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4655 Great America Parkway
Santa Clara, CA 95054

Reference for the BayStack 420/425 Command Line Interface, Software Release 3.1

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- EMC - Electromagnetic Emissions – CISPR 22, Class A
- EMC - Electromagnetic Immunity – CISPR 24
- Electrical Safety – IEC 60950, with CB member national deviations

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National safety statements of compliance

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Fax:	52 5 480 2199
Input:	BayStack 425
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	200 - 240 VAC 12 A 50 to 60 Hz

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	100 - 120 VAC 16A 50 to 60 Hz
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Revision History

Date Revised	Version	Reason for revision
July 2004	1.0	Documenting new features for software 3.1 release.

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Tables

Preface

The Nortel Networks* BayStack 425-24T/48T Switch* Command Line Interface (CLI) is one tool used to configure and manage a BayStack 425-24T and BayStack 425-48T Switches. The CLI allows you to set up, configure, and manage your BayStack 420/425.

You can also use the Java* Device Manager Graphical User Interface (GUI), the Web-based management system GUI and the Console Interface (CI) menus to configure and manage the switch. For more information on these management systems, refer to *Reference for the BayStack 420/425 Switch Management Software, Software Release 3.1, Using Web-based Management for the BayStack 420/425, Software Release 3.1,* and *Using the BayStack 420/425 Switch, Software Release 3.1*.

For general information on using and configuring the BayStack 425, refer to *Using the BayStack 420/425 Switch, Software Release 3.1*.

About this guide

This guide provides information about using the features and capabilities of the CLI to manage switching operations in the BayStack 425-24T/48T Switch, as well as a complete list of CLI commands.

Before you begin

This guide is intended for network administrators with the following background:

- Basic knowledge of networks, bridging, and IP
- Familiarity with networking concepts and terminology
- Basic knowledge of network topologies

Before using this guide, you must complete the procedures discussed in the *BayStack 425 Switch Installation Instructions.*

Text conventions

angle brackets (< >)	Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. Example: If the command syntax is `ip default-gateway <XXX.XXX.XXX.XXX>`, you enter `ip default-gateway 192.32.10.12`
braces ({ })	Indicate required elements in syntax descriptions where there is more than one option. You must choose only one of the options. Do not type the braces when entering the command. Example: If the command syntax is: `http-server {enable|disable}` the options for are `enable` or `disable`.
brackets ([ ])	Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command. Example: If the command syntax is: `show ip [bootp]`, you can enter either: `show ip` or `show ip bootp`.
`plain Courier text`	Indicates command syntax and system output. Example: `TFTP Server IP Address:  192.168.100.15`
vertical line |	Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command. Example: If the command syntax is: `cli password <serial|telnet>`, you must enter either `cli password serial` or `cli password telnet`, but not both.
H.H.H.	Enter a MAC address in this format (XXXX.XXXX.XXXX).

Related publications

For more information about managing or using the BayStack 420/425 Switch, refer to the following publications:

- *Using the BayStack 420/425 Switch, Software Release 3.1* (part number 215661-B)

  Describes how to use the BayStack 425 Switch for network configuration.

- *Using Web-based Management for the BayStack 420/425, Software Release 3.1* (part number 215660-B)

  Describes how to use the Web-based management tool to configure switch features.

- *Installing the BayStack 425 Switch* (part number 215658-B)

  Describes how to install the BayStack 425 Switch.

- *Release Notes for the BayStack 420/425 Switch, Software Release 3.1* (part number 216078-B)

  Documents important changes about the software and hardware that are not covered in other related publications.

- *Getting Started with BayStack 420/425 Switch Management Software, Software Release 3.1* (part number 215663-B)

  Describes how to install the Java-based device level software management application.

- *Reference for the BayStack 420/425 Switch Management Software, Software Release 3.1* (part number 215662-C)

  Describes how to use the Java-based device level software management application.

You can print selected technical manuals and release notes free, directly from the Internet. Go to the www.nortelnetworks.com/documentation URL. (The product family for the BayStack 420/425 is Data and Internet.) Find the product for which you need documentation. Then locate the specific category and model or version for your hardware or software product. Use Adobe* Acrobat Reader* to open the manuals and release notes, search for the sections you need, and print them on most standard printers. Go to Adobe Systems at the www.adobe.com URL to download a free copy of the Adobe Acrobat Reader.

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An Express Routing Code (ERC) is available for many Nortel Networks products and services. When you use an ERC, your call is routed to a technical support person who specializes in supporting that product or service. To locate an ERC for your product or service, go to the http://www130.nortelnetworks.com/cgi-bin/eserv/common/essContactUs.jsp URL.

Chapter 1
CLI Basics

You can manage the BayStack 420/425 with a number of tools. You can use either Graphical User Interface (GUI) or the Web-based management system. You can use the Console Interface (CI menus), or you can use the Command Line Interface (CLI). (For more information on using the DM, refer to *Reference for the BayStack 420/425 Switch Management Software, Software Release 3.1*. For more information on using the Web-based management system, refer to *Using Web-based Management for the BayStack 420/425, Software Release 3.1*. For more information on using the CI menus, refer to *Using the BayStack 420/425 Switch, Software Release 3.1*.

The BayStack 425 24T/48T Command Line Interface (CLI) is a management tool that provides methods for configuring, managing, and monitoring the operational functions of the switch. You can access the CLI through a direct connection to the switch console port, or remotely using Telnet. For a complete, alphabetical list of CLI commands, refer to Appendix A.

You can use the CLI interactively, or you can load and execute CLI "scripts." CLI scripts are loaded in one of the following ways:

- By entering the `configure network` command.
- By manually loading the script in the console menu.
- By automatically loading the script at boot-up

This chapter discusses the following CLI topics:

CLI command modes

Most CLI commands are available only under a certain command mode. The BayStack 420/425 has the following four command modes:

- User EXEC
- Privileged EXEC
- Global Configuration
- Interface Configuration

The User EXEC mode is the default mode; it is also referred to as exec. This command mode is the initial mode of access upon first powering-up the BayStack 420/425. In this command mode, the user can access only a subset of the total CLI commands; however, the commands in this mode are available while the user is in any of the other four modes. The commands in this mode are those you would generally need, such as ping and logout.

Commands in the Privileged EXEC mode are available to all other modes but the User EXEC mode. The commands in this mode allow you to perform basic switch-level management tasks, such as downloading the software image, setting passwords, and booting the BayStack 420/425. The Privileged EXEC mode is also referred to as privExec mode.

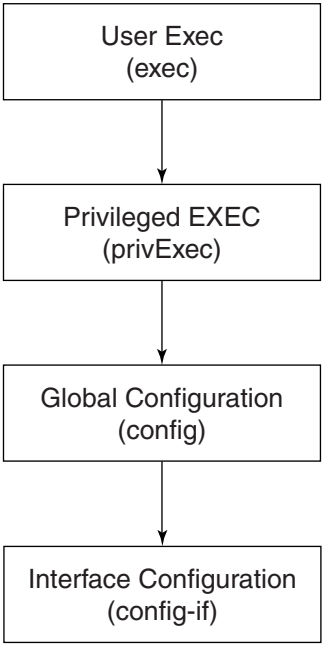
The last two command modes allow you to change the configuration of the BayStack 420/425. Changes made in these command modes are immediately applied to the switch configuration and saved to NVRAM.

The Global Configuration commands allow you to set and display general configurations for the switch, such as the IP address, SNMP parameters, the Telnet access, and VLANs. The Global Configuration mode is also referred to as config mode.

The Interface Configuration commands allow you to configure parameters for each port, such as speed and duplex mode. The Interface Configuration mode is also referred to as config-if mode.

Figure 1 provides an illustration of the hierarchy of BayStack 420/425 CLI command modes.

Figure 1 CLI command mode hierarchy



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You see a specific value for each command mode at the prompt line, and you use specific commands to enter or exit each command mode (Table 1). Additionally, you can only enter command modes from specific modes and only exit to specific command modes.

Table 1 describes the command mode prompts and entrance/exit commands

Table 1 Command mode prompts and entrance/exit commands

Command mode	Prompt	Enter/exit command
User EXEC (exec)	`BS425_48>`	Default mode, automatically enter `logout` or `exit` to quit CLI
Privileged EXEC (privExec)	`BS425_48#`	`enable` to enter from User EXEC mode `logout` or `exit` to quit CLI
Global Configuration (config)	`BS425_48(config)#`	`configure` to enter from Privileged EXEC mode `logout` to quit CLI; `end` or `exit` to exit to Privileged EXEC mode
Interface Configuration (config-if)	`BS425_48(config-if)#`	`interface Fast Ethernet {<portnum>|all}` to enter from Global Configuration mode `logout` to quit CLI; `end` to exit to Privileged EXEC mode; `exit` to exit to Global Configuration mode

The prompt displays the switch name, `BS425`, and the current CLI command mode:

- User EXEC—`BS425_48>`
- Privileged EXEC—`BS425_48#`
- Global Configuration—`BS425_48(config)#`
- Interface Configuration—`BS425_48(config-if)#`

Refer to Appendix A, for a complete, alphabetical list of all CLI commands and where they are explained.

The initial command mode in CLI depends on your access level when you logged into the BayStack 420/425 CI menus:

- With no password protection, you enter the CLI in userExec mode, and use the `enable` command to move to the privExec command mode.
- If you logged into the CI menus with read-only access, you enter the CLI in userExec mode and cannot access any other CLI command modes.

- If you logged into the CI menus with read-write access, you enter the CLI in privExec mode and use the commands to move to the other command modes.

Port numbering

The BayStack 420/425 operates either in standalone mode or in stack mode. The BayStack 425-24T Switch has 24 10/100 Mb/s ports and BayStack 425 48T has 48 10/100 ports on the front, as well as 2 combo ports, which includes 2GBIC or 2 copper ports 10/100/1000Mbps.

The CLI uses the variable `<portlist>` when a command specifies one or more ports for the command. The format of the variable `<portlist>` is different if you are working with a standalone BS 425 or with a stack.

Port numbering in standalone mode

In standalone mode, the number of port is a integer between 1-50 for BayStack 425-48T and 1-26 for BayStack 425-24T. You can use the `<portlist>` variable in the following formats:

- A single port number—an integer between 1 through 50
  - Example: `7` means port 7
- A range of port numbers—a pair of port numbers between 1 and 50 separated by a dash
  - Example: `1-3` means ports 1, 2, and 3
  - Example: `5-24` means all ports from port 5 through port 24
- A list of port numbers and/or port ranges, separated by commas
  - Example: `1,3,7` means ports 1, 3, and 7
  - Example: `1-3,9-11` means ports 1, 2, 3, 9, 10, and 11
  - Example: `1,3-5,9-11,15` means ports 1, 3, 4, 5, 9, 10, 11, and 15
- `none` means no ports.
- `all` means all the ports on the standalone BS 425, including any GBIC ports.

You can also use the unit/port convention discussed in "Port numbering in stacked mode," next, with a standalone BayStack 420/425 as long as the unit number is always 1.

Port numbering in stacked mode

In BS 425 Stack mode, use the `<portlist>` variable to represent the number of the unit within the stack, followed by a forward slash (/), followed by port number(s). The unit numbers will always be integers between 1 and 8, and the port numbers will always be integers between 1 and 50. You can also use `none` to indicate none of the ports in the stack or all to indicate `all` of the ports in the stack.

In stacked mode, use the `<portlist>` variable in the following formats:

- A single port number—an integer for the unit, followed by /, and an integer for the port number
  - — Example: `1/7` means unit 1 port 7
  - — Example: `3/24` means unit 3, port 24
- A range of port numbers—an integer for the unit, followed by /, and integers for the port number between 1 and 28 separated by a dash
  - — Example: `1/1-3` means unit 1, ports 1, 2, and 3
  - — Example: `3/5-24` means unit 3, port 5 through port 24
- A unit with no ports specified—an integer for the unit, followed by /, and the word none.
  - — `3/none` means unit 3 with no ports
- A unit with all ports specified—an integer for the unit, followed by /, and the word all.
  - — `3/all` means unit 3 with all ports
- A list of port numbers, port ranges, and/or units with all ports or no ports—using the unit/port format—separated by commas
  - — Example: `1/1,2/3,3/7` means unit 1 port 1; unit 2, port 3; and unit 3, port 7
  - — Example: `1/1-3,3/9-11` means unit 1, ports 1, 2, 3; and unit 3, ports 9, 10, and 11
  - — Example: `1/1,4/3-5,5/9-11,7/15` means unit 1, port 1; unit 4, ports 3, 4, 5; unit 5, ports 9, 10, 11; and unit 7, port 15
  - — Example: `1/3,3/ALL,4/NONE` means unit 1, port 3; unit 3, all ports; and unit 4, no ports
- `none` means no ports in the stack.
- `all` means all the ports in the stack, including all GBIC ports.

To view the unit numbers in the stack, issue the `show stack-info` command ("show stack-info command" on page 42). You must be in the Privileged EXEC (privExec) mode to issue this command.

Refer to *Using the BayStack 425 Switch Software Version 3.1* guide, for more information on numbering units within the stack.

IP notation

You enter IP addresses and subnet masks in one of the following two ways in the CLI. You can always enter an IP address in dotted decimal notation (XXX.XXX.XXX.XXX), specifying both the IP address and the subnet mask in dotted-decimal notation.

Or, when you are specifying both an IP address and a netmask, you may alternatively enter XXX.XXX.XXX.XXX/0-32, where XXX.XXX.XXX.XXX is the IP address in dotted-decimal notation and the value 0-32 specifies the number of bits starting from the left in the mask (for example, a value of 8 is 255.0.0.0).

