D-Link®
Building Networks for People

CLI Manual

Product Model: DGS-3200 Series
Layer 2 Gigabit Ethernet Managed Switch
Release 1.1

Table of Contents

I. Introduction

The Introduction section includes the following chapter: Using Command Line Interface.

1 Using Command Line Interface

The Switch can be managed through the Switch's serial port, Telnet, 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.

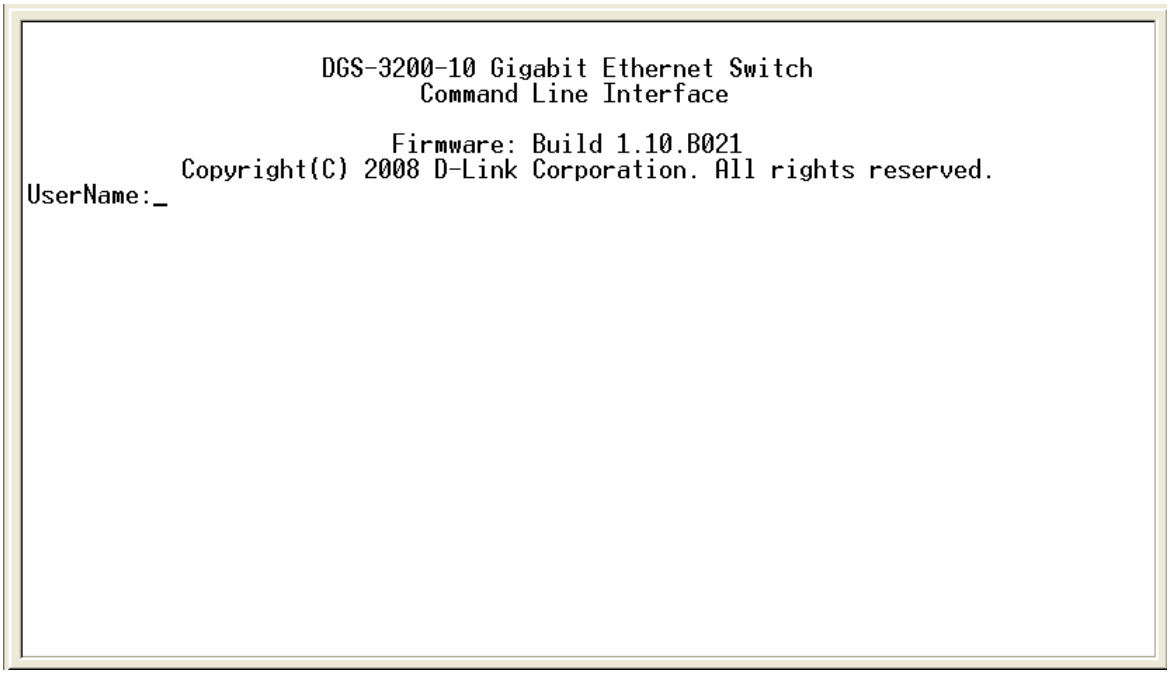
This manual provides a reference for all of the commands contained in the CLI. Every command will be introduced in terms of purpose, format, description, parameters, and examples. Configuration and management of the Switch via the Web-based management agent are discussed in the User Manual. For detailed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

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 is then connected to the Switch's serial port via an RS-232 DB-9 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.

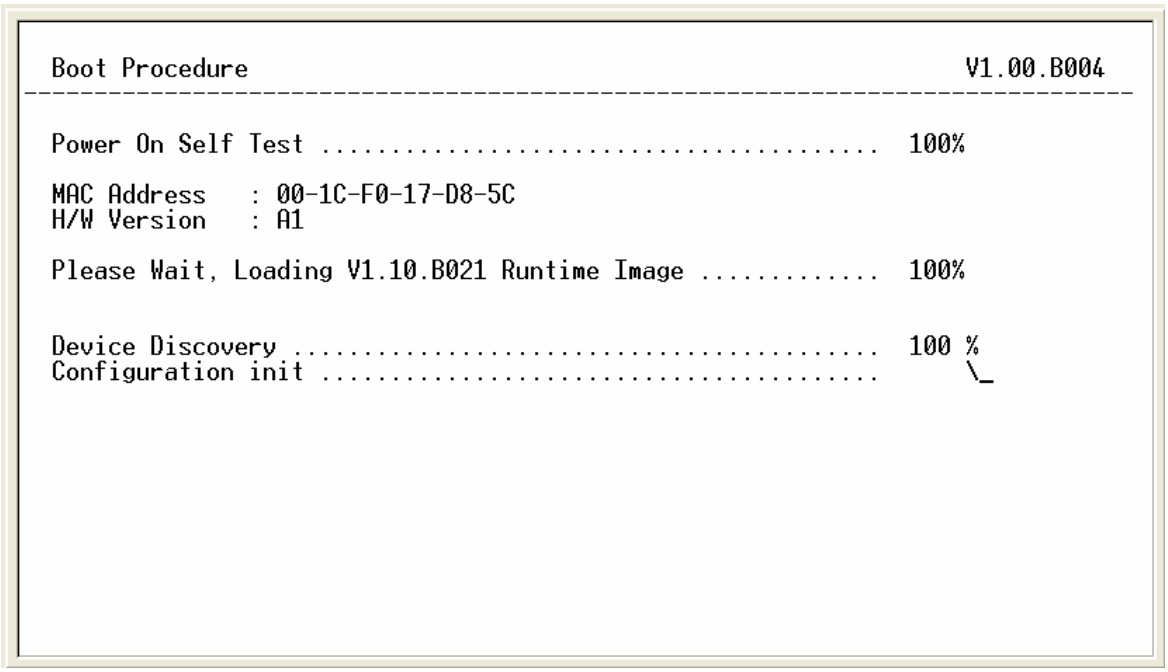


There is no initial username or password. Just press the **Enter** key twice to display the CLI input cursor – **DGS-3200-10:4#**. This is the command line where all commands are input.

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.



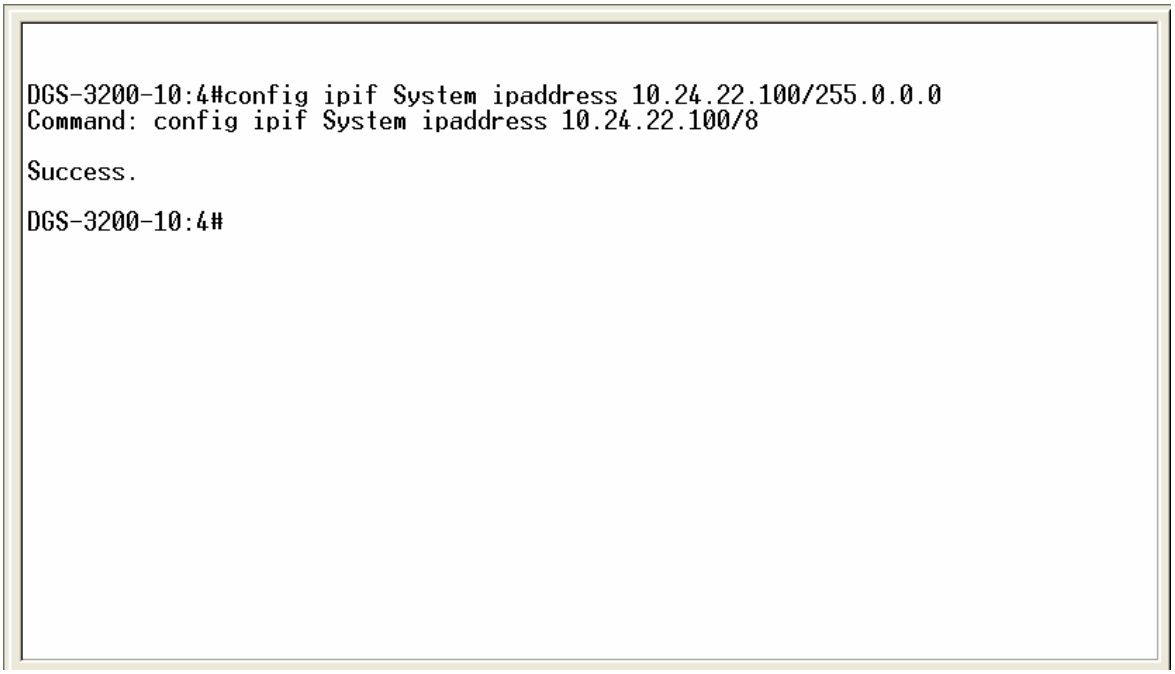
The Switch's MAC address can also be found in the Web management program on the Switch Information (Basic Settings) window on the Configuration menu.

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.

The IP address may be set using the Command Line Interface (CLI) over the console serial port as follows:

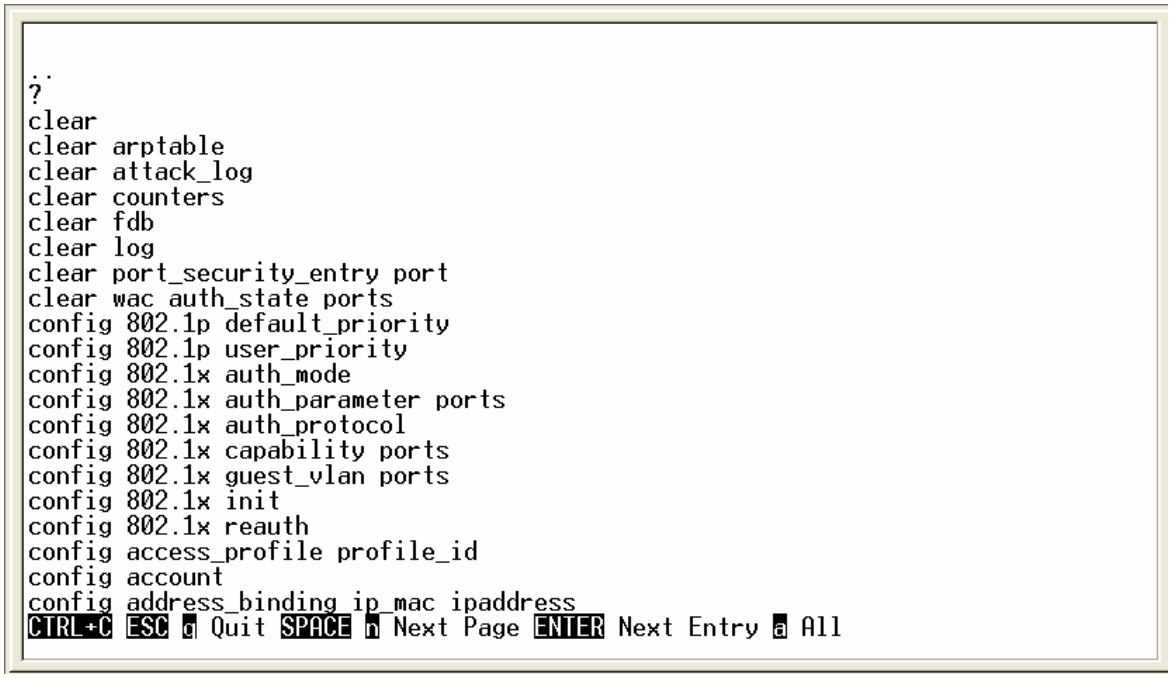
1. Starting at the command line prompt, enter the commands **config ipif System ipaddress xxx.xxx.xxx.xxx/yyy.yyy.yyy.yyy**. Where the **x**'s represent the IP address to be assigned to the IP interface named **System** and the **y**'s represent the corresponding subnet mask.
2. Alternatively, you can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

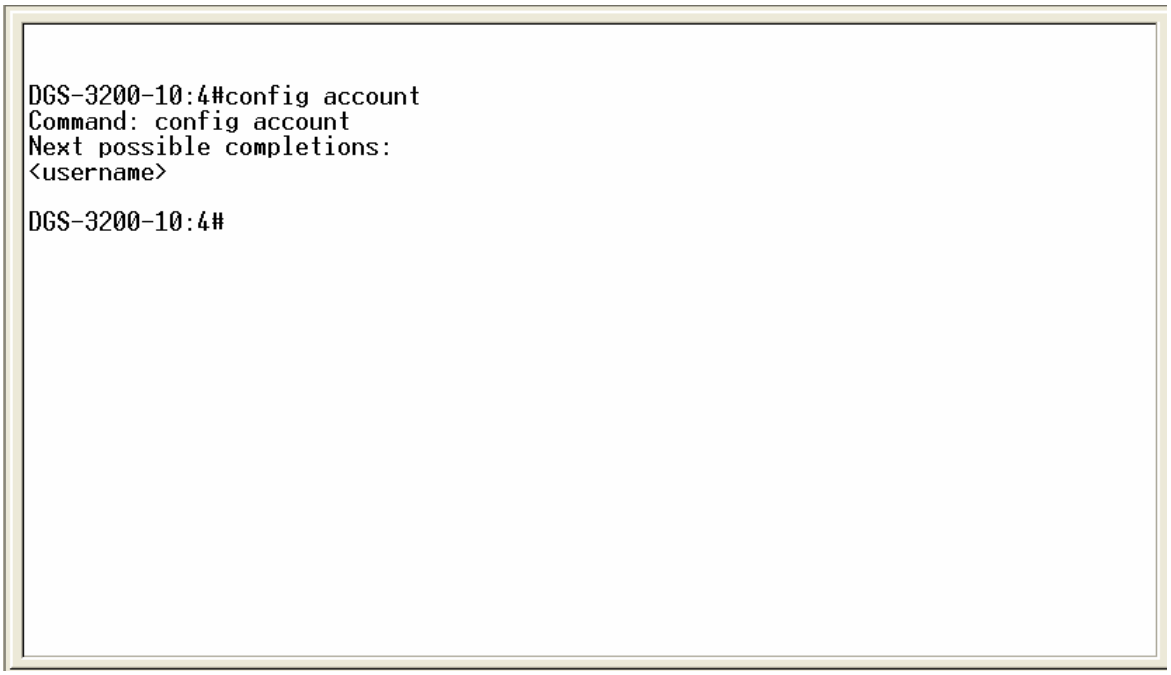


In the above example, the Switch was assigned an IP address of 10.24.22.100 with a subnet mask of 255.0.0.0. The system message **Success** indicates that the command was executed successfully. The Switch can now be configured and managed via Telnet, SNMP MIB browser and the CLI or via the Web-based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



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



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.

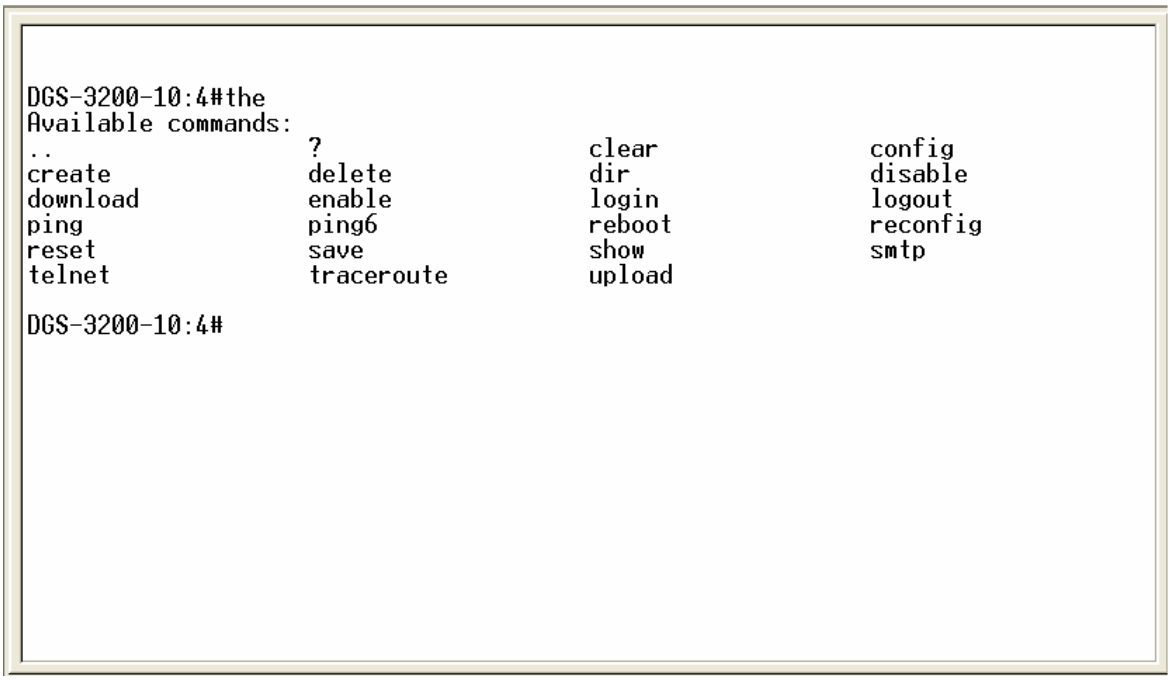
In addition, after typing any given command plus one space, users can see all of the next possible sub-commands, in sequential order, by repeatedly pressing the **Tab** key.

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.

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



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.

```
Command: show
Next possible completions:
802.1p                  802.1x                  access_profile      account
acct_client             address_binding         arpentry            attack_log
auth_client             auth_diagnostics        auth_session_statistics
auth_statistics         authen                  authen_enable       authen_login
authen_policy           autoconfig              bandwidth_control   command_history
config                  cpu                     dhcp_relay          error
fdb                     firmware                greeting_message    gvrp
igmp_snooping           ipif                    iproute             jumbo_frame
jwac                    lacp_port               link_aggregation    log
log_save_timing         loopdetect              mac_based_access_control
mac_based_access_control_local                  mac_notification    mirror
mld_snooping            multicast               multicast_fdb       packet
port_security           ports                   pvid                radius
router_ports            safeguard_engine        scheduling
scheduling_mechanism                            serial_port         session
sim                     smtp                    snmp                sntp
ssh                     ssl                     stp                 switch
syslog                  system_severity         time                time_range
traffic                 traffic_segmentation                        trusted_host
utilization             vlan                    wac

DGS-3200-10:4#
```

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

angle brackets <>	Enclose a variable or value. You must specify the variable or value. For example, in the syntax **create ipif <ipif_name 12> <network_address> <vlan_name 32> {secondary | state [enable | disable | proxy_arp [enable | disable]}** you 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 [ ]	Enclose a required value or list of required arguments. One or more values or arguments must be specified. For example, in the syntax **create account [admin | user]** you must specify either the admin-level or user-level account 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 syntax **show snmp [community | traps]** you must specify either the community or trap receiver in the command. Do not type the vertical bar.

braces { }	Enclose an optional value or a list of optional arguments. One or more values or arguments can be specified. For example, in the syntax **reset { [config | system] }** you may choose config or system in the command. Do not type the braces.
Ipif <ipif_name 12> **metric <value 1-31>**	12 means the maxmum length of IP interface name. 1-31 means the legal range of 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.
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.

II. Interface and Hardware

The Interface and Hardware section includes the following chapter: Switch Port.

2 Switch Port Command List

config ports [<portlist>| all] {medium_type[fiber|copper]} { speed [auto | 10_half | 10_full | 100_half | 100_full | 1000_full{master|slave}] | flow_control [enable | disable] | learning [enable | disable] | state([enable | disable] [description <desc 1-32> | clear_description])
show ports { <portlist> } { [description | err_disabled]}

2-1 config ports

Purpose

Used to configure the switch port settings.

Format

config ports [<portlist> | all] {medium_type[fiber|copper]}{speed [auto | 10_half | 10_full | 100_half | 100_full | 1000_full {master|slave}] | flow_control [enable | disable] | learning [enable | disable]| state [enable | disable] | [description <desc 1-32> | clear_description] }

Description

The **config ports** command changes switch port settings.

Parameters

Parameters	Description	
portlist	Specified a range of ports to be configured.	
all	For set all ports in the system, you may use "**all**" parameter.	
medium_type	Specify the medium type when configuring ports that are combo ports. It's an optional parameter for configuring the medium type of a combo port; If there are no combo ports, user need not specify **medium_type** in the command.	
Speed	You can set port speed for the specified ports .	
	auto	Set port speed to auto negotiation.
	10_half	Set port speed to 10_half.
	10_full	Set port speed to 10_full.
	100_half	Set port speed to 100_half.
	100_full	Set port speed to 100_full._

	1000_full	**1000_full** sets port speed to 1000_full. When setting port speed to **1000_full**, user should specify master or slave mode for 1000 base TX interface, and leave the **1000_full** without any master or slave setting for other interface.
flow_control	You can turn on or turn off flow control on one or more ports by setting **flow_control** to enable or disable.	
learning	You can turn on or turn off MAC address learning on one or more ports.	
state	Enables or disables the specified port. If the specified ports are in error-disabled status, configuring their **state** to **enable** will recover these ports from disabled to enable state.	
description	Describes the port interface.	

Note: Gigabit Ethernet ports are statically set to 1 Gbps and their speed cannot be modified.

Restrictions

You must have administrator privileges.

Example

To configure the speed of ports 1 to 3 of unit 1 to be 10 Mbps, with full duplex, learning enabled, state enabled, and flow control enabled:

```
DGS-3200-10:4# config ports 1-3 speed 10_full state enable learning enable
flow_control enable
Command: config ports 1-3 speed 10_full state enable learning enable flow_control
enable

Success.

DGS-3200-10:4#
```

2-2 show ports

Purpose

Used to display the current configurations of a range of ports.

Format

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

Description

The **show ports** command displays the current configurations of a range of ports. No parameter will show all ports.

Parameters

Parameters	Description
portlist	Specified a range of ports to be displayed.
description	Indicate if port description will be included in the display .
err-disabled	Indicate if ports are disabled by some reasons will be displayed.
	Note: If no parameter is specified, all ports will be displayed.

Restrictions

None.

Example

To display the configuration of ports 1-4

```
DGS-3200-10:4#show ports 1-4
Command: show ports 1-4

Port    Port      Settings               Connection             Address
        State     Speed/Duplex/FlowCtrl  Speed/Duplex/FlowCtrl  Learning
------  --------  ---------------------  ---------------------  --------
1       Enabled   10M/Full/Enabled       Err-Disabled           Enabled
2       Enabled   10M/Full/Enabled       Link Down              Enabled
3       Enabled   10M/Full/Enabled       Err-Disabled           Enabled
4       Enabled   Auto/Disabled          Link Down              Enabled

DGS-3200-10:4#
```

```
DGS-3200-10:4#show ports 1-4 description
Command: show ports 1-4 description

Port    Port      Settings               Connection status      Address
        State     Speed/Duplex/FlowCtrl  Speed/Duplex/FlowCtrl  Learning
------  --------  ---------------------  ---------------------  --------
```

```
1        Enabled   10M/Full/Enabled       Err-Disabled           Enabled
         Desc: port1.
2        Enabled   10M/Full/Enabled       Err-Disabled           Enabled
         Desc: port2.
3        Enabled   10M/Full/Enabled       Link Down              Enabled
         Desc: port3.
4        Enabled   Auto/Disabled          Link Down              Enabled
         Desc: port4.

DGS-3200-10:4#
```

Note: Connection status has the following situations: Link Down, speed/Duplex/FlowCtrl (link up), and Err-Disabled.

```
DGS-3200-10:4#show ports err-disabled
Command: show ports err-disabled

Port    Port      Connection status      Reason
        State
------  --------  ---------------------  ----------------
1       Enabled   Err-Disabled           Storm control
        Desc: port1.
8       Enabled   Err-Disabled           Storm control
        Desc: port8.

DGS-3200-10:4#
```

III. Fundamentals

The Fundamentals section includes the following chapters: Basic Management and Utility.

3 Basic Management Command List

create account [admin | user] <username 15>
enable password encryption
disable password encryption
config account <username> {encrypt [plain_text| sha_1] <password>}
show account
delete account <username>
show session
show switch
show environment
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
enable telnet {<tcp_port_number 1-65535>}
disable telnet
enable web {<tcp_port_number 1-65535>}
disable web
save {[config <config_id 1-2> | log | all]}
reboot
reset {[config | system]}
login
logout

3-1 create account

Purpose

Used to create user accounts

Format

create account [admin | user] <username 15>

Description

The **create account** command creates user accounts. The username is between 1 and 15 characters, the password is between 0 and 15 characters. The number of account (include admin and user) is up to 8.

Parameters

Parameters	Description
admin <username 15>	Name of the admin account.
user <username 15>	Name of the user account.

Restrictions

You must have administrator privileges.

Examples

To create the admin-level user “dlink”:

```
DGS-3200-10:4#create account admin dlink
Command: create account admin dlink

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

DGS-3200-10:4#
```

To create the user-level user “System”:

```
DGS-3200-10:4##create account user System
Command: create account user System

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

DGS-3200-10:4#
```

3-2 enable password encryption

Purpose

Used to create user accounts.

Format

enable password encryption

Description

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 when it is stored in the configuration file. When password encryption is disabled, the password will be in plain text form when it is stored in the configuration file. However, if the created user account directly uses the encrypted password, the password will still be in the encrypted form.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable password encryption

```
DGS-3200-10:4#enable password encryption
Command: enable password encryption

Success.

DGS-3200-10:4#
```

3-3 disable password encryption

Purpose

Used to create user accounts.

Format

disable password encryption

Description

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 when it is stored in the configuration file. When password encryption is disabled, the password will be in plain text form when it is stored in the configuration file. However, if the created user account directly uses the encrypted password, the password will still be in the encrypted form.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable password encryption

```
DGS-3200-10:4#disable password encryption
Command: disable password encryption

Success.

DGS-3200-10:4#
```

3-4 config account

Purpose

Used to configure user accounts.

Format

config account <username> {encrypt [plain_text| sha_1] <password>}

Description

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-I.

Parameters

Parameters	Description
<username>	Name of the account. The account must already be defined.
plain_text	Select to specify the password in plain text form.
sha_1	Select to specify the password in the SHA-I enacrpted 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 assword is case-sensitive.

Restrictions

You must have administrator privileges.

Examples

To configure the user password of “dlink” account :

```
DGS-3200-10:4#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-3200-10:4#
```

To configure the user password of “adminstrator” account :

```
DGS-3200-10:4#config account adminstrator
Command: config account administrator encrypt sha_1
*@&cRDtpNCeBiq15KOQsKVyrA0sAiCIZQwq
Success.

DGS-3200-10:4#
```

3-5 show account

Purpose

Used to display user accounts.

Format

show account

Description

The **show account** command displays user accounts that have been created.

Parameters

None.

Restrictions

None.

Example

To display the accounts that have been created:

```
DGS-3200-10:4#show account
Command: show account

Current Accounts:
Username          Access Level
---------------   ------------
System            User
dlink             Admin



DGS-3200-10:4#
```

3-6 delete account

Purpose

Used to delete an existing account.

Format

delete account <username>

Description

The delete account command deletes an existing account.

Parameters

Parameters	Description
<username>	Name of the user who will be deleted.

Restrictions

You must have administrator privileges. One active admin user must exist.

Example

To delete the user account “System”:

```
DGS-3200-10:4#delete account System
Command: delete account System

Success.

DGS-3200-10:4#
```

3-7 show session

Purpose

Used to display a list of currently logged-in users.

Format

show session

Description

The **show session** command will display a list of currently users which are logged in to CLI sessions.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To display a list of currently logged-in users:

```
DGS-3200-10:4# show session
Command: show session

ID  Live Time     From                          Level  Name
--  ------------  ----------------------------  -----  ---------------
8   23:37:42.270  Serial Port                    4      Anonymous

Total Entries: 1

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

3-8 show switch

Purpose

Used to display the switch information.

Format

show switch

Description

The **show switch** command displays the switch information.

Parameters

None.

Restrictions

None.

Example

To display the switch information:

```
DGS-3200-10:4#show switch
Command: show switch

Device Type        : DGS-3200-10 Gigabit Ethernet Switch
MAC Address        : 00-00-00-01-02-00
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 1.00.B004
Firmware Version   : Build 1.10.B021
Hardware Version   : A1
Serial Number      : P4CK183000001
System Name        :
System Location    :
System Contact     :
Spanning Tree      : Disabled
GVRP               : Disabled
IGMP Snooping      : Disabled
MLD Snooping       : Disabled
TELNET             : Disabled (TCP 23)
```

```
WEB                 : Enabled (TCP 80)
SNMP                : Enabled
RMON                : Disabled
SSL Status          : Disabled
SSH Status          : Disabled
802.1x              : Disabled
Jumbo Frame         : Off
Clipaging           : Enabled
MAC Notification    : Disabled
Port Mirror         : Disabled
SNTP                : Disabled
Syslog Global State  : Disabled
Single IP Management : Disabled
Dual Image            : Supported
Password Encryption Status : Disabled

DGS-3200-10:4#
```

3-9 show environment

Purpose

Used to display the device internal temperature.

Format

show environment

Description

The **show environemnt** command displays the device internal temperature status.

Parameters

None.

Restrictions

Only DGS-3200-16 supports this command. DGS-3200-10 does not support this command.

Example

To display the switch internal temperature status:

```
DGS-3200-16:4# show environment
Command: show environment

Side Fan                    Temperature
                             (Celsius)
--------                    -------------
   OK                            47

Note: The warning temperature is above 83 degrees.




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

3-10 show serial_port

Purpose

Used to display the current serial port setting.

Format

show serial_port

Description

The **show serial_port** command displays the current serial port setting.

Parameters

None.

Restrictions

None.

Example

To display the serial port setting:

```
DGS-3200-10:4#show serial_port
Command: show serial_port

Baud Rate      : 115,200
Data Bits      : 8
```

```
Parity Bits    : None
Stop Bits      : 1
Auto-Logout    : 10 mins


DGS-3200-10:4#
```

3-11 config serial_port

Purpose

Used to configure the serial bit rate that will be used to communicate with the management host and the auto logout time for idle connections.

Format

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

Description

The **config serial_port** command configures the serial bit rate that will be used to communicate with the management host and the auto logout time for idle connections.

Parameters

Parameters	Description	
baud_rate	The serial bit rate that will be used to communicate with the management host. There are four options: **9600**, **19200**, **38400**, and **115200**.	
auto_logout	The auto logout time out setting :	
	never	Never timeout.
	2_minutes	When you idle over 2 minutes, the device will auto logout.
	5_minutes	When you idle over 5 minutes, the device will auto logout.
	10_minutes	When you idle over 10 minutes, the device will auto logout.
	15_minutes	When you idle over 15 minutes, the device will auto logout.

Restrictions

You must have administrator privileges.

Example

To configure baud rate:

```
DGS-3200-10:4# config serial_port baud_rate 9600
Command: config serial_port baud_rate 9600
```

```
Success.

DGS-3200-10:4#
```

3-12 enable clipaging

Purpose

Used to pause the scrolling of the console screen when the show command displays more than one page.

Format

enable clipaging

Description

The **enable clipaging** command enables pausing of the screen display when show command output reaches the end of the page. The default setting is enabled.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

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

```
DGS-3200-10:4#enable clipaging
Command: enable clipaging

Success.

DGS-3200-10:4#
```

3-13 disable clipaging

Purpose

Used to disable pause the scrolling of the console screen when the show command displays more than one page.

Format

disable clipaging

Description

The **disable clipaging** command disables pausing of the screen display when show command output reaches the end of the page. The default setting is enabled.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

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

```
DGS-3200-10:4#disable clipaging
Command: disable clipaging

Success.

DGS-3200-10:4#
```

3-14 enable telnet

Purpose

The switch allows you manage the switch via Telnet based management software.

Use the command to enable Telnet and configure a port number.

Format

enable telnet {<tcp_port_number 1-65535>}

Description

The **enable telnet** command enables Telnet and configures port number.

Parameters

Parameters	Description
tcp_port_number	The TCP port number. TCP ports are numbered between 1 and 65535. The “well-known” TCP port for the Telnet protocol is 23.

Restrictions

You must have administrator privileges.

Example

To enable Telnet and configure a port number:

```
DGS-3200-10:4#enable telnet 23
Command: enable telnet 23

Success.

DGS-3200-10:4#
```

3-15 disable telnet

Purpose

The switch allows you manage the switch via Telnet based management software.

Use the command to disable Telnet.

Format

disable telnet

Description

The **disable telnet** command disables Telnet.

Parameter

None.

Restrictions

You must have administrator privileges.

Example

To disable Telnet:

```
DGS-3200-10:4#disable telnet
Command: disable telnet

Success.

DGS-3200-10:4#
```

3-16 enable web

Purpose

The switch allows you manage the switch via HTTP based management software.

Use the command to enable HTTP and configure port number.

Format

enable web {<tcp_port_number 1-65535>}

Description

The enable web command enables HTTP and configures port number.

Parameters

Parameters	Description
tcp_port_number	The TCP port number. TCP ports are numbered between 1 and 65535. The “well-known” TCP port for the Web protocol is 80

Restrictions

You must have administrator privileges.

Example

To enable HTTP and configure port number:

```
DGS-3200-10:4#enable web 80
Command: enable web 80

Note: SSL will be disabled if web is enabled.
Success.

DGS-3200-10:4#
```

3-17 disable web

Purpose

The switch allows you manage the switch via HTTP based management software.

Use the command to disable HTTP.

Format

disable web

Description

The **disable web** command disables HTTP.

Parameter

None.

Restrictions

You must have administrator privileges.

Example

To disable HTTP :

```
DGS-3200-10:4#disable web
Command: disable web

Success.

DGS-3200-10:4#
```

3-18 save

Purpose

Used to save changes in non-volatile RAM.

Format

save{[config <config_id 1-2> | log | all]}

Description

The save command saves changes in non-volatile RAM.

Parameters

Parameters	Description
config <config_id 1-2>	Specifes the configuration identify number of the indicated configuration.
log	Save log.
all	Save changes to currently active configuration and save log
	If no any keyword specified, save changes to configuration

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#save
Command: save

Saving all configurations to NV-RAM..... Done.
```

```
DGS-3200-10:4#
```

```
DGS-3200-10:4#save config 1
Command: save config 1

Saving configuration 1 to NV-RAM.......... Done.

DGS-3200-10:4#
```

```
DGS-3200-10:4#save log
Command: save log

Saving all system logs to NV-RAM.............. Done.

DGS-3200-10:4#
```

```
DGS-3200-10:4#save all
Command: save all

Saving  configuration and logs to NV-RAM...... Done.

DGS-3200-10:4#
```

3-19 reboot

Purpose

Used to restart the switch.

Format

reboot

Description

The **reboot** command restarts the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#reboot
Command: reboot

Are you sure to proceed with the system reboot?(y/n)
 Please wait, the switch is rebooting…
```

3-20 reset

Purpose

Used to reset all switch parameters.

Format

reset {[config | system]}

Description

The reset command resets all switch parameters to the factory defaults.

Parameter

Parameters	Description
config	If you specify the '**config**' keyword , all parameters are reset to default settings. But device will neither save nor reboot.
system	If you specify the '**system**' keyword, all parameters are reset to default settings. Then the switch will do factory reset, save, and reboot
	If no keyword is specified , all parameters will be reset to default settings except IP address, user account, and history log. But device will neither save nor reboot.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#reset
Command: reset

Are you sure to proceed with system reset except IP address?(y/n)
Success.

DGS-3200-10:4#
```

```
DGS-3200-10:4#reset config
Command: reset config

Are you sure to proceed with system reset?(y/n)
Success.

DGS-3200-10:4#
```

```
DGS-3200-10:4#reset system
Command: reset system

Are you sure to proceed with system reset, save and reboot?(y/n)
Loading factory default configuration… Done.
Saving all configuration to NV-RAM… Done.
Please wait, the switch is rebooting…
```

3-21 login

Purpose

Used to log in to the switch.

Format

login

Description

The **login** command log in to the switch.

Parameter

None.

Restrictions

None.

Example

```
DGS-3200-10:4#login
Command: login

UserName:
```

3-22 logout

Purpose

Used to log out of the switch.

Format

logout

Description

When you are finished using the facility, use the **logout** command to logout.

Parameter

None.

Restrictions

None.

Example

```
DGS-3200-10:4#logout
Command: logout



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



                        DGS-3200-10 Gigabit Ethernet Switch
                              Command Line Interface


                                 Firmware: Build 1.10.B021
              Copyright(C) 2008 D-Link Corporation. All rights reserved.
Username:



                        DGS-3200-10 Gigabit Ethernet Switch
                              Command Line Interface


                                 Firmware: Build 1.10.B021
              Copyright(C) 2008 D-Link Corporation. All rights reserved.
Username:
```

4 Utility Command List

download [firmware_fromTFTP [<ipaddr> | <ipv6addr>] <path_filename 64> image_id <1-2>] | [cfg_fromTFTP <ipaddr> <path_filename 64> {[<config_id 1-2> | increment]}]
upload log_toTFTP [<ipaddr> | <ipv6addr>] <path_filename 64>]
upload cfg_toTFTP [<ipaddr> | <ipv6addr>] <path_filename 64> { <config_id 1-2>}
config firmware image_id <1-2> [delete | boot_up]
config configuration <config_id 1-2> [boot_up | delete | active]
show firmware information
show config [current_config | config_in_nvram <config_id 1-2> | information]
ping <ipaddr> {times <value 0-255>} {timeout <sec 1-99>}
traceroute <ipaddr> {ttl <value 1-60>} {port <value 30000-64900>} {timeout <sec 1-65535>} {probe <value 1-9>}
telnet <ipaddr> {tcp_port <value 0-65535>}

Note: The Interface field is used for addresses on the link-local network. It is recommended that the user enter the specific interface for a link-local IPv6 adress. The field may be omitted for global IPv6 addresses. For example,

DGS-3200-10:4#upload cfg_toTFTP fe80::20d:88ff:fe11:7b6c%System DGS-3200.cfg

4-1 download

Purpose

Used to download and install new firmware or a switch configuration file from a TFTP server.

Format

download [firmware_fromTFTP [<ipaddr> | <ipv6addr>] <path_filename 64> image_id <1-2>] | [cfg_fromTFTP <ipaddr> <path_filename 64> {[<config_id 1-2> | increment]}]

Description

This command is used to download a new firmware or a switch configuration file from a TFTP server. The firmware can be loaded to different section according to the **image_id** or the **config_id**.

Parameters

Parameters	Description
firmware_fromTFTP	Download and install new firmware on the switch from a TFTP server.
cfg_fromTFTP	Download a switch configuration file from a TFTP server.
ipaddr	The IP address of the TFTP server.
ipv6addr	The IPv6 address of the TFTP server.
path_filename	The DOS path and filename of the firmware or switch configuration file on the TFTP server. The maximum length is 64.
image_id <1-2>	Specifes the image identify number of the indicated firmware.
config_id <1-2>	Specifes the configuration identify number of the indicated configuration.
increment	Allows the download of a partial switch configuration file. This allows a file to be downloaded that will change only the switch parameters explicitly stated in the configuration file. All other switch parameters will remain unchanged.

Restrictions

You must have administrator privileges.

Examples

Download firmware:

```
DGS-3200-10:4#download firmware_fromTFTP 10.90.90.90 c:/DGS3200_Run_1_10_B021.had
Command: download firmware_fromTFTP 10.90.90.90 c:/DGS3200_Run_1_10_B021.had

Connecting to server.................. Done.
Download firmware..................... Done.   Do not power off !!
Please wait, programming flash......... Done.
Success

DGS-3200-10:4#
```

4-2 upload

Purpose

Used to upload the current switch settings or the switch history log to a TFTP server.

Format

upload log_toTFTP [<ipaddr> | <ipv6addr>] <path_filename 64>

upload cfg_toTFTP [<ipaddr> | <ipv6addr>] <path_filename 64> { <config_id 1-2>}

Description

This command is used to upload either the switch's configuration or the switch's history log to a TFTP server.

Parameters

Parameters	Description
log_toTFTP	Specifies that the switch history log will be uploaded to the TFTP server.
cfg_toTFTP	Specifies that the switch configuration will be uploaded to the TFTP server.
ipaddr	The IP address of the TFTP server.
ipv6addr	The IPv6 address of the TFTP server.
path_filename	Specifies 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.
config_id <1-2>	Specifies the configuration identify number of the indicated configuration.

Restrictions

You must have administrator privileges.

Examples

Upload configuration to TFTP server:

```
DGS-3200-10:4#upload cfg_toTFTP 10.48.74.121 c:\cfg\DGS-3200-10\cfg config_id 1
Command: upload cfg_toTFTP 10.48.74.121 c:\cfg\DGS-3200-10\cfg config_id 1

Connecting to server... Done.
Upload configuration... Done.

DGS-3200-10:4#
```

Upload system log to TFTP server:

```
DGS-3200-10:4#upload log_toTFTP 10.48.74.121 c:\cfg\DGS-3200-10\log
Command: upload log_toTFTP 10.48.74.121 c:\cfg\DGS-3200-10\log

Connecting to server... Done.
Upload configuration... Done.

DGS-3200-10:4#
```

4-3 config firmware

Purpose

Used to configure the specific firmware as boot up image or delete the specific firmware.

Format

config firmware image_id <1-2> [delete | boot_up]

Description

This command is used to configure firmware as a boot-up image or to delete the firmware.

Parameters

Parameters	Description
image_id <1-2>	Specifes the serial number of the indicated firmware.

Restrictions

You must have administrator privileges.

Example

To delete the specific firmware:

```
DGS-3200-10:4#config firmware image_id 2 delete
Command: config firmware image_id 2 delete

Please wait, deleting image ........... Done.
Success

DGS-3200-10:4#
```

To configure the specific firmware as boot up image:

```
DGS-3200-10:4#config firmware image_id 1 boot_up
Command: config firmware image_id 1 boot_up

Success!

DGS-3200-10:4#
```

4-4 config configuration

Purpose

Used to configure the specific configuration, boot up or active, or to delete it.

Format

config configuration <config_id 1-2> [boot_up | delete | active]

Description

None.

Parameters

Parameters	Description
config_id <1-2>	Specifes the serial number of the indicated configuration.

Restrictions

You must have administrator privileges.

Example

To delete the specific configuration:

```
DGS-3200-10:4#config configuration config_id 2 delete
Command: config configuration config_id 2 delete

Success

DGS-3200-10:4#
```

4-5 show firmware information

Purpose

Displays the firmware information.

Format

show firmware information

Description

The **show firmware information** command displays the firmware information.

Parameters

None

Restrictions

You must have administrator privileges.

Example

To show the firmware information:

```
DGS-3200-10:4#show firmware information
Command: show firmware information

Image ID    : 1(Boot up firmware)
    Version     : 1.10.B021
    Size        : 2075194 Bytes
    Update Time: 2000/01/01 00:57:40
    From        : 172.18.211.108(Console)
    User        : Anonymous


Image ID    : 2
    Version     : 1.10.B014
    Size        : 2073148 Bytes
    Update Time: 2000/01/01 01:06:58
    From        : 172.18.211.108(Console)
    User        : Anonymous

DGS-3200-10:4#
```

4-6 show config information

Purpose

Displays the configuration or configuration information.

Format

show config [current_config | config_in_nvram <config_id 1-2> | information]

Description

None

Parameters

None

Restrictions

You must have administrator privileges.

Example

To show the configuration information:

```
DGS-3200-10:4#show config information
Command: show config information

ID          : 1(Boot up configuration)
 -------------  -------------  ----------------------------
 Version     : 1.10.B021
 Size        : 10595 Bytes
 Updata Time: 2000/01/01 00:32:25
 From        : FE80::21A:4DFF:FE32:EFB9(Console)
 User        : Anonymous
 Boot Up     : Yes



 ID          : 2
 -------------  -------------  ----------------------------
 Version     : 1.10.B014
 Size        : 10102 Bytes
 Updata Time: 2000/01/01 00:02:40
 From        : Local save(Console)
 User        : Anonymous
 Boot Up     : No

DGS-3200-10:4#
```

4-7 ping

Purpose

Used to test the connectivity between network devices.

Format

ping <ipaddr> {times <value 0-255>} {timeout <sec 1-99>}

Description

The **ping** command sends 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.

Parameters

Parameters	Description
ipaddr	Specify the IP address of the host.
value	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.
sec	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.

Restrictions

You must have administrator privileges.

Example

To send ICMP echo message to "10.51.17.1" for 4 times:

```
DGS-3200-10:4#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-3200-10:4#
```

4-8 traceroute

Purpose

Used to trace the routed path between the switch and a destination endstation.

Format

traceroute <ipaddr> {ttl <value 1-60>} {port <value 30000-64900>} {timeout <sec 1-65535>} {probe <value 1-9>}

Description

The **traceroute** command allows you to trace a route between the switch and a give host on the network.

Parameters

Parameters	Description
ipaddr	IP address of the destination endstation.
ttl <value1-60>	The time to live value of the trace route request. This is the maximum number of routers The traceroute command will cross while seeking the network path between two devices.
port<value 30000-64900>	The port number. Must be above 1024. The value range is from 30000 to 64900 .
probe<value 1-9>	The number of probes. The range is from 1 to 9 .

Restrictions

You must have administrator privileges.

Example

Trace the routed path between the switch and 10.48.74.121.

```
DGS-3200-10:4#traceroute 10.48.74.121 probe 3
Command: traceroute 10.48.74.121 probe 3


1    <10 ms.      10.48.74.121
1    <10 ms.      10.48.74.121
1    <10 ms.      10.48.74.121


DGS-3200-10:4#
```

4-9 telnet

Purpose

Used to login a host that supports Telnet.

Format

telnet <ipaddr> {tcp_port <value 0-65535>}

Description

The **telnet** command logins a host that supports Telnet.

Parameters

Parameters	Description
ipaddr	The IP address of the host to login.
tcp_port	The Telnet port.

Restrictions

None.

Example

To Telnet to a host:

```
DGS-3200-10:4#telnet 10.1.1.1
Command: telnet 10.1.1.1


 Connecting to 10.1.1.1...
[Press Ctrl+Y to disconnect.]


