

NETSCREEN-50

Installer's Guide

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The following information is for FCC compliance of Class B devices: The equipment described in this manual generates and

may radiate radio-frequency energy. If it is not installed in accordance with NetScreen's installation instructions, it may cause interference with Radio and television reception. This equipment has been tested and found to comply with the limits for a Class B digital devices in accordance with the specifications in part 15 of the FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- 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.

Caution: Changes or modifications to this product could void the user's warranty and authority to operate this device.

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Preface

The NetScreen-50 device provides security for small-and medium-sized companies, as well as enterprise branch and remote offices. The NetScreen-50 device offers 170 Mbps of firewall and 50 Mbps of 3DES VPN, protecting your LANs as well as public servers, such as mail, web, or FTP.

GUIDE ORGANIZATION

This manual has four chapters and two appendices.

Chapter 1, "[Overview](#)" provides an overview of the system, its ports, and power requirements.

Chapter 2, "[Installing the Device](#)" details how to install the NetScreen-50 device on a desktop or in a rack.

Chapter 3, "[Configuring the Device](#)" details how to connect the NetScreen-50 device to your network, establish a Console session, set an IP address for the NetScreen-50 device, and access the device using the WebUI.

Chapter 4, "[Replacing the Fuse](#)" provides procedures on how to replace components on the device.

Appendix A, "[Specifications](#)" provides a list of physical specifications about the NetScreen-50 device.

Appendix B, "[Configuration for Common Criteria, EAL2](#)" provides information about configuring NetScreen devices for Common Criteria, EAL2 compliance.

COMMAND LINE INTERFACE (CLI) CONVENTIONS

Some of the instructions and examples provided in this manual contain CLI commands, most of which perform initial configuration of the NetScreen-500 device. The command examples use conventions for variables and syntax.

CLI Command Variables

Most NetScreen CLI commands have changeable parameters that affect the outcome of command execution. NetScreen documentation represents these parameters as variables. Such variables may include names, identification numbers, IP addresses, subnet masks, numbers, dates, and other values.

Variable Notation

The variable notation used in this manual consists of italicized parameter identifiers. For example, the **set arp** command uses four identifiers, as shown here:

```
set arp
{
  ip_addr mac_addr interface
  age number |
  always-on-dest |
  no-cache
}
```

where

- *ip_addr* represents an IP address.
- *mac_addr* represents a MAC address.
- *interface* represents a physical or logical interface.
- *number* represents a numerical value.

Thus, the command might take the following form:

```
ns-> set arp 172.16.10.11 00e02c000080 ethernet2
```

where **172.16.10.11** is an IP address, **00e02c000080** is a MAC address, and **ethernet2** is a physical interface.

Common CLI Variable Names

The following list shows the CLI variable names used in NetScreen documents.

<i>comm_name</i>	The community name of a host or other device.
<i>date_str</i>	A date value.
<i>dev_name</i>	A device name, as with flash card memory.
<i>dom_name</i>	A domain name, such as “acme” in www.acme.com .
<i>dst_addr</i>	A destination address, as with a policy definition that defines a source and destination IP address.
<i>filename</i>	The name of a file.
<i>grp_name</i>	The name of a group, such as an address group or service group.
<i>interface</i>	A physical or logical interface.
<i>id_num</i>	An identification number.
<i>ip_addr</i>	An IP address.
<i>key_str</i>	A key, such as a session key, a private key, or a public key.
<i>key_hex</i>	A key expressed as a hexadecimal number.
<i>loc_str</i>	A location of a file or other resource.
<i>mac_addr</i>	A MAC address.
<i>mbr_name</i>	The name of a member in a group, such as an address group or a service group.
<i>mask</i>	A subnet mask, such as 255.255.255.224 or /24 .

<i>name_str</i>	The name of an item, such as an address book entry.
<i>number</i>	A numeric value, usually an integer, such as a threshold or a maximum.
<i>pol_num</i>	A policy number.
<i>port_num</i>	A number identifying a logical port.
<i>pswd_str</i>	A password.
<i>ptcl_num</i>	A number uniquely identifying a protocol, such as TCP, IP, or UDP.
<i>serv_name</i>	The name of a server.
<i>shar_secret</i>	A shared secret value.
<i>spl_num</i>	A Security Parameters Index (SPI) number.
<i>src_addr</i>	A source address, as with a policy definition that defines a source and destination IP address.
<i>string</i>	A character string, such as a comment.
<i>svc_name</i>	The name of a service, such as HTTP or MAIL.
<i>time_str</i>	A time value.
<i>tunn_str</i>	The name of a tunnel, such as an L2TP tunnel.
<i>url_str</i>	A URL, such as www.acme.com .
<i>usr_str</i>	A user, usually an external entity such as a dialup user.
<i>vrouter</i>	A local virtual router, such as trust-vr or untrust-vr.
<i>zone</i>	The name of a security zone.

Some commands contain multiple variables of the same type. The names of such variables may be numbered to identify each individually. For example, the **set dip** command contains two *id_num* variables, each numbered for easy identification:

```
set dip group id_num1 [ member id_num2 ]
```

CLI Command Syntax

Each CLI command description in this manual reveals some aspect of command syntax. This syntax may include options, switches, parameters, and other features. To illustrate syntax rules, some command descriptions use *dependency delimiters*. Such delimiters indicate which command features are mandatory, and in which contexts.

Dependency Delimiters

Each syntax description shows the dependencies between command features by using special characters.

- The { and } symbols denote a mandatory feature. Features enclosed by these symbols are essential for execution of the command.

- The [and] symbols denote an optional feature. Features enclosed by these symbols are not essential for execution of the command, although omitting such features might adversely affect the outcome.
- The | symbol denotes an “or” relationship between two features. When this symbol appears between two features on the same line, you can use either feature (but not both). When this symbol appears at the end of a line, you can use the feature on that line, or the one below it.

Nested Dependencies

Many CLI commands have *nested* dependencies, which make features optional in some contexts, and mandatory in others. The three hypothetical features shown below demonstrate this principle.

```
[ feature_1 { feature_2 | feature_3 } ]
```

In this example, the delimiters [and] surround the entire clause. Consequently, you can omit **feature_1**, **feature_2**, and **feature_3**, and still execute the command successfully. However, because the { and } delimiters surround **feature_2** and **feature_3**, you must include either **feature_2** or **feature_3** if you include **feature_1**. Otherwise, you cannot successfully execute the command.

