

# Network and Security Manager

## NSMXpress Quick Start

March 27, 2012  
Revision 2

NSMXpress is an appliance version of Network and Security Manager (NSM). NSMXpress simplifies the complexity of network administration by providing a single, integrated management interface that controls device parameters.

This robust hardware management system installs in minutes with full high availability (HA) support, making it easy to scale and deploy. Enterprise customers with limited resources can benefit significantly from NSMXpress because it eliminates the need to have dedicated resources for maintaining a network and security management solution.

NSMXpress makes it easy for administrators to control device configuration, network settings, and security policy settings for multiple families of Juniper devices including:

- IDP Series Intrusion Detection and Prevention Appliances and Firewall and VPN devices running ScreenOS
- Devices running Junos OS, such as J Series Services Routers, SRX Series Services Gateways, EX Series Ethernet Switches, M Series Multiservice Edge Routers, and MX Series Ethernet Services routers
- SA Series SSL VPN Appliances
- IC Series Unified Access Control Appliances

For a complete list of supported device families and platforms, see the *Network and Security Manager Administration Guide*.

Up to 10 administrators can log into NSMXpress concurrently.

This quick start explains the following steps for installing and configuring NSMXpress and for configuring NSM.

1. Install the NSMXpress appliance hardware.
2. Set up the NSMXpress appliance using the serial port.

3. Configure the NSMXpress software using the Web interface.
4. Configure the NSM software which is preinstalled onto the NSMXpress appliance, with site-specific parameters.

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## Hardware Installation

We recommend that you install NSMXpress on your LAN to ensure that it can communicate with your applicable resources, such as authentication servers, DNS servers, internal Web servers through HTTP/HTTPS, external Web sites through HTTP/HTTPS (optional), the Juniper update server via HTTP, Network File System (NFS) file servers (optional), and client/server applications (optional).



**NOTE:** If you decide to install NSMXpress in your DMZ, ensure that it can connect to your internal resources.

## NSMXpress Ports

Table 1 on page 4 provides required port information on the NSMXpress.

**Table 1: Required Ports on NSMXpress**

| Direction | Port | Description  | LAN | Internet | Depends on Configuration |
|-----------|------|--|-----|----------|--------------------------|
| In        | 22   | SSH command-line management  | Yes | No       | No                       |
|           | 443  | Web interface for administrator login  | Yes | No       | No                       |
|           | 8443 | Web interface for listening for NSM API messages.  | LAN | Yes      | Yes                      |
|           | 7800 | Connections from managed devices to NSMXpress  | Yes | Yes      | No                       |
|           | 7808 | Connections from the NSM GUI Client to NSM   | Yes | No       | No                       |
|           | 7802 | Heartbeat between peers in an HA cluster   | Yes | No       | Yes                      |
|           | 7803 | Connections from managed IDP devices to NSM  | Yes | Yes      | Yes                      |
|           | 7804 | Connections from devices running Junos , Secure Access devices, or Infranet Controller devices | Yes | Yes      | Yes                      |

Table 1: Required Ports on NSMXpress (*continued*)

| Direction | Port | Description                                      | LAN | Internet | Depends on Configuration |
|-----------|------|--|-----|----------|--------------------------|
| Out       | 22   | SSH connection to new managed device             | Yes | Yes      | No                       |
|           | 23   | Telnet connection to new managed device          | Yes | No       | Yes                      |
|           | 53   | DNS lookups                                      | Yes | No       | No                       |
|           | 80   | System Security Updates from Juniper Networks    | No  | Yes      | Yes                      |
|           | 111  | Shared Disk portmap lookup                       | Yes | No       | Yes                      |
|           | 123  | Network Time Protocol (NTP) time synchronization | Yes | Yes      | Yes                      |
|           | 2049 | Shared Disk NFS connection                       | Yes | No       | Yes                      |

For more information on ports, refer to the *Network and Security Manager Installation Guide*.

## Installing the Hardware

Follow these steps to unpack the NSMXpress appliance and connect it to your network.

To install NSMXpress:

1. Place the shipping container on a flat surface and remove the hardware components with care.
2. Remove the NSMXpress device from the shipping container and place it on a flat surface.
3. Mount NSMXpress in your server rack using the attached mounting brackets.
4. Plug the power cord into the AC receptacle on the rear panel.

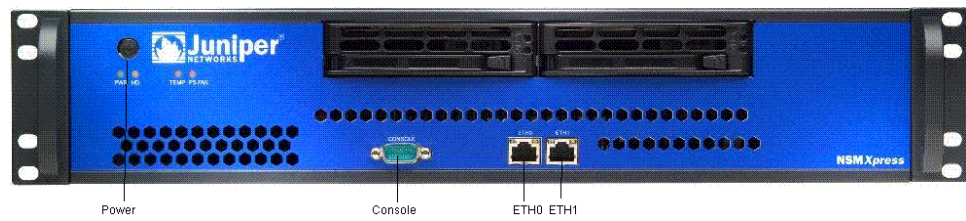
If your NSMXpress contains two power supplies, plug a power cord into each AC receptacle.

5. Plug the other end of the power cord into a wall socket.

If your NSMXpress contains two power supplies, plug each power cord into a separate power circuit to ensure that the NSMXpress continues to receive power if one of the power circuits fails.

6. Plug the Ethernet cable into the port marked ETH0 on the front panel. See [Figure 1 on page 6](#).

Figure 1: Front Panel of NSMXpress



7. Plug the null modem serial cable into the console port. See [Figure 1 on page 6](#).

This cable was shipped with your NSMXpress. If you do not have this cable, use any other null modem serial cable.

8. Push the power button in the upper left corner of the front panel.

The green LED below the power button turns on. The NSMXpress hard disk LED turns on whenever the appliance reads data from or writes data to an NSMXpress hard disk.

The internal port uses two LEDs to indicate the LAN connection status, which is described in [Table 2 on page 6](#).

Hardware installation is now complete. The next step is to set up the software, as described in ["Initial Setup Configuration" on page 6](#).

[Table 2 on page 6](#) provides LED information for the ETH0 and ETH1 ports.

Table 2: Ethernet Port LEDs

| LAN Status                | LED 1                 | LED2     |
|---------------------------|-----------------------|----------|
| 10 Mbps connection        | Off                   | Off      |
| 100 Mbps connection       | Green                 | Off      |
| 1000 Mbps connection      | Orange                | Off      |
| Data is being transferred | Orange, Green, or Off | Blinking |
| No connection             | Off                   | Off      |

## Initial Setup Configuration

When you first turn on an unconfigured NSMXpress appliance, you need to enter basic network and machine information through the serial console to make your appliance accessible to the network. After entering these settings, you can continue configuring the appliance using the CLI or the Web interface. You are not prompted for the initial setup information again.

This section describes the required serial console setup and the tasks you need to perform when connecting to your NSMXpress for the first time:

- [Boot NSMXpress on page 7](#)
- [Set Up Your Appliance on page 7](#)

## Boot NSMXpress

To configure NSMXpress for the first time, you must attach your NSMXpress appliance to a console terminal running an emulation utility such as HyperTerminal.

1. Configure a console terminal or terminal emulation utility to use the following serial connection parameters:
  - 9600 bits per second
  - 8-bit no parity (8N1)
  - 1 stop bit
  - No flow control

2. Connect the terminal or laptop to the null modem serial cable plugged into the NSMXpress console port.

3. Turn on the NSMXpress appliance.

When NSMXpress is powered on, the serial console displays diagnostic information before proceeding to the boot countdown. When complete, the serial console displays the login prompt terminal emulator.

```
NSMXpress.juniper.net login:
```

4. Enter **admin** as your default login name.
5. Enter **abc123** as your default password.
6. Change your default password when prompted. Enter the default password first, followed by your new password. All passwords are case-sensitive.

## Set Up Your Appliance

This section provides the minimum information necessary to make your appliance active on the network.

To set up your appliance either as a regional server or a central manager, follow these steps:

1. Enter the IP address for interface eth0 and press Enter.
2. Enter the subnet mask for interface eth0 and press Enter.
3. Enter the default route or default gateway address for interface eth0 and press Enter.

```
Applying changes...
Re-loading database
ip_tables: (C) 2000-2002 Netfilter core team
ip_tables: (C) 2000-2002 Netfilter core team
```

```
ip_tables: (C) 2000-2002 Netfilter core team
Done!
```

```
Your NSMXpress is now active on the network.
To configure your system via a web browser, connect to:
https://10.150.43.205/admin
```

```
To configure your system via command line, type:
nsm_setup
```

```
For operation of NSM server, switch to user "nsm".
Please consult NSM product documentation for details.
```

```
[admin@NSMXpress ~]$
```

To configure the NSM software using the CLI, see the *NSMXpress User Guide*. To configure the NSM software using the Web interface, go to ["Web Interface Configuration" on page 8](#).

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### Web Interface Configuration

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To configure NSM on your system from a Web interface, use the following steps.

1. Copy the URL (starting with **https://**) from the terminal emulator after installing NSMXpress:

```
Your NSMXpress is now active on the network.
To configure your system via a web browser, connect to:
https://10.150.43.205/administration
```

2. Open a Web browser and paste the URL into the address text box.
3. Press Enter to open the NSMXpress login page.
4. Enter the admin user name and password and then click Login.
5. See ["Configuring the NSM Software" on page 8](#) for details about how to install and configure NSM on your NSMXpress appliance from the Web interface.

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## Configuring the NSM Software

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After logging in as an 'admin' user, an initial setup script walks you through additional configuration system settings before finalizing the NSM installation. This chapter describes that setup process.

Your NSMXpress appliance comes preconfigured as a regional server or a central manager. Most installation and configuration steps in this section are identical for both types of server. All exceptions are noted.

After logging into the NSMXpress Web interface, NSMXpress provides you with the following installation options:

- [Configuring Basic Settings on page 9](#)
- [Configuring High Availability on page 11](#)
- [Advanced Options on page 14](#)
- [Installing NSM Software on page 17](#)

## Configuring Basic Settings

To install the regional server or central manager software using the minimum requirements:

1. Install your NSMXpress hardware as described in [“Hardware Installation” on page 4](#).
2. Boot and setup your NSMXpress appliance as described in [“Initial Setup Configuration” on page 6](#).
3. Enter the **https://<ip>/administration** URL for your appliance in a Web browser. See [“Web Interface Configuration” on page 8](#) for details.
4. Log into the Web interface. The **System Info** page opens.
5. Click the link **Install NSM Regional Server** (see [Figure 2 on page 10](#)) to go to the Install Regional Server window or click the **Install NSM Central Manager** link to view the Install NSM Central Manager window (see [Figure 3 on page 10](#)), as the case may be.