Accessing the CLI

You access the CI menus using Telnet or a a direct connection to the switch from a terminal or personal computer (PC). You can use any terminal or PC with a terminal emulator as the CLI command station. Be sure the terminal has the following features:

- 9600 bits per second (b/s), 8 data bits, 1 stop bit, no parity, no flow control
- Serial terminal-emulation program such as Terminal or Hyperterm for Windows* 95, Windows 98, Windows 2000, Windows XP or Windows NT*.
- Cable and connector to match the male DTE connector (DB-9) on the BayStack 420/425 console port, with the DCE/DTE switch on the switch management module set to DTE
- VT100 Arrows checked in the Terminal Preferences window under Terminal Options, and Block Cursor unchecked; VT-100/ANSI checked under Emulation

To access the CLI:

1 When you access the BayStack 420/425, the banner appears (Figure 2).

Figure 2 BayStack 425-48T Switch banner

```
************************************************************************
*** BayStack 425-48T                                                 ***
*** Nortel Networks                                                  ***
*** Copyright (c) 1996-2004,  All Rights Reserved                    ***
***                                                                  ***
*** HW:0C       FW:3.1.0.4   SW:v3.1.0.60                            ***
************************************************************************
```

2 Press [Ctrl]+Y, and the Main Menu appears on the console screen (Figure 3) with the top line highlighted.

Figure 3 Main Menu for BayStack 425-48T Switch console interface

```
                        BayStack 425-48T Main Menu

                    IP Configuration/Setup...
                    SNMP Configuration...
                    System Characteristics...
                    Switch Configuration...
                    Console/Comm Port Configuration...
                    Display Hardware Units...
                    Spanning Tree Configuration...
                    TELNET/SNMP/Web Access Configuration...
                    Software Download...
                    Configuration File...
                    Display System Log...
                    Reset...
                    Reset to Default Settings...
                    Command Line Interface...
                    Logout...



Use arrow keys to highlight option, press <Return> or <Enter> to select
option.
```

3 Using the Down Arrow key, scroll down to Command Line Interface, and press [Enter]. The CLI cursor appears:

```
BS425_48T>
```

The > sign at the end of the name of the switch indicates that the CLI opens in User EXEC mode. Refer to "CLI command modes" on page 26, to select the command mode you want to use (and are authorized to use).

Setting the CLI password

You can set passwords using the `cli password` command for selected types of access using the CLI, Telnet, or RADIUS security.

For more information on Telnet access, refer to Chapter 3. For more information on using RADIUS security with the CLI, refer to Chapter 3.

cli password command

The `cli password` is in two forms and performs the following functions for either the switch of the entire stack:

- Changes the password for access through the serial console port and Telnet
- Specifies changing the password for serial console port or Telnet access and whether to authenticate password locally or with the RADIUS server

The syntax for the `cli password` commands are:

```
cli password {switch|stack} {ro|rw} <NAME> <PASSWORD>

cli password {switch|stack} {serial|telnet}
{none|local|radius}
```

The `cli password` command is in the config command mode.

Table 2 describes the parameters and variables for the `cli password` command.

Table 2 cli password command parameters and variables

Parameters and variables	Description
switch|stack	Specifies you are modifying the settings on the switch or on the stack. Note: If you omit this parameter, the system modifies the information for the current mode.
ro|rw	Specifies you are modifying the read-only (ro) password or the read-write (rw) password.
<NAME> <PASSWORD>	Enter your username for the first variable, and your password for the second variable.
serial|telnet	Specifies you are modifying the password for serial console access or for Telnet access.
none|local|radius	Specifies the password you are modifying: none—disables the password local—use the locally defined password for serial console or Telnet access radius—use RADIUS authentication for serial console or Telnet access

Getting help

When you navigate through the CLI, online help is available at all levels. Entering a portion of the command, space, and a question mark (**?**) at the prompt results in a list of all options for that command.

Refer to "help command" on page 37 for more information about the specific types of online help.

Basic navigation

This section discusses basic navigation around the CLI and between the command modes. As you see, the CLI incorporates various shortcut commands and keystrokes to simplify its use. The following topics are covered in this section:

General navigation commands

When you enter "`?`" at any point in the CLI session, the system retrieves help information for whatever portion of the command you entered thus far. Refer to "help command" on page 37 for more information.

The system records the last command in a CLI session. However, the last command is not saved across reboots.

Add the word `no` to the beginning of most CLI configuration commands to clear or remove the parameters of the actual command. For example, when you enter the command `ip stack address 192.32.154.126`, you set the IP stack address. However, when you enter `no ip stack address`, the system returns the IP address to zero. Refer to Appendix A for an alphabetical list of `no` commands.

Add the word `default` to the beginning of most CLI configuration commands returns the parameters of the actual command to the factory default values. Refer to Appendix A for an alphabetical list of `default` commands.

When you enter a portion of the command and the [Tab] key, the system finds the first unambiguous match of a command and displays that command. For example, if you enter `down`+[Tab], the system displays `download`.

Keystroke navigation

You change the location of the cursor using the key combinations shown in Table 3.

Table 3 Keystroke navigation

Key combination	Function
[Ctrl]+A	Start of line
[Ctrl]+B	Back 1 character
[Ctrl]+C	Abort command
[Ctrl]+D	Delete the character indicated by the cursor
[Ctrl]+E	End of line
[Ctrl]+F	Forward 1 character
[Ctrl]+H	Delete character left of cursor (Backspace key)
[Ctrl]+I &	Command/parameter completion
[Ctrl]+K & [Ctrl]+R	Redisplay line
[Ctrl]+N or [Down arrow]	Next history command
[Ctrl]+P or [Up arrow]	Previous history command
[Ctrl]+T	Transpose characters
[Ctrl]+U	Delete entire line
[Ctrl]+W	Delete word left of cursor
[Ctrl]+X	Delete all characters to left of cursor
[Ctrl]+z	Exit Global Configuration mode (to Privileged EXEC mode)
?	Context-sensitive help
[Esc]+c & [Esc]+u	Capitalize character at cursor
[Esc]+l	Change character at cursor to lowercase
[Esc]+b	Move back 1 word
[Esc]+d	Delete 1 word to the right
[Esc]+f	Move 1 word forward

help command

The help command is in all command modes and displays a brief message about using the CLI help system. The syntax for the help command is:

```
help
```

The help command has no parameters or variables.

Figure 4 shows the output from the help command.

Figure 4 help command output in privExec mode

```
BS425_48#help
Help may be requested at any point in a command by entering
a question mark '?'.  If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a command argument
(e.g. 'show ?') and describes each possible argument.
2. Partial help is provided when an abbreviated argument is entered and you
want to know what arguments match the input (e.g. 'show pr?'.)
```

no command

The no command is always used as a prefix to a configuration command, and it negates the action performed by that command. The effect of the no command is to remove or to clear the configuration controlled by the specified command. Various no commands are in the config and config-if command modes.

Refer to Appendix A for an alphabetical listing of all no commands.

Note: Not all configuration commands support the no prefix command.

default command

The `default` command is always used as a prefix to a configuration command, and it restores the configuration parameters to default values. The default values are specified by each command.

Refer to Appendix A for an alphabetical listing of all `default` commands.

Note: Not all commands support the `default` prefix command.

logout command

The `logout` command logs you out of the CLI session and returns you to the Main Menu of the console interface (CI) menus (Figure 3). The syntax for the `logout` command is:

```
logout
```

The `logout` command is in all command modes.

The `logout` command has no parameters or variables.

enable command

The `enable` command changes the command mode from User EXEC to privExec mode. The syntax for the `enable` command is:

```
enable
```

The `enable` command is in the exec command mode.

The `enable` command has no parameters or variables.

Note: You must have read-write access to the BayStack 420/425 switch to be able to use the `enable` command.

configure command

The `configure` command moves you to the Global Configuration (config) command mode and identifies the source for the configuration commands. The syntax for the `configure` command is:

```
configure {terminal|network}
```

The `configure` command is in the privExec command mode.

Table 4 describes the parameters and variables for the `configure` command.

Table 4 configure command parameters and variables

Parameters and variables	Description
terminal|network|	Specifies the source for the configuration commands for the BayStack 420/425: terminal—allows you to enter config mode to enter configuration commands network—allows you to set up parameters for auto-loading a script at boot-up or for loading and executing a script immediately

interface command

The `interface` command moves you to the Interface Configuration (config-if) command mode. The syntax for the `interface` command is:

```
interface FastEthernet {<portlist>}
```

The `interface` command is in the config command mode.

Table 5 describes the parameters and variables for the `interface` command.

Table 5 interface command parameters and variables

Parameters and variables	Description
<portlist>	Specifies the portlist you want to be affected by all the commands issued in the config-if command mode.

disable command

The `disable` command returns you to the User EXEC (exec) command mode. The syntax for the `disable` command is:

```
disable
```

The `disable` command is in the privExec command mode.

The `disable` command has no parameters or variables.

end command

The `end` command moves you to the priv Exec mode from either the Global Configuration (config) mode or the Interface Configuration (config-if) mode.

The syntax for the `end` command is:

```
end
```

The `end` command has no parameters or variables.

exit command

The `exit` command moves you around the command modes:

- In User EXEC (exec) and Privileged EXEC (privExec) command modes, `exit` allows you to quit the CLI session.
- In Global Configuration (config) mode, `exit` moves you back to the privExec command mode.

- In Interface Configuration (config-if) command mode, `exit` moves you back to the config mode.

The syntax for the `exit` command is:

```
exit
```

The `exit` command has no parameters or variables.

Managing basic system information

This section shows you how to view basic system information, such as the current software version and the stack mode; you can renumber the units within a stack. The following topics are covered:

- "show sys-info command," next
- "show stack-info command" on page 42
- "renumber unit command" on page 43

Refer to *Using the BayStack 420/425 Switch, Software Release 3.1*, for more information on the operation of the stack mode, including unit numbering.

show sys-info command

The `show sys-info` command displays the current system characteristics. The syntax for the `show sys-info` command is:

```
show sys-info
```

The `show sys-info` command is in the privExec command mode.

The `show sys-info` command has no parameters or variables.

Figure 5 displays sample output from the `show sys-info` command.

Figure 5 show sys-info command output

```
BS425_48#show sys-info
Operation Mode:    Switch
MAC Address:       00-0F-6A-7D-C0-A0
Reset Count:       6
Last Reset Type:   Management Reset
Power Status:      Primary Power
Autotopology:      Enabled
Local GBIC Type:   (port 49) GBIC is missing
Local GBIC Type:   (port 50) GBIC is missing
sysDescr:          BayStack 425-48T
                   HW:0C       FW:3.1.0.4    SW:v3.1.0.60
                   Mfg Date:02192004
Serial #:          SACC26008D
sysObjectID:       1.3.6.1.4.1.45.3.57.1
sysUpTime:         6 days, 14:55:27
sysServices:       3
sysContact:
sysName:
sysLocation:
```

To change the system contact, name, or location, refer to the `snmp-server` command in Chapter 2.

show stack-info command

The `show stack-info` command displays the current stack information, which includes unit numbers, GBIC, and software version for all units. The syntax for the `show stack-info` command is:

```
show stack-info
```

The `show stack-info` command is in the privExec command mode.

The `show stack-info` command has no parameters or variables.

Figure 6 displays sample output from the `show stack-info` command.

Figure 6 show stack-info command output

```
BS425_48#show stack-info
Unit #  Switch Model      GBIC Port     GBIC Port     SW Version
------  ----------------  -----------   -----------   -------------
1       BayStack 425-48T  (0/49) None   (0/50) None   v3.1.0.60
```

renumber unit command

The `renumber unit` command changes the unit number of each switch in the stack. The syntax for the `renumber unit` command is:

`renumber unit`

The `renumber unit` command is in the config command mode.

The `renumber unit` command has no parameters or variables.

Note: This command does not take effect until you reset the stack.

Managing MAC address forwarding database table

This section shows you how to view the contents of the MAC address forwarding database table, as well as setting the age-out time for the addresses. The following topics are covered:

show mac-address-table command

The `show mac-address-table` command displays the current contents of the MAC address forwarding database table. The syntax for the `show mac-address-table` command is:

```
show mac-address-table [vid <1-4094>] [aging-time] [address
<H.H.H>]
```

The `show mac-address-table` command is in the privExec command mode.

Table 6 describes the parameters and variables for the `show mac-address-table` command.

Table 6 show mac-address-table command parameters and variables

Parameters and variables	Description
vid <1-4094>	Enter the number of the VLAN you want to display the forwarding database of. Default is to display the management VLAN's database.
aging-time	Displays the time in seconds after which an unused entry is removed from the forwarding database.
address <H.H.H>	Displays a specific MAC address if it exists in the database. Enter the MAC address you want displayed.

Figure 7 displays sample output from the `show mac-address-table` command.

Figure 7 show mac-address-table command output

```
BS425_48#show mac-address-table
Mac Address Table Aging Time: 300
Number of addresses: 7

   MAC Address       Source          MAC Address       Source
-----------------  --------      -----------------  --------
00-00-A2-8D-58-50  Port: 48      00-02-E3-05-3B-B5  Port: 48
00-04-DC-76-8A-03  Port: 48      00-0F-6A-7D-C0-A0
00-60-FD-F8-FB-3B  Port: 48      00-A0-CC-58-EA-BE  Port: 48
00-C0-4F-0C-4E-24  Port: 48      08-00-20-7C-86-AD  Port: 48
BS425_48#
```

mac-address-table aging-time command

The `mac-address-table aging-time` command sets the time that the switch retains unseen MAC addresses. The syntax for the `mac-address-table aging-time` command is:

```
mac-address-table aging-time <time>
```

The `mac-address-table aging-time` command is in the config command mode.

Table 7 describes the parameters and variables for the `mac-address-table aging-time` command.

Table 7 mac-address-table aging-time command parameters and variables

Parameters and variables	Description
time	Enter the aging time in seconds that you want for MAC addresses before they are flushed.

default mac-address-table aging-time command

The `default mac-address-table aging-time` command sets the time that the switch retains unseen MAC addresses to 300 seconds. The syntax for the `default mac-address-table aging-time` command is:

```
default mac-address aging-time
```

The `default mac-address-table aging-time` command is in the config command mode.

The `default mac-address-table aging-time` command has no parameters or variables.

Chapter 2
General CLI commands

In the BayStack 420/425, the Command Line Interface (CLI) commands allows you to display and modify the switch configuration while the switch is operating.