The following example shows some of the **set interface** command’s feature dependencies.

```
set interface vlan1 broadcast { flood | arp [ trace-route ] }
```

The { and } brackets indicate that specifying either **flood** or **arp** is mandatory. By contrast, the [and] brackets indicate that the **arp** option’s **trace-route** switch is not mandatory. Thus, the command might take any of the following forms:

```
ns-> set interface vlan1 broadcast flood
ns-> set interface vlan1 broadcast arp
ns-> set interface vlan1 broadcast arp trace-route
```

Availability of CLI Commands and Features

As you execute CLI commands using the syntax descriptions in this manual, you may find that certain commands and command features are unavailable for your NetScreen device model.

Because NetScreen devices treat unavailable command features as improper syntax, attempting to use such a feature usually generates the **unknown keyword** error message. When this message appears, confirm the feature’s availability using the ? switch. For example, the following commands list available options for the **set vpn** command:

```
ns-> set vpn ?
ns-> set vpn vpn_name ?
ns-> set vpn gateway gate_name ?
```

NETSCREEN PUBLICATIONS

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Overview



This chapter provides detailed descriptions of the NetScreen-50 chassis.

Topics explained in this chapter include:

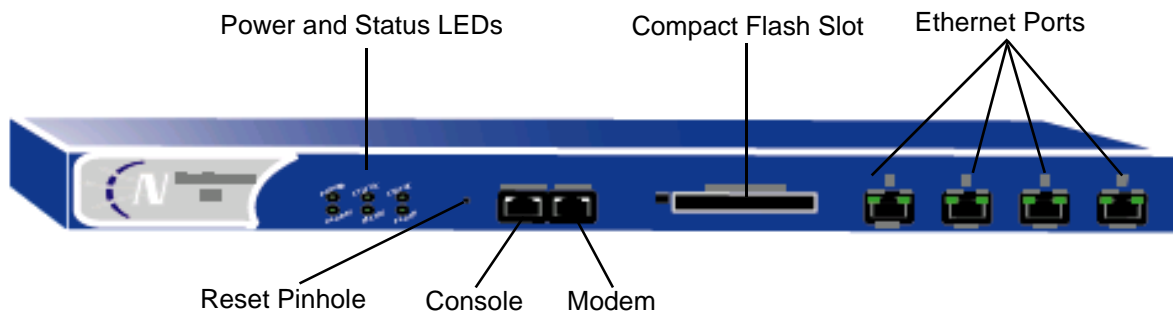
- “The Front Panel” on page 2
 - “Power and Status LEDs” on page 2
 - “Configuration Reset Pinhole” on page 4
 - “Console and Modem Ports” on page 4
 - “Compact Flash Card Slot” on page 4
 - “Ethernet Interfaces” on page 5
- “The Rear Panel” on page 5

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

THE FRONT PANEL

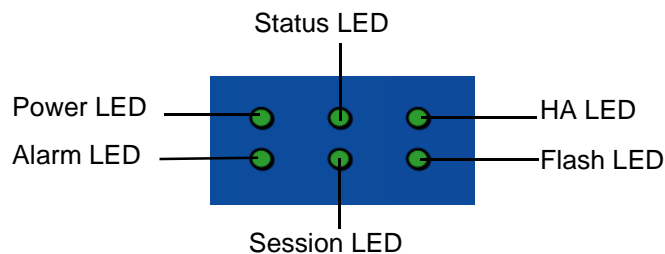
The front panel of the NetScreen-50 device has the following:

- Power and status LEDs.
- Configuration reset pinhole, for resetting the device to the original factory default settings.
- A Console port, for connecting to serial terminal emulation programs such as HyperTerminal.
- A modem port.
- A Compact Flash card slot, for storage of system images, configuration files, keys, and logs.
- Four Ethernet ports, for connecting the NetScreen-50 device to your LAN or local workstations and to the Internet.



Power and Status LEDs

The LEDs display up-to-date information about critical NetScreen-50 functions.



The LEDs are as follows:

LED	Purpose	Color	Meaning
Power	Power Status	green	Power is functioning correctly.
		off	The device is not receiving power.
Alarm	System Alarm	red	Critical alarm—failure of hardware component or software module (such as a cryptographic algorithm)
		amber	Major alarm: Low memory (<10% remaining) High CPU utilization (>90%) Log memory full Sessions full Maximum number of VPN tunnels reached Firewall attacks detected
		off	No alarms.
Status	System Status	blinking green	Normal operation
		green	Booting up normally.
HA	High Availability (HA)	off	No HA activity has been defined.
		green	Port is a master in a redundancy cluster.
		amber	Port is a slave in a redundancy cluster.
Session	Session Utilization	amber	Session utilization is between 70% and 90%.
		red	Session utilization is greater than 90%.
		off	Normal operation.
Flash	Compact Flash (CF) Card Status	green	The card is installed.
		blinking green	Read-write activity is detected.
		off	CF slot is empty.

Configuration Reset Pinhole

The configuration reset pinhole is a switch that resets the device to its original default settings. To use this switch, insert a stiff wire (such as a straightened paper clip) into the pinhole.

Warning! Because resetting the device restores it to the original factory default configuration, any new configuration settings are lost, and the firewall and all VPN service become inoperative.

Console and Modem Ports

The Console port is a RJ-45 serial console port connector, for VT100 terminal emulator programs to perform local configuration and administration.

The Modem port is a RJ-45 serial console port connector, for establishing remote console sessions using dialup connections through a 9600 bps RS-232 cable. Dialing into the modem establishes the dialup console connection.

The table below lists the RJ-45 to DB-9 adapter connection definitions. To employ a standard UART port, both the console and the modem ports must use this configuration.