NOTE: The “admin” user default username is *admin* and the password is the one you created in Step 6 of [“Boot NSMXpress” on page 7](#).

Figure 2: Regional Server Configuration Main Menu

Login: admin

- NSM Administration
- Install NSM Regional Server
- System Administration
- Maintenance
- Troubleshooting
- System Information
- Logout

## Install NSM Regional Server

### NSM Configuration Main Menu

**Management IP** 172.24.68.111  
The IP address on this server that will be used for management

**NSM 'super' password**  
Password for 'super' user

**NSM License type**  
Specify a license file, or select "Base Install" to use the built-in limited device license.

☒ Base Install

Upload license file:

**Remote Replication of Database** Off [Menu](#)

**High Availability** Off [Menu](#)

**SRS** Off [Menu](#)

Figure 3: Central Manager Configuration Main Menu

Login: admin

- NSM Administration
- Install NSM Central Manager
- System Administration
- Maintenance
- Troubleshooting
- System Information
- Logout

## Install NSM Central Manager

### NSM Configuration Main Menu

**Management IP** 172.24.68.111  
The IP address on this server that will be used for management

**NSM 'super' password**  
Password for 'super' user

**Remote Replication of Database** Off [Menu](#)

**High Availability** Off [Menu](#)

- Enter the primary IP address of your management server for eth0 (the default).  
You can use the default IP address next to the first radio button or select the second radio button and then enter a different IP address. Each IP address you add (in addition to the default IP address) will be available in the drop-down list after you click the second radio button.
- Enter the NSM superuser password in the top text box, and then reenter it in the text box below it.

This password must be at least eight characters long and is case-sensitive. This password is used by the NSM superuser (also referred to as the NSM administrator). This user has the highest level of privileges in NSM.

8. Enter the GUI Server one-time password in the top text box, and then reenter it in the text box below it. This password is used to authenticate this NSM server with other NSM servers with which it communicates. Regional servers use this password to authenticate peer servers in an HA configuration and to authenticate the central manager. The central manager uses this password to authenticate its peer server in an HA configuration and any regional servers it manages. NSM servers must have the same GUI Server one-time password, or the authentication will fail.
9. Select the license option. (This option is available only for regional servers.)
  - a. Select **Base Install** to use the built-in limited device license for as many as 25 devices.
  - b. Click **Upload license file** to upload the license file you generated using the Juniper License Management System (LMS), which permits you to manage more than 25 devices. This license file must be located on your local hard drive.

See the *Network and Security Manager installation Guide* for more information about NSM licensing.

10. Click **Submit** to save any changes, and then click **Install** to install the software.

## Configuring High Availability

To configure high availability (HA) settings:

1. On the NSM Configuration Main Menu, click **Menu** next to High Availability to access HA options. See [Figure 4 on page 12](#).

**Figure 4: High Availability Options**

**Menu: High Availability**

**High Availability** ⌂ n y  
Whether to enable HA on this server or not

**Primary Status** y  
If 'y', this machine is a Primary Server and if 'n' this machine is a Secondary Server

**HA Remote IP**   
IP address for the peer's primary heartbeat link

**HA Link Failure Detection IP**   
IP address outside the HA cluster

**HA Inter-server password**   
Shared password for heartbeat

**Shared Disk** Off [Menu](#)

**HA Links** [Menu](#)

**HA Advanced Settings** [Menu](#)

2. Use the High Availability option to turn HA on (**y**) or off (**n**). The default is off.
3. Use the **Primary Status** option to set your NSMXpress appliance as either the primary or secondary server in the HA cluster. If you select **y**, it is the primary server (the default). If you select **n**, it is the secondary server.
4. Use the **HA Remote IP** option to enter the IP address for the HA peer in the HA cluster.
5. Use the **HA Link Failure Detection IP** option to enter the IP address of a computer outside the HA cluster that you can ping to verify connection status.
6. Use the **HA Inter-server password** option to enter the heartbeat password used between the primary and secondary servers.
7. Click **Submit** to save the changes.
8. Click **Menu** next to Shared Disk (see [Figure 4 on page 12](#)) to configure a shared disk for regional servers (see [Figure 5 on page 13](#)) or for central managers (see [Figure 6 on page 13](#)). This step is optional.

Figure 5: Shared Disk Options for Regional Servers

**Menu: Shared Disk**

**Shared Disk: Gui Server** ☒ n ☐ c

If 'y', data directory for GUI Server is a shared disk partition

**Shared Disk: Device Server** ☒ n ☐ c

If 'y', data directory for Device Server is a shared disk partition

**Shared Disk Source (NFS)**

Source of shared disk, e.g. /dev/sdc1 or server:/share

**Shared Disk NFS Mount Options** ☒ rw ☐ c

Options when mounting shared disk e.g. rw,intr,tcp,soft,timeo

Figure 6: Shared Disk Options for Central Managers

**Menu: Shared Disk**

**Shared Disk: Gui Server**

If 'y', data directory for GUI Server is a shared disk partition

**Shared Disk Source (NFS)**

Source of shared disk, e.g. /dev/sdc1 or server:/share

**Shared Disk NFS Mount Options**

Options when mounting shared disk e.g. rw,intr,tcp,soft,timeo

NSMXpress supports shared disk via NFS only. Due to the data-intensive nature of NSM, we recommend gigabit speed links (1000 Mbps) for shared disk use. For more information about custom settings, refer to the *Network and Security Manager Installation Guide*.

- Click **Menu** next to HA Links (see [Figure 4 on page 12](#)) to configure the second link in the HA cluster (see [Figure 7 on page 13](#)). This step is optional.

Figure 7: HA Links Options

**Menu: HA Links**

**HA Link count** ☒ 1 ☐ c

Number of heartbeat links between the Primary and Secondary Servers.

Use the options in this menu to set up a redundant link for the HA cluster. If you are going to use a second link, you need to set the IP address for eth1 before configuring this setting (see [“Configuring the Network” on page 23](#) for details). Setting a redundant link is optional. For more information about custom settings, refer to the *Network and Security Manager Installation Guide*.

If you configure HA with just one heartbeat link, then device management traffic and data replication traffic both use that link. If you configure two links, device management traffic uses the first link and data replication uses the second.

If you set the HA link count to 2, an expanded menu appears to configure the second link:

Figure 8: Redundant Links

| Menu: HA Links   |  |
|--|--|
| <b>HA Link count</b>   | <input checked="" type="radio"/> 2 <input type="radio"/> 1 |
| Number of heartbeat links between the Primary and Secondary Servers. |  |
| <b>HA Link 2 Local IP</b>  | <input type="text"/>                                       |
| IP address for this machine's secondary heartbeat link               |  |
| <b>HA Link 2 Remote IP</b>   | <input type="text"/>                                       |
| IP address for the peer's secondary heartbeat link                   |  |
| <b>HA Remote Replication IP</b>                                      | <input type="text"/>                                       |
| IP address used for remote HA replications                           |  |

10. Click **Menu** next to HA Advanced Settings (see [Figure 4 on page 12](#)) to configure HA advanced settings (see [Figure 9 on page 14](#)). This step is optional.

For more information about custom settings, refer to the *Network and Security Manager Installation Guide*.

Figure 9: HA Advanced Settings

| Menu: HA Advanced Settings  |  |
|---|--|
| <b>HA Heartbeat Frequency</b>   | <input checked="" type="radio"/> 15 <input type="radio"/> <input type="text"/>   |
| Time interval in seconds between heartbeat messages (Default is 15 seconds) (Range is 5 to 3600)                              |  |
| <b>HA Heartbeat Failure Threshold</b>   | <input checked="" type="radio"/> 4 <input type="radio"/> <input type="text"/>    |
| Number of missing heartbeat messages before automatic switchover occurs (Default is 4 missing messages) (Range is 1 to 10000) |  |
| <b>HA Data Replication Timeout</b>  | <input checked="" type="radio"/> 1800 <input type="radio"/> <input type="text"/> |
| Rsync Command Replication Timeout (Default is 1800 seconds) (Range is 1 to 65535)   |  |

11. Click **Submit** to save the HA options and return to the NSM Configuration Main Menu.

## Advanced Options

To display the Advanced Options menu, on the NSM Configuration Main Menu, select **Menu** next to Advanced Options. The Advanced Options menu appears as shown in [Figure 10 on page 14](#).

Figure 10: Advanced Options Menu

| Menu: Advanced Options                              |  |
|---|--|
| <b>https port for NBI service</b>                   | <input checked="" type="radio"/> 8443 <input type="radio"/> <input type="text"/> |
| The port number to listen for NBI (Default is 8443) |  |
| <b>Remote Replication of Database SRS</b>           | Off <a href="#">Menu</a>   |
|   | Off <a href="#">Menu</a>   |

Advanced installation options include:

- **https port for NBI service**—Allows you to configure a port to listen for messages for the NSM API. By default, this value is 8443. You can configure it to any port number from 1025 to 65535.
- **Remote Replication of Database**—Mirrors the daily backup to an external server. You can toggle it on or off. After you turn it on, use the menu options to configure this option.
- **SRS Enabled Options (regional server only)**—Opens a menu to enable and configure the Statistical Report Server (SRS). These options enable NSMXpress to interface with SRS. You can toggle it on or off. When it is on, a menu with additional options is available.



**NOTE:** SRS must be installed on a separate server from NSM.

The following sections provide details about the remote replication and SRS options:

- [Enabling and Configuring Remote Replication of the Database on page 15](#)
- [Enabling and Configuring SRS \(Regional Server Only\) on page 16](#)

### Enabling and Configuring Remote Replication of the Database

To configure remote replication of database settings:

1. On the Advanced Options menu, click **Menu** next to Remote Replication of Database (see [Figure 4 on page 12](#)) to configure daily backups (see [Figure 11 on page 15](#)).

**Figure 11: Remote Replication of Database Options**

2. Use the **Remote Replication of Database** option to turn remote replication on (**y**) or off (**n**). The default is off.
3. Use the **Hour of day to Replicate Database** option to start the backup. The valid range (in hours) is 00 through 23. The default is 2 AM.
4. Use the **Remote Backup IP** option to enter the IP address of the remote backup server.

Backup information is copied to the `/var/netscreen/dbbackup` directory on the remote server. The “nsm” user must exist on both servers and you must establish an SSH trust relationship. See the *Network and Security Manager Installation Guide*, for details.

5. Use the Remote Replication Timeout option to set up a timeout for Rsync. The valid range (in seconds) is 1-65535. The default is 1800 seconds.
6. Click **Submit** to save the options and return to the main menu or continue with the other advanced installation options.

