Configuring the System 5

This chapter discusses viewing and modifying a device's configuration and updating its system-level attributes.

Overview

The NMC-RX application allows you to manage devices on your network via a graphical user interface (GUI) and to modify a device's configuration from the Device Workshop.

Configuration Tasks

The NMC-RX application allows you to perform the following tasks on the device that you want to configure:

- View the device's current configuration.
- Modify the device's configuration.
- Update the device's configuration.

Viewing a Device Configuration

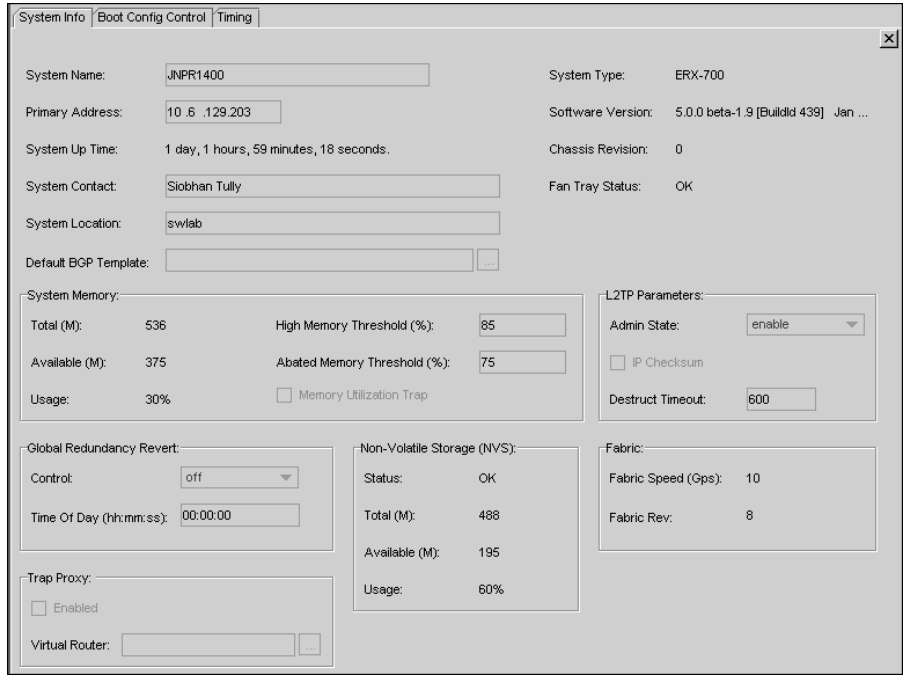
You can view the current configuration of any device on your network from either the Network Workshop or the Device Workshop.

To view a device's configuration from the Network Workshop:

1 In the context area, select the device whose configuration you want to view.

2 Right-click, and click View.

The device's current configuration appears.



To view the device's configuration from the Device Workshop:

1 From either the Instance Explorer or the Device-wide Explorer, select the System folder.

2 Right-click, and click View.

The System Info tab appears in the work area.