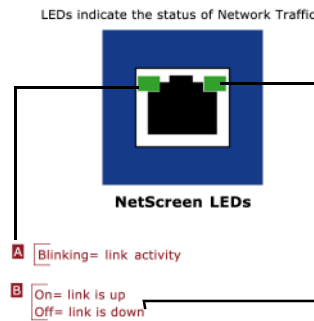
DB9	Signal	Abbreviation	DTE	DCE	RJ45
1	Data Carrier Detect	DCD	In	Out	NC
2	Received Data	RD	In	Out	3
3	Transmitted Data	TD	Out	In	6
4	Data Terminal Ready	DTR	Out	In	7
5	Signal Ground	SGND	N/A	N/A	4
6	Data Set Ready	DSR	In	Out	2
7	Request To Send	RTS	Out	In	8
8	Clear To Send	CTS	In	Out	1
9	Ring Indicator	RI	In	Out	NC

Compact Flash Card Slot

The Compact Flash slot is for downloading or uploading system software or configurations. This slot can accept a SanDisk CompactFlash™ card with a variety of memory capacities. NetScreen has tested 96MB and 512MB cards. The NetScreen device automatically detects the presence of a flash card and records the event log to it.

Ethernet Interfaces

Each Ethernet port is a 10/100 auto-sensing interface. Each port has a pair of LEDs: the left LED indicates network traffic activity and the right LED indicates if the link is up (the port is connected to an active device).



THE REAR PANEL

The rear panel of the NetScreen-50 device contains the power outlet and on/off switch.



You can order the NetScreen-50 device with either an AC or DC power supply.

Installing the Device

2

This chapter describes how to install a NetScreen-50 device in an equipment rack or on a desktop.

Topics in this chapter include:

- “General Installation Guidelines” on page 8
- “Desktop Installation Guidelines” on page 9
- “Equipment Rack Mounting” on page 9
 - “Equipment Rack Installation Guidelines” on page 9
 - “Equipment Rack Accessories and Required Tools” on page 10
 - “NetScreen-50 Rack Mount” on page 10

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

GENERAL INSTALLATION GUIDELINES

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

- Never assume that the device is disconnected from a power source. *Always* check first.
- Room temperature might not be sufficient to keep equipment at acceptable temperatures without an additional circulation system. Ensure that the room in which you operate the device has adequate air circulation.
- Do not work alone if potentially hazardous conditions exist.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, frayed power cords, and missing safety grounds.
- The product should be installed in a restricted area to prevent personal injury from exposure to DC voltage.

Warning! To prevent abuse and intrusion by unauthorized personnel, install the NetScreen-50 device in a locked-room environment.

DESKTOP INSTALLATION GUIDELINES

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

- Never assume that the power cord is disconnected from a power source. *Always* check first.
- Room temperature might not be sufficient to keep equipment at acceptable temperatures without an additional circulation system. Ensure that the room in which you operate the device has adequate air circulation.
- Do not work alone if potentially hazardous conditions exist.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, frayed power cords, and missing safety grounds.

Warning! *To prevent abuse and intrusion by unauthorized personnel, it is extremely important to install the NetScreen device in a secure environment.*

EQUIPMENT RACK MOUNTING

The NetScreen-50 device comes with accessories for mounting the device in a standard 19-inch equipment rack.

Equipment Rack Installation Guidelines

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

Use the following guidelines while configuring your equipment rack.

- Enclosed racks must have adequate ventilation. Such ventilation requires louvered sides and a fan to provide cooling air.
- When mounting a chassis in an open rack, be sure that the rack frame does not block the intake or exhaust ports. If you install the chassis on slides, check the position of the chassis when it is seated all the way into the rack.
- In an enclosed rack with a ventilation fan in the top, equipment higher in the rack can draw heat from the lower devices. Always provide adequate ventilation for equipment at the bottom of the rack.
- Baffles can isolate exhaust air from intake air. The best placement of the baffles depends on the airflow patterns in the rack.

Equipment Rack Accessories and Required Tools

Rack mounting requires the following accessories and tools:

- 1 Phillips-head screwdriver
- 4 screws to match the rack (if the thread size of the screws provided in the NetScreen-50 product package do not fit the thread size of the rack)
- The included rack mount bracket kit.

NetScreen-50 Rack Mount

To rack mount the NetScreen-50 device:

1. Screw the rack mount brackets to each side of the chassis, as shown below.



2. Screw the left and right brackets to the rack.

Configuring the Device

3

This chapter describes how to connect a NetScreen-50 device to your network and perform initial configuration on the device.

Topics in this chapter include:

- “Operational Modes” on page 12
 - “Transparent Mode” on page 12
 - “Route Mode” on page 12
- “The NetScreen-50 Interfaces” on page 13
- “Connecting the Device to a Network” on page 14
- “Establishing an HA Connection Between Devices” on page 15
- “Performing Initial Configuration Using the CLI” on page 17
 - “Connecting Using a VT100 Terminal Emulator” on page 17
 - “Setting an IP Address for Managing the Device” on page 17
 - “Setting an IP Address for Managing the Device” on page 17
 - “Allowing Outbound Traffic” on page 19
 - “Changing Your Login Name and Password” on page 19
- “Accessing the Device With the WebUI” on page 19
- “Resetting the Device to Factory Default Settings” on page 20

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

OPERATIONAL MODES

The NetScreen-50 Series supports two operational modes, Transparent mode and Route mode. The default mode is Transparent.

Transparent Mode

In Transparent mode, the NetScreen-50 device operates as a Layer-2 bridge. Because the device cannot translate packet IP addresses, it cannot perform Network Address Translation (NAT). Consequently, for the device to access the Internet, any IP address in your trusted (local) networks must be routable and accessible from untrusted (external) networks.

In Transparent mode, the IP addresses for the Layer-2 security zones V1-Trust, V1-DMZ, and V1-Untrust are 0.0.0.0, thus making the NetScreen device invisible to the network. However, the device can still perform firewall, VPN, and traffic management according to configured security policies.

Route Mode

In Route mode, the NetScreen-50 device operates at Layer 3. Because you can configure each interface using an IP address and subnet mask, you can configure individual interfaces to perform NAT.

- When the interface performs NAT services, the device translates the source IP address of each outgoing packet into the IP address of the untrusted port. It also replaces the source port number with a randomly-generated value.
- When the interface does *not* perform NAT services, the source IP address and port number in each packet header remain unchanged. Therefore, to reach the Internet your local hosts must have routable IP addresses.

