

## Chapter 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.

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## System Requirements

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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)

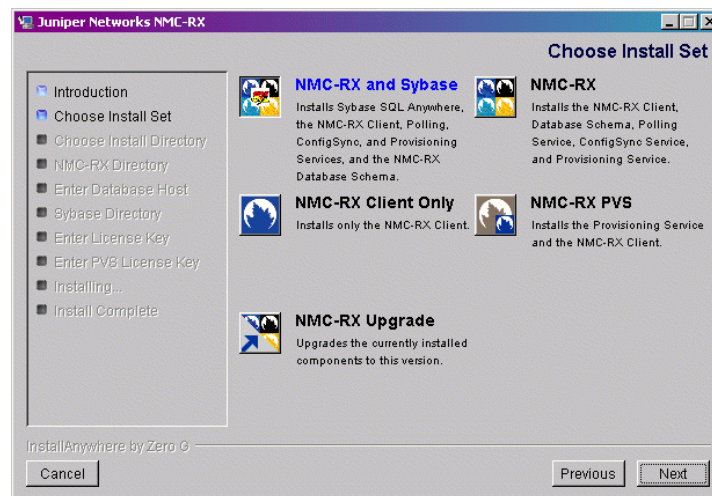
266 MHz

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>

## Installing the NMC-RX Application

There are five installation sets to choose from when you install the NMC-RX Element Management System.



**NMC-RX and Sybase**—Installs Sybase SQL Anywhere, the NMC-RX Element Management System client software, Polling service, ConfigSync service, Provisioning service, and the NMC-RX database schema.

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

**NMC-RX**—Installs the NMC-RX Element Management System client software, database schema, Polling service, ConfigSync service, and Provisioning service.

If you plan to uninstall a previously installed NMC-RX application and reinstall it again, and you have either installed the Sybase database on this system or the Sybase database is accessible on another system, 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, you may 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.

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**NMC-RX PVS**—Installs the NMC-RX Element Management System client software and the Provisioning service (PVS).

**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 that is listed in Table 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 after performing an upgrade, see *Reverting to a Previous Software Installation* on page 20.

**Table 3: Software Upgrade Compatibility**

If You Have This Version Installed	You May Upgrade to This Version
4.1.x	5.0.x, 5.1.x, 5.2.x, 5.3.x
5.0.x	5.1.0, 5.2.x, 5.3.x
5.1.x	5.2.x, 5.3.x
5.2.x	5.3.x

See Table 4 for a description of each component.

**Table 4: 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
Provisioning service	Provides an optional, programmatic application programming interface (API) for integration with the NMC-RX Element Management System application

## Installing or Upgrading the Software



**NOTE:** Before upgrading the NMC-RX software, make sure all NMC-RX processes are shut down.

To install or upgrade the NMC-RX application:

1. Insert the NMC-RX CD in your CD drive and perform one of the following:

Windows: If the installation program does not autoplay, double-click `install.exe` in the Windows directory on the CD drive.

Solaris: Run `install.bin`.

2. Follow the instructions that appear on the screen.

3. When the installation is finished, perform one of the following:

Windows: Click Done and reboot your system.

The installation places a shortcut on your desktop for each application and service that you installed.

Solaris: Click Done.



**NOTE:** To obtain an NMC-RX or Provisioning service license key, please contact your Juniper Networks sales representative. If you would like to change your license key, see *Modifying Your License Keys* on page 18.

## 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. We recommend that you start the Polling service and the ConfigSync service before running the NMC-RX application.



**NOTE:** Scripts that launch NMC-RX applications and services are available for Solaris installations, and can be found in the < NMC-RX installation directory> /utils directory. See Using Solaris Scripts on page 18.

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## NMC-RX Application Components

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The following sections describe each NMC-RX component.

### 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.

#### Running the Resource Configurator on Windows

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 or ConfigSync service are running on this workstation, you must restart each service so that changes made in the Resource Configurator are reflected.

