Nortel Ethernet Routing Switch 8600

Commands Reference — NNCLI

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New in this release

The following sections detail what's new in *Nortel Ethernet Routing Switch 8600 Commands Reference—NNCLI* (NN46205-106) for Release 5.1.

Features

See the following sections for information about feature changes:

Bidirectional Forwarding Detection

Bidirectional Forwarding Detection (BFD) is a simple Hello protocol used between two peers. In BFD, each peer system periodically transmits BFD packets to each other. If one of the systems does not receive a BFD packet after a certain period of time, the system assumes that the link or other system is down.

For more information about BFD, see "BGP services commands" (page 129).

Multicast Source Discovery Protocol

Nortel Ethernet Routing Switch 8600 (NN46205-524) is a new document in Release 5.1. Multicast Source Discovery Protocol (MSDP) is the new feature in this release.

MSDP connects multiple IP Version 4 Protocol Independent Multicast Sparse-Mode (PIM-SM) domains. All rendezvous points (RP) in different domains can use MDSP to know multicast sources for a group. MSDP-speaking routers in a PIM-SM domain establish an MSDP peering relationship with MSDP peers in another domain. MSDP uses the Border Gateway Protocol (BGP) for interdomain operation.

For more information about MSDP, see "Multicast Source Discovery Protocol commands" (page 533).

Terminal Access Controller Access Control System plus

Terminal Access Controller Access Control System plus (TACACS+) is a security application implemented as a client/server-based protocol that provides centralized validation of users attempting to gain access to a router or network access server.

For more information about TACACS+, see “Security commands” (page 723).

Introduction

This guides describes the Nortel Networks Command Line Interface (NNCLI) commands for the configuration of various features in Ethernet Routing Switch 8600 for Release 5.1.

Navigation

Administration commands

This chapter describes Nortel Networks Command Line Interface (NNCLI) commands to support the administration of the Ethernet Routing Switch 8600.

Navigation

no boot config flags autoboot

Access the boot monitor from the run-time environment to configure and manage the boot process.

Syntax

```
no boot config flags autoboot
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

save bootconfig

Save the boot configuration file after accessing the boot monitor from the run-time environment to configure and manage the boot process.

Syntax

`save bootconfig`

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config cli

Configure the boot monitor to configure connection settings for NNCLI sessions.

Syntax

`boot config cli [more]`

Parameters

Variable	Value
more	Configures scrolling for the output display. The default is true. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

Default

The default value is true.

Command mode

Global Configuration Mode

Next command mode

Interface Mode

Related commands

Variable	Value
prompt <value>	Changes the boot monitor prompt to the defined string. • **value** is a string from 1–32 characters. To set this option to the default value, use the **default** operator with the command.

Variable	Value
screenlines <value>	Configures the number of lines in the output display; the default is 23. • **value** is the number of lines (1–64). To set this option to the default value, use the **default** operator with the command.
timeout <seconds>	Configures the idle timeout period before automatic logoff for NNCLI sessions; the default is 0. • **seconds** is the timeout period in seconds (0–65536). To set this option to the default value, use the **default** operator with the command.

boot config flags factorydefaults

Modify the boot sequence to prevent the switch from using the factory default settings or, conversely, to prevent loading a saved configuration file.

Syntax

boot config flags factorydefaults

Parameters

Variable	Value
factorydefaults	Sets the runtime switch configuration to factory defaults.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config flags ftpd

Enable the remote access service to provide multiple methods of remote access.

Syntax

boot config flags ftpd

Parameters

Variable	Value
ftpd	Enables ftp remote access server.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
rlogind	Enables root on fatal error remote access server.
sshd	Enables ssh daemon remote access server.
telnetd	Enables Telnet remote access server.
tftpd	Enables tftp remote access server.

boot config choice

Change the boot source order to display or change the order in which the boot sources (flash and PCMCIA card) are accessed.

Syntax

boot config choice <primary|secondary|tertiary> backup-config-file

Parameters

Variable	Value
backup-config-file <file>	Identifies the backup boot configuration file. • **file** is the device and file name, up to 255 characters including the path. To set this option to the default value, use the **default** operator with the command.
<primary|secondary|tertiary>	Lists the order in which the specified boot devices are accessed after you reboot the switch. The default order is to access the PCMCIA card first, and then the onboard flash.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
config-file <file>	Identifies the boot configuration file. • **file** is the device and file name, up to 255 characters including the path. To set this option to the default value, use the **default** operator with the command.
image-file <file>	Identifies the image file. • **file** is the device and file name, up to 255 characters including the path. To set this option to the default value, use the **default** operator with the command.

boot config delay

Configure the standby-to-master delay to set the number of seconds a standby SF/CPU waits before trying to become the master SF/CPU.

Syntax

boot config delay <seconds>

Parameters

Variable	Value
`delay <seconds>`	Sets the slave delay time in seconds. The value ranges from 0 to 255.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config flags

Set the system flags to enable flags for specific configuration settings.

Syntax

```
boot config flags
```

Parameters

Variable	Value
`8100-mode`	Turns the flag ON or OFF. The default value is false.
`8616-reautoneg`	Permits 8616 modules to reautonegotiate when connected to a Multiservice Switch 15000. The default value is false.
`alt-led`	Activates the alternate LED behavior. The default is disabled. If you change this parameter, you must reset the switch. The default is false. **ATTENTION** For internal Nortel use only. Do not change this parameter unless directed by Nortel.

Variable	Value
autoboot	Enables the switch automatically runs the run-time image after reset. When disabled, the boot process stops at the boot monitor prompt. Configuring autoboot to false is useful for some debugging tasks. The default is enabled. If you change this parameter, you must reset the switch.
block-snmp	When enabled, blocks Simple Network Management Protocol (SNMP) management. The default is disabled.
block-warmstandby-switchover	When enabled, prevents the secondary SF/CPU in warm standby mode from becoming the primary SF/CPU when the primary SF/CPU is reset. The default is disabled. If you change this parameter, you must reset the switch.
control-record-optimization	By default, the switch creates hardware records for routing Layer 3 protocol destination multicast addresses even when the corresponding protocol is not enabled. Set this parameter to true to prevent these records from being created and to achieve higher record scaling and a faster boot time. This flag applies only to classic E and M modules. This flag must be disabled when operating in High Availability mode or in a mixed chassis containing R or RS modules. The default is disabled. If you change this parameter, you must reset the switch.
daylight-saving-time	Activates or disables Daylight Saving Time (DST) for the switch. After enabling, set the DST settings with the **config bootconfig tz** command. The default is disabled.

Variable	Value
debug-config	Activates or disables run-time debugging of the configuration file. When enabled, the line by line processing of the configuration file is displayed on the console when the SF/CPU is initializing. The default is disabled. If you change this parameter, you must reset the switch.
debugmode	Controls whether the switch stops in debug mode following a fatal error. Debug mode provides information equivalent to the **trace** commands. After the flag is activated, the switch does not reboot following a fatal error. After the flag is disabled, the switch automatically reboots following a fatal error. The default is disabled. If you change this parameter, you must reset the switch. **ATTENTION** For internal Nortel use only. Do not change this parameter unless directed by Nortel.
egress-mirror	Activates the ability to mirror egress traffic for E and M modules. The default is activated. If you change this parameter, you must reset the switch.
factorydefaults	Specifies whether the switch boots with the factory defaults. The default is disabled. This flag is automatically set back to the default setting after the CPU turn on. If you change this parameter, you must reset the switch.
ftpd	Enables FTP server.
ha-cpu	Enables high availability of the CPU.

Variable	Value
hsecure	Activates or disables High Secure mode in the switch. This flag introduces the following behaviors for the password: 10 characters enforcement, aging time, limitation of failed logon attempts, and a protection mechanism to filter certain IP addresses. The default is false. After you enable High Secure mode, you must reset the switch to enforce secure passwords. In High Secure mode, a user with an invalid-length password is prompted to change their password.
logging	Activates or disables system logging to a file on the PCMCIA, if present. The default is true. The log file is named using an 8.3 (xxxxxxxx.sss) format. The first 6 characters of the file name contain the last three bytes of the chassis base MAC address. The next two characters specify the slot number of the CPU that generated the logs. The last three characters denote the sequence number of the log file. Multiple sequence numbers are generated for the same chassis and same slot, if the CPU is replaced, reinserted, or if the maximum log file size is reached.
mezz	Permits or prevents the mezzanine card from booting when it is present on a SF/CPU card. The SuperMezz configuration must be identical on a dual CPU chassis: both CPUs have a SuperMezz or both CPUs are without a SuperMezz.

Variable	Value
	The default is enabled. If you change this parameter, you must reset the switch. Before you reset the switch with this parameter enabled, the SuperMezz image must be present on the switch.
nncli	Configures the switch to use NNCLI or CLI mode. After you change this parameter, you must restart the system for the change to take effect. The default is true.
reboot	Activates or disables automatic reboot on a fatal error. The default is activated. This command is equivalent to the debugmode command. If you change this parameter, you must reset the switch. **ATTENTION** For internal Nortel use only. Do not change this parameter unless directed by Nortel.
rlogind	Enables the rlogin or the rsh server.
savetostandby	Activates or disables the ability to save the configuration or boot configuration file automatically to the standby SF/CPU. The default is disabled. If you have a dual SF/CPU system, Nortel recommends that you enable this flag for ease of operation.
spanning-tree-mode <mstp|rstp|default>	Selects the Multiple Spanning Tree Protocol (MSTP), Rapid Spanning Tree Protocol (RSTP), or default (legacy) spanning tree modes. If you do not specify a protocol, the switch uses the default. If you change this parameter, you must save the current configuration and reset the switch. The default is rstp.
sshd	Enables the ssh daemon.

Variable	Value
`tftpd`	Activates or disables TFTP server service. The default is disabled. Note that when the TFTP server is disabled you can still copy files between the SF/CPUs.
`telnetd`	Enables the Telnet server.
`trace-logging`	Activates or disables the creation of trace logs. The default is disabled. **ATTENTION** For internal Nortel use only. Do not change this parameter unless directed by Nortel.
`verify-config`	Activates syntax checking of the configuration file. If a syntax error is found, the factory default configuration file is loaded. When set to false, syntax errors are logged and the SF/CPU continues to source the configuration file. The default is true. Nortel recommends that you change this flag to false. If you change this parameter, you must reset the switch.
`wdt`	Activates or disables the hardware watchdog timer, which monitors a hardware circuit. The watchdog timer reboots the switch based on software errors. The default for this command is activated. If you change this parameter, you must reset the switch. **ATTENTION** For internal Nortel use only. Do not change this parameter unless directed by Nortel.

Default

Default values updated along with the variables in the parameters table.

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

boot config flags ha-cpu
Enable the HA mode on the system to recover if one of the SF/CPUs fails.

Syntax
boot config flags ha-cpu

Parameters

Variable	Value
ha-cpu	Activates or disables High Availability (HA) mode. Switches with two SF/CPUs use HA mode to recover quickly from a failure of one of the SF/CPUs.

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

boot config host
Configure the remote host logon to modify parameters for FTP and TFTP access.

Syntax
boot config host

Parameters

Variable	Value
ftp-debug	Activates or disables debug mode on FTP. If you enable debug mode, debug messages display on the management console screen. The default is disabled. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
password <value>	Configures the password to enable FTP transfers. • **value** is the password, up to 16 characters long. After this password is configured, you can use only FTP for remote host logon. **ATTENTION** This password must match the password set for the FTP server, or the FTP operation fails. Also, if the password is set to a nonnull value, all copying to and from the network uses FTP instead of TFTP. If the user name or password is incorrect, copying over the network fails.
tftp-debug	Activates or disables debug mode on TFTP/TFTPD. If you enable debug mode, debug messages display on the management console screen. The default is disabled. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
tftp-hash	Activates or disables the TFTP hash bucket display. The default is disabled. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
tftp-rexmit <seconds>	Configures the TFTP retransmission timeout. The default value is 2 seconds. • **seconds** is the number of seconds (1–120). To set this option to the default value, use the **default** operator with the command.

Variable	Value
tftp-timeout <seconds>	Configures the TFTP timeout. The default value is 10 seconds. • **seconds** is the number of seconds (1–120). To set this option to the default value, use the **default** operator with the command.
user <value>	Configures the remote user logon. • **value** is the user logon name, up to 16 characters long. To set this option to the default value, use the **default** operator with the command.

Default

Default values are updated with the variables in the parameters table.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config master

Specify the master SF/CPU to determine which SF/CPU becomes the master after the switch performs a full power cycle only.

Syntax

boot config master <cpu-slot>

Parameters

Variable	Value
<cpu-slot>	Specifies the slot number, either 5 or 6, for the master SF/CPU.

Default

The default slot is 5.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config net

Configure the network port devices to define connection settings for the port.

Syntax

boot config net <cpu-network-port>

Parameters

Variable	Value
<cpu-network-port>	Identifies the port using one of the following: • mgmt • cpu2cpu • pccard

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
autonegotiate	Activates or disables autonegotiation for the port. The default is disabled. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
bootp	Activates or disables the Bootstrap Protocol (BootP) for the port. The default is activated. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

Variable	Value
chk-src-route	Blocks traffic with no route back to the source. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
fullduplex	Activates or disables full-duplex mode on the specified port. The default is activated. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
ip <ipaddr/mask> [cpu-slot <value>]	Assigns an IP address/mask for the management port, SF/CPU, or PCMCIA card. **Optional parameter:** • **cpu-slot value** specifies the slot number to which the IP address applies. The valid options are 3, 5, or 6. If you do not specify a slot, the IP address is assigned to the port in the currently active SF/CPU. In an 8003 chassis, the only available SF/CPU slot is 3. **ATTENTION** You cannot assign an address of 0.0.0.0/0.
restart	Restarts the port.
route <netaddr>	Configures a route for the port. **netaddr** is the IP address and mask of the network to be reached. Use the **no** operator to remove this configuration.
speed <10|100>	Configures the connection speed for ports to 10 Mb/s, 100 Mb/s, or 1000 Mb/s. The default is 10 Mb/s. To set this option to the default value, use the **default** operator with the command.
tftp <ipaddr>	Specifies a TFTP server for the port. **ipaddr** is the IP address of the TFTP server.

boot config tz

Set the time zone to specify the time for your location and configure settings for daylight saving.

Syntax

command

Parameters

Variable	Value
dst-end <Mm.n.d/hhmm|MMddhhmm>	Configures the ending date of daylight saving time. You can specify the time in one of the two ways: • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example, **10310200** means October 31 at 2:00 a.m.
dst-name <dstname>	Configures an abbreviated name for the local daylight saving time zone. • **dstname** is the name (for example, pdt is Pacific Daylight Time). To set this option to the default value, use the **default** operator with the command.
dst-offset <minutes|hh:mm>	Configures the daylight saving adjustment in minutes or hours:minutes. The values range from –4:0 to 4:0 for hours:minutes and from –240 to 240 for minutes. The default is 60. To set this option to the default value, use the **default** operator with the command.
dst-start <Mm.n.d/hhmm|MMddhhmm>	Configures the starting date of daylight saving time. • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example, **10310200** means October 31 at 2:00 a.m.

Variable	Value
name <tz>	Configures an abbreviated name for the local time zone name. • **tz** is the name (for example "pst" is Pacific Standard Time). To set this option to the default value, use the **default** operator with the command.
offset-from-utc <minutes|hh:mm>	Configures the time zone offset in minutes or hours:minutes to subtract from Universal Coordinated Time (UTC), where positive numbers mean west of Greenwich and negative numbers mean east of Greenwich. The values range from –14:0 to 14:0 for hours:minutes and from –840 to 840 for minutes. The default value is 0. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

show boot config

Display the configuration to view current or changed settings for the boot monitor and boot monitor.

Syntax

show boot config

Parameters

Variable	Value
bootp	Displays the bootp configuration.
choice	Displays the current boot configuration choices.
cli	Displays the current cli configuration.

Variable	Value
flags	Displays the current flag settings.
general	Displays system information.
host	Displays the current host configuration.
master	Displays the current SF/CPU slot set as master and the settings for the **delay** and **multicast** command.
mezz-image	Displays the mezzanine image.
net	Displays the current configuration of the SF/CPU network ports.
running-config [verbose]	Displays the current boot configuration. • **verbose** includes all possible information. If you omit **verbose**, only the values that were changed from their default settings appear.
sio	Displays the current configuration of the SF/CPU serial ports.
tz	Displays the current configuration of the switch time zone.
wlan	Displays wireless LAN information.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

clock set

Configure the calendar time in the form of month, day, year, hour, minute, and second.

Syntax

clock set <MMddyyyyhhmmss>

Parameters

Variable	Value
<MMddyyyyhhmmss>	Specifies the format of date in the form of month, day, and year and time in the form of hours, minutes, and seconds.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

login-message

Change the login prompt to configure the run-time environment and define the generic configuration settings for NNCLI sessions.

Syntax

login-message <string>

Parameters

Variable	Value
login-message <string>	Changes the NNCLI logon prompt. • **string** is an (American Standard Code for Information Interchange) (ASCII) string from 1–1513 characters. • Use the default option before this parameter, **default loginmessage**, to enable using the default logon string. • Use the no operator before this parameter, **no loginmessage**, to disable the default logon banner and display the new banner.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global configuration Mode

Related commands

None

passwordprompt

Change the password prompt to configure the run-time environment and define the generic configuration settings for NNCLI sessions.

Syntax

passwordprompt <string>

Parameters

Variable	Value
passwordprompt <string>	Changes the NNCLI password prompt. • **string** is an ASCII string from 1–1510 characters. • Use the default option before this parameter, **default passwordprompt**, to enable using the default password string. • Use the no operator before this parameter, **no passwordprompt**, to disable the default password string.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

max-logins

Configure the number of supported rlogin sessions to define the generic configuration settings for NNCLI sessions.

Syntax

max-logins <nsessions>

Parameters

Variable	Value
max-logins <nsessions>	Configures the allowable number of inbound remote NNCLI logon sessions; the default is 8. • **nsessions** is the number of sessions (0–8).

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

telnet-access sessions

Configure the number of supported Telnet sessions to define the generic configuration settings for NNCLI sessions.

Syntax

telnet-access sessions <nsessions>

Parameters

Variable	Value
telnet-access sessions <nsessions>	Configures the allowable number of inbound Telnet sessions; the default is 8. • **nsessions** is the number of sessions (0–8).

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

telnet-access login-timeout

Configure the Telnet login timeout to define the generic configuration settings for NNCLI sessions.

Syntax

telnet-access login-timeout <seconds>

Parameters

Variable	Value
telnet-access login-timeout <seconds>	Configures the time, in seconds, to wait for a Telnet logon before terminating the connection. The allowable range is from 30–65535 seconds.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

banner

Configure the NNCLI logon banner to display a warning message to users before authentication.

Syntax

banner <custom|static>

Parameters

Variable	Value
custom|static	Activates or disables using the default banner.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
displaymotd	Displays the message of the day. To set this option to the default value, use the **default** operator with the command.
WORD <1-80>	Adds lines of text to the NNCLI logon banner. **WORD** is an ASCII string from 1–80 characters.
motd WORD <1-1516>	Creates a message of the day to show with the logon banner.**WORD** is an ASCII string from 1–1516 characters. To provide a string with spaces, include the text in quotation marks (''). To set this option to the default value, use the **default** operator with the command.

clilog enable

Configure logging of NNCLI commands to the file clilog.txt on the PCMCIA. You can enable command logging to keep track of the commands a user enters during a logon session.

Syntax

clilog enable [maxfilesize <integer>]

Parameters

enable	Activates NNCLI logging to the file clilog.txt on the PCMCIA, To disable NNCLI logging, use the no form of the command, **no clilog enable**.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

maxfilesize <integer>	Specify the maximum size of the file clilog.txt in kilobytes (KB). The range is 64–256000; the default is 256 KB.

sys name

Change the system name to configure global options for the Ethernet Routing Switch 8600.

Syntax

sys name WORD <0-255>

Parameters

Variable	Value
name WORD <0-255>	Configures the system or root level prompt name for the switch. • **WORD <0-255>** is an ASCII string from 0–255 characters (for example, LabSC7 or Closet4).

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys ecn-compatibility

Enable explicit congestion notification to configure global options for the Ethernet Routing Switch 8600.

Syntax

sys ecn-compatibility

Parameters

Variable	Value
`ecn-compatibility`	Activates explicit congestion notification, as defined in Experimental Request For Comments (RFC) 2780. This feature is not currently supported on the Ethernet Routing Switch 8600.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys global-filter

Enable global filtering on Ethernet Routing Switch 8600.

Syntax

`sys global-filter`

Parameters

Variable	Value
`global-filter`	Activates global filtering on the switch. After this command is activated, you must disable source MAC VLANs. You cannot enable global filtering and source MAC-based VLANs at the same time. This command is available only on the Ethernet Routing Switch 8600 E and M modules.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys mtu

Enable support for Jumbo frames on Ethernet Routing Switch 8600.

Syntax

sys mtu <bytes>

Parameters

Variable	Value
mtu <bytes>	Activates Jumbo frame support. • **bytes** is the Ethernet frame size, either 1522, 1950 (default), or 9600 bytes. To set this option to the default value, use the **default** operator with the command.

Default

The default value is 1950.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys smlt-on-single-cp

Enable SMLT on the single CP on Ethernet Routing Switch 8600.

Syntax

sys smlt-on-single-cp [timer <value>]

Parameters

Variable	Value
smlt-on-single-cp	Activates SMLT on the single CP.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
`timer <timer value>`	`timer` is the timer value for SMLT on the single CP feature timer. Valid options are 1–3. This mode is only applicable to E and M modules. R and RS moduless support SMLT-on-single-CP configurations by default.

sys record-reservation

Configure record reservation parameters to record the reservation and usage information for each record type.

Syntax

```
sys record-reservation filter <1025-8192>
```

Parameters

Variable	Value
`filter <1025-8192>`	Configures information for filter record type. The filter value ranges from 1 025 to 8 192.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
`ipmc <0-8000>`	Configures information for ipmc record type. The filter value ranges from 0 to 8 000.
`local <0-16000>`	Configures information for local record type. The filter value ranges from 0 to 16 000.
`mac <0-200000>`	Configures information for mac record type. The filter value ranges from 0 to 200 000.

Variable	Value
`static-route <0-1000>`	Configures information for static-route record type. The filter value ranges from 0 to 1 000.
`vrrp <0-510>`	Configures information for vrrp record type. The filter value ranges from 0 to 510.

sys msg-control action

Configure system message control action to enable or disable system messaging and define configuration settings.

Syntax

`sys msg-control action <suppress-msg|send-trap|both>`

Parameters

Variable	Value
`action <action type>`	Configures the message control action. To set this option to the default value, use the default operator with the command. `<action type>` specifies the type of message control action as one of the following: • `suppress-msg` • `send-trap` • `both`

Default

The default value is suppress-msg.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
`suppress-msg`	Sets message control as suppress message.
`send-trap`	Sets message control as send trap.
`both`	Sets message control as both suppress message and send trap.

sys msg-control control-interval

Configure the message control interval by specifying the interval time in minutes.

Syntax

sys msg-control control-interval

Parameters

Variable	Value
control-interval <1-30>	Configures the message control interval in minutes. The valid options are 1–30. To set this option to the default value, use the **default** operator with the command.

Default

The default value is 5.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys msg-control max-msg-num

Configure the maximum number of message to set the number of occurrences of message after which the control action happens.

Syntax

sys msg-control max-msg-num <2-500>

Parameters

Variable	Value
max-msg-num <2-500>	Configures the number of occurrences of a message after which the control action happens. To set the maximum number of occurrences, enter a value from 2–500. To set this option to the default value, use the **default** operator with the command.

Default

The default is 5.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys force-msg

Use the force message control option to extend the message control feature functionality to the software and hardware log messages.

Syntax

sys force-msg WORD <4-4>

Parameters

Variable	Value
force-msg WORD <4-4>	Adds a forced message control pattern • **WORD** is a string of 4 characters. You can add a four-byte pattern into the force-msg table. The software and the hardware log messages that use the first four bytes matching one of the patterns in the force-msg table undergo the configured message control action.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys mgmt-virtual-ip

Create a virtual management port in addition to the physical management ports on the switch management modules.

Syntax

sys mgmt-virtual-ip <ipaddr/mask>

Parameters

Variable	Value
`mgmt-virtual-ip <A.B.C.D/X>`	Configures the management virtual ip address to provide access to switch management modules. `<A.B.C.D/x>` specifies the ip address and the subnet mask.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

udp checksum

Enables the udp checksum calculation on the Ethernet Routing Switch 8600.

Syntax

`udp checksum`

Parameters

Variable	Value
`checksum`	Enables the udp checksum calculation on the Ethernet Routing Switch 8600.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

udpsrc-by-vip

Enable virtual ip as the udp source on the Ethernet Routing Switch 8600.

Syntax

udpsrc-by-vip

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

clock sync-time

Configure the regular interval to synchronize the real-time and system clocks.

Syntax

clock sync-time <15-3600>

Parameters

Variable	Value
sync-time <15-3600>	Configures the real-time clock to the system clock synchronization time in minutes. **<15-3600>** specifies the number of minutes between synchronization. The switch generates log messages if the drift between the real-time clock and the system clock is more than 5 seconds.

Default

The default value is 60.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys flags m-mode

Enable M mode to support up to 128 000 table entries in the system.

Syntax

sys flags m-mode

Parameters

Variable	Value
m-mode	Enable extended memory (128 k) mode-effect after reboot.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys flags r-mode

Enable R mode to support 256 000 IP routes. R mode supports the Nortel Ethernet Routing Switch 8600 Release 4.0 and later feature sets.

Syntax

sys flags r-mode

Parameters

Variable	Value
r-mode	Enable RSP memory (256 k) mode-effect after reboot.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys flags enhanced-operational-mode

Enable enhanced operational mode to increase the maximum number of virtual LANs (VLAN) if you use MultiLink Trunking (MLT) and Split MultiLink Trunking (SMLT).

Syntax

```
sys flags enhanced-operational-mode
```

Parameters

Variable	Value
`enhanced-operational-mode`	Sets the enhanced operation mode to increase the maximum number of VLANs.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys flags global-filter-ordering

Enable the ordering of global filters to store the filters in the order of their IDs.

Syntax

```
sys flags global-filter-ordering
```

Parameters

Variable	Value
`global-filter-ordering`	Enables the global filter ordering feature on the Ethernet Routing Switch 8600.

Default

None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

boot config flags ha-cpu
Enable the CPU high availability mode to allow the switch to recover quickly from a failure of one of the SF/CPUs.

Syntax
boot config flags ha-cpu

Parameters

Variable	Value
ha-cpu	—

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

slpp enable
Enable the Simple Loop Prevention Protocol (SLPP) globally and on a VLAN to detect a loop and automatically stop it.

Syntax
slpp enable

Parameters

Variable	Value
enable	Enables the SLPP operation globally an on a VLAN.

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

slpp ethertype
Specify the PDU Ether type on the SLPP.

Syntax
slpp ethertype <pid>

Parameters

Variable	Value
ethertype <pid>	Specifies the SLPP PDU Ethernet type. <pid> is the SLPP protocol ID in integer format from 1–65535. To set this option to the default value, use the **default** operator with the command.

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

slpp tx-interval
Configure the transmission interval on the SLPP.

Syntax
slpp tx-interval <integer>

Parameters

Variable	Value
`tx-interval <integer>`	Configures the SLPP packet transmit interval. <integer> is the SLPP packet transmit interval. The range is 500–5000 milliseconds.

Default

The default is 500.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

slpp vid

Add a VLAN to a SLPP transmission list.

Syntax

`slpp vid <vid>`

Parameters

Variable	Value
`vid <vid>`	Adds a VLAN to a SLPP transmission list. **`<vid>`** is the VLAN ID from 1–4095.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

slpp port

Enable SLPP by port to detect a loop and automatically stop it.

Syntax

```
slpp port <portlist> [packet-rx] [packet-rx-threshold
<1-500>]
```

Parameters

Variable	Value
packet-rx	Activates SLPP packet reception on the listed ports. To set this option to the default value, use the **default** operator with the command.
<portlist>	Identifies the slot or port.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

Variable	Value
packet-rx-threshold <1-500>	Specifies the SLPP reception threshold on the ports. The threshold is an integer. The packet reception threshold specifies how many SLPP packets are received by the port before it is administratively disabled.To set this option to the default value, use the **default** operator with the command. **ATTENTION** Setting the rx-threshold to a value greater than 50 ms on a heavy loaded Ethernet Routing Switch 8600 can cause high CPU utilization if a loop occurs. Nortel recommends that you only configure the rx-threshold above 50 ms on lightly loaded switches.

show slpp

Use SLPP information to view loop information.

Syntax

show slpp

Parameters

None

Default

None

Command mode

Privilege Executive Mode

Next command mode

Privilege Executive Mode

Related commands

None

show slpp interface

Show SLPP information for a port so that you can view the loop information for a port.

Syntax

show slpp interface <FastEthernet|GigabitEthernet> <slot/port>

Parameters

Variable	Value
<FastEthernet|GigabitEthernet>	Specifies the mode to display the SLPP information.
<slot/port>	Specifies the slot and the port number.

Default

None

Command mode

Privilege Executive Mode

Next command mode

Privilege Executive Mode

Related commands

None

sys ext-cp-limit max-ports-to-check

Configure extended CP Limit functionality to prevent overwhelming of the switch.

Syntax

```
sys ext-cp-limit [max-ports-to-check <value>]
```

Parameters

Variable	Value
max-ports-to-check <number of ports>	Configures the total number of ports to monitor. • **number of ports** is in the range of 0–512. To set this option to the default value, use the **default** operator with the command.

Default

The default is 0.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys ext-cp-limit min-congestion-time

Configure the minimum time for which traffic keeps hitting the SF/CPU to trigger the congestion algorithm.

Syntax

```
sys ext-cp-limit [min-congestion-time <time>]
```

Parameters

Variable	Value
min-congestion-time <time in msec>	Configures the minimum time for which traffic keeps hitting the SF/CPU to trigger the congestion algorithm. • **time in msec** is the time in milliseconds in the range of 100–600000. To set this option to the default value, use the **default** operator with the command.

Default

The default is 300.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys ext-cp-limit port-congestion-time

Configure the time duration for a monitoring port.

Syntax

```
sys ext-cp-limit [port-congestion-time <time>]
```

Parameters

Variable	Value
port-congestion-time <time in sec>	Configures the time duration for which, if the bandwidth utilization for a monitoring port remains more than the threshold, the port is disabled. • **time in sec** is the time in seconds in the range of 1–600. To set this option to the default value, use the **default** operator with the command.

Default

The default is 5 seconds.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys ext-cp-limit trap-level

Configure the trap level for the extended CP limit.

Syntax

sys ext-cp-limit trap-level <dummy|None|Normal|Verbose>

Parameters

Variable	Value
trap-level <dummy|None|Normal|Verbose>	Configures the trap level. The options are: • dummy • None—no traps are sent. • Normal—sends a single trap for all the ports which are disabled. • Verbose—sends a trap for each of the ports which is disabled. To set this option to the default value, use the **default** operator with the command.

insert table

Default

The default value is None.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys ext-cp-limit port

Configure Extended CP Limit on a port to prevent overwhelming of the switch.

Syntax

sys ext-cp-limit port <PortList> <None|SoftDown|HardDown>

Parameters

Variable	Value
<None | SoftDown | HardDown>	Indicates the following: • None—the port does not need to be checked. • SoftDown—the port belongs to the may-go-down-port-list. • HardDown—the port belongs to the must-go-down-port-list.
port <PortList>	Specifies a port or list of ports.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface configuration Mode

Related commands

Variable	Value
threshold-util-rate	Specifies the threshold bandwidth utilization rate from 1–100. The default value is 50%. To set this option to the default value, use the **default** operator with the command.

cp-limit port multicast-limit

Configure the CP Limit functionality to protect the switch from becoming congested by an excess of data flowing through one or more ports.

Syntax

cp-limit port [multicast-limit <value>] [broadcast-limit <value>]

Parameters

Variable	Value
multicast-limit <value>	Configures the multicast control frame rate. The range is 1000–100000 pps. To set this option to the default value, use the **default** operator with the command.
port	Specifies a port or list of ports. To set this option to the default value, use the **default** operator with the command.

insert table

Default

The default is 1500.

Command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Next command mode

Interface Mode

Related commands

Variable	Value
broadcast-limit <value>	Configures the broadcast control frame rate. The default is 10000 pps. The range is 1000–100000 pps. To set this option to the default value, use the **default** operator with the command.

link-flap-detect interval

Configure link flap detection and interval to control link state changes on a physical port.

Syntax

link-flap-detect interval <interval>

Parameters

Variable	Value
interval <interval>	Configures the link-flap-detect interval in seconds. • **interval** is from 2–600. To set this option to the default value, use the **default** operator with the command.

Default

The default is 60.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

link-flap-detect frequency

Configure the number of changes allowed during the interval on the port.

Syntax

link-flap-detect frequency <frequency>

Parameters

Variable	Value
frequency <frequency>	Configures the number of changes that are allowed during the time specified by the **interval** command. The default is 10. • **frequency** is from 1–9999. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

link-flap-detect auto-port-down

Enable automatic port disabling.

Syntax

link-flap-detect auto-port-down

Parameters

Variable	Value
auto-port-down	Activates automatic disabling of the port if the link-flap threshold is exceeded. This option is disabled by default. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

link-flap-detect send-trap

Enable sending a trap on the port.

Syntax

link-flap-detect send-trap

Parameters

Variable	Value
send-trap	Activates sending traps. The default is activated. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys power

Enable power redundancy to create traps and events after power consumption exceeds redundancy capacity.

Syntax

sys power fan-check

Parameters

Variable	Value
fan-check	Enables fan check to check the power management on the port.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
slot-priority <critical|high|low>	Configures the priority for the slot.
<1-10>	Specifies the slot for which to set the priority value. You can configure priority for slots 1–4 and 7–10. To set this option to the default value, use the **default** operator with the command.

password access-level

Enable CLI access levels to control the configuration actions of various users.

Syntax

password access-level <WORD>

Parameters

Variable	Value
`access level`	Permits or blocks this access level. The available access levels are: • l4admin • l4oper • layer1 <word> • layer2 • layer3 <word> • oper • read-only <word> • read-write <word> • read-write-all <word> • slbadmin • slboper • ssladmin `<word>` represents the new password with 0–20 characters. Layer 4 administrator and operator access levels are used to connect to the Web Switching Module (WSM). For more information about Web Switching Module (WSM), see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals* (NN46205-314).

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

password aging-time

Set age out time for passwords.

Syntax

`password aging-time day <1-365>`

Parameters

Variable	Value
`aging-time day <1-365>`	Configures the age-out time for passwords, in days.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

password default-lockout-time

Change the default lockout time after three invalid attempts.

Syntax

`password default-lockout-time <60-65000>`

Parameters

Variable	Value
`default-lockout-time <60-65000>`	Changes the default lockout time after three invalid attempts. Configures the lockout time in seconds and is in the range of 60–65000. To set this option to the default value, use the **`default`** operator with the command.

Default

The default is 60 seconds.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

password lockout

Configure the host lockout time for passwords.

Syntax

`password lockout WORD <0-46> time <60-65000>`

Parameters

Variable	Value
`lockout WORD <0-46> time <60-65000>`	Configures the host lockout time. • **`word`** is the Host Internet Protocol (IP) address in the format a.b.c.d. • **`time`** is the lockout-out time in seconds for passwords lockout in the range of 60–65000.

Default

The default is 60 seconds.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

password min-passwd-len

Configure the minimum length for passwords in high-secure mode.

Syntax

`password min-passwd-len <10-20>`

Parameters

Variable	Value
min-passwd-len <10-20>	Configures the minimum length for passwords in high-secure mode. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

password password-history

Specify the number of previous passwords to remember on the port.

Syntax

command

Parameters

Variable	Value
password-history <3-32>	Specifies the number of previous passwords to remember. To set this option to the default value, use the **default** operator with the command.

Default

The default is 3.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

access-policy access-restrict

Configure an access policy to control access to the switch.

Syntax

```
access-policy <1-65535> [access-strict] [accesslevel
<ro|rwa|rw>]
```

Parameters

Variables	Value
`access-strict`	If this parameter is activated, only the current configuration for access level is accepted. If this parameter is disabled, access is limited up to the level configured. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variables	Value
`accesslevel <ro|rwa|rw>`	Specifies the level of access if the policy is to allow access.

access-policy mode network precedence

Configure the access policy mode, network and precedence on the switch.

Syntax

```
access-policy <1-65535> [mode <allow|deny>] [network
<A.B.C.D>] [precedence <1-128>]
```

Parameters

Variables	Value
mode <allow|deny>	Specifies whether this network address is allowed or denied access through the specified access service. The default is allow.

Default

The default is allow.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variables	Value
network <A.B.C.D>	Specifies the IP address and subnet mask that are permitted or denied access through the specified access service.
precedence <1-128>	Specifies a precedence for the policy, a number from 1–128. This value determines which policy to use if multiple policies apply. Lower numbers take higher precedence. The default is 10.

access-policy ftp

Configure optional access protocols for an access policy on the switch.

Syntax

access-policy <1-65535> [ftp] [http] [ssh] [telnet] [tftp]

Parameters

Variables	Value
ftp	Activates or disables FTP for the specified policy. Because FTP derives its logon or password from the CLI management filters, FTP works for the logins read-write-only (rwo) and read-write (rw); however, it does not work for the login read-only (ro). Use the **no** operator to remove this

	configuration. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variables	Value
http	Activates the HTTP for this access policy. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
ssh	Activates SSH for this access policy. For more information about the SSH, see *Nortel Ethernet Routing Switch 8600 Security* (NN46205-601). Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
telnet	Activates Telnet for this access policy. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
tftp	Activates the TFTP for this access policy. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

access-policy host

Configure optional rlogin access for an access policy on the switch.

Syntax

access-policy <1-65535> host <word> rlogin username <word>

Parameters

Variables	Value
host <word>	For rlogin access, specifies the trusted host address as an IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variables	Value
accesslevel <ro|rwa|rw>	Specifies the level of access if the policy is to allow access.
rlogin	Activates rlogin for this access policy. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
username <word>	For rlogin access, specifies the trusted host user name.

access-policy snmp-group

Configure optional SNMP parameters for an access policy on the switch.

Syntax

access-policy <1-65535> [snmp-group <word> <snmpv1|snmpv2c|usm>] [snmpv3]

Parameters

Variables	Value
snmp-group <word> <snmpv1|snmpv2c|usm>	Adds snmp-v3 group under this access policy. • **word** is the snmp-v3 group name of 1–32 characters. • **<snmpv1|snmpv2c|usm>** is the security model {snmpv1|snmpv2c|usm}.

	Use the **no** operator to remove this configuration.

Default

None

Command mode

Global Configuration Mode

Related commands

Variables	Value
snmpv3 <ftp|telnet|tftp>	Activates SNMP version 3 for this access policy. For more information about the SNMPv3, see *Nortel Ethernet Routing Switch 8600 Security* (NN46205-601) . Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

access-policy enable

Enable the access policy globally to control access across the switch.

Syntax

access-policy <1-65535> enable

Parameters

Variable	Value
enable	Enables the access policy globally on the switch.
<1-65535>	Specifies the policy ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

access-policy name

Assign a name to the access policy to uniquely identify the policy.

Syntax

access-policy <1-65535> name <word>

Parameters

Variable	Value
name <word>	Specifies a name using a string from 0–15 characters.

insert table

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

access-policy by-mac

Configure access-policies by MAC address to allow or deny local MAC addresses on the network management port after an access policy is activated.

Syntax

access-policy by-mac <0x00:0x00:0x00:0x00:0x00:0x00> action <allow|deny>

Parameters

Variables	Value
<0x00:0x00:0x00:0x00:0x00:0x00>	Adds a MAC address to the policy. Specify the MAC address in hexadecimal format.
<allow|deny>	Specifies the action to take for the MAC address.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

copy srcfile destfile

Install a license file on an Ethernet Routing Switch 8600 to enable licensed features.

Syntax

```
copy <a.b.c.d>:<srcfile> /flash/<destfile>
```

Parameters

Variable	Value
<a.b.c.d>	Specifies the IP address of the TFTP server where the license file is to be copied from.
<destfile>	Specifies the name of the license file when copied to the flash. The destination file name must be lower case and have a file extension of .dat. For example, bld100_8610adv.dat or license.dat.
<srcfile>	Specifies the name of the license file on the TFTP server. For example, bld100_8610adv.lic or license.dat.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

load-license

Load the license file to unlock the licensed features.

Syntax

```
load-license
```

Parameters

None

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

show license
Display the existing software licenses on your switch.

Syntax
```
show license
```

Parameters
None

Default
None

Command mode
Privilege Executive Mode

Next command mode
Privilege Executive Mode

Related commands
None

ntp interval
Enable Network Time Protocol (NTP) globally.

Syntax
```
ntp interval <10-1440>
```

Parameters

Variable	Value
interval <10-1440>	Specifies the time interval (10–1440 minutes) between successive NTP updates. **ATTENTION** If NTP is already activated, this configuration does not take effect until you disable NTP and then reenable it. To set this option to the default value, use the **default** operator with the command.

Default

The default is 15 minutes.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

ntp authentication-key

Create a NTP authentication key.

Syntax

ntp authentication-key <1-2147483647> <word>

Parameters

Variable	Value
authentication-key <1-2147483647> <word>	Creates an authentication key for MD5 authentication. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

ntp server

Add an NTP server or modify existing NTP server parameters. You can configure a maximum of 10 time servers.

Syntax

ntp server <A.B.C.D>

Parameters

Variable	Value
<A.B.C.D>	Specifies the ip address of the NTP server to be added or modified.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

ntp server auth-enable

Configure additional options for the NTP server.

Syntax

ntp server <A.B.C.D> [auth-enable] [authentication-key <0-2147483647>] [enable]

Parameters

Variable	Value
auth-enable	Activates MD5 authentication on this NTP server. The default is no MD5 authentication. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
authentication-key <0-2147483647>	Specifies the key ID value used to generate the MD5 digest for the NTP server. The value range is an integer from 1–2147483647. The default value is 0, which indicates disabled authentication. To set this option to the default value, use the **default** operator with the command.
enable	Activates the NTP server. To set this option to the default value, use the **default** operator with the command.

ip domain-name

Configure the Domain Name Service to establish the mapping between an IP name and an IP address.

Syntax

ip domain-name <word>

Parameters

Variable	Value
domain-name <word>	Configures the default domain name. • **word** is a string 0–255 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

ip name-server primary

Optionally, add addresses for additional DNS servers.

Syntax

```
ip name-server primary <word> [secondary <word>] [tertiary
<word>]
```

Parameters

Variable	Value
`primary <word>`	Configures the primary DNS server address. Enter the IP address in a.b.c.d format for IPv4 or hexadecimal format (string length 0–46) for IPv6.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
`secondary <word>`	Configures the secondary DNS server address. Enter the IP address in a.b.c.d format for IPv4 or hexadecimal format (string length 0–46) for IPv6.
`tertiary <word>`	Configures the tertiary DNS server address. Enter the IP address in a.b.c.d format for IPv4 or hexadecimal format (string length 0–46) for IPv6.

show ip dns

View the DNS client system status.

Syntax

```
show ip dns
```

Parameters

None

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

show hosts

Query the DNS host for information about host addresses. You can enter either a hostname or an IP address.

Syntax
```
show hosts <word>
```

Parameters

Variable	Value
`word`	Specifies one of the following: • the name of the host DNS server as a string of 0–255 characters. • the IP address of the host DNS server in a.b.c.d format. • the IPv6 address of the host DNS server in hexadecimal format (string length 0–46).

insert table

Default
None

Command mode
Privileged Executive Mode

Next command mode
Privileged Executive Mode

Related commands
None

sys max-vlan-resource-reservation

Enable maximum VLAN mode to use all available Multicast Group IDs (MGIDs) for VLANs. No IP multicast (IPMC) traffic transmits if you enable maximum VLAN mode.

Syntax

sys max-vlan-resource-reservation

Parameters

Variable	Value
max-vlan-resource-reservation	Enables maximum VLAN mode.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Insert table

sys multicast-resource-reservation

Reserve MGIDs for IPMC to increase the number of IPMC traffic streams supported on the system.

Syntax

sys multicast-resource-reservation <value>

Parameters

Variable	Value
value	Specifies the number of MGIDs to reserve for IPMC traffic. Select from the range of 64–4083. To set this option to the default value, use the **default** operator with the command.

Default

The default value is 2048.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

save bootconfig

Save a boot configuration to a file to retain the configuration settings. You can configure the switch to load a specific configuration file.

Syntax

```
save bootconfig [file <word>] [verbose] [standby <value>]
[backup <word>] [mode (cli|nncli)]
```

Parameters

Variable	Value
file **<word>**	Specifies the file name in one of the following formats for **value**: • [a.b.c.d]: <file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> **File** is a string of 1–99 characters.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
backup **<word>**	Saves the specified file name and identifies the file as a backup file. **word** uses one of the following formats: • [a.b.c.d]:<file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> **file** is a string of 1–99 characters.
mode (cli|nncli)	Saves the boot configuration in either CLI or NNCLI format.
standby **<word>**	Saves the specified file name to the standby SF/CPU in the following format for **value**: • filename, /pcmcia/ <file> • /flash/ <file> **file** is a string of 1–99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you changed.

save config file

Save the current configuration to a file to retain the configuration settings.

Syntax

```
save config [file <word>] [verbose] [standby <value>]
[backup <word>] [mode (cli|nncli)]
```

Parameters

Variable	Value
file **<word>**	Specifies the file name in one of the following formats for **value**: • [a.b.c.d]: <file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> **File** is a string of 1–99 characters.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
backup **<word>**	Saves the specified file name and identifies the file as a backup file. **word** uses one of the following formats: • [a.b.c.d]:<file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> **file** is a string of 1–99 characters.
mode (cli|nncli)	Saves the boot configuration in either CLI or NNCLI format.

Variable	Value
standby **<word>**	Saves the specified file name to the standby SF/CPU in the following format for **value**: • filename, /pcmcia/ <file> • /flash/ <file> **file** is a string of 1–99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you changed.

boot file config value

Reboot the switch to implement configuration changes or recover from a system failure.

Syntax

```
boot [<file>] [config <value>] [-y]
```

Parameters

Variable	Value
file	Specifies the software image device and file name in the format: *[a.b.c.d:]<file> /pcmcia/<file> /flash/<file>*. The file name, including the directory structure, can include up to 99 characters.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
`config <value>`	Specifies the software configuration device and file name in the format: *[a.b.c.d:]<file> /pcmcia/<file> /flash/<file>*. The file name, including the directory structure, can include up to 99 characters.
`-y`	Suppresses the confirmation message before the switch reboots. If you omit this parameter, you are asked to confirm the action before the switch reboots.

reset

Reset the switch to reload system parameters from the most recently saved configuration file.

Syntax

```
reset [-y]
```

Parameters

Variable	Value
`-y`	Suppresses the confirmation message before the switch resets. If you omit this parameter, you are asked to confirm the action before the switch resets.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

peer telnet

Access the standby SF/CPU to make changes to the standby SF/CPU without reconnecting to the console port on that module.

Syntax

```
peer <telnet|rlogin>
```

Parameters

Variable	Value
`(telnet|rlogin)`	Specifies either Telnet or rlogin to use to access the standby SF/CPU.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

ping hostname

Ping a device to test the connection between the Ethernet Routing Switch 8600 and another network device.

Syntax

```
ping <HostName/ipv4address/ipv6address> [scopeid <value>]
[datasize <value>] [count <value>] [-s] [-I <value>] [-t
<value>] [-d] [vrf <word>]
```

Parameters

Variable	Value
`HostName/ipv4address/ipv6address`	Specifies the Host Name or IPv4 (a.b.c.d) or IPv6 (x:x:x:x:x:x:x:x) address (string length 1–256).
`scopeid value`	Specifies the circuit ID (for IPv6) (1–9999).

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
`count value`	Specifies the number of times to ping (for IPv4) (1–9999).
`-d`	Configures ping debug mode (for IPv4).
`datasize value`	specifies the size of ping data sent in bytes (for IPv4) (16–4076).
`-I`	Specifies the interval between transmissions in seconds (1–60).
`-s`	Configures the continuous ping at the interval rate defined by the `[-I]` parameter (for IPv4).
`-t`	Specifies the no-answer time-out value in seconds (1–120)(for IPv4).
`vrf <word>`	Specifies the VRF name from 1–16 characters.

pingipx ipxhost

Ping an IPX device to test the connection between the Ethernet Routing Switch 8600 and another network device.

Syntax

```
pingipx <ipxhost> <count>[-s] [-q] [-t <value>]
```

Parameters

Variable	Value
`ipxhost`	Specifies the IP address of the network node to ping.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
`count`	Specifies the number of times to ping (for IPv4) (1–9999).

Variable	Value
`-s`	Configures a continuous ping.
`-q`	Configures quiet output (same as nonverbose mode).
`-t`	Specifies the no-answer time-out value in seconds (1–120).

md5 filename

Calculate the MD5 digest to verify the MD5 checksum.

Syntax

```
md5 <filename> [-a] [-c] [-f] [-r]
```

Parameters

Variable	Value
`-a`	Adds data to the output file instead of overwriting it. You cannot use the `-a` option with the `-c` option.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
`-c`	Compares the checksum of the specified file by `<filename>` with the MD5 checksum present in the checksum file name. You can specify the checksum file name using the `-f` option. If the checksum file name is not specified, the file `/flash/checksum.md5` is used for comparison.

Variable	Value
	If the supplied checksum file name and the default file are not available on flash, the following error message appears: Error: Checksum file **<filename>** not present. The **-c** option also: • calculates the checksum of files specified by **filename** • compares the checksum with all keys in the checksum file, even if file names do not match • displays the output of comparison

-f <checksum-file-name>	Stores the result of MD5 checksum to a file on flash or PCMCIA.
	
	If the output file specified with the **-f** option is one of the:
	
	• reserved file names on the switch, the command fails with the error message:
	`Error: Invalid operation.`
	
	• files for which MD5 checksum is to be computed, the command fails with the error message:
	`Ethernet Routing Switch-8610:5# md5 *.cfg -f config.cfg`
	`Error: Invalid operation on file <filename>`
	
	If the checksum file name specified by the **-f** option exists on the switch (and is not one of the reserved file names), the following message appears on the switch:
	
	`File exists. Do you wish to overwrite? (y/n)`

-r	Reverses the output. Use with the **-f** option to store the output to a file.

Variable	Value
	The `-r` option cannot be used with the `-c` option.

sys action

Reset system functions to reset all statistics counters, the modem port, the console port, and the operation of the switchover function.

Syntax

```
sys action cpu-switch-over
```

Parameters

Variable	Value
`cpuswitchover`	Resets the switch to change over to the backup SF/CPU.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
`reset {console|counters|modem}`	Reinitializes the hardware universal asynchronous receiver transmitter (UART) drivers. Use this command only if the console or modem connection is hung. Resets all the statistics counters in the switch to zero. Resets the modem port.

source file

Source a configuration to merge a script file into the running configuration.

Syntax

```
source <file> [stop] [debug] [syntax]
```

Parameters

Variable	Value
`debug`	Debugs the script output.
`file`	Specifies a file name and location from 1–99 characters. Use the format {a.b.c.d:|peer:|/pcmcia/|/flash/}<file>

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
`stop`	Stops the merge after an error occurs.
`syntax`	Verifies the script syntax.

show cli password

Use this command to display the access, logon name, and password combinations.

Syntax

`show cli password`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show basic config

Use this command to display the basic switch configuration.

Syntax

show basic config

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show running-config

Use this command to display the current switch configuration.

Syntax

show running-config [mode (cli|nncli)] [module <value>] [verbose]

Parameters

Parameter	Description
mode (cli|nncli)	Selects the mode between CLI and NNCLI.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Parameter	Description
module **<value>**	**module <value>** specifies the command group for which you are requesting configuration settings. The options are: • cli • sys • web • rmon • vlan • port • qos • traffic-filter • mlt • stg • ip • ipx • diag • dvmrp • radius • atm • ntp • svlan • lacp • naap • cluster • bootp • filter • ipv6
verbose	Specifies a complete list of all configuration information about the switch.

show cli info

Use this command to display information about the NNCLI configuration.

Syntax

```
show cli info
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show sys-info

Use this command to display system status and technical information about the switch hardware components.

Syntax

```
show sys-info [asic] [card] [gbic] [mda]
```

Parameters

Parameter	Description
asic	Displays information about the application-specific integrated circuit (ASIC) installed on each module.
card	Displays information about all the installed modules.
gbic	Displays information about all the Gigabit Interface Converters (GBIC).
mda	Displays information about installed media dependent adapters (MDA).

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ntp server

Use this command to view the NTP server status statistics.

Syntax

show ntp server

Parameters

Variable	Value
server	Displays NTP server information.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
key	Displays NTP key information.
statistics	Displays NTP statistics information.

show sys power

Use this command to view a summary of the power information for the chassis.

Syntax

show sys power

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show sys power global

Use this command to view a summary of the power redundancy settings.

Syntax

```
show sys power global
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show sys power power-supply

Use this command to view detailed power information for each power supply.

Syntax

```
show sys power power-supply
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show sys power slot

Use this command to view detailed power information for each slot.

Syntax

```
show sys power slot
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show sys

Use this command to display system status and technical information about the switch hardware components and software configuration.

Syntax

show sys

Parameters

Parameter	Description
8648gtr	Displays technical information about the 8648gtr settings.
action	Displays the configuration for the system action parameter.
dns	Displays the DNS default domain name.
ecn-compatibility	Displays the status of Explicit Congestion Notification (ECN) compatibility, either enabled or disabled.
ext-cp-limit	Displays the ext-cp-limit settings.
flags	Displays the configuration of system flags.
force-msg	Displays the message control force message pattern settings.
global-filter	Displays the status of system global filter settings, either enabled or disabled.
mcast-smlt	Displays the settings for multicast over Split MultiLink Trunking (MLT).
mgid-usage	Displays the multicast group ID (MGID) usage for VLANs and multicast traffic.

Parameter	Description
msg-control	Displays the system message control function status (activated or disabled).
mtu	Displays system maximum transmission unit (MTU) information.
performance	Displays system performance information, such as CPU utilization, switch fabric utilization, NonVolatile Random Access Memory (NVRAM) size, and NVRAM used. The information is updated once a second.
power	Displays power information for the chassis. Command options are: • **group**—power management settings • **power-supply**—power information for each power supply • **slot**—power information for each slot
record-reservation	Displays the number of reserved records and usage information for each record type. Record types include filter, IP multicasting (IPMC), MAC, and static route.
setting	Display system settings.
smlt-on-single-cp	Displays the settings for SMLT on a single CP.
software	Displays the version of software running on the switch, the last update of that software, and the Boot Config Table. The Boot Config Table lists the current system settings and flags.
stats	Displays system statistics. For more information about statistics, see *Nortel Ethernet Routing Switch 8600 Performance Management* (NN46205-704).
topology-ip	Displays clip-ip set as topology ip.
vlan-bysrcmac	Displays the status of VLANs created by source MAC address, either enabled or disabled.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show tech

Use this command to display technical information about system status and information about the hardware, software, and operation of the switch.

Syntax

`show tech`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show users

Use this command to display a list of users who are logged on to the switch.

Syntax

`show users`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

BGP services commands

This chapter describes Nortel Networks Command Line Interface (NNCLI) commands to configure Border Gateway Protocol (BGP) services for the Ethernet Routing Switch 8600.

Navigation

router bgp

Access the router configuration mode to configure the Border Gateway Protocol (BGP) commands.

Syntax

`router bgp`

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

router bgp enable

Configure BGP globally to enable BGP on the switch and determine how BGP operates.

Syntax

`router bgp [<0-65535>] [enable]`

Parameters

Variable	Value
`enable`	Enables the BGP on the switch.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

aggregate-address as-set

Adds or deletes an aggregate address in a BGP routing table.

Syntax

```
aggregate-address <prefix/len> [as-set] [summary-only]
[suppress-map <WORD 0-1536>] [advertise-map <WORD 0-1536>]
[attribute-map <WORD 0-1536>]
```

Parameters

variable	Value
`<prefix/len>`	Specifies the IP address and an integer value (between 0 and 32).
`as-set`	Enables autonomous system information.

Default

The default value is disable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

variable	Value
`summary-only`	Enables the summarization of routes not included in routing updates. This parameter creates the aggregate route and suppresses advertisements of more specific routes to all neighbors. The default value is disable.
`suppress-map <WORD 0-1536>`	Specifies the route map name (string length between 0 and 64 characters long) for the suppressed route list.
`advertise-map <WORD 0-1536>`	Specifies the route map name (any string length between 0 and 64 characters long) for route advertisements.
`attribute-map <WORD 0-1536>`	Specifies the route map name (string length between 0 and 64 characters long).

auto-peer-restart enable

Enables the process that automatically restarts a connection to a BGP neighbor.

Syntax

auto-peer-restart enable

Parameters

Variable	Value
enable	Enables the process that automatically restarts a connection to a BGP neighbor.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

auto-summary

Summarize networks based on class limits after BGP is enabled. (For example, Class A, B, C networks).

Syntax

auto-summary

Parameters

None

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

bgp

Configure the IP BGP configuration commands.

Syntax

bgp aggregation enable

Parameters

Variable	Value
aggregation enable	Enables or disables the aggregation feature on this interface.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
always-compare-med	Enables the comparison of the multiexit discriminator (MED) parameter for paths from neighbors in different autonomous systems. A path with a lower MED is preferred over a path with a higher MED. The default value is disable.
client-to-client reflection	Enables or disables route reflection between two route reflector clients. This option is applicable only if the route reflection value is set to enable. The default value is enable.
cluster-id <A>B.C.D>	Sets a cluster ID. This option is applicable only if the route reflection value is set to enable, and if multiple route reflectors are in a cluster. **<A.B.C.D>** is the cluster ID of the reflector router.

Variable	Value
confederation identifier <0-65535> peers <WORD 0-255>	Configures a BGP confederation. The default value is 0. • **identifier <0-65535>** specifies the confederation identifier. • **peers <WORD 0-255>** Lists adjoining ASs that are part of the confederation in the format (5500,65535,0,10,...,...).
default local-preference <0-2147483647>	Specifies the default value of the local preference attribute. The default value is 100. You cannot change the default value when BGP is enabled.
deterministic-med enable	Enables deterministic Multiexit Discriminator (MED). The default value is enable.
multiple-paths <1-8>	Sets the maximum number of equal-cost-paths that are available to a BGP router by limiting the number of equal-cost-paths that can be stored in the routing table. The default value is 1.

comp-bestpath-med-confed

When enabled, compares multiexit discriminator (MED) attributes within a confederation.

Syntax

comp-bestpath-med-confed enable

Parameters

Variable	Value
enable	Enables and compares multiexit discriminator attributes within a BGP confederation.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

debug-screen

Displays debug messages on the console, or saves them in a log file.

Syntax

debug-screen <off|on>

Parameters

Variable	Value
<on|off>	Disable BGP screen logging (off) or enable BGP screen logging (on).

Default

The default value is off.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

default-information

Enables the advertisement of a default route to peers, if it is present in the routing table.

Syntax

default-information originate

Parameters

Variable	Value
originate	Enables the origination default route.

Default

The default value is disable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

default-metric

Sets a value that is sent to a BGP neighbor to determine the cost of a route a neighbor is using.

Syntax

`default-metric <-1-2147483647>`

Parameters

Variable	Value
`<-1-2147483647>`	Specifies the range of the default metric. A default metric value helps solve the problems associated with redistributing routes that have incompatible metrics.

Default

The default value is -1.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

flap-dampening

Enables route suppression for routes that flap on and off.

Syntax

`flap-dampening enable`

Parameters

Variable	Value
`enable`	Enables BGP flap-dampening.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

global-debug

Displays specified debug information for BGP global configurations.

Syntax

`global-debug mask <WORD 1-100>`

Parameters

Variable	Value
`mask <WORD 1-100>`	Specifies a list of mask choices separated by commas with no space between choices. Mask choices are **`none`** disables all debug messages. **`all`** enables all debug messages. **`error`** enables display of debug error messages. **`packet`** enables display of debug packet messages. **`event`** enables display of debug event messages. **`trace`** enables display of debug trace messages. **`warning`** enables display of debug warning messages. **`state`** enables display of debug state transition messages. **`init`** enables display of debug initialization messages. **`filter`** enables display of debug messages related to filtering.

Variable	Value
	update enables display of debug messages related to sending and receiving updates. The no form of this command is **no global-debug mask**. The default form of this command is **default global-debug mask**.

Default

The default value is none.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

ibgp-report-import-rt

Configures BGP to advertise imported routes to an interior BGP (IBGP) peer. This command also enables or disables advertisement of nonBGP imported routes to other IBGP neighbors.

Syntax

ibgp-report-import-rt enable

Parameters

Variable	Value
enable	Enables advertisement of nonBGP imported routes to other IBGP neighbors.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

ignore-illegal-rtrid

Overlook an illegal router id after enabling BGP.

Syntax

ignore-illegal-rtrid enable

Parameters

Variable	Value
enable	Enable or disable the acceptance of a connection from a peer that sends an open message using a router ID of 0 (zero).

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

neighbor-debug-all

Displays specified debug information for BGP neighbors.

Syntax

neighbor-debug-all mask <WORD 1-100>

Parameters

Variable	Value
mask <WORD 1-100>	**<WORD 1-100>** is a list of mask choices separated by commas with no space between choices.

Default

The default value is none.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

network

Specify the IGP network prefixes for BGP to advertise for redistribution.

Syntax

network <prefix/len> [metric <0-65535>]

Parameters

Variable	Value
network <prefix/len> metric <0-65535>	Specifies IGP network prefixes for BGP to advertise for redistribution. This command imports routes into BGP. • **<prefix/len>** is the network address and mask. • **metric <0-65535>** corresponds to the MED (multiexit discriminator) BGP attribute for the route.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

no-med-path-is-worst

Enable BGP to treat an update without a multiexit discriminator (MED) attribute as the worst path.

Syntax

no-med-path-is-worst enable

Parameters

Variable	Value
`enable`	Enables BGP to treat an update without a multiexit discriminator (MED) attribute as the worst path.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

quick-start

Enable the quick-start flag for exponential backoff.

Syntax

`quick-start enable`

Parameters

Variable	Value
`enable`	Enables the quick-start flag for exponential backoff.

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

route-reflector enable

Enables the reflection of routes from IBGP neighbors.

Syntax

route-reflector enable

Parameters

None

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

route-refresh

Enables or disables IP VPN Route Refresh. If enabled, a route refresh request received by a BGP speaker causes the speaker to resend all route updates it contains in its database that are eligible for the peer that issues the request.

Syntax

route-refresh

Parameters

None

Default

The default value is disable

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

router-id

Specify the BGP router ID in IP address format. This parameter only applies to VRF 0.

Syntax

```
router-id <A.B.C.D>
```

Parameters

Variable	Value
`<A.B.C.D>`	Identifies the router IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

synchronization

Enable the router to accept routes from BGP peers without waiting for an update from the IGP.

Syntax

```
synchronization
```

Parameters

None

Default

The default value is enable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

traps

Enable BGP traps.

Syntax

```
traps enable
```

Parameters

Variable	Value
enable	Enables BGP traps.

Default

The default value is disable.

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

neighbor ipaddress

Use peers and peer groups to simplify BGP configuration and makes updates more efficient.

Syntax

neighbor <nbr_ipaddr|peer-group-name> address-family vpnv4

Parameters

Variable	Value
address-family vpnv4	Enables BGP address families for IPv4 (BGP) and L3 VPN (MP-BGP) support. Enable this parameter for VPN/VRF Lite routes. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> address-family vpnv4**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> address-family vpnv4**.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
advertisement-interval <5-120>	Specifies the time interval (in seconds) that transpires between each transmission of an advertisement from a BGP neighbor. The default value is 5 seconds. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> advertisement-interval**.
default-originate	Enables the switch to send a default route advertisement to the specified neighbor. A default route does not have to be in the routing table. The default value is disable. Do not use this command if **default-information originate** is globally enabled. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> default-originate**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> default-originate**.
ebgp-multihop	Enables a connection to a BGP peer that is more than one hop away from the local router. The default value is disable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> ebgp-multihop**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> ebgp-multihop**.
enable	Enables the BGP neighbor. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> enable**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> enable**.
fall-over	Sets the fall-over status.

Variable	Value
in-route-map <WORD 0-256>	Applies a route policy rule to all incoming routes that are learned from, or sent to, the local BGP router peers, or peer groups. The local BGP router is the BGP router that allows or disallows routes and sets attributes in incoming or outgoing updates. **<WORD 0-256>** name is an alphanumeric string length (0 to 256 characters) that indicates the name of the route map or policy. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> in-route-map <WORD 0-256>**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> in-route-map**.
ipvpn-lite-capability	Specifies (when enabled) that IP VPN Lite capability can be enabled or disabled on the BGP neighbor peer. The default is disable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> ipvpn-lite-capability**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> ipvpn-lite-capability**.
max-prefix <0-2147483647>	Sets a limit on the number of routes that can be accepted from a neighbor. The default value is 12000 routes. A value of 0 (zero) indicates that there is no limit to the number of routes that can be accepted. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> max-prefix**.

Variable	Value
MD5-authentication enable	Enables TCP MD5 authentication between two peers. The default value is disable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> MD5-authentication enable**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> MD5-authentication enable**.
neighbor-debug mask <WORD 1-100>	Displays specified debug information for a BGP peer. The default value is none. **<WORD 1-100>** is a list of mask choices separat ed by commas with no space between choices. For example, **{<mask>,<mask>,<mask>...}**. Mask choices are **none** disables all debug messages. **all** enables all debug messages. **error** enables display of debug error messages. **packet** enables display of debug packet messages. **event** enables display of debug event messages. **trace** enables display of debug trace messages. **warning** enables display of debug warning messages. **state** enables display of debug state transition messages. **init** enables display of debug initialization messages.

Variable	Value
	filter enables display of debug messages related to filtering. **update** enables display of debug messages related to sending and receiving updates. The default form of this command is **default neighbor <A.B.C.D|WORD 0-1536> neighbor-debug mask**.
next-hop-self	When enabled, specifies that the next-hop attribute in an IBGP update is the address of the local router or the router that is generating the IBGP update. The default value is disable. The next-hop parameter can only be configured when the neighbor is disabled. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> next-hop-self**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> next-hop-self**.
out-route-map <WORD 0-256>	Applies a route policy rule to all outgoing routes that are learned from, or sent to, the local BGP router's peers, or peer groups. The local BGP router is the BGP router that allows or disallows routes and sets attributes in incoming or outgoing updates. **<WORD 0-256>** name is an alphanumeric string length (0 to 256 characters) that indicates the name of the route map or policy. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> out-route-map <WORD 0-256>**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> out-route-map**.

Variable	Value
peer-group <WORD 0-1536>	Adds a BGP peer to the specified subscriber group. You must create the specified subscriber group before you issue this command. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> peer-group <WORD 0-1536>**.
remote-as <0-65535>	Configures the remote AS number of a BGP peer or a peer-group. You cannot configure this option when the admin-state is enable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> remote-as**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> remote-as**.
remove-private-as enable	When enabled, strips private AS numbers when an update is sent. This feature is especially useful within a confederation. The default value is enable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> remove-private-as enable**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name>**.
retry-interval <1-65535>	Sets the time interval (in seconds) for the ConnectRetry Timer. The default value is 120 seconds. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> remove-private-as enable**.

Variable	Value
route-reflector-client	Configures the specified neighbor or group of neighbors as its route reflector client. The default value is disable. All neighbors that are configured become members of the client group and the remaining IBGP peers become members of the nonclient group for the local route reflector. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> route-reflector-client**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> route-reflector-client**.
route-refresh	Enables IP VPN Route Refresh for the BGP peer. If enabled, a route refresh request received by a BGP speaker causes the speaker to resend all route updates it contains in its database that are eligible for the peer that issues the request. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> route-refresh**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> route-refresh**.
send-community	Enables the switch to send the update message community attribute to the specified peer. The default value is disable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> send-community**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> send-community**.

Variable	Value
soft-reconfiguration-in enable	When enabled, the router relearns routes from the specified neighbor or group of neighbors without resetting the connection when the policy changes in the inbound direction. The default value is disable. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> soft-reconfiguration-in enable**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> soft-reconfiguration-in enable**.
timers <0-21845> <0-65535>	Sets timers (in seconds) for the BGP speaker for this peer. • **<0-21845>** is the keepalive time. • **<0-65535>** is the hold time. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> timers**.
update-source <A.B.C.D>	Specifies the source IP address when BGP packets are sent to this peer or peer group. You cannot configure this parameter when the admin-state is enable. **<A.B.C.D>** is the specified source IP address. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> update-source <A.B.C.D>**.
weight <0-65535	Specifies the weight of a BGP peer or peer groups, or the priority of updates that can be received from that BGP peer. The default value is 0. If you have particular neighbors that you want to prefer for most of your traffic, you can assign a higher weight to all routes learned from that neighbor. The no form of this command is **no neighbor <nbr_ipaddr|peer-group-name> weight**. The default form of this command is **default neighbor <nbr_ipaddr|peer-group-name> weight**.

redistribute

Configure a redistribute entry to announce routes of a certain source protocol type into the BGP domain, for example, static, RIP, or direct routes. Use a route policy to control the redistribution of routes.

Syntax

redistribute <direct|ospf|rip|static> enable

Parameters

Variable	Value
enable [vrf-src <WORD 0-16>]	Enables the BGP route redistribution instance.
direct|ospf|rip|static	Different BGP domains available to configure the redistribute entry.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
metric <0-65535> [vrf-src <WORD 0-16>]	Configures the metric to apply to redistributed routes.
route-map <WORD 0-64> [vrf-src <WORD 0-16>]	Configures the route policy to apply to redistributed routes.
vrf-src <WORD 0-16>	Specifies the source VRF instance by name for route redistribution.

ip prefix-list

Use prefix lists to allow or deny specific route updates. A prefix list policy specifies route prefixes to match. When there is a match, the route is used.

Syntax

ip prefix-list <1-1024> <prefix/len> [<ge|le> <0-32>]

Parameters

Variable	Value
<prefix/len> [<ge|le> <0-32>]	Creates or adds a prefix to the list. • **<prefix/len>** specifies the IP address and network mask in the format a.b.c.d/x, a.b.c.d/x.x.x.x, or default. • **<ge|le>** specifies greater than or equal to or less than or equal to. • **<0-32>** specifies the mask length in the range 0 to 32. The no form of this command is **no ip prefix-list <1-1024> <prefix/len>**.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
name <WORD 1-64>	Names the prefix list.

ip as-list

Use an AS path list to restrict the routing information a router learns or advertises to and from a neighbor. The AS path list acts as a filter that matches AS paths.

Syntax

ip as-list <1-1024> memberId <0-65535> <permit|deny> as-path <WORD 0-1536>

Parameters

Variable	Value
as-list <1-1024>	Creates the specified AS-path list entry.
memberId <0-65535>	Adds a regular expression entry to the specified AS-path list. It is an integer value between 0 and 65535.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
`<permit|deny>`	Permits or denies access for matching conditions.
`as-path <WORD 0-1536>`	Specifies an integer value between 0 and 1536 placed within " ."

ip community-list

Use community lists to specify permitted routes by using their BGP community. This list acts as a filter that matches communities or AS numbers

Syntax

```
ip community-list <1-1024> memberId <0-65535>
<permit|deny> community-string <WORD 0-256>
```

Parameters

Variable	Value
`community-list <1-1024>`	Creates the specified community list entry.`<1-1024>` specifies the list id.
`memberId <0-65535>`	Adds an entry to the community list. `<0-65535>` is an integer value between 0 and 65535 that represents the member ID in the community list.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
<permit|deny>	Sets the access mode, which permits or denies access for matching conditions.
community-string <WORD 0-256>	It is an alphanumeric string value with a string length between 0 and 1536 characters. This string value is either an AS num:community-value or a well-known community string. Well known communities include: • internet • no-export • no-advertise • local-as (known as NO_EXPORT_SUBCONFED)

ip extcommunity-list

Use community lists to specify permitted routes by BGP extended community attributes, including route targets and sites of origin (SOO). This list acts as a filter that matches route targets and SOO.

Syntax

ip extcommunity-list <1-1024> memberId <0-65535> rt <0-65536> <0-2147483647> [soo {<0-65535> <0-2147483647>|<A.B.C.D> <0-65535>}]

Parameters

Variable	Value
memberId <0-65535>	Specifies an integer value between 0 and 65535 that represents the member ID in the community list.
rt <0-65536> <0-2147483647> **rt <A.B.C.D> <0-65535>**	Specifies the route target in the format {AS number:assigned number} (that is, {0 to 65535}:{0 to 2147483647}) or {ipaddress:assigned number} (that is, {a.b.c.d}:{0 to 65535}).

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

Variable	Value
`soo <0-65535> <0-2147483647>` `soo <A.B.C.D> <0-65535>`	Specifies the site of origin in the format {AS number:assigned number} (that is, {0 to 65535}:{0 to 2147483647}) or {ipaddress:assigned number} (that is, {a.b.c.d}:{0 to 65535}).

router bfd enable

Enable BFD so that it runs on the switch.

Syntax

`router bfd enable`

Parameters

Variable	Value
`enable`	Enables BFD globally. The `no` and `default` versions of this command disable BFD globally.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
`holdoff-time <0-65535>`	Specifies the BFD holddown time interval, from 0 to 65535 seconds. If set to 0, the hold-down timer is disabled.
`traps [enable]`	Enables Simple Network Management Protocol (SNMP) traps for BFD.

ip bfd vlan enable

Configure BFD so that it runs optimally on the VLAN interface.

Syntax

```
ip bfd [vlan <1-4094>] enable
```

Parameters

Variable	Value
enable	Enables BFD on the VLAN. The **no** and **default** versions of this command disable BFD on the VLAN.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
min_rx <100-65535>	Specifies the minimum required interval that the switch supports between received BFD Control packets. The range is to 100 to 65535 milliseconds. The **default** version of this command sets the interval to the default value: 200.
interval <100-65535>	Specifies the minimum interval that the local switch would like to use when it transmits BFD Control packets. The range is 100 to 65535 milliseconds. The **default** version of this command sets the interval to the default value: 200.
multiplier <1-20>	Specifies the detection time multiplier for asynchronous mode. The negotiated transmit interval, multiplied by this multiplier, provides the detection time for the transmitting system. The range is 1 to 20. The **default** version of this command sets the multiplier to the default value: 3.

ip bfd brouter port

Configure BFD so that it runs optimally on the brouter port.

Syntax

ip bfd [vlan <1-4094>] enable

Parameters

Variable	Value
enable	Enables BFD on the interface. The **no** and **default** versions of this command disable BFD on the interface.

Default

None

Command mode

Global Configuration Mode

Next command mode

BFD Interface Configuration Mode

Related commands

Variable	Value
min_rx <100-65535>	Specifies the minimum required interval that the switch supports between received BFD Control packets. The range is to 100 to 65535 milliseconds. The **default** version of this command sets the interval to the default value: 200.
interval <100-65535>	Specifies the minimum interval that the local switch would like to use when it transmits BFD Control packets. The range is 100 to 65535 milliseconds. The **default** version of this command sets the interval to the default value: 200.
multiplier <1-20>	Specifies the detection time multiplier for asynchronous mode. The negotiated transmit interval, multiplied by this multiplier, provides

Variable	Value
	the detection time for the transmitting system. The range is 1 to 20. The **default** version of this command sets the multiplier to the default value: 3.

neighbor a.b.c.d fall-over bfd

Enable BFD so that it runs on the interface.

Syntax

neighbor {<A.B.C.D>}|ipv6addr <WORD/0-1536>} fall-over bfd

Parameters

Variable	Value
fall-over bfd	Sets the fall over status of BFD.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

ip route bfd

Enable BFD on a static route.

Syntax

ip route bfd <A.B.C.D>

Parameters

Variable	Value
route	Enables BFD on a static route.

Default

None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

ip ospf bfd
Enable BFD on an OSPF interface.

Syntax
```
ip ospf [vlan <1-4094>/port <portNum>] bfd
```

Parameters

Variable	Value
`ospf`	Enables BFD on an Open Shortest Path Forst (OSPF) interface.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

show ip bfd neighbors
View BFD session information on the switch.

Syntax
```
show ip bfd neighbors
```

Parameters
None

Default
None

Command mode
Privilege Executive Mode

Next command mode
Privilege Executive Mode

Related commands
None

show ip bfd neighbors next-hop
View BFD neighbors next hop information on the switch.

Syntax
show ip bfd neighbors next-hop <A.B.C.D>

Parameters

Variable	Value
<A.B.C.D>	Specifies the ip address of the next hop to view the information.

Default
None

Command mode
Privilege Executive Mode

Next command mode
Privilege Executive Mode

Related commands
None

show ip bfd stats
View BFD statistics on the switch.

Syntax
show ip bfd stats

Parameters
None

Default
None

Command mode
Privilege Executive Mode

Next command mode
Privilege Executive Mode

Related commands

None

show ip bfd

View BFD information on the switch.

Syntax

```
show ip bfd
```

Parameters

None

Default

None

Command mode

Privilege Executive Mode

Next command mode

Privilege Executive Mode

Related commands

None

show ip bgp aggregates

Display information about current aggregate addresses.

Syntax

```
show ip bgp aggregates [<prefix/len>] [vrf <WORD 0-16>]
[vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Specifies the IP address and the mask length (the length can be 0 to 32).
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp cidr-only

Display information about classless interdomain routing (CIDR) routes.

