2 Installing and Running the NMC-RX Application

This chapter provides procedures for installing the NMC-RX Element Management System and its components on a Windows or Sun Solaris system.

System Requirements

To run the NMC-RX application, your system (Windows or Solaris) must meet certain requirements.

Windows

To run the NMC-RX application, your Windows system must meet the following minimum requirements:

- CD-ROM drive
- Windows 95/98, Windows 2000, NT 4.0 or later (preferred)
- 128 MB of RAM
- 330 MB of space on the hard drive (when installing)
- 266 MHz

Solaris

To run the NMC-RX application, your Solaris system must meet the following minimum requirements:

- CD-ROM drive
- Solaris 2.7, Solaris 2.8
- 128 MB of RAM
- 300 MB of space on the hard drive (when installing)
- 266 MHz

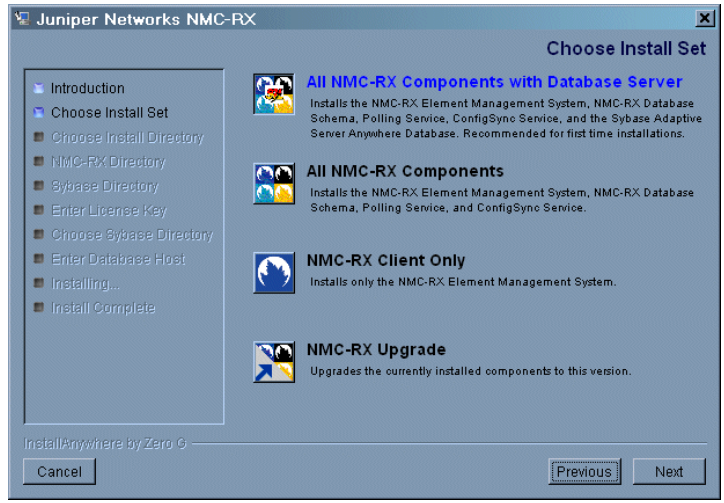
Solaris software patches 108940-50 and 108652-66 are required to install the NMC-RX application on Solaris 2.8. To find the required patches for your system, visit the Sun support Web site:

- http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access

Note: *After you have installed Sybase Adaptive Server Anywhere, you can delete the <NMC-RX installation directory>/sybase directory, provided you have not installed Sybase in that directory (Solaris installation only).*

Installing the NMC-RX Application on Windows

There are four installation sets to choose from when you install the NMC-RX application on a Windows system.



- **All NMC-RX Components with Database Server** – Installs the NMC-RX Element Management System client software, database schema, Polling service, ConfigSync service, and the Sybase Adaptive Server Anywhere database.

  If this is your first installation of the NMC-RX application, choose this installation set.

- **All NMC-RX Components** – Installs the NMC-RX Element Management System client software, database schema, Polling service, and ConfigSync service.

  If you have previously installed the NMC-RX application and Sybase database, choose this installation set.

- **NMC-RX Client Only** – Installs only the NMC-RX Element Management System client software.

  If Polling service, ConfigSync service, and the Sybase Adaptive Server Anywhere database have been installed on another accessible workstation on your network, choose this installation set.

Note: *When you run the NMC-RX software, you must have Sybase Adaptive Server Anywhere installed on your system or on another system that is accessible on the network and already running.*

- **NMC-RX Upgrade** – Upgrades the currently installed components to the version of the software being installed.

  If you have a version of the software installed listed in Table 2-1 and want to upgrade, choose this installation set. You cannot upgrade releases before 4.1.x using this feature.

  To revert to a previously installed version of the software, see *Reverting to a Previous Software Installation* later in this chapter.

Table 2-1 Software upgrade compatibility

If You Have This Version Installed	You May Upgrade To This Version
4.1.x	5.0.0
4.1.x, 5.0.x	5.1.0

Refer to Table 2-2 for a description of each component.

Table 2-2 NMC-RX application components

Application/Service	Description
NMC-RX Element Management System client software	Provides capability of managing devices on your network via a graphical user interface (GUI)
Sybase Adaptive Server Anywhere database	Provides database services and connections needed to run the NMC-RX application
Polling service	Provides the NMC-RX application with the status of managed devices based on a defined polling interval
ConfigSync service	Enables the NMC-RX application to discover or update a device on the network and builds a model of the device in the NMC-RX database Supports the application's configuration save and restore function
Resource Configurator	Provides an efficient graphical interface for setting up SNMP and the Sybase, Polling, and ConfigSync service parameters

Installing or Upgrading the Software

To install or upgrade the NMC-RX application:

1. Insert the NMC-RX CD-ROM in your CD drive. If the installation program does not autoplay, double-click install.exe in the Windows directory on the CD drive.
2. Follow the instructions that appear on the screen.
3. When the application is installed, reboot your system.

