



IBM Networking OS

# BBI Quick Guide

for the IBM Flex System Fabric EN4093 10Gb Scalable Switch



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for the IBM Flex System Fabric EN4093 10Gb Scalable Switch

**Note:** Before using this information and the product it supports, read the general information in the *Safety information and Environmental Notices and User Guide* documents on the *IBM Documentation* CD and the *Warranty Information* document that comes with the product.

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## Preface

The IBM Networking OS Browser-Based Interface (BBI) software is included with the EN4093 10Gb Scalable Switch (EN4093). The BBI software lets you use your Web browser to access switch information and statistics, and to perform switch configuration via the Internet.

This *BBI Quick Guide* provides an overview of how to access and use the IBM N/OS Browser-Based Interface.

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## Who Should Use This Book

This *BBI Quick Guide* is intended for network installers and system administrators engaged in configuring and maintaining a network. It assumes that you are familiar with your EN4093, your Web browser, Ethernet concepts, IP addressing, the IEEE 802.1d Spanning Tree Protocol, and SNMP configuration parameters.

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## Related Documentation

For documentation on installing the switch physically, see the *User Guide* for your EN4093.

For details about the switch information, statistics, and configuration parameters available using the IBM N/OS BBI, see the IBM N/OS *Command Reference* and *Application Guide*.

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## Typographic Conventions

The following table describes the typographic styles used in this book.

Table 1. *Typographic Conventions*

Typeface or Symbol	Meaning	Example
AaBbCc123	This type is used for names of commands, files, and directories used within the text.  It also depicts on-screen computer output and prompts.	View the <code>readme.txt</code> file.  Main#
<b>AaBbCc123</b>	This bold type appears in command examples. It shows text that must be typed in exactly as shown.	Main# <b>sys</b>

Table 1. Typographic Conventions

Typeface or Symbol	Meaning	Example
<AaBbCc123 >	<p>This italicized type appears in command examples as a parameter placeholder. Replace the indicated text with the appropriate real name or value when using the command. Do not type the brackets.</p> <p>This also shows book titles, special terms, or words to be emphasized.</p>	<p>To establish a Telnet session, enter: host# <b>telnet</b> &lt;IP address&gt;</p> <p>Read your <i>User's Guide</i> thoroughly.</p>
[ ]	<p>Command items shown inside brackets are optional and can be used or excluded as the situation demands. Do not type the brackets.</p>	<p>host# <b>ls</b> [-a]</p>



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## How to Get Help

If you need help, service, or technical assistance, visit our website at the following address:

You also can visit our web site at the following address:

<http://www.ibm.com/support>

Click the **Support** tab.

The warranty card received with your product provides details for contacting a customer support representative. If you are unable to locate this information, please contact your reseller. Before you call, prepare the following information:

- Serial number of the switch unit
- Software release version number
- Brief description of the problem and the steps you have already taken

Technical support dump information (# **show tech-support**)



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# Chapter 1. Getting Started

This chapter briefly describes the software features and requirements for the IBM Networking OS Browser-Based Interface (BBI), and explains how to access the BBI start page.

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## Features

The network administrator can access switch configuration and monitoring functions through the BBI, a Web-based switch management interface. The BBI has the following features:

- Many of the same configuration and monitoring functions as the command-line interface
- Intuitive and easy-to-use interface structure
- Password protection
- Nothing to install; the BBI is part of the IBM N/OS switch software
- Automatically upgraded with each new software release

**Note:** You can perform most configuration and monitoring tasks through the BBI. For a comprehensive set of commands, use the command-line interface. Refer to the IBM N/OS *Command Reference* for the EN4093 10Gb Scalable Switch.

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## Requirements

- EN4093 10Gb Scalable Switch switch
- Installed IBM N/OS switch software
- PC or workstation with network access to the switch
- Frame-capable Web-browser software, such as the following:
  - Internet Explorer 7.0x or higher
  - Mozilla FireFox 8.x or higher
  - Google Chrome 16.x or higher
- JavaScript enabled in your Web browser

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## Switch Set Up

Before you can access the BBI, minimal configuration is required on the EN4093.

## IP Interfaces

At least one IP interface must be configured on the switch. Each IP interface address provides a point of access for IBM N/OS switch management. The default internal management interface is 128 for IPv4 and 127 for IPv6. The default external management interface is 126 for IPv4 and 125 for IPv6.