***Note**: In View mode, you cannot modify a device's configuration.*

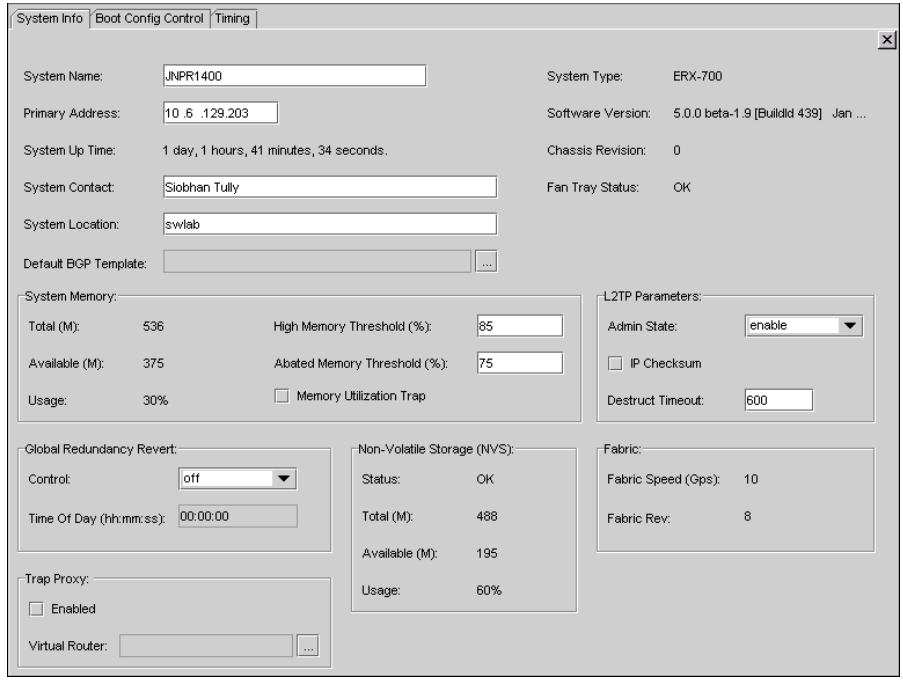
Modifying a Device Configuration

From the Device Workshop, you can modify most system attributes. You can do this via the Instance Explorer or the Device-wide Explorer.

To modify a device's configuration:

1 From either the Instance Explorer or Device-wide Explorer, select the System folder, right-click, and click Configure.

The System Info tab displays the current configuration of the device and has editable fields.



2 Modify the parameter settings. See Table 5-1.

Table 5-1 System configuration parameters

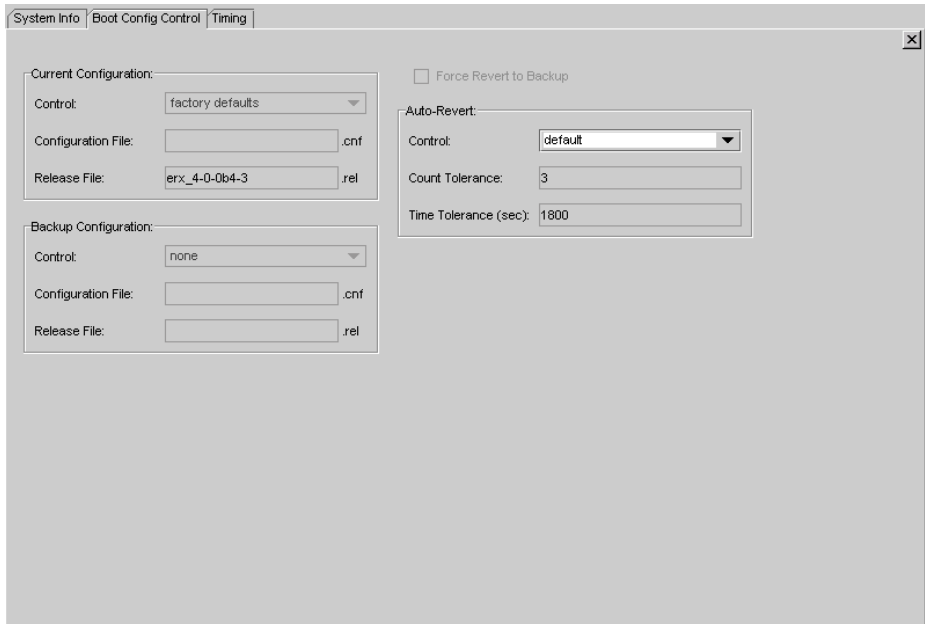
Parameter	Description
System Name	Name you assign to the E-series router
Primary Address	IP address to be used to communicate with the E-series router
System Up Time	Amount of time in hours, minutes, and seconds that the system has been running
System Contact	Contact person for the device (optional)
System Location	Location of the device (optional)
Default BGP Template	Click to select a BGP template from the Apply Template dialog box. See *Related Dialog Boxes*.
System Type	E-series router
Software Version	Version of JUNOSe software running on the device
Chassis Revision	Chassis revision number
Fan Tray Status	Status of the fan tray; not editable; range: Failed, OK
System Memory	
Total (M)	Total memory capacity of the system; not editable; range 0–2147483647 bytes
Available (M)	Amount of unused memory; not editable; range 0–2147483647 bytes
Usage	Percentage of system memory utilization; not editable; range –1 through 100; value of –1 indicates utilization unknown
High Memory Threshold (%)	Value of system memory utilization; if reached for first time, generates high memory utilization event notification to the management entity on the system; range –1 through 100; default 85
Abated Memory Threshold (%)	Value of system memory utilization used to determine when to generate an abated memory utilization event notification to the management entity on the system; range –1 through 100; default 75
Memory Utilization Trap	Controls sending system memory utilization events; options: On, Off; default: Off
L2TP Parameters	
Admin State	Enable or disable Layer 2 Tunneling Protocol (L2TP) for your E-series router **Note:** The NMC-RX application offers full support for tunnel server cards.
IP Checksum	Enable or disable (default) checking data integrity