Note: *To obtain a license key, please contact your Juniper Networks sales representative. If you would like to change your license key, see Modifying Your License Key later in this chapter.*

Note: *A shortcut icon is placed on your desktop for each application and service installed.*

Before Running the Application

To run the NMC-RX application, Sybase Adaptive Server Anywhere must be installed on a machine that can be reached by the NMC-RX application.

Before you run the NMC-RX application, run the Resource Configurator to verify that the settings for the database, SNMP, the Polling service, and the ConfigSync service are correct. You do not need to run the Resource Configurator each time you run the NMC-RX application.

You must start the database service before running the NMC-RX application. Juniper Networks also recommends that you start the Polling service and the ConfigSync service before running the NMC-RX application.

See the following sections for information on how to run these applications.

Resource Configurator

Before you run the NMC-RX application for the first time, you must run the Resource Configurator to set up the NMC-RX parameters.

To run the Resource Configurator from your desktop, double-click the NMC-RX Resources icon on your desktop.

To run the Resource Configurator from the NMC-RX application (after the initial configuration):

1 From the Tools menu, choose NMC-RX Settings.

The NMC-RX Resource Configurator launches.

2 Configure the settings for each of the available services.

Note: *If Polling service and/or ConfigSync service are running, you must restart each service so that changes made in the Resource Configurator are reflected.*

Database Service

You must start the database before you can run the NMC-RX application.

To start the database service, double-click the appropriate Database icon on your desktop. If you are running the database locally, the Database icon appears in the Windows system tray. This indicates that the database is available to the NMC-RX application.

If you are running the database on another machine, you do not receive any indication that it is running. However, if the NMC-RX application cannot connect to the database, an error message appears.

Note: *Be sure to wait until the database is initialized before launching other NMC-RX components. If an error occurs, close all NMC-RX components (including the database) and start over.*

Polling Service

You should run the Polling service before you run the NMC-RX application, although it is not required. The Polling service generates a log of events.

To start the Polling service, double-click the Polling service icon on your desktop. The Polling service console window opens. This window displays the ongoing activity of the Polling service. If errors are encountered during startup, an error dialog box appears.

Note: *If you chose a client-only installation, no Polling service will be available on your workstation. Polling service may be running on another machine that is connected to the database.*

ConfigSync Service

You must run the ConfigSync service before running the NMC-RX application so that the devices you want to configure can be discovered. Once the devices have been discovered, you can close the ConfigSync service.

To start the ConfigSync service, double-click the ConfigSync service icon on your desktop.

Note: *If you chose a client-only installation, no ConfigSync service will be available on your workstation. ConfigSync service may be running on another machine that is connected to the database.*

Running the NMC-RX Client

When you run the NMC-RX client, you must have the ConfigSync service running if you need to update or discover devices. Running the Polling service is necessary only when you want to display the status of the nodes you are working with.

To run the NMC-RX client:

1 Double-click the NMC-RX icon on your desktop.

The NMC-RX application splash screen and the NMC-RX User Authentication dialog box appear.

2 Enter your username and password, and click OK.

The Network Workshop window appears.

Modifying Your License Key

To modify your license key:

1 From the NMC-RX client Help menu, click NMC-RX Licensing.

The NMC-RX Licensing Information dialog box appears.

2 To edit your license key, click Edit License.

The NMC-RX Licensing Information dialog box now shows an editable text field, and the Edit License button changes to the Verify License button.

3 Modify the license string, and click Verify License.

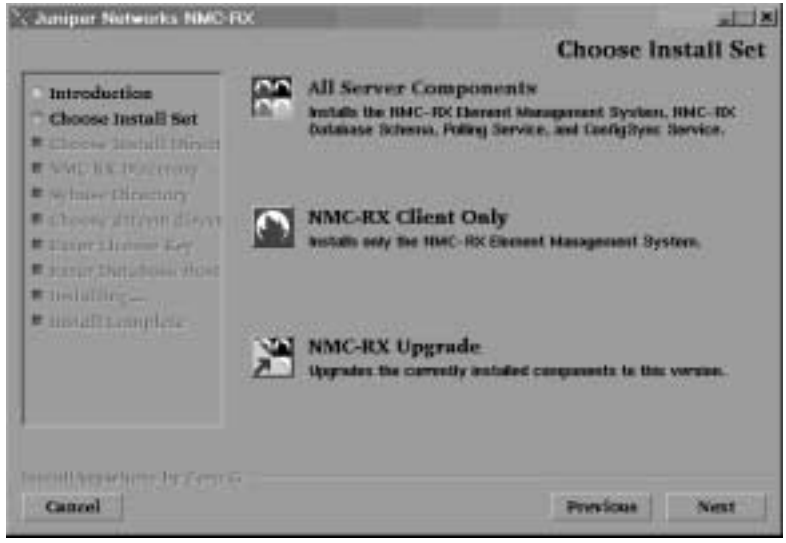
If the license string you entered is a valid license, the OK button is enabled. If the license string is an invalid license, an error message appears.

