Security Products

Secure Services Gateway 5
Hardware Installation and Configuration Guide - Beta3

ScreenOS Version 5.4.0

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- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

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About This Guide

The Juniper Networks Secure Services Gateway (SSG) 5 device is an integrated router and firewall platform that provides Internet Protocol Security (IPSec) Virtual Private Network (VPN) and firewall services for a branch office or a retail outlet.

Juniper Networks offers six models of the Secure Services Gateway (SSG) 5 device:

- SSG 5 Serial
- SSG 5 Serial-WLAN
- SSG 5 V.92
- SSG 5 V.92-WLAN
- SSG 5 ISDN
- SSG 5 ISDN-WLAN

All of the SSG 5 devices support an auxiliary (AUX) port and a universal storage bus (USB) host module. The devices also provide protocol conversions between local area networks (LANs) and wide area networks (WANs), and three of the models support wireless local area networks (WLANs).

Organization

This manual has the following chapters:

Chapter 1, “Hardware Overview” describes the chassis and components for an SSG 5 device.

Chapter 2, “Installing and Connecting the Device” describes how to install an SSG 5 device in a standard 19-inch equipment rack and how to connect an SSG 5 device to your network.

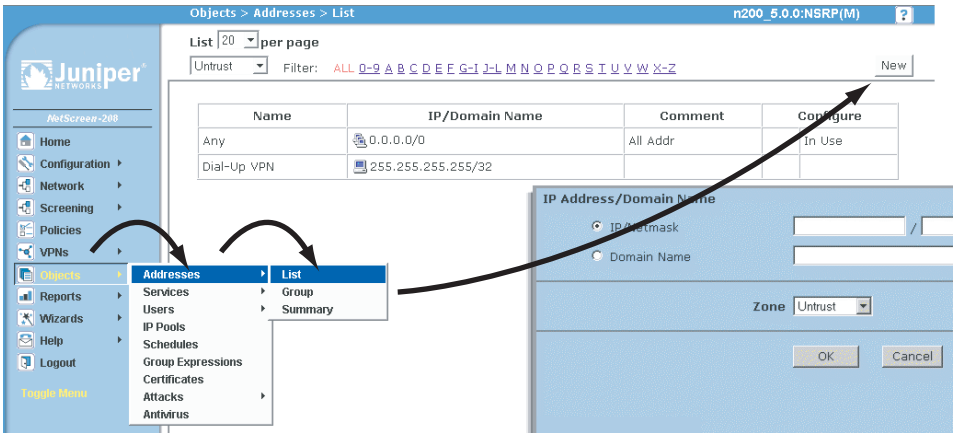
Chapter 3, “Configuring the Device” describes how to configure and manage an SSG 5 device and how to perform some basic configuration tasks.

Chapter 4, “Servicing the Device” describes service and maintenance procedures for SSG 5 devices.

WebUI Conventions

A chevron (>) shows the navigational sequence through the WebUI, which you follow by clicking menu options and links. The following figure shows the following path to the address configuration dialog box—Objects > Addresses > List > New:

Figure 1: WebUI Navigation



To perform a task with the WebUI, you first navigate to the appropriate dialog box, where you then define objects and set parameters. The set of instructions for each task is divided into navigational path and configuration settings:

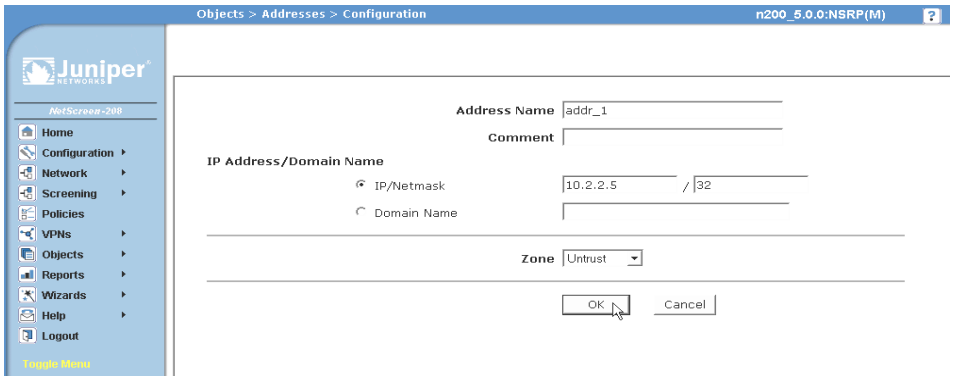
The next figure lists the path to the address configuration dialog box with the following sample configuration settings:

Objects > Addresses > List > New: Enter the following, then click **OK**:

Address Name: addr_1
IP Address/Domain Name:

IP/Netmask: (select), 10.2.2.5/32
Zone: Untrust

Figure 2: Navigational Path and Configuration Settings



CLI Conventions

The following conventions are used to present the syntax of CLI commands in examples and in text.

In examples:

- Anything inside square brackets [ ] is optional.
- Anything inside braces { } is required.
- If there is more than one choice, each choice is separated by a pipe (|). For example:

  set interface { ethernet1 | ethernet2 | ethernet3 } manage

  means "set the management options for the ethernet1, the ethernet2, *or* the ethernet3 interface."
- Variables are in *italic* type:

  set admin user *name1* password *xyz*

In text:

- Commands are in **boldface** type.
- Variables are in *italic* type.

NOTE: When entering a keyword, you need to type only enough letters to identify the word uniquely. For example, typing **set adm u kath j12fmt54** is enough to enter the command **set admin user kathleen j12fmt54**. Although you can use this shortcut when entering commands, all the commands documented here are presented in their entirety.

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Chapter 1

Hardware Overview

This chapter provides detailed descriptions of the SSG 5 chassis and components. It contains the following sections:

- "Port and Power Connectors" on this page
- "Front Panel" on page 2
- "Back Panel" on page 5

Port and Power Connectors

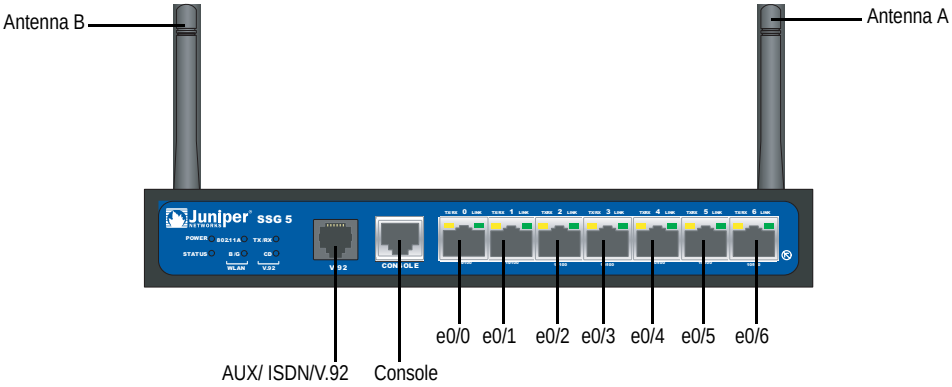


Table 1 shows the ports and power connectors on an SSG 5 device.