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#### Running the Resource Configurator on Solaris

To run the Resource Configurator from the shell:

1. Enter `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.

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

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

## Database Service

You must start the database before you can run the NMC-RX application, either locally or on a remote system (that is configured through NMC-RX Resources).

### Starting the Database Server Locally on Windows

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.

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### Starting the Database Server Locally on Solaris

If you do not use 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.

To start the database service, run **nmcrxdb** from the utils directory or from the command line:

For the NMC-RX database connection, use:

```
dbsrv7 -ud -ti 0 NMC-RX.db
```

For the DemoDB database connection, use:

```
dbsrv7 -ti 0 NMC-RXDemo.db
```

## **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.

You can configure the Polling service from < NMC-RX installation directory> /bin/ by running **./NMC-RXResources** or using the Resource Configurator (available from the NMC-RX application).

Some problems do not stop the Polling service from running or remaining active. If any problems occur, check < NMC-RX installation directory> /log/PollingServer.log for recent messages.

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.

### **Starting the Polling Service in Windows**

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.

### **Starting the Polling Service in Solaris**

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:** The registry port default is port 1099.

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## **ConfigSync Service**

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

You can configure the ConfigSync service from < NMC-RX installation directory> /bin/ by running **./NMC-RXResources** or using the Resource Configurator (available from the NMC-RX application).

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, use FTP to add a file to the ifStack directory and verify that it can be seen and accessed.

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

### Starting the ConfigSync Service on Windows

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

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.

### Starting the ConfigSync Service on Solaris

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



**NOTE:** The registry port default is port 1098.

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## Provisioning Service

The NMC-RX Provisioning Service (PVS) provides an optional, programmatic application programming interface (API) for integration with the NMC-RX Element Management System application.

The NMC-RX database acts as a repository of information to be used both by NMC-RX client GUIs and by clients accessing the NMC-RX application through the provisioning interface. You must install NMC-RX Element Management System software before running NMC-RX Provisioning Service.



**NOTE:** For more information about using the NMC-RX Provisioning Service, see the *NMC-RX Provisioning Service User Guide* .

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## Installing the NMC-RX Provisioning Service

The NMC-RX Provisioning Service package is installed along with the following installation sets:

- NMC-RX and Sybase
- NMC-RX
- NMC-RX PVS
- Full installation upgrades



**NOTE:** When upgrading an installation that contains the NMC-RX PVS software, any changes that were made after the initial installation are overwritten. In addition, any modifications to the files found in the pvsSampleScripts directory are lost.

## Starting the NMC-RX Provisioning Service

NMC-RX Provisioning Service Release is a separately licensed NMC-RX component. The four components that must be run in order to start the Provisioning service are:

- NMC-RX Database service
- CORBA Naming service
- NMC-RX Provisioning RMI service
- NMC-RX Provisioning CORBA Bridge service.

For information about starting and using the NMC-RX Provisioning Service, see the *NMC-RX Provisioning Service User Guide* .

## 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 devices you are working with.

### ***Starting the NMC-RX Client on Windows***

To start 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.

## Starting the NMC-RX Client on Solaris

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

## Modifying Your License Keys

To modify your NMC-RX or Provisioning service 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(s), and click Verify License.

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

4. If the license string(s) is valid, click OK.



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

## Using Solaris 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 5.



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

**Table 5: Scripts for Solaris**

Script	Function
allnmcRX	Affects the database, Polling service, ConfigSync service, and the NMC-RX application <b>NOTE:</b> 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)

**Table 5: Scripts for Solaris (continued)**

Script	Function
nmcrcxdb	Affects the NMC-RX database
nmcrcxdemodb	Affects the NMC-RX Demo database
polling	Affects the Polling service

## 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 the script 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 stopped and restarted. Any clients currently running are notified that the database connection has been lost and that they need to be restarted.



**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

This parameter 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.

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## Help or ?

Each of the parameters display the script's command line parameters.

## Reverting to a Previous Software Installation

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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

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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.