DGS-3200-10:4#Welcome to Microsoft Telnet Service


login: administrator
password:


*===============================================================
Welcome to Microsoft Telnet Server.
*===============================================================
C:\Documents and Settings\Administrator>exit
Connection to host lost.


DGS-3200-10:4#
```

Note: Use “Ctrl+Y” to connect from the host.

IV. Network Management

The Fundamentals section includes the following chapters: SNMPv1/v2, SNMPv3, Network Management, Network Monitoring, System Severity, Command List History, Modify Banner and Prompt, Time and SNTP, Jumbo Frame, Single IP Management, and Safeguard Engine.

5 SNMPv1/v2 Command List

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>

Note: If SNMPv3 commands are used, the SNMPv1/v2 commands are not necessary.

5-1 create snmp community

Purpose

Used to create an SNMP community string.

Format

create snmp community <community_string 32> view <view_name 32> [read_only | read_write]

Description

The **create snmp community** command is used to create an SNMP community string and to specify the string as enabling read only or read-write privileges for the SNMP management host.

Parameters

Parameters	Description
community_string	An alphanumeric string of up to 32 characters used in the authentication of users wanting access to the switch's SNMP agent.
view	An alphanumeric string of up to 32 characters.
read_only	Allows the user using the above 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 using the above community string to have read and write acces to the switch's SNMP agent. The default read-write community string is private.

Restrictions

You must have administrator privileges. A maximum of four community strings can be specified.

Example

To create a read-only level SNMP community "System":

```
DGS-3200-10:4#create snmp community System readwrite
Command: create snmp community System readwrite

Success.

DGS-3200-10:4#
```

5-2 delete snmp community

Purpose

Used to delete an SNMP community string previously entered on the switch.

Format

delete snmp community <community_string 32>

Description

The **delete snmp community** command is used to delete an SNMP community string entered on the switch using the create snmp community command above.

Parameters

Parameters	Description
community_string	An alphanumeric string of up to 32 characters used in the authentication of users wanting access to the switch's SNMP agent.

Restrictions

You must have administrator privileges.

Example

To delete a read-only level SNMP community "System":

```
DGS-3200-10:4#delete snmp community System
Command: delete snmp community System

Success.

DGS-3200-10:4#
```

5-3 show snmp community

Purpose

Used to display the SNMP community configurations on the switch.

Format

show snmp community <community_string 32>

Description

The **show snmp community** command displays the following information: SNMP community strings, View Name, and Access Rights.

Parameter

Parameters	Description
community_string	An alphanumeric string of up to 32 characters used in the authentication of users wanting access to the switch's SNMP agent.

Restrictions

None.

Example

To display SNMP community information:

```
DGS-3200-10:4#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-3200-10:4#
```

6 SNMPv3 Command List

create snmp user <SNMP_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 <SNMP_name 32>
show snmp user
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 community <community_string 32> view <view_name 32> [read_only|read_write]
delete snmp community <community_string 32>
show snmp community { <community_string 32> }
config snmp engineID <snmp_engineID 10-64>
show snmp engineID
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>
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 v6host { <ipv6addr> }
show snmp host { <ipaddr> }
show snmp traps

Note: If SNMPv3 commands are used, SNMPv1/v2 commands are not necessary.

6-1 create snmp user

Purpose

Used to create a new user to an SNMP group originated by this command.

Format

create snmp user <SNMP_name 32> <groupname 32> {encrypted(1)

[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>]]}

Description

The **create snmp user** command creates a new user to an SNMP group originated by this command. User can chose input authencation and privacy by password or by key.

Parameters

Parameters	Description	
SNMP_name	The name of the user on the host that connects to the agent. The range is 1 to 32 .	
groupname	The name of the group to which the user is associated. The range is 1 to 32 .	
encrypted	Specifies whether the password appears in encrypted format.	
by_password	indicate input password for authentication and privacy	
by_key	indicate input key for authentication and privacy	
auth	Initiates an authentication level setting session. The options are md5 and sha .	
	md5	The HMAC-MD5-96 authentication level.
	sha	The HMAC-SHA-96 authentication level.
auth_password	A authentication string used by MD5 or SHA1.	
priv_password	A privacy string used by DES.	
auth_key	A authentication key used by MD5 or SHA1, it is hex string type.	
priv_key	A privacy key used by DES, it is hex string type.	

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#create snmp user dlink D-Link_group encrypted by_password auth md5
12345678 priv des 12345678
Command: create snmp user dlink D-Link_group encrypted by_password auth md5 1234
5678 priv des 12345678

Success.

DGS-3200-10:4#
```

6-2 delete snmp user

Purpose

Used to remove a user from an SNMP group and delete the associated group in SNMP group.

Format

delete snmp user <SNMP_name 32>

Description

The **delete snmp user** command removes a user from a SNMP group and deletes the associated group in SNMP group..

Parameters

Parameters	Description
username	The name of the user on the host that connects to the agent. The range is 1 to 32 .

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#delete snmp user dlink
Command: delete snmp user dlink

Success.

DGS-3200-10:4#
```

6-3 show snmp user

Purpose

Used to display information on each SNMP username in the group username table.

Format

show snmp user

Description

The **show snmp user** command displays information on each SNMP username in the group username table.

Parameter

None.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#show snmp user
Command: show snmp user

Username          Group Name        SNMP Version  Auth-Protocol  PrivProtocol
---------------  ---------------  ------------  -------------  ------------
initial           initial           V3             None            None

Total Entries : 1

DGS-3200-10:4#
```

6-4 show snmp groups

Purpose

Used to display the names of groups on the switch, and the security model, level, and the status of the different views.

Format

show snmp groups

Description

The **show snmp groups** command displays the names of groups on the switch, and the security model, level, and the status of the different views.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#show snmp groups
Command: show snmp groups

Vacm Access Table Settings

Group    Name    : public
ReadView Name    : CommunityView
WriteView Name   :
Notify View Name : CommunityView
Securiy Model    : SNMPv1
Securiy Level    : NoAuthNoPriv

Group    Name    : public
ReadView Name    : CommunityView
WriteView Name   :
Notify View Name : CommunityView
Securiy Model    : SNMPv2
Securiy Level    : NoAuthNoPriv

Group    Name    : initial
ReadView Name    : restricted
WriteView Name   :
Notify View Name : restricted
Securiy Model    : SNMPv3
Securiy Level    : NoAuthNoPriv

Group    Name    : private
ReadView Name    : CommunityView
WriteView Name   : CommunityView
Notify View Name : CommunityView
Security Model   : SNMPv1
Security Level   : NoAuthNoPriv
```

```
Group    Name    : private
ReadView Name    : CommunityView
WriteView Name   : CommunityView
Notify View Name : CommunityView
Security Model   : SNMPv2
Security Level   : NoAuthNoPriv

Group    Name    : ReadGroup
ReadView Name    : CommunityView
WriteView Name   :
Notify View Name : CommunityView
Security Model   : SNMPv1
Security Level   : NoAuthNoPriv

Group    Name    : ReadGroup
ReadView Name    : CommunityView
WriteView Name   :
Notify View Name : CommunityView
Security Model   : SNMPv1
Security Level   : NoAuthNoPriv

Group    Name    : ReadGroup
ReadView Name    : CommunityView
WriteView Name   :
Notify View Name : CommunityView
Security Model   : SNMPv2
Security Level   : NoAuthNoPriv

Group    Name    : WriteGroup
ReadView Name    : CommunityView
WriteView Name   : CommunityView
Notify View Name : CommunityView
Security Model   : SNMPv1
Security Level   : NoAuthNoPriv

Group    Name    : WriteGroup
ReadView Name    : CommunityView
```

```
WriteView Name    : CommunityView
Notify View Name  : CommunityView
Security Model    : SNMPv1
Security Level    : NoAuthNoPriv

Group     Name    : WriteGroup
ReadView Name     : CommunityView
WriteView Name    : CommunityView
Notify View Name  : CommunityView
Security Model    : SNMPv2
Security Level    : NoAuthNoPriv

Group     Name    : D-Link_group
ReadView Name     : CommunityView
WriteView Name    : CommunityView
Notify View Name  : CommunityView
Security Model    : SNMPv3
Security Level    : authPriv

Total Entries: 10

DGS-3200-10:4
```

6-5 create snmp view

Purpose

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]

Description

The **create snmp view** command assigns views to community strings to limit which MIB objects an SNMP manager can access.

Parameters

Parameters	Description
view_name	View name to be created.
oid	Object-Identified tree, MIB tree.

view_type	Specify the access type of of the MIB tree in this view .	
	included	Includes for this view.
	excluded	Excluded for this view.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#create snmp view dlinkview 1.3.6 view_type included
Command: create snmp view dlinkview 1.3.6 view_type included

Success.

DGS-3200-10:4#
```

6-6 delete snmp view

Purpose

Used to remove a view record.

Format

delete snmp view <view_name 32> [all | <oid>]

Description

The **delete snmp view** command removes a view record.

Parameters

Parameters	Description
view_name	View nameof the user who will be deleted.
all	all view record.
oid	Object-Identified tree, MIB tree.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#delete snmp view dlinkview all
Command: delete snmp view dlinkview all

Success.

DGS-3200-10:4#
```

6-7 show snmp view

Purpose

Used to display the SNMP view record.

Format

show snmp view {<view_name 32>}

Description

The **show snmp view** command displays the SNMP view record.

Parameters

Parameters	Description
view_name	View name of the user who likes to show.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#show snmp view
Command: show snmp view

Vacm View Table Settings
View Name              Subtree                      View Type
--------------------  -------------------------  ----------
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: 8

DGS-3200-10:4#
```

6-8 create snmp community

Purpose

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]

Description

The **create snmp community** command creates an SNMP community string.

Parameters

Parameters	Description
community_string	Communtiy string. Max string length is 32.
view_name	View name. A MIB view. Max length is 32
[read_only | read_write]	Read and write or read-only permission.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#create snmp community dlink view CommunityView read_write
Command: create snmp community dlink view CommunityView read_write

Success.

DGS-3200-10:4#
```

6-9 delete snmp community

Purpose

Used to remove a specific communtiy string

Format

delete snmp community <community_string 32>

Description

The **delete snmp community** command removes a specific community string.

Parameters

Parameters	Description
community_string 32	The community string that will be deleted.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#delete snmp community dlink
Command: delete snmp community dlink

Success.

DGS-3200-10:4#
```

6-10 show snmp community

Purpose

Used to display the community string configurations

Format

show snmp community { <community_string 32> }

Description

The **show snmp** communtiy command displays the community string configurations..

Parameters

Parameters	Description
community_string 32	The community string to be displayed.
	If a community string is not specified, all community string information will be displayed.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#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-3200-10:4#
```

6-11 config snmp engineID

Purpose

Used to configure a identifier for the SNMP engine on the switch.

Format

config snmp engineID <snmp_engineID 10-64>

Description

The **config snmp engineID** command configures a identifier for the SNMP engine on the switch. Associated with each SNMP entity is a unique engineID.

Parameters

Parameters	Description
snmp_engineID	Identify for the SNMP engine on the switch. It is an octet string type.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#config snmp engineID 1023457890
Command: config snmp engineID 1023457890

Success.

DGS-3200-10:4#
```

6-12 show snmp engineID

Purpose

Used to display the identification of the SNMP engine on the switch.

Format

show snmp engineID

Description

The **show snmp engineID** command displays the identification of the SNMP engine on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#show snmp engineID
Command: show snmp engineID

SNMP Engine ID : 1023457890

DGS-3200-10:4#
```

6-13 create snmp group

Purpose

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>}

Description

The **create snmp group** command creates a new SNMP group.

Parameters

Parameters	Description	
groupname	The name of the group.	
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 security models. Specifies authentication of a packet.	
	noauth_nopriv	neither support packet authentication nor encrypting.
	auth_nopriv	Support packet authentication .
	auth_priv	Support packet authentication and encrypting.
view_name	View name. An MIB view.	

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#create snmp group D-Link_group v3 auth_priv read_view CommunityView
write_view CommunityView notify_view CommunityView
Command: create snmp group D-Link_group v3 auth_priv read_view CommunityView wri
te_view CommunityView notify_view CommunityView

Success.

DGS-3200-10:4#
```

6-14 delete snmp group

Purpose

Used to remove a SNMP group.

Format

delete snmp group <groupname 32>

Description

The **delete snmp group** command removes a SNMP group.

Parameters

Parameters	Description
groupname	The name of the group will be deleted.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#delete snmp group D_Link_group
Command: delete snmp group D_Link_group

Success.

DGS-3200-10:4#
```

6-15 create snmp host

Purpose

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>

Description

The **create snmp host** command creates a recipient of an SNMP operation.

Parameters

Parameters	Description	
ipaddr	The IP address of the recipient for which the traps are targeted.	
v6host	Specifies the v6host IP address to which the trap packet will be sent.	
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.
auth_string	The authentication string.	

Restrictions

2-level administrator

3-level operator

Example

```
DGS-3200-10:4#create snmp host 10.48.74.100 v3 noauth_nopriv initial
Command: create snmp host 10.48.74.100 v3 noauth_nopriv initial

Success.

DGS-3200-10:4#
```

6-16 delete snmp host

Purpose

Used to delete a recipient of an SNMP trap operation.

Format

delete snmp [host <ipaddr> | v6host <ipv6addr>]

Description

The **delete snmp** host command deletes a recipient of an SNMP trap operation.

Parameters

Parameters	Description
ipaddr	The IP address of the recipient for which the traps are targeted.
v6host	Specifies the v6host IP address.

Restrictions

2-level administrator

3-level operator

Example

```
DGS-3200-10:4#delete snmp host 10.48.74.100
Command: delete snmp host 10.48.74.100

Success.

DGS-3200-10:4#
```

6-17 show snmp host

Purpose

Used to display the recipient for which the traps are targeted.

Format

show snmp host { <ipaddr> }

Description

The **show snmp host** command displays the recipient for which the traps are targeted.

Parameters

Parameters	Description
ipaddr	The IP address of the recipient for which the traps are targeted.
	If no parameter specified, all SNMP hosps will be diplayed.
v6host	Specifies the v6host IP address.

Restrictions

user level

Example

```
DGS-3200-10:4# show snmp host
Command: show snmp host

SNMP Host Table
Host IP Address  SNMP Version     Community Name / SNMPv3 User Name
---------------  ---------------  --------------------------------
10.48.76.100     V3 noauthnopriv  initial
10.51.17.1       V2c               public

Total Entries : 2

DGS-3200-10:4#
```

6-18 show snmp v6host

Purpose

Used to display the recipient for which the traps are targeted.

Format

show snmp v6host { <ipv6addr> }

Description

The **show snmp v6host** command displays the recipient for which the traps are targeted.

Parameters

Parameters	Description
ipaddr	The IP address of the recipient for which the traps are targeted.
	If no parameters are specified, all SNMP hosts will be displayed.
v6host	Specifies the v6host IP address.

Restrictions

user level

Example

```
DGS-3200-10:4# show snmp v6host
Command: show snmp v6host

SNMP Host Table
-----------------------------------------------------------------
Host IPv6 Address: FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
SNMP Version     : V3 na/np
Community Name/SNMPv3 User Name: 12345678910123456789O

Host IPv6 Address: FECO:1A49:2AA:FF:FE34:CA8F
SNMP Version     : V3 a/np
Community Name/SNMPv3 User Name: abcdefghijk

Total Entries : 2

DGS-3200-10:4#
```

6-19 show snmp traps

Purpose

Used to display the status of SNMP trap and authentication traps.

Format

show snmp traps

Description

The **show snmp traps** command is used to show traps state.

Parameters

None

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#show snmp traps
Command: show snmp traps

SNMP Traps           : Enabled
Authenticate Trap    : Enabled

DGS-3200-10:4#
```

7 Network Management Command List

enable snmp
disable snmp
create trusted_host [<ipaddr> | network <network_address>]
delete trusted_host [ipaddr <ipaddr> | network <network_address>| all]
show trusted_host {<ipaddr>}
config snmp system_name {<sw_name>}
config snmp system_location {<sw_location>}
config snmp system_contact {<sw_contact>}
enable rmon
disable rmon
enable snmp traps
disable snmp traps
enable snmp authenticate_traps
disable snmp authenticate_traps

7-1 enable snmp

Purpose

Use to enable and disable the SNMP interface access function.

Format

enable snmp

Description

Use to enable and disable the SNMP function. When SNMP function is disabled, the network manager will not be able the access SNMP MIB objects. The device will not send traps or notification to network manager either.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable SNMP:

```
DGS-3200-10:4#enable snmp
Command: enable snmp

Success.

DGS-3200-10:4#
```

7-2 create trusted_host

Purpose

Used to create the trusted host.

Format

create trusted_host [<ipaddr> | network <network_address>]

Description

The **create trusted host** command creates the trusted host. The switch allows you to specify up to ten IP addresses that are allowed to manage the switch via in-band SNMP or Telnet based management software. These IP addresses must be members of the Management VLAN. If no IP addresses are specified, then there is nothing to prevent any IP address from accessing the switch, provided the user knows the Username and Password.

Parameters

Parameters	Description
ipaddr	The IP address of the trusted host.
network	The network address of the trusted network. The form of network address is xxx.xxx.xxx.xxx/y.

Restrictions

You must have administrator privileges.

Example

To create a trusted host:

```
DGS-3200-10:4#create trusted_host 10.48.74.121
Command: create trusted_host 10.48.74.121

Success.

DGS-3200-10:4#
```

7-3 delete trusted_host

Purpose

Used to delete a trusted host entry made using the **create trusted_host** command above.

Format

delete trusted_host [ipaddr <ipaddr> | all]

Description

The **delete trusted_host** command is used to delete a trusted host entry made using the **create trusted_host** command above.

Parameters

Parameters	Description
ipaddr <all>	The IP address of the trusted host
network	The network address of the trusted network.

Restrictions

You must have administrator privileges.

Example

To delete the trusted host:

```
DGS-3200-10:4#delete trusted_host ipaddr 10.48.74.121
Command: delete trusted_host ipaddr 10.48.74.121

Success.

DGS-3200-10:4#
```

7-4 show trusted_host

Purpose

Used to display a list of trusted hosts entered on the switch using the **create trusted_host** command above.

Format

show trusted_host {<ipaddr>}

Description

The **show trusted host** command displays the trusted hosts.

Parameters

None.

Restrictions

None.

Example

To display a trusted host:

```
DGS-3200-10:4#show trusted_host
Command: show trusted_host

Management Stations

IP Addrress
---------------
10.48.93.100
10.51.17.1
10.50.95.90

Total Entries : 3

DGS-3200-10:4#
```

7-5 config snmp system_name

Purpose

Used to configure the name for the switch.

Format

config snmp system_name {<sw_name>}

Description

The **config snmp system_name** command configures the name of the switch.

Parameter

Parameters	Description
sw_name	A maximum of 255 characters is allowed. A null string is also accepted.

Restrictions

You must have administrator privileges.

Example

To configure the switch name for "DGS-3200-10 Gigabit Ethernet Switch":

.

```
DGS-3200-10:4# config snmp system_name DGS-3200-10 Gigabit Ethernet Switch
Command: config snmp system_name DGS-3200-10 Gigabit Ethernet Switch

Success.

DGS-3200-10:4#
```

7-6 config snmp system_location

Purpose

Used to enter a description of the location of the switch.

Format

config snmp system_location {<sw_location>}

Description

The **config snmp system_location** command is used to enter a description of the location of the switch. A maximum of 255 characters can be used.

Parameter

Parameters	Description
sw_location	A maximum of 255 characters is allowed. A null string is also accepted.

Restrictions

You must have administrator privileges.

Example

To configure the switch location for "HQ 5F":

```
DGS-3200-10:4# config snmp system_location HQ 5F
Command: config snmp system_location HQ 5F

Success.

DGS-3200-10:4#
```

7-7 config snmp system_contact

Purpose

Used to enter the name of a contact person who is responsible for the switch.

Format

config snmp system_contact {<sw_contact>}

Description

The **config snmp system_contact** command is used to enter the name and/or other information to identify a contact person who is responsible for the switch. A maximum of 255 character can be used.

Parameters

Parameters	Description
sw_contact	A maximum of 255 characters is allowed. A null string is also accepted.

Restrictions

You must have administrator privileges.

Example

To configure the switch contact to "MIS Department II":

.

```
DGS-3200-10:4#config snmp system_contact "MIS Department II"
Command: config snmp system_contact "MIS Department II"

Success.

DGS-3200-10:4#
```

7-8 enable rmon

Purpose

Used to enable RMON on the switch.

Format

enable rmon

Description

The **enable rmon** command enables RMON on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable RMON on the switch:

```
DGS-3200-10:4#enable rmon
Command: enable rmon

Success.

DGS-3200-10:4#
```

7-9 disable rmon

Purpose

Used to disable RMON on the switch.

Format

disable rmon

Description

The **disable rmon** command disables RMON on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To disable RMON on the switch:

```
DGS-3200-10:4#disable rmon
Command: disable rmon

Success.

DGS-3200-10:4#
```

7-10 enable snmp traps

Purpose

Used to enable SNMP trap support.

Format

enable snmp traps

Description

The **enable snmp traps** command is used to enable SNMP trap support on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable SNMP trap support:

```
DGS-3200-10:4#enable snmp traps
Command: enable snmp traps

Success.

DGS-3200-10:4#
```

7-11 disable snmp traps

Purpose

Used to disable SNMP trap support on the switch.

Format

disable snmp traps

Description

The **disable snmp traps** command is used to disable SNMP trap support on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To prevent SNMP traps from being sent from the switch:

```
DGS-3200-10:4#disable snmp traps
Command: disable snmp traps

Success.

DGS-3200-10:4#
```

7-12 enable snmp authenticate_traps

Purpose

Used to enable SNMP authentication failure trap support.

Format

enable snmp authenticate_traps

Description

The **enable snmp authenticate_traps** command enables SNMP authentication failure trap support.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable SNMP authentication trap support:

```
DGS-3200-10:4#enable snmp authenticate_traps
Command: enable snmp authenticate_traps

Success.

DGS-3200-10:4#
```

7-13 disable snmp authenticate_traps

Purpose

Used to disable SNMP authentication failure trap support.

Format

disable snmp authenticate_traps

Description

The **disable snmp authenticate_traps** command disables SNMP authentication failure trap support.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To disable SNMP authentication trap support:

```
DGS-3200-10:4#disable snmp authenticate_traps
Command: disable snmp authenticate_traps

Success.

DGS-3200-10:4#
```

8 Network Monitoring Command List

show packet ports <portlist>
show error ports <portlist>
show utilization [ports | cpu]
clear counters {ports <portlist> }
clear log
show log {index <value_list> }
enable syslog
disable syslog
show syslog
config syslog host [all|<index 1-4>] { severity [informational |warning |all] | **facility [local0|local1|local2|local3|local4|local5|local6|local7] |** **udp_port <udp_port_numer> |** **ipaddress <ipaddr> |** **state [enable|disable]}**
create syslog host <index 1-4> {severity [informational|warning|all] | facility[local0|local1 **|local2|local3|local4|local5|local6|local7] |udp_port <udp_port_number> | ipaddress <ipaddr>** **| state [enable|disable]}**
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

8-1 show packet ports

Purpose

Used to display statistics about the packets sent and received by the switch.

Format

show packet ports <portlist>

Description

The **show packet ports** command displays statistics about the packets sent and received by the switch.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be displayed.

Restrictions

None.

Example

To display the packets analysis for port 7

```
DGS-3200-10:4#show packet ports 7
Command: show packet ports 7

Port number : 7
================================================================================
Frame Size/Type  Frame Counts           Frames/sec
---------------  --------------------   --------------------
64               572                    27
65-127           151                    5
128-255          39                     0
256-511          65                     0
512-1023         7                      0
1024-1518        0                      0
Unicast RX       4                      0
Multicast RX     162                    1
Broadcast RX     568                    31

Frame Type       Total                  Total/sec
----------       --------------------   --------------------
RX Bytes         81207                  2237
RX Frames        734                    32
TX Bytes         8432                   0
TX Frames        100                    0
DGS-3200-10
```

8-2 show error ports

Purpose

Used to display the error statistics for a range of ports.

Format

show errors ports <portlist>

Description

The **show error ports** command displays the error statistics for a range of ports.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be displayed.

Restrictions

None.

Example

To display the errors of port 3:

```
DGS-3200-10:4#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
```

8-3 show utilization

Purpose

Used to display real-time port utilization statistics.

Format

show utilization [ports | cpu]

Description

The **show utilization** command displays real-time port utilization or CPU statistics.

Parameters

None.

Restrictions

None.

Example

To display the ports utilization:

```
DGS-3200-10:4# show utilization ports
Command: show utilization ports

Port    TX/sec      RX/sec      Util
------  ----------  ----------  ----
 1      0           0           0
 2      0           0           0
 3      0           0           0
 4      0           0           0
 5      0           0           0
 6      0           0           0
 7      0           0           0
 8      0           0           0
```

To display the CPU utilization:

```
DGS-3200-10:4# show utilization cpu
Command: show utilization cpu

CPU utilization :
-------------------------------------------------------------------------------
Five seconds - 20%        One minute - 10%         Five minutes - 70%



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

8-4 clear counters

Purpose

Used to clear the switch's statistics counters.

Format

clear counters {ports <portlist>}

Description

The clear counters command clears the switch's statistics counters.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be configured. The beginning and end of the port list range are separated by a dash.
	If no parameter is specified, the system will count all of the ports.

Restrictions

You must have administrator privileges.

Example

To clear the switch's statistics counters:

```
DGS-3200-10:4#clear counters ports 7-9
Command: clear counters ports 7-9

Success.

DGS-3200-10:4#
```

8-5 clear log

Purpose

Used to clear the switch's history log.

Format

clear log

Description

The **clear log** command clears the switch's history log.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To clear the switch's history log:

```
DGS-3200-10:4#clear log
Command: clear log

Success

DGS-3200-10:4#
```

8-6 show log

Purpose

Used to display the switch history log.

Format

show log {index <value_list> }

Description

The **show log** command displays the switch history log.

Parameters

Parameters	Description
value_list	The **show log** command will display the history log between two values. For example, **show log index 1-5** will display the history log from 1 to 5.
	If no parameter is specified, all history log entries will be displayed.

Restrictions

None.

Examples

To display the switch history log:

```
DGS-3200-10:4#show log index 1-5
Command: show log index 1-5

Index  Date      Time        Log Text
-----  ------------------  --------------------------------------------------
5      2000-01-01 00:00:41  Port 5 link down
4      2000-01-01 00:00:31  Port 3 link up, 100Mbps FULL duplex
3      2000-01-01 00:00:31  Successful login through Console (Username:Anonymous)
2      2000-01-01 00:00:31  Console session timed out (Username: dlink)
1      2000-01-01 00:00:31  Spanning Tree Protocol is disabled

DGS-3200-10:4#
```

8-7 enable syslog

Purpose

Used to enable syslog to send a message.

Format

enable syslog

Description

The **enable syslog** command enables syslog to send a message.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable syslog to send a message:

```
DGS-3200-10:4#enable syslog
Command: enable syslog

Success

DGS-3200-10:4#
```

8-8 disable syslog

Purpose

Used to disable syslog sending a message.

Format

disable syslog

Description

The **disable syslog** command disables syslog sending a message.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable syslog sending a message:

```
DGS-3200-10:4#disable syslog
Command: disable syslog

Success

DGS-3200-10:4#
```

8-9 show syslog

Purpose

Used to display the syslog protocol global state.

Format

show syslog

Description

The **show syslog** command displays the syslog protocol global state.

Parameters

None.

Restrictions

None.

Examples

To display the syslog protocol global state:

```
DGS-3200-10:4#show syslog
Command: show syslog

Syslog Global State: Enabled

DGS-3200-10:4#
```

8-10 config syslog host

Purpose

Used to configure the syslog host configurations.

Format

config syslog host [all |<index 1-4>] { severity [informational |warning | all] |
facility [local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7] |
udp_port <udp_port_number> | ipaddress <ipaddr> | state [enable |disable]}

Description

The **config syslog** command configures the syslog host configurations

Parameters

Parameters	Description	
host [all|<index 1-4>]	Host index or all hosts	
severity	Three level supported:	
	informational	informational messages
	warning	warning conditions
	all	any condition
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 in the following: Bold font means the facility values the switch supports now.	
	local0	user-defined Facility
	local1	user-defined Facility
	local2	user-defined Facility
	local3	user-defined Facility
	local4	user-defined Facility
	local5	user-defined Facility
	local6	user-defined Facility
	local7	user-defined Facility
udp_port	The UDP port number	
ipaddr	The IP address of the host.	
state	The syslog protocol has been used for the transmission of event notification messages across networks to host. This option enables or disables the host to receive such messages.	

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#config syslog host all severiry all facility local0
Command: config syslog host all severiry all facility local0

Success.

DGS-3200-10:4#
```

8-11 create syslog host

Purpose

Used to create a new syslog host.

Format

create syslog host <index 1-4> {severity [informational|warning|all] | facility[local0|local1 |local2|local3|local4|local5|local6|local7] |udp_port <udp_port_number> | ipaddress <ipaddr> |state [enable|disable]}

Description

The **config syslog** command creates a new syslog host.

Parameters

Parameters	Description	
host <index 1-4>	The host index.	
severity	Three levels are supported:	
	informational	Informational messages.
	warning	Warning conditions.
	all	Any condition.
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 in the following: Bold font means the facility values the switch supports now.	
	local0	user-defined Facility
	local1	user-defined Facility
	local2	user-defined Facility
	local3	user-defined Facility
	local4	user-defined Facility

	local5	user-defined Facility
	local6	user-defined Facility
	local7	user-defined Facility
udp_port	The UDP port number.	
ipaddr	The IP address of the host.	
state	The Syslog protocol has been used for the transmission of event notification messages across networks to host. The option enables or disables the host to receive such messages.	

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#create syslog host 1 severity all facility local0
Command: create syslog host 1 severity all facility local0

Success.

DGS-3200-10:4#
```

8-12 delete syslog host

Purpose

Used to delete the syslog host(s).

Format

delete syslog host [<index 1-4> | all]

Description

The **delete syslog host** command deletes the syslog host(s).

Parameters

Parameters	Description
host [<index 1-4> | all]	Host index or all hosts.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4#delete syslog host 4
Command: delete syslog host 4

Success

DGS-3200-10:4#
```

8-13 show syslog host

Purpose

Used to display syslog host configurations.

Format

show syslog host {<index 1-4>}

Description

The **show syslog host** command displays the syslog host configurations.

Parameters

Parameters	Description
index	The host index.
	If no parameter is specified, all hosts will be displayed .

Restrictions

None.

Example

```
DGS-3200-10:4#show syslog host
Command: show syslog host

Syslog Global State: Disabled

Host Id  Host IP Address  Severity        Facility  UDP port  Status
-------  ---------------  --------------  --------  --------  --------
1        10.1.1.2         All             Local0    514       Disabled
2        10.40.2.3        All             Local0    514       Disabled
3        10.21.13.1       All             Local0    514       Disabled

Total Entries : 3
```

```
DGS-3200-10:4#
```

8-14 config log_save_timing

Purpose

Used to configure the method to save log.

Format

config log_save_timing [time_interval <min 1-65535> | on_demand | log_trigger]

Description

The **config log_save_timing** command is used to set the method to save log.

Parameters

Parameters	Description
time_interval	Save log to flash every xxx minutes. (if no log happen in this period, don't save)
on_demand	Save log to flash whener user type "**save log**" or "**save all**".
log_trigger	Save log to flash whenever log arrives.

Restrictions

You must have administrator privileges.

Notes

The default method is **on_demand**.

Examples

To configure method to save log as on demand:

```
DGS-3200-10:4# config log_save_timing on_demand
Command: config log_save_timing on_demand

Success.

DGS-3200-10:4#
```

8-15 show log_save_timing

Purpose

Used to show the method to save log.

Format

show log_save_timing

Description

Shows the method to save log.

Parameters

None.

Restrictions

None.

Example

To show the timing method of the log save.

```
DGS-3200-10:4#show log_save_timing
Command: show log_save_timing

Saving log method: on_demand

DGS-3200-10:4#
```

9 System Severity Command List

config system_severity [trap | log | all] [critical | warning | information]
show system_severity

9-1 config system_severity

Purpose

Configure severity level control for system.

Format

config system_severity [trap | log | all] [critical | warning | information]

Description

This command is used to configure severity level control for the system.

Parameters

Parameters	Description
trap	Configure severity level control for a trap.
log	Configure severity level control for a log.
all	Configure severity level control for a trap and a log.
critical	Severity level = critical.
warning	Severity level = warning.
information	Severity level = information.

Restrictions

You must have administrator privilege.

Examples

To configure severity level control for information level for a trap:

```
DGS-3200-10:4#config system_severity trap information
Command: config system_severity trap information

Success.

DGS-3200-10:4#
```

9-2 show system_severity

Purpose

To show the severity level control for a system.

Format

show system_severity

Description

Use this command to show severity level control for a system.

Parameters

None.

Restrictions

None.

Examples

To show the severity level control for a system:

```
DGS-3200-10:4#
Command: show system_severity


  System Severity Trap : warning
  System Severity Log  : information


DGS-3200-10:4#
```

10 Command List History Command List

?
show command_history
dir
config command_history <value 1-40>

10-1 ?

Purpose

Used to display all commands in the Command Line Interface (CLI).

Format

? {command}

Description

The **?** command will display all of the commands available through the Command Line Interface (CLI).

Parameters

Parameters	Description
command	Specifies the command.
	If no command specified, the system will display all commands.

Restrictions

None.

Example

To display all commands:

```
DGS-3200-10:4# ?
Command: ?


..
?
add port_security_entry vlan_name
clear
clear arptable
clear counters
```

```
clear fdb
clear log
clear port_security_entry port
config 802.1p default_priority
config 802.1p user_priority
config 802.1x auth_mode
config 802.1x auth_parameter ports
config 802.1x capability ports
config 802.1x init
config 802.1x reauth
config access_profile profile_id
config account
config arp_aging time
config arpentry
config bandwidth_control
config command_history

DGS-3200-10:4#
```

10-2 show command_history

Purpose

Used to display command history.

Format

show command_history

Description

The **show command_history** command displays command history.

Parameters

None.

Restrictions

None.

Example

To display command history:

```
DGS-3200-10:4# show command_history
Command: show command_history

?
?
show traffic_segmentation 1-6
config traffic_segmentation 1-6 forward_list 7-8
config radius delete 1
config radius add 1 10.48.74.121 key dlink default
config 802.1x reauth port_based ports all
config 802.1x init port_based ports all
config 802.1x auth_mode port_based
config 802.1x auth_parameter ports 1-50 direction both
config 802.1x capability ports 1-5 authenticator
show 802.1x auth_configuration ports 1
show 802.1x auth_state ports 1-5
enable 802.1x
show 802.1x auth_state ports 1-5
show igmp_snooping
enable igmp_snooping

DGS-3200-10:4#
```

10-3 dir

Purpose

Used to display all commands.

Format

dir

Description

The **dir** command displays all commands.

Parameters

None.

Restrictions

None.

Example

To display all commands:

```
DGS-3200-10:4# dir
Command: dir


..
?
add port_security_entry vlan_name
clear
clear arptable
clear counters
clear fdb
clear log
clear port_security_entry port
config 802.1p default_priority
config 802.1p user_priority
config 802.1x auth_mode
config 802.1x auth_parameter ports
config 802.1x capability ports
config 802.1x init
config 802.1x reauth
config access_profile profile_id
config account
config arp_aging time
config arpentry
config bandwidth_control
config command_history
```

10-4 config command_history

Purpose

The switch “remembers” the last 40 (maximum) commands you entered. This command lets you configure the number of commands that the switch can recall.

Format

config command_history <value 1-40>

Description

The **config command_history** command lets you cofigure the number of commands that the switch can recall.

Parameters

Parameters	Description
value	The number of commands (1-40) that the switch can recall.

Restrictions

None.

Example

To configure the number of commands history:

```
DGS-3200-10:4#config command_history 20
Command: config command_history 20

Success.

DGS-3200-10:4#
```

11 Modify Banner and Prompt Command List

config greeting_message {default}
config command_prompt [<string 16> | username | default]

11-1 config greeting_message

Purpose

Used to configure the greeting message(or banner).

Format

config greeting_message {default}

Description

Users may enter this command to modify the login banner.

Parameters

Parameters	Description
default	Adding this parameter to the **config greeting_message** command will return the greeting message (banner) to its original factory default entry.

Restrictions

1. When users issue the “reset” command, the modified banner will remain in tact. Yet, issuing the “reset system” will return the banner to its original default value.
2. The maximum character capacity for the banner is 6*80. (6 Lines and 80 characters per line)
3. In the following example, Ctrl+W will save the modified banner only to the DRAM. Users must enter the “save” command to save this entry to the FLASH memory.
4. You must have administrator privileges.

Example

To edit the banner:

```
DGS-3200-10:128#config greeting_message
Command: config greeting_message


Banner Editor
```

```
================================================================================
This is a DGS-3200-10 switch.




================================================================================

   <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
--------------------------------------------------------------------------------

Success.

DGS-3200-10:128#
```

Response messages

(1). "**Success.**"

When users input a valid greeting message and the setting is accepted by the device.

(2). "**Quit without saving. The current greeting message will not be changed.**"

The user may exit the banner editor by pressing the "Ctrl+c" function key.

(3). "**Fail ! Settings failed.**"

When settings entered are not accepted by the device.

11-2 config command_prompt

Purpose

Used to configure the command prompt.

Format

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

Description

Users may enter this command to modify the command prompt.

The current command prompt consists of four parts: “product name” + “:” + ”user level” + ”#” (e.g. “**DGS-3200-10:4#**”). 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.

Parameters

Parameters	Description
string	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

1. When users issue the “reset” command, the current command prompt will remain in tact. Yet, issuing the “reset system” will return the command prompt to its original factory default value.
2. You must have administrator privileges.

Example

To edit the command prompt:

```
DGS-3200-10:4#config command_prompt DGS-3200-10
Command: config command_prompt DGS-3200-10

Success.

DGS-3200-10:4#
```

Response messages

(1). “**Success.**”

(2). "**Fail ! The entered prompt string exceeded the maximum length (16).**”

When the prompt string entered exceeds the maximum characters allowed (16).

12 Time and SNTP Command List

config sntp {primary <ipaddr> | secondary <ipaddr> | poll-interval <int 30-99999>}
show sntp
enable sntp
disable sntp
config time <date ddmmmyyyy > <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_wday <start_day sun-sat>** **| s_mth <start_mth 1-12>** **| s_time <start_time hh:mm>** **| e_week <end_week 1-4,last>** **| e_wday <end_day 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

12-1 config sntp

Purpose

To configure SNTP.

Format

config sntp {primary <ipaddr> | secondary <ipaddr> | poll-interval <int 30-99999>}

Description

The **config sntp** command changes SNTP configurations.

Parameters

Parameters	Description
primary	The SNTP primary server IP address.
secondary	The SNTP secondary server IP address.
poll-interval	The polling interval range is between 30 and 99999 seconds.

Restrictions

You must have administrator privileges.

Example

To configure SNTP:

```
DGS-3200-10:4#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-3200-10:4#
```

12-2 show sntp

Purpose

Display SNTP configuration.

Format

show sntp

Description

The **show sntp** command displays the current SNTP time source and configuration.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To show SNTP:

```
DGS-3200-10:4#show sntp
Command: show sntp

Current Time Scource  : System Clock
SNTP                  : Disabled
SNTP Primary Server   : 10.1.1.1
SNTP Secondary Server : 10.1.1.2
SNTP Poll Interval    : 30 sec

DGS-3200-10:4#
```

12-3 enable sntp

Purpose

Turn on SNTP support.

Format

enable sntp

Description

The **enable sntp** command turns on SNTP support.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable SNTP:

```
DGS-3200-10:4#enable sntp
Command: enable sntp

Success.

DGS-3200-10:4#
```

12-4 disable sntp

Purpose

Turn off SNTP support.

Format

disable sntp

Description

The **disable sntp** command turns off SNTP support.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To disable SNTP:

```
DGS-3200-10:4#disable sntp
Command: disable sntp

Success.

DGS-3200-10:4#
```

12-5 config time

Purpose

Configure time and date settings of the device.

Format

config time <date ddmthyyyy> <time hh:mm:ss>

Description

The **config time** command changes time settings.

Parameters

Parameters	Description
date	system clock date
time	system clock time

Restrictions

You must have administrator privileges.

Example

To configure time:

```
DGS-3200-10:4# config time 30jun2003 16:30:30
Command: config time 30jun2003 16:30:30

Success.

DGS-3200-10:4#
```

12-6 config time_zone

Purpose

Configure time zone of the device.

Format

config time_zone {operator [+ | -] | hour <gmt_hour 0-13> | min <minute 0-59>}

Description

The **config time_zone** command changes time zone settings.

Parameters

Parameters	Description
operator	operator of time zone + : positive - : negative.
hour	hour of time zone
min	minute of time zone

Restrictions

You must have administrator privileges.

Example

To configure the time zone:

```
DGS-3200-10:4#config time_zone operator + hour 2 min 30
Command: config time_zone operator + hour 2 min 30

Success.

DGS-3200-10:4#
```

12-7 config dst

Purpose

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]}]

Description

The **config dst** command changes Daylight Saving Time settings.

Parameters

Parameters	Description
disable	Disable the DST of the switch .
repeating	Set the DST to repeating mode .
annual	Set the DST to annual mode.
s_week, e_week	Configure the start/end week number of DST.
s_day, e_day	Configure the start/end day number of DST.
s_mth, e_mth	Configure the start/end month number of DST.
s_time, e_time	Configure the start/end time of DST.
s_date, e_date	Configure the start/end date of DST
offset	Indicates number of minutes to add or to subtract during summertime. The range of offsets are 30, 60, 90, and 120; The default value is 60.

Restrictions

You must have administrator privileges.

Example

To configure time:

```
DGS-3200-10:4#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
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-3200-10:4#
```

12-8 show time

Purpose

Display time states.

Format

show time

Description

The **show time** command displays current time states.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To show time:

```
DGS-3200-10:4#show time
Command: show time

     Current Time Source  : System Clock
     Boot Time    : 1 Jan 2000  00:00:00
     Current Time : 1 Jan 2000  07:26:28
     Time Zone    : GMT +00:00
     Daylight Saving Time : Disabled
          Offset in Minutes: 60
          Repeating From   : Apr 2nd  Tue 15:00
                     To     : Oct last Sun 00:00
          Annual    From   : 29 Apr 00:00
                     To     : 12 Oct 00:00
DGS-3200-10:4#
```

13 Jumbo Frame Command List

enable jumbo_frame
disable jumbo_frame
show jumbo_frame

13-1 enable jumbo_frame

Purpose

Use the command to enable support of Jumbo Frames.

Format

enable jumbo_frame

Description

The **enable jumbo_frame** command enables support of Jumbo Frames.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable Jumbo Frames:

```
DGS-3200-10:4#enable jumbo_frame
Command: enable jumbo_frame

The maximum size of Jumbo Frame is 10240 Bytes.
Success.

DGS-3200-10:4#
```

13-2 disable jumbo_frame

Purpose

Use the command to disable support of Jumbo Frames.

Format

disable jumbo_frame

Description

The **disable jumbo_frame** command disables support of Jumbo Frames.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To disable Jumbo Frames:

```
DGS-3200-10:4#disable jumbo_frame
Command: disable jumbo_frame

Success.

DGS-3200-10:4#
```

13-3 show jumbo_frame

Purpose

Use the command to display Jumbo Frames.

Format

show jumbo_frame

Description

The **show jumbo_frame** command displays Jumbo Frames.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To display Jumbo Frames:

```
DGS-3200-10:4#show jumbo_frame
Command: show jumbo_frame

Jumbo Frame State  : Disabled
Maximum Frame Size : 1536 Bytes

DGS-3200-10:4#
```

14 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> <path_filename> {[members <mslist 1-32> | all]}
upload sim_ms [configuration_to_tftp | log_to_tftp] <ipaddr> <path_filename> {[members <mslist> | all]}

14-1 enable sim

Purpose

Used to enable single IP management.

Format

enable sim

Description

The **enable sim** command configures the single IP management on the switch as enable.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

To enable single IP management:

```
DGS-3200-10:4#enable sim
Command: enable sim

Success.

DGS-3200-10:4#
```

14-2 disable sim

Purpose

Used to disable single IP management on the switch.

Format

disable sim

Description

The **disable sim** command configures the single IP management on the switch as disable.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

To disable single IP management:

```
DGS-3200-10:4#disable
Command: disable sim

Success.

DGS-3200-10:4#
```

14-3 show sim

Purpose

Used to display the current information of the specific sorts of devices.

Format

show sim { [candidates { <candidate_id 1-100> } | members { <member_id 1-32> } | group {commander_mac <macaddr>} | neighbor] }

Description

The **show sim** command displays the information of the specific sorts of devices including of self, candidate, member, group, and neighbor.

Parameters

Parameters	Description
candidates	Specifies the candidate devices.
members	Specifies the member devices.
group	Specifies other group devices.
neighbor	Specifies other neighbor devices.

Restrictions

You must have administrator privilege.

