Getting Started with the BayStack 380-24F Gigabit Switch Management Software

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Preface

The Nortel Networks* BayStack* 380-24F Gigabit Switch management software provides the means to configure and monitor the operation of your BayStack 380-24F switches. Management software includes the console interface resident in each BayStack 380-24F Gigabit Switch; Java-based Device Manager software, which you install on a management station in the network; and a Web-based management interface accessible through a Web browser.

This guide provides instructions for installing the Device Manager software and summarizes procedures for using Device Manager and the Web-based management interface. For information about using the console interface, refer to *Using the BayStack 380-24F Gigabit Switch*.

This guide includes the following information:

- A summary of management options for the switch
- Instructions to install Device Manager software
- A summary of navigation procedures for Device Manager and initial setup procedures using Device Manager
- An overview of the Web management interface
- Common startup problems and how to troubleshoot them

Before you begin

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

- Basic knowledge of networks, Ethernet* bridging, and IP and IPX routing
- Familiarity with networking concepts and terminology
- Basic knowledge of network topologies
- Experience with windowing systems, graphical user interfaces (GUIs), or Web browsers

Text conventions

This guide uses the following 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
	`ping <ip_address>`, you enter `ping 192.32.10.12`
bold Courier text	Indicates command names and options and text that you need to enter.
	Example: Enter **# chmod 755 ./install_dmvm**.
italic text	Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore.
	Example: If the command syntax is
	`install_dmvm <filename> <target_directory>`, *target_directory* is one variable and you substitute one value for it.
plain Courier text	Indicates command syntax and system output, for example, prompts and system messages.
	Example: `% JDM`
separator (>)	Shows menu paths.
	Example: Edit > File System identifies the File System option on the Edit menu.

Related publications

For more information about using the BayStack 380-24F Gigabit Switch, refer to the following publications:

- *Using the BayStack 380-24F Gigabit Switch* (part number 214391-A)

    Describes how to install and use the BayStack 380-24F Gigabit Switch; includes instructions to use the console interface to configure the switch.

- *Installing the BayStack 380-24F Gigabit Switch* (part number 214390-A)

    Provides installation instructions for the switch in English and five other languages.

- *Reference for the BayStack 380-24F Management Software* (part number 214393-A)

    Describes how to use Device Manager software to manage the switch.

- *Using Web-Based Management for the BayStack 380-24F Gigabit Switch* (part number 214394-A)

    Describes how to use the Web-based management interface to configure and monitor switch operations.

Hard-copy technical manuals

You can print selected technical manuals and release notes free, directly from the Internet. Go to the www.nortelnetworks.com/documentation URL. 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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How to get help

If you purchased a service contract for your Nortel Networks product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

If you purchased a Nortel Networks service program, contact one of the following Nortel Networks Technical Solutions Centers:

Technical Solutions Center	Telephone
Europe, Middle East, and Africa	(33) (4) 92-966-968
North America	(800) 4NORTEL or (800) 466-7835
Asia Pacific	(61) (2) 9927-8800
China	(800) 810-5000

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 www.nortelnetworks.com/ URL and click ERC at the bottom of the page.

Chapter 1
Management basics

This chapter summarizes basic operational procedures in a BayStack 380-24F
Gigabit Switch and provides an overview of switch management options. Topics
in this chapter include the following information:

- Overview of management tools (next)
- Setting IP parameters for management access to the switch (page 18)
- Access levels and passwords (page 20)

Management tools

You can use three management tools to monitor and manage your BayStack
380-24F Gigabit Switch:

- Device Manager software page 17
- Web-based management interface (page 18)
- Console port interface (Refer to *Using the BayStack 380-24F Gigabit Switch*.)

Device Manager software

The Device Manager software for the BayStack 380-24F switches is a graphical
user interface (GUI) that allows you to manage a switch. Device Manager
provides the options found in other management tools, as well as the ability to
manage VLANs and MultiLink Trunks. You can display or print statistics and
other data in one of three graph formats. To use Device Manager, you must have
network connectivity to a management station running Device Manager on one of
the supported platforms, and you must also assign an IP address to the switch.

Web-based management interface

The BayStack 380-24F Gigabit Switch Web-based management interface is a Web-based graphical user interface that you use with a Web browser to manage a switch. You can access devices on your network from various locations within the network.

To access the Web-based management interface, you need a Web browser and an IP address for the switch.

Setting the switch IP parameters

To allow management access to the switch, you must assign IP parameters for the switch.

To set the IP parameters:

1   Connect a terminal to the Console port on the switch.

2   Set the terminal protocol as follows:

- 9600 baud
- No parity
- 8 bits
- 1 stop bit
- Flow control set to Xon/Xoff
- Window Terminal Emulator option set to VT100
- Terminal Preferences: Function, Arrow, and Control keys active
- Buffer size set to 24

3   Connect the switch to power.

4   After the Nortel Networks logo is displayed, press [Ctrl]-Y to display the Main Menu (Figure 1).

The screen displays the Main Menu for a standalone switch.

Figure 1 Main menu

```
                       BayStack 380-24F  Main Menu


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

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

5 Select IP Configuration/Setup (or press i) to display the IP
Configuration/Setup menu (Figure 2).

→ **Note:** The default management VLAN in the BayStack 380-24F
Gigabit Switch is VLAN 1. To manage the switch, make sure the
network management station is on the management VLAN or is
connected to the management VLAN through routers.

Figure 2 IP Configuration/Setup menu


```
                         IP Configuration/Setup

              BootP Request Mode:  [ BootP Disabled        ]


                     Configurable        In Use         Last BootP
                     -------------       ----------      ------------

In-Band Switch IP Address:  [ 0.0.0.0 ]                 0.0.0.0
In-Band Subnet Mask:        [ 0.0.0.0 ]     0.0.0.0     0.0.0.0

Default Gateway:            [ 0.0.0.0 ]     0.0.0.0     0.0.0.0

IP Address to Ping:         [ 0.0.0.0 ]
Start Ping:                 [ No  ]




