

# Blue Coat® Systems

## 8100 Series

### *Installation Guide*

*Version: SGOS 4.x and 5.x*



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## **Chapter 1: The Blue Coat SG 8100**

- Unpacking the Blue Coat SG 8100 6
- SG 8100 Connection Ports 7
- SG 8100 Front Panel 8

## **Chapter 2: Installing the SG 8100**

- Installing the SG 8100 into an Equipment Rack 11
- Attaching the Cables 15
- Opening the Front Panel 18
- Initial Installation of the Disk Drives 18
- Powering the SG 8100 On and Off 21
- Checking Status with the Front Panel LEDs 22
- Checking LAN Activity with Back Panel LEDs 25

## **Chapter 3: First-Time Configuration**

- Overview of First-Time Configuration 27
- Configuring the SG 8100 with the Front Panel 28
- Configuring the SG 8100 Using a Direct Serial Port Connection 34
- Configuring the SG 8100 Running 5.x or Higher Using a Direct Serial Port Connection 41
- Configuring the SG 8100 Using the Setup Wizard 50
- Logging on to the SG 8100 52
- Configuring a Front-Panel PIN 57
- Configuring the Front-Panel LCD Behavior 58

## **Chapter 4: Maintaining and Upgrading the SG 8100**

- Hot-Swapping a Disk Drive 61
- Hot-Swapping a Power Supply 64
- Option Upgrade Cards 70

## **Chapter 5: Troubleshooting**

- System Warning LED Indicates System Malfunction 71
- Testing the SG 8100 72
- Cannot Access the Serial Console 72
- CLI Session Times Out 73
- CLI Limited to 16 Sessions 73
- Cannot Access the Web Interface 73
- Web Interface Username and Password Fail 74

Web Interface Java Errors Occur	74
Client Requests Fail	74
Client Responses Are Slow	75
SG 8100 Certificate No Longer Valid if IP Address Changes	76
The ProxySG Does Not Come Back Up After Rebooting	77

## **Appendix A: Specifications**

Environmental and Electrical	79
Lasers	80
Connector	80

## **Appendix B: Regulatory Statements**

Class A Digital Warning	81
EC Community EMC Warning	81
Canadian EC EMC Warning	81
Australia/New Zealand EC EMC Warning	81
Taiwan BSMI Notification	82
China CCC Notification	82
Japan VCCI EMC Notification	82
Battery Warning Notification	82
Declaration of Conformity	83

## **Chapter 6: Index**

## *Chapter 1: The Blue Coat SG 8100*

This *Installation Guide* provides general instructions for installing, configuring, and using the Blue Coat SG 8100. The procedures in “[Troubleshooting](#)” on page 71 can help you verify that your system is installed and operating properly.

Once you have completed the first-time configuration of the SG 8100 and have logged in, you should do the following:

- Upgrade the SG 8100 software by downloading the latest patch release (available at <http://download.bluecoat.com>).
- Fully configure the appliance.

To configure the SG 8100, you will need to download the *Blue Coat ProxySG Configuration and Management Guide Suite*, (the CMG) available on the Blue Coat Web site at [www.bluecoat.com](http://www.bluecoat.com). (Look for *WebPower Login* under *Support*.)

If you log in using an Internet browser, you can access the online Help by clicking the Help button on any screen in the Management Console, the graphical interface of the SG 8100. Additionally, you can visit the Documentation section in the Management Console to view the CMG.

You can also visit the Blue Coat Web site for the latest support bulletins and technical notes.

In this chapter you will find a list of items shipped with the SG 8100 and an overview of the external features of the SG 8100.

## Unpacking the Blue Coat SG 8100

When you receive the unit, verify that the following items are contained in the shipment:

- 
- Blue Coat SG 8100
  - Serial Cable
  - Power Cords (2 AC or 3 DC)
  - Grounding wire (with lugs, screws, and screw nuts) DC units only
  - *Quick Start Guide*
  - Disk Drives
  - License and Warranty
- 

***Important:*** This product is intended for operation and servicing only by appropriately trained technical personnel.

Dieses Produkt wird für Betrieb vorgehabt und wird nur durch passend ausgebildeten technisches Personal gewartet

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If any of the items are missing or damaged, e-mail Blue Coat Technical Support at [support@bluecoat.com](mailto:support@bluecoat.com).

## SG 8100 Connection Ports

The SG 8100 connection ports are located at the back of the unit, including:

- Four Network Interfaces

Two integrated 10/100/1000 Mbps on-board ports for high-speed connections.

The SG 8100 is shipped with a Dual GigE Copper card installed in the expansion slot labeled 2. This card has two 10/100/1000 Mbps ports for high-speed connections.

- Serial console port

The serial console port connects to a PC, serial terminal, or stand-alone serial console box.

- Four upgrade slots for additional network and add-in cards.

Slots 2 and 3 accept Dual or Quad GigE Copper or Fiber LX cards and slots 4 and 5 accept SSL Accelerator cards.

- Two USB ports

- AC or DC power supplies

The SG 8100 comes with two AC or three DC hot-swappable power supplies.

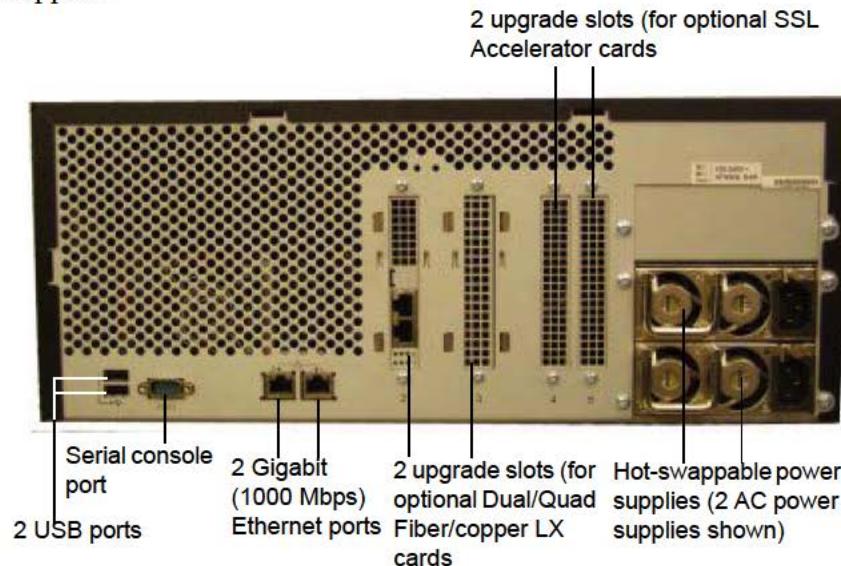


Figure 1-1: Connection Ports at the Back of the SG 8100

## SG 8100 Front Panel

The SG 8100 front panel contains buttons and displays that allow you to:

- Power the SG 8100 on and off.
- View network, disk drive, and system status.
- Configure basic network settings.

Using the front panel LCD and buttons is the quickest method for setting the SG 8100 initial network configuration and connecting it to the network. See “[Using the Front Panel to Configure Basic Network Settings](#)” on page 32.

- Install or hot-swap disk drives.

For information about installing disk drives for the first time, see “[Initial Installation of the Disk Drives](#)” on page 18. For information about

hot-swapping disk drives (replacing a disk drive without powering off), see ["Hot-Swapping a Disk Drive"](#) on page 61.

The front panel LED status indicators and the LCD are visible when the front panel is closed, as shown in Figure 1-2.

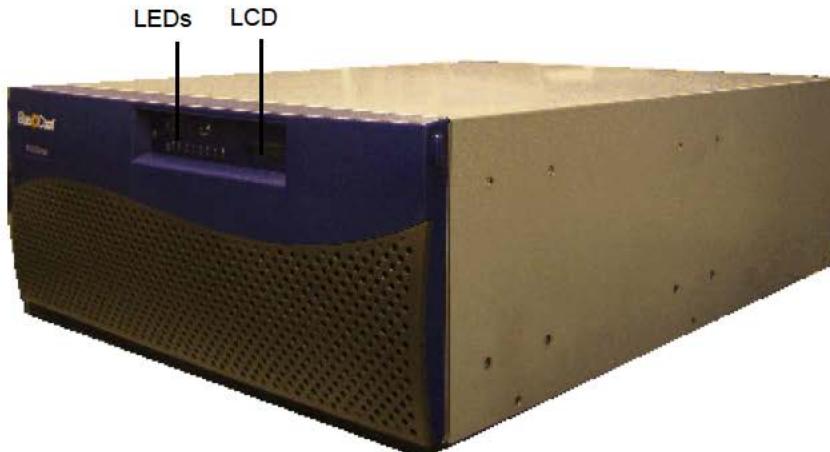


Figure 1-2: Front of the SG 8100

When the front panel is open, as shown in Figure 1-3, the power button, the control buttons, and the disk-drive bays are visible.

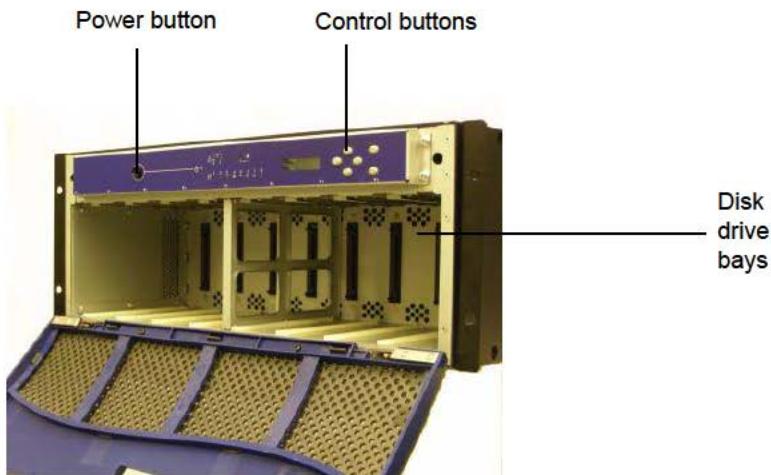


Figure 1-3: The SG 8100 with the Front Panel Open

## *Chapter 2: Installing the SG 8100*

This chapter describes how to mount, assemble, and power on the Blue Coat SG 8100, and how the front panel LEDs indicate the system status.

### **Installing the SG 8100 into an Equipment Rack**

#### **Rack-Mounting Safety Instructions**

- Verify that the rack is rated to support the installed equipment.
- Ensure that the weight of the SG 8100 is distributed properly.
- Ensure that the rack allows sufficient space to provide adequate air circulation. Allow a minimum three-inch (7.6 cm) clearance in front of and behind the SG 8100.

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**Note:** A Blue Coat SG 8100 unit weighs up to 82 pounds (37 kg), depending on the model. Blue Coat recommends that you install the SG 8100 into an equipment rack with a shelf, using the front rack-mounting brackets to fasten the unit to the equipment rack.

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- Elevated Operating Ambient—If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading—Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading—Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the

circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- Earthing (Grounding)—Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

## Install the SG 8100 into an Equipment Rack with a Shelf

- 1** To install the SG 8100 into an equipment rack with a shelf (recommended), slide the unit into the shelf until the front rack-mounting brackets are flush with the equipment rack (you might need to remove the middle rack-mounting brackets first).
- 2** Use four equipment-rack screws (two on each side) to securely fasten the SG 8100 to the equipment rack.



Figure 2-1: SG 8100 Installed in an Equipment Rack with a Shelf

## Install the SG 8100 into an Equipment Rack without a Shelf

---

**Important:** Use an equipment-lift or two people to install the SG 8100 into an equipment rack without a shelf.

---

- 1 To install the SG 8100 free-standing into an equipment rack (without a shelf), use an equipment-lift or another person to position the unit so that the front or middle rack-mounting brackets are flush with the equipment rack.



Figure 2-2: Positioning the SG 8100 into an Equipment Rack with a Lift

- 2 Use four equipment-rack screws (two on each side) to securely fasten the ProxySG to the equipment rack.



Figure 2-3: SG 8100 Installed in an Equipment Rack without a Shelf

## Attaching the Cables

**Note:** International power cords are available. If included, the cords are shipped with the SG 8100 along with the North American power cords.

- 1 Attach the network connection to Adapter 0, Interface 0. This connects the network to the interface configured via the LCD (see *"Overview of First-Time Configuration"* on page 27).
- 2 Attach the serial cable that came with the ProxySG to the serial port connection, if necessary.

The serial cable allows you to hook up to a PC, a serial terminal, or a standalone serial console box to configure and manage the SG 8100.



Figure 2-4: Attach the Serial Cable and Network Connection

- 3 Attach the power cords:

- For an AC-powered SG 8100, attach the two AC power cords as shown in Figure 2-5; connect the cords to an AC power source.