Examples

To show the self information in detail:

```
DGS-3200-10:4#show sim
Command: show sim

SIM Version         : VER-1.61
Firmware Version    : Build 1.10.B021
Device Name         :
MAC Address         : 00-35-26-11-11-00
Capabilities        : L2
Platform            : DGS-3200-10 L2 Switch
SIM State           : Disabled
Role State          : Candidate
Discovery Interval : 30 sec
Hold Time           : 100 sec

DGS-3200-10:4#
```

To show the candidate information in summary, if a user specifies a candidate ID, it would show information in detail:

```
DGS-3200-10:4#show sim candidate
Command: show sim candidate

ID  MAC Address       Platform /                Hold  Firmware Device Name
                      Capability                Time  Version
--- ----------------- ------------------------ ----- --------- ----------------
 1  00-01-02-03-04-00 DGS-3200-10 L2 Switch      40   1.10-B021 aaaaaaaaaaaaaaa
                                                                 bbbbbbbbbbbbbb
 2  00-55-55-00-55-00 DES-3326SR L3 Switch      140   4.00-B15 default master

Total Entries: 2

DGS-3200-10:4#
```

To show the member information in summary, if a user specifies a member ID, it will show information in detail:

```
DGS-3200-10:4#show sim member
Command: show sim member

ID  MAC Address       Platform /                Hold  Firmware Device Name
                      Capability                Time  Version
--- ----------------- ------------------------ ----- --------- ----------------
 1  00-01-02-03-04-00 DGS-3200-10 L2 Switch      40   1.10-B021 aaaaaaaaaaaaaaa
                                                                 bbbbbbbbbbbbbb
 2  00-55-55-00-55-00 DES-3326SR L3 Switch     140   4.00-B15 default master

Total Entries: 2

DGS-3200-10:4#
```

To show other groups information in summary, if a user specifies a group name, it will show information in detail:

```
DGS-3200-10:4#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-3200-10 L2 Switch      40    1.10-B021 aaaaaaaaaaaaaaaa
                                                                 bbbbbbbbbbbbbb
 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-3200-10 L2 Switch      40    1.10-B021 aaaaaaaaaaaaaaaa
                                                                 bbbbbbbbbbbbbb
 2  00-55-55-00-55-00

'*' means commander switch.

DGS-3200-10:4#
```

To show a SIM neighbor table:

```
DGS-3200-10:4# 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-3200-10:4#
```

14-4 reconfig

Purpose

Used to re-Telnet to member.

Format

reconfig { member_id <value 1-32> | exit }

Description

The **reconfig** command is used to re-Telnet to a member.

Parameters

Parameters	Description
member_id	Specifies the serial number of a member.

Restrictions

You must have administrator privilege.

Examples

To re-Telnet to a member:

```
DGS-3200-10:4#reconfig member_id 1
Command: reconfig member_id 1


DGS-3200-10:4#
Login:
```

14-5 config sim_group

Purpose

Used to configure group information.

Format

config sim_group [add <candidate_id 1-100> { <password> } | delete <member_id 1-32>]

Description

The **config sim_group** command configures group information on the switch.

Parameters

Parameters	Description
candidate_id	Add a specific candidate to group.
password	The password of candidate if necessary.
member_id	Remove a specific member from group.

Restrictions

You must have administrator privilege.

Examples

To add a member:

```
DGS-3200-10:4# config sim_group add 2
Command: config sim_group add 2

Please wait for ACK !!!
SIM Config Success !!!

Success.

DGS-3200-10:4#
```

To delete a member:

```
DGS-3200-10:4# config sim_group delete 1
Command: config sim_group delete 1

Please wait for ACK !!!
SIM Config Success !!!

Success.

DGS-3200-10:4#
```

14-6 config sim

Purpose

Used to configure the role state and parameters of discovery protocol on the switch.

Format

config sim [[commander { group_name <groupname 64> } | candidate] |dp_interval <sec 30-90> | hold_time <sec 100-255>]

Description

The **config sim** command configures role state and parameters of discovery protocol on the switch.

Parameters

Parameters	Description
commander	Transfer role to commander.
group_name	If commander, user can update name of group.
candidate	Transfer role to candidate.
dp_interval	The time in seconds between discovery.
hold_time	The time in seconds the device holds the discovery result.

Restrictions

You must have administrator privilege.

Examples

To transfer to commander:

```
DGS-3200-10:4# config sim commander
Command: config sim commander

Success.

DGS-3200-10:4#
```

To transfer to candidate:

```
DGS-3200-10:4# config sim candidate
Command: config sim candidate

Success.

DGS-3200-10:4#
```

To update name of group:

```
DGS-3200-10:4#config sim commander group_name mygroup
Command: config sim commander group_name mygroup

Success.

DGS-3200-10:4#
```

To change the time interval of discovery protocol:

```
DGS-3200-10:4# config sim dp_interval 30
Command: config sim dp_interval 30

Success.

DGS-3200-10:4#
```

To change the hold time of discovery protocol:

```
DGS-3200-10:4# config sim hold_time 200
Command: config sim hold_time 200

Success.

DGS-3200-10:4#
```

14-7 download sim_ms

Purpose

Used to download firmware or configuration to indicated device.

Format

download sim_ms [firmware_from_tftp | configuration_from_tftp] <ipaddr> <path_filename> {[members <mslist 1-32> | all]}

Description

The **download sim_ms** command is used to download firmware or configuration from a TFTP server to indicated devices.

Parameters

Parameters	Description
ipaddr	Specifes the ipaddress of TFTP server.
path_filename	Specifes the file path of firmware of configuration in TFTP server.
members	Specifies a range of members which download this firmware or configuration.

Restrictions

You must have administrator privilege.

Examples

To download firmware:

```
DGS-3200-10:4# download sim_ms configuration_from_tftp 10.55.47.1 D:\dwl600x.tfp
members 1
Commands: download sim_ms configuration_from_tftp 10.55.47.1 D:\dwl600x.tfp 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
 3   00-07-06-05-04-04   Fail

DGS-3200-10:4#
```

To download configuration:

```
DGS-3200-10:4# download sim_ms configuratin_from_tftp 10.55.47.1 D:\test.txt 1
Commands: download sim_ms configuratin_from_tftp 10.55.47.1 D:\test.txt 1
<new page>

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-3200-10:4#
```

14-8 upload sim_ms

Purpose

Used to upload configuration to TFTP server.

Format

upload sim_ms [configuration_to_tftp | log_to_tftp] <ipaddr> <path_filename> {[members < mslist> | all]}

Description

The **upload sim_ms** command is used to upload configuration from indicated devices to a TFTP server.

Parameters

Parameters	Description
ipaddr	Specifes the IP address of TFTP server.
path_filename	Specifes the file path to store configuration in TFTP server.
members	Specifies the member which upload its configuration.

Restrictions

You must have administrator privilege.

Examples

To upload a configuration:

```
DGS-3200-10:4#upload sim_ms configuration_to_tftp 10.55.47.1 D:\configuration.txt
members 1
Command: upload sim_ms configuration_to_tftp 10.55.47.1 D:\configuration.txt
members 1

Done.

DGS-3200-10:4#
```

15 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

15-1 config safeguard_engine

Purpose

To configure the safeguard engine.

Format

config safeguard_engine { state [enable|disable]| utilization{rising <20-100>| falling <20-100>} | trap_log [enable|disable] | mode [strict | fuzzy] }

Description

Use this command to configure the safeguard engine for the system.

Parameters

Parameters	Description
state	Configure the safeguard engine state to **enable** or **disable**.
trap_log	Configure the state of safeguard engine related trap/log mechanism to **enable** or **disable**. If set to **enable**, trap and log will be active while the safeguard engine current mode is changed. If set to **disable**, current mode change will not trigger trap and log events.
mode	Determines the controlling method of broadcast traffic. Here are two modes (**strict** and **fuzzy**). In **strict**, the Switch will stop receiving all 'ARP not to me' packets (the protocol address of target in ARP packet is the Switch itself). That means no matter what reasons cause the high CPU utilization (may not caused by ARP storm), the Switch reluctantly processes any 'ARP not to me' packets in exhausted mode. In **fuzzy** mode, the Switch will adjust the bandwidth dynamically depend on some reasonable algorithm .
utilization	Configure the safeguard engine threshold.

	rising	Config utilization rising threshold , the range is between 20%-100% , if the CPU utilization is over the rising threshold, the switch enters exhausted mode.
	falling	Config utilization falling threshold , the range is between 20%-100% , if the CPU utilization is lower than the falling threshold, the switch enters normal mode.

Restrictions

You must have administrator privilege.

Examples

To configure the safeguard engine:

```
DGS-3200-10:4#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-3200-10:4#
```

15-2 show safeguard_engine

Purpose

To show safeguard engine information.

Format

show safeguard_engine

Description

Use this command to **show safeguard_engine** information.

Parameters

None.

Restrictions

None.

Examples

To show safeguard engine information:

```
DGS-3200-10:4#show safeguard_engine
Command: show safeguard_engine

 Safeguard engine state  :  Enabled
 Safeguard engine current status  : exhausted mode
================================================================================================
CPU utilization information:
Rising threshold  : 50%
Falling threshold  : 30&

Trap/log state  :  Enabled
Broadcast traffic control mode : strict



DGS-3200-10:4#
```

Note: The safeguard engine current status has two modes: exhausted and normal mode.

V. Layer 2

The Layer 2 section includes the following chapters: MSTP, FDB, MAC Notification, Mirror, VLAN/Protocol VLAN, Link Aggregation, LACP Configuration, Traffic Segmentation, Port Security, and Static MAC-based VLAN.

16 MSTP Command List

show stp
show stp instance <value 0-15>
show stp ports { <portlist> }
show stp mst_config_id
create stp instance_id <value 1-15>
delete stp instance_id <value 1-15>
config stp instance_id <value 1-15> [add_vlan|remove_vlan] <vidlist>
config stp mst_config_id { name <string> | revision_level <int> }
enable stp
disable stp
config stp version [mstp | rstp | stp]
config stp priority <value 0-61440> instance_id <value 0-15>
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] | }**
config stp ports <portlist> { external_cost [auto | <value 1-200000000>] | **hellotime <value 1-2> |** **migrate [yes | no] |** **edge [true | false] |** **p2p [true | false | auto] |** **state [enable | disable] |** **fbpdu [enable | disable] }**
config stp mst_ports <portlist> instance_id <value 0-15> { internal_cost [auto | <value 1-200000000>] | priority <value 0-240> }

16-1 show stp

Purpose

Used to show the bridge parameters global settings. (CIST or msti id=0)

Format

show stp

Description

The **show stp** command is used to show the bridge parameters global settings.

Parameters

None.

Restrictions

None.

Examples

To show STP:

```
DGS-3200-10:4#show stp
Command: show stp

STP Bridge Global Settings
------------------------------
STP Status          : Enabled
STP Version         : MSTP
Max Age             : 20
Forward Delay       : 15
Max Hops            : 20
TX Hold Count       : 3
Forwarding BPDU     : Enabled

DGS-3200-10:4#
```

16-2 show stp instance

Purpose

Used to show each instance parameters settings.

Format

show stp instance <value 0-15>

Description

This command displays each instance parameters settings. Value means the instance ID, if there is no input of this value, all instances will be shown.

Parameters

Parameters	Description
instance	MSTP instance ID. Instance 0 represents the default instance: CIST. The bridge supports a total 16 Instance（0-15）at most.

Restrictions

None.

Examples

To show STP instances:

```
DGS-3200-10:4#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-3200-10:4#
```

16-3 show stp ports

Purpose

Used to show port information including parameter settings and operational values.

Format

show stp ports {<portlist>}

Description

This command displays each port's parameter settings. If the portlist is not input, all ports will be shown. If there are multi instances on this bridge, the parameters of the port on different instances will be shown.

Parameters

Parameters	Description
ports	Shows parameters of the designated port numbers which are distinguished from the parameters of the bridge.
portlist	One of the CLI Value Types, restricts the input value and format of the ports.

Restrictions

None.

Examples

To show STP ports:

```
DGS-3200-10:4# 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 : No /No ,  P2P    : False/No
Port RestrictedRole : False,  Port RestrictedTCN : False
Port Forward BPDU : Enabled

Msti   Designated Bridge   Internal PathCost  Prio  Status      Role
-----  ------------------  -----------------  ----  ----------  ----------
0      N/A                  200000             128   Disabled    Disabled
2      N/A                  200000             128   Disabled    Disabled

DGS-3200-10:4#
```

16-4 show stp mst_config_id

Purpose

Used to show the MST Configuration Identification as defined in 802.1's 13.7.

Format

show stp mst_config_id

Description

Show the three elements of the MST configuration Identification, including Configuration Name, Revision Level, and the MST configuration Table. The default Configuration name is the MAC address of the bridge.

Parameters

Parameters	Description
mst_config_id	If two bridges have the same three elements in **mst_config_id** , that means they are in the same MST region.

Restrictions

None.

Examples

Display the STP MST Config ID:

```
DGS-3200-10:4# 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-3200-10:4#
```

16-5 create stp instance_id

Purpose

To create an MST Instance without mapping the corresponding VLANs yet.

Format

create stp instance_id <value 1-15>

Description

To create a new MST instance independent from the default Instance: CIST（Instance 0). After creating the MST instance, you need to configure the VLANs（using commands in 47-7), or the newly created MST instance will still be in a disabled state .

Parameters

Parameters	Description
instance_id	MSTP instance ID. Instance 0 represents a default instance, CIST. The DUT supports 16 Instance (0-15) at most.

Restrictions

You must have administrator privilege.

Examples

To create an MSTP instance:

```
DGS-3200-10:4# create stp instance_id 2
Command: create stp instance_id 2

Warning:There is no VLAN mapping to this instance_id!
Success.

DGS-3200-10:4#
```

16-6 delete stp instance_id

Purpose

Used to delete an MST instance.

Format

delete stp instance_id <value 1-15>

Description

To delete the specified MST Instance . CIST（Instance 0）cannot be deleted and you can only delete one instance at a time.

Parameters

Parameters	Description
instance_id	MSTP instance ID. Instance 0 represents the default instance, CIST. The DUT supports 16 instances (0-15) at most.

Restrictions

You must have administrator privilege.

Examples

To delete an MSTP instance:

```
DGS-3200-10:4# delete stp instance_id 2
Command: delete stp instance_id 2

Success.

DGS-3200-10:4#
```

16-7 config stp instance_id

Purpose

To map or remove the VLAN range of the specified MST instance for an existing MST instance.

Format

config stp instance_id <value 1-15> [add_vlan|remove_vlan] <vidlist>

Description

There are two different action types to deal with an MST instance. They are listed as follows:

- **add_vlan**: To map specified VLAN lists to an existing MST instance..
- **remove_vlan**: To delete specified VLAN lists from an existing MST instance.

Parameters

Parameters	Description
instance_id	MSTP instance ID. Instance 0 represents a default instance, CIST. The DUT supports 16 instances (0-15) at most.
add_vlan	Defined action type to configure an MST instance.
remove_vlan	Defined action type to configure an MST instance.
vidlist	Newly added CLI Value Type. It is similar to **<portlist>** type , but the value range is 1 to 4094.

Restrictions

You must have administrator privilege.

Examples

To map a VLAN ID to an MSTP instance:

```
DGS-3200-10:4# config stp instance_id 2 add_vlan 1 to 3
Command: config stp instance_id 2 add_vlan 1 to 3

Success.

DGS-3200-10:4#
```

To remove a VLAN ID from an MSTP instance:

```
DGS-3200-10:4# config stp instance_id 2 remove_vlan 2
Command: config stp instance_id 2 remove_vlan 2

Success.

DGS-3200-10:4#
```

16-8 config stp mst_config_id

Purpose

Used to change the name or revision level of the MST configuration identification.

Format

config stp mst_config_id { name <string> | revision_level <int> }

Description

To configure a configuration name or revision level in the MST configuration identification. The default configuration name is the MAC address of the bridge.

Parameters

Parameters	Description
name	The name given for a specified MST region.
revision_level	The same given name with a different revision level also represents a different MST region.

Restrictions

You must have administrator privilege.

Examples

To change the name and revision level of the MST configuration identification:

```
DGS-3200-10:4# 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-3200-10:4#
```

16-9 enable stp

Purpose

Used to enable STP globally.

Format

enable stp

Description

Although it is possible to modify to allow a user to enable STP per instance, CIST should be enabled first before enabling other instances. The current chip design dictates that when a user enables the CIST, all MSTIs will be enabled automatically if FORCE_VERSION is set to MSTP(3) and there is at least one VLAN mapped to this instance.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

To enable STP:

```
DGS-3200-10:4# enable stp
Command: enable stp

Success.

DGS-3200-10:4#
```

16-10 disable stp

Purpose

Used to disable STP globally.

Format

disable stp

Description

To disable STP functionality in every existing instance.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

To disable STP:

```
DGS-3200-10:4# disable stp
Command: disable stp

Success.

DGS-3200-10:4#
```

16-11 config stp version

Purpose

Used to enable STP globally.

Format

config stp version [mstp | rstp | stp]

Description

If version is configured as STP or RSTP, all currently running MSTIs should be disabled. If the version is configured as MSTP, the current chip design is enabled for all available MSTIs (assuming that CIST is enabled).

Parameters

Parameters	Description
version	To decide to run under which version of STP.
mstp	Multiple Spanning Tree Protocol.
rstp	Rapid Spanning Tree Protocol.
stp	Spanning Tree Protocol.

Restrictions

You must have administrator privilege.

Examples

To configure the STP version:

```
DGS-3200-10:4# config stp version mstp
Command: config stp version mstp

Success.

DGS-3200-10:4#
```

To configure the STP version with the same value of the old configuration:

```
DGS-3200-10:4# config stp version mstp
Command: config stp version mstp

Configure value is the same with current value.
Fail!

DGS-3200-10:4#
```

16-12 config stp priority

Purpose

Used to configure the instance priority.

Format

config stp priority <value 0-61440> instance_id <value 0-15>

Description

One of the parameters used to select the Root Bridge.

Parameters

Parameters	Description
priority	The bridge priority value must be divisible by 4096.
instance_id	Identifier to distinguish different STP instances.

Restrictions

You must have administrator privilege.

Examples

To configure the STP instance ID:

```
DGS-3200-10:4# config stp priority 61440 instance_id 0
Command: config stp priority 61440 instance_id 0

Success.

DGS-3200-10:4#
```

16-13 config stp

Purpose

Used to configure the bridge management parameters for CIST (**instance_id** = 0).

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] }

Description

This command is used to configure the bridge parameter global settings.

Parameters

Parameters	Description
maxage	Used to determine if a BPDU is valid. The default value is 20.
maxhops	Used to restrict the forwarded times of one BPDU. The default value is 20.
Hellotime	The default value is 2 . This is a per-Bridge parameter in RSTP, it is existed only in STP/RSTP Mode..
forwarddelay	The maximum delay time for one BPDU to be transmitted by a bridge and received from another bridge. The default value is 15.
txholdcount	Used to restrict the numbers of BPDU transmitted in a time interval（per Hello Time）.
fbpdu	To decide if the Bridge will flood STP BPDU when STP functionality is disabled.

Restrictions

You must have administrator privilege.

Examples

To config STP:

```
DGS-3200-10:4# config stp maxage 25
Command: config stp maxage 25

Success.

DGS-3200-10:4#
```

16-14 config stp ports

Purpose

Used to configure the ports management parameters only at CIST level.

Format

config stp ports <portlist> { external_cost [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] }

Description

This command can configure all the parameters of ports, except for Internal Path Cost and Port Priority. The two parameters (Internal Path Cost and Port Priority) are special cases in MSTP and will need another command in 47-13 to use.

Parameters

Parameters	Description
portlist	One of the CLI Value Types, restricts the input value and format of the ports.
external_cost	The path cost between the MST regions from the transmitting Bridge to the CIST Root Bridge. It is only used at CIST level.
hellotime	The default value is 2 . This is a per-Bridge parameter in RSTP, but it becomes a per-Port parameter in MSTP.
migrate	Operation of management in order to specify the port to send MSTP BPDU for a delay time.
edge	Decides if this port is connected to a LAN or a Bridged LAN. 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	Decides if this port is in Full-Duplex or Half-Duplex mode.

state	Decides if this port supports the STP functionality.
restricted_role	Decides if this port is to be selected as Root Port or not. The default value is **false**.
restricted_tcn	Decides if this port is to to propagate a topology change or not. The default value is **false**
fbpdu	Decides if this port will flood STP BPDU when STP functionality is disabled.

Restrictions

You must have administrator privilege.

Examples

To config STP ports:

```
DGS-3200-10:4# config stp ports 1 external_cost auto
Command: config stp ports 1 external_cost auto

Success.

DGS-3200-10:4#
```

16-15 config stp mst_ports

Purpose

Used to configure the port management parameters at the CIST (**instance_id = 0**) or MSTI (**instance_id = 1**) level.

Format

config stp mst_ports <portlist> instance_id <value 0-15> { internal_cost [auto | <value 1-200000000>] | priority <value 0-240> }

Description

Internal Path Cost and Port Priority of a Port in MSTI can be separately configured to different values from the configuration of CIST（**instance_id = 0**）.

Parameters

Parameters	Description
mst_ports	Distinguished from the parameters of ports only at the CIST level.
portlist	One of the CLI Value Types, restricts the input value and format of the ports.

instance_id	Instance = 0 represents CIST, Instance from 1 to 15 represents MSTI 1 - MSTI 15 .
internal_cost	The Port Path Cost used in MSTP.
priority	The Port Priority.

Restrictions

You must have administrator privilege.

Examples

To configure STP MST ports:

```
DGS-3200-10:4# config stp mst_ports 1 instance_id 0 internal_cost auto
Command: config stp mst_ports 1 instance_id 0 internal_cost auto

Success.

DGS-3200-10:4#
```

17 FDB Command List

create fdb <vlan_name 32> <macaddr> port <port>
create multicast_fdb <vlan_name 32> <macaddr>
config multicast_fdb <vlan_name 32> <macaddr> [add | delete] <portlist>
config fdb aging_time <sec 10-875>
config multicast vlan_filtering_mode [vlanid <vidlist>|vlan <vlan_name 32>|all] [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> | mac_address <macaddr> }
show fdb { port <port> | vlan <vlan_name 32> | mac_address <macaddr> | static | aging_time }
show multicast vlan_filtering_mode {vlanid <vidlist>|vlan <vlan_name 32>}

17-1 create fdb

Purpose

Used to create a static entry to the unicast MAC address forwarding table (database).

Format

create fdb <vlan_name 32> <macaddr> port <port>

Description

The **create fdb** command will make an entry into the switch's unicast MAC address forwarding database.

Parameters

Parameters	Description
vlan_name 32	Specifies a VLAN name associated with a MAC address.
macaddr	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.

Restrictions

You must have administrator privileges.

Examples

To create an unicast MAC forwarding:

```
DGS-3200-10:4#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-3200-10:4#
```

17-2 create multicast_fdb

Purpose

Used to create a static entry to the multicast MAC address forwarding table (database).

Format

create multicast_fdb <vlan_name 32> <macaddr>

Description

The **create multicast_fdb** command will make an entry into the switch's multicast MAC address forwarding database.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN on which the MAC address resides. The maximum length is 32.
macaddr	The multicast MAC address to be added to the static forwarding table.

Restrictions

You must have administrator privileges.

Examples

To create multicast MAC forwarding:

```
DGS-3200-10:4# create multicast_fdb default 01-00-5E-00-00-00
Command: create multicast_fdb default 01-00-5E-00-00-00

Success.

DGS-3200-10:4#
```

17-3 config multicast_fdb

Purpose

Used to configure the switch's multicast MAC address forwarding database.

Format

config multicast_fdb <vlan_name 32> <macaddr> [add | delete] <portlist>

Description

The **config multicast_fdb** command configures the multicast MAC address forwarding table.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN on which the MAC address resides. The maximum name length is 32.
macaddr	The MAC address that will be added or deleted to the forwarding table.
portlist	Specifies a range of ports to be configured.

Restrictions

You must have administrator privileges.

Examples

To add multicast MAC forwarding:

```
DGS-3200-10:4# 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-3200-10:4#
```

17-4 config fdb aging_time

Purpose

Used to configure the switch's MAC address aging time.

Format

config fdb aging_time <sec 10-875>

Description

The **config fdb aging_time** command is used to set the age-out timer for the switch's dynamic unicast MAC address forwarding tables.

Parameters

Parameters	Description
aging_time	Specifies the time, in seconds, that a dynamically learned MAC address will remain in the switch's MAC address forwarding table, without being accessed, before being dropped from the database. The range of the value is 10 to 875.

Restrictions

You must have administrator privileges.

Examples

To configure MAC address aging time:

```
DGS-3200-10:4#config fdb aging_time 300
Command: config fdb aging_time 300

Success.

DGS-3200-10:4#
```

17-5 config multicast vlan_filtering_mode

Purpose

Used to configure the the multicast packet filtering mode for VLANs.

Format

config multicast vlan_filtering_mode [vlanid <vidlist>|vlan <vlan_name 32> |all]
[forward_unregistered_groups|filter_unregistered_groups]

Description

The **config multicast_fdb** command configures the multicast packet filtering mode for VLANs.

Parameters

Parameters	Description
vidlist	Specifies VLAN ID list to set.
vlan_name 32|all	Specifies VLAN or all VLANs to set.
forward_unregistered_groups	The filtering mode can be "**forward_unregistered_groups**", or "**filter_unregistered_groups**".
filter_unregistered_groups	

Restrictions

You must have administrator privileges.

Examples

To configure the the multicast packet filtering mode for all VLAN:

```
DGS-3200-10:4#config multicast vlan_filtering_mode all forward_unregistered_groups
Command: config multicast port filtering_mode all forward_unregistered_groups

Success.

DGS-3200-10:4#
```

17-6 delete fdb

Purpose

Used to delete an entry to the switch's forwarding database.

Format

delete fdb <vlan_name 32> <macaddr>

Description

The **delete fdb** command deletes a permanent FDB entry.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN on which the MAC address resides. The maximum length is 32.
macaddr	The multicast MAC address to be deleted from the static forwarding table.

Restrictions

You must have administrator privileges.

Examples

To delete a permanent FDB entry:

```
DGS-3200-10:4#delete fdb default 00-00-00-00-01-02
Command: delete fdb default 00-00-00-00-01-02

Success.

DGS-3200-10:4#
```

17-7 clear fdb

Purpose

Used to clear the switch's forwarding database of all dynamically learned MAC addresses.

Format

clear fdb [vlan <vlan_name 32> | port <port> | all]

Description

The **clear fdb** command clears the switch's forwarding database of all dynamically learned MAC addresses.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN on which the MAC address resides. The maximum length is 32.
port	The port number corresponding to the MAC destination address. The switch will always forward traffic to the specified device through this port.

Restrictions

You must have administrator privileges.

Examples

To clear all FDB dynamic entries:

```
DGS-3200-10:4#clear fdb all
Command: clear fdb all

Success.

DGS-3200-10:4#
```

17-8 show multicast_fdb

Purpose

Used to display the contents of the switch's multicast forwarding database.

Format

show multicast_fdb { vlan <vlan_name 32> | mac_address <macaddr> }

Description

The **show multicast_fdb** command displays the contents of the switch's multicast forwarding database.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN on which the MAC address resides. The maximum length is 32.
macaddr	Specifies a MAC address, for which FDB entries will be displayed.
	If no parameter is specified, all multicast fdb entries will be displayed.

Restrictions

None.

Examples

To display multicast MAC address table:

```
DGS-3200-10:4#show multicast_fdb
Command: show multicast_fdb

VLAN Name      : default
MAC Address    : 01-00-5E-00-00-00
Egress Ports   : 1-5,26
Mode           : Static

Total Entries : 1

DGS-3200-10:4#
```

17-9 show fdb

Purpose

Used to display the current unicast MAC address forwarding database.

Format

show fdb { port <port> | vlan <vlan_name 32> | mac_address <macaddr> | static | aging_time }

Description

The **show fdb** command displays the current unicast MAC address forwarding database.

Parameters

Parameters	Description
port	Displays the entries for one port.
vlan_name 32	Displays the entries for a specific VLAN.
static	Displays all permanent entries.
aging_time	Displays the unicast MAC address aging time.
	If no parameter is specified, the system will display the unicast address table.

Restrictions

None.

Examples

To display unicast MAC address table:

```
DGS-3200-10:4#show fdb
Command: show fdb

Unicast MAC Address Ageing Time = 300

VID    VLAN Name          MAC Address         Port     Type
----   ----------------   -----------------   ------   ----------------
1      default            00-00-00-00-01-02    5      Permanent
1      default            00-01-02-03-04-00   CPU      Self

Total Entries : 2

DGS-3200-10:4#
```

17-10 show multicast vlan_filtering_mode

Purpose

Used to show the multicast packet filtering mode for VLANs.

Format

show multicast vlan_filtering_mode {vlanid <vidlist>|vlan <vlan_name 32>}

Description

The **show multicast filtering_mode** command show the multicast packet filtering mode for VLANs.

Parameters

Parameters	Description
vidlist	Displays the entries by VLAN ID list.
vlan_name 32	Displays the entries for a specific VLAN.

Restrictions

None.

Examples

To show multicast filtering mode for ports:

```
DGS-3200-10:4#show multicast vlan_filtering_mode
Command: show multicast filtering_mode

VLAN Name                              Multicast Filter Mode
-------------------------------    ------------------------------
default                              forward_unregistered_groups

DGS-3200-10:4#
```

18 MAC Notification Command List

enable mac_notification
disable mac_notification
config mac_notification{interval <int 1-2147483647>|historysize <int 1-500>}
config mac_notification ports [<portlist>|all] [enable|disable]
show mac_notification
show mac_notification ports{<portlist>}

18-1 enable mac_notification

Purpose

Used to enable global MAC address table notification on the switch.

Format

enable mac_notification

Description

Enable global MAC address table notification on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable the MAC notification function:

```
 DGS-3200-10:4#enable mac_notification
Command: enable mac_notification


Success.


 DGS-3200-10:4#
```

18-2 disable mac_notification

Purpose

Used to disable global MAC address table notification on the switch.

Format

disable mac_notification.

Description

Disable global MAC address table notification on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable the MAC notification function:

```
 DGS-3200-10:4#disable mac_notification
Command: disable mac_notification

Success.

 DGS-3200-10:4#
```

18-3 config mac_notification

Purpose

Used to configure the switch's MAC address table notification global settings.

Format

config mac_notification{interval <int 1-2147483647>|historysize <int 1-500>}

Description

Used to configure the switch's MAC address table notification global settings.

Parameters

Parameters	Description
interval	The time in seconds between notifications.
historysize	This is the maximum number of entries listed in the history log used for notification. Up to 500 entries can be specified.

Restrictions

You must have administrator privileges.

Examples

To config the switch's MAC address table notification global settings:

```
 DGS-3200-10:4#config mac_notification interval 1 historysize 500
Command: config mac_notification interval 1 historysize 500

Success.

 DGS-3200-10:4#
```

18-4 config mac_notification ports

Purpose

Used to configure the port's MAC address table notification status settings.

Format

config mac_notification ports [<portlist>|all] [enable(3)|disable(2)]

Description

Used to configure the port's MAC address table notification status settings.

Parameters

Parameters	Description
portlist	Specifiy a range of ports to be configured.
all	To set all ports in the system, use the "**all**" parameter.
enable	Enable the port's MAC address table notification.
disable	Disable the port's MAC address table notification.

Restrictions

You must have administrator privileges.

Examples

To enable MAC address table notification for Port 7:

```
 DGS-3200-10:4#config mac_notification ports 7 enable
Command: config mac_notification ports 7 enable

Success.

 DGS-3200-10:4#
```

18-5 show mac_notification

Purpose

Used to display the switch's MAC address table notification global settings.

Format

show mac_notification

Description

Used to display the switch's MAC address table notification global settings.

Parameters

None.

Restrictions

None.

Examples

To show the switch's MAC address table notification global settings:

```
 DGS-3200-10:4#show mac_notification
Command: show mac_notification


Global Mac Notification Settings


State        : Enabled
Interval     : 1
History Size : 500


 DGS-3200-10:4#
```

18-6 show mac_notification ports

Purpose

Used to display the port's MAC address table notification status settings.

Format

show mac_notification ports{<portlist>}

Description

Used to display the port's MAC address table notification status settings.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be configured.

Restrictions

None.

Examples

To display the MAC address table notification status settings of all ports:

```
 DGS-3200-10:4#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


 DGS-3200-10:4#
```

19 Mirror Command List

config mirror port <port> [add|delete] source ports <portlist> [rx | tx | both]
enable mirror
disable mirror
show mirror

19-1 config mirror port

Purpose

Used to configure a mirror port − a 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 can then be attached to study the traffic crossing the source port in a completely unobtrusive manner.

Format

config mirror port <port> [add |delete] source ports <portlist> [rx|tx|both]

Description

The **config mirror** command allows a range of ports to have all of their traffic also sent to a designated port − where a network sniffer or other device can monitor the network traffic. In addition, you can specify that only traffic received by or sent by or both is mirrored to the target port.

Parameters

Parameters	Description
port	The port that will receive the packets duplicated at the mirror port.
add	The mirror entry to be added.
delete	The mirror entry to be deleted.
portlist	The port that will be mirrored. All packets entering and leaving the source port can be duplicated in the mirror port.
rx	Allows the mirroring of only packets received (flowing into) the port or ports in the port list.
tx	Allows the mirroring of only packets sent (flowing out of) the port or ports in the port list.
both	Mirrors all the packets received or sent by the port or ports in the port list.

Restrictions

You must have administrator privileges.

Examples

To add mirroring ports:

```
DGS-3200-10:4#config mirror port 6 add source ports 1-5 both
Command: config mirror port 6 add source ports 1-5 both

Success.

DGS-3200-10:4#
```

19-2 enable mirror

Purpose

Used to enable a previously entered port mirroring configuration.

Format

enable mirror

Description

This command, combined with the **disable mirror** command below, allows you to enter a port mirroring configuration into the switch, and then turn the port mirroring on and off without having to modify the port mirroring configuration.

Note: If the target port hasn't been set, **enable mirror** will not be allowed.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable mirroring configurations:

```
DGS-3200-10:4#enable mirror
Command: enable mirror

Success.

DGS-3200-10:4#
```

19-3 disable mirror

Purpose

Used to disable a previously entered port mirroring configuration.

Format

disable mirror

Description

This command, combined with the **enable mirror** command above, allows you to enter a port mirroring configuration into the switch, and then turn the port mirroring on and off without having to modify the port mirroring configuration.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable mirroring configurations:

```
DGS-3200-10:4#disable mirror
Command: disalbe mirror

Success.

DGS-3200-10:4#
```

19-4 show mirror

Purpose

Used to show the current port mirroring configuration on the switch.

Format

show mirror

Description

The **show mirror** command displays the current port mirroring configuration on the switch.

Parameters

None.

Restrictions

None.

Examples

To display mirroring configuration:

```
DGS-3200-10:4#show mirror
Command: show mirror

Current Settings
Mirror Status : Disabled
Target Port   : 7
Mirrored Port
            RX:
            TX: 1-5

DGS-3200-10:4#
```

20 VLAN Command List

create vlan <vlan_name 32 > tag <vlanid 2-4094> { type 1q_vlan advertisement }
create vlan vlanid <vlanid_list> { advertisement }
delete vlan <vlan_name>
delete vlan vlanid <vlanid_list>
config vlan < vlan_name > { [add [tagged | untagged | forbidden] | delete] <portlist> | advertisement [enable | disable]}
config vlan vlanid <vlanid_list> { [add [tagged | untagged | forbidden] | delete] <portlist> | advertisement [enable | disable]| name <vlan_name>}
config vlan <vlan_name> delete <portlist>
config vlan vlanid <vlanid_list> delete <portlist>
config gvrp [<portlist> | all] {state [enable | disable] | ingress_checking [enable | disable] |acceptable_frame[tagged_only | admit_all]pvid<vlanid 1-4094> }
enable gvrp
disable gvrp
show vlan { <vlan_name 32> | vlanid <vlanid_list> | ports <portlist>}
show gvrp {<portlist>}
enable pvid auto_assign
disable pvid auto_assign
show pvid auto_assign

20-1 create vlan

Purpose

Used to create a VLAN on the switch.

Format

create vlan <vlan_name 32 > tag <vlanid 2-4094> { type 1q_vlan advertisement }

create vlan vlanid <vlanid_list> { advertisement }

Description

The **create vlan** command creates a VLAN on the switch. The VLAN ID must be always specified for creating a VLAN.

Parameters

Parameters	Description
vlan_name	The name of the VLAN to be created.
vlan vlanid	The VLAN ID of the VLAN to be created.
tag	The VLAN ID of the VLAN to be created. The range is from 2 to 4094.
advertisement	Specifies the VLAN as being able to be advertised out.

Restrictions

You must have administrator privileges.

Examples

To create a VLAN with name “v2” and VLAN ID 2:

```
DGS-3200-10:4#create vlan v2 tag 2 type 1q_vlan advertisement
Command: create vlan v2 tag 2 type 1q_vlan advertisement

Success.

DGS-3200-10:4#
```

20-2 delete vlan

Purpose

Used to delete a previously configured VLAN on the switch.

Format

delete vlan <vlan_name>

delete vlan vlanid <vlanid_list>

Description

The **delete vlan** command deletes a previously configured VLAN on the switch.

Parameters

Parameters	Description
vlan_name	The VLAN name of the VLAN to be deleted.
vlan vlanid	The VLAN ID of the VLAN to be deleted.

Restrictions

You must have administrator privileges.

Examples

To remove a VLAN v1:

```
DGS-3200-10:4#delete vlan v1
Command: delete vlan v1

Success.

DGS-3200-10:4#
```

20-3 config vlan add ports

Purpose

Used to add additional ports to a previously configured VLAN.

Format

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

config vlan vlanid <vlanid_list> { [add [tagged | untagged | forbidden] | delete] <portlist> |

Description

The **config vlan add** command allows you to add ports to the port list of a previously configured VLAN. You can specifiy the additional ports as tagging, untagging, or forbidden. The default is to assign the ports as untagging.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN you want to add ports to.
vlan vlanid	The VLAN ID of the VLAN you want to add ports to.
tagged	Specifies the additional ports as tagged.
untagged	Specifies the additional ports as untagged.
forbidden	Specifies the additional ports as forbidden.
portlist	A range of ports to add to the VLAN.

Restrictions

You must have administrator privileges.

Examples

To add 4 through 8 as tagged ports to the VLAN v1:

```
DGS-3200-10:4#config vlan v1 add tagged 4-8
Command: config vlan v1 add tagged 4-8

Success.

DGS-3200-10:4#
```

20-4 config vlan delete ports

Purpose

Used to delete one or more ports from a previously configured VLAN.

Format

config vlan <vlan_name 32> delete <portlist>

config vlan vlanid <vlanid_list> delete <portlist>

Description

The **config vlan delete** command deletes one or more ports from a previously configured VLAN.

Parameters

Parameters	Description
vlan_name 32	The name of the VLAN you want to delete ports from.
vlan vlanid	The VLAN ID of the VLAN you want to delete ports from.
portlist	Specifies a range of ports to be configured.

Restrictions

You must have administrator privileges.

Examples

To delete ports 4 through 8 from VLAN v1:

```
DGS-3200-10:4#config vlan v1 delete 4-8
Command: config vlan v1 delete 4-8

Success.

DGS-3200-10:4#
```

20-5 config vlan advertisement

Purpose

Used to enable or disable the VLAN advertisement.

Format

config vlan vlanid <vidlist> advertisement [enable | disable]

Description

The **config vlan advertisement** command enables or disables the VLAN advertisement.

Parameters

Parameters	Description
vlan vlanid	The VLAN ID of the VLAN on which you want to configure.
advertisement	Join GVRP or not. If not, the VLAN can't join dynamically

Restrictions

You must have administrator privileges.

Examples

To enable the VLAN default advertisement:

```
DGS-3200-10:4#config vlan default advertisement enable
Command: config vlan default advertisement enable

Success.

DGS-3200-10:4#
```

20-6 config gvrp

Purpose

Used to set the ingress checking status and the sending and receiving of GVRP information.

Format

config gvrp [<portlist> | all] {state [enable | disable] | ingress_checking [enable | disable] | acceptable_frame [tagged_only | admit_all] pvid<vlanid 1-4094> }

Description

The **config gvrp** command sets the ingress checking status and the sending and receiving of GVRP information.

Parameter

Parameters	Description	
portlist	A range of ports for which you want ingress checking. The beginning and end of the port list range are separated by a dash.	
state	Enables or disables GVRP for the ports specified in the port list.	
ingress_checking	Enables or disables ingress checking for the specified portlist.	
acceptable_frame	The type of frame will be accepted by the port.	
	tagged_only	Only tagged frame will be received.
	admit_all	Both tagged and untagged will be accepted.
pvid	Specified the default VLAN will associated with the port.	

Restrictions

You must have administrator privileges.

Example

To set the ingress checking status and send and receive GVRP information:

```
DGS-3200-10:4#config gvrp_5 state enable ingress_checking enable acceptable_
frame tagged_only pvid 2
Command: config gvrp_5 state enable ingress_checking enable acceptable_frame
tagged_only pvid 2

Success

DGS-3200-10:4#
```

20-7 enable gvrp

Purpose

Used to enable the Generic VLAN Registration Protocol (GVRP).

Format

enable gvrp

Description

The **enable gvrp** command enables the Generic VLAN Registration Protocol (GVRP). The default setting is disabled.

Parameter

None.

Restrictions

You must have administrator privileges.

Example

To enable the generic VLAN Registration Protocol (GVRP):

```
DGS-3200-10:4#enable gvrp
Command: enable gvrp

Success.

DGS-3200-10:4#
```

20-8 disable gvrp

Purpose

Used to disable the Generic VLAN Registration Protocol (GVRP).

Format

disable gvrp

Description

The **disable gvrp** command disables the Generic VLAN Registration Protocol (GVRP).

Parameter

None.

Restrictions

You must have administrator privileges.

Example

To disable the Generic VLAN Registration Protocol (GVRP) :

```
DGS-3200-10:4#disable gvrp
Command: disable gvrp

Success.

DGS-3200-10:4#
```

20-9 show vlan

Purpose

Used to show the VLAN information including of parameters setting and operational value.

Format

show vlan { <vlan_name 32> | vlanid <vlanid_list> | ports <portlist>}

Description

The **show vlan** command displays summary information about each VLAN, which includes: VLAN ID, VLAN Name, Tagged/Untagged/Forbidden status for each port, and Member/Non-member status for each port.

Parameters

Parameters	Description
vlan_name	The name of the VLAN to be displayed.
vlandid	The VLAN ID number to be displayed.
ports	A range of ports for which you want to display VLAN. The beginning and end of the port list range are separated by a dash.

Restrictions

None.

Examples

To display VLAN settings.

```
DGS-3200-10:4#show vlan
Command: show vlan

VID             : 1          VLAN Name        : default
VLAN TYPE       : static     Advertisement    : Enabled
Member ports    : 1-7
Static ports    : 1-6
Current Tagged ports:
Current Untagged ports  : 1-7
Static Tagged ports:
Static Untagged ports   : 1-6
Forbidden ports :

Total Entries : 1

DGS-3200-10:4#
```

```
DGS-3200-10:4#show vlan ports 1-2
Command: show vlan ports 1-2

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

DGS-3200-10:4#
```

20-10 show gvrp

Purpose

Used to display the GVRP status for a port list on the switch.

Format

show gvrp {<portlist>}

Description

The **show gvrp** command displays the GVRP status for a port list on the switch.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be displayed.
	If no parameter is specified, the system will display GVRP information for all ports.

Restrictions

None.

Example

To display the 802.1q port setting for ports 1 through 6:

```
DGS-3200-10:4#show gvrp 1-6
Command: show gvrp 1-6

Global GVRP : Enabled

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

Total Entries : 6

DGS-3200-10:4#
```

20-11 enable pvid auto_assign

Purpose

Enable auto assignment of PVID.

Format

enable pvid auto_assign

Description

The command enables the auto-assignment of PVID. If “auto-assign PVID” is disabled, PVID can only be changed by PVID configuration (user changes explicitly). The VLAN configuration will not automatically change PVID.

If “Auto-assign PVID” is enabled, PVID can be changed by PVID or VLAN configuration. When a 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 the last item of the VLAN list. When a 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.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable the auto-assign PVID:

```
DGS-3200-10::4#enable pvid auto_assign
Command: enable pvid auto_assign

Success.

DGS-3200-10::4#
```

20-12 disable pvid auto_assign

Purpose

Disable auto assignment of PVID.

Format

disable pvid auto_assign

Description

The command disables the auto-assignment of PVID. If “auto-assign PVID” is disabled, PVID can only be changed by PVID configuration (user changes explicitly). The VLAN configuration will not automatically change PVID.

If “Auto-assign PVID” is enabled, PVID can be changed by PVID or VLAN configuration. When a 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 the last item of the VLAN list. When a 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.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To disable the auto-assign PVID:

```
DGS-3200-10::4#disable pvid auto_assign
Command: disable pvid auto_assign

Success.

DGS-3200-10::4#
```

20-13 show pvid auto_assign

Purpose

Display the PVID auto-assigment state.

Format

show pvid auto_assign

Description

This command displays the PVID auto-assign state.

Parameters

None.

Restrictions

user level

Example

To display PVID auto-assignment state.

```
DGS-3200-10::4#show pvid auto_assign

PVID Auto-assignment: Enabled.

DGS-3200-10::4#
```

21 Protocol VLAN Command List

create dot1v_protocol_group group_id < id> {group_name <name>}
config dot1v_protocol_group [group_id < id> | group_name <name>] add protocol [ethernet_2| ieee802.3_snap| ieee802.3_llc] < protocol_value>
config dot1v_protocol_group [group_id < id> | group_name <name>] delete protocol [ethernet_2 | ieee802.3_snap | ieee802.3_llc] < protocol_value>
delete dot1v_protocol_group [group_id <id> | group_name <name>| all]
show dot1v_protocol_group {group_id <id> | group_name <name>}
config port dot1v ports [<portlist> | all] [add protocol_group [group_id <id> | group_name <name>] [vlan< vlan_name 32> | vlanid <vlanid>] {priority <value 0-7>} | delete protocol_group [group_id <id>|all]]
show port dot1v {ports <portlis>t}

21-1 create dot1v_protocol_group

Purpose

To create a protocol group for the protocol VLAN function.