This chapter includes information about general switch maintenance, such as setting up access parameters, upgrading the software, and setting the speed. This chapter covers the following topics:

Setting the terminal

You can view the terminal settings, set them to default settings, or customize the terminal settings.This sections covers:

show terminal command

The `show terminal` command displays the current serial port information, which includes connection speed, as well as the terminal width and length in number of characters. The syntax for the `show terminal` command is:

```
show terminal
```

The `show terminal` command is in the exec command mode.

The `show terminal` command has no parameters or variables.

Figure 8 shows the output from the `show terminal` command.

Figure 8 show terminal command output

```
BS425_48#show terminal
Terminal speed: 9600
Terminal width: 79
Terminal length: 23
BS425_48#
```

default terminal command

The `default terminal` command configures default settings for the terminal. These settings are transmit and receive speeds, terminal length, and terminal width. The syntax for the `default terminal` command is:

```
default terminal {speed|width|length}
```

The `default terminal` command is in the exec mode.

Table 8 describes the parameters and variables for the `default terminal` command.

Table 8 default terminal command parameters and variables

Parameters and variables	Description
speed|width|length	Sets the defaults • speed—transmit and receive baud rates for the terminal; default is 9600 baud • width—width of the terminal display; default is 79 characters • length—Length of the terminal display; default is 24 characters

terminal command

The `terminal` command configures the settings for the terminal. These settings are transmit and receive speeds, terminal length, and terminal width. The syntax of the `terminal` command is:

```
terminal speed {2400|4800|9600|19200|38400}|length
<1-132>|width <1-132>
```

The `terminal` command is in the exec mode.

Table 9 describes the parameters and variables for the `terminal` command.

Table 9 terminal command parameters and variables

Parameters and variables	Description
speed {2400|4800|9600|19200|38400}	Sets the transmit and receive baud rates for the terminal. You can set the speed at one of the five options shown; default is 9600.
length	Sets the length of the terminal display in characters; default is 24.
width	Sets the width of the terminal displaying characters; default 79.

Pinging

To ensure that the BayStack 420/425 has connectivity to the network, ping a device you know is connected to this network.

ping command

The `ping` command tests the network connection to another network device. The command sends an Internet Control Message Protocol (ICMP) packet from the switch to the target device. The local IP address must be set before issuing the `ping` command. Refer to "Assigning and clearing IP addresses" on page 58 for information on setting IP addresses.

The syntax for the `ping` command is:

```
ping <XXX.XXX.XXX.XXX>
```

The `ping` command is in the exec command mode.

Table 10 describes the parameters and variables for the `ping` command.

Table 10 ping command parameters and variables

Parameters and variables	Description
XXX.XXX.XXX.XXX	Specify the IP address of the target device in dotted-decimal notation.

If the device receives the packet, it sends a ping reply. When the switch receives the reply, it displays a message indicating that the specified IP address is alive. If no reply is received, a message indicates that the address is not responding.

Figure 9 shows sample `ping` responses.

Figure 9 ping command responses

```
BS425_48#ping 10.10.40.29
Host is reachable
BS425_48#ping 10.10.41.29
Host is not reachable
```

Custom Autonegotiation Advertisements

Custom Autonegotiation Advertisement (CANA) allows you to customize the capabilities that you advertise. It also allows you to control the capabilities that are advertised by the BayStack switch as part of the auto-negotiation process.

Configuring CANA using the CLI

This section describes configuring CANA using the CLI and includes the following topics:

- "Configuring CANA", next
- "Viewing current autonegotiation advertisements" on page 52
- "Viewing hardware capabilities" on page 53

- "Setting default autonegotiation advertisements" on page 55

Configuring CANA

Use the `auto-negotiation-advertisements` command to configure CANA.

To configure port 5 to advertise the operational mode of 10 Mpbs and full duplex enter the following command line:

```
auto-negotiation-advertisements port 5 10-full
```

Figure 10 shows sample output for this command.

Figure 10 auto-negotiation-advertisements sample output

```
BS425_48(config-if)#auto-negotiation-advertisements port 5 10-full
BS425_48(config-if)#
```

Viewing current autonegotiation advertisements

To view the autonegotiation advertisements for the device, enter the following command line:

```
show auto-negotiation-advertisements [port <portlist>]
```

Figure 11 and Figure 12 shows sample output for this command. Port 5 has been configured to only advertise an operational mode of 10 Mbps full duplex.

Figure 11 show auto-negotiation-advertisements command sample output.

```
BS425_48(config-if)#show auto-negotiation-advertisements
Port Autonegotiation Advertised Capabilities
---- ------------------------------------------------
1    10Full 10Half 100Full 100Half
2    10Full 10Half 100Full 100Half
3    10Full 10Half 100Full 100Half
4    10Full 10Half 100Full 100Half
5    10Full
6    10Full 10Half 100Full 100Half
7    10Full 10Half 100Full 100Half
8    10Full 10Half 100Full 100Half
9    10Full 10Half 100Full 100Half
10   10Full 10Half 100Full 100Half
11   10Full 10Half 100Full 100Half
12   10Full 10Half 100Full 100Half
13   10Full 10Half 100Full 100Half
14   10Full 10Half 100Full 100Half
15   10Full 10Half 100Full 100Half
16   10Full 10Half 100Full 100Half
17   10Full 10Half 100Full 100Half
18   10Full 10Half 100Full 100Half
19   10Full 10Half 100Full 100Half
20   10Full 10Half 100Full 100Half
----More (q=Quit, space/return=Continue)----
```

Figure 12 show auto-negotiation-advertisements command sample output

```
BS425_48(config-if)#show auto-negotiation-advertisements port 5
Port Autonegotiation Advertised Capabilities
---- ------------------------------------------------------------
5    10Full
BS425_48(config-if)#
```

Viewing hardware capabilities

To view the available operational modes for the device, enter the following command line:

```
show auto-negotiation-capabilities [port <portlist>]
```

Figure 13 and Figure 14 shows sample output for this command.

Figure 13 show auto-negotiation-capabilities command sample output

```
BS425_48(config-if)#show auto-negotiation-capabilities
Port Autonegotiation Capabilities
---- -------------------------------------------------
1    10Full 10Half 100Full 100Half
2    10Full 10Half 100Full 100Half
3    10Full 10Half 100Full 100Half
4    10Full 10Half 100Full 100Half
5    10Full 10Half 100Full 100Half
6    10Full 10Half 100Full 100Half
7    10Full 10Half 100Full 100Half
8    10Full 10Half 100Full 100Half
9    10Full 10Half 100Full 100Half
10   10Full 10Half 100Full 100Half
11   10Full 10Half 100Full 100Half
12   10Full 10Half 100Full 100Half
13   10Full 10Half 100Full 100Half
14   10Full 10Half 100Full 100Half
15   10Full 10Half 100Full 100Half
16   10Full 10Half 100Full 100Half
17   10Full 10Half 100Full 100Half
18   10Full 10Half 100Full 100Half
19   10Full 10Half 100Full 100Half
20   10Full 10Half 100Full 100Half
----More (q=Quit, space/return=Continue)----
```

Figure 14 show auto-negotiation-capabilities frp p dqg#vdp sdn# xwsxw

```
BS425_48(config-if)#show auto-negotiation-capabilities port 5
Port Autonegotiation Capabilities
---- -------------------------------------------------------
5    10Full 10Half 100Full 100Half
BS425_48(config-if)#
```

Setting default autonegotiation advertisements

To set default autonegotiation advertisements for the device, enter the following command line in the interface configuration mode:

```
default auto-negotiation-advertisements [port <portlist>]
```

or

```
no auto-negotiation-advertisements [port <portlist>]
```

To set default advertisements for port 5 of the device, enter the following command line:

```
default auto-negotiation-advertisements port 5
```

or

```
no auto-negotiation-advertisements port 5
```

Figure 15 and Figure 16 shows sample output from this command.

Figure 15 default auto-negotiation-advertisements command sample output

```
BS425_48(config-if)#default auto-negotiation-advertisements
BS425_48(config-if)#
```

Figure 16 no auto-negotiation-advertisements command sample output

```
BS425_48(config-if)#no auto-negotiation-advertisements
BS425_48(config-if)#
```

Automatically loading Configuration file

This section discusses how to download a configuration file when the system boots. You use standard CLI commands to modify the configuration file you want to download. This section covers these commands:

- "configure network command," next
- "show config-network command" on page 57

configure network command

The `configure network` command allows you to load and execute a script immediately and to configure parameters to automatically download a configuration file when you reboot the switch or stack. The syntax for the `configure network` command is:

```
configure network [load-on-boot
{disable|use-bootp|use-config}] [filename <FILENAME>]
[address <XXX.XXX.XXX.XXX>]
```

The `configure network` command is in the exec mode.

Note: When you enter `configure network` with no parameters, the system prompts you for the script file name and TFTP server address and then downloads the script.

Table 11 describes the parameters and variables for the `configure network` command.

Table 11 configure network command parameters and variables

Parameters and variables	Description
load-on-boot {disable|use-bootp|use-config	Specifies the settings for automatically loading a configuration file when the system boots: • disable—disables the automatic loading of config file • use-boot—specifies using the BootP file as the automatically loaded config file • use-config—specifies using the ASCII configuration file as the automatically loaded config file Note: If you omit this parameter, the system immediately downloads and runs the ASCII config file.
filename <FILENAME>	Specifies the file name. Note: If you omit this parameter and do not specify BootP, the system uses the configured file name.
address <XXX.XXX.XXX.XXX>	Specifies the TFTP server from which to load the file. Enter the IP address in dotted-decimal notation. Note: If you omit this parameter and do not specify BootP, the system uses the configured address.

Note: When you specify the file name or address, these parameters will be changed at the next reboot, even if you do not specify load-on-boot.

show config-network command

The `show config-network` command displays information regarding the automatic loading of the configuration file, including the current status of this feature, the file name, the TFTP server address, and the status of the previous automatic configuration command. The syntax for the `show config-network` command is:

```
show config-network
```

The `show config-network` command is in the privExec mode.

The `show config-network` command has no parameters or values.

Figure 17 shows the output for the `show config-network` command.

Figure 17 show config-network command

```
BS425_48(config)#show config-network
Auto-Load Configuration On Boot:  Disabled
Configuration Filename:
TFTP Server IP Address:  134.177.152.102
Last Auto Configuration Status:  Passed
Last Manual Configuration Status:  Passed
```

Assigning and clearing IP addresses

Using the CLI, you can assign IP addresses and gateway addresses, clear these addresses, and view configured IP addresses. This section covers these topics:

ip address command

The `ip address` command sets the IP address and subnet mask for the switch or a stack. The syntax for the `ip address` command is:

```
ip address [stack|switch] <XXX.XXX.XXX.XXX> [netmask
<XXX.XXX.XXX.XXX>]
```

The `ip address` command is in the config command mode.

If you do not enter either the stack or switch parameter, the system automatically modifies the stack IP address when in stack mode and modifies the switch IP address when in standalone mode.

Table 12 describes the parameters and variables for the `ip address` command.

Table 12 ip address command parameters and variables

Parameters and variables	Description
stack|switch	Sets the stack the IP address and netmask or the switch IP address and netmask.
XXX.XXX.XXX.XXX	Enter IP address in dotted decimal notation; netmask is optional.
netmask	Set the IP subnet mask for the stack or switch.

Note: When you change the IP address or subnet mask, you may lose connection to Telnet and the Web.

no ip address command

The `no ip address` command clears the IP address and subnet mask. This command sets the IP address and subnet mask for a switch or a stack to all zeros (0). The syntax for the `no ip address` command is:

```
no ip address {stack|switch}
```

The `no ip address` command is in the config command mode.

Table 13 describes the parameters and variables for the `no ip address` command.

Table 13 no ip address command parameters and variables

Parameters and variables	Description
stack|switch	Zeroes out the stack IP address and subnet mask for the switch IP address and subnet mask.

Note: When you change the IP address or subnet mask, you may lose connection to Telnet and the Web.You also disable any new Telnet connection, and you must connect to the serial console port to configure a new IP address.

ip default-gateway command

The `ip default-gateway` command sets the IP default gateway address for a switch or a stack to use. The syntax for the `ip default-gateway` command is:

```
ip default-gateway <XXX.XXX.XXX.XXX>
```

The `ip default-gateway` command is in the config command mode.

Table 14 describes the parameters and variables for the `ip default-gateway` command.

Table 14 ip default-gateway command parameters and variables

Parameters and variables	Description
XXX.XXX.XXX.XXX	Enter the dotted-decimal IP address of the default IP gateway.

Note: When you change the IP gateway, you may lose connection to Telnet and the Web.

no ip default-gateway command

The `no ip default-gateway` command sets the IP default gateway address to zeros (0). The syntax for the `no ip default-gateway` command is:

```
no ip default-gateway
```

The `no ip default-gateway` command is in the config command mode.

The `no ip default-gateway` command has no parameters or variables.

Note: When you change the IP gateway address, you may lose connection to Telnet and the Web. You also may disable any new Telnet connection be required to connect to the serial console port to configure a new IP gateway address.

show ip command

The `show ip` command displays the IP configurations, specifically BootP mode, stack address, switch address, subnet mask, and gateway address. This command displays the these parameters for what is configured, what is in use, and the last BootP. The syntax for the `show ip` command is:

```
show ip [bootp] [default-gateway] [address [stack|switch]]
```

The `show ip` command is in the exec command mode. If you do not enter any parameters, this command displays all the IP-related configuration information.

Table 15 describes the parameters and variables for the `show ip` command.

Table 15 show ip command parameters and variables

Parameters and variables	Description
bootp	Displays BootP-related IP information.
default-gateway	Displays the IP address of the default gateway.
address	Displays the current IP address.
stack|switch	Specifies current IP address of the stack or the switch.

Figure 18 displays a sample output of the `show ip` command.

Figure 18 show ip command output

```
BS425_48>show ip
BootP Mode: BootP Disabled

                     Configured        In Use        Last BootP
                    --------------- --------------- ---------------
Stack IP Address:   10.10.40.29     10.10.40.29     0.0.0.0
Switch IP Address:  0.0.0.0                         0.0.0.0
Subnet Mask:        255.255.255.0   255.255.255.0   0.0.0.0
Default Gateway:    10.10.40.1      10.10.40.1      0.0.0.0
BS425_48>
```

Assigning and clearing IP addresses for specific units

You can assign IP addresses for specific units within a stack. This section covers these topics:

ip address unit command

The `ip address unit` command sets the IP address and subnet mask for a specific unit in the stack. The syntax for the `ip address unit` command is:

```
ip address unit <1-8> A.B.C.D
```

The `ip address unit` command is in the config command mode.