For complete information about configuring IP interfaces, see your EN4093 *Application Guide*.

## Enabling/Disabling BBI Access

By default, BBI access is disabled for HTTP, and enabled for HTTPS. If you need to enable HTTP access, use the following command from the command-line interface:

```
Router (config)# [no] access http enable
```

For more information on the accessing and configuring the switch through the command-line interface, see your *Command Reference*.

---

## Web Browser Set Up

Most modern Web browsers work with frames and JavaScript by default, and require no additional set up. However, you should check your Web browser's features and configuration to make sure frames and JavaScript are enabled.

**Note:** JavaScript is not the same as Java. Please make sure that JavaScript is enabled in your Web browser.

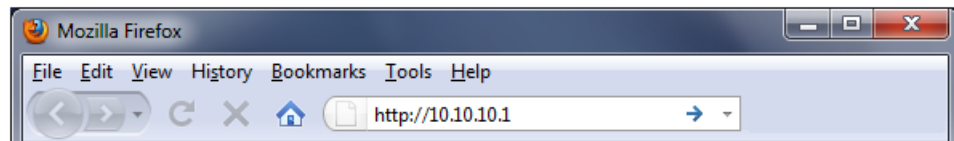
---

## Starting the BBI

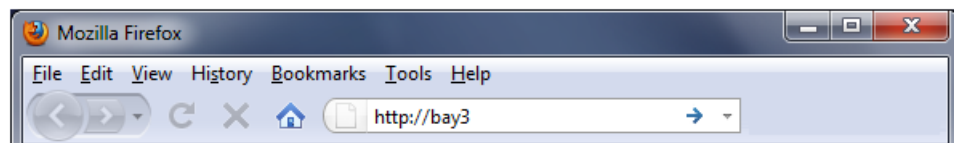
When the switch and browser set up is done, follow these steps to launch the BBI:

1. Start your Web browser.
2. Enter the switch IP interface address in the Web browser's URL field.

For example, consider an IP interface with a network IP address of 10.10.10.1. You could enter the following:

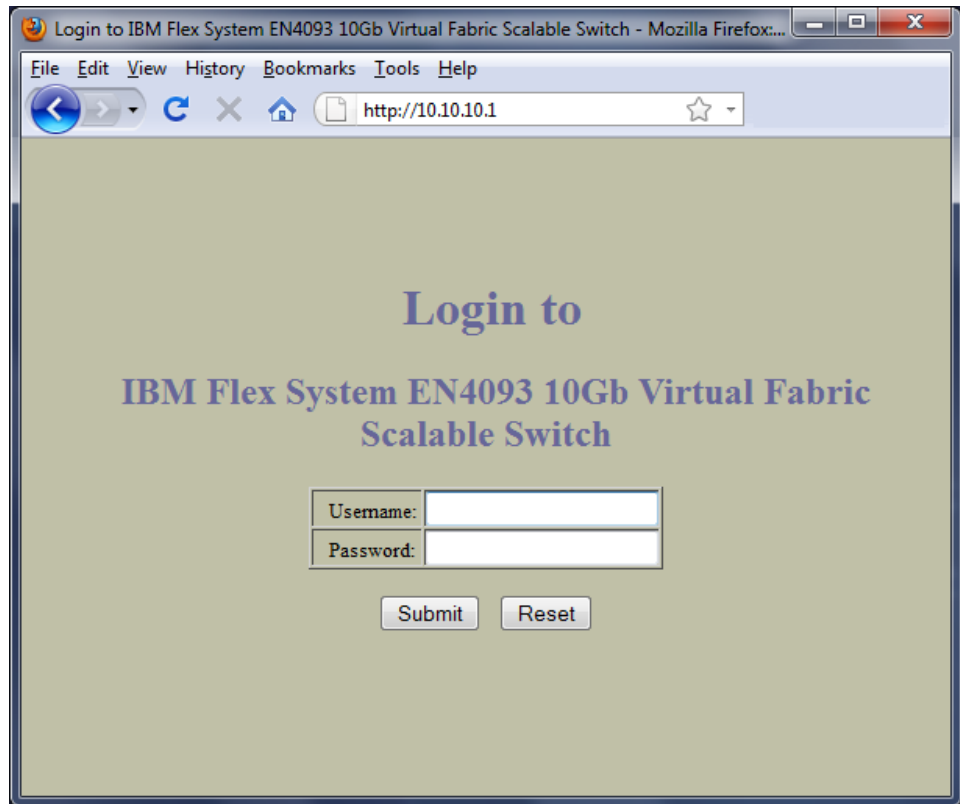


If the IP interface's address has a name on your local domain name server, you could enter the name instead. For example, you could enter the following:



3. Log in to the switch.

If your switch and browser are properly configured, you are asked to enter a password:



Enter the account name and password for the switch's administrator or user account.