Syntax

```
show ip bgp cidr-only [<prefix/len>] [vrf <WORD 0-16>]
[vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Specifies an exact match of the prefix. This is an IP address and an integer value between 0 and 32 in the format a.b.c.d/xx.
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp dampened-paths

Display information about flap-dampened routes to determine unreliable routes.

Syntax

```
show ip bgp dampened-paths <A.B.C.D> [<prefix/len>]
[longer-prefixes] [vrf <WORD 0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
`longer-prefixes`	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp flap-damp-config

Display global information about flap-dampening.

Syntax

```
show ip bgp flap-damp-config [<prefix/len>] [vrf <WORD
0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`[<prefix/len>]`	Exact match the prefix {a,b,c,d/len}.
`vrf <Word/0-16>`	Displays BGP configuration for a particular VRF.
`vrfids <Word/0-255>`	Specifies the VRF ID in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip bgp imported-routes

Display information about BGP imported routes.

Syntax

```
show ip bgp imported-routes [<prefix/len>] [longer-prefixe
s] [vrf <WORD 0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
`longer-prefixes`	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp networks

Display information about BGP network configurations.

Syntax

```
show ip bgp networks [<prefix/len>] [vrf <WORD 0-16>]
[vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Shows networks with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp neighbors

Display information about BGP peers.

Syntax

```
show ip bgp neighbors [vrf <WORD 0-16>] [vrfids <WORD
0-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp neighbors A.B.C.D

Display information about BGP peer advertised routes, peer routes, and IP VPN BGP peers.

Syntax

```
show ip bgp neighbors <A.B.C.D> advertised-routes
[<prefix/len>] [longer-prefixes] [vrf <WORD 0-16>] [vrfids
<WORD 0-255>]
```

Parameters

Variable	Value
`advertised-routes`	Displays information about BGP peer advertised routes.
`routes`	Displays information about BGP peer routes.
`stats`	Displays statistics information for BGP peers.
`vpnv4`	Displays information about IP VPN BGP peers.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
`<prefix/len>`	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
`longer-prefixes`	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
`community`	Enables the display of community attributes.
`ext-community`	Enables the display of extended community attributes.
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

show ip bgp peer-group

Display information about BGP peer groups.

Syntax

```
show ip bgp peer-group [<WORD 1-1536>] [vrf <WORD 0-16>]
[vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<WORD 1-1536>`	Specifies the name of the peer group.
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp vpnv4

Display information about IP VPN routes.

Syntax

```
show ip bgp vpnv4 [<prefix/len>] [longer-prefixes]
[community] [ext-community] [vrf <WORD 0-16>] [vrfids
<WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
`longer-prefixes`	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
`community`	Enables the display of community attributes.

Variable	Value
`ext-community`	Enables the display of extended community attributes.
`ip`	Specifies the IP address.
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip bgp route

Display information about BGP routes.

Syntax

```
show ip bgp route [<prefix/len>] [longer-prefixes]
[community <enable|disable>] [ip <A.B.C.D>] [vrf <WORD
0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`<prefix/len>`	Shows paths with this prefix. The prefix is the IP address and exact mask length (must be an integer value between 0 and 32).
`community <enable|disable>`	Enables or disables the display of community attributes.
`ip <A.B.C.D>`	Specifies an IP address.
`longer-prefixes`	Shows long prefixes. The longer-prefixes indicate the mask length from any specified prefix to 32 (for example, show from prefix a.b.c.d/len to a.b.c./32).
`vrf <WORD 0-16>`	Specifies a VRF instance by name.
`vrfids <WORD 0-255>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

show ip bgp summary

Display summarized information about BGP.

Syntax

```
show ip bgp summary [vrf <WORD 0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`vrf <value>`	Specifies a VRF instance by name.
`vrfids <value>`	Specifies a range of VRFs by ID number.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

Commissioning commands

This chapter provides the Nortel Networks Command Line Interface (NNCLI) commands to commission the Nortel Ethernet Routing Switch 8600.

Navigation

boot config sio modem

Connect a modem to a Nortel Ethernet Routing Switch 8600 to establish a connection with the switch. You can configure the modem port first using another type of connection, such as a terminal connection, to the NNCLI.

Syntax

boot config sio modem 8databits

Parameters

Variable	Value
8databits	Specifies either 8 (enabled) or 7 (disabled) data bits for each byte for software to interpret.

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
baud <rate>	Configures the baud rate for the port. The default is 9600. To configure this option to the default value, use the **default** operator with the command.
mode <ascii|slip|ppp>	Configures the communication mode for the serial port. The default is American Standard Code for Information Interchange (ASCII). If you are configuring the modem port, you can configure the port to use either the SLIP or the PPP communication mode.
mtu <bytes>	Configures the size of the maximum transmission unit for a PPP link (0–2048). The default is 0.
my-ip <ipaddr>	Configures the IP address for the server side, the Nortel Ethernet Routing Switch 8600, of the point-to-point link. The default is 0.0.0.0. Nortel recommends that you use the current IP address for the management port.

Variable	Value
peer-ip <ipaddr>	Configures the peer (PC) IP address on the point-to-point link. The default is 0.0.0.0. The switch assigns this value to any PC that connects through the modem port with configured TCP/IP properties to obtain an IP address automatically. If the client uses a static IP address, the Nortel Ethernet Routing Switch 8600 accepts this address. If you use Password Authentication Protocol (PAP) authentication, you must ensure that the client uses the correct IP address.
pppfile <file>	Specifies the PPP configuration file to provide details for authentication and other options to include during the boot procedure of the switch. The PPP file name is a string value of no more than 64 characters. Identify the file in the format {a.b.c.d:|peer:|/pcmcia/|/flash/}<file>.
restart	Shuts down and initializes the port.
slip-compression	Enables or disables Transmission Control Protocol over IP (TCP/IP) header compression for SLIP mode. The default is false.
slip-rx-compression	Enables or disables TCP/IP header compression on the receive packet for SLIP mode. The default is false.

install

Configure the switch with the setup utility to monitor system requirements and obtain the maximum system performance.

Syntax

install

Parameters

None

Default

None

Command mode

Privileged Exec Mode

Next command mode

Privileged Executive Mode

Related commands

None

snmp-server

Configure system identification to specify the system name, contact person, and location of the switch.

Syntax

```
snmp-server contact <word 0-255>
```

Parameters

Variable	Value
`contact <word>`	Identifies the contact person who manages the node. To include blank spaces in the contact, use quotation marks (") around the text.

Default

The default is support@nortelnetworks.com.

Command mode

Global Configuration Mode

Related commands

Variable	Value
`agent-conformance`	Enables agent conformance mode.
`authentication-trap`	Enables or disables generation of authentication traps.
`bootstrap`	Sets SNMP initial user entry.
`community`	Sets community table.
`force-iphdr-sender`	Sets same SNMP and IP sender flag.
`force-trap-sender`	Sets SNMP trap sender IP.
`group`	Sets SNMP v3 group access table.
`host`	Specifies hosts to receive SNMP notifications.
`location <word>`	Identifies the physical location of the node. To include blank spaces in the location, use quotation marks (") around the text. The default is a Nortel address.
`name <word>`	Configures the system or root level prompt name for the switch. **`word`** is an ASCII string from 1 to 255 characters (for example, LabSC7 or Closet4).
`notify-filter`	Creates new entry for notify filter table.

Variable	Value
sender-ip	Sets SNMP trap sender IP.
user	Creates or modifies SNMPv3 user.
view	Creates or modifies an SNMP access view.

boot config tz

Configure the time zone to specify the time zone for your location and configure settings for Daylight Saving Time (DST).

Syntax

boot config tz dst-end

Parameters

Variable	Value
dst-end <Mm.n.d/hhmm|MMddhhmm>	Configures the ending date of DST. You can specify the time in one of two ways: • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example, **10310200** means October 31 at 2:00 a.m.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
dst-name <WORD 1-7>	Configures an abbreviated name for the local daylight saving time zone. **dstname** is the name. For example, PDT is Pacific Daylight Time. To configure this option to the default value, use the **default** operator with the command. **WORD <1-7>** daylight saving timezone abbreviation.
dst-offset <WORD 0-6>	Configures the daylight saving adjustment in minutes. The default is 60 minutes. To configure this option to the default value, use the **default** operator with the command. **WORD<0-6>** Daylight saving adjustment {hh:mm{–4:00 to 4:00}/minutes{–240 to 240}}.
dst-start <Mm.n.d/hhmm|MM ddhhmm>	Configures the starting date of DST. • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example,

Variable	Value
	10310200 means October 31 at 2:00 a.m.
name <WORD 1-7>	Configures an abbreviated name for the local time zone name. **tz** is the name. For example, PST is Pacific Standard Time. To configure this option to the default value, use the **default** operator with the command. **<WORD 1-7>** is the timezone abbreviation.
offset-from-utc <WORD 0-6>	Configures the time zone offset in minutes to subtract from Universal Coordinated Time (UTC), where positive numbers mean west of Greenwich and negative numbers mean east of Greenwich. To configure this option to the default value, use the **default** operator with the command.

clock set

Configure the calendar time in the form of month, day, year, hour, minute, and second.

Syntax

```
clock set <MMddyyyyhhmmss>
```

Parameters

Variable	Value
`<MMddyyyyhhmmss>`	Specifies the current date and time.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

boot config master

Specify the primary SF/CPU to determine which SF/CPU you use as the master after the switch performs a full power cycle only.

Syntax

```
boot config master <cpu-slot>
```

Parameters

Variable	Value
`<cpu-slot>`	Specifies the slot number for the primary SF/CPU. This variable can be 5 or 6.

Default

The default primary is slot 5.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

show boot config master

View the current setting for the primary SF/CPU.

Syntax

show boot config master

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

None

boot config net mgmt ip

Assign an IP address to the management port to use it for out-of-band (OOB) management.

Syntax

boot config net mgmt ip <ipaddr> <mask> <value>

Parameters

Variable	Value
<ipaddr> <mask>	Specifies the IP address and subnet mask of the management port (For example, 10.127.231.15 255.255.255.0).

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

sys mgmt-virtual-ip

Assign an IP address to a virtual management port to use it for out-of-band (OOB) management.

Syntax

sys mgmt-virtual-ip <ipaddr/mask>

Parameters

Variable	Value
<ipaddr> <mask>	Specifies the IP address and subnet mask of the management port (For example, 10.127.231.15 255.255.255.0).
mgmt-virtual-ip	Specifies the management virtual IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config net mgmt route

Assign a static route to specify a gateway address route for the management interface. You can specify up to four static routes for the management interface.

Syntax

boot config net mgmt route <netaddr/mask> <gateway>

Parameters

Variable	Value
gateway	Configures the IP address of the default gateway.
netaddr/mask	Configures the IP address and mask of the destination network in the formats a.b.c.d/x | a.b.c.d/x.x.x.x | default.

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

boot config flags access-service
Enable the remote access service to provide multiple methods of remote access.

Syntax
```
boot config flags <access-service>
```

Parameters

Variable	Value
`access-service`	Specifies one of the following remote-access service types to enable: • ftpd • rlogind • sshd • telnetd • tftpd

Default
None

Command mode
Global Configuration Mode

Next command mode
Global Configuration Mode

Related commands
None

web-server enable
Enable the Web management interface to provide management access to the switch using a Web browser.

Syntax

```
web-server enable
```

Parameters

Variable	Value
`def-display-rows`	Sets Web server default display row width.
`enable`	Enables the Web interface.
`help-tftp`	Sets Web server HTML directories.
`http-port`	Sets Web server HTTP port.
`password`	Sets Web server password.

Default

None

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

None

boot config host

Configure the remote host logon to modify parameters for FTP and TFTP access. Use the default parameters for TFTP transfers. If you want to use FTP as the transfer mechanism, you must change the password to a valid value.

Syntax

```
boot config host
```

Parameters

Variable	Value
`ftp-debug`	Enables or disables debug mode on FTP. If you enable debug mode, debug messages appear on the management console screen.

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Global Configuration Mode

Related commands

Variable	Value
password <WORD 0-16>	Configures the password to enable FTP transfers. **<WORD 0-16>** is the remote host user logon password, enables FTP transfers and is up to 16 characters long. After you configure this password, only FTP is used for remote host logon. **ATTENTION** This password must match the password for the FTP server, or the FTP operation fails. Also, if you configure the password to a valid value, then all copying to and from the network uses FTP instead of TFTP. If the user name or password is incorrect, copying over the network fails.
tftp-debug	Enables or disables debug mode on TFTP/TFTPD. If you enable debug mode, debug messages display on the management console screen. The default is disabled.
tftp-hash	Enables or disables the TFTP hash bucket display. The default is disabled.
tftp-rexmit <seconds>	Configures the TFTP retransmission timeout. The default value is 2 seconds. **seconds** is the number of seconds (1–120). To configure this option to the default value, use the **default** operator with the command.
tftp-timeout <seconds>	Configures the TFTP timeout. The default value is 6 seconds. **seconds** is the number of seconds (1–120).
user <value>	Configures the remote user logon. **value** is the user logon name (up to 16 characters).

save bootconfig

Save the configuration to a file to retain the configuration settings.

Syntax

```
save bootconfig [file <word 1-99>] [verbose] [standby <word
1-99>] [backup <word 1-99>] [mode <cli|nncli>]
```

Parameters

Variable	Value
file <word>	Specifies the file name in one of the following formats for **word**: • [a.b.c.d]: <file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
backup <word>	Saves the specified file name and identifies the file as a backup file. **word** uses one of the following formats: • [a.b.c.d]:<file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
mode <cli|nncli>	Saves the boot configuration in CLI or NNCLI format.

Variable	Value
standby <word>	Saves the specified file name to the standby SF/CPU in the following format for **word**: • filename, /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change.

save config

Save the running configuration to a file to retain the configuration settings.

Syntax

save config [file <word 1-99>] [verbose] [standby <word 1-99>] [backup <word 1-99>] [mode (cli|nncli)]

Parameters

Variable	Value
file <word>	Specifies the file name in one of the following formats for **word**: • [a.b.c.d]: <file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.

Default

None

Command mode

Privileged Executive Mode

Next command mode

Privileged Executive Mode

Related commands

Variable	Value
backup <word>	Saves the specified file name and identifies the file as a backup file. **word** uses one of the following formats: • [a.b.c.d]:<file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
mode <cli|nncli>	Saves the boot configuration in CLI or NNCLI format.
standby <word>	Saves the specified file name to the standby SF/CPU in the following format for **word**: • filename, /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change.

Ethernet Modules commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to help you configure the Ethernet Routing Switch 8600 Ethernet modules.

Navigation

shutdown

Disable an Ethernet module before you remove it from the chassis to minimize traffic loss. Traffic does not flow on a disabled module.

Syntax

```
shutdown <1-10>
```

Parameters

Variable	Value
`<1-10>`	Specifies the slot number.

Default

None

Command mode

GigabitEthernet or FastEthernet Interface Configuration Mode

Related commands

None

auto-negotiate enable

Enable AutoNegotiation on the Ethernet port to optimally operate on the network.

Syntax

```
auto-negotiate enable
```

Parameters

Variable	Value
`enable`	Enables or disables AutoNegotiation for the port or other ports of the module or both.
`port {slot/port[-slot/port][,...]}`	Specifies the slot and the port.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

boot config flags 8616-reautoneg

Configure 8616 module after enabling the autonegotiation.

Syntax

boot config flags 8616-reautoneg

Parameters

Variable	Value
8616-reautoneg	Enables reautonegotiation for 8616 modules. Reautonegotiation permits 8616 modules to reautonegotiate when connected to a Multiservice Switch 15000.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

auto-negotiation-advertisements

Configure autonegotiation advertisements after enabling autonegotiation.

Syntax

auto-negotiation-advertisements <10-full|10-half|100-full|100-half|1000-full|1000-half|none>

Parameters

Variable	Value
10-full	Advertises 10mbps full duplex.
10-half	Advertises 10mbps half duplex.
100-full	Advertises 100mbps full duplex.
100-half	Advertises 100mbps half duplex.
1000-full	Advertises 1000mbps full duplex.
1000-half	Advertises 1000mbps half duplex.
none	Sets the value to none.
port {slot/port[-slot/port][,...]}	Specifies the slot and the port.

Default

None

Command mode
Global Configuration Mode

Next command mode
FastEthernet Interface Configuration Mode

Related commands
None

duplex

Configure the duplex mode on the Ethernet module. This is applicable to 10/100/1000 Mbit/s ports.

Syntax
```
duplex [port <portList>] <half|full>
```

Parameters

Variable	Value
`<half|full>`	Specifies half- or full-duplex mode. 1 and 10 Gbit/s ports must use full-duplex mode.
`port`	Specifies the slot and the port number.

Default
None

Command mode
Global Configuration Mode

Next command mode
FastEthernet Interface Configuration Mode

Related commands
None

speed

Set the speed of the port on the Ethernet modules.

Syntax
```
speed [port <portList>] <10|100|1000>
```

Parameters

Variable	Value
`<10|100|1000>`	Specifies the port speed. Not applicable to 1 Gigabit or 10 Gigabit Ethernet modules.
`port`	Specifies the slot and the port number.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

name port

Specify the name of the port that needs to be changed and have same settings for all the ports.

Syntax

```
name [port <portList>] <WORD 0-42>
```

Parameters

Variable	Value
`portlist`	Specifies the slot and the port number.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

port-phy portlist

Specify the line and the connector that you want to be active.

Syntax

```
port-phy [port <portList>] <left|right>
```

Parameters

Variable	Value
`<left|right>`	For duplex connectors, specifies which line and connector you want to be active: left or right.
`portlist`	Specifies the slot and the port number.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

sffd enable

Enable the Single Fiber Fault Detection on the module to perform optimally on the network.

Syntax

```
sffd enable
```

Parameters

Variable	Value
`enable`	Enables the Single Fiber Fault Detection as required.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

tx-flow-control enable

Enable TX flow control to allow the TX to transmit the MAC control PAUSE frames to indicate congestion on the receive side of the port interface. Flow control can only be enabled on 1 Gbit/s and 10 Gbit/s ports. Flow control cannot be enabled for ports that run at less than 1 Gbit/s.

Syntax

tx-flow-control enable

Parameters

Variable	Value
enable	Enables the TX flow control on the module.
port [portlist]	Specifies the slot and the port number.

Default

The default is disable.

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

flow-control

Configure the flow control pause0 and pause timer on the module.

Syntax

flowcontrol pause0

Parameters

Variable	Value
pause0	When **tx-flow-control** is enabled and **flowcontrol pause0** is enabled, the TX port transmits MAC control PAUSE frames with a timer value of 0 to indicate to its link partner to resume transmission. This parameter only applies to 1 and 10 Gigabit Ethernet ports.
pause-time <0...65535>	Setting the pause time sets the timer value in the MAC control PAUSE frame. This indicates to

Variable	Value
	the link partner how long to pause transmission. The pause time is in units of 512 bit-times. The default is 65535. This parameter only applies to 1 and 10 Gigabit Ethernet ports.

Default

The default is enable.

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

wan-mode

Configure the Wide Area Network (WAN) mode for LAN or WAN or both modules.

Syntax

`wan-mode enable`

Parameters

Variable	Value
`enable`	Enables the WAN mode on the module.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

framing sonet

Configure the framing type after the WAN mode is enabled.

Syntax

framing <sonet|sdh>

Parameters

Variable	Value
<sonet|sdh>	Sets the port to SONET or SDH framing. This parameter only applies to 10 Gbit/s WAN ports.
port [portlist]	Specifies the slot and the port number.

Default

The default value is SONET.

Command mode

Global Configuration Mode

Next command mode

FastEthernet Interface Configuration Mode

Related commands

None

clock source

Configure the clock source type in WAN modules.

Syntax

clock source <internal|line>

Parameters

Variable	Value
internal	This mode uses the recovered Receive (Rx) clock to generate the Tx clock.
line	This mode uses the onboard oscillator to generate the transmit (Tx) clock. Only applicable to WAN 10 Gbit/s ports.
port [portlist]	Specifies the slot and the port number.

Default

The default value is internal.

Command mode
Global Configuration Mode

Next command mode
FastEthernet Interface Configuration Mode

Related commands
None

vrf word 0-16
Associate a port to a (Virtual Router Forwarding) VRF so that the port becomes a member of the VRF instance.

Syntax
```
vrf <WORD 0-16>
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	`<WORD 0-32>` specifies the VRF name.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

show sys 8648gtr
Display the current control MAC mappings.

Syntax
```
show sys 8648gtr
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands

None

sys 8648gtr high-priority-control-mac

Use the high-priority control MAC address feature to select control MAC addresses to be treated as high priority.

Syntax

```
sys 8648gtr high-priority-control-mac <0-5> [<0x00:0x00:0
x00:0x00:0x00:0x00>
```

Parameters

Variable	Value
`<0-5> [<0x00:0x00:0x00:0x00:0x00:0x00>]`	`<0-5>` specifies the MAC address register and ranges from 0 to 5. `<0x00:0x00:0x00:0x00:0x00:0x00>` specifies the MAC address to be given high priority. If no MAC address is specified, it is set to default.

Default

None

Command mode

Global Configuration Mode

Related commands

None

IP Routing commands

This chapter provides the Nortel Networks Command Line Interface (NNCLI) commands to perform general IP routing operations on the Ethernet Routing Switch 8600.

Navigation

- "show ip ospf accept" (page 251)
- "ip redistribute enable" (page 252)
- "show ip redistribute" (page 253)
- "ip rsmlt" (page 253)
- "show ip rsmlt" (page 254)
- "ip rsmlt edge-support " (page 255)
- "show ip rsmlt edge-support" (page 256)

ip routing

Enable IP forwarding (routing) on a global level so that the router supports routing. You can use the IP address of any router interface for IP-based network management.

Syntax

ip routing

Parameters

Variable	Value
routing	Enables IP routing.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip routing

Displays the ip routing configuration information.

Syntax

show ip routing

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

routing

You can enable or disable routing capabilities on specified switch ports. The specified port can be part of a routed VLAN, while routing is disabled only on that port.

Syntax

`routing enable`

Parameters

Variable	Value
`enable`	Sets the IP routing to enable.

Default

The default setting for routing is enable.

Command mode

Gigabitethernet Interface Configuration Mode

Related commands

Variable	Value
`port{slot/port}`	Specifies the port and the slot number to be changed.

no ip route

Delete a dynamically learned route from the routing table if you do not want the Ethernet Routing Switch to use the route. Exercise caution when you delete entries from the routing table.

Syntax

`no ip route <A.B.C.D> <A.B.C.D> <A.B.C.D> dynamic`

Parameters

Variable	Value
`dynamic`	Specifies that a dynamic route is to be deleted.
`{A.B.C.D}`	Specifies the IP address, the subnet mask, and the next-hop IP address, respectively.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`enable`	Disables the route.
`local-next-hop enable`	Disables the local-next-hop option.
`preference`	Deletes the value of the route preference.
`next-hop-vrf <WORD 0-16>`	Specifies the name of the next-hop VRF router.

show ip route

Displays the IP route information.

Syntax

```
show ip route [<A.B.C.D>] [-s <A.B.C.D> <A.B.C.D>]
[alternative] [preference] [vrf <WORD 0-16>] [vrfids <WORD
0-255>]
```

Parameters

Variable	Value
`<A.B.C.D>`	Specifies the IP address of the route to the network.
`-s <A.B.C.D> <A.B.C.D>`	Indicates the IP address and subnet mask for which to display routes.
`alternative`	`alternative` displays the alternative routes.
`preference [next-hop-vrf <WORD 0-16>]`	`preference` displays the route preference.
`vrf <WORD 0-16>`	Specifies a VRF instance by VRF name.
`vrfids <WORD 0-255>`	Specifies a VRF instance by VRF number.

Default

None

Command mode

Configuration Mode

Next command mode

Configuration Mode

Related commands

None

ip route preference

Syntax

```
ip route preference protocol <static|ospf-intra|ospf-inter|ebgp|ibgp|rip|ospf-extern1|ospf-extern2|staticv6|ospfv3-intra|ospfv3-inter|ospfv3-extern1|ospfv3-extern2> <0-255>
```

Parameters

Variable	Value
`protocol <static|ospf-intra|ospf-inter|ebgp|ibgp|rip|ospf-extern1|ospf-extern2|staticv6|ospfv3-intra|ospfv3-inter|ospfv3-extern1|ospfv3-extern2> <0-255>`	Configures the preference value for the specified protocol. If two protocols have the same configured value, the default value is used. • The protocol must be one of the following: static, ospf-intra, ospf-inter, ebgp, ibgp, rip, ospf-extern1, ospf-extern2, staticv6, ospfv3-intra, ospfv3-inter, ospfv3-extern1, or ospfv3-extern2. • `<0-255>` configures the priority. 0 is reserved for local routes.
`vrf <WORD 0-16>`	Specifies a VRF instance by VRF name.
`vrfids <WORD 0-255>`	Specifies a VRF instance by VRF number.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

show ip route preference

Display the IP route preference information to confirm that the configuration is correct.

Syntax

```
show ip route preference [vrf <WORD 0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF instance by VRF name.
`vrfids <WORD 0-255>`	Specifies a VRF instance by VRF number.

Default

None

Command mode

Global Configuration Mode

Related commands

None

action flushIp

For administrative and troubleshooting purposes, flush the routing tables.

To flush tables on a VRF instance for a port or VLAN, ensure that the VRF is associated with the port or VLAN.

Syntax

```
action flushIp
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Gigabitethernet Interface Configuration Mode

Related commands

None

ip ttl

Configure the IP routing protocol stack to specify which routing features the switch can use.

Syntax

```
ip ttl <1-255>
```

Parameters

Variable	Value
`ttl <1-255>`	Configures the default time-to-live (TTL) value for a routed packet. The TTL is the maximum number of seconds before a packet is discarded. The default value of 255 is used whenever a time is not supplied in the datagram header. The default form of this command is **default ip ttl**.

Default

The default value is 255.

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
max-routes-trap enable	Enables the switch to send a trap when the maximum number of routes is exceeded. The no form of this command is **no max-routes-trap enable**. The default form of this command is **default max-routes-trap enable**.

Variable	Value
more-specific-non-local-route	Enables the more-specific-non-local-route feature. If enabled, the switch can enter a more-specific nonlocal route into the routing table. The default form of this command is **default ip more-specific-non-local-route** The no form of this command is **no ip more-specific-non-local-route**
routing	Enables routing. The no form of this command is **no ip routing**.
supernet	Enables or disables supernetting. If supernetting is globally enabled, the switch can learn routes with a route mask of less then eight bits. Routes with a mask length less than eight bits cannot have ECMP paths, even if the ECMP feature is globally enabled. The default form of this command is **default ip supernet**. The no form of this command is **no ip supernet**.

ip alternative-route

Enable the Alternative Route feature globally.

Syntax

ip alternative-route

Parameters

Variable	Value
alternative-route	Enables or disables the Alternative Route feature. The default value is enabled. If the alternative-route parameter is disabled, all existing alternative routes are removed. When the parameter is enabled, all alternative routes are re-added.

Variable	Value
	The default form of this command is **default ip alternative-route**. The no form of this command is **no ip alternative-route**.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip ecmp

Enable Equal cost multiplepath protocol (ECMP).

Syntax

ip ecmp

Parameters

Variable	Value
ecmp	Enables or disables ECMP. If the ECMP parameter is disabled, all existing ECMP routes are removed. When ECMP is enabled, all ECMP routes are re-added. The no form of this command is **no ip icmp**.

Default

The default is disabled.

Command mode

Global Configuration Mode

Related commands

Variable	Value
pathlist-1 <WORD 0-64>	Configures one equal-cost path to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable ECMP. The no form of this command is **no ip icmp pathlist-1**.
pathlist-2 <WORD 0-64>	Configures up to two equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable ECMP. The no form of this command is **no ip icmp pathlist-2**.
pathlist-3 <WORD 0-64>	Configures up to three equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable ECMP. The no form of this command is **no ip icmp pathlist-3**.
pathlist-4 <WORD 0-64>	Configures up to four equal-cost paths to the same destination prefix. To remove the policy, enter a blank string. To configure this parameter, you must globally enable ECMP. The no form of this command is **no ip icmp pathlist-4**.
max-path <1-8>	Configures the maximum number of ECMP paths. The range for this number with R mode false is 1 to 4, and with R mode true, the range is 1 to 8.

Variable	Value
	The default form of this command is **default ip icmp max-path**.

ip icmp

Enables ICMP redirect and unreachable messages.

Syntax

ip icmp redirect

Parameters

Variable	Value
redirect	Enables the switch to send ICMP destination redirect messages. The default form of this command is **default ip icmp redirect**.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
unreachable	Enables the switch to send ICMP unreachable messages. When enabled, generates Internet Control Message Protocol (ICMP) network unreachable messages if the destination network is not reachable from this router. These messages help determine if the routing switch is reachable over the network. The default is disabled. The default form of this command is **default ip icmp unreachable**.

ip route

Configure a black hole static route to the destination a router advertises to avoid routing loops when aggregating or injecting routes to other routers.

Syntax

```
ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 enable
[next-hop-vrf <WORD 0-16>]
```

Parameters

Variable	Value
{A.B.C.D}	The first and second **<A.B.C.D>** specify the IP address and mask for the route destination. 255.255.255.255 is the black hole route.
enable	Adds a static or default route to the router or VRF. The no form of this command is **no ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 enable**
local-next-hop enable	Enables the local next hop for this static route. The default form of this command is **default ip route <A.B.C.D> <A.B.C.D> <A.B.C.D> local-next-hop enable**. The no form of this command is **no ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 local-next-hop enable**

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
next-hop-vrf <WORD 0-16>	Specifies the next-hop VRF instance by name. The default form of this command is **default ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 next-hop-vrf <WORD 0-16>** The no form of this command is **no ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 next-hop-vrf <WORD 0-16>**

Variable	Value
weight <1-65535>	Specifies the static route cost. The default form of this command is **default ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 weight**
preference <1-255>	Specifies the route preference. The default form of this command is **default ip route <A.B.C.D> <A.B.C.D> 255.255.255.255 preference**

ip route default

The default route specifies a route to all networks for which there are no explicit routes in the Forwarding Information Base or the routing table. This route has a prefix length of zero (RFC 1812). You can configure routing switches with a static default route, or they can learn it through a dynamic routing protocol.

To create a default static route, you configure the destination address and subnet mask to 0.0.0.0.

Syntax

ip route 0.0.0.0 0.0.0.0 <A.B.C.D> enable [next-hop-vrf <WORD 0-16>]

Parameters

Variable	Value
<A.B.C.D>	**<A.B.C.D>** specifies the IP address of the next-hop router (the next router at which packets must arrive on this route).
enable	Adds a static or default route to the router or VRF. The no form of this command is **no ip route 0.0.0.0 0.0.0.0 <A.B.C.D> enable**

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
local-next-hop enable	Enables the local next hop for this static route. The default form of this command is **default ip route 0.0.0.0 0.0.0.0 <A.B.C.D> local-next-hop enable**. The no form of this command is **no ip route 0.0.0.0 0.0.0.0 <A.B.C.D> local-next-hop enable**
next-hop-vrf <WORD 0-16>	Specifies the next-hop VRF instance by name. The default form of this command is **default ip route 0.0.0.0 0.0.0.0 <A.B.C.D> next-hop-vrf <WORD 0-16>** The no form of this command is **no ip route 0.0.0.0 0.0.0.0 <A.B.C.D> next-hop-vrf <WORD 0-16>**
weight <1-65535>	Specifies the static route cost. The default form of this command is **default ip route 0.0.0.0 0.0.0.0 <A.B.C.D> weight**
preference <1-255>	Specifies the route preference. The default form of this command is **default ip route 0.0.0.0 0.0.0.0 <A.B.C.D> preference**

ip irdp

Enable Router Discovery globally so that the switch supports Router Discovery.

Syntax

ip irdp enable

Parameters

Variable	Value
enable	Enables the router discovery protocol on the switch.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip irdp

Confirm that Router Discovery is enabled.

Syntax

show ip irdp

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip irdp address

Configure ICMP Router Discovery to enable hosts attached to multicast or broadcast networks to discover the IP addresses of their neighboring routers.

Syntax

ip irdp address <A.B.C.D>

Parameters

Variable	Value
address <A.B.C.D>	Specifies the IP destination address use for broadcast or multicast router advertisements sent from the interface. The address is the all-systems multicast address, 224.0.0.1, or the limited-broadcast address, 255.255.255.255. The default address is 255.255.255.255. The default form of this command is **default ip irdp address**.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
holdtime <4-9000>	Configures the lifetime for advertisemen ts. The default form of this command is **default ip irdp holdtime**.
maxadvertinterval <4-1800>	Specifies the maximum time (in seconds) that elapses between unsolicited broadcast or multicast router advertisement transmissions from the router interface. The default is 600 seconds. The default form of this command is **def ault ip irdp maxadvertinterval**.
minadvertinterval <3-1800>	Specifies the minimum time (in seconds) that elapses between unsolicited broadcast or multicast router advertisement transmissions from the interface. The range is 3 seconds to maxadvertinterval. The default is 450 seconds. The default form of this command is **def ault ip irdp minadvertinterval**.
multicast	Specifies if multicast advertisements are sent. The no form of this command is **no ip irdp multicast**.
preference <-2147483648-214 7483647>	Specifies the preference (a higher number indicates more preferred) of the address as a default router address relative to other router addresses on the same subnet The default is 0. The default form of this command is **default ip irdp preference**.

ip address

Configure a circuitless IP interface (CLIP) when you want to provide a virtual interface that is not associated with a physical port. You can use a CLIP interface to provide uninterrupted connectivity to your switch. You can configure a maximum of 256 CLIP interfaces on each device.

Syntax

ip address [<1-256>] <A.B.C.D/X> [vrf <WORD 0-32>]

Parameters

Variable	Value
address [<1-256>] <A.B.C.D/X> [vrf <WORD 0-32>]	Specifies the IP address for the CLIP interface. • **<1-256>** specifies the interface ID value; • **<A.B.C.D/X>** specifies the IP address and mask; • **vrf <WORD 0-32>** specifies an associated VRF by name in the range of 0 to 32 characters. The no form of this command is **no ip address [<1-256>] <A.B.C.D> [vrf <WORD 0-32>]**.

Default

None

Command mode

Global Configuration Mode

Next command mode

Loopback Interface Configuration Mode

Related commands

Variable	Value
area <1-256> <A.B.C.D> vrf <0-32>	Specifies the interface area for the circuitless IP interface. **<1-256>** specifies the interface id value in the range of 0 to 256.**vrf <WORD 0-32>** specifies an associated VRF by name in the range of 0 to 32 characters. The default form of this command is **default ip area <1-256>** .

Variable	Value
	The no form of this command is **no ip area <1-256>** .
ipvpn-lite-capability <1-256> enable	Enables ipvpn lite capability on the loopback interface mode.
ospf <1-256> vrf <word 0-32>	Enables ospf on loopback interface.**vrf <WORD 0-32>** specifies an associated VRF by name in the range of 0 to 32 characters.
pim [<1-256>] vrf <WORD 0-32>	Enables PIM for the circuitless IP interface. **vrf <WORD 0-32>** specifies an associated VRF by name. The default form of this command is **default ip pim <1-256>** . The no form of this command is **no ip pim <1-256>** .

show interfaces loopback

Display the circuitless IP interface configuration information.

Syntax

show interfaces loopback vrf <WORD 0-32> vrfids <WORD 0-255>

Parameters

Variable	Value
vrf <WORD 0-32>	Displays the loopback information for the associated VRF name. **<WORD 0-32>** specifies the VRF name in the range of 0 to 32 characters.
vrfids <WORD 0-255>	Displays the loopback configuration for the specified VRF IDs. **<WORD 0-255>** specifies the VRF IDs in the range of 0 to 255.

Default

None

Command mode

Privileged Exec Mode

Related commands

None

Show ip ecmp

Display the prefix list of routes with number of ECMP paths.

Syntax

show ip ecmp pathlist-1 vrf <WORD 0-32> vrfids <WORD 0-255>

Parameters

Variable	Value
pathlist-1	Displays prefix list of routes with 1 ecmp path.
vrf <WORD 0-32>	Displays the prefix list of routes with 1 ecmp path for a particular VRF. **<WORD 0-32>** specifies the VRF name in the range of 0 to 32 characters.
vrfids <WORD 0-255>	Displays the prefix list of routes with 1 ecmp path for a particular VRF ID. **<WORD 0-255>** specifies the VRF ID in the range of 0 to 255.

Default

None

Command mode

Privileged Exec Mode

Related commands

Variable	Value
pathlist-2 <WORD 0-32> vrfids <WORD 0-255>	Displays prefix list of routes with 2 ecmp paths. **<WORD 0-32>** specifies the VRF name in the range of 0 to 32 characters. **<WORD 0-255>** specifies the VRF ID in the range of 0 to 255.
pathlist-3 <WORD 0-32> vrfids <WORD 0-255>	Displays prefix list of routes with 3ecmp paths. **<WORD 0-32>** specifies the VRF name in the range of 0 to 32 characters. **<WORD 0-255>** specifies the VRF ID in the range of 0 to 255.
pathlist-4 <WORD 0-32> vrfids <WORD 0-255>	Displays prefix list of routes with 4 ecmp paths. **<WORD 0-32>** specifies the VRF name in the range of 0 to 32 characters. **<WORD 0-255>** specifies the VRF ID in the range of 0 to 255.

ip dhcp-relay

View and configure DHCP parameters globally on the Ethernet Routing Switch 8600.

Syntax

```
ip dhcp-relay
```

Parameters

Variable	Value
`dhcp-relay`	Configures the Dynamic Host Control Protocol (DHCP) parameters on the switch.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip dhcp-relay fwd-path

Create the forwarding path from the client to the server.

Syntax

```
ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D>
```

Parameters

Variable	Value
`fwd-path <A.B.C.D> <A.B.C.D>`	Configures the forwarding path from the client to the server. • `A.B.C.D` is the IP address configured on an interface (a locally configured IP address) to forward or relay BootP or DHCP. • `A.B.C.D` is the IP address of the DHCP server in the network. If this IP address corresponds to the locally configured IP network, the DHCP packet is broadcast out from the interface.

Variable	Value
	Use the **no** operator to delete the forwarding path from the client to the server: **no ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D>**

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip dhcp-relay fwd-path enable

Enable the forwarding path from the client to the server.

Syntax

ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D> enable

Parameters

Variable	Value
fwd-path <A.B.C.D> <A.B.C.D> enable	Enables DHCP relaying on the path from the IP address to the server. • **A.B.C.D** is the IP address configured on an interface (a locally configured IP address). • **A.B.C.D** is the IP address of the DHCP server in the network. If this IP address corresponds to the locally configured IP network, the DHCP packet is broadcast out from the interface.
disable	Disables DHCP relaying on the path from the IP address to the server.

Default

None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands
None

ip dhcp-relay fwd-path mode
Modify DHCP mode to forward BootP messages only, DHCP messages only, or both.

Syntax
ip dhcp-relay fwd-path <A.B.C.D> <A.B.C.D> mode <bootp|bootp-dhcp|dhcp>

Parameters

Variable	Value
fwd-path <A.B.C.D> <A.B.C.D> mode <bootp|bootp-dhcp|dhcp>	Modifies DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both. • **mode** is {bootp | bootp_dhcp | dhcp}.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface ConfigurationMode

Related commands
None

show ip dhcp-relay
Display relay information to show relay information about DHCP routes and counters.

Syntax
show ip dhcp-relay fwd-path [vrf <WORD/0-32>] [vrfids <0-255>]

Parameters

Variable	Value
counters	Displays information about DHCP relay forward paths.
fwd-path	Displays information about DHCP relay counters.
vrf <WORD/0-32>	The name of the VRF.
vrfids <0-255>	The ID of the VRF. The value is an integer in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip dhcp-relay broadcast

You can view and configure DHCP parameters on specific ports or on a VLAN.

Syntax

ip dhcp-relay broadcast

Parameters

Variable	Value
broadcast	When enabled, sends the server reply as a broadcast to the end station. When disabled, sends the server reply as a unicast to the end station. Use the **no** operator to disable broadcast: **no ip dhcp-relay broadcast** To set this option to the default value, use the **default** operator with this command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
fwd-path <A.B.C.D> [vrid <1-255>]	Creates a forward path server with a virtual router ID (or VRRP ID), a mode, and a state. • **A.B.C.D** is the IP address. • **vrid <1-255>** is the ID of the virtual router and is an integer between 1 and 255. Use the **no** operator to delete a forward path server with a specific value and virtual router ID: **no ip dhcp-relay fwd-path <A.B.C.D> [vrid <1-255>]** To set this option to the default value, use the **default** operator with this command.
fwd-path <A.B.C.D> disable [vrid <1-255>]	Disables a forward path server with a specific value and virtual router ID. • **A.B.C.D** is the IP address. • **vrid <1-255>** is the ID of the virtual router (or VRRP ID) and is an integer between 1 and 255.
fwd-path <A.B.C.D> enable [vrid <1-255>]	Enables a forward path server with a specific value and virtual router ID (or VRRP ID). • **A.B.C.D** is the IP address in the form a.b.c.d. • **vrid <1-255>** is the ID of the virtual router and is an integer between 1 and 255.
fwd-path-mode <A.B.C.D> mode <bootp|bootp_dhcp|dhcp> [vrid <1-255>]	Sets the forward path mode. • **A.B.C.D** is the IP address in the form a.b.c.d. • **mode** is a choice of bootp, dhcp, or bootp_dhcp. • **vrid <1-255>** is the ID of the virtual router (or VRRP ID) and is an integer between 1 and 255.

Variable	Value
	To set this option to the default value, use the **default** operator with this command.
max-hop <1-16>	Sets the maximum number of hops before a BootP/DHCP packet is discarded (1 to 16). The default is 4. To set this option to the default value, use the **default** operator with this command.
min-sec <0-65535>	Sets the minimum seconds count for DHCP. If the secs field in the BootP/DHCP packet header is greater than this value, the switch relays or forwards the packet; otherwise, the packet is dropped (0 to 65535). The default is 0 seconds. To set this option to the default value, use the **default** operator with this command.
mode <**bootp**|**bootp_dhcp**|**dhcp**>	Sets DHCP mode to forward BootP messages only, DHCP messages only, or both. The default is both. To set this option to the default value, use the **default** operator with this command.

ip forward-protocol udp

Configure UDP protocols to determine which UDP broadcasts are forwarded

Syntax

ip forward-protocol udp

Parameters

Variable	Value
<1-65535> <WORD/1-15>	Creates a new UDP protocol. • <1-65535> <WORD/1-15> is the UDP protocol name as a string.
[vrf <WORD/0-32>]	The name of the VRF.
[vrfids <0-255>]	The ID of the VRF. The value is an integer between 0 and 255.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

show ip forward-protocol udp

View and confirm the UDP configuration setting on the switch.

Syntax

```
show ip forward-protocol udp [vrf <WORD/0-32>] [vrfids
<0-255>]
```

Parameters

Variable	Value
`<1-65535> <WORD/1-15>`	Creates a new UDP protocol. • `<1-65535> <WORD/1-15>` is the UDP protocol name as a string.
`[vrf <WORD/0-32>]`	The name of the VRF.
`[vrfids <0-255>]`	The ID of the VRF. The value is an integer between 0 and 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip forward-protocol udp portfwd

Configure a UDP port forward entry to add or remove a port forward entry.

Syntax

```
ip forward-protocol udp portfwd
```

Parameters

Variable	Value
<1-65535> <A.B.C.D>	Adds a UDP protocol port to the specified port forwarding list. • **1-65535** is a UDP protocol port in the range of 1 to 65535. • **A.B.C.D** is an IP address in a.b.c.d format. Use the **no** operator to remove a protocol port forwarding entry and IP address from the list: **no ip forward-protocol udp portfwd <1-65535> <A.B.C.D>** To set this option to the default value, use the **default** operator with this command.
[vrf <WORD/0-32>]	The name of the VRF.
[vrfids <0-255>]	The ID of VRF and is an integer between 0 and 255.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

nOne

show ip forward-protocol udp portfwd

View and confirm the port forward entry configuration.

Syntax

show ip forward-protocol udp portfwd [vrf <WORD/0-32>] [vrfids <0-255>]

Parameters

Variable	Value
<1-65535> <A.B.C.D>	Adds a UDP protocol port to the specified port forwarding list. • **1-65535** is a UDP protocol port in the range of 1 to 65535. • **A.B.C.D** is an IP address in a.b.c.d format. Use the **no** operator to remove a protocol port forwarding entry and IP address from the list: **no ip forward-protocol udp portfwd <1-65535> <A.B.C.D>** To set this option to the default value, use the **default** operator with this command.
[vrf <WORD/0-32>]	The name of the VRF.
[vrfids <0-255>]	The ID of VRF and is an integer between 0 and 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip forward-protocol udp portfwdlist

Configure the UDP port forwarding list.

Syntax

ip forward-protocol udp portfwdlist <1-1000>

Parameters

Variable	Value
<1-1000>	Creates a UDP port forwarding list in the range of 1 to 1000.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip forward-protocol udp broadcastmask

Set the broadcast mask on the IP forwarding list.

Syntax

ip forward-protocol udp broadcastmask <A.B.C.D>

Parameters

Variable	Value
<A.B.C.D>	Sets the interface broadcast mask (the interface broadcast mask can be different from the interface mask). • **A.B.C.D** is an IP address in a.b.c.d format.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Mode

Related commands

Variable	Value
maxttl	Specifies the maximum time to live for the interface.
portfwdlist	Sets the port forward list.
vlan	Specifies the VLAN ID in the range of 1 to 4094.

ip forward-protocol udp maxttl

Set the maximum time to live.

Syntax

ip forward-protocol udp maxttl <1-16>

Parameters

Variable	Value
`maxttl <1-16>`	Sets the maximum time-to-live value (TTL) for the UDP broadcast forwarded by the interface. The range is 1 to 16.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

show ip forward-protocol udp portfwdlist

View and confirm the configuration setting on the IP forwarding list.

Syntax

```
show ip forward-protocol udp portfwdlist [vrf <WORD/0-32>]
[vrfids <0-255>]
```

Parameters

Variable	Value
`<WORD/0-15>`	Name of the UDP port forwarding list. • `WORD/0-15` is an alphabetic string.
`[vrf <WORD/0-32>]`	The name of the VRF.
`[vrfids <0-255>]`	The ID of the VRF and is an integer in the range of 0 to 255.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip forward-protocol udp

Display the UDP protocol table with the UDP port numbers for each supported or designated protocol.

Syntax

```
show ip forward-protocol udp [vrf <WORD/0-32>] [vrfids
<0-255>]
```

Parameters

Variable	Value
`interface [<A.B.C.D>]`	Displays information about the UDP interface for all IP addresses or a specified IP address.
`portfwd`	Displays the UDP port forwarding table.
`portfwdlist`	Displays the UDP port forwarding list table for the specified list or all lists on the switch.
`<A.B.C.D>`	Specifies the IP address for the interface in a.b.c.d format.
`[vrf <WORD/0-32>]`	Specifies the name of the VRF.
`[vrfids <0-255>]`	Specifies the ID of the VRF and is an integer in the range of 0 to 255.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip arp-response

Enable Address Resolution Protocol (ARP) on the switch to allow a router to answer a local ARP request.

Syntax

```
ip arp-response
```

Parameters

None

Default

None

Command mode
Global Configuration Mode

Next command mode
VLAN/FastEthernet/GigabitEthernet Interface Configuration Mode

Related commands
None

ip arp-proxy enable
Configure an ARP proxy to allow a router to answer a local ARP request for a remote destination.

Syntax
ip arp-proxy enable

Parameters

Variable	Value
enable	Enables the proxy Address Resolution Protocol.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN/FastEthernet/GigabitEthernet Interface Configuration Mode

Related commands
None

loop-detect action
Configure the ARP loop detection when loop-detect is enabled.

Syntax
loop-detect [action {port-down|vlan-block|mac-discard}] [arp-detect]

Parameters

Variable	Value
action	Indicates the action that the switch tak es: port-down|vlan-block|mac-discard.
arp-detect	—

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN/FastEthernet/GigabitEthernet Interface Configuration Mode

Related commands
None

show ip arp interface

Show ARP port information to display data about the specified port, all ports, or the VLAN.

Syntax
`show ip arp interface <interface-type> <interface-id>`

Parameters

Variable	Value
`interface-id`	ID of the interface.
`interface-type`	Type of interface, either a port or a VLAN.

Default
None

Command mode
Privileged Executive Mode/Global Configuration Mode

Related commands
None

ip arp

Configure ARP static entries to modify the ARP parameters on the switch. The only way to change a static ARP is to delete the static ARP entry and create a new entry with new information.

Syntax
`ip arp static-mcast`

Parameters

Variable	Value
static-mcast	Configures static multicast MAC entries.
<A.B.C.D>	Adds ARP entries.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
multicast-mac-flooding [enable]	Determines whether ARP entries for multicast MAC addresses are associated with the VLAN or the port interface on which they were learned. Use the **no** operator to delete a static entry from the ARP table: **no ip arp multicast-mac-flooding [enable]** To set this option to the default value, use the **default** operator with this command.
request-threshold <50-1000>	Configures the maximum number of outstanding ARP requests that a switch can generate. The range is 50 to 1000. The default value is 500. To set this option to the default value, use the **default** operator with this command.

Variable	Value
`timeout <1-32767>`	Sets the length of time in seconds an entry remains in the ARP table before timeout. The range is between 1 and 32767. To set this option to the default value, use the **`default`** operator with this command.
`<A.B.C.D>`	Adds ARP entries.

show ip arp

View and confirm the ARP configuration on the switch.

Syntax

`show ip arp`

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

clear ip arp interface

Clear the ARP timers.

Syntax

`clear ip arp interface <interface-type> <interface-id>`

Parameters

Variable	Value
`interface-id`	ID of the interface.
`interface-type`	Type of interface, either a port or a VLAN.

Default

None

Command mode

Privileged Executive Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

show ip arp -s

Show ARP information to view the configuration information in the ARP table.

Syntax

```
show ip arp [<A.B.C.D>] [-s <A.B.C.D> <A.B.C.D>] [vrf
<WORD/0-32>] [vrfids <0-255>]
```

Parameters

Variable	Value
`<A.B.C.D>`	The specific network IP address for the table.
`-s <A.B.C.D> <A.B.C.D>`	The specific subnet for the table.
`vrf <WORD/0-32>`	The name of the VRF.
`vrfids <0-255>`	The VRF ID in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip vrrp

Configure Virtual Router Redundancy Protocol (VRRP) on a port or a VLAN.

Syntax

```
ip vrrp <1-255> enable
```

Parameters

Variable	Value
enable	Enables VRRP on the port. Use the **no** operator to disable VRRP on the port: **no ip vrrp <1-255> enable** To set this option to the default value, use the **default** operator with this command.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet/Gigabit Ethernet Interface Configuration Mode

Related commands

Variable	Value
action {none|preempt}	Use the action choice option to manually override the hold-down timer and force preemption. • **none|preempt** can be set to preempt the timer or set to none to allow the timer to keep working. To set this option to the default value, use the **default** operator with this command.
address <1-255> <A.B.C.D>	Sets the IP address of the VRRP physical interface that forwards packets to the virtual IP addresses associated with the virtual router. • **A.B.C.D** is the IP address of the master VRRP. Use the **no** operator to remove the IP address of the VRRP physical interface: **no ip vrrp address <1-255> <A.B.C.D>** To set this option to the default value, use the **default** operator with this command.

Variable	Value
adver-int <1-255>	Sets the the time interval between sending VRRP advertisement messages. The range is between 1 and 255 seconds. This value must be the same on all participating routers. The default is 1. To set this option to the default value, use the **default** operator with this command.
backup-master enable	Enables the VRRP backup master. This option is supported only on Split MultiLink Trunking (SMLT) ports. Use the **no** operator to disable the VRRP backup master: **no ip vrrp <1-255> backup-master enable** To set this option to the default value, use the **default** operator with this command. **ATTENTION** Do not enable Backup Master if Critical IP is enabled.
critical-ip-addr <A.B.C.D>	Sets the critical IP address for VRRP. • **A.B.C.D** is the IP address on the local router, which is configured so that a change in its state causes a role switch in the virtual router (for example, from master to backup in case the interface goes down).
critical-ip enable	Enables the critical IP address option. Use the **no** operator to disable the critical IP address option: **no ip vrrp <1-255> critical-ip enable** To set this option to the default value, use the **default** operator with this command. **ATTENTION** Do not enable Critical IP if Backup Master is enabled.

Variable	Value
fast-adv enable	Enables the Fast Advertisement Interval. The default is disabled. Use the **no** operator to disable VRRP on the port: **no ip vrrp <1-255> fast-adv enable** To set this option to the default value, use the **default** operator with this command.
fast-adv-int <200-1000>	Sets the Fast Advertisement Interval, the time interval between sending VRRP advertisement messages. • **200-1000** is the range in milliseconds, and must be the same on all participating routers. The default is 200. You must enter values in multiples of 200 milliseconds. To set this option to the default value, use the **default** operator with this command.
holddown-timer <0-21600>	Modifies the behavior of the VRRP failover mechanism by allowing the router enough time to detect the Open Shortest Path First (OSPF) or Routing Information Protocol (RIP) routes. • **0-21600** is the time interval (in seconds) a router is delayed when changing to master state. To set this option to the default value, use the **default** operator with this command.
priority <1-255>	Sets the port VRRP priority. • **1-255** is the value used by the VRRP router. The default is 100. Assign the value 255 to the router that owns the IP address associated with the virtual router. To set this option to the default value, use the **default** operator with this command.

show ip vrrp address

Display basic VRRP configuration information about the specified port, all ports, or the VLAN.

Syntax

```
show ip vrrp address [vrid <1-255>] [addr <A.B.C.D>] [vrf
<WORD/0-32>] [vrfids <0-255>]
```

Parameters

Variable	Value
`addr <A.B.C.D>`	The IP address of the master VRRP.
`vrf <WORD/0-32>`	The name of the VRF.
`vrid <1-255>`	A unique integer value that represents the virtual router ID in the range 1 to 255. The virtual router acts as the default router for one or more assigned addresses.
`vrfids <0-255>`	The ID of the VRF and is an integer in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip vrrp interface vlan

Show the extended VRRP configuration for all VLANs on the switch or for the specified VLAN.

Syntax

```
show ip vrrp interface vlan [<1-4094>] [portList] verbose
[vrf <WORD/1-16>] [vrfids <0-255>]
```

Parameters

Variable	Value
`<1-4094>`	The VLAN ID in the range of 1 to 4094.
`portList`	The slot/port number of a range of ports.
`vrf <WORD/1-16>`	The name of the VRF.
`vrfids <0-255>`	The ID of the VRF and is an integer in the range of 0 to 255.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

ip prefix-list
Configure a prefix list and apply list to any IP route policy.

Syntax
ip prefix-list <WORD/1-64>

Parameters

Variable	Value
<A.B.C.D/0-32> [<ge|le> <0-32>]	Adds a prefix entry to the prefix list. • **A.B.C.D/0-32** is the IP address and mask. • **<ge|le> <0-32>** Lower bound and higher bound mask lengths together can define a range of networks. Use the **no** operator to remove a prefix entry from the prefix list: **no ip prefix-list <WORD/1-64> <A.B.C.D/0-32>**
name <WORD/1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.
vrf <WORD/0-32>	The name of the VRF.
vrfids <0-255>	The ID of the VRF and is an integer in the range of 0 to 255.

Default
None

Command mode
Global Configuration Mode

Next command mode
VRF Router Mode

Related commands

None

show ip prefix-list

Display the prefix list.

Syntax

show ip prefix-list [<WORD/1-64>] [prefix <A.B.C.D>] [vrf <WORD/0-32>] [vrfids <0-255>]

Parameters

Variable	Value
<A.B.C.D/0-32> [<ge|le> <0-32>]	Adds a prefix entry to the prefix list. • **A.B.C.D/0-32** is the IP address and mask. • **<ge|le> <0-32>** Lower bound and higher bound mask lengths together can define a range of networks. Use the **no** operator to remove a prefix entry from the prefix list: **no ip prefix-list <WORD/1-64> <A.B.C.D/0-32>**
name <WORD/1-64>	Renames the specified prefix list. The name length is from 1 to 64 characters.
vrf <WORD/0-32>	The name of the VRF.
vrfids <0-255>	The ID of the VRF and is an integer in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

route-map enable

Configure and enable a route policy so that the switch can control routes that certain packets can take.

Syntax

```
route-map <WORD/1-64> <1-65535> enable
```

Parameters

Variable	Value
enable	Enables a route policy with a policy name and a sequence number.
match as-path <WORD/0-1027>	If configured, the switch matches the as-path attribute of the Border Gateway Protocol (BGP) routes against the contents of the specified AS-lists. This field is used only for BGP routes and ignored for all other route types. **WORD/0-1027** specifies the list IDs of up to four AS-lists, separated by a comma.
match community <WORD/0-1027>	If configured, the switch matches the community attribute of the BGP routes against the contents of the specified community lists. This field is used only for BGP routes and ignored for all other route types. **WORD/0-1027** specifies the list IDs of up to four defined community lists, separated by a comma.
match community-exact enable	When disabled, match community-exact results in a match when the community attribute of the BGP routes match any entry of any community-list specified in match-community. When enabled, match-community-exact results in a match when the community attribute of the BGP routes matches all of the entries of all the community lists specified in match-community. **enable** enables match community-exact.
community-exact	Matches community exactly, applicable for BGP only, ignored in all other cases.
match interface <WORD 0-1027>	If configured, the switch matches the IP address of the interface by which the RIP route was learned against the contents of the specified prefix list. This field is used only for RIP routes and ignored for all other route types. **word 0-1027** specifies the name of up to four defined prefix lists, separated by a comma.

Variable	Value
local-preference	Matches the local preference, applicable to all protocols.
match metric <0-65535>	If configured, the switch matches the metric of the incoming advertisement or existing route against the specified value. If 0, this field is ignored. **0-65535** The default is 0.
match network <WORD/0-1027>	If configured, the switch matches the destination network against the contents of the specified prefix lists. **WORD/0-1027** specifies the name of up to four defined prefix lists, separated by a comma.
match next-hop <WORD/0-1027>	If configured, matches the next-hop IP address of the route against the contents of the specified prefix list. This field applies only to nonlocal routes. • **WORD/0-1027** specifies the name of up to four defined prefix lists, separated by a comma.
match protocol <WORD/0-40>	If configured, matches the protocol through which the route is learned. **WORD/0-40** is any|xxx, where xxx is local, OSPF, External BGP (EBGP), Internal BGP (IBGP), RIP, Distance Vector Multicast Routing Protocol (DVMRP), static, or any combination, in a string length 0 to 40.
match route-source <WORD/0-1027>	If configured, matches the next-hop IP address for RIP routes and advertising router IDs for OSPF routes against the contents of the specified prefix list. This option is ignored for all other route types. **WORD/0-1027** specifies the name of up to four defined prefix lists, separated by a comma.
match-route-type {any|local|internal|external|external-1|external-2}	Sets a specific route type to match (applies only to OSPF routes). **any|local|internal|external|external-1|external-2** specifies OSPF routes of the specified type only (External-1 or External-2). Any other value is ignored.

Variable	Value
match tag <WORD/0-256>	Specifies a list of tags used during the match criteria process. Contains one or more tag values. **WORD/0-256** is a value from 0 to 256.
match [vrf <WORD/0-32>] [vrfids <0-255>]	Sets a specific VRF to match (applies only to OSPF routes).
name <WORD/1-64>	Renames a policy and changes the name field for all sequence numbers under the given policy.
<permit|deny>	Specifies the action to take when a permit or deny policy is selected for a specific route. Permit allows the route, deny ignores the route.
set as-path <WORD/0-256>	If configured, the switch adds the AS number of the AS-list to the BGP routes that match this policy. • **WORD/0-256** specifies the list ID of up to four defined AS-lists separated by a comma. Use the **no** operator to delete the AS number: **no route-map <WORD/1-64> <1-65535> set as-path**
set as-path-mode <tag|prepend>	Sets the AS path mode. Prepend is the default configuration. The switch prepends the AS number of the AS-list specified in set-as-path to the old as-path attribute of the BGP routes that match this policy. Use the **no** operator to delete the AS number: **no route-map <WORD/1-64> <1-65535> set as-path-mode**
set automatic-tag enable	Sets the tag automatically. Used for BGP routes only. Use the **no** operator to disable the tag: **no route-map <WORD/1-64> <1-65535> set automatic-tag enable**
set community <WORD/0-256>	If configured, the switch adds the community number of the community list to the BGP routes that match this policy. • **WORD/0-256** specifies the list ID of up to four defined community lists separated by a comma.

Variable	Value
set community-mode <unchanged|additive|none>	Sets the community mode. • **additive**—the switch prepends the community number of the community list specified in set-community to the old community path attribute of the BGP routes that match this policy. • **none**—the switch removes the community path attribute of the BGP routes that match this policy to the specified value.
set injectlist <WORD/0-1027>	If configured, the switch replaces the destination network of the route that matches this policy with the contents of the specified prefix list. • **WORD/0-1027** specifies one prefix list by name.
set ip preference <0-255>	Setting the preference to a value greater than 0 specifies the route preference value to assign to the routes that match this policy. This applies to accept policies only. • **0-255** is the range you can assign to the routes. The default is 0. If the default is configured, the global preference value is used.
set local-preference <0-65535>	A value used during the route decision process in the BGP protocol. Applicable to BGP only.
set mask <A.B.C.D>	If configured, sets the mask of the route that matches this policy. This applies only to RIP accept policies. • **A.B.C.D** is a valid contiguous IP mask.
set metric <0-65535>	If configured, sets the metric value for the route while announcing a redistribution. The default is 0. If the default is configured, the original cost of the route is advertised into OSPF; for RIP, the original cost of the route or default-import-metric is used.
set metric-type {type1|type2}	If configured, sets the metric type for the routes to announce into the OSPF domain that matches this policy. The default is type 2. This field is applicable only for OSPF announce policies.

Variable	Value
set next-hop <A.B.C.D>	Specifies the IP address of the next-hop router. Ignored for Distance Vector Multicast Routing Protocol (DVMRP) routes. Use the **no** operator to disable set next-hop: **no route-map <WORD/1-64> <1-65535> set next-hop**
set nssa-pbit enable	Sets the not so stubby area (NSSA) translation P bit. Applicable to OSPF announce policies only.
set origin {igp|egp|incomplete}	If configured, the switch changes the origin path attribute of the BGP routes that match this policy to the specified value.
set origin-egp-as <0-65535>	Indicates the remote autonomous system number. Applicable to BGP only.
set tag <0-65535>	Sets the tag of the destination routing protocol. If not specified, the switch forwards the tag value in the source routing protocol. A value of 0 indicates that this parameter is not set.
set weight <0-65535>	The weight value for the routing table. For BGP, this value overrides the weight configured through NetworkTableEntry, FilterListWeight, or NeighborWeight. Used for BGP only. A value of 0 indicates that this parameter is not set.
<WORD/1-64> <1-65535>	Creates a route policy with a policy name and a sequence number. • **WORD/1-64** is the policy name. • **1-65535** is the sequence number.

Default
None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

show route-map
Display current information about the IP route policy.

Syntax

```
show route-map [<WORD/1-64>] [<1-65535>] [vrf <WORD/0-32>]
[vrfids <0-255>]
```

Parameters

Variable	Value
`<WORD/1-64> <1-65535>`	Creates a route policy with a policy name and a sequence number. • `WORD/1-64` is the policy name. • `1-65535` is the sequence number.
`vrf <WORD/0-32>`	The name of the VRF.
`vrfids <0-255>`	The ID of the VRF and is an integer in the range of 0 to 255.

Default

None

Command mode

Global Configuration Mode

Related commands

None

accept adv-rtr enable

Create a policy to accept external routes from a specified advertising route.

Syntax

```
accept adv-rtr <A.B.C.D>
```

Parameters

Variable	Value
`enable`	Enables an OSPF accept entry for a specified advertising router.

Variable	Value
metric-type {type1 | type2 | any}	Indicates the OSPF external type. This parameter describes which types of OSPF external routes match this entry. • **any** means match all external routes. • **type1** means match external type 1 only. • **type2** means match external type 2 only.
route-policy <WORD>	Specifies the name of the route policy to use for filtering external routes advertised by the specified advertising router before accepting into the routing table.

Default
None

Command mode
Global Configuration Mode

Next command mode
OSPF Router Configuration Mode

Related commands
None

ip ospf apply accept adv-rtr
Apply the OSPF accept policy change to accept external routes from a specified advertising route.

Syntax
ip ospf apply accept adv-rtr <A.B.C.D>

Parameters

Variable	Value
adv-rtr <A.B.C.D>	Specifies the advertising router IP address.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

ip ospf apply accept

Apply OSPF accept policy changes to allow the configuration changes in the policy to take effect in an OSPF Accept context (and to prevent the switch from attempting to apply the changes one by one after each configuration change).

Syntax

```
ip ospf apply accept [vrf <WORD/0-32>]
```

Parameters

Variable	Value
`apply`	Commits entered changes. Issue this command after modifying any policy configuration that affects an OSPF accept policy.
`[vrf <WORD/0-32>]`	The name of the VRF.
`[vrfids <0-255>]`	The ID of the VRF. The value is an integer between 0 and 255.

Default

None

Command mode

Priviliged Executive Mode

Related commands

None

show ip ospf accept

Display information about the configured OSPF entries.

Syntax

```
show ip ospf accept [vrf <WORD/0-32>] [vrfids <0-255>]
```

Parameters

Variable	Value
`[vrf <WORD/0-32>]`	The name of the VRF.
`[vrfids <0-255>]`	The ID of the VRF. The value is an integer between 0 and 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip redistribute enable

Configure and enable redistribution entries to allow a protocol to announce routes of a certain source type, for example, static, RIP, or direct.

Syntax

```
ip <rip|ospf|bgp> redistribute <ospf|bgp|static|direct|rip> enable [vrf-src <WORD 0-16>]
```

Parameters

Variable	Value
`enable [vrf-src <vrf-name>]`	Enables the OSPF route redistribution instance.
`<ospf|bgp|static|direct|rip>`	Specifies the type of routes to redistribute—the protocol source.
`vrf <WORD 0-16>`	Specifies the VRF instance.
`vrfids <0-255>`	Specifies a list of VRF IDs.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
`apply [vrf-src <vrf-name>]`	Applies the redistribution configuration.
`metric <metric-value> [vrf-src <vrf-name>]`	Configures the metric to apply to redistributed routes.
`metric-type <type1|type2> [vrf-src <vrf-name>]`	Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone.

Variable	Value
`route-policy <policy-name> [vrf-src <vrf-name>]`	Configures the route policy to apply to redistributed routes.
`subnets <allow|suppress> [vrf-src <vrf-name>]`	Allows or suppresses external subnet route advertisements when routes are redistributed into an OSPF domain.

show ip redistribute

Display and ensure the accuracy of the configuration settings.

Syntax

```
show ip <rip|ospf|bgp> redistribute [vrf <WORD 0-16>]
[vrfids <0-255>]
```

Parameters

Variable	Value
`<ospf|bgp|static|direct|rip>`	Specifies the type of routes to redistribute—the protocol source.
`vrf <WORD 0-16>`	Specifies the VRF instance.
`vrfids <0-255>`	Specifies a list of VRF IDs.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip rsmlt

Configure Routed Split MultiLink Trunking (RSMLT) on each IP VLAN interface.

Syntax

```
ip rsmlt holddown-timer <0-3600>
```

Parameters

Variable	Value
holddown-timer <0-3600>	Defines how long the RSMLT switch does not participate in Layer 3 forwarding. • **0-3600** is the timer value in seconds. To set this value to the default value, use the **default** operator with this command. Nortel recommends that you configure this value to be longer than the anticipated routing protocol convergence.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
holdup-timer <0-9999>	Defines how long the RSMLT switch maintains forwarding for its peer. • **0-9999** is the timer value in seconds. 9999 means infinity. To set this value to the default value, use the **default** operator with this command.
<**local**|**peer**>	Indicates a configuration for a local or peer device.

show ip rsmlt

Show IP RSMLT information to view data about all RSMLT interfaces.

Syntax

show ip rsmlt [<local|peer>] [vrf <value>] [vrfids <value>]

Parameters

Variable	Value
`[<local|peer>]`	Specifies values for the local or peer switch.
`[vrf <value>]`	Displays IP routing for a VRF.
`[vrfids <value>]`	Displays IP routing for a range of VRFs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip rsmlt edge-support

Configure RSMLT-edge to store the RSMLT peer MAC/IP address-pair in its local config file and restore the configuration if the peer does not restore after a simultaneous reboot of both RSMLT-peer switches.

Syntax

`ip rsmlt edge-support`

Parameters

Variable	Value
`vlan ID`	The ID of the VLAN in the range of 0 to 4094.
`edge-support`	Enables RSMLT-edge support.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
`peer-address`	Displays RSMLT peer information.

show ip rsmlt edge-support

Display RSMLT-edge status information.

Syntax

`show ip rsmlt edge-support`

Parameters

Variable	Value
`vlan ID`	The ID of the VLAN in the range of 0 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

IP Multicast Routing commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to configure multicast protocols that the Nortel Ethernet Routing Switch 8600 supports.

Navigation

ip pim enable

Configure PIM-SM to enable or disable PIM-SM globally on the switch and change default global parameters.

Syntax

`ip pim enable`

Parameters

Variable	Value
enable	Globally activates PIM on the switch. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
bootstrap-period <5-32757>	Specifies the interval (in seconds) that the elected bootstrap router (BSR) waits between originating bootstrap messages. • **integer** is an integer in the range of 5–32757. The default is 60. To set this option to the default value, use the **default** operator with the command.
disc-data-timeout <5-65535>	Specifies how long (in seconds) to discard data until the join is received from the rendezvous point (RP). An IP multicast discard record is created after a register packet is sent, until the the timer expires or a join is received. • **integer** is an integer in the range of 5–65535. The default is 60. To set this option to the default value, use the **default** operator with the command.
fast-joinprune	Enables the fast join prune interval. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Variable	Value
fwd-cache-timeout <10–86400>	Specifies the forward cache timeout value. • **integer** is an integer in the range of 10–86400. The default is 210. **ATTENTION** When you configure one of the timers, activity-chk-interval or fwd-cache-timeout, with a nondefault value, you cannot configure the other timer. To set this option to the default value, use the **default** operator with the command.
join-prune-interval <1–18724>	Specifies how long to wait (in seconds) before the PIM router sends out the next join/prune message to its upstream neighbors. • **integer** is an integer in the range of 1–18724. The default is 60. To set this option to the default value, use the **default** operator with the command.
mbr	Enables or disables the PIM multicast border router globally. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
mode <sparse|ssm>	Configures the mode of this interface globally. After you change from one mode to another, an information message appears to remind you that traffic does not stop immediately. To set this option to the default value, use the **default** operator with the command. The default is sparse.
register-suppression-timeout <6–65535>	Specifies how long (in seconds) the designated router (DR) suppresses sending registers to the RP. The timer starts after the DR receives a register-stop message from the RP. • **integer** is an integer in the range of 6–65535. The default is 60. To set this option to the default value, use the **default** operator with the command.

Variable	Value
rp-c-adv-timeout <5–26214>	Specifies how often (in seconds) a router configured as a candidate RP (C-RP) sends C-RP advertisement messages. After this timer expires, the C-RP router sends an advertisement message to the elected BSR. • **integer** is an integer in the range of 5–26214. The default is 60. To set this option to the default value, use the **default** operator with the command.
rp-candidate group <A.B.C.D> <mask address> rp <A.B.C.D>	Adds or deletes candidate RP entries. Use the **no** operator to later remove this configuration.
static-rp <A.B.C.D/X> <A.B.C.D>	Adds static RP entries and activates static RP. A.B.C.D/X represents the group address and mask. A.B.C.D is the RP IP address.
unicast-route-change-timeout <2–65535>	Specifies how often (in seconds) the switch polls the routing table manager (RTM) for unicast routing information updates for PIM. **ATTENTION** Lowering this value increases how often the switch polls the RTM. This can affect the performance of the switch, especially when a high volume of traffic flows through the switch. • **integer** is an integer in the range of 2–65535. The default is 5. To set this option to the default value, use the **default** operator with the command.
virtual-neighbor <A.B.C.D> <A.B.C.D>	Adds a virtual neighbor to an interface globally. A.B.C.D represents the IP addresses of the interface and the virtual neighbor. Use the **no** operator to later remove this configuration.

show ip pim

Verify the configuration by displaying the global status of PIM on the switch.

Syntax

show ip pim [vrf Word<0–16>] [vrfids Word<0–255>]

Parameters

Variable	Value
vrf Word <0-16>	Specifies the VRF name in the range of 0 to 16.
vrfids Word <0-255>	Specifies the VRF ID in the range of 0 to 255.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip pim enable vrf

Configure PIM to create or remove an instance of the multicast routing protocol on a Virtual Router Forwarding (VRF) instance.

Syntax

ip pim enable

Parameters

Variable	Value
enable	Globally activates PIM on the switch. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
bootstrap-period <5-32757>	Specifies the interval (in seconds) that the elected bootstrap router (BSR) waits between originating bootstrap messages. • **integer** is an integer in the range of 5–32757. The default is 60. To set this option to the default value, use the **default** operator with the command.
disc-data-timeout <5–65535>	Specifies how long (in seconds) to discard data until the join is received from the rendezvous point (RP). An IP multicast discard record is created after a register packet is sent, until the the timer expires or a join is received. • **integer** is an integer in the range of 5–65535. The default is 60. To set this option to the default value, use the **default** operator with the command.
fast-joinprune	Enables the fast join prune interval. To set this option to the default value, use the **default** operator with the command. The default is no disabled.
fwd-cache-timeout <10–8640>	Specifies the forward cache timeout value. • **integer** is an integer in the range of 10–86400. The default is 210. **ATTENTION** When you configure one of the timers, activity-chk-interval or fwd-cache-timeout, with a nondefault value, you cannot configure the other timer. To set this option to the default value, use the **default** operator with the command.
joinprune-interval <1–18724>	Specifies how long to wait (in seconds) before the PIM router sends out the next join/prune message to its upstream neighbors. • **integer** is an integer in the range of 1–18724. The default is 60. To set this option to the default value, use the **default** operator with the command.

Variable	Value
mode <sparse|ssm>	Configures the mode of this interface globally. After you change from one mode to another, an information message appears to remind you that traffic does not stop immediately. To set this option to the default value, use the **default** operator with the command. The default is sparse.
register-suppression-timeout <6–65535>	Specifies how long (in seconds) the designated router (DR) suppresses sending registers to the RP. The timer starts after the DR receives a register-stop message from the RP. • **integer** is an integer in the range of 6–65535. The default is 60. To set this option to the default value, use the **default** operator with the command.
rp-c-adv-timeout <5–26214>	Specifies how often (in seconds) a router configured as a candidate RP (C-RP) sends C-RP advertisement messages. After this timer expires, the C-RP router sends an advertisement message to the elected BSR. • **integer** is an integer in the range of 5–26214. The default is 60. To set this option to the default value, use the **default** operator with the command.
rp-candidate group <A.B.C.D> <mask address> rp <A.B.C.D>	Adds or deletes candidate RP entries. Use the **no** operator to later remove this configuration.
static-rp <A.B.C.D/X> rp <A.B.C.D>	Adds static RP entries and activates static RP.
unicast-route-change-timeout <2–65535>	Specifies how often (in seconds) the switch polls the routing table manager (RTM) for unicast routing information updates for PIM. **ATTENTION** Lowering this value increases how often the switch polls the RTM. This can affect the performance of the switch, especially when a high volume of traffic flows through the switch. • **integer** is an integer in the range of 2–65535. The default is 5.

Variable	Value
	To set this option to the default value, use the **default** operator with the command.
virtual-neighbor <A.B.C.D> <A.B.C.D>	Adds a virtual neighbor to an interface globally. A.B.C.D represents the IP addresses of the interface and the virtual neighbor. Use the **no** operator to later remove this configuration.

ip pim enable vlan

Configure PIM for each interface to enable the interface to perform multicasting operations.

Syntax

ip pim enable

Parameters

Variable	Value
enable	Enables PIM on the local switch interface. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
active	Enables PIM and configures the interface type to active.
bsr-candidate preference <pref value>	Enables the BSR candidate on a specific port. The preference value ranges from 0–255. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Variable	Value
interface-type <active|passive>	Specifies whether the selected interface is active or passive. You can change the state of a PIM interface after you create the interface but only if you disable PIM on the interface. An active interface accepts PIM control transmitted and received traffic. A passive interface prevents PIM control traffic from transmitting or receiving, thereby reducing the load on a system. This feature is useful when a high number of PIM interfaces exist and connect to end users, not to other switches. To set this option to the default value, use the **default** operator with the command. The default is active.
joinprune-interval <seconds>	Specifies how long to wait (in seconds) before the PIM switch sends out the next join/prune message to its upstream neighbors. The default is 60 seconds. To set this option to the default value, use the **default** operator with the command. The range is 1–18724.
passive	Enables PIM and configures the interface type to passive.
query-interval <seconds>	Specifies how long to wait (in seconds) before the PIM switch sends out the next hello message to neighboring switches. The default is 30 seconds with the range of 0–18724. To set this option to the default value, use the **default** operator with the command.

ip pim enable ethernet port

Configure PIM for each interface to enable the interface to perform multicasting operations.