Table 16 describes the parameters and variables for the `ip address unit` command.

Table 16 ip address unit command parameters and variables

Parameters and variables	Description
unit <1-8>	Sets the unit you are assigning an IP address.
A.B.C.D	Enter IP address in dotted decimal notation.

Note: When you change the IP address or subnet mask, you may lose connection to Telnet and the Web.

no ip address unit command

The `no ip address unit` command sets the IP address for the specified unit in a stack to all zeros (0). The syntax for the `no ip address unit` command is:

```
no ip address unit <1-8>
```

The `no ip address unit` command is in the config command mode.

Table 17 describes the parameters and variables for the `no ip address unit` command.

Table 17 no ip address command parameters and variables

Parameters and variables	Description
unit <1-8>	Zeroes out the IP address for the specified unit.

Note: When you change the IP address or subnet mask, you may lose connection to Telnet and the Web.You also disable any new Telnet connection, and you must connect to the serial console port to configure a new IP address.

default ip address unit command

The `default ip address unit` command sets the IP address for the specified unit in a stack to all zeros (0). The syntax for the `default ip address unit` command is:

```
default ip address unit <1-8>
```

The `default ip address unit` command is in the config command mode.

Table 18 describes the parameters and variables for the `default ip address unit` command.

Table 18 default ip address unit command parameters and variables

Parameters and variables	Description
unit <1-8>	Zeroes out the IP address for the specified unit.

Note: When you change the IP gateway, you may lose connection to Telnet and the Web.

Setting Telnet access

You can also access the CLI through a Telnet session. To access the CLI remotely, the management port must have an assigned IP address and remote access must be enabled. You can log on to the switch using Telnet from a terminal that has access to the BayStack 420/425.

To open a Telnet session from Device Manager, click on the Telnet icon on the tool bar (Figure 19) or click Action > Telnet on the Device Manager tool bar.

Figure 19 Telnet icon on Device Manager toolbar

Note: Multiple users can access the CLI system simultaneously, through the serial port, Telnet, and modems. The maximum number of simultaneous users is four plus one each at the serial port for a total of 12 users on the stack. All users can configure simultaneously.

You can view the Telnet allowed IP addresses and settings, change the settings, or disable the Telnet connection. This section covers the following topics:

show telnet-access command

The `show telnet-access` command displays the current settings for Telnet access. The syntax for the `show telnet-access` command is:

```
show telnet-access
```

The `show telnet-access` command is in the privExec command mode.

The `show telnet-access` command has no parameters or variables.

Figure 20 shows sample output from the `show telnet-access` command.

Figure 20 show telnet-access command output

```
BS425_48(config)#show telnet-access
TELNET Access:       Enabled
Login Timeout:       1 minute(s)
Login Retries:       3
Inactivity Timeout:  15 minute(s)
Event Logging:       All
Allowed Source IP Address  Allowed Source Mask
-------------------------  -------------------
0.0.0.0                    0.0.0.0
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
255.255.255.255            255.255.255.255
```

telnet-access command

The `telnet-access` command allows you to configure the Telnet connection used to manage the switch. The syntax for the `telnet-access` command is:

```
telnet-access [enable|disable] [login-timeout <1-10>] [retry
<1-100>] [inactive-timeout <0-60>] [logging
{none|access|failures|all}] [source-ip <1-10>
<XXX.XXX.XXX.XXX>[mask <XXX.XXX.XXX.XXX>]]
```

The `telnet-access` command is in the config command mode.

Table 19 describes the parameters and variables for the `telnet-access` command.

Table 19 telnet-access command parameters and variables

Parameters and variables	Description
enable|disable	Enables or disables Telnet connections.
login-timeout <1-10>	Specifies the time in minutes you want to wait between initial Telnet connection and accepted password before closing the Telnet connection; enter an integer between 1 and 10.
retry <1-100>	Specifies the number of times the user can enter an incorrect password before closing the connection; enter an integer between 1 and 100.
inactive timeout <0-60>	Specifies in minutes how long to wait before closing an inactive session; enter an integer between 0 and 60.
logging {none|access|failures|all]	Specifies what types of events you want to save in the event log: • none—do not save access events in the log • access—save access events in the log • failure—save failed access events in the log • all—save all access events in the log
[source-ip <1-10> <XXX.XXX.XXX.XXX>[mask <XXX.XXX.XXX.XXX>]	Specifies the source IP address from which connections are allowed. Enter the IP address either as an integer or in dotted-decimal notation. Specifies the subnet mask from which connections are allowed; enter IP mask in dotted-decimal notation. Note: These are the same source IP addresses as in the IP Manager list. For more information on the IP Manager list, refer to Chapter 3.

no telnet-access command

The `no telnet-access` command allows you to disable the Telnet connection. The syntax for the `no telnet-access` command is:

```
no telnet-access [source-ip [<1-10>]]
```

The `no telnet-access` command is in the config mode.

Table 20 describes the parameters and variables for the `no telnet-access` command.

Table 20 no telnet-access command parameters and variables

Parameters and variables	Description
source-ip [<1-10>]	Disables the Telnet access. When you do *not* use the optional parameter, the source-ip list is cleared, meaning the 1st index is set to 0.0.0.0./0.0.0.0. and the 2nd to 10th indexes are set to 255.255.255.255/255.255.255.255. When you *do* specify a source-ip value, the specified pair is set to 255.255.255.255/255.255.255.255. Note: These are the same source IP addresses as in the IP Manager list. For more information on the IP Manager list, refer to Chapter 3.

default telnet-access command

The `default telnet-access` command sets the Telnet settings to the default values. The syntax for the `default telnet-access` command is:

```
default telnet-access
```

The `default telnet-access` command is in the config command mode.

The `default telnet-access` command has no parameters or values.

Setting server for Web-based management

You can enable or disable the Web server to use for the Web-based management system. Refer to *Using Web-based Management for the BayStack 425 Switch Software Version 3.1* for information on the Web-based management system. This section discusses the following commands:

- "web-server," next
- "no web-server" on page 69

web-server

The `web-server` command enables or disables the Web server that you use for Web-based management. The syntax for the `web-server` command is:

```
web-server {enable|disable}
```

The `web-server` command is in the config mode

Table 21 describes the parameters and variables for the `web-server` command.

Table 21 web-server command parameters and variables

Parameters and variables	Description
enable|disable	Enables or disables the Web server.

no web-server

The `no web-server` command disables the Web server that you use for Web-based management. The syntax for the `no web-server` command is:

```
no web-server
```

The `no web-server` command is in the config mode.

The `no web-server` command has no parameters or values.

Setting boot parameters

You can reboot the switch or stack and configure BootP. The topics covered in this section are:

boot command

The `boot` command performs a soft-boot of the switch or stack. The syntax for the `boot` command is:

```
boot [default]
```

The `boot` command is in the privExec command mode.

Table 22 describes the parameters and variables for the `boot` command.

Table 22 boot command parameters and variables

Parameters and variables	Description
default	Restores switch or stack to factory-default settings after rebooting.

Note: When you reset to factory defaults, the switch or stack retains the stack operational mode, last reset count, and reason for last reset; these three parameters are not defaulted to factory defaults.

ip bootp server command

The `ip bootp server` command configures BootP on the current instance of the switch or server. The syntax for the `ip bootp server` command is:

```
ip bootp server {last|needed|disable|always}
```

The `ip bootp server` command is in the config command mode.

Table 23 describes the parameters and variables for the `ip bootp server` command.

Table 23 ip bootp server command parameters and variables

Parameters and variables	Description
last|needed|disable|always	Specifies when to use BootP: • last—use BootP or the last known address • needed—use BootP only when needed • disable—never use BootP • always—Always use BootP

no ip bootp server command

The `no ip bootp server` command disables the BootP server. The syntax for the `no ip bootp server` command is:

```
no ip bootp server
```

The `no ip bootp server` command is in the config command mode.

The `no ip bootp server` command has no parameters or values.

default ip bootp server command

The `default ip bootp server` command disables the BootP server. The syntax for the `default ip bootp server` command is:

```
default ip bootp server
```

The `default ip bootp server` command is in the config command mode.

The `default ip bootp server` command has no parameters or values.

Setting TFTP parameters

You can display the IP address of the TFTP server, assign an IP address you want to use for a TFTP server, copy a configuration file to the TFTP server, or copy a configuration file from the TFTP server to the switch to use to configure the switch. This section covers:

show tftp-server command

The `show tftp-server` command displays the IP address of the server used for all TFTP-related transfers. The syntax for the `show tftp-server` command is:

```
show tftp-server
```

The `show tftp-server` command is in the privExec command mode.

The `show tftp-server` command has no parameters or variables.

Figure 21 shows a sample output of the `show tftp-server` command.

Figure 21 show tftp-server command output

```
BS425_48#show tftp-server
TFTP Server IP address : 192.168.100.15
BS425_48#
```

tftp-server command

The `tftp-server` command assigns the address for the stack or switch to use for TFTP services. The syntax of the `tftp-server` command is:

```
tftp-server <XXX.XXX.XXX.XXX>
```

The `tftp-server` command is in the config command mode.

Table 24 describes the parameters and variables for the `tftp-server` command.

Table 24 tftp-server command parameters and variables

Parameters and variables	Description
XXX.XXX.XXX.XXX	Enter the dotted-decimal IP address of the server you want to use for TFTP services.

no tftp-server command

The `no tftp-server` command clears the TFTP server IP address to 0.0.0.0. The syntax of the `no tftp-server` command is:

```
no tftp-server
```

The `no tftp-server` command is in the config command mode.

The `no tftp-server` command has no parameters or values.

copy config tftp command

The `copy config tftp` command copies the current configuration file onto the TFTP server. The syntax for the `copy config tftp` command is:

```
copy config tftp [address <XXX.XXX.XXX.XXX>] filename <WORD>
```

The `copy config tftp` command is in the privExec command mode.

Table 25 describes the parameters and variables for the `copy config tftp` command.

Table 25 copy config tftp command parameters and variables

Parameters and variables	Description
address <XXX.XXX.XXX.XXX>	Specifies the TFTP server IP address; enter in dotted-decimal notation.
filename <WORD>	Specifies that you want to copy the configuration file onto the TFTP server. Enter the name you want the configuration file to have on the TFTP server.

copy tftp config command

The `copy tftp config` command retrieves the system configuration file from the TFTP server and uses the retrieved information as the current configuration on the system.The syntax for the `copy tftp config` command is:

```
copy tftp config [address <XXX.XXX.XXX.XXX>] filename <WORD>
```

The `copy tftp config` command is in the privExec command mode.

Table 26 describes the parameters and variables for the `copy tftp config` command.

Table 26 copy tftp config command parameters and variables

Parameters and variables	Description
address <XXX.XXX.XXX.XXX>	Specifies the TFTP server IP address; enter in dotted-decimal notation.
filename <WORD>	Enter the name of the configuration file you want to copy from the TFTP server.

ASCII Configuration Generator

The primary goal of ASCII Configuration Generator (ACG) is to provide the user of the BayStack 425 switch with a tool that allows them to easily modify configuration of a particular switch or a stack.

ACG generates an ASCII configuration file which reproduces the behavior of the current binary configuration file. The user can also rely on this function to maintain backup configurations, as well as use it as a reliable method for debugging the current configuration of a switch.

The BayStack 425 switch can download an editable ASCII configuration file from the TFTP server. You can load the ASCII configuration file automatically at boot time or on demand using console menus or CLI. Once downloaded, the configuration file automatically configures the switch or stack according to the Command Line Interface (CLI) commands in the file. The maximum size for an ASCII configuration file is 100 KBs; larger configuration files must be split into multiple files.

For more information on loading the ASCII configuration file automatically, see "Automatically loading Configuration file" on page 56.

The commands that are associated with ACG are:

- "show running-config command", next
- "copy running-config tftp command" on page 76

show running-config command

This command displays the current configuration of switch or a stack as a series of CLI commands.

This command must be executed in the configuration mode and has no parameters or variables.

The syntax of this command is:

```
show running-config
```

Figure 22 shows the output of the `show running-config` command

Figure 22 Output of the show running-config command

```
BS425_48#show running-config
! Embedded ASCII Configuration Generator Script
! Model = BayStack 425-48T
! Software version = v3.1.0.60
enable
configure terminal
!
! *** CORE ***
!
mac-address-table aging-time 300
autotopology
no snmp-server host
snmp-server authentication-trap enable
snmp-server community "public" ro
snmp-server community "private" rw
no radius-server
radius-server host 0.0.0.0
radius-server secondary-host 0.0.0.0
radius-server port 1645
telnet-access login-timeout 1
telnet-access retry 3
telnet-access inactive-timeout 15
telnet-access logging all
----More (q=Quit, space/return=Continue)----
```

copy running-config tftp command

This command copies contents of the current configuration file to another file on the TFTP server. The syntax of the command is

```
copy running-config tftp {<IP Address> <filename>}
```

This command can be executed in the config mode.

Table 27 describes the parameters and variables of this command.

Table 27 copy running-config tftp command parameters and variables

Parameter	Description
IP Address	Signifies the IP address of the TFTP server
Filename	Denotes the filename to store configuration commands on the TFTP server

Upgrading software

You can download the BayStack 420/425 software image that is located in non-volatile flash memory. To download the BayStack 420/425 software image, a properly configured Trivial File Transfer Protocol (TFTP) server must be present in your network, and the policy switch must have an IP address. To learn how to configure the switch or stack IP address, refer to "Assigning and clearing IP addresses" on page 58.

Caution: Do not interrupt power to the device during the software download process. A power interruption can corrupt the firmware image.

This section covers the following topics:

- "download command," next

download command

The `download` command upgrades the software for the BayStack 420/425. You can upgrade both the software image and the diagnostics image. If you upgrade to a stack configuration, the entire stack will be upgraded, and the new image is loaded onto every unit of the stack.