Format

create dot1v_protocol_group group_id < id> {group_name <name>}

Description

Used to create a protocol group for the protocol VLAN function.

Parameters

Parameters	Description
group_id	The ID of the protocol group which is used to identify a set of protocols.
group_name	The name of the protocol group. The maximum length is 32 characters. If a group name is not specified, the group name will be automatically generated in accordance with ProtocolGroup+group_id. For example, the auto-generated name for group ID 2 is ProtocolGroup2. If the auto-generated name is in conflict with an existing group, an alternative name will be used in accordance with ProtocolGroup+group_id+ALT+num. The value for num starts with 1. If it is still in conflict, then subsequent number will be used instead.

	For example: The auto-generated name for group ID 1 is “ProtocolGroup1”. If this name already exists, then ProtocolGroup1ALT1 will be used instead.

Restrictions

You must have administrator privileges.

21-2 config dot1v_protocol_group add protocol

Purpose

To add a protocol to a protocol group.

Format

config dot1v_protocol_group [group_id < id>| group_name <name>] add protocol [ethernet_2| ieee802.3_snap|ieee802.3_llc] < protocol_value>

Description

This command adds a protocol to a protocol group.The selection of a protocol can be a pre-defined protocol type or a user defined protocol.

Parameters

Parameters	Description
group_id	The ID of the protocol group which is used to identify a set of protocols.
group_name	The name of the protocol group.
protocol_value	The protocol vlaue is used to identify a protocol of the frame type specified. Depending on the frame type, the octet string will have one of the following values: The form of the input is 0x0 to 0xffff. For 'ethernet'II, this is a 16-bit (2-octet) hex value. Example: IPv4 is 800, IPv6 is 86dd, ARP is 806,.. and so on. For ' IEEE802.3 SNAP ', this is this is a 16-bit (2-octet) hex value. Example: IPv4 is 800, IPv6 is 86dd, ARP is 806,.. and so on. For 'IEEE802.3 LLC', this is the 2-octet IEEE 802.2 Link Service Access Point (LSAP) pair: The first octet is for Destination Service Access Point (DSAP) and the second octet is for Source.

Restrictions

You must have administrator privileges.

21-3 config dot1v_protocol_group delete protocol

Purpose

Used to delete a protocol from protocol group.

Format

config dot1v_protocol_group [group_id < id>| group_name <name>] delete protocol [ethernet_2| ieee802.3_snap| eee802.3_llc] < protocol_value.>

Description

To delete a protocol from a protocol group.

Parameters

Parameters	Description
group_id	Specifies the group ID to be deleted.
group_name	The name of the protocol group.
protocol_value	The protocol value is used to identify a protocol of the frame type specified. Depending on the frame type, the octet string will have one of the following values: The form of the input is 0x0 to 0xffff. For 'ethernet'II, this is a 16-bit (2-octet) hex value. Example: IPv4 is 800, IPv6 is 86dd, ARP is 806,.. and so on. For ' IEEE802.3 SNAP ', this is this is a 16-bit (2-octet) hex value. Example: IPv4 is 800, IPv6 is 86dd, ARP is 806,.. and so on. For 'IEEE802.3 LLC', this is the 2-octet IEEE 802.2 Link Service Access Point (LSAP)

Restrictions

You must have administrator privileges.

21-4 delete dot1v_protocol_group

Purpose

Delete a protocol group.

Format

delete dot1v_protocol_group [group_id <id>| group_name <name>| all]

Description

This command deletes a protocol group

Parameters

Parameters	Description
group_id	Specifies the group ID to be deleted.
group_name	The name of the protocol group.

Restrictions

You must have administrator privileges.

21-5 show dot1v_protocol_group

Purpose

Display the protocols defined in a protocol group.

Format

show dot1v_protocol_group {group_id <id> | group_name <name>}

Description

Display the protocols defined in protocol groups.

Parameters

Parameters	Description
group_id	Specifies the ID of the group to be displayed if group id is not specified, all configured protocol groups will be displayed
group_name	The name of the protocol group.

Restrictions

None.

21-6 config port dot1v

Purpose

Assign the VLAN for untagged packets ingress from the portlist based on the protocol group configured.

Format

config port dot1v ports [<portlist> | all] [add protocol_group [group_id <id>| group_name <name>] [vlan < vlan_name 32> | vlanid <vlanid>] {priority <value 0-7>} | delete protocol_group [group_id <id>|all]]

Description

Assign the VLAN for untagged packets ingress from the portlist based on the protocol group configured. This assignment can be removed by using the **delete protocol_group** option.
When priority is not specified in the command, the port default prority will be the priority for those untagged packets classified by the protocol VLAN.

Parameters

Parameters	Description
portlist	Specifies a range of ports to apply this command.
group_id	Group ID of the protocol group.
group_name	The name of the protocol group.
vlan	VLAN that is to be associated with this protocol group on this port.
vlan_id	Specifies the VLAN ID .
priority	Specifies the priority to be associated with the packet which has been classified to the specified VLAN by the protocol.

Restrictions

You must have administrator privileges.

21-7 show port dot1v

Purpose

Displays the VLAN to be associated with untagged packet ingressed from a port based on the protocol group.

Format

show port dot1v{ ports <portlist>}

Description

Display the VLAN to be associated with untagged packet ingressed from a port based on the protocol group.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be displayed. If not specified, information for all ports will be displayed.

Restrictions

None.

22 Link Aggregation Command List

create link_aggregation group_id <value 1-5> {type [lacp | static] }
delete link_aggregation group_id <value 1-5>
config link_aggregation group_id <value 1-5> {master_port <port> | ports <portlist> | state [enable|disable]}
config link_aggregation algorithm [mac_source_dest | ip_source_dest]
show link_aggregation {group_id <value 1-5> | algorithm}

22-1 create link_aggregation group_id

Purpose

Used to create a link aggregation group on the switch.

Format

create link_aggregation group_id <value 1-5> {type [lacp | static] }

Description

The **create link_aggregation group_id** command will create a link aggregation group.

Parameters

Parameters	Description
group_id	Specifies the group ID. The group number identifies each of the groups. The switch allows up to five link aggregation groups to be configured.
type	Specifies the group type is belong to static or LACP. If type is not specified, the default is the static type.

Restrictions

You must have administrator privileges.

Example

To create a link aggregation group:

```
DGS-3200-10:4#create link_aggregation group_id 1 type lacp
Command: create link_aggregation group_id 1 type lacp


Success


DES-3200-10:4#
```

22-2 delete link_aggregation group_id

Purpose

Used to delete a previously configured link aggregation group.

Format

delete link_aggregation group_id <value 1-5>

Description

The **delete link_aggregation group_id** command is used to delete a previously configured link aggregation group.

Parameters

Parameters	Description
group_id	The specifies the group ID. The group number identifies each of the groups. The switch allows up to five link aggregation groups to be configured.

Restrictions

You must have administrator privileges.

Example

To delete a link aggregation group:

```
DGS-3200-10:4#delete link_aggregation group_id 3
Command: delete link_aggregation group_id 3

Success.

DGS-3200-10:4#
```

22-3 config link_aggregation

Purpose

Used to configure a previously created link aggregation group.

Format

config link_aggregation group_id <value> {master_port <port> | ports <portlist> | state [enabled|disabled]}

Description

The **config link_aggregation** command allows you to configure a link aggregation group that was created with the **create link_aggregation** command above.

Parameters

Parameters	Description
group_id	Specifies the group ID. The group number identifies each of the groups. The switch allows up to five link aggregation groups to be configured.
master_port	The master port ID. Specifies 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.
ports	Specifies a range of ports that will belong to the link aggregation group.
state	Allows you to enable or disable the specified link aggregation group. If configuring an LACP group, the ports' state machine will start.

Restrictions

You must have administrator privileges.

Example

To define a load-sharing group of ports, group-id 1, master port 7:

```
DGS-3200-10:4#config link_aggregation group_id 1 master_port 7 ports 5-7
Command: config link_aggregation group_id 1 master_port 7 ports 5-7

Success.

DGS-3200-10:4#
```

22-4 config link_aggregation algorithm

Purpose

Used to configure the link aggregation algorithm.

Format

config link_aggregation algorithm [mac_source_dest | ip_source_dest]

Description

The **config link_aggregation algorithm** command configures the part of the packet examined by the switch when selecting the egress port for transmitting load-sharing data. This feature is only available when using the address-based load-sharing algorithm.

Parameters

Parameters	Description
mac_source_dest	Indicates that the switch should examine the MAC source and destination address.
ip_source_dest	Indicates that the switch should examine the IP source and destination address.

Restrictions

You must have administrator privileges.

Example

To configure the link aggregation algorithm for mac-source-dest:

```
DGS-3200-10:4#config link_aggregation algorithm mac_source_dest
Command: config link_aggregation algorithm mac_source_dest

Success.

DGS-3200-10:4#
```

22-5 show link_aggregation

Purpose

Used to display the current link aggregation configuration on the switch.

Format

show link_aggregation {group_id <value> | algorithm}

Description

The **show link_aggregation** command will display the current link aggregation configuration of the switch.

Parameters

Parameters	Description
group_id	Specifies the group ID. The group number identifies each of the groups. The switch allows up to five link aggregation groups to be configured.
algorithm	Allows you to specify the display of link aggregation by the algorithm in use by that group.
	If no parameter is specified, the system will display all the link aggregation information.

Restrictions

None.

Example

Link aggregation group enabled:

```
DGS-3200-10:4#show link_aggregation
Command: show link_aggregation

Link Aggregation Algorithm = MAC-Source-Dest

Group ID      : 1
Type          : LACP
Master Port   : 1
Member Port   : 1-8
Active Port   : 7
Status        : Enabled

DGS-3200-10:4#
```

Link aggregation group disabled:

```
DGS-3200-10:4#show link
Command: show link_aggregation

Link Aggregation Algorithm = MAC-Source-Dest
Group ID      : 1
Type          : LACP
Master Port   : 1
Member Port   : 1-8
Active Port   :
Status        : Disabled

DGS-3200-10:4#
```

23 LACP Configuration Command List

config lacp_ports <portlist> mode [active|passive]
show lacp_ports {<portlist>}

23-1 config lacp_ports

Purpose

Configure current mode of LACP of port .

Format

config lacp_ports <portlist> mode [active|passive]

Description

The **config lacp** command config per-port LACP mode.

Parameters

Parameters	Description
portlist	Specified a range of ports to be configured.
mode	**active/passive**
	If no parameter is specified, the system will display current LACP and all port status.

Restrictions

You must have administrator privileges.

Example

To config port LACP mode:

```
DGS-3200-10:4#config lacp_port 1-10 mode active
Command: config lacp_port 1-10 mode active


Success.


DGS-3200-10:4#
```

23-2 show lacp_ports

Purpose

Show current mode of LACP of port(s).

Format

show lacp_ports <portlist>

Description

The display per-port LACP mode.

Parameters

Parameters	Description
portlist	Specified a range of ports to be configured.
	If no parameter is specified, the system will display current LACP and all port status.

Restrictions

None.

Example

To show port LACP mode:

```
DGS-3200-10:4#show lacp_ports
Command: show lacp_ports

Port    Activity
------  --------
1       Active
2       Active
3       Active
4       Active
5       Active
6       Active
7       Active
8       Active
9       Active
10      Active

DGS-3200-10:4#
```

24 Traffic Segmentation Command List

config traffic_segmentation [<portlist>|all] forward_list[null|all\<portlist>]
show traffic_segmentation {<portlist>}

24-1 config traffic_segmentation

Purpose

Used to configure the traffic segmentation.

Format

config traffic_segmentation [<portlist>|all] forward_list[null|all\<portlist>]

Description

The **config traffic_segmentation** command configures the traffic segmentation.

Parameters

Parameters	Description	
portlist	Specifes a range of ports to be configured.	
forward_list	Specifies a range of port forwarding domains.	
	portlist	Specifes a range of ports to be configured.
	null	Specifies a range of port forwarding domain is null.

Restrictions

You must have administrator privileges. The forwarding domain is restricted to Bridge Traffic only.

Example

To configure traffic segmentation:

```
DGS-3200-10:4# config traffic_segmentation 1-6 forward_list 7-8
Command: config traffic_segmentation 1-6 forward_list 7-8

Success.

DGS-3200-10:4#
```

24-2 show traffic_segmentation

Purpose

Used to display current traffic segmentation table.

Format

show traffic_segmentation {<portlist>}

Description

The **show traffic_segmentation** command displays current traffic segmentation table.

Parameters

Parameters	Description
portlist	Specifies 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 the traffic segmentation table:

```
DGS-3200-10:4# show traffic_segmentation
Command: show traffic_segmentation

Traffic Segmentation Table

Port    Forward Portlist
------  ------------------------------------------------
1       1-10
2       1-10
3       1-10
4       1-10
5       1-10
6       1-10
7       1-10
8       1-10

DGS-3200-10:4#
```

25 Port Security Command List

config port_security ports | all] { admin_state [enable | disable] |max_learning_addr <max_lock_no 0-16> | lock_address_mode [Permanent|DeleteOnTimeout|DeleteOnReset]
delete port_security_entry vlan_name<vlan_name 32> port <port> mac_address <macaddr>
clear port_security_entry port <portlist>
show port_security {ports <portlist>}
enable port_security trap_log
disable port_security trap_log

25-1 config port_security

Purpose

To configure port security.

Format

config port_security ports| all] { admin_state [enable | disable] |max_learning_addr <max_lock_no 0-16> | lock_address_mode [Permanent|DeleteOnTimeout|DeleteOnReset])

Description

The **config port_security** command includes admin state, maximum learning address, and lock address mode.

Parameters

Parameters	Description	
portlist	Specifies a range of ports to be configured.(port number).	
all	All ports be configured.	
admin_state	allows the port security to be enabled or disabled for the ports specified in the port list.	
max_learning_addr	The maximum number of address learning set to the ports specified in the portlist. The range of the maximum number will depends on project definition.	
lock_address_mode	Indicates the mode of locking address.	
	Permanent	The locked addresses will not be aged out after aging timer expire.

	DeleteOnTimeout	The locked addresses can be aged out after aging timer expire
	DeleteOnReset	never age out the locked addresses unless restart the system to prevent from port movement or intrusion.

Restrictions

You must have administrator privileges.

Examples

To configure a port security setting:

```
DGS-3200-10:4#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 16
lock_address_mode Permanent

Success.

DGS-3200-10:4#
```

25-2 delete port_security_entry

Purpose

Used to delete a port security entry by MAC address, port number, and VLAN ID.

Format

delete port_security_entry vlan_name <vlan_name 32> port <port> mac_address <macaddr>

Description

Used to delete a port security entry by mac address, port number, and VLAN ID.

Parameters

Parameters	Description
vlan_name 32	The VLAN name the port belongs to.
mac_address	The MAC address to be deleted which was learned by the port.
portlist	The port number which has learned the MAC .

Restrictions

You must have administrator privileges.

Examples

To delete a default route from the routing table:

```
 DGS-3200-10:4#delete port_security_entry vlan_name default mac_address 00-01-30-10-2C-C7 port 6
Command: delete port_security_entry vlan_name default mac_address 00-01-30-10-2C-C7 port 6

Success.

 DGS-3200-10:4#
```

25-3 clear port_security_entry

Purpose

Used to clear the MAC entries learned from the specified port(s) for the port security function.

Format

clear port_security_entry port <portlist>.

Description

Used to clear the MAC entries learned from the specified port(s) for the port security function.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be configured.(UnitID:port number).

Restrictions

You must have administrator privileges.

Examples

To clear port security entry by port(s):

```
 DGS-3200-10:4#clear port_security_entry port 6
Command: clear port_security_entry port 6

Success.

 DGS-3200-10:4#
```

25-4 show port_security

Purpose

Used to display the port security related information of the switch ports.

Format

show port_security {ports <portlist>}

Description

The **show port_security** command displays the port security related information of the switch ports including the port security admin state, the maximum number of learning addresses, and the lock mode.

Parameters

None.

Restrictions

None.

Examples

To display the port security information of switch ports:

```
DGS-3200-10:4# show port_security ports 1-6
Command: show port_security ports 1-6

Port_security Trap/Log : Enabled

Port    Admin State  Max. Learning Addr.  Lock Address Mode
------  -----------  -------------------  -----------------
1     Disabled     1                    DeleteOnReset
2     Disabled     1                    DeleteOnReset
3     Disabled     1                    DeleteOnReset
4     Disabled     1                    DeleteOnReset
5     Disabled     1                    DeleteOnReset
6     Enabled      10                   Permanent

DGS-3200-10:4#
```

25-5 enable port_security trap_log

Purpose

Used to enable the port security trap/log.

Format

enable port_security trap_log

Description

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 with the info of the MAC and port, and the relevant information will be logged.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable a port security trap:

```
DGS-3200-10:4# enable port_security trap_log
Command: enable port_security trap_log

Success.

DGS-3200-10:4#
```

25-6 disable port_security trap_log

Purpose

Used to disable a port security trap/log.

Format

disable port_security trap_log

Description

If the **port_security** trap is disabled, no trap will be sent out for MAC violations.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To prevent port security traps from being sent from the switch:

```
DGS-3200-10:4# disable port_security trap_log
Command: disable port_security trap_log

Success.

DGS-3200-10:4#
```

26 Static MAC-based VLAN Command List

create mac_based_vlan mac_address <macaddr> vlan <vlan_name 32>
delete mac_based_vlan {mac_address <macaddr> vlan <vlan_name 32>}
show mac_based_vlan {mac_address <macaddr> vlan <vlan_name 32>}

26-1 create mac_based_vlan

Purpose

Used to create a static mac-based VLAN entry.

Format

create mac_based_vlan mac_address <macaddr> vlan <vlan_name 32>

Description

This command only needs to be supported by the model which supports MAC-based VLAN.
The user can use this command to create a static MAC-based VLAN entry.
When an entry is created for a port, the port will automatically become the untagged member port of the specificed VLAN.
When a static MAC-based VLAN entry is created for a user, the traffic from this user will be able to be serviced under the specified VLAN regardless of the authentiucation function operated on this port.

There is a global limitation of the maximum entries supported for the static mac-based entry. It is project dependent.

Parameters

Parameters	Description
mac_address	The MAC address.
vlan	The VLAN to be associated with the MAC address.

Restrictions

You must have administrator privileges.

26-2 delete mac_based_vlan

Purpose

Used to delete a static MAC-based VLAN entry.

Format

delete mac_based_vlan {mac_address <macaddr> vlan <vlan_name 32>}

Description

User use this command to delete a database entry. If the MAC address and VLAN are not specified, all static entries associated with the port will be removed.

Parameters

Parameters	Description
mac_address	The MAC address.
vlan	The VLAN to be associated with the MAC address.

Restrictions

You must have administrator privileges.

26-3 show mac_based_vlan

Purpose

Used to delete the static MAC-based VLAN entry.

Format

show mac_based_vlan {mac_address <macaddr> vlan <vlan_name 32>}

Description

User can use this command to display the static MAC-based VLAN entry.

Parameters

Parameters	Description
mac_address **vlan**	Specifies the entry that you would like to display.

Restrictions

None.

VI. IP

The IP section includes the following chapters: Basic IP, Auto Config, Routing Table, ARP, and Loopback Detection.

27 Basic IP Command List

config ipif <ipif_name>[{ipaddress<network_address> |vlan<vlan_name >|state [enable|disable]}| bootp |dhcp | ipv6 ipv6address <ipv6networkaddr>]
create ipif <ipif_name > {<network_address>} <vlan_name > {state [enable|disable]}
delete ipif [<ipif_name > {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>}

27-1 config ipif

Purpose

Used to configure the specified IP interface.

Format

config ipif <ipif_name>[{ipaddress<network_address> |vlan<vlan_name >|
state [enable|disable]}| bootp |dhcp | ipv6 ipv6address <ipv6networkaddr>]

Description

The **config ipif** command configures the specified IP interface.

Parameters

Parameters	Description
ipif_name	The name of the IP interface.
vlan_name	The name of the VLAN corresponding to the System IP interface.
network_address	The IP address and netmask of th IP interface to be created. You can specify the address and mask information using the traditional format (for example, 10.1.2.3/255.0.0.0 or in CIDR format, 10.1.2.3/16).
state	Allows you to enable or disable the IP interface.
bootp	Allows the selection of the BOOTP protocol for the assignment of an IP address to the switch's System IP interface.
dhcp	Allows the selection of the DHCP protocol for the assignment of an IP address to the switch's System.
ipv6networkaddr	The IPv6 address and subnet prefix of the IPV6 address to be create.

Restrictions

You must have administrator privileges.

Examples

To configure the System IP interface:

```
DGS-3200-10:4# config ipif System vlan v1
Command: config ipif System vlan v1

Success.

DGS-3200-10:4#
```

27-2 create ipif

Purpose

Used to create an IPv6 interface for IPv6 addresses.

Format

create ipif <ipif_name > {<network_address>} <vlan_name > {state [enable|disable]}

Description

This command creates an IP interface for IPv6 only.

This interface can only be configured with an IPv6 address. Because only one IPV6 interface is supported, when the System interface already has some IPV6 addresses, executing this command will fail.

Note: The Switch only supports one IP interface for IPV6 addresses.

Parameters

Parameters	Description
ipif_name	The name of the interface.
network_address	This parameter is not supported in the current release.
vlan_name	The name of the VLAN corresponding to the IP interface.
state	The state of the IP interface.

Restrictions

You must have administrator privileges.

Examples

To create an IP interface

```
DGS-3200-10:4# create ipif ip VLAN2
Command: create ipif ipif ip VLAN2

Success.

DGS-3200-10:4#
```

27-3 delete ipif

Purpose

Used to delete an interface or an IPv6 address.

.

Format

delete ipif [<ipif_name > {ipv6address <ipv6networkaddr>} | all]

Description

Delete an IPv6 interface or an IPv6 address from the specifed interface by using this command.

Parameters

Parameters	Description
ipif_name	The name of the interface.
ipv6networkaddr	The IPv6 network address which want to be deleted by administrator.
all	All IP interface except the System IP interface will be deleted.

Restrictions

You must have administrator privileges.

Examples

To delete interface “interface1.”

```
DGS-3200-10:4#delete ipif interface1
Command: delete ipif interface1

Success.

DGS-3200-10:4#
```

27-4 enable ipif

Purpose

Enable the admin state for an interface.

Format

enable ipif [<ipif_name 12> | all]

Description

Enable the state for an IPIF. When the state is enabled, the IPv4 processing will be started when the IPv4 address is configured on the IPIF. The IPv6 processing will be started when the IPv6 address is explicitly configured on the IPIF.

Parameters

Parameters	Description
ipif_name	The name of the interface.
all	All the IP interface

Restrictions

You must have administrator privileges.

Examples

Enable the state for an interface.

```
DGS-3200-10:4#enable ipif interface1
Command: enable ipif interface1

Success.

DGS-3200-10:4#
```

27-5 disable ipif

Purpose

To disable the admin state for an interface.

Format

disable ipif [<ipif_name 12> | all]

Description

Use this command to disable the state of an interface.

Parameters

Parameters	Description
ipif_name	The name of the interface.
all	All the IP interface

Restrictions

You must have administrator privileges.

Examples

To disable the state for an interface.

```
DGS-3200-10:4#disable ipif interface1
Command: disable ipif interface1

Success.

DGS-3200-10:4#
```

27-6 show ipif

Purpose

Used to display IP interface settings.

Format

show ipif {<ipif_name 12>}

Description

The **show ipif** command displays IP interface settings.

Parameters

Parameters	Description
ipif_name	The name of the interface.

Restrictions

None.

Examples

To display IP interface settings.

```
DGS-3200-10:4# show ipif
Command: show ipif

IP Interface Settings

IP Interface                : System
IP Address                  : 10.90.90.90     (MANUAL)
Subnet Mask                 : 255.0.0.0
VLAN Name                   : v1
Interface Admin. State     : Enabled
Link Status                 : Link UP
Member Ports                : 1-10

Total Entries : 1

DGS-3200-10:4#
```

27-7 enable ipif_ipv6_link_local_auto

Purpose

Enable the auto configuration of link local address when no IPv6 address is configured.

Format

enable ipif_ipv6_link_local_auto [<ipif_name 12> | all]

Description

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 enabling this automatic configuration, the link local address will be automatically configured and IPv6 processing will be started.

Parameters

Parameters	Description
ipif_name	The name of the interface.
all	All the IP interfaces.

Restrictions

You must have administrator privileges.

Examples

Enable the automatic configuration of link local address for an interface.

```
DGS-3200-10:4#enable ipif_ipv6_link_local_auto interface1
Command: enable ipif_ipv6_link_local_auto interface1

Success.

DGS-3200-10:4#
```

27-8 disable ipif_ipv6_link_local_auto

Purpose

Disable the auto configuration of link local address when no IPv6 address is configured.

Format

disable ipif_ipv6_link_local_auto [<ipif_name 12> | all]

Description

Disable the auto configuration of link local address when no IPv6 address is explicitly configured.

Parameters

Parameters	Description
ipif_name	The name of the interface.
all	All the IP interface

Restrictions

You must have administrator privileges.

Examples

Disable the automatic configuration of link local address for an interface.

```
DGS-3200-10:4#disable ipif_ipv6_link_local_auto interface1
Command: disable ipif_ipv6_link_local_auto interface1

Success.

DGS-3200-10:4#
```

27-9 show ipif_ipv6_link_local_auto

Purpose

To display the link local address automatic configuration state.

Format

show ipif_ipv6_link_local_auto {<ipif_name 12>}

Description

Use this command to display the link local address automatic configuration state.

Parameters

Parameters	Description
ipif_name	The name of the interface.

Restrictions

None

Examples

Show interface's information.

28 Auto Config Command List

show autoconfig
enable autoconfig
disable autoconfig

28-1 show autoconfig

Purpose

Used to show DHCP auto configuration status.

Format

show autoconfig

Description

Show DHCP auto configuration status.

Restrictions

None.

Example

To display the DHCP auto configuration status:

```
DGES-3200-10:4#show autoconfig
Command: show autoconfig

Autoconfig State: Disabled

DGS-3200-10:4#
```

28-2 enable autoconfig

Purpose

Used to enable DHCP auto configuration.

Format

enable autoconfig

Description

Enables DHCP auto configuration.

Restrictions

Administrator Level.

Example

To enable DHCP auto configuration status:

```
DGS-3200-10:4#enable autoconfig
Command: enable autoconfig

Success.

DGS-3200-10:4#
```

28-3 disable autoconfig

Purpose

Used to disable DHCP auto configuration.

Format

disable autoconfig

Description

Disable DHCP auto configuration.

Restrictions

Administrator Level.

Example

To disablee DHCP auto configuration status:

```
DGS-3200-10:4#disable autoconfig
Command: disable autoconfig

Success.

DGS-3200-10:4#
```

29 Routing Table Command List

create iproute default <ipaddr> {<metric 1-65535>}
delete iproute default
show iproute {<static>}
create ipv6route [default] [<ipif_name 12> <ipv6addr> |<ipv6addr>] {<metric 1-65535>}
delete ipv6route [default] [<ipif_name 12> <ipv6addr> | <ipv6addr>] | all]
show ipv6route

29-1 create iproute

Purpose

Used to create a default IP route entry.

Format

create iproute default <ipaddr> {<metric 1-65535>}

Description

The **create iproute** command creates a default IP route entry.

Parameters

Parameters	Description
ipaddr	The IP address for the next hop router.
metric	The default setting is 1.That is, the default hop cost is 1.

Restrictions

You must have administrator privileges.

Examples

To add a static address 10.48.74.121:

```
DGS-3200-10:4#create iproute default 10.48.74.121
Command: create iproute default 10.48.74.121


Success.


DGS-3200-10:4#
```

29-2 delete iproute default

Purpose

Used to delete a default IP route entry.

Format

delete iproute default

Description

The **delete iproute default** command deletes a default route entry.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To delete a default route from the routing table:

```
DGS-3200-10:4#delete iproute default
Command: delete iproute default

Success.

DGS-3200-10:4#
```

29-3 show iproute

Purpose

Used to display the switch's current IP routing table.

Format

show iproute {<static>}

Description

The **show iproute** command displays the switch's current IP routing table.

Parameters

Parameters	Description
<static>	The static address.

Restrictions

None.

Examples

To display the contents of the IP routing table:

```
DGS-3200-10:4#show iproute
Command: show iproute

Routing Table

IP Address/Netmask  Gateway           Interface     Hops       Protocol
------------------  ---------------  ------------  --------  --------
10.0.0.0/8          0.0.0.0           System        1          Local

Total Entries : 1

DGS-3200-10:4#
```

29-4 create ipv6route

Purpose

To create an IPv6 default route.

Format

create ipv6route [default] [<ipif_name 12> <ipv6addr>| <ipv6addr>]{<metric 1-65535>}

Description

Used to create an IPv6 static route. If the next hop is a global address, it is not necessary to indicate the interface name. If the next hop is a link local address, then the interface name must be specified.

Parameters

Parameters	Description
default	Specifies the default route.
ipif_name	Specifies the interface for the route.
ipv6addr	Specify the next hop address for this route.
metric	The default setting is 1.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4#create ipv6route default System FEC0::5
Command: create ipv6route default System FEC0::5

Success.

DGS-3200-10:4#
```

29-5 delete ipv6route

Purpose

To delete an IPv6 static route.

Format

delete ipv6route [default] [<ipif_name> <ipv6addr> | <ipv6addr>] | all]

Description

Used to delete an IPv6 static route. If the next hop is a global address, it is not necessary to indicate the interface name. If the next hop is a link local address, then the interface name must be specified.

Parameters

Parameters	Description
default	Specifies the default route.
ipv6addr	Specify the next hop address for the default route
all	All static created routes will be deleted.

Restrictions

You must have administrator privileges.

Examples

To delete an IPv6 static route.

```
DGS-3200-10:4#delete ipv6route default System FEC0::5
Command: delete ipv6route default System FEC0::5

Success.

DGS-3200-10:4#
```

29-6 show ipv6route

Purpose

To display IPv6 routes.

Format

show ipv6route

Description

Used to display IPv6 routes.

Parameters

None.

Restrictions

None.

Examples

To display an IPv6 route:

```
DGS-3200-10:4#show ipv6route
Command: show ipv6route

IPv6 Prefix: ::/0                       Protocol: Static  Metric: 1
Next Hop   : FEC0::5                    IPIF    : System



Total Entries: 1



DGS-3200-10:4#
```

30 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 }

30-1 create arpentry

Purpose

Used to make a static entry into the ARP table.

Format

create arpentry <ipaddr> <macaddr>

Description

The **create arpentry** command is used to enter an IP address and the corresponding MAC address into the switch's ARP table.

Parameters

Parameters	Description
ipaddr	The IP address of the end node or station.
macaddr	The MAC address corresponding to the IP address above.

Restrictions

You must have administrator privileges.

Examples

To create a static ARP entry for the IP address 10.48.74.121 and MAC address 00:50:BA:00:07:36:

```
DGS-3200-10:4#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-3200-10:4#
```

30-2 delete arpentry

Purpose

Used to delete a static entry into the ARP table.

Format

delete arpentry {<ipaddr> | all}

Description

The **delete arpentry** command is used to delete a static ARP entry, made using the **create arpentry** command above, by specifying either the IP address of the entry or all. Specifying "**all**" clears the switch's ARP table.

Parameters

Parameters	Description
ipaddr	The IP address of the end node or station.
all	Deletes all ARP entries

Restrictions

You must have administrator privileges.

Examples

To delete an entry of IP address 10.48.74.121 from the ARP table:

```
DGS-3200-10:4#delete arpentry 10.48.74.121
Command: delete arpentry 10.48.74.121

Success.

DGS-3200-10:4#
```

30-3 config arpentry

Purpose

Used to configure a static entry to the ARP table.

Format

config arpentry <ipaddr> <macaddr>

Description

The **config arpentry** command configures a static entry to the ARP table. Specify the IP address and

MAC address of the entry.

Parameters

Parameters	Description
ipaddr	The IP address of the end node or station.
macaddr	The MAC address corresponding to the IP address above.

Restrictions

You must have administrator privileges.

Examples

To configure a static ARP entry for the IP address 10.48.74.121 and MAC address 00:50:BA:00:07:36:

```
DGS-3200-10:4#config arpentry 10.48.74.121 00-50-BA-00-07-36
Command: config arpentry 10.48.74.121 00-50-BA-00-07-36

Success.

DGS-3200-10:4#
```

30-4 config arp_aging time

Purpose

Used to configure the age-out timer for ARP table entries on the switch.

Format

config arp_aging time <value 0-65535>

Description

The **config arp_aging time** command sets the maximum amount of time, in minutes, that a ARP entry can remain in the switch's ARP table, without being accessed, before it is dropped from the table..

Parameters

Parameters	Description
value	The ARP age-out time, in minutes. The default is 20. The range is 0 to 65535.

Restrictions

You must have administrator privileges.

Examples

To configure the ARP aging time:

```
DGS-3200-10:4#config arp_aging time 30
Command: config arp_aging time 30

Success.

DGS-3200-10:4#
```

30-5 show arpentry

Purpose

Used to display the ARP table.

Format

show arpentry {ipif <ipif_name 12> | ipaddress <ipaddr> | static}

Description

The **show arpentry** command displays the Address Resolution Protocol (ARP) table. You can filter the display by IP address, Interface name, or static entries.

Parameters

Parameters	Description
ipif_name	The name of the IP interface the end node or station for which the ARP table entry was made, resides on.
ipaddr	The IP address of the end node or station.
static	Displays the static entries to the ARP table.
	If no parameter is specified, all ARP entries will be displayed.

Restrictions

None.

Examples

To display the ARP table:

```
DGS-3200-10:4# 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          10.90.90.90       00-01-02-03-04-00   Local
System          10.255.255.255    FF-FF-FF-FF-FF-FF   Local/Broadcast

Total Entries: 3

DGS-3200-10:4#
```

30-6 clear arptable

Purpose

Used to remove dynamic entries in the ARP table.

Format

clear arptable

Description

The **clear arptable** command removes dynamic entries in the ARP table. Static ARP entries are not affected.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To remove the dynamic entries in the ARP table:

```
DGS-3200-10:4#clear arptable
Command: clear arptable

Success.

DGS-3200-10:4#
```

31 Loopback Detection Command List

config loopdetect {recover_timer [0 | <value 60-1000000>] | interval <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 [all | <portlist>]

31-1 config loopdetect

Purpose

Used to configure loop-back detection function on the switch.

Format

config loopdetect {recover_timer [0 | <value 60-1000000>] | interval <1-32767> | mode [port-based | vlan-based]}

Description

The config loopdetect command is used to setup the loop-back detection function (LBD) for the entire switch.

Parameters

Parameters	Description
recover_timer	The time interval (in seconds) used by the Auto-Recovery mechanism to decide how long to check if the loop status is gone. The valid range is 60 to 1000000. Zero is a special value which means to disable the auto-recovery mechanism, hence, user need to recover the disabled port back manually. Default value of recover_timer is 60.
interval	The time interval (in seconds) at which device transmits all the CTP(Configuration Test Protocol) packets to detect the loop-back event. The default setting is 10. Valid range is 1 to 32767.
mode	Choose the loop-detection operation mode. In the port-based mode , the port will be shut-down (disabled) when detecting loop ; in vlan-based mode , the port can't process packets of the VLAN that detecting the loop.

Restriction

You must have administrator privileges.

Examples

To set a recover time of 0 and an interval of 20 in VLAN-based mode:

```
DGS-3200-10:4# config loopdetect recover_timer 0 interval 20 vlan-based
Command: config loopdetect  recover_timer 0 interval 20 vlan-based

Success.

DGS-3200-10:4#
```

31-2 config loopdetect ports

Purpose

Used to configure loop-back detection function for the port on the switch.

Format

config loopdetect ports [<portlist>| all] state [enable | disable]

Description

The **config loopdetect port** command is used to setup the loop-back detection function for the interface on the switch.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be configured..
all	For set all ports in the system , you may use “all” parameter.
state	Allows loop-detect to be enabled or disabled for the ports specified in the port list. The default is disabled.

Restriction

You must have administrator privileges.

Examples

To set state to enable:

```
DGS-3200-10:4# config loopdetect ports 1-5 state enable
Command: config loopdetect ports 1-5 state enable

Success.

DGS-3200-10:4#
```

31-3 enable loopdetect

Purpose

Used to globally enable loopdetect function on the switch.

Format

enable loopdetect

Description

The **enable loopdetect** command allows the Loop Detection Function to be globally enabled on the switch. The default value is enabled.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable the loopdetect:

```
DGS-3200-10:4#enable loopdetect
Command: enable loopdetect

Success.

DGS-3200-10:4#
```

31-4 disable loopdetect

Purpose

Used to globally disable the loopdetect function on the switch.

Format

disable loopdetect

Description

The **disable loopdetect** command allows the Loop Detection Function to be globally disabled on the switch. The default value is enabled.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable loopdetect:

```
DGS-3200-10:4#disable loopdetect
Command: disable loopdetect

Success.

DGS-3200-10:4#
```

31-5 show loopdetect

Purpose

Used to display the switch's current loopdetect configuration.

Format

show loopdetect

Description

The **show loopdetect** command displays the switch's current loopdetect configuration.

Parameters

None.

Restrictions

None.

Examples

```
DGS-3200-10:4#show loopdetect
Command: show loopdetect
LBD Global Settings
---------------------------------
LBD Status         : Enabled
LBD Interval       : 20
LBD Recover Time   : 60

DGS-3200-10:4#
```

31-6 show loopdetect ports

Purpose

Used to display the switch's current per-port loopdetect configuration.

Format

show loopdetect ports [all | <portlist>]

Description

The **show loopdetect ports** command displays the switch's current per-port loopdetect configuration and status.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be displayed.
all	System will display all ports loopdetect information.

Restrictions

None.

Examples

To display the loopdetect state of ports 1 through 9 in port-based mode:

```
DGS-3200-10:4#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-3200-10:4#
```

To display loopdetect state of port 1-9 under VLAN-based mode：

```
DGS-3200-10:4#show loopdetect ports 1-9
Command: show loopdetect ports 1-9

Port   Loopdetect State    Loop VLAN
------ ----------------- ----------
1      Enabled            None
2      Enabled            None
3      Enabled            None
4      Enabled            None
5      Enabled            2
6      Enabled            None
7      Enabled            2
8      Enabled            None
9      Enabled            None

DGS-3200-10:4#
```

VII. Multicast

The Multicast section includes the following chapters: IGMP Snooping, MLD Snooping, and Limited Multicast IP Address.

32 IGMP Snooping Command List

config igmp_snooping [vlan_name <vlan_name 32> | vlanid <vlanid_list> |all] { host_timeout <sec 1-16711450> | router_timeout <sec 1-16711450> | leave_timer <sec 1-16711450> | state [enable|disable] | fast_leave [enable|disable] }
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 1-255> | last_member_query_interval <sec 1-25> | state [enable|disable] version <value 1-3> }
config router_ports <vlan_name 32> [add|delete]<portlist>
config router_ports_forbidden <vlan_name 32> [add|delete]<portlist>
enable igmp_snooping
disable igmp_snooping
show igmp_snooping {vlan <vlan_name 32> | vlanid <vlanid_list> }
show igmp_snooping group {vlan <vlan_name 32> | vlanid <vlanid_list> }
show router_ports {vlan <vlan_name 32> | vlanid <vlanid_list> } {static |dynamic|forbidden}

32-1 config igmp_snooping

Purpose

Used to configurer IGMP snooping on the switch.

Format

config igmp_snooping [vlan_name <vlan_name 32>| vlanid <vlanid_list> |all] { host_timeout <sec 1-16711450> | router_timeout <sec 1-16711450> | leave_timer <sec 1-16711450> | state [enable|disable] | fast_leave [enable|disable] }

Description

The **config igmp_snooping** command configures IGMP snooping on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which IGMP snooping is to be configured. **all** indicates all VLAN.
host_timeout	Specifies the maximum amount of time a host can be a member of a multicast group without the switch receiving a host membership report. The default is 260 seconds.
route_timeout	Specifies the maximum amount of time a route will remain in the

	switch's can be a member of a multicast group without the switch receiving a host membership report. The default is 260 seconds.
leave_timer	Leave timer. The default setting is 2.
state	Enable or disable IGMP snooping for the chosen VLAN.
fast_leave	Enable or disable IGMP snooping fast_leave function. If enable, the membership is immediately removed when the system receive the IGMP leave message.

Restrictions

You must have administrator privileges.

Examples

To configure the IGMP snooping:

```
DGS-3200-10:4#config igmp_snooping default host_timeout 250 state enable
Command: config igmp_snooping default host_timeout 250 state enable fast_leave
enable

Success.

DGS-3200-10:4#
```

32-2 config igmp_snooping querier

Purpose

Used to configure the the time in seconds between general query transmissions, the maximum time in seconds to wait for reports from members, 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 1-255> | last_member_query_interval <sec 1-25> | state [enable|disable] version <value 1-3> }

Description

The **config igmp_snooping querier** command configures IGMP snooping querier.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which IGMP snooping querier is to be configured.

query_interval	Specifies the amount of time in seconds between general query transmissions. the default setting is 125 seconds..
max_reponse_time	The maximum time in seconds to wait for reports from members. The default setting is 10 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 IGMP message intervals: • 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. • By default, the robustness variable is set to 2. You might want to increase this value if you expect a subnet to be lossy.
last_member_query_interval	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.
state	If the state is enable, it allows the switch to be selected as a IGMP Querier (sends IGMP query packets). It the state is disabled, then the switch can not play the role as a querier. Note that if the Layer 3 router connected to the switch provides 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 also send the multicast-routing protocol packet, the port will be timed out as a router port.
version	Specifies the version of IGMP packet that will be sent by this port. If a IGMP packet received by the interface has a version higher than the specified version, this packet will be dropped.

Restrictions

You must have administrator privileges.

Examples

To configure the IGMP snooping querier:

```
DGS-3200-10:4#config igmp_snooping querier default query_interval 125 state enable
Command: config igmp_snooping querier default query_interval 125 state enable

Success.

DGS-3200-10:4#
```

32-3 config router_ports

Purpose

Used to configure ports as router ports.

Format

config router_ports <vlan_name 32> [add|delete] <portlist>

Description

The **config router_ports** command allows you 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.

Parameters

Parameters	Description
vlan_name	The name of the VLAN on which the router port resides.
add | delete	Specifies to add or delete the router ports .
portlist	Specifies a range of ports to be configured.

Restrictions

You must have administrator privileges.

Examples

To set up static router ports:

```
DGS-3200-10:4#config router_ports default add 1-10
Command: config router_ports default add 1-10

Success.

DGS-3200-10:4#
```

32-4 config router_ports_forbidden

Purpose

Used to configure ports as forbidden router ports.

Format

config router_ports_forbidden <vlan_name 32> [add|delete] <portlist>

Description

The **config router_ports_forbidden** command allows you 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.

Parameters

Parameters	Description
vlan_name	The name of the VLAN on which the router port resides.
add | delete	Specifies to add or delete the router ports.
portlist	Specifies a range of ports to be configured.

Restrictions

You must have administrator privileges.

Examples

To set up port range 1-7 to be forbidden router ports of the default VLAN:

```
DGS-3200-10:4#config router_ports_forbidden default add 1-7
Command: config router_ports_forbidden default add 1-7

Success.

DGS-3200-10:4#
```

32-5 enable igmp_snooping

Purpose

Used to enable IGMP snooping on the switch.

Format

enable igmp_snooping

Description

The **enable igmp_snooping** command allows you to enable IGMP snooping on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable IGMP snooping on the switch:

```
DGS-3200-10:4#enable igmp_snooping
Command: enable igmp_snooping

Success.

DGS-3200-10:4#
```

32-6 disable igmp_snooping

Purpose

Used to disable IGMP snooping on the switch.

Format

disable igmp_snooping

Description

The **disable igmp_snooping** command disables IGMP snooping on the switch. IGMP snooping can be disabled only if IP multicast routing is not being used. Disabling IGMP snooping allows all IGMP and IP multicast traffic to flood within a given IP interface.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable IGMP snooping on the switch:

```
DGS-3200-10:4#disable igmp_snooping
Command: disable igmp_snooping

Success.

DGS-3200-10:4#
```

32-7 show igmp_snooping

Purpose

Used to show the current status of IGMP snooping on the switch.

Format

show igmp_snooping {vlan <vlan_name 32> | **vlanid <vlanid_list>}**

Description

The **show igmp_snooping** command will display the current IGMP snooping configuration on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which you want to view the IGMP snooping configuration.
	If no parameter is specified, the system will display all current IGMP snooping configuration.

Restrictions

None.

Examples

To show IGMP snooping:

```
DGS-3200-10:4#show igmp_snooping
Command: show igmp_snooping

IGMP Snooping Global State : Disabled

VLAN  Name                  : default
Query Interval              : 125
Max Response Time           : 10
Robustness Value            : 2
Last Member Query Interval : 1
Host Timeout                : 260
Route Timeout               : 260
Leave Timer                 : 2
Querier State               : Disabled
Querier Router Behavior    : Non-Querier
State                       : Disabled
Fast Leave                  : Disabled
Version                     : 3

Total Entries: 1

DGS-3200-10:4#
```

32-8 show igmp_snooping group

Purpose

Used to display the current IGMP snooping group configuration on the switch.

Format

show igmp_snooping group {vlan <vlan_name 32>| vlanid <vlanid_list>}

Description

The **show igmp_snooping group** command displays the current IGMP snooping group configuration on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which you want to view IGMP snooping group configuration information.
	If no parameter specified, the system will display all current IGMP group snooping configuration of the switch.

Restrictions

None.

Examples

To show the IGMP snooping group:

```
DGS-3200-16:4#show igmp_snooping group
Command: show igmp_snooping group

Source/Group     :   10.0.0.2/225.0.0.2
VLAN Name/VID    :   default/1
Member Ports     :   1-2
Filter Mode      :   INCLUDE

Source/Group     :   10.0.0.2/225.0.0.2
VLAN Name/VID    :   default/1
Member Ports     :   3
Filter Mode      :   EXCLUDE

Source/Group     :   NULL/225.0.0.5
VLAN Name/VID    :   default/1
Member Ports     :   4-5
Filter Mode      :   EXCLUDE


Total Entries : 3

DGS-3200-16:4#
```

32-9 show router_ports

Purpose

Used to display the currently configured router ports on the switch.

Format

show router_ports {vlan <vlan_name 32>| vlanid <vlanid_list>}{static|dynamic|forbidden}

Description

The **show router_ports** command displays the currently configured router ports on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN on which the router port resides.
static	Displays router ports that have been statically configured.
dynamic	Displays router ports that have been dynamically registered.
forbidden	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.

Examples

To display the router ports.