Use space bar to display choices, press <Return> or <Enter> to select choice.
Press Ctrl-R to return to previous menu.  Press Ctrl-C to return to Main Menu.
```

6 Do one of the following, based on your configuration:

- For a standalone switch, enter the IP address of the switch in the In-Band Switch IP Address field.

→ **Note:** If the In-Band Subnet Mask field does not already contain a value when you enter the IP address in the In-Band Switch IP Address field, the switch software provides an in-use default value for the In-Band Subnet Mask field, based on the class of the entered IP address.

7 In the In-Band Subnet Mask field, enter the IP subnet mask address.

8 In the Default Gateway field, enter the default gateway address.

Access levels and passwords

Access to management functions for BayStack 380-24F switches is controlled by passwords and community strings. Different passwords or community strings allow access to different levels of management functions. Access to Device Manager requires entering community strings. Access to the Web-based interface requires a user identification and a password.

Chapter 2
Installing Device Manager software

Device Manager software is available on the Nortel Networks Services and Support Web site as a self-extracting executable file. This chapter provides instructions to install the Device Manager software in a Windows or UNIX environment.

Accessing the Nortel Networks Web site

To access the Nortel Networks Services and Support Web site:

1 Go to the following URL:

www12.nortelnetworks.com/software

2 Under Switching Products, choose BayStack 380-24F Gigabit Switch, and click Go.

3 Scroll down to BayStack 380-24F Gigabit Switch Device Manager:

- Java Device Manager v5.6.0 for Unix (Solaris, HP-UX, AIX)
- Java Device Manager v5.6.0 for PC (95/98/NT)

4 Follow the instructions in one of the next sections, depending on the platform on which you will install the software.

Windows installation

The minimum system requirements for installing Device Manager on Microsoft* Windows NT, Windows 95, or Windows 98 are:

- 266 Pentium II processor or above

- 128 MB DRAM
- 240 MB space on the hard disk

Downloading the Device Manager Windows software

To obtain the Device Manager software from the Nortel Networks Web site:

1 Go to the following URL:

http://www.nortelnetworks.com/support

2 Click on the product for which you want JDM.

A page opens that displays all versions of that product line.

3 Click Software under the specific product you are working with.

The software page opens.

4 Click the Java Device Manager version you want.

The Software Detail Information page opens.

5 Click JDM for PC (95/98/NT)

A File Download dialog box opens that asks you to either run this program from its current location or to download the Device Manager software to your system.

6 Choose a directory to download the software to. The software download is a self-extracting .exe file.

→ **Note:** In the file name, *xxx* represents the current version of the Device Manager software.

Installing the Device Manger Windows software

To install the Device Manager software in a Windows environment:

1 Close all programs.

**2** Navigate to the directory on your system where you downloaded the Device Manager software.

3 Double-click the jdm_xxx.exe file.

→ Note: Always install a new DM application into a clean directory, and uninstall previous versions. A dm.ini file from a previous version of DM may be moved into this directory.

An Install screen opens that has text running through the screen. Then a Nortel dialog box opens with a ribbon on the bottom showing the progress. Finally, the InstallAnywhere* Introduction dialog box opens (Figure 3).

Figure 3 InstallAnywhere Introduction dialog box
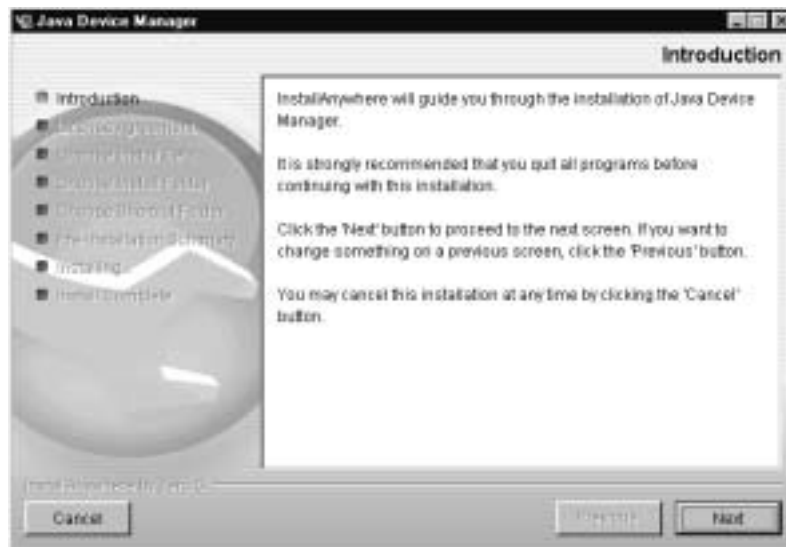
4 Click Next to continue the installation process.

The License Agreement dialog box opens (Figure 4).

Figure 4 License Agreement dialog box

5 Click I accept the terms of the license agreement as shown in Figure 4.

6 Click Next.

The Choose Install Set dialog box opens (Figure 5).

Figure 5 Choose Install Set dialog box

7 Do *one* of the following:

— Select Typical installation to install the common set features, as well as online help.

— Select Minimal installation to select features to install (recommended for those with limited disk space).

— Select Help to install only the online help.

— Select Custom installation to customize the features prior to installation.

8 Click Next.

The Choose Install Folder dialog box opens (Figure 6).

Figure 6 Choose Install Folder dialog box

9 Click Restore Default Folder or click Choose to select the storage path.

10 Click Next.

The Choose Shortcut Folder dialog box opens (Figure 7).

Figure 7 Choose Shortcut Folder dialog box

11 Select your shortcut path(s).

12 Click Next.

The Pre-Installation Summary dialog box opens (Figure 8).

Figure 8 Pre-installation Summary dialog box

13 Verify the folder, shortcut(s), and disk space required to install the software. Use the Previous button to return to the appropriate dialog box to make changes.

14 Click Install.

The installation process begins (Figure 9).

Figure 9   Installing Java Device Manager dialog box

When the installation is complete, the Install Complete dialog box opens (Figure 10).

Figure 10 Install Complete dialog box

15 Click Done to exit the installation.

Device Manager is now completely installed on your machine.

UNIX installation

The minimum system requirements for installing Device Manager in a UNIX SPARC* workstation running the Sun* Solaris* 2.6.x (or higher) operating system

— 4 MB available in a temporary directory
— 240 MB free in the directory where you want to install the Device Manager software
— 128 MB DRAM

or

• HP* workstation running the HP-UX* 11.x or above operating system
— 4 MB available in a temporary directory
— 240 MB free in the directory where you want to install the Device Manager software

— 32 MB DRAM

Installing the Device Manager software in a UNIX environment requires two or three steps, depending on the specific platform:

1 In a Solaris environment, install Solaris patches (next).

2 In both environments, install the Java Runtime Environment (JRE):

- For a Solaris environment, the JRE is available on the Nortel Networks Services and Support Web site.
- For an HP-UX environment, go to the HP Web site to obtain the JRE.

3 Install the Device Manager software.

Installing OS patches and JRE software

Solaris

For SPARC versions 5.6, 5.7, and 5.8, you can obtain the required OS patches and JRE software from the http://www.nortelnetworks.com/support Web site.

To download the Solaris JRE and OS patch:

1 Go to the following URL:

http://www.nortelnetworks.com/support

2 Click on the product for which you want JDM.

A page opens that displays all versions of that product line.

3 Click Software under the specific product you are working with.

The software page opens.

4 Follow the links on the site to download the OS patch and installation instructions for your OS version.

5 Follow the installation instructions to install the Solaris OS patch and JRE 1.3.1 software.

Installing the patches for Solaris 2.6, 2.7, or 2.8 release

To install the Solaris patches:

1 Use the `uname -a` command to determine the version of SunOS/Solaris that is installed on your workstation.

Table 1 lists the patch file archive name for each version of Solaris.

Table 1 Solaris patch files

SunOS/Solaris version	Patch file name
5.6/2.6	jre131_sol56_patchBundle.tar
5.7/2.7	jre131_sol57_patchBundle.tar
5.8/2.8	jre131_sol58_patchBundle.tar

2 Create a new working directory and move to that directory by entering:

```
mkdir /tmp/patch
```

```
cd /tmp/patch
```

3 Download the patch file archive to the working directory and untar the file by entering:

```
tar -xvf jre131_solxx_patchBundle.tar
```

where:

xx is 56, 57, or 58

4 Run the localcheck Perl script included in the patch bundle to determine if the JRE 1.3.1 patches are applied by entering:

```
perl localcheck
```

→ **Note:** Perl must be installed on the system and it must be included in the execution path for this script to work.

If the script reports that all patches are up to date, you do not need to install the patches. Proceed to the next section, "Installing the JRE in a SunOS/Solaris environment" on page 31.

5 If the script indicates that patches are required for your system, you should run the install script pinst. Make the install script file executable by entering:

```
chmod a+x pinst
```

6 Change the user to root and run the script by entering:

```
su root
./pinst -cj
```

7 The patch installation can take up to several hours to complete, during which time, your system should be in a quiet state with a minimum of activity. When installation is complete, you can check the installation log by entering:

```
more /var/sadm/install_data/Solaris_8_Recommended_log
```

→ **Note:** An error message indicating a patch failure of type 8 means that the package for which the patch is intended is not installed on your system. You do not need to take any action in response to this error message.

8 Use the localcheck Perl script again to determine if all JRE patches were installed successfully by entering:

```
perl localcheck
```

9 Use the install script pinst to remove install files that are no longer needed by entering:

```
./pinst -r
```

The script cannot remove itself and does not remove the patch bundle. You may remove these files by entering:

```
rm pinst
rm jre131_solxx_patchBundle.tar
```

where:

xx is 56, 57, or 58

After you install the Solaris patches, you must install the Java Runtime Environment (JRE) for Solaris systems.

Installing the JRE in a SunOS/Solaris environment

To install the JRE in a SunOS/Solaris environment:

1 Copy the j2re-1_3_1_03-solsparc.sh UNIX script file from the Web site into a directory. This example uses the /tmp directory. If you use a different directory, adjust your paths accordingly.

2 Make the file executable by entering:

```
chmod a+x /tmp/j2re-1_3_1_03-solsparc.sh
```

3 Change the working directory to /usr by entering:

```
cd /usr
```

You will install the JRE software to this directory.

4 You may need to be the root user to run the JRE installation. To change the user to root enter:

```
su root
```

5 Execute the script file by entering:

```
/tmp/j2re-1_3_1_03-solsparc.sh
```

The script installs the JRE into the subdirectory named j2re1_3_1_03.

6 Remove the downloaded script file from your home directory by entering:

```
rm /tmp/j2re-1_3_1_03-solsparc.sh
```

You no longer need this file, and it consumes approximately 15 MB of disk space.

7 Update your .cshrc file by entering the following string in the .cshrc file by setting your environment variable $JRE131_HOME to reference the subdirectory where the Java software was installed by entering:

```
setenv JRE131_HOME /usr/j2re1_3_1_03
```

HP-UX

Nortel Networks does not directly provide the JRE for HP-UX systems. However, you can download the JRE from the HP corporate Web site.

To obtain and install the HP-UX JRE software and patches:

1 Go to the http://www.unix.hp.com/java/ URL

2 Follow the prompts to download and install the patches for HP-UX Operating System 11.00 that are required for JRE 1.3.

3 Follow the prompts to download and install the JRE for your HP-UX system.

Downloading the Device Manager UNIX software

1 Go to the following URL:

http://www.nortelnetworks.com/support

2 Click on the product for which you want JDM.

A page opens that displays all versions of that product line.

3 Click Software under the specific product you are working with.

The software page opens.

4 Click the Java Device Manager version you want.

The Software Detail Information page opens.

5 Click JDM for Unix-Solaris, HP-UX, IBM, AIX.

A File Download dialog box opens that asks you to either run this program from its current location or to download the Device Manager software to your system.

6 Choose a directory to download the software to.

Installing the Device Manager UNIX software

To install the Device Manager software in a UNIX environment:

1 Close all programs.

1 Navigate to the directory on your system where you downloaded the Device Manager software.

2 Run the jdm_xxx.bin file.

→ Note: Always install DM into a clean directory.

An Install screen opens that has text running through the screen. Then a Nortel dialog box opens with a ribbon on the bottom showing the progress. Finally, the InstallAnywhere* Introduction dialog box opens (Figure 11).

Figure 11 InstallAnywhere Introduction dialog box
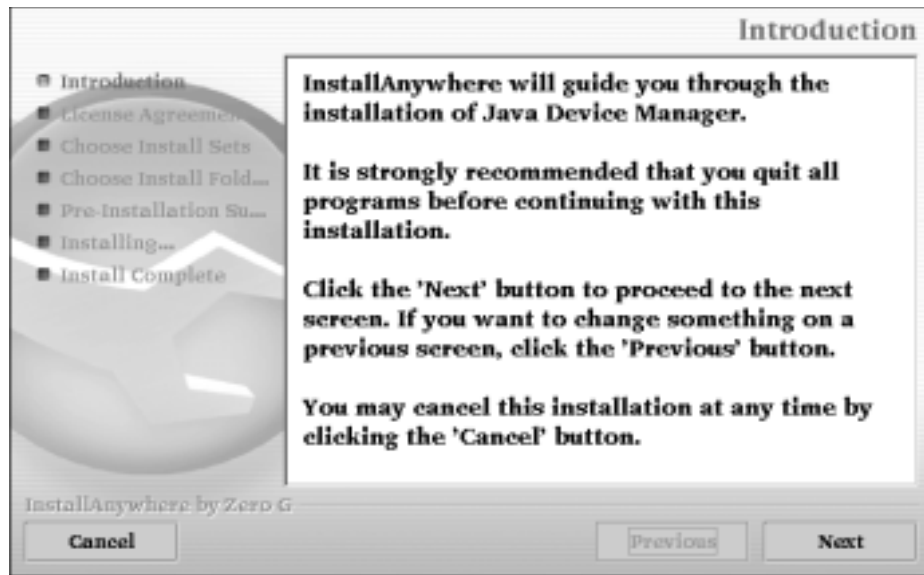
3 Click Next to continue the installation process.

The License Agreement dialog box opens (Figure 12).

Figure 12 License Agreement dialog box

4 Click I accept the terms of the license agreement as shown in Figure 12.

5 Click Next.

The Choose Install Set dialog box opens (Figure 13).

Figure 13   Choose Install Set dialog box

6 Do *one* of the following:

— Select Typical installation to install the common set features, as well as online help.

— Select Minimal installation to select features to install (recommended for those with limited disk space).

— Select Help to install only the online help.

— Select Custom installation to customize the features prior to installation.

7 Click Next.

The Choose Install Folder dialog box opens (Figure 14).

Figure 14 Choose Install Folder dialog box

8 Click Restore Default Folder or click Choose to select the storage path.

9 Click Next.

The Pre-Installation Summary dialog box opens (Figure 15).

Figure 15 Pre-installation Summary dialog box

10 Verify the folder, shortcut(s), and disk space required to install the software. Use the Previous button to return to the appropriate dialog box to make changes.

11 Click Install.

The installation process begins (Figure 16).

Figure 16   Installing Java Device Manager dialog box

When the installation is complete, the Install Complete dialog box opens (Figure 17).

Figure 17 Install Complete dialog box

12 Click Done to exit the installation.

Device Manager is now completely installed on your machine.

Chapter 3
Device Manager basics

This chapter describes basic procedures for using the Device Manager software. The chapter includes the following information:

- Instructions to start Device Manager, set the Device Manager properties, and open a device (next)
- A summary of the Device Manager user interface features and how to use them (starting on page 45)
- Instructions to view statistics and display graphs (page 53)
- Instructions to use Device Manager to access a switch (page 60)
- Information about the trap log (page 60)
- Information about online Help (page 61)

Starting Device Manager

To start Device Manager:

➔ Do one of the following, depending upon your operating system environment:

- In a Microsoft* Windows* environment, from the Windows taskbar choose Start > Programs > Nortel Networks Device Manager > Device Manager.
- In a UNIX environment, verify that the Device Manager installation directory is in your search path; then enter:

    JDM

The initial Device Manager window opens (Figure 18).

> **Note:** On startup, Device Manager performs a DNS lookup for the machine on which it is running. If the DNS lookup is slow or fails, the initial Device Manager window may take up to 30 seconds to open.

Figure 18   Device Manager window

Setting the Device Manager properties

Device Manager communicates with the BayStack 380-24F Gigabit Switch using Simple Network Management Protocol (SNMP). The software is shipped with default values set for important communication parameters, such as the polling interval, timeout, and retry count. You may want to set the parameters before you open a device to manage.

To set the Device Manager properties:

1   Choose Device > Properties.

The Properties dialog box opens (Figure 19).

Figure 19   Properties dialog box

2   Type information and select check boxes.

3   Click OK.

Table 2 describes items in the Properties dialog box.

Table 2   Properties dialog box items

Area	Item	Description
Polling	Status Interval	Interval at which statistics and status information are gathered (default is 300 seconds).
	(If traps, Status Interval)	Interval at which statistics and status information are gathered when traps are enabled (default is 300 seconds).
	Hotswap Detect every	The interval at which Device Manager polls for module information (default is 600 seconds).
	Enable	Enables (checked) or disables (not checked) periodic polling of the device for updated status. If polling is disabled, the switch status is updated only when you click Refresh in the chassis window.

Table 2 Properties dialog box items (continued)

Area	Item	Description
SNMP	Retry Count	Number of times Device Manager retransmits polling information.
	Timeout	Length of each retry of each polling waiting period. When accessing the device through a slow link, you may want to increase the timeout interval and then change the Retransmission Strategy to superlinear.
	Trace	Enables (checked) or disables (not checked) SNMP tracing. When Trace is selected, SNMP protocol data units (PDUs) are displayed in the Device > Log dialog box.
	Register for Traps	Specifies whether or not Device Manager should automatically register to receive traps when Device Manager is launched against a switch.
	Listen for Traps	Specifies whether or not Device Manager should automatically listen for traps when Device Manager is launched against a switch.
	Max Traps in Log	Specifies the maximum number of traps that can exist in the trap log (default is 500).