Note: The system resets after downloading a new image.

The syntax for the download command is:

```
download [address <ip>] {image <image-name>|image-if-newer
<image-name>|diag <filename>}
```

The download command is in the privExec command mode.

Note: You can use the download command without parameters. The system displays the most recently used TFTP serve IP address and file name; if you still want to use these, press [Enter] You can also change these.

Table 28 describes the parameters and variables for the download command.

Table 28 download command parameters and variables

Parameters and variables	Description
address <ip>	Specifies the TFTP server you want to use. Note: If this parameter is omitted, the system goes to the server specified by the tftp-server command.
image <image-name>	Enter the name of the BayStack 425 software image you want to download.
image-if-newer <image-name>	Enter the name of the BayStack 425 software image of the newer version you want to download.
diag <filename>	Enter the name of the BayStack 425 diagnostics image you want to download.

The software download process automatically completes without user intervention. The process erases the contents of flash memory and replaces it with a new software image. Take care not to interrupt the download process until after it runs to completion (the process can take up to 10 minutes, depending on network conditions).

When the download process is complete, the switch automatically resets and the new software image initiates a self-test. The system returns a message after successfully downloading a new image.

Figure 23 shows a sample output of the download command.

Figure 23 download message for BayStack 425-48T Switch

```
Download Image [/]
Saving Image [-]
Finishing Upgrading Image
```

During the download process, the BayStack 425 Switch is not operational. You can monitor the progress of the download process by observing the LED indications.

Displaying interfaces

You can view the status of all interfaces on the switch or stack, including MultiLink Trunk membership, link status, autonegotiation, and speed.

show interfaces command

The `show interfaces` command displays the current configuration and status of all interfaces. The syntax for the `show interfaces` command is:

```
show interfaces [names] [<portlist>]
```

The `show interfaces` command is in the exec command mode.

Table 29 describes the parameters and variables for the `show interfaces` command.

Table 29 show interfaces command parameters and variables

Parameters and variables	Description
names <portlist>	Displays the interface names; enter specific ports if you want to see only those.

Figure 24 displays a sample output of the `show interfaces names` command.

Figure 24 show interfaces names command output

```
BS425_48 SW 1.1 in SC2-02 LAB>show interfaces names 1-3
Port Name
---- ------------------------------------------------------------------
1     LabBldg4
2     Testing
3     Floor1Bldg2
```

Figure 25 Shows a sample output of the `show interfaces` command without the names variable.

Figure 25 show interfaces command output

```
BS425_48(config)#show interfaces
              Status                        Auto                          Flow
Port  Trunk Admin   Oper Link LinkTrap Negotiation Speed    Duplex Control
----  ----- ------- ---- ---- -------- ----------- -------- ------ -------
1           Enable  Down Down Enabled  Enabled
2           Enable  Down Down Enabled  Enabled
3           Enable  Down Down Enabled  Enabled
4           Enable  Down Down Enabled  Enabled
5           Enable  Down Down Enabled  Enabled
6           Enable  Down Down Enabled  Enabled
7           Enable  Down Down Enabled  Enabled
8           Enable  Down Down Enabled  Enabled
9           Enable  Down Down Enabled  Enabled
10          Enable  Down Down Enabled  Enabled
11          Enable  Down Down Enabled  Enabled
12          Enable  Down Down Enabled  Enabled
13          Enable  Down Down Enabled  Enabled
14          Enable  Down Down Enabled  Enabled
15          Enable  Down Down Enabled  Enabled
16          Enable  Down Down Enabled  Enabled
17          Enable  Down Down Enabled  Enabled
18          Enable  Down Down Enabled  Enabled
19          Enable  Down Down Enabled  Enabled
----More (q=Quit, space/return=Continue)----
```

Setting SNMP parameters

You can set various SNMP parameters and traps, as well as disable SNMP traps. This section covers:

snmp-server command

The `snmp-server` command configures various SNMP parameters. The syntax for the `snmp-server` command is:

```
snmp-server
{{enable|disable}|authentication-trap|bootstrap|community
<community-string> contact <text>|host <host-ip>
<community-string>|location <text>|name <text>|user
<text>|view <text>}
```

The `snmp-server` command is in the config command mode.

Table 30 describes the parameters and variables for the `snmp-server` command.

Table 30 snmp-server command parameters and variables

Parameters and variables	Description
authentication-trap	Enables generation of SNMP authentication failure traps.
bootstrap	Generates SNMP bootstrap parameters
community <community-string>	Changes the read-only (ro) or read-write (rw) community strings for SNMP v1 and SNMPv2c access. Enter a community string that works as a password and permits access to the SNMP protocol.
contact <text>	Specifies the SNMP sysContact value; enter an alphanumeric string.
disable	Disables SNMP access
enable	Enables SNMP access.
host <host-ip> <community-string>	Configures an SNMP trap destination: • host-ip—enter a dotted-decimal IP address of a host that will be the trap destination • community-string—enter a community string that works as a password and permits access to the SNMP protocol
location <text>	Specifies the SNMP sysLocation value; enter an alphanumeric string.
name <text>	Specifies the SNMP sysName value; enter an alphanumeric string.
user	Creates SNMPv3 user
view	Creates or modifies an SNMP access view

no snmp-server command

The `no snmp-server` command disables SNMP or clears the configuration. If you omit the parameters, this command disables SNMP access. The syntax for the `no snmp-server` command is:

```
no snmp-server [authentication-trap|community [ro|rw]
contact|host [<host-ip> <community-string>]|location
|name|user|view]
```

The `no snmp-server` command is in the config command mode.

Table 31 describes the parameters and variables for the `no snmp-server` command.

Table 31 no snmp-server command parameters and variables

Parameters and variables	Description
enable|disable	With no parameters, disables SNMP access.
authentication-trap	Disables authentication failure traps.
community	Disables the community string.
ro|rw	Disables either read-only or read-write access.
contact <text>	Clears the SNMP sysContact value.
host <host-ip> <community-string>	Removes an SNMP trap destination or all destinations.
location	Clears the SNMP sysLocation value.
name	Clears the SNMP sysName value
user	Removes SNMPv3 user
view	Removes SNMPv3 view

Note: Disabling SNMP access will also lock you out of the DM management system.

snmp trap link-status command

The `snmp trap link-status` command enables the linkUp/linkDown traps for the port. The syntax of the command is:

```
snmp trap link-status [port <portlist>]
```

The `snmp trap link-status` command is in the config-if command mode.

Table 32 describes the parameters and variables for the `snmp trap link-status` command.

Table 32 snmp trap link-status command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to enable the linkUp/linkDown traps on. Enter the port numbers or all. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

no snmp trap link-status command

The `no snmp trap link-status` command disables the linkUp/linkDown traps for the port. The syntax of the command is:

```
no snmp trap link-status [port <portlist>]
```

The `no snmp trap link-status` command is in the config-if command mode.

Table 33 describes the parameters and variables for the `no snmp trap link-status` command.

Table 33 no snmp trap link-status command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to disable the linkUp/linkDown traps on. Enter the port numbers or all. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

default snmp trap link-status command

The `default snmp trap link-status` command disables the linkUp/linkDown traps for the port. The syntax of the command is:

```
default snmp trap link-status [port <portlist>]
```

The `default snmp trap link-status` command is in the config-if command mode.

Table 34 describes the parameters and variables for the default `snmp trap link-status` command.

Table 34 default snmp trap link-status command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to disable the linkUp/linkDown traps on. Enter the port numbers or all. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Setting the system event log

You can set the system event log to log different levels of events. This section covers:

show logging

The `show logging` command displays the current contents of the system event log. The syntax for the `show logging` command is:

```
show logging [critical] [serious] [informational]
```

The `show logging` command is in the privExec command mode.

Table 35 describes the parameters and variables for the `show logging` command.

Table 35 show logging command parameters and variables

Parameters and variables	Description
critical	Displays critical log messages.
serious	Displays serious log messages.
informational	Displays informational log messages.

Figure 26 shows the output of the `show logging informational` command.

Figure 26 show logging command output

```
BS425_48#show logging informational
Type Unit Time        Index     Src Message
---- ---- ---------- --------- --- -------
I    1    00:00:01:52 1             Warm Start Trap
I    1    00:00:01:52 2             Enterprise Specific Trap
I    1    00:00:01:57 3             Link Up Trap
I    1    00:00:01:57 4             Link Up Trap
I    1    00:00:01:57 5             Link Up Trap
I    1    00:00:01:57 6             Link Up Trap
```

logging

The `logging` command configures the system settings for the system event log. The syntax for the `logging` command is:

```
logging [enable|disable] [level
critical|serious|informational] [nv-level
critical|serious|informational|none]
```

The `logging` command is in the config command mode.

Table 36 describes the parameters and variables for the `logging` command.

Table 36 logging command parameters and values

Parameters and variables	Description
enable|disable	Enables or disables the event log (default is enabled).
level critical|serious|informational	Specifies the level of logging stored in dynamic memory.
nv-level critical|serious|informational|none	Specifies the level of logging stored in non-volatile memory.

no logging

The `no logging` command disables the system event log. The syntax for the `no logging` command is:

```
no logging
```

The `no logging` command is in the config command mode.

The `no logging` command has no parameters or values.

default logging

The `default logging` command configures the system settings as the factory default settings for the system event log. The syntax for the `default logging` command is:

```
default logging
```

The `default logging` command is in the config command mode.

The `default logging` command has no parameters or values.

clear logging command

The `clear logging` command clears all log messages in DRAM. The syntax for the `clear logging` command is:

```
clear logging [nv]
```

The `clear logging` command is in the privExec command mode.

Table 37 describes the parameters and values for the `clear logging` command.

Table 37 clear logging command parameters and values

Parameters and values	Description
nv	Clears all log messages in both DRAM and NVRAM.

Displaying port statistics

You can display the statistics for a port for both received and transmitted traffic. This section covers:

- "show port-statistics command," next

- "clear-stats command" on page 90

show port-statistics command

Note: You must be in interface configuration mode to use the show port-statistics command.

The `show port-statistics` command displays the statistics for the port on both received and transmitted traffic. The syntax for the `show port-statistics` command is:

```
show port-statistics [port <portlist>]
```

The `show port-statistics` command is in the config-if command mode.

Table 38 describes the parameters and variables for the `show port-statistics` command.

Table 38 show port-statistics command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to configure to display statistics on; enter the port numbers. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Figure 27 shows sample output from the `show port-statistics` command.

Figure 27 show port-statistics command output

```
BS425_48(config-if)#show port-statistics

Received
    Packets:                0
    Multicasts:             0
    Broadcasts:             0
    Total Octets:           0
    Lost Packets:           0
    FCS Errors:             0
    Undersized Packets:     0
    Oversized Packets:      0
    Filtered Packets:       0
    Flooded Packets:        0
    Frame Errors:           0
Transmitted
    Packets:                0
    Multicasts:             0
    Broadcasts:             0
    Total Octets:           0
    Collisions:             0
    Single Collisions:      0
    Multiple Collisions:    0
    Excessive Collisions:   0
    Deferred Packets:       0
    Late Collisions:        0
Received / Transmitted
    Packets 64 bytes:       0
            65-127 bytes:   0
            128-255 bytes:  0
            256-511 bytes:  0
            512-1023 bytes: 0
            1024-1518 bytes: 0
```

clear-stats command

The `clear-stats` command clears all statistical information for the specified port. All counters are set to zero (0). The syntax for the `clear-stats` command is:

```
clear-stats [port <portlist>]
```

The `clear-stats` command is in the config-if command mode.

Table 39 describes the parameters and variables for the `clear-stats` command.

Table 39 clear-stats command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to clear of statistical information; enter the port numbers. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Enabling or disabling a port

You can enable or disable a port using the CLI. This section covers the following commands:

- "shutdown command," next
- "no shutdown command" on page 92

shutdown command

The `shutdown` command disables the port. The syntax for the `shutdown` command is:

```
shutdown [port <portlist>]
```

The `shutdown` command is in the config-if command mode.

Table 40 describes the parameters and variables for the `shutdown` command.

Table 40 shutdown command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to shut down or disable. Enter the port numbers you want to disable. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

no shutdown command

The `no shutdown` command enables the port. The syntax for the `no shutdown` command is:

```
no shutdown [port <portlist>]
```

The `no shutdown` command is in the config-if command mode.

Table 41 describes the parameters and variables for the `no shutdown` command.

Table 41 no shutdown command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to enable. Enter the port numbers you want to disable. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Naming ports

You can name a port using the CLI. This section covers the following commands:

- "name command," next
- "no name command" on page 93

- "default name command" on page 94

name command

The name command allows you to name ports or to change the name. The syntax for the name command is:

```
name [port <portlist>] <LINE>
```

The name command is in the config-if command mode.

Table 42 describes the parameters and variables for the name command.

Table 42 name command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to name. Note: If you omit this parameter, the system uses the port number you specified in the interface command.
<LINE>	Enter up to 26 alphanumeric characters.

no name command

The no name command clears the port names; it resets the field to an empty string. The syntax for the no name command is:

```
no name [port <portlist>]
```

The no name command is in the config-if command mode.

Table 43 describes the parameters and variables for the `no name` command.

Table 43 no name command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to clear of names. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

default name command

The `default name` command clears the port names; it resets the field to an empty string. The syntax for the `default name` command is:

```
default name [port <portlist>]
```

The `default name` command is in the config-if command mode.

Table 44 describes the parameters and variables for the `default name` command.

Table 44 default name command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to clear of names. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Setting port speed

You can set the speed and duplex mode for a port. This section covers:

- "speed command," next
- "default speed command" on page 95
- "duplex command" on page 96

- "default duplex command" on page 97

speed command

The `speed` command sets the speed of the port. The syntax for the `speed` command is:

```
speed [port <portlist>] {10|100|1000|auto}
```

The `speed` command is in the config-if command mode.

Table 45 describes the parameters and variables for the `speed` command.