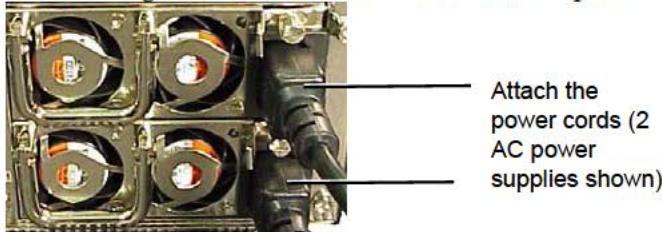


Figure 2-5: Attach the Power Cords

- For a DC-powered SG 8100, complete the following steps:



**WARNING!**

You must connect the grounding wire included with the SG 8100 from the DC power supply to an electrically neutral ground before connecting the DC power cords. You must also use a 20A circuit breaker to connect to your DC power source as an over-current protection device.

- a. Connect the DC grounding wire (minimum AWG 8 rating) to the ground terminal on the side of the ProxySG DC power supply (use the screws and nuts provided); attach the other end to the chassis of your DC power source or to another electrically neutral ground.

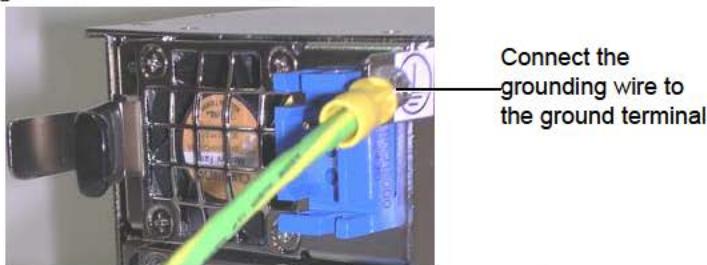


Figure 2-6: DC Power Supply Grounding Terminal

- b.** Connect the DC power connectors to the SG 8100 DC power supply (you need to connect at least two of the three power supplies to a DC power source).



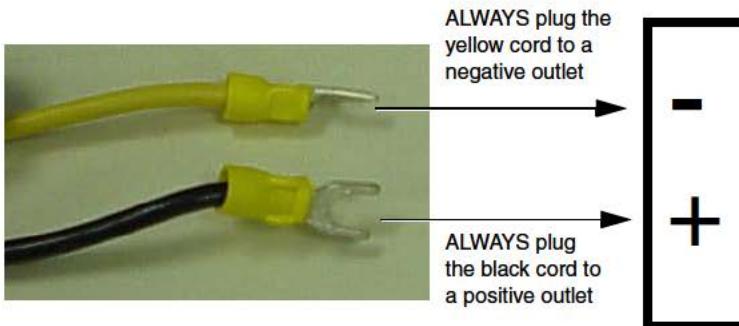
Connect at least two of the  
three DC power connectors to  
the SG 8100 DC power supply

Figure 2-7: Hot-Swappable DC Power Supply



**WARNING!**

If you use the cables supplied by Blue Coat to reconnect the DC power connections to a DC power source, **ALWAYS** connect the yellow DC power cord to a negative DC outlet, and connect the black DC power cord to a positive DC outlet.



- c.** Connect the DC power connections to a DC power source.

## Opening the Front Panel

Open the front panel to access the power and control buttons, and to insert or remove disk drives.

- To open the front panel, use the two bezel tabs on each side of the front panel to open the front panel and pull it forward and down.

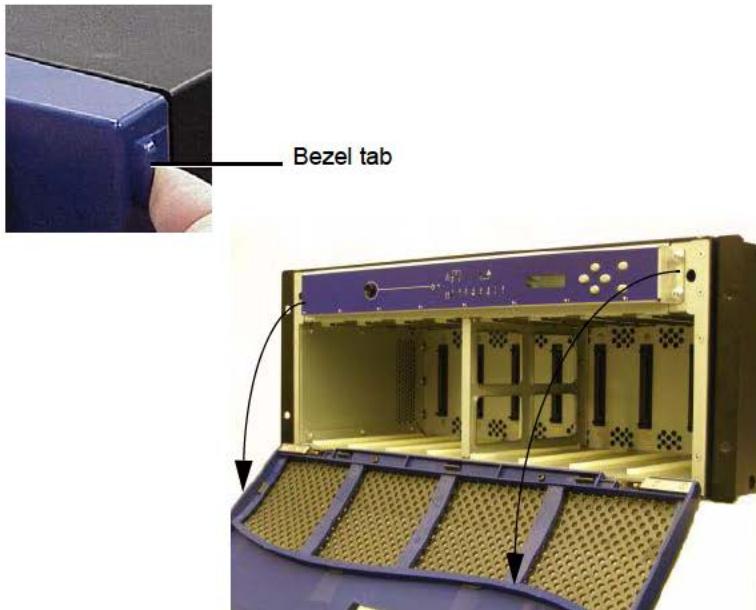


Figure 2-8: Open the Front Panel

## Initial Installation of the Disk Drives

Complete the following procedure to do a first-time installation of the disk drives that shipped with the SG 8100. For instructions about hot-swapping a disk drive (replacing a disk drive without powering off the unit), see ["Hot-Swapping a Disk Drive"](#) on page 61.

- 1 Open the front panel and power off the SG 8100, if necessary (check that the Power LED is off).

- 2** Remove the disk drives from the shipping container and prepare each for insertion into the drive bays, as follows:
- The drive bays are numbered from 1 to 8, starting from the left; insert the drives from left to right, *always* starting with drive bay 1.
  - When you insert a disk drive, the disk lever (the black latch) must be on top.
  - The left edge of the disk-drive container must align with both the plastic guide rail at the bottom of the disk drive bay and the metal guide rail at the top.
  - Insert disk drives carefully to avoid damaging the SCSI connectors.

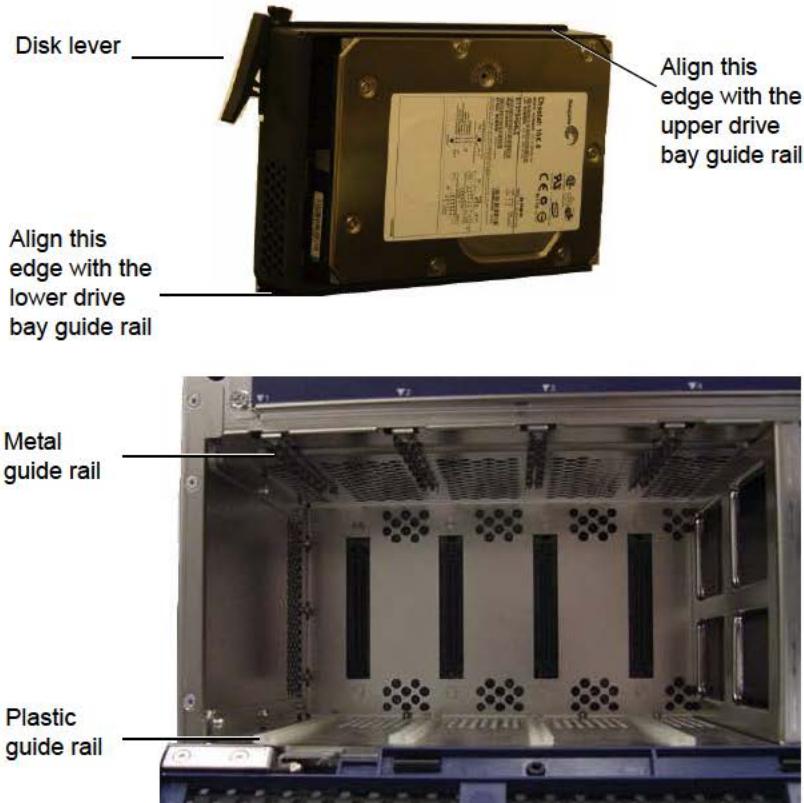


Figure 2-9: Insert Disk Drives Starting with Drive Bay 1

- 3** To insert a disk drive, hold the disk lever up, align the disk drive with the drive bay guide rails, and gently push the disk drive into the drive bay. Push the disk drive as far back as possible to ensure a complete connection.

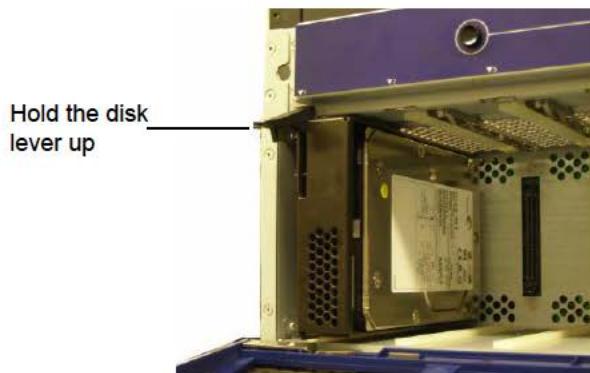


Figure 2-10: Inserting a Disk by Sliding Inside Upper and Lower Guide Rails

- 4** When the disk lever meets the ProxySG frame, push the lever down slowly until the lever locks in place.

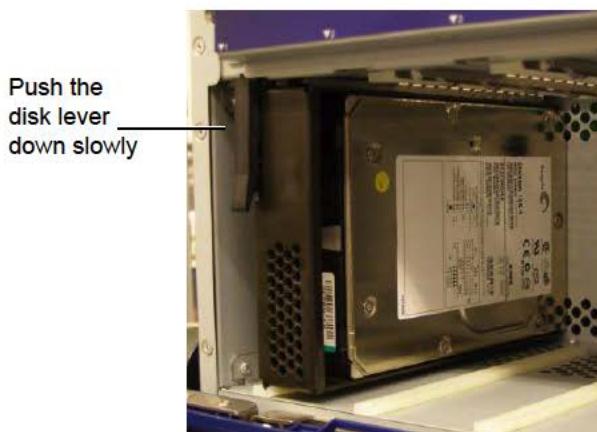


Figure 2-11: Locking a Disk Drive into Place

- 5** Repeat Steps 2 through 4 as necessary until each disk drive is installed.

## Powering the SG 8100 On and Off

Follow this procedure to power on or power off the ProxySG.

- 1 Open the front panel of the SG 8100 and press the power button.

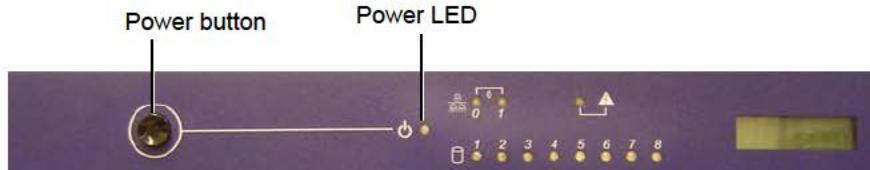


Figure 2-12: Press the Power Button to Power On or Power Off the SG 8100

- 2 Verify that the SG 8100 has powered on or off successfully.

- Successful Power On:

The Power LED is green and the LCD displays “Blue Coat” when the SG 8100 first powers on.

After one or two minutes, the System LED is green and the LCD displays “IP address not configured” (if a first-time configuration has not been done) or it cycles between CPU utilization and proxied traffic statistics. The LEDs corresponding to all installed and functioning disk drives are green, and the corresponding LAN LED is lit for all connected network interfaces. Figure 2-13 shows an example of a successful power on; different network and disk drive configurations may not look the same.

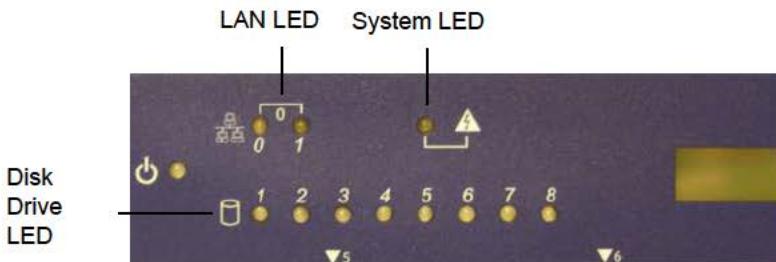


Figure 2-13: Example of a Successful Power On

- Successful Power Off:

The LCD and LEDs go off when the SG 8100 powers off.

- 3** Close the front panel.

## Checking Status with the Front Panel LEDs

The front panel LEDs indicate the status of the ProxySG.