### Enabling and Configuring SRS (Regional Server Only)

This option is not available on a central manager. To configure statistical report server (SRS) settings:

1. On the Advanced Options menu, click **Menu** next to SRS (see [Figure 4 on page 12](#)) to open the SRS menu (see [Figure 12 on page 16](#)).

**Figure 12: SRS Menu**

**Menu: SRS**

**SRS** ☒ n ☐ y  
Statistical Report Server will be used with this GUI Server

**SRS DB IP**   
Database server IP address

**SRS DB Type** ☒ pgsql ☐ pgsql  
Database type

**SRS Database Name** ☒ netscreen ☐   
Database name

**SRS DB Owner Name** ☒ netscreen ☐   
Database user name

**SRS DB Owner Password**   
Database password

2. Use the **SRS** options to turn SRS on (**y**) or off (**n**). The default is off. If you turn on this feature, the server is used with the GUI server.
3. Use the **SRS DB IP** option to enter the IP address for the server on which you have installed the SRS database server.
4. Use the **SRS DB Type** option to select the database type. The values are pgsql (the default), oracle, or mssql.
5. Use the **SRS Database Name** option to enter the name of the SRS database. The default value is netscreen. To enter another name, click the radio button next to the blank text box and enter the name in the text box.
6. Use the **SRS DB Owner Name** option to enter the owner's name of the SRS database. The default value is netscreen. To enter another name, click the radio button next to the blank text box and enter the name in the text box.

7. Use the **SRS Database Owner Password** option to enter the SRS database password. The password requires a minimum of eight characters and is case-sensitive. Reenter it in the second text box.
8. Click **Submit** to save the options and return to the NSM Configuration Main Menu.

## Installing NSM Software

After you submit all your configuration options, click **Install** to install the NSM software on your NSMXpress appliance. Installation takes a few minutes. A status indicator shows the progress of the installation. Wait until installation is finished before continuing to use the Web interface.

## Managing NSM Administration

Expand **NSM Administration** in the left navigation tree to access the options described in this section. These options are available only after installing NSM.

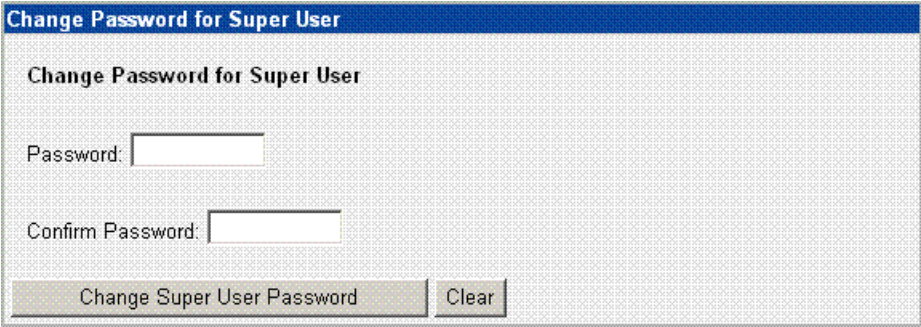
The following sections explain how to use each of the NSM Administration options:

- [Changing the Superuser Password on page 17](#)
- [Downloading NSM MIBS \(Regional Server Only\) on page 18](#)
- [Exporting Audit Logs on page 18](#)
- [Exporting Device Logs \(Regional Server Only\) on page 18](#)
- [Generating Reports \(Regional Server Only\) on page 19](#)
- [Modifying NSM Configuration Files on page 19](#)
- [Backing Up the NSM Database on page 20](#)
- [Changing the NSM Management IP on page 21](#)
- [Scheduling Security Updates on page 21](#)

## Changing the Superuser Password

To change the superuser password, select **NSM Administration > NSM Super User Password**. See [Figure 13 on page 17](#).

Figure 13: Change Superuser Password



The screenshot shows a web form titled "Change Password for Super User" with a blue header bar. The form has a light gray background with a fine grid pattern. It contains two text input fields: "Password:" and "Confirm Password:". Below the fields are two buttons: "Change Super User Password" and "Clear".

## Downloading NSM MIBS (Regional Server Only)

To download any available MIBs, select **NSM Administration > Download NSM MIBS**, and then click **Download MIB**. See [Figure 14 on page 18](#). This option is not available on the central manager.

Figure 14: Download NSM MIBs



The screenshot shows a web interface with a blue header bar containing the text "Download NSM MIBS". Below the header is a single button labeled "Download MIB".

## Exporting Audit Logs

To export audit logs, select **NSM Administration > Export Audit Logs**. See [Figure 15 on page 18](#).

Figure 15: Export Audit Logs



The screenshot shows a web interface with a blue header bar containing the text "Export Audit Logs". Below the header, there is a section titled "Select Export Type:" with a dropdown menu showing "CSV". Below the dropdown is a text input field. Below the text input field is the label "Enter csv file-name". At the bottom of the form is a button labeled "Export Audit Logs".

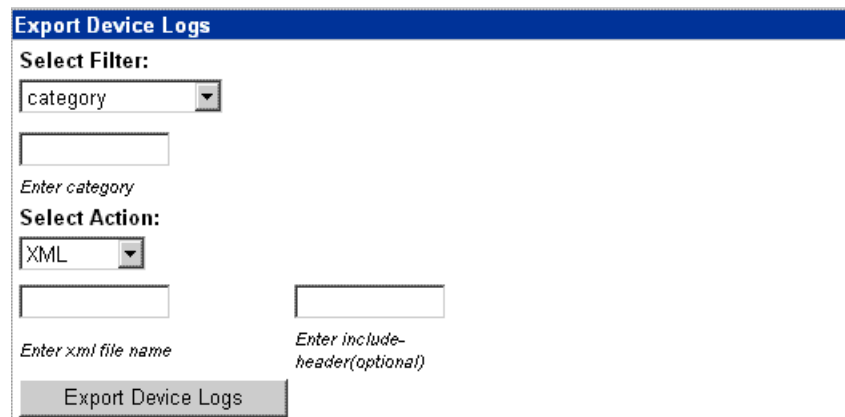
To export an audit log to a **csv** file, select **csv** in the drop-down list box, and then enter the **csv** file name in the text box.

To export an audit log to a system log server, select **syslog** in the drop-down list box, and then enter the server IP address, if it is not the local host.

## Exporting Device Logs (Regional Server Only)

To export device logs, select **NSM Administration > Export Device Logs**. See [Figure 16 on page 18](#). This option is not available on the central manager.

Figure 16: Export Device Logs



The screenshot shows a web interface with a blue header bar containing the text "Export Device Logs". Below the header, there is a section titled "Select Filter:" with a dropdown menu showing "category". Below the dropdown is a text input field. Below the text input field is the label "Enter category". Below the "Select Filter:" section is a section titled "Select Action:" with a dropdown menu showing "XML". Below the dropdown is a text input field. Below the text input field is the label "Enter xml file name". To the right of the "Enter xml file name" label is another text input field. Below the "Enter include-header(optional)" label is a button labeled "Export Device Logs".

## Generating Reports (Regional Server Only)

To generate reports, select **NSM Administration > Generate Reports**. See [Figure 17 on page 19](#). This option is not available on the central manager.

Figure 17: Generate Reports



**NOTE:** The user is an NSM administrator and not an NSMXpress user. Enter a user name as *domain/user*, such as *global/super*.

## Modifying NSM Configuration Files

To manually edit the `GuiSrv.cfg`, `DevSvr.dfg` and `HaSvr.cfg` files, select **NSM Administration > Modify NSM Configuration Files**. The example in [Figure 18 on page 20](#), shows the option to modify the `GuiSrv.cfg` file.

Figure 18: NSM Configuration Files

## NSM Configuration Files

**GuiSvr.cfg** **DevSvr.cfg** **HaSvr.cfg**

The page allows you to manually edit the /usr/netscreen/GuiSvr/var/guiSvr.cfg. Be careful, as no syntax checking will be done on your edits.

**The server will be restarted once the changes are made.**

```
# this file contains just enough info for the processes
# to start up. Each process should pull its complete
# configuration from the NML DB

setuid.user          nsm
clientId             0
peerGuiSvrId         2
clientOneTimePassword dk2003ns

default.printLevel    warn
default.printProperties where=file, sync=0, maxfilenum=25
#statusMonitor.printLevel debug
#statusMonitor.printProperties where=file, sync=1, maxfilenum=250
#guiSvrDirectiveHandler.printLevel debug
#guiSvrLicenseManager.printLevel debug
#guiSvrMasterController debug
guiSvrLicenseManager.licenseFile /usr/netscreen/GuiSvr/var/license/license.
txt
#guiSvrManager.printLevel debug
```

Save



**NOTE:** If you subsequently change the NSMXpress configuration by using the nsm-setup utility, all manual changes to the configuration files are lost.

## Backing Up the NSM Database

To configure backups of the NSM database, select **NSM Administration > NSM Database Backup** link under NSM Administration. See [Figure 19 on page 21](#).

Figure 19: Database Backup

## Database Backup

| NSM Backup Configuration Parameters   |                                     |                          |                                 |
|---------------------------------------|-------------------------------------|--------------------------|---------------------------------|
| Local Backup Enabled                  | <input checked="" type="radio"/> y  | <input type="radio"/> n  | <input type="text" value="y"/>  |
| Remote Backup enabled                 | <input checked="" type="radio"/> n  | <input type="radio"/> y  | <input type="text" value="y"/>  |
| Hour of Day to Replicate Database     | <input checked="" type="radio"/> 02 | <input type="radio"/> 00 | <input type="text" value="00"/> |
| Remote Backup IP                      | <input type="text"/>                |                          |                                 |
| <input type="button" value="Submit"/> |                                     |                          |                                 |

| Execute Backup Now                   |  |
|--------------------------------------|--|
| <input type="button" value="Apply"/> |  |

| Download Database Backup Files                  |  |
|---|--|
| File to Download                                | <input type="text" value="/var/netscreen/dbbackup/"/> <input style="float: right;" type="button" value="..."/> |
| <input type="button" value="Download Backups"/> |  |

### Changing the NSM Management IP

To change the IP address of the NSM management server, select **NSM Administration** > **NSM Management IP** link under NSM Administration. See [Figure 20 on page 21](#).

Figure 20: Change Management IP

| NSM Management IP |   |
|-------------------|---|
| Management Ip     | <input checked="" type="radio"/> 172.24.68.111 <input type="radio"/> <input type="text"/> |

### Scheduling Security Updates

To schedule security updates, select **NSM Administration** > **Schedule Security Updates**. See [Figure 21 on page 22](#).