	Trap Port	Specifies the UDP port that Device Manager will listen on to receive SNMP traps.
	Listen for Syslogs	This feature is inactive and not available.
	Confirm row deletion	When this check box is selected, a confirmation dialog box is displayed when you try to delete a row from a Device Manager table.
	Default Read Community	Specifies the default read community, either public or private.
	Default Write Community	Specifies the default write community, either public or private.

Opening a device

"Opening" a device displays the device view, a picture of the device. To open the device view, you must enter community strings that determine the access level granted to the device. Table 3 shows the default access community strings for the Device Manager software.

Table 3 SNMP community string default values

Access level	Description
Read-only	public
Read/write	private

To display the device view:

1 Do one of the following:

- Choose Device > Open.
- Choose Device > Open Last, and select an IP address from the list.
- Click the folder icon in the Device Manager window.

- Press [Ctrl] + O.

The Open Device dialog box opens (Figure 20).

Figure 20   Open Device dialog box

Table 4 describes the items in the Open Device dialog box.

Table 4   Open Device dialog box items

Item	Description
Device Name	Either an IP address or a DNS name for the device, entered by the user.
Read Community	SNMP read community string for the device. Default is `public` (displayed as ******). The entry is case-sensitive.
Write Community	SNMP write community string for the device. Default is `private` (displayed as *******).The entry is case-sensitive.
v3 Enabled	Specifies that v3 is enabled.

Table 4 Open Device dialog box items (continued)

Item	Description
User Name	Specifies a user name.
Authentication Protocol	Specifies authentication protocol.
Authentication Password	Specifies an authentication password.
Privacy Protocol	Specifies a privacy protocol.
Privacy Password	Specifies a privacy password.

2 In the Device Name text box, type the DNS name or IP address of the device.

3 In the Read Community and Write Community text boxes, type the proper community strings (Table 3 on page 42).

→ **Note:** To gain read/write/all access to a device in Device Manager, you must enter the read/write/all community string for both the Read Community and Write Community strings.

4 Click Open.

Device Manager automatically determines what version of software the selected device is running and displays the appropriate Device Manager dialog boxes. The Device Manager window opens, showing a picture of the device (Figure 21) that represents the physical features of the device.

Figure 21 Device view
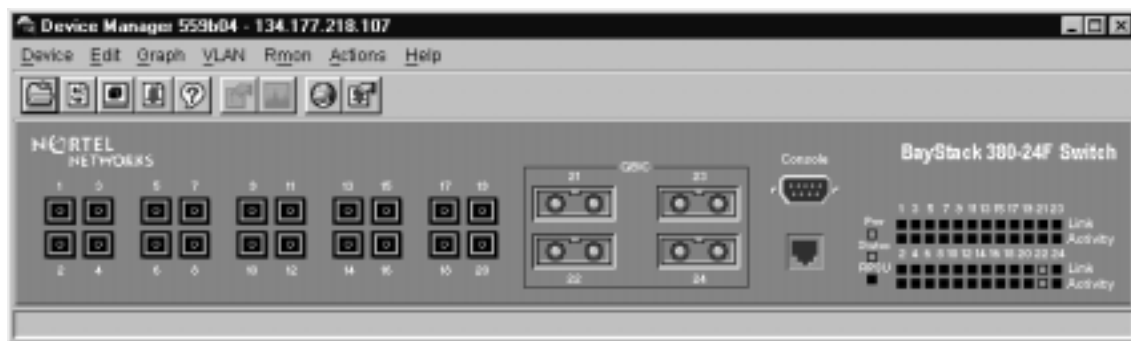
Device Manager window

The Device Manager window (Figure 22) has the following parts:

- Menu bar
- Toolbar
- Device view
- Status bar

Figure 22 Parts of the Device Manager window

Menu bar

Tool bar
Device view

Status bar

Menu bar

Use the menu bar to set up and operate Device Manager (Table 5).

Table 5 Menu bar commands

Command	Description
Device	Opens the Open Device dialog box.
Edit	Opens edit dialog boxes for selected objects in the device view (refer to "Selecting objects" on page 47). This command also opens dialog boxes for managing files and running diagnostic tests.
Graph	Opens statistics dialog boxes for the selected object.
VLAN	Opens dialog boxes for managing VLANs, spanning tree groups (STGs), and Multi-Link Trunks.
Rmon	Opens RMON configuration and monitoring dialog boxes.
Actions	Provides quick opening of a Telnet session without going through other dialog boxes.
Help	Opens online Help topics for Device Manager and provides a legend for the port colors in the device view.

Toolbar

The toolbar contains buttons that provide quick access to commonly used commands and some additional actions (Table 6).

Table 6 Toolbar buttons

Button	Name	Description	Menu bar equivalent
	Open Device	Opens the Open Device dialog box.	Device > Open
	Refresh Device Status	Refreshes the device view information.	Device > Refresh Status
	Telnet	Opens a Telnet session.	Device > Telnet
	Trap Log	Opens the trap log.	Device > Trap Log
	Help	Opens online Help in a Web browser.[1]	Help > Device
	Edit Selected	Displays configuration data for the selected chassis object.	Edit > Unit Edit > Chassis Edit > Port
	Graph Selected	Opens statistics and graphing dialog boxes for the selected object	Graph > Chassis Graph > Port
	Home Page	Opens the Web Management Software Home Page	Actions > Open Home Page
	Alarm Manager	Opens the Rmon Alarm Manager.	Rmon > Alarm Manager

1 If the online Help does not launch, refer to page 61.

Device view

The device view (Figure 23) allows you to determine at a glance the operating status of the various units and ports in your hardware configuration. You also use the device view to perform management tasks on specific objects.

Selecting objects

The types of objects contained in the device view are:

- A switch or chassis (called a unit in the menus and dialog boxes)
- 20 SFP GBIC Ports
- 4 GBIC ports

Figure 23 Objects in the device view
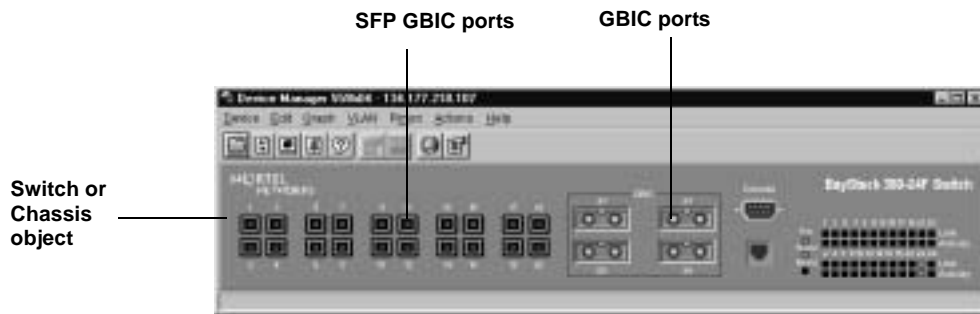
Selecting a single object

To select a single object:

→ Click the edge of the object

The object is outlined in yellow, indicating that it is selected. Subsequent activities in Device Manager refer to the selected object.

Selecting multiple objects

To select multiple objects of the same type (such as ports or switches of the same type):

→ Do one of the following:

• For a block of contiguous ports, drag to select the group of ports.

To select all the ports in a switch:

→ Choose Edit > Select > Ports.

LEDs and ports

The color of LEDs in the device view is the same as the colors of the LEDs on the physical switch. However, the device view does not show blinking activity of the LEDs.

For a full description of the LEDs for the BayStack 380-24F Gigabit Switch, refer to *Using the BayStack 380-24F Gigabit Switch*.

The ports on the device view are color coded to show port status. Table 7 shows the status assigned to each color.

Table 7   Port color codes

Color	Description
Green	Port is operating.
Red	Port has been manually disabled.
Orange	Port has no link.
Light blue	Port is in standby mode.
Dark blue	Port is being tested.
Gray	Port is unmanageable.
Purple	Loopback Mode.

In addition, the Help menu provides a legend that identifies the port colors and their meanings (Figure 24).

Figure 24   Port color legend
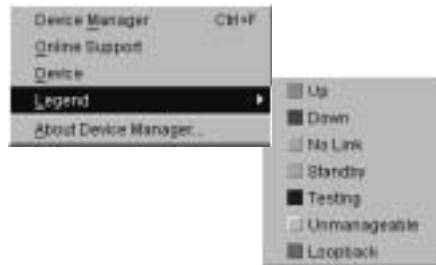
Shortcut menus

Each object in the device view has a shortcut menu that opens when you right-click a selected object. The switch shortcut menu (Figure 25) provides access to basic hardware information about the switch and to the graphing dialog boxes for the switch.

Figure 25 Shortcut menu