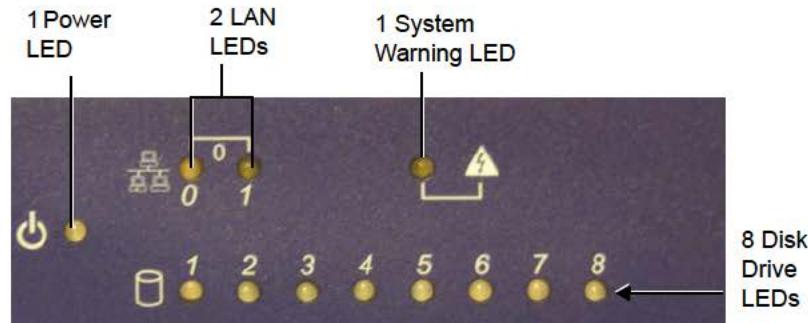


Figure 2-14: Front Panel LEDs

Table 2.1 describes the appearance and meaning of LED colors and flash rates.

Table 2.1: Front Panel LED Connection and Activity Status

Front Panel LEDs	Description
Power	<p>The Power LED indicates if power is being supplied to the SG 8100.</p> <ul style="list-style-type: none"><li>• If the SG 8100 is powered on and configured, the Power LED is green.</li><li>• If the SG 8100 is powered on and not configured, the Power LED will blink from green to amber.</li><li>• If the SG 8100 is without power, the Power LED is off.</li></ul>

Table 2.1: Front Panel LED Connection and Activity Status

<b>LAN</b>	The two LAN LEDs indicate network connection status for Adapter 0 (Interfaces 0 and 1). <ul style="list-style-type: none"><li>• If a network link is not established for a particular adapter/interface, the LAN LED is off.</li><li>• If a network link is established for a particular adapter/interface, but no activity is detected, the LAN LED colors are as follows:<ul style="list-style-type: none"><li>• 10 Mbps: Solid orange</li><li>• 100 Mbps: Solid blue</li><li>• 1000 Mbps connection: Solid purple</li></ul></li><li>• If a network link is established for a particular adapter/interface and activity is detected, the LAN LED colors are as follows:<ul style="list-style-type: none"><li>• 10 Mbps: Flashes orange</li><li>• 100 Mbps: Flashes blue</li><li>• 1000 Mbps: Flashes pink</li></ul></li></ul>
<b>Front Panel LEDs</b>	<b>Description</b>
<b>System Warning</b>	The System Warning LED indicates if the system has a malfunction. <ul style="list-style-type: none"><li>• If this LED is off, there is no status on the health of SG 8100.</li><li>• If the SG 8100 is operating normally, the System Warning LED is solid green.</li><li>• If a system warning occurs, the System Warning LED is solid amber.</li><li>• If a serious problem requiring immediate attention occurs, the System Warning LED flashes amber.</li></ul> If the System Warning LED is solid or flashing amber, see " <a href="#">System Warning LED Indicates System Malfunction</a> " on page 71 for information about detecting the problem.

Table 2.1: Front Panel LED Connection and Activity Status

<b>Disk Drive</b>	<p>The Disk Drive LEDs indicate the connection and activity status of the corresponding disk drives.</p> <ul style="list-style-type: none"><li>• If a disk drive is not connected, the corresponding Disk Drive LED is off.</li><li>• If a disk drive is connected, but no activity is detected, the corresponding Disk Drive LED is solid green.</li><li>• If a disk drive is connected and activity is detected, the corresponding Disk Drive LED is either solid amber or flashes between green and amber at an irregular interval.</li><li>• If a disk drive is connected but is not functioning (either because it has been taken offline or is faulty), the corresponding Disk Drive LED flashes from green to amber at a regular interval. <i>A Disk Drive LED that flashes amber at a regular interval indicates a drive that can be removed.</i></li></ul>
-------------------	---

## Checking LAN Activity with Back Panel LEDs

You can also check LAN activity from the back of the SG 8100, at the site of the Gigabit Ethernet ports. Figure 2-15 shows two LAN connectors—one at Adapter 0, Interface 0 (on the left), and one at Adapter 1, Interface 0 (on the right).

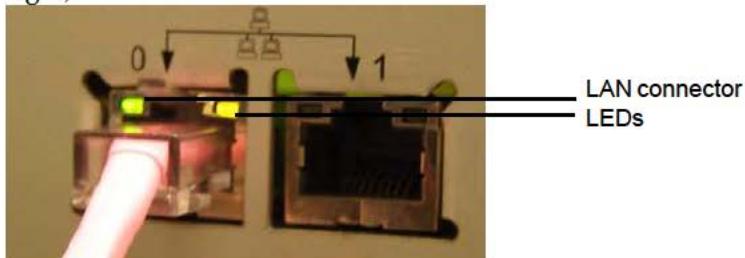


Figure 2-15: LAN Connection Port LEDs at the Back of the SG 8100

Table 2.2 describes the appearance and meaning of the LAN Connection Port LED colors and flash rates.

---

**Note:** If no link is established, the connection port LED will be off.

---

Table 2.2: Connection Port LED Activity Status

<b>Adapter 0 Connections (Interface 0 and 1)</b>	<b>Link established; no activity detected</b>	<b>Link established; activity detected</b>
10 Mbps	solid green	flashing green
100 Mbps	solid yellow	flashing yellow
1000 Mbps	solid orange	flashing orange



## *Chapter 3: First-Time Configuration*

The Blue Coat SG 8100 requires a first-time configuration prior to use.

Once you have completed first-time configuration, refer to the *Blue Coat ProxySG Configuration and Management Guide Suite*, available from the Blue Coat Web site at [www.bluecoat.com](http://www.bluecoat.com). for information on how to fully configure the SG 8100 to best meet your needs.

### **Overview of First-Time Configuration**

There are two ways to do the first-time configuration:

- Use the SG 8100 front-panel LCD and buttons.
- Use a direct connection between the SG 8100 and either a standalone serial terminal or a PC with an available serial (COM) port.

Both of these methods allow you to make the basic network settings required to test the SG 8100 connection and functionality. After completing the first-time configuration, you must log in to the SG 8100 and use the command-line interface (CLI) or Management Console Web interface to fully configure the appliance. First-time configuration is designed only to get you up and running for testing purposes.

## Configuring the SG 8100 with the Front Panel

Using the front panel control buttons and LCD is the quickest and easiest way to do a first-time configuration. Figure 3-1 shows the front panel LCD and control buttons.

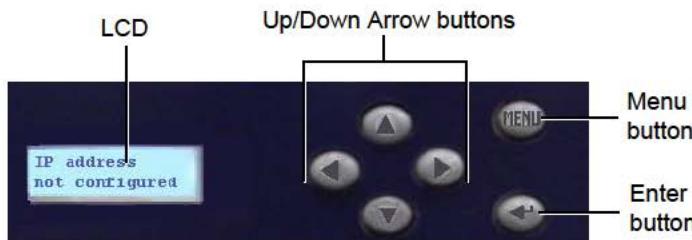


Figure 3-1: Front Panel LCD and Control Buttons

Use the LCD and control buttons to set the basic networking parameters and monitor the SG 8100.

### LCD Behavior

The default behavior of the front-panel LCD is to turn off after 30 seconds. The front-panel LCD behavior is configurable; see "[Configuring the Front-Panel LCD Behavior](#)" on page 58 for information.

#### *To Relight the Front-Panel LCD:*

- If the SG 8100 is powered on, but the front-panel LCD is dim, press any front-panel control button (see Figure 3-1) to relight the LCD.

After the LCD relights, the front-panel control buttons return to normal behavior.

## Modes and the LCD

The SG 8100 has three modes, which can be viewed in the LCD.

**Status Mode** The default mode. Before the SG 8100 is configured, the LCD in Status mode displays “IP address not configured.” After initial configuration, the LCD in Status mode displays CPU utilization and proxied traffic statistics.

In Status mode, there is no cursor in the LCD.

**IP address  
not configured**

**Proxied Traffic:  
23 kbps**

**Configuration Mode** From Status mode, push the **Enter** button to go to Configuration mode. In Configuration mode, you can use the **Up** and **Down** arrow buttons to cycle the LCD through the six networking parameters (IP Address, Subnet mask, Gateway address, DNS address, Console Password, and Enable Password).

In Configuration mode, the cursor is an underscore in the LCD.

**IP address:  
010.025.036.047**



---

**Edit Mode** From Configuration mode, use the **Up** or **Down** arrow button until the parameter you want to configure is displayed, then press the **Enter** button to go to Edit mode for that parameter (for a first-time configuration, you must begin with the first displayed parameter—IP address).

To configure the parameter, use the **Left** and **Right** arrow buttons to position the cursor over a character you want to change, then use the **Up** and **Down** arrow buttons to cycle through the characters. When the parameter is configured correctly, press the **Enter** button to save the setting and return to Configuration mode.

---

**Note:** The SG 8100 automatically exits Edit mode, without saving parameter configurations, if no activity is detected for 20 seconds.

---

In Edit mode, the cursor is a blinking box in the LCD.

IP address:  
01■.025.036.047  
↑

---

## The Control Buttons

This section explains how to use the front panel control buttons to add configuration settings.

The buttons work as follows:

---

### Enter Button



When you push the **Enter** button in Status mode, the SG 8100 enters Configuration mode. In Configuration mode, one of the six configurable parameters displays in the LCD (starting with IP address).

When you push the **Enter** button in Configuration mode, the SG 8100 enters Edit mode for the parameter displayed.

When you push the **Enter** button in Edit mode, the SG 8100 saves any changes you made to the parameter displayed and returns to Configuration mode.

---

### Menu Button



The **Menu** button functions like an Escape key. When you push the **Menu** button in Edit mode, the SG 8100 returns to Configuration mode, *cancelling any changes you made to the parameter displayed*.

When you push the **Menu** button in Configuration mode, the SG 8100 returns to Status mode. Any changes you made while in Edit mode have already been saved, and are not affected when you push the **Menu** button in Configuration mode.

---

### Left and Right Arrow Buttons



When you push the **Left** and **Right** arrow buttons in Edit mode, the cursor moves back and forth over the configurable settings of the parameter displayed.

---

### Up and Down Arrow Buttons



When you push the **Up** and **Down** arrow buttons in Configuration mode, the SG 8100 cycles through the six configurable parameters.

When you push the **Up** and **Down** arrow buttons in Edit mode, the SG 8100 cycles through the characters available for the selected setting of the parameter (the selected setting is the character that the cursor is over when you push the arrow buttons).

---

## Using the Front Panel to Configure Basic Network Settings

Use the front-panel components of the SG 8100 to do a quick first-time configuration of the following networking parameters on Adapter 0:

- IP address
- Subnet mask
- Gateway address
- DNS address
- Console password
- Enable password

---

***Important: A default username (admin) is already set on the SG 8100.***

***A unique console and enable password are generated automatically. You can configure the passwords now, or write down the auto-generated passwords and use them to log in, changing them later. The enable password is not required if you log in using a browser.***

---

- 1 When the LCD reads “IP address not configured,” press the **Enter** button to enter Configure mode.  
The IP address parameter appears in the LCD, and the cursor appears as an underscore.
- 2 Press the **Enter** button again to enter Edit mode.  
The cursor changes to a blinking box.
- 3 Press the **Left** or **Right** arrow buttons to position the cursor over the characters you want to change; press the **Up** or **Down** arrow buttons to change them.
- 4 When you have all the characters of the parameter entered correctly, press the **Enter** button to save the changes and return to Configure mode.
- 5 Press the **Down** arrow button to move to the next parameter; press the **Enter** button to enter Edit mode.

- 6** Repeat Steps 3 through 5 for the Subnet mask, Gateway address, and DNS address parameters. When the LCD reads, “Console password: Push to set,” go to Step 7.
- 7** Press the **Enter** button to enter Edit mode (if necessary) and complete one of the following two steps:
  - To configure the password later (after you log in), write down the auto-generated password and press the **Enter** button to return to Configure mode.
  - To configure the password now, follow Steps 3 and 4.
- 8** Push the **Down** arrow button to move to the enable password parameter; repeat Step 7 for the enable password.

The LCD will display “Enable password: Push to configure” when you are back in Configuration mode. Do not push the **Enter** button again, or a new auto-generated enable password will be created (if that happens, repeat Step 7).

- 9** Push the **Down** arrow button to move to the secure serial port parameter. Selecting **Yes** to secure the serial port means that you will be challenged for the administrative username/password when accessing the serial console and will be challenged for the setup password when accessing the setup console.

To restrict access to the front panel, configure the front panel PIN from the CLI after initial setup is complete (see “*Configuring a Front-Panel PIN*” on page 57).
- 10** Press the **Enter** button to enter Edit mode (if necessary) and follow Steps 3 and 4 to secure the serial port.
- 11** Press the **Menu** button to return to Status mode.

Initial network configuration is now complete. The LCD cycles between CPU utilization and proxied traffic statistics.

## Configuring the SG 8100 Using a Direct Serial Port Connection

If your ProxySG is running 4.2.x or higher, use the following procedure to configure it with a direct serial port connection.

