

## Chapter 2

# Installing and Running the NMC-RX Application

This chapter describes how to install 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 the minimum requirements that are listed in the following sections.

### Windows

Your Windows system must meet the following minimum requirements to run the NMC-RX application:

- CD-ROM drive
- Windows 98, Windows 2000, Windows XP, NT 4.0 or later (preferred)
- 256 MB of RAM
- 330 MB of space on the hard drive (when installing)
- 500 MHz

### Solaris

Your Solaris system must meet the following minimum requirements to run the NMC-RX application:

- CD-ROM drive
- Solaris 2.8
- 256 MB of RAM
- 300 MB of space on the hard drive (when installing)
- 400 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

You can choose from six installation sets 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, Config Sync Services, Provisioning Service, and the NMC-RX database schema.

If you are installing the NMC-RX application for the first time, choose this installation set.



**NOTE:** To obtain NMC-RX, Provisioning Service, and Config Sync Services license keys, please contact your Juniper Networks sales representative.

- **NMC-RX**—Installs the NMC-RX Element Management System client software, database schema, Polling Service, Config Sync Services, and Provisioning Service.

If you plan to uninstall a previously installed NMC-RX application and reinstall it again, and if 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, Config Sync Services, and the Sybase Adaptive Server Anywhere database are 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.

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



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

For users who want to view sample scripts that ship with the NMC-RX PVS installer, see *NMC-RX User Guide, Vol. 2, Chapter 11, Using the Provisioning Service*.

- **NMC-RX Upgrade**—Upgrades the currently installed components to the version of the software that you are installing.

When you complete an upgrade but want to revert to a previously installed version of the software, see *Reverting to a Previous Software Installation on page 24*.

- **Config Sync Services**—Installs one or more Config Sync Services on your workstation. The NMC-RX database must be running to install Config Sync Services.

Each Config Sync Service is assigned a service ID during installation. When scheduling tasks, a task is assigned to a specific Config Sync Service. Each Config Sync Service is only responsible for those tasks assigned to its service ID.

If the number of Config Sync Services already installed in the NMC-RX application and connected to the database is equal to the number allowed by the license key, a dialog box appears indicating that the maximum number of Config Sync Services is reached. Click OK to close the dialog box and exit the installation.

## NMC-RX Components

Table 4 describes each NMC-RX 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 by means of 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

**Table 4: NMC-RX Application Components (continued)**

Application/Service	Description
Config Sync Services	<ul style="list-style-type: none"> <li>■ 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</li> <li>■ Provides task scheduling services</li> <li>■ Provides software download services</li> <li>■ Supports the configuration save and restore function of the application</li> </ul>
Resource Configurator	Provides an efficient graphical interface for setting up SNMP and the Sybase, Polling, and Config Sync Services parameters
Provisioning Service	Provides an optional application programming interface (API) for integration with the NMC-RX Element Management System application

### Installing Either SNMPv2c or SNMPv3

During installation, you must choose between installing SNMPv2c or SNMPv3 of the NMC-RX application. If you want to switch versions after the application has been installed, you must uninstall the current version and install the other version.

This SNMP option is available for the following installation sets:

- NMC-RX and Sybase
- NMC-RX

See *Chapter 9, Configuring Security Settings* for more information on SNMP.

### Installing or Upgrading the Software



**NOTE:** Before you upgrade the NMC-RX software, be sure to shut down all NMC-RX processes.

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. Make the desired configuration changes.



**NOTE:** To change your license keys, see *Modifying a License Key* on page 21.

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.

### **Before You Run the NMC-RX Application**

To run the NMC-RX application, you must install Sybase Adaptive Server Anywhere on a machine that the NMC-RX application can reach.

You must start the Database Service before you can run the NMC-RX application. We recommend that you start the Polling Service and the Config Sync Services before you run the NMC-RX application.



**NOTE:** Scripts that start NMC-RX applications and services are available for Solaris installations and are located in the *< NMC-RX installation directory > /utils* directory. For more information, see *Using Solaris Scripts on page 22*.

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### **Starting the 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 server, double-click the appropriate Database icon on your desktop. If you run the database locally, the Database icon appears in the Windows system tray. This icon indicates that the database is available to the NMC-RX application.