```
Unit #1
Edit
```
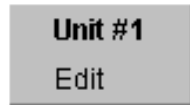
Table 8 describes the commands on the switch unit shortcut menu.

Table 8 Switch unit shortcut menu commands

Command	Description
Edit	Opens a read-only dialog box that provides basic hardware information about the switch.
Graph	Opens a dialog box that displays statistics for the switch and allows you to display the statistics as a graph.

The port shortcut menu (Figure 26) provides a faster path for editing and graphing a single port; however, you can access the same options using the menu bar or the toolbar.

Figure 26 Port shortcut menu

```
Port 1/1
Edit
Graph
Enable
Disable
```
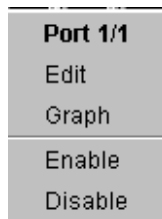
Table 9 describes the commands on the port shortcut menu.

Table 9 Port shortcut menu commands

Command	Description
Edit	Opens a dialog box that allows you to set operating parameters for the port.
Graph	Opens a dialog box that displays statistics for the port and allows you to display the statistics as a graph.
Enable	Administratively brings a port up.
Disable	Administratively shuts down a port. The color of the port changes to red in the device view.

Status bar

The status bar displays error and informational messages from the software application. These messages are not related to the device being managed.

Using the buttons in Device Manager dialog boxes

Table 10 describes buttons in Device Manager dialog boxes. Not all buttons appear in all dialog boxes.

Table 10 Device Manager buttons

Button	Name	Description
Insert	Insert	Opens a dialog box to create a new entry for a table; then from the dialog box, inserts the new entry in the table.
	Copy	Copies selected cells from a table.
	Paste	Pastes copied values to a currently selected table cell.
	Reset Changes	Causes changed (but not applied) fields to revert to their previous values.
	Print Table or Print Graph	Prints the table or graph that is displayed.

Table 10 Device Manager buttons (continued)

Button	Name	Description
Stop	Stop	Stops the current action (compiling, saving, and so forth). If you are updating or compiling a large data table, the Refresh button changes to a Stop button while this action is taking place. Clicking the Stop button interrupts the polling process.
	Export Data	Exports information to a file you specify. You can then import this file into a text editor or spreadsheet for further analysis.

Editing objects

You can edit objects and values in the Device Manager device view in the following ways:

• Select an object and, on the toolbar, click the Edit Selected button.

The edit dialog box opens for that object.

• From a switch or port shortcut menu, choose Edit. The edit dialog box opens for that object.

When you change the value in a box, the changed value is displayed in **bold**. However, changes are not applied to the running configuration until you click Apply.

→ **Note:** Many dialog boxes contain a Refresh button. After you apply changes to fields, click Refresh to display the new information in the dialog box.

Working with statistics and graphs

Device Manager collects a wide range of statistics for each switch and each port. You can view and graph statistics for a single object or multiple objects. For information about the statistics tracked for the switch and ports, refer to *Using the BayStack 380-24F Gigabit Switch.*

This section describes the types of statistics and graphs available, the graph dialog boxes, and the procedure for creating a graph.

Types of statistics

The data tables in the statistics dialog boxes list the counters, or categories of statistics being gathered, for the specified object. For example, the categories for ports include Interface, Ethernet Errors, Bridge, and Rmon. Each category can be associated with six types of statistics (Table 11).

Table 11 Types of statistics

Statistic	Description
AbsoluteValue	The total count since the last time counters were reset. A system reboot resets all counters.
Cumulative	The total count since the statistics window was first opened. The elapsed time for the cumulative counter is displayed at the bottom of the graph window.
Average	The cumulative count divided by the cumulative elapsed time.
Minimum	The minimum average for the counter for a given polling interval over the cumulative elapsed time.
Maximum	The maximum average for the counter for a given polling interval over the cumulative elapsed time.
LastValue	The average for the counter over the last polling interval.

Types of graphs

With Device Manager, you can create line, area, bar, and pie graphs. Figure 27, Figure 28, Figure 29, and Figure 30 illustrate the different graph styles, respectively.

Figure 27 Line graph
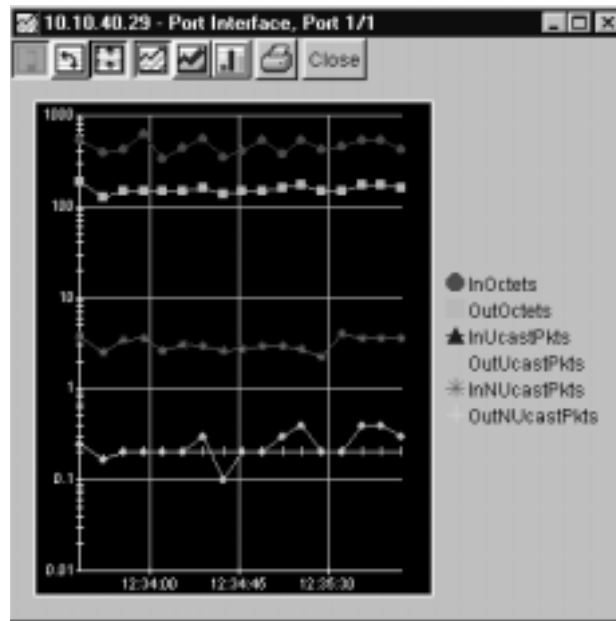
Figure 28 Area graph
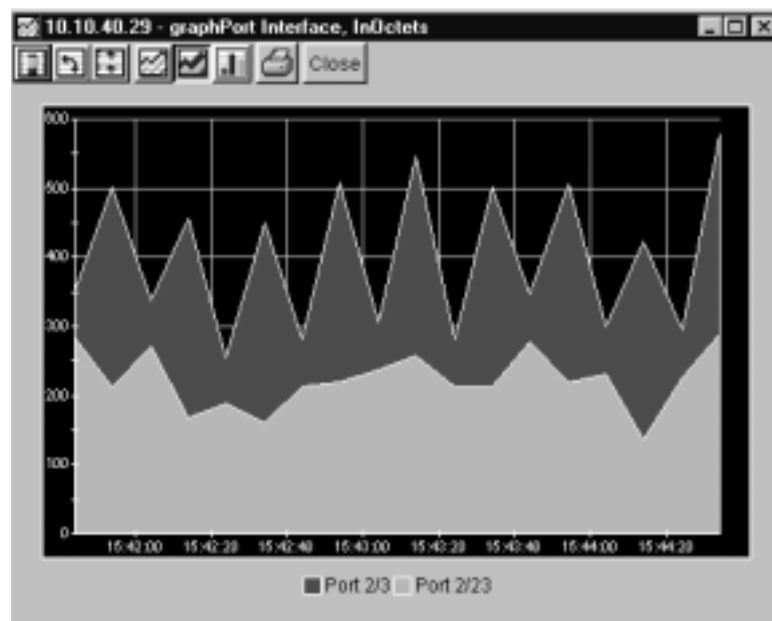
Figure 29   Bar graph
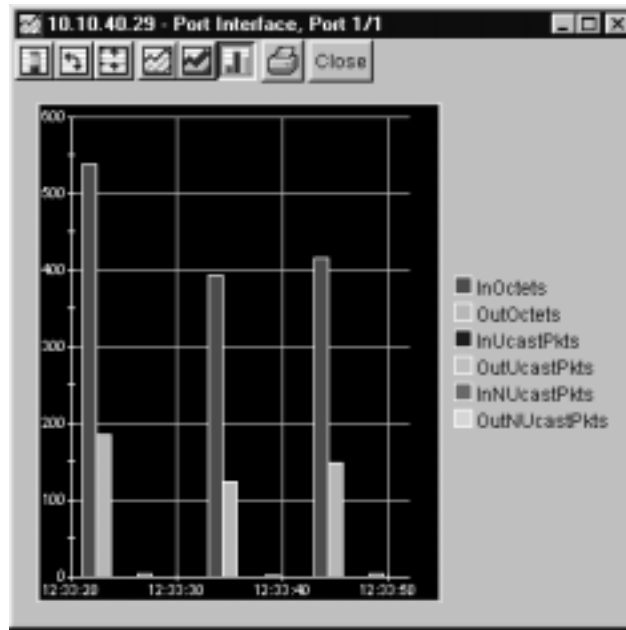
Figure 30   Pie graph
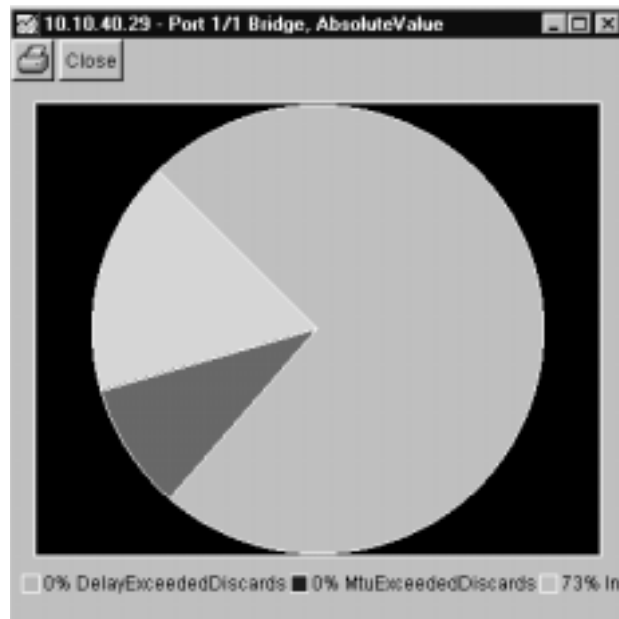
Statistics for single and multiple objects

Statistics for a selected object or objects are displayed in the statistics dialog box.

The dialog box for a single object shows all six types of statistics for each counter (Figure 31).

Figure 31 Interface statistics for a single port

The statistics dialog box for multiple objects shows a single type of statistics (Table 11) for the selected objects. For example, Figure 32 shows LastValue statistics for the selected ports.

Figure 32 Interface statistics for multiple ports

To change the type of statistics displayed, select a different type from the show list at the bottom of the dialog box.

The statistics are updated based on the poll interval shown at the bottom of the dialog box. You can select a different polling interval.

Buttons for bar, pie, and line graphs are located at the bottom of a statistics dialog box. See the next section, "Viewing statistics as graphs," for instructions to use these buttons.

You can export the statistics to a tab-separated file format and import the file into other applications. To export the information, use the Export Data button below the table.