Figure 21: Schedule Security Updates

**Security Update**

**Select Post Action:**

update-devices skip

Update Devices after Attack Select update device action: Skip(skips update of unconnected device)

User: Password:

Eg: global/super

Schedule Security Updates:

☐

Minutes: Hour: Day: Month: Day: Week

Run Security Update

## Managing System Administration

Use the options in the System Administration section to perform the tasks described in the following sections:

- [Rebooting or Shutting Down NSMXpress on page 22](#)
- [Changing the User Password on page 23](#)
- [Configuring the Network on page 23](#)
- [Managing RADIUS Servers on page 25](#)
- [Monitoring with SNMP on page 28](#)
- [Forwarding Syslog Messages on page 31](#)
- [Changing the System Time on page 34](#)
- [Installing Updates on page 34](#)
- [Managing Users on page 35](#)
- [Configuring the Web Interface on page 39](#)

### Rebooting or Shutting Down NSMXpress

To reboot or shut down NSMXpress, select **System Administration > Bootup and Shutdown**, and then click either **Reboot System** or **Shutdown System**. See [Figure 22 on page 22](#).

Figure 22: ReBoot or Shut Down

**Bootup and Shutdown**

Reboot System

Shutdown System

## Changing the User Password

To change the user password, select **System Administration > Change User Password**, fill out the form shown in [Figure 23 on page 23](#), and then click **Change**.

Figure 23: Change User Password

Changing NSMXpress user password

Changing password for admin

Old password

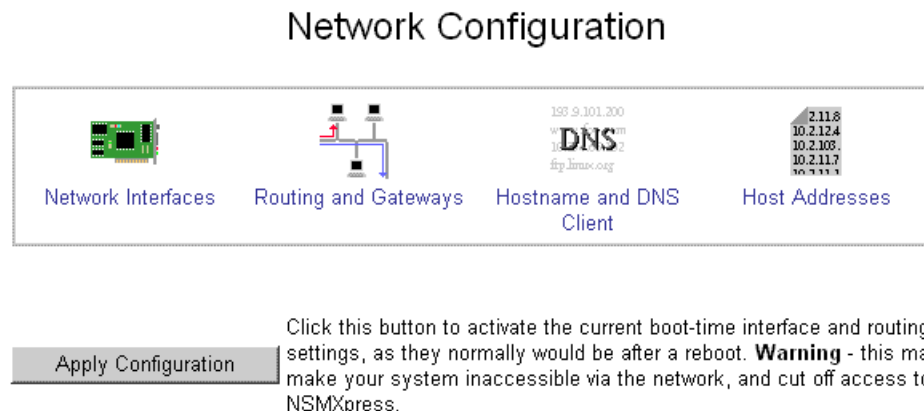
New password

New password (again)

## Configuring the Network

To access options that allow you to configure the network, select **System Administration > Network Configuration**. The Network Configuration window appears as shown in [Figure 24 on page 23](#).

Figure 24: Network Interfaces Options



The following sections describe each of the options available in the Network Configuration window:

- [Network Interfaces on page 23](#)
- [Routing and Gateways on page 24](#)
- [Hostname and DNS Clients on page 24](#)
- [Host Addresses on page 25](#)

### Network Interfaces

Use this option to manage the network interfaces. See [Figure 25 on page 24](#).

Figure 25: Network Interfaces

[Module Index](#)

## Network Interfaces

## Interfaces Active Now

[Select all.](#) | [Invert selection.](#) | [Add a new interface.](#)

|                          | Name | Type     | IP Address    | Netmask       | Status |
|--------------------------|------|----------|---------------|---------------|--------|
| <input type="checkbox"/> | eth0 | Ethernet | 172.24.68.111 | 255.255.252.0 | Up     |
| <input type="checkbox"/> | lo   | Loopback | 127.0.0.1     | 255.0.0.0     | Up     |

[Select all.](#) | [Invert selection.](#) | [Add a new interface.](#)

De-Activate Selected Interfaces

## Interfaces Activated at Boot Time

[Select all.](#) | [Invert selection.](#) | [Add a new interface.](#) | [Add a new address range.](#)

|                          | Name | Type     | IP Address    | Netmask       | Activate at boot? |
|--------------------------|------|----------|---------------|---------------|-------------------|
| <input type="checkbox"/> | eth0 | Ethernet | 172.24.68.111 | 255.255.252.0 | Yes               |
| <input type="checkbox"/> | eth1 | Ethernet | From DHCP     | Automatic     | No                |
| <input type="checkbox"/> | lo   | Loopback | 127.0.0.1     | 255.0.0.0     | Yes               |

[Select all.](#) | [Invert selection.](#) | [Add a new interface.](#) | [Add a new address range.](#)

Delete Selected Interfaces

Delete and Apply Selected Interfaces

Apply Selected Interfaces

## Routing and Gateways

Use this option to configure and manage routes and gateways. See [Figure 26 on page 24](#).

Figure 26: Routes and Gateways

**Routing configuration activated at boot time**

**Default routes**

| Interface | Gateway     |
|-----------|-------------|
| eth0      | 172.24.68.1 |
|           |             |

Act as router? ☐ Yes ☒ No

**Static routes**

| Interface | Network | Netmask | Gateway |
|-----------|---------|---------|---------|
|           |         |         |         |

**Local routes**

| Interface | Network | Netmask |
|-----------|---------|---------|
|           |         |         |

Save

## Active Routes

|                          | Destination   | Gateway     | Netmask       | Interface |
|--------------------------|---------------|-------------|---------------|-----------|
| <input type="checkbox"/> | 172.24.68.0   | None        | 255.255.252.0 | eth0      |
| <input type="checkbox"/> | 169.254.0.0   | None        | 255.255.0.0   | eth0      |
| <input type="checkbox"/> | Default Route | 172.24.68.1 |               | eth0      |

## Hostname and DNS Clients

Use this option to configure and manage hostnames and DNS clients. See [Figure 27 on page 25](#).

Figure 27: DNS Client Options

### Host Addresses

Use this option to manage host addresses, See [Figure 28 on page 25](#).

Figure 28: Host Address

## Managing RADIUS Servers

The NSMXpress WebUI supports authentication of users defined in the RADIUS servers, in addition to authentication of locally defined admin users.

When a user logs into NSMXpress using the WebUI, the software first checks the UNIX user database and then the WebUI user database to authenticate the user. If the user is not a locally defined admin user, the software contacts the RADIUS servers added to the RADIUS server list in the Web UI to authenticate the user. The RADIUS servers are contacted in the order of priority set in the RADIUS server list. If any of the RADIUS servers authenticates the user, the user is logged in with the privileges that are associated with the user profile. If none of the servers authenticates the user, the user login fails.



**NOTE:** The NSMXpress appliance must be configured as a RADIUS client on a RADIUS server so that the RADIUS server responds to authentication requests from NSMXpress. Select any Juniper Make or Model in the Make/Model field while adding an NSMXpress appliance as a RADIUS client. You will need to update the juniper dictionary file (juniper.dct) in the RADIUS server with the Juniper defined Vendor-Specific Attribute (VSA) for NSMXpress:ATTRIBUTE Juniper-Nsmxpress-Profile Juniper-VSA(6, string) r . You will also need to add NSMXpress users with their associated user profiles (SysAdmin, NSMAdmin, Operator, Guest), to the RADIUS database. For more details see *Steel-Belted Radius Documentation*.



**NOTE:** You need System Administration or NSM Administration permission to manage RADIUS servers in the NSMXpress WebUI.

- Adding a RADIUS Server on page 26
- Changing the Priority of RADIUS Servers on page 27
- Deleting a RADIUS Server on page 27
- Editing RADIUS Server Parameters on page 27

### Adding a RADIUS Server

To add a RADIUS server:

1. Select **System Administration > Radius Management**. The RADIUS Servers dialog box appears listing the RADIUS Servers that have been added. See [Figure 29 on page 26](#).

**Figure 29: RADIUS Servers Dialog Box**

Radius Servers

| RADIUS Servers           |            |                    |           |                 |          |         |         |
|--------------------------|------------|--------------------|-----------|-----------------|----------|---------|---------|
|                          | Name       | Host               | Auth Port | Accounting Port | COA Port | Retries | Timeout |
| <input type="checkbox"/> | RadiusSvr2 | 10.204.77.118      | 1812      | 1813            | 4600     | 1       | 3       |
| <input type="checkbox"/> | RadiusSvr1 | jghosh-dc.jnpr.net | 1812      | 1813            | 4564     | 1       | 3       |

2. Click **Add** to add a RADIUS Server to the WebUI. The Add Radius Server dialog box appears. See [Figure 30 on page 26](#).

**Figure 30: Add RADIUS Server Dialog Box**

Add Radius Server

Add RADIUS Server

| Add Radius Server   |                |
|---------------------|----------------|
| Name                | server1        |
| Server address      | 10.206.144.154 |
| Shared secret       | ••••••••       |
| Auth port           | 1645           |
| Acct port           | 1646           |
| Disconnect/CoA port | 1700           |
| Timeout(secs)       | 3              |
| Retries             | 1              |

3. Configure the following parameters in the Add RADIUS Server dialog box:
  - a. **Name:** The name of the user to be authenticated by the RADIUS server.
  - b. **Server address:** The IP address or the hostname of the RADIUS Server.
  - c. **Shared secret:** The shared secret NSMXpress and the RADIUS server use for secure authentication.

- d. **Auth Port:** The RADIUS authentication software port. (We recommend UDP port 1812.)
  - e. **Acct Port:** The RADIUS accounting software port. (We recommend UDP port 1813.)
  - f. **Disconnect/CoA port:** The change of authorization or disconnect port.
  - g. **Timeout (sec):** Automatic time out in second(s) of the RADIUS access-request after which the request will be retransmitted, if applicable. Enter a value between 1 and 10 seconds.
  - h. **Retries:** The number of times the RADIUS access-request must be retransmitted for RADIUS authentication. Enter a value between 1 and 5.
4. Click **Add**. The RADIUS Servers dialog box appears with the RADIUS Server you added listed.

### Changing the Priority of RADIUS Servers

To change the priority of RADIUS servers:

1. Select **System Administration > Radius Management**. The RADIUS Servers dialog box appears listing the RADIUS Servers that have been added.
2. To increase the priority of a RADIUS server, select the check box next to the name of the server whose priority you want to increase, and click **Move Up**.  
  
To decrease the priority of a RADIUS server, select the check box next to the name of the server whose priority you want to decrease, and click **Move Down**.

### Deleting a RADIUS Server

To delete a RADIUS server:

1. Select **System Administration > Radius Management**. The RADIUS Servers dialog box appears listing the RADIUS Servers that have been added.
2. Select the check box next to the name of the server you want to delete, and click **Delete Selected**.