Use a standalone serial terminal or a PC and use the SG 8100 command-line interface (CLI) to do a first-time configuration of the following basic network information:

- IP address
- IP subnet mask
- IP gateway address
- DNS server
- Console username
- Console password
- Enable password
- Serial port password (optional)

In addition, you can optionally configure a bridge, a forwarding host, or you can restrict access to the SG 8100 to a particular IP address or addresses.

---

**PC Note:** If the PC is using standard serial port settings, you should have a problem-free connection. You can run into problems, for example, if there are non-standard PC serial port settings.

---

Do the following procedure by reading on-screen material and entering data where necessary. The on-screen instructions display as five separate pages. In the procedure below, places that require you to enter data show example entries in bold text.

- 1 Power on and connect the serial terminal or PC as described below (the SG 8100 must be powered off):

*Serial terminal:* Connect the terminal's serial cable to the ProxySG's serial console port; start the terminal and verify that it is set as described below.

*PC:* Connect the serial cable that came with the ProxySG to a serial port on the PC and to the ProxySG's serial console port; start the PC, open a terminal emulator (such as HyperTerminal), and connect to the serial port to which you attached the cable. Create and name a new connection

(either a COM or TCP/IP), and verify that the port is set using the parameters below:

- Baud rate: 9600 bps
- Parity: none
- Flow control: none
- Emulation: VT 100
- Data bits: 8
- Stop bits: 1
- Smooth-scroll: disabled

If you have set flow control to *none*, and if you have *smooth-scroll* as an option in your terminal settings, you can disable smooth-scroll in your terminal settings to reduce the chance of losing output.

**2** Power on the ProxySG and wait for the system to finish booting.

The following configuration alert displays:

```
***** CONFIGURATION ALERT *****  
System startup cannot continue for one of these  
reasons:  
(a) Need at least one adapter (or bridge) configured  
with an IP address and subnet.  
(b) Need the console password and enable password.  
***** SYSTEM STARTUP TEMPORARILY SUSPENDED *****  
Press "enter" three times to activate the serial console
```

Figure 3-2: Initial Setup—Configuration Alert

**3** Press the computer keyboard <Enter> key three times.

When the Welcome to the ProxySG Appliance Setup Console prompt appears, the system is ready for the first-time network configuration.

Five screens will display, one at a time, as shown in the following steps.

- 4 On page 1, indicate whether you want to configure a bridge; enter an interface number, and enter the values as indicated for the four network settings.

---

**Note:** If you enter YES, to configure a bridge, you must also configure at least one bridge port and associate a network interface with it.

---

```
Welcome to the ProxySG Appliance Setup Console
----- (page 1 of 5) -----
Press <ESC> at any time to return to the main menu

DIRECTIONS:
This setup console is used to assign IP addresses to
the ProxySG Appliance. After assigning the IP addresses
you can connect to the command line interface or Web
interface to perform additional management tasks.

If you have a pass through card, you can configure it by
using the bridge name passthru-<slot number>. For
example if the pass through card is at slot 2, the
bridge name would be passthru-2.

In order to create a new bridge, you would have to
1. assign a name to the bridge
2. associate one or more interfaces to the bridge

Configure bridge? Y/N [No] No
Enter interface number to configure [0:0]:
IP address [0.0.0.0]: 10.25.36.47
IP subnet mask [0.0.0.0]: 255.255.255.0
IP gateway [0.0.0.0]: 10.25.36.1
DNS server [0.0.0.0]: 101.52.23.101

You have entered the following IP addresses:
IP address: 10.25.36.47
IP subnet mask: 255.255.255.0
IP gateway: 10.25.36.1
DNS server: 101.52.23.101

Would you like to change any of them? Y/N [No] No
```

Figure 3-3: Initial Setup—Page One

- 5** On page 2, enter a console username and a console and enable password. A default username (admin) is already in place—you can change it here.

Usernames and passwords can each be from 1 to 64 characters in length, and that passwords that contain special characters (such as an exclamation point) must be in quotes.

```
----- (page 2 of 5) -----  
Press <ESC> at any time to return to the main menu  
DIRECTIONS:  
The console username, password and enable password are  
special administrative credentials which can be used to  
log in to the command line interface or web management  
interface.  
WARNING – The console password and enable password are  
not defined.  
The system cannot start up until these are defined.  
You must configure the console user account now.  
Enter console username: name123  
Enter console password: "*****"  
Verify console password: "*****"  
Enter enable password: "*****"  
Verify enable password: "*****"
```

Figure 3-4: Initial Setup—Page Two

- 6** (Optional) For maximum security, secure the serial port.

The serial port allows you to configure and access the SG 8100 using a serial cable. This can pose a security risk because anyone with access to the appliance can reconfigure the SG 8100 settings. This optional step sets

a password on the serial console setup, allowing only authorized personnel the ability to reconfigure the appliance.

```
Do you want to secure the serial port? Y/N [Yes] Yes
Enter setup password: "*****"
Verify setup password: "*****"

WARNING:

If you continue and enable the secure serial port it
will not be possible to enter the setup console
without the setup password. If the setup password is
lost, assistance from Blue Coat Systems will be
required and all system configuration may be lost.
It is recommended that this password be stored in a
physically secure location. Access to the CLI on the
serial port will challenge for credentials.

To enable the secure serial port, re-enter the setup
password: "*****"
```

Figure 3-5: Initial Setup—Secure the Serial Port (Optional)

- 7 (Optional) On page 3, you can restrict access to the SG 8100.

---

**Note:** For maximum security, you should restrict physical access to the SG 8100.

After initial configuration, you can change the workstation restriction settings through the security commands in the CLI or the Console Access tab in the Management Console. You can add or remove IP addresses or you can enable or disable workstation restrictions. For details, refer to the “Security and Authentication” chapter in the *Blue Coat ProxySG Configuration and Management Guide Suite*.

---

----- (page 3 of 5) -----

Press <ESC> at any time to return to the main menu

**DIRECTIONS:**

The console username and password are special: they can be used to log in to the CLI or Web Management interface even in circumstances where this is denied by VPM or CPL policy. This makes the console account useful in emergencies, as a way to log in when policy is broken, but it may also create a security hole.

To close the security hole, we recommend that you restrict the use of the console account to specific workstations, identified by their IP address.

This dialog allows you to add one IP address to the list of workstations that are authorized to use the console account. (This same list is also used to restrict which workstations can use SSH with RSA authentication.) Additional workstations may be configured later, from the command line interface or the Web interface.

**WARNING:** The console account can currently be used to log in from any workstation.

Would you like to restrict access to an authorized workstation? Y/N [Yes] **Yes**

Authorized workstation [0.0.0.0]:**10.2.33.1**

Figure 3-6: Initial Setup—Page Three

- 8 On page 4, press <Enter> or type **No** if you do not want to enter a forwarding host at this time, or type **Yes** to enter a forwarding host.

If you type **Yes**, you must also provide a host alias and a host name or IP address.

```
----- (page 4 of 5) -----  
Press <ESC> at any time to return to the main menu  
DIRECTIONS:  
This setup console is used to configure a proxy  
forwarding host as the forwarding default (a one member  
default fail-over sequence). After assigning a host  
alias and the host name you can connect to the command  
line interface to perform additional management tasks.  
Would you like to setup the forwarding host now? Y/N [No]
```

Figure 3-7: Initial Setup—Page Four

Page 5 displays. This page explains how to access the SG 8100 from an SSH Client or with a Web browser (see “[Logging on to the SG 8100](#)” on page 52 for more information).

```
----- (page 5 of 5) -----  
DIRECTIONS:  
The ProxySG Appliance has been successfully configured  
to use IP address: "10.25.36.47"  
You can connect to the command line interface or Web  
interface to perform additional management tasks.  
To connect to the command line interface, open the  
following location from your SSH application:  
10.25.36.47  
To connect to the Web management interface, go to the  
following location with your web browser:  
https://10.25.36.47:8082/  
----- CONFIGURATION COMPLETE -----  
Press "enter" three times to activate the serial console
```

Figure 3-8: Initial Setup—Page Five

- 9 To log in to the serial console right away, press <Enter> three times.

A menu displays offering two choices:

- 1) Command Line Interface
- 2) Setup Console

**10** Enter 1 to select the CLI (see “[Logging on to the SG 8100 CLI](#)” on page 54 for information about using the SG 8100 CLI). To access the SG 8100 Management Console, enter the following address into your Web browser:

`https://appliance_IP:8082/`

where `appliance_IP` is the IP address that you configured for this SG 8100 in Step 4.

See “[Logging on to the SG 8100](#)” on page 52 for more information about accessing the SG 8100.

## Configuring the SG 8100 Running 5.x or Higher Using a Direct Serial Port Connection

If your ProxySG is running 5.x or higher, use the following procedure to configure it with a direct serial port connection.

Use a standalone serial terminal or a PC and the ProxySG command-line interface (CLI) to perform a first-time configuration of the following basic network information:

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• IP address</li><li>• IP gateway address</li><li>• Console username</li><li>• Enable password</li></ul> | <ul style="list-style-type: none"><li>• IP subnet mask</li><li>• DNS server</li><li>• Console password</li><li>• Serial port password (optional)</li></ul> |
|--|--|

---

**PC Note:** If the PC is using standard serial port settings, you should have a problem-free connection. Problems can occur if there are non-standard PC serial port settings.

---

Do the procedure by reading on-screen material and entering data where necessary. The on-screen instructions display as five separate pages. In the

procedure below, places that require you to enter data show example entries in bold text.

Five screens display, one at a time, as shown in the following steps.

- 1 Power on and connect the serial terminal or PC as described below (the ProxySG must be powered off):

*Serial terminal:* Connect the terminal's serial cable to the ProxySG's serial console port; start the terminal and verify that it is set using the parameters described below.

- 1 PC: Connect a serial cable to a serial port on the PC and to the ProxySG's serial console port; start the PC, open a terminal emulator (such as HyperTerminal), and connect to the serial port to which you attached the cable. Create and name a new connection (either a COM or TCP/IP), and verify that the port is set using the parameters described below.

- Baud rate: 9600 bps
- Parity: none
- Flow control: none
- Emulation: VT 100
- Data bits: 8
- Stop bits: 1
- Smooth-scroll: disabled

If you have set flow control to *none*, and if you have *smooth-scroll* as an option in your terminal settings, disable smooth-scroll in your terminal settings to reduce the chance of losing output.

- 2 Power on the ProxySG and wait for the system to finish booting.

The following configuration alert displays:

```
***** CONFIGURATION ALERT *****  
System startup cannot continue for one of these  
reasons:  
(a) Need at least one adapter (or bridge) configured  
with an IP address and subnet.  
(b) Need the console password and enable password.  
***** SYSTEM STARTUP TEMPORARILY SUSPENDED *****  
Press "enter" three times to activate the serial console
```

Figure 3-9: Initial Setup—Configuration Alert

- 3** Press <Enter> three times.

When the Welcome to the ProxySG Appliance Setup Console prompt appears, the system is ready for the first-time network configuration.

- 4** On page 1, enter the interface number, IP address, IP subnet mask, IP gateway, and DNS server parameters.

```
Welcome to the ProxySG Appliance Setup Console
----- (page 1 of 5) -----
Press <ESC> at any time to return to the main menu

DIRECTIONS:

This setup console is used to assign IP addresses to
the ProxySG Appliance. After assigning the IP
addresses you can connect to the command line
interface or Web interface to perform additional
management tasks.

Enter interface number to configure [0:0]:
IP address [0.0.0.0]: 10.25.36.47
IP subnet mask [255.255.255.0]: 255.255.255.0
IP gateway [0.0.0.0]: 10.25.36.1
DNS server [0.0.0.0]: 101.52.23.100

You have entered the following IP addresses:

IP address: 10.25.36.47
IP subnet mask: 255.255.255.0
IP gateway: 10.25.36.1
DNS server: 101.52.23.101

Would you like to change any of them? Y/N [No] N
```

**Figure 3-10: Initial Setup—Page One**

- 5 On page 2, you are asked if you want to finish configuration using the Setup Wizard.

```
----- (page 2 of 5) -----  
A comprehensive Setup Wizard is available if you use your Web browser. You can either use the Web Setup Wizard or you can continue the initial configuration using this serial console. Note that this serial console initial configuration method contains a subset of the configuration options available in the Web Setup Wizard.  
Would you like to use the ProxySG Web Setup Wizard? Y/N  
[No] N
```

Figure 3-11: Initial Setup—Page Two

If you choose to use the Setup Wizard, go to “[Configuring the SG 8100 Using the Setup Wizard](#)” on page 50.

- 6 On page 3, enter a console username and a console and enable password. A default username (admin) is already in place—change it for stronger security.

Usernames and passwords can each be from 1 to 64 characters in length. Passwords that contain special characters (such as an exclamation point) must be in quotes.

