



**Avaya Integrated Management
Release 4.0**
Configuring Red Hat Linux

555-233-152
Issue 7
May 2007

© 2007 Avaya Inc.
All Rights Reserved.

Notice

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Avaya Inc. can assume no liability for any errors. Changes and corrections to the information in this document may be incorporated in future releases.

For full legal page information, please see the complete document, Avaya Legal Page for Software Documentation, Document number 03-600758.

To locate this document on the website, simply go to <http://www.avaya.com/support> and search for the document number in the search box.

Documentation disclaimer

Avaya Inc. is not responsible for any modifications, additions, or deletions to the original published version of this documentation unless such modifications, additions, or deletions were performed by Avaya. Customer and/or End User agree to indemnify and hold harmless Avaya, Avaya's agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation to the extent made by the Customer or End User.

Link disclaimer

Avaya Inc. is not responsible for the contents or reliability of any linked Web sites referenced elsewhere within this documentation, and Avaya does not necessarily endorse the products, services, or information described or offered within them. We cannot guarantee that these links will work all of the time and we have no control over the availability of the linked pages.

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language, as well as information regarding support for this product, while under warranty, is available through the following Web site:

<http://www.avaya.com/support>

Copyright

Except where expressly stated otherwise, the Product is protected by copyright and other laws respecting proprietary rights. Unauthorized reproduction, transfer, and or use can be a criminal, as well as a civil, offense under the applicable law.

Avaya support

Avaya provides a telephone number for you to use to report problems or to ask questions about your product. The support telephone number is 1-800-242-2121 in the United States. For additional support telephone numbers, see the Avaya Web site:

<http://www.avaya.com/support>

Contents

Chapter 1: Welcome	5
Purpose.	5
Prerequisites	5
Intended Audience.	5
Conventions Used in This Book	5
Additional Resources	6
Support Resources	6
Avaya Technology and Consulting (ATAC)	6
Communications, Solutions, and Integration (CSI) Group of Software Services	6
Avaya Global Services Delivery (GSD).	7
Avaya Global Technical Services.	7
Customized Management Solutions for Avaya Integrated Management.	8
Avaya Contact Information	9
Product Documentation	10
How to Access Books on the Web	10
Chapter 2: Linux Server Installation	11
Overview	11
Installing Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0	11
Upgrading Red Hat Enterprise Linux ES 3.0 or AS 3.0 to Red Hat Enterprise Linux ES 4.0 or AS 4.0	14
Verifying Installation of Required RPM Files.	15
Installing Required RPM Files	16
RPM Files Installed by System Management R4.0.	17
Security Considerations.	18

Contents

Chapter 1: Welcome

Purpose

This book explains how to set up Red Hat Linux on the server that runs components of Avaya Integrated Management.

Prerequisites

Configuring Linux requires familiarity with Linux operating systems. Experience using Red Hat is highly desirable.

Intended Audience

This book is written for system administrators who are responsible for installing software on Linux-based systems.

Conventions Used in This Book

The following typographical conventions are used:

- **Bold** type is used to indicate information that you type, buttons in a window, selections in a menu, and the **Enter** key on the keyboard. It is also used for emphasis.
- `Courier` font is used for any information that the computer screen displays.
- Arrows indicate options that you select from cascading menus; for example, “Select **File** > **Open**” means choose the **Open** option from the **File** menu.

Additional Resources

For help during installation and configuration of Integrated Management applications that run on a Linux server, see *Avaya Integrated Management Release 4.0, System Management Installation and Upgrade*, document number 14-300448.

Support Resources

Avaya provides a variety of planning, consulting, and technical services. The following sections describe the resources and services that are available.

Avaya Technology and Consulting (ATAC)

Avaya Technology and Consulting (ATAC) works with client teams to develop detailed solutions for connectivity to Avaya Communication Manager solutions. The ATAC also designs network configurations.

Communications, Solutions, and Integration (CSI) Group of Software Services

Avaya Communications, Solutions, and Integration (CSI) Group of Software Services offers customers the following services:

- Platform readiness verification
- Remote implementation and installation
- Network management server configuration
- Customer acceptance verification
- Custom on-site services

The CSI Group consists of the following two teams:

- **Converged Solutions Implementation Engineering**

The Converged Solutions Implementation Engineering (CSIE) team implements multi-site media gateway (G350/G650/G700) deployment projects for both voice and data design. The overall direction of the CSIE team is to bring the correct methodology to these complex deployments that span various regions and to provide continuity to the overall project from the voice and data implementation standpoint.