Table 1: SSG 5 Port and Power Connectors

Port	Description	Connector	Speed/Protocol
Ports 0/0-0/6	Enables direct connections to workstations or a LAN connection through a switch or hub. This connection also allows you to manage the device through a Telnet session or the WebUI.	RJ-45	10/100 Mbps/ Ethernet autosensing duplex and auto MDI/MDIX
USB	Enables a 1.1 USB connection with the system.	N/A	12M (full speed) or 1.5M (low speed)
Console	Enables a serial connection with the system. Used for launching Command Line Interface (CLI) sessions.	RJ-45	9600 bps/ RS-232C
AUX	Enables a backup serial Internet connection through an external modem.	RJ-45	9600 bps-115 Kbps/ RS-232C
V.92 Modem	Enables a primary or backup Internet or untrusted network connection to an Internet Service Provider (ISP).	RJ-11	9600 bps — 115 Kbps/ RS-232 Serial autosensing duplex and polarity
ISDN	Enables the ISDN line to be used as the untrust or backup interface.	RJ-45	B-channels at 64 Kbps
Antenna A & B (SSG 5-WLAN)	Enables a direct connection to workstations in the vicinity of a wireless radio connection.	RPSMA	802.11a 802.11b 802.11g 802.11g turbo

Front Panel

This section describes the following elements on the front panel of an SSG 5 device:

- System Status LEDs
- Port Descriptions

System Status LEDs

The system status LEDs display information about critical device functions. Figure 3 illustrates the position of each status LED on the front of the device. The system LEDs differ depending on the version of the SSG 5 device.

Figure 3: Status LEDs

When the system powers up, the POWER LED changes from off to blinking green and the STATUS LED changes in the following sequence: red, green, blinking green. Startup takes approximately 2 minutes to complete. If you want to turn the system off and on again, we recommend waiting a few seconds between shutting it down and powering it back up. Table 2 provides the name, color, status, and description of each system status LED.

Table 2: LED Descriptions

Type	Name	Color	State	Description
	POWER	Green	On steadily	Indicates that the system is receiving power
			Off	Indicates that the system is not receiving power
		Red	On steadily	Indicates that the device is not operating normally
			Off	Indicates that the device is operating normally
	STATUS	Green	On steadily	Indicates that the system is booting up or performing diagnostics
			Blinking	Indicates that the device is operating normally
		Red	Blinking	Indicates that there was an error detected
ISDN	CH B1	Green	On steadily	Indicates that B-Channel 1 is active
			Off	Indicates that B-Channel 1 is not active
	CH B2	Green	On steadily	Indicates that B-Channel 2 is active
			Off	Indicates that B-Channel 2 is not active
V.92	HOOK	Green	On steadily	Indicates that the link is active
			Off	Indicates that the serial interface is not in service
	TX/RX	Green	Blinking	Indicates that traffic is passing through
			Off	Indicates that no traffic is passing through
WLAN				
	802.11A	Green	On steadily	Indicates that a wireless connection is established but there is no link activity
		Green	Blinking slowly	Indicates that a wireless connection is established. The band rate is proportional to the link activity
		Green	Off	Indicates that there is no wireless connection established
	B/G	Green	On steadily	Indicates that a wireless connection is established but there is no link activity
		Green	Blinking slowly	Indicates that a wireless connection is established. The band rate is proportional to the link activity
		Green	Off	Indicates that there is no wireless connection established

Port Descriptions

This section explains the purpose and function of the following:

- "Ethernet Ports" on this page
- "Console Port" on page 4
- "AUX Port" on page 5

Ethernet Ports

Seven built-in 10/100 Ethernet ports provide LAN connections to hubs, switches, local servers, and workstations. You can also designate an Ethernet port for management traffic. The ports are labeled 0/0 — 0/6. See "Default Device Settings" on page 19 for the default zone bindings for each Ethernet port.

When configuring one of these ports, reference the interface name that corresponds to the location of the port. From left to right on the front panel, the interface names for the ports are: ethernet0/0 — ethernet0/6.

Figure 4 displays the location of the LEDs on each Ethernet port.

Figure 4: Activity Link LEDs

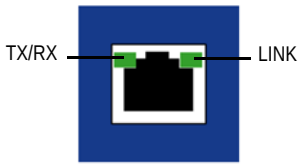


Table 3 describes the Ethernet port LEDs.

Table 3: Ethernet Port LEDs

Name	Color	Status	Description
LINK	Green	On steadily	Port is online
		Off	Port is offline
TX/RX	Green	Blinking	Traffic is passing through. The baudrate is proportional to the link activity
		Off	Port might be on but is not receiving data

Console Port

The Console port is an RJ-45 serial port wired as Data Communications Equipment (DCE) that can used for local administration. An RJ-45 to DB-9 adapter is supplied.

See "Connectors" on page III for the RJ-45 connector pinouts.

AUX Port

The auxiliary (AUX) port is an RJ-45 serial port wired as Data Terminal Equipment (DTE) that you can connect to a modem to allow remote administration. We do not recommend using this port for regular remote administration. The AUX port is typically assigned to be the backup serial interface. The baudrate is adjustable from 9600 bps to 115200 bps and requires hardware flow control.

See “Connectors” on page III for the RJ-45 connector pinouts.

Back Panel

This section describes the back panel of an SSG 5 device:

- “Power Adapter” on this page
- “Radio Transceiver” on this page
- “Grounding Lug” on page 6
- “Antennae Types” on page 6
- “Universal Serial Bus (USB) Host Module” on page 6

Figure 5: Back Panel of an SSG Device

Power Adapter

The POWER LED on the front panel of a device either glows green or is off. Green indicates correct function, and off indicates power adapter failure or that the device is off.

Radio Transceiver

The SSG 5-WLAN devices contain two wireless connectivity radio transceivers, which support 802.11a/b/g standards. The first transceiver (WLAN 0) uses the 2.4 GHz radio band, which supports the 802.11b standard at 11 Mbps and the 802.11g at 54 Mbps. The second radio transceiver (WLAN 1) uses the 5 GHz radio band, which supports the 802.11a standard at 54 Mbps. The two radio bands can work simultaneously, For information on configuring the wireless radio band, see *“Wireless Configuration” on page 25.*

Grounding Lug

A one-hole grounding lug is provided on the rear of the chassis to connect the device to earth ground (see Figure 5).