Table 5-1 System configuration parameters (continued)

Parameter	Description
Destruct Timeout	Time period in the range 10–3600 seconds (1 hour) for which the E-series router maintains dynamic destinations, tunnels, and sessions
Global Redundancy Revert	
Control	Global revert control; range: off, immediate, time of day; default: off
Time of Day	Number of seconds past midnight on any given day at which time reversions are allowed to occur. Editable only if set to time of day; range 00:00:00 to 23.59.59; default 00:00:00
Non-Volatile Storage (NVS)	
Status	State of NVS
Total (M)	Percentage of total capacity of NVS
Available (M)	Amount of unallocated NVS
Usage	Total NVS currently allocated
Fabric	
Fabric Speed (GPS)	Either 5 Gbps or 10 Gbps
Fabric Rev	Revision number of the fabric board on the E-series device
Trap Proxy	
Enabled	Configuration setting for SNMP trap proxying. Enabling the trap proxy configures the associated SNMP agent to proxy internally generated traps. Options: Enabled or Disabled; default: Disabled
Virtual Router	Name of the virtual router that is configured for trap proxying. Click  to select a virtual router from the Associated Virtual Router dialog box. See *Related Dialog Boxes*.

3 Click Save.

4 Click the Boot Config Control tab.



5 Modify the parameter settings. See Table 5-2.

Table 5-2 System boot parameters

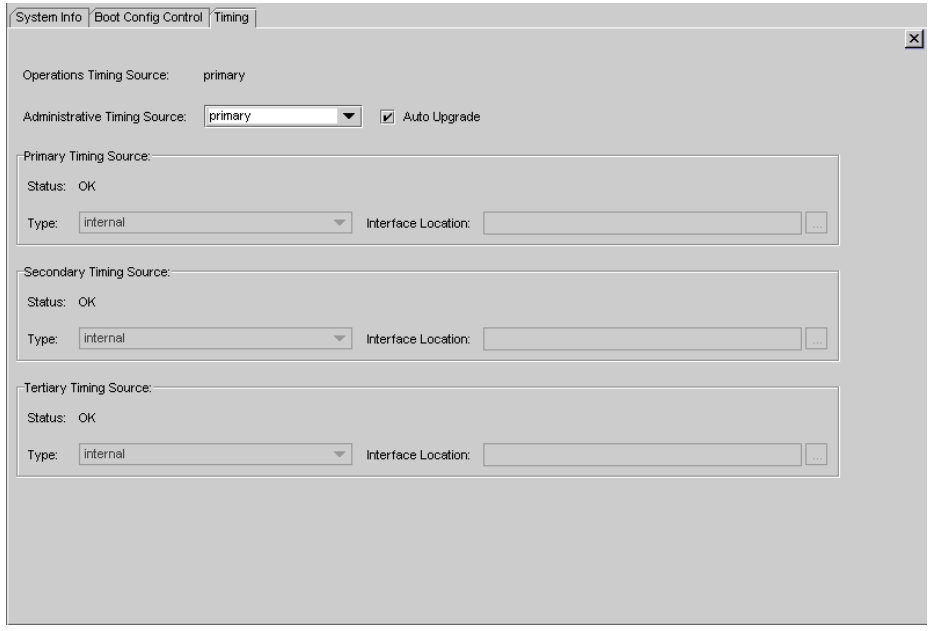
Parameter	Description
Force Revert: to Backup	Forces the system to revert to the backup configuration regardless of the Auto-Revert parameter settings the next time the system is rebooted
Current Configuration	
Control	Current system boot configuration control; default: running configuration; not editable in Release 4.0
Configuration File	Current local boot configuration filename, with extension .cnf; default: blank; not editable in Release 4.0
Release File	Current local boot release filename, with extension .rel; default blank; not editable in Release 4.0
Backup Configuration	
Control	Backup system boot configuration control; default running configuration; default: none; not editable in Release 4.0
Configuration File	Local backup boot configuration filename, with extension .cnf; default: blank; not editable in Release 4.0
Release File	Local backup boot release filename, with extension .rel; default: blank; not editable in Release 4.0