For more information on NAT, see the *NetScreen Concepts and Examples ScreenOS Reference Guide*.

Important! Performing the setup instructions below configures your device in Route mode. To configure your device in Transparent mode, see the *NetScreen Concepts and Examples ScreenOS Reference Guide*.

THE NETSCREEN-50 INTERFACES

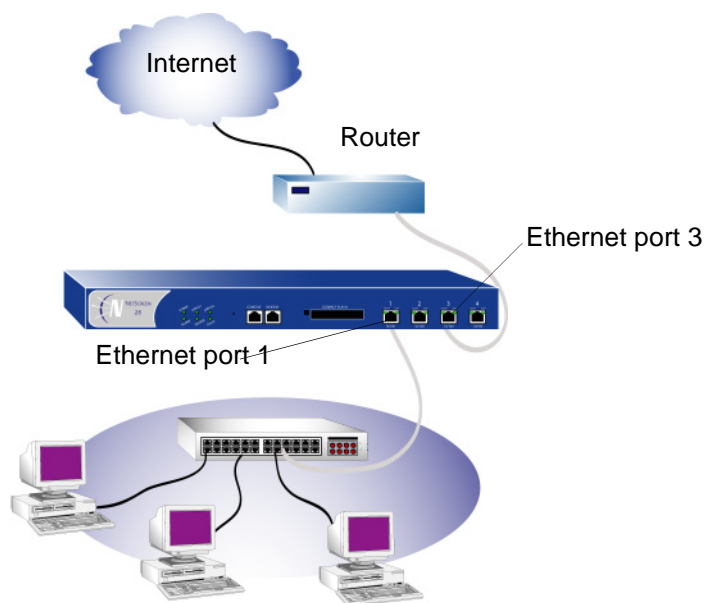
Each NetScreen-50 device provides ethernet interfaces for access and connectivity. In addition, there are logical (non-physical) interfaces that perform special Layer-2 or management functions.

The configurable interfaces available on a NetScreen-50 device are as follows:

Interface Type	Description
Ethernet interfaces	<p>ethernetn specifies a physical ethernet interface, denoted by a physical port (n) on the module. Although each interface is bound to a security zone by default, you can bind it to another zone as required.</p> <ul style="list-style-type: none"> • ethernet1 Bound to the Trust security zone by default. Connect this interface using a twisted pair cable with RJ-45 connectors. • ethernet2 Bound to the DMZ security zone by default. Connect this interface using a twisted pair cable with RJ-45 connectors. • ethernet3 Bound to the Untrust security zone by default. Connect this interface using a twisted pair cable with RJ-45 connectors. • ethernet4 Bound to HA zone by default.
Layer-2 interfaces	<p>vlan1 specifies a logical interface used for management and VPN traffic termination while the NetScreen device is in Transparent mode.</p> <p>v1-trust specifies a logical Layer-2 interface bound to the V1-Trust zone.</p> <p>v1-untrust specifies a logical Layer-2 interface bound to the V1-Untrust zone.</p> <p>v1-dmz specifies a logical Layer-2 interface bound to the V1-DMZ zone.</p>
Tunnel interfaces	<p>tunnel.n specifies a logical tunnel interface. This interface is for VPN traffic.</p>

CONNECTING THE DEVICE TO A NETWORK

The following illustration shows typical cabling for 10/100 BaseT networks. This example uses the default interface bindings for the Ethernet ports.



To add a NetScreen-50 device to your network:

1. (Optional) Install the NetScreen-50 device in an equipment rack (see [“Equipment Rack Mounting” on page 9](#)).
2. Make sure that the power switch on the device is turned OFF.
3. Connect the power cable, included in the product package, to the NetScreen-50 power outlet at the rear of the device and to a power source.

Warning! To prevent personal injury from exposure to DC voltage, always replace the insulating cap after installing power cables.

4. Connect an RJ-45 cross-over cable from the Trust zone interface (Ethernet port 1) to the internal switch, router, or hub.

Note: Check your router, hub, switch, or PC documentation to see if these devices require any further configuration. In addition, see if it is necessary to switch OFF the power to any new device you add to the LAN.

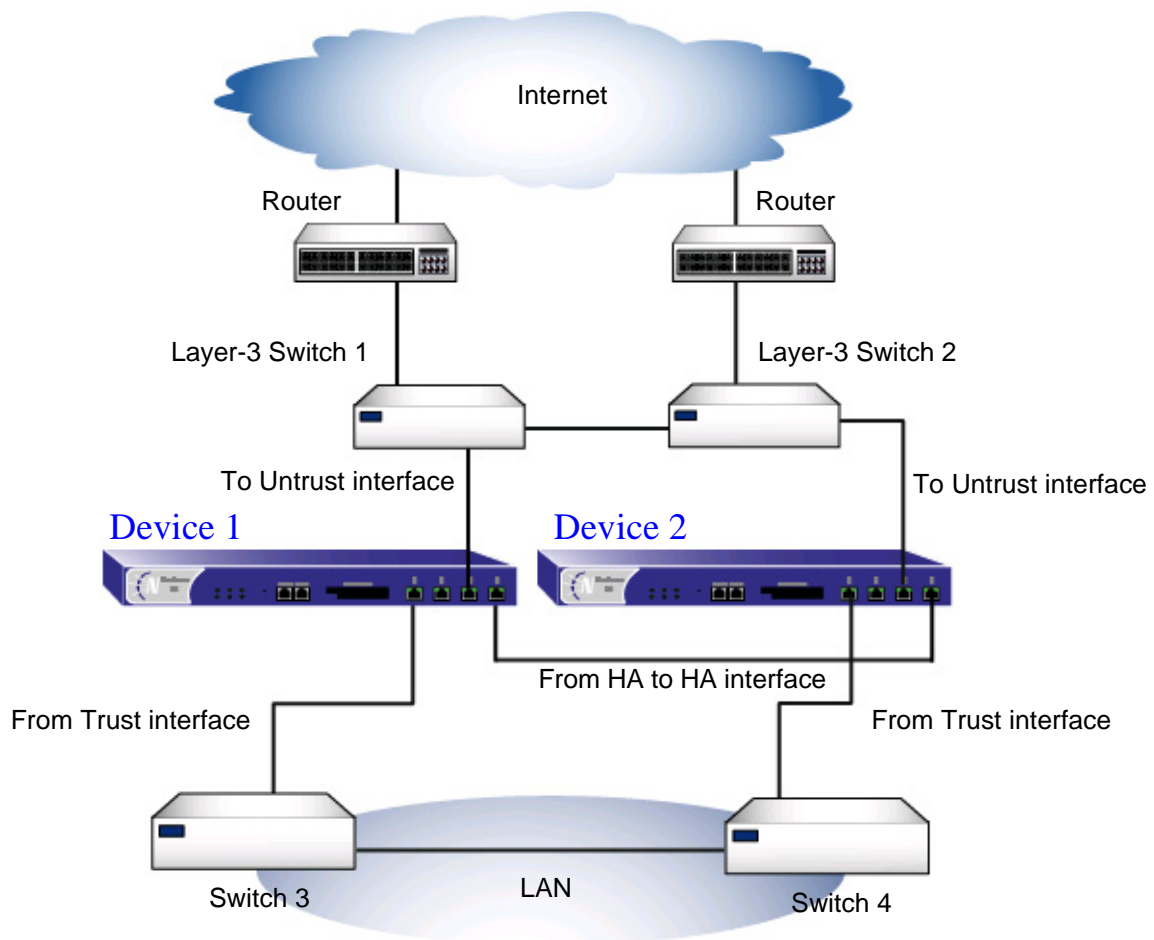
5. Connect an RJ-45 straight-through cable from the Untrust zone interface (Ethernet port 3) to the external router.
6. Flip the power switch to the ON position.