To ground the device before connecting power, you connect a grounding cable to earth ground and then attach the cable to the lug on the rear of the chassis.

Antennae Types

The SSG 5-WLAN devices support three types of custom-built radio antennae:

- **Diversity antennae** — The diversity antennae provide 2dBi omnidirectional coverage and a fairly uniform level of signal strength within the area of coverage and are suitable for most installations. this type of antennae are shipped with the device.

- **External omnidirectional antenna** — The external antenna provides 2dBi omnidirectional coverage. Unlike diversity antennae, which function as a pair, an external antenna operates to eliminate an echo effect that can sometimes occur from slightly delayed characteristics in signal reception when two are in use.

- **External directional antenna** — The external directional antenna provides 2dBi unidirectional coverage and is well suited for such places as hallways and outer walls (with the antenna facing inward).

Universal Serial Bus (USB) Host Module

The slot labeled USB on the back panel of an SSG 5 device implements a host-only USB 1.1 host module for a USB device adapter or USB flash key, as defined in the *CompactFlash Specification* published by the CompactFlash Association. When the USB storage device, or flash key, is installed and configured, it automatically acts as a secondary storage device.

The USB host module allows file transfers, such as device configurations, user certifications, and update version images between an external USB flash key and the internal flash storage located in the security device. The USB host module supports USB 2.0 specification at either low-speed (1.5M) or full-speed (12M) file transfer.

To use a USB flash key to transfer files between the device, perform the following steps:

1. Insert the USB flash key into the USB host module on the security device.

2. Save the files from the USB flash key to the internal flash storage on the device with the **save { software | config | image-key } from usb** *filename* **to flash** CLI command.

3. Before removing the USB flash key, stop the host module with the **exec usb-device stop** CLI command.

4. It is now safe to remove the USB flash key.

To save files from a USB flash key to the device, use the save { software | config | image-key } from usb *filename* to flash CLI command.

If you want to delete a file from the USB flash key, use the **delete file** *path:/filename* CLI command.

If you want to view the saved file information on the USB flash key or internal flash storage, use the **get file info** CLI command.

Chapter 2

Installing and Connecting the Device

This chapter describes how to install an SSG 5 device in a standard 19-inch equipment rack and connect cables and power to the device. Topics in this chapter include:

- "Before You Begin" on this page
- "Equipment Rack Installation" on page 10
- "Equipment Desk Mount Installation" on page 10
- "Connecting Interface Cables to the Device" on page 11
- "Chassis Grounding" on page 11
- "Connecting the Power" on page 11

NOTE: For safety warnings and instructions, please refer to the *Juniper Networks Security Products Safety Guide*. Before working on any equipment, you should be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Before You Begin

The location of the chassis, the layout of the equipment rack, and the security of your wiring room are crucial for proper system operation.

WARNING: To prevent abuse and intrusion by unauthorized personnel, install an SSG 5 device in a secure environment.

Observing the following precautions can prevent shutdowns, equipment failures, and injuries:

- Before installation, always check that the power supply is disconnected from any power source.
- Ensure that the room in which you operate the device has adequate air circulation and that the room temperature does not exceed 104° F (40° C).

- Do not place the device in an equipment rack frame that blocks an intake or exhaust port. Ensure that enclosed racks have fans and louvered sides.
- Correct these hazardous conditions before any installation: moist or wet floors, leaks, ungrounded or frayed power cables, or missing safety grounds.

Equipment Rack Installation

You can front-mount the SSG 5 device into a standard 19-inch equipment rack. The device is shipped with mounting brackets installed. You can install two SSG 5 devices per rack.

To front-mount an SSG 5 device, you need a phillips screwdriver (not provided).

To install an SSG 5 device onto a rack:

1. Unscrew the mounting brackets with the phillips screwdriver.

NOTE: SSG 5-WLAN users with the optional antennae need to remove the existing antennae, then connect the new antenna through the side hole.

2. Align the bottom of the device with the base holes.
3. Pull the device forward to lock it in the base holes.
4. Screw the mounting brackets to the device and the rack.
5. Place the power supply in the supply holder, then plug the power adapter into the device.
6. To install a second SSG 5 device, repeat steps 1 through 4, then continue.
7. Place the tray in the rack.
8. Plug in the power supply to the power outlet.

Equipment Desk Mount Installation

To desk-mount an SSG 5 device, you need a phillips screwdriver (not provided).

To install an SSG 5 device onto a desk mount:

1. Attach the desktop stand to the side of the device. We recommend the side closest to the power adapter.
2. Place the mounted device on the desktop.
3. Plug in the power adapter and connect the power supply to the power outlet.

Connecting Interface Cables to the Device

To connect interface cables to the device:

1. Have ready a length of the type of cable used by the interface.
2. Insert the cable connector into the cable connector port on the device.
3. Arrange the cable as follows to prevent it from dislodging or developing stress points:
   a. Secure the cable so that it is not supporting its own weight as it hangs to the floor.
   b. Place excess cable out of the way in a neatly coiled loop.
   c. Place fasteners on the loop to help maintain its shape.

Connecting the Power

To connect the power to an SSG 5 device, plug the AC adapter end of the power cable into an AC power source and the power cord into the power outlet. We recommend using a surge protector for the power connection.

Connecting the Device to a Network

The SSG 5 devices provide firewall and general security for networks when it is placed between internal networks and the untrusted network. This section describes the physical connections.

Connect an SSG 5 Device to an Untrusted Network

You can connect your SSG 5 device to the untrusted network in one of the following ways:

- Connecting Ethernet Ports
- Connecting Serial (AUX/Console) Ports
- Connecting the WAN Ports

Connecting Ethernet Ports

To establish a high-speed connection, connect the provided Ethernet cable from the Ethernet port marked 0/0 on an SSG 5 device to the external router. This Ethernet port (0/0) is assigned to the ethernet0/0 interface, which is by default bound to the Untrust security zone. The device autosenses the correct speed, duplex, and MDI/MDIX settings.

Connecting Serial (AUX/Console) Ports

You can connect to the untrusted network with an RJ-45 straight through serial cable and external modem.

WARNING: Make sure that you do not inadvertently connect the Console, AUX, or Ethernet ports on the device to the telephone outlet.

Connecting the WAN Ports

1. Have ready a length of the type of cable used by the interface.
2. Insert the cable connector into the cable-connector port on the device.
3. Arrange the cable as follows to prevent it from dislodging or developing stress points:
   a. Secure the cable so that it is not supporting its own weight as it hangs to the floor.
   b. Place any excess cable out of the way in a neatly coiled loop.
   c. Use fasteners to maintain the shape of the cable loops.