**NOTE:** You need System Administration permissions to delete RADIUS servers.

### Editing RADIUS Server Parameters

To edit the parameters of a RADIUS server:

1. Select **System Administration > Radius Management**. The RADIUS Servers dialog box appears listing the RADIUS Servers that have been added.
2. Click the name of the server whose properties you want to edit. The Edit RADIUS Server dialog box appears. See [Figure 31 on page 28](#).

Figure 31: Edit RADIUS Server Dialog Box

Module Index Edit Radius Server

---

| Edit Radius Server   |                |
|--|----------------|
| Name   | server1        |
| Server address   | 10.206.144.154 |
| Shared secret  | *****          |
| Auth port  | 1645           |
| Acct port  | 1646           |
| Disconnect/CoA port  | 1700           |
| Timeout(secs)  | 3              |
| Retries  | 1              |
| <input type="button" value="Save"/> <input type="button" value="Clear"/> |                |

← [Return to Radius Servers list](#)

3. Edit the parameters you want to change and click **Save**.

## Monitoring with SNMP

You can configure your NSMXpress appliance for SNMP monitoring from a network operations server. The server can then issue periodic SNMP Get instructions to return the status of the NSMXpress appliance.

You configure SNMP on the NSMXpress appliances with access credentials for either SNMP v2c or SNMP v3. NSMXpress supports read-only access to the System Descriptor (sysDescr) and Host Resource MIB.

This section provides instructions for configuring NSMXpress for SNMP monitoring. You must provide access credentials for the SNMP server, a list of IP addresses from which logon requests will be accepted, and the trap conditions to be reported to the SNMP server.

To configure SNMP monitoring of your NSMXpress appliance, select **System Administration > SNMP Monitoring**. The SNMP window appears. This window contains the tabs described in the following sections:

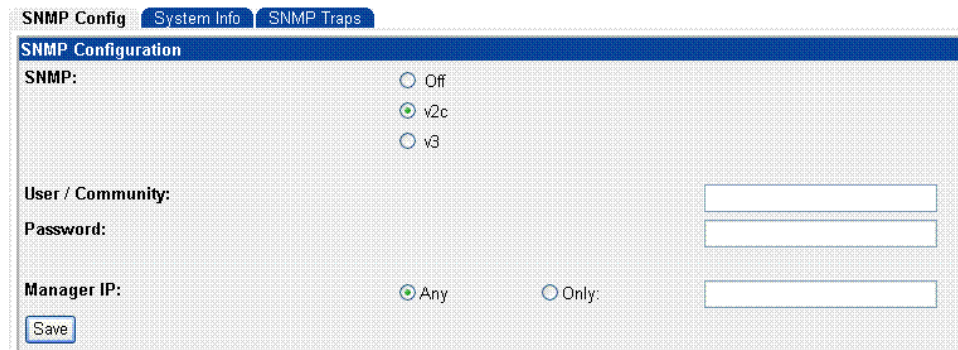
- [SNMP Configuration on page 28](#)
- [SNMP System Information on page 29](#)
- [SNMP Trap Configuration on page 30](#)

### SNMP Configuration

To configure SNMP:

1. Select **System Administration > SNMP Monitoring**.
2. Select the **SNMP Config** tab, which is shown in [Figure 32 on page 29](#).

Figure 32: Configuring SNMP



The image shows the 'SNMP Configuration' web interface. At the top, there are three tabs: 'SNMP Config' (selected), 'System Info', and 'SNMP Traps'. Below the tabs is a blue header bar with the text 'SNMP Configuration'. The main content area has a light gray background. It contains the following fields and options:

- SNMP:** Three radio buttons: 'Off' (unselected), 'v2c' (selected), and 'v3' (unselected).
- User / Community:** A text input field.
- Password:** A text input field.
- Manager IP:** Two radio buttons: 'Any' (selected) and 'Only:' (unselected). To the right of 'Only:' is a text input field.
- A 'Save' button is located at the bottom left of the form.

3. Select the version of SNMP to be used, either **v2c** or **v3**.
4. Provide authentication information:
  - If you selected SNMP v2c, enter a username.
  - If you selected SNMP v3, enter a username and password.

The password must be at least 8 characters long.

NSMXpress implements a single username and password, which is effective only for SNMP communication and is not related to any other username and password used on the NSMXpress appliance.

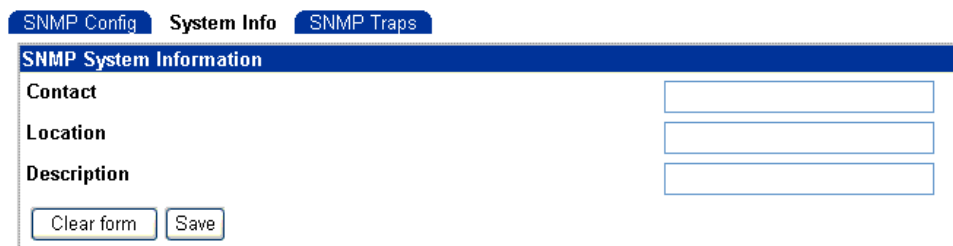
5. To limit SNMP Get requests to specific servers, select **Only**, and then enter the IP addresses of the permitted servers.
6. Click **Save**.

### SNMP System Information

To configure SNMP system information:

1. Select **System Administration > SNMP Monitoring**.
2. Select the **System Info** tab, which is shown in Figure 33 on page 29.

Figure 33: Configuring SNMP System Information



The image shows the 'SNMP System Information' web interface. At the top, there are three tabs: 'SNMP Config', 'System Info' (selected), and 'SNMP Traps'. Below the tabs is a blue header bar with the text 'SNMP System Information'. The main content area has a light gray background. It contains the following fields and options:

- Contact:** A text input field.
- Location:** A text input field.
- Description:** A text input field.
- At the bottom left, there are two buttons: 'Clear form' and 'Save'.

3. Enter the following information, which is required for any SNMP-managed device:
  - Contact—Contact information for the appliance.
  - Location—Location of the appliance.

- Description—A brief description of the appliance.

4. Click **Save**.

## SNMP Trap Configuration

To configure SNMP trap conditions:

1. Select **System Administration > SNMP Monitoring**.
2. Select the **SNMP Traps** tab, which is shown in Figure 34 on page 30.

Figure 34: Configuring SNMP Traps

SNMP Config System Info **SNMP Traps**

**SNMP Traps and Notifications Configuration**

Destination IP:

Community string:

| Trigger   | Value                |
|---|----------------------|
| <input checked="" type="checkbox"/> Disk space low          | 15 percent           |
| <input checked="" type="checkbox"/> Memory low              | 20 percent           |
| <input checked="" type="checkbox"/> CPU high                | 85 percent           |
| <input checked="" type="checkbox"/> NSM start / stop        |                      |
| <input checked="" type="checkbox"/> Admin Logon / Logoff    |                      |
| <input checked="" type="checkbox"/> External IP Unreachable | <input type="text"/> |

Save

3. In the **Manager IP** field, enter the IP address of the SNMP management server.

4. Select from the following trap conditions:

- **Disk space low**

Enter the percentage of free disk space below which SNMP issues a trap.

- **Memory low**

Enter the percentage of free memory below which SNMP issues a trap.

- **CPU high**

Enter the percentage of CPU use over which SNMP issues a trap.

- **NSM start/stop**

- **Admin Logon/Logoff**

- **External IP unreachable**

Enter the IP address of the required device.

5. Click **Save**.

## Forwarding Syslog Messages

NSMXpress provides a simple mechanism for configuring syslog messaging between the NSMXpress appliance and a syslog receiver running rsyslog, syslog-NG, or basic syslog. This mechanism simplifies choosing syslog receivers, data sources of the messages you want to log, and the message transport used.

For the type of message transport, you can choose among TCP, SSL, and UDP. For rsyslog or syslog-NG implementations use TCP or SSL. SSL adds security to TCP; if you select SSL, NSMXpress creates a secure tunnel to the syslog receiver. UDP messaging is available for basic syslog implementations.

The following sections provide procedures for managing syslog message forwarding:

- [Viewing Syslog Receivers on page 31](#)
- [Adding and Configuring Syslog Receivers on page 32](#)
- [Editing Syslog Receiver Configurations on page 34](#)
- [Deleting Syslog Receivers on page 34](#)

### Viewing Syslog Receivers

To view the syslog receivers configured on your NSMXpress appliance, follow these steps:

1. Select **System Administration > Syslog Forwarding**. The Syslog Forwarding window appears. [Figure 35 on page 33](#) shows an example.

### Syslog Forwarding

Select all. | Invert selection. | Add new Receiver

| Receiver                         | Address | Type | System           | Device Server  | GUI Server   | HA Server   |
|----------------------------------|---------|------|------------------|--|--|-------------|
| <input type="checkbox"/> server1 | 1.2.3.4 | UDP  | maillog, updates | datacollector.log, ddhnspl.log, deviceDaemon.0, deviceservice.log, gproDDM.log | generateMPK.0, gproGDM.log, license.log, statusMonitor.0 | highAvail.0 |
| <input type="checkbox"/> sever2  | 1.2.3.5 | UDP  | messages         |  |  |             |

Select all. | Invert selection. | Add new Receiver

Delete selected receivers

| NSM Data Sources  |                 |
|-------------------|-----------------|
| GUI Server Log    | Syslog facility |
| fingerprintMPK.0  | user ▼          |
| generateMPK.0     | user ▼          |
| gproGDM.log       | user ▼          |
| guiDaemon.0       | user ▼          |
| license.log       | user ▼          |
| nbiservice.log    | user ▼          |
| pro.mc.log        | user ▼          |
| statusMonitor.0   | user ▼          |
| webproxy.log      | user ▼          |
| xdbservice.log    | user ▼          |
| Device Server Log | Syslog facility |
| datacollector.log | user ▼          |
| ddhnspl.log       | user ▼          |

2. View the configured syslog receivers in the table in the top portion of the window.  
[Table 3 on page 32](#) describes the fields.

**Table 3: Viewing Syslog Receivers**

| Field         | Description  |
|---------------|--|
| Receiver      | A name provided by the network administrator to identify the syslog receiver |
| IP Address    | The IP address of the syslog receiver  |
| Type          | The protocol used for forwarding messages: UDP, TCP, SSL                     |
| Data sources  | The data sources configured for forwarding                                   |
| System        | The system logs configured to be sent to this receiver.                      |
| Device Server | The Device Server logs configured to be sent to this receiver.               |
| GUI Server    | The GUI Server logs configured to be sent to this receiver.                  |
| HA Server     | The HA Server logs configured to be sent to this receiver.                   |

### **Adding and Configuring Syslog Receivers**

To add and configure a syslog receiver, follow these steps:

1. Select **System Administration > Syslog Forwarding**.
2. In the Data Sources section, select the syslog facility for each GUI Server log, Device Server log, and HA Server log. The syslog facility is a field included in the syslog message to help identify the data source.
3. Click **Save**.
4. Click **Add new Receiver**.