----- (page 3 of 5) -----

Press <ESC> at any time to return to the main menu

DIRECTIONS:

The console username, password and enable password are special administrative credentials which can be used to log in to the command line interface or web management interface.

WARNING – The console password and enable password are not defined. The system cannot start up until these are defined.

You must configure the console user account now.

Enter console username [admin]: **name123**

Enter console password: "\*\*\*\*\*"

Verify console password: "\*\*\*\*\*"

Enter enable password: "\*\*\*\*\*"

Verify enable password: "\*\*\*\*\*"

Figure 3-12: Initial Setup—Page Three

- 7 (Optional) For maximum security, secure the serial port.

The serial port allows you to configure and access the ProxySG using a serial cable. This can pose a security risk because anyone with access to the appliance can reconfigure the ProxySG settings. This optional step sets a password for the serial console setup, allowing only authorized personnel the ability to reconfigure the appliance.

---

**WARNING!** If you set the serial console password and then lose the password, you must restore the appliance to its original factory defaults to access the Management Console or CLI (see *Resetting the SG200 to Its Factory Defaults* on page 46).

---

```
Do you want to secure the serial port? Y/N [Yes] Y  
Enter setup password: "*****"  
Verify setup password: "*****"
```

**WARNING:**

If you continue and enable the secure serial port it will not be possible to enter the setup console without the setup password. If the setup password is lost, assistance from Blue Coat Systems will be required and all system configuration may be lost. It is recommended that this password be stored in a physically secure location. Access to the CLI on the serial port will challenge for credentials.

To enable the secure serial port, re-enter the setup password: "\*\*\*\*\*"

Figure 3-13: Initial Setup—Secure the Serial Port (Optional)

- 8** (Optional) On page 4, you can restrict access to the SG 8100.

---

**Note:** For maximum security, restrict physical access to the SG 8100.

---

----- (page 4 of 5) -----

Press <ESC> at any time to return to the main menu

DIRECTIONS:

The console username and password are special: they can be used to log in to the CLI or Web Management interface even in circumstances where this is denied by VPM or CPL policy. This makes the console account useful in emergencies, as a way to log in when policy is broken, but it may also create a security hole.

To close the security hole, we recommend that you restrict the use of the console account to specific workstations, identified by their IP address.

This dialog allows you to add one IP address to the list of workstations that are authorized to use the console account. (This same list is also used to restrict which workstations can use SSH with RSA authentication.) Additional workstations may be configured later, from the command line interface or the Web interface.

WARNING: The console account can currently be used to log in from any workstation.

Would you like to restrict access to an authorized workstation? Y/N [Yes] **Y**

Authorized workstation [0.0.0.0]:**10.2.33.1**

Figure 3-14: Initial Setup—Page Four

Page 5 displays. This page explains how to access the ProxySG from an SSH Client or with a Web browser. See “[Logging on to the SG 8100](#)” on page 52 for more information.

```
----- (page 5 of 5) -----  
DIRECTIONS:  
The ProxySG Appliance has been successfully configured  
to use IP address: "10.25.36.47"  
You can connect to the command line interface or Web  
interface to perform additional management tasks.  
To connect to the command line interface, open the  
following location from your SSH application:  
10.25.36.47  
To connect to the Web management interface, go to the  
following location with your web browser:  
https://10.25.36.47:8082/  
----- CONFIGURATION COMPLETE -----  
Press "enter" three times to activate the serial console
```

Figure 3-15: Initial Setup—Page Five

- 9** To log in to the serial console right away, press <Enter> three times.

A menu displays offering two choices:

- 1) Command Line Interface
- 2) Setup Console

- 10** Access the CLI or Management Console:

- Enter 1 in the serial console menu to select the CLI.

See “[Logging on to the SG 8100 CLI](#)” on page 54 for information about using the ProxySG CLI.

- To access the ProxySG Management Console, enter the following address into your Web browser:

[https://proxysg\\_IP:8082/](https://proxysg_IP:8082/)

where *proxysg\_IP* is the IP address that you configured for this ProxySG.

See “[Logging on to the SG 8100 CLI](#)” on page 54 for more information about accessing the ProxySG.

When you have set the basic networking parameters and connected the ProxySG to the network, you are ready to fully configure the appliance. For a list of all CLI commands, refer to the *Blue Coat ProxySG Command Line Reference*. For information about configuring and administering the ProxySG (including information about setting policies that will explicitly grant or deny proxied transactions), refer to the *Blue Coat ProxySG Configuration and Management Guide Suite*.

# Configuring the SG 8100 Using the Setup Wizard

---

**Note:** The following procedure is for 8100 Appliances running SGOS 5.x or later.

---

- 1 Complete the procedure described in “*Installing the SG 8100*” on page 11
- 2 Power on the ProxySG.
- 3 Enter the following URL into your browser:

`https://proxysg.bluecoat.com:8083/`.

A security warning dialog appears.

---

**Note:** It is safe to click Yes or OK in this dialog because the ProxySG system is directly connected to your PC. For more information about this warning dialog, see *A Security Warning Appears for the Initial Configuration Web Page* on page 46. The appearance of the dialog varies depending on the browser that you use.

---

- 4 Click Yes (or OK) in the dialog.
- 

**Note:** If you do not see the warning dialog or if you cannot connect to the Setup Wizard, reset the ProxySG to its factory defaults. See *Chapter 5:Troubleshooting*.

---

When the appliance connects, the Setup Wizard displays, as shown in the following figure.



This screen will display your appliance's identifying information here

Figure 3-16: The Setup Wizard

**5** Enter information on each screen, as prompted.

Each page is described; some pages include mouse-over help. If you entered network settings from the serial console, they are already filled in. To complete the Setup Wizard you must:

- a. Enter the console access information.
- b. Enter the CLI Enable password.
- c. (Optional but highly recommended) Secure the serial port.
- d. Enter the network settings:
  - ❖ IP Address
  - ❖ Subnet Mask
  - ❖ Gateway
  - ❖ DNS Server
- e. (Optional) Configure the Application Delivery Network (ADN) settings. The ADN settings optimize the delivery of applications over the WAN.

- f. Select the traffic types that the appliance should intercept.
  - g. Set the initial policy.
  - h. Confirm the settings and click Configure.
- 

**Note:** The Web-based wizard is available only for initial appliance configuration (or following a reset to factory defaults). After you click Configure during the final step, the wizard is no longer available.

---

## Logging on to the SG 8100

Once the SG 8100 is configured, the LCD begins to cycle through and display various messages, such as CPU Utilization and Proxied Traffic.

After you have completed the initial configuration and connected the SG 8100 to the network, you must log on to the SG 8100 to fully configure the appliance. There are two ways to do this.

- Use a browser to access the SG 8100 Management Console Web interface.
- Use a direct serial connection or an SSH client to access the SG 8100 command-line interface (CLI).

## Logging on to the SG 8100 Management Console

The Management Console is a graphical interface for configuring and managing all aspects of the SG 8100. You can log on to the Management Console using a browser.

### *To Log on to the Management Console Using a Browser:*

- 1** Start the SG 8100.
  - 2** Open a browser. The SG 8100 supports Microsoft® Internet Explorer 6.0, Netscape® Communicator 7.2, and Firefox 1.0.
  - 3** Enter the IP address configured during initial configuration, followed by the port number 8082. For example, enter <https://10.25.36.47:8082>.
-

A security warning dialog appears.

- 4 If you are satisfied that this certificate was generated from the correct appliance, click Yes or OK in the security warning dialog.

An Enter Network Password dialog appears.

- 5 Enter a username and password in the Enter Network Password dialog. If the username has not been changed, the default is admin. The password is the one you entered during initial configuration.

The SG 8100 home page displays.

- 6 Click the Management Console link from the top of the list on the left.

The Management Console page displays.

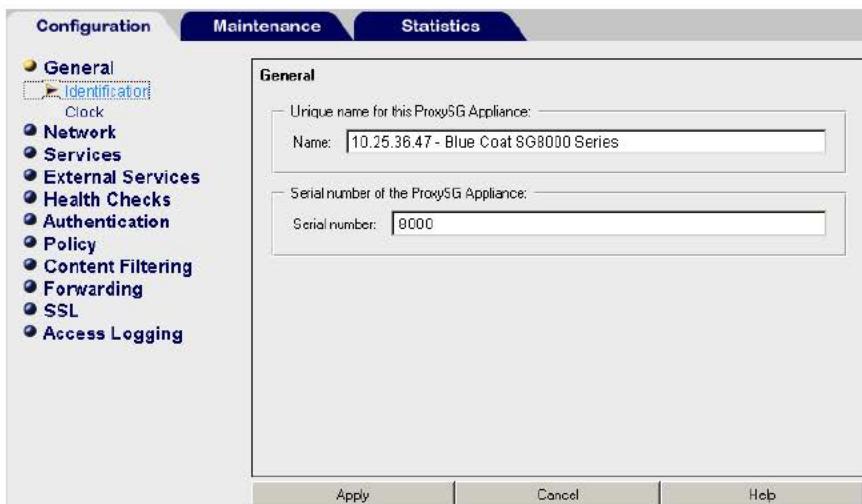


Figure 3-17: The Management Console Page

- 7 Navigate among Configuration, Maintenance, and Statistics by clicking one of the three tabs near the top of the screen; click the links on the left to select a configurable component. Click the Help button on any screen to display information for that screen.

The online Help contains the complete text of the *Blue Coat ProxySG Configuration and Management Guide Suite*. Once you are in the online Help, use the TOC (Table of Contents) and Index links to navigate through the manual.

## Logging on to the SG 8100 CLI

You can connect to the SG 8100 CLI using a direct serial connection or an SSH client, such as PuTTY or F-Secure. To connect to the ProxySG CLI using Telnet, you must first enable the Telnet-Console. Refer to the *Managing Port Services* section of the *Blue Coat ProxySG Configuration and Management Guide Suite*.

---

**Note:** The CLI uses two passwords: The console password is required to establish a connection to the interface, and the enable password can be set to restrict access to the privileged mode configuration options. If you forget the username or password, you can reset them using either the front panel control buttons and LCD or a serial terminal or PC.

---

### To Connect to the SG 8100 CLI Using a Direct Serial Connection:

- 1 To set up the serial connection, complete steps 1 through 3 in the section “*Configuring the SG 8100 Using a Direct Serial Port Connection*” on page 34.

The following text displays:

```
Welcome to the ProxySG Appliance Serial Console  
Version: SGOS 4.1.0.1, Release id: 22527  
----- MENU -----  
Executing image: Version: SGOS 4.1.0.1, Release id: 22527  
1) Command Line Interface  
2) Setup Console  
  
-----  
Enter option:
```

Figure 3-18: Serial Connection Login Page

- 2 Enter 1 to select the Command Line Interface option.
- 3 Enter the username and password when prompted. If the username has not been changed, the default is `admin`. The password is the one you wrote down or configured during initial configuration.

- 4 At the command prompt, enter **enable**, then enter the enable password that you wrote down or configured during initial configuration:

```
SGOS>enable  
Enable Password:  
SGOS#
```

You are now in privileged mode.

- 5 At the privileged-mode command prompt, enter the **configure terminal** to configure SG 8100 settings:

```
SGOS#configure terminal  
Enter configuration commands, one per line. End with CTRL-Z.  
SGOS#(config)
```

When you have set the basic networking parameters and connected the SG 8100 to the network, you are ready to fully configure the appliance. For a list of all CLI commands, refer to the *Blue Coat ProxySG Command Line Interface Reference*. For information about configuring and administering the SG 8100 (including information about configuring explicit or transparent proxies for the SG 8100), refer to the *Blue Coat ProxySG Configuration and Management Guide Suite*.

#### *To Connect to the SG 8100 CLI Using an SSH Client:*

---

**Note:** You must already have an SSH Client installed before you proceed with the steps below.

---

- 1 Start the SG 8100.
- 2 Launch your SSH Client—enter the following settings as necessary:
  - The IP address that you configured during initial configuration.
  - A port number, if necessary (Port 22 is the default).
  - The username and password. If the username has not been changed, the default is **admin**. The password is the one you wrote down or configured during initial configuration.

- 3 At the command prompt, enter **enable**, then enter the enable password that you wrote down or configured during initial configuration:

```
SGOS>enable
Enable Password:
SGOS#
```

You are now in privileged mode.

- 4 At the privileged-mode command prompt, enter the **configure terminal** command to access the SG 8100 privileged-mode configure commands:

```
SGOS#configure terminal
Enter configuration commands, one per line. End with CTRL-Z.
SGOS#(config)
```

When you have set the basic networking parameters and connected the SG 8100 to the network, you are ready to fully configure the appliance. For a list of all CLI commands, refer to the *Blue Coat ProxySG Command Line Interface Reference*. For information about configuring and administering the SG 8100 (including information about configuring explicit or transparent proxies for the SG 8100), refer to the *Blue Coat ProxySG Configuration and Management Guide Suite*.