Syntax

ip pim enable

Parameters

Variable	Value
enable	Enables PIM on the local switch interface. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Configuration Mode

Related commands

Variable	Value
active	Enables PIM and configures the interface type to active.
bsr-candidate preference <pref value>	Enables the BSR candidate on a specific port. The preference value ranges from 0–255. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
interface-type <active|passive>	Specifies whether the selected interface is active or passive. You can change the state of a PIM interface after you create the interface but only if you disable PIM on the interface. An active interface accepts PIM control transmitted and received traffic. A passive interface prevents PIM control traffic from transmitting or receiving, thereby reducing the load on a system. This feature is useful when a high number of PIM interfaces exist and connect to end users, not to other switches. To set this option to the default value, use the **default** operator with the command. The default is active.
joinprune-interval <seconds>	Specifies how long to wait (in seconds) before the PIM switch sends out the next join/prune message to its upstream neighbors. The default is 60 seconds. To set this option to the default value, use the **default** operator with the command. The range is 1–18724.
passive	Enables PIM and configures the interface type to passive.
query-interval <seconds>	Specifies how long to wait (in seconds) before the PIM switch sends out the next hello message to neighboring switches. The default is 30 seconds with the range of 0–18724. To set this option to the default value, use the **default** operator with the command.

ip pim mode ssm

Configure SSM to optimize PIM-SM by simplifying the many-to-many model (servers-to-receivers).

Syntax

ip pim mode ssm

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip dvmrp

Configure the Distance Vector Multicast Routing Protocol (DVMRP) globally to enable or disable DVMRP and change default global parameters.

Syntax

ip dvmrp

Parameters

Variablelace	Value
fwd-cache-timeout <integer>	Configures the forward cache timeout (in seconds). • **integer** is the range of 10–86400 seconds. The default value is 300 seconds. To set this option to the default value, use the **default** operator with the command.
generate-log	Enables or disables the DVMRP log. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
generate-trap	Enables or disables the DVMRP trap. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
leaf-timeout <integer>	Configures the length of time (in seconds) the router waits for a response from a neighbor before considering the attached network as a leaf network. • **integer** is the range of 25–4000 seconds. The default value is 125 seconds. To set this option to the default value, use the **default** operator with the command.

Variablelace	Value
nbr-probe-interval <integer>	Configures the time interval (in seconds) for the DVMRP router to send a neighbor probe message on its interface. • **integer** is the range of 5–30 seconds. The default value is 10 seconds. To set this option to the default value, use the **default** operator with the command.
nbr-timeout <integer>	Configures the length of time (in seconds) the router waits to receive a report from a neighbor before considering the connection inactive. • **integer** is the range of 35–8000 seconds. The default value is 35 seconds. To set this option to the default value, use the **default** operator with the command.
output-report-delay <integer>	Configures the time interval (in seconds) between DVMRP router update messages. • **integer** is the range of 10–2000 seconds. The default value is 60 seconds. To set this option to the default value, use the **default** operator with the command.
prune-resend	Sends prune messages every 3 minutes, to address the link failures at remote upstream switches. The feature is disabled by default. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
route-discard-timeout <integer>	Configures the route discard timeout (in seconds). • **integer** is the range of 25–8000. The default value is 260 seconds. To set this option to the default value, use the **default** operator with the command.

Variablelace	Value
route-expiration-timeout <integer>	Configures the route expiration timeout (in seconds). • **integer** is the range of 20–4000 seconds. The default value is 140 seconds. To set this option to the default value, use the **default** operator with the command.
route-switch-timeout <integer>	Configures the route switch timeout (in seconds). • **integer** is the range of 20–2000. The default value is 140 seconds. To set this option to the default value, use the **default** operator with the command.
show-next-hop-table	Enables or disables showing information about the DVMRP next hops. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
triggered-update-interval <integer>	Configures the time interval (in seconds) between triggered update messages sent after routing information changes. • **integer** is the range of 5–1000 seconds. The default value is 5 seconds. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip dvmrp enable vlan

Configure DVMRP for each interface to enable the interface to perform multicasting operations.

Syntax

ip dvmrp enable

Parameters

Variable	Value
enable	Enables DVMRP on the local router interface. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
active	Enables DVMRP on a specific interface with a specific type. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is active.
advertise-self	Enables or disables the advertisement of local routes for the selected interface to other switches in the network. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to advertise.
default-listen	Learns the default route over the specified interface if this feature is enabled on the interface. The default setting is enable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to listen.

Variable	Value
default-supply	Generates and advertises the default route if this feature is enabled on the interface. The default setting is disable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to not supply.
default-supply-metric <cost>	Advertises the specified metric over the interface if you configured the interface to supply the default route. The range is 1–31 hops. The default setting is 1 hop. To set this option to the default value, use the **default** operator with the command.
in-policy <policy_name>	Applies a DVMRP accept policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.
interface-type active	Configures an interface as active. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is active.
metric <cost>	Configures the cost metric (maximum number of hops) for the router interface. • **cost** is the range of 1–31. To set this option to the default value, use the **default** operator with the command. The default is 1.
out-policy <policy_name>	Applies a DVMRP accept policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.

ip dvmrp enable ethernet port

Configure DVMRP for each interface to enable the interface to perform multicasting operations.

Syntax

ip dvmrp enable

Parameters

Variable	Value
enable	Enables DVMRP on the local router interface. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

Variable	Value
active	Enables DVMRP on a specific interface with a specific type. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is active.
advertise-self	Enables or disables the advertisement of local routes for the selected interface to other switches in the network. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to advertise.
default-listen	Learns the default route over the specified interface if this feature is enabled on the interface. The default setting is enable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to listen.
default-supply	Generates and advertises the default route if this feature is enabled on the interface. The default setting is disable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to not supply.

Variable	Value
default-supply-metric <cost>	Advertises the specified metric over the interface if you configured the interface to supply the default route. The range is 1–31 hops. The default setting is 1 hop. To set this option to the default value, use the **default** operator with the command.
in-policy <policy_name>	Applies a DVMRP accept policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.
interface-type active	Configures an interface as active. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is active.
metric <cost>	Configures the cost metric (maximum number of hops) for the router interface. • **cost** is the range of 1–31. To set this option to the default value, use the **default** operator with the command. The default is 1.
out-policy <policy_name>	Applies a DVMRP accept policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.

ip igmp vlan

Configure IGMP for each interface to change default multicasting operations.

Syntax

ip igmp

Parameters

Variable	Value
access-list	Displays the IP Multicast access group list.

Variable	Value
compatibility-mode	Enables v2-v3 compatibility mode. The default value is disabled, which means IGMPv3 is not compatible with IGMPv2. To use the default configuration, use the default option in the command: **default ip igmp compatibility-mode**, or use the no option to disable compatibility mode:**no ip igmp compatibility-mode**
dynamic-downgrade-version	Configures if the Ethernet Routing Switch 8600 downgrades the version of IGMP to handle older query messages. If the switch downgrades, the host with IGMPv3 only capability does not work. If you do not configure the switch to downgrade the version of IGMP, the switch logs a warning. The switch downgrades to the oldest version of IGMP on the network by default. To use the default configuration, use the default option in the command: **default ip igmp dynamic-downgrade-version** or use the no option to disable downgrade: **no ip igmp dynamic-downgrade-version**
igap	Enables the IGAP feature. To set this option to the default value, use the **default** operator with the command. The default is disabled.
immediate-leave	Enables fast leave mode. Prevents a port from receiving a leave message from a member of a group. Normal IGMP behavior is skipped. To set this option to the default value, use the **default** operator with the command. The default is disabled.
immediate-leave-members	Adds fast leave members for the VLAN.
last-member-query-interval <1/10_seconds>	The maximum response time (in tenths of a second) that is inserted into group-specific queries sent in response to leave group messages. This value is also the time between group-specific query messages. This value is not configurable for IGMPv1. Decreasing the value reduces the time to detect the loss of the last member of a group. • **1/10_seconds** is the range from 0–255, and the default is 10 tenths of a second.

Variable	Value
	Nortel recommends that you configure this value between 3–10 (equal to 0.3–1.0 seconds).
mrdisc	Configures multicast router discovery parameters. To set this option to the default value, use the **default** operator with the command. The default is disabled.
mrouter <ports>	Adds multicast router ports.
proxy	Enables the proxy-snoop option globally for the VLAN. To set this option to the default value, use the **default** operator with the command. The default is disabled.
query-interval <seconds>	Configures the frequency (in seconds) at which the VLAN transmits host query packets. • **seconds** is the range from 0–65535. The default value is 125 seconds.
query-max-response <1/10_seconds>	The maximum response time (in tenths of a second) advertised in IGMPv2 general queries on this interface. This value is not configurable for IGMPv1. Smaller values allow a router to prune groups faster. • **1/10_seconds** is an integer value with a range of 0–255, and the default is 100 tenths of a second (equal to 10 seconds). **ATTENTION** You must configure this value lower than the query-interval.
robust-value <integer>	Configures the expected packet loss of a network. • **integer** is an integer value with a range of 2–255 seconds. The default value is 2 seconds. Increase the value if you expect the network to experience packet loss.

Variable	Value
router-alert	When enabled, this parameter instructs the router to ignore IGMP packets that do not contain the router alert IP option. When disabled (default setting), the router processes IGMP packets regardless of whether the router alert IP option is set. **ATTENTION** To maximize your network performance, Nortel recommends that you set this parameter according to the version of IGMP currently in use: • IGMPv1—Disable • IGMPv2—Enable • IGMPv3—Enable
snooping	Enables the snoop option for the VLAN. To set this option to the default value, use the **default** operator with the command. The default is disabled.
ssm-snoop	Enables support for PIM-SSM on the snoop interface. To set this option to the default value, use the **default** operator with the command. The default is disabled.
static-group	Displays the IP Multicast static parameters.
stream-limit	Enables the stream-limit feature.
stream-limit-group	Enables and configures stream-limit member features.
stream-limit-max-streams	Sets the maximum number of streams allowed on an interface.
version <integer>	Configures the version of IGMP that you want to configure on this interface. For IGMP to function correctly, all routers on a LAN must use the same version. • **integer** is an integer value with a value of 1, 2, or 3. The default value is 2 (IGMPv2).

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp ethernet port

Configure IGMP for each interface to change default multicasting operations.

Syntax

ip igmp

Parameters

Variable	Value
access-list	Displays the IP Multicast access group list parameters.
compatibility-mode	Enables v2-v3 compatibility mode. The default value is disabled, which means IGMPv3 is not compatible with IGMPv2. To use the default configuration, use the default option in the command: **default ip igmp compatibility-mode**, or use the no option to disable compatibility mode: **no ip igmp compatibility-mode**
dynamic-downgrade-version	Configures if the Ethernet Routing Switch 8600 downgrades the version of IGMP to handle older query messages. If the switch downgrades, the host with IGMPv3 only capability does not work. If you do not configure the switch to downgrade the version of IGMP, the switch logs a warning. The switch downgrades to the oldest version of IGMP on the network by default. To use the default configuration, use the default option in the command: **default ip igmp dynamic-downgrade-version**, or use the no option to disable downgrade: **no ip igmp dynamic-downgrade-version**
immediate-leave	Enables the fast leave option on the interface. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Variable	Value
last-member-query-interval <1/10_seconds>	Configures the maximum response time (in tenths of a second) that is inserted into group-specific queries sent in response to leave group messages. This value is also the time between group-specific query messages. This value is not configurable for IGMPv1. Decreasing the value reduces the time to detect the loss of the last member of a group. • **1/10_seconds** is an integer in the range from 0–255 and the default is 10 tenths of a second. Nortel recommends that you configure this value between 3–10 (equal to 0.3–1.0 seconds). To set this option to the default value, use the **default** operator with the command.
port {slot/port[-slot/port][,...]}	Configures IGMP for a specific port.
query-interval <seconds>	Configures the frequency (in seconds) at which the interface transmits host query packets. • **seconds** is an integer in the range from 0–65535 with a default of 125. To set this option to the default value, use the **default** operator with the command.
query-max-response <1/10_seconds>	Configures the maximum response time (in tenths of a second) advertised in IGMPv2 general queries on this interface. This value is not configurable for IGMPv1. Smaller values allow a router to prune groups faster. • **1/10_seconds** is an integer value with a range of 0–255, and the default is 100 tenths of a second (equal to 10 seconds). **ATTENTION** You must configure this value lower than the query-interval. To set this option to the default value, use the **default** operator with the command.

Variable	Value
robust-value <integer>	Configures the expected packet loss of a network. • **integer** is an integer value with a range of 2–255 seconds. The default value is 2 seconds. Increase the value if you expect the network to experience packet loss. To set this option to the default value, use the **default** operator with the command.
router-alert	When enabled, this parameter instructs the router to ignore IGMP packets that do not contain the router alert IP option. When disabled (default setting), the router processes IGMP packets regardless of whether the router alert IP option is set. **ATTENTION** To maximize your network performance, Nortel recommends that you set this parameter according to the version of IGMP currently in use: • IGMPv1—Disable • IGMPv2—Enable • IGMPv3—Enable Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
stream-limit	Enables the stream-limit feature.
stream-limit-max-streams	Sets the maximum number of streams allowed on an interface.
version <integer>	Configures the version of IGMP that you want to configure on this interface. For IGMP to function correctly, all routers on a LAN must use the same version. • **integer** is an integer value with a value of 1, 2, or 3. The default value is 2 (IGMPv2).

Default

None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

ip dvmrp show-next-hop-table
Enable showing the next-hop table on the switch.

Syntax
`ip dvmrp show-next-hop-table`

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

show ip dvmrp next-hop
Display information about the DVMRP next hops.

Syntax
`show ip dvmrp next-hop`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

ip dvmrp default-listen vlan

Apply the default route policy to a VLAN to improve the management of the DVMRP routing tables.

Syntax

ip dvmrp default-listen default-supply default-supply-metric <value>

Parameters

Variable	Value
default-listen	Learns the default route over the specified interface if this feature is enabled on the interface. The default setting is enable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to listen.
default-supply	Generates and advertises the default route if this feature is enabled on the interface. The default setting is disable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to not supply.
default-supply-metric <cost>	Advertises the specified metric over the interface if you configured the interface to supply the default route. The range is 1–31 hops. The default setting is 1 hop. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
active	Enables DVMRP on a specific interface of a specific interface type. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is enabled.
enable	Enables DVMRP on a specific interface. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
in-policy <policy_name>	Specifies the DVMRP route in-policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.
interface-type active	Specifies the interface type as active. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is active.
metric <value>	Specifies the DVMRP route metric value. • **cost** is the metric value with a range of 1–31. To set this option to the default value, use the **default** operator with the command. The default is 1.
out-policy <policy_name>	Specifies the DVMRP route out-policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.

ip dvmrp default-listen ethernet port

Apply the default route policy to a VLAN to improve the management of the DVMRP routing tables.

Syntax

```
ip dvmrp default-listen default-supply default-supply-me
tric <value>
```

Parameters

Variable	Value
default-listen	Learns the default route over the specified interface if this feature is enabled on the interface. The default setting is enable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to listen.
default-supply	Generates and advertises the default route if this feature is enabled on the interface. The default setting is disable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is to not supply.
default-supply-metric <cost>	Advertises the specified metric over the interface if you configured the interface to supply the default route. The range is 1–31 hops. The default setting is 1 hop. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

Variable	Value
active	Enables DVMRP on a specific interface of a specific interface type. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is enabled.

Variable	Value
enable	Enables DVMRP on a specific interface. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
in-policy <policy_name>	Specifies the DVMRP route in-policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.
interface-type active	Specifies the interface type as active. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is active.
metric <value>	Specifies the DVMRP route metric value. • **cost** is the metric value with a range of 1–31. To set this option to the default value, use the **default** operator with the command. The default is 1.
out-policy <policy_name>	Specifies the DVMRP route out-policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.

route-map policy name seq number

Create and configure the policy before you apply and announce or accept policy to an interface, VLAN, or a port.

Syntax

route-map <policy-name> <seq_number>

Parameters

Variable	Value
policy-name	Indicates the name of the specified policy with a string length of 1 to 64 characters.
seq_number	Indicates the number of the specified policy in the range of 1 to 65535.

Default

None

Command mode

Global Configuration Mode

Next command mode

Route-map Mode

Related commands

Variable	Value
enable	Enables a route policy with a policy name and a sequence number. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
match as-path Word<0-256>	If configured, the switch matches the as-path attribute of the Border Gateway Protocol (BGP) routes against the contents of the specified as-lists. This field is used only for BGP routes and ignored for all other route types. • **as-list** specifies the list IDs of up to four as-lists, separated by commas. Use the **no** operator to later remove this configuration.

Variable	Value
match community Word<0-256>	If configured, the switch matches the community attribute of the BGP routes against the contents of the specified community-lists. This field is used only for BGP routes and ignored for all other route types. • **community-list** specifies the list IDs of up to four defined community-lists, separated by commas. Use the **no** operator to later remove this configuration.
match community-exact <enable|disable>	When disabled, match-community results in a match when the community attribute of the BGP routes matches an entry of a community-list specified in match-community. When enabled, match-community results in a match when the community attribute of the BGP routes matches all of the entries of all the community-lists specified in match-community. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
match extcommunity Word<0-1027>	Matches the community in the community-id list where **word** is between 0–1027. Represent multiple community-id list as 2,4,5,6,7.
match interface Word<0-259>	If configured, the switch matches the IP address of the interface from which the RIP route was learned against the contents of the specified prefix list. This field is used only for RIP routes and ignored for all other route types. • **prefix-list** specifies the names of up to four defined prefix lists, separated by commas. Use the **no** operator to later remove this configuration.
match local-preference <0-2147483647>	Matches the preference value from 0–2147483647. To set this option to the default value, use the **default** operator with the command. The default is 0.

Variable	Value
match metric <0-65535>	If configured, the switch matches the metric of the incoming advertisement or existing route against the specified value. If 0, this field is ignored. • **metric** is 0–65535. The default is 0. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
match network Word<0–259>	If configured, the switch matches the destination network against the contents of the specified prefix lists. • **prefix-list** specifies the names of up to four defined prefix lists, separated by commas. Use the **no** operator to later remove this configuration.
match next-hop Word<0–259>	If configured, matches the next-hop IP address of the route against the contents of the specified prefix list. This field applies only to nonlocal routes. • **prefix-list** specifies the names of up to four defined prefix lists, separated by commas. Use the **no** operator to later remove this configuration.
match protocol <Any|xxx>	If configured, matches route policy to the protocol from which the route is learned. xxx is local, ospf, ebgp, ibgp, rip, dvmrp, static, or a combination separated by a vertical bar (|). This field is used only for Routing Information Protocol (RIP) announcement purposes. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is any.

Variable	Value
match route-source Word<0-259>	If configured, matches the next-hop IP address for RIP, BGP, and DVMRP routes and advertising router IDs for Open Shortest Path First (OSPF) routes against the contents of the specified prefix list. This option is ignored for all other route types. • **prefix-list** specifies the names of up to four defined prefix lists, separated by commas. Use the **no** operator to later remove this configuration.
match route-type <any|local|internal|external|external-1|external-2>	Configures a specific route-type to match (applies only to OSPF routes). Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is any.
match tag Word<0-256>	Specifies a list of tags that is used during the match criteria process. Contains one or more tag values. • **tag** is a value from 0–256. Use the **no** operator to later remove this configuration.
vrf	Match the VRF name.
vrfids	Match a range of VRFs.
name <policy_name>	Renames a policy after its creation. This command changes the name field for all sequence numbers under the policy.
<permit|deny>	Specifies the action to take when a policy matches a specific route. Permit accepts the route and deny ignores the route. To set this option to the default value, use the **default** operator with the command. The default is permit.
policy-name	Indicates the name of the specified policy, which is a string length from 1–64 characters.
seq_number	Indicates the number of the specified policy, which is a number from 1–65535.

Variable	Value
set as-path Word<0-256>	If configured, the switch adds the as-number of the as-list to the BGP routes that match this policy. • **as-list-id** specifies the list ID of up to four defined as-lists, separated by commas. Use the **no** operator to later remove this configuration.
set as-path-mode <tag|prepend>	**prepend** is the default configuration. The switch prepends the as-number of the as-list specified in set-as-path to the old as-path attribute of the BGP routes that match this policy. Use the **no** operator to later remove this configuration.
set automatic-tag <enable|disable>	Configures the tag automatically. This option is used for BGP routes only. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
set community Word<0-256>	If configured, the switch adds the community number of the community list to the BGP routes that match this policy. • **community-list** specifies the list ID of up to four defined community lists, separated by commas. Use the **no** operator to later remove this configuration.
set community-mode <additive|none|unchanged>	Configures the community mode. • **additive**—the switch prepends the community number of the community list specified in set-community to the old community path attribute of the BGP routes that match this policy. • **none**—the switch removes the community path attribute of the BGP routes that match this policy. • **unchanged**—keeps the community attribute in the route path. Use the **no** operator to later remove this configuration. The default is unchanged.

Variable	Value
set injectlist Word<0-1027>	If configured, the switch replaces the destination network of the route that matches this policy with contents of the specified prefix list. • **prefix-list** specifies one prefix list by name. Use the **no** operator to later remove this configuration.
set local-preference <0-65535>	A value used during a route decision process in the BGP protocol. Applicable to BGP only. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is 0.
set mask <A.B.C.D>	If configured, the switch configures the mask of the route that matches this policy. This applies only to RIP accept policies. • **ipaddr** is a valid contiguous IP mask. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is 0.0.0.0.
set metric <0-65535>	If configured, the switch configures the metric value for the route while announcing a redistribution. The default is 0. If the default is configured, the original cost of the route is advertised into OSPF; for RIP, the original cost of the route or default-import-metric is used. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
set metric-type <type1|type2>	If configured, sets the metric type for the routes that match this policy to announce into the OSPF domain. The default is type 2. This variable is applicable only for OSPF announce policies. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
set metric-type-internal	Sets the internal metric type, 0 or 1. To set this option to the default value, use the **default** operator with the command. The default is 0.

Variable	Value
set next-hop <A.B.C.D>	Specifies the IP address of the next-hop router. Ignored for DVMRP routes. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is 0.0.0.0.
set nssa-pbit enable	Configures the not-so-stubby-area (NSSA) translation P bit. This variable is applicable only for OSPF announce policies. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is enable.
set origin <igp|egp|incomplete>	If configured, the switch changes the origin path attribute of the BGP routes that match this policy to the specified value. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is unchanged (not configured).
set origin-egp-as <0-65535>	Indicates the remote autonomous system number. This variable is applicable to BGP only. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is 0.
set tag <0-65535>	Configures the tag of the destination routing protocol. If you do not specify a tag, the switch forwards the tag value in the source routing protocol. A value of zero indicates that this parameter is not set. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is 0.
set weight <0-65535>	The weight value for the routing table. For BGP, this value overrides the weight configured through NetworkTableEntry, FilterListWeight, or NeighborWeight. This parameter is applicable to BGP only. A value of zero indicates that this parameter is not set. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is 0.

route-map policy name seq number permit

Create an action for the policy on the DVMRP.

Syntax

route-map <policy-name> <seq_number> <permit | deny>

Parameters

Variable	Value
policy-name	Indicates the name of the specified policy with a string length of 1 to 64 characters.
seq_number	Indicates the number of the specified policy in the range of 1 to 65535.
permit	Permits the route.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
deny	Denies the policy route.

ip dvmrp out-policy vlan

Apply a DVMRP announce policy to a VLAN to control which routes the switch sends to neighboring routers, to reduce the size of routing tables, or to provide a level of security for the network.

Syntax

ip dvmrp out-policy <policy_name>

Parameters

Variable	Value
out-policy <policy_name>	Specifies the DVMRP route out-policy. • **policy_name** is a policy name that uses a string length of 0 to 64. To set this option to the default value, use the **default** operator with the command.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands
None

ip dvmrp out-policy ethernet port

Apply a DVMRP announce policy to a port to control which routes the switch sends to neighboring routers, to reduce the size of routing tables, or to provide a level of security for the network.

Syntax
ip dvmrp out-policy <policy_name>

Parameters

Variable	Value
out-policy <policy_name>	Specifies the DVMRP route out-policy. • **policy_name** is a policy name that uses a string length of 0 to 64. To set this option to the default value, use the **default** operator with the command.

Default
None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

ip dvmrp in-policy vlan

Apply a DVMRP accept policy to a port to control the way DVMRP manages incoming route advertisements.

Syntax

```
ip dvmrp in-policy <policy-name>
```

Parameters

Variable	Value
in-policy <policy_name>	Specifies the DVMRP route in-policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip dvmrp in-policy ethernet port

Apply a DVMRP accept policy to a VLAN to control the way DVMRP manages incoming route advertisements.

Syntax

```
ip dvmrp in-policy <policy-name>
```

Parameters

Variable	Value
in-policy <policy_name>	Specifies the DVMRP route in-policy. • **policy_name** is a policy name that uses a string length of 0–64. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

ip dvmrp advertise-self vlan
Apply the advertisement of local networks policy to advertise local networks over a VLAN.

Syntax
ip dvmrp advertise-self

Parameters

Variable	Value
advertise-self	Advertises the local network if the setting is enable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is enabled.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands
None

ip dvmrp advertise-self port
Apply the advertisement of local networks policy to advertise local networks over a port.

Syntax
ip dvmrp advertise-self

Parameters

Variable	Value
advertise-self	Advertises the local network if the setting is enable. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is enabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

None

ip dvmrp interface-type active vlan

Configure a VLAN interface as active or passive.

Syntax

ip dvmrp interface-type active

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip dvmrp interface-type active port

Configure a port interface as active or passive.

Syntax

ip dvmrp interface-type active

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

ip dvmrp active

Create an active port to receive all types of incoming DVMRP packets from neighbors, and send out probes or route reports to neighbor switches.

Syntax
ip dvmrp active

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

ip pim mbr

Enable the MBR functionality on a Nortel Ethernet Routing Switch 8600 to connect a PIM-SM domain to a DVMRP domain.

Syntax
ip pim mbr

Parameters
None

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip pim virtual-neighbor

Configure a virtual neighbor when the next hop for a static route cannot run PIM.

Syntax

ip pim virtual-neighbor <ipaddr> <ipaddr>

Parameters

Variable	Value
ipaddr	The first IP address indicates the IP address of the selected interface.
ipaddr	The second IP address Indicates the IP address of the neighbor.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip pim rp-candidate group

Configure a candidate rendezvous point (C-RP) to serve as backup to the RP router.

Syntax

ip pim rp-candidate group <A.B.C.D> <mask> rp <A.B.C.D>

Parameters

Variable	Value
group <A.B.C.D>	Specifies the IP address of the multicast group. When combined with the group mask, it identifies the prefix that the local router uses to advertise itself as a C-RP router.

Variable	Value
mask	Specifies the address mask of the multicast group. When combined with the group address, it identifies the prefix that the local router uses to advertise itself as a C-RP router.
rp <A.B.C.D>	Specifies the IP address of the C-RP router. This address must be one of the local PIM-SM enabled interfaces.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip pim rp-candidate

Display information about the candidate rendezvous points for the PIM-SM domain.

Syntax

show ip pim rp-candidate [vrf Word<0-16>] [vrfids Word<0-255>]

Parameters

Variable	Value
vrf word <0-16>	Specifies the name of the VRF with a string length of 0 to 16 characters.
vrfids Word <0-255>	Specifies the VRF ID in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip pim static-rp

Configure a static RP to configure a static entry for an RP.

Syntax

ip pim static-rp <A.B.C.D/X> <A.B.C.D>

Parameters

Variable	Value
A.B.C.D/X	Specifies the IP address and address mask of the multicast group. When combined, the IP address and address mask identify the range of the multicast addresses that the RP handles.
A.B.C.D	Specifies the IP address of the static RP.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip pim bsr-candidate preference value etherent port

Configure additional routers as candidate BSRs (C-BSR) to provide backup protection in the event that the primary BSR fails.

Syntax

ip pim bsr-candidate preference <value>

Parameters

Variable	Value
preference <value>	Enables the C-BSR on this interface and configures its preference value, from 1–255, to become a BSR. The C-BSR with the highest BSR preference and address is the preferred BSR. The default is –1, which indicates that the current interface is not a C-BSR. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

None

ip pim bsr-candidate preference value vlan

Configure additional routers as candidate BSRs (C-BSR) to provide backup protection in the event that the primary BSR fails.

Syntax

ip pim bsr-candidate preference <value>

Parameters

Variable	Value
preference <value>	Enables the C-BSR on this interface and configures its preference value, from 1–255, to become a BSR. The C-BSR with the highest BSR preference and address is the preferred BSR. The default is –1, which indicates that the current interface is not a C-BSR. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

multicast smlt-square

Enable square-SMLT globally on each of the four switches to form an SMLT aggregation group.

Syntax

multicast smlt-square

Parameters

Variable	Value
smlt-square	Enables multicast SMLT square.

Default
None

Command mode
Global Configuration Mode

Related commands
None

ip igmp stream-limit
Configure multicast stream limitation on an Ethernet port to limit the number of concurrent multicast streams on the port.

Syntax
ip igmp stream-limit

Parameters

Variable	Value
stream-limit	Enables the stream limit on the specifies Ethernet port.

Default
None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

ip igmp stream-limit-max-streams
Configure the maximum number of allowed streams on the port.

Syntax
ip igmp stream-limit-max-streams <0-65535>

Parameters

Variable	Value
stream-limit-max-streams <0-65535>	Sets the maximum number of streams allowed on an interface. The value ranges from 0 to 65 535.

Default

The default value is 4.

Command mode

Global Configuration Mode

Next command mode

Fast Ethernet or GigabitEthernet Interface Configuration Mode

Related commands

None

show ip igmp stream-limit interface

Display multicast stream limitation information for the ports on a specific interface.

Syntax

`show ip igmp stream-limit interface <fastethernet|gigabitethernet>`

Parameters

Variable	Value
`fastethernet|gigabitethernet`	Specifies the type of interface to include in the output. The results display all ports using stream limitation on the selected interface type.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip igmp stream-limit vlan

Configure multicast stream limitation on a VLAN to limit the number of concurrent multicast streams on the VLAN.

Syntax

`ip igmp stream-limit`

Parameters

Variable	Value
stream-limit	Enables the multicast stream limitation on a VLAN interface.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp stream-limit-max-streams vlan

Configure the maximum number of allowed streams on a VLAN interface.

Syntax

ip igmp stream-limit-max-streams <0-65535>

Parameters

Variable	Value
stream-limit-max-streams <0-65535>	Configures the maximum number of allowed streams on this port. The range is from 0–65535 and the default is 4. To use the default configuration, use the default option in the command: **default ip igmp stream-limit-max-streams**

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp stream-limit-group

Configure multicast stream limitation members on ports of a specific VLAN to limit the number of multicast groups that can join a VLAN.

Syntax

ip igmp stream-limit-group <ports> enable max-streams <value>

Parameters

Variable	Value
max-streams <value>	Configures the maximum number of allowed streams for the specified ports on this VLAN. The range is from 0–65535 and the default is 4. To use the default configuration, use the default option in the command: **default ip igmp stream-limit-group <ports>**
<ports>	Specifies the port or port list in the format {slot/port[-slot/port][,...]}.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp mrdisc

Configure the multicast route discovery options to enable the automatic discovery of multicast-capable routers.

Syntax

ip igmp mrdisc

Parameters

Variable	Value
maxadvertinterval <seconds>	Configures the maximum number (in seconds) between successive advertisements. For this change to take effect, you must save the configuration and reset the switch. To set this option to the default value, use the **default** operator with the command. The default is 20.
maxinitadvertinterval <seconds>	Configures the maximum number (in seconds) between successive initial advertisements. For this change to take effect, you must save the configuration and reset the switch. To set this option to the default value, use the **default** operator with the command. The default is 2.
maxinitadvertisements <integer>	Configures the maximum number of initial multicast advertisements after initialization. For this change to take effect, you must save the configuration and reset the switch. To set this option to the default value, use the **default** operator with the command. The default is 3.
minadvertinterval <seconds>	Configures the minimum number (in seconds) between successive advertisements. For this change to take effect, you must save the configuration and reset the switch.

Variable	Value
	To set this option to the default value, use the **default** operator with the command. The default is 15.
neighdeadinterval <seconds>	Configures the multicast router discovery dead interval—the number of seconds the multicast route neighbors for the switch must wait before assuming that the multicast router is down. • **seconds** is a value from 1–59. The default is 60. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp static-group

Configure IGMP static members to add members to a snoop group.

Syntax

ip igmp static-group <group address> <to group address> [<portList>] <static|blocked>

Parameters

Variable	Value
<static|blocked>	Adds a static-member entry to the IGMP interface. • **value** is the port or list of ports to which you want to redirect the multicast stream for this multicast group. • **static|blocked** configures the route to static or blocked.

Variable	Value
portList	Creates static members on the interface. Specifies the port or list of ports to which you want to redirect the multicast stream for this multicast group. Use the format {slot/port[-slot/port][,...]}. Use the **no** operator to later remove this configuration.
<group address> <to group address>	Indicates the IP address range {a.b.c.d[-w.x.y.z]} of the selected multicast group.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp ssm group-range

Configure SSM dynamic learning and a range group to enable the IGMPv3 dynamic learning feature and to extend the default SSM range of 232/8 to include an IP multicast address.

Syntax

ip igmp ssm group-range <A.B.C.D/X>

Parameters

Variable	Value
A.B.C.D/X	Defines the SSM range. The SSM range parameter extends the default SSM range of 232/8 to include an IP multicast address. You can configure existing applications without having to change their group configurations. This parameter specifies an IP multicast address within the range of 224.0.1.0 and 239.255.255.255. The default is 232.0.0.0. The address mask is the IP address mask of the multicast group. The default is 255.0.0.0.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`dynamic-learning`	Enables SSM dynamic learning.

ip igmp ssm-map

Configure the SSM channel table to map groups to their sending source.

Syntax

```
ip igmp ssm-map all
```

Parameters

Variable	Value
`all`	Enables SSM channel for all the static entries.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`<IP address> enable`	Enables the administrative state for a specific entry (group). This setting does not affect the dynamically learned entries. This state determines whether the switch uses the static entry or saves it for future use. The default is enable for each entry.
`IP address <source IP address>`	Creates a static SSM channel table entry by specifying the group and source IP addresses. The IP address is an IP multicast address within the SSM range. The source IP address is an IP host address that is sends traffic to the group.

ip igmp access-list ethernet port

Configure multicast access control for an IGMP Ethernet port to restrict access to certain multicast streams and to protect multicast streams from spoofing (injecting data to the existing streams).

Syntax

ip igmp access-list <word> <host IP address>/<host mask address> <deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both>

Parameters

Variable	Value
<host IP address> <host mask address>	Creates an access control group entry for a specific IGMP interface. • **host IP address** is the IP address of the host. • **host mask address** is the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both	Indicates the action for the specified IGMP interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
word	Specifies the name of the access list from 1–64 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip igmp access-list mode

Change an existing access list on the Ethernet port.

Syntax

ip igmp access-list <word> <host IP address>/<host mask address> mode <deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both

Parameters

Variable	Value
<host IP address> <host mask address>	Creates an access control group entry for a specific IGMP interface. • **host IP address** is the IP address of the host. • **host mask address** is the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both	Indicates the action for the specified IGMP interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
mode	Changes the access control group configuration.
word	Specifies the name of the access list from 1–64 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip igmp access-list vlan

Configure multicast access control for a VLAN to restrict access to certain multicast streams and to protect multicast streams from spoofing (injecting data to the existing streams).

Syntax

```
ip igmp access-list <word> <host IP address>/<host mask
address> <deny-tx|deny-rx|deny-both|allow-only-tx|allow
-only-rx|allow-only-both>
```

Parameters

Variable	Value
<host IP address> <host mask address>	Creates an access control group entry for a specific IGMP interface. • **host IP address** is the IP address of the host. • **host mask address** is the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both	Indicates the action for the specified IGMP interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
word	Specifies the name of the access list from 1–64 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp access-list mode vlan

Change an existing access list on the VLAN interface.

Syntax

```
ip igmp access-list <word> <host IP address>/<host mask
address> mode <deny-tx|deny-rx|deny-both|allow-only-tx|a
llow-only-rx|allow-only-both
```

Parameters

Variable	Value
<host IP address> <host mask address>	Creates an access control group entry for a specific IGMP interface. • **host IP address** is the IP address of the host. • **host mask address** is the subnet mask used to determine the host or hosts covered by this configuration. You can use the host subnet mask to restrict access to a portion of the network for the host.
deny-tx|deny-rx|deny-both|allow-only-tx|allow-only-rx|allow-only-both	Indicates the action for the specified IGMP interface. For example, if you specify deny-both, the interface denies both transmitted and received traffic.
mode	Changes the access control group configuration.
word	Specifies the name of the access list from 1–64 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp immediate-leave-mode

Configure fast (immediate) leave mode to specify if a port receives a leave message from a member of a group.

Syntax

ip igmp immediate-leave-mode <multiple-user|one-user>

Parameters

Variable	Value
`multiple-user|one-user`	`multiple-user` removes from the group only the IGMP member who sent the leave message. Traffic does not stop if other receivers exist on the interface port. This setting is the default. `one-user` removes all group members on a fast leave enabled interface port after receiving the first leave message from a member. This behavior is the same as the conventional fast leave process.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip igmp sys

View the current fast leave mode configuration on the switch.

Syntax

```
show ip igmp sys [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

Variable	Value
`vrf Word <0-16>`	Specifies the name of the VRF with a string length of 0 to 16 characters.
`vrfids Word <0-255>`	Sets the VRF ID in the range of 0 to 255.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip igmp immediate-leave port

Enable fast (immediate) leave mode to specify if a port receives a leave message from a member of a group.

Syntax

ip igmp immediate-leave

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip igmp immediate-leave vlan

Configure IGMP fast leave members on a VLAN to specify fast leave capable ports.

Syntax

ip igmp immediate-leave

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp immediate-leave-members

Configure fast leave members on a VLAN to specify fast leave capable ports.

Syntax

ip igmp immediate-leave-members <ports>

Parameters

Variable	Value
<ports>	Specifies the port or list of ports that you want to join the fast leave group.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip pgm enable

Configure PGM globally on the switch to provide reliable, duplicate-free delivery of data packets while reducing network congestion.

Syntax

ip pgm enable

Parameters

Variable	Value
max-rexmit-state <integer>	Configures the maximum number of retransmit state entries that the switch can create. Each entry uses a unique NAK sequence number. The default value is 200 entries. To set this option to the default value, use the **default** operator with the command.
max-sessions <integer>	Configures the maximum number of source path state sessions allowed on the switch. The default value is 100 sessions. To set this option to the default value, use the **default** operator with the command.

Variable	Value
nnak-generate <enable|disable>	When enabled, the DLR that receives redirected NAKs, where it uses the retransmitted data (RDATA), sends an NNAK to the original source. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is enabled.
session-life-time <integer>	Specifies the length of idle time (in seconds) before a session times out. Idle time is when the switch does not receive SPMs from the upstream router. The default value is 300 seconds. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip pgm enable vlan

Configure PGM on an interface to customize your PGM configuration.

Syntax

ip pgm enable

Parameters

Variable	Value
max-nak-rdata-int <integer>	Specifies how long to wait for RDATA (in milliseconds) after receiving a NAK confirmation (NCF). The default value is 10000 milliseconds. To set this option to the default value, use the **default** operator with the command.
max-nak-re-xmit-cnt <integer>	Configures the maximum number of NAK retransmission packets allowed for each second. The default value is 2 pps. To set this option to the default value, use the **default** operator with the command.

Variable	Value
nak-eliminate-int <integer>	Specifies the length of time (in milliseconds) during which a network element (NE) eliminates duplicate NAKs. After this interval expires, the NE suspends NAK elimination until the first duplicate arrives. After this NAK is forwarded, the NE eliminates duplicate NAKs for the specified interval. You must configure this parameter lower than **max-nak-rdata-int**. The default value is 5000 milliseconds. To set this option to the default value, use the **default** operator with the command.
nak-re-xmit-int <integer>	Specifies how long to wait for an NCF (in milliseconds), before retransmitting the NAK. The default value is 1000 milliseconds. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet, GigabitEthernet, or VLAN Interface Configuration Mode

Related commands

None

show ip pgm interface

Syntax

show ip pgm interface <fastEthernet|gigabitethernet|vlan>

Parameters

Variable	Value
<fastethernet|gigabitethernet|vlan>	Displays the IP PGM configuration information on any one of the interfaces.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip mroute interface

Configure a multicast route on an interface to customize the time-to-live (TTL) value for the route.

Syntax

```
ip mroute interface <ipaddr> ttl <1-255>
```

Parameters

Variable	Value
`ipaddr`	Indicates the IP address of the selected interface.
`ttl <1-255>`	Configures the TTL threshold for the multicast route interface. The range, in seconds, is 1–255. To set this option to the default value, use the **`default`** operator with the command. The default is 1.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip mroute stream-limit

Limit the number of multicast streams to protect a Switch Fabric/Central Processor Unit (SF/CPU) from multicast data packet bursts generated by malicious applications.

Syntax

```
ip mroute stream-limit
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip mroute stream-limit interface

Limit the number of multicast streams to protect a Switch Fabric/Central Processor Unit (SF/CPU) from multicast data packet bursts generated by malicious applications.

Syntax

ip mroute stream-limit

Parameters

Variable	Value
max-allowed-streams <integer>	Configures the maximum number of streams on the specified port. The port is shut down if the number of streams exceeds this limit. The value is a number between 1–32768. The default value is 1984 streams. To set this option to the default value, use the **default** operator with the command.
max-allowed-streams-timer-check <integer>	Configures the sampling interval, which is used to check if the number of ingress multicast streams to the SF/CPU is under a configured limit or if the port needs to shut down. The range is between 1–3600. The default value is 10 seconds. To set this option to the default value, use the **default** operator with the command.
port	Specifies the port or range of ports in slot/port notation. Use the **no** operator to later remove this configuration.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet, GigabitEthernet, or VLAN interface Configuration Mode

Related commands

None

show ip mroute interface

Display the mroute stream limit configuration on the switch.

Syntax

show ip mroute interface <fastethernet|gigabitethernet> [<slot/port>]

Parameters

Variable	Value
<fastethernet|gigabitethernet>	Shows the mroute configuration information on the interface.
slot/port	Specifies the slot and the port number on which the mroute information is displayed.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip mroute static-source-group

Configure static source-group entries in the Distance Vector Multicast Routing Protocol (DVMRP) or Protocol Independent Multicast (PIM) multicast routing table.

Syntax

ip mroute static-source-group <A.B.C.D> <A.B.C.D/X>

Parameters

Variable	Value
A.B.C.D	Specifies the IP address of the multicast group. Use the **no** operator to remove this configuration.
A.B.C.D/X	Specifies the multicast source IP address and subnet mask for the static source group entry. You cannot create duplicate groups. How you configure the source address depends on the protocol and mode you use. Use the **no** operator to remove this configuration.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip static-mroute

Configure a multicast static route to separate unicast and multicast traffic streams for Reverse Path Forwarding (RPF) calculation.

Syntax

```
ip static-mroute <A.B.C.D/0-32> rpf <A.B.C.D> [preference
<1-255>] [enable]
```

Parameters

Variable	Value
`1-255`	Specifies a preference value from the range 1–255. The default value is 1. To set this option to the default value, use the **`default`** operator with the command.
`A.B.C.D`	Specifies the IP address of the RPF neighbor or the static route.
`A.B.C.D/0-32`	Specifies the IP address and the network mask for the route.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip static-mroute

View the route to reach a specific RPF address in the route table.

Syntax

```
show ip static-mroute [ip <A.B.C.D>] [rpf <A.B.C.D>] [vrf
<Word/0-32>] [vrfids <0-255>]
```

Parameters

Variable	Value
`A.B.C.D`	Specifies the IP address of the RPF neighbor or the static route.

Variable	Value
`A.B.C.D/0-32`	Specifies the IP address and the network mask for the route.
`[vrf <Word/0-32>] [vrfids <0-255>]`	Specifies a VRF name or a range of VRF IDs to include in the show command results.

Default
None

Command mode
Global Configuration Mode

Related commands
None

multicast software-forwarding
Configure the IP multicast software forwarding feature so the SF/CPU initially forwards IP multicast data until a hardware record is created.

Syntax
```
multicast software-forwarding
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

show multicast software-forwarding
Show the software forwarding configuration.

Syntax
```
show multicast software-forwarding [vrf Word<0-16>]
[vrfids Word<0-255>]
```

Parameters

Variable	Value
`[vrf <Word/0-16>] [vrfids <0-255>]`	Specifies a VRF name or a range of VRF IDs to include in the show command results.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip mroute resource-usage egress-threshold

Configure the resource usage counters to query the number of ingress and egress IP multicast streams traversing your switch.

Syntax

```
ip mroute resource-usage egress-threshold <0-32767>
ingress-threshold <0-32767>
```

Parameters

Variable	Value
`egress-threshold <0-32767>`	Configures the egress record threshold (S,G). A notification message is sent if this value is exceeded. • **`integer`** is a value between 0–32767. To set this option to the default value, use the **`default`** operator with the command. The default is 0.
`ingress-threshold <0-32767>`	Configures the ingress record threshold (peps). A notification message is sent if this value is exceeded. • **`integer`** is a value between 0–32767. To set this option to the default value, use the **`default`** operator with the command. The default is 0.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip mroute resource-usage log-msg trap-msg

Enable traps and log messages on the console.

Syntax

ip mroute resource-usage log-msg trap-msg

Parameters

Variable	Value
log-msg	Configures the notification method for sending only a log message after the threshold level is exceeded. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.
trap-msg	Configures the notification method for sending only a trap message after the threshold level is exceeded. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command. The default is disabled.

Default

None

Command mode

Global Configuration Mode

Related commands

None

multicast mlt-distribution enable

Enable multicast flow distribution on the switch.

Syntax

multicast mlt-distribution

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

multicast mlt-distribution globally

Configure multicast flow distribution globally to distribute multicast streams over a multilink trunk.

Syntax

multicast mlt-distribution [grp-mask <grp-mask>] [redistribution] [src-mask <src-mask>]

Parameters

Variable	Value
grp-mask <grp-mask>	Specifies a group mask to use when the switch distributes multicast traffic over a multilink trunk. The default is 255.255.255.255. To set this option to the default value, use the **default** operator with the command. You must disable MLT distribution before you change the group mask.
redistribution	Enables the multicast MLT redistribution feature. The default is disabled. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
src-mask <src-mask>	Specifies a source mask to use when the switch distributes multicast traffic over a multilink trunk. The default is 255.255.255.255. **ATTENTION** Ensure that the mask values for grp-mask and src-mask are contiguous. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

None

multicast mlt-distribution multilink trunk

Enable multicast flow distribution for each multilink trunk to customize your configuration. Distribute the load on different ports of the multilink trunk.

Syntax

```
multicast mlt-distribution [grp-mask <grp-mask>]
[redistribution] [src-mask <src-mask>]
```

Parameters

Variable	Value
grp-mask <grp-mask>	Specifies a group mask to use when the switch distributes multicast traffic over a multilink trunk. The default is 255.255.255.255. To set this option to the default value, use the **default** operator with the command. You must disable MLT distribution before you change the group mask.
redistribution	Enables the multicast MLT redistribution feature. The default is disabled. Use the **no** operator to later remove this configuration. To set this option to the default value, use the **default** operator with the command.
src-mask <src-mask>	Specifies a source mask to use when the switch distributes multicast traffic over a multilink trunk. The default is 255.255.255.255. **ATTENTION** Ensure that the mask values for grp-mask and src-mask are contiguous. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

None

vlan mac-address-static

Configure Layer 2 multicast MAC filtering to direct MAC multicast flooding to a specific set of ports.

Syntax

vlan mac-address-static <1–4094> <MAC address> <ports> qos <0-7>

Parameters

Variable	Value
MAC address	Specifies the MAC address in hexadecimal format.
<ports>	Specifies the port or ports that receive the multicast flooding. Type this information as a port or a range of ports in slot/port format.
qos <0-7>	Specifies the Quality of Service level.
1–4094	Specifies a VLAN from 1–4094.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip arp static-mcast

Configure Layer 3 multicast MAC filtering to route an IP frame to a unicast IP address and flood it with a destination multicast MAC address.

Syntax

ip arp static-mcast <A.B.C.D> <MAC address> vid <1–4094> [port <value> Word<1–16>]

Parameters

Variable	Value
<MAC address>	Specifies the MAC address in hexadecimal format.
A.B.C.D	Specifies the IP address.
vid <1-4094>	Specifies the VLAN ID.
port <value>	Specifies the port that receives the multicast flooding. Type this information as a port or a range of ports in slot/port format.
<1-16>	Specifies the multilink trunk ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip prefix-list

Create one or more IP prefix lists and apply those lists to an IP route policy.

Syntax

ip prefix-list <prefix-list-name> <IP address>

Parameters

Variable	Value
name <name>	Renames the specified prefix list. The name can contain 1–64 characters.
prefix-list-name	Indicates the name of the specified prefix list, which is a string length from 1–64 characters. Use the **no** operator to later remove this configuration.
IP address	Adds a prefix entry to the prefix list. Specify the IP address in the format a.b.c.d/x or a.b.c.d/x.x.x.x **ATTENTION** Lower boundaries and higher boundaries of the mask lengths together can define a range of networks. Use the **no** operator to later remove this configuration.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show ip dvmrp
Display information about the general Distance Vector Multicast Routing Protocol (DVMRP) group.

Syntax
```
show ip dvmrp
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip dvmrp interface
Display DVMRP route policy information for the DVMRP interface configurations on the switch.

Syntax
```
show ip dvmrp interface [fastethernet <slot/port>]
[gigabitethernet <slot/port>] [pos <slot/port>] [vlan
<vlan_id>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show ip dvmrp neighbor

Display information about the configured DVMRP neighbors.

Syntax

show ip dvmrp neighbor

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip dvmrp route

Display information about the DVMRP routes.

Syntax

show ip dvmrp route

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp access

Display information about the Internet Group Management Protocol (IGMP) multicast access control groups.

Syntax

show ip igmp access [vrf Word<0-16>] [vrfids Word<0-255>]

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip igmp cache
Display information about the IGMP cache.

Syntax
```
show ip igmp cache [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip igmp group
Display information about the IGMP group.

Syntax
```
show ip igmp group [count] [group <IP address>]
[member-subnet <default|IP address/mask>] [vrf
Word<0-16>] [vrfids Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show ip igmp interface

Display information about the interfaces where IGMP is enabled.

Syntax

```
show ip igmp interface [fastethernet <slot/port>]
[gigabitethernet <slot/port>] [pos <slot/port>] [vlan
<slot/port>] [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp mrdisc

Display information about the IGMP multicast discovery routes.

Syntax

```
show ip igmp mrdisc [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp mrdisc neighbors

Display information about the IGMP multicast router discovery neighbors.

Syntax

```
show ip igmp mrdisc neighbors [vrf Word<0-16>] [vrfids
Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip igmp router-alert
Display the status of IGMP router alert.

Syntax
```
show ip igmp router-alert [vrf Word<0-16>] [vrfids
Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip igmp sender
Display information about the IGMP senders.

Syntax
```
show ip igmp sender [count] [group <IP address>]
[member-subnet <default|IP address/mask>] [vrf
Word<0-16>] [vrfids Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show ip igmp snooping

Display the status of IGMP snoop.

Syntax

```
show ip igmp snooping [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp static

Display information about the static and blocked ports for the IGMP-enabled interfaces.

Syntax

```
show ip igmp static [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan static-mcastmac

Display the Layer 2 multicast media access control (MAC) filters.

Syntax

```
show vlan static-mcastmac [<vlan 1-4904>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip arp static-mcastmac
Display Layer 3 multicast MAC ARP data.

Syntax
```
show ip arp static-mcastmac [-s <IP/subnet value> [vrf <vrf
name>] [vrfids <vrf ID>] [<A.B.C.D]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip igmp snoop-trace
View multicast group trace information for IGMP snoop.

Syntax
```
show ip igmp snoop-trace [source <IP address>] [group <IP
address>] [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show multicast mlt-distribution

Show the multicast MLT distribution configuration.

Syntax

show multicast mlt-distribution

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip mroute route

Display information about the multicast routes set up on the switch.

Syntax

show ip mroute route [vrf Word<0-16>] [vrfids Word<0-255>]

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip mroute next-hop

Display information about the next hop for the multicast routes set up on the switch.

Syntax

show ip mroute next-hop [vrf Word<0-16>] [vrfids Word<0-255>]

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip mroute interface

Display information about the multicast routes set up on the switch for a specific interface.

Syntax
```
show ip mroute interface [<fastethernet|gigabitethernet>
<slot/port>] [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip pgm

Display the PGM global status on the switch.

Syntax
```
show ip pgm
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show ip pim active-rp

Display information about the active rendezvous point (RP) for all groups or a specific group.

Syntax

```
show ip pim active-rp <group IP address> [vrf Word<0-16>]
[vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim bsr

Display information about the bootstrap router (BSR) for this PIM-SM domain.

Syntax

```
show ip pim bsr [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim interface

Display information about the PIM-SM interface setup on the switch.

Syntax

```
show ip pim interface [fastEthernet <slot/port>]
[gigabitethernet <slot/port>] [pos <slot/port>] [vlan
<slot/port>] [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim mode

Show the PIM mode (SM or SSM) configuration on the switch.

Syntax

```
show ip pim mode [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim neighbor

Display information about the neighboring routers configured with PIM-SM.

Syntax

```
show ip pim neighbor [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim mroute

Display information from the route table.

Syntax

```
show ip pim mroute [group <IP address>] [source <IP
address>] [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim virtual-neighbor

Display the virtual neighbor.

Syntax

```
show ip pim virtual-neighbor [vrf Word<0-16>] [vrfids
Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim rp-hash

Display information about the RPs for this PIM-SM domain.

Syntax

```
show ip pim rp-hash [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp ssm-map

Display the list of SSM channels.

Syntax

```
show ip igmp ssm-map [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp ssm

Display the SSM group range and the status of dynamic learning.

Syntax

```
show ip igmp ssm [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pim static-rp

Display the static RP table.

Syntax

```
show ip pim static-rp [vrf Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip mroute static-source-group

Display information about the static source groups on the current interface.

Syntax

```
show ip mroute static-source-group [<GroupAddress>] [vrf
Word<0-16>] [vrfids Word<0-255>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan members

Display VLAN port data.

Syntax

```
show vlan members [<vlan id>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

IP VPN commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to configure the IP VPN and IP VPN-Lite services on the Nortel Ethernet Routing Switch 8600.

Navigation

- "show ip route count-summary" (page 385)
- "show ip route" (page 386)
- "show ip vrf" (page 386)
- "traceroute" (page 386)

ip vrf

Create one or more VRFs for each VPN that the PE node services to isolate the traffic.

Syntax

```
ip vrf <WORD 0-16>
```

Parameters

Variable	Value
max-routes <0–250000>	Specifies the maximum number of routes allowed for the VRF from 0–250000. To configure this option to the default value, use the **default** operator with the command.
max-routes-trap enable	Enables the generation of the VRF maximum routes exceeded traps. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.
name <WORD>	Renames the VRF instance.
vrf-trap enable	Enables the generation of the VrfUp and VrfDown traps. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.
vrfid <1–255>	Specifies the VRF instance by number.
<WORD 0-16>	Specifies the name of the VRF instance.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipvpn

Create an IP VPN instance in the VRF before you enable the IP VPN for VPN communications.

Syntax

ipvpn

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

rd

Configure a unique route distinguisher to create globally unique VPN addresses.

Syntax

rd {<0-65535> <0-2147483647>|<A.B.C.D> <0-65535>}

Parameters

<0-65535> <0-2147483647>|<A.B.C.D> <0-65535>	Specifies the route distinguisher (RD). Each VRF instance must use a unique RD. The RD is a 6-byte value that you specify in one of the following formats: • Type 0—<AS number> <number> AS number is the assigned autonomous system (AS) number of the PE and number is an assigned 4-byte value. • Type 1—<ip-address> <number> ip-address is an IPv4 address in the assigned prefix range of the PE

	and number is an assigned 2-byte value. **ATTENTION** You must administratively disable the IP VPN before you modify an existing RD configuration.

Default
None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

ipvpn enable
Enable IP VPN to configure VPN communications.

Syntax
```
ipvpn enable
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

route-target both
Configure one route target to define a single set of routes for import and export on the VRF.

Syntax

```
route-target both {<0-65535> <0-2147483647>|<A.B.C.D>
<0-65535>}
```

Parameters

Variable	Value
{<0-65535> <0-2147483647>|<A.B.C.D> <0-65535>}	Defines one or more import or export policies that must be met for routes received from remote PEs to be installed into the VRF routing table and for routes from the VRF routing table to be redistributed to remote PEs. Define the route target in one of the following formats: • Type 0—<AS number> <number> AS number is the assigned autonomous system (AS) number of the PE and number is an assigned 4-byte value. • Type 1—<ipaddr> <number> ipaddr is an IPv4 address in the assigned prefix range of the PE and number is an assigned 2-byte value. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

route-target import

Configure separate route targets to define a set of routes for import or export on the VRF.

Syntax

```
route-target <import|export> {<0-65535> <0-2147483647>|
<A.B.C.D> <0-65535>}
```

Parameters

Variable	Value
`<0-65535> <0-2147483647>|<A.B.C.D> <0-65535>`	Defines one or more import or export policies that must be met for routes received from remote PEs to be installed into the VRF routing table and for routes from the VRF routing table to be redistributed to remote PEs. Define the route target in one of the following formats: • Type 0—<AS number> <number> AS number is the assigned autonomous system (AS) number of the PE and number is an assigned 4-byte value. • Type 1—<ipaddr> <number> ipaddr is an IPv4 address in the assigned prefix range of the PE and number is an assigned 2-byte value. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

vrf

Assign an interface to the VRF to enable data path traffic between the PE node and the CE node.

Syntax

```
vrf <WORD 0-16>
```

Parameters

Variable	Value
`<WORD 0-16>`	Specifies the name of the VRF instance to associate with the VLAN or port.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet, GigabitEthernet, or VLAN Interface Configuration Mode

Related commands

None

ipvpn service-label-allocation

Configure the service label allocation scheme for locally generated service labels on routes that are exported from a VRF to remote PEs.

Syntax

`ipvpn service-label-allocation {per-vrf|per-vrf-per-nexthop}`

Parameters

Variable	Value
`service-label-allocation {per-vrf|per-vrf-per-nexthop}`	Configures the service label allocation scheme for locally generated service labels on routes that are exported from the VRF to remote PEs. Use **`per-vrf`** to enable ingress VRF IP forwarding information base (FIB) lookup for traffic that arrives from the core network. This scheme reduces the number of service labels distributed in the VPN network. Use **`per-vrf-per-nexthop`** to enable optimized IP VPN data path at tunnel exit. This scheme provides higher forwarding throughput than the **`per-vrf`** option.

Variable	Value
	To configure this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

neighbor address-family vpnv4

Configure an MP-BGP session between two PE nodes, or between a PE node and a route reflector, to exchange IP VPN routing information.

Syntax

neighbor <nbr_ipaddr|peer-group-name> address-family vpnv4

Parameters

Variable	Value
address-family vpnv4	Configures BGP address families for IPv4 (BGP) and Layer 3 VPN (MP-BGP) support. Enable for VPN/VRF routes. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.
<nbr_ipaddr|peer-group-name>	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.

Default

None

Command mode
Global Configuration Mode

Next command mode
BGP Router Configuration Mode

Related commands
None

neighbor ipvpn-lite-capability
Enable IP VPN-Lite to provide IP VPN in a routed network without explicit tunnels between PE devices.

Syntax
neighbor <nbr_ipaddr|peer-group-name> ipvpn-lite-capability

Parameters

Variable	Value
<nbr_ipaddr|peer-group-name>	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.

Default
None

Command mode
Global Configuration Mode

Next command mode
BGP Router Configuration Mode

Related commands
None

ip bgp enable
Configure the external Border Gateway Protocol (eBGP) for the VRF to exchange BGP routes between a PE node and a CE device.

Syntax
ip bgp enable

Parameters

Variable	Value
`enable`	Enables the BGP on the VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip bgp neighbor

Add a BGP peer group to the VRF.

Syntax

ip bgp neighbor <nbr_ipaddr|peer-group-name> peer-group <WORD>

Parameters

Variable	Value
`<nbr_ipaddr|peer-group-name>`	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.
`WORD`	Specifies the name of the peer group to add to the VRF. Use the **no** operator to later remove this configuration.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip bgp neighbor as-override

Configure AS override for a BGP group to ensure that the PE node replaces the autonomous system number (ASN) of an incoming route with its own ASN before it advertises the route.

Syntax

ip bgp neighbor <nbr_ipaddr|peer-group-name> as-override

Parameters

Variable	Value
<nbr_ipaddr|peer-group-name>	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip bgp neighbor site-of-origin

Configure a site of origin to identify from which site the PE router learns a route.

Syntax

ip bgp neighbor <nbr_ipaddr|peer-group-name> site-of-origin <WORD>

Parameters

Variable	Value
WORD	Specifies the site of origin in one of two formats: • AS number:assigned number in the ranges 0–65535:0–4294967295 • IPv4 address:assigned number as A.B.C.D:0–65535 Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.
<nbr_ipaddr|peer-group-name>	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip bgp neighbor allow-as-in

Specify the number of times that the local ASN can exist in the AS-PATH of a received route.

Syntax

ip bgp neighbor <nbr_ipaddr|peer-group-name> allow-as-in <0-10>

Parameters

Variable	Value
`<0-10>`	Configures the number of times the local ASN can exist in the AS-PATH of a received route. To configure this option to the default value, use the **`default`** operator with the command.
`<nbr_ipaddr|peer-group-name>`	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip bgp neighbor remove-private-as

Configure the remove private AS to remove private or reserved ASNs from BGP outbound updates.

Syntax

```
ip bgp neighbor <nbr_ipaddr|peer-group-name>
remove-private-as enable
```

Parameters

Variable	Value
`<nbr_ipaddr|peer-group-name>`	Specifies the properties of a statically configured peer within a BGP group. Enter the neighbor IP address in a.b.c.d format for <nbr_ipaddr>, or the neighbor group name for <peer-group-name>.

Default

None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

ip ospf

Configure OSPF on an interface that connects to a CE device to exchange route information between the PE node and a customer site.

Syntax
`ip ospf`

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

ip ospf redistribute bgp

Create a route redistribution instance on the OSPF.

Syntax
`ip ospf redistribute bgp`

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip ospf redistribute bgp enable

Enable route redistribution on the OSPF.

Syntax

ip ospf redistribute bgp enable vrf-src <vrfName>

Parameters

Variable	Value
vrfName	Specifies of the name of the VRF.
vrf-src <vrfName>	Specifies the VRF instance name to which to apply redistribution. To redistribute routes from VRF 0, explicitly specify vrf-src 0. Otherwise, the command redistributes routes within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip rip

Configure RIP on a customer-facing interface to exchange route information between a PE node and a CE device.

Syntax

ip rip

Parameters

Variable	Value
default-metric	Sets the RIP Default Import Metric; default value is 8. This value is used by rip announce of OSPF internal routes if the policy does not specify metric. 0 is used for deconfiguration.
domain	Sets the RIP domain value.
enable	Enables the RIP on a particular VRF.
redistribute	Specifies the RIP redistribution configuration commands.
timers	Specifies the RIP timer configuration commands.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip rip redistribute bgp enable

Enable route redistribution on the VRF to enable the information exchange on the PE and CE nodes.

Syntax

ip rip redistribute bgp enable [vrf-src <vrfName>]

Parameters

Variable	Value
enable	Enables the redistribution instance on the VRF.
vrf-src <vrfName>	Specify the VRF instance name to which to apply redistribution. To redistribute routes from VRF 0, explicitly specify vrf-src 0. Otherwise, the command redistributes routes within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
`metric`	Configures metric for redistribution policy.
`route-map`	Sets route-map for redistribute.

route-map policyname seqnumber

Create a policy statement to enter the Router VRF Route-Map configuration mode in the NNCLI and assign the policy to the RIP interface.

Syntax

```
route-map <WORD 0-32> <1-10>
```

Parameters

Variable	Value
`Word <0-32>`	Specify the name of the route policy to create or apply.
`<1-10>`	Assign a sequence number to the policy.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Route-map Router Configuration Mode

Related commands

None

route-map enable

Enable the route policy on the VRF.

Syntax

```
route-map <WORD 0-32> <1-10> enable
```

Parameters

Variable	Value
`enable`	Enables the route policy.

Default

None

Command mode

Global Configuration Mode

Next command mode

Route-map Configuration Mode

Related commands

None

route-map permit

Configure the route policy to accept routes.

Syntax

```
route-map <WORD 0-32> <1-10> permit
```

Parameters

Variable	Value
`<WORD 0-32>`	Specify the name of the route policy to create or apply.
`<1-10>`	Assign a sequence number to the policy.
`permit`	Permits the routes.

Default

None

Command mode

Global Configuration Mode

Next command mode

Route-map Configuration Mode

Related commands

Variable	Value
`deny`	Permits or denies the route deny.

route-map match

Configure the route policy to accept BGP-learned routes.

Syntax

```
route-map <WORD 0-32> <1-10> match [vrf <WORD/0-32>]
[vrfids <WORD/0-255>]
```

Parameters

Variable	Value
`<WORD 0-32>`	Specify the name of the route policy to create or apply.
`<1-10>`	Assign a sequence number to the policy.
`vrf <WORD/0-32>`	Specify a VRF name from 0–32 characters for the match criteria.
`vrfids <WORD/0-255>`	Specify a VRF ID from 0–255 for the match criteria.

Default

None

Command mode

Global Configuration Mode

Next command mode

Route-map Configuration Mode

Related commands

None

ip rip out-policy

Assign the policy to the RIP interface.

Syntax

```
ip rip out-policy <WORD 0-32>
```

Parameters

Variable	Value
`<WORD 0-32>`	Specify the name of the route policy.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip route

Configure a static route for the VRF to explicitly define the next hop for a particular destination (that is, a CE device). The static route destination can be an IPv4 address.

Syntax

```
ip route <IP address> <network mask> <next-hop> weight
<value> [preference <1-255>] [local-next-hop enable]
enable
```

Parameters

Variable	Value
IP address	Specifies the destination IP address in the format A.B.C.D
local-next-hop enable	Enables or disables this option. True indicates that the static route becomes active only if the switch uses a local route to the network. False indicates that the static route becomes active if the switch uses a local route or a dynamic route. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.
network mask	Specifies the network mask in the format A.B.C.D
next-hop	Specifies the IP address for the next hop.

Variable	Value
preference <1-255>	Configures the preference for the static route in the range 1–255. You can configure different preferences for multiple static routes to the same destination. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.
weight <value>	Configures the cost for the static route. The lower the cost, the more preferable the route.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip bgp multiple-paths

Configure Border Gateway Protocol (BGP) inbound route filtering on the global routing engine (GRE) to reduce BGP update messaging after you configure new VPNs (that is, new route targets) on the node.

Syntax

ip bgp multiple-paths <1-8>

Parameters

Variable	Value
1-8	Configures the maximum number of equal multicost routes to store in the routing table. For non-R mode, the range is 1–4. For R mode, the range is 1–8. To configure this option to the default value, use the **default** operator with the command.

Default

None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

ip ecmp max-path

Configure the number of equal cost multi path (ECMP) routes that the VRF can learn from remote PE routers and route reflectors to allow the system to distribute IP VPN traffic across multiple paths.

Syntax
ip ecmp max-path <1-8>

Parameters

Variable	Value
1-8	Configures the maximum number of ECMP routes that can be stored in the routing table. For non R mode, the range is 1–4. For R mode, the range is 1–8. To configure this option to the default value, use the **default** operator with the command.

Default
None

Command mode
Global Configuration Mode

Next command mode
VRF Router Configuration Mode

Related commands
None

ip vrf max-routes

Configure the maximum number of routes the system can store in the VRF routing table to conserve memory use.

Syntax
ip vrf <vrfName> max-routes <0-250000>

Parameters

Variable	Value
max-routes <0–250000>	Specifies the maximum number of routes allowed for the VRF from the range of 0–250000. To configure this option to the default value, use the **default** operator with the command.
vrf <vrfName>	Specifies the VRF name.

Default

None

Command mode

Global Configuration Mode

Related commands

None

no ipvpn

Administratively disable IP VPN on a VRF to remove it from service for troubleshooting purposes or if you need to change the route distinguisher.

Syntax

no ipvpn

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

ip extcommunity-list

Configure policies using extended communities to include one or more communities in the policy.

Syntax

```
ip extcommunity-list <1-1024> memberId <1-65535> [rt
<WORD>] [soo <WORD>]
```

Parameters

Variable	Value
1-1024	Assigns an ID to the list from 1–1024.
memberId <1-65535>	Defines each member by specifying one or more member ID values.
rt <WORD>	Specifies a route target. <WORD> is <AS number> <assigned number> or <ipaddress> <assigned number>. If you use the AS number, the assigned number is in the range 0–2147483647. If you use the IP address, the assigned number is in the range 0–65535.
soo <WORD>	Specifies a site of origin. <WORD> is <AS number> <assigned number> or <ipaddress> <assigned number>. If you use the AS number, the assigned number is in the range 0–2147483647. If you use the IP address, the assigned number is in the range 0–65535.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

None

route-map match condition

Configure VRF level policies to define a set of criteria that must be satisfied for routes received from remote PEs before they can enter the BGP route selection process.

Syntax

```
route-map <WORD> <1-65535> match <match condition>
```

Parameters

Variable	Value
`1-65535`	Specifies a sequence number for the policy.
`match condition`	Specifies one or more of the following as match criteria: • as-path <ID from 0–1027>—re presents multiple as-list IDs as "2,4,5,6,7" • community <ID from 0–1027>—re present multiple community IDs as "2,4,5,6,7" • community-exact enable • interface <prefix-list from 0–1027> • local-preference <0–2147483647> • metric <0–65535> • network <prefix-list from 0–1027> • next-hop <prefix-list from 0–1027> • protocol <protocol from 0–40>—Any|xxx, where xxx is local, rip, static, or any combination separated by a vertical line (|) • route-source <prefix-list from 0–1027> • route-type <any|local|internal|external|external-1|external-2> • tag <tag from 0–256> • vrf <vrfName from 0–32> • vrfids <ID from 0–255>
`WORD`	Specifies a name for the policy from 1–64 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Route-Map Router configuration Mode

Related commands

Variable	Value
`enable`	Enables the policy.
`name <Word>`	Renames the policy.
`set command`	Specifies one or more of the following as a set command: • as-path <as-list-id from 0–256> • as-path-mode <prepend|tag> • automatic-tag enable • community <community-list from 0–256> • community-mode <additive|none|unchanged> • extcommunity <extcommunity-list-id from 0–1024> • extcommunity-mode <append|overwrite|unchanged> • injectlist <prefix-list from 0–1027> • ip-preference • local-preference <pref-value from 0–65535> • mask <ipaddr> • metric <metric-value from 0–65535> • metric-type <type1|type2> • metric-type-internal • next-hop <ipaddr> • nssa-pbit enable • origin <igp|egp|incomplete> • origin-egp-as <origin-egp-as from 0–65535> • tag <tag from 0–65535> • weight <weight from 0–65535>

ip bgp in-route-policy

Configure peer level policies to apply a route policy rule to all routes that are learned from, or sent to, the local BGP router peers or peer groups.

Syntax

```
ip bgp in-route-policy <WORD>
```

Parameters

Variable	Value
`in-route-policy`	Configures the incoming policy.
`Word`	Specifies a route-map name. This option is a string value from 1–256 characters. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
`out-route-policy`	Configures the outgoing route policy.

route-map match extcommunity

Create multiprotocol BGP (MP-BGP) policies to configure route leaking between VRFs and the Global Routing Engine (GRE) VRF 0. These policy configurations are specific to VRFs with IP VPN enabled.

Syntax

```
route-map <WORD 1-64> <1-65535> match extcommunity
<extcommunity-list>
```

Parameters

Variable	Value
extcommunity-list	Filters incoming and outgoing updates based on communities. Specify the community IDs from 0–1027. Reference multiple lists separated with a comma (,), for example, 2,4,5,6,7. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command.
<WORD 1-64>	Assigns a name to the policy from 1–64 characters.
<1-65535>	Specifies a second index used to identify a specific policy within a route policy group.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
extcommunity-list-id	Configures the extended community string, from 1–1024. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command.
pref-value	Matches the local prefix value, from 0–2147483647. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command.

Variable	Value
<append|overwrite|unchanged>	Configures the extended community mode as one of the following: • Unchanged—Keep the community attribute in the route path. • None—Remove the community in the route path additive. • Append—Add the community number specified in SetCommu nityNumber to the community list attribute. The default is unchanged. To configure this option to the default value, use the **default** operator with the command.
vrf <vrfName> or **vrfids <IDs>**	Identifies which source VRFs leak routes to the local VRF.

show ip ipvpn

Displays the configuration for IP VPN enabled VRFs.

Syntax

show ip ipvpn [vrf <value>] [vrfids <value>]

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip ipvpn rd

Displays the configured route distinguisher for IP VPN enabled VRFs.

Syntax

show ip ipvpn rd [vrf <value>] [vrfids <value>]

Parameters

None

Default
None

Command mode
Global Configuration Mode

Related commands
None

show ip ipvpn route-target
Displays the configured route target for IP VPN enabled VRFs.

Syntax
```
show ip ipvpn route-target [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip bgp peer-group
Displays BGP groups configured on the specified VRF or VRF IDs.

Syntax
```
show ip bgp peer-group [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip bgp route
Displays BGP routes maintained by the specified VRF or VRF IDs.

Syntax

```
show ip bgp route [vrf <value>] [vrfids <value>]
```

Parameters

Variable	Value
`<prefix/len>`	Displays exact prefix {a.b.c.d/len.}
`community`	Displays community attributes.
`ip`	Specifies the IP address.
`longer-prefixes`	Displays all the more specified routes.
`vrf`	Displays BGP configuration for a particular VRF.
`vrfids <Word 0-255>`	Specifies the VRF ID in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip bgp neighbors

Displays BGP neighbors for the specified VRF or VRF IDs.

Syntax

```
show ip bgp neighbors [vrf <value>] [vrfids <value>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip bgp dampened-paths

Displays dampened BGP routes on the specified VRF or VRF IDs.

Syntax

```
show ip bgp dampened-paths <IP address> [vrf <value>]
[vrfids <value>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip bgp summary

Displays summary BGP information for the specified VRF or VRF IDs.

Syntax

```
show ip bgp summary [vrf <value>] [vrfids <value>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf ifstats

Displays the interface statistics for the specific VRF or VRF IDs.

Syntax

```
show ip ospf ifstats [vrf <Word 0-32>] [vrfids <Word 0-255>]
```

Parameters

Variable	Value
`vrf <Word 0-32>`	Specifies the VRF name in the range of 0 to 32 characters.
`vrfids <Word 0-255>`	Specifies the VRF ID in the range of 0 to 255.

Default
None

Command mode
Privileged Executive Mode

Related commands

Variable	Value
`detail`	Specifies the OSPF ifstats detail parameter.
`mismatch`	Specifies the OSPF ifstats mismatch parameter.

show ip ospf
Displays OSPF general information for the specific VRF or VRF IDs.

Syntax
```
show ip ospf [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip ospf interface
Displays OSPF interface and virtual link summaries for the specified VRF or VRF IDs.

Syntax
```
show ip ospf interface [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show ip ospf neighbors interface

Displays OSPF neighbors for the specified VRF or VRF IDs.

Syntax

```
show ip ospf neighbors interface [vrf <value>] [vrfids
<value>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf port-error

Displays OSPF port error information for the specified VRF or VRF IDs.

Syntax

```
show ip ospf port-error [vrf <value>] [vrfids <value>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf redistribute

Displays the configuration for OSPF route redistribution on all or specific VRFs.

Syntax

```
show ip ospf redistribute [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip ospf stats
Displays OSPF packet statistics for the specified VRF.

Syntax
```
show ip ospf stats [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip rip interface
Displays RIP interfaces on the specified VRF.

Syntax
```
show ip rip interface [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip rip redistribute

Displays the configuration for RIP route redistribution on all or specific VRFs.

Syntax

```
show ip rip redistribute [vrf <value>] [vrfids <value>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ping

Verifies reachability to a specified destination from the VRF.

Syntax

```
ping <IP address> vrf <value>
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip route count-summary

Displays a summary of route table information for the specified VRF or VRF IDs.

Syntax

```
show ip route count-summary [vrf <value>] [vrfids <value>]
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip route
Displays route table information for the specified VRF or VRF IDs.

Syntax
```
show ip route [vrf <value>] [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip vrf
Displays configuration and operational information for the specified VRF.

Syntax
```
show ip vrf <value> [vrfids <value>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

traceroute
Traces the route to the remote host from the specified VRF.