Table 5-2 System boot parameters (continued)

Parameter	Description
Auto-Revert	
Control	Forces the system to revert to the backup configuration if the primary configuration fails beyond the configured tolerance values; default: default
Count Tolerance	Editable only if Auto-Revert Control is set to “set”; default 3
Time Tolerance	Time tolerance in seconds; editable only if Auto Revert Control is set to “set”; default 1800

6 Click Save.

7 Click the Timing tab.



8 Modify the parameter settings. See Table 5-3.

Table 5-3 System timing parameters

Parameter	Description
Operations Timing Source	If the E-series router’s current timing source fails, the system automatically downgrades to the next timing source. Not editable; default: primary

Table 5-3 System timing parameters (continued)

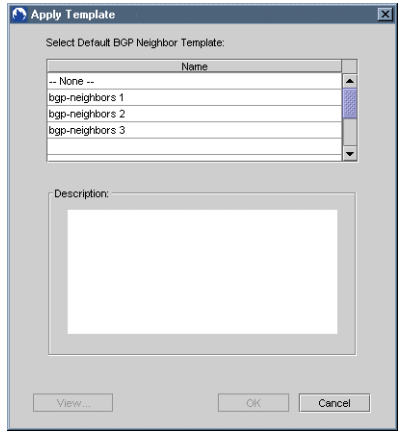
Parameter	Description
Administrative Timing Source	If Auto-Upgrade is enabled, the system never attempts to upgrade to a source higher than the selected administrative timing source. Default: primary
Auto-Upgrade	Controls the automatic timing selector upgrade. If the system's current timing source fails, the E-series router automatically downgrades to the next timing source. Enabling this parameter causes the E-series router to automatically switch back to a higher timing source when that source becomes available. Disabling this parameter prevents automatic upgrade to the next highest timing selector.
Timing Source (Primary/Secondary/Tertiary)	
Status	Status associated with the timing selector; not editable; default: Unknown
Type	System timing source type; only editable for JUNOSe versions 4.1.0 and later
Interface IF Index	Editable only if the timing source type is Interface IF Index

9 Click Save.

Related Dialog Boxes

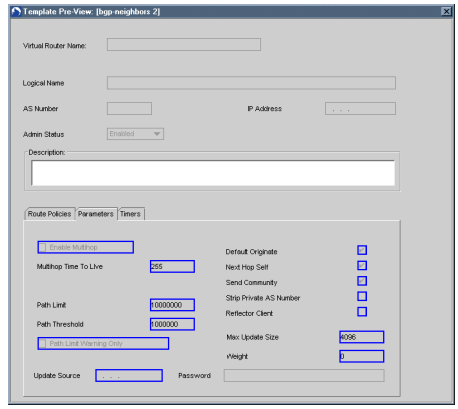
Apply Template

The Apply Template dialog box appears when you click  in the description column next to Default BGP Template on the System Info tab. Use it to select a template.