## Configuring a Front-Panel PIN

The front panel allows you to reconfigure the initial settings of the SG 8100, which can represent a security risk. Setting a front-panel PIN limits access to authorized personnel only.

This procedure is only available through the CLI—you cannot set a front-panel PIN through the Management Console.

### *To Configure a Front-Panel PIN:*

- 1** Connect to the SG 8100 CLI and access the privileged-mode configure commands (see “[Logging on to the SG 8100](#)” on page 52).
- 2** From the privileged mode command prompt, change the SG 8100 front panel PIN by entering one of the following commands:

```
SGOS#(config) security front-panel-pin PIN
```

-or-

```
SGOS#(config) security hashed-front-panel-pin hashed_PIN
```

where *PIN* is an unhashed PIN and *hashed\_PIN* is a PIN in hashed format. After entering one of these commands, anyone who attempts to configure the SG 8100 through the front panel will be prompted to enter the PIN.

---

**Note:** The front-panel PIN commands are hidden commands. If you enter the commands listed above and receive an unrecognized command message, enter the following command and try again:

```
SGOS#(config) reveal-advanced all
```

---

## Configuring the Front-Panel LCD Behavior

The front-panel LCD dims after 30 seconds by default. This behavior is configurable—you can set the LCD to remain lit at all times, to dim after a specified length of time, or to flash (the flash setting can be helpful if you need to find one SG 8100 in a room full of them).

The front-panel LCD cannot be configured through the Management Console—you must use the CLI.

### *To Configure the Front-Panel LCD through the CLI:*

- 1 Open a terminal session with the SG 8100; at the standard-mode command prompt, enter **enable** and your privileged-mode password.

```
SGOS>enable
Enable Password: *****
SGOS#
```

- 2 At the privileged-mode command prompt, enter the **configure terminal** command to access the privileged mode configure commands:

```
SGOS#configure terminal
SGOS#(config)
```

- 3 At the (config) prompt, enter the front-panel command to access the front-panel mode commands and to configure the front-panel LCD behavior.

```
SGOS#(config) front-panel
SGOS#(config front-panel)
SGOS#(config front-panel) backlight flash
SGOS#(config front-panel) backlight state {off | on | timeout}
SGOS#(config front-panel) backlight timeout seconds
```

where:

flash		Configures the LCD to flash. When set, the LCD continues to flash until the user presses a front panel button or the setting is changed through the CLI command <code>no backlight flash</code> .  The flash setting can overwrite the backlight state setting.
state	off	Configures the LCD to always remain off when the SG 8100 is powered on. This is the default behavior.
	on	Configures the LCD to always remain lit when the SG 8100 is powered on.
	timeout	Configures the LCD to dim after a specified number of seconds. Use the <code>backlight timeout <i>seconds</i></code> command (described below) to specify the number of seconds.
timeout	<i>seconds</i>	Specifies the number of seconds that the LCD remains lit without activity. The <code>backlight state timeout</code> command specifies an LCD timeout; this command specifies the number of seconds before dimming occurs.



## *Chapter 4: Maintaining and Upgrading the SG 8100*

The sections in this chapter provide the details for maintaining and upgrading the Blue Coat SG 8100 hardware, as follows:

- *Hot-Swapping a Disk Drive*
- *Hot-Swapping a Power Supply*
- *Option Upgrade Cards*

### **Hot-Swapping a Disk Drive**

Hot-swapping a disk drive is a two-step process—you must take the disk offline before removing it. Except for the disk used to boot the system (the disk located in drive bay 1), disk drives can be removed and replaced separately, without powering off the SG 8100. (Doing a hot swap of the disk used to boot the system can result in a loss of configuration.)

For initial installation of disk drives, see “*Initial Installation of the Disk Drives*” on page 18.

### **Taking a Disk Offline**

Before you remove a hot-swappable disk, you must take that disk offline. You can do this using either the SG 8100 Management Console or the CLI.

#### *Take a Disk Offline Using the Management Console:*

- 1 Go to the SG 8100 home page—open a browser and enter the SG 8100 HTTPS IP address followed by a colon and port number 8082, as follows:  
`https://ip_address:8082`.
- 2 Click Yes in the Security Alert dialog; enter your username and password and click OK in the Enter Network Password dialog.
- 3 Click the Management Console link in the SG 8100 home page that appears.
- 4 In the Management Console page that appears, select the Statistics tab, then click General and select Disks 1-8.
- 5 Click the icon of the disk that you want to take offline in the Disks 1-8 pane.

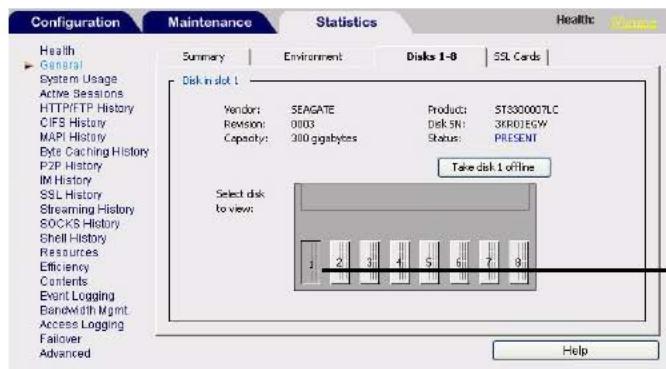


Figure 4-1: Using the Management Console to Take a Disk Offline

- 6 Click the Take disk # offline button, where # is the number of the disk selected (this button will be grayed out if the disk selected is not currently online).
- 7 Click OK in the Take disk offline dialog that displays.
- 8 Close the Management Console.
- 9 Make sure that the disk drive is offline before you remove it—the front panel disk drive LED corresponding to that drive will flash between amber and green at a regular interval when it is offline. See “[Removing and Replacing a Hot-Swappable Disk Drive](#)” on page 63, for removal instructions.

#### *Take a Disk Offline Using the CLI:*

- 1 Open a terminal session with the SG 8100; enter your password at the prompt.
- 2 At the command prompt, enter **enable** and enter your privileged-mode password at the prompt.
- 3 At the privileged-mode command prompt, enter the following command:  
**SGOS#disk offline disk\_number**  
where *disk\_number* is the number of the disk that is going offline (a number from 2 to 8).

- 4 Make sure that the disk drive is offline before you remove it—the front panel disk drive LED corresponding to that drive will flash between amber and green at a regular interval when it is offline. See [Removing and Replacing a Hot-Swappable Disk Drive](#), below, for removal instructions.

## Removing and Replacing a Hot-Swappable Disk Drive

Use the following procedure to hot-swap a disk drive (remove and replace it without powering off the SG 8100).

---

**Important:** Always take a disk drive offline before removing it (see [Taking a Disk Offline starting on page 61](#)).

---

- 1 Open the front panel of the SG 8100 and note the drive bay number of the disk to be swapped.
- 2 Release the disk lever and remove the disk drive: hold the disk lever up (the black latch on top of the disk) and carefully pull the disk drive towards you.
- 3 Insert and seat the replacement disk drive in the same orientation as the drive you just removed. To insert the disk drive, hold the disk lever up, align the disk drive with the guide rails at the top and the bottom of the bay, and carefully insert the disk drive.
- 4 When the disk lever meets the frame of the unit, push the lever down slowly until the lever locks in place.

When the new disk is connected, the corresponding disk drive LED is solid green to show that power has been established. When activity is detected on the disk drive, the Disk Drive LED is either solid amber or flashes between green and amber at an irregular interval. If the Disk Drive LED flashes amber at a regular interval, either the connection is faulty or the disk drive is bad.

## Hot-Swapping a Power Supply

The SG 8100 comes with two AC or three DC hot-swappable power supplies. Each power supply is equipped with a separate power connector. This permits each power supply to be separately removed and replaced without requiring that the unit be powered off.

---

***Important: Be careful as you insert the power supply. The guiding prongs on the power supply can easily be bent if the power supply is inserted too quickly or at the wrong angle.***

---

### Check for a Faulty Power Supply

Before you hot-swap a power supply, make sure that you know which one is faulty.

- 1** Go to the SG 8100 home page: open a browser and enter your SG 8100 IP address followed by a colon and port number (for example: [https://ip\\_address:8082](https://ip_address:8082)).  
Click Yes in the Security Alert dialog, enter your username and password and click OK in the Enter Network Password dialog.
- 2** Click the Management Console link in the SG 8100 home page that appears.
- 3** Select the Statistics tab, then click General and select Environment.  
The Environment pane displays.
- 4** Click the View Sensors button.  
The Sensor Statistics window opens, detailing the status of system functions. The example shown in Figure 4-2 indicates that the AC Power Supply 2 is faulty.

Sensor Name	Reading	Status
Motherboard temperature	27.8 °C	OK
Power supply cage temperature	22.0 °C	OK
CPU 1 temperature	47.5 °C	OK
CPU 2 temperature	44.0 °C	OK
Fan 3 speed	4322.8 RPM	OK
Fan 4 speed	4333.2 RPM	OK
Fan 5 speed	4255.2 RPM	OK
Power supply 1 fan 1 status		OK
Power supply 1 fan 2 status		OK
Power supply 2 fan 1 status		OK
Power supply 2 fan 2 status		OK
CPU 1 fan speed	6060.4 RPM	OK
CPU 2 fan speed	6136.0 RPM	OK
+3.3V bus voltage	3.33 volts	OK
+5V bus voltage	5.10 volts	OK
+12V bus voltage	12.15 volts	OK
CPU 1 core voltage	1.49 volts	OK
CPU 1 +2.5V bus voltage	2.54 volts	OK
CPU 2 core voltage	1.46 volts	OK
CPU 2 +2.5V bus voltage	2.60 volts	OK
Power supply 1 status		OK
Power supply 2 status		OK

If a power supply is bad,  
this will read "No Power"

Figure 4-2: Sensor Statistics Window Indicating a Faulty AC Power Supply

## Hot-Swapping an AC Power Supply

A SG 8100 with two AC power supplies needs only one of the power supplies to function. The second power supply provides redundancy and can be removed without affecting system operation.

- 1 Disconnect the power cord to the faulty power supply that will be replaced. Power Supply 1 is below Power Supply 2 (see [Check for a Faulty Power Supply](#), above, to determine which power supply is faulty).

- 2** Loosen the power supply screw.

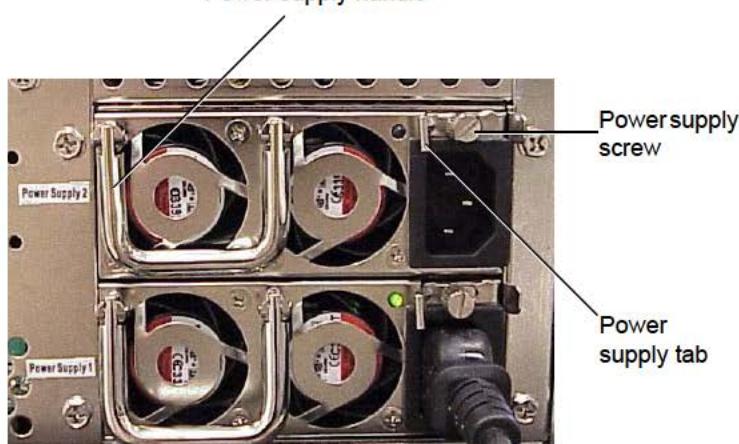


Figure 4-3: Hot-Swappable AC Power Supply

- 3** Push the power supply tab in toward the left and at the same time grasp the power supply handle and slowly pull out the power supply.

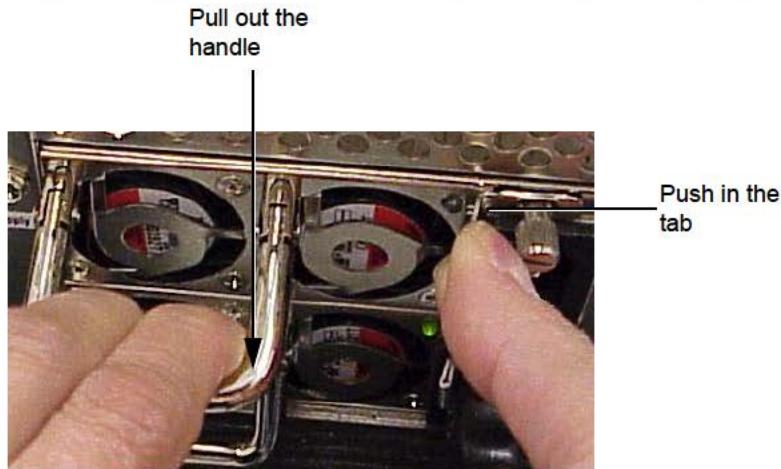


Figure 4-4: Remove a Hot-Swappable AC Power Supply

- 4** Carefully insert the new power supply and tighten the power supply screw.