Syntax

```
traceroute <IP address> vrf <value>
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

IPv6 Routing commands

This chapter describes the Nortel Networks command line interface (NNCLI) commands to perform general network management operations on the Nortel Ethernet Routing Switch 8600.

Navigation

- "show ip ospf interface " (page 440)
- "show ipv6 ospf" (page 440)
- "show ipv6 ospf vlan interface" (page 441)
- "show ipv6 ospf int-timers" (page 441)
- "show ipv6 ospf lsdb" (page 442)
- "show ipv6 ospf neighbor" (page 442)
- "show ip ospf interface vlan" (page 442)
- "show ipv6 tunnel" (page 443)

net6-mgmt ipv6

Assign IPv6 addresses to the management port to manage the device.

Syntax

```
net6-mgmt ipv6 <IPv6 address/prefix length>
```

Parameters

Variable	Value
`IPv6 address/prefix length`	Specifies the IPv6 address and prefix length to assign to the management interface.

Default

None

Command mode

Global Configuration Mode

Related commands

None

net6-mgmt ipv6 route

Configure a management route to establish communication between networks.

Syntax

```
net6-mgmt ipv6 route <network IPv6 address>
```

Parameters

Variable	Value
`network IPv6 address`	Specifies the IPv6 address and prefix length of the network to add.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipv6 mgmt-virtual

Configure a system virtual IPv6 address to manage of the SF/CPU Ethernet port in failover situations.

Syntax

ipv6 mgmt-virtual <ipv6address/prefixlen>

Parameters

Variable	Value
ipv6address/prefixlen	Specifies the IPv6 address and prefix length to add to the port. To set this option to the default value, use the **default** operator with the command: **default ipv6 mgmt-virtual**.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan create

Configure a VLAN before you can configure it as an IPv6 VLAN.

Syntax

vlan create <vid> name <value> type <value>

Parameters

Variable	Value
name <value>	Configures a name for the VLAN.

Variable	Value
type <value>	Specifies the type of VLAN to create. The options are: • port [<stgId:1-16>|cist|msti <1-15>] • protocol-ApltkEther2Snap • protocol-decEther2 • protocol-decOtherEther2 • protocol-ipEther2 • protocol-ipv6Ether2 • protocol-ipx802.2 • protocol-ipx802.3 • protocol-ipxEther2 • protocol-ipxSnap • protocol-Netbios • protocol-RarpEther2 • protocol-sna802.2 • protocol-snaEther2 • protocol-Userdef <4096-65534> • protocol-vinesEther2 • protocol-xnsEther2 • ipsubnet-mstprstp <1-63> <A.B.C.D/0-32> [color<1-32>] • port-mstprstp <1-63> <A.B.C.D/0-32> [color<1-32>] [naap-vlan] [firewall-vlan] [firewall-peering-vlan] • protocol-mstprstp <1-63> ip|ipx802dot3|ipx802dot2|ipxSnap|ipxEthernet2|appleTalk|decLat|decOther|sna802dot2|snaEthernet2|netBios|xns|vines|ipV6|usrDefined|rarp|PPPoE [<pid>] [color <1-32>] [encap <value>] • srcmac-mstprstp <1-63> [color <1-32>] • svlan-mstprstp <1-63> [color <1-32>] • ids-mstprstp <1-63> [color <1-32>] • ipsubnet <1-63> <A.B.C.D/mask> [color <1-32>] • srcmac <1-63> [color <1-32>]

Variable	Value
	• svlan <1-63> [color <1-32>] • ids <1-63> [color <1-32>] stgId is the spanning tree group ID. color <value> is the color of the VLAN. The color attribute is used by Optivity software to display the VLAN. pid is a user-defined protocol ID number in hexadecimal format (0–65535). encap <value> is the frame encapsulation method. **ATTENTION** The mstprstp options are available for the Nortel Ethernet Routing Switch 8600 only.
vid	Specifies the VLAN ID (from 1–4094).

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipv6 interface address

Configure an interface as an IPv6 interface to use IPv6 routing on the interface.

Syntax

ipv6 interface address <ipv6 address> vlan <vlan id>

Parameters

Variable	Value
address <ipv6 address>	Configures the IPv6 address and prefix length in the format address/prefix length.
vlan <vlan id>	Specifies the VLAN ID.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
`address-type <1-2>`	1—unicast, 2—anycast
`mtu <bytes>`	Configures the maximum transmission unit for the interface.
`multicast-routing`	Enables or disables MLD.
`reachable-time <ms>`	Configures the time, in milliseconds, a neighbor is considered reachable after receiving a reachability confirmation.
`retransmit-time <ms>`	Configures the time, in milliseconds, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor.

ipv6 interface address vlan

Configure a VLAN as an IPv6 VLAN to use IPv6 routing on the VLAN.

Syntax

`ipv6 interface address <ipv6 address>`

Parameters

Variable	Value
`address <ipv6 address>`	Configures the IPv6 address or prefix length.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interfaces Configuration Mode

Related commands

Variable	Value
`address-type <1-2>`	1—unicast, 2—anycast

Variable	Value
mtu <bytes>	Configures the maximum transmission unit for the interface
multicast-routing	Enables or disables MLD
reachable-time <ms>	Configures the time, in milliseconds, a neighbor is considered reachable after receiving a reachability confirmation
retransmit-time <ms>	Configures the time, in milliseconds, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor

ipv6 icmp error-interval

Configure Internet Control Message Protocol (ICMP) to transport error and information messages within IPv6 packets.

Syntax

ipv6 icmp error-interval <0–2147483647>

Parameters

Variable	Value
error-interval <0 through 2147483647>	Configures the error interval in milliseconds. The interval is the time between transmission of error messages. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
redirect-msg	Configures the administrative status for ICMP redirect messages. Use the **no** operator to remove this configuration. To set this option to

Variable	Value
	the default value, use the **default** operator with the command.
unreach-msg	Configures the administrative status for ICMP unreachable messages. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

ipv6 nd prefix-interface

Configure discovery prefixes to discover link-layer addresses and to obtain and advertise various network parameters and reachability information.

Syntax

```
ipv6 nd prefix-interface < Ipv6address-prefix>
[no-autoconfig <false|true>] [eui <1-3>] [no-advertise]
[no-onlink <false|true>]
```

Parameters

Variable	Value
no-autoconfig <false|true>	If true, the prefix is used for autonomous address configuration.
eui <1-3>	(1) eui (extended unique identifier) not used, (2) eui with U/L (Universal/Local bit) complement enabled, (3) eui used without u/l.
no-advertise	Removes the prefix from the neighbor advertisement. Use the **no** operator to remove this option. Use the **default** operator to set this value to the default setting.
no-onlink <false|true>	If true, onlink determination uses the prefix. This value is placed in the L-bit field in the prefix information option. It is a 1-bit flag.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipv6 nd prefix

Set neighbor discovery prefix parameters.

Syntax

ipv6 nd prefix <prefix/prefix length> [infinite] [no-advertise] [preferred-life <seconds>] [valid-life <seconds>]

Parameters

Variable	Value
infinite	Configures the prefix as infinite.
preferred-life <seconds>	Configures the preferred life, in seconds. The valid range is 0–3600000. Use the **default** operator to set this value to the default setting.
prefix/prefix length	Specifies the IP address and prefix.
valid-life <seconds>	Configures the valid life, in seconds. The valid range is 0–3600000. Use the **default** operator to set this value to the default setting.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipv6 nd

Configure route advertisement to discover potential default routers in a network, and to discover link information.

Syntax

```
ipv6 nd [dad-ns <0-600>] [hop-limit <1-255>] [manag
ed-config-flag] [other-config-flag] [ra-lifetime
<0|4-9000>] [rtr-advert-max-interval <4-1800>]
[rtr-advert-min-interval <3-1350>] [send-ra]
```

Parameters

Variable	Value
dad-ns	The number of neighbor solicitation messages from duplicate address detection. The acceptable range is 0 through 600. A value of 0 disables duplicate address detection on the specified interface. A value of 1 configures a single transmission without follow-up transmissions. Use the **default** operator to set this value to the default setting.
hop-limit	Enter the maximum number of hops before packets drop. Use the **default** operator to set this value to the default setting.
managed-config-flag	Set to true to enable M-bit (managed address configuration) on the router. Use the **no** operator to remove this option. Use the **default** operator to set this value to the default setting.
other-config-flag	Set to true to enable the O-bit (other stateful configuration) in the router advertisement. Other stateful configuration autoconfigures received information without addresses. Use the **no** operator to remove this option. Use the **default** operator to set this value to the default setting.
ra-lifetime	Enter the router lifetime included in router advertisement. Other devices use this information to determine if the router can be reached. The range is 0 or 4–9000. Use the **default** operator to set this value to the default setting.
rtr-advert-max-interva l	Configures the maximum time allowed between sending unsolicited multicast router advertisements.

Variable	Value
rtr-advert-min-interval	Configures the minimum time allowed between sending unsolicited multicast router advertisements from the interface, in seconds. (3–1350 seconds). Use the **default** operator to set this value to the default setting.
send-ra	Enable or disable periodic router advertisement messages. Use the **no** operator to remove this option. Use the **default** operator to set this value to the default setting.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipv6 neighbor

Add neighbors to the cache manually.

Syntax

ipv6 neighbor <ipv6 address> port <slot/port> mac <mac address> vlan <vlan id>

Parameters

Variable	Value
ipv6 address	Specifies the IPv6 address in hexadecimal colon format {string length 0..128}.
mac address	Specifies the MAC address in the following format: {0x00:0x00:0x00:0x00:0x00:0x00}.
slot/port	Specifies the slot and port location to add a neighbor for a brouter port.
vlan id	Specifies the ID of the VLAN to add a neighbor for a VLAN.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipv6 route

Configure IPv6 static routes to change static routes directly with the IPv6 static routing table manager.

Syntax

```
ipv6 route <Ipv6 address/prefix> enable [next-hop <Ipv6
address/prefix>] [port <slot/port>] [tunnel <tunnel-id>]
[vlan <vlan id>]
```

Parameters

Variable	Value
`enable [next-hop <Ipv6 address/prefix>]`	Adds a static or default route to the switch. • `ipv6address/prefix` is the IP address and prefix for the route destination as a string 0–46 characters. • `next-hop <value>` is the IP address of the next-hop router; the next router at which packets must arrive on this route. The string length is 0–46 characters. When creating a black hole static route, set this field to 255.255.255.255 as the IP address of the router through which the specified route is accessible.
`port <value>`	Specifies the slot and the port number.
`vlan <value>`	Specifies the VLAN ID in the range of 1–4094.
`tunnel <value>`	configures the tunnel ID in the range of 1–2 147 483 647.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
cost <1-65535>	Specifies the metric of the route in the range of 1–65 535.
preference <1-255> <ipv6addr-prefix> next-hop <value>	Modifies static route preference. • **<1-255>** configures the route preference in the range of 1–255. • **ipv6addr-prefix** is the IP address and prefix for the route destination as a string 0–46 characters. • **next-hop <value>** is the IP address of the next-hop router; the next router at which packets must arrive on this route. The string length is 0–46 characters. **ATTENTION** A black hole route is a route with an invalid next hop, so the switch drops data packets destined to this network. When you specify a route preference, be sure that you configure the preference value appropriately so that when the black -hole route is used, it is elected as the best route.

router ospf ipv6-enable

Enable OSPF to affect OSPF routing on the entire switch.

Syntax

router ospf ipv6-enable

Parameters

Variable	Value
ipv6-enable	Enables the OSPF for ipv6.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipv6 as-boundary-router enable

Enable the OSPF autonomous system boundary router for ipv6.

Syntax

```
ipv6 as-boundary-router enable
```

Parameters

Variable	Value
`as-boundary-router enable`	Enables the OSPF autonomous system boundary router.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Interface Configuration Mode

Related commands

Variable	Value
`area`	Configures the IPv6 OSPF area.
`redistribute`	Enables the IPv6 redistributing policy.
`router id <A.B.C.D>`	Configures the OSPF router ID IPv6 address.
`tunnel`	Configures the OSPF tunnel parameters.

ipv6 area

Create and configure an OSPF area.

Syntax

```
ipv6 area <A.B.C.D> default-cost <cost> import <value>
[import-summaries enable] translator-role <value> type
<nssa|stub>
```

Parameters

Variable	Value
default-cost <cost>	Stub default metric for this stub area. **cost** is the range from 0 to 16777215. This is the metric value applied at the indicated type of service. To set this option to the default value, use the **default** operator with the command.
import <value>	Configures the area support for importing advertisements. The options are: • external—Stub and nssa are both false • noexternal—Set the area as stub area • nssa—Set the area as nssa To set this option to the default value, use the **default** operator with the command.
import-summaries enable	Configures the area support for importing summary advertisements into a stub area. Use this entry only for a stub area. To set this option to the default value, use the **default** operator with the command.
translator-role <value>	Indicates an NSSA Border router ability to perform translation of type-7 LSAs into type-5 LSAs Default is 1, the candidate value is 2.
type <nssa|stub>	Configures the type of area. An NSSA prevents flooding of normal route advertisements into the area by replacing them with a default route. A stub area uses only one exit point (router interface) out of the area.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

ipv6 area range

Configure an area address range on the OSPF router to reduce the number of ABR advertisements into other OSPF areas.

Syntax

```
ipv6 area range <A.B.C.D> <Ipv6 address/prefix>
<inter-area-prefix-link|nssa-extlink> advertise-mode
<advertise|not-advertise>] advertise-metric <0-65535>
```

Parameters

Variable	Value
`A.B.C.D`	Specifies the IP address of the area.
`advertise-metric <0-65535>`	Specifies the advertise metric value and LSA type.
`advertise-mode <advertise|not-advertise>`	Specifies the area range advertise mode as `advertise` or `not-advertise`.
`ipv6addrress/prefix`	Configures the IPv6 address range of an OSPF area. The string length is 0–255 characters.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

ipv6 area virtual-link

Configure an OSPF virtual interface to the ABR if a remote OSPF ABR uses no connection to the backbone area but needs to be part of the same routing domain (AS) in which the switch resides.

Syntax

```
ipv6 area virtual-link <area IP address> <virtual link IP
address> dead-interval <seconds> hello-interval <seconds>
retransmit-interval <seconds> transit-delay <seconds>
```

Parameters

Variable	Value
dead-interval <seconds>	Specifies the dead interval, in seconds, as a range 1–4 095. To set this option to the default value, use the **default** operator with the command.
hello-interval <seconds>	Specifies the Hello interval, in seconds, sent between switches for a virtual interface in an OSPF area. The range is 1–65535. To set this option to the default value, use the **default** operator with the command.
retransmit-interval <seconds>	Specifies the retransmit interval, in seconds, sent between switches for a virtual interface in an OSPF area. The range is 1–1800. To set this option to the default value, use the **default** operator with the command.
transit-delay <seconds>	Specifies the transit delay interval, in seconds, sent between switches for a virtual interface in an OSPF area. The range is 1–1800. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

ipv6 ospf area

Configure an OSPF interface for designated router (DR) and backup designated router (BDR) election to reduce the amount of routing traffic.

Syntax

```
ipv6 ospf area <A.B.C.D> cost <metric> [dead-interval
<seconds>] [hello-interval <seconds>] [network
<value>] [priority <value>] [retransmit-interval
<seconds>] [transit-delay <seconds>]
```

Parameters

Variable	Value
area <A.B.C.D>	Specifies the area IP address (0.0.0.0 to 255.255.255.255) {a.b.c.d}.
cost <metric>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. • **metric** is the range 0–65535. To set this option to the default value, use the **default** operator with the command.
dead-interval <seconds>	Configures the OSPF dead interval for the interface. • **seconds** is the number of seconds the switch OSPF neighbors wait before determining that this OSPF router is down. The range is from 1–4095. This value must be at least four times the Hello interval value. The default is 40. To set this option to the default value, use the **default** operator with the command.
hello-interval <seconds>	Configures the OSPF hello interval for the interface. • **seconds** is the number of seconds between hello packets sent on this interface. The range is 1–65535. The default is 10. **ATTENTION** When you change the hello interval values, you must save the configuration file and reboot the switch for the values to be restored and checked for consistency. To set this option to the default value, use the **default** operator with the command.
network <value>	Configures the type of interface. The choices are: • eth—broadcast • nbma—NBMA • p2mp—point-to-multipoint • p2p—point-to-point

Variable	Value
poll-interval <seconds>	Configures the polling interval for the OSPF interface in seconds. • **seconds** is 0–2147483647. To set this option to the default value, use the **default** operator with the command.
priority <value>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. • **value** is in the range 0–255. The default is 1. To set this option to the default value, use the **default** operator with the command.
retransmit-interval <seconds>	Configures the retransmit interval for the OSPF interface; the number of seconds between link-state advertisement retransmissions. • **seconds** is an integer between 1–1 800. To set this option to the default value, use the **default** operator with the command.
transit-delay <seconds>	Configures the transit delay time for the OSPF interface, the estimated time in seconds it takes to transmit a link-state update packet over the interface. • **seconds** is an integer between 1–1 800. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipv6 ospf enable

Enable OSPF on the interface.

Syntax

`ipv6 ospf enable`

Parameters

Variable	Value
`enable`	Enables the OSPF on the ipv6 interface.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
`cost <metric>`	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. • **`metric`** is the range 0–65535. To set this option to the default value, use the **`default`** operator with the command.

Variable	Value
dead-interval <seconds>	Configures the OSPF dead interval for the interface. • **seconds** is the number of seconds the switch OSPF neighbors wait before determining that this OSPF router is down. The range is from 1–4095. This value must be at least four times the Hello interval value. The default is 40. To set this option to the default value, use the **default** operator with the command.
hello-interval <seconds>	Configures the OSPF hello interval for the interface. • **seconds** is the number of seconds between hello packets sent on this interface. The range is 1–65535. The default is 10. **ATTENTION** When you change the hello interval values, you must save the configuration file and reboot the switch for the values to be restored and checked for consistency. To set this option to the default value, use the **default** operator with the command.
poll-interval <seconds>	Configures the polling interval for the OSPF interface in seconds. • **seconds** is 0–2147483647. To set this option to the default value, use the **default** operator with the command.
priority <value>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the

Variable	Value
	designated router or a backup. The priority is used only during election of the designated router and backup designated router. • **value** is in the range 0–255. The default is 1. To set this option to the default value, use the **default** operator with the command.
retransmit-interval <seconds>	Configures the retransmit interval for the OSPF interface; the number of seconds between link-state advertisement retransmissions. • **seconds** is an integer between 1–1 800. To set this option to the default value, use the **default** operator with the command.
transit-delay <seconds>	Configures the transit delay time for the OSPF interface, the estimated time in seconds it takes to transmit a link-state update packet over the interface. • **seconds** is an integer between 1–1 800. To set this option to the default value, use the **default** operator with the command.

ipv6 redistribute direct

Enable or disable direct and static redistribution to redistribute IPv6 direct and static routes into an OSPFv3 routing domain.

Syntax

ipv6 redistribute direct enable

Parameters

Variable	Value
static enable	Enables or disables static redistribution to redistribute IPv6 static routes.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

ipv6 ospf nbma-nbr

Configure port-based OSPFv3 neighbor parameters for specified ports to customize your OSPF IPv6 configuration.

Syntax

ipv6 ospf nbma-nbr <Ipv6address/prefix-len> priority <priority>

Parameters

Variable	Value
Ipv6address/prefix-len	Specifies the IPv6 address of the neighbor as a string of 0–43.
priority <priority>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The range is 0 to 255. The default is 1. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipv6 ospf area vlan

Configure OSPFv3 parameters for a specified VLAN to customize your OSPF IPv6 configuration.

Syntax

```
ipv6 ospf area <A.B.C.D> cost <metric> [dead-interval
<seconds>] [hello-interval <seconds>] [network
<value>] [priority <value>] [retransmit-interval
<seconds>] [transit-delay <seconds>]
```

Parameters

Variable	Value
area <A.B.C.D>	Specifies the area IP address (0.0.0.0 to 255.255.255.255) {a.b.c.d}.
cost <mtric>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. • **metric** is the range 0–65535. To set this option to the default value, use the **default** operator with the command.
dead-interval <seconds>	Configures the OSPF dead interval for the interface. • **seconds** is the number of seconds the switch OSPF neighbors wait before determining that this OSPF router is down. The range is from 1–4095. This value must be at least four times the Hello interval value. The default is 40. To set this option to the default value, use the **default** operator with the command.
hello-interval <seconds>	Configures the OSPF hello interval for the interface. • **seconds** is the number of seconds between hello packets sent on this interface. The range is 1–65 535. The default is 10. **ATTENTION** When you change the hello interval values, you must save the configuration file and

Variable	Value
	reboot the switch for the values to be restored and checked for consistency. To set this option to the default value, use the **default** operator with the command.
network <value>	Configures the type of interface. The choices are: • eth—broadcast • nbma—NBMA • p2mp—point-to-multipoint • p2p—point-to-point
poll-interval <seconds>	Configures the polling interval for the OSPF interface in seconds. • **seconds** is between 0–2147483647. To set this option to the default value, use the **default** operator with the command.
priority <value>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. • **value** is in the range 0–255. The default is 1. To set this option to the default value, use the **default** operator with the command.

Variable	Value
retransmit-interval <seconds>	Configures the retransmit interval for the OSPF interface; the number of seconds between link-state advertisement retransmissions. • **seconds** is an integer between 1–1800. To set this option to the default value, use the **default** operator with the command.
transit-delay <seconds>	Configures the transit delay time for the OSPF interface, the estimated time in seconds it takes to transmit a link-state update packet over the interface. • **seconds** is an integer between 1–1800. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ipv6 ospf nbma-nbr vlan

Configure port-based OSPFv3 neighbor parameters for specified ports on VLAN to customize your OSPF IPv6 configuration.

Syntax

ipv6 ospf nbma-nbr <Ipv6address/prefix-len> priority <priority>

Parameters

Variable	Value
`Ipv6address/prefix-len`	Specifies the IPv6 address of the neighbor as a string of 0–43.
`priority <priority>`	Configures the OSPF priority for the VLAN during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. The range is 0 to 255. The default is 1. To set this option to the default value, use the **`default`** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ipv6 ospf enable vlan

Enable OSPF on a VLAN.

Syntax

`ipv6 ospf enable`

Parameters

Variable	Value
`enable`	Enables the OSPF on the ipv6 VLAN interface.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
cost <metric>	Configures the OSPF metric for the VLAN. The switch advertises the metric in router link advertisements. • **metric** is the range 0–65535. To set this option to the default value, use the **default** operator with the command.
dead-interval <seconds>	Configures the OSPF dead interval for the VLAN. • **seconds** is the number of seconds the switch OSPF neighbors wait before determining that this OSPF router is down. The range is from 1-4095. This value must be at least four times the Hello interval value. The default is 40. To set this option to the default value, use the **default** operator with the command.
hello-interval <seconds>	Configures the OSPF hello interval for the VLAN. • **seconds** is the number of seconds between hello packets sent on this interface. The range is 1–65535. The default is 10. **ATTENTION** When you change the hello interval values, you must save the configuration file and reboot the switch for the values to be restored and checked for consistency. To set this option to the default value, use the **default** operator with the command.
poll-interval <seconds>	Configures the polling interval for the OSPF VLAN interface in seconds. • **seconds** is 0–2147483647. To set this option to the default value, use the **default** operator with the command.

Variable	Value
priority <value>	Configures the OSPF priority for the VLAN during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. • **value** is in the range 0–255. The default is 1. To set this option to the default value, use the **default** operator with the command.
retransmit-interval <seconds>	Configures the retransmit interval for the OSPF VLAN; the number of seconds between link-state advertisement retransmissions. • **seconds** is an integer between 1–1 800. To set this option to the default value, use the **default** operator with the command.
transit-delay <seconds>	Configures the transit delay time for the OSPF VLAN interface, the estimated time in seconds it takes to transmit a link-state update packet over the interface. • **seconds** is an integer between 1–1 800. To set this option to the default value, use the **default** operator with the command.

ipv6 tunnel

Create a tunnel to transfer traffic between IPv6 devices in an IPv4 network. Configure manual tunnels when you want to define both the local and destination addresses.

Syntax

ipv6 tunnel <tunnel id> source <A.B.C.D> address <ipv6 address/prefix-len> destination <A.B.C.D>

Parameters

Variable	Value
address <ipv6 address/prefix-len>	Configures the local address for the tunneled device in IPv6/prefix-length format.
destination <A.B.C.D>	Configures the address for the device that is tunneled to in IPv4 or IPv6/prefix-length format.
source <A.B.C.D>	Configures the address for the local device.
tunnel id	Specifies the ID number of the tunnel in the range of 1–2147483647.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
hop-limit <value>	Configures the maximum number of hops that a packet can make before it is dropped. • **value** is in the range 0–255. To set this option to the default value, use the **default** operator with the command.

ipv6 tunnel vlan

Configure OSPF on a VLAN or brouter tunnel to create a dynamic IPv6 tunnel on the OSPF interface.

Syntax

```
ipv6 tunnel <tunnel id> [dead-interval <seconds>]
enable [hello-interval <seconds>] [metric <value>]
[poll-interval <seconds>] [priority <value>]
[retransmit-interval <seconds>] [transit-delay <seconds>]
```

Parameters

Variable	Value
area <A.B.C.D>	Configures the area IP address (0.0.0.0 to 255.255.255.255) {a.b.c.d}.

Variable	Value
dead-interval <seconds>	Configures the OSPF dead interval for the interface. • **seconds** is the number of seconds the switch OSPF neighbors wait before determining that this OSPF router is down. The range is from 1-4095. This value must be at least four times the hello interval value. The default is 40. To set this option to the default value, use the **default** operator with the command.
enable	Configures the state (enabled or disabled) of the OSPF interface. To set this option to the default value, use the **default** operator with the command.
hello-interval <seconds>	Configures the OSPF Hello interval for the interface. • **seconds** is the number of seconds between hello packets sent on this interface. The range is 1–65535. The default is 10. **ATTENTION** When you change the hello interval values, you must save the configuration file and reboot the switch for the values to be restored and checked for consistency. To set this option to the default value, use the **default** operator with the command.
metric <value>	Configures the OSPF metric for the interface. The switch advertises the metric in router link advertisements. • **value** is the range 0–65535. To set this option to the default value, use the **default** operator with the command.
poll-interval <seconds>	Configures the polling interval for the OSPF interface in seconds. • **seconds** is between 1–2 147 483 647. To set this option to the default value, use the **default** operator with the command.

Variable	Value
priority <value>	Configures the OSPF priority for the interface during the election process for the designated router. The interface with the highest priority number is the designated router. The interface with the second-highest priority becomes the backup designated router. If the priority is 0, the interface cannot become either the designated router or a backup. The priority is used only during election of the designated router and backup designated router. • **value** is in the range 0–255. The default is 1. To set this option to the default value, use the **default** operator with the command.
retransmit-interval <seconds>	Configures the retransmit interval for the OSPF interface; the number of seconds between link-state advertisement retransmissions. • **seconds** is an integer between 1–1800. To set this option to the default value, use the **default** operator with the command.
transit-delay <seconds>	Configures the transit delay time for the OSPF interface, the estimated time in seconds required to transmit a link-state update packet over the interface. • **seconds** is an integer between 1–1800. To set this option to the default value, use the **default** operator with the command.
tunnel-id	Specifies the ID number of the tunnel in the range of 1–2147483647.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

ipv6 multicast-routing

Enable the router for multicast traffic to enable MLD globally.

Syntax

ipv6 multicast-routing

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipv6 interface multicast-routing

Configure a VLAN for multicast traffic to enable MLD on the VLAN.

Syntax

ipv6 interface multicast-routing [reachable-time <value>] [retransmit-timer <value>]

Parameters

Variable	Value
reachable-time <value>	Configures the reachable time, in milliseconds, for the interface. The range is 0–3600000.
retransmit-timer <value>	Configures the time between attempts to transmit multicast packets, in milliseconds, for the interface. The range is 0–3600000.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ipv6 mld

Configure Multicast Listener Discovery (MLD) on a VLAN to customize the configuration.

Syntax

```
ipv6 mld [last-memb-query-int <value>] [query-interval
<value>] [query-max-response-time <value>] [robustval
<value>] [version <1|2>]
```

Parameters

Variable	Value
`last-memb-query-int <value>`	Configures the query interval time in 1/10 of a second for the last member. • `value` is in the range 0–65535.
`query-interval <value>`	Configures the maximum query response time advertised in MLD queries on this interface. • `value` is in the range 0–65535.
`query-max-response-time <value>`	Configures the query interval time in 1/10 of a second for the last member. • `value` is in the range 0–65535.
`robustval <value>`	Configures the robustness value. • `value` is in the range 0–65535.
`version <1|2>`	Configures the version of MLD to version 1 or version 2.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ipv6 interface multicast-routing brouter

Configure multicasting on a brouter port to enable MLD on the port.

Syntax

```
ipv6 interface multicast-routing [reachable-time <value>]
[retransmit-timer <value>]
```

Parameters

Variable	Value
`reachable-time <value>`	Configures the reachable time, in milliseconds, for the interface. The range is 0-3600000.
`retransmit-timer <value>`	Configures the time between attempts to transmit multicast packets, in milliseconds, for the interface. The range is 0-3600000.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipv6 mld brouter

Configure MLD on a brouter port to customize the configuration.

Syntax

```
ipv6 mld [last-memb-query-int <value>] [query-interval
<value>] [query-max-response-time <value>] [robustval
<value>] [version <1|2>]
```

Parameters

Variable	Value
`last-memb-query-int <value>`	Configures the query interval time in 1/10 of a second for the last member. • `value` is in the range 0–65535.
`query-interval <value>`	Configures the query interval time in 1/10 of a second. • `value` is in the range 0–65535.

Variable	Value
`query-max-response-time <value>`	Configures the maximum query response time advertised in MLD queries on this interface. • `value` is in the range 0–65535.
`robustval <value>`	Configures the robustness value. • `value` is in the range 0–65535.
`version <1|2>`	Configures the version of MLD to version 1 or version 2.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

filter act

Configure an access control template (ACT) to create, delete, apply, and specify attributes. After you apply the ACT you cannot change the attributes.

Syntax

`filter act <act-id>`

Parameters

Variable	Value
`act-id`	Specifies an ACT ID in the range 1–4096. **ATTENTION** In the Nortel Ethernet Routing Switch 8600, act-id acts as an index to the ACT table. Thus, you can change the name at any time, even after you apply it. To set this option to the default value, use the `default` operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`arp <operation>`	Specifies the permitted ARP attributes for the ACT template. The list of allowed attributes must be separated by commas and includes [operation]
`ethernet <word>`	Specifies the permitted Ethernet attributes for the ACT template. The list of allowed attributes must be separated by commas and includes [none | srcMac, dstMac, etherType, [portvlan], vlanTagPrio]. **ATTENTION** 1. You can select port or vlan-id, but not both. 2. If you select none: — The entry deletes the Ethernet node. — The entry prevents you from selecting any other attribute choices.
`ip <word>`	Specifies the permitted IP attributes for the ACT template. The list of allowed attributes must be separated by commas and includes [none | srcIp, dstIp, ipFragFlag, ipOptions, ipProtoType, dscp].
`ipv6 <word>`	Specifies the permitted IPv6 for the ACT template. The list of allowed attributes must be separated by commas and includes [none | srcIpv6, dstIpv6, nextHdr]

Variable	Value
name <word>	Specifies a name for the ACT. **<word>** is an optional parameter that specifies a name for the ACT using 0–32 characters. If you do not enter a name, a default name is generated, for example, ACT-1 for act-id = 1.
protocol <word>	Specifies the permitted protocol attributes for the ACT template. The list of allowed attributes must be separated by commas and includes [none | tcpSrcPort, udpSrcPort, tcpDstPort, udpDstPort, tcpFlags, icmpMsgFlags]

filter act pattern

Create a template for patterns within an ACT. You can associate a maximum of three patterns with an ACT.

Syntax

filter act pattern <act-id> <word> <base> <offset> <length>

Parameters

Variable	Value
act-id	Specifies an ACT ID in the range of 1–4096.
<base> <offset> <length>	Adds a template for patterns you create. Options here include: • base: the base and the offset together determine the beginning of the pattern. Permitted values for the base include the following: — ether-begin — mac-dst-begin — mac-src-begin — ethTypeLen-begin — arp-begin — ip-hdr-begin — ip-options-begin — ip-payload-begin — ip-tos-begin — ip-proto-begin — ip-src-begin

Variable	Value
	— ip-dst-begin — ipv6-hdr-begin — tcp-begin — tcp-srcport-begin — tcp-dstport-begin — tcp-flags-end — udp-begin — udp-srcport-begin — udp-dstport-begin — ether-end — ip-hdr-end — icmp-msg-begin — tcp-end — udp-end • offset: the number of bits from the base where the pattern starts. This is a range from 0–76800. • length: the length in bits of the user-defined field from 1–56.
name <pattern-name>	Renames the pattern with a new name that you define. Each of the three patterns must use a unique name.
word	Specifies a name for the pattern in the range of 1–32 characters. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter apply act

After you create and configure the ACT, apply it to implement the configuration.

Syntax

filter apply act <act-id>

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl

Configure access control lists (ACL) to create rules for the ACT.

Syntax

filter acl <acl-id> type <inVlan|outVlan|inPort|outPort> act <act-id> pktType <ipv4|ipv6> name <word>

Parameters

Variable	Value
acl-id	Specifies an ACL ID in the range 1–4096.
act <act-id>	Specifies the ACT ID to associate with the ACL.
enable	Enables the ACL state along with all of the ACEs below it. Enable is the default state for the ACL.
name <word>	Renames an ACL. To set this option to the default value, use the **default** operator with the command.
pktType <ipv4|ipv6>	Configures the packet type for the ACL. **ATTENTION** The pktType field is optional for IPv4 traffic filters. It is required if you apply the ACL to IPv6 packets.
type <inVlan|outVlan|inPort|outPort>	Configures the type of ACL.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl set

Set global and default actions for an ACL to apply the configuration globally.

Syntax

filter acl set <acl-id> default-action <value>

Parameters

Variable	Value
acl-id	Specifies an ACL ID in the range of 1–4096.
default-action <value>	Specifies the default action when no ACEs match. Permitted options include [deny|permit], with a default of permit. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
global-action <value>	Specifies the global action for the matching ACEs. Permitted options include [none|count|count-ipfix|ipfix|mirror|mirror-count|mirror-count-ipfix|mirror-ipfix]. The default is none. To set this option to the default value, use the **default** operator with the command.

filter acl vlan

Associate or remove VLANs for a particular ACL.

Syntax

filter acl vlan <acl-id> <vlan-id>

Parameters

Variable	Value
acl-id	Specifies an ACL ID in the range of 1–4096. To set this option to the default value, use the **default** operator with the command.
vlan-id	Associates a VLAN or a VLAN list with a particular ACL. Format a list of VLANs separated by a comma or a range of VLANs specified as low-high [vlan-id -vlan-id]. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl port

Associate or remove ports for a particular ACL.

Syntax

filter acl port <acl-id> <port>

Parameters

Variable	Value
acl-id	Specifies an ACL ID in the range 1–4096.
port	Associates a port or a port list with a particular ACL. Format a list of ports separated by a comma or a range of ports specified as low-high [slot/port -slot/port].

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl ace ipv6

Add an ACE with IP header attributes as match criteria.

Syntax

```
filter acl ace ipv6 <acl-id> <ace-id> [dst-ipv6 eq <word>]
[nxt-hdr <eq|ne> <next-header>] [src-ipv6 eq <word>]
```

Parameters

Variable	Value
ace-id	Specifies an ACE ID in the range 1–1000. To set this option to the default value, use the **default** operator with the command.
acl-id	Specifies an ACL ID in the range 1–4096. To set this option to the default value, use the **default** operator with the command.
dst-ipv6 eq <word>	Specifies the following: • an operator for a field match condition—eq • the list of destination IPv6 addresses separated by commas
nxt-hdr <eq|ne> <nxt-hdr>	Specifies the following: • an operator for a field match condition (eq | ne) • the next header value from one of the following: fragment|hop-by-hop|icmpv6|ipsecah|ipsecesp|noHdr|routing|tcp|udp|undefined
src-ipv6 eq <word>	Specifies the following: • an operator for a field match condition—eq • the list of source IPv6 addresses separated by commas

Default

None

Command mode

Global Configuration Mode

Related commands

None

ping

Ping a device so that the switch sends an Internet Control Message Protocol (ICMP) packet to the target device.

Syntax

ping <HostName/ipv4address/ipv6address> [scopeid <value>] [datasize <value>] [count <value>] [-s] [-I <value>] [-t <Value>] [-d]

Parameters

Variable	Value
count <value>	Configures the number of times to ping (for IPv4/IPv6). The range is 1–9 999. **ATTENTION** To specify a count for the ping operation, you must also specify a size. For example,**ping 8888:0:0:0:0:0:0:1**
-d <value>	Configures ping debugging (for IPv4/IPv6).
datasize <value>	Configures the size of ping data sent in bytes, for IPv4:16–4076, for IPv6: 16-65487.
HostName/ipv6address	Specifies the host name or IPv6 (x:x:x:x:x:x:x:x) address {string length 1–256}.
-I <value>	Configures the interval between transmissions in seconds (1–60).
-s	Configures the continuous ping at the interval rate defined by the **[-I]** parameter (for IPv4/IPv6).
scopeid <value>	Configures the circuit ID (for IPv6) (1–9999).
-t <value>	Configures the no answer timeout value (for IPv4/IPv6) {1–120}.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show filter acl ace

Display information about ACLs or ACEs.

Syntax

```
show filter acl ace <acl-id> <ace-id>
```

Parameters

Variable	Value
ace-id	Specifies a unique identifier (in the range 1 through 1000) for this ACE entry.
acl-id	Specifies a unique identifier (in the range 1 through 4096) for this ACL entry.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show filter act

Display ACT data.

Syntax

```
show filter act [<act-id>]
```

Parameters

Variable	Value
act-id	Specifies a unique identifier (in the range 1 through 4096) for this ACT entry.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show filter act-pattern

Display ACT pattern data.

Syntax

```
show filter act-pattern [act-id]
```

Parameters

Variable	Value
act-id	Specifies a unique identifier (in the range 1 through 4096) for this ACT entry.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ports statistics ospf main

Display basic OSPF information about the specified port or for all ports.

Syntax

```
show ports statistics ospf main <ports>
```

Parameters

Variable	Value
<ports>	Specifies the port or range of ports configured in the format slot/port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show routing statistics interface

Display extended OSPF information about the specified port or for all ports.

Syntax

```
show routing statistics interface <interface> [slot/port]
```

Parameters

Variable	Value
`interface`	Specifies the interface type for which to report statistics. The options include fastethernet and gigabitethernet.
`slot/port`	Specifies a particular slot and port or list of ports for which to provide results. If you omit a specific port or port list, results include all ports on the interface type.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 interface

View the output of all configured interfaces.

Syntax

```
show ipv6 interface [<interface-type>] [<interface-id>]
[<interface-index>]
```

Parameters

Variable	Value
`interface-id`	Specifies the interface ID.
`interface-index`	Specifies the index from 1 to 4096.
`interface-type`	Specifies the type of interface if you want to limit the output. The options are fastEthernet, gigabitEthernet, icmpstatistics, statistics, or vlan.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 route static

Display the existing IPv6 static routes for the switch or for a specific net or subnet.

Syntax

show ipv6 route static

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 mld-cache interface

Display the MLD cache for a brouter port, VLAN, or group address.

Syntax

show ipv6 mld-cache interface <interface-type> <interface-id> [grp-address <0-46>] [detail]

Parameters

Variable	Value
grp-address	Specifies the group address to display.
interface-id	Specifies the interface ID.
interface-type	Specifies the type of interface if you want to limit the output. The options are fastEthernet, gigabitEthernet, or vlan.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 mld interface

Display configuration details for all MLD interfaces.

Syntax

```
show ipv6 mld interface [<interface-type> <interface-id>]
[detail]
```

Parameters

Variable	Value
`interface-id`	Specifies the interface ID.
`interface-type`	Specifies the type of interface if you want to limit the output. The options are fastEthernet, gigabitEthernet, or vlan.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 neighbor

View entries in the neighbor cache.

Syntax

```
show ipv6 neighbor [<ipv6addr>] [type {other|dynamic|stati
c|local}] [interface <interface-type> <interface-id>]
```

Parameters

Variable	Value
`interface-id`	Specifies the interface ID.
`interface-type`	Specifies the type of interface if you want to limit the output. The options are fastEthernet, gigabitEthernet, or vlan.
`type`	Specifies the type of mapping as one of the following: • other • dynamic • static • local

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipv6 nd-prefix interface
View all configured neighbor discovery prefixes.

Syntax
```
show ipv6 nd-prefix interface <interface-type>
<interface-id>]
```

Parameters

Variable	Value
`interface-id`	Specifies the interface ID.
`interface-type`	Specifies the type of interface if you want to limit the output. The options are fastEthernet, gigabitEthernet, or vlan.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipv6 ospf area
Display information about OSPF area parameters.

Syntax
```
show ipv6 ospf area
```

Parameters
None

Default
None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf interface

Display information about the OSPF parameters of the specified port or all ports.

Syntax

```
show ip ospf interface [<interface-type>] [<interface-id>]
[vrf <WORD/1-16>] [vrfids <0-255>]
```

Parameters

Variable	Value
`interface-id`	Specifies the interface ID.
`interface-type`	Specifies the type of interface if you want to limit the output. The options are fastethernet, gigabitethernet, pos, or vlan.
`vrf <WORD/1-16>`	Dispays OSPF configuration for a particular virtual router and forwarder (VRF).
`vrfids <0-255>`	Specifies the VRF ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 ospf

Display the current OSPF settings for the switch.

Syntax

```
show ipv6 ospf
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipv6 ospf vlan interface
Display information about the OSPF interface.

Syntax
show ipv6 ospf interface [{vlan|fastEthernet|gigabitEthernet} {vlan-id|slot/port}]

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipv6 ospf int-timers
Display OSPF interface timer settings.

Syntax
show ipv6 ospf int-timers

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipv6 ospf lsdb

Display the OSPF link-state database (LSDB) table.

Syntax

```
show ipv6 ospf lsdb [scope <1-3>] [tunnel <1-2147483647>]
[area <A.B.C.D>] [lsa-type <1-8>] [adv-rtr <A.B.C.D>]
[lsid <0-4294967295>] [detail]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 ospf neighbor

Display OSPF neighbors configuration information.

Syntax

```
show ipv6 ospf neighbor
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf interface vlan

View OSPFv3 information for VLANs.

Syntax

```
show ip ospf interface vlan <vlan-id>
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipv6 tunnel

Display the general tunnel information.

Syntax

```
show ipv6 tunnel [<tunnel-id>] [local <A.B.C.D>] [remote
<A.B.C.D>] [detail]
```

Parameters

Variable	Value
`detail`	Displays address information in addition to basic tunnel information.
`tunnel-id`	Specifies the ID number of the tunnel in the range 1 through 2 147 483 647.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

IPX Routing commands

This chapter describes the Nortel Command Line Interface (NNCLI) commands to help you configure Internet Packet Exchange (IPX) on the Ethernet Routing Switch 8600.

Navigation

ipx network brouter interface

Configure an IPX brouter interface to support IPX routing on an Ethernet port.

Syntax

```
ipx network <ipxnetnum> <1-4094> encapsulation [mac_offset
<0-65535>] [tick <1-2147483647>]
```

Parameters

Variable	Value
`encapsulation`	Sets the encapsulation type as one of the following: • `ethernet-ii` • `snap` • `llc` • `raw`

Variable	Value
<IPX network-number>	Specifies the network address value.
[mac_offset <value>]	Manually changes the default media access control (MAC) address for a logical or physical interface. The value is an integer in the range of 0 to 65 535. The default is the next available value.
[tick <value>]	Specifies the value that determines the best route for the IPX routed Virtual Local Area Network (VLAN). The lower the tick value the better the route. Enter a tick value in the range of 1 to 2 147 483 647. The default value is 1.
<1-4094>	Specifies the VLAN ID in the range of 1 to 4 094.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ipx network vlan interface

Configure an IPX VLAN interface to create a VLAN for IPX routing.

Syntax

ipx network <ipxnetnum> encapsulation [mac_offset <0-65535>] [tick <1-2147483647>]

Parameters

Variable	Value
encapsulation	Sets the encapsulation type as one of the following: • **ethernet-ii** • **snap** • **llc** • **raw**

Variable	Value
`<IPX network-number>`	Specifies the network address value.
`[mac_offset <value>]`	Manually changes the default media access control (MAC) address for a logical or physical interface. The value is an integer in the range of 0 to 65 535. The default is the next available value.
`[tick <value>]`	Specifies the value that determines the best route for the IPX routed Virtual Local Area Network (VLAN). The lower the tick value the better the route. Enter a tick value in the range of 1 to 2 147 483 647. The default value is 1.
`<1-4094>`	Specifies the VLAN ID in the range of 1 to 4 094.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ipx forwarding

Configure IPX forwarding to enable, disable, or view the current configuration of IPX forwarding globally or on a specified IPX network.

Syntax

```
ipx forwarding [<ipxnetnum>]
```

Parameters

Variable	Value
`[<ipxnetnum>]`	Specifies the IPX network number {0x00000000 | 00:00:00:00 | <value> }.

Default

None

Command mode
Global Configuration Mode

Related commands
None

show ipx basic
View the current IPX configuration.

Syntax
show ipx basic

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

ipx rip
Configure the IPX Routing Information Protocol (RIP) on an IPX interfaces to set the IPX RIP interface.

Syntax
ipx rip

Parameters

Variable	Value
default-interval<interval-timer>	Configures the interval timer default values in seconds in the range of 1 to 2 147 483 647. The default is 60 seconds.
default-multiplier<hold-multiplier>	Configures the hold multiplier default value in the range of 1 to 2 147 483 647. The default is 3.
default-output-delay <1-1000>	Configures the default output-delay timer in the range of 1 to 1000.

Variable	Value
`multiplier [<ipxnetnum>]`	Configures the RIP multiplier.
`output-delay [<ipxnetnum>]`	Configures the output-delay timer.
`state [<ipxnetnum>]`	Changes the RIP state.
`update-interval [<ipxnetnum>]`	Configures the update-interval timer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipx sap service

Configure the IPX Service Advertisement Protocol (SAP) on an IPX interface to provide a name resolution mechanism for clients to resolve the addresses of services on an IPX internetwork.

Syntax

```
ipx sap service <0-65535|0x0-0xffff> <WORD/1-47>
<0x00:0x00:0x00:0x00.0x00:0x00:0x00:0x00:0x00:0x00>
<1-15>
```

Parameters

Variable	Value
`<WORD/1-47>`	Specifies the service name.
`<0-65535|0x0-0xffff>`	Specifies the service type.
`<0x00:0x00:0x00:0x00.0x00:0x00:0x00:0x00:0x00>`	Specifies the PT_IPXHOST.

Default
None

Command mode
Global Configuration Mode

Related commands
None

ipx maximum-routes
Configure an IPX set to determine how IPX operates.

Syntax
ipx maximum-routes <128-8000>

Parameters

Variable	Value
<128-8000>	Configures a value for maximum-routes.

Default
None

Command mode
Global Configuration Mode

Related commands
None

ipx routing-method
Enable the IPX routing method globally to assign the routing method to ticks or hops.

Syntax
ipx routing-method {tick|hop}

Parameters

Variable	Value
hop	Configures the routing method to hops.
tick	Configures the routing method to tick.

Default
None

Command mode

Global Configuration Mode

Related commands

None

ipx static-route

Configure an IPX static-route to force the router to make specific forwarding decisions.

Syntax

```
ipx static-route <ipxnetnum> <0x00:0x00:0x00:0x00.0x00:0x
00:0x00:0x00:0x00:0x00> <1-15> <1-2147483647>
```

Parameters

Variable	Value
`<ipxnetnum>`	Specifies the IPX network number.
`<0x00:0x00:0x00:0x00:0x00:0x 00:0x00:0x00:0x00:0x00>`	Specifies the PT_IPXHOST address.

Default

None

Command mode

Global Configuration Mode

Related commands

None

pvc-1483 ipx

Configure an IPX on single Asynchronous Transfer Mode (ATM) Permanent virtual connection (ATM-PVC) by using 1483 encapsulation so that the IPX can operate over an ATM link.

Syntax

```
pvc-1483 ipx [port <portList>] <1-4094>
```

Parameters

Variable	Value
`<portList>`	Specifies the port list.
`<1-4094>`	Specifies the VLAN ID in the range of 1 to 4094.

Default
None

Command mode
Global Configuration Mode

Next command mode
ATM Interface Configuration Mode

Related commands
None

pvc-1483 muxipipx

Configure multiplex IPX over a single ATM PVC to create a multiples Multiplex Internet Protocol emulated local area network (muxIplpx ELAN).

Syntax
```
pvc-1483 ipx [port <portList>] <1-4094> <0-255.0-4095>
<A.B.C.D>
```

Parameters

Variable	Value
portlist	Specifies the slot and the port number.
<1-4094>	Specifies the VLAN ID in the range of 1 to 4094.

Default
None

Command mode
Global Configuration Mode

Next command mode
ATM Interface Configuration Mode

Related commands
None

ipx rsmlt

Configure VLAN IPX Routed MultiLink Trunk (RSMLT) for each IPX interface to enable IPX routing protocol on Layer-3 interfaces and VLANs.

Syntax
```
ipx rsmlt
```

Parameters

Variable	Value
holddown-timer <0-3600>	Configures the hold-down timer.
holdup-timer <0-9999>	Configures the holdup timer.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

show ipx interface

View the port information, IPX address, and encapsulation type.

Syntax

show ipx interface <fastEthernet | gigabitEthernet> [<interface-id>]

Parameters

Variable	Value
fastEthernet	Shows the IPX fastethernet interface.
gigabitEthernet	Shows the IPX gigabitethernet interface.
pos	Shows the IPX RIP interface.
vlan	Shows the IPX VLAN interface.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx circuit

View the circuit configured for an IPX.

Syntax

```
show ipx circuit [<IPX-network-number>]
```

Parameters

Variable	Value
`<IPX-network-number>`	Specifies the IPX network number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx config

View the IPX configuration information for a specified IPX network interface.

Syntax

```
show ipx config [<IPX-network-number>]
```

Parameters

Variable	Value
`<IPX-network-number>`	Specifies the IPX network number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx default

View the default value of the IPX parameters.

Syntax

```
show ipx default
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipx route
View information about the IPX routes on the Ethernet Routing Switch 8600 or a specific IPX route, including the type, hop count, and ticks.

Syntax
```
show ipx route [<ipxnetnum>]
```

Parameters

Variable	Value
`<ipxnetnum>`	Specifies the IPX network number.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ipx sap
View the IPX SAP service and type.

Syntax
```
show ipx sap [WORD <0-32>]
```

Parameters

Variable	Value
`WORD<0-32>`	Specifies the service-name.

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show ipx statistics

View the IPX statistics and monitor performance for the specified IPX network number.

Syntax

show ipx statistics [<ipx-network-number>]

Parameters

Variable	Value
<ipx-network-number>	Specifies the IPX network number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx routingmethod

View the routing method (ticks or hops) information.

Syntax

show ipx routingmethod

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx rsmlt

View the IPX RSMLT information for the specified local or peer Ethernet Routing Switch 8600.

Syntax

```
show ipx rsmlt
```

Parameters

Variable	Value
local	Specifies the local information.
peer	Specifies the peer information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm 1483

View ATM 1483 bridge, IP, and IPX information.

Syntax

```
show interfaces atm 1483 [<1-4094>] [<portList>]
```

Parameters

Variable	Value
<1-4094>	Specifies the VLAN ID in the range of 1 to 4094.
<slot/port>	Specifies the port list.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ipx rip input-network-filter ethernet

Create a RIP In or Out policy on an Ethernet interface to determine which RIP traffic is allowed on the IPX virtual local area network (VLAN).

Syntax

```
ipx rip input-network-filter <ipxnetnum> <WORD/0-15>
```

Parameters

Variable	Value
`input-network-filter`	Applies an input network filter to IPX RIP.
`<ipxnetnum>`	Specifies the IPX network number.
`<Word/0-15>`	Specifies the name of the policy group to apply to the interface. A blank policy-name erases a previously entered name.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
`output-network-filter <IPX-network-number> <policy-name>`	Specifies the name of the policy applied to a received RIP packet. • **IPX-network-number** is the name of the IPX interface to which the policy applies. • **policy-name** is the name of the policy group to apply to the interface. A blank policy-name erases a previously entered name.

ipx sap output-sap-filter

Configure a SAP In or Out policy to create a SAP In or Out policy on a SAP interface.

Syntax

```
ipx sap output-sap-filter <ipxnetnum> <WORD/0-15>
output-sap-filter <IPX-network-number> <WORD/0-15>
```

Parameters

Variable	Value
`output-sap-filter`	Applies an output-SAP-filter.

Variable	Value
`IPX-network-number`	Specifies the IPX address of the IPX interface to which the policy applies.
`<Word/0-15>`	Specifies the IPX policy name.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
`input-sap-filter <IPX-network -number> <policy-name>`	Applies an input-SAP-filter. • **IPX-network-number** is the name of the IPX interface to which the policyapplies. • **policy-name** is the name of the policy group to apply to the interface. A blank policy-name erases a previously entered name.

ipx sap input-sap-filter interface

Configure a SAP In or Out policy on an interface to create a SAP In or Out policy on an interface.

Syntax

`ipx sap input-sap-filter <ipxnetnum> <WORD/0-15>`

Parameters

Variable	Value
`input-sap-filter`	Applies the input-SAP-filter.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
`output-sap-filter`	Applies the output-SAP-filter.

ipx rip output-rip-filter vlan interface

Configure a RIP In or Out policy to create RIP In or Out policy on a VLAN interface.

Syntax

```
ipx rip output-rip-filter <ipxnetnum> <WORD/0-15>
```

Parameters

Variable	Value
`<ipxnetnum>`	Specifies the IPX address of the IPX interface to which the policy applies.
`<WORD/0-15>`	Specifies the policy name.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
`input-network-filter`	Applies the input network filter to RIP.

ipx sap input-network-filter vlan interface

Configure a SAP In or Out policy to create SAP In or Out policy on VLAN an interface.

Syntax

```
ipx sap input-network-filter <ipxnetnum> <WORD/0-15>
```

Parameters

Variable	Value
`input-network-filter`	Applies the input-network-filter.
`<ipxnetnum>`	Specifies the IPX address of the IPX interface to which the policy applies.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
`output-network-filter`	Applies the output-network-filter.

ipx netlist

Configure an IPX netlist to create a set of IPX network addresses that both RIP and SAP policies can use.

Syntax

```
ipx netlist <WORD/0-15>
```

Parameters

Variable	Value
`<WORD/0-15>`	Specifies the network list name.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipx netlist network

Configure the IPX netlist add-network to create a new entry in the network lists.

Syntax

```
ipx netlist <WORD/0-15> network <ipxnetnum> [to
<ipxnetnum>]
```

Parameters

Variable	Value
`to <value>`	Indicates the range of IPX network addresses. This is an optional parameter. The default value is NetAddr, which refers to a single IPX network.
`<ipxnetnum>`	Indicates the IPX network number in the format 0x00000000, 00:00:00:00, or value.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipx route-policy

Configure the IPX route policy to create policy groups that both RIP and SAP protocols can use.

Syntax

`ipx route-policy <WORD/0-15> <1-65535>`

Parameters

Variable	Value
`action <permit|deny>`	Modifies the processing of the RIP or SAP packet. The route or service is announced or accepted only if the action is configured to permit. The route or service is ignored if the value is configured to deny. The default value is permit.
`enable`	Enables a route policy.

Variable	Value
match-netlist <list-name/id> [clear]	Modifies the numbers of the networks to which this policy can apply. The network list name or ID refers to the range of networks in the Network List table. If not configured or if the Network List table entry is empty, this policy applies to all packets. You can configure a maximum of four network list for a policy. • **list-name/id** network list name or ID from the Network List table.
match-routesource <Route Source> [clear]	Modifies the route source of the packet. Use this field only for Announce policies. This field is not used by Accept policies. The default value is none (the route source field is not checked). Accepted values are: • direct • nlsp • rip • static • any
match-servlist <list-name id> [clear]	Modifies the service types and service names to which this policy applies. The service list name or ID represents the service type and service name. If not configured, or if the Service List table entry is empty, this policy is applied to all service types and service names. You can configure a maximum of four service lists for a policy. **ATTENTION** This field is valid only for SAP policies. • **list-name id** service list name or ID in the Service List table.

Variable	Value
maximum-hops <0-16>	Specifies the number of hops count. Configures the number of hops in Announce policies. The hop count of the matching RIP or SAP route is updated with this value. If the value is 0, the hop count is not modified. This field applies only to Announce policies. Enter a hop value in the range of 0 to 16. The default value is 0. **hops_count** is the number of hops.
ticks <tick_value>	Specifies the tick value in RIP Announce policies. For RIP Announce policies, the ticks of the route are updated with this value. If the value is 0, the ticks of the route is not modified. This field applies only to RIP Announce policies. Enter a tick value in the range of 0 to 2 147 483 647. The default value is 0.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ipx servlist

Configure the IPX service list to assign the IPX network service name information.

Syntax

ipx servlist <WORD/0-15> name <WORD/0-15>

Parameters

Variable	Value
<WORD/0-15>	Specifies the service list name.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ipx list-policy

View information about list policies for an interface.

Syntax

```
show ipx list-policy [<interface>] [<ipxnetnum>]
```

Parameters

Variable	Value
`<ipxnetnum>`	Specifies the IPX network number.
`<interface>`	Specifies the interface to display the information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx netlist

View information about the network list.

Syntax

```
show ipx netlist <1-1000> [<network <ipxnetnum>]
```

Parameters

Variable	Value
`<1-1000>`	Shows the IPX network.
`<ipxnetnum>`	Specifies the IPX network number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx route-policy

View information about a route policy.

Syntax

```
show ipx route-policy <1-65535>
```

Parameters

Variable	Value
`<1-65535>`	Specifies the policy ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ipx service-list

View the information about the network list.

Syntax

```
show ipx service-list [<1-1000> [service-type
<0x0-0xffff>] [service-name <WORD/1-47>]
```

Parameters

Variable	Value
`service-name`	Specifies the service name.
`service-type`	Specifies the type of service.
`<WORD/1-47>`	Specifies the service name.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

trace ipx-policy rip input-network-filter

Trace the IPX RIP In policy to control trace support for RIP In policy routes, utility, and the interactions of packets for a protocol.

Syntax

```
trace ipx-policy rip input-network-filter <ipxnetnum>
```

Parameters

Variable	Value
`cancel`	Deactivates trace on the network input-network-filter.
`output-network-filter`	Activates trace on the network.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

trace ipx-policy rip output-network-filter

Trace an IPX RIP Out policy to control support for RIP In policy routes.

Syntax

```
trace ipx-policy rip output-network-filter <ipxnetnum>
```

Parameters

Variable	Value
`cancel`	Deactivate trace on the network input-network-filter.
`input-network-filter`	Activates trace on the network.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

trace ipx-policy sap input-network-filter

Trace IPX SAP In policy to control support for SAP In policy routes.

Syntax

```
trace ipx-policy sap input-network-filter <ipxnetnum>
```

Parameters

Variable	Value
`cancel`	Deactivates trace on the network.
`<ipxnetnum>`	Specifies the IPX address of the IPX interface to which the trace is applied.
`output-network-filter`	Activates trace on the network.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

trace ipx-policy sap

Control trace support for IPX SAP Out policy routes to control support for SAP Out policy routes.

Syntax

`trace ipx-policy sap {output-network-filter|output-sap -filter} <ipxnetnum>`

Parameters

Variable	Value
`cancel`	Deactivates trace on the network.
`<ipxnetnum>`	Specifies the IPX address of the IPX interface to which the trace applies.
`output-network-filter`	Activates trace on the network.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

IGAP commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to configure an Internet Group Membership Authentication Protocol (IGAP) enabled Remote Authentication Dial-In User Service (RADIUS) server.

Navigation

ip address

Configure the IP routing operation on the switch to enable IGAP configuration.

Syntax

```
ip address {ipaddr <a.b.c.d>}{Network mask <a.b.c.d>}
[<Mac_offset value>]
```

Parameters

Variable	Value
`<vid>`	Specifies the VLAN id. The range is between 1 and 4094. The default value is 1.
`ipaddr/Network mask`	Indicates the IP address in the format {a.b.c.d} and the subnet mask assigned to the VLAN.
`mac_offset value`	Indicates the Media Access Control (MAC) address you want to assign to this VLAN. This is an optional parameter, which, if used, replaces the default MAC address and ranges from 0 to 65 535.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

ip igmp version

Set the version of IGMP on each VLAN on the switch to enable IGAP configuration.

Syntax

```
ip igmp version 2
```

Parameters

Variable	Value
`<vid>`	Specifies the VLAN id. The range is between 1 and 4094. The default value is 1.
`version`	Indicates the version of IGMP ranging from 1 to 3.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands
None

ip pim mode sparse
Enable PIM-SM globally on the switch to enable IGAP configuration.

Syntax
`ip pim mode sparse`

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

ip pim enable
Enable PIM-SM on the VLAN to enable IGAP configuration.

Syntax
`ip pim enable`

Parameters

Variable	Value
`<vid>`	Specifies the VLAN id. The range is between 1 and 4094. The default value is 1.
`enable`	Enables IGAP on the switch.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands
None

ip igmp igap
Configure IGAP on an interface or a VLAN to authenticate and account the user for the clients receiving multicast streams on their networks.

Syntax
ip igmp igap authentication

Parameters

Variable	Value
authentication	Enables authentication on the IGAP interface. The default is enable.

Default
None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands

Variable	Value
accounting	Enables accounting on the IGAP interface. The default is enable.

clear ip igmp igap-counters
Clear IGAP counters on an interface or a VLAN to enable authentication and accounting process for the other multicast groups.

Syntax
clear ip igmp igap-counters [vlan <1-4094>]

Parameters

Variable	Value
`<1-4094>`	Specifies the VLAN ID. The value ranges from 1 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip igmp generate-log

Configure the Ip IGMP commands to manage the performance of the network.

Syntax

`ip igmp generate-log`

Parameters

Variable	Value
`generate-log`	Sets IGMP log.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`generate-trap`	Sets the IGMP trap.
`immediate-leave-mode`	Enables the immediate leave mode to the users.
`ssm`	Enables or sets the SSM feature.
`ssm-map`	Enables or sets the IGMP SSM channel parameters.

radius mcast-addr-attr-value

Set vendor-specific attributes to configure IGAP with RADIUS.

Syntax

radius mcast-addr-attr-value <value>

Parameters

Variable	Value
mcast-addr-attr-value <value>	Integer value for the multicast address attribute in the range of 0 to 255.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
auth-info-attr-value <value>	Integer value for the vendor-specific attribute in the range of 0 to 255. The default value is 91.

radius igap-timeout-log-fsize

Set the timeout log file size to capture authentication and accounting information in an IGAP timeout log for each session.

Syntax

radius igap-timeout-log-fsize <value>

Parameters

Variable	Value
igap-timeout-log-fsize	Maximum size of IGAP timeout log file in kilobytes.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vendorname nasIPaddress type version.log

Store the IGAP timeout logs in the Ethernet Routing Switch 8600 in a PCMCIA file.

Syntax

vendorname_nasIPaddress_type_version.log

Parameters

Variable	Value
vendorname	A two-character symbol representing the vendor. **nr** represents a specific Nortel project.
nasIPaddress	Identifies the network access server (NAS) by its IP address. **ATTENTION** When there are less than three digits in an octet such as 10 and 1, leading zeroes fill in to make up the 12 digits. If the Ethernet Routing Switch 8600 cannot determine the NAS IP address, create a file corresponding to NAS IP address 0.0.0.0 such as: 7672 MAR-17-2003 11:42:20 /pcmcia/ nr_000000000000_rac_01.log.
type	Uses three characters to represent the kind of log.
version	Uses two digits to represent the version number.

Default

None

Command mode

Global Configuration Mode

Related commands

None

radius server host

Add an IGAP-enabled RADIUS server to configure the authentication and accounting of multicast streams.

Syntax

radius server host {a.b.c.d} key WORD<0-32> used-by igap

Parameters

Variable	Value
<a.b.c.d>	Indicates the IP address of the selected interface.

Variable	Value
acct-port <value>	Enables the server account UDP port. The value ranges form 1 to 65 536.
acct-enable <value>	Enables the server account. This value is either true or false.
enable <value>	Enables the server. This value is either true or false.
port <value>	Server udp port and its value ranges from 1 to 65 536.
priority <value>	Specifies the server priority and ranges from 1 to 10.
retry <value>	Maximum number of retries. The allowed retries range from 0 to 6.
source-ip <value>	IP address {a.b.c.d}.
timeout <value>	No answer timeout value and the value ranges form 1 to 20.
WORD <0-32>	Specifies the secret key. This value is a string in the range of 0 to 32 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

None

radius server host used-by igap

Set the IGAP-enabled RADIUS server parameters.

Syntax

radius server host {a.b.c.d} used-by igap

Parameters

Variable	Value
{a.b.c.d}	Indicates the IP address of the selected interface.
acct-port <value>	Enables the server account udp port. The value ranges form 1 to 65 536.
acct-enable <value>	Enables the server account. This value is either true or false.

Variable	Value
enable <value>	Enables the server. This value is either true or false.
port <value>	Server udp port and its value ranges from 1 to 65 536.
priority <value>	Specifies the server priority and ranges from 1 to 10.
retry <value>	Maximum number of retries. The allowed retries range from 0 to 6.
source-ip <value>	IP address {a.b.c.d}.
timeout <value>	No answer timeout value and the value ranges form 1 to 20.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip igmp igap

Display information about IGAP-enabled interfaces.

Syntax

show ip igmp igap

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp igap group

Show the IGAP group information for the multicast sessions for the IGAP group members.

Syntax

```
show ip igmp igap group [count] [member-subnet <A.B.C.D/X
or A.B.C.D/X.X.X.X or default>] [group <A.B.C.D>]
```

Parameters

Variable	Value
`count`	Shows the number of entries in the IGAP group.
`group`	Indicates the IP address of the group.
`member-subnet`	Indicates the IP address and network mask of the IGAP group.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp igap counters

Troubleshoot IGAP network connectivity.

Syntax

```
show ip igmp igap counters [vlan <value>]
```

Parameters

Variable	Value
`vlan <value>`	Indicates the ID number of the VLAN. The value ranges from 1 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

Link Aggregation, MLT, and SMLT commands

This chapter describes the Nortel networks Command Line Interface (NNCLI) commands to configure link aggregation and MultiLink trunking on the Ethernet Routing Switch 8600.

Navigation

- "show vlacp interface" (page 496)
- "vlacp enable" (page 497)

lacp

Configure LACP parameters globally. When the LACP system priority is set globally, it applies to all LACP-enabled aggregators and ports.

Syntax

lacp

Parameters

Variable	Value
aggr-wait-time <200–2000>	Sets the aggregation wait time (in milliseconds) globally. The default value is 2000.
enable	Enables LACP globally. To disable LACP globally, use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
fast-periodic-time <200–20000>	Sets the fast-periodic time (in milliseconds) globally. The default is 20000 ms.
slow-periodic-time <10000–30000>	Sets the slow periodic time globally. The default value is 1000 ms.
smlt-sys-id <0x00:0x00:0x00:0x00:0x00:0x00>	Sets the LACP system ID globally. Enter a MAC address in the following format: 0x00:0x00:0x00:0x00:0x00:0x00.
system-priority <0-65535>	Sets the global LACP system priority. The default value is 32768.
timeout-scale <2-10>	Sets the timeout scale globally. The default value is 3. To set this option to the default value, use the **default** operator with the command.

Default

The default is disabled.

Command mode

Global Configuration Mode

Related commands

None

lacp enable

Configure LACP on a port to enable or disable LACP on the selected ports.

Syntax

lacp enable

Parameters

Variable	Value
enable	Enables LACP on the port.

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

Variable	Value
aggregation enable	Sets the port as aggregatable. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
aggr-wait-time <200-2000>	Sets the aggregation wait time (in milliseconds) for this port. The default value is 2000.
fast-periodic-time <200-20000>	Sets the fast-periodic time (in milliseconds) for this port. The default is 1000 ms.
key <0-65535>	Sets the aggregation key for this port.
mode {active, passive}	Sets the LACP mode to be active or passive.
partner-key <0-65535>	Sets the partner administrative key.
partner-port <0-65535>	Sets the partner administrative port value.
partner-port-priority <0-65535>	Sets the partner administrative port priority value.

Variable	Value
partner-state <0x00-0xff>	Sets the partner administrative state bitmask. Specify the partner administrative state bitmap in the range 0x0-0xff. The bit to state mapping is Exp, Def, Dis, Col, Syn, Agg, Time, and Act. For example, to set the two partner-state parameters • Act = true • Agg = true specify a value of 0x05 (bitmap = 00000101).
partner-system-id <0x00:0x00:0x00:0x00:0x00:0x00>	Sets the partner administrative system ID. Specify a MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00.
partner-system-priority <0-65535>	Sets the partner administrative system priority value.
priority <0-65535>	Sets the port priority. The default value is 32768. To set this option to the default value, use the **default** operator with the command.
slow-periodic-time <10000-30000>	Sets the slow periodic time for this port. The default is 30000 ms. To set this option to the default value, use the **default** operator with the command.
system-priority <0-65535>	Sets the system priority for this port. The default value is 32768.
timeout-scale <2-10>	Sets a timeout scale for this port. The default value is 3. To set this option to the default value, use the **default** operator with the command.
timeout-time {long,short} [timeout-scale <2-10>]	Sets the timeout to either long or short. To set this option to the default value, use the **default** operator with the command.

show lacp

View LACP configuration information to determine the LACP parameters and to ensure your configuration is correct.

Syntax

show lacp

Parameters

Variable	Value
actor-admin interface [{fastethernet|gigabitethernet}] [vid {vlan-id[-vlan-id][,...]}] [<portList>]	Shows LACP actor administrative information for all interfaces or the specified interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.
actor-oper interface [{fastethernet|gigabitethernet}] [vid {vlan-id[-vlan-id][,...]}] [<portList>]	Shows LACP actor operational information for all interfaces or the specified interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.
extension interface [{fastethernet|gigabitethernet}] [vid {vlan-id[-vlan-id][,...]}] [<portList>]	Shows LACP timer information for all interfaces or the specified interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.
interface [{fastethernet|gigabitethernet|pos}] [vid {vlan-id[-vlan-id][,...]}] [<portList>]	Shows all LACP port configuration information for all interfaces or the specified interface.
interface mlt [<64–6399>]	Shows the MLT LACP information for all MLTs or the specific MLT index.

Variable	Value
partner-admin interface [{**fastethernet**|**gigabitethernet**}] [**vid** {**vlan-id**[-**vlan-id**] [,...]}] [<portList>]	Shows LACP partner administrative information for all interfaces or the specified interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.
partner-oper interface [{**fastethernet**|**gigabitethernet**}] [**vid** {**vlan-id**[-**vlan-id**] [,...]}] [<portList>]	Shows LACP partner operational information for all interfaces or the specified interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

mlt

Configure an MLT to set up MLTs on the switch.

Syntax

mlt <mlt ID>

Parameters

Variable	Value
enable	Creates and enables a new MLT.
encapsulation dot1q	Sets encapsulation. **dot1q** enables trunking on the MLT.
member <portList>	Adds ports to this MLT.
<mlt ID>	Specifies the MLT ID in the range of 1–256.

Variable	Value
name <0-20>	Changes the name for this MLT in the range of 0–20 characters.
ntstg enable	Enables NTSTG.
vlan <1–4094>	Specifies a VLAN ID to add to this MLT.

Default

None

Command mode

Global Configuration Mode

Related commands

None

mlt member

Add ports to an MLT LAG to add an existing VLAN to a link aggregation configuration.

Syntax

mlt <1-256> member <portlist> vlan <1-4094>

Parameters

Variable	Value
<1-256>	Specifies the MLT ID in the range of 1 to 256.
<portList>	Specifies the port and the slot number.
vlan <1-4094>	Specifies the VLAN ID in the range of 1 to 4094.

Default

None

Command mode

Global Configuration Mode

Related commands

None

no mlt member

Remove ports from an MLT LAG.

Syntax

no mlt <mlt-id> member <portlist>

Parameters

Variable	Value
`portlist`	Specifies the slot and the port number.

Default

None

Command mode

Global Configuration Mode

Related commands

None

lacp enable key

Configure an MLT with LACP to use the dynamic link aggregation function.

Syntax

`lacp enable key <integer>`

Parameters

Variables	Value
`key <integer>`	Sets LACP aggregator key for a specific MLT. • `integer` is the LACP actor admin key.

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

Variables	Value
`system-priority <integer>`	Sets the LACP system priority for a specific MLT. • `integer` is the system priority in the range 0–65535.

smlt

Create a SMLT from an existing MLT to split physical ports between two switches to improve resiliency and provide active load sharing.

Syntax

```
smlt <smltid>
```

Parameters

Variable	Value
`<smltid>`	Specifies the Split MLT ID in the range of 1–32 (1–256 for R and RS modules in R mode). The value must match the peer switch SMLT ID.

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

None

ist peer-ip

Create an interswitch trunk from an existing MLT.

Syntax

```
ist peer-ip <A.B.C.D> vlan <vid>
```

Parameters

Variable	Value
`<A.B.C.D>`	Specify the peer IP address—the IP address of the IST VLAN on the other aggregation switch.
`<1-4094>`	Specify the VLAN ID.

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

None

ist enable

Enable an interswitch trunk.

Syntax

```
ist enable
```

Parameters

Variable	Value
`enable`	Enables the interswitch trunk.

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

None

no ist enable

Disable an interswitch trunk.

Syntax

```
no ist enable
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

None

no ist peer-ip

Delete an interswitch trunk.

Syntax

no ist peer-ip

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

MLT Interface Configuration Mode

Related commands

None

smlt port

Configure a split MultiLink trunk that uses a single port. Use single port SMLT to permit the scaling of the number of SMLT on a switch to the maximum number of available ports.

Syntax

smlt <smlt id>

Parameters

Variable	Value
<smltid>	Specifies the Split MLT ID. The value ranges from 1–512.

Default

None

Command mode

Global Configuration Mode

Next command mode

GigabitEthernet Interface Configuration Mode

Related commands

None

sys smlt-on-single-cp

Configure SMLT-on-Single-CPU to support SMLT on an aggregation switch with a single CPU.

Syntax

```
sys smlt-on-single-cp [timer <1-3>]
```

Parameters

Variable	Value
`timer <1-3>`	Sets the SMLT-on-Single-CPU feature timeout value.

Default

None

Command mode

Global Configuration Mode

Related commands

None

sys hash-calc getmltindex traffic-type

View the MLT port calculated by the MLT hash algorithm to obtain information about the MLT port calculated by the new distribution algorithm for R-series.

Syntax

```
sys hash-calc getmltindex traffic-type <ipv4|ipv6|non-ip>
dest-val <WORD 1-1536> src-val <WORD 1-1536> mltID <1-256>
[dest-port <0-65535>] [src-port <0-65535>]
```

Parameters

Variable	Value
`dest-val<value>`	Specifies the destination address in the range form 1–1536. The source and destination addresses cannot have the same value.
`src-val<value>`	Specifies the source address in the range from 1–1536. The source and destination addresses cannot have the same value.

Variable	Value
`mltID<value>`	Specifies the MLT ID. The value ranges from 1–256.
`traffic-type {ipv4|ipv6|non-ip}`	The type of traffic. Specify one of ipv4, ipv6, or non-ip.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show mlt error collision

View information about collision errors to obtain information about collision errors in the specified MLT, or for all MLTs.

Syntax

```
show mlt error collision [<mltid>]
```

Parameters

Variable	Value
`<mltid>`	Specifies the MLT ID. The value ranges from 1–256.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mlt error main

View information about Ethernet errors to display information about the types of Ethernet errors sent and received by the specified MLT or all MLTs.

Syntax

```
show mlt error main [<mltid>]
```

Parameters

Variable	Value
`<mltid>`	Specifies the MLT ID. The value ranges from 1–256.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show smlt

View all ports for a single port SMLT to ensure the correct ports are configured.

Syntax

`show smlt {fastethernet|gigabitethernet|mlt|pos}`

Parameters

Variable	Value
`{fastethernet|gigabitethernet|pos} [<portList>]`	Displays SMLT information for the interface and ports that you specify. • `portList` is the port or port list.
`mlt`	Displays SMLT information for the MLT interface.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

vlacp

Configure VLACP on a port to ensure there is end-to-end reachability.

Syntax

`vlacp`

Parameters

Variable	Value
enable	Enables VLACP for this port.
ethertype <1-65535>	Sets the VLACP protocol identification for this port.
fast-periodic-time <10-20000>	Sets the fast periodic time (in milliseconds) for this port.
funcmac-addr <<0x00:0x00:0x00:0x00:0x00:0x00>>	Sets the multicast MAC address used for the VLACPDU. Specify a MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00.
slow-periodic-time <10000-30000>	Sets the slow periodic time (in milliseconds) for a specific port type.
timeout {**long**|**short**}	Sets the port to use the long or short timeout: • **long** sets the port to use the timeout-scale value multiplied by the slow-periodic-time. • **short** sets the port to use the timeout-scale value multiplied by the fast-periodic-time. For example, if you specify a short timeout, set the timeout-scale value to 3, and the fast-periodic-time to 400 ms, the timer will expire within 1000 to 1200 ms. To set this option to the default value, use the **default** operator with the command.
timeout-scale <2-10>	Sets a timeout scale for this port used to calculate the timeout. The default value is 3. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

show vlacp interface

View the VLACP port configuration to show the port VLACP configuration.

Syntax

show vlacp interface

Parameters

Variable	Value
fastethernet [vid {vlan-id[-vlan-id] [,...]}] [<portList>]	Displays the VLACP configuration for the Fastethernet port interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.
gigabitethernet [vid {vlan-id[-vlan-id] [,...]}] [<portList>]	Displays the VLACP configuration for the GigabitEthernet port interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.
pos [vid {vlan-id[-vlan-id] [,...]}] [<portList>]	Displays the VLACP configuration for the PoS port interface. • **vlan-id** is the VLAN ID or list of VLAN IDs to show only ports attached to a particular VLAN. The range is 1–4094. • **portList** is the port or port list.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

vlacp enable

Enable or disable the VLACP globally to reset all port level settings on the chassis.

Syntax

`vlacp enable`

Parameters

Variable	Value
`enable`	Enables the VLACP globallly.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`no`	Disables VLACP when prefixed with the VLACP command.

MPLS Services commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to configure the Multiprotocol Label Switching (MPLS) core on the Ethernet Routing Switch 8600, which you must do before you can configure Virtual Private Network (VPN) services.

Navigation

brouter port

Configure Ethernet ports on the Ethernet Routing Switch 8600 to assign one of two port types: access or trunk.

Syntax

```
brouter port <portList> [vlan <1-4094>] [subnet
<A.B.C.D/0-32>] [mac_offset <0-65535>]
```

Parameters

Variable	Value
`mac_offset <0-65535>`	mac_offset is a user-assigned MAC address that you can use in place of the default MAC address.
`subnet <A.B.C.D/0-32>`	Specifies the IP address and subnet mask.
`port <portList>`	Indicates the slot and port number of the port you are configuring.
`vlan <1-4094>`	Specifies the VLAN ID.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip ospf enable

Enable OSPF on MPLS trunk ports.

Syntax

`ip ospf enable`

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip ospf

Configure circuitless IP (CLIP) to ensure that, if one or more of the switch interfaces become disabled, the switch is always reachable as long as a viable path to the switch exists.

Syntax

```
ip ospf [<1-256>] [vrf <WORD 0-32>]
```

Parameters

Variable	Value
`<1-256>`	Specifies the interface ID value in the range of 1 to 256.
`vrf <Word/0-32>]`	Enables passive mode OSPF for the CLIP interface. `vrf <WORD/0-32>` specifies an associated VRF by name.

Default

None

Command mode

Global Configuration Mode

Next command mode

Loopback Interface Configuration Mode

Related commands

Variable	Value
`area [<1-256>] <A.B.C.D> [vrf <WORD 0-32>]`	Designates an area for the CLIP interface. • `<1-256>` specifies the interface id value. • `<A.B.C.D>` is the IP address of the OSPF area associated with the CLIP interface. • `vrf <WORD 0-32>` specifies an associated VRF by name.

router-id

Configure OSPF so that MPLS can use the information from the OSPF unicast routing table to create and maintain routes within the network. The router ID must be the same as the circuitless IP address.

Syntax

```
router-id <A.B.C.D>
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode
OSPF Router Configuration Mode

Related commands
None

router ospf enable
Enable the OSPF for the switch.