1 Click a template.

2 (Optional) Click View to display the template's full configuration.



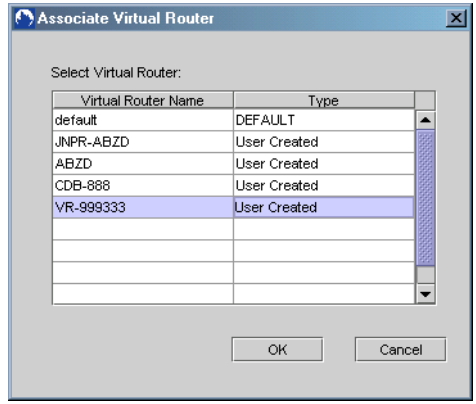
3 Close the Template Pre-View dialog box.

4 Click OK in the Apply Template dialog box.

The information is entered in the Default BGP Template text box in the System Info tab.

Associate Virtual Router

The Associate Virtual Router dialog box appears when you click  in the description box next to Virtual Router on the System Info tab. Use it to select a virtual router.



1 Click a virtual router.

2 Click OK.

The virtual router name is entered in the Virtual Router text box in the System Info tab.

Updating a Device Configuration

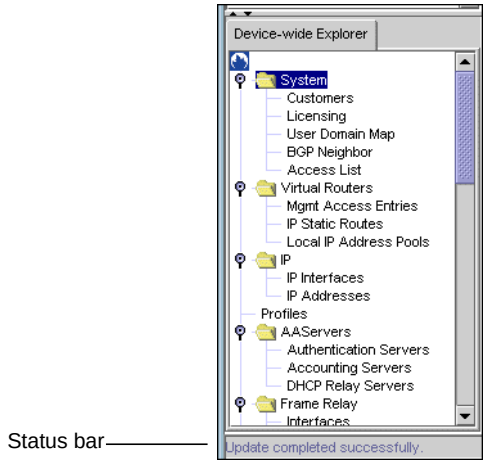
You can update the NMC-RX configuration for the device to match the current configuration on the physical device.

To update your system:

1 In either the Instance Explorer or the Device-wide Explorer, select System, right-click, and click Update.

The Updating Device progress monitor pop-up appears and indicates that the NMC-RX application is downloading the most recent configuration from the device.

When the process is finished, the status of the configuration appears in the status bar at the bottom of the window.



If errors or warnings occurred during the update, a warning pop-up appears. To see what the error was, open the ConfigSync server console. For more information on the ConfigSync server, see *NMC-RX User Guide, Vol. 2, Chapter 13, Using the Resource Configurator and NMC-RX Services*.

2 If you want to update the device regardless of the error, click Yes.

Updating a Single Module or Port

You can update the NMC-RX configuration for a single module or port to match the current configuration on the physical device.

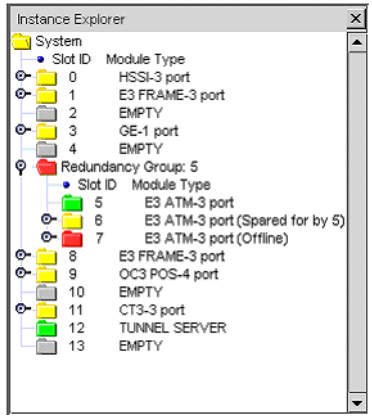
To update a single module or port:

- In the Instance Explorer, select the module or port, right-click, and click Update.

The Updating Module/Port progress monitor pop-up appears. When the update is complete, the progress pop-up disappears and the status of the configuration is listed in the status bar.

Line Module Redundancy Groups

The NMC-RX software can recognize line module redundancy groups on a device and display which module is active and inactive (spared for). A redundancy group folder is created in the Instance Explorer, and the line modules in that group are placed in it.



See Table 5-4 for common redundancy group terms.