The syslog receiver configuration window appears as shown in [Figure 35 on page 33](#).

Figure 35: Configuring a Syslog Receiver

**Syslog Receiver**

**Name:**

**IP:**

**Transport:** ☒ UDP ☐ TCP ☐ SSL

**Data Sources**

**System Logs**

☐ Console messages

☒ Mail log

☒ System updates

**NSM**

| GUI Server Log                                      | Syslog facility |
|---|-----------------|
| <input type="checkbox"/> fingerprintMPK.0           | user            |
| <input checked="" type="checkbox"/> generateMPK.0   | user            |
| <input checked="" type="checkbox"/> gproGDM.log     | user            |
| <input type="checkbox"/> guiDaemon.0                | user            |
| <input checked="" type="checkbox"/> license.log     | user            |
| <input type="checkbox"/> nbiservice.log             | user            |
| <input type="checkbox"/> pro.mc.log                 | user            |
| <input checked="" type="checkbox"/> statusMonitor.0 | user            |
| <input type="checkbox"/> webproxy.log               | user            |
| <input type="checkbox"/> xdbservice.log             | user            |

| Device Server Log                                     | Syslog facility |
|---|-----------------|
| <input checked="" type="checkbox"/> datacollector.log | user            |
| <input checked="" type="checkbox"/> ddhnsd.log        | user            |
| <input checked="" type="checkbox"/> deviceDaemon.0    | user            |
| <input checked="" type="checkbox"/> deviceservice.log | user            |
| <input checked="" type="checkbox"/> gproDDM.log       | user            |
| <input type="checkbox"/> newLogWalker.0               | user            |
| <input type="checkbox"/> pro.dc.log                   | user            |
| <input type="checkbox"/> profilerMgr.0                | user            |
| <input type="checkbox"/> statusMonitor.0              | user            |

| HA Server Log                                   | Syslog facility |
|---|-----------------|
| <input type="checkbox"/> backup.log             | user            |
| <input type="checkbox"/> ha.log                 | user            |
| <input checked="" type="checkbox"/> highAvail.0 | user            |

5. In the Name field, enter a name for the syslog receiver. This is the name that the syslog receiver will be known by within NSM.
6. In the IP field, Enter the IP address of the syslog receiver.
7. In the Transport field, select the type of syslog receiver:
  - Select **UDP** for basic syslog implementations.
  - Select **TCP** for rsyslog or syslog-NG implementations.

- Select **SSL** to create a secure tunnel to a syslog receiver in rsyslog or syslog-NG implementations.
  - In the System Logs section of the Data Sources table, select the sources of data from which system messages will be forwarded to the syslog receiver. These sources can include NSMXpress system messages, package updates, and mail logs.
  - In the NSM section of the Data sources table, select each GUI Server log, Device Server log, and HA Server log to be forwarded to the syslog receiver.
8. Click **Save** to save and apply the configuration.

---

### Editing Syslog Receiver Configurations

To edit a syslog receiver configuration, follow these steps:

1. Select **System Administration > Syslog Forwarding**.
2. In the Syslog Receivers window, click the name of the syslog receiver you want to edit.  
The syslog receiver configuration window appears for the selected receiver.
3. Make the desired changes to the configuration.
4. Click **Save** to save and apply your edits to the configuration of this syslog receiver.

---

### Deleting Syslog Receivers

To delete a syslog receiver configuration, follow these steps:

1. Select **System Administration > Syslog Forwarding**.
2. In the Syslog Receivers window, check the box next to each syslog receiver you want to delete.
3. Click **Delete selected receivers**.

NSMXpress deletes the selected syslog receivers and any secure tunnels configured for their use.

## Changing the System Time

To set the system time, select **System Administration > System Time**. From the System Time window, you can perform the following functions:

- Set or change the system time.
- Set the time zone.
- Configure an NTP server to synchronize the system time with an external clock.

## Installing Updates

Select **System Administration > System Update** to perform the following tasks:

- Check for updates and install them.
- Enable or disable automatic updates.
- Install a new NSMXpress version.
- Add or modify proxy settings for the Yum server.

## Managing Users

The NSMXpress WebUI allows you to create multiple users with role-based access control to the WebUI. You can create a user in the WebUI and associate the user to a predefined user profile. You can also map a user created in the NSMXpress OS to a predefined user profile in the WebUI. However, this user profile is only applicable to the local OS user in the WebUI.



**NOTE:** You need System Administration permission to create users.

This topic contains the following sections:

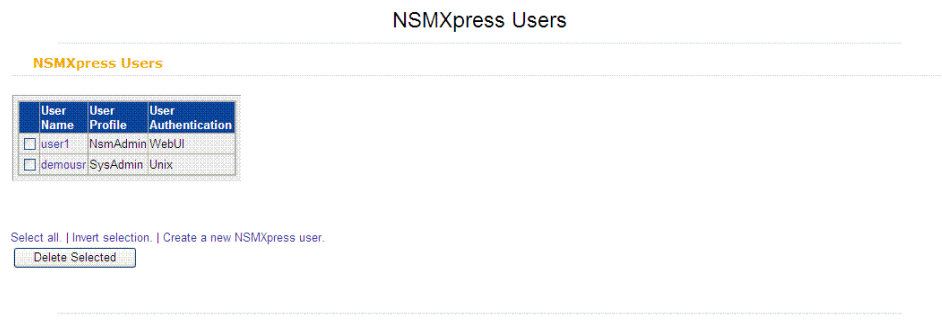
- [Creating New NSMXpress Users on page 35](#)
- [Deleting a User on page 37](#)
- [Editing User Attributes on page 37](#)
- [Understanding User Profiles on page 37](#)

### Creating New NSMXpress Users

To create a local OS user:

1. Select **System Administration > User Management**. The NSMXpress Users dialog box appears listing all NSMXpress users. See [Figure 36 on page 35](#).

**Figure 36: NSMXpress Users Dialog Box**



2. Click **Create a new NSMXpress User**. The Create NSMXpress user dialog box appears. See [Figure 37 on page 36](#).

Figure 37: Create NSMXpress User Dialog Box

Module Index Create NSMXpress User

---

**Create New User**

**Username**

**Password** Unix authentication

**Confirm Password**

**User Profile** NsmAdmin

[Return to user list](#)

3. Enter the user name in the local OS, in the **Username** text box.
4. Select **Unix authentication** from the **Password** drop-down list. The Password and Confirm Password text boxes will be disabled since the password will be fetched from the local OS.
5. From the **User Profile** drop-down list box, select the user profile you want to associate with the local user in the WebUI.
6. Click **Submit**. The NSMXpress Users dialog box appears with the new NSMXpress user listed.

To create a WebUI user:

1. Select **System Administration > User Management**. The NSMXpress Users dialog box appears listing all NSMXpress users. See [Figure 38 on page 36](#).

Figure 38: NSMXpress Users Dialog Box

NSMXpress Users

---

**NSMXpress Users**

| User Name                         | User Profile | User Authentication |
|-----------------------------------|--------------|---------------------|
| <input type="checkbox"/> user1    | NsmAdmin     | WebUI               |
| <input type="checkbox"/> demouser | SysAdmin     | Unix                |

Select all | Invert selection | Create a new NSMXpress user.

2. Click **Create a new NSMXpress User**. The Create NSMXpress user dialog box appears.
3. Enter a user name in the **Username** text box.
4. Select **Set to** from the password drop-down list and enter the password you want to set in the password text box.
5. Reenter the password in the **Confirm Password** text box.

6. Select the user profile you want to associate with this user from the **User Profile** drop-down list box.
7. Click **Submit**. The NSMXpress Users dialog box appears with the new NSMXpress user listed.

### Deleting a User

To delete a user:

1. Select **System Administration > User Management**. The NSMXpress Users dialog box appears listing all NSMXpress users.
2. Select the check box next to the name of the user you want to delete and click **Delete Selected**. Click **Delete User** in the Delete Users confirmation dialog box that appears.



**NOTE:** You cannot delete admin users or change their user profiles.

### Editing User Attributes

To edit user attributes:

1. Select **System Administration > User Management**. The NSMXpress Users dialog box appears, with all NSMXpress users listed.
2. Click on the name of the user whose attributes you want to edit. The Edit NSMXpress Users dialog box appears.
3. Edit the parameters you want to change and click **Submit**. You can change the password and the user profile.

### Understanding User Profiles

NSMXpress provides four predefined user profiles that allow you to implement role-based access control over the NSMXpress WebUI. A user created via the WebUI or in the RADIUS server can be associated with any one of the following profiles:

- **System Administrator**—System Administrators are superusers for the NSMXpress WebUI and have full access to all the modules in the NSMXpress WebUI.
- **NSM Administrator**—NSM Administrators have access to NSM Administration, Radius Management, Maintenance and Troubleshooting modules.
- **Network Operator**—Network Operators have access to Network Utilities and Report Generation Modules.
- **Guest User**—Guest Users have read access to System Information and System Statistics modules.

When a user logs in, NSMXpress modules are displayed or hidden based on the user profile and the permissions associated with the profile. For more details about user profiles and permissions, see [Table 4 on page 38](#).

Table 4: NSMXpress WebUI User Profiles and Permissions

| NSMXpress Modules              | System Administrator | NSM Administrator | Network Operator | Guest User |
|--------------------------------|----------------------|-------------------|------------------|------------|
| <b>System Administration</b>   |                      |                   |                  |            |
| Bootup and Shutdown            | Yes                  | No                | No               | No         |
| Change User Password           | Yes                  | No                | No               | No         |
| Network Configuration          | Yes                  | No                | No               | No         |
| Radius Management              | Yes                  | Yes               | No               | No         |
| SNMP Monitoring                | Yes                  | No                | No               | No         |
| Syslog Forwarding              | Yes                  | No                | No               | No         |
| System Time                    | Yes                  | No                | No               | No         |
| System Update                  | Yes                  | No                | No               | No         |
| User Management                | Yes                  | No                | No               | No         |
| WebUI Configuration            | Yes                  | No                | No               | No         |
| <b>NSM Administration</b>      |                      |                   |                  |            |
| Change NSM Super User Password | Yes                  | Yes               | No               | No         |
| Download NSM MIBs              | Yes                  | Yes               | No               | No         |
| Export Audit Logs              | Yes                  | Yes               | Yes              | No         |
| Export Device Logs             | Yes                  | Yes               | Yes              | No         |
| Generate Reports               | Yes                  | Yes               | Yes              | No         |
| NSM Configuration Files        | Yes                  | Yes               | No               | No         |
| NSM Database Backup            | Yes                  | Yes               | No               | No         |
| NSM Management IP              | Yes                  | Yes               | No               | No         |
| Schedule Security Updates      | Yes                  | Yes               | No               | No         |
| <b>Maintenance</b>             |                      |                   |                  |            |
| System Statistics              | Yes                  | Yes               | Yes              | Yes        |
| <b>Troubleshooting</b>         |                      |                   |                  |            |
| Action Audit Logs              | Yes                  | Yes               | No               | No         |

Table 4: NSMXpress WebUI User Profiles and Permissions (*continued*)

| NSMXpress Modules  | System Administrator | NSM Administrator | Network Operator | Guest User |
|--------------------|----------------------|-------------------|------------------|------------|
| Error Logs         | Yes                  | Yes               | Yes              | No         |
| Network Utilities  | Yes                  | Yes               | Yes              | No         |
| Tech Support       | Yes                  | Yes               | Yes              | No         |
| System Information | Yes                  | Yes               | Yes              | Yes        |

## Configuring the Web Interface

To specify which NSM client computers can access NSMXpress through the Web interface, select **System Administration > WebUI Configuration**. The Allowed IP Addresses window appears as shown in [Figure 39 on page 39](#).

