



NMC-RX™ Element Management System for Juniper Networks® Routing Platforms

Release Notes

Release 7.3.0

Juniper Networks, Inc.

1194 North Mathilda Avenue
Sunnyvale, CA 94089

USA

408-745-2000

www.juniper.net

Part Number: 162-01496-00, Revision A00

Juniper Networks, the Juniper Networks logo, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. JUNOS and JUNOSe are trademarks of Juniper Networks, Inc. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners.

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Products made or sold by Juniper Networks (including the ERX-310, ERX-705, ERX-710, ERX-1410, ERX-1440, M5, M7i, M10, M10i, M20, M40, M40e, M160, M320, and T320 routers, T640 routing node, and the JUNOS, JUNOSe, and SDX-300 software) or components thereof might be covered by one or more of the following patents that are owned by or licensed to Juniper Networks: U.S. Patent Nos. 5,473,599, 5,905,725, 5,909,440, 6,192,051, 6,333,650, 6,359,479, 6,406,312, 6,429,706, 6,459,579, 6,493,347, 6,538,518, 6,538,899, 6,552,918, 6,567,902, 6,578,186, and 6,590,785.

Copyright © 2006, Juniper Networks, Inc.
All rights reserved. Printed in USA.

NMC-RX™ Element Management System Release Notes, Release 7.3.0

Writing: John Borelli
Editing: Fran Mues
Illustration: John Borelli
Cover Design: Edmonds Design

Revision History
26 October 2006—Revision 1

The information in this document is current as of the date listed in the revision history.

Software License

The terms and conditions for using this software are described in the software license contained in the acknowledgment to your purchase order or, to the extent applicable, to any reseller agreement or end-user purchase agreement executed between you and Juniper Networks. By using this software, you indicate that you understand and agree to be bound by those terms and conditions.

Generally speaking, the software license restricts the manner in which you are permitted to use the software and may contain prohibitions against certain uses. The software license may state conditions under which the license is automatically terminated. You should consult the license for further details.

For complete product documentation, please see the Juniper Networks Web site at www.juniper.net/techpubs.

END USER LICENSE AGREEMENT

READ THIS END USER LICENSE AGREEMENT ("AGREEMENT") BEFORE DOWNLOADING, INSTALLING, OR USING THE SOFTWARE. BY DOWNLOADING, INSTALLING, OR USING THE SOFTWARE OR OTHERWISE EXPRESSING YOUR AGREEMENT TO THE TERMS CONTAINED HEREIN, YOU (AS CUSTOMER OR IF YOU ARE NOT THE CUSTOMER, AS A REPRESENTATIVE/AGENT AUTHORIZED TO BIND THE CUSTOMER) CONSENT TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT OR CANNOT AGREE TO THE TERMS CONTAINED HEREIN, THEN (A) DO NOT DOWNLOAD, INSTALL, OR USE THE SOFTWARE, AND (B) YOU MAY CONTACT JUNIPER NETWORKS REGARDING LICENSE TERMS.