## Hot-Swapping a DC Power Supply

A SG 8100 with three DC power supplies needs two of the power supplies to function. The third power supply provides redundancy and can be removed without affecting system operation.



**You must connect the grounding wire included with the SG 8100 from the DC power supply to an electrically neutral ground (described in Step 1, below).**

**You must also use a 20A circuit breaker to connect to your DC power source as an over-current protection device.**

- 1 Connect the DC grounding wire (minimum AWG 8 rating) to the ground terminal on the side of the SG 8100 DC power supply (use the screws and nuts provided); attach the other end to the chassis of your DC power source or to another electrically neutral ground.

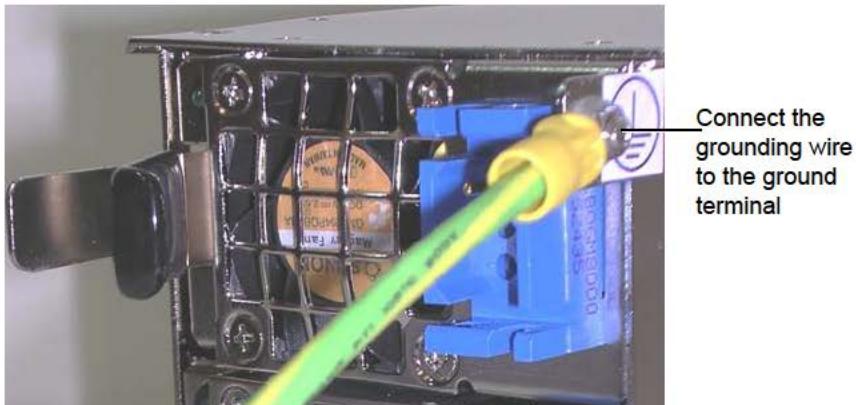


Figure 4-5: DC Power Supply Grounding Terminal

- 2** Disconnect the DC power connector to the faulty power supply that will be replaced (see “[Check for a Faulty Power Supply](#)” on page 64 to determine which power supply is faulty).

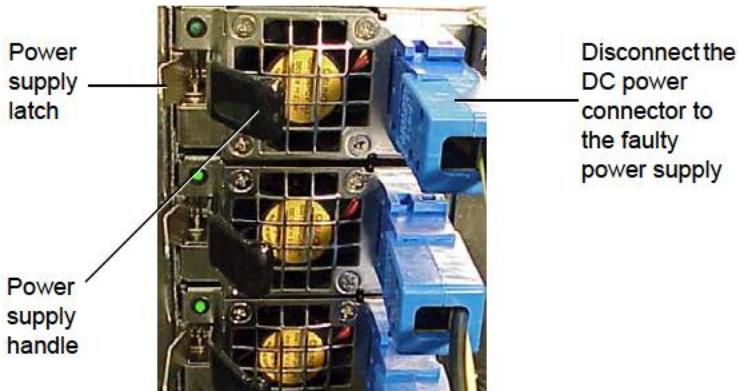


Figure 4-6: Hot-Swappable DC Power Supply

- 3** Push in the DC power supply latch to the right until it aligns with the power supply handle and pull the power supply out slowly.

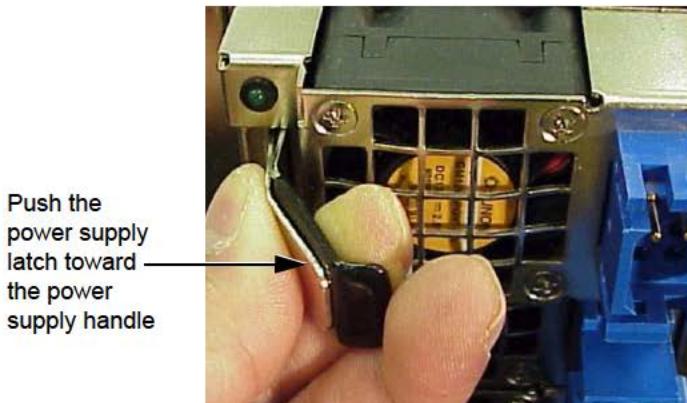
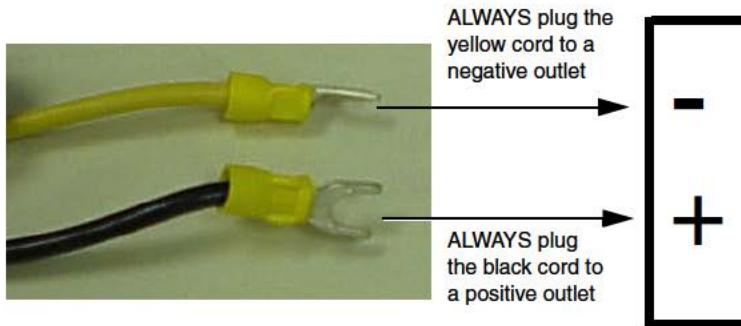


Figure 4-7: Remove a Hot-Swappable DC Power Supply

- 
- 4** Carefully insert the new DC power supply.



If you use the cables supplied by Blue Coat to reconnect the DC power connections to a DC power source, **ALWAYS** connect the yellow DC power cord to a negative DC outlet, and connect the black DC power cord to a positive DC outlet.



- 
- 5** Insert the DC power connectors into the new DC power supply.

## Option Upgrade Cards

The Blue Coat SG 8100 comes with four expansion slots; the two left-hand slots (labeled Slot 1 and Slot 2) are for network interface cards and the two right-hand slots (labeled Adapter 2 and Adapter 3) are for SSL Accelerator cards.

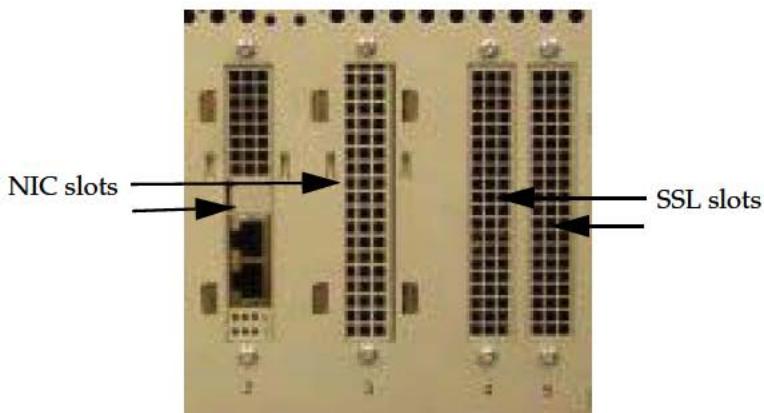


Figure 4.8: I/O Expansion Slots

The following option upgrade cards are available for installation into the Blue Coat SG 8100:

- SSL Accelerator Card
- Dual GigE Copper Card
- Quad GigE Copper Card
- Quad GigE Fiber LX Card

## *Chapter 5: Troubleshooting*

This chapter describes how to locate and solve common problems.

### **System Warning LED Indicates System Malfunction**

The front panel System Warning LED is solid green when the SG 8100 is functioning normally. If a minor system malfunction is detected, the System LED is solid amber. If a serious malfunction occurs, requiring immediate attention, the System Warning LED flashes red.

To find out what an amber System Warning LED indicates, you must go to the Management Console's Environment panel, as follows:

- 1** Go to the SG 8100 home page: open a browser and enter your SG 8100 HTTPS IP address followed by a colon and port number 8082, as follows:  
`https://ip_address:8082`.  
Click Yes in the Security Alert dialog, enter your username and password and click OK in the Enter Network Password dialog.
- 2** Click the Management Console link in the SG 8100 home page that appears.
- 3** Select the Statistics tab, then click General and select Environment.  
The Environment pane displays.
- 4** Click the View Sensors button.

The Sensor Statistics window opens, detailing the status of system functions.

Sensor Name	Reading	Status
Motherboard temperature	27.8 °C	OK
Power supply cage temperature	22.0 °C	OK
CPU 1 temperature	47.5 °C	OK
CPU 2 temperature	44.0 °C	OK
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Fan 4 speed	4333.2 RPM	OK
Fan 5 speed	4255.2 RPM	OK
Power supply 1 fan 1 status		OK
Power supply 1 fan 2 status		OK
Power supply 2 fan 1 status		OK
Power supply 2 fan 2 status		OK
CPU 1 fan speed	6060.4 RPM	OK
CPU 2 fan speed	6136.0 RPM	OK
+3.3V bus voltage	3.33 volts	OK
+5V bus voltage	5.10 volts	OK
+12V bus voltage	12.15 volts	OK
CPU 1 core voltage	1.49 volts	OK
CPU 1 +2.5V bus voltage	2.54 volts	OK
CPU 2 core voltage	1.46 volts	OK
CPU 2 +2.5V bus voltage	2.60 volts	OK
Power supply 1 status		OK
Power supply 2 status		OK

If a fan is bad, this  
will read “Fan Slow”

Figure 5-1: Sensor Statistics Window (Example of Faulty CPU Fan Shown)

## Testing the SG 8100

If you suspect a problem with the SG 8100, test its operation and connection using the CLI. Use the **ping** and **traceroute** commands to test the network connection. From enable mode, use the **test** command to retrieve an object or to run a loopback test to verify that the device is operational. Refer to the *Blue Coat ProxySG Command Line Interface Reference* for information on these commands.

## Cannot Access the Serial Console

When connecting to the serial console, you must configure the terminal emulator for the correct settings. You can connect to the serial console by using a terminal, a terminal server, or a computer running a terminal emulator. For detailed instructions on connecting the terminal, see “*Using the Front Panel to Configure Basic Network Settings*” on page 32 or “*Configuring the SG 8100 Using a Direct Serial Port Connection*” on page 34.

## CLI Session Times Out

A Telnet session to the CLI remains open as long as there is activity. If you leave the session idle, the connection will eventually time out and you will have to reconnect. The default timeout is five minutes. You can set the timeout by using the `line-vty` command in-configure mode, as follows:

```
SGOS# (config)line-vty  
SGOS# (config line-vty)timeout minutes  
SGOS# (config line-vty)exit
```

## CLI Limited to 16 Sessions

The CLI is limited to 16 active sessions (and one serial console session). If you try to connect a 17th session, you receive a message saying that no more sessions are available. To connect, you will have to wait for one of the active sessions to close.

## Cannot Access the Web Interface

You can access the SG 8100 Management Console from an Internet browser. If the Internet browser fails when attempting to connect to the SG 8100, follow these steps to help identify the problem:

- Verify that you have entered the correct IP address and port (the default port is 8082) for the SG 8100 in the Internet browser. The only way to verify which address the SG 8100 is using without the Internet browser interface is to connect to the serial console and display the network configuration. See [“Configuring the SG 8100 Using a Direct Serial Port Connection”](#) on page 34.
- Verify that your workstation is configured and working properly by connecting to other Internet sites (such as [www.bluecoat.com](http://www.bluecoat.com)). If your browser is configured to use the SG 8100 as a proxy server and there is a problem with the SG 8100, this test might fail.
- If you are accessing a SG 8100 located on a remote network (any segment other than the segment where your workstation is attached), verify that other servers on that network are accessible.

- Try pinging the IP address to verify that the SG 8100 is accessible from the workstation. If the SG 8100 does not respond to the ping, verify that it is operational, as described earlier.

## Web Interface Username and Password Fail

The Management Console is protected with a username and password. If the username and password fail, reset them by using the serial console. See “*Configuring the SG 8100 Using a Direct Serial Port Connection*” on page 34 for information on using the serial console. For instructions on resetting the username and password, refer to the *Blue Coat ProxySG Configuration and Management Guide Suite* at [www.bluecoat.com](http://www.bluecoat.com).

## Web Interface Java Errors Occur

When you upgrade the Web interface, you must clear the local cache and restart the browser to guarantee that the new Java components for the Web interface are loaded. Each Web browser handles Java applets in a different way. Some browsers do not reload applets until their cache is cleared or until the browser is restarted.

## Client Requests Fail

A failed request for a Web document indicates one of the following:

- The Web browser is not properly configured for the SG 8100.
- The SG 8100 cannot access the requested document.
- The SG 8100 is not properly configured.
- The SG 8100 is not functioning.

### *To isolate client request failures*

- If the SG 8100 is used to access the Internet, and the SG 8100 has been working properly, the most likely cause of failed requests is the route between the SG 8100 and the Internet or intranet. Before you spend time troubleshooting the SG 8100, verify your connection to the Internet by using the `ping` and `traceroute` commands from the CLI. If you are able to ping the destination from the SG 8100, use the `test` command to verify that the device can get the object. For information on the `ping`,

`traceroute`, and `test` commands, refer to the *Blue Coat ProxySG Command Line Interface Reference*. If the request fails, try other HTML requests to verify that all requests fail.