Figure 39: Web Interface Access

## Maintaining NSMXpress

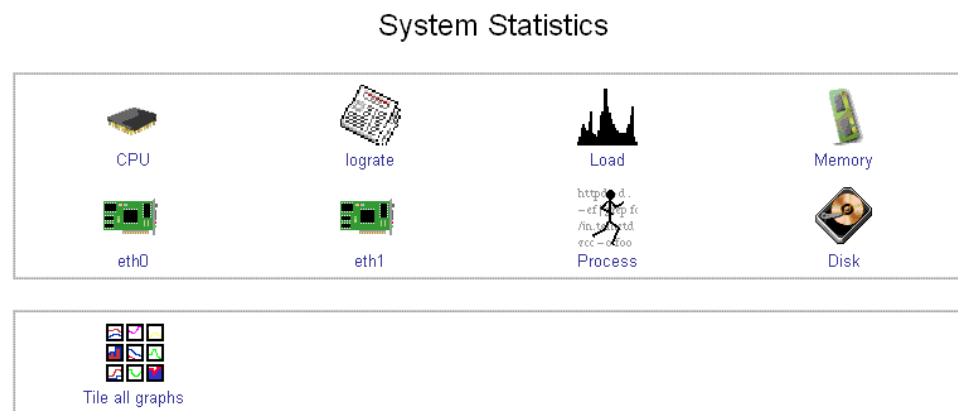
The Maintaining section of the NSMXpress navigation tree allows you to perform the tasks described in the following sections:

- [Viewing System Statistics on page 39](#)
- [Upgrading the Recovery Partition on page 41](#)

### Viewing System Statistics

To view system statistics, select **System Administration > Maintenance > System Statistics**. The system Statistics window appears as shown in [Figure 40 on page 40](#).

Figure 40: System Statistics



### CPU

Select **CPU** to view graphs that monitor the CPU activity hourly, daily, weekly, monthly, or on a customizable basis.

### Log Rate

Select **lograte** to view graphs that monitor the log rate hourly, daily, weekly, monthly, or on a customizable basis.

### CPU Load

Select **Load** to view graphs that monitor the CPU load hourly, daily, weekly, monthly, or on a customizable basis.

### Memory Data

Select **Memory** to view graphs that monitor the memory activity hourly, daily, weekly, and monthly.

### Network Data

Select either **eth0** or **eth1** to view graphs that monitor network activity hourly, daily, weekly, and monthly.

### Process Count

Select **Process** to view graphs that monitor the number of processes hourly, daily, weekly, and monthly.

### Disk Data

Select **Disk** to view graphs that monitor the file system disk space usage hourly, daily, weekly, and monthly.

### Tile All Graphs

Select **Tile all graphs** to display all the statistical graphs for the system in one window.

## Upgrading the Recovery Partition

The recovery partition contains all files necessary to perform a clean installation of the NSMXpress OS and its applications with default settings. It provides a last-resort recovery mechanism. When the NSMXpress appliance is shipped from the factory, the recovery partition files match the version of the NSMXpress OS with factory default settings.

Using the Recovery Upgrade option, you can make the current version of NSMXpress available for recovery, displacing the existing files in the recovery partition. The factory default recovery files are retained as an alternative recovery choice. Other versions are deleted.

Recovery upgrade uses two sets of packages to create a set of files from which you can perform a clean installation. One set makes up the NSMXpress OS, the other a set of upgrade script packages. Both sets are usually retained in the local file system. The NSMXpress OS set can also be downloaded from the Juniper Networks software repository.

NSMXpress splits the recovery upgrade process into a preparation phase and an upgrade phase. In the preparation phase, NSMXpress assembles a copy of the current version of the image files in temporary workspace. In the upgrade phase, NSMXpress replaces the old recovery image files, and installs the current version of the image files from the temporary workspace into the recovery partition. By splitting the process into two phases, NSMXpress minimizes the period of vulnerability while the upgrade itself takes place.

To upgrade the recovery partition, follow these steps:

1. Select **System Administration > Maintenance > Update Recovery Partition**.

If the new recovery partition files have already been prepared, then the Upgrade screen appears. Proceed with the upgrade phase as described in step 5.

If the upgrade files have not yet been prepared, the Upgrade Preparation window appears. Proceed with the preparation phase in step 2.

2. Enter the location of the NSMXpress Regional server or Central Manager upgrade zip file, downloaded from the Juniper Customer Support Center when upgrading NSM, on the local file system.
3. If the NSMXpress Offline server upgrade file is available on the local file system, enter the location and name of the NSMXpress offline server upgrade file in the System upgrade source field. If the NSMXpress offline server upgrade file is not available on the local file system and the appliance has access to the Juniper Update site, select **Online**.
4. Click **Prepare System**.

The Preparation Progress screen shows the progress of the operation.

Errors are reported if the required files are unavailable, disk space is not sufficient, or the previous version files are invalid.

When preparation is completed, the Upgrade window appears.

5. In the Upgrade window, enter the admin Web UI password and then click **Start Update**.

The upgrade process usually takes less than one minute.



**CAUTION:** Do not interrupt the upgrade process. If you do, your NSMXpress appliance might not boot normally.

## Troubleshooting

Use the options in the Troubleshooting section to access the following information and utilities:

- [Auditing User Operations on page 42](#)
- [Error Logs on page 43](#)
- [Network Utilities on page 44](#)
- [Tech Support on page 47](#)

### Auditing User Operations

You can audit all user operations performed in NSMXpress. Users with System Administrator and NSM administrator permissions can view all Actions Logs in NSMXpress.

To view Action Audit Logs:

1. Select **Troubleshooting > Action Audit Logs**. The NSMXpress Actions Log dialog box appears. See [Figure 41 on page 42](#).

**Figure 41: NSMXpress Actions Dialog Box**

NSMXpress Actions Log

---

Search the NSMXpress log for actions ..

Actions by NSMXpress users

Actions by user profile

Actions by authentication mechanism

Actions in module

Actions on dates

☒ By any user

☐ By user

☐ By any user except

☒ By any profile

☐ By profile

☐ By any profile except

☒ By any authentication

☐ By authentication

☐ By any authentication except

☒ In any module

☐ In module

☐ At any time

☒ For today only

☐ For yesterday only

☐ During the last week

☐ Between  / Jan /  and  / Jan /

Search

2. Select the Action Audit Logs that you want to view:

- **Actions by NSMXpress Users:** Select the **By any user** check box to select actions by all users. Select the **By user** check box and choose a username from the drop-down list to specify actions by a particular user. Select **By any user except** and choose a username from the drop-down list to exclude actions by a specific user.
  - **Actions by User Profile:** Select the **By any profile** check box to select actions by all user profiles. Select the **By profile** check box and choose a profile from the drop-down list to specify actions by a specific user profile. Select **By any profile except** and choose a profile from the drop-down list to exclude actions by a user profile.
  - **Actions by authentication mechanism:** Select the **By any authentication** check box to select actions by all authentication mechanisms. Select the **By authentication** check box and choose an authentication mechanism from the drop-down list to specify actions by a specific authentication mechanism. Select **By any authentication except** and choose a profile from the drop-down list to exclude actions by an authentication mechanism.
  - **Actions in module:** Select the **In any module** check box to select actions in all modules. Select the **In module** check box and choose a module from the drop-down list to specify actions in a particular module.
  - **Actions on dates:** Select the **At any time** check box to select actions at any time. Select the **For today only** check box to select today's actions. Select the **For yesterday only** check box to select yesterday's actions. Select the **During the last week** check box to select last week's actions. Select the **Between** check box and enter the start date and end date in the drop-down list to view actions within the specified time period.
3. Click **Search**. The Search Results dialog box appears with the result of your query. See [Figure 42 on page 43](#).


**Figure 42: Search Results Dialog Box**

Module Index

Search Results

Logged actions on 14/Aug/2009 ...

| Action                            | Module            | User    | User profile | User Authentication | Client Address | Date        | Time  |
|-----------------------------------|-------------------|---------|--------------|---------------------|----------------|-------------|-------|
| Created NSMXpress user demouaz    | User management   | admin   | SysAdmin     | Unix                | 10.206.144.154 | 14/Aug/2009 | 04:11 |
| Created NSMXpress user usez1      | User management   | admin   | SysAdmin     | Unix                | 10.206.144.154 | 14/Aug/2009 | 04:11 |
| Deleted Radius Server thirty-five | Radius Management | shaleen | SysAdmin     | Radius              | 10.206.146.216 | 14/Aug/2009 | 00:53 |
| Deleted 1 NSMXpress users         | User management   | shaleen | SysAdmin     | Radius              | 10.206.146.216 | 14/Aug/2009 | 00:52 |
| Added Radius Server thirty-five   | Radius Management | admin   | SysAdmin     | Unix                | 10.206.146.216 | 14/Aug/2009 | 00:39 |
| Created NSMXpress user sanjay     | User management   | admin   | SysAdmin     | Unix                | 10.206.146.216 | 14/Aug/2009 | 00:37 |

 Return to search form

← Return to search form

## Error Logs

To review error logs, select **Troubleshooting > Error Logs**. [Figure 43 on page 44](#) shows an example,

Figure 43: Review Error Logs

## System Logs

| Log File  | Description                        |                        |
|---|------------------------------------|------------------------|
| File /usr/netscreen/DevSvr/var/errorLog/deviceDaemon.0  | Device Server Error Log            | <a href="#">View..</a> |
| File /usr/netscreen/DevSvr/var/errorLog/pro.dc.log      | Data Collector Error Log           | <a href="#">View..</a> |
| File /usr/netscreen/DevSvr/var/errorLog/gproDDM.log     | Device Directive Manager Error Log | <a href="#">View..</a> |
| File /usr/netscreen/DevSvr/var/errorLog/newLogWalker.0  | Log Walker Error Log               | <a href="#">View..</a> |
| File /usr/netscreen/DevSvr/var/errorLog/profilerMgr.0   | Profiler Manager Error Log         | <a href="#">View..</a> |
| File /usr/netscreen/DevSvr/var/errorLog/statusMonitor.0 | Status Monitor                     | <a href="#">View..</a> |
| File /usr/netscreen/GuiSvr/var/errorLog/guiDaemon.0     | Gui Server Error Log               | <a href="#">View..</a> |
| File /usr/netscreen/GuiSvr/var/errorLog/pro.mc.log      | Master Controller Error Log        | <a href="#">View..</a> |
| File /usr/netscreen/GuiSvr/var/errorLog/gproGDM.log     | Gui Directive Manager Error Log    | <a href="#">View..</a> |
| File /usr/netscreen/GuiSvr/var/errorLog/statusMonitor.0 | GuiSvr Status Monitor Error Log    | <a href="#">View..</a> |
| File /usr/netscreen/HaSvr/var/errorLog/highAvail.0      | High Avail Error Log               | <a href="#">View..</a> |

To view details of an individual error log, select the file you want to view and click **View**. [Figure 44 on page 44](#) shows sample error log details.