Syntax
```
router ospf enable
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

mpls router-id
Configure the MPLS router ID on the switch to globally enable the Label Distribution Protocol (LDP) and the Resource Reservation Protocol (RSVP).

Syntax
```
mpls router-id <A.B.C.D>
```

Parameters
None

Default
None

Command mode

Global Configuration Mode

Related commands

None

mpls ldp globally

Configure LDP globally to apply the same settings to all LDP interfaces.

Syntax

mpls ldp

Parameters

Variable	Value
egress-policy redist-connected	The Ethernet Routing Switch 8600 is the egress router for connected routes that are advertised into LDP. This setting determines how those prefixes are redistributed. After redist-connected is enabled, the router acts as the egress router for all connected routes. After redist-connected is disabled, the router acts as the egress router for loopback addresses only. The default is disabled. The default operator is **default mpls rsvp message-bundling**. The no operator is **no mpls rsvp message-bundling**.
explicit-null	Defines how LDP supports penultimate hop popping (PHP). The default is implicit-null. • **implicit-null** causes the upstream LSR to pop the label stack if it is the penultimate (next-to-last) hop in the MPLS network. • **explicit-null** causes the upstream LSR to treat this label value like a normal label before sending the packet to the egress router. However, when the egress router receives a packet with this label, it automatically pops off the label stack entry and classifies and forwards the packet based on the next inner label. If there is no inner label, it uses the encapsulated packet header.

Variable	Value
	ATTENTION All LDP sessions restart after you change this setting, and the new value takes effect immediately. The default operator is **default mpls ldp explicit-null**. The no operator is **no mpls ldp explicit-null**.
hello-holdtime <5-65535>	Specifies the interval (in seconds) that the system remembers an LDP neighbor without receiving a Hello message. The timer restarts to this value whenever the system receives a Hello message from a peer. If the timer expires before another Hello message is received, the system terminates the Hello adjacency. Changes to this setting do not affect existing LDP sessions. The interval range is a number of seconds between 5–65535. The default is 15. The default operator is **default mpls ldp hello-holdtime**. A value of zero (0) indicates that the hello-holdtime variable is the global indicator.
holdtime <15-2147483>	Specifies the interval (in seconds) between LDP keep alive messages sent to neighbors or interfaces. The allowed range is 15–2147483. The default is 15. The default operator is **default mpls ldp holdtime**.

Variable	Value
loop-detection max-hops <1-255>	Specifies the maximum number of hops permitted in a Label Request message. The router assumes the path is a loop if the hop count parameter exceeds this value. Then the router does not respond with a Label Mapping message, and it does not propagate the Label Request. Changes to this setting do not affect existing LDP sessions. The default is 0. The default operator is **default mpls ldp loop-detection max-hops**. The no operator is **no mpls ldp loop-detection max-hops**.
loop-detection path-vector <1-255>	Specifies the maximum path vector length permitted in a Label Request message. The router assumes the path is a loop if the vector length is equal to or greater than this value (or if the router LSR ID is present in the path vector. Then the router does not respond with a Label Mapping message, and it does not propagate the Label Request. Changes to this setting do not affect existing LDP sessions. The default is 0. The default operator is **default mpls ldp loop-detection path-vector**. The no operator is **no mpls ldp loop-detection path-vector**.
traps path-vector	Sets an SNMP trap when paths meet or exceed the path vector limit. The default is **no mpls ldp traps path-vector** (disable).
traps status	Sets an SNMP trap when an LDP status changes. The default is disabled (no). The default operator is **default mpls ldp traps status**. The no operator is **no mpls ldp traps status**.
traps threshold	Sets an SNMP trap when the session exceeds the threshold. The default is disabled (no).

Variable	Value
	The default operator is **default mpls ldp traps threshold**. The no operator is **no mpls ldp traps threshold**.

Default
None

Command mode
Global Configuration Mode

Related commands
None

mpls ldp ethernet
Configure the MPLS on the LDP interfaces to configure LSPs in the MPLS network.

Syntax
mpls ldp

Parameters

Variable	Value
ldp	Enables LDP on the interface. The default is disabled. The default operator is **default mpls ldp**. The no operator is **no mpls ldp**.

Default
None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

Variable	Value
hello-holdtime {global | <5-65535>}	Configures the period of time (in seconds) that an interface remembers an LDP neighbor without receipt of an LDP hello message from that neighbor. When set to global, this command uses the LDP global value. When set to a number between 5–65535, this value overrides the LDP global value. The default operator is **default mpls ldp hello-holdtime global**. A value of zero (0) indicates that the hello-holdtime variable is the global indicator.
holdtime {global | <15-2147483>}	Configures the LDP hold time (in seconds) for keeping the session alive on the interface. When set to global, this command uses the LDP global value. When set to a number between 15 and 2147483, this value overrides the LDP global value. The default operator is **default mpls ldp holdtime global**.
import-policy <all | host-only>	Configures the LDP import policy behavior. If set to host-only, only the host can import policies. If set to all, all interfaces can import policies. The default operator is **default mpls ldp import-policy all**.

Variable	Value
transport-address <interface|router-id>	Configures the transport address of the LDP LSP. If no interface is specified, the switch uses MPLS router-ID for the transport address. The default operator is **default mpls ldp transport-address router-id**.
mtu <64-9600>	Sets the maximum transmission size of frames for all the MPLS ports on the chassis. The supported options are 1950, 9600, and 1500. The default MTU is 1500. The MPLS MTU value cannot exceed that of the system MTU size. The default operator is **default mpls mtu 1500**.

mpls ldp vlan

Configure the LDP on VLANs to group the LDP interfaces and configure LSPs in the MPLS network.

Syntax

mpls ldp

Parameters

Variable	Value
ldp	Enables LDP on the VLAN. The default operator is **default mpls ldp**. The no operator is **no mpls ldp**.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
hello-holdtime {global|<5-65535>}	Configures the period of time (in seconds) that a VLAN remembers an LDP neighbor without receipt of an LDP hello message from that neighbor. The default operator is **default mpls ldp hello-holdtime global**. A value of zero (0) indicates that the hello-holdtime variable is the global indicator.
holdtime {global|<15-2147483>}	Configures the LDP hold time (in seconds) for keeping the session alive on the interface. When set to global, this command uses the LDP global value. When set to a number between 15 and 2147483, this value overrides the LDP global value. The default operator is **default mpls ldp holdtime global**.
import-policy <all|host-only>	Configures the LDP import policy behavior. If set to host-only, only the host can import policies. If set to all, all VLANs can import policies. The default operator is **default mpls ldp import-policy all**.
transport-address <interface|router-id>	Configures the transport address of the LDP LSP. If no VLAN is specified, the switch uses MPLS router-ID for the transport address. The default operator is **default mpls ldp transport-address router-id**.
mtu <64-9600>	Sets the maximum transmission size of frames for all the MPLS ports on the chassis. The supported options are 1500, 9600, and 1500. However, the MPLS MTU value cannot exceed that of the system MTU size.

Variable	Value
	The default operator is **default mpls mtu 1500**.

mpls rsvp globally

Configure RSVP globally to apply the same settings to all RSVP interfaces.

Syntax

mpls rsvp

Parameters

Variable	Value
explicit-null	Defines how RSVP supports penultimate hop popping (PHP). • **implicit-null** causes the upstream LSR to pop the label stack if it is the penultimate (next-to-last) hop in the MPLS network. • **explicit-null** causes the upstream LSR to treat this label value like a normal label before sending the packet to the egress router. However, when the egress router receives a packet with this label, it automatically pops off the label stack entry and classifies and forwards the packet based on the next inner label. If there is no inner label, it uses the encapsulated packet header. **ATTENTION** All RSVP sessions restart after you change this setting, and the new value takes effect immediately.
explicit-path <WORD/0-32>	Configures the RSVP explicit-path settings.
hello-interval <0-65535>	Configures the RSVP hello interval (in seconds). The range is from 0–65535. When set to 0, no hellos are sent. The default operator is **default mpls rsvp hello-interval 10**.
lsp <WORD/0-32>	Configures the RSVP LSP configurations.

Variable	Value
message-bundling	Bundles messages from different interfaces that are going to the same final destination. The default operator is **default mpls rsvp message-bundling**. The no operator is **no mpls rsvp message-bundling**.
refresh interval <1-65535>	Configures the RSVP refresh interval (in seconds). The range is from 1 to 65535. The default operator is **default mpls rsvp refresh interval 30**.
refresh multiplier <1-255>	Configures the refresh multiplier (in seconds). When the node receives a ResvErr message, this value multiplied times the refresh interval determines how long to set the blockade timer. (For more information, see RFC 2205.) The range of values is from 1–255. The default operator is **default mpls rsvp refresh multiplier 3**.
refresh reduction	Configures whether or not to send RSVP summary refresh messages. The default operator is **default mpls rsvp refresh reduction**. The no operator is **no mpls rsvp refresh reduction**.
resource <1-255>	Configures the RSVP resource.
static-ip <A.B.C.D/X>	Configures the RSVP static-IP address.
traps tunnel	Configures whether or not to send trap messages when RSVP LSPs change their state. The default operator is **default mpls rsvp traps tunnel**. The no operator is **no mpls rsvp traps tunnel**.

Default

None

Command mode

Global Configuration Mode

Related commands

None

mpls rsvp ethernet

Configure MPLS on RSVP interfaces to configure LSPs in the MPLS network.

Syntax

mpls rsvp

Parameters

Variable	Value
hello-interval {global|<1-65535>}	Configures the RSVP hello interval (in seconds). The default operator is **default mpls rsvp hello-interval 10**.
message-bundling [global]	Bundles messages from different interfaces that are going to the same final destination. The default operator is **default mpls rsvp message-bundling global**. The no operator is **no mpls rsvp message-bundling**.
mtu <64-9600>	Sets the maximum transmission size of frames for this MPLS interface. The supported options are 1950, 9600, and 1500. However, the MPLS MTU value cannot exceed that of the system MTU size. The default operator is **default mpls mtu 1500**.
refresh interval {global|<1-65535>}	Configures the RSVP refresh interval (in seconds). The default operator is **default mpls rsvp refresh interval 30**.

Variable	Value
refresh multiplier {global|<1-255>}	Configures the refresh multiplier (in seconds). After the node receives a ResvErr message, this value multiplied times the refresh interval determines how long to set the blockade timer. (For more information, see RFC 2205.) The default operator is **default mpls rsvp refresh multiplier 3**.
refresh reduction [global]	Configures whether or not to send RSVP summary refresh messages. The default operator is **default mpls rsvp refresh reduction**. The no operator is **no mpls rsvp refresh reduction**.
rsvp	Configures RSVP on this interface. The default operator is **default mpls rsvp**. The no operator is **no mpls rsvp**.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

None

mpls rsvp vlan

Configure RSVP on VLANs to group RSVP interfaces and configure LSPs in the MPLS network.

Syntax

mpls rsvp

Parameters

Variable	Value
hello-interval {global|<1-65535>}	Configures the RSVP hello interval (in seconds). The default operator is **default mpls rsvp hello-interval 10**.
message-bundling [global]	Bundles messages from different interfaces that are going to the same final destination. The default operator is **default mpls rsvp message-bundling global**. The no operator is **no mpls rsvp message-bundling**.
mtu <64-9600>	Sets the maximum transmission size of frames for this MPLS VLAN. The supported options are 1950, 9600, and 1500. However, the MPLS MTU value cannot exceed that of the system MTU size. The default operator is **default mpls mtu 1500**.
refresh interval {global|<1-65535>}	Configures the RSVP refresh interval (in seconds). The default operator is **default mpls rsvp refresh interval 30**.
refresh multiplier {global|<1-255>}	Configures the refresh multiplier (in seconds). After the node receives a ResvErr message, this value multiplied times the refresh interval determines how long to set the blockade timer. (For more information, see RFC 2205.) The default operator is **default mpls rsvp refresh multiplier 3**.

Variable	Value
refresh reduction [global]	Configures whether or not to send RSVP summary refresh messages. The default operator is **default mpls rsvp refresh reduction**. The no operator is **no mpls rsvp refresh reduction**.
rsvp	Configures RSVP on this VLAN. The default operator is **default mpls rsvp**. The no operator is **no mpls rsvp**.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

mpls rsvp resource

Configure an LSP to reserve bandwidth for an RSVP LSP.

Syntax

mpls rsvp resource <1-255> <0-2147483647>

Parameters

Variable	Value
resource <1-255> <0-2147483647>	Globally configures an MPLS RSVP resource on the switch. Specify the LSP resource index by entering a value from 1 to 255. Specify the bandwidth (in Kbps) by entering a value from 0 to 2147483647.

Default

None

Command mode

Global Configuration Mode

Related commands

None

mpls rsvp explicit-path

Configure an RSVP explicit path to define specific hops in the LSP.

Syntax

mpls rsvp explicit-path <WORD/0-32> hop <1-255>

Parameters

Variable	Value
hop <1-255>	Defines the hops in the explicit path. Enter a hop index and address to create an entry in the hop table. The IP address must be an IP/MPLS interface on the router, not the LSR-ID.**<1-255>** specifies the index value assigned to this hop. The index determines the order of the hop in the list of configured hops (lower to higher). For example, the path goes to hop 1 and then hop 2.
Word<0-32>	Specifies the explicit path name with a string length of 0 to 32 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
address <A.B.C.D>	Creates the explicit-path hop address.
type<loose|strict>	Specifies whether the hop follows a loose (default) or strict path. • **strict** refers to a strictly-defined path where the path from the previous router to this router must be direct. • **loose** refers to a loosely-defined path where the path from the previous router to this router does not have to be direct and can include other routers.

mpls rsvp lsp

Configure an RSVP label switched path (LSP) to define a specific transport LSP between ingress and egress nodes.

Syntax

mpls rsvp lsp <WORD/0-32>

Parameters

Variable	Value
lsp <WORD/0-32>	Names the LSP with a string from 0 to 32 characters. The default operator is **default mpls rsvp lsp <WORD/0-32>**.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
bandwidth <0-255>	Specifies the value of the LSP resource index, which determines how much bandwidth the LSP can use. The range of values for the index is from 0 to 255. A value of 0 indicates that this LSP uses a best effort approach. Primary and secondary LSPs use this bandwidth value by default.
description <WORD/0-255>	Provides an optional description for the LSP using a string from 0 to 255 characters.
destination <A.B.C.D>	Specifies the destination IP address of the egress node. The destination is required to create the LSP. **ATTENTION** If you change the destination IP address, it brings down the LSP.
fast-reroute	Enables or disables Fast Rerouting of the RSVP LSP. This flag permits any hop to reroute the LSP after a fault is detected downstream. This mechanism enables the router to reroute traffic for fast service restoration.
primary	Configures one of the following primary lsp parameters: • **bandwidth <0-255>** configures lsp primary bandwidth value in the range of 0 to 255. • **enable** enables RSVP LSP primary. • **explicit-path <WORD 0-32>** configures LSP primary explicit path name in the range of 0 to 32 characters. • **record-route** enables LSP primary record route.

Variable	Value
secondary	Configures one of the following secondary lsp parameters: • **bandwidth <0-255>** configures lsp secondary bandwidth value in the range of 0 to 255. • **enable** enables RSVP LSP secondary. • **explicit-path <WORD 0-32>** configures LSP secondary explicit path name in the range of 0 to 32 characters. • **record-route** enables LSP secondary record route.
source <A.B.C.D>	Specifies the source IP address of the ingress node. This is an optional setting. If you do not specify a source, the source defaults to the router ID. **ATTENTION** If you change the source IP address, it brings down the LSP.

mpls rsvp lsp primary

Configure a primary RSVP LSP to define a particular path for the LSP to use.

Syntax

mpls rsvp lsp <WORD/0-32> primary

Parameters

Variable	Value
bandwidth <0-255>	Specifies the value of the LSP resource index, which determines how much bandwidth the primary LSP can use. The range of values for the index is from 0 to 255. A value of 0 indicates that this LSP uses a best effort approach.
enable	Enable brings up the primary LSP; the no operator for enable brings down the LSP.

Variable	Value
explicit-path <WORD/0-32>	Specifies the name of an explicit path for this primary LSP to use.
record-route	Configures whether or not RSVP can make a retain a record of this LSP after it is signaled.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
secondary	Configures secondary LSP parameters.

mpls rsvp static-ip

Configure a RSVP static FEC to create a Forwarding Equivalency Class (IP prefix) for IP traffic to pass through a particular RSVP LSP.

Syntax

mpls rsvp static-ip <ipaddr/mask> lsp <name>

Parameters

Variable	Value
static-ip <A.B.C.D/0-32> lsp <WORD/0-32>	Creates a static path by specifying an IP address and mask and naming the LSP. The default operator is **default mpls rsvp static-ip <A.B.C.D/0-32>**. The no operator is **no mpls rsvp static-ip <A.B.C.D/0-32>**.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show mpls basic

Display all of the global MPLS information including information about LDP and RSVP.

Syntax

show mpls basic

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ftn

Display the FEC (forward equivalence class) to NHLFE (next hop label forwarding entry) table information.

Syntax

show mpls ftn

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ilm

Display the Incoming Label Map table.

Syntax

show mpls ilm

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls mtu
Display size of the maximum transmission unit, which determines how large packets can be.

Syntax
show mpls mtu <FastEthernet|GigabitEthernet|vlan>

Parameters

Variable	Value
FastEthernet	Displays MTU FastEthernet configurations.
GigabitEthernet	Displays MTU GigabitEthernet configurations.
vlan	Displays MTU VLAN configurations.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls statistics ldp
Displays LDP statistics information.

Syntax
show mpls statistics ldp [A.B.C.D] [detail]

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show mpls statistics rsvp

Displays RSVP statistics information.

Syntax

show mpls statistics rsvp

Parameters

Variable	Value
FastEthernet	Displays RSVP port statistics.
GigabitEthernet	Displays RSVP port statistics.
vlan	Displays VLAN RSVP information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls statistics receive

Displays MPLS statistics receive information.

Syntax

show mpls statistics receive

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls statistics transmit

Displays MPLS statistics transmit information.

Syntax

show mpls statistics transmit

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ldp

Display global information that applies to all LDP interfaces.

Syntax

show mpls ldp

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ldp bindings

Display only those paths whose local label falls within the specified minimum and maximum range.

Syntax

show mpls ldp bindings [min-label] [max-label] [<A.B.C.D/X>]

Parameters

Parameter	Description
min-label	Specify the minimum local label value bound to this FEC.

Parameter	Description
max-label	Specify the maximum local label value bound to this FEC.
<A.B.C.D/X>	Specify the address of another FEC.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls ldp discovery
Display information about routers that are not necessarily directly connected and to establish sessions with these routers.

Syntax
```
show mpls ldp discovery <inferface-type> [<interface-id>]
```

Parameters

Parameter	Description
interface-type	Specify which interface to display. The options are FastEthernet, GigabitEthernet, and vlan.
interface-id	Specify the interface ID for the nominate interface.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls ldp interface
Display information about a specific LDP interface.

Syntax
```
show mpls ldp interface [vlan <vlan id>] [port <portList>]
[detail]
```

Parameters

Parameter	Description
`detail`	Displays all available information about LDP interfaces.
`port <portList>`	Displays LDP port configurations.
`vlan`	Displays LDP VLAN configurations.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ldp neighbor

Display information about all or one specific peer address.

Syntax

```
show mpls ldp neighbor [<A.B.C.D>]
```

Parameters

Parameter	Description
`<A.B.C.D>`	Displays the IP address of a specific LDP peer

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ldp route

Purpose statement

Syntax

```
show mpls ldp route <A.B.C.D/X>
```

Parameters

Parameter	Description
`<A.B.C.D/X>`	Displays the route to a specific destination IP address and mask.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ldp session

Display information about all of the currently active LDP sessions or, if you provide a peer IP address, for a specifically identified session.

Syntax

`show mpls ldp session [<A.B.C.D>]`

Parameters

Parameter	Description
`<A.B.C.D>`	Displays the IP address of a specific LDP peer.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls ldp summary

Display general information about all the LDP activity on the switch.

Syntax

`show mpls ldp summary`

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls rsvp
Display global information that applies to all RSVP interfaces.

Syntax
show mpls rsvp

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls rsvp explicit-path
Display the specific hops in the explicit path of the LSP.

Syntax
show mpls rsvp explicit-path [WORD<0-32>]

Parameters

Parameter	Description
WORD<0-32>	Specifies the name of an explicit path.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls rsvp interface

Display information about a specific RSVP interface.

Syntax

show mpls rsvp interface [FastEthernet] [GigabitEthernet] [vlan]

Parameters

Parameter	Description
FastEthernet	Displays RSVP FastEthernet configurations.
GigabitEthernet	Displays RSVP GigabitEthernet configurations.
vlan	Displays RSVP VLAN discovery configurations.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls rsvp neighbor

Display information about a learned neighbor.

Syntax

show mpls rsvp neighbor [detail]

Parameters

Parameter	Description
detail	Displays all available information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls rsvp paths

Display information about RSVP paths, including ones that are not currently operational.

Syntax

show mpls rsvp paths [name <lsp-name>] [type <ingress|transition|egress>] [detail] [disabled}

Parameters

Parameter	Description
detail	Displays all available information about LDP interfaces.
disabled	Displays information about LSPs that are not operational.
type <ingress|transition|egress>	Displays information about three types of LSPs: egress, ingress, and transit.
name <lsp-name>	Displays the RSVP FEC information for the specified LSP.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls rsvp resource

Display the bandwidth used by RSVP.

Syntax

show mpls rsvp resource

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls rsvp static-ip lsp

Display information about RSVP LSPs that are statically mapped to a destination IP address and mask.

Syntax

```
show mpls rsvp static-ip lsp [WORD<0-32>]
```

Parameters

Parameter	Description
`lsp <WORD<0-32>`	Displays the RSVP FEC information for the specified LSP.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

Multicast Source Discovery Protocol commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands for configuration of the Multicast Source Discovery Protocol (MSDP) on the Nortel Ethernet Routing Switch 8600.

Navigation

ip msdp enable

Configure MSDP to enable or disable the MSDP function on the global router.

Syntax

`ip msdp enable`

Parameters

Variable	Value
`no`	Disables MSDP. After you disable MSDP, all MSDP peer sessions end and the system deletes all local cache entries.

Default

The default is disabled.

Command mode

Global Configuration Mode

Related commands

None

ip msdp originator-id

Configure the originator ID to set the RP address field inside the Source-Active (SA) message.

Syntax

```
ip msdp originator-id <A.B.C.D>
```

Parameters

Variable	Value
`A.B.C.D`	Specifies the IP address to use as the originator ID. If the orig-address is not a system local address, the system rejects the configuration.
`no`	Deletes the RP address field inside the SA message.
`default`	Uses the default originator ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp peer

Create an MSDP peer to establish a peering relationship between the local MSDP-enabled router and a peer in another domain. Nortel recommends that you do not add more than 20 peers.

Syntax

```
ip msdp peer <A.B.C.D>
```

Parameters

Variable	Value
`peer <A.B.C.D>`	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
remote-as <0–65535>	Specifies the autonomous system number of the MSDP peer from 0–65535. This value is for display purpose only. A peer can appear to be in another autonomous system (other than the one in which it really resides) if you use an MSDP peering session but do not use a Border Gateway Protocol peer session with that peer. If another autonomous system injects the prefix of the peer, the prefix appears as the autonomous system number of the peer. To delete the current configuration, use the no option in the command **no ip msdp peer <A.B.C.D> remote-as** To use the default configuration, use the default option in the command **default ip msdp peer <A.B.C.D> remote-as**
connect-source <A.B.C.D>	If configured, this IP address is the source IP address to initiate the MSDP connection. If the local address you configure is not a system local address, the system rejects the configuration. If you do not configure a local address, the IP address of the interface found in the route to reach the peer becomes the default source IP address for the TCP connection. To delete the current configuration, use the no option in the command**no ip msdp peer <A.B.C.D> connect-source** To use the default configuration, use the default option in the command **default ip msdp peer <A.B.C.D> connect-source**.

ip msdp description

Configure a peer description to ease the identification of a peer.

Syntax

```
ip msdp description <A.B.C.D> WORD<1-255>
```

Parameters

Variable	Value
`Word <1-255>`	Specifies the text description up to 255 characters for the peer.
`A.B.C.D`	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`no`	Removes a peer description when prefixed with the command.

ip msdp md5-authentication

Configure Message Digest (MD) 5 authentication to secure control messages on the TCP connection between MSDP peers.

Syntax

```
ip msdp md5-authentication <A.B.C.D> enable
```

Parameters

Variable	Value
`enable`	Enables the MD5 authentication on MSDP.
`no`	Disables the MD5 authentication when prefixed with the command.
`A.B.C.D`	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp password peer

Configure the MD5 authentication password.

Syntax

ip msdp password peer <A.B.C.D> Word<1-80>

Parameters

Variable	Value
Word <1-80>	Specifies a case-sensitive password, up to 80 characters, for MD5 authentication.
A.B.C.D	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp sa-limit

Configure the SA limit to limit the number of SA messages from an MSDP peer that the router stores in the SA cache.

Syntax

ip msdp sa-limit <A.B.C.D> <0-6144>

Parameters

Variable	Value
<0-6144>	Specifies the maximum number of SA messages from an MSDP peer to keep in the SA cache. The valid values are from 0–6144; the default value is 6144. To delete the current configuration, use the no option in the command**no ip msdp sa-limit <A.B.C.D>** To use the default configuration, use

Variable	Value
	the default option in the command **default ip msdp sa-limit <A.B.C.D>**
A.B.C.D	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp ttl-threshold

Configure the time-to-live (TTL) threshold to limit which multicast data packets the router sends in SA messages to an MSDP peer.

Syntax

ip msdp ttl-threshold <A.B.C.D> <1–255>

Parameters

Variable	Value
1–255	Specifies the time-to-live value, from 1–255. The default value is 0, which means that the router advertises all SA messages. To delete the current configuration, use the no option in the command **no ip msdp ttl-threshold <A.B.C.D>** To use the default configuration, use the default option in the command **default ip msdp ttl-threshold <A.B.C.D>**
A.B.C.D	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp keepalive

Configure keepalive messages to adjust the interval at which an MSDP peer sends keepalive messages and the interval at which the MSDP peer waits for keepalive messages from other peers before it declares them down.

Syntax

ip msdp keepalive <A.B.C.D> <0-21845> <3-65535>

Parameters

Variable	Value
0-21845	Specifies the interval, in seconds, at which the MSDP peer sends keepalive messages. The range is from 0–21845 seconds. The default is 60 seconds. A value of 0 indicates the router does not send keepalive messages after the peers establish the MSDP session. If you assign a value of 0, Nortel recommends that you configure the interval to wait for keepalive messages on the other side of the peer relationship as 0.
3-65535	Specifies the interval, in seconds, at which the MSDP peer waits for keepalive messages from other peers before it declares them down. The range is from 6–65535 seconds. The default is 75 seconds. A value of 0 indicates the MSDP connection is never torn down due to absence of messages from peer.
A.B.C.D	Specifies the IP address of the router that is the MSDP peer. To delete the current configuration, use the no option in the command **no ip msdp keepalive <A.B.C.D>**.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp connect-retry

Configure the connect-retry period to configure the amount of time, in seconds, between connection attempts for peering sessions.

Syntax

ip msdp connect-retry <A.B.C.D> <1-65535>

Parameters

Variable	Value
1-65535	Specifies the interval, in seconds, at which the MSDP peer retries the connection, after the previous connection establishment to the peer fails. The range is from 1–65535 seconds. The default is 30 seconds. To use the default configuration, use the default option in the command **default ip msdp connect-retry <A.B.C.D>** To delete the current configuration, use the no option in the command **no ip msdp connect-retry <A.B.C.D>**
A.B.C.D	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp default-peer

Define a default peer to accept all SA messages from the peer.

Syntax

```
ip msdp default-peer <A.B.C.D> [route-policy Word<1-64>]
```

Parameters

Variable	Value
1-64	Specifies the route policy name to associate with the default peer.
A.B.C.D	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp implicit-default-peer

Configure an implicit default peer to accept all SA messages from the default peer if reverse path forwarding (RPF) peer rule checks fail.

Syntax

```
ip msdp implicit-default-peer
```

Parameters

None

Default

The default value is disabled.

Command mode

Global Configuration Mode

Related commands

None

ip msdp peer

Change the peer status to administratively enable or disable a configured peer.

Syntax

```
ip msdp peer <A.B.C.D>
```

Parameters

Variable	Value
`A.B.C.D`	Specifies the IP address of the router that is the MSDP peer.

Default

The default value is enabled.

Command mode

Global Configuration Mode

Related commands

None

clear ip msdp peer

Clear the peer connection to clear the TCP connection to the specified MSDP peer, and reset all MSDP message counters.

Syntax

```
clear ip msdp peer <A.B.C.D>
```

Parameters

Variable	Value
`A.B.C.D`	Specifies the IP address of the MSDP peer.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

no ip msdp peer

Delete an MSDP peer to permanently remove the peer relationship from the configuration.

Syntax

```
no ip msdp peer <A.B.C.D>
```

Parameters

Variable	Value
`A.B.C.D`	Specifies the IP address of the router that is the MSDP peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip access-list extended

Create an extended ACL with a prefix entry.

Syntax

```
ip access-list extended Word<1-64> <A.B.C.D> <A.B.C.D>
<A.B.C.D> <A.B.C.D>
```

Parameters

Variable	Value
`Word <1-64>`	Specifies the name, up to 255 characters, for the extended ACL.
`<A.B.C.D> <A.B.C.D> <A.B.C.D> <A.B.C.D>`	Specifies the IP address and mask for the source, and then the destination.

Default

None

Command mode

Global Configuration Mode

Related commands

None

route-map

Edit a route policy.

Syntax

```
route-map Word<1-64> <1-65535>
```

Parameters

Variable	Value
`1-65535`	Specifies the integer sequence number in the range of 1–65535. A sequence number acts as an implicit preference; a lower sequence number takes preference.
`Word <1-64>`	Specifies the name, up to 64 characters for the policy.

Default

None

Command mode

Global Configuration Mode

Related commands

None

match extended-prefix

Associate an extended ACL with the route policy.

Syntax

`match extended-prefix Word<1-255>`

Parameters

Variable	Value
`Word <1-255>`	Specifies the name of the extended ACL to associate with the route policy.
`no`	Clears the association between the route policy and the extended ACL when prefixed with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Route policy configuration Mode

Related commands

None

ip msdp redistribute

Filter Protocol Independent Multicast (PIM) routes to filter which (S,G,RP) entries PIM provides to MSDP.

Syntax

```
ip msdp redistribute [route-policy Word<1-64>]
```

Parameters

Variable	Value
1-64	Specifies the name of the optional route policy. You do not need to create a route policy to use the redistribution filter.

Default

None

Command mode

Global Configuration Mode

Related commands

None

no ip msdp redistribute route-policy

Delete a route policy associated with the redistribute filter.

Syntax

```
no ip msdp redistribute route-policy
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp sa-filter

Filter SA messages to determine which SA messages to accept from a peer and which SA messages to send to a peer.

Syntax

```
ip msdp sa-filter <in|out> <A.B.C.D> create [route-policy
Word<1-64>]
```

Parameters

Variable	Value
A.B.C.D	Specifies the IP address of the router that is the MSDP peer.
<in|out>	Creates or modifies an inbound or outbound SA filter for this peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip msdp mesh-group

Configure mesh groups to reduce SA flooding.

Syntax

```
ip msdp mesh-group Word<1-64> <A.B.C.D>
```

Parameters

Variable	Value
1-64	Specifies the mesh group ID; the name of the mesh group from 1–64 characters.
A.B.C.D	Specifies the IP address of the MSDP router that is the peer.

Default

None

Command mode

Global Configuration Mode

Related commands

None

clear ip msdp sa-cache

Clear the SA cache to clear the SA entries the router learns from all peers or a specific peer.

Syntax

```
clear ip msdp sa-cache [group <A.B.C.D>] [peer <A.B.C.D>]
[rp <A.B.C.D>] [source <A.B.C.D>]
```

Parameters

Variable	Value
`group <A.B.C.D>`	Optionally, clears the SA entries that match the specified group range.
`peer <A.B.C.D>`	Optionally, clears only the entries the router learns from the peer address you specify.
`rp <A.B.C.D>`	Optionally, clears the SA cache entries that match the specified RP address.
`source <A.B.C.D>`	Optionally, clears the SA cache entries that match the specified source range.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp peer

View peer information to view the peer configuration and to see information about the Source-Active (SA) messages that MSDP accepts from, or sends to, this peer.

Syntax

```
show ip msdp peer [<A.B.C.D>] [<accepted-sas|advertised
-sas>]
```

Parameters

Variable	Value
`A.B.C.D`	Optionally, specifies the IP address of the MSDP peer. If you do not specify an IP address, the results of this command show all MSDP peers.
`accepted-sas | advertised-sas`	Optionally, shows either the SA messages MSDP accepts from or advertises to the peer. If you do not select one of these options, the results of this command show all MSDP peer information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp sa-cache

View the SA cache to display the (S, G) state the router learns from MSDP peers.

Syntax

`show ip msdp sa-cache [foreign | local] [group <A.B.C.D>] [rp <A.B.C.D>] [source <A.B.C.D>]`

Parameters

Variable	Value
`foreign | local`	Shows either the local or the foreign SA cache.
`group <A.B.C.D>`	Optionally, shows all cache entries that match the group address.
`rp <A.B.C.D>`	Optionally, shows all cache entries that match the rendezvous point address.
`source <A.B.C.D>`	Optionally, shows all cache entries that match the source address.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp count

Show the MSDP count to view the number of sources and groups that originate in MSDP SA messages and the number of SA messages from an MSDP peer in the SA cache.

Syntax

```
show ip msdp count [<0-65535>]
```

Parameters

Variable	Value
`as-number`	Optionally, shows the MSDP count for a specific autonomous system, from 0–65535. If you do not specify an autonomous system number, the command results show global information.

Command mode

Privileged Executive Mode

Related commands

None

Related commands

None

show ip msdp summary

Show the MSDP summary to view MSDP global status and peer status.

Syntax

```
show ip msdp summary
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp rpf

Show the reverse path forwarding (RPF) peer to display the unique MSDP peer information from which a router accepts SA messages that originate from the specified rendezvous point (RP).

Syntax

```
show ip msdp rpf <A.B.C.D>
```

Parameters

Variable	Value
A.B.C.D	Specifies the RP address of the multicast group for which you request the upstream RPF peer.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp mesh-group

Show the mesh group to view configured mesh groups.

Syntax

```
show ip msdp mesh-group [Word<1-64>]
```

Parameters

Variable	Value
1-64	Optionally, specifies the name of a specific mesh group, from 1–64 characters, to include in the command results. If you do not specify a mesh group name, the results include all mesh groups.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp sa-check source

Show the SA check to display the unique MSDP peer information from which a router accepts SA messages that originate from the specified RP, and check whether the router accepts the specified (S, G, RP) entries from the peer.

Syntax

show ip msdp sa-check source <A.B.C.D> group <A.B.C.D> rp <A.B.C.D> [peer <A.B.C.D>]

Parameters

Variable	Value
group <A.B.C.D>	Specifies the group address as part of the received SA message.
peer <A.B.C.D>	Optionally, checks whether the router can receive (S, G, RP) entries from this peer address. If you do not specify the peer address, the router uses the RPF peer calculated by using the RP address as the peer to validate the (S, G, RP) information. If you do specify the peer address, the router compares the RPF peer calculated by using the RP address against the peer address and if a match exists, the router validates the (S, G, RP) by using the peer inbound filter.
rp <A.B.C.D>	Specifies the RP address of the multicast group for which you request the upstream RPF peer.
source <A.B.C.D>	Specifies the source address as part of the received SA message.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip access-list extended

Show extended access control lists (ACL) to view configured extended ACLs on the system.

Syntax

```
show ip access-list extended [Word<1-64>]
```

Parameters

Variable	Value
1-64	Optionally, specifies the name of an extended ACL, up to 64 characters, to include in the command results. If you do not specify a name, the command results include all ACLs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip msdp show-all

Show all MSDP information to view the output of multiple show commands at the same time.

Syntax

```
show ip msdp show-all [Word<1-99>]
```

Parameters

Variable	Value
1-99	Optionally, specifies a file name to use to save the output of the command. Use the format /pcmcia/<file> or /flash/<file> where <file> is the file name up to 99 characters in length.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

OSPF and RIP commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to help you configure the Routing Information Protocol (RIP) and Open Shortest Path First (OSPF) on the Ethernet Routing Switch 8600. The router uses these protocols to determine the best routes for data forwarding.

Navigation

default-metric

Set RIP Default Import Metric. This value is used by rip announce of OSPF internal routes if the policy does not specify metric. 0 is used for deconfiguration.

Syntax

default-metric <0-15>

Parameters

Variable	Value
default-metric	Configures the value of default import metric to import a route into RIP domain.

Default

The default value is 8.

Command mode

Global Configuration Mode

Next command mode

RIP Router Configuration Mode

Related commands

Variable	Value
domain <0-39321>	Specifies the RIP domain from 0 to 39321.
timers basic holddown <0-360>	Configures the RIP hold-down timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable. The default is 120 s.
timers basic timeout <15-259200>	Configures the RIP timeout interval.
timers basic update <0-360>	Configures the RIP update timer. The update time is the time interval between RIP updates. The default is 30 s.

rip enable

Enable RIP globally.

Syntax

enable

Parameters

Variable	Value
enable	Globally enables RIP on the VRF or switch.

Default

None

Command mode

Global Configuration Mode

Next command mode

RIP Router Configuration Mode

Related commands

None

show ip rip

Display RIP configuration information to ensure the configuration is accurate.

Syntax

```
show ip rip [vrf <WORD 0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF by name.
`vrfids <WORD 0-255>`	Specifies a range of VRF IDs.

Default

None

Command mode

Global Configuration Mode

Next command mode

Privileged Executive Mode

Related commands

None

ip rip

Configure RIP on Ethernet ports and VLANs so that they can participate in RIP routing.

Syntax

```
ip rip cost <1-15>
```

Parameters

Variable	Value
`cost <1-15>`	Configures the RIP cost for this port (link).

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
advertise-when-down enable	Enables or disables AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. The default is disabled. When you configure a port with no link and enable advertise-when-down, it does not advertise the route until the port is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.
auto-aggregation enable	Enables or disables automatic route aggregation on the port. When enabled, the router switch automatically aggregates routes to their natural mask when they are advertised on an interface in a different class network. The default is disable.
default-listen enable	Enables DefaultListen: the switch accepts the default route learned through RIP on this interface. The default is disabled.
default-supply enable	Enables DefaultSupply. If enabled, a default route must be advertised from this interface. The default is false. The default route is advertised only if it exists in the routing table.
enable	Enables RIP routing on the port.
holddown <0-360>	Configures the RIP holddown timer value, the length of time (in seconds) that RIP continues to advertise a network after determining that it is unreachable. The default is 120.
in-policy <WORD 0-64>	Configures the port RIP in-policy. The policy name for inbound filtering on this RIP interface. This policy determines whether to learn a route on this interface. It also specifies the parameters of the route when it is added to the routing table.
listen enable	If enabled, the switch listens for a default route without listening for all routes. Specifies that the routing switch learns RIP routes through this interface. The default is enable.

Variable	Value
out-policy <WORD 0-64>	Configures the port RIP out-policy. The policy name for outbound filtering on this RIP interface. This policy determines whether to advertise a route from the routing table on this interface. This policy also specifies the parameters of the advertisement. **policy name** is a string of length 0 to 64 characters.
poison enable	Enables Poison Reverse. If you disable Poison Reverse (**no poison enable**), Split Horizon is enabled. By default, Split Horizon is enabled. If Split Horizon is enabled, IP routes learned from an immediate neighbor are not advertised back to the neighbor. If Poison Reverse is enabled, the RIP updates sent to a neighbor from which a route is learned are poisoned with a metric of 16. Therefore, the receiver neighbor ignores this route because the metric 16 indicates infinite hops in the network. These mechanisms prevent routing loops.
port <portList>	Applies the same settings to other ports at the same time.
send version <notsend|rip1|rip1comp|rip2>	Indicates which RIP update version the router sends from this interface. ripVersion1 implies sending RIP updates that comply with RFC 1058. rip1Compatible implies broadcasting RIP2 updates using RFC 1058 route subassumption rules. The default is rip1Compatible.
receive version <rip1|rip2|rip1orrip2>	Indicates which RIP update version is accepted on this interface. The default is rip1orrip2.
supply enable	Specifies that the switch advertises RIP routes through the port. The default is enable.
timeout <15-259200>	Configures the RIP timeout interval in seconds.
triggered enable	Enables automatic triggered updates for RIP.

redistribute

Configure a redistribute entry to announce certain routes into the RIP domain, including static routes, direct routes, RIP, OSPF, or BGP. Optionally, use a route policy to control the redistribution of routes.

Syntax

redistribute <ospf|bgp|static|direct|rip> [vrf-src <WORD 0-16>]

Parameters

Variable	Value
<ospf|bgp|static|direct|rip>	Specifies the type of routes to be redistributed (the protocol source).
vrf <WORD 0-16>	Specifies the VRF instance.
vrf-src <WORD 0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

RIP Router Configuration Mode

Related commands

Variable	Value
enable [vrf-src <WORD 0-16>]	Enables the RIP route redistribution instance.
metric <0-255> [vrf-src <WORD 0-16>]	Configures the metric to apply to redistributed routes.
route-map <WORD 0-64> [vrf-src <WORD 0-16>]	Configures the route policy to apply to redistributed routes.

ip rip redistribute

Configure a redistribute entry to announce certain routes into the RIP domain, including static routes, direct routes, RIP, OSPF, or BGP. Optionally, use a route policy to control the redistribution of routes.

Syntax

ip rip redistribute <ospf|bgp|static|direct|rip>

Parameters

Variable	Value
<ospf|bgp|static|direct|rip>	Specifies the type of routes to be redistributed (the protocol source).

Variable	Value
`vrf <WORD 0-16>`	Specifies the VRF instance.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
`enable [vrf-src <WORD 0-16>]`	Enables the RIP route redistribution instance.
`metric <0-255> [vrf-src <WORD 0-16>]`	Configures the metric to apply to redistributed routes.
`route-map <WORD 0-64> [vrf-src <WORD 0-16>]`	Configures the route policy to apply to redistributed routes.

ip rip apply redistribute

Apply the RIP redistribution.

Syntax

```
ip rip apply redistribute <ospf|bgp|static|direct|rip>
[vrf <WORD 0-16>] [vrf-src <WORD 0-16>]
```

Parameters

Variable	Value
`<ospf|bgp|static|direct|rip>`	Specifies the type of routes to be redistributed (the protocol source).

Variable	Value
`vrf <WORD 0-16>`	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip rip redistribute

Display the RIP redistribution configuration information.

Syntax

```
show ip rip redistribute [vrf <WORD 0-16>] [vrfids <1-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
`vrfids <1-255>`	Specifies a list of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

action triggerRipUpdate

Force RIP to update the routing table so that the port or VLAN uses the latest routing information.

Syntax

action triggerRipUpdate

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

router-id

Configure OSPF parameters on the switch to control how OSPF behaves on the system. The Ethernet Routing Switch 8600 uses global parameters to communicate with other OSPF routers. Globally configure OSPF before you configure OSPF for an interface, port, or VLAN.

Syntax

router-id <A.B.C.D>

Parameters

Variable	Value
router-id <A.B.C.D>	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

Variable	Value
`as-boundary-router enable`	Enables or disables ASBR status. If enabled, the router acts as an OSPF Autonomous System boundary router.
`auto-vlink`	Enables the automatic creation of OSPF virtual links when required. The default is disable.
`default-cost [ethernet <1-65535>] [fast-ethernet <1-65535>] [gig-ethernet <1-65535>] [ten-gig-ethernet <1-65535>]`	Configures the OSPF default metrics. The range is 1 to 65535. • `ethernet <1-65535>` is for 10 Mbit/s Ethernet (default is 100). • `fast-ethernet <1-65535>` is for 100 Mbit/s (Fast) Ethernet (default is 10). • `gig-ethernet <1-65535>` is for Gigabit (gig) Ethernet (default is 1). • `ten-gig-ethernet <1-65535>` is for 10 Gigabit Ethernet (default is 1).
`rfc1583-compatibility enable`	Enables the RFC 1583 compatibility mode.
`router-id <A.B.C.D>`	Configures the OSPF router ID IP address, where A.B.C.D is the IP address.
`timers basic holddown <0-60>`	Configures the OSPF hold-down timer value in seconds. The range is 3 to 60; the default is 10.
`trap enable`	Enables the router to issue OSPF traps.

show ip ospf

Display OSPF configuration information to ensure accuracy.

Syntax

```
show ip ospf [vrf <WORD 0-16>] [vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF by name.
`vrfids <WORD 0-255>`	Specifies a range of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

router ospf enable

Enable OSPF for the switch.

Syntax

```
router ospf enable
```

Parameters

Variable	Value
`router ospf enable [ipv6-enable]`	Enables OSPF routing on the Ethernet Routing Switch 8600.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip ospf area

Configure OSPF parameters on a port or VLAN to control how OSPF behaves on the port or VLAN.

Syntax

```
ip ospf area <A.B.C.D>
```

Parameters

Variable	Value
`area <A.B.C.D>`	Configures the OSPF identification number for the area, typically formatted as an IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode for the port or VLAN Interface Configuration Mode

Related commands

Variable	Value
advertise-when-down enable	Enables or disables AdvertiseWhenDown. If enabled, the network on this interface is advertised as up, even if the port is down. The default is disabled. When you configure a port with no link and enable advertise-when-down, the route is not advertised until the port is active. Then the route is advertised even when the link is down. To disable advertising based on link status, this parameter must be disabled.
authentication-key <WORD 0-8>	Configures the eight-character simple password authentication key for the port or VLAN.
authentication-type <none|message-digest|simple>	Configures the OSPF authentication type for the port: none, simple password, or MD5 authentication. If simple, all OSPF updates the interface receives must contain the authentication key specified by the area authentication-key command. If MD5, they must contain the MD5 key.
bfd	Enables BFD.
cost <1-65535>	Configures the OSPF cost associated with this interface and advertised in router link advertisements. The default is 0.
dead-interval <0-2147483647>	Configures the router OSPF dead interval—the number of seconds the OSPF neighbors of a switch must wait before assuming that the OSPF router is down. The default is 40. The value must be at least four times the Hello interval.
enable	Enables OSPF on the port or VLAN.
hello-interval <1-65535>	Configures the OSPF Hello interval, which is the number of seconds between Hello packets sent on this interface. The default is 10.
message-digest-key <1-255> md5-key <WORD 0-16>	Configures the MD5 key. At most, you can configure two MD5 keys for an interface. • **<1-255>** is the ID for the message digest key • **<WORD 0-16>** is an alphanumeric password of up to 16 bytes {string length 0 to 16}

Variable	Value
mtu-ignore enable	Enables MTU ignore. To allow the Ethernet Routing Switch 8600 to accept OSPF database description (DBD) packets with a different MTU size, enable mtu-ignore. Incoming OSPF DBD packets are dropped if their MTU is greater than 1500 bytes.
network <broadcast|nbma|passive>	Specifies the type of OSPF interface.
poll-interval <0-2147483647>	Configures the OSPF poll interval in seconds. The default is 120.
primary-md5-key <1-255>	Changes the primary key used to encrypt outgoing packets. **<1-255>** is the ID for the new message digest key.
priority <0-255>	Configures the OSPF priority for the port during the election process for the designated router. The port with the highest priority number is the best candidate for the designated router. If you configure the priority to 0, the port cannot become either the designated router or a backup designated router. The default is 1.
retransmit-interval <0-3600>	Configures the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions.
transit-delay <0-3600>	Configures the transit delay for the virtual interface, which is the estimated number of seconds required to transmit a link-state update over the interface.
vlan <1-4094>	Applies only to VLAN interfaces. Specifies the VLAN ID.

show ip ospf port-error

Check OSPF errors for administrative and troubleshooting purposes.

Syntax

show ip ospf port-error [port <portList>] [vrf <WORD 0-16>] [vrfids <WORD 0-255>]

Parameters

Variable	Value
portlist	Specifies the slot and the port number.
vrf <Word 0-16>	Name of the VRF in the range of 0 to 16 characters.
vrfids <Word 0-255>	Specifies the VRF ID in the range of 0 to 255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

area import

Import information from other areas to learn their OSPF relationships and create normal, stubby, or not-so-stubby areas (NSSA). Place stubby or NSSAs at the edge of an OSPF routing domain.

Syntax

area <A.B.C.D> import <external|noexternal|nssa>

Parameters

Variable	Value
import <external|no external|nssa>	Specifies the type of area: • external—Stub and NSSA (not so stubby area). are both false • noexternal—Configures the area as stub area. • nssa—Configures the area as NSSA.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

Variable	Value
default-cost <0-16777215>	Stub area default metric for this stub area, which is the cost from 0 to 16 777 215. This is the metric value applied at the indicated type of service.
import-summaries enable	Configures the area support to import summary advertisements into a stub area. This parameter must be used only if the area is a stub area.
stub	Configures the import external option for this area as stub. A stub area has only one exit point (router interface) from the area.

area range

Use aggregate area ranges to reduce the number of link-state advertisements that are required within the area. You can also control advertisements.

Syntax

area range <A.B.C.D> <A.B.C.D/0-32> <summary-link|nssa-extlink>

Parameters

Variable	Value
<A.B.C.D> <A.B.C.D/0-32>	**<A.B.C.D>** identifies an OSPF area and **<A.B.C.D/0-32>** is the IP address and subnet mask of the range, respectively.
<summary-link|nssa-extlink>	Specifies the LSA type. If you configure the range as type nssa-extlink then you cannot configure the advertise-metric.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

Variable	Value
advertise-metric <0-65535>	Changes the advertised metric cost of the OSPF area range.
advertise-mode <summarize|suppress|no-summarize>	Changes the advertisement mode of the range.

show ip ospf area-range

Display OSPF area range configuration information to ensure accuracy.

Syntax

show ip ospf area-range [vrf <WORD 0-16>] [vrfids <WORD 0-255>]

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF by name.
`vrfids <WORD 0-255>`	Specifies a range of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

auto-vlink

Use automatic virtual links to provide an automatic, dynamic backup link for vital OSPF traffic. Automatic virtual links require more system resources than manually configured virtual links.

Syntax

`auto-vlink`

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

area virtual-link

Use manual virtual interfaces to provide a backup link for vital OSPF traffic with a minimum of resource use.

Syntax

`area virtual-link <A.B.C.D> <A.B.C.D>`

Parameters

Variable	Value
<cr>	Creates a virtual interface area identifier. **<A.B.C.D> <A.B.C.D>** specify the area ID and the virtual interface ID, respectively.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

Variable	Value
authentication-key <WORD 0-8>	Configures the authentication key of up to eight characters.
authentication-type <none|simple|message-digest>	Configures the authentication type for the OSPF area. **auth-type** is none, simple password, or MD5 authentication. If simple, all OSPF updates received by the interface must contain the authentication key specified by the area authentication-key command. If MD5, they must contain the MD5 key. The default is none.
primary-md5-key <1-255>	Changes the primary key used to encrypt outgoing packets. **<1-255>** is the ID for the message digest key.
dead-interval <0-2147483647>	Configures the dead interval, in seconds, for the virtual interface, the number of seconds that a router Hello packets are not seen before its neighbors declare the router down. This value must be at least four times the Hello interval value. The default is 60.

Variable	Value
hello-interval <1-65535>	Configures the Hello interval, in seconds, on the virtual interface for the length of time (in seconds) between the Hello packets that the router sends on the interface. The default is 10.
retransmit-interval <0-3600>	Configures the retransmit interval for the virtual interface, the number of seconds between link-state advertisement retransmissions. The range is from 1 to 3600.
transit-delay <0-3600>	Configures the transit delay for the virtual interface, the estimated number of seconds required to transmit a link-state update over the interface. The range is from 1 to 3600.

area virtual-link message-digest-key

Configure an MD5 key for the virtual interface.

Syntax

area virtual-link message-digest-key <A.B.C.D> <A.B.C.D/0-32> <1-255> md5-key <WORD>

Parameters

Variable	Value
<A.B.C.D> <A.B.C.D/0-32> <1-255> md5-key <WORD 0-16>	Adds an MD5 key to the interface. At most, you can configure two MD5 keys to an interface. • **<A.B.C.D>** identifies an OSPF area. • **<A.B.C.D/0-32>** is the IP address and subnet mask of the range. • **<1-255>** is the ID for the message digest key • **<WORD 0-16>** is an alphanumeric password of up to 16 characters

Default
None

Command mode
Global Configuration Mode

Next command mode
OSPF Router Configuration Mode

Related commands
None

show ip ospf virtual-link
Display the OSPF virtual link information to ensure accuracy.

Syntax
show ip ospf virtual-link [vrf <WORD 0-16>] [vrfids <WORD 0-255>]

Parameters

Variable	Value
vrf <WORD 0-16>	Specifies a VRF.
vrfids <WORD 0-255>	Specifies a range of VRF IDs.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

ip ospf area vlan or port
Import information from other areas to learn their OSPF relationships and create normal, stubby, or not-so-stubby areas (NSSA). Place stubby or NSSAs at the edge of an OSPF routing domain.

Syntax
ip ospf area <A.B.C.D>

Parameters

Variable	Value
<A.B.C.D>	Creates the OSPF area. **<A.B.C.D>** specifies the IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
authentication-key <WORD 0-8>	Configures the eight-character simple password authentication key for the port or VLAN.
authentication-type <none|simple|message-digest>	Configures the authentication type for the OSPF area. The type is none, simple password, or MD5 authentication. If simple, all OSPF updates received by the interface must contain the authentication key specified by the area authentication-key command. If MD5, they must contain the MD5 key. The default is none.
cost <1-65535>	Configures the OSPF cost associated with this interface and advertised in router link advertisements. The default is 0.
dead-interval <0-2147483647>	Configures the dead interval, in seconds the number of seconds that a router Hello packets are not seen before its neighbors declare the router down. This value must be at least four times the Hello interval value. The default is 60.
hello-interval <1-65535>	Configures the Hello interval, in seconds, on the virtual interface for the length of time (in seconds) between the Hello packets that the router sends on the interface. The default is 10.
mtu-ignore enable	Enables MTU ignore. To allow the Ethernet Routing Switch 8600 to accept OSPF database description (DBD) packets with a different MTU size, enable mtu-ignore. Incoming OSPF DBD packets are dropped if their MTU is greater than 1500 bytes.
network <broadcast|nbma|passive>	Specifies the type of OSPF network.
poll-interval <0-2147483647>	Configures the OSPF poll interval in seconds. The default is 120.

Variable	Value
primary-md5-key <1-255>	Changes the primary key used to encrypt outgoing packets. **<1-255>** is the ID for the message digest key.
priority <0-255>	Configures the OSPF priority for the port during the election process for the designated router. The port with the highest priority number is the best candidate for the designated router. If you set the priority to 0, the port cannot become either the designated router or a backup designated router. The default is 1.
retransmit-interval <0-3600>	Configures the retransmit interval: the number of seconds between link-state advertisement retransmissions. The range is from 1 to 3600.
transit-delay <0-3600>	Configures the transit delay: the estimated number of seconds it takes to transmit a link-state update over the interface. The range is from 1 to 3600.

host-route

Use host routes when the Ethernet Routing Switch 8600 resides in a network that uses routing protocols other than OSPF.

Syntax

host-route <A.B.C.D> [metric <0-65535>]

Parameters

Variable	Value
<A.B.C.D>	Specifies the IP address of the host router in a.b.c.d format.
metric <0-65535>	Configures the metric (cost) for the host route.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

show ip ospf host-route

Display the host route OSPF information to ensure accuracy.

Syntax

```
show ip ospf host-route [vrf <WORD 0-16>] [vrfids <WORD
0-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF by name.
`vrfids <WORD 0-255>`	Specifies a range of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

neighbor

Configure NBMA neighbors so that the interface can participate in Designated Router election. All OSPF neighbors that you manually configure are NBMA neighbors.

Syntax

```
neighbor <A.B.C.D> [priority <0-255>]
```

Parameters

Variable	Value
`<A.B.C.D>`	Identifies an OSPF area in IP address format a.b.c.d.
`priority <0-255>`	Changes the priority level of the neighbor.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

None

show ip ospf neighbor

Display OSPF NBMA neighbor information.

Syntax

```
show ip ospf neighbor [vrf <WORD 0-16>] [vrfids <WORD
0-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF by name.
`vrfids <WORD 0-255>`	Specifies a range of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

accept adv-rtr

Use a route policy to define how the switch redistributes external routes from a specified source into an OSPF domain. The policy defines which route types the switch accepts and redistributes.

Syntax

```
accept adv-rtr <A.B.C.D>
```

Parameters

Variable	Value
`<A.B.C.D>`	Specifies the IP address.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

Variable	Value
`enable`	Enables an OSPF acceptance policy.
`metric-type <type1 | type2 | any>`	Configures the metric type as Type 1, Type 2, or any.
`route-policy <WORD 0-64>`	Configures the route policy by name.

show ip ospf accept

Display the OSPF acceptance policy information.

Syntax

```
show ip ospf accept
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf lsdb

View the area advertisements and other information contained in the link-state database (LSD) to ensure correct OSPF operations.

Syntax

```
show ip ospf lsdb [area <A.B.C.D>] [lsatype <0-7>] [lsid
<A.B.C.D>] [adv_rtr <A.B.C.D>] [vrf <WORD 0-16>] [vrfids
<WORD 0-255>] [detail]
```

Parameters

Variable	Value
`adv_rtr <A.B.C.D>`	Specifies the advertising router.
`area <A.B.C.D>`	Specifies the OSPF area.
`detail`	Provides detailed output.

Variable	Value
`lsatype <0-7>`	Specifies the link-state advertisement type in the range of 0 to 7.
`lsid <A.B.C.D>`	Specifies the link-state ID.
`vrf <WORD 0-16>`	Specifies a VRF by name.
`vrfids <WORD 0-255>`	Specifies a range of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf ase

View the link-state database to determine externally learned routing information.

Syntax

```
show ip ospf ase [metric-type <1-2>] [vrf <WORD 0-16>]
[vrfids <WORD 0-255>]
```

Parameters

Variable	Value
`metric-type <1-2>`	Specifies the metric type as a string of 1 to 2 characters.
`vrf <WORD 0-16>`	Identifies the VRF by name.
`vrfids <WORD 0-255>`	Specifies a VRF by ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

redistribute ospf

Configure a redistribute entry to announce certain routes into the RIP domain, including static routes, direct routes, RIP, OSPF, or BGP. Optionally, use a route policy to control the redistribution of routes.

Syntax

redistribute <ospf|bgp|static|direct|rip> [vrf-src <WORD 0-16>]

Parameters

Variable	Value
<ospf|bgp|static|direct|rip>	Specifies the type of routes to be redistributed (the protocol source).
vrf <WORD 0-16>	Specifies the VRF instance.
vrf-src <WORD 0-16>	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

OSPF Router Configuration Mode

Related commands

Variable	Value
apply [vrf-src <WORD 0-16>]	Applies the redistribution configuration. Changes do not take effect until you apply them.
enable [vrf-src <WORD 0-16>]	Enables the OSPF route redistribution instance.
metric <metric-value> [vrf-src <WORD 0-16>]	Configures the metric to apply to redistributed routes.
metric-type <type1|type2> [vrf-src <WORD 0-16>]	Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone.

Variable	Value
`route-policy <WORD 0-64> [vrf-src <WORD 0-16>]`	Configures the route policy to apply to redistributed routes.
`subnets <allow|suppress> [vrf-src <WORD 0-16>]`	Allows or suppresses external subnet route advertisements when routes are redistributed into an OSPF domain.

show ip ospf redistribute

Display the OSPF redistribution configuration information.

Syntax

```
show ip ospf redistribute [vrf <WORD 0-16>] [vrfids
<1-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
`vrfids <1-255>`	Specifies a list of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip ospf apply redistribute

Apply the OSPF redistribution.

Syntax

```
ip ospf apply redistribute <ospf|bgp|static|direct|rip>
[vrf <WORD 0-16>] [vrf-src <WORD 0-16>]
```

Parameters

Variable	Value
`<ospf|bgp|static|direct|rip>`	Specifies the type of routes to be redistributed (the protocol source).
`vrf <WORD 0-16>`	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip ospf redistribute

Configure a redistribute entry to announce certain routes into the RIP domain, including static routes, direct routes, RIP, OSPF, or BGP. Optionally, use a route policy to control the redistribution of routes.

Syntax

`ip ospf redistribute <ospf|bgp|static|direct|rip>`

Parameters

Variable	Value
`<ospf|bgp|static|direct|rip>`	Specifies the type of routes to be redistributed (the protocol source).
`vrf <WORD 0-16>`	Specifies the VRF instance.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Next command mode

VRF Router Configuration Mode

Related commands

Variable	Value
`apply [vrf-src <vrf-name>]`	Applies the redistribution configuration. Changes do not take effect until you apply them.
`enable [vrf-src <vrf-name>]`	Enables the OSPF route redistribution instance.
`metric <metric-value> [vrf-src <vrf-name>]`	Configures the metric to apply to redistributed routes.
`metric-type <type 1|type2> [vrf-src <vrf-name>]`	Specifies a type 1 or a type 2 metric. For metric type 1, the cost of the external routes is equal to the sum of all internal costs and the external cost. For metric type 2, the cost of the external routes is equal to the external cost alone.
`route-policy <policy name> [vrf-src <vrf-name>]`	Configures the route policy to apply to redistributed routes.
`subnets <allow|suppress> [vrf-src <vrf-name>]`	Allows or suppresses external subnet route advertisements when routes are redistributed into an OSPF domain.

ip ospf apply redistribute

Apply the OSPF redistribution.

Syntax

```
ip ospf apply redistribute <ospf|bgp|static|direct|rip>
[vrf <WORD 0-16>] [vrf-src <WORD 0-16>]
```

Parameters

Variable	Value
`<ospf|bgp|static|direct|rip>`	Specifies the type of routes to be redistributed (the protocol source).

Variable	Value
`vrf <WORD 0-16>`	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
`vrf-src <WORD 0-16>`	Specifies the source VRF instance. This parameter is not required for redistribution within the same VRF.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip ospf redistribute

Display the OSPF redistribution configuration information.

Syntax

```
show ip ospf redistribute [vrf <WORD 0-16>] [vrfids
<1-255>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies the VRF instance by name. When applying a redistribution instance that redistributes from a nonzero VRF to VRF 0 (the global router), do not specify the destination VRF; only specify the source VRF.
`vrfids <1-255>`	Specifies a list of VRF IDs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ip ospf spf-run

Force the switch to update its shortest-path calculations so that the switch uses the latest OSPF routing information.

Syntax

```
ip ospf spf-run [vrf <WORD 0-16>]
```

Parameters

Variable	Value
`vrf <WORD 0-16>`	Specifies a VRF instance by name.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

Performance Management commands

This chapter describes Nortel Networks Command Line Interface (NNCLI) commands about switch management tools, the Dynamic Network Applications feature, SNMP, RMON, IPFIX, configuration of the Web management interface, viewing and creating graphs for the Ethernet Routing Switch 8600.

Navigation

show sys perf

View system performance to monitor network functionality.

Syntax

`show sys perf`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

boot config flags ha-cpu

When you use Layer 2 and Layer 3 redundancy, the bootconfig file is saved to both the Master and the Standby Switch Fabric/Central Processor Unit (SF/CPU) and the Standby SF/CPU resets automatically. You must manually reset the Master SF/CPU.

Syntax

boot config flags ha-cpu

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

rmon

Configure RMON functions on the switch to set alarms and capture events.

Syntax

rmon

Parameters

Variable	Value
alarm <1-65535> <Word/1-536> <1-3600> {**absolute** | **delta**} **rising-threshold** <-2147483648-2147483647> [<event:1-65535>] **falling-threshold** <-2147483648-2147483647> [<event:1-65535>]	Creates an alarm interface. • <1-65535> is the interface index number from 1–65535. • <Word/1-1536> is the variable name or OID, case sensitive (string length 1–1536). • {**absolute** | **delta**} is the sample type.

[owner <WORD/2-127>] default rmon alarm <1-65535>	• **rising-threshold <-2147483648-2147483647> [<event:1-65535>]** is the rising threshold (–2147483648–2147483647) and the rising event number (1–65535). • **falling-threshold <-2147483648-2147483647> [<event:1-65535>]** is the falling threshold (–2147483648–2147483647) and the falling event number (1–65535). • **owner <WORD/2-127>** is the name of the owner (string length 1–48). • **default rmon alarm <65535>** is the default rmon alarm configuration. Use the **no** operator to disable RMON alarms: **no rmon alarm [<1-65535>]**
stats <1-65535> <portList> [owner <WORD/1-127>]	Creates an ether-stats control interface. • **<1-65535>** is the index number of the ether stats control interface. • **portList** is the single port interface {slot/port[-slot/port][,...]}. • **owner <WORD/1-127>** is name of the owner (string length 1–127). Use the **no** operator to delete a stats control interface: **no rmon stats [<1-65535>]**
event <1-65535> [log] [trap] [description <LINE>] [owner <LINE>] [trap_src <A.B.C.D>] [trap_dest <A.B.C.D>] [community <WORD/1-127>]	Creates an event. • **<1-65535>** is the event index number. • **[log]** displays information about configured traps. • **[trap]** specifies trap source and destination IP addresses. • **description <LINE>** is the event description (string length 0–127). • **owner <WORD/1-127>** is the name of the owner (string length 1–127). • **trap_src <A.B.C.D>** is the trap source ip address. • **trap_dest <A.B.C.D>** is the trap destination ip address. • **community <WORD/1-27>** is the event community (string length 1–127).

	Use the **no** operator to delete a RMON event: **no rmon event [<1-65535>] [log]**
history <1-65535> <portList> [<buckets:1-65535>] [<interval:1-3600>] [owner <WORD/1-127>]	Creates a history control interface. • **<1-65535>** is the index number of the history control interface (1–65535). • **<portList>** is the single port interface {slot/port[-slot/port][,...]}. • **[<buckets:1-65535>]** is the number of buckets requested (1–65535). • **[<interval:1-3600>]** is the time interval in seconds over which the data is sampled for each bucket (1–3600). • **[owner <WORD/1-127>]** is the name of the owner (string length 1–48). Use the **no** operator to delete a history control interface: **no rmon history [<1-65535>]**
memsize <250000-4000000>	Configures the amount of RAM in bytes to allocate for RMON. The range is 250000–4000000.
trap-option <toOwner | toAll>	Controls whether the RMON traps are sent to the owner or to all trap recipients. **toOwner | toAll** is set to either the owner or to all trap recipients.
util-method <half | full>	Controls whether port utilization is calculated in half or full duplex.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show rmon

View RMON settings to see information about alarms, statistics, events, or the status of RMON on the switch.

Syntax

show rmon

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

ip ipfix enable

You must globally enable IPFIX before you can use any IPFIX commands. This command is critical for offloading the switch from IPFIX processing.

Syntax
ip ipfix enable

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

filter acl set

Configure an Access Control List (ACL) filter.

Syntax
filter acl set <1-4096> {default-action {deny|permit} global-action {mirror|count|mirror-count|ipfix|mirror-ipfix|count-ipfix|mirror-count-ipfix}}

Parameters

Variable	Value
default-action	The options are deny or permit.
filter acl set	This is the ACL ID. The range is from 1–4096.
global-action	The value is one of the following actions:**mirror|count|mirror-count|ipfix|mirror-ipfix|count-ipfix|mirror-count-ipfix**

Default
None

Command mode
Global Configuration Mode

Related commands
None

filter acl ace action
Enable IPFIX on an ACL.

Syntax
```
filter acl ace action <1-4096> <1-1000> {deny|permit}
[ipfix |enable|disable]
```

Parameters

Variable	Value
`<1-4096>`	Specifies an ACL ID in the range of 1–4096.
`<1-1000>`	Specifies an ACE ID in the range of 1–1000.
`{deny|permit}`	Configures the action mode, and its options update desired action parameters for access control entries.

Default
None

Command mode
Global Configuration Mode

Related commands
None

ip ipfix port
Configure IPFIX parameters on a port.

Syntax
```
ip ipfix [port <portlist>] [enable]
```

Parameters

Variable	Value
enable	Enables IPFIX. Use the **no** operator to disable IPFIX parameters on a port: **no ip ipfix [port <portlist>] [enable]**
hash-key <1-4>	Selects a hash-key ID. Values range from 1–4. **<1-4>**—hashKeyOne|hashKeyTwo|hashKeyThree|hashKeyFour A 64-bit key is formed based on the following hash-key-id: Hash Key 1: SIP(lower 20 bits), DIP(lower 19 bits, protocol(1-5 bits), srcport(lower 10 bits), dstport(lower 10 bits) Hash Key 2: Cascaded Hash - Use all bits from 5-tuple - hash1 = hash(SIP,DIP), hash2 = hash(hash1(lower 24 bits,protocol(8 bits), srcport(16 bits),dstport(16 bits)) Hash Key 3: hash(SIP(32 bits),DIP(32 bits)) Hash Key 4: hash(SIP(32 bits),srcport(16 bits),dstport(16 bits)).
hash-polynomial-coeffs <1025-16777215>	Configures the hash polynomial for IPFIX. • **coeffs <1025-16777215>**—polynomial coefficients in the range <1025–16777215>. If you do not specify a coefficient, the default value (0x7cc) is used.
hash-polynomial-seed <0-16777215>	Configures the hash polynomial for IPFIX. • **seed <0-16777215>**—polynomial seed in the range <0–16777215> If you do not specify a seed value, the default value (0) is used.
sampling-rate <1-100000>	Configures the sampling rate. The sampling rate is expressed as 1 in every *n* packets. Configure as 1 (the default) for continuous monitoring. Otherwise, specify a different frequency.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

ip ipfix slot
Configure IPFIX slot parameters.

Syntax
ip ipfix slot <slotList>

Parameters

Variable	Value
active-timeout <1-60>	Configures flow active timeout. **<1-60>**—flow record active timeout value from 1–60 minutes.
aging-interval <10-3600>	Configures flow record aging interval. **<10-3600>**—flo w record aging interval from 10–3600 seconds.
exporter-enable	Enables the exporter state. To disable the exporter state, use the following command: **no ip ipfix slot <slotlist> exporter-enable**
export-interval <10-3600>	Configures the export interval.**<10-3600>**—frequency of flow export to collector from 10–3600 seconds.
template-ref resh-interval <300-3600>]	Configures the value of template refresh timeout for IPFIX. **<300-3600>**—value in seconds from 300–3600. The template rate refresh is scheduled for every x seconds or every y exported packets, whichever occurs first.
template-ref resh-packets <10000-100000>	Configures the value of template refresh timeout for packets. **<10000-100000>**—number of packets from 10000–100000. The template rate refresh is scheduled for every x seconds or every y exported packets, whichever occurs first.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip ipfix collector

Configure up to two collectors for each slot.

If you do not specify an Exporter IP address, the source IP address is chosen from Virtual IP, Management IP, or outgoing interface IP based on the collector IP reachability.

Syntax

```
ip ipfix collector <slotList> <A.B.C.D> {[enable]
[protocol {udp|tcp|sctp}] [dest-port <1-65535,
[exporter-ip <A.B.C.D>] [protocol-version {ipfix|preipfi
x|preipfixv5}]}
```

Parameters

Variable	Value
`<A.B.C.D> {[enable] [protocol {udp|tcp|sctp}] [dest-port <1-65535>] [exporter-ip <A.B.C.D>] [protocol-version {ipfix|preipfix|preipfixv5}]`	Configures or modifies a collector. • `enable`—state of collector {false|true}. • `<A.B.C.D>`—IP address of collector. • `protocol`—type of protocol `{udp|tcp|sctp}`. • `dest-port`—port from 0–65535. • `exporter-ip <A.B.C.D>`—IP address for the exported traffic. • `protocol-version {ipfix|preipfixv9|preipfixv5}`—IPFIX protocol version.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ip ipfix

You can display flow entries using the NNCLI framework. Because the flow database is large, the sorting functionality remains simple. The response time can be slow for sorted displays.

Syntax

show ip ipfix

Parameters

Variable	Value
collector [<slotList>]	Shows collector information.
exporter [<slots>]	Shows exporter information.
export [<slots>]	Shows exporter statistics.
flows <slots> [source-addr {=|!=|<=|>=} <A.B.C.D>] [dest-addr {=|!=|<=|>=} <A.B.C.D>] [port {=|!=|<=|>=} <slot/port>] [vlan {=|!=|<=|>=} <0-4095>] [protocol {=|!=|<=|>=} <0-255>] [TCP-UDP-src-port {=|!=|<=|>=} <0-65535>] [TCP-UDP-dest-port {=|!=|<=|>=} <0-65535>] [byte-count {=|!=|<=|>=} <0-4294967295>] [pkt-count {=|!=|<=|>=} <0-4294967295>] [TOS {=|!=|<=|>=} <0-255>] [first-pkt-time {=|!=|<=|>=} <MMddyyyy hhmmss>] [last-pkt-time {=|!=|<=|>=} <MMddy yyyhhmmss>] [monitor <true|false>] [numFlows <1-100>]	Displays IPFIX flows for a given slot. • **source-addr**—oper{=|!=|<=|>=} and ip addr {A.B.C.D}; for example, {<=A.B.C.D}. • **dest-addr**—oper{=|!=|<=|>=} and ip addr {A.B.C.D}; for example, {>=A.B.C.D}. • **port**—oper{=|!=|<=|>=} and port{slot/port}; for example, {=a/b}. • **vlan**—oper{=|!=|<=|>=} and vlan{0–4095}; for example, {!=a}. • **protocol**—oper{=|!=|<=|>=} and protocol {0–255}; for example, {>=a}. The mapping values for some of the protocol types are icmp:1, tcp:6, udp:17, ipsecesp:50, ipsecah:51, ospf:89, vrrp:112, snmp:254, undefined:256. • **TCP-UDP-src-port**—oper{=|!=|<=|>=} and port {0–65535}; for example, {>=a}. • **TCP-UDP-dest-port**—oper{=|!=|<=|>=} and port {0–65535}; for example, {>=a}. • **byte-count**—oper{=|!=|<=|>=} and byte-count {0-4294967295}. For example, {>=a}.

Variable	Value
	• **pkt-count**—oper{=|!=|<=|>=} and pkt-count {0–4294967295}; for example, {>=a}. • **TOS** = oper{=|!=|<=|>=} and TOS{0-255},e.g {>=a} • **first-pkt-time**—oper{=|!=|<=|>=} and time {MMddyyyyhhmmss}; for example, {>=a}. • **last-pkt-time**—oper{=|!=|<=|>=} and time {MMddyyyyhhmmss}; for example, {>=a}. • **monitor**—true|false. When monitor is set to true, you can monitor the 10 flows (by byte count) by default. You can monitor more flows by setting the numFlows option. The maximum number of flows that can be monitored is 100. • **numFlows**—from 1–100.
hash-statistics [<slots>]	Shows hash statistics.
interface [<interface-type>] [<interface-id>]	Shows IPFIX interface information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

clear ip ipfix

Clear the exporter and hash statistics configuration on the specified slot.

Syntax

clear ip ipfix {[stats [slots]]}

Parameters

Variable	Value
stats [slots]	Clears the statistics on the specifies slot.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

pluggable-optical-module

Configure Digital Diagnostic Interface (DDI) on Digital Diagnostic Monitoring to get information concerning the status of the transmitted and received signals to allow better fault isolation and error detection.

Syntax

pluggable-optical-module ddm-alarm-portdown

Parameters

Variable	Value
ddm-alarm-portdown	Sets the port down when an alarm occurs. When enabled, the port goes down when any alarm occurs.

Default

The default is disable.

Command mode

Global Configuration Mode

Related commands

Variable	Value
ddm-monitor	Enables the monitoring of the DDM. When enabled, the user gets the internal performance condition (temperature, voltage, bias, Tx power and Rx power) of the SFP/XFP. The default is disable.

Variable	Value
ddm-monitor-interval <5-60>	Configures the DDM monitor interval in the range of 5 to 60 in seconds. If any alarm occurs, the user gets the log message before the specific interval configured by the user. The default value is 5 seconds.
ddm-traps-send	Enables or disables the sending of trap messages. When enabled, the trap message is sent to the Device manager, any time the alarm occurs. The default is enable.

show pluggable-optical-module

View DDI module information to view basic SFP and XFP manufacturing information and characteristics.

Syntax

show pluggable-optical-modules basic [<ports>]

Parameters

Variable	Value
basic	Displays basic SFP/XFP information.
ports	A port or a range of ports in the format of slot/port. If no port list is entered the complete detailed output displays for each port.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
config	Displays pluggable optical modules configuration information.
detail	Displays detailed SFP and XFP information.
temperature	Displays SFP and XFP temperature information.
voltage	Displays SFP and XFP voltage information.

trace auto enable

Configure the switch to automatically enable a trace if SF/CPU utilization reaches a predefined value.

Syntax

trace auto enable

Parameters

Variable	Value
enable	Enables automatic trace feature.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
high-percentage <percent>	Specifies the SF/CPU utilization percentage above which autotrace is enabled. **percent** is a value from 60–100. The default is 90.
high-track-duration <seconds>	Specifies the time in seconds to monitor SF/CPU utilization before triggering a trace. **seconds** is a value from 3–10. The default is 5.
low-percentage <percent>	Specifies the SF/CPU utilization percentage below which autotrace is disabled. **percent** is a value from 50–90. The default is 75.
low-track-duration <seconds>	Specifies the time, in seconds, to monitor SF/CPU utilization before disabling the trace. **seconds** is a value from 3–10. The default is 5.
low-track-duration <seconds>	Specifies the time, in seconds, to monitor SF/CPU utilization before disabling the trace. **seconds** is a value from 3–10. The default is 5.
module	Adds or deletes a module to be traced by the trace autoenable feature. • **add <1-92>** identifies the module that you want to add. • **remove <1092>** identifies the module you want to delete.

mac-security auto-learning

Configure FDB protection on ports to manage network performance.

Syntax

mac-security auto-learning fdbprotect

Parameters

Variable	Value
fdbprotect	Enables fdbprotect on the port.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
max-addrs	Assigns maximum number of entries on the port.
min-addrs	Assigns the minimum number of MAC entries at which the learning is reenabled.
snmp-trap	Enables logging and trapping in an event of violation.
violation-down-port	Brings down the port on an event of violation.

show ip tcp statistics

View TCP statistics to manage network performance.

Syntax

show ip tcp statistics

Parameters

Variable	Value
statistics	Displays IP TCP global statistics command.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
`connections`	Displays IP TCP connections information command.
`properties`	Displays IP TCP global properties command.

show routing statistics

View port routing statistics to manage network performance.

Syntax

```
show routing statistics interface [<interface-type>]
[<interface-id>]
```

Parameters

Variable	Value
`[<interface-type>]`	Indicates the interface type.
`[<interface-id>]`	Indicates the interface identifier.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics

Display individual bridging statistics for specific ports to manage network performance.

Syntax

```
show interfaces FastEthernet statistics bridging
[<1-4094>] [<portList>]
```

Parameters

Variable	Value
`[<1-4094>]`	Displays all statistics by VLAN.
`[<portList>]`	Displays all statistics by port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces dhcp-relay

Display individual DHCP-relay statistics for specific ports to manage network performance.

Syntax

`show interfaces FastEthernet statistics dhcp-relay [<vrf>] [<vrfids>] [<portList>]`

Parameters

Variable	Value
`[<vrf>]`	Specifies a VRF instance by VRF name.
`[<vrfids>]`	The ID of the VRF and is an integer between 0 and 255.
`[<portList>]`	Displays all statistics by port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics ipvpn

Display individual IPVPN statistics for specific ports to manage network performance.

Syntax

```
show interfaces FastEthernet statistics ipvpn
[<vrf>] [<vrfids>] [<portList>]
```

Parameters

Variable	Value
[<vrf>]	Specifies a VRF instance by VRF name.
[<vrfids>]	The ID of the VRF and is an integer between 0 and 255.
[<portList>]	Displays all statistics by port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics lacp

Display individual LACP statistics for specific ports to manage network performance.

Syntax

```
show interfaces FastEthernet statistics lacp [<portList>]
```

Parameters

Variable	Value
[<portList>]	Displays all statistics by port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics rmon

Display individual RMON statistics for specific ports to manage network performance.

Syntax

```
show interfaces FastEthernet statistics rmon [<portList>]
```

Parameters

Variable	Value
[<portList>]	Displays all statistics by port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics stg

Display individual STG statistics for specific ports to manage network performance.

Syntax

```
show interfaces FastEthernet statistics stg [<portList>]
```

Parameters

Variable	Value
[<portList>]	Displays all statistics by port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics verbose

Display individual STG statistics for specific ports to manage network performance.

Syntax

```
show interfaces FastEthernet statistics verbose
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip ipfix export
View exporter statistics to manage network performance.