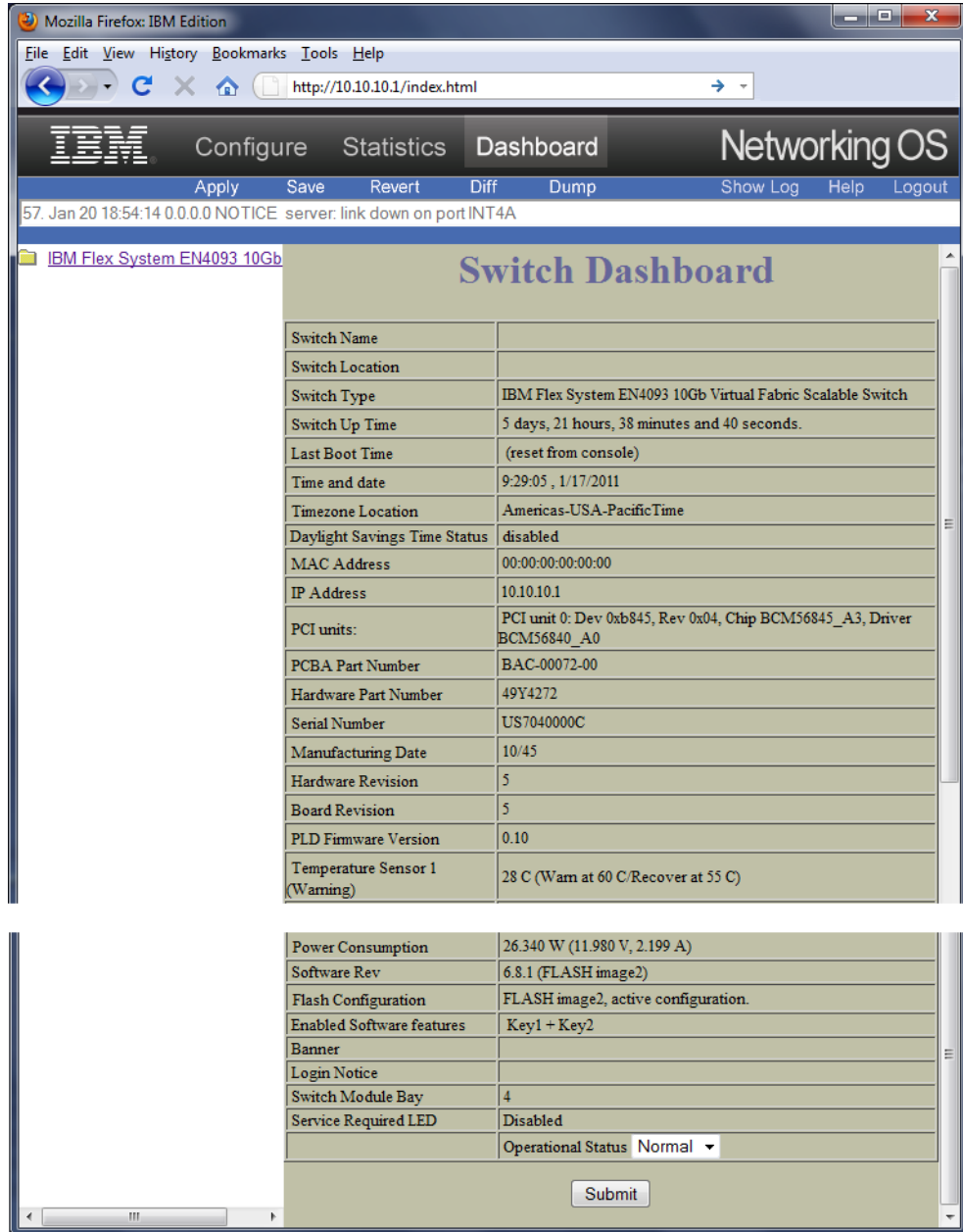
The default user name and password is as follows:

- User name is **USERID**.
- Password is **PASSW0RD** (the 0 in PASSW0RD is a zero).