Table 45 speed command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to configure the speed. Enter the port numbers you want to configure. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.
10|100|1000|auto	Sets speed to: • 10—10 Mb/s • 100—100 Mb/s • 1000—1000 Mb/s or 1 GB/s • auto—autonegotiation

Note: When you set the port speed for autonegotiation, ensure that the other side of the link is also set for autonegotiation.

default speed command

The `default speed` command sets the speed of the port to the factory default speed. The syntax for the `default speed` command is:

```
default speed [port <portlist>]
```

The `default speed` command is in the config-if command mode.

Table 46 describes the parameters and variables for the `default speed` command.

Table 46 default speed command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to set the speed to factory default. Enter the port numbers you want to set. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

duplex command

The `duplex` command specifies the duplex operation for a port. The syntax for the `duplex` command is:

```
duplex [port <portlist>] {full|half|auto}
```

The `duplex` command is in the config-if command mode.

Table 47 describes the parameters and variables for the `duplex` command.

Table 47 duplex command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port number to configure the duplex mode. Enter the port number you want to configure, or all to configure all ports simultaneously. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.
full|half|auto	Sets duplex to: • full—full-duplex mode • half—half-duplex mode • auto—autonegotiation

Note: When you set the duplex mode for autonegotiation, ensure that the other side of the link is also set for autonegotiation.

default duplex command

The `default duplex` command sets the duplex operation for a port to the factory default duplex value. The syntax for the `default duplex` command is:

```
default duplex [port <portlist>]
```

The `default duplex` command is in the config-if command mode.

Table 48 describes the parameters and variables for the `default duplex` command.

Table 48 default duplex command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to reset the duplex mode to factory default values. Enter the port numbers you want to configure, or all to configure all ports simultaneously. The default value is autonegotiation. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Enabling Autopology

You can enable the Optivity* Autopology* protocol using the CLI. Refer to the www.nortelnetworks.com/documentation URL for information on Autopology. (The product family for Optivity and Autotopology is Data and Internet.). This section covers the following commands:

- "autotopology command," next
- "no autotopology command" on page 98

autotopology command

The `autotopology` command enables the Autotopology protocol. The syntax for the `autotopology` command is:

```
autotopology
```

The `autotopology` command is in the config command mode.

The `autotopology` command has no parameters or values.

no autotopology command

The `no autotopology` command disables the Autotopology protocol. The syntax for the `no autotopology` command is:

```
no autotopology
```

The `no autotopology` command is in the config command mode.

The `no autotopology` command has no parameters or values.

default autotopology command

The `default autotopology` command enables the Autotopology protocol. The syntax for the `default autotopology` command is:

```
default autotopology
```

The `default autotopology` command is in the config command mode.

The `default autotopology` command has no parameters or values.

Enabling flow control

If you use a Gigabit Ethernet MDA with the BayStack 420/425, you control traffic on this port using the `flowcontrol` command. This section covers the following commands:

flowcontrol command

The `flowcontrol` command is used only on Gigabit Ethernet ports and controls the traffic rates during congestion. The syntax for the `flowcontrol` command is:

```
flowcontrol [port <portlist>]
{asymmetric|symmetric|auto|disable}
```

The `flowcontrol` command is in the config-if mode.

Table 49 describes the parameters and variables for the `flowcontrol` command.

Table 49 flowcontrol command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to configure for flow control. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.
asymmetric|symmetric|auto|disable	Sets the mode for flow control: • asymmetric—enables the local port to perform flow control on the remote port • symmetric—enables the local port to perform flow control • auto—sets the port to automatically determine the flow control mode (default) • disable—disables flow control on the port

no flowcontrol command

The `no flowcontrol` command is used only on Gigabit Ethernet ports and disables flow control. The syntax for the `no flowcontrol` command is:

```
no flowcontrol [port <portlist>]
```

The `no flowcontrol` command is in the config-if mode.

Table 50 describes the parameters and variables for the `no flowcontrol` command.

Table 50 no flowcontrol command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to disable flow control. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

default flowcontrol command

The `default flowcontrol` command is used only on Gigabit Ethernet ports and sets the flow control to auto, which automatically detects the flow control. The syntax for the `default flowcontrol` command is:

```
default flowcontrol [port <portlist>]
```

The `default flowcontrol` command is in the config-if mode.

Table 51 describes the parameters and variables for the `default flowcontrol` command.

Table 51 default flowcontrol command parameters and variables

Parameters and variables	Description
port <portlist>	Specifies the port numbers to default to auto flow control. Note: If you omit this parameter, the system uses the port number you specified in the `interface` command.

Banner Display Function

Setting Banner Display

This release of BayStack 425 provides the banner control feature. The banner control feature provides you an option to specify banner display. This section covers the following commands:

- "banner command for displaying banner" next
- "show banner command" on page 102
- "no banner command" on page 102
- "default banner command" on page 103

banner command for displaying banner

The `banner` command for displaying banner specifies the banner displayed at startup; either static or custom. The syntax for the `banner` command to display banner is:

```
banner [ custom | static | disabled | <1-15> LINE | clear ]
```

The `banner` command for displaying banner is in the config mode.

Table 52 describes the parameters for the banner command.

Table 52 banner command parameters

Parameters	Description
static	Displays the default agent-banner.
custom	Displays the custom agent-banner.
disabled	Skips the agent-banner display.
<1-15> *LINE*	Fills the Nth line of the custom banner $(1 \leq N \leq 15)$ with the text specified in *LINE*.
clear	clears the custom agent-banner.

show banner command

The `show banner` command displays the banner. The syntax for the `show banner` command is:

```
show banner [ custom | static ]
```

The `show banner` command is in the config mode.

Table 53 describes the parameters for the banner command.

Table 53 show banner command parameters

Parameters	Description
static	Displays default banner
custom	Displays custom banner
(if empty)	Displays static, custom or disabled status if parameter is not entered.

no banner command

The `no-banner` command allows you to clear all lines of a previously stored custom banner. The syntax for the `no-banner` command is:

```
no-banner
```

The `no-banner` command is in the config mode.

default banner command

The `default banner` command allows you to restore the default banner. The syntax for the `default banner` command is:

```
no banner
```

The `default banner` command is in the config mode.

Setting the default management interface

You can set the default management interface when you connect to the BayStack 420/425 through console port or Telnet. This selection is stored in NVRAM and propagated to all units in a stack configuration.

On system startup, the banner displays and prompts the user to enter Ctrl+Y. After entering these characters, the system displays either a menu or the Nortel Networks Command Line Interface (NNCLI) prompt, depending on which is set using this command.

When using the console port, you must logout for the new mode to display. When using Telnet, all subsequent Telnet sessions display the selection.

cmd-interface command

The `cmd-interface` command allows you to set the default management interface when you use the console port or Telnet.

The syntax for the `cmd-interface` command is:

```
cmd-interface {cli|menu}
```

The `cmd-interface` command is in the privExec command mode.

Table 54 describes the parameters and variables for the `cmd-interface` command.

Table 54 cmd-interface command parameters and variables

Parameters and variables	Description
cli|menu	Allows you to set the default management system when using console port or Telnet: • cli—the system automatically enters the NNCLI mode and displays the NNCLI prompt after you enter Crtl+Y • menu—the system automatically enters the CI menu mode and displays the menus after you enter Ctrl+Y.

Chapter 3
Security

This chapter describes the security commands available with the CLI. There are four types of security available on the BayStack 420/425:

Refer to *Using the BayStack 425 Switch Software Version 3.1* for more information on these security features, as well as using the console interface (CI) menus. Refer to *Using Web-based Management for the BayStack 425 Switch Software Version 3.1* for information on configuring these features using the Web-based management system, and refer to *Reference for the BayStack 425 Switch Management Software Version 3.1* for information on configuring with the DM.

Using MAC address security

You configure the BaySecure* application using MAC addresses with the following commands:

- "mac-security mac-da-filter command" on page 112

show mac-security command

The `show mac-security` command displays configuration information for the BaySecure application. The syntax for the `show mac-security` command is:

```
show mac-security {config|mac-address-table [address
<macaddr>]|port|security-lists|mac-da-filter}
```

The `show mac-security` command is in the privExec command mode.

Table 55 describes the parameters and variables for the `show mac-security` command.

Table 55 show mac-security command parameters and variables

Parameters and variables	Description
config	Displays general BaySecure configuration.
mac-address-table [address <macaddr>]	Displays contents of BaySecure table of allowed MAC addresses: • address—specifies a single MAC address to display; enter the MAC address
port	Displays the BaySecure status of all ports.
security-lists	Displays port membership of all security lists.
mac-da-filter	Displays MAC DA filtering addresses.

Figure 28 shows sample output from the `show mac-security` command.

Figure 28 show mac-security command output

```
BS425_48#show mac-security config
MAC Address Security: Disabled
MAC Address Security SNMP-Locked: Disabled
Partition Port on Intrusion Detected: Disabled
DA Filtering on Intrusion Detected: Disabled
Generate SNMP Trap on Intrusion: Disabled
Current Learning Mode: Disabled
Learn by Ports: NONE
```

mac-security command

The `mac-security` command modifies the BaySecure configuration. The syntax for the `mac-security` command is:

```
mac-security [disable|enable] [filtering {enable|disable}]
[intrusion-detect {enable|disable|forever}] [intrusion-timer
<1-65535>] [learning-ports <portlist>] [learning
{enable|disable}]|mac-address-table|mac-da-filter|security
list [snmp-lock {enable|disable}] [snmp-trap
{enable|disable}]
```

The `mac-security` command is in the config command mode.

Table 56 describes the parameters and variables for the `mac-security` command.

Table 56 mac-security command parameters and values

Parameters and variables	Description
disable|enable	Disables or enables MAC address-based security.
filtering {enable|disable}	Enables or disables destination address (DA) filtering on intrusion detected.
intrusion-detect {enable|disable|forever}	Specifies partitioning of a port when an intrusion is detected: • enable—port is partitioned for a period of time • disabled—port is not partitioned on detection • forever—port is partitioned until manually changed

Table 56 mac-security command parameters and values

Parameters and variables	Description
intrusion-timer <1-65535>	Specifies, in seconds, length of time a port is partitioned when an intrusion is detected; enter the number of you want.
learning {enable|disable}	Specifies MAC address learning: • enable—enables learning by ports • disable—disables learning by ports
learning-ports <portlist>	Specifies MAC address learning. Learned addresses are added to the table of allowed MAC addresses. Enter the ports you want to learn; it can be a single port, a range of ports, several ranges, all, or none.
mac-address-table	Adds addresses to MAC security address table.
mac-da-filter	Adds or deletes MAC DA filtering addresses.
security-list	Modifies security list port membership.
snmp-lock {enable|disable}	Enables or disables a lock on SNMP write-access to the BaySecure MIBs.
snmp-trap {enable|disable}	Enables or disables trap generation upon intrusion detection.

mac-security mac-address-table address command

The `mac-security mac-address-table address` command assigns either a specific port or a security list to the MAC address. This removes any previous assignment to the specified MAC address and creates an entry in the BaySecure table of allowed MAC addresses. The syntax for the `mac-security mac-address-table address` command is:

```
mac-security mac-address-table address <H.H.H.> {port
<portlist>|security-list <1-32>}
```

Note: In this command, `portlist` must specify only a single port

The `mac-security mac-address-table address` command is in the config command mode.

Table 57 describes the parameters and variables for the `mac-security mac-address-table address` command.

Table 57 mac-security mac-address-table address parameters and values

Parameters and variables	Description
<H.H.H>	Enter the MAC address in the form of H.H.H.
port <portlist>|security-list <1-32>	Enter the port number or the security list number.

mac-security security-list command

The `mac-security security-list` command assigns a list of ports to a security list. The syntax for the `mac-security security-list` command is:

```
mac-security security-list <1-32> <portlist>
```

The `mac-security security-list` command is in the config command mode.

Table 58 describes the parameters and variables for the `mac-security security-list` command.

Table 58 mac-security security-list command parameters and values

Parameters and variables	Description
<1-32>	Enter the number of the security list you want to use.
<portlist>	Enter a list or range of port numbers.

no mac-security command

The `no mac-security` command disables MAC source address-based security. The syntax for the `no mac-security` command is:

```
no mac-security
```

The `no mac-security` command is in the config command mode.

The `no mac-security` command has no parameters or values.

no mac-security mac-address-table command

The no mac-security mac-address-table command clears entries from the MAC address security table. The syntax for the no mac-security mac-address-table command is:

```
no mac-security mac-address-table {address <H.H.H.> |port
<portlist>|security-list <1-32>}
```

The no mac-security mac-address-table command is in the config command mode.

Table 59 describes the parameters and variables for the no mac-security mac-address-table command.

Table 59 no mac-security mac-address-table command parameters and values

Parameters and variables	Description
address <H.H.H>	Enter the MAC address in the form of H.H.H.
port <portlist>	Enter a list or range of port numbers.
security-list <1-32>	Enter the security list number.

no mac-security security-list command

The no mac-security security-list command clears the port membership of a security list. The syntax for the no mac-security security-list command is:

```
no mac-security security-list <1-32>
```

The no mac-security security-list command is in the config command mode.

Table 60 describes the parameters and variables for the `no mac-security security-list` command.

Table 60 no mac-security security-list command parameters and values

Parameters and variables	Description
<1-32>	Enter the number of the security list you want to clear.

mac-security command for specific ports

The `mac-security` command for specific ports configures the BaySecure status of specific ports. The syntax for the `mac-security` command for specific ports is:

```
mac-security [port <portlist>] {disable|enable|learning}
```

The `mac-security` command for specific ports is in the config-if command mode

Table 61 describes the parameters and variables for the `mac-security` command for specific ports.

Table 61 mac-security command for a single port parameters and variables

Parameters and variables	Description
port <portlist>	Enter the port numbers.
disable|enable|learning	Directs the specific port: • disable—disables BaySecure on the specified port and removes the port from the list of ports for which MAC address learning is being performed • enable—enables BaySecure on the specified port and removes the port from the list of ports for which MAC address learning is being performed • learning—disables BaySecure on the specified port and adds these port to the list of ports for which MAC address learning is being performed

mac-security mac-da-filter command

The `mac-security mac-da-filter` command allows you to filter packets from up to 10 specified MAC DAs. You also use this command to delete such a filter and then receive packets from the specified MAC DA**.** The syntax for the `mac-security mac-da-filter` command is:

```
mac-security mac-da-filter {add|delete}<H.H.H.>
```

The `mac-security mac-da-filter` command is in the config command mode.