Connecting the Device to an Internal Network or Workstation

You can connect your local area network (LAN) or workstation using one or both of the following methods:

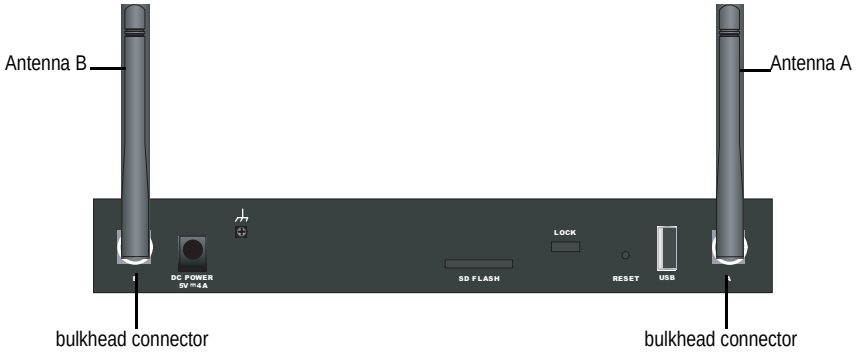
- "Connecting Ethernet Ports" on page 13
- "Connecting the Wireless Antennae" on page 13

Connecting Ethernet Ports

An SSG 5 device contains seven Ethernet ports. You can use one or more of these ports to connect to LANs through switches or hubs. You can also connect one or all of the ports directly to workstations, eliminating the need for a hub or switch. You can use either crossover or straight through cables to connect the Ethernet ports to other devices.

Connecting the Wireless Antennae

If you are using the wireless interface, you need to connect the provided antennae on the device. If you have the standard 2dB omnidirectional antennae, use screws to attach them onto the posts marked A and B at the back of the device. Bend each antenna at their elbows, making sure not to put pressure on the bulkhead connectors.



If you are using the optional external antenna, follow the connection instructions for that antenna.

Chapter 3

Configuring the Device

The ScreenOS software is preinstalled on the SSG 5 devices. When the device is powered on, it is ready to be configured. While the device has a default factory configuration which allows you to initially connect to the device, you need to perform further configuration for your specific network requirements.

This chapter describes:

- Accessing the Device on page 16
- Default Device Settings on page 19
- Basic Device Configuration on page 21
- Wireless Configuration on page 25
- WAN Configuration on page 29
- Basic Firewall Protections on page 30
- Verifying External Connectivity on page 31
- Resetting the Device to Factory Defaults on page 31

NOTE: After you configure an SSG 5 device and verify connectivity through the remote network, you must register your product at www.juniper.net/support/ so certain ScreenOS services, such as Deep Inspection Signature Service, can be activated on the device. After registering your product, use the WebUI to obtain the subscription for the service. For more information about registering your product and obtaining subscriptions for specific services, see the *Fundamentals* volume of the *Concepts & Examples ScreenOS Reference Guide* for ScreenOS 5.4.0.

Accessing the Device

You can configure and manage an SSG 5 device in several ways:

- Console: The Console port on the device allows you to access the device through a serial cable connected to your workstation or terminal. To configure the device, you enter ScreenOS Command Line Interface (CLI) commands on your terminal or in a terminal emulation program on your workstation.

- WebUI: The ScreenOS WebUI is a graphical interface available through a Web browser. To initially use the WebUI, the workstation on which you run the Web browser must be on the same subnetwork as the device. You can also access the WebUI through a secure server using secure sockets layer (SSL) using secure HTTP (S-HTTP).

- Telnet/SSH: Telnet and Secure Shell (SSH) are applications that allows you to access devices through an IP network. To configure the device, you enter ScreenOS CLI commands in a Telnet session from your workstation. Fore more information, See the *Administration* volume of the *Concepts & Examples Reference Guide* for ScreenOS 5.4.0.

- NetScreen-Security Manager: NetScreen-Security Manager is Juniper Networks' enterprise-level management application that enables you to control and manage Juniper Networks firewall/IPSec VPN devices and SSG devices. See the *NetScreen-Security Manager Administrator's Guide*.

Using a Console Connection

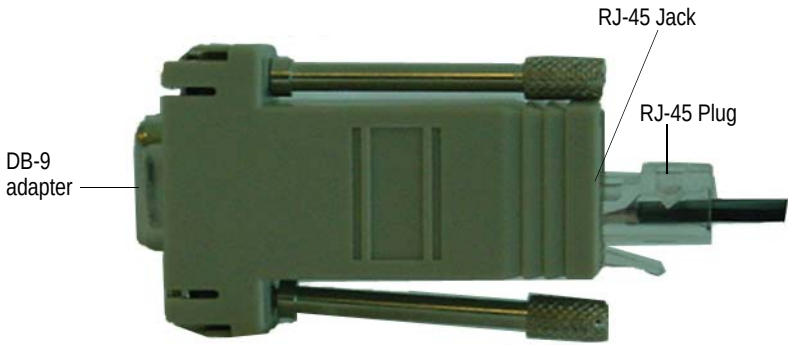
NOTE: Use a serial cable with a male RJ-45 connector to plug into the Console port on the devices.

To establish a console connection:

1. Plug the female end of the supplied DB-9 adapter into the serial port of your workstation. (Be sure that the DB-9 is inserted properly and secured.)

2. Plug the male end of the RJ-45 CAT5 serial cable into the Console port on the SSG 5 device. (Be sure that the other end of the CAT5 cable is inserted properly and secured in the DB-9 adapter.)

Figure 6: DB-9 Adapter



3. Launch a serial terminal emulation program on your workstation. The required settings to launch a console session with the devices are as follows.

   - Baud rate: 9600
   - Parity: None
   - Data bits: 8
   - Stop bit: 1
   - Flow Control: None

4. If you have not yet changed the default user name and password, enter **netscreen** in both the login and password prompts. (Use lowercase letters only. The login and password fields are both case-sensitive.)

   For information on how to configure the device with the CLI commands, see the *Concepts & Examples Reference Guide* for ScreenOS 5.4.0.

5. (Optional) By default, the console times out and terminates automatically after 10 minutes of idle time. To remove the timeout, enter **set console timeout 0**.