```
DGS-3200-10:4#show router_ports
Command: show router_ports

VLAN Name                : default
Static router port     : 1-7
Dynamic router port    :
Forbidden router port  :

VLAN Name                : vlan2
Static router port     :
Dynamic router port    :
Forbidden router port  :

Total Entries : 2

DGS-3200-10:4#
```

33 MLD Snooping Command List

config mld_snooping [<vlan_name 32> | vlanid <vlanid_list> |all] { node_timeout <sec 1-16711450> | router_timeout <sec 1-16711450> | done_timer <sec 1-16711450> | state [enable|disable] | fast_done [enable|disable] }
config mld_snooping querier [<vlan_name 32> | vlanid <vlanid_list> |all] { query_interval <sec 1-65535> |max_response_time <sec 1-25>| robustness_variable <value 1-255> | last_listener_query_interval <sec 1-25> | state [enable|disable] | version <value 1-2>} }
config mld_snooping mrouter_ports <vlan_name 32> [add|delete]<portlist>
config mld_snooping mrouter_ports_forbidden <vlan_name 32> [add|delete]<portlist>
enable mld_snooping
disable mld_snooping
show mld_snooping {vlan <vlan_name 32>| vlanid <vlanid >}
show mld_snooping group {vlan <vlan_name 32>| vlanid <vlanid > }
show mld_snooping mrouter_ports {vlan <vlan_name 32>| vlanid <vlanid_list>} { [static|dynamic|forbidden]}

33-1 config mld_snooping

Purpose

Used to configurer MLD snooping on the switch.

Format

config mld_snooping [<vlan_name 32>| vlanid <vlanid_list> |all] { node_timeout <sec 1-16711450> | router_timeout <sec 1-16711450> | done_timer <sec 1-16711450> | state [enable|disable] | fast_done [enable|disable] }

Description

The **config mld_snooping** command configures MLD snooping on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which MLD snooping is to be configured. **all** indicates all VLANs.
node_timeout	Specifies the amount of time that must pass before a link node is considered to be not a listener anymore. The default is 260 seconds.
router_timeout	Specifies the maximum amount of time a router will remain the switch's can be a listener of a multicast group without the switch receiving a node listener report. The default is 260 seconds.

done_timer	The done timer. The default setting is 2.
state	**enable** or **disable** MLD snooping for the chosen VLAN.
fast_done	**enable** or **disable** the MLD snooping fast done function. If enabled, the membership is immediately removed when the system receives the MLD done message.

Restrictions

You must have administrator privileges.

Example

To configure MLD snooping:

```
DGS-3200-10:4#config mld_snooping default node_timeout 250 state enable
Command: config mld_snooping default node_timeout 250 state enable

Success.

DGS-3200-10:4#
```

33-2 config mld_snooping querier

Purpose

Used to configure the time in seconds between general query transmissions, the maximum time in seconds to wait for reports from listeners, the permitted packet loss that guarantees MLD snooping.

Format

config mld_snooping querier [<vlan_name 32>| vlanid <vlanid_list>| |all] { query_interval <sec 1-65535> | max_response_time <sec 1-25> | robustness_variable <value 1-255> | last_listener_query_interval <sec 1-25> | state [enable|disable] | version <value 1-2> }

Description

The **config mld_snooping querier** command configures MLD snooping querier.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which MLD snooping querier is to be configured.
query_interval	Specifies the amount of time in seconds between general query transmissions. The default setting is 125 seconds.

max_reponse_time	The maximum time in seconds to wait for reports from listeners. The default setting is 10 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: • 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 lossy.
last_listener_query_interval	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.
state	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.
version <value 1-2>	Specifies the version of MLD packet that will be sent by this port. If a MLD packet received by the interface has a version higher than the specified version, this packet will be dropped.

Restrictions

You must have administrator privileges.

Example

To configure the MLD snooping querier:

```
DGS-3200-10:4#config mld_snooping querier default query_interval 125 state enable
Command: config mld_snooping querier default query_interval 125 state enable

Success.

DGS-3200-10:4#
```

33-3 config mld_snooping mrouter_ports

Purpose

Used to configure ports as router ports.

Format

config mld_snooping mrouter_ports <vlan_name 32> [add|delete] <portlist>

Description

The **config mld_snooping mrouter_ports** command allows you 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.

Parameters

Parameters	Description
vlan_name	The name of the VLAN on which the router port resides.
add | delete	Specifies to add or delete the router ports.
portlist	Specifies a range of ports to be configured. (UnitID:port number)

Restrictions

You must have administrator privileges.

Example

To set up static router ports:

```
DGS-3200-10:4#config mld_snooping mrouter_ports default add 1-10
Command: config mld_snooping mrouter_ports default add 1-10

Success.

DGS-3200-10:4#
```

33-4 config mld_snooping mrouter_ports_forbidden

Purpose

Used to configure ports as forbidden router ports.

Format

config mld_snooping mrouter_ports_forbidden <vlan_name 32> [add|delete] <portlist>

Description

The **config mld_snooping mrouter_ports_forbidden** command allows you 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.

Parameters

Parameters	Description
vlan_name	The name of the VLAN on which the router port resides.
add | delete	Specifies to add or delete the router ports.
portlist	Specifies a range of ports to be configured.

Restrictions

You must have administrator privileges.

Example

To set up static router ports:

```
DGS-3200-10:4#config mld_snooping mrouter_ports_forbidden default add 1-10
Command: config mld_snooping mrouter_ports_forbidden default add 1-10

Success.

DGS-3200-10:4#
```

33-5 enable mld_snooping

Purpose

Used to enable MLD snooping on the switch.

Format

enable mld_snooping

Description

The **enable mld_snooping** command allows you to enable MLD snooping on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To enable MLD snooping on the switch:

```
DGS-3200-10:4#enable mld_snooping
Command: enable mld_snooping

Success.

DGS-3200-10:4#
```

33-6 disable mld_snooping

Purpose

Used to disable MLD snooping on the switch.

Format

disable mld_snooping

Description

The **disable mld_snooping** command disables MLD snooping on the switch. MLD snooping can be disabled only if IPv6 multicast routing is not being used. Disabling MLD snooping allows all MLD and IPv6 multicast traffic to flood within a given IPv6 interface.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To disable MLD snooping on the switch:

```
DGS-3200-10:4#disable mld_snooping
Command: disable mld_snooping

Success.

DGS-3200-10:4#
```

33-7 show mld_snooping

Purpose

Used to show the current status of MLD snooping on the switch.

Format

show mld_snooping {vlan <vlan_name 32>| vlanid <vlanid_list> }

Description

The **show mld_snooping** command will display the current MLD snooping configuration on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which you want to view the MLD snooping configuration.
	If no parameter is specified, the system will display all current MLD snooping configurations.

Restrictions

None.

Example

To show MLD snooping:

```
DGS-3200-10:4#show mld_snooping
Command: show mld_snooping

MLD Snooping Global State    : Disabled

VLAN  Name                   : default
Query Interval               : 125
Max Response Time            : 10
Robustness Value             : 2
Last Listener Query Interval : 1
Node Timeout                 : 260
Router Timeout               : 260
Done Timer                   : 2
Querier State                : Disabled
Querier Router Behavior      : Non-Querier
State                        : Disabled
```

```
Fast Done                       : Disabled
Version                         : 2

Total Entries: 1

DGS-3200-10:4#
```

33-8 show mld_snooping group

Purpose

Used to display the current MLD snooping group configuration on the switch.

Format

show mld_snooping group {vlan <vlan_name 32>| vlanid <vlanid_list>}

Description

The **show mld_snooping group command** displays the current MLD snooping group configuration on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN for which you want to view MLD snooping group configuration information.
	If no parameter is specified, the system will display all current MLD group snooping configuration of the switch.

Restrictions

None.

Examples

To show MLD snooping group:

```
DGS-3200-10:4#show mld_snooping group
Command: show mld_snooping group

Source/Group     :   2000::100:10:10:5/FF0E::100:0:0:20
VLAN Name/VID    :   default/1
Member Ports     :   1-2
Filter Mode      :   INCLUDE
```

```
Source/Group      :   2000::100:10:10:5/FF0E::100:0:0:20
VLAN Name/VID     :   default/1
Member Ports      :   3
Filter Mode       :   EXCLUDE

Source/Group      :   NULL/FF0E::100:0:0:21
VLAN Name/VID     :   default/1
Member Ports      :   4-5
Filter Mode       :   EXCLUDE

Total Entries :  3

DGS-3200-10:4#
```

33-9 show mld_snooping mrouter_ports

Purpose

Used to display the currently configured router ports on the switch.

Format

show mld_snooping mrouter_ports {vlan <vlan_name 32>| vlanid <vlanid_list>}{[static|dynamic|forbidden}}

Description

The **show mld_snooping mrouter_ports** command displays the currently configured router ports on the switch.

Parameters

Parameters	Description
vlan_name	The name of the VLAN on which the router port resides.
static	Displays router ports that have been statically configured.
dynamic	Displays router ports that have been dynamically configured.
forbidden	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 router ports.

```
DGS-3200-10:4#show mld_snooping mrouter_ports
Command: show mld_snooping mrouter_ports

VLAN Name                : default
Static mrouter port      : 1-10
Dynamic mrouter port     :
Forbidden mrouter port   :

VLAN Name                : vlan2
Static mrouter port      :
Dynamic mrouter port     :
Forbidden mrouter port   :

Total Entries : 2

DGS-3200-10:4#
```

34 Limited Multicast IP Address Command List

create mcast_filter_profile profile_id <value 1-24> profile_name <name>
config mcast_filter_profile [profile_id < value 1-24>| profile_name <name>] { profile_name <name> | [add | delete] <mcast_address_list>}
delete mcast_filter_profile profile_id [<value 1-24> | all]
delete mcast_filter_profile profile_name <name>
show mcast_filter_profile { profile_id <value 1-24>}
config limited_multicast_addr [ports <portlist>] {[add | delete] [profile_id <value 1-24> | profile_name <name>] | access [permit | deny]}
show limited_multicast_addr { ports <portlist> }
config max_mcast_group ports {<portlist>} max_group [<value 1-256>]
show max_mcast_group ports {ports <portlist>}

34-1 create mcast_filter_profile

Purpose

This command creates a multicast address profile.

Format

create mcast_filter_profile profile_id <value 1-24> <name>

Description

This command configures a multicast address profile. Mutliple ranges of multicast addresses can be defined in the profile.

Parameters

Parameters	Description
profile_id	ID of the profile. Range is 1 to 24.
name	Provides a meaningful description for the profile.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# create mcast_filter_profile profile_id 2 profile_name MOD
Command: create mcast_filter_profile profile_id 2 profile_name MOD

Success.

DGS-3200-10:4#
```

34-2 config mcast_filter_profile

Purpose

This command adds or deletes a range of multicast addresses to the profile.

Format

config mcast_filter_profile [profile_id < value 1-24>| profile_name <name>] { profile_name <name> | [add | delete] <mcast_address_list>}

Description

This command deletes a range of multicast IP addresses previously defined.

Parameters

Parameters	Description
profile_id	The ID of the profile.
profile_name	Provides a meaningful description for the profile.
mcast_address_list	List of the multicast addresses to be put in the profile. You can either specifiy a single multicast IP address or a rane of multicast addresses using **-.**

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# config mcast_filter_profile profile_id 2 add 225.1.1.1 - 225.1.1.1
Command: config mcast_filter_profile profile_id 2 add 225.1.1.1 - 225.1.1.1

Success.

DGS-3200-10:4#
```

34-3 delete mcast_filter_profile

Purpose

This command deletes a multicast address profile.

Format

delete mcast_filter_profile profile_id [<value 1-24> | all]

Description

This command delete a multicast address profile

Parameters

Parameters	Description
profile_id	The ID of the profile
all	All multicast address profiles will be deleted.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# delete mcast_filter_profile profile_id 3
Command: delete mcast_filter_profile profile_id 3

Success.

DGS-3200-10:4#
```

34-4 show mcast_filter_profile

Purpose

This command displays the defined multicast address profiles.

Format

show mcast_filter_profile { profile_id <value 1-24>}

Description

This command displays the defined multicast address profiles.

Parameters

Parameters	Description
profile_id	The ID of the profile. If not specified, all profiles will be displayed.

Restrictions

user level

Examples

```
DGS-3200-10:4#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-3200-10:4#
```

34-5 config limited_multicast_addr

Purpose

Used to configure the multicast address filtering function on a port.

Format

config limited_multicast_addr ports [<portlist> | vlanid <vlanid_list >] {[add | delete] profile_id <value 1-24> | access [permit | deny]}

Description

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 snooping function and layer 3 function. When the function is configured on a vlan, it limits the multicast group operated by the IGMP layer 3 function.

Parameters

Parameters	Description
<portlist>	A range of ports to config the multicast address filtering function.
add	Add a multicast address profile to a port.
delete	Delete a multicast address profile to a port.

profile_id	A profile to be added to or deleted from the port
permit	Specifies that the packet that match the addresses defined in the profiles will be permitted. The default mode is permit.
deny	Specifies that the packet that match the addresses defined in the profiles will be denied.

Restrictions

You must have administrator privileges.

Examples

To configure ports 1 and 3 to set the multicast address profile 2.

```
DGS-3200-10:4# 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-3200-10:4#
```

34-6 show limited multicast addr

Purpose

Used to show per-port Limited IP multicast address range.

Format

show limited_multicast_addr { ports <portlist> }

Description

The **show limited_multicast_addr** command allows you to show multicat address range by ports or by VLANs.

When the function is configured on a port, it limits the multicast groups operated by the IGMP snooping function and layer 3 function. When the function is configured on a VLAN, it limits the multicast groups operated by the IGMP layer 3 function.

Parameters

Parameters	Description
<portlist>	A range of ports to show the limited multicast address configuration.

Restrictions

user level

Examples

To display a limited multicast address range:

```
DGS-3200-10:4#show limited_multicast_addr 1,3
Command: show limited_multicast_addr 1,3


Port    : 1
Access  : Deny

Profile ID      Name                  Multicast Addresses
----------    ----------         ---------------------------
1             customer             224.19.62.34 - 224.19.162.200


Port    : 3
Access  : Deny

Profile ID      Name                  Multicast Addresses
----------    ----------------   ---------------------------
1             customer           224.19.62.34 - 224.19.162.200


DGS-3200-10:4#
```

34-7 config max_mcast_group

Purpose

This command configures the maximum number of multicast groups a port can join.

Format

config max_mcast_group ports [<portlist>] max_group [<value 1-256>]

Description

This command configures the maximum number of multicast groups a port can join.

Parameters

Parameters	Description
<portlist>	A range of ports to config the max_mcast_group.
max_group	Specifies the maximum number of the multicast groups. The range is from 1 to 256 or infinite. Infinite is the default setting.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# config max_mcast_group ports 1, 3 max_group 100
Command: config max_mcast_group ports 1, 3 max_group 100

Success.

DGS-3200-10:4#
```

34-8 show max_mcast_group

Purpose

This command displays the maximum number of multicast groups that a port can join.

Format

show max_mcast_group ports {<portlist>}

Description

This command display the max number of multicast groups that a port can join.

Parameters

Parameters	Description
<portlist>	A range of ports to display the max number of multicast groups.

Restrictions

user level

Examples

```
DGS-3200-10:4# show max_mcast_group ports 1
Command: show max_mcast_group ports 1


Port         Max Multicast Group Number
--------    ----------------------------
1                 100
3                100
DGS-3200-10:4#
```

VIII. Security

The Security section includes the following chapters: 802.1X, Access Authentication Control, SSL, SSH, IP-MAC-Port Binding (IMPB), Web-based Access Control, MAC-based Access Control, and JWAC.

35 802.1X 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]
show 802.1x [auth_state | auth_configuration] {ports <portlist>}
config 802.1x capability ports [<auth_portlist>|all] [authenticator|none]
config 802.1x auth_parameter ports [<auth_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> | enable_reauth [enable|disable]}]
config 802.1x auth_mode [port_based |mac_based]
config 802.1x init [port_based ports [<auth_portlist|all>] |mac_based ports [<portlist>|all] {mac_address <macaddr>}]
config 802.1x reauth [port_based ports [<auth_portlist|all>] |mac_based ports [<auth_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 [<auth_portlist>|all] state [enable | disable]
show 802.1x guest_vlan
config radius add <server_index 1-3> [<server_ip> | <ipv6addr>] key <passwd 32> [default | { auth_port<udp_port_number 1-65535> | acct_port <udp_port_number 1-65535> | timeout <int 1-255> | retransmit <int 1-255>}]
config radius delete <server_index 1-3>
config radius <server_index 1-3> {ipaddress [<server_ip> | <ipv6addr>] |key <passwd 32> | auth_port <udp_port_number> | acct_port <udp_port_number> | timeout <int 1-255> | retransmit <int 1-255>}
show radius
show auth_statistics {ports <auth_portlist>}
show auth_diagnostics {ports <auth_portlist>}
show auth_session_statistics {ports <auth_portlist>}

show auth_client
show acct_client

35-1 enable 802.1x

Purpose

Used to enable the 802.1x function.

Format

enable 802.1x

Description

The **enable 802.1x** command enables 802.1x function.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable the 802.1x function:

```
DGS-3200-10:4#enable 802.1x
Command: enable 802.1x

Success.

DGS-3200-10:4#
```

35-2 disable 802.1x

Purpose

Used to disable the 802.1x function.

Format

disable 802.1x

Description

The **disable 802.1x** command disables the 802.1x function.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable the 802.1x function:

```
DGS-3200-10:4#disable 802.1x
Command: disable 802.1x

Success.

DGS-3200-10:4#
```

35-3 create 802.1x user

Purpose

Used to create the 802.1x user.

Format

create 802.1x user <username 15>

Description

The **create 802.1x user** command creates a 802.1x user.

Parameters

Parameters	Description
username	Specifies adding a user name.

Restrictions

You must have administrator privilege.

Examples

To create a user named “ctsnow”.

```
DGS-3200-10:4#create 802.1x user ctsnow
Command: create 802.1x user ctsnow

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

Success.

DGS-3200-10:4#
```

35-4 delete 802.1x user

Purpose

Used to delete a 802.1x user.

Format

delete 802.1x user <username 15>

Description

The **delete 802.1x user** command delete specified user.

Parameters

Parameters	Description
username	Specifies deleting a user name.

Restrictions

You must have administrator privilege.

Examples

To delete user named “Tiberius”.

```
DGS-3200-10:4#delete 802.1x user Tiberius
Command: delete 802.1x user Tiberius

Success.

DGS-3200-10:4#
```

35-5 show 802.1x user

Purpose

Used to display the 802.1x user.

Format

show 802.1x user

Description

The **show 802.1x user** command displays the 802.1x user account information.

Parameters

None.

Restrictions

None.

Examples

To display the 802.1x user information

```
DGS-3200-10:4#show 802.1x user
Command: show 802.1x user

Current Accounts:
UserName          Password
---------------   ------------
ctsnow            ctsnow

Total Entries : 1

DGS-3200-10:4#
```

35-6 config 802.1x auth_protocol

Purpose

Used to cofig the 802.1x auth protocol

Format

config 802.1x auth_protocol [local|radius_eap]

Description

The **config 802.1x auth_protocol** command config the 802.1x auth protocol.

Parameters

Parameters	Description
local	Specifies the auth protocol as local.
radius_eap	Specifies the auth protocol as RADIUS EAP

Restrictions

You must have administrator privilege.

Examples

To config the 802.1x RADIUS EAP:

```
DGS-3200-10:4#config 802.1x auth_protocol radius_eap
Command: config 802.1x auth_protocol radius_eap

Success.

DGS-3200-10:4#
```

35-7 show 802.1x

Purpose

Used to display the 802.1x state or configurations.

Format

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

Description

The **show 802.1x** command displays the 802.1x state or configurations.

Parameters

Parameters	Description
auth_state	Used to display 802.1x authentication state machine of some or all ports
auth_configuration	Used to display 802.1x configurations of some or all ports.
portlist	Specifies a range of ports to be displayed.

Restrictions

None.

Examples

To display the 802.1x states:

```
DGS-3200-10:4# show 802.1x auth_state ports 1-5
Command: show 802.1x auth_state ports 1-5

Port    Auth PAE State  Backend State  Port Status
------  --------------  -------------  ------------
1      ForceAuth        Success        Authorized
2      ForceAuth        Success        Authorized
3      ForceAuth        Success        Authorized
4      ForceAuth        Success        Authorized
5      ForceAuth        Success        Authorized

DGS-3200-10:4#
```

To display the 802.1x configurations:

```
DGS-3200-10:4# show 802.1x auth_configuration ports 1
Command: show 802.1x auth_configuration ports 1

802.1X                   : Enabled
Authentication Mode      : Port_based
Authentication Protocol : Radius_Eap

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

DGS-3200-10:4#
```

35-8 config 802.1x capability

Purpose

Used to configure the port capability.

Format

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

Description

The **config 802.1x capability** command configures the port capability.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be configured.
all	All ports.
authenticator	The port that wishes to enforce authentication before allowing access to services that are accessible via that Port adopts the authenticator role.
none	Allows the flow of PDUs via the Port.

Restrictions

You must have administrator privileges.

Examples

To configure the port capability:

```
DGS-3200-10:4#config 802.1x capability ports 1-10 authenticator
Command: config 802.1x capability ports 1-10 authenticator

Success.

DGS-3200-10:4#
```

35-9 config 802.1x auth_parameter

Purpose

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>|enable_reauth [enable|disable]}]

Description

The **config 802.1x auth_parameter** command configures the parameters that control the operation of the authenticator associated with a port.

Parameters

Parameters	Description	
portlist	Specifies a range of ports to be configured.	
all	All ports.	
default	Sets all parameter to be default value.	
direction	Sets the direction of access control .	
	both	For bidirectional access control.
	in	For unidirectional access control.
port_control	You can force a specific port to be unconditionally authorized or unauthorized by setting the the parameter of **port_control** to be **force_authorized** or **force_unauthorized**. Besides, the controlled port will reflect the outcome of authentication if **port_control** is **auto**.	
	force_authorized	
	auto	
	force_unauthorized	
quiet_period	It is the initialization value of the quietWhile timer. The default value is 60 s and can be any value from 0 to 65535.	
tx_period	It is the initialization value of the txWhen timer. The default value is 30 s and can be any value from 1 to 65535.	
supp_timeout	The initialization value of the aWhile timer when timing out the supplicant. Its default value is 30 s and can be any value from 1 to 65535.	
server_timeout	The initialization value of the aWhile timer when timing out the authentication server. Its default value is 30 and can be any value from 1 to 65535.	
max_req	The maximum number of times that the authenitcation PAE state machine will retransmit an EAP Request packet to the supplicant. Its default value is 2 and can be any number from 1 to 10.	
reauth_period	Its a nonzero number of seconds, which is used to be the re-authentication timer. The default value is 3600.	
enable_reauth	You can enable or disable the re-authentication mechanism for a specific port.	

Restrictions

You must have administrator privileges.

Examples

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

```
DGS-3200-10:4# config 802.1x auth_parameter ports 1:1-1:20 direction both
Command: config 802.1x auth_parameter ports 1:1-1:20 direction both

Success.

DGS-3200-10:4#
```

35-10 config 802.1x auth_mode

Purpose

Used to configure 802.1x authentication mode.

Format

config 802.1x auth_mode [port_based |mac_based]

Description

The **config 802.1x auth_mode** command configures the authentication mode.

Parameters

Parameters	Description
port_based	Configure the authentication as port-based mode.
mac_based	Configure the authentication as MAC-based mode.

Restrictions

You must have administrator privileges.

Examples

To configure the authentication mode.:

```
DGS-3200-10:4#config 802.1x auth_mode port_based
Command: config 802.1x auth_mode port_based

Success.

DGS-3200-10:4#
```

35-11 config 802.1x init

Purpose

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>}]

Description

The **config 802.1x init** command used to initialize the authentication state machine of some or all.

Parameters

Parameters	Description
port_based	Configure the authentication as port-based mode.
mac_based	Configure the authentication as MAC-based mode.
portlist	Specifies a range of ports to be configured.
all	All ports.
mac_address	MAC address of the client.

.

Restrictions

You must have administrator privileges.

Examples

To initialize the authentication state machine of some or all.:

```
DGS-3200-10:4# config 802.1x init port_based ports all
Command: config 802.1x init port_based ports all

Success.

DGS-3200-10:4#
```

35-12 config 802.1x reauth

Purpose

Used to reauthenticate the device connected with the port.

Format

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

Description

The **config 802.1x reauth** command reauthenticates the device connected with the port. During the reauthentication period, the port status remains authorized until failed reauthentication.

Parameters

Parameters	Description
port_based	Switch pass data based on its authenticated port.
mac_based	Switch pass data based on MAC address of authenticated RADIUS client.
portlist	Specifies a range of ports to be configured.
all	All ports.
mac_address	MAC address of authenticated RADIUS client.

.

Restrictions

You must have administrator privileges.

Examples

To reauthenticate the device connected with the port:

```
DGS-3200-10:4# config 802.1x reauth port_based ports all
Command: config 802.1x reauth port_based ports all

Success.

DGS-3200-10:4#
```

35-13 create 802.1x guest_vlan

Purpose

Used to assign a static VLAN to be a guest VLAN.

Format

create 802.1x guest_vlan {<vlan_name 32>}

Description

The **create 802.1x guest_vlan** command will assign a static VLAN to be a guest VLAN.

Parameter

Parameters	Description
vlan_name 32	Specify the static VLAN to be a guest VLAN.

Restrictions

You must have administrator privileges. The specific VLAN which is assigned to a guest VLAN must already exist. The specific VLAN which is assigned to the guest VLAN can't be deleted.

Example

```
DGS-3200-10:4# create 802.1x guest_vlan guestVLAN
Command: create 802.1x guest_vlan guestVLAN

Success.

DGS-3200-10:4#
```

35-14 delete 802.1x guest_vlan

Purpose

Used to delete a guest VLAN configuration.

Format

delete 802.1x guest_vlan {<vlan_name 32>}

Description

The **delete 802.1x guest_vlan** command will delete a guest VLAN setting, but not delete the static VLAN.

Parameter

Parameters	Description
vlan_name 32	The guest VLAN name.

Restrictions

You must have administrator privileges. All ports which are enabled as guest VLAN will return to the original VLAN after the guest VLAN is deleted.

Example

```
DGS-3200-10:4# delete 802.1x guest_vlan guestVLAN
Command: delete 802.1x guest_vlan guestVLAN

Success.

DGS-3200-10:4#
```

35-15 config 802.1x guest vlan

Purpose

Used to configure a guest VLAN setting.

Format

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

Description

The **config guest vlan** command will config a guest VLAN setting.

Parameter

Parameters	Description
ports	A range of ports to enable or disable the guest VLAN function
state	Specify the guest VLAN port state of the configured ports. **enable**: join to the guest VLAN. **disable**: remove from guest VLAN.

Restrictions

You must have administrator privileges. If the specific port state is changed from the enabled state to the disabled state, this port will move to its original VLAN.

Example

```
DGS-3200-10:4# config 802.1x guest_vlan ports 1-8 state enable
Command: config 802.1x guest_vlan ports 1-8 state enable

Warning! GVRP of the ports were disable !

Success.

DGS-3200-10:4#
```

35-16 show 802.1x guest vlan

Purpose

Used to show the guest VLAN setting.

Format

show 802.1x guest _vlan

Description

The **show guest vlan** command allows you to show the information of a guest VLAN.

Parameter

None.

Restrictions

None.

Example

```
DGS-3200-10:4#show 802.1x guest_vlan
Command: show 802.1x guest_vlan

Guest Vlan Setting
------------------------------------------------------------
Guest vlan : guest
Enable guest vlan ports : 1-10

DGS-3200-10:4#
```

35-17 config radius add

Purpose

Used to add a new RADIUS server. The server with a lower index has higher authenticative priority.

Format

config radius add <server_index 1-3> [<server_ip>|<ipv6addr>] key <passwd 32> [default | { auth_port<udp_port_number 1-65535> | acct_port <udp_port_number 1-65535>| timeout <int 1-255> | retransmit <int 1-255>}]

Description

The **config radius add** command adds a new RADIUS server.

Parameters

Parameters	Description
server_index	The RADIUS server index.
server_ip	The IP address of the RADIUS server.
ipv6addr	The IPv6 address of the RADIUS server.
key	The key pre-negotiated between switch and the RADIUS server. It is

	used to encrypt user's authentication data before being transmitted over the Internet. The maximum length of the key is 32.
default	Sets the **auth_port** to be 1812 and **acct_port** to be 1813.
auth_port	Specifies 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.
acct_port	Specifies 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.
timeout <int 1-255>	The time in second for waiting server reply. The default value is 5 seconds.
retransmit <int 1-255>	The count for re-transmit. The default value is 2.

Restrictions

You must have administrator privileges.

Examples

To add a new RADIUS server:

```
DGS-3200-10:4#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-3200-10:4#
```

35-18 config radius delete

Purpose

Used to delete a RADIUS server.

Format

config radius delete <server_index 1-3>

Description

The **config radius delete** command deletes a RADIUS server.

Parameters

Parameters	Description
server_index	The RADIUS server index. The range is 1 to 3.

Restrictions

You must have administrator privileges.

Examples

To delete a RADIUS server:

```
DGS-3200-10:4#config radius delete 1
Command: config radius delete 1

Success.

DGS-3200-10:4#
```

35-19 config radius

Purpose

Used to configure a RADIUS server.

Format

config radius <server_index 1-3> {ipaddress [**<server_ip> | <ipv6addr>**] **|key <passwd 32> | auth_port <udp_port_number 1-65535> | acct_port <udp_port_number 1-65535>| timeout <int 1-255> | retransmit <int 1-255>}**

Description

The **config radius** command configures a RADIUS server.

Parameters

Parameters	Description
server_index	The RADIUS server index.
server_ip	The IP address of the RADIUS server.
ipv6addr	The IPv6 address.
key	The IPv6 address of the RADIUS server.
passwd	The key pre-negotiated between the switch and the RADIUS server. It is used to encrypt user's authentication data before being transmitted over the Internet. The maximum length of the key is 32.
auth_port	Specifies the UDP port number which is used to transmit RADIUS authentication data between the switch and the RADIUS server.
acct_port	Specifies the UDP port number which is used to transmit RADIUS accounting statistics between the switch and the RADIUS server.
timeout <int 1-255>	The time in second for waiting server reply. The default value is 5 seconds.
retransmit <int 1-255>	The count for re-transmit. The default value is 2.

Restrictions

You must have administrator privileges.

Examples

To configure a RADIUS server:

```
DGS-3200-10:4#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-3200-10:4#
```

35-20 show radius

Purpose

Used to display RADIUS server configurations.

Format

show radius

Description

The **show radius** command displays RADIUS server configurations.

Parameters

None.

Restrictions

None.

Examples

To display RADIUS server configurations:

```
DGS-3200-10:4# show radius
Command: show radius

Index 1
   IP Address     : fe80:fec0:56ab:34b0:20b2:6aff:fecf:7ec6
   Auth-Port      : 1812
   Acct-Port      : 1813
   Timeout        : 5
```

```
   Retransmit     : 2
   Key            : adfdslkfjefiefdkgjdassdwtgjk6y1w

 Index 2
   IP Address     : 172.18.211.71
   Auth-Port      : 1812
   Acct-Port      : 1813
   Timeout        : 5
Retransmit     : 2
   Key            : 1234567

 Index 3
   IP Address     : 172.18.211.108
   Auth-Port      : 1812
   Acct-Port      : 1813
   Timeout        : 5
   Retransmit     : 2
   Key            : adfdslkfjefiefdkgjdassdwtgjk6y1w


 DGS-3200-10:4#
```

35-21 show auth_statistics

Purpose

Used to display authenticator statistics information

Format

show auth_statistics {ports <portlist>}

Description

The **show auth_statistics** command displays authenticator statistics information

Parameters

Parameters	Description
portlist	Specifies a range of ports to be configured.

Restrictions

None.

Examples

To display authenticator statistics information from port 1

```
DGS-3200-10:4#show auth_statistics ports 1
Command: show auth_statistics ports 1

Port number : 1

EapolFramesRx                          0
EapolFramesTx                          6
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

DGS-3200-10:4#
```

35-22 show auth_diagnostics

Purpose

Used to display authenticator diagnostics information

Format

show auth_ diagnostics {ports <auth_portlist>}

Description

The **show auth_ diagnostics** command displays authenticator diagnostics information

Parameters

Parameters	Description
auth_portlist	Specifies a range of ports to be configured.

Restrictions

None.

Examples

To display authenticator diagnostics information from port 1

```
DGS-3200-10:4# show auth_diagnostics ports 1
Command: show auth_diagnostics ports 1

Port number : 1

EntersConnecting                        20
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

DGS-3200-10:4#
```

35-23 show auth_session_statistics

Purpose

Used to display authenticator session statistics information

Format

show auth_session_statistics {ports <auth_portlist>}

Description

The **show auth_session_statistics** command displays authenticator session statistics information

Parameters

Parameters	Description
auth_portlist	Specifies a range of ports to be configured.

Restrictions

None.

Examples

To display authenticator session statistics information from port 1

```
DGS-3200-10:4#show auth_session_statistics ports 1
Command: show auth_session_statistics ports 1

Port number : 1

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

DGS-3200-10:4#
```

35-24 show auth_client

Purpose

Used to display authentication client information.

Format

show auth_client

Description

The **show auth_client** command displays authentication client information.

Parameters

None

Restrictions

None

Examples

To display authentication client information:

```
DGS-3200-10:4# show auth_client
Command: show auth_client

radiusAuthClient ==>
radiusAuthClientInvalidServerAddresses   0
radiusAuthClientIdentifier               D-Link


radiusAuthServerEntry ==>
radiusAuthServerIndex :1

radiusAuthServerAddress                  0.0.0.0
radiusAuthClientServerPortNumber         X
radiusAuthClientRoundTripTime            0
radiusAuthClientAccessRequests           0
radiusAuthClientAccessRetransmissions    0
radiusAuthClientAccessAccepts            0
radiusAuthClientAccessRejects            0
radiusAuthClientAccessChallenges         0
radiusAuthClientMalformedAccessResponses 0
radiusAuthClientBadAuthenticators        0
radiusAuthClientPendingRequests          0
radiusAuthClientTimeouts                 0
radiusAuthClientUnknownTypes             0
radiusAuthClientPacketsDropped           0

radiusAuthClient ==>
radiusAuthClientInvalidServerAddresses   0
radiusAuthClientIdentifier               D-Link


radiusAuthServerEntry ==>
```

```
radiusAuthServerIndex :2

radiusAuthServerAddress                   0.0.0.0
radiusAuthClientServerPortNumber          X
radiusAuthClientRoundTripTime             0
radiusAuthClientAccessRequests            0
radiusAuthClientAccessRetransmissions     0
radiusAuthClientAccessAccepts             0
radiusAuthClientAccessRejects             0
radiusAuthClientAccessChallenges          0
radiusAuthClientMalformedAccessResponses  0
radiusAuthClientBadAuthenticators         0
radiusAuthClientPendingRequests           0
radiusAuthClientTimeouts                  0
radiusAuthClientUnknownTypes              0
radiusAuthClientPacketsDropped            0

radiusAuthClient ==>
radiusAuthClientInvalidServerAddresses    0
radiusAuthClientIdentifier                D-Link


radiusAuthServerEntry ==>
radiusAuthServerIndex :3

radiusAuthServerAddress                   0.0.0.0
radiusAuthClientServerPortNumber          X
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-3200-10:4#
```

35-25 show acct_client

Purpose

Used to display account client information.

Format

show acct_client

Description

The **show acct_client** command displays account client information

Parameters

None.

Restrictions

None.

Examples

To display account client information:

```
DGS-3200-10:4# show acct_client
Command: show acct_client

radiusAcctClient ==>
radiusAcctClientInvalidServerAddresses   0
radiusAcctClientIdentifier               D-Link



radiusAuthServerEntry ==>
radiusAccServerIndex : 1

radiusAccServerAddress                   0.0.0.0
radiusAccClientServerPortNumber          X
radiusAccClientRoundTripTime             0
radiusAccClientRequests                  0
radiusAccClientRetransmissions           0
radiusAccClientResponses                 0
```

```
radiusAccClientMalformedResponses         0
radiusAccClientBadAuthenticators          0
radiusAccClientPendingRequests            0
radiusAccClientTimeouts                   0
radiusAccClientUnknownTypes               0
radiusAccClientPacketsDropped             0

radiusAcctClient ==>
radiusAcctClientInvalidServerAddresses    0
radiusAcctClientIdentifier                D-Link


radiusAuthServerEntry ==>
radiusAccServerIndex : 2

radiusAccServerAddress                    0.0.0.0
radiusAccClientServerPortNumber           X
radiusAccClientRoundTripTime              0
radiusAccClientRequests                   0
radiusAccClientRetransmissions            0
radiusAccClientResponses                  0
radiusAccClientMalformedResponses         0
radiusAccClientBadAuthenticators          0
radiusAccClientPendingRequests            0
radiusAccClientTimeouts                   0
radiusAccClientUnknownTypes               0
radiusAccClientPacketsDropped             0

radiusAcctClient ==>
radiusAcctClientInvalidServerAddresses    0
radiusAcctClientIdentifier                D-Link


radiusAuthServerEntry ==>
radiusAccServerIndex : 3

radiusAccServerAddress                    0.0.0.0
radiusAccClientServerPortNumber           X
```

```
radiusAccClientRoundTripTime              0
radiusAccClientRequests                   0
radiusAccClientRetransmissions            0
radiusAccClientResponses                  0
radiusAccClientMalformedResponses         0
radiusAccClientBadAuthenticators          0
radiusAccClientPendingRequests            0
radiusAccClientTimeouts                   0
radiusAccClientUnknownTypes               0
radiusAccClientPacketsDropped             0


DGS-3200-10:4#
```

36 Access Authentication Control Command List

enable authen_policy
disable authen_policy
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> protocol [tacacs | xtacacs | tacacs+ | radius]**
delete authen server_group <string 15>
show authen server_group {<string 15>}
create authen server_host <ipaddr> protocol [tacacs | xtacacs | tacacs+ | radius] **{ port <int 1-65535> |** **key [<key_string 254> | none] |** **timeout <int 1-255> |** **retransmit <int 1-255> }**
config authen server_host <ipaddr> protocol [tacacs | xtacacs | tacacs+ | radius] **{ port <int 1-65535> |** **key [<key_string 254> | none] |** **timeout <int 1-255> |** **retransmit <int 1-255> }**
delete authen server_host <ipaddr> 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 <password 0-15>

36-1 enable authen_policy

Purpose

Used to enable system access authentication policy.

Format

enable authen_policy

Description

Enables 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 mothod list to authenticate the enable password for promoting the user ‘s privilege to Admin level.

Parameters

None

Restrictions

You must have administrator privilege.

Examples

To enable system access authentication policy:

```
DGS-3200-10:4#enable authen_policy
Command: enable authen_policy

Success.

DGS-3200-10:4#
```

36-2 disable authen_policy

Purpose

Used to disable system access authentication policy.

Format

disable authen_policy

Description

Disables 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.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

To disable system access authentication policy:

```
DGS-3200-10:4#disable authen_policy
Command: disable authen_policy

Success.

DGS-3200-10:4#
```

36-3 show authen_policy

Purpose

Used to display whether system access authentication policy is enabled or disabled.

Format

disable authen_policy

Description

Displays whether system access authentication policy is enabled or disabled.

Parameters

None.

Restrictions

None.

Examples

To display system access authentication policy:

```
DGS-3200-10:4#show authen_policy
Command: show authen_policy

Authentication Policy : Enabled

DGS-3200-10:4#
```

36-4 create authen_login method_list_name

Purpose

Used to create a user-defined method list of authentication methods for user login.

Format

create authen_login method_list_name <string 15>

Description

Create a user-defined method list of authentication methods for user login. The maximum supported number of the login method lists is eight.

Parameters

Parameters	Description
string 15	The user-defined method list name.

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#create authen_login method_list_name login_list_1
Command: create authen_login method_list_name login_list_1

Success.

DGS-3200-10:4#
```

36-5 config authen_login

Purpose

Used to configure a user-defined or default method list of authentication methods for user login.

Format

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

Description

Configure a user-defined or default method list of authentication methods for user login. The sequence of methods will effect the authentication result. For example, if the sequence is TACACS+ first, then TACACS and local, when a user trys to login, the authentication request will be sent to the first server host in the TACACS+ built-in server group. If the first server host in the TACACS+ group is missing, the authentication request will be sent to the second server host in the TACACS+ group, and so on. If all server hosts in the TACACS+ group are missing, the authentication request will be sent to the first server host in the TACACS group. If all server hosts in a TACACS group are missing, the local account database in the device is used to authenticate this user. When a user logs in to 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 a user wants to get admin privilege level, the user must use the “enable admin” command to promote his privilege level. But when the local method is used, the privilege level will depend on this account privilege level stored in the local device.

Parameters

Parameters	Description
default	The default method list of authentication methods.
method_list_name <string 15>	The user-defined method list of authentication methods.
tacacs	Authentication by the built-in server group “**tacacs**”.
xtacacs	Authentication by the built-in server group “**xtacacs**”.
tacacs+	Authentication by the built-in server group “**tacacs+**”.
radius	Authentication by the built-in server group “**radius**”.
server_group <string 15>	Authentication by the user-defined server group.
local	Authentication by local user accout database in device.
none	No authentication.

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#config authen_login method_list_name login_list_1 method tacacs+
tac
acs local
Command: config authen_login method_list_name login_list_1 method tacacs+ tacac
s local

Success.

DGS-3200-10:4#
```

36-6 delete authen_login method_list_name

Purpose

Used to delete a user-defined method list of authentication methods for user login.

Format

delete authen_login method_list_name <string 15>

Description

Delete a user-defined method list of authentication methods for user login.

Parameters

Parameters	Description
string 15	The user-defined method list name.

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#delete authen_login method_list_name login_list_1
Command: delete authen_login method_list_name login_list_1

Success.

DGS-3200-10:4#
```

36-7 show authen_login

Purpose

Used to display the method list of authentication methods for user login.

Format

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

Description

Display the method list of authentication methods for user login.

Parameters

Parameters	Description
default	Display default user-defined method list for user login.
method_list_name <string 15>	Display the specific user-defined method list for user login.
all	Display all method lists for user login.

Restrictions

None.

Examples

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

```
DGS-3200-10:4#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-3200-10:4#
```

36-8 create authen_enable method_list_name

Purpose

Used to create a user-defined method list of authentication methods for promoting a user's privilege to

Admin level.

Format

create authen_enable method_list_name <string 15>

Description

Create a user-defined method list of authentication methods for promoting a user's privilege to Admin level. The maximum supported number of the enable method lists is eight.

Parameters

Parameters	Description
string 15	The user-defined method list name.

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#create authen_enable method_list_name enable_list_1
Command: create authen_enable method_list_name enable_list_1

Success.

DGS-3200-10:4#
```

36-9 config authen_enable

Purpose

Used to configure a user-defined or default method list of authentication methods for promoting a user's privilege to Admin level.

Format

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

Description

Configure a user-defined or default method list of authentication methods for promoting a user's privilege to Admin level. The sequence of methods will effect the authencation result. For example, if the sequence is TACACS+ first, then TACACS and local_enable, when a user trys to login, the authentication request will

be sent to the first server host in the TACACS+ built-in server group. If the first server host in the TACACS+ group is missing, the authentication request will be sent to the second server host in the TACACS+ group, and so on. If all server hosts in the TACACS+ group are missing, the authentication request will be sent to the first server host in the TACACS group. If all server hosts in the TACACS group are missing, the local enable password in the device is used to authenticate this user's password. The local enable password in the device can be configured by the CLI command "config admin local_password".

Parameters

Parameters	Description
default	The default method list of authentication methods.
method_list_name <string 15>	The user-defined method list of authentication methods.
tacacs	Authentication by the built-in server group "**tacacs**".
xtacacs	Authentication by the built-in server group "**xtacacs**".
tacacs+	Authentication by the built-in server group "**tacacs+**".
radius	Authentication by the built-in server group "**radius**".
server_group <string 15>	Authentication by the user-defined server group.
local_enable	Authentication by local enable password in device.
none	No authentication.

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#config authen_enable method_list_name enable_list_1 method tacacs+
tac
acs local_enable
Command: config authen_ enable method_list_name enable_list_1 method tacacs+ tacac
s local_enable

Success.

DGS-3200-10:4#
```

36-10 delete authen_enable method_list_name

Purpose

Used to delete a user-defined method list of authentication methods for promoting a user's privilege to Admin level.

Format

delete authen_enable method_list_name <string 15>

Description

Delete a user-defined method list of authentication methods for promoting a user's privilege to Admin level.

Parameters

Parameters	Description
string 15	The user-defined method list name

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#delete authen_enable method_list_name enable_list_1
Command: delete authen_enable method_list_name enable_list_1

Success.