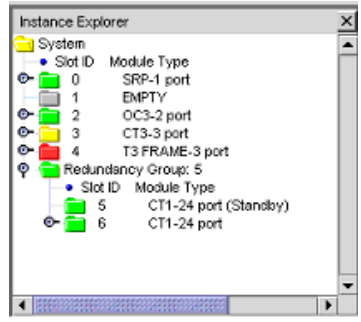
Table 5-4 Line module redundancy group terms

Term	Description
Redundancy group	Group of line modules containing a spare and one or more primary line modules in adjacent slots. To have a redundancy group, a special midplane must be installed that allows the spare line module to take over (or spare) for any of the primary line modules. Redundancy groups come in several sizes from 2 to 6 line modules. For example: • 2-module group is referred to as 1+1 (1 primary + 1 spare) redundancy • 3-module group is referred to as 2+1 (2 primary + 1 spare) redundancy • 6-module group is referred to as 5+1 (5 primary + 1 spare) redundancy
Spare line module	• Line module in the lowest-numbered slot of the redundancy group. The spare takes over when a primary line module goes offline. • Not configurable (except for admin status)

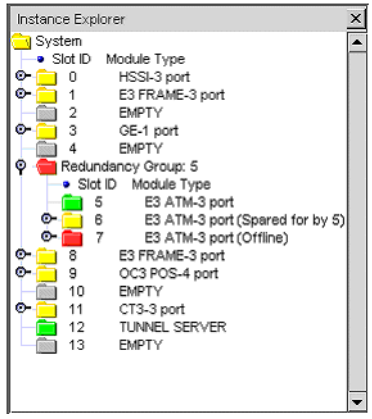
Table 5-4 Line module redundancy group terms (continued)

Term	Description
Primary line module	• Active line module that is not a spare • When offline, primary line modules are spared for by the spare line module in the group. • Configurable when online and when being spared for • If there are multiple offline primary line modules, only one can be spared for.
Sparing for	• Act of a spare line module taking over for a primary line module • When the primary line module is offline, the spare line module's state changes from standby to online. This process is also called switchover or failover.

Example 1 In this example, slot 5 has a spare line module in standby mode, and slot 6 has a primary line module that is online in a 1+1 redundancy group. Note that the group is issued an ID (5).

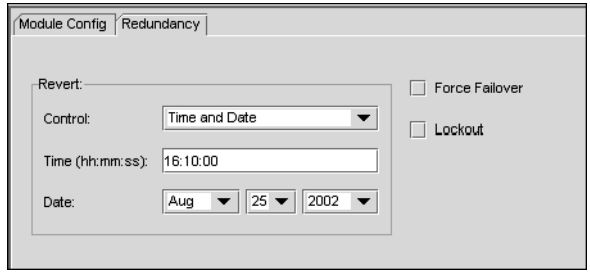


Example 2 In this example, slots 5 through 7 are in a 2+1 redundancy group. The spare line module in slot 5 is currently sparing for the primary line module in slot 6, which is inactive. The primary line module in slot 7 is also inactive, but because the spare line module is already sparing for slot 6, slot 7 is colored red and labeled Offline.



Configuring a Redundancy Module

When configuring a line module, you can set redundancy features by clicking the Redundancy tab. The tab is visible only when the current slot is a member of a redundancy group and is a primary module. The tab is not displayed for spare line modules.



You can perform the following redundancy tasks:

- Force a failover to the spare line module.
- Prevent the spare line module from taking over for the slot the line module is in.
- Revert to the primary line module at a particular time and date.

***Note**: See each line module chapter for information on how to configure the module.*

To configure module redundancy:

1 In the Instance Explorer, select the module you want to configure, right-click, and click Configure.

2 Click the Redundancy tab.

3 Set the parameters. See Table 5-5.

Table 5-5 Module redundancy parameters

Parameter	Description
Control	Allows you to revert control to the primary module at a specific time • Off – default • Time and Date – select a specific time and date • Immediate – available if module is inactive
Time, Date	• Enables you to select a specific time and date to revert control to the primary line module • Available when Time and Date is selected from Control
Force Failover	• Select to make the current slot inactive and cause the spare line module to take over • Enabled only when the primary line module is online
Lockout	• Prevents the spare line module from taking over for the slot. Selecting Force Failover, however, overrides Lockout.