Using the WebUI

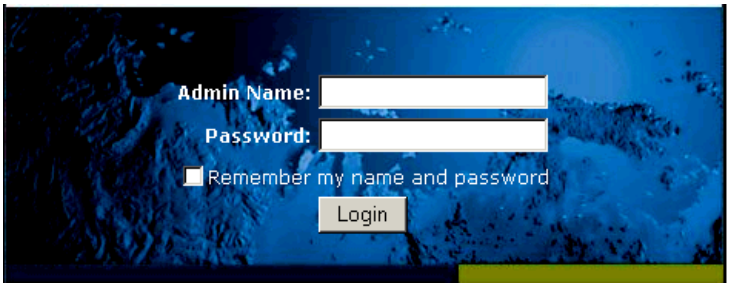
To use the WebUI, you must initially be on the same subnetwork as the device. To access the device with the WebUI browser interface:

1. Connect your workstation to the 0/2 - 0/6 port (bgroup0 interface in the Trust zone) on the device. Ensure that your workstation is configured for DHCP or is statically configured with an IP address in the 192.168.1.1/24 subnetwork.

2. Launch your browser, enter the IP address for the bgroup0 interface (the default IP address is 192.168.1.1), then press **Enter**.

   The WebUI application displays the login prompt.

Figure 7: WebUI Login Prompt



3. If you have not yet changed the default user name and password, enter **netscreen** in both the login and password prompts. (Use lowercase letters only. The login and password fields are both case-sensitive.)

NOTE: If you decide to use the Initial Configuration Wizard to configure your device, see Using the Initial Configuration Wizard.

Using Telnet

1. Connect your workstation to the 0/2 - 0/6 port (bgroup0 interface in the Trust zone) on the device. Ensure that your workstation is configured for DHCP or is statically configured with an IP address in the 192.168.1.1/24 subnetwork.

2. Start a Telnet client application to the IP address for the bgroup0 interface (the default IP address is 192.168.1.1). For example, enter **telnet 192.168.1.1**.

   The Telnet application displays the login prompt.

3. If you have not yet changed the default user name and password, enter **netscreen** in both the login and password prompts. (Use lowercase letters only. The login and password fields are both case-sensitive.)

4. (Optional) By default, the console times out and terminates automatically after 10 minutes of idle time. To remove the timeout, enter **set console timeout 0**.

Default Device Settings

This section describes the default settings and operation of an SSG 5 device.

Table 4 describes the default zone bindings for ports on the devices.

Table 4: Default Physical Interface to Zone Bindings

Port Label	Interface	Zone
Console	N/A	N/A
AUX	serial0/0	Null
10/100 Fast Ethernet ports:		
■ 0/0	■ ethernet0/0	Untrust
■ 0/1	■ ethernet0/1	DMZ
■ bgroup0 ■ 0/2 ■ 0/3 ■ 0/4 ■ 0/5 ■ 0/6	■ bgroup0 (default IP address is 192.168.1.1/24) ■ ethernet0/2 ■ ethernet0/3 ■ ethernet0/4 ■ ethernet0/5 ■ ethernet0/6	Trust
WAN ports:		
■ ISDN	■ bri0/0	Untrust
■ V.92	■ serial0/0	Null

A bridge group, bgroup, is designed to allow network users to switch between wired/wireless traffic without having to reconfigure or reboot the device. By default, the ethernet0/2—ethernet0/6 interfaces, labeled as port 0/2—0/6 on the device, are grouped together as the bgroup0 interface, have the IP address 192.168.1.1/24, and are bound to the Trust security zone. You can configure up to four bgroups.

If you want to set an Ethernet or wireless interface into a bgroup, you must first make sure that the Ethernet or wireless interface is in the Null security zone. Unsetting the Ethernet or wireless interface that is in a bgroup places the interface in the Null security zone. Once assigned to the Null security zone, the Ethernet interface can be bound to a security zone and assigned a different IP address.

To unset ethernet0/3 from bgroup0 and assign it to the Trust zone with a static IP address of 192.168.3.1/24, do the following:

```
unset interface bgroup0 port ethernet0/3
set interface ethernet0/3 zone trust
set interface ethernet0/3 ip 192.168.3.1/24
save
```

Table 5: Wireless and Logical Interface Bindings

SSG 5-WLAN	Interface	Zone
Wireless interface Specifies a wireless interface, which is configurable to operate on 2.4G and/or 5G radio band.	wireless0/0 (default IP address is 192.168.2.1/24)	Trust
	wireless0/1-0/3	Null
Logical Interfaces		
Layer2 interface	vlan1 specifies the logical interfaces used for management and VPN traffic termination while the device is in Transparent mode.	N/A
Tunnel interfaces	tunnel.*n* specifies a logical tunnel interface. This interface is for VPN traffic.	N/A

You can change the default IP address on the bgroup0 interface to match the addresses on your LAN and WLAN. For configuring a wireless interface to a bgroup, see *"Wireless Configuration" on page 25*.

NOTE: The bgroup interface does not work in transparent mode when it contains a wireless interface.

For addition bgroup information and examples, refer to the *Concepts & Examples ScreenOS Reference Guide*.

There are no other default IP addresses configured on other Ethernet or wireless interfaces on a device; you need to assign IP addresses to the other interfaces, including the WAN interfaces.

Basic Device Configuration

This section describes optional configuration:

- "Changing the Root Admin Name and Password" on page 21
- "Setting the Date and Time" on page 22
- "Bridge Group Interfaces" on page 22
- "Administrative Access" on page 23
- "Management Services" on page 23
- "Host and Domain Name" on page 23
- "Default Route" on page 24
- "Management Interface Address" on page 24
- "Backup Untrust Interface Configuration" on page 24

Changing the Root Admin Name and Password

The root admin user has complete privileges to configure an SSG 5 device. We recommend that you change the default root admin name (netscreen) and password (netscreen) immediately.

WebUI

Configuration > Admin > Administrators > Edit (for the netscreen Administrator Name): Enter the following, then click **OK**:

Administrator Name:
Old Password:
New Password:
Confirm New Password:

NOTE: Passwords are not displayed in the WebUI.

CLI

```
set admin name name
set admin password pswd_str
save
```

Setting the Date and Time

The time set on an SSG 5 device affects events such as the setup of VPN tunnels. The easiest way to set the date and time on the device is to use the WebUI to synchronize the device system clock with the workstation clock.

WebUI

1. Configuration > Date/Time: Click the **Sync Clock with Client** button.

   A pop-up message prompts you to specify if you have enabled the daylight saving time option on your workstation clock.

2. Click **Yes** to synchronize the system clock and adjust it according to daylight saving time or click **No** to synchronize the system clock without adjusting for daylight saving time.

You can also use the set clock CLI command in a Telnet or Console session to manually enter the date and time for the SSG device.

Bridge Group Interfaces

By default, the SSG 5 devices have Ethernet interfaces ethernet0/2—ethernet0/6 grouped together in the Trust security zone. Grouping interfaces sets interfaces in one subnet. You can unset an interface from a group and assign it to a different security zone. Interfaces must be in the Null security zone before they can be assigned to a group. To place a grouped interface in the Null security zone, use the **unset interface** *interface* **port** *interface* CLI command.