DGS-3200-10:4#
```

36-11 show authen_enable

Purpose

Used to display the method list of authentication methods for promoting a user's privilege to Admin level.

Format

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

Description

Display the method list of authentication methods for promoting a user's privilege to Admin level.

Parameters

Parameters	Description
default	Display default user-defined method list for promoting a user's privilege to Admin level.
method_list_name <string 15>	Display the specific user-defined method list for a promoting user's privilege to Admin level.
all	Display all method lists for promoting a user's privilege to Admin level.

Restrictions

None.

Examples

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

```
DGS-3200-10:4#show authen_enable all
Command: show authen_enable all

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            Keyword

enable_list_2     1         tacacs+          Built-in Group
                  2         radius           Built-in Group

Total Entries : 2

DGS-3200-10:4#
```

36-12 config authen application

Purpose

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>]

Description

Configure login or enable method list for all or the specified application.

Parameters

Parameters	Description
console	Application: console.
telnet	An application: Telnet.
ssh	An application: SSH.
http	An application: web.
all	Applications: **console**, **telnet**, **SSH**, and **web**.
login	Select the method list of authentication methods for user login.
enable	Select the method list of authentication methods for promoting user's privilege to Admin level.
default	The default method list.
method_list_name <string 15>	The user-defined method list name.

Restrictions

You must have administrator privilege.

Examples

To configure the login method list for Telnet:

```
DGS-3200-10:4#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-3200-10:4#
```

36-13 show authen application

Purpose

Used to display the login/enable method list for all applications.

Format

show authen application

Description

Display the login/enable method list for all applications.

Parameters

None.

Restrictions

None.

Examples

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

```
DGS-3200-10:4#show authen application
Command: show authen application

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

DGS-3200-10:4#
```

36-14 create authen server_group

Purpose

Used to create a user-defined authentication server group.

Format

create authen server_group <string 15>

Description

Create a user-defined authentication server group. The maximum supported number of server groups including built-in server groups is eight. Each group consists of eight server hosts as maximum.

Parameters

Parameters	Description
string 15	The user-defined server group name.

Restrictions

You must have administrator privilege.

Examples

To create a user-defined authentication server group.

```
DGS-3200-10:4#create authen server_group mix_1
Command: create authen server_group mix_1

Success.

DGS-3200-10:4#
```

36-15 config authen server_group

Purpose

Used to add or remove an authentication server host to or from the specified server group.

Format

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

Description

Add or remove an authentication server host to or from the specified server group. Built-in server group "**tacacs**", "**xtacacs**", "**tacacs+**", and "**radius**" accept the server host with the same protocol only, but user-defined server group can accept server hosts with different protocols. The server host must be created first by using the CLI command "**create authen server_host**".

Parameters

Parameters	Description
server_group tacacs	The built-in server group "**tacacs**".
server_group xtacacs	The built-in server group "**xtacacs**".
server_group tacacs+	The built-in server group "**tacacs+**".
server_group radius	The built-in server group "**radius**".
server_group <string 15>	A user-defined server group.
add	Add a server host to a server group.
delete	Remove a server host from a server group.
server_host <ipaddr>	The server host's IP address.
protocol tacacs	The server host's authentication protocol.

protocol xtacacs	The server host's authentication protocol.
protocol tacacs+	The server host's authentication protocol.
protocol radius	The server host's authentication protocol.

Restrictions

You must have administrator privilege.

Examples

To add an authentication server host to a server group:

```
DGS-3200-10:4#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 ta
cacs+

Success.

DGS-3200-10:4#
```

36-16 delete authen server_group

Purpose

Used to delete a user-defined authentication server group.

Format

delete authen server_group <string 15>

Description

Delete a user-defined authentication server group.

Parameters

Parameters	Description
string 15	The user-defined server group name.

Restrictions

You must have administrator privilege.

Examples

To delete a user-defined authentication server group:

```
DGS-3200-10:4#delete authen server_group mix_1
Command: delete authen server_group mix_1

Success.

DGS-3200-10:4#
```

36-17 show authen server_group

Purpose

Used to display the authentication server groups.

Format

show authen server_group {<string 15>}

Description

Display the authentication server groups.

Parameters

Parameters	Description
<string 15>	The built-in or user-defined server group name.

Restrictions

None.

Examples

To display all authentication server groups:

```
DGS-3200-10:4#show authen server_group
Command: show authen server_group

Server Group : mix_1

Group Name       IP Address       Protocol
---------------  ---------------  --------
mix_1            10.1.1.222       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-3200-10:4#
```

36-18 create authen server_host

Purpose

Used to create an authentication server host.

Format

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

Description

Create an authentication server host. When an authentication server host is created, the IP address and protocol are the index. That means more than one authentication protocol service can be run on the same physical host. The maximum supported number of server hosts is 16.

Parameters

Parameters	Description	
server_host <ipaddr>	The server host's IP address.	
protocol tacacs	The server host's authentication protocol.	
protocol xtacacs	The server host's authentication protocol.	
protocol tacacs+	The server host's authentication protocol.	
protocol radius	The server host's authentication protocol.	
port <int 1-65535>	The port number of the authentication protocol for the server host. The default value for TACACS/XTACACS/TACACS+ is 49. The default value for RADIUS is 1812.	
key	**<key_string 254>**	The key for TACACS+ and RADIUS authenticaiton. If the value is null, no encryption will apply. This value is meaningless for TACACS and XTACACS.
	none	No encryption for TACACS+ and RADIUS authenticaiton. This value is meaningless for TACACS and XTACACS.
timeout <int 1-255>	The time in seconds for waiting for a server reply. Default value is 5 seconds.	
retransmit <int 1-255>	The count for re-transmit. This value is meaningless for TACACS+. Default value is 2.	

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#create authen server_host 10.1.1.222 protocol tacacs+ port 15555 time
out 10
Command: create authen server_host 10.1.1.222 protocol tacacs+ port 15555 timeou
t 10

Success.

DGS-3200-10:4#
```

36-19 config authen server_host

Purpose

Used to configure an authentication server host.

Format

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

Description

Configure an authentication server host.

Parameters

Parameters	Description
server_host <ipaddr>	The server host's IP address.
protocol tacacs	The server host's authentication protocol.
protocol xtacacs	The server host's authentication protocol.
protocol tacacs+	The server host's authentication protocol.
protocol radius	The server host's authentication protocol.
port <int 1-65535>	The port number of the authentication protocol for the server host. The default value for TACACS/XTACACS/TACACS+ is 49. The default value for RADIUS is 1812.

key	**<key_string 254>**	The key for TACACS+ and RADIUS authenticaiton. If the value is null, no encryption will apply. This value is meaningless for TACACS and XTACACS.
	none	No encryption for TACACS+ and RADIUS authenticaiton. This value is meaningless for TACACS and XTACACS.
timeout <int 1-255>	The time in seconds for waiting for a server reply. The default value is 5 seconds.	
retransmit <int 1-255>	The count for re-transmit. This value is meaningless for TACACS+. The default value is 2.	

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#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 se
cret"

Success.

DGS-3200-10:4#
```

36-20 delete authen server_host

Purpose

Used to delete an authentication server host.

Format

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

Description

Delete an authentication server host.

Parameters

Parameters	Description
server_host <ipaddr>	The server host's IP address.
protocol tacacs	The server host's authentication protocol.
protocol xtacacs	The server host's authentication protocol.
protocol tacacs+	The server host's authentication protocol.
protocol radius	The server host's authentication protocol.

Restrictions

You must have administrator privilege.

Examples

To delete an authentication server host:

```
DGS-3200-10:4#delete authen server_host 10.1.1.222 protocol tacacs+
Command: delete authen server_host 10.1.1.222 protocol tacacs+

Success.

DGS-3200-10:4#
```

36-21 show authen server_host

Purpose

Used to display the authentication server hosts.

Format

show authen server_host

Description

Display the authentication server hosts.

Parameters

None

Restrictions

None

Examples

To display all authentication server hosts:

```
DGS-3200-10:4#show authen server_host
Command: show authen server_host

SRV IP Address   Protocol  Port   Timeout  Retransmit  Key
---------------  --------  -----  -------  ----------  -------------------------
10.1.1.222       TACACS+   15555  10       No Use      This is a secret

Total Entries : 1

DGS-3200-10:4#
```

36-22 config authen parameter response_timeout

Purpose

Used to configure the amount of time waiting or for user input on console, Telnet, and SSH applications.

Format

config authen parameter response_timeout <int 0-255>

Description

Configure the amount of time waiting or for user input on console, Telnet, and SSH applications.

Parameters

Parameters	Description
<int 0-255>	The amount of time for user input on console or Telnet or SSH. 0 means there is no time out. The default value is 30 seconds.

Restrictions

You must have administrator privilege.

Examples

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

```
DGS-3200-10:4#config authen parameter response_timeout 60
Command: config authen parameter response_timeout 60

Success.

DGS-3200-10:4#
```

36-23 config authen parameter attempt

Purpose

Used to configure the maximum attempts for users trying to login or promote the privilege on console, Telnet, or SSH applications.

Format

config authen parameter attempt <int 1-255>

Description

Used to configure the maximum attempts for users trying to login or promote the privilege on console, Telnet, or SSH applications. If the failure value is exceeded, connection or access will be locked.

Parameters

Parameters	Description
<int 1-255>	The amount of attempts for users trying to login or promote the privilege on console, Telnet, or SSH. The default value is 3.

Restrictions

You must have administrator privilege.

Examples

To configure the maximum attempts for users trying to login or promote the privilege to be 9:

```
DGS-3200-10:4#config authen parameter attempt 9
Command: config authen parameter attempt 9

Success.

DGS-3200-10:4#
```

36-24 show authen parameter

Purpose

Used to display the parameters of authentication.

Format

show authen parameter

Description

Display the parameters of authentication.

Parameters

None.

Restrictions

None.

Examples

To display the parameters of authentication:

```
DGS-3200-10:4# show authen parameter
Command: show authen parameter

Response timeout : 60 seconds
User attempts    : 9

DGS-3200-10:4#
```

36-25 enable admin

Purpose

Used to open the administrator level privilege

Format

enable admin

Description

Promote the "user" privilege level to "admin" level. When the user enters this command, the authentication method TACACS, XTACAS, TACACS+, user-defined server groups, local enable, or none will be used to authenticate the user. Because TACACS, XTACACS and RADIUS don't support the "**enable**" function by themselves, if a user wants to use either one of these three protocols to enable authentication, the 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 the "enable" function.This command can not be used when authentication policy is disabled.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

To enable administrator lever privilege:

```
DGS-3200-10:3#enable admin
Password:********
DGS-3200-10:4#
```

36-26 config admin local_enable

Purpose

Used to configure the local enable password for the administrator level privilege.

Format

config admin local_enable <password 0-15>

Description

Configure the local enable password for the enable command. When the user chooses the "**local_enable**" method to promote the privilege level, the enable password of the local device is needed.

Parameters

Parameters	Description
password 0-15	The specific password.

Restrictions

You must have administrator privilege.

Examples

To configure the administrator password:

```
DGS-3200-10:4#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-3200-10:4#
```

37 SSL Command List

show ssl certificate
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
show ssl cachetimout
config ssl cachetimout <value 60-86400>

37-1 show ssl certificate

Purpose

To show the certificate status.

Format

show ssl certificate

Description

User must download specified certificate type according to desired key exchange algorithm. The options are no certificate, RSA type or DSA type certificate

Parameters

None.

Restrictions

None.

Examples

To show certificate:

```
DGS-3200-10:4#show ssl certificate
Command: show ssl certificate

Loaded with RSA Certificate!

DGS-3200-10:4#
```

37-2 download ssl certificate

Purpose

Download certificate to device according to certificate level.

Format

download ssl certificate <ipaddr> certfilename <path_filename 64> keyfilename <path_filename 64>

Description

User can download specified certificate to device according to the desired key exchange algorithm. For RSA key exchange, a user must download an RSA type certificate and for DHS_DSS must use the DSA certificate for key exchange.

Parameters

Parameters	Description
ipaddr	Input the TFTP server IP address.
certfilename	The desired certificate file name.
path_filename	Certificate file path in respect to the TFTP server root path. Input characters with a maximum of 64 octets.
keyfilename	The private key file name which accompanies the certificate.
path_filename	Private key file path in respect to the TFTP server root path. Input characters with a maximum of 64 octets.

Restrictions

You must have administrator privilege.

Examples

To download a certificate from a TFTP server:

```
DGS-3200-10:4# 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

Success.

DGS-3200-10:4#
```

37-3 enable ssl

Purpose

Used to enable the SSL feature and ciphersuites.

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 } }

Description

This command enables the SSL status and its individual ciphersuites. Using the "**enable ssl**" command will enable the SSL feature, which means SSLv3 and TLSv1. Each ciphersuite must be enabled by this command.

Parameters

Parameters	Description
ciphersuite	For configuring a cipher suite combination.
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.
NULL	Enable the SSL feature.

Restrictions

You must have administrator privilege.

Examples

To enable the SSL ciphersuite for RSA_with_RC4_128_MD5:

```
DGS-3200-10:4# enable ssl ciphersuite RSA_with_RC4_128_MD5
Command: enable ssl ciphersuite RSA_with_RC4_128_MD5

Success.

DGS-3200-10:4#
```

To enable SSL:

```
DGS-3200-10:4# enable ssl
Command: enable ssl

Success.

DGS-3200-10:4#
```

37-4 disable ssl

Purpose

Used to disable SSL feature and 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 } }

Description

This command disables the SSL feature and supported ciphercuites. Using the "**disable ssl**" command will disable the SSL feature and each individual ciphersuite.

Parameters

Parameters	Description
ciphersuite	For configuring cipher suite combination.
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.
NULL	Disables the SSL feature.

Restrictions

You must have administrator privilege.

Examples

To disable the SSL ciphersuite for RSA_with_RC4_128_MD5:

```
DGS-3200-10:4# disable ssl ciphersuite RSA_with_RC4_128_MD5
Command: disable ssl ciphersuite RSA_with_RC4_128_MD5

Success.

DGS-3200-10:4#
```

To disable the SSL feature:

```
DGS-3200-10:4# disable ssl
Command: disable ssl

Success.

DGS-3200-10:4#
```

37-5 show ssl

Purpose

Used to show SSL environment variables and ciphersuites status.

Format

show ssl

Description

This command will show the current SSL status and supported ciphersuites.

Parameters

None.

Restrictions

None.

Examples

To show SSL:

```
DGS-3200-10:4# show ssl
Commands: show ssl

SSL Status                                      Disabled
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-3200-10:4#
```

37-6 show ssl cachetimeout

Purpose

Used to show the SSL cache timeout value.

Format

show ssl cachetimeout

Description

This command will show the cache timeout value which is designed for a dlktimer library to remove the session ID after it has expired. In order to support the resume session feature, the SSL library keeps the session ID on the web server and invokes the dlktimer library to remove this session ID by the cache timeout value.

Parameters

None.

Restrictions

None.

Examples

To show the SSL cache timeout:

```
DGS-3200-10:4# show ssl cachetimeout
Commands: show ssl cachetimeout

Cache timeout is 600 second(s)

DGS-3200-10:4#
```

37-7 config ssl cachetimeout

Purpose

Used to configure the SSL cache timeout value. This value is between 1 minute and 24 hours.

Format

config ssl cachetimout <value 60-86400>

Description

This command will configure the cache timeout value which is designed for the dlktimer library to remove the session ID after expiration. In order to support the resume session feature, the SSL library keeps the session ID on theweb server, and invokes the dlktimer library to remove this session ID by the cache timeout value. The unit of argument's value is second and its boundary is between 60 (1 minute) and 86400 (24 hours). The default value is 600 seconds.

Parameters

Parameters	Description
cachetimout	The SSL cache timeout value attributes.

Restrictions

None.

Examples

To configure an SSL cache timeout value of 60:

```
DGS-3200-10:4# config ssl cachetimeout 60
Commands: config ssl cachetimeout 60

Success.
DGS-3200-10:4#
```

38 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> authmode [publickey | password | hostbased [hostname <domain_name 32> |hostname_ip <domain_name 32> <ipaddr>]]
show ssh user authmode
config ssh server {maxsession <int 1-8> | contimeout <sec 120-600> | authfail <int 2-20> | rekey [10min |30min |60min |never] }
enable ssh
disable ssh
show ssh server

38-1 config ssh algorithm

Purpose

Used to configure the SSH server algorithm.

Format

config ssh algorithm [3DES|AES128|AES192|AES256|arcfour|blowfish|cast128|twofish128| twofish192|twofish256|MD5|SHA1|RSA|DSS] [enable|disable]

Description

The **config ssh algorithm** command configures the SSH service algorithm.

Parameters

Parameters	Description
3DES	An SSH server encryption algorithm.
blowfish	An SSH server encryption algorithm.
AES(128,192,256)	An SSH server encryption algorithm.
arcfour	An SSH server encryption algorithm.
cast128	An SSH server encryption algorithm.
twofish(128,192,256)	An SSH server encryption algorithm.
MD5	An SSH server data integrality algorithm.
SHA1	An SSH server data integrality algorithm.

DSS	An SSH server public key algorithm.
RSA	An SSH server public key algorithm.
enable	Used to enable the algorithm.
disable	Used to disable the alogirthm.

Restrictions

You must have administrator privileges.

Examples

To enable an SSH server public key algorithm:

```
DGS-3200-10:4#config ssh algorithm DSA enable RSA enable
Command: config ssh algorithm DSA enable RSA enable

Success.

DGS-3200-10:4#
```

38-2 show ssh algorithm

Purpose

Used to show the SSH server algorithms.

Format

show ssh algorithm

Description

The **show ssh algorithm** command displays the SSH service algorithms.

Parameters

None.

Restrictions

None.

Examples

To show the SSH server algorithms:

```
DGS-3200-10:4#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-3200-10:4#
```

38-3 config ssh authmode

Purpose

Used to update user authentication for SSH configuration

Format

config ssh authmode [password|publickey|hostbased][enable|disable]

Description

The **config ssh user** command updates the SSH user information.

Parameters

Parameters	Description
password	Specifies user authentication method.
publickey	Specifies user authentication method.
hostbased	Specifies user authentication method.
enable	Enable user authentication method.
disable	Disable user authentication method.

Restrictions

You must have administrator privilege.

Examples

To config the SSH user authentication method:

```
DGS-3200-10:4#config ssh authmode publickey enable
Command: config ssh authmode publickey enable

Success.

DGS-3200-10:4#
```

38-4 show ssh authmode

Purpose

Used to show user authentication method

Format

show ssh authmode

Description

The **show ssh authmode** command displays the user authentication method.

Parameters

None.

Restrictions

None.

Examples

To show the SSH user authentication method:

```
DGS-3200-10:4#show ssh authmode
Command: show ssh authmode

The SSH Authmode
-----------------------------------------------------------
Password  : Enabled
Publickey : Enabled
Hostbased : Enabled

DGS-3200-10:4#
```

38-5 config ssh user

Purpose

Used to update user information for ssh configuration.

Format

config ssh user <username> authmode [publickey | password | hostbased [hostname <domain_name 32> | hostname_ip <domain_name 32> <ipaddr>]]

Description

The **config ssh user** command update the ssh user information

Parameters

Parameters	Description
username	The user name.
publickey	Specifies user authentication method.
password	Specifies user authentication method.
hostbased	Specifies user authentication method.
hostname	Specifies host domain name.
hostname_ip	Specifies host domain name and IP address.
domain_name	Specifies host name if configuration is in host-based mode.
ipaddr	Specifies host IP address if configuring host-based mode.

Restrictions

You must have administrator privilege.

Note: The user account must be created.

Examples

To update user “test” authmode:

```
DGS-3200-10:4#config ssh user test publickey
Command: config ssh user test publickey

Success.

DGS-3200-10:4#
```

38-6 show ssh user authmode

Purpose

Used to show SSH user information.

Format

show ssh user authmode

Description

The **show ssh user authmode** command displays SSH user information.

Parameters

None.

Restrictions

None.

Examples

To show user information about SSH configuration:

```
DGS-3200-10:4#show ssh user
Command: show ssh user

Current Accounts
Username        Authentication
-------------   -------------
test            publickey

Total Entries : 1

DGS-3200-10:4#
```

38-7 config ssh server

Purpose

Used to configure the SSH server.

Format

config ssh server {maxsession <int 1-8>|
contimeout <sec 120-600> |
authfail {<int 2-20> |
rekey [10min|30min|60min|never] }

Description

The **config ssh server** command configures SSH server general information.

Parameters

Parameters	Description
int 1-8	Specifies SSH server max session at the same time.
sec 120-600	Specifies SSH server connection timeout.
int 2-20	Specifies user max fail attempts.
10/30/60 min	Specifies time to re-generate session key.
never	Do not re-generate session key.

Restrictions

You must have administrator privilege

Examples

To configure an SSH server max session of 3:

```
DGS-3200-10:4#config ssh server maxsession 3
Command: config ssh server maxsession 3

Success.

DGS-3200-10:4#
```

38-8 enable ssh

Purpose

Used to enable the SSH server.

Format

enable ssh server

Description

The **enable ssh** command enables SSH server services.

Parameters

None.

Restrictions

You must have administrator privilege. When enabling SSH, Telnet is disabled.

Examples

```
DGS-3200-10:4#enable ssh
Command: enable ssh


Success.


DGS-3200-10:4#
```

38-9 disable ssh

Purpose

Used to disable SSH server service.

Format

disable ssh server

Description

The **disable ssh** command disables SSH server services.

Parameters

None.

Restrictions

You must have administrator privilege.

Examples

```
DGS-3200-10:4#disable ssh
Command: disable ssh


Success.


DGS-3200-10:4#
```

38-10 show ssh server

Purpose

Used to show SSH server.

Format

show ssh server

Description

The **show ssh server** command show SSH server general information.

Parameters

None.

Restrictions

None.

Examples

To show SSH server:

```
DGS-3200-10:4#show ssh server
Command: show ssh server

The SSH Server Configuration
max Session         : 3
Connection Timeout : 300
Authfail Attempts  : 2
Rekey Timeout       : 60min

DGS-3200-10:4#
```

39 IP-MAC-Port Binding (IMPB) Command List

create address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports[<portlist>| all] | mode[arp| acl]}
config address_binding ip_mac ports [<portlist> | all] {state[enable| disable] |allow_zeroip [enable| disable]}
config address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports [<portlist>| all] | mode [arp| acl]}
delete address_binding [ip_mac[ipaddress<ipaddr> {mac_address <macaddr>} |all] |blocked[all | vlan_name<vlan_name> mac_address <macaddr>]]
show address_binding [ip_mac {all| ipaddress <ipaddr> mac_address <macaddr> }|blocked {all| vlan_name <vlan_name> mac_address <macaddr>} |ports]
enable address_binding acl_mode
disable address_binding acl_mode
enable address_binding trap_log
disable address_binding trap_log

39-1 create address_binding ip_mac ipaddress

Purpose

Used to create an IP-MAC Binding entry.

Format

create address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports[<portlist>| all] | mode[arp| acl]}

Description

This command will create an IP-MAC Binding entry.

Parameters

Parameters	Description
ipaddr	The IP address.
macaddr	The MAC address.
ports	Configure the portlist to apply, if not configure ports means apply to all ports.
arp	This entry is specified as an ARP mode entry. This entry will not be added as an access entry. If not specified, the mode

	defaults to ARP mode. If the system is in ARP mode, the ARP mode entries and ACL mode entries will be effective. If the system is in ACL mode, only the ACL mode entries will be active; the ARP mode entry will not be in effect.
acl	This entry is specified as an ACL mode entry. If a user enables ACL mode, this entry will be added as access entry.

Restrictions

You must have administrator privileges.

Examples

To create address binding on the Switch:

```
DGS-3200-10:4#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-3200-10:4#
```

39-2 config address_binding ip_mac ports

Purpose

Used to configure an IP-MAC state to enable or disable for specified ports.

Format

config address_binding ip_mac ports [<portlist> | all] {state[enable| disable] |allow_zeroip [enable| disable]

Description

This command will configure the IP-MAC state to enable or disable for specified ports.

Parameters

Parameters	Description
ports	**portlist**: Specifies a port or range of ports. **all**: specifies all ports on the switch.
state	Enables or disables the specified range of ports.

allow_zeroip	This feature is for the DHCP packet which the source IP address is zero. **enable**:The DHCP packet which the source IP is zero can be forwarded. **disable**:Process according normal logic.

Restrictions

You must have administrator privileges.

Examples

To configure address binding on the Switch:

```
DGS-3200-10:4# config address_binding ip_mac ports 1 state enable
Command: config address_binding ip_mac ports 1 state enable

Success.

DGS-3200-10:4#
```

39-3 delete address_binding address

Purpose

To delete an address binding entry

Format

delete address_binding [ip-mac [ipaddress <ipaddr> mac_address <macaddr> |all] | blocked [all | vlan_name <vlan_name> mac_address <macaddr>]]

Description

User use this command to delete an address binding entry.

If ACL mode is enabled, the switch will delete the according ACL access entries automatically.

Parameters

Parameters	Description
ip_mac	The database that a user creates for address binding.
blocked	The address database that the system auto learned and blocked.
ipaddr	The IP address.
macaddr	The MAC address.
vlan_name	The VLAN name (the blocked MAC belongs to).

.

Restrictions

You must have administrator privileges.

Examples

To delete an address binding entry :

```
DGS-3200-10:4#delete 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-3200-10:4#
```

39-4 config address_binding address

Purpose

To update an address binding entry

Format

config address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> { ports [portlist | all] mode [acl | arp]}

Description

User use this command to update an address binding entry.

Parameters

Parameters	Description
ipaddr	The IP address.
macaddr	The MAC address.
ports	Configure the portlist to apply, if ports are not configured, then it will apply to all ports.
arp	This entry is specified as an ARP mode entry. This entry will not be added as access entries. If not specified, the mode defaults to ARP mode. If the system is in ARP mode, the ARP mode entries and ACL mode entries will be effective. If the system is in ACL mode, only the ACL mode entries will be active; the ARP mode entry will not be in effect.
acl	This entry is specified as an ACL mode entry. If a user enables ACL mode, this entry will be added as an access entry.

Restrictions

You must have administrator privileges.

Examples

To config an address binding entry :

```
DGS-3200-10:4#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-3200-10:4#
```

39-5 show address_binding

Purpose

To display address binding entries, blocked MAC entries, and port status.

Format

show address_binding [ip_mac {all| ipaddress <ipaddr> mac_address <macaddr> }|blocked {all| vlan_name <vlan_name> mac_address <macaddr>} |ports]

Description

This command is used to display address binding information.

Parameters

Parameters	Description
ip_mac	The database that user create for address binding.
blocked	The address database that system auto learned and blocked.
ipaddr	The IP address.
macaddr	The MAC address.
vlan_name	The VLAN name (the blocked MAC belongs to).
ports	The state of IP MAC port binding of all the ports.

.

Restrictions

None.

Examples

To display the address binding global configuration:

```
DGS-3200-10:4#show address_binding ip_mac
Command: show address_binding ip_mac

ACL_mode : Disabled
Trap/Log : Disabled
Enabled Ports:
Enabled Allow Zero IP Ports:
IP Address     MAC Address       Mode  Ports
-------------- ----------------  ----  ------------------------------

10.90.90.1     00-11-22-33-44-55  ARP   2
10.90.90.2     00-11-22-33-44-55  ARP   1-16

Total Entries : 2DGS-3200-10:4#
```

39-6 enable address_binding acl_mode

Purpose

To enable the address binding ACL mode.

Format

enable address_binding acl_mode

Description

User uses this command to enter the address binding ACL mode.
If a user enables the ACL mode, the switch will first check if there are existing two empty access profiles. If the switch does not have two empty access profiles, it will show an error message and can not enable the ACL mode; Otherwise the switch will create two access profiles automatically.

After enabling the ACL mode, the switch will check if there are any ports with address binding enabled. If this port is address binding enabled, the switch will create an access entry automatically (To block all IP packets on this port). If the ACL pool is full and the switch can not create access entries, the switch will return a warning message.

If a user already created some address binding entries, then enable the address binding ACL mode. The switch will automatically create access entries (Each entry which has a mode belonging to ACL in the address binding entries).

If the ACL pool is full before creating all the address binding entries, then the address binding module can not create access entries. The switch will show an error message and the switch will set up these address binding entries as inactive.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable the address binding ACL mode:

```
DGS-3200-10:4#enable address_binding acl_mode
Command: enable address_binding acl_mode

Success.

DGS-3200-10:4#
```

39-7 disable address_binding acl_mode

Purpose

To disable the address binding ACL mode.

Format

disable address_binding acl_mode

Description

User use this command to enter the address binding normal mode..

If a user disable the address binding ACL mode, the switch will delete the access profiles and access entries which were created by address binding module.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable an address binding ACL mode :

```
DGS-3200-10:4#disable address_binding acl_mode
Command: disable address_binding acl_mode

Success.

DGS-3200-10:4#
```

39-8 enable address_binding trap_log

Purpose

Used to enable an address binding trap/log.

Format

enable address_binding trap_log

Description

User uses this command to send trap and log when address binding module detects illegal ip and mac address.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable an address binding trap log:

```
DGS-3200-10:4#enable address_binding trap_log
Command: enable address_binding trap_log

Success.

DGS-3200-10:4#
```

39-9 disable address_binding trap_log

Purpose

Used to disable the address binding trap/log.

Format

disable address_binding trap_log.

Description

User use this command to disable address binding trap log.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable the address binding trap log :

```
DGS-3200-10:4#disable address_binding trap_log
Command: disable address_binding trap_log

Success.

DGS-3200-10:4#
```

40 Web-based Access Control Command List

enable wac
disable wac
config wac { vlan <vlan_name 32> | ports [<portlist> | all] | state [enable | disable] | method [local | radius] | | default_redirpath <string 128> | logout_timer [infinite |<min 1-1440>] }
create wac user <username 15> vlan <vlan_name 32>
delete wac user <username 15>
config wac user <username 15> vlan <vlan_name 32>
show wac {ports [<portlist>|all]}
show wac user
clear wac auth_state ports [<portlist> | all]

40-1 enable wac

Purpose

Used to enable the Web-based Access Control function.

Format

enable wac

Description

The **enable wac** command will enable the WAC function.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable the WAC function:

```
DGS-3200-10:4# enable wac
 Command: enable wac

 Success.
 DGS-3200-10:4#
```

40-2 disable wac

Purpose

Used to disable the Web-based Access Control function.

Format

disable wac

Description

The **disable wac** command will disable the WAC function.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable the WAC function:

```
DGS-3200-10:4# disable wac
Command: disable wac

Success.
DGS-3200-10:4#
```

40-3 config wac

Purpose

Used to configure the parameter of the Web authentication.

Format

config wac { vlan <vlan_name 32> | ports [<portlist> | all] | state [enable | disable] | method [local | radius] | default_redirpath <string 128> | logout_timer [infinite | <min 1-1440>] }

Description

The **config wac** command allows you to configure Web authentication setting.

Parameters

Parameters	Description
ports	A range of ports that **enable** or **disable** the WAC function.
state	Specify the port state.
method	Specify which authenticated method is used.

vlan	The authentication VLAN name.
default_redirpath	The URL that the client will be redirected to after successful authentication. Initially, the redirected path is empty string. It must be specified by the user before the function can be enabled.
logout_timer	The authenticated port will be reverted to un-authenticated state after logout timer. The default value is 60 minutes. Please note that “infinite” indicates that the authenticated port will never age-out.

Restrictions

You must have administrator privileges. The specific VLAN assigned to be the authentication VLAN must already exist already.

Examples

To config the WAC port state:

```
DGS-3200-10:4# config wac ports 1-8 state enable
Command: config wac ports 1-8 state enable

Success.
DGS-3200-10:4#
```

To config method:

```
DGS-3200-10:4# config wac method radius
Command: config wac method radius

Success.
DGS-3200-10:4#
```

To config VLAN:

```
DGS-3200-10:4# config wac vlan default
Command: config wac vid default

Success.
DGS-3200-10:4#
```

40-4 create wac user

Purpose

Used to create a user account for Web-based Access Control.

Format

create wac user <username 15> vlan <vlan_name 32>

Description

The **create wac** command allows you to create an account for Web-based Access Control.

Parameters

Parameters	Description
username	User account for Web-based Access Control.
vlan	The authentication VLAN name.

Restrictions

You must have administrator privileges. This user account is independent from the login user acoount.

Example

To create a WAC account:

```
DGS-3200-10:4#create wac user 123
Command: create wac user 123

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

Success.

DGS-3200-10:4#
```

40-5 delete wac user

Purpose

Used to delete a Web-based Access Control account.

Format

delete wac user <username 15>

Description

The **delete wac** command allows you to delete a account.

Parameters

Parameters	Description
username	User account for Web-based Access Control.

Restrictions

None.

Example

To delete a WAC account:

```
DGS-3200-10:4#delete wac user 123
Command: delete wac user 123

Success.

DGS-3200-10:4#
```

40-6 config wac user

Purpose

Used to configure the VLAN ID of the user account.

Format

config wac user <username 15> vlan <vlan_name 32>

Description

The **config wac** command allows you to configure Web Authentication.

Parameters

Parameters	Description
username	The name of user account who want to change VID
vlan	The authentication VLAN name.

Restrictions

You must have administrator privileges.

Example

To configure the port state:

```
DGS-3200-10:4#config wac user 123 vlan v100
Command: config wac user 123 vlan v100

Success.

DGS-3200-10:4#
```

40-7 show wac

Purpose

Used to display the Web authentication setting.

Format

show wac {ports [<portlist>|all]}

Description

The **show wac** command allows you to show the Web authentication setting.

Parameters

Parameters	Description
ports	A range of member ports to show the status.

Restrictions

You must have administrator privileges.

Examples

To show WAC:

```
DGS-3200-10:4# show wac
Command: show wac

Web-Base Access Control
-----------------------------
State               : Enable
Method              : RADIUS
Vlan Name           : default
Logout Timer        : 60 mins
Redirect Page       : http://tw.yaholl.com

DGS-3200-10:4#
```

To show WAC ports:

```
DGS-3200-10:4# show wac ports 1-8
Command: show wac ports 1-8

Port         State            User Name    Auth Status       Assigned VLAN
----         -------      --------------  ------------     ----------------
1            Enabled          123           Authenticated       12
2            Enabled          abc           Authenticating      -
3            Enabled          Apple         Un-authenticated    -
4            Enabled           -             -                   -
5            Enabled           -             -                   -
6            Enabled           -             -                   -
7            Enabled           -             -                   -
8            Enabled           -             -                   -

Success.

DGS-3200-10:4#
```

40-8 show wac user

Purpose

Used to display Web authentication user accounts.

Format

show wac user

Description

The **show wac user** command allows you to display Web authentication accounts.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To show Web authentication user accounts:

```
DGS-3200-10:4# show wac user
Command: show wac user

Current Accounts:
Username          Vlan name
---------------   ---------
123               default

Success.

DGS-3200-10:4#
```

40-9 clear wac auth_state

Purpose

Used to the authentication state of a port.

Format

clear wac auth_state ports [all | portlist]

Description

Used to clear the authentication state of a port. The port will return to un-authenticated state. All the timer associated with the port will be reset.

Parameters

Parameters	Description
port	Specifies the list of ports whose WAC state will be cleared.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# clear wac auth_state ports 1-5
Command: clear wac auth_state ports 1-5

Success.

DGS-3200-10:4#
```

41 MAC-based Access Control Command Lists

enable mac_based_access_control
disable mac_based_access_control
config mac_based_access_control {ports [<portlist> | all] state [enable | disable]|method[local | radius] | password < passwd 16>| guest_vlan ports <portlist>}
create mac_based_access_control guest_vlan < vlan_name 32>
delete mac_based_access_control guest_vlan
create mac_based_access_control_local mac <macaddr> vlan < vlan_name 32>
config mac_based_access_control_local mac <macaddr> vlan <vlan_name 32>
delete mac_based_access_control_local [mac<macaddr> | vlan<vlan_name 32>]
show mac_based_access_control auth_mac {ports <portlist>}
show mac_based_access_control {port[<portlist> | all]}
show mac_based_access_control_local {[mac<macaddr> | vlan <vlan_name 32>]}

41-1 enable mac_based_access_control

Purpose

Used to enable MAC-Based Access Control.

Format

enable mac_based_access_control

Description

The **enable mac_based_access_control** command will enable the MAC-Based Access Control function.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable MAC-based Access Control:

```
DGS-3200-10:4# enable mac_based_access_control
Command: enable mac_based_access_control

Success.

DGS-3200-10:4#
```

41-2 disable mac_based_access_control

Purpose

Used to disable MAC-Based Access Control.

Format

disable mac_based_access_control

Description

The **disable mac_based_access_control** command will disable the MAC-Based Access Control function.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable MAC-based Acces Control:

```
DGS-3200-10:4# disable mac_based_access_control
Command: disable mac_based_access_control

Success.

DGS-3200-10:4#
```

41-3 config mac_based_access_control

Purpose

Used to configure the parameter of the MAC-Based Access Control.

Format

config mac_based_access_control {ports [<portlist> | all] state [enable | disable]|method [local | radius] | password < passwd 16>| guest_vlan ports <portlist>}

Description

The **config mac_based_access_control** command allows you to configure the MAC-Based Access Control setting.

Parameters

Parameters	Description
ports	A range of ports to enable or disable the **mac_based_access_control** function.
state	Specify specific port state.
method	Specify which authenticated method.
password	In RADIUS mode, the switch communicate with a RADIUS server uses the password. The maximum length of the key is 32.
guest_vlan	An authentication VLAN.
ports	The guest VLAN members. The specified port list will be associated with **guest_vlan**. Those ports outside of the specified port list will be de-associated from the guest VLAN.

Restrictions

You must have administrator privileges.

Examples

To config the port state:

```
DGS-3200-10:4# config mac_based_access_control ports 1-8 state enable
Command: config mac_based_access_control ports 1-8 state enable

Success.

DGS-3200-10:4#
```

To config method:

```
DGS-3200-10:4# config mac_based_access_control method local
Command: config mac_based_access_control method local

Success.

DGS-3200-10:4#
```

To config password:

```
DGS-3200-10:4# config mac_based_access_control password default
Command: config mac_based_access_control password default

Success.

DGS-3200-10:4#
```

To config guest VLAN ports:

```
DGS-3200-10:4# config mac_based_access_control relative_vlan 123
Command: config mac_based_access_control relative_vlan 123

Success.

DGS-3200-10:4#
```

41-4 config mac_based_access_control guest_vlan

Purpose

Configure guest VLAN ports for MAC-based Access Control.

Format

config mac_based_access_control guest_vlan ports <portlist>

Description

This command assigns some ports to be guest VLAN members.

Parameters

Parameters	Description
ports	The portlist that is assigned to a guest VLAN.

Restrictions

You must have administrator privileges.

Example

To assign ports to a guest VLAN:

```
 DGS-3200-10:4# config mac_based_access_control guest_vlan ports 1-5
Command: config mac_based_access_control guest_vlan ports 1-5

Success.

DGS-3200-10:4#
```

41-5 delete mac_based_access_control guest_vlan

Purpose

To delete MAC-based Access Control guest VLANs.

Format

delete mac_based_access_control guest_vlan

Description

This command deletes guest VLANs from the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

To delete a a MAC-based Access Control guest VLAN:

```
DGS-3200-10:4# delete mac_based_access_control guest_vlan
Command: config mac_based_access_control guest_vlan

Success.

DGS-3200-10:4#
```

41-6 create mac_based_access_control local mac

Purpose

Used to create a local database entry.

Format

create mac_based_access_control_local mac <macaddr> vlan < vlan_name 32>

Description

User use this command to create a database entry.

Parameter

Parameters	Description
mac	The MAC address that access is accepted in local mode.
vlan	If the MAC address is authorized, the port will be assigned to this VLAN.

Restrictions

You must have administrator privileges.

Example

To create a local database entry:

```
DGS-3200-10:4# 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-3200-10:4#
```

41-7 config mac_based_access_control_local

Purpose

Used to config the local database entry.

Format

config mac_based_access_control_local mac <macaddr> vlan <vlan_name 32>

Description

User use this command to modify a database entry.

Parameters

Parameters	Description
mac	The MAC address that access is accepted in local mode.
vlan	If the MAC address is authorized, the port will be assigned to this VLAN.

Restrictions

You must have administrator privileges.

Examples

To config a MAC-based Access Control entry:

```
DGS-3200-10:4# 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-3200-10:4#
```

41-8 delete mac_based_access_control_local

Purpose

Used to delete the local database entry.

Format

delete mac_based_access_control_local [mac <macaddr> | vlan <vlan_name 32>]

Description

User use this command to delete a database entry.

Parameters

Parameters	Description
mac	Delete database by this MAC address.
vlan	Delete database by this VLAN name.

Restrictions

You must have administrator privileges.

Examples

To delete a MAC-based Access Control local database entry by MAC address:

```
DGS-3200-10:4# 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-3200-10:4#
```

To delete a MAC-based Access Control local database entry by VLAN name:

```
DGS-3200-10:4# delete mac_based_access_control_local vlan default
Command: delete mac_based_access_control_local vlan default

Success.

DGS-3200-10:4#
```

41-9 show mac_based_access_control auth_mac

Purpose

Used to display MAC-based Access Control authentication MACs.

Format

show mac_based_access_control auth_mac {ports <portlist>}

Description

User use this command to **display mac_based_access_control** authentication MACs on some ports or all ports.

Parameters

Parameters	Description
ports	The ports that you want to show.

Restrictions

None.

Examples

To show MAC-based Access Control authenticated MAC addresses:

```
DGS-3200-10:4# show mac_based_access_control auth_mac
Command: show mac_based_access_control auth_mac

Port number : 1
Index  MAC Address         Auth State      VLAN Name
-----  -----------------   -------------   --------------------------------
1      00-00-01-02-03-A2   Authenticating  default
2      00-03-09-18-10-01   Authenticating  default
3      00-05-5D-ED-84-EA   Authenticating  default
4      00-0D-0B-4E-A0-F7   Authenticating  default
5      00-0D-60-8F-49-38   Authenticating  default
6      00-0E-A6-8E-C1-B7   Authenticating  default
7      00-10-4B-69-F4-AD   Authenticating  default
8      00-11-D8-DA-CE-0B   Authenticating  default

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

41-10 show mac_based_access_control

Purpose

Used to display MAC-based Access Control settings.

Format

show mac_based_access_control {port [<portlist> | all]}

Description

Use this command to display MAC-based Access Control settings.

Parameters

Parameters	Description
	Display **mac_based_access_control** global setting
port	Display **mac_based_access_control** port state

Restrictions

None.

Examples

To show MAC-based Access Control settings:

```
DGS-3200-10:4# show mac_based_access_control
Command: show mac_based_access_control

MAC Based Access Control
-----------------------------------
State                    : Enabled
Method                   : Radius
Password                 : default
Guest VLAN               : default
Guest VLAN Member Ports: 1-8

DGS-3200-10:4#
```

To show MAC-based Access Control by port:

```
DGS-3200-10:4# show mac_based_access_control port 1-9
Command: show mac_based_access_control port 1-9

Port    State
------  --------
1       Disabled
2       Disabled
3       Disabled
4       Disabled
5       Enabled
6       Disabled
7       Disabled
8       Disabled
9       Disabled

DGS-3200-10:4#
```

41-11 show mac_based_access_control_local

Purpose

Used to display MAC-based Access Control local databases.

Format

show mac_based_access_control_local {[mac<macaddr> | vlan <vlan_name 32>]}

Description

Use this command to display MAC-based Access Control local databases.

Parameters

Parameters	Description
	Display all **mac_based_access_control** local database entries.
mac	Display **mac_based_access_control** local database entries by MAC address.
vlan	Display **mac_based_access_control** local database entries by VLAN.

Restrictions

None.

Examples

To show MAC-based Access Control local entries:

```
DGS-3200-10:4# show mac_based_access_control_local
Command: show mac_based_access_control_local

MAC Address         VLAN Name
-----------------   --------------------------------
00-00-00-00-00-01   default
00-00-00-00-00-02   123
00-00-00-00-00-03   123
00-00-00-00-00-04   default

Total Entries:4

DGS-3200-10:4#
```

To show MAC-based Access Control local entries by MAC address:

```
DGS-3200-10:4# show mac_based_access_control_local mac 00-00-00-00-00-01
Command: show mac_based_access_control_local mac 00-00-00-00-00-01

MAC Address         VLAN Name
-----------------   --------------------------------
00-00-00-00-00-01   default

Total Entries:1

DGS-3200-10:4#
```

To show MAC-based Access Control local entries by VLAN:

```
DGS-3200-10:4# show mac_based_access_control_local vlan default
Command: show mac_based_access_control_local vlan default

MAC Address         VLAN Name
-----------------   --------------------------------
00-00-00-00-00-01   default
00-00-00-00-00-04   default

Total Entries:2

DGS-3200-10:4#
```

42 JWAC Command List

enable jwac
disable jwac
enable jwac redirect
disable jwac redirect
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
config jwac redirect {destination [quarantine_server | jwac_login_page] | delay_time <sec 0-10>}(1)
config jwac virtual_ip <ipaddr>
config jwac quarantine_server_url <string 128>
config jwac clear_quarantine_server_url
config jwac update_server [add | delete] ipaddress <network_address>
config jwac switch_http_port < tcp_port_number 1-65535> {[http | https]}
config jwac port [<portlist> | all] {state [enable | disable] | max_authenticating_host <value 0-10> | aging_time [infinite | <min 1-1440>] | idle_time [infinite | <min 1-1440>] | block_time [<sec 0-300>]}(1)
config jwac radius_protocol [local | pap | chap | ms_chap | ms_chapv2 | eap_md5]
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
delete jwac host [ports [all | portlist] {authenticated | authenticating | blocked} | <macaddr>]
show jwac
show jwac host {ports [all | <portlist>] } {authenticated | authenticating | blocked}
show jwac port [all | <portlist>]

42-1 enable/disable jwac

Purpose

Used to enable or disable the JWAC function.

Format

enable jwac

disable jwac

Description

JWAC and WAC are mutually exclusive functions. That is, they can not be enabled at the same time. 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. For the second stage, the authentication is similar to WAC, except that there is no port VLAN membership change by JWAC after a host passes authentication. The RADIUS server will share the server configuration defined by the 802.1X command set.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# enable jwac
Command: enable jwac

Success.

DGS-3200-10:4#
```

42-2 enable/disable jwac redirect

Purpose

Used to enable or disable JWAC redirect function.