4 Click Save.

System Logging

The NMC-RX application has a logging feature that records several attributes, actions, events, and errors of the system. One log file is saved for each client session and is stored in the /log directory of the NMC-RX installation directory.

The following filename format is used:

- nmcrxlogMMDDYYYY_HHMMSS.log

By default, logging is enabled when the application is installed. To turn logging off, open traceLog.rc (located in the NMC-RX installation directory), change nmcrxLogFileOn=On to nmcrxLogFileOn=Off, and save the file.

See the following sections for types of information logged.

User Login Actions

User login actions are logged when a user logs in or logs out. The following message format is used:

```
MM/DD/YYYY HH:MM:SS user:[username/Privilege Level] Message
```

where:

- MM/DD/YYY – Month, day, year
- HH:MM:SS – Hour, minute, second
- username – Name can be 1–32 characters and must contain at least one alphabetic and one numerical character. If the username = admin, the default privilege level of “all privileges” is used.
- privilege level – Determines the privileges that are assigned to the user. Letter codes are used as follows:
  - s – security
  - b – backup
  - v – view
  - c – create
  - m – configure
  - d – delete
  - e – execute
- Message – user login action

See username and privilege level examples in Table 5-6.

These actions include authorized client logins, unauthorized login attempts, user login changes, and user password changes.

Table 5-6 User login actions

Type	Description	Example
Authorized client login	Logs a successful user login	`11/13/2003 08:56:19 user:[jdoe7/--v----] logged in`
Unauthorized login attempts	Failed login entries show the attempted login ID, as well as the reason for failure	`11/13/2003 09:02:23 user:[admin/sbvcmde] login failed, invalid password`
User login changes	A logout entry occurs when the user exits the NMC-RX application	`11/13/2003 08:57:31 user:[jdoe7/--v----] logged out`
	When a logged-in user changes login, it is considered to be the logout of the user and a subsequent login of a new user	`11/13/2003 08:57:31 user:[jdoe7/--v----] logged out` `11/13/2003 08:58:19 user:[msmith/--v----] logged in`
User password changes	Logs when a user password is changed	`11/13/2003 13:46:41 user:[admin/sbvcmde] Password changed for User [jsmith2]`

Execute-Only Actions

Execute-only actions are logged when they are started. The following message format is used:

```
MM/DD/YYYY HH:MM:SS user:[username/Privilege Level]
  action_name message
```

These actions include ATM ping, ping, telnet, and traceroute. The log entry includes relevant device information. For example:

Example 1

```
11/13/2003 08:57:31 user:[jdoe7/--v----] Ping from NMC-RX to
  10.6.129.203
```

Example 2

```
11/13/2003 09:57:31 user:[jdoe7/--v----] Ping from
  10.6.129.203 to 112.34.55.2
```

Example 3

```
11/13/2003 10:57:31 user:[jdoe7/--v----] telnet 10.6.129.203
```

Processing Actions

For actions that may take a long time to process, both the start and end time are recorded. The following message format is used:

```
MM/DD/YYYY HH:MM:SS user:[username/Privilege Level]
  action_name <initiated|completed|standby> message on
  device_ID
```

These actions include create, configure, delete, device updates, and configuration save and restore. For example:

Example 1

```
11/18/2003 15:56:00 user:[admin/sbvcmde] List Area create
  initiated on ATM Interface [ATM3/3]
11/18/2003 15:56:14 user:[admin/sbvcmde] List Area create
  complete ATM Interface [ATM3/3]
  Created ATMSubIntf ATM3/3.3
```

Example 2

```
11/18/2003 15:56:00 user:[admin/sbvcmde] update initiated on
  10.6.129.12
.
.
.
11/18/2003 16:16:00 user:[admin/sbvcmde] update completed on
  10.6.129.12
```