- **Data Network Implementation Engineering (formerly RNIS)**

The Data Network Implementation Engineering team implements and/or upgrades existing or new data networks. This team analyzes the customer's network design requirements and performance expectations, and then creates the hardware and software installation specification used to implement data devices including Cajun, VPN, Wireless LAN, Secure Gateways, Extreme, and multi-vendor data equipment.

The CSI Group provides support on a contract basis. You can purchase various implementation offers from the CSI Group in Tampa, Florida. See [Table 1: Customer-Accessible Resources](#) on page 9 for contact information.

Avaya Global Services Delivery (GSD)

Avaya Global Services Delivery (GSD) provides support to the Avaya Integrated Management client teams, field technicians, and customers. The GSD will bill customers for support on a time and materials basis if the following conditions exist:

- Customers do not provide remote access.
- Customers do not have a current maintenance agreement.
- Customers do not procure and install the required systems and software as defined in the Integrated Management Services Support Plan.
- Customers request support that is outside the purchase agreement.

The GSD does not support hardware or software that customers purchase from third-party vendors.

Avaya Global Technical Services

Avaya Global Technical Services answers customer calls about products in Avaya Integrated Management. They will either answer your questions directly or connect you with an associate who can answer questions about the products.

Customized Management Solutions for Avaya Integrated Management

The Integrated Management Product Team understands customer's needs and is focused on customer satisfaction. See [Table 1: Customer-Accessible Resources](#) on page 9 for contact information. The Product Team will assist customers with Avaya Integrated Management projects and will provide:

- **Project Management** — An Integrated Management project person will work with the customer to access configuration and customization requirements for any or all applications within each Avaya Integrated Management offer. If custom work is required, the evaluation will include a proposed statement of work and price. Note that this offer is *not* intended to provide installation for customers that choose to implement Integrated Management applications using Avaya Services or third-party implementation services.
- **Training** — Basic training can be performed remotely using an interactive medium to display the applications and a conference bridge for audio. On-site training can be customized to meet the customer's needs. Customized training will focus on application functionality that is relevant to the customer and provide focused knowledge transfer to facilitate application-specific training.

Avaya Contact Information

[Table 1](#) and [Table 2](#) provide contact information that you may use if you need assistance during the process of installing and setting up Avaya Integrated Management. To access the links in [Table 2](#), you must be able to access the Avaya intranet.

Table 1: Customer-Accessible Resources

Resource	Contact Information
Avaya Support Center	http://www.avaya.com/support
Avaya Global Technical Services	+1 800 242-2121, extension 15921
Communications, Solutions, and Integration (CSI) Group of Software Services	+1 800 730-9108, prompt 3
Integrated Management Product Team	Send email to: AIMtraining@avaya.com
Toll Fraud Intervention	+1 800 643-2353, prompt 1

Table 2: Avaya Internal Resources

Resource	Contact Information
Avaya System Management Support	http://aem-support.dr.avaya.com
Avaya Technology and Consulting (ATAC)	+1 888 297-4700, prompt 2,6 http://forum.avaya.com (requires a password)
Communications, Solutions, and Integration (CSI) Group of Software Services	http://associate2.avaya.com/sales_market/products/data-implementation-services/
Integrated Management Services Support Plan	http://associate2.avaya.com/solution/support_plans/#Enterprise

Product Documentation

The latest version of Avaya Integrated Management product documentation, including this book, is available from the Avaya Support Web Site. To view or download these books from the Web, you must have access to the Internet, an Internet browser, and Adobe Reader. Adobe Reader 7.0 is provided on the Avaya Integrated Management CD and is also available from <http://www.adobe.com>. See [How to Access Books on the Web](#) for instructions on how to view or download these books.

How to Access Books on the Web

To view or download books from the Avaya Support Web Site, follow these steps:

1. Access <http://www.avaya.com/support>.
2. Click **Find Documentation and Downloads by Product Name**.
3. Click the letter **I** in the alphabet listing.
4. Locate the Integrated Management product or offer name and click the corresponding link.
5. Click **View All Documents** to display a list of available books for that product or offer.

Chapter 2: Linux Server Installation

Overview

This chapter specifies the options that you must select during the installation of Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0 to support Avaya Fault and Performance Manager, Avaya MultiSite Administration, and Avaya Integrated Management Database. The procedure to upgrade Red Hat Enterprise Linux ES 3.0 or Red Hat Enterprise Linux AS 3.0 to Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0 is also provided.

Note:

Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0 is required for new installations. Red Hat Enterprise Linux ES 3.0 or Red Hat Enterprise Linux AS 3.0 is supported only if you are upgrading from Avaya Integrated Management Release 3.2 to Avaya Integrated Management Release 4.0.