7. After the NetScreen-50 device boots up, check the following LEDs:
 - The Power LED glows green.
 - The Status LED blinks green.
 - The Ethernet port LEDs for each connected interface glows or blinks green. (For more details about interpreting the Link Status LEDs, see [“Ethernet Interfaces”](#) on page 5.)

ESTABLISHING AN HA CONNECTION BETWEEN DEVICES

To assure continuous traffic flow in the event of system failure, you can cable and configure two NetScreen devices in a redundant cluster. The devices propagate all network, configuration and session information to each other. Should one device fail, the other takes over the traffic processing.

The following diagram shows a typical HA setup for NetScreen-50 devices.



To cable two NetScreen-50 devices together for HA and connect them to the network:

Note: The cabling instructions given below reproduce the configuration shown here. However, this is not the only possible HA configuration. In addition, the instructions assume that all physical ports and interfaces are still set at their default settings. If you have changed the port and interface configurations, the instructions below might not work properly.

1. (Optional) Install the NetScreen-50 devices in an equipment rack (see [“Equipment Rack Mounting” on page 12](#)).
2. Make sure that all ON/OFF power supply switches are OFF.
3. Connect the power cables on each NetScreen-50 to a power source.

Note: Whenever you deploy two NetScreen-50 devices in an HA cluster, connect each to a different power source, if possible. If one power source fails, the other source might still be operative.

4. Connect a 10/100 BaseT cable from the **HA** zone interface (Ethernet port 4) on Device 1 to the **HA** zone interface (Ethernet port 4) on Device 2.

Device 1

5. On Device 1, connect a crossover cable from the **Trust** zone interface (Ethernet port 1) to the switch labeled “Switch 3.”
6. On Device 1, connect a straight-through cable from the **Untrust** zone interface (Ethernet port 3) to the switch labeled “Layer 3 switch 1.”

Device 2

7. On Device 2, connect a crossover cable from the **Trust** zone interface (Ethernet port 1) to the switch labeled “Switch 4.”
8. On Device 2, connect a straight-through cable from the **Untrust** zone interface (Ethernet port 3) to the switch labeled “Layer 3 switch 2.”

Switches

9. Cable together the switches labeled “Switch 3” and “Switch 4.”
10. Cable together the switches labeled “Layer 3 switch 1” and “Layer 3 switch 2.”
11. Cable the switches labeled “Layer 3 switch 1” and “Layer 3 switch 2” to routers.

Note: The switch ports must be defined as 802.1Q trunk ports, and the external routers must be able to use either Hot Standby Router Protocol (HSRP) or Virtual Router Redundancy Protocol (VRRP). For the best configuration method, see the documentation for your switch or router.

12. Turn the power switches for all devices ON.

For more advanced HA configurations, see the *NetScreen Concepts and Examples ScreenOS Reference Guide*.

PERFORMING INITIAL CONFIGURATION USING THE CLI

There are two ways to establish a console session with the NetScreen-50 device:

- Using a VT100 terminal emulator, such as Hilgraeve® Hyperterminal®, through an RJ-45 serial cable connected to the console port.
- Using Telnet, through a TCP/IP network connection to the NetScreen-50 device.

Connecting Using a VT100 Terminal Emulator

To establish a connection to the NetScreen-50 device using a VT100 Terminal Emulator:

1. Connect an RJ-45 serial cable between the console port on the NetScreen-50 device and the serial port on your PC.
2. Start the VT100 terminal emulator program on your PC.

Typical settings for a console session are as follows:

- Baud Rate to 9600
 - Parity to No
 - Data Bits to 8
 - Stop Bit to 1
 - Flow Control to none
3. Press the ENTER key to see the login prompt.
 4. At the login prompt, type `netScreen`.
 5. At the password prompt, type `netScreen`.

Note: Use lowercase letters only. Both login and password are case-sensitive.

6. (Optional) By default, the console times out and terminates automatically after 10 minutes of idle time. To change the timeout value, execute the following command:

set console timeout *number*

where *number* is the length of idle time, in minutes, before session termination. To prevent automatic termination, specify a value of 0.

Setting an IP Address for Managing the Device

The default IP address for managing the NetScreen-50 device through the Trust zone interface (Ethernet port 1) is 192.68.1.1. This is the IP address that you use to manage the device through a Telnet session or with the WebUI management application. If you do not wish to use this default IP address, you need to assign a new one.