Format

enable jwac redirect

disable jwac redirect

Description

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 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.

Parameters

None.

Restrictions

When enable redirect to quarantine server is in effect, a quarantine server must be configured first. You must have administrator privileges.

Example

```
DGS-3200-10:4# enable jwac redirect
Command: enable jwac redirect

Success.

DGS-3200-10:4#
```

42-3 enable/disable jwac forcible_logout

Purpose

Used to enable or disable the JWAC forcible logout function.

Format

enable jwac forcible_logout

disable jwac forcible_logout

Description

When f**orcible_logout** is 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.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# enable jwac forcible_logout
Command: enable jwac forcible_logout

Success.

DGS-3200-10:4#
```

42-4 enable/disable jwac udp_filtering

Purpose

Used to enable or disable the JWAC UDP filtering function.

Format

enable jwac udp_filtering

disable jwac udp_filtering

Description

When **udp_filtering** is enabled, all UDP and ICMP packets except DHCP and DNS packets from unauthenticated hosts will be dropped.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# enable jwac udp_filtering
Command: enable jwac udp_filtering

Success.

DGS-3200-10:4#
```

42-5 enable/disable jwac quarantine_server_monitor

Purpose

Used to enable or disable the JWAC Quarantine Server monitor function.

Format

enable jwac quarantine_server_monitor

disable jwac quarantine_server_monitor

Description

When the JWAC Quarantine Server monitor is 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.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4# enable jwac quarantine_server_monitor
Command: enable jwac quarantine_server_monitor

Success.

DGS-3200-10:4#
```

42-6 config jwac quarantine_server_error_timeout

Purpose

Used to set the Quarantine Server error timeout.

Format

config jwac quarantine_server_error_timeout <sec 5-300>

Description

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.

Parameters

Parameters	Description
<sec 5-300>	Specifies the error timeout interval.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac quarantine_server_error_timeout 60
Command: config jwac quarantine_server_error_timeout 60

Success.

DGS-3200-10:4#
```

42-7 config jwac redirect

Purpose

Used to config redirect destination and delay time before an unauthenticated host is redirected to the Quarantine Server or JWAC login web page.

Format

config jwac redirect {destination [quarantine_server | jwac_login_page] | delay_time <sec 0-10>}

Description

This command allows you 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.

Parameters

Parameters	Description
destination	Specifies the destination which the unauthenticated host will be redirected to.
delay_time	Specifies the time interval after which the unauthenticated host will be redirected.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac redirect destination jwac_login_page delay_time 5
Command: config jwac redirect_ destination jwac_login_page delay_time 5

Success.

DGS-3200-10:4#
```

42-8 config jwac virtual_ip

Purpose

Used to configure JWAC virtual IP addresses used to accept authentication requests from an unauthenticated host.

Format

config jwac virtual_ip <ipaddr>

Description

The virtual IP of JWAC 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 requests or ICMP packets.

Parameters

Parameters	Description
<ipaddr>	Specifies the IP address of the virtual IP.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac virtual_ip 1.1.1.1
Command: config jwac virtual_ip 1.1.1.1

Success.

DGS-3200-10:4#
```

42-9 config jwac quarantine_server_url

Purpose

Used to configure JWAC Quarantine Server URL.

Format

config jwac quarantine_server_url <string 128>

Description

This command allows you to configure the URL of the Quarantine Server. If the redirect is enabled and the redirect destination is the Quarantine Server, when an HTTP request from unauthenticated host not to the

Quarantine Server reaches the JWAC Switch, the Switch will handle this HTTP packet and send back a message to the host ot make it access the Quarantine Server with the configured URL. When the PC connects to the specified URL, the quarantine server will request the PC user to input the user name and password to do authentication.

Parameters

Parameters	Description
<string 128>	Specifies the entire URL of the authentication page on the Quarantine Server.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# 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-3200-10:4#
```

42-10 config jwac clear_quarantine_server_url

Purpose

Used to clear the Quarantine Server configuration.

Format

config jwac clear_quarantine_server_url

Description

This command will clear the Quarantine Server configuration.

Parameters

None.

Restrictions

When JWAC is enabled and the redirect destination is the Quarantine Server, the Quarantine Server cannot be cleared. You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac clear_quarantine_server_url
Command: config jwac clear_quarantine_server_url

Success.

DGS-3200-10:4#
```

42-11 config jwac update_server

Purpose

Used to configure the servers that the PC may need to connect to in order to complete the JWAC authentication.

Format

config jwac update_server [add | delete] ipaddress <network_address>

Description

The **config jwac other_server** command allows you 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.

Parameters

Parameters	Description
add	Adds a network address to which the traffic will not be blocked. Five network addresses can be added at most.
delete	Deletes a network address to which the traffic will not be blocked.
ipaddress	Specifies the network address to add or delete.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac other_server add ipaddress 10.90.90.109/24
Command: config jwac other_server add ipaddress 10.90.90.109/24

 Warning: the real added update server is 10.90.90.0/24

Success.

DGS-3200-10:4#
```

42-12 config jwac switch_http_port

Purpose

Used to configure the TCP port which the JWAC Switch listens to.

Format

config jwac switch_http_port < tcp_port_number 1-65535> {[http | https]}

Description

The **config jwac switch_http_port** command allows you 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.

Parameters

Parameters	Description
< tcp_port_number 1-65535>	A TCP port which the JWAC Switch listens to and uses to finish the authenticating process.
http	Specifies the JWAC run HTTP protocol on this TCP port.
https	Specifies the JWAC run HTTPS protocol on this TCP port.

Restrictions

HTTP cannot run on TCP port 443, and HTTPS cannot run on TCP port 80. You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac switch_http_port 8888 http
Command: config jwac switch_http_port 8888 http

Success.
```

```
DGS-3200-10:4#
```

42-13 config jwac port

Purpose

Used to configure the port state of JWAC.

Format

config jwac port [<portlist> | all] {state [enable | disable] | max_authenticating_host <value 0-10> | aging_time [infinite | <min 1-1440>] | idle_time [infinite | <min 1-1440>] | block_time [<sec 0-300>]}

Description

The **config jwac port** command allows you to configure port state of JWAC. The default value of the **max_authenticating_host** is 10. The default value of the **aging_time** is 1440 minutes. The default value of the **idle_time** is infinite. The default value of the **block_time** is 0 seconds.

Parameters

Parameters	Description
<porlist>	A port range for setting the JWAC state.
all	Every Switch ports' JWAC state is configured.
state	Specifies the port state of JWAC.
max_authenticating_host	The maximum number of hosts that can process authentication on each port at the same time.
aging_time	A time period during which an authenticated host will keep in authenticated state. "**infinite**" indicates never aging out the authenticated host on the port.
idle_time	If there is no traffic during idle time, the host will be moved back to unauthenticated state. "**infinite**" indicates never checking the idle state of the authenticated host on the port.
block_time	If a host fail to pass the authentication, it will be blocked for a period specified by the block time.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac port 1-9 state enable
Command: config jwac port 1-9 state enable

Success.

DGS-3200-10:4#
```

42-14 config jwac radius_protocol

Purpose

Used to configure the RADIUS protocol used by JWAC.

Format

config jwac radius_protocol [local | pap | chap | ms_chap | ms_chapv2 | eap_md5]

Description

The **config jwac radius_protocol** command allows you to specify the RADIUS protocol used by JWAC to complete RADIUS authentication.

Parameters

Parameters	Description
local	JWAC Switch uses local user DB to complete the authentication.
pap	JWAC Switch uses PAP to communicate with the RADIUS Server.
chap	JWAC Switch uses CHAP to communicate with the RADIUS Server.
ms_chap	JWAC Switch uses MS-CHAP to communicate with the RADIUS Server.
ms_chapv2	JWAC Switch uses MS-CHAPv2 to communicate with the RADIUS Server.
eap_md5	JWAC Switch uses EAP MD5 to communicate with the RADIUS Server.

Restrictions

JWAC share other RADIUS configurations with 802.1x, when using this command to set the RADIUS protocol, you must make sure the RASIUS server added by the "**config radius** …" command supports the protocol. You must have administrator privileges.

Example

```
DGS-3200-10:4# config jwac radius_protocol ms_chapv2
Command: config jwac radius_protocol ms_chapv2

Success.

DGS-3200-10:4#
```

42-15 create jwac user

Purpose

Used to create JWAC user into local DB.

Format

create jwac user <username 15> {vlan <vlanid 1-4094>}

config jwac user <username 15> {vlan <vlanid 1-4094>}

Description

The **create jwac user** command creates JWAC users in the local DB. When "**local**" is chosen while configuring the JWAC RADIUS protocol, the local DB will be used.

Parameters

Parameters	Description
<username 15>	The user name to be created.
<vlanid 1-4094>	Target VLAN ID for authenticated host which uses this user account to pass authentication.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# create jwac user 112233
Command: create jwac user 112233

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

DGS-3200-10:4#
```

42-16 delete jwac user

Purpose

Used to delete JWAC user into local DB.

Format

delete jwac [user <username 15> | all_users]

Description

The delete jwac user command deletes JWAC users from the local DB.

Parameters

Parameters	Description
user	Specifies the user name to be deleted
all_user	All user accouts in local DB will be deleted.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# delete jwac user 112233
Command: delete jwac user 112233

Success.

DGS-3200-10:4#
```

42-17 show jwac user

Purpose

Used to show JWAC user into local DB.

Format

show jwac user

Description

The **show jwac user** command displays JWAC users in the local DB.

Parameters

None.

Restrictions

You must have administrator privileges.

Example

```
 DGS-3200-10:4# show jwac user
 Command: show jwac user

Current Accounts:
 Username           Target VID  Password
 ---------------  ----------  ----------------
 1                          -           1

 Total Entries:1

 DGS-3200-10:4#
```

42-18 delete jwac host

Purpose

Used to delete the host on JWAC enabled ports.

Format

delete jwac host [ports [all | <portlist>] {authenticated | authenticating | blocked} | <macaddr>]

Description

The **delete jwac host** command allows you to delete a JWAC host.

Parameters

Parameters	Description
ports	Specifies the port range to delete the host on.
authenticated	Specifies the state of the host to delete.
authenticating	Specifies the state of host to delete.
blocked	Specifies the state of host to delete.
<macaddr>	Deletes a specified host with this MAC.

Restrictions

You must have administrator privileges.

Example

```
DGS-3200-10:4# delete jwac host ports all blocked
Command: delete jwac host ports all blocked

Success.

DGS-3200-10:4#
```

42-19 show jwac

Purpose

Used to display the JWAC configuration.

Format

show jwac

Description

The **show jwac** command allows you to display the JWAC configuration settings.

Parameters

None.

Restrictions

None.

Example

```
DGS-3200-10:4# show jwac
Command: show jwac

State                 : Enabled
Enabled Ports         : 1,9
Virtual IP            : 1.1.1.1
Switch HTTP Port      : 21212 (HTTP)
UDP Filtering         : Enabled
Forcible Logout       : Enabled
Redirect State        : Enabled
Redirect Delay Time   : 3 Seconds
Redirect Destination  : Quarantine Server
Quarantine Server     : http://172.18.212.147/pcinventory
Q-Server Monitor      : Enabled (Running)
Q-Svr Error Timeout   : 5 Seconds
Radius Auth-Protocol  : PAP
Update Server         : 172.18.202.1/32
                        172.18.202.0/24
                        10.1.1.0/24

DGS-3200-10:4#
```

42-20 show jwac host

Purpose

Used to display JWAC client host information.

Format

show jwac host {port [all | <portlist>]} {authenticated | authenticating | blocked}

Description

The **show jwac host** command allows you to show the JWAC client host information.

Parameters

Parameters	Description
port	A port range to show the information of client host
authenticated	Only to show authenticated client hosts
authenticating	Only to show client hosts being in authenticating process
blocked	Only to show client host being temporarily blocked because of the failure of authentication.

Restrictions

None.

Example

```
DGS-3200-10:4# show jwac host port 3
Command: show jwac host port 3

                                  Remaining
Hosts               Port VID  AgeTime/IdleTime   Authentication State
                              or BlockingTime
-----------------   ---- ---  ----------------   --------------------
00-00-00-00-00-01   3    5    98   Min/Infinite  Authenticated
00-00-00-00-00-02   3    99   Infinite/Infinite  Authenticating
00-00-00-00-00-03   2    44        30 Sec         Blocked

Total Authenticating Hosts :1
Total Authenticated Hosts  :1
Total Blocked Hosts        :1

DGS-3200-10:4#
```

42-21 show jwac port

Purpose

Used to display the port configuration of JWAC.

Format

show jwac port [all | <portlist>]

Description

The **show jwac port** command allows you to display the port configuration of JWAC.

Parameters

Parameters	Description
all	Shows all the ports configured for JWAC.
<portlist>	Specifies a port range to show the configuration of JWAC.

Restrictions

None.

Example

```
DGS-3200-10:4# show jwac port 1-4
Command: show jwac port 1-4

Port  State           Max          Aging Time Idle Time Block Time
                Authenticating  (Minutes)  (Minutes) (Seconds)
                     Host
----- -------- --------------- ---------- --------- ----------
1     Enabled        10          Infinite   20        10
2     Disabled       50          60         10        2
3     Enabled        50          1440       Infinite  2
4     Enabled        0           600        30        5

DGS-3200-10:4#
```

IX. QoS

The QoS section includes the following chapter: QoS.

43 QoS Command List

config bandwidth_control <portlist>{rx_rate [no_limit | <value 512-1024000>] | tx_rate [no_limit | <value 512-1024000>]}
show bandwidth_control {<portlist>}
config scheduling <class_id 0-7> max_packet<value 0-255>
config scheduling_mechanism [strict(1) | weight_fair(2)]
show scheduling
show scheduling_mechanism
config 802.1p user_priority <priority 0-7> <class_id 0-7>
show 802.p user_priority
config 802.1p default_priority [<portlist> | all] <priority 0-7>
show 802.1p default_priority { <portlist>}

43-1 config bandwidth_control

Purpose

Used to configure the port bandwidth limit control.

Format

config bandwidth_control <portlist>{rx_rate [no_limit | <value 512-1024000>] | tx_rate [no_limit | <value 512-1024000>]}

Description

The **config bandwidth_control** command sets the maximum limit for port bandwidth.

Parameters

Parameters	Description
portlist	Specifes a range of ports to be configured.
rx_rate	Specifies the limitation of receive data rate.

	no_limit - Indicates there is no limit on port rx bandwidth. An integer value from 64 to 1024000 sets a maximum limit in Kbits/sec. The specified bandwidth limit may be equaled but not exceeded. This exact logical limit or token value is hardware determined. The token value will always be a multiple of the bandwidth increment specific to the chip used for the project (i.e. 32 Kbits, 64 Kbits, 128 Kbits, etc.). This token value, the actual set limit recognized by the CPU, will be displayed when the user enters the bandwidth limit integer. **Note**: 1 Kbit = 1000 bits, 1 Gigabit = 1000*1000 Kbits.
tx_rate	Specifies the limitation of transmit data rate.
	no_limit - Indicates there is no limit on port tx bandwidth. An integer value from 64 to 1024000 sets a maximum limit in Kbits/sec. The specified bandwidth limit may be equaled but not exceeded. This exact logical limit or token value is hardware determined. The token value will always be a multiple of the bandwidth increment specific to the chip used for the project (i.e. 32 Kbits, 64 Kbits, 128 Kbits, etc.). This token value, the actual set limit recognized by the CPU, will be displayed when the user enters the bandwidth limit integer. **Note**: 1 Kbit = 1000 bits, 1 Gigabit = 1000*1000 Kbits.

Restrictions

You must have administrator privileges.

Examples

To configure the port bandwidth:

```
DGS-3200-10:4#config bandwidth_control 1-10 tx_rate 1024
Command: config bandwidth_control 1-10 tx_rate 1024

Success.

DGS-3200-10:4#
```

Response messages

(1). "**Success.**"

When users input a value that is a multiple of 64 and the setting is successful.

(2). "**Fail !**

Trunk member port %-p can not be configured because the master is not contained in the portlist" . The configured portlist contains trunk port but not it's master port.

(3). "**Success,**

The setting value is not a multiple of 64, closest value %d is chosen".

If a user inputs a value that is not a multiple of 64 (or whatever bandwidth increment is used for the chip). The token value becomes the effective limit. The Token value is set at the nearest multiple of the bandwidth increment is used for the chip (i.e. 32 Kbits, 64 Kbits, etc.) without exceeding the specified limit. For example, a user inputs a limit of 130, therefore the Token value will be 128.

43-2 show bandwidth_control

Purpose

Used to display the port bandwidth control table.

Format

show bandwidth_control {<portlist>}

Description

The **show bandwidth_control** command displays the port bandwidth configurations.

Parameters

Parameters	Description
portlist	Specifies a range of ports to be displayed.
	If no parameter is specified, the system will display all port bandwidth configurations.

Restrictions

None.

Examples

To display the port bandwidth control table:

```
DGS-3200-10:4#show bandwidth_control  1-10
Command: show bandwidth_control 1-10

Bandwidth Control Table

Port   RX Rate        TX Rate       Effective RX         Effective TX
       (Kbit/sec)     (Kbit/sec)     (Kbit/sec)           (Kbit/sec)
----   ----------     ----------     -----------------    ----------------
 1     1024           1024           1024                 1024
 2     1024           1024           1024                 1024
 3     1024           1024           1024                 1024
 4     1024           1024           1024                 1024
 5     1024           1024           1024                 1024
 6     no_limit       no_limit       no_limit             no_limit
 7     no_limit       no_limit       no_limit             no_limit
 8     no_limit       no_limit       no_limit             no_limit
 9     no_limit       no_limit       no_limit             no_limit
 10    no_limit       no_limit       no_limit             no_limit

DGS-3200-10:4#
```

43-3 config scheduling

Purpose

Used to configure the traffic scheduling mechanism for each COS queue.

Format

config scheduling <class_id 0-7> max_packet <value 0-255>

Description

The switch contains n+1 hardware priority queues. Incoming packets must be mapped to one of these n+1 queues. This command is used to specify the rotation by which these n+1 hardware priority queues are emptied.

Parameters

Parameters	Description
class_id	This specifies which of the n+1 hardware priority queues the config scheduling command will apply to. The four hardware priority queues are identified by number – from 0 to n – with the 0 queue being the lowest priority.
weight	Specifies the weights for weighted fair queueing. A value between 0 and 255 can be specified.

Restrictions

You must have administrator privileges.

Examples

To configure the traffic scheduling mechanism for each COS queue:

```
DGS-3200-10:4# config scheduling 0 max_packet 34
Command: config scheduling 0 max_packet 34

Success.

DGS-3200-10:4#
```

43-4 config scheduling_mechanism

Purpose

Used to configure the traffic scheduling mechanism for each COS queue.

Format

config scheduling_mechanism [strict | weight_fair]

Description

This command is use to specify how the switch handle packets in priority queues.

Parameters

Parameters	Description
strict	The highest queue first process.That is, the highest queue should be finished first.
weight_fair	Use weighted fair algorithm to handle packets in priority queues.

Restrictions

You must have administrator privileges.

Examples

To configure the traffic scheduling mechanism for each COS queue:

```
DGS-3200-10:4#config scheduling_mechanism strict
Command: config scheduling_mechanism strict

Success.

DGS-3200-10:4#
```

43-5 show scheduling

Purpose

Used to display the current traffic scheduling parameters in use on the switch.

Format

show scheduling

Description

The **show scheduling** command displays the current traffic scheduling parameters in use on the switch.

Parameters

None.

Restrictions

None.

Examples

To display traffic scheduling parameters for each COS queue (for example, four hardware priority queues):

```
DGS-3200-10:4# show scheduling
Command: show scheduling

QOS Output Scheduling

Class ID  MAX. Packets
--------  ------------
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-3200-10:4#
```

43-6 show scheduling_mechanism

Purpose

Used to show the traffic scheduling mechanism.

Format

show scheduling_mechanism

Description

The **show scheduling_mechanism** command display the traffic scheduling mechanism.

Parameters

None.

Restrictions

None.

Examples

To show the scheduling mechanism:

```
DGS-3200-10:4# show scheduling_mechanism
Command: show scheduling_mechanism

QOS scheduling mechanism
CLASS ID  Mechanism
--------  -----------
Class-0   strict
Class-1   strict
Class-2   strict
Class-3   strict
Class-4   strict
Class-5   strict
Class-6   strict
Class-7   strict

DGS-3200-10:4#
```

43-7 config 802.1p user_priority

Purpose

Used to map the 802.1p user priority of an incoming packet to one of the four hardware queues available on the switch.

Format

config 802.1p user_priority <priority 0-7> <class_id 0-7>

Description

The **config 802.1p user_priority** command configures the way the switch will map an incoming packet, based on its 802.1p user priority, to one of the four available hardware priority queues on the switch. The switch's default is to map the following incoming 802.1p user priority values to the four hardware priority queues.

Parameters

Parameters	Description
priority	The 802.1p user priority you want to associate with the **<class_id>** (the number of the hardware queue) with.
class_id	The number of the switch's hardware priority queue. The switch has n+1 hardware priority queues available. They are numbered between 0 (the lowest priority) and n (the highest priority).

Restrictions

You must have administrator privileges.

Examples

To configure the 802.1p user priority:

```
DGS-3200-10:4# config 802.1p user_priority 1 3
Command: config 802.1p user_priority 1 3

Success.

DGS-3200-10:4#
```

43-8 show 802.1p user_priority

Purpose

Used to display 802.1p user priority.

Format

show 802.1p user_priority

Description

The **show 802.1p user_priority** command displays 802.1p user priority.

Parameters

None.

Restrictions

None.

Examples

To display the traffic scheduling mechanism for each COS queue:

```
DGS-3200-10:4# show 802.1p user_priority
Command: show 802.1p user_priority

QOS Class of Traffic
Priority-0  ->  <Class-1>
Priority-1  ->  <Class-3>
Priority-2  ->  <Class-0>
Priority-3  ->  <Class-1>
Priority-4  ->  <Class-2>
Priority-5  ->  <Class-2>
Priority-6  ->  <Class-3>
Priority-7  ->  <Class-3>

DGS-3200-10:4#
```

43-9 config 802.1p default_priority

Purpose

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>

Description

The **config 802.1p default_priority** command allows you to specify default priority handling of untagged packets received by the switch. The priority value entered with this command will be used to determine which of the four hardware priority queues the packet is forwarded to.

Parameters

Parameters	Description
portlist	This specifies 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 beginning and end of the port list range are separated by a dash.
all	Specifies that the command applies to all ports on the switch.
priority	The priority value (0 to 7) you want to assign to untagged packets received by the switch or a range of ports on the switch.

Restrictions

You must have administrator privileges.

Examples

To configure the 802.1p default priority settings on the switch:

```
DGS-3200-10:4#config 802.1p default_priority all 5
Command: config 802.1p default_priority all 5

Success.

DGS-3200-10:4#
```

43-10 show 802.1p default_priority

Purpose

Used to display the current default priority settings on the switch.

Format

show 802.1p default_priority { <portlist> }

Description

The **show 802.1p default_priority** command displays the current default priority settings on the switch.

Parameters

Parameters	Description
portlist	Specified a range of ports to be displayed.
	If no parameter is specified, the system will display all ports with 802.1p **default_priority**.

Restrictions

None.

Examples

To display 802.1p default priority:

```
DGS-3200-10:4# show 802.1p default_priority
Command: show 802.1p default_priority

Port        Priority      Effective Priority
----        -----------   ------------------
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

DGS-3200-10:4#
```

X. IP Addressing Service

The IP Addressing Service section includes the following chapter: DHCP Relay.

44 DHCP Relay Command List

config dhcp_relay { hops <value 1-16> | time <sec 0-65535>}
config dhcp _relay [add|delete] ipif <ipif_name 12> <ipaddr>
config dhcp_relay option_82 { state [enable|disable] | check [enable|disable] | policy [replace|drop|keep] }
enable dhcp _relay
disable dhcp _relay
show dhcp _relay {ipif <ipif_name 12>}

Note: 1. The DHCP relay commands include all the commands defined in the BOOTP relay command section; If this DHCP relay command set is supported in your system, the BOOTP relay commands can be ignored.

2. The system supporting DHCP relay will accept BOOTP relay commands in the config file but not allow input from the console screen, and these BOOTP relay commands setting from the config file will be saved as DHCP relay commands while the save command is performed.

44-1 config dhcp_relay

Purpose

Used to configure the DHCP relay feature of the switch.

Format

config dhcp_relay { hops <value 1-16> | time <sec 0-65535>}

Description

The **config dhcp_relay** command configures the DHCP relay feature of the switch.

Parameters

Parameters	Description
hops	Specifies the maximum number of router hops that the DHCP/BOOTP packets can cross. The range is 1 to 16. The default value is 4.
time	The minimum time in seconds within which the switch must relay the DHCP/BOOTP request. If this time is exceeded, the switch will drop the DHCP/BOOTP packet.The range is 0 to 65535. The default value is 0.

Restrictions

You must have administrator privileges.

Examples

To configure DHCP relay status.

```
DGS-3200-10:4#config dhcp_relay hops 4 time 2
Command: config dhcp_relay hops 4 time 2

Success.

DGS-3200-10:4#
```

44-2 config dhcp_relay add

Purpose

Used to add an IP destination address to the switch's DHCP relay table.

Format

config dhcp_relay add ipif <ipif_name 12> <ipaddr>

Description

The **config dhcp_relay add** command adds an IP address as a destination to forward (relay) DHCP/BOOTP packets.

Parameters

Parameters	Description
ipif_name	The name of the IP interface which contains the IP address below.
ipaddr	The DHCP/BOOTP server IP address.

Restrictions

You must have administrator privileges.

Examples

To add a DHCP/BOOTP server to the relay table.

```
DGS-3200-10:4#config dhcp_relay add ipif System 10.43.21.12
Command: config dhcp_relay add ipif System 10.43.21.12

Success.

DGS-3200-10:4#
```

44-3 config dhcp_relay delete

Purpose

Used to delete one or all IP destination addresses from the switch's DHCP relay table.

Format

config dhcp_relay delete ipif <ipif_name 12> <ipaddr>

Description

The **config dhcp_relay delete** command is used to delete one or all of the IP destination addresses in the swith's relay table.

Parameters

Parameters	Description
ipif_name	The name of the IP interface which contains the IP address below.
ipaddr	The DHCP/BOOTP server IP address.

Restrictions

You must have administrator privileges.

Examples

To delete a DHCP/BOOTP server to the relay table.

```
DGS-3200-10:4#config dhcp_relay delete ipif System 10.43.21.12
Command: config dhcp_relay delete ipif System 10.43.21.12

Success.

DGS-3200-10:4#
```

44-4 config dhcp_relay option_82

Purpose

Used to configure the DHCP relay agent information option 82 of the switch.

Format

config dhcp_relay option_82 { state [enable|disable] | check [enable|disable] | policy [replace|drop|keep] }

Description

The **config dhcp_relay option_82** command configures the DHCP relay agent information option 82 setting of the switch.

The formats for the circuit ID suboption and the remote ID suboption are as following. For the circuit ID suboption of a standalone switch, the module field is always zero.

Circuit ID suboption format :

1.	2.	3.	4.	5.	6.	7.
1	6	0	4	VLAN	Module	Port
1 byte	1 byte	1 byte	1 byte	2 bytes	1 byte	1 byte

1. Suboption type 2. Length

3. Circuit ID type 4. Length

5. VLAN : The incoming VLAN ID of DHCP client packet.

6 . Module : For a standalone switch, Module is always 0.

7. Port : The incoming port number of DHCP client packet, port number starts from 1.

Remote ID suboption format :

1.	2.	3.	4.	5.
2	8	0	6	MAC address
1 byte	1 byte	1 byte	1 byte	6 bytes

1. Suboption type 2. Length

3. Remote ID type 4. Length

5. MAC address : The switch's system MAC address.

Parameters

Parameters	Description
state	Enable or disable the switch to insert and remove DHCP relay agent information 82 field in messages between DHCP server and client. The default setting is **disable**.
check	Enable or disable the switch to check the validity of DHCP relay agent information 82 field in messages between DHCP server and client. The invalid messages are those packets that contain the option 82 field from DHCP client and those packets that contain the wrong format of option 82 field from DHCP server. If check is set to enable, the switch will drop all invalid messages received from DHCP server or client. The default setting is **disable**.
policy	Configure the reforwarding policy as following : **replace**: replace the exiting option 82 field in messages. **drop**: discard messages with existing option 82 field. **keep**: retain the existing option 82 field in messages. The default setting is replace. **Note**: The reforwarding policy is active only when the "check" option is disabled.

Restrictions

You must have administrator privileges.

Examples

To configure the DHCP relay option 82:

```
DGS-3200-10:4#config dhcp_relay option_82 state enable
Command: config dhcp_relay option_82 state enable

Success.

DGS-3200-10:4#config dhcp_relay option_82 check disable
Command: config dhcp_relay option_82 check disable

Success.

DGS-3200-10:4#config dhcp_relay option_82 policy replace
Command: config dhcp_relay option_82 policy replace

Success.

DGS-3200-10:4#
```

44-5 enable dhcp_relay

Purpose

Used to enable the DHCP relay function on the switch.

Format

enable dhcp_relay

Description

The **enable dhcp_relay** command enables the DHCP relay function on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To enable the DHCP relay function.

```
DGS-3200-10:4#enable dhcp_relay
Command: enable dhcp_relay

Success.

DGS-3200-10:4#
```

44-6 disable dhcp_relay

Purpose

Used to disable DHCP relay function on the switch.

Format

disable dhcp_relay

Description

The **disable dhcp_relay** command disables the DHCP relay function on the switch.

Parameters

None.

Restrictions

You must have administrator privileges.

Examples

To disable the DHCP relay function:

```
DGS-3200-10:4#disable dhcp_relay
Command: disable dhcp_relay

Success.

DGS-3200-10:4#
```

44-7 show dhcp_relay

Purpose

Used to display the current DHCP relay configuration.

Format

show dhcp_relay {ipif <ipif_name 12>}

Description

The **show dhcp_relay** command displays the current DHCP relay configuration.

Parameters

Parameters	Description
ipif_name	The IP interface name.
	If no parameter is specified , the system will display all DHCP relay configurations.

Restrictions

None.

Examples

To display the DHCP relay status.

```
DGS-3200-10:4# 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 : 0
DHCP Relay Agent Information Option 82 State  : Disabled
DHCP Relay Agent Information Option 82 Check  : Disabled
DHCP Relay Agent Information Option 82 Policy : Replace

Interface     Server 1        Server 2         Server 3        Server 4
------------- --------------- ---------------- --------------- --------------
System        10.48.74.122    10.23.12.34      10.12.34.12     10.48.75.121

DGS-3200-10:4#
```

XI. IPv6

The IPv6 section includes the following chapter: IPv6 NDP.

45 IPv6 NDP 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_timer <value 0-4294967295>
config ipv6 nd ra ipif <ipif_name 12> { state [enable|disable] | life_time <value 0-9000> | reachable_time <value 0-3600000> | retrans_time < value 0-4294967295> | hop_limit <value 0-255> | managed_flag [enable|disable] | other_config_flag [enable|disable] | min_rtr_adv_interval < value 3-1350> | max_rtr_adv_interval < value 4-1800> }(1)
config ipv6 nd ra prefix_option ipif <ipif_name 12> <ipv6networkaddr >- {preferred_life_time <value 0-4294967295> | valid_life_time <value 0-4294967295>| on_link_flag [enable|disable] | autonomous_flag [enable|disable]} (1)
show ipv6 nd ipif {<ipif_name 12>}

45-1 delete ipv6 neighbor_cache

Purpose

Add a static neighbor on an IPv6 interface

Format

create ipv6 neighbor_cache ipif <ipif_name 12> <ipv6addr> <macaddr>

Description

Add a static neighbor on an IPv6 interface

Parameters

Parameters	Description
ipif_name	The interface's name.
ipv6addr	The address of the neighbor.
macaddr	The MAC address of the neighbor.

Restrictions

You must have administrator privileges.

Examples

To create a static neighbor cache entry.

```
DGS-3200-10:4#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-3200-10:4#
```

45-2 delete ipv6 neighbor_cache

Purpose

To delete an IPv6 neighbor from the interface neighbor address cache.

Format

delete ipv6 neighbor_cache ipif [<ipif_name 12>|all] [<ipv6addr> | static| dynamic| all]

Description

Used to delete a neighbor cache entry or static neighbor cache entries from the address cache or all address cache entries on this ipif. Both static and dynamic entry can be deleted.

Parameters

Parameters	Description
Ipif_name	The IPv6 interface.
ipv6addr	The address of the neighbor.
all	All entries include static and dynamic entries will be deleted.
dynamic	Delete those dynamic entries.
static	Delete the static entry

Restrictions

You must have administrator privileges.

Examples

To delete a neighbor cache.

```
DGS-3200-10:4#delete ipv6 neighbor_cache ipif System 3ffc::1
Command: delete ipv6 neighbor_cache ipif System 3FFC::1

Success.

DGS-3200-10:4#
```

45-3 show ipv6 neighbor_cache

Purpose

To show an IPv6 neighbor cache.

Format

show ipv6 neighbor_cache ipif [<ipif_name 12>|all] [ipv6address <ipv6addr> | static|dynamic|all]

Description

To display the neighbor cache entry for the specified interface. You can display a specific entry, all entries, and all static entries..

Parameters

Parameters	Description
<ipif_name 12>	The interface's name.
< ipv6addr>	The address of the entry.
static	Static neighbor cache entry.
dynamic	Dynamic entries.

Restrictions

None.

Examples

```
DGS-3200-10:4#show ipv6 neighbor_cache ipif System all
Command: show ipv6 neighbor_cache ipif System all

Neighbor                          Link Layer Address Interface   State
------------------------------------  ----------------- ----------- -----
FE80::20B:6AFF:FECF:7EC6            00-0B-6A-CF-7E-C6  System     T

Total Entries: 1

State:
(I) means Incomplete state. (R) means Reachable state.
(S) means Stale state.     (D) means Delay state.
(P) means Probe state.     (T) means Static state.



DGS-3200-10:4#
```

45-4 config ipv6 nd ns

Purpose

To configure neighbor solicitation related arguments.

Format

config ipv6 nd ns ipif <ipif_name 12> retrans_timer <value 0-4294967295>

Description

Use this command to configure neighbor solicitation related arguments.

Parameters

Parameters	Description
ipif_name	The name of the interface.
ns retrans_timer	Neighbor solicitation's retransmit timer in milliseconds. It has the same value as ra retrans_time in the config ipv6 nd ra command. If we configure one, the other will change too.

Restrictions

You must have the administrator privilege.

Examples

```
DGS-3200-10:4#config ipv6 nd ns ipif System retrans_time 400
Command: config ipv6 nd ns ipif System retrans_time 400

Success.

DGS-3200-10:4#
```

45-5 config ipv6 nd rs

Purpose

To configure router solicitation related arguments.

Format

config ipv6 nd rs ipif <ipif_name 12> state [enable | disable]

Description

Use this command to configure router solicitation related arguments.

Parameters

Parameters	Description
ipif_name	The name of the interface.
state	Router solicited state.

Restrictions

You must have administrator privileges.

45-6 config ipv6 nd ra

Purpose

To configure router advertisement related arguments.

Format

config ipv6 nd ra ipif <ipif_name 12> { state [enable|disable] | life_time <value 0-9000> | reachable_time <value 0-3600000> | retrans_time < value 0-4294967295> | hop_limit <value 0-255> | managed_flag [enable|disable] | other_config_flag [enable | disable] | min_rtr_adv_interval < value 3-1350> | max_rtr_adv_interval < value 4-1800> }(1)

Description

To configure router advertisement related arguments.

Parameters

Parameters	Description
ipif_name	The name of the interface.
state	router advertisement state.
life_time	Indicates the lifetime of the router as the default router in second.
reachable_time	Indicates the amount of time that a node can consider a neighboring node reachable after receiving a reachability confirmation in millisecond.
retrans_time	Indicates the amount of time between retransmissions of `router` advertisement message in millisecond, and the router advertisement packet will take it to host.
hop_limit	Indicate the default value of hop limit field in the IPv6 header for packets sent by hosts that receive this RA message.
managed_flag	When set to enable, it indicates that hosts receiving this RA must use a stateful address configuration protocol to obtain address in the addition to the addresses derived from the stateless address configuration.
other_config_flag	When set to enable, it indicates that hosts receiving this RA must use a stateful address configuration protocol to obtain on-address configuration information,.
min_rtr_adv_interval	The minimum time allowed between sending unsolicited multicast Router Advertisements from the interface, in seconds. MUST be no less than 3

	seconds and no greater than .75 * MaxRtrAdvInterval. Default: 0.33 * MaxRtrAdvInterval
max_rtr_adv_interval	The maximum time allowed between sending unsolicited multicast Router Advertisements from the interface, in seconds. MUST be no less than 4 seconds and no greater than 1800 seconds. Default: 600 seconds

Restrictions

You must have administrator privileges.

45-7 config ipv6 nd ra prefix_option

Purpose

To configure the prefix option for the router advertisement function.

Format

config ipv6 nd ra prefix_option ipif <ipif_name 12> <ipv6networkaddr > {preferred_life_time <value 0-4294967295> | valid_life_time <value 0-4294967295>| on_link_flag [enable|disable] | autonomous_flag [enable |disable]} (1)

Description

To configure the prefix option for the router advertisement function.

Parameters

Parameters	Description
ipif_name	The name of the interface.
preferred_life_time	Indicates the number of seconds that an address, based on the specified prefix, using the stateless address configuration, remains in preferred state. For an infinite valid lifetime, the value can be set to 0xffffffff.
valid_life_time	Indicates the number of seconds that an address, based on the specified prefix, using the stateless address configuration, remains valid. For an infinite valid lifetime, the value can be set to 0xffffffff.

on_link_flag	When set to 1, the address implied by the specified prefix are available on the link where the RA message is received.
autonomous_flag	When set to 1, then the specified prefix will be used to create an autonomous address configuration.

Restrictions

You must have administrator privileges. \

Examples

```
DGS-3200-10:4#config ipv6 nd ra prefix_option ipif ip FEC0::1/64 preferred_life_time 100
valid_life_
time 1000
Command: config ipv6 nd ra prefix_option ipif ip FEC0::1/64 preferred_life_time 100
valid_life_time
1000

Success.

DGS-3200-10:4#
```

45-8 show ipv6 nd

Purpose

To display an interface's information.

Format

show ipv6 nd {ipif <ipif_name 12>}

Description

To display IPv6 ND related configuration.

Parameters

Parameters	Description
ipif_name	The interface name.

Restrictions

None.

Examples

To display interface's information.

```
DGS-3200-10:4#show ipv6 nd ipif System
Command: show ipv6 nd ipif System



Interface Name             : System
Hop Limit                  : 64
NS Retransmit Time         : 0 (ms)
Router Advertisement       : Disabled
RA Max Router AdvInterval : 600 (s)
RA Min Router AdvInterval : 198 (s)
RA Router Life Time        : 1800 (s)
RA Reachable Time         : 1200000 (ms)
RA Retransmit Time         : 0 (ms)
RA Managed Flag            : Disabled
RA Other Config Flag       : Disabled


DGS-3200-10:4
```

XII. ACL

The ACL section includes the following chapter: ACL.

46 ACL Command List

create access_profile profile_id <value 1-200> **[ethernet** **{ vlan | source_mac <macmask 000000000000-ffffffffffff> |** **destination_mac <macmask 000000000000-ffffffffffff> |** **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 [al | {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>}]}(1)** **| 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>}** **]**
delete access_profile [profile_id <value 1-200> | all]
config access_profile profile_id <value 1-200> **[add access_id [auto_assign | <value 1-200>]** **[ethernet** **{vlan <vlan_name 32> | source_mac <macaddr 000000000000-ffffffffffff> |** **destination_mac <macaddr 000000000000-ffffffffffff> |** **802.1p <value 0-7> |ethernet_type <hex 0x0-0xffff> }** **| ip** **{ vlan <vlan_name 32> | 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> |** **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_mask
{ offset_chunk_1 <hex 0x0-0xffffffff>
offset_chunk_2 <hex 0x0-0xffffffff>
offset_chunk_3 <hex 0x0-0xffffffff>
offset_chunk_4 <hex 0x0-0xffffffff> }
| ipv6 { class <value 0-255> | flowlabel <hex 0x0-0xfffff> |
source_ipv6 <ipv6addr> | destination_ipv6 <ipv6addr>}] port [<portlist> | all]
[permit { priority <value 0-7> {replace_priority} | replace_dscp <value 0-63> | rx_rate
[no_limit | <value 1-156249>] } | mirror | deny]
{time_range <range_name 32>} |delete access_id <value 1-200>]

show access_profile {profile_id <value 1-200>}

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

create cpu access_profile profile_id <value 1-5>
[ethernet
{ vlan | source_mac <macmask 000000000000-ffffffffffff> |
destination_mac <macmask 000000000000-ffffffffffff> | 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 0x0-0xffffffff>}]}
| packet_content_mask
{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>} | ipv6

{class | flowlabel| source_ipv6_mask <ipv6mask> | destination_ipv6_mask <ipv6mask>}]

create cpu access_profile

[ethernet

{ vlan | source_mac <macmask 000000000000-ffffffffffff> |

destination_mac <macmask 000000000000-ffffffffffff> | 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 0x0-0xffffffff>}]}

| packet_content_mask

{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>}(1)

| ipv6

{class | flowlabel| source_ipv6_mask <ipv6mask> | destination_ipv6_mask <ipv6mask>}]

profile_id <value 1-5>

delete cpu access_profile [profile_id <value 1-5> |all]

config cpu access_profile profile_id <value 1-5>"

[add access_id <value 1-100>"

[ethernet

{vlan <vlan_name 32> | source_mac <macaddr 000000000000-ffffffffffff> |

destination_mac <macaddr 000000000000-ffffffffffff> |

802.1p <value 0-7> | ethernet_type <hex 0x0-0xffff> }

| ip

{vlan <vlan_name 32> | 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> | 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> } | ipv6 {class <value 0-255> | flowlabel <hex 0x0-0xfffff>| source_ipv6 <ipv6addr> | destination_ipv6 <ipv6addr>}] port [<portlist> | all] [permit | deny] {time_range <range_name 32>} | delete access_id <value 1-100>]
show cpu access_profile {profile_id <value 1-5>}
enable cpu_interface_filtering
disable cpu_interface_filtering

46-1 create access_profile

Purpose

Used to create access list rules.

Format

```
create access_profile profile_id <value 1-200>
[ ethernet
{ vlan | source_mac <macmask 000000000000-ffffffffffff> |
 destination_mac <macmask 000000000000-ffffffffffff> |
 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 [al | {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>}]

Description

The **create access_profile** command creates access list rules.

Note: Please see the Appendix section entitled “Mitigating ARP Spoofing Attacks Using Packet Content ACL” for a configuration example and further information.

Parameters

Parameters	Description	
vlan	Specifies a VLAN mask.	
source_mac	Specifies the source MAC mask.	
destination_mac	Specifies the destination MAC mask.	
802.1p	Specifies 802.1p priority tag mask.	
ethernet_type	Specifies the Ethernet type mask.	
vlan	Specifies a VLAN mask.	
source_ip_mask	Specifies an IP source submask.	
destination_ip_mask	Specifies an IP destination submask.	
dscp	Specifies the DSCP mask.	
icmp	Specifies that the rule applies to icmp traffic.	
	type	Specifies the ICMP packet type.
	code	Specifies the ICMP code.
igmp	Specifies that the rule applies to IGMP traffic.	
	type	Specifies the IGMP packet type
tcp	Specifies that the rule applies to TCP traffic.	
	src_port_mask	Specifies the TCP source port mask.
	dst_port_mask	Specifies the TCP destination port mask.
	flag_mask	Specifies the TCP flag field mask.
udp	Specifies that the rule applies to UDP traffic.	
	src_port_mask	Specifies the TCP source port mask.
	dst_port_mask	Specifies the TCP destination port mask.
protocod_id_mask	Specifies that the rule applies to the IP protocol ID traffic.	

<table>
<tr><td></td><td>user_define_mask</td><td>Specifies the L4 part mask.</td></tr>
<tr><td>packet_content_mask</td><td colspan="2">Specifies the frame content mask. There are a maximum of five offsets that can 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.</td></tr>
<tr><td>offset</td><td colspan="2">Specifies the mask pattern offset of frame.</td></tr>
<tr><td>offset_chunk_1,
offset_chunk_2,
offset_chunk_3,
offset_chunk_4</td><td colspan="2">Specifies the frame content offset and mask. Up to four trunk offset and masks in maximum can be configured. A trunk mask presents 4 bytes.
Four offset chunks can be selected out from 32 predefined offset chunks as described below:

<table>
<tr><td>chunk0</td><td>chunk1</td><td>chunk2</td><td>……</td><td>chunk29</td><td>chunk30</td><td>chunk31</td></tr>
<tr><td>B126,
B127,
B0,
B1</td><td>B2,
B3,
B4,
B5</td><td>B6,
B7,
B8,
B9</td><td>……</td><td>B114,
B115,
B116,
B117</td><td>B118,
B119,
B120,
B121</td><td>B122,
B123,
B124,
B125</td></tr>
</table>

Example:
offset_chunk_1 0 0xffffffff will match packet byte offset 126,127,0,1
offset_chunk_1 0 0x0000ffff will match packet byte offset 0,1
Note: Only one packet content mask profile can be created.</td></tr>
<tr><td>class</td><td colspan="2">Specifies the IPv6 class mask.</td></tr>
<tr><td>flowlabel</td><td colspan="2">Specifies the IPv6 flow label mask.</td></tr>
<tr><td>source_ipv6_mask</td><td colspan="2">Specifies the IPv6 source IP mask.</td></tr>
<tr><td>destination_ipv6_mask</td><td colspan="2">Specifies the IPv6 destination IP mask.</td></tr>
</table>

Restrictions

You must have administrator privileges. The Switch supports a maximum of 200 profiles.