Viewing statistics as graphs

To create a graph for an object:

1 Select the object or objects to be graphed (see "Selecting objects" on page 47).

2 Do one of the following:

- On the toolbar, click Graph Selected.

- From the shortcut menu for the object, choose Graph.
- From the main menu, choose Graph > Chassis or Graph > Port.

A statistics dialog box opens with tabs for different categories of statistics for the selected object (Figure 33).

Figure 33   Statistics dialog box for a port
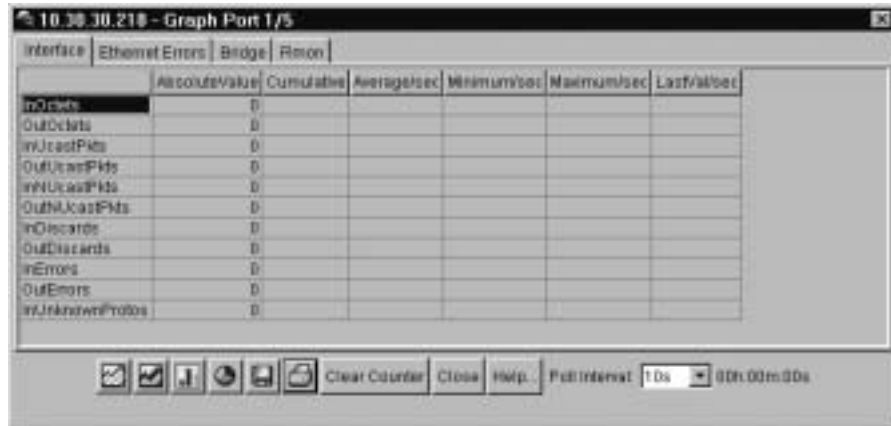
3   Select a tab for the group of statistics you want to view.

4   On the displayed data table, drag to select the cells you want to graph. (They must be in the same row or column.)

5   Click one of the graph buttons at the bottom of the dialog box (see "Types of graphs" on page 53).

A graph dialog box opens for the selected graph type.

6   To print a copy of the graph, click Print.

Buttons at the top of the graph dialog boxes for line, area, and bar graphs allow you to change the orientation of the graph, change the scale, or change the graph type. Table 12 describes the buttons in the graph dialog boxes.

Table 12 Graph dialog box buttons

Button	Name	Description
	Stacked	"Stacks" data quantities instead of displaying them side-by-side.
	Horizontal	Rotates the graph 90 degrees.
	Log Scale	Changes the scale of the x-axis (of an unrotated graph) from numeric to logarithmic.
	Line Chart	Converts an area graph or bar graph to a line graph.
	Area Chart	Converts a line graph or bar graph to an area graph.
	Bar Chart	Converts a line graph or area graph to a bar graph.

Telneting to a switch

From Device Manager, you can initiate a Telnet session to the console interface for the switch you are currently accessing.

To Telnet to a switch:

→ Do one of the following:

• From the Device Manager main menu, choose Device > Telnet.
• On the toolbar, click the Telnet button.

A Telnet window to the switch opens.

Trap log

You can configure a BayStack 380-24F Gigabit Switch to send SNMP generic traps. When Device Manager is running, any traps received are recorded in the trap log. You set the maximum number of entries in the trap log using the Properties window (page 40). The default number of trap log entries is 500.

To view the trap log:

→ Do one of the following:

• On the toolbar, click the Trap Log button.

• From the Device Manager Main Menu, choose Device > Trap Log.

→| **Note:** When you operate Device Manager from a UNIX platform, you must be logged in as root in order to receive traps.

By default, traps are sent in SNMP V2c format. However, if you are using an older network management system (NMS), one that supports only SNMP V1 traps (HP OpenView), you can specify that the traps be sent in V1 format.

Management stations operating with Device Manager are automatically added to trap receivers.

For more information about traps and trap receivers, refer to *Using the BayStack 380-24F Gigabit Switch*.

Online Help

Online Help in Device Manager is context-sensitive. You use a Web browser to display online Help. The Web browser should launch automatically when you click the Help button. If the Help topic you are accessing is not displayed in your browser, exit the existing browser session and click the Help button again. If, for some reason, the Web browser does not launch, the default locations of the Help files are the directories listed in Table 13.

Table 13 Help file locations

Platform	Default path
Windows 95, Windows 98, or Windows NT	JDM Directory\help\dmhelp.html
UNIX	DM-UNIX/DM/help

Chapter 4
Web management interface basics

A BayStack 380-24F Gigabit Switch includes a Web management interface that lets you monitor your switch through a World Wide Web browser from anywhere on the network. The Web interface provides some of the more popular monitoring and configuration features of the Device Manager software.

This chapter provides an overview of the Web management interface and its navigation features. For information about specific Web management pages, check the online Help in the Web management interface. For information about using the Web management interface to configure and manage the switch, refer to *Using Web-Based Management for the BayStack 380-24F Gigabit Switch*.

This chapter contains information about the following topics:

- Requirements (next)
- Accessing your switch through the Web interface (page 64)
- Security (page 70)

Requirements

To use the Web-based management interface you need:

- A computer connected to any of the network ports
- One of the following Web browsers installed on the computer:
    — Microsoft Internet Explorer, version 4.0 or later
    — Netscape Navigator*, version 4.51 or later
- The IP address of the switch

For instructions to set the IP address of the switch, refer to "Setting the switch IP parameters" on page 18.

Access to the Web management interface must also be enabled for the switch (the default setting) using the console interface. For information about enabling Web access, refer to *Using the BayStack 380-24F Gigabit Switch*.

Accessing the Web interface

Before you log in to the Web management interface, use the console interface to verify the VLAN port assignments and to make sure that the switch CPU and your computer are assigned to the same VLAN. If the devices are not connected to the same VLAN, the IP address of the switch will not open the home page.

To access the Web interface:

1 Start your Web browser.

2 In the Web address field of your Web browser, type the switch IP address, and press [Enter].

 If this is the first time you are logging in to the Web management interface, the System Information home page opens (Figure 34).

Figure 34   System Information home page
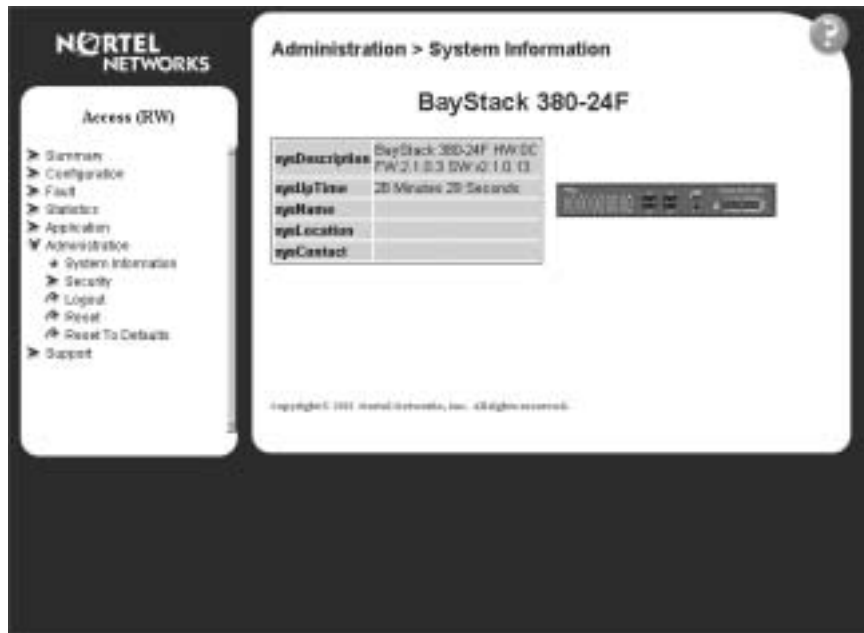
Network security does not yet exist the first time you access the Web
management interface. As the system administrator, you must create access
parameters and passwords. For more information about setting access