4 If the license string is valid, click OK to apply the license string to the current session.

Note: *The only valid license keys are those provided by Juniper Networks.*

Installing the NMC-RX Application on Solaris

You have three installation sets to choose from when installing the NMC-RX application on a Solaris system.



- **All Service Components –** Installs the NMC-RX Element Management System client software, database schema, Polling service, and ConfigSync service.
- **NMC-RX Client Only –** Installs the NMC-RX Element Management System client software.

  If Polling service, ConfigSync service, and the Sybase Adaptive Server Anywhere database have been installed on another accessible workstation on your network, choose this installation set.
- **NMC-RX Upgrade –** Upgrades the currently installed components to the version of the software being installed.

  If you have a version of the software installed listed in Table 2-3 and want to upgrade, choose this installation set. You cannot upgrade releases before 4.1.x using this feature.

  To revert to a previously installed version of the software, see *Reverting to a Previous Software Installation* later in this chapter.

Table 2-3 Software upgrade compatibility

If You Have This Version Installed	You May Upgrade To This Version
4.1.x	5.0.0
4.1.x, 5.0.x	5.1.0

Note: *For the initial installation of this application, you must install the NMC-RX application first, followed by Sybase Adaptive Server Anywhere (ASA).*

Note: *Sybase is not an option on the Solaris installation of the NMC-RX application. You must install it separately.*

Installing or Upgrading the Software

To install or upgrade the NMC-RX application:

1. Insert the NMC-RX CD-ROM in your CD drive and run install.bin.
2. Follow the instructions that appear on the screen.
3. When the installation is finished, click Done.

   A directory called *sybase* is created under the NMC-RX installation directory.

Note: *To obtain a license key, please contact your Juniper Networks sales representative. If you would like to change your license key, see Modifying Your License Key earlier in this chapter.*

Installing Adaptive Server Anywhere

To install Sybase Adaptive Server Anywhere:

1. Navigate to the Sybase directory by typing **cd <NMC-RX installation directory>/sybase**.
2. Press Enter.
3. Type **./setup** and press Enter.
4. Follow the directions on the screen.

Before Running the Application

To run the NMC-RX application, Sybase Adaptive Server Anywhere must be installed on a machine that can be reached by the NMC-RX application.

Before you run the NMC-RX application, run the Resource Configurator to verify that the settings for the database, SNMP, the Polling service, and

the ConfigSync service are correct. You do not need to run the Resource Configurator each time you run the NMC-RX application.

You must start the database service before running the NMC-RX application. Juniper Networks also recommends that you start the Polling service and the ConfigSync service before running the NMC-RX application. Scripts that launch NMC-RX components are also available.

See the following sections for information on how to run these applications.

Resource Configurator

Before you run the NMC-RX application for the first time, you must run the Resource Configurator to set up the NMC-RX parameters.

To run the Resource Configurator from the shell:

1. Type **cd <NMC-RX installation directory>/bin**
2. Run **./NMC-RXResources** to configure the database, SNMP, Polling service, and ConfigSync service.

Note: *If ConfigSync service will be running on this workstation,* ***ifconfig -a*** *provides the Solaris IP address for FTP on the ConfigSync service tab.*

To run the Resource Configurator from the NMC-RX application (after the initial configuration):

1. From the Tools menu, click NMC-RX Settings.
2. Configure the settings for each of the available services.

Database Service

The NMC-RX application requires that a Sybase database connection be established before you run the NMC-RX software. You can run **nmcrxdb** from the utils directory or from the command line:

- For the NMC-RX Database connection, use:

  dbsrv7 -ti 0 NMC-RX.db

- For the DemoDB database connection, use:

  dbsrv7 -ti 0 NMC-RXDemo.db

Polling Service

You can configure the Polling service from <NMC-RX installation directory>/bin/ by running **./NMC-RXResources**.

- Registry Port – Default is port 1099.

You can start the Polling service from <NMC-RX installation directory>/bin/ by running **./PollingService** or by using the polling script located in the utils directory.

Note: *Some problems will not stop the Polling service from running or remaining active. Therefore, if there are issues, it is always advisable to check <NMC-RX installation directory>/log/PollingServer.log for recent messages.*

ConfigSync Service

Verify that the FTP Home Directory has been granted write permission.