The SSG 5-WLAN devices allow Ethernet and wireless interfaces to be grouped under one subnet.

NOTE: Only wireless and Ethernet interfaces can be set in a bridge group.

To configure a group with Ethernet and wireless interfaces, do the following:

```
unset interface bgroup0 port ethernet0/3
unset interface bgroup0 port ethernet0/4
set interface bgroup1 port ethernet0/3
set interface bgroup1 port ethernet0/4
set interface bgroup1 port wireless0/2
set interface bgroup1 zone DMZ
set interface bgroup1 ip 10.0.0.1/24
save
```

Administrative Access

By default, anyone in your network can manage a device if they know the login and password. You can configure the device to be managed only from a specific host on your network:

WebUI

Configuration > Admin > Permitted IPs: Enter the following, click **Add**:

IP Address/Netmask: *ip_addr/mask*

CLI

```
set admin manager-ip ip_addr/mask
save
```

Management Services

ScreenOS provides services for configuring and managing the SSG device, such as SNMP, SSL, and SSH, which you can enable on a per-interface basis.

WebUI

Network > Interfaces > Edit (for eth0/0): Under **Management Services**, select or clear the management services you want to use on the interface, then click **Apply**.

CLI

```
set interface eth0/0 manage web
unset interface eth0/0 manage snmp
save
```

Host and Domain Name

The domain name defines the network or subnetwork that the device belongs to, while the hostname refers to a specific device. The hostname and domain name together uniquely identify the device in the network.

WebUI

Network > DNS > Host: Enter the following, then click **Apply**:

Host Name: *name*
Domain Name: *name*

CLI

set hostname *name*
set domain *name*
save

Default Route

The default route is a static route used to direct packets addressed to networks that are not explicitly listed in the routing table. If a packet arrives at the device with an address that the device does not have routing information for, the device sends the packet to the destination specified by the default route.

WebUI

Network > Routing > Routing Entries > New: Enter the following, then click **OK**:

Network Address/Netmask: 0.0.0.0/0.0.0.0
Gateway: (select)
Interface: serial1/0 (select)
Gateway IP Address: *ip_addr*

CLI

set route 0.0.0.0/0 interface serial1/0 gateway *ip_addr*
save

Management Interface Address

The Trust interface has the default IP address 192.168.1.1/24 and is configured for management services. If you connect the 0/2—0/6 port on the device to a workstation, you can configure the device from a workstation in the 192.168.1.1/24 subnetwork using a management service such as Telnet.

You can change the default IP address on the trust interface. For example, you might want to change the interface to match IP addresses that already exist on your LAN.

Backup Untrust Interface Configuration

The SSG 5 devices allow you to configure a backup interface for untrust failover. To set a backup interface for untrust failover, perform the following steps:

1. Set the backup interface in the Null security zone with the **unset interface** *interface* [**port** *interface*] CLI command.

2. Bind the backup interface to the same security zone as the primary interface with the **set interface** *interface* **zone** *zone_name* CLI command.

NOTE: The primary and backup interfaces must be in the same security zone. One primary interface has only one backup interface, and one backup interface has only one primary interface.

To set the ethernet0/4 interface as the backup interface to the ethernet0/0 interface, do either of the following:

WebUI

Network > Interfaces > Backup > Enter the following, then click **Apply**.

Primary: ethernet0/0
Backup: ethernet0/4
Type: track-ip (select)

CLI

```
unset interface bgroup0 port ethernet0/4
set interface ethernet0/4 zone untrust
set interface ethernet0/0 backup interface ethernet0/4 type track-ip
save
```

Wireless Configuration

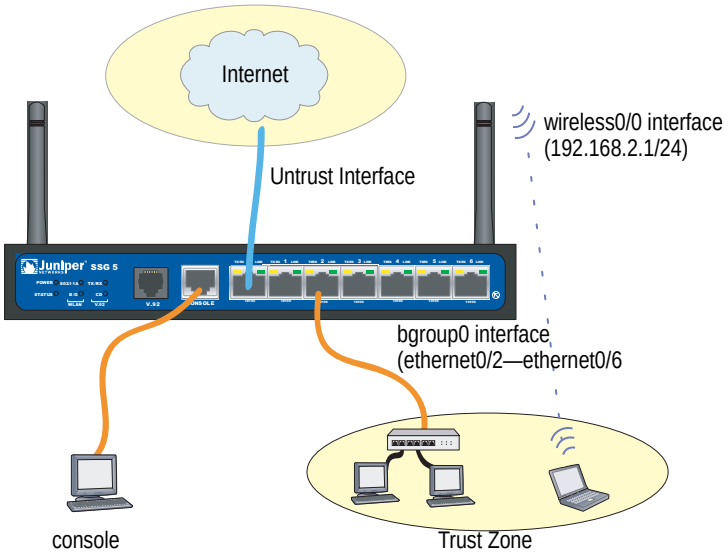
This section provides information for configuring the wireless interface on the SSG 5-WLAN devices. To use the wireless local area network (WLAN) capabilities on the device, you must configure at least one Service Set Identifier (SSID) and bind it to a wireless interface.

Add Taiwan, China, Korea, Singapore

NOTE: If you are operating the SSG 5-WLAN device in a country other than the United States or Japan, then you must use the **set wlan country-code** command before a WLAN connection can be established. This command sets the selectable channel range and transmit power level.

Figure 8 shows the default configuration for an SSG 5-WLAN device.

Figure 8: Default SSG 5-WLAN Configuration



By default, the wireless0/0 interface is configured with the IP address of 192.168.2.1/24. All wireless clients that need to connect to in the Trust zone must have an IP address in the wireless subnetwork. You can also configure the device to automatically assign IP addresses in the 192.168.2.1/24 subnetwork to your devices with DHCP.

By default, the wireless0/1 - wireless0/3 interfaces are defined as Null and do not have IP addresses assigned to them. If you want to use any of the other wireless interfaces, you must configure an IP address for it, assign an SSID to it, and bind it to a security zone.

For more information about WLANs, refer to “Wireless Interface” in the *Concepts and Examples ScreenOS Reference Guide*.

Wireless Network Configuration

Wireless networks consist of names referred to as Service Set Identifiers (SSIDs). Specifying SSIDs allows you to have multiple wireless networks reside in the same location without interfering with each other. An SSID name can have a maximum of 32 characters. If a space is part of the SSID name string, then the string must be enclosed with quotation marks. Once the SSID name is set, more SSID attributes can be configured.