- 1. The Parties.** The parties to this Agreement are Juniper Networks, Inc. and its subsidiaries (collectively "Juniper"), and the person or organization that originally purchased from Juniper or an authorized Juniper reseller the applicable license(s) for use of the Software ("Customer") (collectively, the "Parties").
- 2. The Software.** In this Agreement, "Software" means the program modules and features of the Juniper or Juniper-supplied software, and updates and releases of such software, for which Customer has paid the applicable license or support fees to Juniper or an authorized Juniper reseller. "Embedded Software" means Software which Juniper has embedded in the Juniper equipment.
- 3. License Grant.** Subject to payment of the applicable fees and the limitations and restrictions set forth herein, Juniper grants to Customer a non-exclusive and non-transferable license, without right to sublicense, to use the Software, in executable form only, subject to the following use restrictions:
 - a. Customer shall use the Embedded Software solely as embedded in, and for execution on, Juniper equipment originally purchased by Customer from Juniper or an authorized Juniper reseller.
 - b. Customer shall use the Software on a single hardware chassis having a single processing unit, or as many chassis or processing units for which Customer has paid the applicable license fees; provided, however, with respect to the Steel-Belted Radius or Odyssey Access Client software only, Customer shall use such Software on a single computer containing a single physical random access memory space and containing any number of processors. Use of the Steel-Belted Radius software on multiple computers requires multiple licenses, regardless of whether such computers are physically contained on a single chassis.
 - c. Product purchase documents, paper or electronic user documentation, and/or the particular licenses purchased by Customer may specify limits to Customer's use of the Software. Such limits may restrict use to a maximum number of seats, registered endpoints, concurrent users, sessions, calls, connections, subscribers, clusters, nodes, realms, devices, links, ports or transactions, or require the purchase of separate licenses to use particular features, functionalities, services, applications, operations, or capabilities, or provide throughput, performance, configuration, bandwidth, interface, processing, temporal, or geographical limits. In addition, such limits may restrict the use of the Software to managing certain kinds of networks or require the Software to be used only in conjunction with other specific Software. Customer's use of the Software shall be subject to all such limitations and purchase of all applicable licenses.
 - d. For any trial copy of the Software, Customer's right to use the Software expires 30 days after download, installation or use of the Software. Customer may operate the Software after the 30-day trial period only if Customer pays for a license to do so. Customer may not extend or create an additional trial period by re-installing the Software after the 30-day trial period.
 - e. The Global Enterprise Edition of the Steel-Belted Radius software may be used by Customer only to manage access to Customer's enterprise network. Specifically, service provider customers are expressly prohibited from using the Global Enterprise Edition of the Steel-Belted Radius software to support any commercial network access services.

The foregoing license is not transferable or assignable by Customer. No license is granted herein to any user who did not originally purchase the applicable license(s) for the Software from Juniper or an authorized Juniper reseller.

4. Use Prohibitions. Notwithstanding the foregoing, the license provided herein does not permit the Customer to, and Customer agrees not to and shall not: (a) modify, unbundle, reverse engineer, or create derivative works based on the Software; (b) make unauthorized copies of the Software (except as necessary for backup purposes); (c) rent, sell, transfer, or grant any rights in and to any copy of the Software, in any form, to any third party; (d) remove any proprietary notices, labels, or marks on or in any copy of the Software or any product in which the Software is embedded; (e) distribute any copy of the Software to any third party, including as may be embedded in Juniper equipment sold in the secondhand market; (f) use any 'locked' or key-restricted feature, function, service, application, operation, or capability without first purchasing the applicable license(s) and obtaining a valid key from Juniper, even if such feature, function, service, application, operation, or capability is enabled without a key; (g) distribute any key for the Software provided by Juniper to any third party; (h) use the Software in any manner that extends or is broader than the uses purchased by Customer from Juniper or an authorized Juniper reseller; (i) use the Embedded Software on non-Juniper equipment; (j) use the Software (or make it available for use) on Juniper equipment that the Customer did not originally purchase from Juniper or an authorized Juniper reseller; (k) disclose the results of testing or benchmarking of the Software to any third party without the prior written consent of Juniper; or (l) use the Software in any manner other than as expressly provided herein.

5. Audit. Customer shall maintain accurate records as necessary to verify compliance with this Agreement. Upon request by Juniper, Customer shall furnish such records to Juniper and certify its compliance with this Agreement.

6. Confidentiality. The Parties agree that aspects of the Software and associated documentation are the confidential property of Juniper. As such, Customer shall exercise all reasonable commercial efforts to maintain the Software and associated documentation in confidence, which at a minimum includes restricting access to the Software to Customer employees and contractors having a need to use the Software for Customer's internal business purposes.

7. Ownership. Juniper and Juniper's licensors, respectively, retain ownership of all right, title, and interest (including copyright) in and to the Software, associated documentation, and all copies of the Software. Nothing in this Agreement constitutes a transfer or conveyance of any right, title, or interest in the Software or associated documentation, or a sale of the Software, associated documentation, or copies of the Software.