Syntax
```
show ip ipfix export [<slots>]
```

Parameters

Variable	Value
[<slots>]	Indicates a slot or range of slots for which you want to view statistics.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip ipfix hash-statistics
View hash statistics to manage network performance.

Syntax
```
show ip ipfix hash-statistics [<slots>]
```

Parameters

Variable	Value
[<slots>]	Indicates a slot or range of slots for which you want to view statistics.

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show qos statistics

Display individual queue statistics with the following procedure.

Syntax

show qos statistics egress-queue-set <1-386> [interface type <fastethernet|gigabitethernet>] [detail]

Parameters

Variable	Value
<interface type>	**fastethernet|gigabitethernet**
<1-386>	Specifies the transmitted queue template identifier.
[detail]	Displays all details.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics egress-queues

Display individual egress queue statistics for specific ports, use the following command. Be aware that you can also use the command to verify that drops occur according to the queue priority level.

Syntax

show interfaces FastEthernet statistics egress-queues <0-63> [<portList>] [verbose]

Parameters

Variable	Value
[<portList>]	Displays all queue statistics by port.

Variable	Value
`<0-63>`	Indicates the transmitted queue template identifier.
`[verbose]`	Displays the queues with both nonzero and zero allocation. Otherwise, only queues with nonzero allocations are shown. You can also use this option for debugging purposes because it can signal a configuration problem if the queues with zero allocation have packet drops.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show qos statistics policy
Display policing statistics.

Syntax
`show qos statistics policy`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

clear filter acl
Clear default ACL statistics if you no longer require previous statistics.

Syntax
`clear filter acl statistics default [<1-4096>]`

Parameters

Variable	Value
`[<1-4096>]`	Specifies the ACL identifier.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show filter acl statistics port

View port statistics to ensure that the ACE operates correctly.

Syntax

```
show filter acl statistics port [<1-4096>] [<portList>]
```

Parameters

Variable	Value
`[<1-4096>]`	Specifies the ACL ID.
`[<portList>]`	Specifies the ports for which you want to see statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

clear filter

Clear ACE for each-port statistics.

Syntax

```
clear filter acl statistics port [<1-4096>] [<portList>]
```

Parameters

Variable	Value
`[<1-4096>]`	Specifies the ACL ID.
`[<portList>]`	Specifies the ports for which you want to see statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

clear ip traffic-filter

Clear traffic filter statistics to delete statistics you no longer require.

Syntax

```
clear ip traffic-filter-statistics [<1-4096>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the filter ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter

View the filter ID and counter information for all filters that have statistics gathering enabled, or for a specific filter ID to manage network performance.

Syntax

```
show ip traffic-filter statistics [<1-3071]
```

Parameters

Variable	Value
`<1-3071>`	Specifies the filter ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pgm retransmit

Display the PGM retransmission statistics to analyze trends.

Syntax

`show ip pgm retransmit`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pgm session

Display the PGM session statistics to analyze trends.

Syntax

`show ip pgm session`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pgm interface

Show PGM interface statistics to display general statistics about the selected interface.

Syntax

`show ip pgm interface statistics`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pgm interface statistics nak

Show PGM interface NAK statistics to display information about NAK and NNAK on the selected interface.

Syntax

`show ip pgm interface statistics nak`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip pgm interface statistics parity

Show PGM interface parity statistics to display parity information about the selected interface.

Syntax

`show ip pgm interface statistics parity`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show port statistics wis sectioncurrent

Show current section statistics on specified ports to ensure the port functions properly.

Syntax
```
show port statistics wis sectioncurrent [1-4094]
[portList]
```

Parameters

Variable	Value
[1-4094]	Specifies the VLAN on which you want to view statistics.
[portList]	Specifies the port on which you want to view statistics.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show port statistics wis sectioninterval

View current section statistics on specified ports at a specified interval to ensure the interface functions properly.

Syntax
```
show port statistics wis sectioninterval <1-96>
```

Parameters

Variable	Value
`<1-96>`	Identifies the interval.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis linecurrent

View current line statistics on specified ports to ensure the interface functions properly.

Syntax

`show port statistics wis linecurrent <1-4094> [<portlist>]`

Parameters

Variable	Value
`[1-4094]`	Specifies the VLAN on which you want to view statistics.
`[portList]`	Specifies the port on which you want to view statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis lineinterval

View current line statistics on specified ports at a specified interval to ensure the interface functions properly.

Syntax

`show port statistics wis lineinterval <1-96>`

Parameters

Variable	Value
`<1-96>`	Identifies the interval.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis felinecurrent

View current FE line statistics on specified ports to ensure the interface functions properly.

Syntax

```
show port statistics wis felinecurrent <1-4094>
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN on which you want to view statistics.
`<portList>`	Indicates the ports on which you want to view statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis felineinterval

View current FE line statistics on specified ports at a specified interval to ensure the interface functions properly.

Syntax

```
show port statistics wis felineinterval <1-96>
```

Parameters

Variable	Value
`<1-96>`	Identifies the interval.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis pathcurrent

View current path statistics on specified ports to ensure the interface functions properly. The default Path SES threshold of 2400 corresponds to a situation where 30 per cent of all of the SPEs being received have parity errors detected through the Path BIP checks.

Syntax

```
show port statistics wis pathcurrent <1-4094> [<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN on which you want to view statistics.
`<portList>`	Indicates the ports on which you want to view statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis pathinterval

View current path statistics on specified ports at a specified interval to ensure the interface functions properly.

Syntax

```
show port statistics wis pathinterval <1-96>
```

Parameters

Variable	Value
`<1-96>`	Identifies the interval.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis fepathcurrent

View current FE path statistics on specified ports to ensure the interface functions properly.

Syntax

```
show port statistics wis fepathcurrent <1-4094>
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN on which you want to view statistics.
`<portList>`	Indicates the ports on which you want to view statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis fepathinterval

View FE path statistics on specified ports at a specified interval to ensure the interface functions properly.

Syntax

```
show port statistics wis fepathinterval <1-96>
```

Parameters

Variable	Value
`<1-96>`	Identifies the interval.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show port statistics wis sonetmedium

View current SONET medium statistics on a specified port to ensure the interface functions properly.

Syntax

`show port statistics wis sonetmedium <1-4094> [<portlist>]`

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN on which you want to view statistics.
`<portList>`	Indicates the ports on which you want to view statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree mstp statistics

Display MSTP statistics to see MSTP related bridge-level statistics.

Syntax

`show spanning-tree mstp statistics`

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show spanning-tree rstp statistics
View Rapid Spanning Tree Protocol statistics to manage network performance.

Syntax
`show spanning-tree rstp statistics`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show spanning-tree rstp port statistics
View RSTP stats on ports to manage network performance.

Syntax
`show spanning-tree rstp port statistics <portlist>`

Parameters

Variable	Value
`<portlist>`	The ports for which you want to view statistics.

Default
None

Command mode
Privileged Executive Mode

Related commands

None

show mlt stats

View MLT statistics to display MultiLinkTrunking statistics for the switch or for the specified MLT ID.

Syntax

show mlt stats <mltid>

Parameters

Variable	Value
<mltid>	Specifies the MLT ID. The value ranges from 1–256.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces error ospf

Use statistics to help you monitor Open Shortest Path First (OSPF) performance. You can also use statistics in troubleshooting procedures.

Syntax

show interfaces [fastEthernet|GigabitEthernet] error ospf [<portList>]

Parameters

Variable	Value
<portList>	is the either port or slot number or a range of ports.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf ifstats

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

```
show ip ospf ifstats [mismatch] [vrf <value>] [vrfids
<value>]
```

Parameters

Variable	Value
`[mismatch]`	`mismatch` is the number of times the area ID is not matched.
`[vrf <value>]`	Specifies a VRF instance by VRF name.
`[vrfids <value>]`	Specifies a VRF or range of VRFs by ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip ospf stats

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

```
show ip ospf stats [vrf <value>] [vrfids <value>]
```

Parameters

Variable	Value
`[vrf <value>]`	Specifies a VRF instance by VRF name.
`[vrfids <value>]`	Specifies a VRF or range of VRFs by ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ports statistics ospf main

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

show ports statistics ospf main <portList>

Parameters

Variable	Value
<portList>	is the either port or slot number or a range of ports.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ports statistics ospf extended

Use statistics to help you monitor Open Shortest Path First (OSPF) performance.

Syntax

show ports statistics ospf extended <portList>

Parameters

Variable	Value
<portList>	is the either port or slot number or a range of ports.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show lacp interface

View LACP statistics for each port to monitor LACP performance of the port.

Syntax

show lacp interface <fastethernet|gigabitethernet> {slot/port [-slot/port]}

Parameters

Variable	Value
vid	Shows ports attached to a particular VLAN.
{slot/port [-slot/port]}	Specify the ports.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

mpls statistics receive

Enable MPLS statistics for received packets before the switch captures receive statistics.

Syntax

mpls statistics receive

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

mpls statistics receive start-label

Define the label number at which the switch begins collecting receive statistics on the MPLS.

Syntax

```
mpls statistics receive start-label <0-1048575>
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

mpls statistics transmit

Enable MPLS statistics for transmitted packets before the switch captures transmitted statistiscs.

Syntax

```
mpls statistics transmit
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

mpls statistics transmit start-label

Define the label number at which the switch begins collecting transmit statistics on MPLS.

Syntax

```
mpls statistics transmit start-label <0-1048575>
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls statistics receive
View statistics for received MPLS packets.

Syntax
```
show mpls statistics receive [label <value>] [port <value>]
```

Parameters

Variable	Value
`[GigabitEthernet <value>]`	Identifies the GigabitEthernet interface for which you are viewing statistics.
`[FastEthernet <value>]`	Identifies the FastEthernet interface for which you are viewing statistics.
`label <value>`	The number representing the label at which you want the switch to start collecting statistics. Valid values are 0 through 1048575.
`[port <value>]`	The portlist for MPLS statistics. <slot/port>.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show mpls statistics transmit
View statistics for transmitted MPLS packets to manage network performance.

Syntax
```
show mpls statistics transmit [FastEthernet <value>]
[GigabitEthernet <value>] [label <value>] [port <value>]
```

Parameters

Variable	Value
`[GigabitEthernet <value>]`	Identifies the GigabitEthernet interface for which you are viewing statistics.
`[FastEthernet <value>]`	Identifies the FastEthernet interface for which you are viewing statistics.
`label <value>`	The number representing the label at which you want the switch to start collecting statistics. Valid values are 0 to 1048575.
`[port <value>]`	The portlist for MPLS statistics. <slot/port>.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls statistics ldp

View MPLS LDP statistics to manage network performance.

Syntax

`show mpls statistics ldp [Peer IPAddress] [detail]`

Parameters

Variable	Value
`Peer IPAddress`	The IP address of the device for which you want to view statistics.
`detail`	Displays all captured statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show mpls statistics rsvp

View MPLS RSVP statistics to manage network performance.

Syntax

```
show mpls statistics rsvp [FastEthernet <value>]
[GigabitEthernet <value>] [label <value>] [vlan <value>]
```

Parameters

Variable	Value
`[FastEthernet <value>]`	Identifies the FastEthernet interface for which you are viewing statistics.
`[GigabitEthernet <value>] [label <value>]`	Identifies the GigabitEthernet interface for which you are viewing statistics.
`[vlan <value>]`	Identifies the VLAN for which you are viewing statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show eapol auth-stats interface

Display the Authenticator statistics to manage network performance.

Syntax

```
show eapol auth-stats interface [<interface-type>]
[<interface-id>]
```

Parameters

Variable	Value
`interface-type`	Specifies the type of interface displayed.
`interface-id`	Specifies the VLAN for which to show the statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show eapol session interface

View EAPoL session statistics to manage network performance.

Syntax

```
show eapol session interface [<interface-type>]
[<interface-id>]
```

Parameters

Variable	Value
`interface-type`	Specifies the type of interface displayed.
`interface-id`	Specifies the VLAN for which to show the statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show radius-server

Display current RADIUS server configurations.

Syntax

```
show radius-server
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

clear radius statistics

Clear server statistics.

Syntax

```
clear radius statistics
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces statistics dhcp-relay

Show DHCP relay information to view DHCP parameter information for one port, for all ports, or for a VLAN.

Syntax

```
show interfaces [interface-type] statistics dhcp-relay
[slot/port] [vrf <WORD/0-32>] [vrfids <0-255>]
```

Parameters

Variable	Value
`[interface-type] [interface-id]`	The type of interface and the ID of the interface.
`[vrf <WORD/0-32>]`	The name of the VRF.
`[vrfids <0-255>]`	The ID of the VRF and is an integer. The range is are 0–255.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos activealarms

Display active alarms on the 8683POSM Module port to manage network performance.

Syntax

show sonet statistic interfaces pos activealarms

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos felinecurrent

Display current statistics on the far-end line, which is at the receiving end, to manage network performance.

Syntax

show sonet statistic interfaces pos felinecurrent

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos felineinterval

Display statistics on the far-end line over a 15-minute interval.

Syntax

show sonet statistic interfaces pos felineinterval <1-96>

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos fepathcurrent
Display current statistics for the far-end path, which is at the receiving end, to manage network performance.

Syntax
```
show sonet statistic interfaces pos fepathcurrent
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos fepathinterval
Display statistics on the far-end path over a 15-minute interval to manage network performance.

Syntax
```
show sonet statistic interfaces pos fepathinterval <1-96>
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos linecurrent

Display current statistics for the line to manage network performance.

Syntax

show sonet statistic interfaces pos linecurrent

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos lineinterval

Display statistics for the line over a 15-minute interval to manage network performance.

Syntax

show sonet statistic interfaces pos lineinterval <1-96>

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos linkstatus

Display current statistics on the frames coming across the PPP link to manage network performance.

Syntax

show sonet statistic interfaces pos linkstatus

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos lqrstatus
Display the current statistics on the link quality reporting to manage network performance.

Syntax
`show sonet statistic interfaces pos lqrstatus`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos pathcurrent
Display current statistics on the path on the transmitting end to manage network performance.

Syntax
`show sonet statistic interfaces pos pathcurrent`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos pathinterval

Display statistics on the path for a 15-minute interval to manage network performance.

Syntax

show sonet statistic interfaces pos pathinterval <1-96>

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos pppiftbl

Display statistics on the PPP link to manage network performance.

Syntax

show sonet statistic interfaces pos pppiftbl

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show sonet statistic interfaces pos sectioncurrent

Display the current statistics on the section to manage network performance.

Syntax

show sonet statistic interfaces pos sectioncurrent

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos sectioninterval
Display statistics on the section over a 15-minute interval.

Syntax
```
show sonet statistic interfaces pos sectioninterval <1-96>
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show sonet statistic interfaces pos sonetmediumtbl
Display statistics on the SONET medium to manage network performance.

Syntax
```
show sonet statistic interfaces pos sonetmediumtbl
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show rmon stats
View RMON statistics to manage network performance.

Syntax

```
show rmon stats
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics

Show ATM port statistics to manage network performance.

Syntax

```
show interfaces atm statistics [<1-4094>] [portlist]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics ds3fecurrent

View DS3 far-end current statistics to manage network performance.

Syntax

```
show interfaces atm statistics ds3fecurrent [<1-4094>] [
portlist]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics ds3feinterval

View ATM DS3 far-end interval statistics to manage network performance.

Syntax

```
show interfaces atm statistics ds3feinterval <1-96>
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics ds3fetotal

View DS3 far-end total statistics to manage network performance.

Syntax

```
show interfaces atm statistics ds3fetotal [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics ds3necurrent

View DS3 near-end current statistics to monitor network performance.

Syntax

```
show interfaces atm statistics ds3necurrent [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics ds3neinterval

View DS3 near-end interval statistics to manage network performance.

Syntax

```
show interfaces atm statistics ds3neinterval [<1-96>]
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics ds3netotal

Display DS3 near-end total statistics to manage network performance.

Syntax

```
show interfaces atm statistics ds3netotal [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics felinecurrent

Display far-end line current statistics at the receiving end to manage network statistics.

Syntax

```
show interfaces atm statistics felinecurrent [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics felineinterval

View ATM far-end line statistics at a specified interval to manage network performance.

Syntax

```
show interfaces atm statistics felineinterval <1-96>
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics fepathcurrent

View the far-end path current statistics at the receiving end to manage network performance.

Syntax

```
show interfaces atm statistics fepathcurrent [>1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics fepathinterval

Display statistics on the far-end path for a specified interval to manage network performance.

Syntax

```
show interfaces atm statistics fepathinterval <1-96>
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics linecurrent

View current statistics for the ATM line to manage network performance.

Syntax

```
show interfaces atm statistics linecurrent [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics lineinterval

View statistics for the ATM line for a particular interval to manage network performance.

Syntax

```
show interfaces atm statistics lineinterval <1-96>
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics pathcurrent

View ATM path statistics to display current statistics on the ATM path at the transmitting end to manage network performance.

Syntax

```
show interfaces atm statistics pathcurrent [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics pathinterval

View statistics on the ATM path at an interval to manage network performance.

Syntax

```
show interfaces atm statistics pathinterval <1-96>
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics sectioncurrent

View current statistics on the ATM section to manage network performance.

Syntax

```
show interfaces atm statistics sectioncurrent [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics sectioninterval

View ATM statistics for an interval to manage network performance.

Syntax

```
show interfaces atm statistics sectioninterval <1-96>
[<portlist>]
```

Parameters

Variable	Value
`<1-96>`	Indicates the interval.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm statistics sonetmediumtbl

View statistics on the ATM SONET medium to manage network performance.

Syntax

```
show interfaces atm statistics sonetmediumtbl [<1-4094>]
[<portlist>]
```

Parameters

Variable	Value
`<1-4094>`	Indicates the VLAN.
`<portList>`	Indicates the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show pcap stats

View PCAP statistics to manage network performance.

Syntax

`show pcap stats`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

clear ip msdp statistics

Clear statistics counters for one or all of the Multicast Source Discovery Protocol (MSDP) peers without resetting the sessions.

Syntax

`clear ip msdp statistics {A.B.C.D}`

Parameters

Variable	Value
`peer address {A.B.C.D}`	The IP address of the MSDP peer.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

QoS and IP Filtering for R and RS Modules commands

This chapter describes the Nortel Command Line Interface (NNCLI) commands to configure Quality of Service (QoS) and filtering operations on the Ethernet Routing Switch 8600.

Navigation

- "show filter acl ethernet" (page 684)
- "filter acl ace ip" (page 685)
- "show filter acl ip" (page 686)
- "filter acl ace protocol" (page 687)
- "show filter acl protocol" (page 689)
- "filter acl ace advanced" (page 689)
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- "show filter acl ipv6" (page 691)
- "show filter acl config" (page 691)

enable-diffserve

Enable DiffServ so that the switch provides DiffServ-based QoS on that port.

Syntax

enable-diffserv [port <portList>] [enable]

Parameters

Variable	Value
enable	Enables DiffServ for the specified port. The default is disabled. To use the default configuration, use the default option in the command **default enable-diffserv [enable]** To delete the current configuration, use the no option in the command **no enable-diffserv [enable]**
port <portList>	Specifies the slot and port, or slot and port list. To delete the current configuration, use the no option in the command **no enable-diffserv [port <portList>]**

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

access-diffserve

Configure a port as untrusted to determine the Layer 3 QoS actions the switch performs. An untrusted port overrides DSCP markings.

Syntax

access-diffserv [port <portList>] [enable]

Parameters

Variable	Value
enable	If enabled, specifies an access port and overrides incoming DSCP bits. If disabled, specifies a core port and honors and handles incoming DSCP bits. The default is disabled. To use the default configuration, use the default option in the command **default access-diffserv [enable]** To delete the current configuration, use the no option in the command **no access-diffserv [enable]**
port <portList>	Specifies the slot and port, or slot and port list. To delete the current configuration, use the no option in the command **no access-diffserv [port <portList>]**

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

no access-diffserve enable

Configure a port as trusted to determine the Layer 3 QoS actions the switch performs. A trusted port honors incoming DSCP markings.

Syntax

no access-diffserve enable

Parameters

Variable	Value
enable	If enabled, specifies an access port and overrides incoming DSCP bits. If disabled, specifies a core port and honors and handles incoming DSCP bits. The default is disabled.

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

qos 802.1p-override

Configure a port as untrusted to determine the Layer 2 QoS actions the switch performs. An untrusted port (override enabled) overrides 802.1p bit markings.

Syntax

qos 802.1p-override [enable]

Parameters

Variable	Value
enable	If you configure this variable, it overrides incoming 802.1p bits; if you do not configure this variable, it honors and handles incoming 802.1p bits. The default is disable (Layer 2 trusted). To use the default configuration, use the default option in the command **default qos 802.1p-override [enable]** To delete the current configuration, use the no option in the command **no qos 802.1p-override [enable]**

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

no qos 802.1p-override

Configure a port as trusted to determine the Layer 2 QoS actions the switch performs. A trusted port (override disabled) honors incoming 802.1p bit markings.

Syntax

```
no qos 802.1p-override
```

Parameters

None

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

qos level port

Configure the default port QoS level to assign a default QoS level for all traffic (providing the packet does not match an ACL that remarks the packet).

Syntax

```
qos level [port <portList>] <0-6>
```

Parameters

Variable	Value
`<0-6>`	Specifies the default QoS level for the port traffic. QoS level 7 is reserved for network control traffic. The default is 1. To use the default configuration, use the default option in the command **`default qos level`**
`port` `<portList>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

qos level vlan

Change the default port or VLAN QoS levels to assign a default QoS level for all traffic, providing the packet does not match an ACL that remarks the packet.

Syntax

`qos level` `<0-6>`

Parameters

Variable	Value
`<0-6>`	Specifies the default QoS level for the VLAN traffic. QoS level 7 is reserved for network control traffic. The default is 1. To use the default configuration, use the default option in the command **`default qos level`**.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

vlan mac-address-entry status

Configure the source MAC QoS level for a dynamically learned address.

Syntax

vlan mac-address-entry <1-4094> qos-level <H.H.H> <0-6> status <other|invalid|learned|self|mgmt>

Parameters

Variable	Value
<0-6>	Specifies the QoS level. The default is 1. To use the default configuration, use the default option in the command.
<1-4094>	Specifies the VLAN ID.
<H.H.H>	Specifies the MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00
<portList>	Specifies the slot and port, or slot and port list.
status <other|invalid|learned|self|mgmt>	Specifies the FDB status (other|invalid|learned| self|mgmt).

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-static

Configure the source MAC QoS level for a bridge static address.

Syntax

vlan mac-address-static <1-4094> <H.H.H> <portList> qos <0-6>

Parameters

Variable	Value
<0-6>	Specifies the QoS level. The default is 1. To use the default configuration, use the default option in the command.

Variable	Value
`<1-4094>`	Specifies the VLAN ID.
`<H.H.H>`	Specifies the MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00
`<portList>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-filter

Configure the source MAC QoS level for a bridge filter address.

Syntax

`vlan mac-address-filter <1-4094> <H.H.H> <portList> <0-6>`

Parameters

Variable	Value
`<0-6>`	Specifies the QoS level. The default is 1. To use the default configuration, use the default option in the command.
`<1-4094>`	Specifies the VLAN ID.
`<H.H.H>`	Specifies the MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00
`<portList>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Global Configuration Mode

Related commands

None

bandwidth-limit

Configure broadcast and multicast bandwidth limiting to restrict the amount of ingress broadcast and multicast traffic on a port. The switch drops traffic that violates the bandwidth limit.

Syntax

bandwidth-limit [port <portList>] broadcast <250-2147483647>

Parameters

Variable	Value
broadcast <250-2147483647>	Specifies the bandwidth limit for broadcast traffic from 250–2 147 483 647 Kb/s. To delete the current configuration, use the no option in the command: **no bandwidth-limit [port <portList>] broadcast** To use the default configuration, use the default option in the command: **default bandwidth-limit broadcast**.
port <portList>	Specifies the slot and port, or a list of slots and ports. To delete the current configuration, use the no option in the command: **no bandwidth-limit port <portList>** To use the default configuration, use the default option in the command: **default bandwidth-limit port <portList>**

Default

The default is disabled.

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
multicast <250-2147483647>	Specifies the bandwidth limit for multicast traffic from 250–2 147 483 647 Kb/s. To delete the current configuration, use the no option in the command: **no bandwidth-limit [port <portList>] multicast** . To use the default configuration, use the default option in the command: **default bandwidth-limit multicast**. The default is disabled.

qos if-shaper

Configure port-based shaping to rate-limit all outgoing traffic to a specific rate.

Syntax

qos if-shaper [port <portList>] shape-rate <1000–10000000>

Parameters

Variable	Value
port <portList>	Specifies the slot and port, or slot and portlist.
shape-rate <1000-10000000>	Configures the shaping rate from 1000–10000000 Kb/s.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

qos if-policer

Configure a port policer to bandwidth-limit incoming traffic. The switch drops or remarks violating traffic. Only RS modules support this policer.

Syntax

```
qos if-policer [port <portList>] police-rate <1000–10000000>
```

Parameters

Variable	Value
`police-rate <1000–10000000>`	Specifies the ingress rate limit (policing limit) in Kb/s. The range is 1000–10000000.
`port <portList>`	Specifies the slot and port or slot and portlist.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

qos policy

Configure a QoS policy to configure peak and service policing rates for specific lane members.

Syntax

```
qos policy <1-16383> peak-rate <250-10000000> svc-rate
<250-10000000> [lanes <WORD 1-128>] [name <WORD 1-32>]
```

Parameters

Variable	Value
`<1-16383>`	Specifies the policer ID number.
`peak-rate <250-10000000>`	Configures the policer peak rate in Kb/s.
`srv-rate <250-10000000>`	Configures the policer service rate in Kb/s.
`lane <WORD 1-128>`	Specifies the lanes to which the policer applies: • all • slot/lane [-slot/lane][,-]
`name <WORD 1-32>`	Names the policer template.
`port <portList>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show qos policy-config

Ensure the accuracy of the QoS policy configuration.

Syntax

```
show qos policy-config [<0-16383>] [lane <WORD 1-128>]
[port <portList>]
```

Parameters

Variable	Value
`<1-16383>`	Specifies the policer ID number.
`lane <WORD 1-128>`	Specifies the lanes to which the policer applies: • all • slot/lane [-slot/lane][,-]
`port <portList>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

qos egress-queue-set qmax

Configure an egress queue set to apply the same egress queue configuration (a template) to a group (set) of ports.

Syntax

```
qos egress-queue-set qmax <1-386> <8|64> balanced-queues
<0-48>
```

Parameters

Variable	Value
`<1-386>`	Identifies the egress queue template.

Variable	Value
balanced-queues <0-48>	Specifies the maximum number of balanced queues in the egress queue set.
qmax <8 | 64>	Specifies the maximum number of queues, either 8 or 64. The sum of the number of queues for balanced, hipri, and lopri queues must be less than or equal to qmax.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
hipri-queues <0-64>	Specifies the maximum number of high-priority queues in the egress queue set.
lopri-queues <0-8>	Specifies the maximum number of low-priority queues in the egress queue set.
name <WORD 0-32>	Names the egress queue set template.

qos egress-queue-set

Associate ports with the egress queue set.

Syntax

qos egress-queue-set <1-386> <portList>

Parameters

Variable	Value
<1-386>	Identifies the egress queue set.
<portList>	Specifies the list of ports. To remove ports to an egress queue set, use the following command: **no qos egress-queue-set <1-386> <portList>**

Default

None

Command mode

Global Configuration Mode

Related commands

None

qos apply egress-queue-set

Apply all configuration changes on the egress queue set.

Syntax

```
qos apply egress-queue-set <1-386>
```

Parameters

Variable	Value
`<1-386>`	Identifies the egress queue template.
`apply`	Applies the egress queue set when you issue the command. When you create an egress queue set, apply occurs when you issue the command. When you modify a queue set, apply occurs after you save the configuration and boot the switch. This command is available only in Privileged EXEC mode.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show qos statistics egress-queue-set

Ensure the accuracy of the egress queue set configuration.

Syntax

```
show qos statistics egress-queue-set <1-386> [detail]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

qos egress-queue-set queue

Configure an egress queue set queue to customize shaping behavior.

Syntax

```
qos egress-queue-set queue <1-386> <0-63> [max-length
<0-32760>]
```

Parameters

Variable	Value
`<0-63>`	Identifies the queue.
`<1-386>`	Identifies the egress queue template.
`max-length <0-32760>`	Specifies the limit to which a queue can grow. The queue length does not imply that a queue has a fixed number of buffers. For example, a queue can grow to full memory size of 32 K buffers.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`max-rate <0-100>`	Specifies the maximum line rate in percent to accommodate various port speeds in the same template. The max-rate maximum is 100 percent. For example, if a 20 percent rate applies to a 10 and 1 Gb/s Ethernet port, the result is a 2 Gb/s bandwidth allocation for 10 Gb/s Ethernet and 200 Mb/s for a 1 Gb/s Ethernet port.
`min-rate <0-100>`	Specifies the minimum line rate in percent to accommodate various port speeds in the same template.
`name <WORD 0-32>`	Names the egress queue.

qos apply egress-queue-set

Apply the changes to the queue set.

Syntax

```
qos apply egress-queue-set <1-386>
```

Parameters

Variable	Value
`<1-386>`	Identifies the egress queue template.
`apply`	Applies the egress queue set when you issue the command. When you create an egress queue set, apply occurs when you issue the command. When you modify a queue set, apply occurs after you save the configuration and boot the switch. This command is available only in Privileged EXEC mode.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

qos ingressmap exp

Modify the ingress mappings to change traffic priorities. However, Nortel recommends that you use the default mappings.

Syntax

```
qos ingressmap exp <0-7> <0-7>
```

Parameters

Variable	Value
`exp <0-7> <0-7>`	Maps the MPLS EXP bit to a QoS level. Each option has a range from 0–7.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`1p <0-7> <0-7>`	Maps the IEEE 802.1p bit to QoS level. Each QoS level has a default IEEE 1P value: • level 0—1 • level 1—0 • level 2—2 • level 3—3 • level 4—4 • level 5—5 • level 6—6 • level 7—7 To use the default configuration, use the default option in the command**`default qos ingressmap 1p`**
`ds <0-63> <0-7>`	Maps the DS byte to QoS level.

show qos ingressmap

Ensure the accuracy of the ingress configuration.

Syntax

`show qos ingressmap`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

qos egressmap exp

Modify the egress mappings to change traffic priorities. However, Nortel recommends that you use the default mappings.

Syntax

```
qos egressmap exp <0-7> <0-7>
```

Parameters

Variable	Value
`exp <0-7> <0-7>`	Maps the QoS level to MPLS EXP level.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`1p <0-7> <0-7>`	Maps the QoS level to IEEE 802.1p priority. Each QoS level has a default IEEE 1P value: • level 0—1 • level 1—0 • level 2—2 • level 3—3 • level 4—4 • level 5—5 • level 6—6 • level 7—7 To use the default configuration, use the default option in the command**`default qos ingressmap 1p`**
`ds <0-7> <WORD 1-6>`	Maps the QoS level to DS byte. You can specify the DSCP in either hexadecimal, binary, or decimal.

show qos egressmap

Ensure the accuracy of the egress mappings configuration.

Syntax

```
show qos egressmap
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter act name

Use an access control template (ACT) to specify all possible match fields for an access control list (ACL).

Syntax

filter act <1-4096> [name <WORD 0-32>]

Parameters

Variable	Value
<1-4096>	Specifies an ACT ID in the range of 1 to 4096.
name <WORD 0-32>	Specifies an optional name for the ACT that uses 0–32 characters. If you do not enter a name, the switch generates a default name. You can change the name at any time, even after you issue the **apply** command.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
arp <operation>	Specifies the permitted ARP attributes for the ACT. The only option is operation.
ip <ip-attributes>	Specifies the permitted IP attributes for the ACT. Separate the list of attributes by commas: srcIp, dstIp, ipFragFlag, ipOptions, ipProtoType, or dscp. The default is none. To use the default configuration, use the default option in the command: **default filter act <1-4096> ip**

Variable	Value
ethernet <srcMac|dstMac|ethertype|<port|vlan>|vlanTagPrio>	Specifies the permitted Ethernet attributes for the ACT. Separate the list of attributes by commas: srcMac, dstMac, etherType, <port|vlan>, or vlanTagPrio. The default is none. To use the default configuration, use the default option in the command: **default filter act <1-4096> ethernet**
ipv6 <srcipv6|dstIpv6|nextHdr>	Specifies the permitted IPv6 attributes. Separate the list of allowed attributes by commas: srcIpv6, dstIpv6, or nextHdr.
protocol <tcpSrcPort|udpSrcPort|tcpDstPort|udpDstPort|tcpFlags|icmpMsgType>	Specifies the permitted protocol attributes for the ACT. Separate the list of attributes by commas: tcpSrcPort, udpSrcPort, tcpDstPort, udpDstPort, tcpFlags, or icmpMsgFlags. The default is none. To use the default configuration, use the default option in the command: **default filter act <1-4096> protocol**

show filter act

Display to ensure the accuracy of the filter ACT configuration.

Syntax

show filter act [<1-4096>]

Parameters

Variable	Value
<1-4096>	Specifies the ACT ID in the range of 1 to 4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter apply act

Apply (commit) the changes to the filter ACT. After you issue the apply command, you cannot modify the ACT.

Syntax

filter apply act <1-4096>

Parameters

Variable	Value
apply	Applies or commits the ACT. After you issue the **apply** command, to change the ACT, you must delete it (if no ACLs are associated with it) and recreate it.
<1-4096>	Specifies the ACT ID in the range of 1 to 4096.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter act pattern

Add a user-defined pattern to which the ACT can match. An ACT can have a maximum of three associated patterns.

Syntax

filter act pattern <1-4096> <WORD 0-32> <base> <0-76800> <1-56>

Parameters

Variable	Value
<0-76800>	The **<0-76800>** parameter specifies the offset: the number of bits from the base where the pattern starts.
<1-56>	The **<1-56>** parameter specifies the length in bits of the user-defined field from 1–56.

Variable	Value
`<base>`	The `<base>` parameter specifies the base. The base and the offset together determine the beginning of the pattern. Permitted values for the base include ether-begin, mac-dst-begin, mac-srcbegin, ethTypeLen-begin, arp-begin, ip-hdr-begin, ip-options-begin, ip-payload-begin, ip-tos-begin, ip-proto-begin, ip-src-begin, ip-dst-begin, ipv6-hdr-begin, tcp-begin, tcp-srcport-begin, tcp-dstport-begin, tcp-flags-end, udp-begin, udp-srcport-begin, udp-dstport-begin, ether-end, ip-hdr-end, icmp-msg-begin, tcp-end, or udp-end.
`<WORD 0-32>`	Names the pattern with a new name that you define. Each of the three patterns must have a unique name.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter act-pattern

Display the filter ACT pattern to ensure the accuracy of configuration.

Syntax

```
show filter act-pattern [<1-4096>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the ACT ID in the range of 1 to 4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl

Use an ACL to specify an ordered list of ACEs, or filter rules.

Syntax

```
filter acl <1-4096> type <inVlan|outVlan|inPort|outPort>
act <1-4096> [pktType <ipv4|ipv6>] [name <WORD 0-32>]
```

Parameters

Variable	Value
`act <1-4096>`	Specifies an ACT ID from 1 to 4096.
`name <WORD 0-32>`	Specifies an optional descriptive name for the ACL.
`pktType <ipv4|ipv6>`	Specifies the IP version. The default is IPv4.
`type <inVlan|outVlan|inPort|outPort>`	Specifies the ACL type. `inVlan` and `inPort` are ingress ACLs, and `outVlan` and `outPort` are egress ACLs.
`<1-4096>`	Specifies a unique identifier (1 to 4096) for this ACL.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl

Display the configuration of the filter ACL.

Syntax

```
show filter acl [<1-4096>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl enable

Enable the ACL on the filter.

Syntax

filter acl <1-4096> enable

Parameters

Variable	Value
<1-4096>	Specifies the ACL ID int he range of 1 to 4096.
enable	Enables the ACL state, and all associated ACEs.

Default

The default state is enable.

Command mode

Global Configuration Mode

Related commands

None

filter acl set

Configure the global packet treatment when a packet does match an ACE.

Syntax

filter acl set <1-4096> global-action <count|count-ipfix|ipfix|mirror|mirror-count|mirror-count-ipfix|mirror-ipfix>

Parameters

Variable	Value
global-action <count|count-ipfix|ipfix|mirror|mirror-coun	Specifies the global action for matching ACEs: mirror, count, mirror-count, ipfix, mirror-ipfix, count-ipfix, or mirror-count-ipfix.

Variable	Value
t|mirror-count-ipfix|mirror-ipfix>	If you enable mirroring, ensure you specify the source or destination mirroring ports: • For R modules in Tx mode, use **mirror-by-port** commands to specify mirroring ports. • For RS modules, or R modules in Rx mode, use the **filter acl ace debug** commands to specify mirroring ports. The default is none. To use the default configuration, use the default option in the command **default filter acl set <1-4096> global-action**

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl set default-action

Configure the default packet treatment when a packet does not match an ACE.

Syntax

filter acl set <1-4096> default-action <permit|deny>

Parameters

Variable	Value
default-action <deny|permit>	Specifies the default action to take when no ACEs match. Options include **<deny|permit>**.

Default

The default is permit.

Command mode

Global Configuration Mode

Related commands

None

filter acl vlan

Associate VLANs with, or remove VLANs from, an ACL so that filters do or do not apply to VLAN traffic, respectively.

Syntax

```
filter acl vlan <1-4096> <1-4094>
```

Parameters

Variable	Value
`<1-4096>`	Specifies an ACL ID from 1–4096.
`<1-4094>`	Specifies the VLAN IDs from 1–4094.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl port

Associate ports with, or remove ports from, an ACL so that filters do or do not apply to port traffic, respectively.

Syntax

```
filter acl port <1-4096> <portList>
```

Parameters

Variable	Value
`<1-4096>`	Specifies an ACL ID from 1–4096.
`<portList>`	Specifies ports in one of the following formats: [<slot/port>] or [<slot/port-slot/port>].

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl

View configuration information for ACL-based filters.

Syntax

show filter acl

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show filter act

View configuration information about the ACTs.

Syntax

show filter act

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show filter act-pattern

View configuration information about ACT patterns.

Syntax

show filter act-pattern

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl ace

Use an access control entry (ACE) to define a packet pattern and the desired behavior for packets that carry the pattern.

Syntax

```
filter acl ace <1-4096> <1-1000> [name <WORD 0-32]
```

Parameters

Variable	Value
`name <WORD 0-32>`	Specifies an optional descriptive name for the ACE that uses 0–32 characters.
`<1-1000>`	Specifies an ACE ID from 1 to 1000.
`<1-4096>`	Specifies an ACL ID from 1 to 4096.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`debug`	Updates desired debug parameters for ACEs.
`enable`	Enables an ACE within an ACL. After you enable an ACE, to make changes, first disable it.

filter acl ace action

Configure the ACE action mode as deny or permit

Syntax

```
filter acl ace action <1-4096> <1-1000> <deny|permit>
```

Parameters

Variable	Value
<permit|deny>	Configures the action mode. To use the default configuration, use the default option in the command **default filter acl ace action <1-4096> <1-1000>**
<1-1000>	Specifies an ACE ID from 1 to 1000.
<1-4096>	Specifies an ACL ID from 1 to 4096.

Default

The default is deny.

Command mode

Global Configuration Mode

Related commands

None

show filter acl ace

Display the filter ACL ACE configuration information.

Syntax

show filter acl ace [<1-4096>] [<1-1000>]

Parameters

Variable	Value
<1-1000>	Specifies an ACE ID from 1 to 1000.
<1-4096>	Specifies an ACL ID from 1 to 4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl ace debug

Use debug actions to use filters for troubleshooting or monitoring procedures.

Syntax

```
filter acl ace debug <1-4096> <1-1000> [count enable]
[copy-to-primary-cp enable] [copy-to-secondary-cp
enable] [mirror enable] [monitor-dst-ports <portList>]
[monitor-dst-vlan <0-4094>] [monitor-dst-mlt <1-256>]
```

Parameters

Variable	Value
copy-to-primary-cp enable	Enables the ability to copy matching packets to the primary (Master) CPU. The default is disabled. To use the default configuration, use the default option in the command **default filter acl ace debug <1-4096> <1-1000> copy-to-primary-cp enable**
copy-to-secondary-cp enable	Enables the ability to copy matching packets to the secondary (Standby) CPU. The default is disabled. To use the default configuration, use the default option in the command **default filter acl ace debug <1-4096> <1-1000> copy-to-secondary-cp enable**
count enable	Enables the ability to count matching packets. The default is disabled. To use the default configuration, use the default option in the command **default filter acl ace debug <1-4096> <1-1000> count enable**
mirror enable	Enables mirroring. If you enable mirroring, ensure that you configure the appropriate parameters: • For R and RS modules in Rx mode, and for RS modules, use**monitor-dst-ports**, **monitor-dst-vlan**, or **monitor-dst-mlt**. • For R modules in Tx mode, use the **mirror-by-port** commands to specify the mirroring source or destination. The default is disabled. To use the default configuration, use the default option in the command **default filter acl ace debug <1-4096> <1-1000> mirror enable**
monitor-dst-ports <portList>	Configures mirroring to a destination port or ports.
monitor-dst-mlt <1-256>	Configures mirroring to a destination MLT group.
monitor-dst-vlan <0-4094>	Configures mirroring to a destination VLAN.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show filter acl debug
Display the filter ACL debug configuration information.

Syntax
```
show filter acl debug [<1-4096>] [<1-1000>]
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

filter acl ace arp
Use ACE ARP entries so that the filter looks for ARP requests or responses.

Syntax
```
filter acl ace arp <1-4096> <1-1000> operation eq
<arprequest|arpresponse>
```

Parameters

Variable	Value
`operation eq <arprequest|arpresponse>`	Specifies an ARP operation type of arpRequest or arpResponse. For ARP, only one operator and attribute exist (eq and operation).

Default
None

Command mode
Global Configuration Mode

Related commands

None

show filter acl arp

Display the filter ACL ARP operation configuration information.

Syntax

show filter acl arp [<1-4096>] [<1-1000>]

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl ace ethernet

Use Ethernet ACEs to filter on Ethernet parameters.

Syntax

filter acl ace ethernet <1-4096> <1-1000>

Parameters

Variable	Value
dst-mac <eq|ne|le|ge> <WORD 1-1024>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 1-1024>** parameter specifies a list of destination MAC addresses separated by a comma, or a range of MAC addresses specified from low to high; for example, [a:b:c:d:e:f, (x:y:z:w:v:u-a:b:c:d:e:f)].

Variable	Value
ether-type <eq|ne> <WORD 1-200>	The **<eq|ne>** parameter specifies an operator for a field match condition: equal to or not equal to. The **<WORD 1-200>** parameter specifies an ether-type name or number: • 0–65563 • ip, arp, ipx802dot3, ipx802dot2, ipxSnap, ipxEthernet2, appleTalk, decLat, decOther, sna802dot2, snaEthernet2, netBios, xns, vines, ipv6, rarp, or PPPoE
port eq <portList>	Specifies ports to which to match, where **<portList>** specifies the ports.
src-mac <eq|ne|le|ge> <WORD 1-1024>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 1-1024>** parameter specifies a list of source MAC addresses separated by separated by a comma, or a range of MAC addresses specified from low to high; for example, [a:b:c:d:e:f, (x:y:z:w:v:u- a:b:c:d:e:f)].
vlan-id eq <1-4094>	Specifies VLANs to match, where **<1-4094>** specifies the VLAN IDs.
vlan-tag-prio <eq|ne> <0-7>	The **<eq|ne>** parameter specifies an operator for a field match condition: equal to or not equal to. The **<vlan-tag-prio>** parameter specifies a VLAN tag priority from 0–7 or undefined.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl ethernet

Display the filter acl Ethernet configuration information.

Syntax

```
show filter acl ethernet [<1-4096>] [<1-1000>]
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl ace ip

Use IP ACEs to filter on the source IP address, destination IP address, DiffServ Code Point (DSCP), protocol, IP options, and IP fragmentation parameters.

Syntax

```
filter acl ace ip <1-4096> <1-1000> dst-ip eq <Word 1-1024>
```

Parameters

Variable	Value
`dst-ip <eq|ne|le|ge> <WORD 1-1024>`	The `<eq|ne|le|ge>` parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The `<WORD 1-1024>` parameter specifies the destination IP address list in one of the following formats: a.b.c.d, [w.x.y.z-p.q.r.s], [l.m.n.o/mask], [a.b.c.d/len].
`dscp <eq|ne> <WORD 0-256>`	The `<eq|ne>` parameter specifies an operator for a field match condition: equal to or not equal to. The `<WORD 0-256>` parameter specifies the PHB name or DSCP value {0 to 256}, or phbcs0, phbcs1, phbaf11, phbaf12, phbaf13, phbcs2, phbaf21, phbaf22, phbaf23, phbcs3, phbaf31, phbaf32, phbaf33, phbcs4, phbaf41, phbaf42, phbaf43, phbcs5, phbcs6, phbef, or phbcs.

Variable	Value
ip-frag-flag eq <noFragment|anyFragment|moreFragment|lastFragment>	The **eq** parameter specifies an operator for a field match condition: equal to. The **ip-frag-flag** parameter specifies a match option for IP fragments (0, 2, or 4), or noFragment, anyFragment, moreFragment, lastFragment.
ip-options any	Matches to an IP option. Any is the only option.
ip-protocol-type <eq|ne> <WORD 1-256>	The **<eq|ne>** parameter specifies an operator for a field match condition: equal to or not equal to. The **<WORD 1-256>** parameter specifies one or more IP protocol types: (1–256), or undefined, icmp, tcp, udp, ipsecesp, ipsecah, ospf, vrrp, snmp.
src-ip <eq|ne|le|ge> <WORD 1-1024>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 1-1024>** parameter specifies a source IP address list in one of the following formats: a.b.c.d, [w.x.y.z-p.q.r.s], [l.m.n.o/mask], [a.b.c.d/len].

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl ip

Display the filter ACL Ip configuration information.

Syntax

show filter acl ip [<1-4096>] [<1-1000>]

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl ace protocol

Use protocol ACEs to filter on the TCP source port, UDP source port, TCP destination port, UDP destination port, ICMP message type, and TCP flags.

Syntax

filter acl ace protocol <1-4096> <1-1000> icmp-msg-type eq <Word 1-200>

Parameters

Variable	Value
icmp-msg-type <eq|ne> <WORD 1-200>	Specifies the icmp message type attribute of the protocol. The **<eq|ne>** parameter specifies an operator for a field match condition: equal to or not equal to. The **<WORD 1-200>** parameter specifies one or more IP protocol types (0–255), or echoreply, destunreach, sourcequench, redirect, echo-request, routeradv, routerselect, time-exceeded, param-problem, timestamp-request, timestamp-reply, addressmask-request, addressmask-reply, or traceroute.
tcp-dst-port <eq|ne|le|ge> <WORD 1-60>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 1-60>** parameter specifies the destination port for the TCP protocol: (0–65535), or echo, ftpdata, ftpcontrol, ssh, telnet, dns, http, bgp, hdot323, or undefined.

Variable	Value
tcp-flags <match-any|match-all> <WORD>	Specifies matchAny or matchAll operators for a field match condition. The **<WORD>** parameter specifies one or more TCP flags: none, fin, syn, rst, push, ack, urg, undefined. The tcp-flags and icmp-msg-type command options support lists.
tcp-src-port <eq|ne|le|ge> <WORD 0-65535>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 0-65535>** parameter specifies the destination port for the TCP protocol (0–65535), or echo, dns, bootpServer, bootpClient, tftp, rip, rtp, rtcp, or undefined.
udp-dst-port <eq|ne|le|ge> <WORD 1-200>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 1-200>** parameter specifies the destination port for the UDP protocol (0–65535), or echo, dns, bootpServer, bootpClient, tftp, rip, rtp, rtcp, or undefined.
udp-src-port <eq|ne|le|ge> <WORD 0-65535>	The **<eq|ne|le|ge>** parameter specifies an operator for a field match condition: equal to, not equal to, less than or equal to, greater than or equal to. The **<WORD 0-65535>** parameter specifies the source port for the UDP protocol (0–65535), or [ ].

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl protocol

Display the filter ACL protocol configuration information.

Syntax

```
show filter acl protocol [<1-4096>] [<1-1000>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl ace advanced

You can use a custom ACE to define your own match patterns.

Syntax

```
filter acl ace advanced <1-4096> <1-1000>
```

Parameters

Variable	Value
custom-filter1 <WORD 0-32> <eq|le|ge> <WORD 1-1024>	Creates a custom filter 1: • <WORD 0-32> specifies a descriptive name for the pattern that uses 0–32 characters. • <eq|le|ge> specifies the operators equal to, less than or equal to, or greater than or equal to. The ace-op ne does not apply to an ACE pattern. • <WORD 1-1024> specifies a hexadecimal number equal to the pattern template length.
custom-filter2 <WORD 0-32> <eq|le|ge> <WORD 1-1024>	Creates custom filter 2.
custom-filter3 <WORD 0-32> <eq|le|ge> <WORD 1-1024>	Creates custom filter 3.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl advanced

Display the filter ACL advanced information.

Syntax

```
show filter acl advanced [<1-4096>] [<1-1000>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl ace ipv6

Use an IPv6 ACE to filter on IPv6 attributes.

Syntax

```
filter acl ace ipv6 <1-4096> <1-1000>
```

Parameters

Variable	Value
`dst-ipv6 <eq> <WORD 0-255>`	The `<eq|ne>` parameter specifies an operator for a field match condition: equal to or not equal to. The `<WORD 0-255>` parameter specifies a list of destination IPv6 addresses, separated by commas. An example IPv6 address is 3ffe:1900:4545:3:200:f8ff:fe21:67cf.

Variable	Value
nxt-hdr <eq|ne> <nxt-hdr>	The **<eq|ne>** parameter specifies an operator for a field match condition: equal to or not equal to. **<nxt-hdr>** specifies hop-by-hop, tcp, udp, routing, fragment, ipsecesp, ipsecah, icmpv6, noHdr, or undefined.
src-ipv6 <eq> <WORD 0-255>	The **<eq|ne>** parameter specifies an operator for a field match condition: equal to or not equal to. The **<WORD 0-255>** parameter specifies a list of source IPv6 addresses, separated by commas. An example IPv6 address is 3ffe:1900:4545:3:200:f8ff:fe21:67cf.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show filter acl ipv6
Display the filter acl ipv6 configuration information.

Syntax
show filter acl ipv6 [<1-4096>] [<1-1000>]

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show filter acl config
Review your configuration to ensure that it is correct.

Syntax

```
show filter acl config [<1-4096>] [<1-1000>]
```

Parameters

Variable	Value
`<1-1000>`	Specifies an ACE ID from 1–1000.
`<1-4096>`	Specifies an ACL ID from 1–4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

QoS and IP Filtering for Classic Modules commands

This chapter describes the Nortel command line interface (NNCLI) commands to configure Quality of Service (QoS) and filtering operations functions on the Ethernet Routing Switch 8600 Classic modules.

Navigation

enable-diffserv

Enable DiffServ so that the switch uses the DiffServ to provide DiffServ-based QoS on that port.

Syntax

```
enable-diffserv [port <portlist>] [enable]
```

Parameters

Variable	Value
`[enable]`	Enables Diffserv on a port.
`[port <portlist>]`	Specifies the ports which are to be changed.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

access-diffserv

Configure a port as trusted or untrusted to determine the Layer 3 QoS actions the switch performs. A trusted port honors incoming DSCP markings. An untrusted port overrides DSCP markings.

Syntax
```
access-diffserv [port <portlist>] [enable]
```

Parameters

Variable	Value
`[enable]`	If enabled, specifies an access port and overrides incoming DSCP bits. If disabled, specifies a core port and honors and services incoming DSCP bits. By default, access-diffserv is false.
`port <portlist>`	Specifies the ports which are to be changed.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

qos level

Use the default port QoS level to assign a default QoS level for all traffic.

Syntax

```
qos level [port <portlist>] <0-6>
```

Parameters

Variable	Value
`<0-6>`	Specifies the default QoS level for the port traffic. QoS level 7 is reserved for network control traffic.
`port <portlist>`	Specifies the slot and port, or slot and port list.

Default

The default value is 1.

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

qos level vlan

The default port or VLAN QoS levels can be changed to assign a default QoS level for all traffic.

Syntax

```
qos level [port <portlist>] <0-6>
```

Parameters

Variable	Value
`<0-6>`	Specifies the default QoS level for the VLAN traffic. QoS level 7 is reserved for network control traffic.
`port <portlist>`	Specifies the ports to be changed.

Default

The default value is 1.

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

vlan mac-address-entry

Apply a QoS level to traffic from specific VLAN MAC addresses to provide special QoS treatment to the packets.

Syntax

vlan mac-address-entry <1-4094> qos-level <H.H.H> <0-6> status <other|invalid|learned|self|mgmt>

Parameters

Variable	Value
<0-6>	Specifies the QoS level.
<1-4094>	Specifies the VLAN ID.
<H.H.H>	Specifies the MAC address in the format 0x00:0x00:0x00:0x00:0x00:0x00
<portlist>	Specifies the slot and port, or slot and port list.
status <other|invalid|learned|self|mgmt>	Specifies the FDB status (other|invalid|learned|self|mgmt).

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-static

Configure the source MAC QoS level for a bridge static address.

Syntax

vlan mac-address-static <1-4094> <H.H.H> <portlist> qos <0-6>

Parameters

Variable	Value
<0-6>	Specifies the QoS level.
<1-4094>	Specifies the VLAN ID.

Variable	Value
`<H.H.H>`	Specifies the MAC address in the format 0x00:0x00:0x00:0x00:0x00 :0x00
`<portlist>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-filter

Configure the source MAC QoS level for a bridge filter address.

Syntax

`vlan mac-address-filter <1-4094> <H.H.H> <portlist> <0-6>`

Parameters

Variable	Value
`<0-6>`	Specifies the QoS level.
`<1-4094>`	Specifies the VLAN ID.
`<H.H.H>`	Specifies the MAC address in the format 0x00:0x00:0x00:0x00:0x00 :0x00
`<portlist>`	Specifies the slot and port, or slot and port list.

Default

None

Command mode

Global Configuration Mode

Related commands

None

qos egressmap ds

You can modify the egress QoS mapping table to change traffic priorities. However, Nortel recommends that you use the default mappings.

Syntax

```
qos egressmap ds <0-7> <WORD 1-6>
```

Parameters

Variable	Value
ds <0-7> <WORD 1-6>	Maps the QoS level to DS byte. You can specify the DSCP in either hexadecimal, binary, or decimal. The default for 0 is 0 The default for 1 is 0 The default for 2 is 10 The default for 3 is 18 The default for 4 is 26 The default for 5 is 34 The default for 6 is 46 The default for 7 is 46

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
exp <0-7> <0-7>	Maps the QoS level to MPLS EXP level. Only R and RS modules support MPLS. The default for 0 is 0 The default for 1 is 1 The default for 2 is 2 The default for 3 is 3 The default for 4 is 4 The default for 5 is 5

Variable	Value
	The default for 6 is 6 The default for 7 is 7
`1p <0-7> <0-7>`	Maps the QoS level to IEEE 802.1p priority in the range of 0 to 7. The default for 0 is 1 The default for 1 is 0 The default for 2 is 2 The default for 3 is 3 The default for 4 is 4 The default for 5 is 5 The default for 6 is 6 The default for 7 is 7

show qos egressmap

Display the qos egress map configuration information.

Syntax

`show qos egressmap`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

qos ingressmap ds

You can modify the ingress mappings to change traffic priorities. However, Nortel recommends that you use the default mappings.

Syntax

```
qos ingressmap ds <0-63> <0-7>
```

Parameters

Variable	Value
`ds <0-63> <0-7>`	Maps the DS byte to QoS level. The default value is 1.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`exp <0-7> <0-7>`	Maps QoS level to EXP bit level on egress in the range of 0 to 7. MPLS is supported on R and RS modules only. The default for 0 is 0 The default for 1 is 1 The default for 2 is 2 The default for 3 is 3 The default for 4 is 4 The default for 5 is 5 The default for 6 is 6 The default for 7 is 7
`1p <0-7> <0-7>`	Maps the IEEE 802.1p bit to QoS level. The default for 0 is 1 The default for 1 is 0 The default for 2 is 2 The default for 3 is 3 The default for 4 is 4

Variable	Value
	The default for 5 is 5 The default for 6 is 6 The default for 7 is 7

show qos ingressmap

Display qos ingress map configuration information.

Syntax

```
show qos ingressmap
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

show qos queue

View the QoS queue information on the Ethernet Routing Switch 8600.

Syntax

```
show qos queue [<0-7>]
```

Parameters

Variable	Value
`<0-7>`	Shows the queue parameters for a specific QoS level.`0-7` is the QoS level.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

rate-limit

Use broadcast and multicast rate limiting to limit the amount of ingress broadcast and multicast traffic on a port. Traffic that violates the rate limit is dropped.

Syntax

```
rate-limit [port <portList>] broadcast <1-65535>
```

Parameters

Variable	Value
`broadcast <1-65535>`	Sets the rate-limit for broadcast traffic from 0 to 65535 packets per second.
`<portlist>`	Specifies the slot and port.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
`multicast <1-65535>`	Sets the rate-limit for multicast traffic from 0 to 65535 packets per second.

ip traffic-filter

Use traffic filters to selectively accept, reject, or modify traffic.

Syntax

```
ip traffic-filter global [<1-4096>] [dst-ip <A.B.C.D>
<A.B.C.D>] [src-ip <A.B.C.D> <A.B.C.D>]
```

Parameters

Variable	Value
`global [<1-4096>] [dst-ip <A.B.C.D> <A.B.C.D>] [src-ip <A.B.C.D> <A.B.C.D>]`	Creates a global filter: • `src-ip <A.B.C.D> <A.B.C.D>` is the source IP address and mask. • `dst-ip <A.B.C.D> <A.B.C.D>` is the source IP and mask. • `<1-4096>` is the traffic filter ID.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`destination dst-ip <A.B.C.D> <A.B.C.D> [<1-4096>] [src-ip <A.B.C.D> <A.B.C.D>]`	Creates a destination filter: • `dst-ip <A.B.C.D> <A.B.C.D>` is the destination IP address and mask. • `src-ip <A.B.C.D> <A.B.C.D>` is the source IP address and mask. • `<1-4096>` is the traffic filter ID.
`source src-ip <A.B.C.D> <A.B.C.D> [<1-4096>] [dst-ip <A.B.C.D> <A.B.C.D>]`	Creates a source filter: • `src-ip <A.B.C.D> <A.B.C.D>` is the source IP address and mask. • `dst-ip <A.B.C.D> <A.B.C.D>` is the destination IP address and mask. • `<1-4096>` is the traffic filter ID.

ip traffic-filter destination

Create a destination filter to selectively accept, modify, or reject traffic based on destination IP parameters.

Syntax

```
ip traffic-filter destination dst-ip <A.B.C.D> <A.B.C.D>
[<1-4096>] [src-ip <A.B.C.D> <A.B.C.D>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the filter ID.
`dst-ip <A.B.C.D> <A.B.C.D>`	Specifies the source IP address and mask.
`src-ip <A.B.C.D> <A.B.C.D>`	Specifies the source IP address and mask.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter source src-ip

Create a source filter to selectively accept, modify, or reject traffic based on source IP parameters.

Syntax

```
ip traffic-filter source src-ip <A.B.C.D> <A.B.C.D>
[<1-4096>] [dst-ip <A.B.C.D> <A.B.C.D>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the filter ID.
`dst-ip <A.B.C.D> <A.B.C.D>`	Specifies the source IP address and mask.
`src-ip <A.B.C.D> <A.B.C.D>`	Specifies the source IP address and mask.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter filter

View information about a specific filter or rename a specific traffic filter.

Syntax

```
ip traffic-filter filter <1-4096> name <Word 01-15>
```

Parameters

Variable	Value
`<1-4096>`	Specifies the traffic filter ID.
`name <Word 0-15>`	Specifies the name of the ip traffic filter in the range of 0 to 15 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`name <WORD 0-15>`	Names or renames the traffic filter.

ip traffic-filter action

Configure the port filter actions to determine which filters are active on the port, and what actions the port should take for matching filters.

Syntax

```
ip traffic-filter action <1-4096>
```

Parameters

variable	Value
`mirror`	Enables the traffic filter mirror option.
`mode <default|forward|drop|forward-to-next-hop>`	Sets the action to occur when a filter is applied • default is the default action • forward forwards the packet • drop drops the packet • forward-to-next-hop forwards the packet to the next-hop router

variable	Value
next-hop-forward [next-hop-unreachable-drop] [<A.B.C.D>]	Specifies the IP address of the next-hop router to be used by the mode forward-to-next-hop option. If the next-hop router is unreachable (no ARP resolution is possible), packet that match the filter are forwarded normally unless the next-hop-unreachable-drop option is enabled.
statistic	Enables statistics collection on the traffic filter. The default setting is disable. If disabled, the show ip traffic-filter stats command displays zero for this filter.
stop-on-match	Stops further filtering if the current filter is applied.
tcp-connect	Enables the traffic filter TCP-connect option, which allows only TCP connections established from within the network (enabled) or allows bidirectional establishment (disabled). The default is disabled.
traffic-profile <0-64>	Sets the IP traffic profile. The valid options are 0–64.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter action next-hop-forward

Configure traffic filter action parameters to specify the IP address of the next-hop router.

Syntax

```
ip traffic-filter action <1-4096> next-hop-forward
[next-hop-unreachable-drop] [<A.B.C.D>]
```

Parameters

Variable	Value
<1-4096>	Specifies the filter ID.

Variable	Value
<A.B.C.D>	Sets the IP address of next hop.
next-hop-unreachable-drop	Specifies that if the next-hop address is unreachable, the packet is dropped.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter match

Configure traffic filter match parameters to specify the match criteria for filters.

Syntax

ip traffic-filter match <1-4096>

Parameters

Variable	Value
ds-field <WORD 1-6> <WORD 1-2>	Sets the traffic match DSCP to a specific number. This field is used to specify the match value for the DS field. The user must enter an 8-bit value, which is composed of the 6-bit DSCP and the 2-bit DSCP reserved fields. If the DS field in the incoming packet matches this value, then this filter is applied to the packet. • **<WORD 1-6>** is the DSCP as a binary number. • **<WORD 1-2>** is the reserved field as a binary number.
ds-field-enable	Enables or disables the traffic filter to match on the DS field set for the traffic filter.

Variable	Value
dst-port <0-65535> [dst-option <equal|noteq ual|greater|less|ignore>]	Sets the TCP/UDP destination port and destination option. • **port** is the TCP/UDP destination port to filter on (0 to 65535). • **dst-option <value>** is the TCP/UDP destination port option {ignore|equal|less|greater|notequal}.
icmp-request	Enables the traffic filter to match ICMP requests.
ip-fragment	Enables the traffic filter to allow IP fragments to be filtered.
protocol <ignore|icmp|tcp|u dp|vrrp|ospf|ipsec_esp|ipse c_ah|usrDefined> [<0-255>]	Sets the protocol type for the filter. • The protocol is ignore, ICMP, TCP, UDP, vrrp, ospf, ipsec_esp, ipsec_ah, or usrDefined. • **<0-255>** is the PID in decimal format that you assign.
src-port <0-65535> [src-option <equal|noteq ual|greater|less|ignore>]	Sets the TCP/UDP source port and source option. • **port** is the TCP/UDP source port to filter on (0 to 65535). • **src-option <value>** is the option {ignore|equal|less|greater|notequal}.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter modify

Use traffic filters on DiffServ access ports to modify untrusted DSCP or 802.1p bit markings.

Syntax

ip traffic-filter modify <1-4096>

Parameters

Variable	Value
dscp <WORD 1-6>	Modifies the DSCP. If you want the DS codepoint (DSCP) modified to a nonzero value, use this command to specify the value for the DSCP. After entering the binary number, you must disable and then enable the traffic filter to ensure that it takes effect. **<WORD 1-6>** is a binary number.
dscp-enable	Enables or disables the traffic filter to modify the DSCP to zero on packet ingressing a DiffServ access port only.
ieee8021p <0-7>	Modifies IEEE 802.1p bits to a nonzero value. Use this field to specify the value for the IEEE 802.1p bits. Disable and enable the filter for changes to take effect.
ieee8021p-enable	Enables or disables the traffic filter to modify the IEEE 802.1p bits to zero on packets ingressing a DiffServ access port only.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter global-set

Configure global traffic filter sets to group global filters.

Syntax

ip traffic-filter global-set <1-100>

Parameters

Variable	Value
filter <1-4096>	Adds a global filter to a global filter set.
name <WORD 1-15>	Assigns a name for the global filter set.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter media

Configure multimedia platform filters to provide differentiated service, better network management, flexible call monitoring, and convenient troubleshooting for VoIP calls.

Syntax

ip traffic-filter media <3000-3127>

Parameters

Variable	Value
device <0-6>	Device identifier or the type.
gateway <A.B.C.D>	Sets the gateway IP address.
name <WORD 0-63>	Sets the media name of the selected device.
platform <0-10> [device <0-6>]	Creates IP traffic filter media for a platform or a device.
statistic	Enables the display of statistics about the filter.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter media-stream

Configure multimedia platform filters to provide differentiated service, better network management, flexible call monitoring, and convenient troubleshooting for VoIP calls.

Syntax

ip traffic-filter media-stream <3000-3127> <1-4>

Parameters

Variable	Value
match-dscp <WORD 1-6>	Specifies a 6-bit binary value for the stream.
name <WORD 0-31>	Specifies the name of the selected media device.
port-option <src|dst|src-dst>	Specifies a port option, either src, dest, or srcDest.
ports min <0-65535> [max <0-65535>]	Specifies the minimum port number in the range of 0 to 65535.
protocol <udp|tcp>	Specifies either a TCP or UDP protocol.
stream-type <signal|media>	Specifies the type of stream. The valid options are signal and media.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter set

Configure a source and destination filter set to group source and destination filters.

Syntax

ip traffic-filter set <300-1000>

Parameters

Variable	Value
filter <1-4096>	Adds a filter to a filter set. **<1-4096>** is the traffic filter ID.
[name <WORD 0-15>]	Configures the set name.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter profile

Configure a traffic profile to specify the handling properties of a traffic flow selected by a classifier.

Syntax

```
ip traffic-filter profile <1-64>
```

Parameters

Variable	Value
`average-rate <0-65535>`	Sets the traffic profile average rate, which is expressed in 64-byte segments of data allowed in a 2.5 millisecond timeslot.
`discard-out-profile`	Enables the ability to discard traffic that violates the traffic profile average rate.
`enable`	Enables the filter traffic-profile.
`in-dscp <WORD 1-6>`	Marks traffic that conforms to the average rate in the traffic profile. `<WORD 1-6>` is the DSCP expressed in the format Binary- xxxxxx 6-bit (MSB...LSB), Hex, or Decimal.
`name <WORD 0-32>`	Specifies the IPF filter traffic profile name.
`out-dscp <WORD 1-6>`	Marks traffic that falls outside the traffic profile's average rate. `<WORD 1-6>` is the DSCP expressed in the format Binary- xxxxxx 6-bit (MSB...LSB), Hex, or Decimal.
`translate-dscp`	Enables the profile translate for DSCP. This command must be enabled for any traffic to be marked.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip traffic-filter set

Apply traffic filters on a port to manage traffic.

Syntax

```
ip traffic-filter set <1-3127>
```

Parameters

Variable	Value
`enable`	Enables the filter on the port.
`set <1-3127>`	Adds a filter to a port. **value** is the global or source and destination filter set ID.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

ip traffic-filter default-action

Configure the port filter default action for a filter to forward or drop packets that match filter criteria.

Syntax

`ip traffic-filter default-action <drop|forward>`

Parameters

Variable	Value
`forward`	Sets the port filter default action to forward.
`drop`	Sets the port filter default action to drop.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

multimedia select

Assign a multimedia filter to a port to manage port traffic.

Syntax

```
multimedia select <WORD 0-63>
```

Parameters

Variable	Value
`enable`	Enables a multimedia Ethernet filter on the port.
`select <WORD 0-63>`	Selects a multimedia device for the port by name.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

show ip traffic-filter active

Display information about the filters to learn which filters are active.

Syntax

```
show ip traffic-filter active
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter enabled

View information about enabled filters on the switch or on a specified port.

Syntax

```
show ip traffic-filter enabled [<portlist>]
```

Parameters

Variable	Value
`<cr>`	Shows enabled filter information for all ports.
`<portlist>`	Specifies the ports for which to show enabled filter information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter

Display the information about the filters to learn which filters are disabled.

Syntax

```
show ip traffic-filter [<portlist>]
```

Parameters

Variable	Value
`<cr>`	Shows disabled filter information for all ports.
`<portlist>`	Specifies the ports for which to show disabled filter information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter global

View the global filters for the Ethernet Routing Switch 8600 or for the specified filter IDs.

Syntax

```
show ip traffic-filter global [<1-4096>]
```

Parameters

Variable	Value
`<cr>`	Shows global traffic filter information.
`<1-4096>`	Shows information for the filter ID in the range of 1–4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter destination

Display active destination traffic filters.

Syntax

```
show ip traffic-filter destination [<1-4096>]
```

Parameters

Variable	Value
`<1-4096>`	Filter identification number in the range of 1 to 4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter source

View information about active source traffic filters.