- The SG 8100 can be configured to deny access to address groups. If the SG 8100 is configured for forwarding or filtering, verify that the requested address does not match a denied subnet and mask. For information on configuring deny settings in the Web interface, refer to the *Forwarding* chapter in the *Blue Coat ProxySG Configuration and Management Guide Suite*.
- If your network is not configured for transparency, check the Web browser to see if it is by using a Proxy Auto-Configuration (PAC) file for auto-configuration. If the Web browser is configured to use a PAC file, verify that the address of the PAC file is correct and that the file is accessible. If auto-configuration is not being used, check the Web browser's proxy configuration. If you are not using transparency, the Web browser must be configured for the SG 8100's IP address and port. Refer to the *Configuring Proxies* chapter of the *Blue Coat ProxySG Configuration and Management Guide Suite* for more information.
- If the ProxySG responds to the ping, verify that the SG 8100's configuration is valid. If it is configured to forward requests, verify that the server to which the SG 8100 forwards requests is working. If the SG 8100 is not forwarding requests, check the default gateway address and DNS address.
- If the SG 8100's default gateway address and DNS address are correct, try pinging each address from the CLI to verify that the servers are running. Be sure to ping the gateway and DNS server from the same network segment where the SG 8100 is connected.
- If the default gateway is accessible, the problem most likely lies outside the local network. To verify that the problem is not associated with the SG 8100, you must configure your workstation for the same gateway address as the SG 8100, and configure the Web browser not to use a proxy server for HTTP requests.

## Client Responses Are Slow

If every request from the client results in a slow response, there might be a problem accessing a PAC file or the SG 8100.

*To Isolate Slow Client Responses:*

- Check the Web browser to see if it is using a PAC file for auto-configuration. If the Web browser is configured to use a PAC file, verify that the address of the PAC file is correct, and the file is accessible. Refer to the *Blue Coat ProxySG Configuration and Management Guide Suite* for additional information on by using PAC files. If the PAC file is not accessible, the Web browser might attempt to access the PAC file, then wait for a timeout before retrieving the object directly.
- Check the Web browser's proxy address and port. The Web browser must be configured for the SG 8100's IP address and port. Refer to the *Blue Coat ProxySG Configuration and Management Guide Suite* for information on configuring the clients. If the address or port is not correct, the Web browser might attempt to access the SG 8100, then wait for a timeout before retrieving the object directly.

If the correct IP address and port for the proxy server is specified in the Web browser, try pinging the IP address to verify that the SG 8100 is accessible from the workstation. If the SG 8100 does not respond to the ping, verify that it is operational.

## SG 8100 Certificate No Longer Valid if IP Address Changes

If you move the SG 8100 from its original location or change the IP address for any reason, the SG 8100's security certificate might not be accepted the next time you open the Management Console. This is because the hostname no longer matches the hostname on the certificate. You must create a new certificate and then edit the HTTPS-Console service to use it. For information about creating a new certificate and editing the HTTPS-Console service, refer to the "Configuring HTTPS Termination" and "HTTPS Console (Secure Console)" sections of the *Blue Coat ProxySG Configuration and Management Guide Suite*.

## The ProxySG Does Not Come Back Up After Rebooting

If the appliance is not coming back up after rebooting and the serial port is connected to terminal server (terminal concentrator) try the following:

- 1** Open an active session on the terminal server, noting any traffic being outputted.
- 2** Unplug the terminal server from the appliance.



## *Appendix A: Specifications*

### Environmental and Electrical

#### **Dimensions and Weight**

Enclosure (Einschließung)	19 in (48.3 cm) rack-mountable
Height (Höhe)	7.0 in (17.8 cm); 4 rack units
Width (Breite)	17.4 in (44.2 cm)
Depth (Länge)	23.7 in (60.2 cm)
Weight (Gewicht)	81.5 lbs (37.2 kg) maximum

#### **Operating Environment**

Power Input, AC (Stromversorgung)	100-240V, 47-63Hz, 460 Watts (1+1 redundancy)
Power Input, DC (Optional)	-36 VDC to -72 VDC, 650 Watts (n+1 redundancy)
Temperature (Betriebstemperatur)	Operating: 41° to 104° F (5° to 40° C) Non-operating: -40° to 158° F (-5° to 70° C)
Relative Humidity (Relative Luftfeuchte)	Less than 90% (non-condensing)
Maximum Altitude (Maximale Höhe)	Operating: Up to 10,000 ft (3.0 Km) Non-operating: Up to 15,000 ft (4.6 Km)

#### **System**

Disk Drives (Festplatte)	Two to eight Ultra320 10,000 RPM or 15,000 RPM SCSI Disk Drives.
Processors (Prozessor)	Up to two Dual Core AMD64 Opteron
RAM (Speicher)	1 to 16 GB
Network Interfaces (Netzwerk)	Two 10/100/1000BaseT on-board ports and two 10/100/1000BaseT ports (add-in card).
Backplane	Hot-swappable SCSI Ultra 320

#### **Operating System**

SGOS v3

#### **Regulations**

Safety (Schutz)	CSA C22.2 No. 60950-1/UL 60950-1, EN60950-1
EMC	FCC Class A, CE Class A, VCCI, BSMI, CCC, C-Tick

## Lasers

Location of the laser apertures if any (Par. 6.1 3). Example: connectors for fiberoptic component.



## Connector

The port on the Gigabit-LX Module transmits at 850 nm wavelength, and is compatible with the IEEE 802.3z Gigabit-LX standard. It accepts multi-mode.

## *Appendix B: Regulatory Statements*

---

***Important:* Any modification to this product, unless expressly approved by Blue Coat Systems, Inc., could void the user's authority to operate the equipment.**

---

### **Class A Digital Warning**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, might cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the users are required to correct the interference at their own expense.

### **EC Community EMC Warning**

This is a Class A product. In a domestic environment, this product might cause radio interference in which case the user might be required to take adequate measures.

### **Canadian EC EMC Warning**

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numerique de la class A est conforme a la norme NMB-003 du Canada.

### **Australia/New Zealand EC EMC Warning**

This is a Class A product. In a domestic environment, this product might cause radio interference, in which case the user might be required to take adequate measures.

## Taiwan BSMI Notification

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## China CCC Notification

### 声 明

此为 A 级产品，在生活环境 中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

## Japan VCCI EMC Notification

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

## Battery Warning Notification

**CAUTION:** Danger of explosion if battery is incorrectly placed. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

**ATTENTION:** Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie de même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Connection to ports not defined for normal operation, according to this manual, might result in excessive radiated emissions. The user is then responsible for all corrective action in the event of any problem.

# Declaration of Conformity



## Declaration of Conformity

We, Blue Coat Systems  
420 North Mary Avenue  
Sunnyvale, CA 94085

Declare under our sole responsibility that the products

Blue Coat Systems model 8100

to which this declaration relates is in conformity with the following standards:

EN 60950-1: 2001+A11  
EN 55022: 1998+A1:2000+A2:2003  
EN 55024: 1998+A1:2001+A2:2003

Following the provisions of the 73/23/EEC and 89/336/EEC Directives, including the Amending Directive 93/68/EEC.

Blue Coat Systems model 8100 is also in conformity with the following standard:

Directive 2002/95/EC, Restriction of Hazardous Substances (RoHS).

Sunnyvale, CA 94085

Date: July 1, 2006

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Tim Redjaian  
Director of Engineering



# *Index*

## **A**

AC power supply 7  
hot-swapping 65  
adapter port LEDs 25–??

## **B**

Blue Coat  
technical support 6  
bridge  
configuring using a serial terminal  
or PC 36

## **C**

certificate  
invalid if ProxySG moves or changes  
IP address 76

## CLI

limited to four sessions 73  
logging on to using a direct serial  
connection 48  
logging on using a direct serial  
connection 54–55  
logging on using an SSH client 55–56  
session times out 73  
client HTML, *see* HTML 75  
Configuration and Management Guide  
download PDF 5  
configuring the ProxySG  
configuring network settings 32–33  
control button functions 31  
instructions 27–40  
using a serial terminal or PC 34–40  
using front panel LCD and buttons  
28–33  
viewing modes in the LCD 29–30  
configuring the SG200  
using a serial terminal or PC 42–48  
using the Setup Wizard 50

connection ports 7

control buttons  
accessing 10  
using for first-time configuration 31  
copyrights  
document ii

## **D**

DC power supply 7  
hot-swapping 67  
declaration of conformity 83  
diagnosing system malfunction 71  
disk drives

aligning with guide rails 19, 20  
hot-swapping 61–63  
installing in the ProxySG 18  
preparing for insertion 19  
removing and replacing 63  
taking offline 61–63  
verifying successful insertion 24

disk lever

orientation into drive bay 19  
using to lock disk in place 20

DNS server, setting and changing 32

drive bays

guide rails 19  
inserting disk drives 20  
numbered one - eight 19

dual fiber SX upgrade cards 7, 70

## **E**

equipment rack  
installing the ProxySG into 11–14  
safety instructions 11

## **F**

first-time configuration  
using a direct serial connection ??–48  
terminal emulator parameters

- 42
- forwarding host
    - configuring during initial configuration 39
  - front of the ProxySG 9
  - front panel
    - bezel tabs 18
    - functions 9
    - opening 10, 18
  - front-panel PIN
    - configuring 57
- G**
- gigabit Ethernet ports 7
- H**
- hot-swapping
    - AC power supply 65
    - DC power supply 67
    - disk drives 61–63
    - power supplies 64–69
  - HTML
    - requests fail 74
    - responses slow 75
- I**
- IP address, setting and changing 32
  - IP gateway, setting and changing 32
  - IP subnet mask, setting and changing 32
- J**
- Java errors 74
- L**
- LAN connector LEDs 25–??
  - LCD
    - cursor in 29–30
    - modes reflected in 29–30
  - LEDs
    - checking system status with 22
    - description of color and flash rate 22–24
    - disk drive 23
    - LAN 23
    - power 23
- system warning 23
  - system warning diagnostic 71
- logging on
    - using a direct serial connection 48
- M**
- Management Console
    - cannot access 73
    - logging on to 52–53
- modes
    - automatic exit warning 30
    - configuration 29
    - edit 30
    - status 29
- N**
- network cables
    - attaching 15
  - network interfaces 7
  - network upgrade slots 7
- P**
- packing list 6
  - password
    - auto-configuration of 32
    - CLI 54
    - configuring using a serial terminal or PC 37
    - configuring using the front panel 33
    - failure 74
  - PC
    - connection problems 34, 41
    - using with the ProxySG 34–40
  - PCI card slots 7
  - ping command 72
  - ports
    - gigabit Ethernet 7
    - serial console 7
  - power button
    - accessing 10
  - power cords
    - attaching 15
  - power supplies
    - AC and/or DC 7

hot-swapping 64–69  
insertion warning 17, 64, 67, 69  
powering on and off 21  
**ProxySG**  
  CLI passwords for 54  
  CLI username for 54  
  Configuration and Management  
    Guide PDF, downloading 5  
  configuring for the first time 27–40  
  connection ports 7  
  control buttons 31  
  control buttons, accessing 10  
  diagnosing system malfunction 71  
  direct serial connection to 34–40  
  disk drives, accessing 10  
  disk drives, installing 18  
  equipment rack, installing into  
    11–14  
  first-time configuration, overview of  
    27  
  front panel, opening 10, 18  
  invalid certificate 76  
  logging on to 52–56  
  modes in 29–30  
  packing list 6  
  power button, accessing 10  
  powering on and off 21  
  testing 72  
  view from the front 9

**S**

safety instructions  
  equipment rack 11  
security  
  configuring a front-panel PIN 57  
serial console  
  cannot access 72  
serial console port 7  
serial port  
  securing with a password 37  
serial port password  
  securing 45  
serial terminal  
  using with the ProxySG 34–40

  using with the SG200 41–48  
setting up the ProxySG, *see* configuring  
  the ProxySG  
specifications

  connector 80  
  declaration of conformity 83  
  environmental and electrical 79  
  lasers 80  
  regulatory statements 81–82  
SSL accelerator upgrade cards 7, 70  
system malfunction  
  diagnosing 71

## T

technical support 6  
terminal emulator 35  
  direct serial connection parameters  
    42

traceroot command 72

## U

upgrade cards  
  dual fiber SX 7, 70  
  insertion slots for 70  
  SSL accelerator 7, 70

username  
  CLI 54  
  configuring using a serial terminal  
    or PC 37  
  default 32  
  failure 74

## W

Web interface, *see* Management Console