Example

To create access list rules:

```
DGS-3200-10:4#create access_profile profile_id 100 ethernet vlan source_mac FF-F
F-FF-FF-FF-FF destination_mac 00-00-00-FF-FF-FF 802.1p ethernet_type
Command: create access_profile profile_id 100 ethernet vlan source_mac FF-FF-FF-
FF-FF-FF destination_mac 00-00-00-FF-FF-FF 802.1p ethernet_type

Success.
```

```
DGS-3200-10:4#

DGS-3200-10:4#create access_profile profile_id 101 ip vlan source_ip_mask 255.25
5.255.255 destination_ip_mask 255.255.255.0 dscp icmp
Command: create access_profile profile_id 101 ip vlan source_ip_mask 255.255.255
.255 destination_ip_mask 255.255.255.0 dscp icmp

Success.

DGS-3200-10:4#
```

46-2 delete access_profile

Purpose

Used to delete access list rules.

Format

delete access_profile [profile_id <value 1-200> | all]

Description

The **delete access_profile** command deletes access list rules.

Parameters

Parameters	Description
profile_id	Specifies the index of access list profile.
all	Specifies the whole access list profile to delete.

Restrictions

You must have administrator privileges. The Switch supports a maximum of 200 access entries. The **delete access_profile** command can only delete the profile which is created by the ACL module.

Example

To delete access list rules:

```
DGS-3200-10:4#delete access_profile profile_id 10
Command: delete access_profile profile_id 10

Success.

DGS-3200-10:4#
```

46-3 config access_profile

Purpose

Used to configure access list entry.

Format

config access_profile profile_id <value 1-200>
[add access_id [auto_assign | <value 1-200>]
[ethernet
{vlan <vlan_name 32> | source_mac <macaddr 000000000000-ffffffffffff> |
destination_mac <macaddr 000000000000-ffffffffffff> |
802.1p <value 0-7> |ethernet_type <hex 0x0-0xffff> }

| ip
{ vlan <vlan_name 32> | 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> |
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_mask
{offset_chunk_1 <hex 0x0-0xffffffff>
offset_chunk_2 <hex 0x0-0xffffffff>
offset_chunk_3 <hex 0x0-0xffffffff>
offset_chunk_4 <hex 0x0-0xffffffff> }
| ipv6
{ class <value 0-255> | flowlabel <hex 0x0-0xfffff> |
source_ipv6 <ipv6addr> | destination_ipv6 <ipv6addr>}] port [<portlist> | all]
[permit { priority <value 0-7> {replace_priority}| replace_dscp <value 0-63> | rx_rate [no_limit |
<value 1-156249>] } | mirror | deny] {time_range <range_name 32>}
|delete access_id <value 1-200>]

Description

The **config access_profile** command configures access list entry.
Note: Please see the Appendix section entitled “Mitigating ARP Spoofing Attacks Using Packet Content ACL” for a configuration example and further information.

Parameters

Parameters	Description		
profile_id	Specifies the index of the access list profile.		
access_id	Specifies the index of the access list entry. The range of this value is 1 to 200.		
	vlan	Specifies a VLAN name.	
	source_mac	Specifies the source MAC.	
	destination_mac	Specifies the destination MAC.	
	802.1p	Specifies the value of 802.1p priority tag, the value can be configured between 1 to 7.	
	ethernet_type	Specifies the Ethernet type.	
	vlan	Spcifies a VLAN name.	
	source_ip	Specifies an IP source address.	
	destination_ip	Specifies an IP destination address.	
	dscp	Specifies the value of DSCP, the value can be configured from 0 to 63.	
	icmp	Specifies that the rule applies to ICMP traffic.	
		type	Specifies the ICMP packet type.
		code	Specifies the ICMP packet code.
	igmp	Specifies that the rule applies to IGMP traffic.	
		type	Specifies the IGMP packet type.
	tcp	**src_port**	Specifies that the rule applies the range of TCP source port.
		dst_port	Specifies the range of tcp destination port range.
		flag	Specifies the TCP flag fields .
	udp	**src_port**	Specifies the range of tcp source port range.
		dst_port	Specifies the range of tcp destination port mask.
	protocod_id	Specifies that the rule applies to the value of IP protocol id traffic	
		user_define	Specifics the L4 part value.
	offset_chunk_1, offset_chunk 2, offset_chunk 3, offset_chunk 4	Specifies the content of the trunk to be monitored	
	class	Specifies IPv6 class value.	

	flowlabel	Specifies IPv6 flow label value.
	source_ipv6	Specifies IPv6 source IP value.
	destination_ipv6	Specifies IPv6 destionation IP value.
permit	Specifies the packets that match the access profile are permit by the switch.	
priority	Specifies the packets that match the access profile are remap the 802.1p priority tag field by the switch.	
replace_priority	Specifies the packets that match the access profile remarking the 802.1p priority tag field by the switch.	
rx_rate	Specifies the limitation of receive data rate.	
replace_dscp	Specifies the DSCP of the packets that match the access profile are modified according to the value.	
deny	Specifies the packets that match the access profile are filtered by the switch.	
time_range	Specifies name of this time range entry.	

Restrictions

You must have administrator privileges.

Example

To configure an access list entry:

```
DGS-3200-10:4#config access_profile profile_id 101 add access_id 1 ip vlan defau
lt source_ip 20.2.2.3 destination_ip 10.1.1.252 dscp 3 icmp port 1 permit
Command: config access_profile profile_id 101 add access_id 1 ip vlan default so
urce_ip 20.2.2.3 destination_ip 10.1.1.252 dscp 3 icmp port 1 permit

Success.

DGS-3200-10:4#
```

46-4 show access_profile

Purpose

Used to display current access list table.

Format

show access_profile {profile_id <value 1-200>}

Description

The **show access_profile** command displays current access list table.

Parameters

Parameters	Description
profile_id	Specifies the index of the access list profile.

Restrictions

None.

Example

To display the current access list table:

```
DGS-3200-10:4#show access_profile
Command: show access_profile

Access Profile Table

Total Unused Rule Entries:199
Total Used Rule Entries  :1


Access Profile ID: 100                                      Type : Ethernet
================================================================================
Owner       : ACL
MASK Option :
VLAN          Source MAC          Destination MAC   802.1P  Ethernet Type
              FF-FF-FF-FF-FF-FF   00-00-00-FF-FF-FF
-----------   -----------------   ----------------- ------  -------------
================================================================================
Unused Entries: 200


Access Profile ID: 101                                      Type : IP
================================================================================
Owner       : ACL
MASK Option :
VLAN          Source IP MASK  Dst. IP MASK    DSCP ICMP
```

```
              255.255.255.255 255.255.255.0
-----------  --------------- --------------- ---- -----------------

Access ID : 1               Mode: Permit                RX Rate(64Kbps): no_limit
Ports     : 1
-----------  --------------- --------------- ---- -----------------
default      20.2.2.3         10.1.1.0         3
================================================================================
Unused Entries: 199

DGS-3200-10:4#
```

46-5 config time_range

Purpose

Used to configure the range of time to activate a function on the switch.

Format

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

Description

This command defines 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 SNTP time or configured time. If this time is not available, then the time range will not be met.

Parameters

Parameters	Description
range_name	Specifies the name of the time range settings.
start_time	Specifies the starting time in a day. (24-hr time) For example, 19:00 means 7PM. 19 is also acceptable. **start_time** must be smaller than end_time.
end_time	Specifies the ending time in a day. (24-hr time)
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. 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, the deletion of this time range profile will fail.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4#config time_range testdaily hours start_time 12:0:0 end_time 13:0:
0 weekdays mon,fri
Command: config time_range testdaily hours start_time 12:0:0 end_time 13:0:0 wee
kdays mon,fri

Success.

DGS-3200-10:4#
```

46-6 show time_range

Purpose

Used to display current access list table.

Format

show time_range

Description

The **show time_range** command displays current time range setting.

Parameters

None.

Restrictions

None.

Example

To display current time range setting.

```
DGS-3200-10:4#show time_range
Command: show time_range

Time Range Information
-------------------------
Range Name  :  testdaily
Weekdays    :  Mon,Fri
Start Time  :  12:00:00
End Time    :  13:00:00

Total Entries :1

DGS-3200-10:4#
```

46-7 create cpu access_profile

Purpose

Used to create CPU access list rules.

Format

create cpu access_profile profile_id <value 1-5>
[ethernet
{ vlan | source_mac <macmask 000000000000-ffffffffffff> |
destination_mac <macmask 000000000000-ffffffffffff> | 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 0x0-0xffffffff>}]}
| packet_content_mask
{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>}
| ipv6
{class | flowlabel| source_ipv6_mask <ipv6mask> | destination_ipv6_mask <ipv6mask>}]

Description

The **create cpu access_profile** command creates CPU access list rules.

Parameters

Parameters	Description	
vlan	Specifies a VLAN mask.	
source_mac	Specifies the source MAC mask.	
destination_mac	Specifies the destination MAC mask.	
802.1p	Specifies 802.1p priority tag mask.	
ethernet_type	Specifies the Ethernet type mask.	
vlan	Specifies a VLAN mask.	
source_ip_mask	Specifies an IP source submask.	
destination_ip_mask	Specifies an IP destination submask.	
dscp	Specifies the DSCP mask.	
icmp	Specifies that the rule applies to ICMP traffic.	
	type	Specifies the ICMP packet type.
	code	Specifies the ICMP code.
igmp	Specifies that the rule applies to IGMP traffic.	
	type	Specifies the IGMP packet type
Tcp	Specifies that the rule applies to TCP traffic.	
	src_port_mask	Specifies the TCP source port mask.
	dst_port_mask	Specifies the TCP destination port mask.
	flag_mask	Specifies the TCP flag field mask.
udp	Specifies that the rule applies to UDP traffic.	
	src_port_mask	Specifies the TCP source port mask.
	dst_port_mask	Specifies the TCP destination port mask.
protocod_id_mask	Specifies that the rule applies to the IP protocol ID traffic.	
	user_define_mask	Specifies the L4 part mask
packet_content_mask	Specifies the packet content mask.	
	offset_0-15	Specifies mask for packet bytes 0-15.
	offset_16-31	Specifies mask for packet bytes 16-31.
	offset_32-47	Specifies mask for packet bytes 32-47.
	offset_48-63	Specifies mask for packet bytes 48-63.
	offset_64-79	Specifies mask for packet bytes 64-79.
class	Specifies the IPv6 class mask.	
flowlabel	Specifies the IPv6 flow label mask.	
source_ipv6_mask	Specifies the IPv6 source IP mask.	

destination_ipv6_mask	Specifies the IPv6 destination IP mask.

Restrictions

You must have administrator privileges. The Switch supports a maximum of five CPU profiles to be configured.

Example

To create CPU access list rules:

```
DGS-3200-10:4#create cpu access_profile profile_id 1 ethernet vlan
Command: create cpu access_profile profile_id 1 ethernet vlan

Success.

DGS-3200-10:4#create cpu access_profile profile_id 2 ip source_ip_mask 255.255.2
55.255
Command: create cpu access_profile profile_id 2 ip source_ip_mask 255.255.255.25
5

Success.

DGS-3200-10:4#
```

46-8 delete cpu access_profile

Purpose

Used to delete CPU access list rules.

Format

delete CPU access_profile [profile_id <value 1-5> | all]

Description

The **delete cpu access_profile** command deletes CPU access list rules.

Parameters

Parameters	Description
profile_id	Specifies the index of access list profile.
all	Specifies the whole access list profile to delete.

Restrictions

You must have administrator privileges. The Switch supports a maximum of 500 access entries. The **delete cpu access_profile** command can only delete the profile which is created by the CPU ACL module.

Example

To delete access list rules:

```
DGS-3200-10:4#delete cpu access_profile profile_id 3
Command: delete cpu access_profile profile_id 3

Success.

DGS-3200-10:4#
```

46-9 config cpu access_profile

Purpose

Used to configure a CPU access list entry.

Format

config cpu access_profile profile_id <value 1-5>"
[add access_id <value 1-100>"
[ethernet
{vlan <vlan_name 32> | source_mac <macaddr 000000000000-ffffffffffff> |
destination_mac <macaddr 000000000000-ffffffffffff> |
802.1p <value 0-7> | ethernet_type <hex 0x0-0xffff> }
| ip
{vlan <vlan_name 32> | 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> | 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> }
| ipv6
{class <value 0-255> | flowlabel <hex 0x0-0xfffff>|
source_ipv6 <ipv6addr> | destination_ipv6 <ipv6addr>}]
port [<portlist> | all] [permit | deny] {time_range <range_name 32>}
| delete access_id <value 1-100>]

Description

The **config cpu access_profile** command configures CPU access list entry.

Parameters

Parameters	Description		
profile_id	Specifies the index of CPU access list profile.		
access_id	Specifies the index of an access list entry. The range of this value is 1 to 100.		
	vlan	Specifies a VLAN name.	
	source_mac	Specifies the source MAC.	
	destination_mac	Specifies the destination MAC.	
	802.1p	Specifies the value of 802.1p priority tag, the value can be configured between 1 and 7.	
	ethernet_type	Specifies the Ethernet type.	
	vlan	Spcifies a VLAN name.	
	source_ip	Specifies an IP source address.	
	destination_ip	Specifies an IP destination address.	
	dscp	Specifies the value of DSCP, the value can be configured from 0 to 63.	
	icmp	Specifies that the rule applies to ICMP traffic.	
		type	Specifies the ICMP packet type.
		code	Specifies the ICMP packet code.
	igmp	Specifies that the rule applies to IGMP traffic.	
		type	Specifies the IGMP packet type.
	tcp	**src_port**	Specifies that the rule applies to the range of TCP source ports.
		dst_port	Specifies the range of the TCP destination port range
		flag	Specifies the TCP flag fields.
	udp	**src_port**	Specifies the range of the TCP source port range.
		dst_port	Specifies the range of the TCP destination port mask

	protocod_id	Specifies that the rule applies to the value of IP protocol ID traffic.	
		user_define	Specifies the L4 part value.
	packet_content	**offset_0-15**	Specifies value for packet bytes 0-15.
		offset_16-31	Specifies value for packet bytes 16-31.
		offset_32-47	Specifies value for packet bytes 32-47.
		offset_48-63	Specifies value for packet bytes 48-63.
		offset_64-79	Specifies value for packet bytes 64-79.
	class	Specifies IPv6 class value.	
	flowlabel	Specifies IPv6 flow label value.	
	source_ipv6	Specifies IPv6 source IP value.	
	destination_ipv6	Specifies IPv6 destionation IP value.	
permit	Specifies the packets that match the access profile are permitted by the switch.		
deny	Specifies the packets that match the access profile are filtered by the switch.		
time_range	Specifies name of this time range entry.		

Restrictions

You must have administrator privileges.

Example

To configure access list entry:

```
DGS-3200-10:4#config cpu access_profile profile_id 1 add access_id 1 ethernet vl
an default port 1-3 deny
Command: config cpu access_profile profile_id 1 add access_id 1 ethernet vlan de
fault port 1-3 deny

Success.

DGS-3200-10:4#
```

46-10 show cpu access_profile

Purpose

Used to display current CPU access list table.

Format

show cpu access_profile {profile_id <value 1-5>}

Description

The **show cpu access_profile** command displays current CPU access list table.

Parameters

Parameters	Description
profile_id	Specifies the index of an access list profile.

Restrictions

None.

Example

To display the current CPU access list table:

```
DGS-3200-10:4#show cpu access_profile
Command: show cpu access_profile

CPU Interface Filtering State: Disabled

CPU Interface Access Profile Table

Total Unused Rule Entries:499
Total Used Rule Entries  :1



Access Profile ID: 1                                    Type : Ethernet
================================================================================
MASK Option :
VLAN
-----------

Access ID : 1              Mode: Deny
Ports     : 1-3
-----------
default
================================================================================
Unused Entries: 99
```

```
Access Profile ID: 2                                        Type : IP
================================================================================
MASK Option :
Source IP MASK
255.255.255.255
---------------
================================================================================
Unused Entries: 100


DGS-3200-10:4#
```

46-11 enable cpu_interface_filtering

Purpose

Used to enable CPU interface filtering.

Format

enable cpu_interface_filtering

Description

The **enable cpu_interface_filtering** command enables CPU interface filtering.

Parameters

None.

Restrictions

None.

Example

To enable CPU interface filtering:

```
DGS-3200-10:4#enable cpu_interface_filtering
Command: enable cpu_interface_filtering

Success.

DGS-3200-10:4#
```

46-12 disable cpu_interface_filtering

Purpose

Used to disable CPU interface filtering.

Format

disable cpu_interface_filtering

Description

The **disable cpu_interface_filtering** command disables CPU interface filtering.

Parameters

None.

Restrictions

None.

Example

To disable CPU interface filtering:

```
DGS-3200-10:4#disable cpu_interface_filtering
Command: disable cpu_interface_filtering

Success.

DGS-3200-10:4#
```

XIII. Packet Control

The Packet Control section includes the following chapter: Packet Storm.

47 Packet Storm Command List

config traffic control [<portlist> | all] { broadcast [enable| disable]| multicast [enable| disable] | unicast [enable | disable] | action [drop | shutdown] | threshold <value 512-1024000>| countdown [<value 0> | value 5-30>] | time_interval <value 5-30 > }
config traffic trap [none|storm_occurred|storm_cleared|both]
show traffic control{ <portlist> }

47-1 config traffic control

Purpose

Used to configure broadcast/multicast/unicast packet storm control. A software mechanism is provided to monitor the traffic rate in addition to the hardware storm control mechanism. If the 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 512-1024000>| countdown [<value 0> | <value 5-30>] | time_interval <value 5-30 > }

Description

The **config traffic control** command configures broadcast/multicast/unicaststorm control.
Broadcast storm control commands provides H/W storm control mechanism only, and these packet storm control commands include H/W and S/W mechanisms to provide shutdown, recovery, and trap notification functions.

Parameters

Parameters	Description
portlist	Used to specify a range of ports to be configured.
broadcast	Enable or disable broadcast storm control.
multicast	Enable or disable multicast storm control.
unicast	Enable or disable unknown packet strom control. (Only support HW storm control)
action	There are two actions to take for storm control, **shutdown** and **drop**. The former is implemented in S/W, and the latter is implemented in H/W. If a user chooses **shutdown**, he needs to configure **threshold**,

	countdown, and **time_interval** as well.
threshold	The upper threshold at which the specified storm control will turn on. The **<value 512-1024000>**is the number of broadcast/multicast packets per second received by the switch that will trigger the storm traffic control measure. Must be an unsigned integer.
countdown	Timer for shutdown mode. When a port enters a shutdown RX state, and if this times out, the port will shut down the port forever. The default is 0 minutes. 0 is the disable forever state.
time_interval	The sampling interval of received packet counts. The possible value will be 5 to 30 seconds. This parameter is meaningless for dropping packets is selected as action.

Restrictions

You must have administrator privileges.

Examples

To configure traffic control and state:

```
DGS-3200-10:4#config traffic control 1-10 broadcast enable action shutdown
threshold
1 time_interval 10
Command: config traffic control 1-10 broadcast enable action shutdown threshold
1
10 time_interval 10

Success.

DGS-3200-10:4#
```

47-2 config traffic trap

Purpose

Used to configure a traffic control trap.

Format

config traffic trap [none|storm_occurred|storm_cleared|both]

Description

This command configures whethers storm control notification will be generated or not while traffic

storm events are detected by a SW traffic storm control mechanism.

Note: A traffic control trap is active only when the control action is configured as "**shutdown**". If the control action is "**drop**" there will no traps issue while storm event is detected.

Parameters

Parameters	Description
none	No notification will be generated when storm event is detected or cleared.
storm_occurred	A notification will be generated when a storm event is detected.
storm_cleared	A notification will be generated when a storm event is cleared.
both	A notification will be generated both when a storm event is detected and cleared.

Restrictions

You must have administrator privileges.

Examples

```
DGS-3200-10:4#config traffic trap both
Command: config traffic trap both

Success.

DGS-3200-10:4#
```

47-3 show traffic control

Purpose

Used to display current traffic control settings.

Format

show traffic control{ <portlist> }

Description

The **show traffic control** command displays current traffic control settings.

Parameters

Parameters	Description
portlist	Used to specify a range of ports to be shown. If no parameter is specified, the system will display all port packet storm control configurations.

Restrictions

None.

Examples

To display the packet storm control setting:

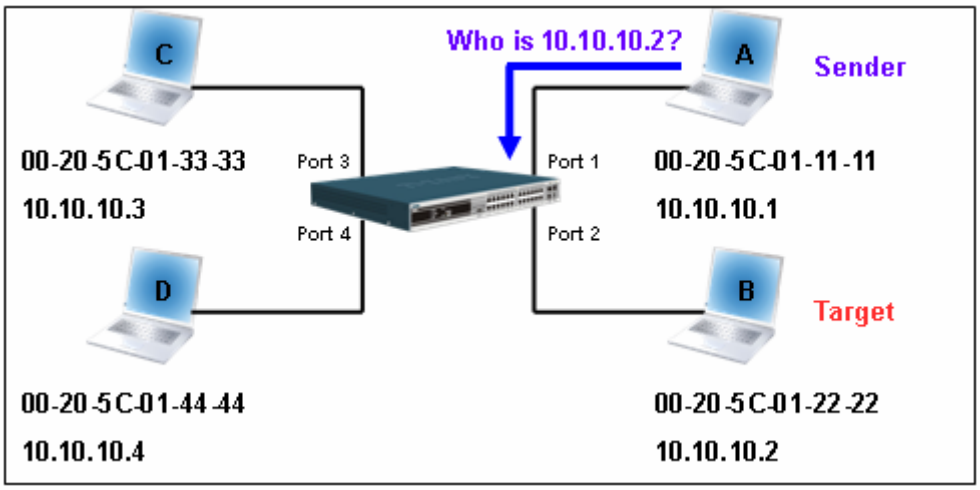
```
DGS-3200-10:4#show traffic control
Command: show traffic control



Traffic Storm Control Trap :[None]

Port Thres  Broadcast Multicast Unicast  Action   Count Time    Shutdown
     hold   Storm     Storm     Storm              down  Interval Forever
---- ----- --------- --------- -------- -------- ----- -------- --------
1    512    Disabled  Disabled  Disabled drop     0     5
2    512    Disabled  Disabled  Disabled drop     0     5
3    512    Disabled  Disabled  Disabled drop     0     5
4    512    Disabled  Disabled  Disabled drop     0     5
5    512    Disabled  Disabled  Disabled drop     0     5
6    512    Disabled  Disabled  Disabled drop     0     5
7    512    Disabled  Disabled  Disabled drop     0     5
8    512    Disabled  Disabled  Disabled drop     0     5
9    512    Disabled  Disabled  Disabled drop     0     5
10   512    Disabled  Disabled  Disabled drop     0     5

DGS-3200-10:4#
```

Appendix - Mitigating ARP Spoofing Attacks Using Packet Content ACL

How Address Resolution Protocol works

In the process of ARP, PC A will first issue an ARP request to query PC B's MAC address. The network structure is shown in Figure-1.

Figure-1



In the meantime, PC A's MAC address will be written into the "Sender H/W Address" and its IP address will be written into the "Sender Protocol Address" in the ARP payload. As PC B's MAC address is unknown, the "Target H/W Address" will be "00-00-00-00-00-00," while PC B's IP address will be written into the "Target Protocol Address," shown in Table-1.

Table-1 (ARP Payload)

H/W type	Protocol type	H/W address length	Protocol address length	Operation	Sender H/W address	Sender protocol address	Target H/W address	Target protocol address
				ARP request	***00-20-5C-01-11-11***	***10.10.10.1***	***00-00-00-00-00-00***	***10.10.10.2***

The ARP request will be encapsulated into an Ethernet frame and sent out. As can be seen in Table-2, the "Source Address" in the Ethernet frame will be PC A's MAC address. Since an ARP request is sent via broadcast, the "Destination address" is in a format of Ethernet broadcast (FF-FF-FF-FF-FF-FF).

Table-2 (Ethernet frame format)

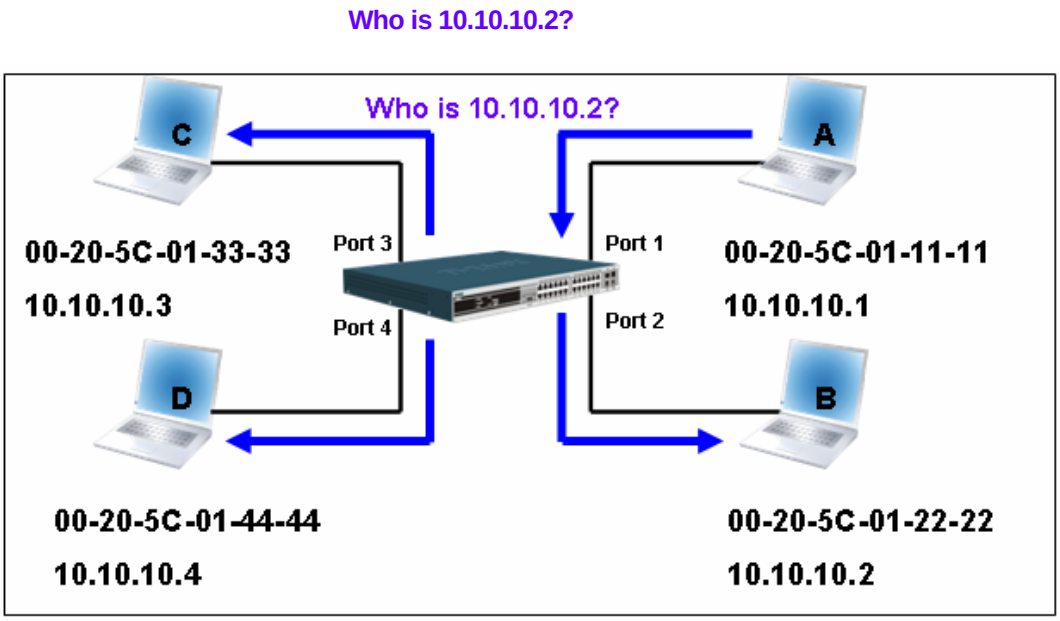
Destination address	Source address	Ether-type	ARP	FCS
FF-FF-FF-FF-FF-FF	***00-20-5C-01-11-11***			

When the switch receives the frame, it will check the "Source Address" in the Ethernet frame's header. If the address is not in its Forwarding Table, the switch will learn PC A's MAC and the associated port into its Forwarding Table.

Port1 00-20-5C-01-11-11

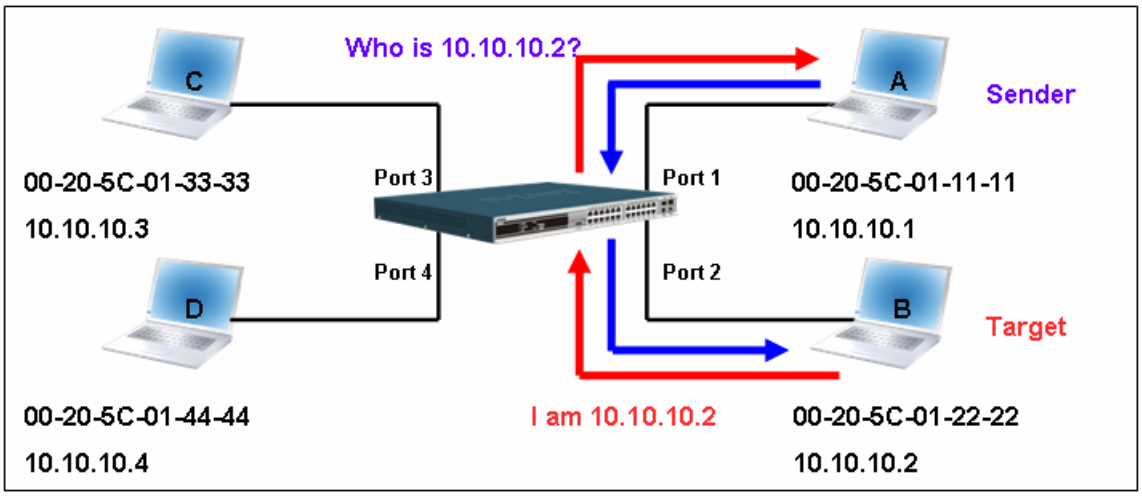
In addition, when the switch receives the broadcasted ARP request, it will flood the frame to all ports except the source port, port 1 (see Figure-2).

Figure-2



When the switch floods the frame of ARP request to the network, all PCs will receive and examine the frame but only PC B will reply the query as the destination IP matched (see Figure-3).

Figure-3



When PC B replies to the ARP request, its MAC address will be written into “Target H/W Address” in the ARP payload shown in Table-3. The ARP reply will be then encapsulated into an Ethernet frame again and sent back to the sender. The ARP reply is in a form of Unicast communication.

Table-3 (ARP Payload)

H/W type	Protocol type	H/W address length	Protocol address length	Operation	Sender H/W address	Sender protocol address	Target H/W address	Target protocol address
				ARP reply	***00-20-5C-01-11-11***	***10.10.10.1***	***00-20-5C-01-22-22***	***10.10.10.2***

When PC B replies to the query, the “Destination Address” in the Ethernet frame will be changed to PC A’s MAC address. The “Source Address” will be changed to PC B’s MAC address (see Table-4).

Table-4 (Ethernet frame format)

Destination address	Source address	Ether-type	ARP	FCS
00-20-5C-01-11-11	***00-20-5C-01-22-22***			

The switch will also examine the “Source Address” of the Ethernet frame and find that the address is not in the Forwarding Table. The switch will learn PC B’s MAC and update its Forwarding Table.

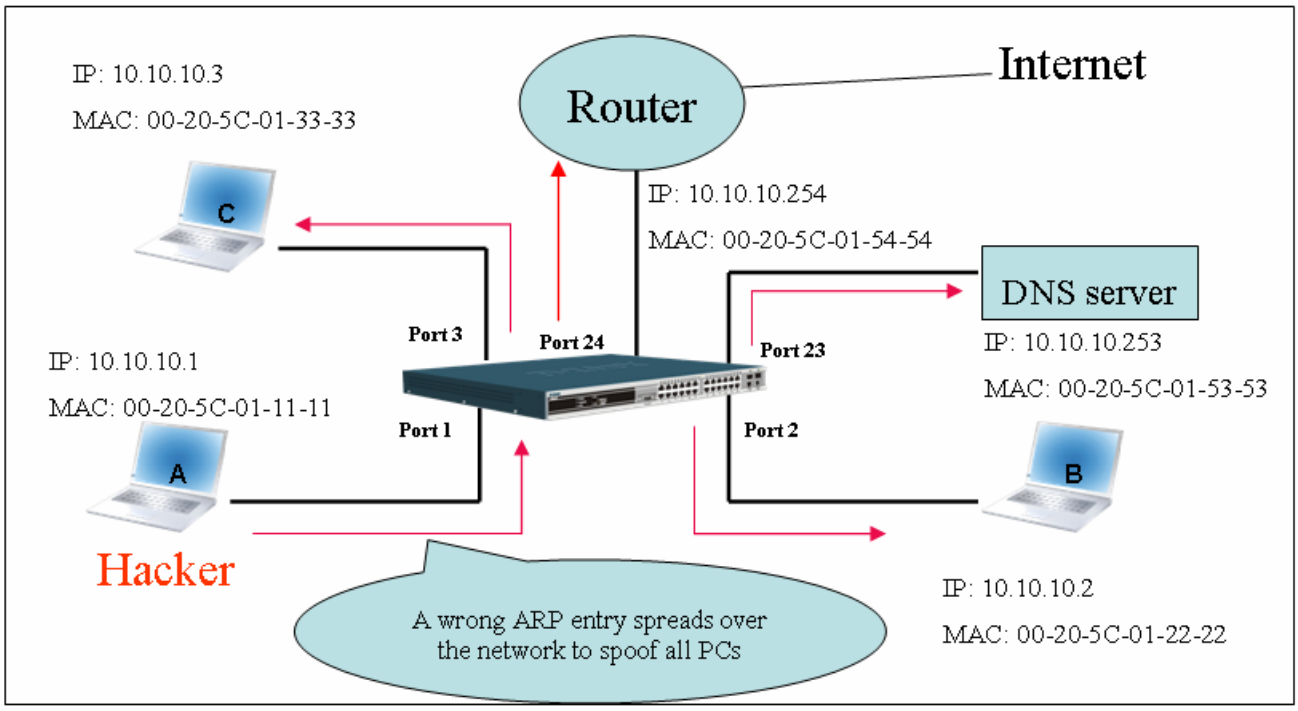
Forwarding Table

Port1	**00-20-5C-01-11-11**
Port2	**00-20-5C-01-22-22**

How ARP Spoofing Attacks a Network

ARP spoofing, also known as ARP poisoning, is a method to attack an Ethernet network which may allow an attacker to sniff data frames on a LAN, modify the traffic, or stop the traffic altogether (known as a Denial of Service – DoS attack). The principle of ARP spoofing is to send the fake, or spoofed ARP messages to an Ethernet network. Generally, the aim is to associate the attacker's or random MAC address with the IP address of another node (such as the default gateway). Any traffic meant for that IP address would be mistakenly re-directed to the node specified by the attacker. IP spoofing attack is caused by Gratuitous ARP that occurs when a host sends an ARP request to resolve its own IP address. Figure-4 shows a hacker within a LAN to initiate ARP spoofing attack.

Figure-4



In the Gratuitous ARP packet, the “Sender protocol address” and “Target protocol address” are filled with the same source IP address itself. The “Sender H/W Address” and “Target H/W address” are filled with the same source MAC address itself. The destination MAC address is the Ethernet broadcast address (FF-FF-FF-FF-FF-FF). All nodes within the network will immediately update their own ARP table in accordance with the sender’s MAC and IP address. The format of Gratuitous ARP is shown in the following table.

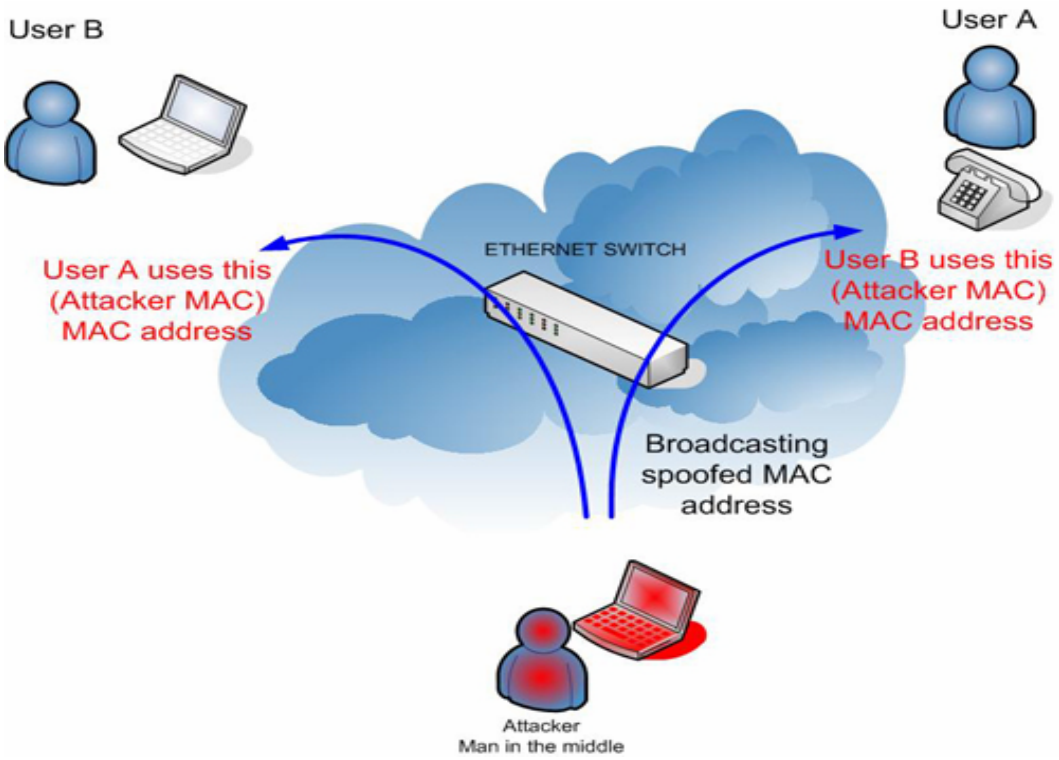
Table-5

Ethernet Header											
Destination address (6-byte)	Source address (6-byte)	Ethernet type (2-byte)	H/W type (2-byte)	Protocol type (2-byte)	H/W address length (1-byte)	Protocol address length (1-byte)	Operation (2-byte)	Sender H/W address (6-byte)	Sender protocol address (4-byte)	Target H/W address (6-byte)	Target protocol address (4-byte)
FF-FF-FF-FF-FF-FF	00-20-5C-01-11-11	806					ARP reply	***00-20-5C-01-11-11***	***10.10.10.254***	***00-20-5C-01-11-11***	***10.10.10.254***

A common DoS attack today can be done by associating a nonexistent or any specified MAC address to the IP address of the network's default gateway. The malicious attacker only needs to broadcast ONE Gratuitous ARP to the network claiming it is the gateway so that the whole network operation will be turned down as all packets to the Internet will be directed to the wrong node.

Likewise, the attacker can either choose to forward the traffic to the actual default gateway (passive sniffing) or modify the data before forwarding it (man-in-the-middle attack). The hacker cheats the victim PC that it is a router and cheats the router that it is the victim. As can be seen in Figure-5 all traffic will be then sniffed by the hacker but the users will not discover.

Figure-5

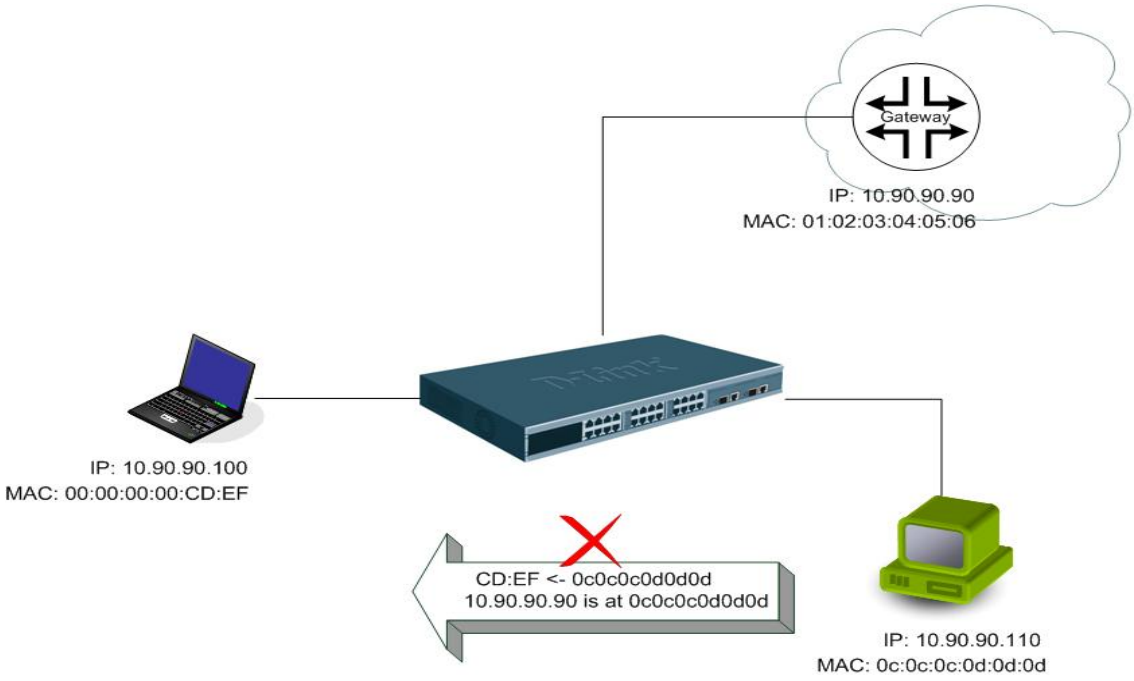


Prevent ARP Spoofing via Packet Content ACL

D-Link managed switches can effectively mitigate common DoS attacks caused by ARP spoofing via a unique Package Content ACL.

For the reason that basic ACL can only filter ARP packets based on packet type, VLAN ID, Source, and Destination MAC information, there is a need for further inspections of ARP packets. To prevent ARP spoofing attack, we will demonstrate here via using Packet Content ACL to block the invalid ARP packets which contain faked gateway's MAC and IP binding.

Example topology



Configuration

The configuration logic is as follows:

1. Only if the ARP matches Source MAC address in Ethernet, Sender MAC address and Sender IP address in ARP protocol can pass through the switch. (In this example, it is gateway's ARP.)
2. The switch will deny all other ARP packets which claim they are from the gateway's IP.

The design of Packet Content ACL enables users to inspect any offset_chunk. An offset_chunk is a 4-byte block in a HEX format which is utilized to match the individual field in an Ethernet frame. Each profile is allowed to contain up to a maximum of four offset_chunks. Furthermore, only one single profile of Packet Content ACL can be supported per switch. In other words, up to 16 bytes of total offset_chunks can be applied to each profile and a switch. Therefore, a careful consideration is needed for planning and configuration of the valuable offset_chunks.

In Table-6, you will notice that the Offset_Chunk0 starts from the 127th byte and ends at the 128th byte. It also can be found that the offset_chunk is scratched from **1** but not zero.

Table-6: Chunk and packet offset

Offset Chunk	Offset Chunk0	Offset Chunk1	Offset Chunk2	Offset Chunk3	Offset Chunk4	Offset Chunk5	Offset Chunk6	Offset Chunk7	Offset Chunk8	Offset Chunk9	Offset Chunk10	Offset Chunk11	Offset Chunk12	Offset Chunk13	Offset Chunk14	Offset Chunk15
Byte	127	3	7	11	15	19	23	27	31	35	39	43	47	51	55	59
Byte	128	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
Byte	1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61
Byte	2	6	10	14	18	22	26	30	34	38	42	46	50	54	58	62

Offset Chunk	Offset Chunk15	Offset Chunk16	Offset Chunk17	Offset Chunk18	Offset Chunk19	Offset Chunk20	Offset Chunk21	Offset Chunk22	Offset Chunk23	Offset Chunk24	Offset Chunk25	Offset Chunk26	Offset Chunk27	Offset Chunk28	Offset Chunk129	Offset Chunk30
Byte	63	67	71	75	79	83	87	91	95	99	103	107	111	115	119	123
Byte	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120	124
Byte	65	69	73	77	81	85	89	93	97	101	105	109	113	117	121	125
Byte	66	70	74	78	82	86	90	94	98	102	106	110	114	118	122	126

The following table indicates a completed ARP packet contained in Ethernet frame which is the pattern for the calculation of packet offset.

Table-7: A completed ARP packet contained in Ethernet frame

Ethernet Header **ARP**

Destination address (6-byte)	Source address (6-byte) 01 02 03 04 05 06	Ethernet type (2-byte) 0806	H/W type (2-byte)	Protocol type (2-byte)	H/W address length (1-byte)	Protocol address length (1-byte)	Operation (2-byte)	Sender H/W address (6-byte)	Sender protocol address (4-byte) 0a5a5a5a (10.90.90.90)	Target H/W address (6-byte)	Target protocol address (4-byte)

	Command	Description
Step1	create access_profile profile_id 1 ethernet source_mac FF-FF-FF-FF-FF-FF ethernet_type	- Create access profile 1 To match Ethernet Type and Source MAC address.
Step2	config access_profile profile_id 1 add access_id 1 ethernet source_mac 01-02-03-04-05-06 ethernet_type 0x806 port 1-27 permit	- Configure access profile 1 - Only if the gateway's ARP packet that contains the correct Source MAC in Ethernet frame can pass through the switch.
Step3	create access_profile profile_id 2 packet_content_mask offset_chunk_1 3 0x0000FFFF Ethernet Type(2-byte) offset_chunk_2 7 0x0000FFFF Sdr IP(First 2-byte) offset_chunk_3 8 0xFFFF0000 Sdr IP(Last 2-byte)	- Create access profile 2 - The first Chunk starts from Chunk 3: mask for Ethernet Type (Blue in Table-6: 13th & 14th bytes) - The second Chunk starts from Chunk 7: mask for Sender IP (First 2-byte) in ARP packet (Green in Table-6: 29th & 30th bytes) - The third Chunk starts from Chunk 8: mask for Sender IP (Last 2-byte) in ARP packet (Brown in Table-6: 31st & 32nd bytes)
Step4	config access_profile profile_id 2 add access_id 1 packet_content offset_chunk_1 0x00000806 Ethernet Type(2-byte): ARP offset_chunk_2 0x00000A5A Sdr IP(First 2-byte): 10.90 offset_chunk_3 0x5A5A0000 Sdr IP(Last 2-byte): 90.90 port 1-27 deny	- Configure access profile 2 - - The rest ARP packets whose Sender IP claim they are the gateway's IP will be dropped.
Step5	Save	- Save config