The SSG 5-WLAN devices allow you to create up to 16 SSIDs, but only 4 of them can be used simultaneously. You can configure the device to use the 4 SSIDs on either one of the transceivers or split the use on both. For example, 3 SSIDs assigned to WLAN 0 and 1 SSID assigned to WLAN 1. Use the **set interface** *wireless_interface* **wlan** { 0 | 1 | both } CLI command to set the radio transceivers on the SSG 5-WLAN devices.

To set the SSID name **netscreen open**, allow the SSID to be open to all users, bind the SSID to the wireless0/0 interface, and use both radio transceivers, do either of the following:

WebUI

Wireless > SSID > New: Enter the following, then click **OK**:

SSID: netscreen open
Authentication: open
Encryption: none
Wireless Interface Binding: wireless0/0 (select)

CLI

```
set ssid name "netscreen open"
set ssid "netscreen open" authentication open encryption none
set ssid "netscreen open" interface wireless0/0
set interface wireless0/0 wlan both
set interface wireless0/0 zone trust
save
exec wlan reactivate
```

You can set an SSID to operate in the same subnet as the wired subnet. This action allows clients to work in either interface without having to reconnect in another subnet.

To set up a wireless interface for basic configuration, do the following:

set wlan country-code {code}
set interface *wireless_interface* ip *ip_addr/netmask*
set ssid name *name_str*
set ssid *name_str* authentication *auth_type* encryption *encryption_type*
set ssid *name_str* key-id *number*
set ssid *name_str* interface *interface*
set interface *wireless_interface* wlan both
save
exec wlan reactivate

To set an ethernet and wireless interface to the same bridge group interface, do the following:

set interface *bgroup_name* port *wireless_interface*
set interface *bgroup_name* port *ethernet_interface*

NOTE: *Bgroup_name* can be bgroup0—bgroup3.

Ethernet_interface can be ethernet0/0—ethernet0/6.

Wireless_interface can be wireless0/0—wireless0/3.

Authentication and Encryption

The SSG 5-WLAN supports the following authorization and encryption methods:

Authentication	Encryption
Open	Allows any wireless client to access the device
Shared-key	WEP shared-key
WPA-PSK	AES/TKIP with Pre-shared key
WPA	AES/TKIP with key from RADIUS server
WPA2-PSK	802.11i compliant with a pre-shared key
WPA2	802.11i compliant with a RADIUS server
WPA-Auto-PSK	Allows WPA and WPA2 type with pre-shared key
WPA-Auto	Allows WPA and WPA2 type with RADIUS server
802.1x	WEP with key from RADIUS server

Once you have set an SSID to the wireless0/0 interface, you can access the device using the default wireless0/0 interface IP address in the steps provided "Accessing the Device" on page 16. Refer to the *Concepts & Examples ScreenOS Reference Guide* for configuration examples, SSID attributes, and CLI commands relating to wireless security configurations.

WAN Configuration

This section explains how to configure the WAN interfaces:

- "The ISDN Interface" on this page
- "The V.92 Modem Interface" on page 30

The ISDN Interface

Integrated Services Digital Network (ISDN) is a set of standards for digital transmission over different media created by the Consultative Committee for International Telegraphy and Telephone (CCITT) and International Telecommunications Union (ITU). As a dial-on-demand service, it has fast call setup and low latency as well as the ability to carry high-quality voice, data, and video transmissions. ISDN is also a circuit-switched service that can be used on both multipoint and point-to-point connections. ISDN provides a service router with a backup connection for network interfaces.

Some SSG 5 devices support ISDN basic rate interfaces (BRIs). The ISDN interface is usually configured as the backup interface of the Ethernet interface to access external networks.

To configure the ISDN interface, do either of the following:

WebUI

Network > Interfaces > Edit (bri0/0): Enter or select the applicable option value, then click **OK**.

BRI Mode: Dial Using BRI
Primary Number: 123456
WAN Encapsulation: PPP
PPP Profile: isdnprofile

CLI

```
set interface bri0/0 dialer-enable
set interface bri0/0 primary-number "123456"
set interface bri0/0 encap ppp
set interface bri0/0 ppp profile isdnprofile
save
```

For more information on how to configure the ISDN interface, refer to the *Concepts and Examples ScreenOS Reference Guide*.

To configure the ISDN interface as the backup interface, see "Backup Untrust Interface Configuration" on page 24.

The V.92 Modem Interface

Some SSG 5 devices provide an internal modem to establish a PPP connection to an ISP. You can configure the serial interface as a primary or backup interface, which is used in case of interface failover.

NOTE: The V.92 interface does not work in transparent mode.

To configure the V.92 interface, do either of the following:

WebUI

Network > Interfaces > Edit (for serial0/0) > Modem: Enter the following, click **OK**:

Modem Name: mod1
Init String: AT&FS7=255S32=6
Status: Enable (select)
Inactivity Timeout: 20

CLI

```
set interface serial0/0 modem idle-time 20
set interface serial0/0 modem settings mod1 init-strings AT&FS7=255S32=6
set interface serial0/0 modem settings mod1 active
```

For information on how to configure the V.92 modem interface, refer to the *Concepts and Examples ScreenOS Reference Guide*.

Basic Firewall Protections

The devices are configured with a default policy that permits workstations in the Trust zone of your network to access any resource in the Untrust security zone, while outside computers are not allowed to access or start sessions with your workstations. You can configure policies that direct the device to permit outside computers to start specific kinds of sessions with your computers. For information about creating or modifying policies, refer to the *Concepts and Examples ScreenOS Reference Guide*.

The SSG 5 devices provide various detection methods and defense mechanisms to combat probes and attacks aimed at compromising or harming a network or network resource:

- ScreenOS SCREEN options secure a zone by inspecting, and then allowing or denying, all connection attempts that require crossing an interface to that zone. For example, you can apply port scan protection on the Untrust zone to stop a source from an remote network from trying to identify services to target for further attacks.

- The device applies firewall policies, which can contain content filtering and intrusion detection and prevention (IDP) components, to the traffic that passes the SCREEN filters from one zone to another. By default, no traffic is permitted to pass through the device from one zone to another. To permit traffic to cross the device from one zone to another, you must create a policy that overrides the default behavior.

To set ScreenOS SCREEN options for a zone:

WebUI

Screening > Screen: Select the zone to which the options apply. Select the SCREEN options that you want, then click **Apply**:

CLI

```
set zone zone screen option
save
```

For more information about configuring the network security options available in ScreenOS, see the *Attack Detection and Defense Mechanisms* volume in the *Concepts & Examples ScreenOS Reference Guide*.

Verifying External Connectivity

To verify that workstations in your network can access resources on the Internet, start a Web browser from any workstation in the network and enter the following URL: www.juniper.net.