8. Warranty, Limitation of Liability, Disclaimer of Warranty. The warranty applicable to the Software shall be as set forth in the warranty statement that accompanies the Software (the "Warranty Statement"). Nothing in this Agreement shall give rise to any obligation to support the Software. Support services may be purchased separately. Any such support shall be governed by a separate, written support services agreement. TO THE MAXIMUM EXTENT PERMITTED BY LAW, JUNIPER SHALL NOT BE LIABLE FOR ANY LOST PROFITS, LOSS OF DATA, OR COSTS OR PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, THE SOFTWARE, OR ANY JUNIPER OR JUNIPER-SUPPLIED SOFTWARE. IN NO EVENT SHALL JUNIPER BE LIABLE FOR DAMAGES ARISING FROM UNAUTHORIZED OR IMPROPER USE OF ANY JUNIPER OR JUNIPER-SUPPLIED SOFTWARE. EXCEPT AS EXPRESSLY PROVIDED IN THE WARRANTY STATEMENT TO THE EXTENT PERMITTED BY LAW, JUNIPER DISCLAIMS ANY AND ALL WARRANTIES IN AND TO THE SOFTWARE (WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE), INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT DOES JUNIPER WARRANT THAT THE SOFTWARE, OR ANY EQUIPMENT OR NETWORK RUNNING THE SOFTWARE, WILL OPERATE WITHOUT ERROR OR INTERRUPTION, OR WILL BE FREE OF VULNERABILITY TO INTRUSION OR ATTACK. In no event shall Juniper's or its suppliers' or licensors' liability to Customer, whether in contract, tort (including negligence), breach of warranty, or otherwise, exceed the price paid by Customer for the Software that gave rise to the claim, or if the Software is embedded in another Juniper product, the price paid by Customer for such other product. Customer acknowledges and agrees that Juniper has set its prices and entered into this Agreement in reliance upon the disclaimers of warranty and the limitations of liability set forth herein, that the same reflect an allocation of risk between the Parties (including the risk that a contract remedy may fail of its essential purpose and cause consequential loss), and that the same form an essential basis of the bargain between the Parties.

9. Termination. Any breach of this Agreement or failure by Customer to pay any applicable fees due shall result in automatic termination of the license granted herein. Upon such termination, Customer shall destroy or return to Juniper all copies of the Software and related documentation in Customer's possession or control.

10. Taxes. All license fees for the Software are exclusive of taxes, withholdings, duties, or levies (collectively "Taxes"). Customer shall be responsible for paying Taxes arising from the purchase of the license, or importation or use of the Software.

11. Export. Customer agrees to comply with all applicable export laws and restrictions and regulations of any United States and any applicable foreign agency or authority, and not to export or re-export the Software or any direct product thereof in violation of any such restrictions, laws or regulations, or without all necessary approvals. Customer shall be liable for any such violations. The version of the Software supplied to Customer may contain encryption or other capabilities restricting Customer's ability to export the Software without an export license.

12. Commercial Computer Software. The Software is "commercial computer software" and is provided with restricted rights. Use, duplication, or disclosure by the United States government is subject to restrictions set forth in this Agreement and as provided in DFARS 227.7201 through 227.7202-4, FAR 12.212, FAR 27.405(b)(2), FAR 52.227-19, or FAR 52.227-14(ALT III) as applicable.

13. Interface Information. To the extent required by applicable law, and at Customer's written request, Juniper shall provide Customer with the interface information needed to achieve interoperability between the Software and another independently created program, on payment of applicable fee, if any. Customer shall observe strict obligations of confidentiality with respect to such information and shall use such information in compliance with any applicable terms and conditions upon which Juniper makes such information available.

14. Third Party Software. Any licensor of Juniper whose software is embedded in the Software and any supplier of Juniper whose products or technology are embedded in (or services are accessed by) the Software shall be a third party beneficiary with respect to this Agreement, and such licensor or vendor shall have the right to enforce this Agreement in its own name as if it were Juniper. In addition, certain third party software may be provided with the Software and is subject to the accompanying license(s), if any, of its respective owner(s). To the extent portions of the Software are distributed under and subject to open source licenses obligating Juniper to make the source code for such portions publicly available (such as the GNU General Public License ("GPL") or the GNU Library General Public License ("LGPL")), Juniper will make such source code portions (including Juniper modifications, as appropriate) available upon request for a period of up to three years from the date of distribution. Such request can be made in writing to Juniper Networks, Inc., 1194 N. Mathilda Ave., Sunnyvale, CA 94089, ATTN: General Counsel. You may obtain a copy of the GPL at <http://www.gnu.org/licenses/gpl.html>, and a copy of the LGPL at <http://www.gnu.org/licenses/lgpl.html>.