To set the IP address of the NetScreen-50 Trust zone interface:

1. Choose an unused IP address within the current address range of your Local Area Network.
2. Set the IP address of the Trust zone interface to this unused IP address by executing the following command:

```
set interface ethernet1 ip ip_addr/mask
```

For example, to set the IP address and subnet mask of the Trust zone interface to 10.100.2.183 and 255.255.0.0, respectively:

```
set interface ethernet1 ip 10.100.2.183/16
```

3. To confirm the new port settings, execute the following command:

```
get interface
```

You should see that the IP address for the Trust zone interface is the IP address you set.

Connecting Using Telnet

To establish a Telnet session with the NetScreen-50 device:

1. Connect an RJ-45 cross-over cable from the Trust zone interface on the NetScreen-50 device to the internal switch, router, or hub in your LAN (see [“Connecting the Device to a Network” on page 14](#)).
2. Open a Telnet session, specifying the current IP address for the Trust zone interface. For example, in Windows, click **Start** >> **Run**, enter **telnet ip_addr** (where *ip_addr* is the address of the Trust zone interface), and then click **OK**.

For example, if the IP address of the Trust zone interface is 10.100.2.183, enter:

```
telnet 10.100.2.183
```

3. At the Username prompt, type **netscreen**.
4. At the Password prompt, type **netscreen**.

Note: Use lowercase letters only. Both Username and Password are case-sensitive.

5. (Optional) By default, the console times out and terminates automatically after 10 minutes of idle time. To change the timeout value, execute the following command:

```
set console timeout number
```

where *number* is the length of idle time, in minutes, before session termination. To prevent automatic termination, specify a value of 0.

Allowing Outbound Traffic

By default, the NetScreen-50 device does not allow inbound or outbound traffic, nor does it allow traffic to or from the DMZ. You need to create access policies to permit specified kinds of traffic in the directions you want. (You can also create access policies to deny and tunnel traffic.)

The following access policy permits all kinds of outbound traffic from any point on the trusted network to any point on the untrusted network.

```
set policy outgoing "inside any" "outside any" any permit
save
```

Important! Your network might require a more restrictive policy than the one created in the example above. The example is *NOT* a requirement for initial configuration.

You can also use the Outgoing Policy Wizard in the WebUI management application to create access policies for outbound traffic. See [“Accessing the Device With the WebUI” on page 19](#) for information on accessing the WebUI application.

Changing Your Login Name and Password

Because all NetScreen products use the same login name and password (**netscreen**), it is highly advisable to change your login name and password immediately. Enter the following commands:

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

For information on creating different levels of administrators, see “Administration” in the *NetScreen Concepts and Examples ScreenOS Reference Guide*.

ACCESSING THE DEVICE WITH THE WEBUI

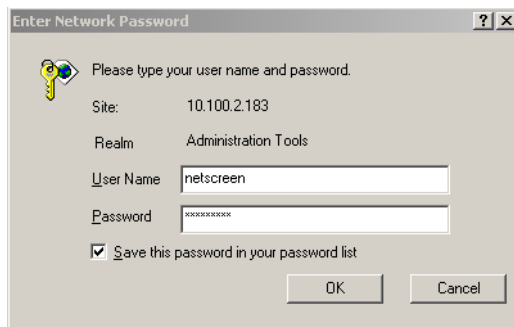
To access the NetScreen-50 device with the WebUI management application:

1. Connect your PC (or your LAN hub) to the Trust zone interface, as described in [“Connecting the Device to a Network” on page 14](#).
2. Launch your browser, enter the IP address of the Trust zone interface in the URL field, and then press Enter.

For example, if you assigned the Trust zone interface of the device the IP address of 10.100.2.183/16, enter the following:

```
10.100.2.183
```

The NetScreen WebUI software displays the Enter Network Password prompt.



3. Enter **netscreen** in both the **User Name** and **Password** fields, then click **OK**. (Use lowercase letters only. The User Name and Password fields are both case sensitive.)

The NetScreen WebUI application window appears.

RESETTING THE DEVICE TO FACTORY DEFAULT SETTINGS

If you lose the admin password, you can use one of the following procedures to reset the NetScreen device to its default settings. This destroys any existing configurations, but restores access to the device.

Warning! *Resetting the device will delete all existing configuration settings, and the firewall and VPN service will be rendered inoperative.*

Note: *After you successfully reset and reconfigure the NetScreen device, you should back up the new configuration setting. As a precaution against lost passwords, you should back up a new configuration that contains the NetScreen default password. This will ensure a quick recovery of a lost configuration. You should change the password on the system as soon as possible.*

Using CLI Commands to Reset the Device

To perform this operation, you need to make a console connection, as described in “[Connecting Using a VT100 Terminal Emulator](#)” on page 17.

Note: *By default the device recovery feature is enabled. You can disable it by entering the following CLI command: **unset admin device-reset***

1. At the login prompt, type the serial number of the device.
2. At the password prompt, type the serial number again.

The following message appears:

!!! Lost Password Reset !!! You have initiated a command to reset the device to factory defaults, clearing all current configuration, keys and settings. Would you like to continue? y/[n]

3. Press the **y** key.

The following message appears:

!! Reconfirm Lost Password Reset !! If you continue, the entire configuration of the device will be erased. In addition, a permanent counter will be incremented to signify that this device has been reset. This is your last chance to cancel this command. If you proceed, the device will return to factory default configuration, which is: System IP: 192.168.1.1; username: netscreen; password: netscreen. Would you like to continue? y/[n]

4. Press the **y** key to rest the device.

You can now login using *netscreen* as the default username and password.

Using the Asset Recovery Pinhole to Reset the Device

You can also reset the device and restore the factory default settings by pressing the asset recovery pinhole. To perform this operation, you need to make a console connection, as described in [“Connecting Using a VT100 Terminal Emulator” on page 17](#).

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



A serial console message states that the “Configuration Erasure Process has been initiated” and the system sends an SNMP/SYSLOG alert. The Status LED blinks amber once every second.

2. Wait for one-half to two seconds.

After the first reset is accepted, the power LED blinks green; the device is now waiting for the second push. The serial console message now reads, “Waiting for 2nd confirmation.”

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

The Status LED lights amber for one-half second, and then returns to the blinking green state.

4. The device resets to its original factory settings.

When the device resets, the Status LED will turn amber for one-half second and then return to the blinking green state. The serial console message states “Configuration Erase sequence accepted, unit reset.” The system generates SNMP and SYSLOG alerts to configured SYSLOG or SNMP trap hosts.