Table 62 describes the parameters and variables for the `mac-security mac-da-filter` command.

Table 62 mac-security mac-da-filter command parameters and values

Parameters and variables	Description
{add|delete} <H.H.H>	Add or delete the specified MAC address; enter the MAC address in the form of H.H.H.

Note: Ensure that you do not enter the MAC address of the management unit.

Using RADIUS authentication

Using a the RADIUS protocol and a server, you can configure the BayStack 420/425 for authentication. With the CLI system, you use the following commands:

- "show radius-server command," next
- "radius-server command" on page 113
- "no radius-server command" on page 114

show radius-server command

The `show radius-server` command displays the RADIUS server configuration. The syntax for the `show radius-server` command is:

```
show radius-server
```

The `show radius-server` command is in the privExec command mode.

The `show radius-server` command has no parameters or variables.

Figure 29 shows sample output from the `show radius-server` command.

Figure 29 show radius-server command output

```
BS425_48#show radius-server
Primary Host:  0.0.0.0
Secondary Host:  0.0.0.0
Port:  1645
Key:
BS425_48#
```

radius-server command

The `radius-server` command changes the RADIUS server settings. The syntax for the `radius-server` command is:

```
radius-server host <address> [secondary-host <address>] port
<num> key <string>
```

The `radius-server` command is in the config command mode.

Table 63 describes the parameters and variables for the `radius-server` command.

Table 63 radius-server command parameters and variables

Parameters and variables	Description
host <address>	Specifies the primary RADIUS server. Enter the IP address of the RADIUS server.
secondary-host <address>	Specifies the secondary RADIUS server Enter the IP address of the secondary RADIUS server.
port <num>	Enter the port number of the RADIUS server.
key <string>	Specifies a secret text string that is shared between the switch and the RADIUS server. Enter the secret string, which is an alphanumeric string up to 16 characters.

no radius-server command

The `no radius-server` command clears the RADIUS server settings. The syntax for the `no radius-server` command is:

```
no radius-server
```

The `no radius-server` command is in the config command mode.

The `no radius-server` command has no parameters or values.

Chapter 4
Spanning Tree, MLT, and Port-Mirroring

This chapter describes how to configure the Spanning Tree Protocol, a spanning tree group, Multi-Link Trunking (MLT), and port-mirroring. This chapter covers the following topics:

Refer to the *Using the BayStack 420/425 Switch, Software Release 3.1* for more information on multiple spanning tree groups, spanning tree, MLT, and port-mirroring, as well as configuration directions using the console interface (CI) menus. Refer to *Using Web-based Management for the BayStack 420/425, Software Release 3.1* for information on configuring these features using the Web-based management system, and refer to *Reference for the BayStack 420/425 Switch Management Software, Software Release 3.1* for configuration information for the DM.

Using spanning tree

The CLI allows you to configure a spanning tree, to add or remove VLANs to the spanning tree, and to configure the usual spanning tree parameters and FastLearn. This section covers the following topics:

For detailed information on spanning tree parameters, spanning tree groups, and configuration guidelines, refer to *Using the BayStack 420/425 Switch, Software Release 3.1*.

show spanning-tree command

The `show spanning-tree` command displays spanning tree configuration information that is specific to either the spanning tree group or to the port. The syntax for the `show spanning-tree` command is:

```
show spanning-tree {config|port}
```

The `show spanning-tree` command is in the privExec command mode,

Table 64 describes the parameters and variables for the `show spanning-tree` command.

Table 64 show spanning-tree command parameters and variables

Variables	Values
config	Displays Spanning Tree configuration.
port	Displays Spanning Tree status of each port.

Figure 30 displays sample output from the `show spanning-tree` command for the default spanning tree (STP1).

Figure 31 shows the spanning tree parameters by port.

Figure 30 show spanning-tree command output by port

```
BS425_48#show spanning-tree port
Unit Port Trunk   Participation   Priority  Path Cost    State
---- ---- -----  ---------------  --------  ---------  ----------
1    1           Normal Learning  128       10         Forwarding
1    2           Normal Learning  128       10         Forwarding
1    3           Normal Learning  128       10         Forwarding
1    4           Normal Learning  128       10         Forwarding
1    5           Normal Learning  128       10         Forwarding
1    6           Normal Learning  128       10         Forwarding
1    7           Normal Learning  128       10         Forwarding
1    8           Normal Learning  128       10         Forwarding
1    9           Normal Learning  128       10         Forwarding
1    10          Normal Learning  128       10         Forwarding
1    11          Normal Learning  128       10         Forwarding
1    12          Normal Learning  128       10         Forwarding
1    13          Normal Learning  128       10         Forwarding
1    14          Normal Learning  128       10         Forwarding
1    15          Normal Learning  128       10         Forwarding
1    16          Normal Learning  128       10         Forwarding
1    17          Normal Learning  128       10         Forwarding
1    18          Normal Learning  128       10         Forwarding
1    19          Normal Learning  128       10         Forwarding
1    20          Normal Learning  128       10         Forwarding
----More (q=Quit, space/return=Continue)----
```

Figure 31 show spanning-tree command output

```
BS425_48#show spanning-tree config
Bridge Priority:          8000
Designated Root:          8000000342f6de21
Root Port:                2
Root Path Cost:           30
Hello Time:               2 seconds
Maximum Age Time:         20 seconds
Forward Delay:            15 seconds
Bridge Hello Time:        2 seconds
Bridge Maximum Age Time: 20 seconds
Bridge Forward Delay:     15 seconds
```

spanning-tree command by port

The `spanning-tree` command by port sets each Spanning Tree Protocol (STP) for ports. The syntax for the `spanning-tree` command by port is:

```
spanning-tree [port <portlist>] [learning
{disable|normal|fast}] [cost <1-65535>] [priority <0-255>]
```

The `spanning-tree` command by port is in the config-if command mode.

Table 65 describes the variables and values for the `spanning-tree` command by port.

Table 65 spanning-tree command by port variables

Variables	Values
FORWARD-TIME	4 - 30 seconds
HELLO-TIME	1 - 10
MAX-AGE	6 - 40
PRIORITY	0 - 65535

For guidelines for configuring STGs, VLANs, and MLTs, refer to Chapter 1 of the *Using the BayStack 420/425 Switch, Software Release 3.1*.

default spanning-tree command by port

The `default spanning-tree` command by port sets the spanning tree values for the ports within the specified spanning tree group to the factory default settings. The syntax for the `default spanning-tree` command by port is:

```
default spanning-tree [port <portlist>] [stp] [learning]
[cost] [priority]
```

The `default spanning-tree` command by port is in the config-if command mode.

Table 66 describes the parameters and variables for the `default spanning-tree` command by port.

Table 66 default spanning-tree command by port parameters and variables

Parameters and variables	Description
port <portlist>	Enables spanning tree for the specified port or ports; enter port or ports you want set to factory spanning tree default values. Note: If you omit this parameter, the system uses the port number you specified when you issued the `interface` command.
learning	Sets the spanning tree learning mode to factory default value. Default value for learning is normal mode.
cost	Sets the path cost to factory default value. Default value for path cost depends on the type of port.
priority	Sets the priority to factory default value. Default value for the priority is 0x8000.

no spanning-tree command by port

The `no spanning-tree` command by port disables spanning tree for a port in a specific spanning tree group. The syntax for the `no spanning-tree` command by port is:

```
no spanning-tree [port <portlist>]
```

The `no spanning-tree` command by port is in the config-if command mode.

Table 67 describes the parameters and variables for the `no spanning-tree` command by port.

Table 67 no spanning-tree command by port parameters and variables

Parameters and variables	Description
port <portlist>	Disables spanning tree for the specified port or ports; enter port or ports you want enabled for STP. Note: If you omit this parameter, the system uses the port number you specified when you issued the `interface` command.

Using Multi-Link Trunking

You configure Multi-Link Trunking (MLT) using the following commands:

- "show mlt command," next
- "mlt command" on page 121
- "no mlt command" on page 122

Note: For guidelines for configuring STG, VLANs, and MLTs, refer to Chapter 1 of the *Using the BayStack 420/425 Switch, Software Release 3.1*.

show mlt command

The `show mlt` command displays the Multi-Link Trunking (MLT) configuration and utilization. The syntax for the `show mlt` command is:

```
show mlt [utilization <1-6>]
```

The `show mlt` command is in the privExec command mode.

Table 68 describes the parameters and variables for the `show mlt` command.

Table 68 show mlt command parameters and variables

Parameters and variables	Description
utilization <1-6>	Displays the utilization of the specified enabled MLT(s) in percentages.

Figure 32 shows sample output from the `show mlt` command.

Figure 32 show mlt command output

```
BS425_48#show mlt
Trunk Name              Members              STP Learn Bpdu   Mode   Status
-------------------------------------------------------------------------
1     Trunk #1          NONE                 Normal    All    Basic  Disabled
2     Trunk #2          NONE                 Normal    All    Basic  Disabled
3     Trunk #3          NONE                 Normal    All    Basic  Disabled
4     Trunk #4          NONE                 Normal    All    Basic  Disabled
5     Trunk #5          NONE                 Normal    All    Basic  Disabled
6     Trunk #6          NONE                 Normal    All    Basic  Disabled
```

mlt command

The `mlt` command configures a Multi-Link Trunk (MLT). The syntax for the `mlt` command is:

```
mlt <id> [name <trunkname>] [enable|disable] [member
<portlist>][learning {disable|fast|normal}]
```

The `mlt` command is in the config command mode.

Table 69 describes the parameters and variables for the `mlt` command.

Table 69 mlt command parameters and variables

Parameters and variables	Description
id	Enter the trunk ID; range is 1 to 6.
name <trunkname>	Specifies a text name for the trunk; enter up to 16 alphanumeric characters.
enable|disable	Enables or disables the trunk.
member <portlist>	Enter the ports that you want as members of the trunk.
learning <disable|fast|normal>	Sets STP learning mode.

Note: You can modify an MLT when it is enabled or disabled.

no mlt command

The `no mlt` command disables a Multi-Link Trunk (MLT), clearing all the port members. The syntax for the `no mlt` command is:

```
no mlt [<id>]
```

The `no mlt` command is in the config command mode.

Table 70 describes the parameters and variables for the `no mlt` command.

Table 70 no mlt command parameters and variables

Parameters and variables	Description
<id>	Enter the trunk ID to disable the trunk and to clear the port members of the specified trunk.

Using port-mirroring

You use port-mirroring to monitor traffic. Refer to *Using the BayStack 420/425 Switch, Software Release 3.1* for configuration guidelines for port-mirroring. This section covers the following commands:

- "show port-mirroring command," next
- "port-mirroring command" on page 123
- "no port-mirroring command" on page 124

show port-mirroring command

The `show port-mirroring` command displays the port-mirroring configuration. The syntax for the `show port-mirroring` command is:

```
show port-mirroring
```

The `show port-mirroring` command is in the privExec command mode.

The `show port-mirroring` command has no parameters or variables.

Figure 33 displays sample output from the `show port-mirroring` command.

Figure 33 show port-mirroring command output

```
BayStack 425_48(config)#show port-mirroring
Monitoring Mode: Xrx ( -> Port X )
Monitor Port:    1/3
Port X:          1/1
```

port-mirroring command

The `port-mirroring` command sets the port-mirroring configuration. The syntax of the `port-mirroring` command is:

```
port-mirroring mode
{disable |
Xrx monitor-port <portlist> mirror-port-X <portlist>
```

Note: In this command, `portlist` must specify only a single port

The `port-mirroring` command is in the config command mode.

Table 71 describes the parameters and variables for the `port-mirroring` command.

Table 71 port-mirroring command parameters and variables

Parameters and variables	Description
disable	Disables port-mirroring.
Xrx	Mirror packets received on port X.

no port-mirroring command

The `no port-mirroring` command disables port-mirroring. The syntax of the `no port-mirroring command` is:

```
no port-mirroring
```

The `no port-mirroring` command is in the config command mode.

The `no port-mirroring` command has no parameters or variables.

Chapter 5
VLANs

This chapter describes how to configure virtual LANs and IGMP snooping parameters. This chapter covers the following topic:

Refer to the *Using the BayStack 420/425 Switch, Software Release 3.1* for more information on VLANs, IGMP snooping, and multicast groups, as well as configuration directions using the console interface (CI) menus. Refer to *Using Web-based Management for the BayStack 420/425*, *Software Release 3.1* for information on configuring these features using the Web-based management system, and refer to *Reference for the BayStack 420/425 Switch Management Software, Software Release 3.1* for configuration information for the DM.

Configuring and displaying VLANs

You configure and display VLANs using a variety of command modes, depending on whether you are working with ports, protocol-based VLANs, or MAC source address-based VLANs. You can also enable or disable the automatic PVID feature. This section covers the following topics:

- “auto-pvid command” on page 131
- “no auto-pvid command” on page 131
- “vlan ports command” on page 132
- “vlan members command” on page 133

Refer to Appendix A for an alphabetical list of the VLAN commands.

show vlan interface info command

The `show vlan interface info` command displays VLAN settings associated with a port, including tagging information, PVID number, priority, and filtering information for tagged, untagged, and unregistered frames. The syntax for the `show vlan interface info` command is:

```
show vlan interface info [<portlist>]
```

The `show vlan interface info` command is in the privExec command mode.

Table 72 describes the parameters and variables for the `show vlan interface info` command.

Table 72 show vlan command interface info parameters and variables

Parameters and variables	Description
<portlist>	Enter the list of ports you want the VLAN information for, or enter all to display all ports.

Figure 34 shows sample output from the `show vlan interface info` command.