Syntax

```
show ip traffic-filter source [<1-4096>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the filter ID in the range of 1 to 4096.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter interface

Display information about the filters to learn which filters are applied to a port.

Syntax

`show ip traffic-filter interface {fastEthernet|gigabitEthernet|pos} <portlist>`

Parameters

Variable	Value
`<portlist>`	Specifies the ports for which to show enabled filter information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter media

View multimedia platform and device filters by filter ID.

Syntax

`show ip traffic-filter media [<3000-3127>]`

Parameters

Variable	Value
`<3000-3127>`	Specifies the filters for which to show information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter stream

View the media platforms and devices by filter ID.

Syntax

`show ip traffic-filter stream [<3000-3127>]`

Parameters

Variable	Value
`<3000-3127>`	Specifies the filter for which to show information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter global-set

Show traffic filter global set information to display information about the specified global filter set or all global filter lists configured on the switch.

Syntax

`show ip traffic-filter global-set [<1-100>]`

Parameters

Variable	Value
`<1-100>`	Shows information about a specific global set by set ID in the range 1 to 100.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter set

Display the traffic filter set information to view information for the specified source and destination filter list or all source and destination filter lists.

Syntax

```
show ip traffic-filter set [<300-1000>]
```

Parameters

Variable	Value
`<300-1000>`	Specifies the filter set by ID.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip traffic-filter profile

Display the traffic filter traffic-profile information to view the traffic-profile settings.

Syntax

```
show ip traffic-filter profile [<1-64>]
```

Parameters

Variable	Value
`<1-64>`	Specifies the profile ID. The value ranges from 1 to 64.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

Security commands

This chapter describes Nortel Networks Command Line Interface (NNCLI) commands to configure security services for the Nortel Ethernet Routing Switch 8600.

Navigation

- "show tacacs" (page 761)
- "no tacacs server" (page 761)

password aging-time

Configure the duration of your password for when it expires.

Syntax

`password aging-time day <1–365>`

Parameters

Variable	Value
`access level <WORD 2-8>`	Allows or blocks this access level. • no password access-level <WORD 2-8>
`aging-time day <1-365>`	Specifies the number of days that the password is enabled. • **`day`** has a configurable range of 1–365.
`default-lockout-time <60-65000>`	Changes the default lockout time after three invalid attempts. • **`secs`** is the lockout time in seconds and is in the range of 60 to 6500. The default is 60 seconds.
`lockout {A.B.C.D| ipv6addr} [time <60-65000>]`	Sets the host lockout time. • **`A.B.C.D`** is the host IP address. • **`ipv6addr`** is the IP address for ipv6 address. • **`time`** is the lockout-out time in seconds for passwords lockout in the range of 60 to 65000. The default is 60 seconds.

min-passwd-len <10-20>	Sets the minimum length for passwords in high-secure mode. The range is from a minimum of 10 to 20.
password-history <3-32>	Specifies the number of previous passwords to remember. • Password-history has a configurable range of 3 to 32. The default is 3.

Default
None

Command mode
Global Configuration Mode

Related commands
None

save config standby
Synchronize the master and standby SF/CPU passwords.

Syntax
save config standby <WORD 1-99> backup|mode

Parameters

Variable	Value
save standby <WORD 1-99>	Save current configuration to a file.

Default
None

Command mode
Global Configuration Mode

Related commands
None

cli password
Go to the standby SF/CPU and change the password.

Syntax
cli password <WORD 1-20> read-write-access

Parameters

Variable	Value
`read-write-access <WORD 0-20>`	Changes the read-write access logon or password or both.

Default

None

Command mode

Global Configuration Mode

Related commands

None

ip directed-broadcast enable

Configure the device to forward directed broadcasts for a VLAN.

Syntax

`ip directed-broadcast enable`

Parameters

Variable	Value
`enable`	Allows the device to forward directed broadcast frames to the specified VLAN. The default setting for this feature is enabled.

Default

The default is enabled.

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

high-secure enable

Protect the Ethernet Routing Switch 8600 against IP packets with illegal IP addresses such as loopback addresses or a source IP address of ones, or Class D or Class E addresses from being routed.

Syntax

high-secure enable

Parameters

Variable	Value
enable	Enables the high secure feature that blocks packets with illegal IP addresses. This flag is disabled by default. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
port	Specifies ports that must be changed.

ip rvs-path-chk mode port

Use the unicast reverse path checking feature to reduce the problems that are caused by the introduction of malformed or forged (spoofed) IP source addresses into a network.

Syntax

ip rvs-path-chk mode <exist-only|strict>

Parameters

Variable	Value
mode <exist-only|strict>	Specifies the mode for reverse path checking. In exist-only mode, reverse path checking checks whether the source IP address of the incoming packet exists in the routing table. In strict mode, reverse path checking checks whether the source IP address of the incoming packet exists in the

Variable	Value
	routing table. To set this option to the default value, use the **default** operator with the command.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

ip rvs-path-chk mode vlan
Use the unicast reverse path checking feature to reduce the problems that are caused by the introduction of malformed or forged (spoofed) IP source addresses into a network.

Syntax
ip rvs-path-chk mode <exist-only|strict>

Parameters

Variable	Value
mode <exist-only|strict>	Specifies the mode for reverse path checking. In exist-only mode, reverse path checking checks whether the source IP address of the incoming packet exists in the routing table. In strict mode, reverse path checking checks whether the source IP address of the incoming packet exists in the routing table. To set this option to the default value, use the **default** operator with the command.

Default
None

Command mode
Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

portlock enable

Enable port locking for the security of the ports from any modifications.

Syntax

portlock enable

Parameters

Variable	Value
enable	Enables the port locking globally.

Default

None

Command mode

Global Configuration Mode

Related commands

None

lock port

Lock a port to prevent other users from changing port parameters or modifying port action.

Syntax

lock port {slot/port[-slot/port][,...]} enable

Parameters

Variable	Value
port	Specifies the slot and the port number to be locked.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
no	Unlocks the port when prefixed with the command.

load-encryption-module

Load the appropriate SNMPv3 encryption module before you can use SNMPv3 with Data Encryption Standard (DES) or Advanced Encryption Standard (AES) to access the device.

Syntax

load-encryption-module <DES|AES>

Parameters

Variable	Value
DES|AES	Specify the SNMPv3 encryption module to load: AES or DES.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server

Configure Simple Network Management Protocol (SNMP) to define or modify the SNMP settings, and specify how secure you want SNMP communications.

Syntax

snmp-server

Parameters

Variable	Value
agent-conformance enable	Activates agent conformance mode. Use the **no** operator to disable this configuration. To set this option to the default value, use the **default** operator with the command.

Variable	Value
authentication-trap enable	Activates the generations of authentication traps. Use the **no** operator to disable this configuration. To set this option to the default value, use the **default** operator with the command.
bootstrap <min-secure|semi-secure|very-secure>	Creates an initial set of configuration data for SNMPv3. This configuration data follows the conventions described in the SNMPv3 standard (see RFC 3515, Appendix A). This command creates a set of initial users, groups, and views. • **min-secure**—a minimum security configuration that allows read access and notify access to all processes (MIB view *restricted*) with noAuth-noPriv and read, write, and notify access to all processes (MIB view *internet*) using Auth-Priv. In this configuration, restricted MIB view matches internet MIB view. • **semi-secure**—a security configuration that allows read access and notify access to all processes (MIB view restricted) with noAuth-noPriv and read, write, and notify access to all processes (MIB view internet) using Auth-Priv. In this configuration, restricted MIB view contains a smaller subset of views than internet MIB view. See RFC 3515 Appendix A for details. • **very-secure**—a maximum security configuration that allows no access to the users. Note that with this command all existing SNMP configurations in the SNMPv3 MIB tables are removed and replaced with entries as described in the RFC.
contact <WORD 0-255>	Changes the sysContact information for the switch. <WORD 0-255> is an ASCII string from 0–255 characters (for example a phone extension or email address).
disable	Disable SNMP globally for the entire system.
enable	Enable SNMP globally for the entire system.

Variable	Value
force-iphdr-sender enable	Configures the SNMP and IP sender flag to the same value. The default is disable. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
force-trap-sender enable	Sends the configured source address (sender IP) as the sender network in the notification message. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
location <WORD 0-255>	Changes the sysLocation information for the switch. <WORD 0-255> is an ASCII string from 0–255 characters.
log {enable | maxfilesize <64-256000>}	Configure the SNMP logging. Specify: • **enable** to enable the SNMP log feature. • **maxfilesize <64-256000>** to set the maximum SNMP log file size in KB. Use the **no** operator to remove this configuration. To set this option to the default value, use the **default** operator with the command.
name <WORD 0-255>	Changes the sysName information for the switch. <WORD 0-255> is an ASCII string from 0–255 characters.
sender-ip <A.B.C.D> <A.B.C.D>	Configures the SNMP trap receiver and source IP addresses. Specify the IP address of the destination SNMP server that will receive the SNMP trap notification in the first IP address. Specify the source IP address of the SNMP trap notification packet that is transmitted in the second IP address. If this is set to 0.0.0.0 then the switch uses the IP address of the local interface that is closest (from an IP routing table perspective) to the destination SNMP server.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server user engine-id

Create a new user on the remote system in the USM table to authorize a user on a particular SNMP engine.

Syntax

```
snmp-server user engine-id <WORD 16-97> <WORD 1-32>
{md5|sha} <WORD 1-32> <password>] [{aes|des} <WORD 1-32>]
```

Parameters

Variable	Value
{aes|des} <Word 1-32>	Specifies a privacy protocol. If no value is entered, no authentication capability exists. The choices are aes or des. **Word 1-32** assigns a privacy password. If no value is entered, no privacy capability exists. The range is 1 to 32 characters.
engine-id <WORD>	Assigns an SNMPv3 engine ID. The range is 10–64 characters. Use the **no** operator to remove this configuration.
{md5|sha} <password>	Specifies an authentication protocol. If no value is entered, no authentication capability exists. The protocol choices are MD5 and SHA. **password** specifies an authentication password. If no value is entered, no authentication capability exists. The range is 1–32 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server user

Create a user on the local system in the USM table to authorize a user on a particular SNMP engine.

Syntax

```
snmp-server user <WORD> [read-view <WORD>] [write-view
<WORD>] [notify-view <WORD>] [{md5|sha} <password>]
[read-view <WORD>] [write-view <WORD>] [notify-view
<WORD>] [{aes|des|3des} <password> [read-view <WORD>]
[write-view <WORD>] [notify-view <WORD>]
```

Parameters

Variable	Value
{aes|des|3des} <password>	Specifies a privacy protocol. If no value is entered, no authentication capability exists. The choices are aes, des, or 3des. **password** assigns a privacy password. If no value is entered, no privacy capability exists. The range is 1 to 32 characters. **ATTENTION** You must set authentication before you can set the privacy option.
{md5|sha} <password>	Specifies an authentication protocol. If no value is entered, no authentication capability exists. The protocol choices are MD5 and SHA. **password** specifies an authentication password. If no value is entered, no authentication capability exists. The range is 1–32 characters.
notify-view <WORD>	Specifies the view name in the range of 0-32 characters. The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.
read-view <WORD>	Specifies the view name in the range of 0-32 characters. The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.
write-view <WORD>	Specifies the view name in the range of 0-32 characters. The first instance is a noAuth view. The second instance is an auth view and the last instance is an authPriv view.
user <WORD>	Creates the new entry with this security name. The name is used as an index to the table. The range is 1–32 characters. Use the **no** operator to remove this configuration.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server user group

Add the user to a group to authorize a user on a particular SNMP engine.

Syntax

snmp-server user <WORD> group <WORD> [{md5|sha} <password>] [{aes|des} <password>]

Parameters

Variable	Value
{aes|des} <password>	Specifies a privacy protocol. If no value is entered, no authentication capability exists. The choices are aes or des. **password** assigns a privacy password. If no value is entered, no privacy capability exists. The range is 1 to 32 characters. **ATTENTION** You must set authentication before you can set the privacy option.
group <WORD>	Specifies the group access name.
{md5|sha} <password>	Specifies an authentication protocol. If no value is entered, no authentication capability exists. The protocol choices are MD5 and SHA. **password** specifies an authentication password. If no value is entered, no authentication capability exists. The range is 1–32 characters.
user <WORD>	Creates the new entry with this security name. The name is used as an index to the table. The range is 1–32 characters. Use the **no** operator to remove this configuration.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server group

Create a new user group member to logically group users who require the same level of access.

Syntax

```
snmp-server group <group name> <context name>
[auth-no-priv|auth-priv|no-auth-no-priv] [notify-view
<WORD>] [read-view <WORD>] [write-view <WORD>]
```

Parameters

Variable	Value
auth-no-priv	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the **auth-no-priv** parameter is included, it creates one entry for SNMPv3 access.
auth-priv	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the **auth-priv** parameter is included, it creates one entry for SNMPv3 access.
<context name>	Creates a group entry for a particular context. The range is 0–32 characters. If you use a particular group name value but with different context names, you create multiple entries for different contexts for the same group. You can omit the context name and use the default. If the context name value ends in the wildcard character (*), the resulting entries match a context name that begins with that context. For example, a context name value of foo* matches contexts starting with foo, such as foo6 and foofofum. Use the **no** operator to remove this configuration.
group <group name>	Assigns the group name for data access. The range is 1–32 characters. Use the **no** operator to remove this configuration.
no-auth-no-priv	Assigns the minimum level of security required to gain the access rights allowed by this conceptual row. If the **no-auth-no-priv** parameter is included, it creates 3 entries, one for SNMPv1 access, one for SNMPv2c access, and one for SNMPv3 access.
notify-view <WORD>	Specifies the view name in the range of 0–32 characters.
read-view <WORD>	Specifies the view name in the range of 0–32 characters.
write-view <WORD>	Specifies the view name in the range of 0–32 characters.

Default
None

Command mode
Global Configuration Mode

Related commands
None

snmp-server view
Create a new entry in the MIB view table. The default Layer 2 MIB view cannot modify SNMP settings. However, a new MIB view created with Layer 2 permission can modify SNMP settings.

Syntax
```
snmp-server view <view name> <subtree oid>
```

Parameters

Variable	Value
`<subtree oid>`	Specifies the prefix that defines the set of MIB objects accessible by this SNMP entity. The range is 1–32 characters.
`<view name>`	Specifies a new entry with this group name. The range is 1–32 characters.

Default
None

Command mode
Global Configuration Mode

Related commands
None

snmp-server community
Create a community to use in forming a relationship between an SNMP agent and one or more SNMP managers.

Syntax
```
snmp-server community <name> [group <WORD>] [index <WORD>]
[secname <WORD>]
```

Parameters

Variable	Value
`group <WORD>`	Specifies the group name. The range is 1–32 characters.

Variable	Value
index <WORD>	Specifies the unique index value of a row in this table. The range is 1–32 characters.
<name>	Specifies a community string, from 1–32 characters.
secname <WORD>	Maps the community string to the security name in the VACM Group Member Table.

Default

None

Command mode

Global Configuration Mode

Related commands

None

boot config flags block-snmp

Disable SNMP by using the SNMP block flag.

Syntax

boot config flags block-snmp

Parameters

Variable	Value
block-snmp	Turns the flag on or off. Use the **no** operator to remove this configuration. The default is off. To set this option to the default value, use the **default** operator with the command.

Default

By default, SNMP access is enabled.

Command mode

Global Configuration Mode

Related commands

None

show snmp-server

Display SNMP system information to view trap and authentication profiles.

Syntax

show snmp-server

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

boot config flags sshd

Enable the SSH server to provide secure communications for accessing the switch.

Syntax
boot config flags sshd

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

save bootconfig

Save the boot.cfg file.

Syntax
save bootconfig

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands

None

load-encryption-module

Load the 3DES encryption image.

Syntax

`load-encryption-module 3DES`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ssh

Set Secure Shell (SSH) configuration parameters to support public and private key encryption connections.

Syntax

`ssh`

Parameters

Variable	Value
`dsa-auth`	Enable or disable the DSA authentication.
`secure`	Enables SSH in secure mode and immediately disables the access services SNMP, FTP, TFTP, rlogin, and Telnet.
`max-sessions <0-8>`	The maximum number of SSH sessions allowed. A value from 0 to 8. Default is 4.
`pass-auth`	Enables password authentication.

Variable	Value
port <1-65535>	Sets the SSH connection port. **<1-65535>** is the port number. The default is 22 **ATTENTION** You cannot configure the following TCP ports as SSH connection ports: Ports 0 to 1024 (except port 22),1100, 4095, 5000, 5111, 6000, or 999.
rsa-auth	Enable RSA authentication.
timeout <1-120>	The SSH connection authentication timeout in seconds. Default is 60 seconds.
version <v2only|both>	Sets the SSH version. Default is v2only. **ATTENTION** Nortel recommends setting the version to v2 only.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show ssh

Verify that SSH services are enabled on the Ethernet Routing Switch 8600 and display SSH configuration information to ensure that the SSH parameters are properly configured.

Syntax

show ssh

Parameters

Variable	Value
global	Displays global system SSH information.
session	Displays the current session SSH information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

radius

Configure RADIUS to authenticate users identity through a central database.

Syntax

radius

Parameters

Variable	Value
maxserver <1-10>	Specific to RADIUS authentication. Sets the maximum number of servers allowed for the device. The range is between 1 and 10.
access-priority-attribute <192-240>	Specifies the value of the Access Priority attribute.in the range of 192 to 240 and the default is 192.
auth-info-attr-value <0-255>	Specifies the value of the authentication-information attribute in the range of 0 to 255.The default is 91.
cli-commands-attribute <192-240>	Specifies the value of the NNCLI commands attribute in the range of 192 to 240 and the default is 195.
command-access-attribute <192-240>	Specifies the value of the command access attribute in the range of 192 to 240 and the default is 194.
igap-passwd-attr <standard|auth-info>	Specifies the IGAP password attribute as standard or auth-info.
igap-timeout-log-fsize <50-8192>	Specifies the value of the igap-timeout-log-fsize in the range of 50 to 8192 KB. The default is 512.
mcast-addr-attr-value <0-255>	Specifies the value of the multicast address attribute in the range of 0 to 255. The default is 90.

Default

None

Command mode
Global Configuration Mode

Related commands
None

radius cli-profile
Use RADIUS NNCLI profiling to grant or deny NNCLI command access to users being authenticated by way of the RADIUS server.

Syntax
radius cli-profile

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

radius enable
Enable or disable RADIUS authentication globally on the device to allow further configuration to take place.

Syntax
radius

Parameters

Variable	Value
maxserver <1-10>	Specific to RADIUS authentication. Sets the maximum number of servers allowed for the device. The range is between 1 and 10.
access-priority-attribute <192-240>	Specifies the value of the Access Priority attribute.in the range of 192 to 240 and the default is 192.
auth-info-attr-value <0-255>	Specifies the value of the authentication-information attribute in the range of 0 to 255.The default is 91.

Variable	Value
cli-commands-attribute <192-240>	Specifies the value of the NNCLI commands attribute in the range of 192 to 240 and the default is 195.
command-access-attribute <192-240>	Specifies the value of the command access attribute in the range of 192 to 240 and the default is 194.
igap-passwd-attr <standard|auth-info>	Specifies the IGAP password attribute as standard or auth-info.
igap-timeout-log-fsize <50-8192>	Specifies the value of the igap-timeout-log-fsize in the range of 50 to 8192 KB. The default is 512.
mcast-addr-attr-value <0-255>	Specifies the value of the multicast address attribute in the range of 0 to 255. The default is 90.

Default
None

Command mode
Global Configuration Mode

Related commands
None

radius sourceip-flag
Configure the source IP address if the outgoing interface on the Ethernet Routing Switch 8600 fails so that configuration changes be made to define the new RADIUS Client on the RADIUS Server.

Syntax
radius sourceip-flag

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

radius-snmp acct-enable

Enable RADIUS accounting log all of the activity of each remote user in a session on the centralized RADIUS accounting server.

Syntax

radius-snmp acct-enable

Parameters

Variable	Value
acct-enable	Enables RADIUS accounting globally. RADIUS accounting cannot be enabled unless a valid server is configured. This feature is disabled by default.

Default

The default value is disabled.

Command mode

Global Configuration Mode

Related commands

None

radius cli-cmd-count

Configure a RADIUS accounting interim request to create a log whenever more than forty CLI commands are executed.

Syntax

radius cli-cmd-count <1-40>

Parameters

Variable	Value
<1-40>	Specifies a value of the NNCLI command count in the range of 1 to 40.

Default

The default value is 40.

Command mode

Global Configuration Mode

Related commands

None

radius command-access-attribute

Configure RADIUS authentication and RADIUS accounting attributes to determine the size of the packets received.

Syntax

```
radius command-access-attribute <192-240>
```

Parameters

Variable	Value
`command-access-attribute <192-240>`	Specifies the RADIUS authentication attribute value is an integer value of the NNCLI command count in the range of 192 to 240.

Default

The default value is 192.

Command mode

Global Configuration Mode

Related commands

Variable	Value
`accounting attribute-value <value>`	Specifies the RADIUS accounting attribute value is an integer value of the NNCLI command count in the range of 192 to 240. The default value is 193.

show radius

Display the global status of RADIUS information.

Syntax

```
show radius
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

radius server host

Add a RADIUS server to allow RADIUS service on the Ethernet Routing Switch 8600.

Syntax

```
radius server host <A.B.C.D> key <WORD> used-by
{cli|igap|snmp|eapol} acct-enable acct-port <1-65536>
enable port <1-65536> priority <1-10> retry <0-6> source-ip
<A.B.C.D> timeout <1-60>
```

Parameters

Variable	Value
`host <A.B.C.D>`	Create a host server.
`key <WORD>`	Specify a secret key in the range of 0-20 characters.
`used-by {cli|igap|snmp|eapol}`	Specify how the server functions: • cli—configure the server for CLI authentication. • igap—configure the server for Internet Governance Advisory Protocol (IGAP) authentication. • snmp—configure the server for SNMP authentication. • eapol—configure the server for EAPol authentication.
`acct-enable`	Enables RADIUS accounting on this server.
`acct-port <1-65536>`	Specify a UDP port of the RADIUS accounting server.
`enable`	Enables this server.
`port <1-65536>`	Specify a UDP port of the RADIUS server.
`priority <1-10>`	Specify the priority value for this server.
`retry <0-6>`	Specify the maximum number of authentication retries.
`source-ip <A.B.C.D>`	Specify a configured IP address as the source address when transmitting RADIUS packets.
`timeout <1-20>`	Specify the number of seconds before the authentication request times out.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show radius-server
Display current RADIUS server configurations.

Syntax
`show radius-server`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

eapol enable
Configure EAPoL on the Ethernet Routing Switch 8600.

Syntax
`eapol enable`

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

eapol status
Enable EAPoL on an interface.

Syntax

eapol status {authorized|auto|unauthorized}

Parameters

Variable	Value
authorized	Specifies the port is always authorized.
auto	Specifies that port authorization depends on the results of the EAPoL authentication by the RADIUS server.
unauthorized	Specifies the port is always unauthorized.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

None

radius enable eapol

The Ethernet Routing Switch 8600 uses RADIUS servers for authentication and accounting services. Enable RADIUS globally to configure the eapol radius parameters.

Syntax

radius enable

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

radius server host

Add an EAPoL-enabled RADIUS server.

Syntax

radius server host <A.B.C.D> key <WORD 0-20> used-by eapol

Parameters

Variable	Value
<A.B.C.D>	Specifies the IP address of the selected server.
key <WORD 0-20>	Specifies the secret key, which is a string of up to 20 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
[port <1-65535>]	Specifies the port ID number.
[priority <1-10>]	Specifies the priority number. The lowest being the highest priority.
[retry <0-6>]	Specifies the retry count of the account.
[timeout <1-10>]	Specifies the timeout of the server.
[enable]	Enables the functions used by the RADIUS server host.
[acct-port]	Specifies the port account
[acct-enable]	Enables the account.
[source-ip <A.B.C.D>]	Specifies the IP source.

eapol status unauthorized

Create a RADIUS server that is used by EAPoL.

Syntax

eapol status unauthorized

Parameters

None

Default

None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

eapol status auto
Configure a port so that it is authenticated automatically

Syntax
eapol status auto

Parameters
None

Default
None

Command mode
Global Configuration Mode

Next command mode
FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands
None

eapol port
Configure EAPoL on a specific port when you do not want EAPol applied to all of an Ethernet Routing Switch 8600.

Syntax
eapol port <portlist>

Parameters

Variable	Value
<portlist>	Specifies the port or list of ports used by EAPol. Specify the port list using the following format: {slot/port[-slot/port][, ...]}.
max-request <1-10>	Maximum EAP requests sent to supplicant before timing out the session.
quiet-interval <1-65535>	Time interval in seconds between authentication failure and start of a new authentication.

Variable	Value
re-authentication enable	Enables reauthenticating an existing supplicant at a specified time interval.
re-authentication-period <1-2147483647>	Time interval in seconds between successive reauthentications.
server-timeout <1-65535>	Time in seconds to wait for a response from RADIUS server.
sess-manage-mode enable	Enables the port session to be managed by an external device.
sess-manage-open-immediate enable	Sets the port to be opened immediately after 8021x authentication.
status {authorized|auto|unauthorized}	Set the desired EAP authentication status for this port.
supplicant-timeout <1-65535>	Time in seconds to wait for response from supplicant for all EAP packets except EAP Request/Identity.
traffic-control {in|in-out}	Desired level of traffic control of port.
transmit-interval <1-65535>	Time in seconds to wait for response from supplicant for EAP Request/Identity packets.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

None

eapol sess-manage enable

Enable the device to communicate through EAPoL and globally enable the session management.

Syntax

eapol sess-manage enable

Parameters

Variable	Value
sess-manage enable	Enables the session management on EAPoL.

Default

None

Command mode

Global Configuration Mode

Related commands

None

nsna nsnas

Configure the Nortel Secure Network Access (NSNA) server to allow VLANs with policy restrictions to enforce security policies for end users.

Syntax

```
nsna nsnas <A.B.C.D/0-32> port <1024-65535>
```

Parameters

Variable	Value
`port <1024-65535>`	Specifies the TCP port number used by Switch SNAS Communication Protocol (SSCP).
`A.B.C.D/0-32`	—

Default

None

Command mode

Global Configuration Mode

Related commands

None

nsna vlan

Configure the filters for policy restrictions for NSNA users.

Syntax

```
nsna vlan <1-4094> color {red| green|yellow|voip}
filter-id <WORD> filter-name <WORD> yellow-subnet
<A.B.C.D/0-32>
```

Parameters

Variable	Value
color {red|yellow|green|voip}	Specify the following access on a NSNA VLAN: • red—Restricted access allowing only authentication, DHCP and DNS traffic to the Secure Network Access Switch (SNAS), DHCP and DNS servers. • yellow—Limited access allowing traffic to only remediation networks. • green—Full (or with certain restriction per policy) access based on user groups. • voip—Restricted access allowing VoIP traffic to VoIP controllers and authenticated IP phone peers.
filter-id <WORD>	The ID of the filter in the range of 1–4095. If the specified filter ID does not exist, a default filter of the specified color is autogenerated.
filter-name <WORD>	Specify a name for the filter in the range of 1–32 characters.
vlan <1-4094>	The ID of the VLAN.
yellow-subnet <A.B.C.D/0-32>	Specify a VLAN subnet IP and mask for remedial network. This option is present only when creating yellow VLANs.

Default

None

Command mode

Global Configuration Mode

Related commands

None

nsna port

Configure the access ports for NSNA.

Syntax

nsna port <portList> dynamic [voip-vlans <1-4094>]

Parameters

Variable	Value
`<portList>`	Specify the port or a list of ports in the following format: {slot/port[-slot/port][,...]}
`voip-vlans <1-4094>`	Specify the ID of the VoIP VLAN added to the table list.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

nsna uplink vlans

Add a filter for uplinking to core for uplink port or each member port for MLT.

Syntax

`nsna uplink vlans <vidList>`

Parameters

Variable	Value
`vlans <vidList>`	The VLAN ID created with an NSNA color filter.

Default

None

Command mode

Global Configuration Mode

Next command mode

FastEthernet or GigabitEthernet Interface Configuration Mode

Related commands

None

nsna enable

Globally enable the configuration settings in NSNA.

Syntax

nsna enable

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

nsna phone-signature

Add an IP phone signature string to an NSNA IP phone device.

Syntax

nsna phone-signature <WORD>

Parameters

Variable	Value
<WORD>	Specify the phone signature string in the range of 1–64 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

None

tacacs enable

Enable Terminal Access Controller Access Control System plus (TACACS+) authentication to provide centralized validation of users attempting to gain access to a router or network access server.

Syntax

tacacs enable

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

no tacacs enable

Disable TACACS+ authentication to remove the centralized validation of users attempting to gain access to a router or network access server.

Syntax
```
no tacacs enable
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

tacacs server

Configure a TACACS+ server to create the server and specify the authentication process.

Syntax
```
tacacs server <A.B.C.D> key <WORD 1-128>
```

Parameters

Variable	Value
<A.B.C.D>	Specifies the IP address of the server you want to add. The no form of this command is **no tacacs server**. The default form of this command is **no tacacs server <A.B.C.D>**.
key <WORD 1-128>	Specifies the authentication and encryption key for all TACACS+ communications between the device and the TACACS+ server. This key must match the encryption used on the TACACS+ daemon. The string length is 1–128 characters. **ATTENTION** The **key <value>** parameter is a required parameter only when adding a new server entry. The parameter is optional when modifying an existing entry. The no form of this command is **no tacacs server <A.B.C.D> key**. The default form of this command is **default tacacs server <A.B.C.D> key**.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
[key <WORD 1-128>] [port <0-65535>] [priority <1-65535>] [single-connection enable] [source <A.B.C.D>] [source-ip-interface enable] [timeout <10-30>]	• **key <WORD 1-128>**: Specifies the authentication and encryption key for all TACACS+ communications between the device and the TACACS+ server. This key must match the encryption used on the TACACS+ daemon. The string length is 1–128 characters. The no form of this command is **no tacacs server <A.B.C.D> key**. The default form of this command is **default tacacs server <A.B.C.D> key**. • **port <0-65535>**: Specifies the Transmission Control Protocol (TCP) port you want to use. If unspecified, the default port number is 49. The range of values is 0–65535. • **priority <1-65535>**: Determines the order in which the servers are used, where 1 specifies the highest priority. The default value is 1. When you set a second server and more, specify a unique value. The range of values is 1–65535. The default form of this command is **default tacacs server <A.B.C.D> priority**. • **single-connection enable**: Rather than keep the device open and close a TCP connection to the daemon each time the daemon must communicate, the single-connection option maintains a single open connection between the device and the daemon. By default, single-connection is disabled. The no form of this command is **no tacacs server <A.B.C.D> single-connection enable**. • **source <A.B.C.D>**: Specifies the source IP address to use for communication. Enter 0.0.0.0 to

Variable	Value
	use the IP address of the outgoing IP interface. The default value is 0.0.0.0. • **source-ip-interface enable** enables the source IP interface. The default state is disabled. The default form of this command is **default tacacs server <A.B.C.D> source-ip-interface**. • **timeout <10–30>**: Specifies the timeout value (in seconds) for communications with the TACACS+ server. The default value is 10 seconds and the range of values is 10–30.

show tacacs

Display the status of the TACACS+ configuration.

Syntax

show tacacs

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

no tacacs server

Delete a TACACS+ server to remove the centralized validation of users attempting to gain access to a router or network access server.

Syntax

no tacacs server <ipaddr>

Parameters

Variable	Value
`<A.B.C.D>`	Specifies the IP address of the server you want to delete.

Default

None

Command mode

Global Configuration Mode

Related commands

None

Troubleshooting commands

This chapter describes the Nortel Networks Command Line Interface (NNCLI) commands to help you troubleshoot the Ethernet Routing Switch 8600.

Navigation

terminal more disable

Disable scrolling of the output display prior to capturing the data.

Syntax

terminal more disable

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

more boot.cfg

View configuration file information.

Syntax

more boot.cfg

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show tech

Capture the output of the following command when any switch problem is observed.

Syntax

show tech

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show running-config

Capture the output of the following command when any switch problem is observed.

Syntax

show running-config [verbose] [module <cli|sys|web|rmon|vlan|port|qos|traffic-filter|mlt|stg|ip|ipx|diag|dvmrp|radius|atm|ntp|svlan|lacp|naap|cluster|bootp|filter|ipv6>]

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces FastEthernet statistics

Capture the output of the following command when any switch problem is observed.

Syntax

show interfaces FastEthernet statistics

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces FastEthernet error

Capture the output of the following command when any switch problem is observed.

Syntax

show interfaces FastEthernet error

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

dump ar

To aid in troubleshooting, a dump of the hardware records from an ingress OctaPID can be captured.

Syntax

dump ar <0-64> <WORD 1-1536> <0-3>

Parameters

Variable	Value
<0-64>	Specifies the OctaPID assignment from 1 to 64.
<WORD 1-1536>	Specifies a record type in the AR table. Options include vlan, ip_subnet, mac_vlan, mac, arp, ip, ipx, ipmc, ip_filter, protocol, sys_rec, all.
<0-3>	Specifies the verbosity from 0 to 3. Higher numbers specify more verbosity.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

trace level

Use trace to observe the status of a software module at a given time.

Syntax

```
trace level [<0-110>] [<0-4>]
```

Parameters

Variable	Value
`level [<0-110>] [<0-4>]`	Starts the trace by specifying the module ID and level. • `<0-110>` specifies the module ID from 0 to 110. • `<0-4>` specifies the trace level from 0 to 4, where 0 is disabled; 1 is very terse; 2 is terse; 3 is very verbose, 4 is verbose.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
`grep [<WORD 0-128>]`	Performs a comparison of trace messages [get regular expression and print (grep)].
`shutdown`	Stops the trace operation.
`screen`	Enables the display of trace output to the screen.

show trace file

View the trace results.

Syntax

```
show trace file [tail]
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

save trace
Save the trace file to the PCMCIA card for retrieval.

Syntax
`save trace`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

trace auto module
Use autotrace to automatically perform the trace function when a parameter reaches a certain threshold.

Syntax
`trace auto module add <0-110> <0-4>`

Parameters

Variable	Value
`module add <0-110> <0-4>`	Configures the trace autoenable function by specifying the module ID and level. • `<0-110>` specifies the module ID from 0 to 110. • `<0-4>` specifies the trace level from 0 to 4, where 0 is disabled; 1 is very terse; 2 is terse; 3 is very verbose, 4 is verbose.

Default
None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
disable	Disables the autotrace function.
enable	Enables the autotrace function.
high-percentage <60-100>	Specifies the high-percentage threshold for a module. The range is 60 to 100%.
high-track-duration <3-10>	Specifies, in seconds, the maximum amount of time that the activity must be sustained to trigger the trace. The range is 3 to 10 s.
low-percentage <50-90>	Specifies the low-percentage threshold for a module. The range is 50 to 90%.
low-track-duration <3-10>	Specifies, in seconds, the mimimum amount of time that the activity must be sustained to trigger the trace. The range is 3 to 10 s.
module add <0-110> <0-4>	Configures the trace autoenable function by specifying the module ID and level. • **<0-110>** specifies the module ID from 0 to 110. • **<0-4>** specifies the trace level from 0 to 4, where 0 is disabled; 1 is very terse; 2 is terse; 3 is very verbose, 4 is verbose.
module remove <0-110>	Removes a module ID from the autotrace instance.

debug ip pim

Use PIM traces to aid in PIM troubleshooting.

Syntax

debug ip pim pimdbgtrace

Parameters

Variable	Value
pimdbgtrace	Enables or disables PIM debug traces.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`assert`	Displays the assert debug traces.
`bstrap`	Displays bootstrap debug traces.
`group <A.B.C.D>`	Displays debug traces from a specific group IP address.
`hello`	Displays hello debug traces.
`joinprune`	Displays join/prune debug traces.
`pimdbglog`	Enables or disables whether the switch logs debug traces.
`rcv-dbg-trace`	Displays trace messages received by the switch.
`register`	Displays register debug traces.
`regstop`	Displays register stop debug traces.
`rp-adv`	Displays RP advertisement debug traces.
`send-trace`	Displays trace messages forwarded by the switch.
`source <A.B.C.D>`	Displays debug traces from a specific source IP address.

global-debug mask

Display specific debug messages for your global BGP configuration.

Syntax

`global-debug mask <WORD 1-100>`

Parameters

Variable	Value
`mask <WORD 1-100>`	Specifies one or more mask choices that you enter, separated by commas with no space between choices. For example, [<mask>,<mask>,<mask>...]. Options include: none, all, error, packet, event, trace, warning, state, init, filter, update.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

neighbor-debug-all mask

Display specific debug messages for your global BGP neighbors

Syntax

neighbor-debug-all mask <WORD 1-100>

Parameters

Variable	Value
mask <WORD 1-100>	Specifies one or more mask choices that you enter, separated by commas with no space between choices. For example, [<mask>,<mask>,<mask>...]. Options include: none, all, error, packet, event, trace, warning, state, init, filter, update.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

neighbor

Display specific debug messages for BGP peers or peer groups.

Syntax

neighbor <nbr_ipaddr|peer-group-name> neighbor-debug mask <WORD 1-100>

Parameters

Variable	Value
`<nbr_ipaddr|peer-group-name>`	Indicates that you enter the peer's IP address or the peer's group name.
`mask <WORD 1-100>`	Specifies one or more mask choices that you enter, separated by commas with no space between choices. For example, [<mask>,<mask>,<mask>...]. Options include: none, all, error, packet, event, trace, warning, state, init, filter, update.

Default

None

Command mode

Global Configuration Mode

Next command mode

BGP Router Configuration Mode

Related commands

None

mirror-by-port

Use port mirroring to aid in diagnostic and security operations.

Syntax

```
mirror-by-port <1-383> in-port <portList> {monitor-mlt
<1-256>|monitor-vlan <0-4094>|out-port <portList>}
```

Parameters

Variable	Value
`in-port <portList> {monito r-mlt <1-256>|monitor-vlan <0-4094>|out-port <portList>}`	Creates a new mirror-by-port table entry. • `in-port <portList>` specifies the mirrored port. • `monitor-mlt <1-256>` specifies the mirroring MLT ID from 1 to 256.

Variable	Value
	• **monitor-vlan <0-4094>** specifies the mirroring VLAN ID from 0 to 4094. • **out-port <portList>** specifies the mirroring port.
<1-383>	Specifies the mirror-by-port entry ID in the range of 1 to 383.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
enable	Enables or disables a mirroring instance already created in the mirror-by-port table.
mode <tx|rx|both|rxFilter|txFilter|bothFilter>	Sets the mirroring mode. The default is rx. • **tx** mirrors egress packets. • **rx** mirrors ingress packets. • **both** mirrors both egress and ingress packets. • **rxFilter** mirrors and filters ingress packets. If you use the rxFilter option with an R series module, you must use an ACL-based filter. • **txFilter** mirrors and filters egress packets. • **bothFilter** mirrors and filters both egress and ingress packets.
remote-mirror-vlan-id <0-4094>	Sets the remote mirror VLAN ID.
mirror-port <1-383> <portList>	Modifies the mirrored port.

Variable	Value
monitor-mlt <1-383> <1-256>	Modifies the monitoring MLT; <1-256> specifies the mirroring MLT ID.
monitor-port <1-383> <portList>	Modifies the monitoring ports.
monitor-vlan <1-383> <0-4094>	Modifies the monitoring VLAN.

filter acl set

Configure the global action to mirror to mirror packets that match an ACE.

Syntax

filter acl set <1-4096> **global-action** <**count**|**count-ipfix**|**ipfix**|**mirror**|**mirror-count**|**mirror-count-ipfix**|**mirror-ipfix**>

Parameters

Variable	Value
global-action <**count**|**count-ipfix**|**ipfix**|**mirror**|**mirror-count**|**mirror-count-ipfix**|**mirror-ipfix**>	Specifies the global action to take for matching ACEs: mirror, count, mirror-count, ipfix, mirror-ipfix, count-ipfix, or mirror-count-ipfix. If you enable mirroring, ensure you specify the source and/or destination mirroring ports: • For R modules in Tx modes: use **mirror-by-port** commands to specify mirroring ports. • For R and RS modules in Rx modes: use the **filter acl ace debug** commands to specify mirroring ports.
<1-4096>	Specifies an ACL ID from 1 to 4096.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl ace debug

Use debug actions to use filters for troubleshooting or monitoring procedures.

Syntax

```
filter acl ace debug <1-4096> <1-1000> [mirror enable]
[monitor-dst-ports <portList>] [monitor-dst-vlan
<0-4094>] [monitor-dst-mlt <1-256>]
```

Parameters

Variable	Value
copy-to-primary-cp enable	Enables the ability to copy matching packets to the primary (Master) CPU.
copy-to-secondary-cp enable	Enables the ability to copy matching packets to the Secondary CPU.
count enable	Enables the ability to count matching packets.
mirror enable	Enables mirroring. If you enable mirroring, ensure that you configure the appropriate parameters: • For R and RS modules in Rx mode: **monitor-dst-ports**, **monitor-dst-vlan**, or **monitor-dst-mlt**. • For R modules in Tx mode: use the **mirror-by-port** commands to specify the mirroring source/destination.
monitor-dst-ports <portList>	Configures mirroring to a destination port or ports.
monitor-dst-mlt <1-256>	Configures mirroring to a destination MLT group.
monitor-dst-vlan <0-4094>	Configures mirroring to a destination VLAN.
<1-4096>	Specifies the ACL ID from 1 to 4096.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show filter acl debug

Display the debug actions filter information to ensure accurate configuration information.

Syntax

```
show filter acl debug [<1-4096>] [<1-1000>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the ACL ID from 1 to 4096.
`<1-1000>`	Specifies the ACE ID from 1 to 1000.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

remote-mirroring

Use remote mirroring to monitor many ports from different switches using one network probe device.

Syntax

```
remote-mirroring [enable] [mode <source|termination>]
[srcMac <0x00:0x00:0x00:0x00:0x00:0x00>] [dstMac
<0x00:0x00:0x00:0x00:0x00:0x00>] [ether-type
<0x00-0xffff>] [vlan-id <1-4094>]
```

Parameters

Variable	Value
`dstMac <0x00:0x00:0x00:0x00:0x00:0x00>`	Sets the destination MAC address for use in the remote mirroring encapsulation header. The mirrored packet is sent to this MAC address. The DstMac is used only for RMS ports.

Variable	Value
	For RMT ports, one of the unused MAC addresses from the switch port MAC address range is used. This MAC address is saved in the configuration file.
enable	Enables remote mirroring on the port. When remote mirroring is enabled, the following events occur: • A static entry for the DstMac is added to the Forwarding Database (FDB). All packets that come with this remote mirroring DstMac are sent to the RMT port. • The switch periodically (once in 10 seconds) transmits broadcast Layer 2 packets in the associated VLAN so that all nodes in the network can learn the DstMac.
ether-type <0x00-0xffff>	Specifies the Ethertype of the remote mirrored packet. The default value is 0x8103.
mode <source|termination>	Specifies whether the port is an RMT (mode is termination) or an RMS (mode is source).
srcMac <0x00:0x00:0x00:0x00:0x00:0x00>	Sets the source MAC address for use in the remote mirroring encapsulation header. The mirrored packet is sent from the RMS port, and the source MAC parameter in the header is derived from this address. The source MAC address of the encapsulated frame contains the first 45 bits of this MAC address. The three least significant bits are derived from the port number of the RMS port. The MAC address of the port is used as the default value.
vlan-id <1-4094>	Specifies to which VLAN the remote mirroring destination MAC address belongs. This must be a port-based VLAN. Used only for Remote Mirroring Termination (RMT) ports. When the RMT port is removed from the last VLAN in the list, RMT is disabled on the port.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

show remote-mirroring

Display the remote mirroring configuration information.

Syntax

```
show remote-mirroring interfaces <fastEthernet|gigabitEthernet> [enable] [mode <source|termination>] [srcMac <0x00:0x00:0x00:0x00:0x00:0x00>] [dstMac <0x00:0x00:0x00:0x00:0x00:0x00>] [ether-type <0x00-0xffff>] [vlan-id <1-4094>]
```

Parameters

Variable	Value
`dstMac <0x00:0x00:0x00:0x00:0x00:0x00>`	Sets the destination MAC address for use in the remote mirroring encapsulation header. The mirrored packet is sent to this MAC address. The DstMac is used only for RMS ports. For RMT ports, one of the unused MAC addresses from the switch port MAC address range is used. This MAC address is saved in the configuration file.
`enable`	Enables remote mirroring on the port. When remote mirroring is enabled, the following events occur: • A static entry for the DstMac is added to the Forwarding Database (FDB). All packets that come with this remote mirroring DstMac are sent to the RMT port. • The switch periodically (once in 10 seconds) transmits broadcast Layer 2 packets in the associated VLAN so

Variable	Value
	that all nodes in the network can learn the DstMac.
ether-type <0x00-0xffff>	Specifies the Ethertype of the remote mirrored packet. The default value is 0x8103.
mode <source|termination>	Specifies whether the port is an RMT (mode is termination) or an RMS (mode is source).
srcMac <0x00:0x00:0x00:0x00:0x00:0x00>	Sets the source MAC address for use in the remote mirroring encapsulation header. The mirrored packet is sent from the RMS port, and the source MAC parameter in the header is derived from this address. The source MAC address of the encapsulated frame contains the first 45 bits of this MAC address. The three least significant bits are derived from the port number of the RMS port. The MAC address of the port is used as the default value.
vlan-id <1-4094>	Specifies to which VLAN the remote mirroring destination MAC address belongs. This must be a port-based VLAN. Used only for Remote Mirroring Termination (RMT) ports. When the RMT port is removed from the last VLAN in the list, RMT is disabled on the port.

Default

None

Command mode

Global Configuration Mode

Related commands

None

peer telnet

The PCAP engine is the Secondary CPU. You can gain access to the PCAP engine through a direct console or modem connection to the secondary CPU, or by using a peer telnet session from the primary CPU. A connection is made to the secondary CPU, which then prompts for the logon and password.

Syntax

peer telnet

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

pcap enable

Configure PCAP globally to define how PCAP operates on the Ethernet Routing Switch 8600.

Syntax

pcap enable

Parameters

Variable	Value
auto-save [file-name <WORD 1-40>] [pcmcia] [network] [ip <A.B.C.D>]	Enables or disables autosave. When enabled, saves the captured frames into the device specified and continues to capture frames. The default is enable. If this option is disabled, packets are stored in the DRAM buffer only. **file-name <WORD 1-40>** is the name of the file where captured frames are saved. **pcmcia** sets the device to PCMCIA. **network** sets the device to network. **ip <A.B.C.D>** is the IP address used. This is used only if the device is network.
buffer-size <2-420>	Specifies the size of the buffer allocated for storing data. A nonMezz SF/CPU can be up to 256 MB, a Mezz SF/CPU can use up to 420 MB. The maximum buffer size is 104 MB for a 8691 SF/CPU. The default is 32 MB.

Variable	Value
buffer-wrap	Enables buffer wrapping. When this parameter is set to true and the buffer becomes full, the capture continues by wrapping the buffer. If this parameter is set to false and the buffer becomes full, the packet capture stops. The default value is true. A log message is generated when the buffer is wrapped.
enable	Enables PCAP globally. The default is disabled. To disable PCAP, use the **no pcap enable** command.
ethertype-for-svlan-level <0x5dd-0xffff>	Specifies the Ethernet type for sVLAN packets. With this information, PCAP can identify and capture the tag information of packets received from SVLAN ports. **<0x5dd-0xffff>** is a hexadecimal value. The default is 0x8100.
fragment-size <64-9600>	Specifies the number of bytes from each frame to capture. The default is the first 64 bytes of each frame.
pcmcia-wrap	Enables PCMCIA wrapping. When this parameter is set to true and the autosave device is PCMCIA, this causes an overwrite of the present file on the PCMCIA during an autosave. If this parameter is set to false, the present file is not overwritten. A log is generated when the file is overwritten on the PCMCIA.
reset-stat	This command resets the PCAP engine DRAM buffer, as well as all software counters used for PCAP statistics. This command can be executed in the Primary or Secondary SF/CPU.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show pcap

Display PCAP information.

Syntax

show pcap

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

pcap 1-1000

Configure PCAP on a port so that the port supports PCAP, and to apply filters to the captured data. You can apply IP- or Access Control List (ACL)-based filters.

Syntax

pcap <1-1000>

Parameters

Variable	Value
<1-1000>	Adds an IP filter set (Global or Source Destination) to a port. <1-1000> specifies the filter set. The IP filter set must already exist. Filter Global Set ID values are in the range of 1 to 100 and Source/Destination sets are in the range of 300 to 1000. Adding a filter set causes the following to happen: • Creates an IP traffic filter for a port if one does not already exist; otherwise, disables the IP traffic filter. • Adds the IP traffic filter set to the port. • Sets the mirror bit for all the filters in the set. • Restores the default-action of the port. If default-action was not set, set to forwarding. • Enables the traffic filter on the port.

Variable	Value
`acl-filter <1-4096>`	Applies an ACL to captured packets. The ACL ID can be from 1 to 4096.
`enable [mode <tx|rx|both|rxFilter|txFilter|bothFilter>]`	Enables or disables PCAP on the port. The default PCAP mode captures ingress packets (rx mode). If PCAP is enabled in filter mode, then only packets which match the filter criteria are captured.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show pcap port
Display PCAP port information to ensure accuracy.

Syntax
`show pcap port`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

pcap capture-filter
Use capture filters to better define the match criteria used on packets.

Nortel highly recommends using PCAP with IP or MAC filters to reduce the load on the PCAP engine.

Syntax
`pcap capture-filter <1-1000>`

Parameters

Variable	Value
action <capture|drop|trigger-on|trigger-off>	Determines the action taken by the filter. • **capture** indicates that the packet is captured. • **drop** indicates that the packet is dropped. • **trigger-on** indicates to start capturing the packet when a packet matches this filter. PCAP is enabled globally and the trigger filter is disabled. • **trigger-off** indicates to stop capturing the packet when a packet matches this filter. PCAP is disabled globally and the trigger filter is disabled.
dscp <0-63> [<0-63>] [match-zero]	Specifies the DSCP value of the packet. **<0-63>** is the DSCP from 0 to 63. The default is 0, which means this option is disabled. Use the second **<0-63>** to specify a range. When **match-zero** is set, 0 is considered a valid value. When it is not set, 0 is considered a disable value.
dstip <A.B.C.D> [<A.B.C.D>]	Specifies the destination IP address. The default is 0.0.0.0, which means this option is disabled. Use the second **<A.B.C.D>** to specify a range.
dstmac <0x00:0x00:0x00:0x00:0x00:0x00> [<1-6>]	Specifies the MAC address of the destination. If the mask is set, then only the first few bytes are compared. **<1-6>** is the destination MAC address mask, and specifies a range.
enable	Enables the filter. The default is disable.
ether-type <0x0-0xffff> [<0x0-0xffff>]	Specifies the Ethernet type of the packet. **<Ethertype>** is an Ether-type. The default is 0, meaning that this option is disabled. Use the second **<0x0-0xffff>** to specify a range.

Variable	Value
packet-count <0-65535>	When set, PCAP stops after capturing the specified number of packets. This is similar to the refresh-timer option; after it is invoked, the filter is disabled. This option is active only when the action parameter is set to trigger-on. The default value is 0, which means this option is disabled.
pbits <0-7> [<0-7>] [match-zero]	Specifies the priority bit of the packet. The default is 0, which means this option is disabled. Use the second **<0-7>** to specify a range. When **match-zero** is set, 0 is considered a valid value. When it is not set, 0 is considered a disable value.
protocol-type <0-255> [<0-255>]	Specifies the packet protocol type. The default is 0, which means this option is disabled. Use the second **<0-255>** to specify a range.
refresh-timer <WORD 1-7>	When set, this starts or resets a timer. If another packet is not received within the specified time, PCAP is disabled globally. This option is active only when the action parameter is set to 'trigger-on'. To delete this option, set it to 0. The default value is 0.
srcip <A.B.C.D> [<A.B.C.D>]	Specifies the source IP address. The default is 0.0.0.0, which means this option is disabled. Use the second **<A.B.C.D>** to specify a range.
srcmac <0x00:0x00:0x00:0x00:0x00:0x00> [<1-6>]	Specifies the MAC address of the source. If the mask is set, then only the first few bytes are compared. The default is 00:00:00:00:00:00, which means this option is disabled. **<1-6>** is the mask of the source MAC address. This parameter specifies an address range.

Variable	Value
tcp-port <0-65535> [<0-65535>]	Specifies the TCP port of the packet. The default is 0, which means this option is disabled. Use the second <0-65535> to specify a range.
timer <WORD 1-7>	When set, PCAP is invoked when the first packet is matched and stopped after the set value of time. After starting the timer, the filter is disabled. This option is active only when the action parameter is set to trigger-on. <WORD 1-7> is a value from 100 to 3600000 milliseconds. The default value is zero. Setting the value to 0 disables the timer.
udp-port <0-65535> [<0-65535>]	Specifies the UDP port of the packet. The default is 0, which means this option is disabled. Use the second <0-65535> to specify a range.
user-defined <0-9600> <WORD 0-50>	Sets a user defined value on which to match the packet. The user can define a pattern in hex or characters to match (<0-9600>). The user can also specify the offset to start the match (<WORD 0-50>). The default value of pattern is null (”) which means that this field is discarded. To disable this option, set the pattern to null (”).
vid <0-4092> [<0-4092>]	Specifies the VLAN ID of the packet. The default is 0, which means that this option is disabled. Use the second <0-4092> to specify a range.

Default

None

Command mode

Global Configuration Mode

Related commands

None

pcap enable mode

Enable PCAP in RxFilter mode.

Syntax

pcap enable mode rxFilter

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

vlan mac-address-filter

Enable PCAP with FDB filters on a VLAN by MAC address.

Syntax

vlan mac-address-filter <1-4094> pcap <0x00:0x00:0x00:0x00:0x00:0x00> [enable]

Parameters

Variable	Value
<0x00:0x00:0x00:0x00:0x00:0x00>	Specifies the MAC address in the form at 0x00:0x00:0x00:0x00:0x00:0x00.
<1-4094>	Specifies the VLAN by VLAN ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show pcap dump

You can view packets using a NNCLI session and the Secondary SF/CPU. Dumping a large number of captured packets is CPU intensive. The switch does not respond to any commands while the dump is in progress. Nortel recommends you use this command only when it is absolutely necessary. However, there is no degradation in normal traffic handling or switch failover.

Syntax

```
show pcap dump
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

copy

Copy packets to a remote machine, or the switch flash or PCMCIA. If PCAP is used with autosave disabled, captured packets are stored in the Secondary SF/CPU DRAM buffer.

Syntax

```
copy PCAP00 <WORD 1-99>
```

OR

```
ftp> get PCAP00 <WORD 1-99>
```

Parameters

Variable	Value
`<WORD 1-99>`	Specifies pcmcia, flash, or an IP host by IP address and specifies the PCAP file (.cap). Formats include: • a.b.c.d:<file> • /pcmcia/<file> • /flash/<file> • /{wsm|sam} <1-10> [<dst-target>] where dst-target is {image1|im

Variable	Value
	age2|boot|cfg} for the WSM or {image|cfg} for the SAM.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

no pcap enable
Disable PCAP and clear the PCAP DRAM buffer and the PCAP counters.

Syntax
```
no pcap enable

pcap reset-stat
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

no pcap enable globally
Disable PCAP globally.

Syntax
```
no pcap enable
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

pcap reset-stat
Reset PCAP statistics and counters.

Syntax
pcap reset-stat

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

pcap enable
Enable PCAP globally.

Syntax
pcap enable

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

pcap enable mode
Enable PCAP globally.

Syntax

```
pcap enable [mode <tx|rx|both|rxFilter|txFilter|bothFi
lter>]
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

test portList

Set the port to test mode to ensure continuity of the data path.

Syntax

```
test [<portList>]
```

Parameters

Variable	Value
`portlist`	Specifies the port number to perform the test.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

test loopback

Run either an internal or external loopback test to ensure the continuity of data.

Syntax

```
test loopback <portList> [<int|ext>]
```

Parameters

Variable	Value
`<int|ext>`	Specifies the internal or external loopback test to be run on the port.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

test stop loopback

Stop the loopback test.

Syntax

```
test stop loopback <portList>
```

Parameters

Variable	Value
`portlist`	Specifies the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show test loopback

View the results of the loopback test.

Syntax

```
show test loopback [<portList>]
```

Parameters

None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

test fabric
Test the switch fabric for consistency. The fabric test causes the CPU to generate traffic and send it through the switch fabric.

Syntax
`test fabric`

Parameters

Variable	Value
`stop fabric`	Stops the test after a few seconds.

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show test fabric
View the results of the test.

Syntax
`show test fabric`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

test artable

Test the Address Resolution Protocol address table for consistency.

Syntax

test artable

Parameters

Variable	Value
stop artable	Stop the test after a few seconds.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show test artable

View the results of the test

Syntax

show test artable

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

clear ip arp interface

Clear the ARP cache as part of ARP problem resolution procedures.

Syntax

clear ip arp interface [fastethernet|gigabitethernet|vlan <1-4094>] <portList>

Parameters

Variable	Value
`<fastethernet|gigabitethernet|vlan <1-4094>`	Specifies the interface to be cleared.
`portlist`	Specifies the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

action flushIp

Flush or clear the routing tables for administrative and troubleshooting purposes.

Syntax

`action flushIp`

Parameters

Variable	Value
`flushIp`	Flushes the IP routing tables by port.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
`flushArp`	Flushes the ARP tables.
`flushMacFdb`	Flushes the MAC address.

clear ip route interface

Clear the routing table.

Syntax

```
clear ip route interface [fastethernet|gigabitethernet|vl
an <1-4094>]<portList>
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

test led

Test the POS module LEDs to ensure that they are working properly.

Syntax

```
test led <portList> <tx|rx> <off|yellow|green
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

test hardware

Test Packet-over-SONET input/output modules to ensure that they work properly.

Syntax

```
test hardware [<portList>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ping

Use ping operations to determine that a path exists to another device, and that it is reachable.

Syntax

```
ping <WORD 0-256> [scopeid <1-9999>] [datasize <16-4076>]
[count <1-9999>] [-s] [-I <1-60>] [-t <1-120>] [-d] [source
<WORD 1-256>] [vrf <WORD 0-16>]
```

Parameters

Variable	Value
`-d`	Sets the ping debug flag. In debug mode, the ping reply includes additional information about the device being pinged.
`-s`	Specifies that the IPv4 or IPv6 ping should be retransmitted at continuous intervals at the interval defined by -I <1-60>.
`-I <1-60>`	Specifies the interval between ping retransmissions from 1 to 60 seconds.
`-t <1-120>`	Specifies the no-answer timeout from 1 to 120 seconds.
`count <1-9999>`	Specifies the number of times to ping the device from 1 to 9999. The default is 1.
`datasize <16-4076>`	Specifies the size of the ping packet in octets, either 16 to 4076, or 16 to 65487. The default is 16 octets.
`scopeid <1-9999>`	Specifies the circuit scope ID for IPv6 from 1 to 9999.
`source <WORD 1-256>`	Specifies the source IP address for use in IP VPN pings.
`vrf <WORD 0-16>`	Specifies the VRF instance by VRF name.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

pingipx

Ping an IPX device.

Syntax

```
pingipx <0x00:0x00:0x00:0x00.0x00:0x00:0x00:0x00:0x00:0x
00> [<1-9999>] [-s] [-q] [-t <1-120>]
```

Parameters

Variable	Value
`<0x00:0x00:0x00:0x00.0x00:0x 00:0x00:0x00:0x00:0x00>`	Specifies the IPX host in the net.node format.
`-q`	Specifies quiet output (same as nonverbose mode).
`-s`	Specifies that the ping should be retransmitted at continuous intervals.
`-t <1-120>`	Specifies the no-answer timeout from 1 to 120 seconds.
`<1-9999>`	Specifies the number of times to ping the device from 1 to 9999. The default is 1.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ping-mpls ipv4

Ping an MPLS device.

Syntax

```
ping-mpls ipv4 <prefix/len> [ttl <1-255>] [source
<A.B.C.D>] [count <1-1000>]
```

Parameters

Variable	Value
`prefix/len`	Specifies the IPv4 address and prefix length.

Variable	Value
`count <1-1000>`	Specifies the number of times to ping the device from 1 to 1000. The default is 1.
`ttl <1-255>`	Specifies the time-to-live of the MPLS ping packet from 1 to 255.
`source <A.B.C.D>`	Specifies the source IP address.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ping-mpls rsvp

Ping an MPLS device.

Syntax

```
ping-mpls rsvp <WORD 0-32> [ttl <1-255>] [source <A.B.C.D>]
[count <1-1000>]
```

Parameters

Variable	Value
`Word <0-32>`	Specifies the name of the label-switched path.
`count <1-1000>`	Specifies the number of times to ping the device from 1 to 1000. The default is 1.
`ttl <1-255>`	Specifies the time-to-live of the MPLS ping packet from 1 to 255.
`source <A.B.C.D>`	Specifies the source IP address.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

traceroute

Use traceroute to determine the route packets take through a network to a destination.

Syntax

```
traceroute <A.B.C.D> [<1-1464>] [-m <1-255>] [-p
<0-65535>] [-q <1-255>] [-w <1-255>] [-v] [source <WORD
1-256>] [vrf <WORD 0-16>]
```

Parameters

Variable	Value
`-m <1-255>`	Specifies the is maximum time-to-live (TTL) (1 to 255).
`-p <0-65535`	Specifies the base UDP port number (0 to 65535).
`-q <1-255>`	Specifies the number of probes per TTL (1 to 255).
`-v`	Specifies verbose mode (detailed output).
`-w <1-255>`	Specifies the wait time per probe (1 to 255).
`<1-1464>`	Specifies the size of the probe packet (1 to 1464).
`source <WORD 1-256>`	Specifies the source IP address for use in IP VPN traceroutes.
`vrf <WORD 0-16>`	Specifies the VRF instance by VRF name.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

ping-snoop

Use Ping Snoop to troubleshoot multilink trunking configurations. You can only use the CLI or NNCLI to configure Ping Snoop for Classic modules.

Syntax

```
ping-snoop <A.B.C.D/0-32> <A.B.C.D/0-32
```

Parameters

Variable	Value
`<A.B.C.D/0-32> <A.B.C.D/0-32>`	Creates the ping snoop filter by specifying the source IP address and the destination IP address.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`<portList>`	Adds ports to the ping snoop filter after the filter is created. After adding a port, if an ICMP request is received on that port, the source and destination IP address and the port on which the packet was received appear on the management console. To remove ports, use the **`no ping-snoop <portList>`** command.
`enable`	Enables the ping snoop filter. To disable ping snoop, use the **`no ping-snoop enable`** command.

show ping-snoop

Display Ping Snoop configurations to troubleshoot multilink trunking configurations.

Syntax

`show ping-snoop`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

filter acl port

Add the required ports to the ACL.

Syntax

filter acl port <1-4096> <portList>

Parameters

Variable	Value
<1-4096>	Specifies the ACE ID in the range of 1 to 4096.
portlist	Associates a port or a portlist to a particular ACL.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl enable

Enable the Access Control List (ACL).

Syntax

filter acl <1-4096> enable

Parameters

Variable	Value
<1-4096>	Specifies the ACL ID.
enable	Enables the Access Control List on the filter.

Default

None

Command mode

Global Configuration Mode

Related commands

None

filter acl ace

Configure the ACE action, debug action, and the IP addresses that you require.

Syntax

```
filter acl ace <1-4096> <1-1000> [name <WORD 0-32>]
```

Parameters

Variable	Value
`<1-4096>`	Specifies the ACL ID in the range of 1 to 4096.
`<1-1000>`	Specifies the Access Control Entry (ACE) id in the range of 0 to 1000.
`name <Word/0-32>`	Specifies the name for the ACE in the range of 0 to 32 characters.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`<action>`	Specifies the action that the ACE takes upon a match. These include: • `count` • `copy-to-primary-cp` • `copy-to-secondary-cp` • `mirror` • `mirroring-dst-ports <portList>` • `mirroring-dst-vlan <1-4094>` • `mirroring-dst-mlt <1-256>`
`debug 4096 <1-1000> <action> enable`	Configures the debug ACE action.
`ip <1-4096> <1-1000> dst-ip eq <A.B.C.D>`	Configures the destination IP address.
`ip <1-4096> <1-1000> src-ip eq <A.B.C.D>`	Configures the source IP address.
`enable`	Enables the ACE.

show filter acl

Display filter ACL configuration information.

Syntax

show filter acl <1-4096>

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

snmp-server host v1

Configure an SNMP host so that the switch can forward SNMP traps to a host for monitoring.

Syntax

snmp-server host <WORD 1-256> port <1-65535> v1 <WORD 1-32> [filter <WORD 1-32>] [target-name <WORD 1-32>]

Parameters

Variable	Value
Word <1-256>	Specifies either an IPv4 or IPv6 address.
port <1-65535>	Specifies the host server port number.
v1 <WORD 1-32> [filter <WORD 1-32>] [target-name <WORD 1-32>]	Creates a new SNMPv1 entry for the target address table. • **<WORD 1-32>** specifies the security name, which identifies the principal that generates SNMP messages. • **filter <WORD 1-32>** specifies the filter profile to use. • **target-name <WORD 1-32>** is the target name with a string length of 1 to 32.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server host v2

Configure an SNMPv2 host so that the switch can forward SNMP traps to a host for monitoring.

Syntax

```
snmp-server host <WORD 1-256> port <1-65535> v2c
<WORD 1-32> [inform [mms <0-2147483647>] [retries
<0-255>] [timeout <0-2147483647>]] [filter <WORD 1-32>]
[target-name <WORD 1-32>]
```

Parameters

Variable	Value
`v2c <WORD 1-32> [inform [mms <0-2147483647>] [retries <0-255>] [timeout <0-2147483647>]] [filter <WORD 1-32>] [target-name <WORD 1-32>]`	Creates a new SNMPv2c entry for the target address table. • `<WORD 1-32>` specifies the security name, which identifies the principal that generates SNMP messages. • `inform` indicates that SNMP notifications should be sent as inform (rather than trap). • `mms <0-2147483647>` specifies the maximum message size as an integer with a range of 1 to 2147483647. • `retries <0-255>` specifies the retry count value with a range of 0 to 255. • `timeout <0-2147483647>` specifies the timeout value in seconds with a range of 0 to 214748364. • `filter <WORD 1-32>` specifies the filter profile to use. • `target-name <WORD 1-32>` is the target name with a string length of 1 to 32.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp-server host v3

Configure an SNMPv3 host so that the switch can forward SNMP traps to a host for monitoring.

Syntax

```
snmp-server host <WORD 1-256> port <1-65535> v3
{noAuthnoPriv|authNoPriv|AuthPriv} <WORD 1-32> [inform
[retries <0-255>] [timeout <0-2147483647>]] [filter <WORD
1-32>] [target-name <WORD 1-32>]
```

Parameters

Variable	Value
v3 {noAuthnoPriv|authNoPriv|AuthPriv} <WORD 1-32> [inform [retries <0-255>] [timeout <0-2147483647>]] [filter <WORD 1-32>] [target-name <WORD 1-32>]	Creates a new SNMPv3 entry for the target address table. • **{noAuthnoPriv|authNoPriv|AuthPriv}** specifies the security level. • **<WORD 1-32>** specifies the security name, which identifies the principal that generates SNMP messages. • **inform** indicates that SNMP notifications should be sent as inform (rather than trap). • **retries <0-255>** specifies the retry count value with a range of 0 to 255. • **timeout <0-2147483647>** specifies the timeout value in seconds with a range of 0 to 214748364. • **filter <WORD 1-32>** specifies the filter profile to use. • **target-name <WORD 1-32>** is the target name with a string length of 1 to 32.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show snmp-serve host
Display the SNMP server configuration information.

Syntax
`show snmp-server host`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

snmp-server notify-filter
Configure the notify table to select management targets to receive notifications, as well as the type of notification to send to each management target.

Syntax
`snmp-server notify-filter <WORD 1-32> <WORD 1-32>`

Parameters

Variable	Value
`<WORD 1-32> <WORD 1-32>`	Creates a notify filter table. • `<WORD 1-32>` specifies the name of the filter profile with a string length of 1 to 32. • The second `<WORD 1-32>` identifies the filter subtree OID with a string length of 1 to 32.

Variable	Value
	If the Subtree OID parameter uses a '+' prefix (or no prefix), this indicates include. If the Subtree OID uses the '-' prefix, this indicates exclude.

Default
None

Command mode
Global Configuration Mode

Related commands
None

show snmp-server notify-filter
Display a new notify filter configuration information.

Syntax
show snmp-server notify-filter

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

snmp-server sender-ip
Configure the IP interface from which the SNMP traps originate if the Ethernet Routing Switch 8600 has multiple interfaces.

Syntax
snmp-server sender-ip <A.B.C.D> <A.B.C.D>

Parameters

Variable	Value
sender-ip <A.B.C.D> <A.B.C.D>	Configures the SNMP trap receiver and source IP addresses. Specify the IP address of the destination SNMP server that will receive the SNMP trap notification in the first IP address. Specify the source IP address of the SNMP trap notification packet that is transmitted in the second IP address. If this is set to 0.0.0.0 then the switch uses the IP address of the local interface that is closest (from an IP routing table perspective) to the destination SNMP server.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
agent-conformance enable	Enables the agent conformance mode. Conforms to MIB standards when disabled. If you activate this option, feature configuration is stricter and error handling less informative. Activating this option is not a recommended or normally supported mode of operation.
authentication-trap enable	Activates the generation of authentication traps.
force-iphdr-sender enable	Enables the automatic configuration of the SNMP and IP sender to the same value. The default is false.
force-trap-sender enable	Enabled sending the configured source address (sender IP) as the sender network in the notification message.

snmplog

Use SNMP trap logging to send a copy of all traps to the PCMCIA card.

Syntax

snmplog enable

Parameters

Variable	Value
`enable`	Enables or disables the logging of traps.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`maxfilesize <64-256000>`	Specifies the maximum file size for the trap log.

show snmplog

View the contents of the SNMP log.

Syntax

```
show snmplog
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

syslog enable

The syslog commands control a facility in UNIX machines that logs SNMP messages and assigns each message a severity level based on importance.

Syntax

```
syslog enable
```

Parameters

Variable	Value
enable	Enables the sending of syslog messages on the switch.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
ip-header-type <default|circuitless-ip|management-virtual-ip>	Specifies the IP header in syslog packets to default, circuitless-ip or management-virtual-ip. • If set to default, then for syslog packets that are transmitted in-band via input/output (I/O) ports, the IP address of the VLAN is used. For syslog packets that are transmitted out-of-band through the management port, the physical IP address of the Master CPU is used in the IP header. • If set to management-virtual-ip, then for syslog packets that are transmitted out-of-band only through the management port, the virtual management IP address of the switch is used in the IP header. • If set to circuitless-ip, then for all syslog messages (in-band or out-of-band), the circuitless IP address is used in the IP header. If a user has configured multiple CLIPs, the first CLIP configured is used.
max-hosts <1-10>	Specifies the maximum number of syslog hosts supported. **<maxhost>** is the maximum number of enabled hosts allowed (1 to 10).

syslog host

The syslog commands control a facility in UNIX machines that logs SNMP messages and assigns each message a severity level based on importance.

Syntax

syslog host <1-10>

Parameters

Variable	Value
<cr>	Creates a syslog host instance.
address <A.B.C.D>	Configures a host location for the syslog host. **<A.B.C.D>** is the IP address of the UNIX system syslog host.
facility {local0|local1|local2|local3|local4|local5|local6|local7}	Specifies the UNIX facility used in messages to the syslog host. **{local0|local1|local2|local3|local4|local5|local6|local7}** is the UNIX system syslog host facility (LOCAL0 to LOCAL7).
enable	Enables the syslog host.
maperror {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity to use for Error messages.
mapfatal {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity to use for Fatal messages.
mapinfo {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity level to use for Information messages.
mapwarning {emergency|alert|critical|error|warning|notice|info|debug}	Specifies the syslog severity to use for Warning messages.
severity <info|warning|error|fatal> [<info|warning|error|fatal>] [<info|warning|error|fatal>] [<info|warning|error|fatal>]	Specifies the severity levels for which syslog messages should be sent for the specified modules.
udp-port <514-530>	Specifies the UDP port number on which to send syslog messages to the syslog host. This is the UNIX system syslog host port number (514 to 530).

Default

None

Command mode

Global Configuration Mode

Related commands

None

show syslog

View the syslog information to ensure accuracy.

Syntax

show syslog

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show syslog host

View the syslog host information to ensure accuracy.

Syntax

show syslog host <1-10>

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

logging

Configure log file parameters, as well as write, or clear the log file automatically created by the system.

Syntax

logging level <0-4>

Parameters

Variable	Value
`level <0-4>`	Shows and sets the logging level. The level is one of these values: 0 = Information; all messages are recorded. 1 = Warning; only warning and more serious messages are recorded. 2 = Error; only error and more serious messages are recorded. 3 = Manufacturing; this parameter is not available for customer use. 4 = Fatal; only fatal messages are recorded.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`logToPCMCIA`	Starts logging system messages to the PCMCIA card.
`screen`	Sets the log display on the screen to on.
`write <WORD 1-1536>`	Writes the log file with the designated string. `<WORD 1-1536>` is the string or command that you append to the log file. If the string contains spaces, you must enclose the string in quotation marks.

show logging file

Log files can be viewed by file name, category, severity, and SF/CPU.

Syntax

```
show logging file [tail] [category <WORD 0-100>] [severity
<WORD 0-25>] [CPU <WORD 0-25>] [name-of-file <WORD 1-99>]
[save-to-file <WORD 1-99>]
```

Parameters

category <WORD 0-100>	Filters and list the logs according to category. Specify a string length of 0–100 characters. Categories include SNMP, EAP, RADIUS, RMON, WEB, STG, IGMP, HW, MLT, FILTER, QOS, SW, CPU, IP, VLAN, IPMC, ATM, DVMRP, |IPX, IP-RIP, MPLS, OSPF, |PIM, POLICY, POS, RIP. To specify multiple filters, separate each category by the vertical bar (**|**), for example, **OSPF | FILTER | QOS**.
CPU <WORD 0-25>	Filters and list the logs according to the SF/CPU that generated it. Specify a string length of 0–25 characters. To specify multiple filters, separate each SF/CPU by the vertical bar (**|**), for example, **CPU5 | CPU6**.
name-of-file <WORD 1-99>	Displays the valid logs from this file. For example, /pcmcia/logcopy.txt. You cannot use this command on the current log file—the file into which the messages are currently logged). Specify a string length of 1–99 characters.
save-to-file <WORD 1-99>	Redirects the output to the specified file and remove all encrypted information. The tail option is not supported with the **save-to-file** option. Specify a string length of 1–99 characters.
severity <WORD 0-25>	Filters and list the logs according to severity. Choices include INFO, ERROR, WARNING, FATAL. To specify multiple filters, separate each severity by the vertical bar (**|**), for example, **ERROR | WARNING | FATAL**.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

logging transferfile

Configure the remote host address for log transfer. The system transfers the current log file to a remote host when the log file size reaches the configured maximum size.

Syntax

logging transferFile <1-10> address <A.B.C.D>

Parameters

Variable	Value
`address <A.B.C.D>`	Specifies the IP address of the host to where the log file needs to be transferred. The remote host must be reachable or the configuration will fail.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`filename <WORD 0-255>`	Specify the name of the file stored in the remote host. If not configured, the current log file name is the default. **ATTENTION** Nortel recommends that you do not set this option. If this option is set, the previously transferred log file is overwritten on the remote server.

boot config

System logs are a valuable diagnostic tool. You can send log messages to a PCMCIA card for later retrieval.

Syntax

`boot config flags logging`

Parameters

Variable	Value
`flags logging`	Enables or disables logging to a PCMCIA card. The log file is named using an 8.3 (xxxxxxxx.sss) format. The first six characters of the file name contain the last three bytes of the chassis base MAC address. The next two characters specify the slot number of the SF/CPU that generated the logs. The last three characters denote the sequence number of the log file. Multiple sequence numbers are generated for the same chassis and same

Variable	Value
	slot, if the SF/CPU is replaced, reinserted, or if the maximum log file size is reached.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`logfile <64-500> <500-16384> <10-90>`	Configures the logfile parameters: • `<64-500>` specifies the minimum space used for the logfile from 64 to 500 KB. • `<500-16384>` specifies the minimum space used for the logfile from 500 to 16384 KB. • `<10-90>` specifies the maximum percentage of PCMCIA space used for the logfile from 10 to 90%.

logging logToPCMCIA

Begin or stop logging system messages to the PCMCIA card.

Syntax

`logging logToPCMCIA`

Parameters

Variable	Value
`no`	Stops the logging system messages.

Default

None

Command mode

Global Configuration Mode

Related commands

None

sys msg-control

Configure system message control to suppress duplicate error messages on the console, and to determine the action to take if they occur.

Syntax

sys msg-control action <suppress-msg|send-trap|both>

Parameters

Variable	Value
<cr>	Activates system message control. Enabling this command suppresses duplicate error messages.
action <suppress-msg|send-trap|both>	Configures the message control action.
control-interval <1-30>	Configures the message control interval in minutes. The valid options are 1 to 30.
max-msg-num <2-500>	Configures the number of occurrences of a message after which the control action happens. To set the maximum number of occurrences, enter a value from 2 to 500.

Default

None

Command mode

Global Configuration Mode

Related commands

None

sys force-msg

Use the force message control option to extend the message control feature functionality to the software and hardware log messages.

Syntax

sys force-msg <WORD 4-4>

Parameters

Variable	Value
<WORD 4-4>	Used to add a forced message control pattern, where **<WORD 4-4>** is a string of 4 characters. You can add a four-byte pattern into the force-msg table. The software and the hardware log messages that use the first four bytes matching one of the patterns in the force-msg table undergo the configured message control action. You can specify up to 32 different patterns in the force-msg table. This includes a wildcard pattern (****) as well. Upon specifying the wildcard pattern, all messages undergo message control.

Default

None

Command mode

Global Configuration Mode

Related commands

None

clilog

When enabled, NNCLI logging keeps track of all command line interface commands executed on the switch. Use NNCLI logging for fault management purposes.

Syntax

clilog enable

Parameters

Variable	Value
enable	Enables NNCLI logging. To disable, use the **no clilog enable** command.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`maxfilesize <64 to 256000>`	Specifies the maximum file size of the log file in KB.

show clilog

Ensure the clilog information is accurate.

Syntax

```
show clilog
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show clilog file

View the NNCLI log.

Syntax

```
show clilog file [tail] [grep <WORD 1-256>]
```

Parameters

Variable	Value
`tail`	Shows the last results first.
`grep <WORD 1-256>`	Performs a string search in the log file. `<WORD 1-256>` is the string, of up to 256 characters in length, to match.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

Upgrades Software Release 5.1 commands

This chapter provides the Nortel Networks Command Line Interface (NNCLI) commands to upgrade the Ethernet Routing Switch 8600 to Release 5.1.

Navigation

show sys performance

Display and check the memory size to determine if you must upgrade your SF/CPU memory.

Dramsize indicates the SF/CPU memory size.

Syntax

show sys performance

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

dir

View the free space and files in flash memory.

Syntax

dir -l

Parameters

Variable	Value
-l	Displays all the details of all the files like name, size and time and date of the file created.
Word <1-99>	Specifies the name of the particular file to view details.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

remove word

Remove files to make space.

Syntax

```
remove <WORD 1-99> [-y]
```

Parameters

Variable	Value
`<WORD 1-99>`	`<WORD 1-99>` specifies the file to remove.
`-y`	Skip the confirm question.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show boot config choice

Make copies of the configuration files before you upgrade the switch software.