Note: *During a reset, there is no guarantee that the final SNMP alert sent to the receiver before the reset will be received.*

5. The device now reboots.

If you do not follow the complete sequence, the reset process cancels without any configuration change and the serial console message states, “Configuration Erasure Process aborted.” The status LED returns to blinking green. If the unit did not reset, an SNMP alert is sent to confirm the failure.

Replacing the Fuse

4

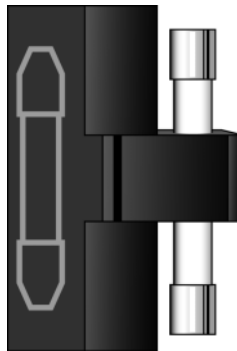
The NetScreen-50 device uses a 2.5 amp slow-blow fuse rated for 250 volts.

To replace a failed fuse on the NetScreen-50 device:

1. Take the device off-line, turn the power switch off, and disconnect the power cable.
2. Using a screwdriver, separate the lid of the external fuse cover from the surface of the power outlet.



3. Manually remove the fuse assembly from the device.
4. To replace the fuse assembly, enter the new fuse into the opening and slide it in until the fuse clicks into place.



5. Replace the power cable and turn the device power switch on. Reconnect network cables.

Specifications

A

This appendix provides general system specifications for the NetScreen-50 device.

- [“NetScreen-50 Attributes” on page 2](#)
- [“Electrical Specification” on page 2](#)
- [“Environmental” on page 2](#)
- [“Safety Certifications” on page 2](#)
- [“EMI Certifications” on page 2](#)
- [“Connectors” on page 3](#)

NETSCREEN-50 ATTRIBUTES

Height: 1.73 inches

Depth: 10.8 inches

Width: 17.5 inches

Weight: 8 pounds

ELECTRICAL SPECIFICATION

AC voltage: 100-240 VAC +/- 10%

DC voltage: -36 to -60 VDC

Maximum AC Watts: 45 Watts

Maximum DC Watts: 50 Watts

Fuse Rating: 2.5A / 250V

ENVIRONMENTAL

Temperature	Operating
Normal altitude	0°-40° C, 32-105°F
Relative humidity	10-90%
Non-condensing	10-90%

The maximum normal altitude is 12,000 feet (0-3,660 meters)

SAFETY CERTIFICATIONS

UL, CUL, CSA, CB, Austel, ICE 60950

EMI CERTIFICATIONS

FCC class A, BSMI, CE class A, C-Tick, VCCI class A

CONNECTORS

The RJ-45 twisted-pair ports are compatible with the IEEE 802.3 Type 10/100 Base-T standard. The following table media type and distance for these connectors.

Standard	Media Type	Mhz/Km Rating	Maximum Distance
100Base-TX	Category 5 and higher Unshielded Twisted Pair (UTP) Cable		100 meters

Configuration for Common Criteria, EAL2

B

All NetScreen devices are designed to meet the Common Criteria requirements, and are currently under evaluation for Common Criteria, EAL2. However, there are certain configuration actions that are required for a security administrator to properly secure the device to be in compliance with the Common Criteria EAL2 security target. While these requirements are for anyone needing Common Criteria assurance, they can also be used as general guidelines for administrators wishing to better secure the deployment of a NetScreen device.

PROPERLY IDENTIFYING THE NETSCREEN DEVICE FOR COMMON CRITERIA EAL2 COMPLIANCE

Before carrying out any step to secure a NetScreen device, you must make sure that the received product has not been tampered with, and ensure that the product received matches the version that is certified as Common Criteria EAL2 compliant.

To ensure that the product has not been tampered with, verify two items:

- The outside packaging cannot show damage, or evidence that it has been opened. If the cardboard shows damage that would allow the device to be removed or exchanged, this may be evidence of tampering.
- The internal packaging cannot show damage or evidence of tampering. The plastic bag should not have a large hole and the label that seals the plastic bag should not be detached or missing. If the bag or the seal are damaged in any way, this may be evidence of tampering.

Both of these tamper evidence criteria must be met to ensure that the product has not been tampered with during shipment.

To verify that the product received is the correct version of hardware and software, run the following command from the Command Line Interface (CLI):

```
get system
```

The output of this command includes two key items, hardware version and software version. The Common Criteria evaluated versions are listed in NetScreen's *Security Target for Common Criteria EAL2*, section 1.1. The hardware and software versions must match the Security Target to be in full compliance with the Common Criteria evaluation.

PROPER STEPS TO SECURE A NETSCREEN DEVICE FOR COMMON CRITERIA EAL2 COMPLIANCE

To configure a NetScreen device to operate securely, and in conformance with the requirements outlined in NetScreen's *Security Target for Common Criteria EAL2*, the following actions must be taken:

- You must configure a Syslog server as a backup for security audit information, and for long-term audit log information storage. This will help prevent a loss in security audit information. See Chapter 2, "Monitoring NetScreen Devices," in Volume 3 of the *NetScreen Concepts & Examples* manual for more information on how to set up and configure a Syslog server to work with NetScreen devices.

The specific commands required to set up a Syslog server are listed below:

```
set syslog config ip_address security_facility
local_facility
```

Note: The **set syslog config** command requires that you define the security facility and local facility. See the **syslog** command in the NetScreen CLI Reference Guide for a complete list of options for *security_facility* and *local_facility*.

```
set syslog enable
set syslog traffic
set log module system level level destination syslog
```

Note: You must enter the **set log** command once for each message level. The options for **level** are listed below:

```
emergency
alert
critical
error
warning
notification
information
```

- There are cases where more auditable events can occur than the NetScreen device is able to write to a syslog server. To be compliant with Common Criteria requirements, the NetScreen device must stop further auditable events from occurring until the audit trail is able to handle more traffic. An authorized administrator must enable the following command:

```
set log audit-loss-mitigation
```

- The NetScreen-5XP and NetScreen-5XT have a default policy that allows traffic to traverse the device from the interface in the Trust zone to the interface in the Untrust zone. You must delete this default policy to avoid inadvertently allowing information to traverse the device. See the **policy** commands in the *NetScreen CLI Reference Guide* for more information on how to set and unset policies.