Figure 34 show vlan interface info output

```
BS425_48(config-if)#show vlan interface info
      Filter
     Untagged
Port  Frames  PVID Priority Remarking Tagging  Name
---- -------- ---- -------- --------- -------- ---------
1    No       1    0        Disabled  Disabled Port 1
2    No       1    0        Disabled  Disabled Port 2
3    No       1    0        Disabled  Disabled Port 3
4    No       1    0        Disabled  Disabled Port 4
5    No       1    0        Disabled  Disabled Port 5
6    No       1    0        Disabled  Disabled Port 6
7    No       1    0        Disabled  Disabled Port 7
8    No       1    0        Disabled  Disabled Port 8
9    No       1    0        Disabled  Disabled Port 9
10   No       1    0        Disabled  Disabled Port 10
11   No       1    0        Disabled  Disabled Port 11
12   No       1    0        Disabled  Disabled Port 12
13   No       1    0        Disabled  Disabled Port 13
14   No       1    0        Disabled  Disabled Port 14
15   No       1    0        Disabled  Disabled Port 15
16   No       1    0        Disabled  Disabled Port 16
17   No       1    0        Disabled  Disabled Port 17
18   No       1    0        Disabled  Disabled Port 18
----More (q=Quit, space/return=Continue)----
```

show vlan interface vids command

The `show vlan interface vids` command displays port memberships in VLANs. The syntax for the `show vlan interface vids` command is:

```
show vlan interface vids [<portlist>]
```

The `show vlan interface vids` command is in the privExec command mode.

Table 73 describes the parameters and variables for the `show vlan interface vids` command.

Table 73 show vlan command interface vids parameters and variables

Parameters and variables	Description
<portlist>	Enter the list of ports you want the VLAN information for, or enter all to display all ports.

Figure 35 shows sample output from the `show vlan interface vids` command.

Figure 35 show vlan interface vids output

```
BS425_48#show vlan interface vids
Unit/Port VLAN VLAN Name          VLAN VLAN Name          VLAN VLAN Name
--------- ---- ----------------   ---- ----------------   ------------------
1/1       1    VLAN #1
--------- ---- ----------------   ---- ----------------   ------------------
1/2       1    VLAN #1            2    VLAN #2
--------- ---- ----------------   ---- ----------------   ------------------
1/3       1    VLAN #1
--------- ---- ----------------   ---- ----------------   ------------------
1/4       1    VLAN #1
--------- ---- ----------------   ---- ----------------   ------------------
1/5       1    VLAN #1
--------- ---- ----------------   ---- ----------------   ------------------
1/6       1    VLAN #1
--------- ---- ----------------   ---- ----------------   ------------------
```

vlan mgmt command

The `vlan mgmt` command allows you to set a VLAN as the management VLAN. The syntax for the `vlan mgmt` command is:

```
vlan mgmt <1-4094>
```

The `vlan mgmt` command is in the config command mode.

Table 74 describes the parameters and variables for the `vlan mgmt` command.

Table 74 vlan mgmt command parameters and variables

Parameters and variables	Description
<1-4094>	Enter the number of the VLAN you want to serve as the management VLAN.

default vlan mgmt command

The `default vlan mgmt` command resets the management VLAN. The syntax for the `default vlan mgmt` command is:

```
default vlan mgmt
```

The `default vlan mgmt` command is in the config command mode.

The `default vlan mgmt` command has no variables or parameters.

vlan create command

The `vlan create` command allows you to create a VLAN. You create a VLAN by setting the state of a previously non-existent VLAN.

The syntax for the `vlan create` command is:

```
vlan create <1-4094>]
```

The `vlan create` command is in the config command mode.

Table 75 describes the parameters and variables for the `vlan create` command.

Table 75 vlan create command parameters and variables

Parameters and variables	Description
<1-4094>	Enter the number of the VLAN to create.

Note: This command fails if the VLAN already exists.

vlan delete command

The `vlan delete` command allows you to delete a VLAN. The syntax for the `vlan delete` command is:

```
vlan delete <1-4094>
```

The `vlan delete` command is in the config command mode.

Table 76 describes the parameters and variables for the `vlan delete` command.

Table 76 vlan delete command parameters and variables

Parameters and variables	Description
<1-4094>	Enter the number of the VLAN to delete.

no vlan command

The `no vlan` command allows you to delete a VLAN. The syntax for the `no vlan` command is:

```
no vlan <1-4094>
```

The `no vlan` command is in the config command mode.

Table 77 describes the parameters and variables for the `no vlan` command.

Table 77 no vlan command parameters and variables

Parameters and variables	Description
<1-4094>	Enter the number of the VLAN to delete.

vlan name command

The `vlan name` command allows you to change the name of an existing VLAN. The syntax for the `vlan name` command is:

```
vlan name <1-4094> <line>
```

The `vlan name` command is in the config command mode.

Table 78 describes the parameters and variables for the `vlan name` command.

Table 78 vlan name command parameters and variables

Parameters and variables	Description
<1-4094>	Enter the number of the VLAN you want to change the name of.
<line>	Enter the new name you want for the VLAN.

auto-pvid command

The `auto-pvid` command allows you to enable the automatic PVID feature. The syntax for the `auto-pvid` command is:

```
auto-pvid
```

The `auto-pvid` command is in the config command mode.

The `auto-pvid` command has no parameters or variables.

For more information on the automatic PVID feature, refer to *Using the BayStack 425 Switch Software Version 3.1*.

no auto-pvid command

The `no auto-pvid` command allows you to disable the automatic PVID feature. The syntax for the `no auto-pvid` command is:

```
no auto-pvid
```

The `no auto-pvid` command is in the config command mode.

The `no auto-pvid` command has no parameters or variables.

For more information on the automatic PVID feature, refer to *Using the BayStack 425 Switch Software Version 3.1*.

vlan ports command

The `vlan ports` command configures the VLAN-related settings for a port.The syntax for the `vlan ports` command is:

```
vlan ports [<portlist>] [tagging {enable|disable}] [pvid <1-4094>]
[filter-untagged-frame {enable|disable}] [remarking
{enable|disable}] [priority <0-7>] [name <line>]
```

The `vlan ports` command is in the config command mode.

Table 79 describes the parameters and variables for the `vlan ports` command.

Table 79 vlan ports command parameters and variables

Parameters and variables	Description
<portlist>	Enter the port number(s) you want to configure for a VLAN.
tagging {enable|disable}	Enables or disables the port as a tagged VLAN member for egressing packet.
pvid <1-4094>	Associates the port with a specific VLAN
filter-untagged-frame {enable|disable}	Enables or disables the port to filter received untagged packets.
remarking {enable|disable}	Enables or disables the tagged frames
priority <0-7>	Sets the port as a priority for the switch to consider as it forwards received packets.
name <line>	Enter the name you want for this port. Note: This option can only be used if a single port is specified in the <portlist>.

vlan members command

The `vlan members` command adds a port to or deletes a port from a VLAN. The syntax for the `vlan members` command is:

```
vlan members [add|remove] <1-4094> <portlist>
```

The `vlan members` command is in the config mode.

Table 80 describes the parameters and variables for the `vlan members` command.

Table 80 vlan members command parameters and variables

Parameters and variables	Description
add|remove	Adds a port to or removes a port from a VLAN. Note: If you omit this parameter, you are setting the exact port membership for the VLAN; the prior port membership of the VLAN is discarded and replaced by the new list of ports.
<1-4094>	Specifies the target VLAN.
portlist	Enter the list of port(s) you are adding, removing, or assigning to the VLAN.

Appendix A
Command List

This appendix provides the complete CLI command list in alphabetical order, with approximate page references for the beginning pages of further explanations.

Note: This information is presented for reference only and should not be considered to be an exact representation.

Table 81 CLI command list

Command	Page No.
auto-negotiation-advertisements	page 52
auto-pvid	page 131
autotopology	page 98
boot [default]	page 70
clear logging [nv]	page 88
clear-stats [port<portlist>]	page 90
cli-password {switch|stack} {ro|rw} <WORD> <WORD> cli-password {switch|stack} {serial|telnet} {none|local|radius}	page 33
cmd-interface	page 103
configure {terminal|network|memory}	page 39
configure network [load-on-boot {disable|use-bootp|use-config}] configure network [filename <WORD>] configure network [address <XXX.XXX.XXX.XXX>]	page 56
Configuring CANA	page 52
Configuring CANA using the CLI	page 51
copy config tftp [address <XXX.XXX.XXX.XXX>] filename <WORD>	page 73
copy tftp config [address <XXX.XXX.XXX.XXX>] filename <WORD>	page 74
default auto-negotiation-advertisements	page 55

Table 81 CLI command list (continued)

Command	Page No.
default autotopology	page 98
default duplex [port <portlist>]	page 97
default flowcontrol [port <portlist>]	page 100
default ip address unit <1-8>	page 64
default ip bootp server	page 71
default logging	page 88
default mac-address-table aging-time	page 46
default name [port <port.ist>]	page 94
default snmp trap link-status [port <portlist>]	page 85
default spanning-tree [port <portlist>] [stp <1-8>] [learning] [cost] [priority]	page 119
default speed [port <portlist>]	page 95
default telnet-access	page 68
default terminal {speed|length|width}	page 49
default vlan mgmt <1-4094>	page 129
disable	page 40
download [address <ip>] {image <image-name> [bs425-image <image-name>]|diag <filename>}	page 77
duplex [port <portlist>] {full|half|auto}	page 96
enable	page 38
end	page 40
exit	page 40
flowcontrol [port <portlist>] {asymmetric|symmetrid|auto|disable}	page 99
help	page 37
interface FastEthernet {<portlist>}	page 39
ip address unit <1-8> A.B.C.D	page 62
ip address[stack|switch] <XXX.XXX.XXX.XXX> [netmask <XXX.XXX.XXX.XXX>]	page 58
ip bootp server {last|needed|disable|always}	page 70
ip default-gateway <XXX.XXX.XXX.XXX>	page 60
logging [enable|disable] [level critical|serious|informational] [nv-level critical|serious|informational|none]	page 87
logout	page 38

Table 81 CLI command list (continued)

Command	Page No.
mac-address-table aging-time <time>	page 45
mac-security [disable|enable] [filtering {enable|disable}] [intrusion-detect{enable|disable|forever}] [intrusion-timer <1-65535>] [learning-ports <portlist>] [learning {enable|disable}] [snmp-lock {enable|disable}] [snmp-trap {enable|disable}]	page 107
mac-security [port <portlist>] {disable|enable|learning}	page 111
mac-security mac-address-table address <H.H.H.> {port <portlist>|security-list <1-32>}	page 108
mac-security mac-da-filter	page 112
mac-security security-list <1-32> mac-security security-list <portlist>	page 109
mlt <id> [name <trunkname>] [enable|disable] [member <portlist>]	page 121
name [port <portlist>] <LINE>	page 93
no auto-pvid	page 131
no autotopology	page 98
no flowcontrol [port <portlist>]	page 100
no ip address {stack|switch}	page 59
no ip address unit <1-8>	page 63
no ip bootp server	page 71
no ip default-gateway	page 60
no logging	page 87
no mac-security	page 109
no mac-security mac-address-table {address <H.H.H>|port <portlist>|security-list <1-32>]	page 110
no mac-security security-list <1-32>	page 110
no mlt [<id>]	page 122
no name [port <portlist>]	page 93
no port-mirroring	page 124
no radius-server	page 114
no shutdown [port <portlist>]	page 92
no snmp server [authentication-trap|community [ro|rw] contact|host [<host-ip> <community-string>] [location|name]	page 83
no snmp trap link-status [port <portlist>]	page 84
no spanning-tree [port <portlist>] [stp <1-8>]	page 119
no telnet-access [source-ip [<1-10>]]	page 67

Table 81 CLI command list (continued)

Command	Page No.
no tftp-server	page 73
no vlan <1-4094>	page 130
no web-server	page 69
ping <XXX.XXX.XXX.XXX>	page 50
port-mirroring mode disable port-mirroring mode Xrx monitor-port <portlist> mirror-port X <portlist>	page 123
radius-server host <address> [secondary-host <address>] port <num> key <string>	page 113
renumber unit	page 43
Setting Banner Display	page 101
show config-network	page 57
show interfaces [names] [<portlist>]	page 79
show ip [bootp] [default-gateway] [address [stack|switch]]	page 61
show logging [critical] show logging [serious] show logging [informational]	page 86
show mac-address-table [aging-time] show mac-address-table [vid <1-4094>] [address <H.H.H.>]	page 44
show mac-security {config|mac-address-table [addr <macaddr>]|port|security-lists}	page 106
show mlt [utilization <1-6>]	page 120
show port-mirroring	page 123
show port-statistics [port <portlist>]	page 89
show radius-server	page 113
show spanning-tree {stp <1-8>] {config|port}	page 116
show sys-info	page 41
show telnet-access	page 65
show terminal	page 48
show tftp-server	page 72
show vlan interface info [<portlist>]	page 126
show vlan interface vids [<portlist>]	page 127
show-stack-info	page 42
shutdown [port <portlist>]	page 91

Table 81 CLI command list (continued)

Command	Page No.
snmp trap link-status [port <portlist>]	page 84
snmp-server {{enable|disable}|authentication-trap|community <community-string> [ro|rw] contact <text>|host <host-ip> <community-string>|location >text>|name <text>}	page 82
spanning-tree [port <portlist>] [stp <1-8>] [learning {disable|normal|fast}] [cost <1-65535>] [priority <0-255>]	page 118
speed [port <portlist>] {10|100|1000|auto}	page 95
telnet-access [enable|disable] [login-timeout <1-10>] [retry <1-100>] [inactive-timeout <0-60>] [logging {none|access|failures|all}] [source-ip <1-10> <XXX.XXX.XXX.XXX> [mask <XXX.XXX.XXX.XXX>]]	page 66
terminal {2400|4800|9600|19200|38400}|length <1-132>|width <1-132>	page 49
tftp-server <XXX.XXX.XXX.XXX>	page 73
viewing hardware capabilities	page 53
vlan create <1-4094>	page 129
vlan delete <1-4094>	page 130
vlan members <1-4094> <portlist> vlan members add <1-4094> <portlist> vlan members remove <1-4094> <portlist>	page 133
vlan mgmt <1-4094>	page 128
vlan name <1-4094> <line>	page 131
vlan ports [<portlist>] [tagging {enable|disable}] [pvid <1-4094>] [filter-tagged-frame {enable|disable}] [filter-untagged-frame {enable|disable}] [priority <0-7>] [name <line>]	page 132
web-server{enable|disable}	page 69

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