15. Miscellaneous. This Agreement shall be governed by the laws of the State of California without reference to its conflicts of laws principles. The provisions of the U.N. Convention for the International Sale of Goods shall not apply to this Agreement. For any disputes arising under this Agreement, the Parties hereby consent to the personal and exclusive jurisdiction of, and venue in, the state and federal courts within Santa Clara County, California. This Agreement constitutes the entire and sole agreement between Juniper and the Customer with respect to the Software, and supersedes all prior and contemporaneous agreements relating to the Software, whether oral or written (including any inconsistent terms contained in a purchase order), except that the terms of a separate written agreement executed by an authorized Juniper representative and Customer shall govern to the extent such terms are inconsistent or conflict with terms contained herein. No modification to this Agreement nor any waiver of any rights hereunder shall be effective unless expressly assented to in writing by the party to be charged. If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remainder of this Agreement. This Agreement and associated documentation has been written in the English language, and the Parties agree that the English version will govern. (For Canada: Les parties aux présentes confirment leur volonté que cette convention de même que tous les documents y compris tout avis qui s'y rattache, soient rédigés en langue anglaise. (Translation: The parties confirm that this Agreement and all related documentation is and will be in the English language)).

Table of Contents

Release 7.3.0	1
Overview	1
Before You Start	1
About Release 7.3.0 Documentation.....	2
Contacting Customer Service.....	2
Updating the NMC-RX License Keys	2
New Features and Enhancements	2
PVS Support	2
Creating Multiple VLAN and S-VLAN Services Using the Configuration Wizard	2
New Configuration Templates	3
Creating Profiles	3
Installation Information.....	3
Known Problems	3
Known Limitations.....	4
Troubleshooting.....	5
Fixed Problems.....	5

Release 7.3.0

These *Release Notes* are for NMC-RX Element Management System Release 7.3.0. Unless specified otherwise, information in these *Release Notes* pertains to both the Windows and Sun Solaris versions of the release 7.3.0 software.



NOTE: If the information in these *Release Notes* differs from the information found in the product documentation, follow these *Release Notes*.

- Overview on page 1
- New Features and Enhancements on page 2
- Installation Information on page 3
- Known Problems on page 3
- Known Limitations on page 4
- Troubleshooting on page 5
- Fixed Problems on page 5

Overview

The NMC-RX application allows you to manage, configure, and monitor the E-series routers in your network and to communicate with them to obtain a complete and accurate picture of the network services that you provide to your customers.

Before You Start

Before you use the NMC-RX application, we suggest that you read these *Release Notes* in their entirety, especially the sections *Known Problems* and *Known Limitations*.

About Release 7.3.0 Documentation

With the NMC-RX application, you receive the following documentation:

- Online Help (integral to the NMC-RX application)
- A PDF version of the *NMC-RX User Guide* (Vol. 1 and Vol. 2)
- A PDF version of the *NMC-RX Release Notes* (this document)

Contacting Customer Service

For technical support, open a support case with the Case Manager link at <http://www.juniper.net/support/> or call 1-888-314-JTAC (from the United States, Canada, or Mexico) or 1-408-745-9500 (from elsewhere).

Updating the NMC-RX License Keys

If you need to update your license keys after you install the NMC-RX application, choose NMC-RX Licensing from the Help menu. In the NMC-RX Licensing Information dialog box, you can change either your Config Sync Services or Provisioning Service license key.

New Features and Enhancements

This release is intended to work with JUNOS Releases 7.3.x, 7.2.x, 7.1.x, 7.0.x, and 6.1.x. The following features and enhancements were added to release 7.3.0.

PVS Support

These enhancements have been made to support the NMC-RX Element Management System (EMS) Provisioning Service (PVS):

- PPP interfaces, PPPoE interfaces, and PPPoE subinterfaces are now supported.
- IfAlias parameters (Description and Admin Status fields) are now configurable on IP interfaces.
- New ATM subinterface attributes have been added to support Bridged Ethernet encapsulation types for dynamic interfaces.
- Twenty CORBA clients can be connected simultaneously to PVS.

Creating Multiple VLAN and S-VLAN Services Using the Configuration Wizard

You can rapidly provision large numbers of VLANs and/or S-VLANs by using the VLAN Services Configuration Wizard. The wizard enables you to specify a single set of parameters that can be used for the provisioning of one or more VLAN/S-VLAN stackings.