For more password information, see your *Command Reference*.

4. Allow the BBI Dashboard page to load.

When the proper account name and password combination is entered, the BBI Dashboard page is displayed in your browser's viewing area. There may be a slight delay while the Dashboard page is being initialized. You should not stop the browser while loading is in progress. When loading is complete, a folder icon appears in the left-hand navigation window.



**Note:** The sample screens that appear in this document might differ slightly from the screens displayed by your system. Screen content varies based on the type of switch unit that you are using and the firmware versions and options that are installed.

## Chapter 2. Browser-Based Interface Basics

Once you are properly logged in, the IBM N/OS Browser-Based Interface (BBI) appears in your Web browser's viewing window:

The screenshot shows the IBM N/OS Browser-Based Interface (BBI) for a switch. The interface is divided into four main regions:

- Toolbar:** Contains the IBM logo, 'Configure', 'Statistics', and 'Dashboard' tabs. Below the tabs are buttons for 'Apply', 'Save', 'Revert', 'Diff', and 'Dump'.
- Message Window:** Displays a log message: '57. Jan 20 18:54:14 0.0.0.0 NOTICE server: link down on port INT4A'. Below the message are buttons for 'Show Log', 'Help', and 'Logout'.
- Navigation Window:** Shows a tree view with 'IBM Flex System EN4093 10Gb' selected.
- Forms Window:** Displays the 'Switch Dashboard' with a table of switch information and a 'Submit' button.

Switch Name	
Switch Location	
Switch Type	IBM Flex System EN4093 10Gb Virtual Fabric Scalable Switch
Switch Up Time	5 days, 21 hours, 38 minutes and 40 seconds.
Last Boot Time	(reset from console)
Time and date	9:29:05 , 1/17/2011
Timezone Location	Americas-USA-PacificTime
Daylight Savings Time Status	disabled
MAC Address	00:00:00:00:00:00
IP Address	10.10.10.1
PCI units:	PCI unit 0: Dev 0xb845, Rev 0x04, Chip BCM56845_A3, Driver BCM56840_A0
PCBA Part Number	BAC-00072-00
Hardware Part Number	49Y4272
Serial Number	US7040000C
Manufacturing Date	10/45
Hardware Revision	5
Board Revision	5
PLD Firmware Version	0.10
Temperature Sensor 1 (Warning)	28 C (Warn at 60 C/Recover at 55 C)
Power Consumption	26.340 W (11.980 V, 2.199 A)
Software Rev	6.8.1 (FLASH image2)
Flash Configuration	FLASH image2, active configuration.
Enabled Software features	Key1 + Key2
Banner	
Login Notice	
Switch Module Bay	4
Service Required LED	Disabled
Operational Status	Normal

There are four main regions on the BBI screen:

- The toolbar is used for selecting the context for your actions in the other windows.
- The navigation window is used for selecting particular items or features to act upon.
- The forms window is used for viewing or altering switch information.
- The message window is used for displaying the most recent switch `syslog` messages and events.

---

## Toolbar

### Context Tabs

The toolbar is used for setting the context for your actions in the application. There are three context tabs:

<b>Configure</b>	When selected, you can access the switch configuration forms. Configuration forms can be altered only if you are logged in using the administrator account. Select an item in the navigation window to display the desired configuration form in the forms window.
<b>Statistics</b>	When selected, you can view information about switch performance. Select an item in the navigation window to display the desired statistics in the forms window.
<b>Dashboard</b>	This context tab is selected by default when the BBI is first activated. When selected, basic switch information and status can be viewed in the forms window. Select an item in the navigation window to display the desired dashboard information in the forms window.

The selected context tab is highlighted, to remind you of the current context mode.