Syntax

```
show boot config choice
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

save

Save the configuration files assuming the files use the default file names.

Syntax

```
save config

save bootconfig

save log
```

```
save trace

save clilog
```

Parameters

Variable	Value
backup	Specifies the backup file name.
file	Specifies the file name.
mode	Selects the CLI or the NNCLI mode. This option is applicable only if the savetype is config.
standby	Specifies the standby file name.
verbose	Saves the current and default configurations.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

save config standby

Save the files for back up or secondary.

Syntax

```
save config standby Word<1-99>

save bootconfig standby Word <1-99>
```

Parameters

Variable	Value
Word <1-99>	Specifies the file name in the range of 1 to 99 characters.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

copy

Copy files to a safe place.

Syntax

copy Word <1-99> Word <1-99>

Parameters

Variable	Value
Word <1-99>	Specifies the source file to be copied.
Word <1-99>	Specifies the destination file.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip route

Determine and record the number of routes in the routing table.

Syntax

show ip route

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip route a.b.c.d

Determine and record the number of routes in the routing table.

Syntax

```
show ip route -s <default> <A.B.C.D/X>
```

Parameters

Variable	Value
`-s <default> <A.B.C.D/X>`	Displays IP route information for a specific subnet mask.`<default>` specifies the default subnet mask.`<A.B.C.D/X>` specifies the IP address or subnet mask.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
`alternative`	Displays alternative routes.
`count-summary`	Displays IP route count summary.
`preference`	Displays route preference information.
`static`	Displays static route information.
`vrf <Word 0-32>`	Displays route for a particular VRF. `<Word 0-32>` specifies a VRF name in the range of 0 to 32 characters.
`vrfids <word 0-255>`	Displays route for a particular VRF ID. `<Word 0-255>` specifies a VRF ID in the range of 0 to 255.

show ip arp

Determine Address Resolution Protocol (ARP) information.

Syntax

```
show ip arp
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip bgp summary

Determine Border Gateway Protocol (BGP) parameters; note the total number of routes.

Syntax

`show ip bgp summary`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip igmp group

Determine the total number of Internet Group Management Protocol (IGMP) groups.

Syntax

`show ip igmp group`

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show ip mroute interfaces

Determine the total number of multicast routes.

Syntax

`show ip mroute interface`

```
show ip mroute route
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip ospf
Determine Open Shortest Path First (OSPF) parameters.

Syntax
```
show ip ospf
```

```
show ip ospf neighbors
```

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

show ip
Use the following command to view other IP show commands that you can us

Syntax
```
show ip ?
```

Parameters
None

Default
None

Command mode

Privileged Executive Mode

Related commands

None

no access-policy

If you are upgrading from Release 3.7 or earlier to Release 5.1, disable access policies.

Syntax

```
no access-policy <1-65535>
```

Parameters

Variable	Value
`<1-65535>`	Specifies the access policy ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

boot config choice primary image-file

Configure the boot source to point to the new runtime image file (p80a5000.img).

Syntax

```
boot config choice primary image-file /flash/p80a5000.img
```

Parameters

Variable	Value
`image-file`	Sets run-time image to load.

Default

None

Command mode

Global Configuration Mode

Related commands

None

boot config mezz-image image-name

Load the new Mezz image from the flash to the switch.

Syntax

```
boot config mezz-image image-name /flash/p80m5000.img
```

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

boot config bootp primary

Ensure that the switch uses the correct R and RS module driver files from the flash memory (repeat for each slot).

Syntax

```
boot config bootp Primary default <1-4,7-10>
```

Parameters

Variable	Value
`<1-4,7-10>`	Specifies the slots that have installed R or RS modules.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show boot config choice

Verify that the changed primary image file settings are in the boot.cfg file.

Syntax

```
show boot config choice
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

boot

Boot the Ethernet Routing Switch 8600 with the new boot-monitor image.

Syntax
```
boot /flash/p80b5000.img
```

Parameters
None

Default
None

Command mode
Global Configuration Mode

Related commands
None

dos-format

Format the flash and PCMCIA.

Syntax
```
dos-format /flash

dos-format /pcmcia
```

Parameters
None

Defaults
None

Command mode
Global Configuration Mode

Related Parameters

None

boot config flags ha-cpu

If you use High Availability mode, and you are using the second HA upgrade option, after both SF/CPUs come back online, reenable HA.

Syntax

```
boot config flags ha-cpu
```

Parameters

None

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

fpga update

For proper operation, review and, if required, update the field programmable gate array (FPGA) firmware revisions on every R module.

Syntax

```
fpga update <1-4,7-10> foq [WORD <1-40>]
```

OR

```
default fpga update <1-4,7-10> foq
```

Parameters

Variable	Value
`<WORD 1-40>`	`<WORD 1-40>` specifies the FPGA image file name.
`<1-4,7-10>`	Specifies the R module slot number. Slots 5 and 6 are for SF/CPUs.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

fpga update bmc

Update the BAP Memory Controller (BMC).

Syntax

```
fpga update <1-4,7-10> bmc [WORD <1-40>]
```

OR

```
default fpga update <1-4,7-10> bmc
```

Parameters

Variable	Value
`<WORD 1-40>`	`<WORD 1-40>` specifies the FPGA image file name.
`<1-4,7-10>`	Specifies the R module slot number. Slots 5 and 6 are for SF/CPUs.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

fpga update dpc

Update the Dual Port Controller (DPC).

Syntax

```
fpga update <1-4,7-10> dpc [WORD <1-40>]
```

OR

```
default fpga update <1-4,7-10> dpc
```

Parameters

Variable	Value
`<WORD 1-40>`	`<WORD 1-40>` specifies the FPGA image file name.
`<1-4,7-10>`	Specifies the R module slot number. Slots 5 and 6 are for SF/CPUs.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

fpga update pim

If you are upgrading an 8630GBR module, update the Port Interface Module (PIM).

Syntax

```
fpga update <1-4,7-10> pim [WORD <1-40>]
```

OR

```
default fpga update <1-4,7-10> pim
```

Parameters

Variable	Value
`<WORD 1-40>`	`<WORD 1-40>` specifies the FPGA image file name.
`<1-4,7-10>`	Specifies the R module slot number. Slots 5 and 6 are for SF/CPUs.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

slot reset

Use the following command after all modules are updated, for the updates to take effect on the switch.

Syntax

```
slot reset <slotList>
```

Parameters

Variable	Value
`<slotlist>`	Specifies the slot number.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

fpga update rs-module-dpm

For proper operation, review and, if required, update the field programmable gate array (FPGA) firmware revisions on every RS module.

Syntax

```
fpga update <1-4,7-10> rs-module-dpm [<WORD 1-40>]
```

OR

```
default fpga update <1-4,7-10> rs-module-dpm
```

Parameters

Variable	Value
`<WORD 1-40>`	`<WORD 1-40>` specifies the FPGA image file name.
`<1-4,7-10>`	Specifies the RS module slot number. Slots 5 and 6 are for SF/CPUs.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

fpga update rs pim

For each RS module slot, update the PIM FPGA firmware with the appropriate PIM file.

Syntax

```
fpga update <1-4,7-10> pim [WORD <1-40>]
```

OR

```
default fpga update <1-4,7-10> pim
```

Parameters

Variable	Value
`<WORD 1-40>`	`<WORD 1-40>` specifies the FPGA image file name.
`<1-4,7-10>`	Specifies the RS module slot number. Slots 5 and 6 are for SF/CPUs.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

cli password

Change passwords after an upgrade to maintain the highest security levels.

Syntax

```
cli password <WORD 1-20> read-only
```

Parameters

Variable	Value
`Word <1-20>`	Specifies the logon user name.
`read-only`	Change read only logon ID and password or both. For more password options, enter `cli password <WORD 1-20> ?`

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

Variable	Value
`read-write`	Change the read write logon ID and/or password.
`read-write-all`	Change the read write all logon ID and/or password.

show boot config flags

Verify your upgrade by viewing bootconfig flags to ensure proper switch operation.

Syntax

`shoe boot config flags`

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

show sys flags

Verify your upgrade by viewing mode flags to check if the settings are correct and ensure proper switch operation.

Syntax

`show sys flags`

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

show radius

Verify your upgrade by viewing RADIUS settings to ensure proper switch operation.

Syntax

show radius

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

show log file

Verify your upgrade by checking for alarms and any other unexpected errors to ensure proper switch operation.

Syntax

show log file tail

shoe log file severity

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

save config mode

Save configuration files in the mode that you want to use. Although you cannot convert configuration files from one mode to another, you can save them in either CLI or NNCLI mode.

Syntax

save config mode <cli|nncli>

Parameters

Variable	Value
`cli`	Saves the configuration files in CLI format.
`nncli`	Saves the configuration files in NNCLI format.

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

copy

Copy files as part of an upgrade procedure to back up files or to move files to another location.

Syntax

`copy <file Word/1-99> <file Word/1-99>`

Parameters

Variable	Value
`file Word/1-99`	Specifies the source file name to be copied.
`file Word/1-99`	Specifies the destination file name.

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

boot config flags

Enable FTP and TFTP to use these protocols on the Ethernet Routing Switch 8600. You can use FTP or TFTP servers to store upgrade files. To save a file to a Secondary SF/CPU, enable TFTP on the Secondary SF/CPU. Reboot the switch to enable FTP or TFTP.

Syntax

```
boot config flags ftpd

boot config flags tftpd
```

Parameters

Variable	Value
`ftpd`	Enables the FTP server.
`tftpd`	Enables the TFTP server.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

boot config choice

Change the runtime configuration file locations.

Syntax

```
boot config choice <primary|secondary|tertiary>
[config-file <WORD 0-255>|backup-config-file <WORD
0-255>|image-file <WORD 0-255>]
```

Parameters

Variable	Value
`<primary|secondary|tertiary>`	Specifies the boot choice as one of the following: • primary • secondary • tertiary
`config file <Word 0-255>`	Sets run-time configuration file to load.
`backup-config-file <Word 0-255>`	Sets run-time backup configuration file to load.
`image-file <Word 0-255>`	Sets run-time image to load.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

boot config bootp

Set the location for the R or RS module driver image for the BootStrap protocol.

Syntax

boot config bootp <Primary|Secondary> <WORD 0-127> <1-10>

Parameters

Variable	Value
<primary|secondary> Word/0-127	Sets the primary or the secondary image name with a string length of 0 to 127.
<1-10>	Specifies the slot number in the range of 1 to 10.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

boot config mezz-image

Set the boot source location for the SuperMezz image.

Syntax

boot config mezz-image image-name <Word 0-256>

Parameters

Variable	Value
image-name <Word 0-256>	Specifies the Mezz-image file name with a string length of 0 to 256.

Defaults

None

Command mode
Global Configuration Mode

Related Parameters
None

show sys-info
Determine if an update to the firmware is required, check the current firmware revisions on the slot containing an R or RS module.

Syntax
`show sys-info asic`

Parameters

Variable	Value
`asic`	Displays ASIC information in details.

Defaults
None

Command mode
Privileged Executive Mode

Related Parameters

Variable	Value
`card`	Displays card information in detail.
`gbic`	Displays GBIC information in detail.
`mda`	Displays MDA information in detail.

show sys software
Verify that the image and configuration are loaded properly.

Syntax
`shoe sys software`

Parameters
None

Defaults
None

Command mode
Privileged Executive Mode

Related Parameters

None

sys action cpu-switch-over

Perform the switch over of the CPU while hot-swapping the master SF/CPU module in a dual CPU chassis.

Syntax

```
sys action cpu-switch-over
```

Parameters

Variable	Value
`cpu-switch-over`	Switches over to the other CPU.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

Variable	Value
`reset`	Resets console or modem or counters in a CPU.

peer telnet

Confirm whether the new SF/CPU module is operational.

Syntax

```
peer telnet
```

Parameters

None

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

shutdown

Disabling the SF/CPU module when it is not functioning.

Syntax

```
shutdown <1-10>
```

Parameters

Variable	Value
<1-10>	Specifies the slot number of the module to be disabled. SF/CPUs can reside in slots 5 and 6 in the six and ten-slot chassis.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

None

format-flash

Format the flash memory to ensure that you have adequate space to copy files.

Syntax

```
format-flash
```

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

access-policy

Configure the SNMP service in SNMP group access policies if you are upgrading from Release 3.7 or earlier to Release 4.1.x or later to access the Ethernet Routing Switch 8600 using Device Manager.

Syntax

```
access-policy <1-65535>
```

Parameters

Variable	Value
access-strict	The access-strict mode determines whether or not users with access levels greater than the one configured for the policy are allowed access. For example, if the access-level is set to *rw*, and access-strict is set, only users with rw access are given access. If access-strict is not set, both rw and rwa users are given access.
accesslevel <ro|rw|rwa>	**<ro|rw|rwa>** specifies read-only, read-write, and read-write-access access levels. The access level is the level that a user needs to be granted access. If the user access-level is greater than that configured for the policy, access is granted, depending on the access-strict parameter value.
enable	Enable the access policy. To disable the access policy, use the **no access-policy <1-65535> enable** command.
ftp	Enables File Transfer Protocol.
host <WORD 0-46>	**<WORD 0-46>** specifies the host IPv4 or IPv6 address. If you configure the host address, the policy is only applied if the source IP address matches the host address.
http	Enables Hypertext Transfer Protocol.
mode <allow|deny>	The mode determines whether access is allowed or denied.
name <WORD 0-15>	**<WORD 0-15>** specifies a name, which can be a maximum of 15 characters long.
network <A.B.C.D> <X.X.X.X>	**<A.B.C.D>** specifies the network IP address, and **<X.X.X.X>** specifies the subnetwork mask. If you configure the network address, the policy is only applied if the source IP address matches the network address.

Variable	Value
precedence <1-128>	**<1-128>** specifies the precedence given to this access policy. If more than one policy is matched for an incoming request, the precedence determines which policy is applied. The lower the precedence, the higher the priority.
rlogin	Enables rlogin access.
snmp-group <WORD 1-32> <snmpv1 | snmpv2c | usm>	**<WORD 1-32>** adds an SNMP group to the policy. The group name can be a maximum of 32 characters long. **<snmpv1 | snmpv2c | usm>** specifies whether to use the SNMPv1 security model, the SNMPv2 security model, or the user-based security model (usm). To delete a group from the policy, use the **no snmp-group <WORD 1-32> <snmpv1 | snmpv2c | usm>** command.
snmpv3	Enables SNMPv3 access.
ssh	Enables Secure Shell access.
telnet	Enables Telnet access.
tftp	Enables Trivial File Transfer Protocol access.
username <WORD 0-30>	**<WORD 0-30>** specifies the trusted host user name, which can be a maximum of 30 characters.

Defaults

None

Command mode

Global Configuration Mode

Related Parameters

Variable	Value
by-mac	Add a new MAC address to be allowed or denied.

md5 filename

Use the MD5 checksums to ensure the integrity of the new software files before you use them to upgrade. Corrupted files can cause the upgrade to fail.

Syntax

```
md5 <Word 1-99>
```

Parameters

Variable	Value
-a	Adds data to the output file instead of overwriting it. You cannot use the -a option with the -c option.
-c	Compares the checksum of the specified file by **<filename>** with the MD5 checksum present in the checksum file name. You can specify the checksum file name using the -f option. When the checksum file name is not specified, the file /flash/checksum.md5 is used for comparison. If the checksum file name and the default file are not available in flash memory, the following error message is displayed: `Error: Checksum file <filename> not present.` The -c option also: • calculates the checksum of files specified by **filename** • compares the checksum with all keys in the checksum file, even if the file names do not match • shows the results of the comparison
-f <checksum-file-name>	Stores the result of MD5 checksum to a file in flash memory or on a PCMCIA card. If the output file specified with the -f option is one of the: • reserved file names on the switch, the command fails and the error message is displayed: `Error: Invalid operation.` • files for which MD5 checksum is to be computed, the command fails and the error message is displayed:

Variable	Value

	`Error: Invalid operation on file <filename>`
	
	If the checksum file name specified by the -f option already exists on the switch (and is not one of the reserved file names), the following message is shown:
	
	`File exists. Do you wish to overwrite? (y/n)`

-r	Reverses the output and can be used with -f option to store the output to a file. The -r option cannot be used with the -c option.

Defaults
None

Command mode
Privileged Executive Mode

Related Parameters
None

show running-config mode nncli
View all of the configurations in one mode even if the switch is running in a different mode.

Syntax
`show running-config mode nncli`

Parameters
None

Defaults
None

Command mode
Global Configuration Mode

Related Parameters
None

save config file mode nncli
Save the running configuration from CLI to NNCLI.

Syntax

```
save config file <Word 1-99> mode nncli
```

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

save config file mode cli

Save the running configuration from NNCLI to CLI.

Syntax

```
save config file <Word 1-99> mode cli
```

Parameters

None

Defaults

None

Command mode

Privileged Executive Mode

Related Parameters

None

VLAN and Spanning Tree commands

This chapter describes the Nortel command line interface (NNCLI) commands to help you to configure and manage virtual local area networks (VLAN) and Spanning Tree on the Ethernet Routing Switch 8600.

Navigation

encapsulation dot1q

Enable tagging on the ports before configuring Untagged VLANs.

Syntax

encapsulation dot1q

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

vlan create

Configure VLANs to discard tag or untagged frames for a port.

Syntax

vlan create <1-4094> name <WORD 0-64> type <type> IDS <1-64> color <0-32>

Parameters

Variable	Value
<1-4094>	Specifies the VLAN ID in the range of 1 to 4094.
color 0-32	Specifies the color of the VLAN.
IDS <1-64>	Creates a VLAN by IDS. **<1-64>** is the Spanning Tree ID.
<WORD 0-64>	Specifies the VLAN name.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

Variable	Value
ids-mstprstp <0-63> color <0-32>	Creates a VLAN for IDS. • **0-63** is the Instance-id. • **color** is the color of the VLAN. The value ranges from 0 to 32.
ipsubnet <sid> <ipaddr/mask> [name <value>] [color <value>]	Creates an IP subnet-based VLAN: • **sid** is a spanning tree group ID. • **ipaddr/mask** is the IP address and mask {a.b.c.d/x | a.b.c.d/x.x.x.x | default}. • **name <value>** is the name of the VLAN in the range of 0 to 20 characters. • **color <value>** is the color of the VLAN (0 to 32). The color attribute is used by Optivity software to display the VLAN. This command is available only for the Ethernet Routing Switch 8600.
ipsubnet-mstprstp <instance-id> <ipaddr|mask> [name <value>] [color <value>]	Creates a VLAN by IP subnet: • **instance-id** is the instance ID in the range of 0 to 63. • **ipaddr/mask** is the subnet address or mask {a.b.c.d/x | a.b.c.d/x.x.x.x | default}. • **name <value>** is the name of the VLAN. • **color <value>** is the color of the VLAN in the range of 0 to 32. The color attribute is used by Optivity software to display the VLAN.

Variable	Value
port <sid> [name <value>] [color <value>]	Creates a port-based VLAN: • **sid** is the spanning tree group ID in the range of 1 to 64 characters. • **name <value>** is the name of the VLAN from 0 to 20 characters. • **color <value>** is the color of the VLAN in the range of 0 to 32. The color attribute is used by Optivity software to display the VLAN.
port-mstprstp <instance-id> [name <value>] [color <value>] [naap-vlan] [firewall-vlan] [firewall-peering-vlan]	Creates a VLAN by port: • **instance-id** is the instance ID from 0 to 63. • **name <value>** is the name of the VLAN. • **color <value>** is the color of the VLAN in the range of 0 to 32. • **naap-vlan** marks the VLAN as a NAAP VLAN. • **firewall-vlan** marks the VLAN as a firewall VLAN. • **firewall-peering-vlan** marks the VLAN as a firewall peering VLAN.
protocol <sid> protocol-ApltkEther2Snap|protocol-decEther2|protocol-decOtherEther2|protocol-ipEther2|protocol-ipv6Ether2|protocol-ipx802.2| protocol-ipx802.3|protocol-ipxEther2|protocol-ipxSnap|protocol-Netbios|protocol-RarpEther2|protocol-sna802.2|protocol-snaEther2|protocol-Userdef|protocol-vinesEther2|protocol-xnsEther2[<pid>	Creates a protocol-based VLAN: • **sid** is spanning tree ID. • **protocol-decEther2** Creates a vlan by protocol-decEther2 • **protocol-decOtherEther2** Creates a vlan by protocol-decOtherEther2

Variable	Value
] [name <value>] [color <value>] [encap <value>]	• **protocol-ipEther2** Creates a vlan by protocol-ipEther2 • **protocol-ipv6Ether2** Creates a vlan by protocol-ipv6Ether2 • **protocol-ipx802.2** Creates a vlan by protocol-ipx802.2 • **protocol-ipx802.3** Creates a vlan by protocol-ipx802.3 • **protocol-ipxEther2** Creates a vlan by protocol-ipxEther2 • **protocol-ipxSnap** Creates a vlan by protocol-ipxSnap • **protocol-Netbios** Creates a vlan by protocol-Netbios • **protocol-snaEther2** Creates a vlan by protocol-snaEther2 • **protocol-Userdef** Creates a vlan by protocol-Userdef • **protocol-vinesEther2** Creates a vlan by protocol-vinesEther2 • **protocol-xnsEther2** Creates a vlan by protocol-xnsEther2 • **pid** is a user-defined protocol ID number in hexadecimal. • **name value** is the name of the VLAN in the range of 0 to 20 characters. • **color <value>** is the color of the VLAN (0 to 32). The color attribute is used by Optivity software to display the VLAN. • **encap <value>** is the frame encapsulation method.

Variable	Value
protocol-mstprstp appleTalk|decLat|decOther|ip|ipv6|ipx802dot2|ipx802dot3|ipxEthernet2|ipxsnap|netBios|PPPoE|rarp|sna802dot2|snaEthernet2|userDefined|vines|xns [<pid>] [color <value>] [encap <value>]	Creates a VLAN by protocol. • **appleTalk** is the apple talk protocol. • **decLat** is the declat protocol. • **decOther** is the decother protocol. • **ip** is the Ip protocol. • **Ipv6** is the Ipv6 protocol. • **Ipx802dot2** is the Ipx802dot2 protocol. • **Ipx802dot3** is the Ipx802dot3 protocol. • **Ipxethernet2** is the Ipxethernet2 protocol. • **Ipxsnap** is the Ipxsnap protocol. • **Netbios** is the Netbios protocol. • **Pppoe** is the Pppoe protocol. • **Rarp** is the Rarp protocol. • **Sna802dot2** is the Sna802dot2 protocol. • **Snaethernet2** is the Snaethernet2 protocol. • **Userdefined** is the Userdefined protocol. • **Vines** is the Vines protocol. • **Xns** is the Xns protocol.
srcmac <sid> <value>] [color <value>]	Creates a VLAN by source MAC address: • **sid** is a spanning tree ID in the range of 1 to 64. • **<value>** is the name of the VLAN in the range of 0 to 20 characters. • **color value** is the color of the VLAN (0 to 32). The color

Variable	Value
	attribute is used by Optivity software to display the VLAN. This command is available only for the Ethernet Routing Switch 8600.
srcmac-mstprstp <instance-id> <value> [color <value>]	Creates a VLAN by source MAC address: • **instance-id** is the instance ID in the range of 0 to 63. • **<value>** is the name of the VLAN in the range of 0 to 64 characters. • **color <value>** is the color of the VLAN (0 to 32). The color attribute is used by Optivity software to display the VLAN.
svlan <sid> <value> [color <value>]	Creates an sVLAN: • **sid** is the spanning tree ID in the range of 1 to 64. • **<value>** is the name of the sVLAN in the range of 0 to 20 characters. • **color <value>** is the color of the VLAN (0 to 32). The color attribute is used by Optivity software to display the VLAN.
svlan-mstprstp	Creates an svlan.

ip address

Assign an IP address to a VLAN to configure the VLAN.

Syntax

ip address <A.B.C.D> <A.B.C.D> [<0-65535>]

Parameters

Variable	Value
<ipaddr> <mask>	Adds IP address and network mask to VLAN.
[<0-65535>]	Specifies the Mac-offset value. The value is in the range of 0 to 65535.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

vlan action

Perform the general VLAN operations to set a Quality of Service (QoS) level for the VLAN add and to change the name of a VLAN.

Syntax

vlan action <1-4094> {none | flushMacFdb | flushArp | flushIp | flushDynMemb | triggerRipUpdate | all}

Parameters

Variable	Value
none	Sets action to none.
flushArp	Sets action to flushMacFdb.
flushIp	Sets action to flushIp.
flushDynMemb	Sets action to flushDynMemb.
triggerRipUpdate	Sets action to triggerRipUpdate.
all	Sets action to all.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-entry

Configure the entries in the FDB to configure or modify the VLAN entries in the FDB.

Syntax

vlan mac-address-entry <1-4094> address <H.H.H> status {other|invalid|learned|self|mgmt}

Parameters

Variable	Value
address <H.H.H> status {other|invalid|learned|self|mgmt}	Sets the FDB monitor.
aging-time <10-1000000>	Sets the FDB aging timer. **seconds** indicates the timeout period in seconds.
flush	Flushes the FDB.
qos-level <mac> status <value> <0-7>	Sets a QoS level for a VLAN: • **mac** indicates the MAC address. • **status <value>** is the forwarding database status according to one of the following choices: {other|invalid|learned|self|mgmt}. • **0-7** sets the QoS level. QoS level 7 is reserved for network control traffic.
sync	Synchronizes the switch forwarding database with the forwarding database of the other aggregation switch.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-filter

Configure the VLAN filter members to set VLAN filter members.

Syntax

vlan mac-address-filter <1-4094> <H.H.H> port {portlist} qos <0-6>

Parameters

Variable	Value
<mac> port <value> qos <value>	Adds a filter member to a VLAN bridge: • **mac** indicates the MAC address. • **port <value>** indicates the port (slot/port) number. • **qos <value>** is the QoS level. QoS level 7 is reserved for network control traffic.
no	Disables VLAN filter member when prefixed with the command.
notallowfrom	Adds a not allowed filter member to a VLAN.
pcap <H.H.H> [enable]	Enables or disables the Packet Capture (PCAP)Tool. **mac** indicates the MAC address.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan mac-address-filter notallowfrom

Configure a VLAN not-allowed member to set or modify VLAN not allowed filter member parameters.

Syntax

vlan mac-address-filter <1-4094> notallowfrom <H.H.H> <portList> [<srcOnly|dstOnly|Both>]

Parameters

Variable	Value
<mac> <value> [<srcOnly|dstOnly|Both>]	Adds a not-allowed filter member to a VLAN bridge: • **mac** indicates the MAC address. • **value** indicates the port (slot/port) number. • **srcOnly|dstOnly|Both** is an optional command to set a mask.
<1-4094>	Specifies the VLAN id in the range of 1 to 4094.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

Vlan mac-address-static

Configure the static members of a VLAN to set the VLAN static member parameters.

Syntax

Vlan mac-address-static <1-4094> <H.H.H> port {<portList>} qos <0-6>

Parameters

Variable	Value
<mac> <value> [qos <value>]	Adds a static member to a VLAN bridge: • **mac** indicates the MAC address. • **port <value>** indicates the port (slot/port) number. • **qos <value>** is the QoS level. QoS level 7 is reserved for network control traffic.
<1-4094>	Specifies the VLAN ID in the range of 1 to 4094.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

mac-security auto-learning

Limit MAC address learning to limit the number of forwarding database entries learned on a particular port to a user-specified value.

Syntax

mac-security auto-learning fdb-protect

Parameters

Variable	Value
fdb-protect	Enable or disable MAC address learning on the specified ports.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
max-addrs <1-1000000>	Sets the maximum limit of forwarding database-entries (fdb-entries) that can be learned on the specified ports. The value ranges from 1 to 1 000 000.
min-addrs <0-1000000>	Sets the minimum limit of fdb-entries at which fdb-learning will be reenabled on the specified ports. The value ranges from 0 to 1 000 000.
snmp-trap	View the configuration information related to MAC learning.
violation-down-port	Enables or disables the action taken on the ports in the event of a violation.
action [port <portList>] flushMacFdb	Flushes the fdb-entries on the particular port.

vlan members

Add or remove the ports in a VLAN to configure the ports in the VLAN.

Syntax

vlan members <1-4094> <portList> [{portmember|static|not allowed}]

Parameters

Variable	Value
portmember	Select the port type to port member.
static	Selects the port type to static.
notallowed	Selects the port type to not-allowed.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

vlan srcmac

Add or remove a VLAN source MAC addresses to configure the source MAC address to a VLAN.

Syntax

vlan srcmac <1-4094> <H.H.H>

Parameters

Variable	Value
srcmac	Specifies the source MAC address.
<1-4094>	Specifies the VLAN ID in the range of 1 to 4094.

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

nlb-mode unicast

Configure the NLB unicast support on an IP interface to enable or disable the Network Load Balancer (NLB) unicast support.

Syntax

nlb-mode unicast

Parameters

Variable	Value
igmp-mcast	Sets nlb-mode to igmp-mcast.
multicast	Sets nlb-mode to multicast.
unicast	Sets nlb-mode to unicast.

Default

None

Command mode
Global Configuration Mode

Next command mode
VLAN Interface Configuration Mode

Related commands
None

untagged-frames-discard enable
Configure the untagging default VLAN on a tagged port to separate untagged packets originating from a PC from the tagged packets originating from an IP phone.

Syntax
untagged-frames-discard enable

Parameters

Variable	Value
ports	Specifies the ports which are to be changed.

Default
None

Command mode
Global Configuration Mode

Next command mode
Interface Configuration Mode

Related commands
None

sys flags enhanced-operational-mode
Configure the Enhanced Operation mode to support more VLANs.

Syntax
sys flags enhanced-operational-mode

Parameters

Variable	Value
global-filter-ordering	Enables global filter ordering feature.
m-mode	Enables extended memory (128k) mode-effect after reboot.

Variable	Value
`multicast-check-packet`	Enables multicast check packet feature on PR.
`r mode`	Enables RSP memory(256k) mode-effect after reboot.
`vlan-optimization-mode`	Enable VLAN rec optimization mode-effect after reboot.

Default

None

Command mode

Global Configuration Mode

Related commands

None

loop-detect arp-detect

Configure the Loop Detection to detect the MAC addresses that are looping from one port to another port.

Syntax

`loop-detect arp-detect`

Parameters

Variable	Value
`action`	Specifies the loop detect action to be taken.
`arp-detect`	The Address Resolution Protocol (ARP)-Detect feature is used for IP configured interfaces for ARP packets. Enable this feature (in addition to loop detection) on routed interfaces.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

spoof-detect portlist enable

Configure the spoof detection to prevent an IP spoofing.

Syntax

```
spoof-detect [port <portList>] [enable]
```

Parameters

Variable	Value
`enable`	Enables spoof detection on the port.
`<portList>`	Specifies the port list.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

auto-recover-port port enable

Enable or disable autorecovery on a port.

Syntax

```
auto-recover-port [port <portList>] [enable]
```

Parameters

Variable	Value
`enable`	Enables spoof detection on the port.
`<portList>`	Specifies the port list.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

dsapssap

Configure the multiple DSAP and SSAP to create a protocol-based VLAN.

Syntax

dsapssap <0x0-0xffff>

Parameters

None

Default

None

Command mode

Global Configuration Mode

Next command mode

VLAN Interface Configuration Mode

Related commands

None

show vlan mac-address-filter

View FDB filters to display the FDB filters for the specified VLAN.

Syntax

show vlan mac-address-filter [<1-4094>]

Parameters

Variable	Value
mac <value>	Specifies the MAC address.
port <portList>	Specifies the port or range of ports in a slot/port format.
<1-4094>	Specifies the VLAN ID in a range of 1 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan mac-address-static

View the database status, MAC address, and QoS levels to display the static forwarding database status.

Syntax

```
show vlan mac-address-static [<1-4094>]
```

Parameters

Variable	Value
mac <value>	Specifies the MAC address.
port <portList>	Specifies the port or range of ports in either slot or port format.
<1-4094>	Specifies the VLAN ID in a range of 1 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan advance

View the advanced parameters to display the advanced parameters for the specified VLAN or for all VLANs.

Syntax

```
show vlan advance [<1-4094>]
```

Parameters

Variable	Value
port <value>	Specifies the port or range of ports.
<1-4094>	Specifies the VLAN ID in a range of 1 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan basic

View the VLAN information to display the basic configuration for all VLANs or a specified VLAN.

Syntax

show vlan basic <1-4094>

Parameters

Variable	Value
<1-4094>	Specifies the VLAN ID in a range of 1 to 4094.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan brouter-port

View the brouter port information to display the brouter port VLAN information for all VLANs on the switch or for the specified VLAN.

Syntax

show vlan brouter-port <portList>

Parameters

Variable	Value
<portList>	Specifies the slot and the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan members

View the VLAN port member status to display the port member status for all VLANs on the switch or for the specified VLAN.

Syntax

show vlan members <portList>

Parameters

Variable	Value
port <value>	Specifies the port or range of ports. **ATTENTION** Entering a **port <value>** is optional. When you enter a **port <value>**, the command shows information for the specified VLAN or port. Without the **port <value>**, the command shows information for all the configured VLANs.
<1-4094>	Specifies the VLAN ID in the range of 1 to 4094. **ATTENTION** Entering a **vid** is optional. When you enter a **vid** command shows information for the specified VLAN or port. Without the **vid** the command shows information for all the configured VLANs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show vlan srcmac

View the VLAN source MAC addresses to display the source MAC address for any source MAC-based VLANs on the switch or for the specified VLAN.

Syntax

show vlan srcmac <1-4094> [port <portList>]

Parameters

Variable	Value
`<portList>`	Specifies the port or range of ports. **ATTENTION** The entry of a **`port <value>`** is optional. A**`port <value>`** command shows information for the specified VLAN or port. Without **`port port <value>`**, the command information is shown for all the configured VLANs.
`<1-4094>`	Specifies the VLAN ID. The value ranges from 1 to 4094. **ATTENTION** The entry of a **`vid`** is optional. When you enter a **`vid`** command shows information for the specified VLAN or port. Without the **`vid`** the command shows information for all the configured VLANs.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

vlan create type svlan

Create a VLAN of type sVLAN in the Ethernet Routing Switch 8600.

Syntax

```
vlan create <1-4094> [name<WORD/0-64> type svlan <1-64>
[color <WORD/0-32>]
```

Parameters

Variable	Value
svlan <sid> [name <value>] [color <value>]	Creates an sVLAN. • **sid** is spanning tree ID. • **name <value>** is the name of the VLAN from 0 to 64 characters. • **color <value>** is the color of the VLAN (0 to 32). The color attribute is used by Optivity software to display the VLAN. This command is available only for the Ethernet Routing Switch 8600.
<1-4094>	Specifies the VLAN ID. VLAN 1 is the default VLAN ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

vlan create type svlan-mstprstp

Specify the type of VLAN and create a VLAN of type sVLAN, when the switch is in the MSTP mode.

Syntax

vlan create <1-4094> [name<WORD/0-64> type svlan-mstprstp <1-64> [color <WORD/0-32>]

Parameters

Variable	Value
svlan-mstprstp <0-64> [name <value>] [color <value>]	Creates an sVLAN. • **instance-id** is the instance ID from 0 to 63. • **name <value>** is the name of the sVLAN in the range 0 to 20. • **color <value>** is the color of the sVLAN in the range of 0 to 32. The color attribute

Variable	Value
	is used by Optivity software to display the VLAN.
`<1-4094>`	Specifies the VLAN id. VLAN 1 is the default VLAN.

Default
None

Command mode
Global Configuration Mode

Related commands
None

svlan

Set the Ethertype to indicate which protocol is transported in an Ethernet frame and to set the switch level associated with this sVLAN.

Syntax
```
svlan
```

Parameters

Variable	Value
`ether-type`	Sets level and corresponding ethertype for svlan.
`level`	Sets the svlan level.

Default
None

Command mode
Global Configuration Mode

Related commands
None

svlan-porttype

Set the sVLAN port type to sVLAN UNI or sVLAN NNI.

Syntax
```
svlan-porttype [port <portList> ] <uni|nni|normal>;defaul
t svlan-porttype [port <portList>]
```

Parameters

Variable	Value
<normal|uni|nni>	Sets the port type for the sVLAN to normal, user-to-network interface (UNI), or network-to-network interface (NNI). The default is normal. **ATTENTION** Designate all ports within an OctaPID as either normal or sVLAN (that is, the ports can be all Normal or a combination of UNI/NNI within the Octapid, which can be up to eight ports). When you configure a UNI port in the CLI, the tagged-frames-discard parameter is automatically enabled. When you configure an NNI port in the CLI, the untagged-frames-discard parameter is automatically enabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

None

spanning-tree stp

Set a tagged bridge protocol data unit (BPDU) address different from the standardized BPDU address and create an sVLAN Spanning Tree Group (STG).

Syntax

spanning-tree stp <1-64> create type <stgsvlan|stgnormal> ntstp enable

Parameters

Variable	Value
create type stgsvlan ntstp	Creates a new STG. • **type** sets the STG to normal or sVLAN. Choices are stgsvlan or stgnormal. • **ntstp** enables or disables NTSTP. Choices are enable or disable.
enable	Enables STP.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
delete	Delete an STG
disable	Disables STP.
forward-time	Bridges forward delay time.
hello-time	Bridges hello time.
max-age	Bridges maximum age time.
ports	Add ports to this spanning tree.
priority	Bridges priority.
trap-stp	Enables STP trap for a specific STG.

boot config flags spanning-tree-mode

Configure the STP mode to set the spanning tree mode on the switch.

Syntax

boot config flags spanning-tree-mode {rstp|mstp}

Parameters

Variable	Value
rstp|mstp	Specifies the Spanning Tree modes as Rapid Spanning Tree Protocol (RSTP) or Multiple Spanning Tree Protocol (MSTP).

Default

RSTP

Command mode

Global Configuration Mode

Related commands

None

spanning-tree stp create

Configure the spanning tree group parameters to configure parameters for a specified STG.

Syntax

spanning-tree stp <1-64> create [<ports>]

Parameters

Variable	Value
create [<ports>]	Creates a new STG: • **ports** specifies one or more slot/port numbers. Ports cannot be added to the STG if configured as Single Port SMLT, or as a member of another STG.
tagged-bpdu-vid <value>	Specifies the tagged bridged protocol data unit VLAN ID. If a VLAN spans multiple switches, it must be within the same STG across all switches.
multicast-address <value>	Specifies the multicast address.
type <value>	**type <value>** is the type of STG. Choices are **stgnormal** or **stgsvlan**.
ntstp <value>	**ntstp <value>** enables or disables STP. Choices are **enable** or **disable**.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
delete	Deletes the specified spanning tree group.
disable	Disables the STP.
enable	Enables STP.
forward-time <timeval>	Sets the bridge forward delay time in hundredths of a second. The default is 1500 (15 seconds).
hello-time <timeval>	Sets the bridge hello time in hundredths of a second. The default is 200 (2 seconds).
max-age <timeval>	Sets the bridge maximum age time in hundredths of a second. The default is 2000 (20 seconds).
ports	Adds ports to the spanning tree.
priority <number>	Sets the bridge priority number. **number** is between 0 and 65535.
trap-stp <enable|disable>	Enables or disables the STP trap for the specified STG.

spanning-tree stp change-detection

Configure STG port parameters to set the STG port parameters.

Syntax

spanning-tree stp <1-64> change-detection

Parameters

Variable	Value
change-detection	Enables or disables topology change detection for the specified spanning tree. The default is enable.

Default

None

Command mode

Global Configuration Mode

Next command mode

Interface Configuration Mode

Related commands

Variable	Value
`cost <1-65535>`	Set the contribution of this port to the path cost: is the cost in the range of 1 to 65535.
`enable`	Enables STP on the port.
`learning`	Enables the STP learning flag.
`priority <0-255>`	Sets priority for the ports. Although port priority values can range from 0 to 255, only the following values are used: 0, 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, and 240.

spanning-tree stp trap-stp

Add the required number of UNI ports or NNI ports to the STG.

Syntax

`spanning-tree stp <1-64> ports <portList> trap-stp`

Parameters

Variable	Value
`trap-stp`	Enables STP trap for a specific STG.
`<portList>`	Specifies the port list.
`<1-64>`	Specifies the spanning tree ID.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show spanning-tree config

Query the change detection setting to show the port information.

Syntax

`show spanning-tree config`

Parameters

Variable	Value
`config`	Displays the STP configuration.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Values
`mstp`	Displays the MSTP commands.
`port`	Displays the STP port details.
`rstp`	Displays the RSTP information.
`status`	Displays the STP status.
`stp`	Displays the STP ID.
`vlans`	Shows STP VLAN details.

show spanning-tree stp config

Display STG configurations to view the STG configuration for the switch or for the specified STG.

Syntax

```
show spanning-tree [stp <1-64>] config
```

Parameters

Variable	Value
`config`	Shows STP configuration for a particular STP Id.
`<1-64>`	Specifies the spanning tree id in the range of 1 to 64.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree stp status

Display STG port status to view the spanning tree group status for the specified spanning tree group or all STGs.

Syntax

```
show spanning-tree [stp <1-64>] status
```

Parameters

Variable	Value
`status`	Shows STP status for a particular STP id.
`<1-64>`	Specifies the spanning tree id in the range of 1 to 64.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree status

Display basic STG information to view basic spanning tree group information for one or more specified ports or for all ports.

Syntax

```
show spanning-tree status
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree port detail

Display extended STG information to display additional spanning tree group information about the specified port or about all ports.

Syntax

show spanning-tree port [portList] detail

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

spanning-tree rstp version

Configure the RSTP to set the RSTP configuration.

Syntax

spanning-tree rstp version <stp-compatible|rstp>

Parameters

Variable	Value
version <stp-compatible|rstp>	Sets the RSTP version to either of the following: • **stp-compatible** • **rstp**

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
forward-time	Sets RSTP forward delay.
group-stp	Enables RSTP for specific STG.
hello-time	Sets RSTP hello time.
max-age	Sets RSTP max-age.
pathcost-type	Sets RSTP bridge pathcost type.
priority	Sets RSTP bridge priority.
tx-holdcount	Sets RSTP tx holdcount.

show spanning-tree rstp port config

Configure Ethernet RSTP parameters to set RSTP parameters for the port.

Syntax

show spanning-tree rstp port config [<portList>]

Parameters

Variable	Value
config <portList>	Shows RSTP port configuration.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
role	Shows the RSTP port role.
statistics	Shows the RSTP port statistics.
status	Shows the RSTP port status.

show spanning-tree rstp config

View the global RSTP configuration information to display the Rapid Spanning Tree Protocol (RSTP) configuration details.

Syntax

show spanning-tree rstp config

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree rstp status

View the RSTP status to display the RSTP related status information for the selected bridge.

Syntax

show spanning-tree rstp status

Parameters

Variable	Value
status	Displays the status of the RSTP>.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree rstp port status

View the RSTP status for a port to display the RSTP related status information for a selected port.

Syntax

show spanning-tree rstp port status [<portList>]

Parameters

Variable	Value
status [<portList>]	Shows RSTP port status.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
config <portList>	Shows RSTP port configuration.
role	Shows RSTP port role.
statistics	Shows RSTP port statistics.

show spanning-tree rstp port statistics

View the RSTP information for a selected port to display the RSTP related configuration information for the selected port.

Syntax

```
show spanning-tree rstp port statistics [<portList>]
```

Parameters

Variable	Value
`statistics [<portList>]`	Shows RSTP port statistics.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
`config <portList>`	Shows RSTP port configuration.
`role`	Shows RSTP port role.
`status`	Shows RSTP port status.

show spanning-tree rstp port role

View the RSTP role to display the RSTP information.

Syntax

```
show spanning-tree rstp port role [<portList>]
```

Parameters

Variable	Value
`role <portList>`	Shows RSTP port role.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
`config <portList>`	Shows RSTP port configuration.

Variable	Value
statistics [<portList>]	Shows RSTP port statistics.
status	Shows RSTP port status.

spanning-tree mstp msti

Configure Multiple Spanning Tree Protocol to set the MSTP configuration version.

Syntax

spanning-tree mstp msti <1-63> priority <0-65535>

Parameters

Variable	Value
<1-63>	Specifies the instance parameter.
priority <0-65535>	Sets the MSTP bridge priority. Allowed values are 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344, 61440.

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
forward-time	Sets the MSTP forward delay.
max-age	Sets the MSTP max-age.
max-hop	Sets MSTP bridge hop count.
msti	Specifies the MSTP MSTI commands.
pathcost-type	Sets the MSTP bridge pathcost type.
region	Sets the MSTP region commands.
tx-holdcount	Sets the MSTP tx hold count.
version	Sets the MSTP bridge version

show spanning-tree mstp config

View the MSTP configurations to display the MSTP-related bridge-level VLAN and region information.

Syntax

show spanning-tree mstp config

Parameters

Variable	Value
config	Shows the MSTP configuration information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree mstp status

View the MSTP status to display the MSTP- related status information known by the selected bridge.

Syntax

show spanning-tree mstp status

Parameters

Variable	Value
status	Displays the MSTP port status information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree mstp port role

View the MSTP port information to display the MSTP, CIST port, and MSTI port information maintained by every port of the common spanning tree.

Syntax

show spanning-tree mstp port role <portList>]

Parameters

Variable	Value
`port role`	Displays the MSTP port information.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show spanning-tree mstp statistics

View the MSTP statistics information maintained by spanning tree.

Syntax

`show spanning-tree mstp statistics`

Parameters

Variable	Value
`statistics`	Displays the MSTP statistics information.

Default

None

Command mode

Privileged Executive Mode

Related commands

Variable	Value
`msti`	Shows MSTP MSTI information.

Web Switching Modules commands

This chapter provides the Nortel Networks Command Line Interface (NNCLI) commands for the content-intelligent processing of the Web-based traffic for the Ethernet Routing Switch 8600.

Navigation

copy src file dest file

Transfer all WSM configuration data and software images to and from a WSM on an Ethernet Routing Switch 8600.

Syntax

```
copy <src file> <dest file>
```

Parameters

Variable	Value
a.b.c.d	IP address of a TFTP server
<dest file>	<dest file> = {a.b.c.d: | /pcmcia/ | /flash/}<file> | /wsm/{1..10}[/{image1,image2,boot,cfg}]
<file>	Name of the file
<src file>	{a.b.c.d: | /pcmcia/ | /flash/} <filename> | /wsm/{1..10}/[{image1,image2,boot,cfg,ptdmp}]

Default

None

Command mode

Global Configuration Mode

Related commands

Variable	Value
`boot`	Boot image
`cfg`	A saved configuration file
`flash`	Flash memory
`image1, image2`	WSM software image files
`pcmcia`	PCMCIA card
`ptdmp`	Transfers a saved panic dump
`wsm/{1..10}`	Denotes the WSM in the specified slot number (1–10). You cannot use the WSM in both the `<src>` and `<dest file>` of the same command.

wsm connect

Connect to the WSM installed in the Ethernet Routing Switch 8600.

Syntax

`wsm connect <slot Id>`

Parameters

Variable	Value
`<slot Id>`	Specifies the slot Id in the range of 1 to 10.

Default

None

Command mode

Global Configuration Mode

Related commands

None

show wsm details

Display and check information on the WSM.

Syntax

`show wsm details`

Parameters
None

Default
None

Command mode
Privileged Executive Mode

Related commands
None

wsm reset

Reset a WSM to confirm that the back-facing ports (5 to 8) enter the forwarding state.

Syntax
wsm reset <slot Id>|<all>

Parameters

Variable	Value
<all>	Resets all the hardware in the WSM.
<slot Id>	Enter the slot Id of the hardware to be reset. The range is 1 – 10.

Default
None

Command mode
Global Configuration Mode

Related commands
None

wsm setboot

Set the image specified (image1 or image2) as the current active boot image.

Syntax
wsm setboot [<1-10> [<image-choice>]]

Parameters

Variable	Value
`<image-choice>`	**ATTENTION** If you do not specify an image, the **`setboot`** command returns the identity of the current boot image for all WSMs installed on the Ethernet Routing Switch 8600. Image specified as the currently active boot image.
`<1-10>`	Specifies the slot Id to for the boot image. The slot ID varies from 1–10.

Default

None

Command mode

Global Configuration Mode

Related commands

None

8683 POSM Modules commands

This chapter describes how to configure the Packet-over-Sonet (POS) specific features using the Nortel Networks Command Line Interface (NNCLI).

Navigation

poscard posslot number

Reset, debug, and display the image file name for the 8683POSM module.

Syntax

poscard <posslot number>

Parameters

Variable	Value
card-reset	Resets the card.
debug	Enables or disables trace messages on the module to be displayed on the console of the switch.
<posslot number>	Slot number of the module in the Ethernet Routing Switch 8600 chassis ranging from 1 to 10.

Default

None

Command mode

Global Configuration Mode

Related commands

None

snmp trap link-status

Configure the common features on the POS port.

Syntax

snmp trap link-status <variable> [port <portList>]

Parameters

Variable	Value
`[enable]`	Enables or disables the link up or down trap for a port.
`port [slot/port] enable`	Slot and port number for the module where the trap needs to be enabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

brouter

Create a brouter port so that the POSM port can participate in IP routing.

Syntax

```
brouter [port<portlist>]
```

Parameters

Variable	Value
`vlan <vid> subnet <A.B.C.D/mask> [mac_offset <value> ]`	Creates an IP address and assigns it to a VLAN, with the VLAN ID. VLAN ID ranges form 1 to 4094. The value of mask ranges form 0 to 32. The value of mac_offset ranges from 0 to 65535.
`no`	Deletes the IP address.
`[port <portlist>]`	Port number.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ppp portlist

Configure Point-to-Point Protocol (PPP) parameters on the 8683POSM Module.

Syntax

```
ppp [port<portlist>]
```

Parameters

Variable	Value
bridge-admin-status <open|close>	Enables or disables the bridge control protocol.
fcs-size<32|16>	Sets the length of the redundancy check (fcs) to either 32 or 16.
ip-admin-status <open|close>	Enables or disables the IP control protocol.
ipx-admin-status <open|close>	Enables or disables the IPX control protocol.
ipx-route-protocol {none|rip}	Sets the protocol for IPX routing.
lqr-period <interval>	Sets the link quality reporting interval. **interval** is the time in milliseconds in the range of 0 to 2 147 483 647.
lqr-status	Enables or disables link quality reporting.
lqr-threshold <threshold>	Sets the link quality reporting threshold. **threshold** is a percent in the range of 0 to 100.
magic-number	Sets a random number magic number used in loopback detection. True detects loopback; false does not detect loopback.
ppp-stpmode	Encapsulates spanning tree Bridge Protocol Data Unit (BPDU) packets as PPP. When enabled the BPDUs are encapsulated as in RFC 1638. When disabled, the BPDUs travel as bridged data (assuming bridge-admin-status is enabled).
remote-ip< A.B.C.D>	Sets the remote IP address.

Default
None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

sonet
Configure port parameters for SONET on the 8683POSM Module.

Syntax
sonet

Parameters

Variable	Value
scramble <enable>	Enables or disables scrambling.
section-trace <sectiontrace value>	Sets the integer section trace flag (j0) in the range of 0 to 255.

Default
None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

spanning-tree portlist
Configure the Spanning Tree Group (STG) parameters on the 8683POSM Module.

Syntax
spanning-tree [port <portlist>] [stp <sid>]

Parameters

Variable	Value
`change-detection`	Sets the topology change notification.
`learning`	Enables or disables the fast start flag.
`cost <cost value>`	Sets the contribution of this port to the path cost. `cost value` is an integer in the range of 1 to 65 535.
`priority <Priority value>`	Sets the priority of this port. `Priority value` is an integer in the range of 0 to 255.
`sid`	STG ID in the range of 1 to 64.
`enable`	Enables or disables spanning tree protocol.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ipx network

Configure IPX parameters on the 8683POSM module.

Syntax

`ipx network`

Parameters

Variable	Value
`<IPX-network-number> <vlan_id> {ethernet-ii | snap | llc | raw} [mac_offset <value> ] [tick <value> ]`	Creates the IPX network: • `IPX-network-number` is the network number in the form of {0x00000000 | 00:00:00:00 | <value> }. • `vlan_id` is the VLAN ID in the range of 1 to 4 094. • `{ethernet-ii | snap | llc | raw}` is the type of frame encapsulation.

Variable	Value
	• **mac_offset <value>** is an optional parameter that you use to manually change the default MAC address for a logical or physical interface. **<value>** is an integer from 0 to 65 535. Default is the next available value. • **tick <value>** is the value that determines the best route for the IPX routed VLAN. The lower the tick value the better the route. Enter a tick value with the range of 1 to 2 147 483 647. Default is 1.
no <IPX-network-number>	Deletes the IPX network. **IPX-network-number** is the network number in the form of {0x00000000 | 00:00:00:00 | <value> }.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ipx rip

Apply the Routing Information Protocol (RIP) policies for IPX routing on the 8683POSM module.

Syntax

ipx rip

Parameters

Variable	Value
input-network-filter <IPX-network-number> <WORD/0-15>	Configures the incoming policy for the interface: • **IPX-network-number** is the network number in the form of {0x00000000 | 00:00:00:00 | <value> }. • **WORD/0-15** is the policy name as a string, 0 to 15 characters in length.
output-network-filter <IPX-network-number> <WORD/0-15>	Configures the outgoing policy for the interface: • **IPX-network-number** is the network number in the form of {0x00000000 | 00:00:00:00 | <value> }. • **WORD/0-15** is the policy name as a string, 0 to 15 characters in length.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ipx sap

Apply the Session Announcement Protocol (SAP) policies for IPX routing on the 8683POSM module.

Syntax

ipx sap

Parameters

Variable	Value
input-sap-filter <IPX-network-number> <WORD/0-15>	Configures the incoming policy for the interface: • **IPX-network-number** is the network number in the form of {0x00000000 | 00:00:00:00 | <value> }. • **WORD/0-15** is the policy name as a string, 0 to 15 characters in length.
output-sap-filter <IPX-network-number> <WORD/0-15>	Configures the outgoing policy for the interface: • **IPX-network-number** is the network number in the form of {0x00000000 | 00:00:00:00 | <value> }. • **WORD/0-15** is the policy name as a string, 0 to 15 characters in length.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

lacp

Use Link Aggregation Control Protocol (LACP) to bundle a set of ports into a port group, which is represented as one logical interface to upper layer protocols.

Syntax

lacp

Parameters

Variable	Value
aggr-wait-time <milliseconds>	Sets the aggregator wait-time in milliseconds.
aggregation enable	Sets individual port or aggregatable for a specific port type and enables LACP globally.

Variable	Value
fast-periodic-time <milliseconds>	Sets fast periodic time globally. **milliseconds** is the fast periodic time value.
key <integer>	Sets LACP aggregation key for a specific port. You can use a default key only for individual ports.
mode <active|passive>	Sets the mode as active or passive for a specific port.
partner-key <int>	Sets the administration key value of the port partner. **int** is an integer value in the range 0 and 65 535.
partner-port<int>	Sets the administration port value of the port partner. **int** is an integer value in the range 0 and 65 535.
partner-port-priority <int>	Sets the administration port priority value of the port partner. **int** is an integer value in the range 0 and 65 535.
partner-state {Exp|Def|Dis|Col|Syn|Agg|Time|Act}	Sets the administration state of the port partner. • **{Exp|Def|Dis|Col|Syn|Agg|Time|Act}** is the LACP state bitmap. **Example:** • Activity = true • Aggregating = true • val = 00000101 (0x05) {0x0..0xff}
partner-system-id <mac>	Sets the administration system ID of the port partner. **mac** is the Mac address in the format: 0x00:0x00:0x00:0x00:0x00:0x00.
partner-system-priority <int>	Sets the administration system priority value of the port partner. **int** is an integer value in the range 0 and 65 535.

Variable	Value
port-priority <integer>	Sets the LACP port priority to a specific port type. The default value is 32768. **integer** is an integer value in the range 0 and 65 535.
slow-periodic-time <milliseconds>	Sets slow periodic time globally. **milliseconds** is the slow periodic time value.
system-priority <integer>	Sets LACP system priority globally. **integer** is the system priority value with range of 0 to 65 535.
timeout <long|short>	Sets the timeout value to either long or short for a specific port.
timeout-scale <integer>	Sets a timeout scale for a specific port. The default value is 3.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ip arp-response

Configure Address Resolution Protocol (ARP) to map an IP address to a POSM port.

Syntax

ip arp-response [port <portList>] [enable]

Parameters

Variable	Value
[port <portList>]	—
[enable]	Enables the ARP on the POSM port

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ip igmp access-list

Configure Internet Group Management protocol (IGMP) on a POSM port to establish multicast group memberships.

Syntax

ip igmp access-list word<1-64> <A.B.C.D> <A.B.C.D> mode deny-tx

Parameters

Variable	Value
deny-tx	Modes of IGMP access list deny-tx
deny-rx	Modes of IGMP access list deny-rx
deny-both	Modes of IGMP access list deny-both
allow-only-tx	Modes of IGMPaccess list allow-only-tx
allow-only-rx	Modes of IGMP access list allow-only-rx
allow-only-both	Modes of igmp access list allow-only-both
<A.B.C.D>	Host IP address in the format <A.B.C.D>
<A.B.C.D>	Host mask IP address in the format <A.B.C.D>
word<1-64>	Prefix-list entry name

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ip dhcp-relay

Configure the Dynamic Host Configuration Protocol (DHCP) to configure hosts on an IP network dynamically.

Syntax

ip dhcp-relay

Parameters

Variable	Value
broadcast	Sets always broadcast value
max-hop	Sets the maximum hop count
min-sec	Set minimum second count
mode	Sets the mode
port	Specifies the ports which are to be changed

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ip dvmrp active

Configure the Distance Vector Multicast Routing Protocol (DVMRP) to share information between routers to transport IP Multicast packets among networks.

Syntax

ip dvmrp active

Parameters

Variable	Value
`default-listen`	Specifies the DVMRP default route
`default-supply`	Specifies the supply DVMRP default route
`default-supply-metric`	Specifies the DVMRP default route metric
`enable`	Enables the DVMRP on specific interface
`in-policy`	Sets the port DVMRP in-policy
`interface-type`	Specifies the DVMRP interface type
`metric`	Specifies the DVMRP route metric
`out-policy`	Sets the port DVMRP out-policy

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ip ospf

Configure the Open Shortest Path First (OSPF) protocol to monitor the change in network immediately.

Syntax

`ip ospf`

Parameters

Variable	Value
`advertise-when-down <enable|disable>`	Enables change of notification state to layer 3
`area <ipaddr>`	Sets an area with IP address of the format A.B.C.D
`authentication-key <word>`	Interfaces the authentication-key The range of the characters for the key is 0 to 8.

Variable	Value
authentication-type <auth-type>	Select an authentication type as one of the follows: • message-digest • none • simple
cost	Specifies the cost of the OSPF interface
dead-interval <seconds>	Sets OSPF dead interval. The range is from 0 to 2147483647 seconds.D
enable	Disables OSPF on the POSM interface.
hello-interval <seconds>	Sets the OSPF hello interval. The range is from 1 to 65535 seconds.
message-digest-key	Creates a primary message digest key. The value ranges from 1 to 255.
mtu-ignore	Enables the OSPF mtu-ignore flag
network	Specifies the OSPF interface type. The different types of interface are as follows: • broadcast • nbma • passive
poll-interval	Specifies the OSPF poll interval in seconds. The range is from 0 to 2147483647 seconds.
port	Specifies the interface port for OSPF
primary-md5-key	Sets the primary-message-detect-5 key used for encrypting the outgoing packets. The range of the key is from 1 255.
priority	Specifies the priority of the interface
retransmit-interval	Specifies the interval between the OSPF retransmit. The interval ranges from 0 to 3600 seconds.
transit-delay	Specifies the delay of the OSPF transit The interval ranges from 0 to 3600 seconds.

Default
None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

ip pim

Configure a Protocol Independent Multicast (PIM) to provide multicast techniques using trees and flood-and-prune techniques.

Syntax
ip pim

Parameters

Variable	Value
active	Enables PIM and sets interface type to active.
bsr-candidate	Enables BSR candidate on specific interface.
enable	Enables PIM on a interface.
interface-type	Sets PIM interface type on a interface.
join-prune-interval	Specifies the frequency at which PIM join/prune messages are sent.
passive	Enables PIM and sets interface type to passive.
query-interval	Sets query-interval on a interface.

Default
None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

ip traffic-filter default-action

Configure the traffic IP filters on the POSM port to control whether router traffic is forwarded or blocked at the router's interfaces.

Syntax

ip traffic-filter default-action

Parameters

Variable	Value
drop enable	Enables policy deny to filtered ports.
forward enable	Enables policy permit to filtered ports.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

pcap

Use PCAP to capture packets that ingress or egress a POSM module port.

Syntax

pcap

Parameters

Variable	Value
<value>	Adds a list to a specified port. **value** is a string in the range of 1 to 1 000.
acl-filter	Adds ACL filter to the port.
enable [mode <value>]	Enables PCAP on the port.**mode <value>** is the filter type **{tx|rx|both|rxFilter|txFilter|bothFilter}**.
remove set <value>	Removes a list from a specified port. **value** is a string in the range of 1 to 1000.

Default

None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

smlt port

Use Split MultiLink Trunking (SMLT) to provide nodal protection, link failure protection, and flexible bandwidth scaling.

Syntax
```
smlt [port <portlist>] <smlt id>
```

Parameters

Variable	Value
`no`	Deletes the SMLT ID on the port.
`smlt id`	SMLT ID in the range of 1 to 512.

Default
None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

vlacp

Use Virtual Link Aggregation Control Protocol (VLACP) to provide end to end failure detection.

Syntax
```
vlacp
```

Parameters

Variable	Value
`enable`	Enables VLACP for a specific port.

Variable	Value
fast-periodic-time <milliseconds>	Sets the fast periodic time value (in milliseconds) for a specific port.
slow-periodic-time <milliseconds>	Sets the slow periodic time value (in milliseconds) for a specific port.
timeout <long|short>	Sets the port to use the long or short timeout value: • **long** sets the port to use the timeout-scale value * the slow-periodic-time value. • **short** sets the port to use the timeout-scale value * the fast-periodic-time value. For example, if you set the timeout-scale value to 3, and the fast-periodic-time value to 400 ms, the timer expires within 1000 to 1200 ms.
timeout-scale <integer>	Sets a timeout scale for a specific port (where timeout-scale = periodic-time * timeout-scale). The default value is 3. **integer** is the timeout scale value, an integer value in the range 1 and 10.
ethertype <integer>	Sets the VLACP protocol identification for this port. **integer** is the ethertype value, an integer value in the range 1 and 65 535.
funcmac-addr <mac>	Sets the Multicast MAC address used for the VLACPDU. **mac** is the MAC address in the following format: 0x00:0x00:0x00:0x00:0x00:0x00:0x00.

Default
None

Command mode
Global Configuration Mode

Next command mode
POS Interface Configuration Mode

Related commands
None

ppp port mac_offset
Configure an IP address on the selected port on the 8683POSM Module.

Syntax

```
ppp [port <portlist>] vlan <vid> <ipaddr/mask> [mac_offset
<value>]
```

Parameters

Variable	Value
`<ipaddr/mask>`	IP address on the selected port.
`<vid>`	VLAN ID.
`[mac_offset <value>]`	Specifies the mac offset value.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

no shutdown

Disable the selected port on the 8683POSM Module.

Syntax

```
no shutdown [port <portlist>]
```

Parameters

Variable	Value
`portlist`	Specifies the port number to be disabled.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

ipx network vlan id ethernet-ii

Configure a protocol-based VLAN and assign the port to the VLAN as a static member and ensure that no other ports are allowed to join.

Syntax

```
ipx network <IPX-network-number> <vlan id> {ethernet-ii|snap|llc|raw} [mac_offset <value>] [tick<value>]
```

Parameters

Variable	Value
`ethernet-ii|snap|llc|raw`	—
`mac_offset value`	Specifies the MAC offset value.
`tick <value>`	—
`vlan id`	Specifies the VLAN id.

Default

None

Command mode

Global Configuration Mode

Next command mode

POS Interface Configuration Mode

Related commands

None

test hardware

Configure the test hardware command to run the hardware diagnostics on the 8683POSM Module.

Syntax

```
test hardware [<ports>]
```

Parameters

None

Default

None

Command mode

Privileged Executive Mode

Related commands

None

test led

Configure the test port LEDs to see if the lights on the port LEDs are functioning correctly on the 8683POSM Module.

Syntax

test led <ports> <tx|rx> <off|yellow|green>

Parameters

Variable	Value
<ports>	Port number.
tx	Tests the LED for transmitting data on each port.
rx	Tests the LED for receiving data on each port.
off	Tests whether the LEDs go off correctly.
yellow	Tests whether the LEDs can light yellow.
green	Tests whether the LEDs can light green.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

test loopback

Use loopback tests to ensure continuity of the data path.

Syntax

test loopback [port <portlist>] <int|ext>

Parameters

Variable	Value
<ext|int>	**ext** specifies the external loopback test to be run. External loopback test requires a loopback cable on the port. **int** specifies the internal loopback test to be run.
portlist	Specifies the slot and then port number to run the test on.

Default

Internal loopback test is the default.

Command mode

Privileged Executive Mode

Related commands

None

test stop loopback

Stop the loopback testing on the port.

Syntax

```
test stop loopback <ports>
```

Parameters

Variable	Value
`ports`	Specifies the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

8672 ATMM and 8672 ATME Modules commands

This chapter describes how to configure the 8672 ATM modules by using the Nortel Networks Command Line Interface (NNCLI).

Navigation

atmcard

Configure the Asynchronous Transfer Mode (ATM) card to view Emulated Local Area Network (ELAN) statistics, and display the image file name for 8672 ATM modules.

Syntax

atmcard <atmslot ID>

Parameters

Variable	Value
`<atmslot ID>`	Slot number of the module in the Ethernet Routing Switch 8600 chassis.
`elan-statistics <enable|disable>`	Used to set the ELAN statistics.
`poll-period <poll-period>`	Sets the polling interval for ELAN statistics.

Default

None

Command mode

Global Configuration Mode

Related commands

None

atmcard reset

Configure the ATM card to reset the 8672 ATM modules.

Syntax

`atmcard reset <slot number>`

Parameters

Variable	Value
`<slot number>`	Slot number of the module in the Ethernet Routing Switch 8600 chassis ranging from 1 to 10.
`reset`	Resets the ATM card.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

action choice

Configure ATM ports to display the information on port settings.

Syntax

```
action <choice>
```

Parameters

Variable	Value
`action <choice>`	Flushes a Media Access Control (MAC), Address Resolution Protocol (ARP), or IP table, or triggers a Routing Information Protocol (RIP) update. Choices are none flushMacFdb flushArp flushIp flushAll triggerRipUpdate clearLoopDetectAlarm

Default

None

Command mode

Global Configuration Mode

Next command mode

ATM Interface configuration Mode

Related commands

Variable	Value
`clock-source port [slot/port] <loop-timed | free-running>`	Sets the transmit clock source to: • **`loop-timed`**, which means the clocking is derived from line signal. • **`free-running`**, which means the clocking is derived from the on-board clock. **ATTENTION** If you have two 8672 ATM modules connected, you must set both to free-running or one to

Variable	Value
	loop-timed and one to free-running; do not set both to loop-timed.
framing port [slot]port]<sonet |sdh|ds3CbitAdm| ds3 CbitPlcp|ds3M23Adm| ds3M23Plcp>	Sets the framing to: • **sonet** (Synchronous Optical Network), the standard format used in North America. • **sdh** (Synchronous Digital Hierarchy), the standard format used worldwide except in North America. Any of the following Digital Signal, Level 3 (DS3) formats: • **ds3CbitAdm** • **ds3CbitPlcp** • **ds3M23Adm** • **ds3M23Plcp**
ip traffic-filter <default-action|enable|set>	IP commands to create a new filtered port; the command has the following options: • **default-action**—to set the default-action for the interface. • **enable**—to enable the filtered ports. • **set**—to add a list to the filtered port; the list ID ranges from 1 to 3127.
loop-back-mode port [slot/port]<off | internal | external>	Sets the loopback mode to: • **off** • **internal** • **external** • **ds3PayloadLoop** • **ds3DiagLoop** • **ds3LineLoop**
name port [slot/port] WORD<0-42>	Changes port name: • **port** is the port number which is to be changed. • **WORD<0-42>** is the new port name with a string length of 0 to 42 alphanumeric characters.
no	Negate a command or set its default.

Variable	Value
<number-vpi-bits>	Set vpi bits used in ATM: DS3 {1..7}, OC-3 {1..6}, OC-12 {1..8}. Sets the number of bits used to represent VPI. Enter an integer from 0 to 8. For OC-3c, 11 bits split between NumVpiBits and NumVciBits. NumVpiBits cannot exceed 6 bits for OC-3c. For OC-12c, 13 bits split between NumVpiBits (default is 4) and NumVciBits (default is 9). NumVpiBits cannot exceed 8 bits for OC-12c. For DS3, 12 bits split between NumVpiBits (default is 4) and NumVciBits (default is 8). NumVpiBits cannot exceed 7bits for DS3.
pcap <acl-filter|enable> port	Packet Capture (PCAP) commands and have the following options: • **acl-filter**—to add acl-filter to the port. • **enable**—to enable pcap. • **port**—the port number which is to be changed.
scrambling port [slot/port]	Used to set the scrambling mode.
shutdown port [slot/port]	Disables the interface.
smlt <smlt ID>	Creates an SMLT on the port. The SMLT ID ranges form 1 to 512.
spanning-tree port [slot/port] stp <stp ID>	Port spanning-tree group commands. **stp** specifies the spanning-tree group id with a value range from 1 to 64 and has the following options: • **change-detection** • **cost** • **learning** • **priority**

pvc

Configure the PVC for ATM to display and create the PVC information.

Syntax

pvc

Parameters

Variable	Value
f5-oam port [slot/port]WORD<0-10>	Used to create a PVC on a specific port. **WORD<0-10>** is the name of the port with a string length of 0 to 10. The required parameters are: • **down** is the Operations, Administration and Maintenance (OAM) retry down count. • **retry** is the OAM retry frequency. • **send** is the OAM send frequency. • **trap** is the F5 OAM trap. • **up** is the OAM retry up count.
create < **vpi.vci**> [**name <value>**] [**enc <value>**] [**serv <value>**] [**pcr <value>**] [**scr <value>**] [**mbs <value>**]	Creates a PVC. The required parameters are: • **vpi** is the circuit VPI. Enter a numeric value, within the range 0 to 255. • **vci** is the circuit VCI. Enter a numeric value, within the range 0 to 4095. For OC-3c, 11 bits split between Vpi and Vci. Vpi bits cannot exceed 6 bits for OC-3c. For OC-12c, 13 bits split between Vpi (default is 4) and Vci (default is 9). Vpi bits cannot exceed 8 bits for OC-12c. For DS3, 12 bits split between Vpi (default is 4) and Vci (default is 8). VpiBits cannot exceed 7bits for DS3. **ATTENTION** For <vpi.vci>, 0.0 is not supported. The optional parameters are: • **name** is the display string. Enter up to 256 alphanumeric characters to name PVC. • **enc** is the 1483 encapsulation method, either null or llc-snap. • **serv** is the bit rate, either ubr or vbr. • **pcr**, with VBR only, is the peak cell rate. The valid ranges are OC-3—86..353207

Variable	Value
	OC-12—86..733490 DS3—86..96000 • **scr**, with VBR only, is the sustained cell rate. The valid ranges are OC-3—86..353207 OC-12—86..733490 DS3—86..96000 • **mbs**, with VBR only, is the maximum burst size. Enter an integer from 2 to 255. **ATTENTION** No VLANs or ELANs are bound to the PVC until you add VLAN membership by using the **config atm <ports> pvc 1483** commands.

Default

None

Command mode

Global Configuration Mode

Next command mode

ATM Interface Configuration Mode

Related commands

None

pvc-1483

Configure the 1483 ELAN parameters on the 8672 ATM modules to display information on routed 1483 ELANs, IP, and IPX circuits.

Syntax

pvc-1483 {bridge-group|ip|ipx|muxipipx}

Parameters

Variable	Value
bridge-group <vlan id|list|port> WORD<0-200> <vpi.vci>	Creates or adds a number of PVCs to the tagged VLAN mesh. The required parameters are **vid** is the VLAN ID number ranging from 1 to 4094.

Variable	Value
	vpi.vci are the circuit VPI and the circuit VCI numbers, respectively, separated by a period. The value of VPI ranges from 0 to 255, and the value of VCI ranges form 0 to 4095. **WORD<0-200>** is the name of the PVC with a string length of 0 to 200. **ATTENTION** This command fails if the specified VIDs or VPI/VCI pairs belong to another ELAN or already exist on this ELAN.
ip <vlan id|port> WORD<0-10> <vpi.vci> [,**<vpi.vci>**]...	Creates an IP entry for a vid, vpi and a vci. The required parameters are **vlan id** is the VLAN ID number ranging from 1 to 4094. **port** is the port number to be changed. **WORD<0-10>** is the name of the PVC with a string length of 0 to 10. **vpi.vci** are the circuit VPI and the circuit VCI numbers, respectively, separated by a period. The value of VPI ranges from 0 to 15 and the value of VCI ranges from 0 to 255. **ATTENTION** This command fails if the specified VIDs or VPI/VCI pairs belong to another ELAN or already exist on this ELAN.
ipx <vlan id|port> WORD<0-10> <vpi.vci> [,**<vpi.vci>**]...	Creates an IPX entry for a circuit. The required parameters are **vlan id** is the VLAN ID number ranging from 1 to 4094. **port** is the port number to be changed. **WORD<0-10>** is the name of the PVC with a string length of 0 to 10.

Variable	Value
	vpi.vci are the circuit VPI and the circuit VCI numbers, respectively, separated by a period. The value of VPI ranges from 0 to 15 and the value of VCI ranges from 0 to 255. **ATTENTION** This command fails if the specified VIDs or VPI/VCI pairs belong to another ELAN or already exist on this ELAN.
muxipipx <vlan id|port> WORD<0-10> <vpi.vci> [,**<vpi.vci>**]...	Creates an MUXIPIPX entry for a vid, vpi and a vci. The required parameters are **vlan id** is the VLAN ID number ranging from 1 to 4094. **port** is the port number to be changed. **WORD<0-10>** is the name of the PVC with a string length of 0 to 10. **vpi.vci** are the circuit VPI and the circuit VCI numbers, respectively, separated by a period. The value of VPI ranges from 0 to 15 and the value of VCI ranges from 0 to 255. **ATTENTION** This command fails if the specified VIDs or VPI/VCI pairs belong to another ELAN or already exist on this ELAN.

Default

None

Command mode

Global Configuration Mode

Next command mode

ATM Interface Configuration Mode

Related commands

None

show interfaces atm fdb

Display information about the Forwarding Data Base (FDB) for the 1483 bridged point to multipoint PVCs.

Syntax

```
show interfaces atm fdb [<Vlan ID>] [<slot/port>]
```

Parameters

Variable	Definition
`<slot/port>`	Slot and the port number.
`<vlan id>`	VLAN number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm ports

Display information about the configuration of ATM ports.

Syntax

```
show interfaces atm ports [<vlan id>] [<portlist>]
```

Parameters

Variable	Definition
`<portlist>`	Port number.
`<vlan id>`	VLAN number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm pvc

Display information about the permanent virtual circuits (PVCs) for all the ports.

Syntax

```
show interfaces atm pvc [<vlan id> <portList>]
```

Parameters

Variable	Definition
`<portlist>`	Port number.
`<vlan id>`	VLAN number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm 1483

Display information about 1483 circuits.

Syntax

```
show interfaces atm 1483 [<vlan id> <portList>]
```

Parameters

Variable	Definition
`<portlist>`	Slot and the port number.
`<vlan id>`	VLAN number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

pvc f5-oam port

Configure the F5-OAM Loopback feature for a virtual circuit (VC).

Syntax

```
pvc f5-oam [port <portList>]<vpi.vci>
```

Parameters

Variable	Value
portList	Specifies the slot and the port number on the ATM module.
<vpi.vci>	VPI and VCI are the numeric identifiers associated with the Permanent virtual circuit. The vpi value ranges from 0-255, and vci value ranges from 0-4095.

Default

None

Command mode

Global Configuration Mode

Next command mode

ATM Interface Configuration Mode

Related commands

Variable	Value
down <value>	Sets the number of consecutive F5-OAM Loopback replies that must fail to change the Loopback State to down. The range of values is 1..255(seconds). The default responses are 5.
<enable|disable>	Enables or disables the F5-OAM Loopback feature. When the F5-OAM Loopback on a VC is enabled, an enable command towards this VC can change its F5-OAM Loopback configuration, but it does not alter its F5-OAM statistics. When the F5-OAM Loopback on a VC is disabled, an enable command towards this VC enables and configures its F5-OAM Loopback, and then clears its F5-OAM Loopback statistics.
retry <value>	Sets the retry-transmission rate (in seconds) of F5-OAM Loopback requests. This field is also referred as *retry-frequency*. The range of values is 1..255(seconds). The default value is 1 second.
send <value>	Sets the transmission rate (in seconds) of F5-OAM Loopback requests. This field is also referred as *send-frequency*. The range of values is 1..255(seconds). The default value is 5 seconds.

Variable	Value
`trap <enable|disable>`	Enables or disables the transmission of an SNMP Trap when the F5-OAM Loopback changes from the Down verify to Down state or from the Up verify to Up state. The default value is disabled.
`up <value>`	Sets the number of consecutive F5-OAM Loopback replies that must be received to change the Loopback State to Up. This configuration is also referred as Up-count. The range of values is 1..255 (seconds). The default responses are 3.

show interfaces atm pvc portlist

Display the F5-OAM Loopback configuration.

Syntax

```
show interfaces atm pvc [<portList>]
```

Parameters

Variable	Value
`portList`	Specifies the slot and the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm f5-oam

Display the F5-OAM Loopback status and statistics for a particular PVC.

Syntax

```
show interfaces atm f5-oam <portList>
```

Parameters

Variable	Value
`portList`	Specifies the slot and the port number.

Default

None

Command mode

Privileged Executive Mode

Related commands

None

show interfaces atm

Display packet loss counters on ATM ports.

Syntax

`show interfaces atm`

Parameters

None

Default

None

Command mode

Global Configuration Mode

Related commands

None

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