If you run 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 you start 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 must 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 server, run **nmcrcxdb** from the *< NMC-RX installation directory >/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
```

## Starting the Polling Service

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You should run the Polling Service before you run the NMC-RX application, although it is not required. The Polling Service monitors device status.

The Polling Service generates a log of events. 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 is installed on your workstation. but Polling Service may be running on another machine that is connected to the database.

You can find NMC-RX client polling-specific settings in the NMC-RX Resource Configurator dialog box and Polling Service-specific settings in the Polling Service tab, which you access by choosing the NMC-RX Application Settings option in the Configuration menu. For more information, see *NMC-RX User Guide, Vol. 2, Chapter 14, Configuring NMC-RX Services Using the Resource Configurator*.

## Starting the Polling Service in Windows

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**NOTE:** Run only one instance of the Polling Service per NMC-RX database. For example, if two users are running the NMC-RX application and are sharing a database, they should run only one Polling Service between them.

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To run the Polling Service:

- Double-click the NMC-RX Polling icon on your desktop, or click Start > Programs > NMC-RX > Polling Service.
- 



**NOTE:** If the Polling Service cannot connect to the database, the service does not start, and a message appears indicating that the database is unavailable.

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The Polling Service console window opens, which displays the ongoing activity of the Polling Service.

## Starting the Polling Service in Solaris

To start the Polling Service from *< NMC-RX installation directory >/bin/*, run **./PollingService** or use the **polling** script, which is located in the *NMC-RX installation directory/utils* directory.

## Starting Config Sync Services

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Config Sync Services must be running to discover the devices that you want to configure.



**NOTE:** All Config Sync Service settings have moved into the NMC-RX database. To change the settings in the NMC-RX application, choose NMC-RX Application Settings in the Configuration menu. The Config Sync Service settings are also requested during installation. Each workstation on which you install Config Sync Services has its own specific settings.

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### Starting the Config Sync Services in Windows

We recommend that you start and run Config Sync Services before you start the NMC-RX application. Without these services, an error message appears when you try to create or update a new device. If you encounter such an error, start one or more Config Sync Services.

You can, however, start Config Sync Services after you start the NMC-RX application because the NMC-RX application periodically tries to detect Config Sync Services. For more information, see *Chapter 5, Configuring NMC-RX Application Settings*.

To run Config Sync Services:

- Double-click the CfgSyncSvc <serviceID> icon, or click Start > Programs > Nmc-rx > CfgSyncSvc <serviceID>

### Starting Config Sync Services in Solaris

To start a Config Sync Service from <NMC-RX installation directory>/bin/, run `./CfgSyncSvc <serviceID> /CfgSyncSvc <serviceID>` or use the `configsync` script, which is located in the <NMC-RX installation directory>/utils directory. To start the `configsync` script, run either `configsync start all` or `configsync start <serviceID>`.

Additionally, you can add the word “console” to either command to start Config Sync Services in a window instead of the background. For example:

**configsync start all console**

### Troubleshooting Config Sync Services

While discovering a device, if an FTP file transfer error occurs, check that:

- FTP directories configured on the Config Sync Services tab in the NMC-RX Application Settings exist on your machine
- FTP works on the Config Sync Services machine

## Starting the NMC-RX Client

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You must start Config Sync Services before you can update or discover devices with the NMC-RX client. Run the Polling Service only when you want to view the status of your devices.

### 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

To start the NMC-RX application from `<NMC-RX installation directory>/bin/`, run `./NMC-RX` or use the `nmcrx` script, which is located in the `<NMC-RX installation directory>/utils` directory.

## Modifying a License Key

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To modify your Config Sync Services or Provisioning Service license key:

1. From the NMC-RX client Help menu, choose 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 a text field that you can edit, 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 an 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.

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## Using Solaris Scripts

Scripts that are provided for all NMC-RX application components are located in the `<NMC-RX installation directory>/utils` directory. The **allnmcrx** script starts the NMC-RX database and all NMC-RX components.

To start 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 installation directory>/utils` directory.

**Table 5: Scripts for Solaris**

Script	Function
allnmcrx	Affects the Database, Polling Service, Config Sync Services, and the NMC-RX application <b>NOTE:</b> This script is the recommended way to start all NMC-RX Services on Solaris.
allservices	Affects the database, Polling Service, and Config Sync Services
configsycn	Affects the Config Sync Services <b>NOTE:</b> All Config Sync Services parameters require that you specify either a particular service ID or the parameter <b>all</b> . If you specify <b>all</b> , the requested operation is applied to all Config Sync Services at this location. For example: <b>configsycn start &lt;serviceID&gt;</b> or <b>configsycn start all</b>
nmcrcx	Affects the NMC-RX application (has only <b>start</b> and <b>console</b> options)
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, stop, restart, console, status, help or ?, which are described in the following sections.

### Start

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

In scripts that affect multiple applications, pauses are added to be sure that the database is 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

This parameter checks the status of the application. 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 for multiple applications, the status of each application is checked. The applications that are running are shut down, and those that are not running display a message that they are not running. You are then notified whether the application was successfully stopped or not. NMC-RX clients are not shut down.

## Restart

This parameter checks the status of the application that you want to restart. 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 is lost and needs a restart.



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

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## 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 console output appears in this window.

## Status

This parameter reports whether or not an application is running. For multiple application 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 displays the command-line parameters of the script.

## 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 backup version of the NMC-RX software later. During installation, backup application files are saved to an installation-specific folder in the *rpbk* directory, which is located in the installation directory. A **revert** script is also included in this directory.

To revert to a previous version, run the script **nmc-rx-revert** in the folder of the version to which you want to revert. For full installation upgrades, all data entered into the application between the dates of the upgrade and the date you are performing the reversion is 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 finish configuring your E-series router and save your changes, 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.