### Commands

The following general commands are available on the toolbar:

<b>Save to Active Config</b>	Saves the current configuration to the startup configuration block.
<b>Save to Backup Config</b>	Saves the current configuration to the backup configuration block.
<b>Show Config</b>	Opens a new Web-browser window that displays the running configuration.
<b>Show Log</b>	Opens a new Web-browser window that displays the most recent switch log messages. Close the log browser when finished.
<b>Help</b>	Opens a new Web-browser window that displays basic online help information. Close the Help browser when finished.
<b>Logout</b>	Log off the switch and exit the BBI.

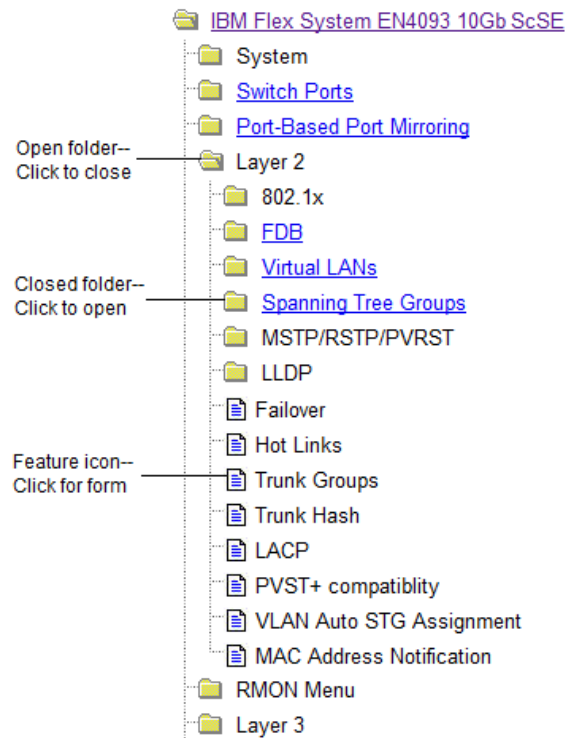
---

## Navigation Window

The navigation window is used for selecting a particular switch feature to act upon. Status, statistics, or configuration forms for the selected item will appear in the forms window, depending on the context chosen on the toolbar.



The navigation window contains a tree of folders, sub-folders, and feature icons:



You can click on any closed folder to open it and reveal its contents. Click on any open folder to close it. Click on any feature icon to load the appropriate status, statistics, or configuration form in the forms window.

Some folders also have forms. If the name of the folders is underlined, click on the name to display the appropriate form.

---

## Forms Window

When a feature icon is selected on the navigation window, a status, statistics, or configuration form is displayed in the forms window. The exact nature of the form depends on the current context selected on the toolbar, as well as the type of information available. Not all feature icons have forms for all contexts.

Some forms display switch information such as settings, status, or statistics. Others allow you to make configuration changes to switch parameters.

---

## Message Window

Switch log messages are generated by events such as login/logout activity, password changes, configuration changes, and switch reboot. The BBI records the most recent messages and displays each one briefly in the message window. When the last message has been displayed, the cycle is repeated.

To view all messages at the same time, select the Show Log command on the toolbar. A new Web-browser window will be opened to display the log information. Close the window when finished.



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## Chapter 3. Configuring the Switch

The IBM Networking OS Browser-Based Interface (BBI) can be used to view and change switch configuration parameters. The same configuration parameters that are available through the switch's command-line interface are present on the BBI configuration forms.

The following provides a basic outline for switch configuration. You should first be familiar with configuration as covered in the IBM N/OS *Command Reference*.