To disable this default policy on the NetScreen-5XP and -5XT, enter the following CLI command:

```
unset policy id 0
```

- NetScreen devices must be configured to prevent all types of Denial of Service (DoS) and attack signatures on every security zone to prevent these types of attacks from occurring on the LAN. See Chapter 2, “Zones,” in Volume 2 in the *NetScreen Concepts & Examples* manual for more information on configuring the Screen functions and for descriptions of the attacks that the Screen functions are designed to prevent.

You must turn on IP spoofing and enable dropping of traffic where there is no source route by using the following command:

```
set zone zone screen ip-spoofing drop-no-rpf-route
```

where *zone* is the name of the zone (for example, trust or untrust). See the **zone** commands in the *NetScreen CLI Reference Guide* for more information.

The screening options that are enabled by default for interfaces in the Untrust security zone in ScreenOS 4.0 are listed below:

Tear-drop Attack Protection	on
SYN Flood Protection (200)	on
Alarm Threshold:	512
Queue Size:	1024
Timeout Value:	20
Source Threshold:	4000
Destination Threshold:	4000
Drop unknown MAC (transparent mode only):	no
Ping-of-Death Protection	on
Source Route IP Option Filter	on
Land Attack Protection	on

All other security zones have no screens enabled by default. The CLI command below enables all screens, on a per-zone basis (and are applied to all interfaces within that zone):

```
set zone name screen all
```

The command **set zone name screen all** enables all screen functions on all interfaces that are configured within the zone. For the purposes of Common Criteria, you must run the following two commands to protect the internal and external interfaces:

```
set zone untrust screen all
set zone trust screen all
```

You must run the same command for each additional security zone that is configured and used.

- NetScreen device administrators must choose logins and passwords that are not only long (at least 8 characters), but that also employ as many types of characters as possible. Passwords are case sensitive, so mixing lower case and upper case is required to ensure proper protection. In addition, user names and

passwords should not be easily guessed, such as a mother's maiden name, a birth date, or names of relatives. NetScreen devices ship with a default user name and password of "netscreen". You must change this as soon as possible to prevent unauthorized access. See Chapter 1, "Administration," in Volume 3 in the *NetScreen Concepts & Examples* manual for more information on administrative passwords. The recommended time between password changes is no longer than 30 days to mitigate the effects of a compromised administrator identity.

The following CLI commands, in order, are required to set a new administrator name and password:

```
set admin name name
set admin password password
```

- It is expected and assumed that authorized administrators are not hostile.
- The NetScreen device must be placed in a physically secure location to prevent physical tampering, or device startup or shutdown. All persons who have physical access to this location, including access to the console, must have the same level of trustworthiness as an administrator.
- To place a NetScreen device into a mode consistent with that specified in NetScreen's *Security Target for Common Criteria*, management access must be limited to the locally connected console port. NetScreen devices do not ship this way by default. To limit management access to the console port, the interface that is by default in the V1-Trust or Trust security zone needs to have management access turned off. See the **interface** commands in the *NetScreen CLI Reference Guide* for more information.

All other interfaces have management access turned off by default, so no action is necessary to turn management off.

To disable management to the interface in the V1-Trust or Trust security zone, issue the following CLI command:

```
unset interface interface manage
```

For each NetScreen device, you must enter the following commands:

```
NetScreen-5XP: unset interface trust manage
NetScreen-5XT: unset interface trust manage
NetScreen-25: unset interface ethernet1 manage
NetScreen-50: unset interface ethernet1 manage
NetScreen-100: unset interface trust manage
NetScreen-204: unset interface ethernet1 manage
NetScreen-208: unset interface ethernet1 manage
NetScreen-500: unset interface ethernet3/2 manage
NetScreen-5200: unset interface ethernet2/2 manage
```

- There are two important steps to take every time a policy is being created. First, all security policies that are created must have counting and logging enabled to ensure that all audit log information is maintained for traffic passing through the device. Second, policies must be as specific as possible to ensure that the traffic being permitted is done intentionally, and not as part of a generic policy.

When creating a policy, always make sure that counting and logging are enabled. This ensures that all traffic matching the policy is logged appropriately.

When creating a policy, always use specific source IP, destination IP, source zone, destination zone, protocol, and service when feasible. One example where it may not make sense to be specific is for traffic destined for an external network for general web access.

The following is an example of a valid policy:

```
set policy id 1 from trust to untrust 192.168.1.2
1.1.1.1 ftp permit count log
```

The above policy allows traffic from 192.168.1.2 to 1.1.1.1 for FTP traffic only, with the Trust zone as the source and the Untrust zone as the destination, and enables logging and counting.

- All traffic from an internal network to an external network must flow through the NetScreen device. Setting up network connections that do not cross the NetScreen device is not a secure setup and leaves the network susceptible to intrusion attacks.
- The CLI is the only administration interface available in the evaluated configuration of the NetScreen devices for Common Criteria EAL2.
- Currently, NetScreen devices are in evaluation for Common Criteria EAL2. This certification is for NetScreen devices to be deployed in environments where the threat of malicious attacks aimed at discovering exploitable vulnerabilities is considered low.

STARTING, STOPPING, AND REVIEWING AUDIT LOGS

The NetScreen device automatically logs the starting and stopping of audit logs. Each time the device boots up, message logging automatically begins (see the Traffic Log messages section in the Messages Log). Upon initial bootup, the message **system is operational** indicates that all message logging has started. The command **get log setting** shows the current state of the logging settings.

To enable or disable any of the eight message logging states, the administrator must issue one of the following commands:

```
set log module system level level-name dest syslog
unset log module system level level-name dest syslog
```

where *level-name* is one of the following:

- emergency
- alert
- critical
- error
- warning
- notification
- information
- debugging

The event log shows the following events:

```
Log setting is modified to {enable|disable} level-name  
level by admin name
```

where *level-name* is the same as the *level-name* in the issued command and *name* is the person making the change.

The NetScreen device logs an event each time an audit log is reviewed. The event log will show the following events:

```
Alarm log was reviewed by admin name  
Traffic log was reviewed by admin name  
Asset recovery log was reviewed by admin name  
Self log was reviewed by admin name  
Event log was reviewed by admin name
```

where *name* is the person making the change.

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