New Configuration Templates

New templates have been added for the creation of GE interfaces.

Creating Profiles

The NMC-RX application enables you to assign IP, PPP, and Point to Point Protocol over Ethernet (PPPoE) parameters to a profile and associate the profile with an ATM subinterface, PPP interface, or PPPoE interface on an E-series device. This process has been redesigned and made easier to use.

During profile creation, you can now apply the profile on just one device or on all routers being managed by the NMC-RX application.

Installation Information

See *NMC-RX User Guide, Vol. 1, Chapter 2, Installing and Running the NMC-RX Application*.

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:

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

Known Problems

This section lists the known problems in release 7.3.0.

- An error message appears when an update is performed on an E320 line module with only one IOA present and online. The message states that the other IOA is not online. Clicking OK completes the update of the line module and the IOA.
- When you use Add/Remove Programs in Windows to remove the Juniper Networks NMC-RX application, all Config Sync Services are also removed. However, entries for the Config Sync Services still appear in the Add/Remove Programs dialog box.

Workaround: Close, then reopen the Add/Remove Programs dialog box to refresh it and confirm that the Config Sync Services entries no longer appear.

- An SNMP error occurs when you try to configure an IP static route and select a nonbroadcast multiaccess (NBMA) or broadcast IP interface as the next hop. Only IP interfaces with a category of point-to-point can be used as the next hop for an IP static route.
- IP interfaces that you choose for any forward or next interface rules within a policy list must exist on the same virtual router. An SNMP error occurs if you add a forward or next interface rule to the policy list that specifies an IP interface from a different virtual router.

Known Limitations

This section lists the known limitations in Release 7.3.0.

- The Provisioning Service (PVS) supports up to twenty CORBA clients connected at the same time. There is a limitation such that the CORBA clients cannot initialize their connections to PVS simultaneously. Each CORBA client needs to be started and initiate its connection to PVS one at a time. Once the client's initial connection to PVS is made, PVS can support requests from other clients (up to 20) at the same time.
- When you click Install on the Pre-Install Summary dialog box during installation, there is a short amount of time when the database updates. If you click Cancel during this time, the database remains locked for the installation of additional Config Sync Services.

Recommendation: Do not click Cancel after the installation begins. Instead, allow the installation to complete, and then use the NMC-RX Uninstaller or Config Sync Services uninstaller to remove the desired components.

- When you use Bulk Services to create a large number of objects, limit the number of objects to a maximum of 9000. Otherwise, you run the risk of running out of memory. To create additional objects, you can exit the NMC-RX application and then restart.
- Currently, the NMC-RX application allows you to start multiple Polling Services at the same time. Only one Polling Service is actually used by the application. There will be no disruption of service if you start additional services; however, it is a waste of resources to do so, and currently no error message is displayed to indicate any displacement of the service being used. All instances of polling should be closed, and only one restarted.
- When the Config Sync Services and the Polling Service are started before the database has completely initialized, an error occurs.

Recommendation: Wait until the database is initialized before launching other NMC-RX components. If an error has occurred, close all NMC-RX components (including the database) and start over.

- An error may occur if, during a device update, you attempt to make changes to a scheduled task and save them.

Workaround: Wait until the device has been updated, and then edit the scheduled tasks.

Troubleshooting

If any of the following conditions appear, try the suggested workaround(s).

- Two causes prevent WebHelp from starting on Solaris:
 - You have not defined the Netscape path in the PATH variable. This results in an error message being displayed in the NMC-RX window.

Workaround: Define the Netscape path.
 - You may not have permission to connect to the X server. This prevents Netscape from being started. When this happens, no error message is generated, and you may think that the online help does not work properly.

Workaround: Enter the command `xhost < hostname >` in a terminal window. Doing this disables the X server security and allows the Netscape browser to be displayed.

Fixed Problems

The following problems reported in previous releases have been fixed:

- Configuration of PPP Authentication does not support the eap authentication type.

PPP configuration does not correctly read from the device any value that is set. Combinations of pap and chap are correctly set through the NMC-RX application on the device; however any attempt at using the application to view the applied setting results in “None”.
- Attempts at saving an invalid Initial MRU value as a template on the VLAN Services Wizard results in an exception being thrown.