**Note:** You must be logged in using the administrator account in order to change switch configuration settings.

---

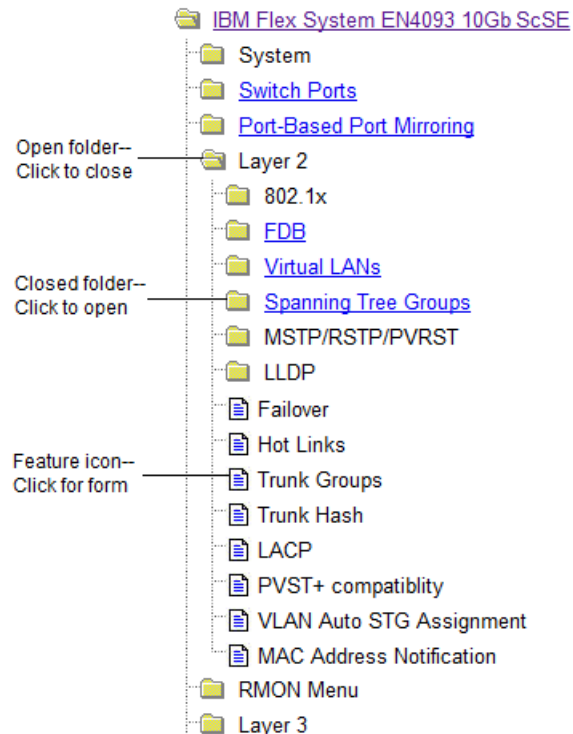
### Configuration Steps

Follow these basic steps for viewing or configuring switch parameters:

1. Click the Configure context tab in the IBM N/OS toolbar:



2. Select a feature icon in the navigation window. For example:



- View or make changes to the settings shown in the forms window. For example:

Field	Value
Enable/Disable Console output of syslog messages	Enabled
Enable/Disable Host Name	Disabled
Syslog Host IP Address	0.0.0.0
Transfer Port of Syslog Host	MGT
Severity of Syslog Host	log debug 7
Facility of Syslog Host	local 0
Second Syslog Host IP Address	0.0.0.0
Transfer Port of Second Syslog Host	MGT
Severity of Second Syslog Host	log debug 7

**Note:** Fields which must be configured for proper switch operations are highlighted on the forms in GREEN type. Items which load other forms when selected are underlined.

- Click the Submit button on the bottom of the form to submit the form contents to the switch.

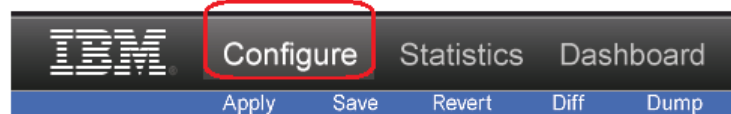
## Using the BBI to Load Switch Software

You can use the Browser-Based Interface to load software onto the EN4093. The software image to load can reside in one of the following locations:

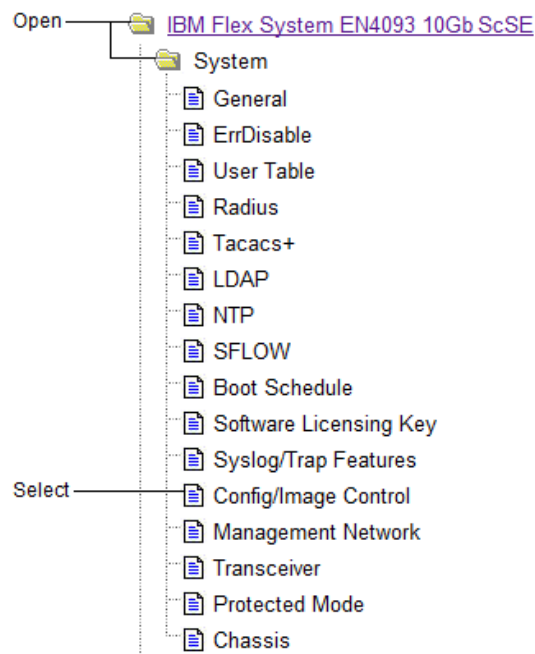
- FTP server
- TFTP server
- Local computer

After you log onto the BBI, perform the following steps to load a software image:

1. Click the Configure context tab in the IBM N/OS toolbar:



2. In the Navigation Window, select System > Config/Image Control.



The Switch Image and Configuration Management page appears.

Switch Image and Configuration Management	
Image 1 Version	version 7.2.0, downloaded 16:48:58 Sat Feb 25, 2012
Image 2 Version	version 7.2.1, downloaded 12:07:07 Sun Sep 23, 2012
Boot Version	version 7.2.0
Active Image Version	7.2.0
Next Boot Image Selection	image 2 ▾
Active Configuration Block	active config
Next Boot Configuration Block Selection	active config ▾
Next CLI Boot Mode Selection	IBMNOS CLI ▾
Prompt for selectable boot mode	ENABLE ▾
NetBoot	
NetConfig for next boot	DISABLE ▾
TFTP IP Address	0.0.0.0
Config file	
FTP/TFTP Settings	
Hostname or IP Address of FTP/TFTP server	100.10.1.2
Username for FTP Server or Blank for TFTP Server	
Password for FTP Server	
Port for Transfer	MGT ▾