parameters and system passwords, refer to "Setting up security" on page 70.

3   If passwords have already been set, the login page opens (Figure 35).

Figure 35   Login page

4 In the Username text box, type `RO` for read-only access or `RW` for read-write access.

5 In the Password text box, type your password.

6 Click Log On.

The System Information home page opens.

With Web access enabled, the switch can support up to four concurrent Web page users. Two pre-defined user levels are available, and each user level has a corresponding user name and password.

Table 14 shows the two pre-defined user levels available and their corresponding access levels in the Web management interface.

Table 14   User levels in the Web management interface

User level	User name	Password	Access level
Read-only	RO	XXXXXXXX	Read-only
Read/write	RW	XXXXXXXX	Full read/write access

Information is available online about the Web management interface. To access more information about the Web management interface:

→ Do one of the following:

- Click Support > Help to view the entire Help file.
- For context-sensitive Help, click the Help button on any page to view information specifically about that page.

Web page layout

All the Web management pages for the BayStack 380-24F Gigabit Switch have a common layout. Each is divided into two sections: the menu and the content area. All Web pages are optimized for an 800 x 600 pixel screen size.

Menu

The menu (Figure 36) is the same for all pages. It contains a list of seven main headings.

Figure 36   Menu

The first six headings provide options for viewing and configuring switch parameters. The Support heading provides options to open the online Help file and the Nortel Networks Web site. Table 15 lists the main menu headings and their associated options. For detailed information about managing the switch using the Web management interface, refer to *Using Web-Based Management for the BayStack 380-24F Gigabit Switch.*

Table 15 Menu headings and options

Heading	Option
Summary	Switch Information Switch View
Configuration	IP System SNMPv1 SNMPv3 SNMP Trap MAC Address Table Find MAC Address Port Management High Speed Flow Control Software Download Configuration File Console/Comm Port
Fault	RMON Threshold RMON Event Log System Log
Statistic	Port Interface Ethernet Errors Transparent Bridging RMON Ethernet RMON History
Application	Port Mirroring VLAN Spanning Tree MultiLink Trunk
Administration	System Information Security Logout Reset Reset to Defaults
Support	Help Release Notes Manuals Upgrade

Content area

The content area displays tables of information with buttons that you use to configure and monitor the switch. Some tables may be too big to fit the displayed page area. In these cases, use the scroll bars at the side and bottom to view the entire table.

Icons

Some pages contain icons that allow you to modify information in a statistical table or to display statistics in chart format. Table 16 describes the icons.

Table 16 Page icons

Icon	Name	Description
	Modify	Modifies the row.
	Help	Opens online Help.
	Delete	Deletes a row.
	Pie chart	Displays the statistics as a pie chart.
	Bar graph	Displays statistics as a bar graph.
	Line graph	Displays statistics as a line graph.

Setting up security

To set passwords and RADIUS (Remote Authentication Dial In User Service) authentication settings for the for the switch, use the Security pages. These pages allow you to create or modify the passwords of a switch, and allow you to set the security parameters for remote dial access users.

> **Note:** Nortel Networks recommends that when you install the switch, you set the initial system passwords using the console interface. After that, you can update them using the Web management interface. For information about using the console interface, refer to *Using the BayStack 380-24F Gigabit Switch*.

To set console, Web, and Telnet passwords and RADIUS authentication settings:

→ From the main menu, choose Administration > Security.

Four options are displayed:

• Web

Allows you to define Web password settings.

• Telnet

Allows you to define Telnet password settings.

• Console

Allows you to define console password settings.

• Radius

Allows you to set the server parameters that will provide authentication, authorization, and accounting for RADIUS.

Setting console, Telnet, and Web passwords

1 From the main menu, select Administration > Security.

2 On the Security page list, click Console, Telnet, or Web.

The selected password management page opens (Figure 37).

> **Note:** The title of the page indicates which type of access you are setting
> the password for. In Figure 37, the network administrator selected
> Administration > Security > Console.

Figure 37 Console password page

3 Choose the type of password:

- None—specifies no password for this type of access
- Local Password—sets a password for access through direct network connection or a direct Console port connection
- RADIUS Authentication—sets a password for remote dial-in. If you select this password type, you must also set up RADIUS authentication from the Radius management page.

4 Type the password for read-only and read/write user access.

5 Click Submit to save the changes.

Setting remote dial-in access security

To set the parameters for remote dial-in access security:

1 From the main menu, select Administration > Security > Radius.

The Radius management page opens (Figure 38).

Figure 38 Radius management page

2 Type the IP addresses of the primary and secondary RADIUS (Remote Authentication Dial In User Services) servers.

3 Type the number of the user datagram protocol (UDP) port for the RADIUS server. The default value is 1645.

4 Type a character string for the RADIUS Shared Secret. This parameter is a special switch security code that provides authentication to the RADIUS server. The value can be any contiguous ASCII string that contains at least one printable character, up to a maximum of 35.

5 Click Submit.

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