Resetting the Device to Factory Defaults

If you lose the admin password, you can reset the SSG 5 device to its default settings. This action destroys any existing configurations but restores access to the device.

WARNING: Resetting the device deletes all existing configuration settings and renders existing firewall and VPN service inoperative.

You can restore the device to its default settings in one of the following ways:

- Using a Console connection. For further information, see the Administration chapter in the Administration volume of the *Concepts and Examples ScreenOS Reference Guide*.
- Using the reset pinhole on the front panel of the device, as described in the next section.

The Reset Pinhole

You can reset the device and restore the factory default settings by pressing the reset pinhole. To perform this operation, you need to either view the device status LEDs on the front panel or start a Console session as described in Using a Console Connection on page 16.

To use the reset pinhole to reset and restore the default settings, perform the following steps:

1. Locate the reset pinhole on the rear panel. Using a thin, firm wire (such as a paper clip), push the pinhole for four to six seconds and then release.

   The STATUS LED blinks red. A message on the Console states that erasure of the configuration has started and the system sends an SNMP/SYSLOG alert.

2. Wait for one to two seconds.

   After the first reset, the STATUS LED blinks green; the device is now waiting for the second reset. The Console message now states that the device is waiting for a second confirmation.

3. Push the reset pinhole again for four to six seconds.

   The Console message verifies the second reset. The STATUS LED glows red for one-half second and then returns to the blinking green state.

   The device then resets to its original factory settings. When the device resets, the STATUS LED glows red for one-half second and then glows green. The Console displays device bootup messages. The system generates SNMP and SYSLOG alerts to configured SYSLOG or SNMP trap hosts.

   After the device has rebooted, the Console displays the login prompt for the device. The STATUS LED blinks green. The login for username and password is netscreen.

If you do not follow the complete sequence, the reset process cancels without any configuration change and the console message states that the erasure of the configuration is aborted. The STATUS LED returns to blinking green. If the device did not reset, an SNMP alert is sent to confirm the failure.

Chapter 4

Servicing the Device

This chapter describes service and maintenance procedures for an SSG 5 device. It contains the following sections:

- "Tools and Parts Required" on this page
- "Memory Upgrade" on page 33

NOTE: For safety warnings and instructions, refer to the Juniper Networks *Security Products Safety Guide*. The instructions in the guide warn you about situations that could cause bodily injury. Before working on any equipment, you should be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Tools and Parts Required

To replace a component on an SSG 5 device, you need the following tools and parts:

- Electrostatic discharge (ESD) grounding wrist strap
- Phillips screwdriver, 1/8-inch

Memory Upgrade

You can upgrade an SSG 5 device with a single 128 MB SIMM DRAM memory module to a 256 MB module.

To upgrade the memory on an SSG 5 device, perform the following steps:

1. Attach an ESD grounding strap to your bare wrist and connect the strap to the ESD point on the chassis, or to an outside ESD point if the device is disconnected from earth ground.
2. Unplug the power adapter from the device. Verify that the POWER LED is off.
3. Use a phillips screwdriver to remove the screws from the top panel of the chassis. The screws are located at the rear and sides of the panel. Keep the screws nearby for use when closing the chassis later.
4. Grip the rear edge of the top panel, lift it up, then remove it.

5. Locate the memory module slot.

Figure 9: Memory Module Slots

Graphic needed.

6. Release the 128 MB SIMM DRAM memory module by pressing your thumbs downward on the locking tabs on each side of the module so that the tabs swivel away from it.

7. Grip the long edge of the memory module and slide it out. Set it aside.

8. Insert one of the 256 MB SIMM DRAM memory modules into the slot from which you just removed the 128 MB SIMM DRAM memory module. Exerting even pressure with both thumbs upon the upper edge of the module, press the module downward until the locking tabs click into position.

9. To replace the top panel on the chassis, set the front edge of the top panel into the groove that runs along the top front edge of the chassis. Then lower the top panel onto the chassis.

10. Use the phillips screwdriver to tighten the screws you removed earlier, securing the top panel to the chassis.

Appendix A

Specifications

This appendix provides general system specifications for the SSG 5 device.

SSG 5 Physical Specifications

Table 6: SSG 5 Physical Specifications

Description	Value
Chassis dimensions	222.5mm X 143.4mm X 35mm. With rubber feet, the system is 40mm (1.6 inches) tall. (8.8 inches X 5.6 inches X 1.4 inches)
Device weight	960g (2.1 lbs)

Electrical Specification

Table 7: SSG 5 Electrical Specifications

Item	Specification
DC input voltage	12 V
DC system current rating	3-4 Amps 3-4.16Amps

Environmental

Table 8: SSG 5 Environmental Tolerance

Description	Value
Altitude	No performance degradation to 6,600 ft (2,000 m)
Relative humidity	Normal operation ensured in relative humidity range of 5% to 90%, noncondensing
Temperature	Normal operation ensured in temperature range of 32°F (0°C) to 104°F (40°C) Non-operating storage temperature in shipping carton: -40°F (-40°C) to 158°F (70°C)

Certifications

Safety

- CAN/CSA-C22.2 No. 60950-1-03/UL 60950-1 Third Edition, Safety of Information Technology Equipment
- EN 60950-1:2001 + A11, Safety of Information Technology Equipment
- IEC 60950-1:2001 First Edition, Safety of Information Technology Equipment

EMC (Emissions)

- FCC Part 15 Class B (USA)
- EN 55022 Class B (Europe)
- AS 3548 Class B (Australia)
- VCCI Class B (Japan)

EMC Immunity

- EN 55024
- EN-61000-3-2 Power Line Harmonics
- EN-61000-3-3 Power Line Harmonics
- EN-61000-4-2 ESD
- EN-61000-4-3 Radiated Immunity
- EN-61000-4-4 EFT
- EN-61000-4-5 Surge
- EN-61000-4-6 Low Frequency Common Immunity
- EN-61000-4-11 Voltage Dips and Sags

European Telecommunications Standards Institute (ETSI)

- ETSI EN-3000386-2: Telecommunication Network Equipment. Electromagnetic Compatibility Requirements; (equipment category -Other than telecommunication centers)

Connectors

Table 9 lists the RJ-45 connector pinouts for the Console and Modem ports:

Table 9: Console and Modem Port Connector Pinouts

RJ-45	Name	I/O	Description	DB-9
1	RTS Out	O	Request to Send	8
2	DTR Out	O	Data Terminal Ready	6
3	TxD	O	Transmit Data	2
4	GND	N/A	Chassis Ground	5
5	GND	N/A	Chassis Ground	5
6	RxD	I	Receive Data	3
7	DSR	I	Data Set Ready	4
8	CTS	I	Clear to Send	7

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