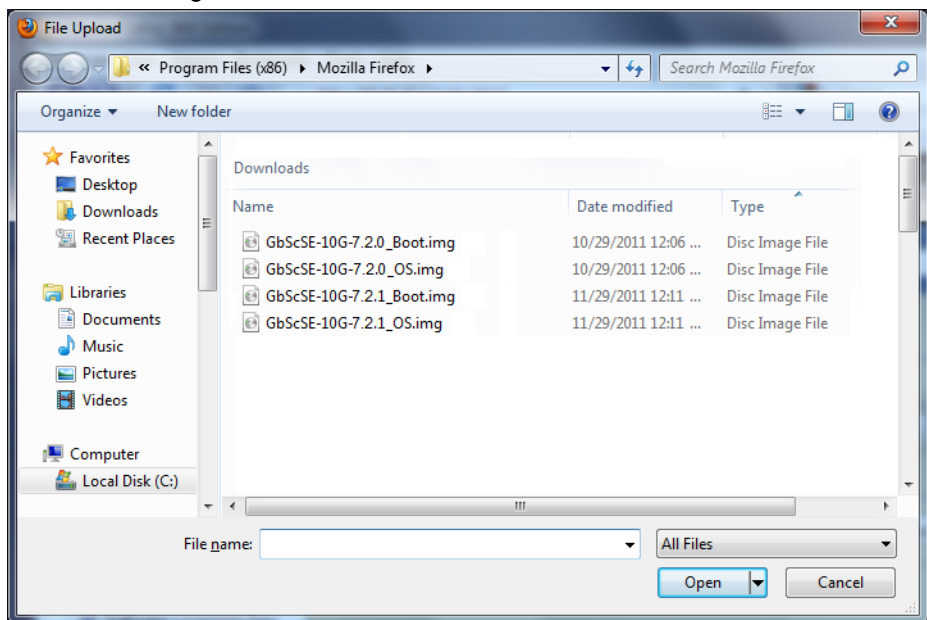
3. If you are loading software from your computer (HTTP client), go to Step 4. If you are loading software from a FTP/TFTP server, enter the server's information in the FTP/TFTP Settings section.

FTP/TFTP Settings	
Hostname or IP Address of FTP/TFTP server	100.10.1.2
Username for FTP Server or Blank for TFTP Server	
Password for FTP Server	
Port for Transfer	MGT ▾

- In the Image Settings section, select the image version you want to replace (Image for Transfer).

<b>Image Settings</b>	
Image for Transfer	image 1 ▾
Image Filename (on server)	7.2.1_os.img <input type="button" value="Get Image"/> <input type="button" value="Put Image"/>
Image Filename (on HTTP Client)	<input type="button" value="Browse..."/> <input type="button" value="Download via Browser"/>

- If you are loading software from a FTP/TFTP server, enter the file name and click **Get Image**.
- If you are loading software from your computer, click **Browse**. In the File Download Dialog, select the file and click **OK**. Click **Download via Browser**.



Once the image has loaded, the page refreshes to show the new software.





---

## Chapter 4. Viewing Statistics

The IBM Networking OS Browser-Based Interface (BBI) can be used to view a variety of switch performance statistics. The same statistics that are available through the switch's command-line interface are present on the BBI statistics forms.

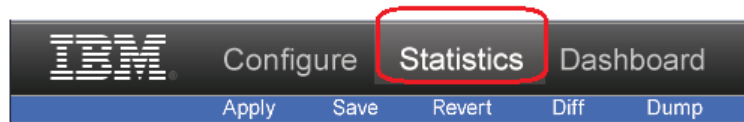
The following provides a basic outline for viewing statistics. You should first be familiar with available statistics as covered in the IBM N/OS *Command Reference*.