You can configure the ConfigSync service from <NMC-RX installation directory>/bin/ by running **./NMC-RXResources**.

The most important configuration issues to remember are:

- FTP destination IP address – Enter the IP address of the machine running the ConfigSync service.
- FTP login name
- FTP password
- FTP destination subdirectory – Be sure the subdirectory is created under the ftproot directory. It is case sensitive.
- Local root directory – Case sensitive
- If FTP is configured properly, the following URL should bring up an FTP connection to the ifStack directory when placed in a Web browser address line:

  `ftp://your ip address here:21/ConfigSync/ifStack`

  To test further, add a file to the ifStack directory to verify that it can be seen and accessed.
- Registry port – Default is port 1098.

You can start ConfigSync service from <NMC-RX installation directory>/bin/ by running **./ConfigSyncService**.

Running the NMC-RX Client

You can start the NMC-RX application from <NMC-RX installation directory>/bin/ by running **./NMC-RX**.

Note: *The recommended way to run the application is to use the scripts that are provided with the NMC-RX application. See the next section.*

If you do not use the scripts to run the NMC-RX application, you need to do the following:

- Set up the LD_LIBRARY_PATH to contain the Sybase ASA library directory. The default directory is /opt/sybase/SYBSsa7/lib.
- Set up the search path to contain the Sybase ASA bin directory. The default directory is /opt/sybase/SYBSsa7/bin.

Using Scripts

Scripts provided for all NMC-RX application components can be found in the <NMC-RX installation directory>/utils directory. The allnmcrx script launches the NMC-RX database and all NMC-RX components.

If you want to launch an individual component, select the appropriate script from Table 2-4.

Note: *All script names are one word, lowercase, and are in the <NMC-RX home>/utils directory.*

Table 2-4 Scripts for Solaris

Script	Function
allnmcrx	Affects the database, Polling service, ConfigSync service, and the NMC-RX application **Note:** This is the recommended way to start all NMC-RX services on Solaris.
allservices	Affects the database, Polling service, and ConfigSync service
configsync	Affects the ConfigSync service
nmcrx	Affects the NMC-RX application (has only start and console options)
nmcrxdb	Affects the NMC-RX database
nmcrxdemodb	Affects the NMC-RX Demo database
polling	Affects the Polling service

The following line in the nmcrxdb and nmcrxdemodb script must be changed if Sybase is not located in the default path locations supplied:

- SYBASE=/opt/sybase

Script Parameters

The scripts accept the following parameters:

Start This is the default behavior of each script. If the script is called without any parameters, it starts the appropriate application. If the application being started is already running, it reports this to you and does not try to start the application again.

In the scripts that affect multiple applications, pauses are added to be sure that the database has been started before the system tries to start the next application in line. Each application is checked for status, and if the application is already running, that application is not started again.

Stop The status of the application is checked, and if the application is running, it is shut down. If the application is not running, you are notified that it is not running.

In the scripts that pertain to multiple applications, each application's status is checked. Those applications that are running are shut down, and those that are not running display a message that they were not running. You are then notified whether the application was successfully stopped or not. NMC-RX clients will not be shut down.

Restart The status of the application to be restarted is checked. If the application is running, it is stopped and then started again. If it is not running, it is started at this point.

In the scripts that pertain to multiple applications, all applications are stopped. NMC-RX clients are not restarted. Any clients currently running are notified that the database connection has been lost and that they need to restart the client.

Note: *The NMC-RX script does not support this option.*

Console When this parameter is present on the command line, a new *dtterm* terminal window is started with the name of the application. The application's console output is displayed in this window.

Status Reports whether or not an application is running. In the case of the multiapplication scripts, this parameter displays the status for each application checked.

Note: *The NMC-RX script does not support this option.*

Help or ? Displays the script's command line parameters.

Reverting to a Previous Software Installation

If you chose the NMC-RX upgrade option during installation, you have the capability of reverting to a backed-up version of the NMC-RX software later. During installation, backup application files are saved to an installation-specific folder in the rpbk directory, located in the installation directory. A revert script is also included in this directory.

If you need to revert to a previous version, run the script *nmc-rx-revert* in the folder of the version you want to revert to. For full installation upgrades, all data entered into the application between the dates of the upgrade and the date you are performing the reversion will be lost (a warning is displayed beforehand). For client-only upgrades, no warning appears because no database information is stored on a client-only system.

Exiting the NMC-RX Application

When you have finished configuring your E-series router and have saved the changes you want, you can exit the application.

To exit the NMC-RX application:

1. From the Network Workshop, choose Exit from the File menu.
2. Click Yes in the confirmation dialog box.