Figure 44: Error Log Detail

[Module Index](#)

View Logfile

/usr/netscreen/DevSvr/var/errorLog/gproDDM.log

Last  lines of
Only show lines with text

cat: /usr/netscreen/DevSvr/var/errorLog/gproDDM.log: No such file or directory

Last  lines of
Only show lines with text

## Network Utilities

To access basic network utilities (ping, traceroute, and nslookup) for TCP/IP Networking, select **Troubleshooting > Network Utilities**. These tools also provide an IP subnet calculator. See [Figure 45 on page 44](#).

Figure 45: Network Utilities Options



## Ping

Ping is a tool for checking network connectivity. NSMXpress prompts with questions so you can focus your search.

[Figure 46 on page 45](#) shows an example.

**Figure 46: Ping Utility**

[Module Index](#)  
[Help..](#)

## Ping

Hostname  ☐ Verbosity Output? ☐ Numeric Output only? ☐ Bypass routing tables?

How many Packets?

Packet Size?

Pattern(s) to send (Hex)?

How many sec between sending each packet?

Pattern(s) to send (Hex)?

### ***How Many Packets***

Enter the number of packets this ping command will send. The default is 5. The values range from 1 through 99.

### ***Packet Size***

Enter the packet size (in bytes) this ping command will send. The default is 56. The values range from 1 through 9999.

### ***How Many Sec Between Sending Each Packet***

Enter how much time (in seconds) ping should wait between sending each packet.

### ***Patterns to Send (Hex)***

The data sent by ping contains a hexadecimal pattern. If you leave this option blank, ping will fill it with random data. This option is useful if you do not have problems with connectivity itself but with data loss.

### ***Verbosity Output***

NSMXpress lists the ICMP packets (other than ECHO\_Response) that have been received.

### ***Numeric Output Only***

Check this option if you do not want any attempts to be made to look up symbolic names for host addresses.

### ***Bypass Routing Tables***

If the host is not a directly attached network, an error is returned. This option can be used to ping a local host through an interface that has no route through it.

## **Traceroute**

Traceroute is a tool to print the route a packet takes to a network host. See [Figure 47 on page 46](#).

Figure 47: Traceroute Utility

[Module Index](#)  
[Help..](#)

## Traceroute

Hostname:

|   |   |                                 |
|---|---|---------------------------------|
| <input type="checkbox"/> Verbosity Output?        | How many Hops?                            | <input type="text" value="30"/> |
| <input type="checkbox"/> Numeric Output only?     | Packet Length?                            | <input type="text" value="40"/> |
| <input type="checkbox"/> Bypass routing tables?   | How many sec between sending each packet? | <input type="text" value="5"/>  |
| <input type="checkbox"/> Use ICMP instead of UDP? | Initial time-to-live?                     | <input type="text" value="1"/>  |
| <input type="checkbox"/> Toggle Checksums?        | Interface:                                | <input type="text"/>            |
| <input type="checkbox"/> Socket level debugging?  |   |                                 |



**NOTE:** The only required field is Hostname. The value can be either a hostname or an IP address.

### Lookup

Use the lookup tool to obtain the IP address from a hostname and the hostname from an IP address (see [Figure 48 on page 46](#)). The query type drop-down list contains several types of records found in the DNS database. Enter a nameserver or select the default. If you choose the default, nslookup will use the server on which NSMXpress is installed.

Figure 48: Lookup Utility

[Module Index](#)  
[Help..](#)

## Lookup

Hostname

Typ:

Nameserver: ☐ Default ☒

Timeout?

### IP Subnet Calculator

Use the IP subnet calculator to calculate the netmask for a TCP/IP-network. You can calculate a netmask by class and subnet bits or by the number of hosts (See [Figure 49 on page 47](#)). When you calculate a netmask by the number of hosts, NSMXpress returns the smallest network available.

Figure 49: IP Subnet Calculator

The figure shows two sections of the IP Subnet Calculator. The top section, titled "Calculate Netmask by Class and Bits", has a "Class" dropdown menu set to "C (192.x.x.x-223.x.x.x)" and a "Subnet Bits" dropdown menu set to "0". A "Calculate Subnet" button is to the right. The bottom section, titled "Calculate Netmask by Number of Hosts", has a "Number of Hosts" text input field and a "Calculate Subnet" button to its right.

## Tech Support

To get contact information for Juniper Networks technical support, select **Troubleshooting > Tech Support**. To help analyze problems, select a detail type in the drop-down list box, and then click **Run Tech-Support Script**. NSMXpress creates a file you can download and send to Juniper Networks technical support. See [Figure 50 on page 47](#).

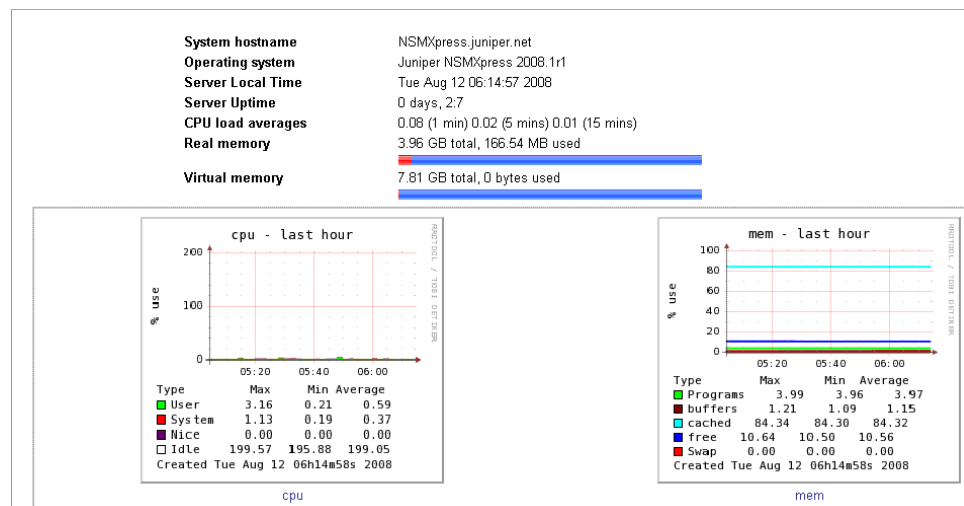
Figure 50: Juniper Tech Support

The figure shows the "Tech Support" section of the interface. It has a blue header bar with the text "Tech Support". Below the header is a dropdown menu showing "Details from Gui, Device and HA servers". Below the dropdown is a button labeled "Run Tech-Support Script". Below the button, the following contact information is displayed: "JTAC WEBSITE: https://support.juniper.net", "JTAC PHONE NUMBER: 1-888-314-JTAC", and "JTAC FTP SITE: ftp.juniper.net".

## Viewing System Information

Use the System Information menu item to display information about the server, including CPU load and memory use, as shown in [Figure 51 on page 48](#).

Figure 51: System Information



## List of Technical Publications

Table 5 on page 48 describes the documentation for NSMXpress and NSM.

**Table 5: Network and Security Manager Publications**

| Book   | Description   |
|--|---|
| <i>Network and Security Manager Installation Guide</i>                         | Describes the steps to install the NSM management system on a single server or on separate servers. It also includes information on how to install and run the NSM user interface. This guide is intended for IT administrators responsible for the installation or upgrade of NSM.   |
| <i>Network and Security Manager Administration Guide</i>                       | <p>Describes how to use and configure key management features in the NSM. It provides conceptual information, suggested workflows, and examples. This guide is best used in conjunction with the NSM Online Help, which provides step-by-step instructions for performing management tasks in the NSM user interface (UI).</p> <p>This guide is intended for application administrators or those individuals responsible for owning the server and security infrastructure and configuring the product for multiuser systems. It is also intended for device configuration administrators, firewall and VPN administrators, and network security operation center administrators.</p> |
| <i>Network and Security Manager Configuring ScreenOS and IDP Devices Guide</i> | Describes NSM features related to device configuration and management. It also explains how to configure basic and advanced NSM functionality, including deploying new device configurations, managing security policies and VPNs, and general device administration.   |
| <i>Network and Security Manager Online Help</i>                                | Provides procedures for basic tasks in the NSM user interface. It also includes a brief overview of the NSM system and a description of the GUI elements.   |

Table 5: Network and Security Manager Publications (*continued*)

| Book  | Description  |
|---|--|
| <i>Network and Security Manager API Guide</i>     | Provides complete syntax and a description of the Simple Object Access Protocol (SOAP) messaging interface to NSM.   |
| <i>Network and Security Manager Release Notes</i> | <p>Provides the latest information about features, changes, known problems, resolved problems, and system maximum values. If the information in the Release Notes differs from the information found in the documentation set, follow the Release Notes.</p> <p>Release Notes are included on the corresponding software CD and are available on the Juniper Networks Website.</p> |
| <i>NSMXpress and NSM3000 User Guide</i>           | Describes how to set up and manage the NSM appliances as a central manager or regional server.   |

## Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>

- Join and participate in the Juniper Networks Community Forum:  
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/> .
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html> .

## Revision History

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March 02, 2011— Revision 1

March 27, 2012— Revision 2

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