---

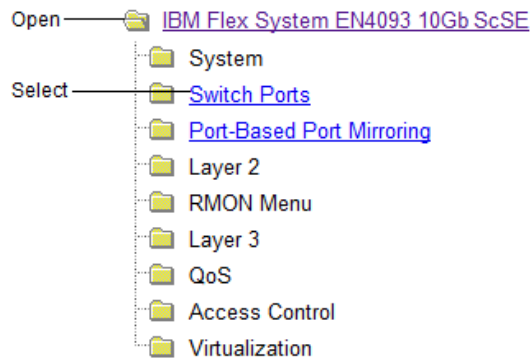
### Steps for Displaying Statistics

Follow these basic steps for viewing switch statistics:

1. Select the Statistics context tab in the IBM N/OS toolbar:



2. Select a feature icon or underlined folder in the navigation window. For example:



3. View the statistics in the forms window. For example:

The screenshot shows the IBM Networking OS interface. The top navigation bar includes 'Configure', 'Statistics', and 'Dashboard'. Below this is a secondary bar with 'Apply', 'Save', 'Revert', 'Diff', 'Dump', 'Show Log', 'Help', and 'Logout'. The main content area is titled 'Switch Ports Statistics Summary' and contains a table with the following data:

Switch Port	InOctets	OutOctets	Total Errors
<a href="#"><u>INT1A</u></a>	0	0	0
<a href="#"><u>INT1B</u></a>	0	0	0
<a href="#"><u>INT2A</u></a>	0	0	0
<a href="#"><u>INT2B</u></a>	0	0	0
<a href="#"><u>INT3A</u></a>	0	0	0
<a href="#"><u>INT3B</u></a>	0	0	0
<a href="#"><u>INT4A</u></a>	0	0	0
<a href="#"><u>INT4B</u></a>	0	0	0
<a href="#"><u>INT5A</u></a>	0	0	0
<a href="#"><u>INT5B</u></a>	0	0	0
<a href="#"><u>INT6A</u></a>	0	0	0
<a href="#"><u>INT6B</u></a>	0	0	0

**Note:** Items which load other forms when selected are [underlined](#).

---

## Chapter 5. The Dashboard

The IBM Networking OS Browser-Based Interface (BBI) can be used to view the present settings and operating status of a variety of switch features. The same information available through the switch's command-line interface is present on the dashboard forms.

The following provides a basic outline for viewing the dashboard forms. You should first be familiar with configuration as covered in the *IBM N/OS Command Reference*.

---

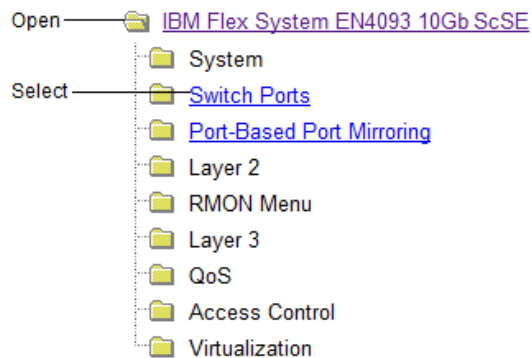
### Steps for Displaying Dashboards

Follow these basic steps for viewing switch dashboard forms:

1. Select the Dashboard context tab in the BBI toolbar:



2. Select a feature icon in the navigation window. For example:



3. View information shown in the forms window. For example:

The screenshot shows the IBM Networking OS Dashboard for an IBM Flex System EN4093 10Gb. The main content area is titled "Switch Ports Dashboard" and displays a table of port configurations. The table has six columns: Status, Switch Port Info, Operational Status, Speed Duplex FlowCtl, Input Frames Output Frames, and LinkState Changes Total Errors. Two ports are listed: INT1A and INT1B. Both ports are currently offline and have a speed/duplex of 1000/Full/Both. The table also shows zero input/output frames and zero link state changes/errors for both ports.

Status	Switch Port Info	Operational Status	Speed Duplex FlowCtl	Input Frames Output Frames	LinkState Changes Total Errors
	<u>INT1A</u> : name: INT1A stp: DSB ext stp guard: no rmon: disabled portfast: disabled ErrDisable Recovery: disabled Link Flap Dampening: disabled Flood Blocking: disabled FDB Learning: enabled Tagging: disabled PVID: 1 VLANs:1	offline	1000/Full/Both	0 0	0 0
	<u>INT1B</u> : name: INT1B stp: DSB ext stp guard: no rmon: disabled portfast: disabled ErrDisable Recovery: disabled Link Flap Dampening: disabled Flood Blocking: disabled FDB Learning: enabled Tagging: disabled PVID: 1 VLANs:1	offline	1000/Full/Both	0 0	0 0

**Note:** Items which load other forms when selected are underlined.





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