Make sure a modem is attached to COM 1 (ttyS0) of the Linux server for dial-in access and turned on while you install Red Hat Enterprise Linux.

Installing Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0

To perform a new installation of Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0, perform the following steps:

1. Insert the first Red Hat Enterprise Linux ES or AS 4.0 CD into the CD-ROM drive, restart the server, and run Red Hat Enterprise Linux System Installer in graphical mode.
2. Follow the prompts until you come to the Welcome page.
3. Click the **Next** button.
The Language Selection page appears.
4. Select the appropriate language, and then click the **Next** button.
The Keyboard Configuration page appears.
5. Select the appropriate keyboard, and then click the **Next** button.
The Disk Partitioning Setup page appears.

Linux Server Installation

6. Click the **Manually Partition with Disk Druid** option button, and click the **Next** button.
The Disk Setup page appears.
7. Perform the following steps:
 - a. Use the **Delete** button to delete any partitioning that appears for the hard drive.
 - b. Use the **New** button to add partitions as shown in [Table 3](#).

Table 3: Hard Drive Partitions

Mount Point	File System Type	Partition Size (40 GB HD)	Proportion of Disk Space (>40 GB HD)
/	ext3	800 MB	2%
/boot	ext3	100 MB	1%
/home	ext3	6000 MB	17%
/usr	ext3	6000 MB	15%
/opt	ext3	10000 MB	26%
/var	ext3	10000 MB	26%
swap	swap	2048 MB	2048 MB
/tmp	ext3	3000 MB	8%
Total		37948 MB	100%

Note:

The precise partition sizes are shown for a 40 GB hard drive. (Note that a 40 GB hard drive partitions to approximately 38 GB.) If the hard drive is bigger than 40 GB, use the proportion column to partition the hard drive.

- c. When finished adding the hard drive partitions, click the **Next** button.
The Boot Loader Configuration page appears.
8. Click the **Next** button to accept the default settings.
The Network Configuration page appears.
9. Click the **Edit** button.
The Edit Interface eth0 dialog box appears.
10. In the Edit Interface eth0 dialog box, perform the following steps:
 - a. Click the **Configure using DHCP** check box to deselect it.
 - b. Enter the static IP address and subnet mask.
 - c. Click the **OK** button.

11. In the Network Configuration page, perform the following steps:
 - a. In the Hostname section of the page, enter the fully qualified domain name.
 - b. In the Miscellaneous Settings section of the page, enter the gateway, primary, secondary, and tertiary DNS server IP addresses.
 - c. Click the **Next** button.

The Firewall Configuration page appears.
12. In the Firewall Configuration page, perform the following steps:
 - a. Click the **No Firewall** option button.
 - b. Click the **SELinux** check box to disable secure Linux kernel mode.
 - c. Click the **Next** button.

The Warning - No Firewall dialog box appears.
 - d. Click the **Proceed** button.

The Additional Language Support page appears.
13. Click the **Next** button to accept the default settings.

Note:
Avaya Integrated Management supports only English operating systems.
The Time Zone Selection page appears.
14. Click the **Next** button to accept the default settings.

The Set Root Password page appears.
15. Enter the root user password, enter it again for confirmation, and then click the **Next** button.

The Package Installation Defaults page appears.
16. Click the **Customize software packages to be installed** option button, and click the **Next** button.

The Package Group Selection page appears.
17. In addition to installing the default packages, click the check boxes for the following packages:
 - **KDE Desktop**
 - **Editors**
 - **FTP Server**
 - **Legacy Software Development**
 - **System Tools**, then do the following:
 - a. Click **Details**.

The Details for System Tools dialog box appears.

- b. Click the **vnc**, **tsclient**, and **net-snmp-utils** check boxes.
- c. Click the **OK** button.

Note:

If you are installing the Red Hat Enterprise Linux 64-bit operating system, click the check box for the **Compatibility Arch Support** package. This package installs the 32-bit compatibility RPMs.

18. In the Package Group Selection page, click the **Next** button.

The About to Install page appears.

19. Click the **Next** button.

The Required Install Media dialog box appears.

20. Click the **Continue** button.

The installation status bar appears.

21. Continue with the installation.

22. When the installation is complete, click the **Reboot** button.

23. After the server reboots, follow the prompts to perform initial configuration of the operating system, such as setting the date and time and registering the system with Red Hat.

Note:

Be sure to add at least one regular user account to the system.

Do not update postgres or any components related to postgres. Doing so can cause serious problems in the Avaya Fault and Performance Manager and Avaya Integrated Management Database applications.

24. After the server is configured, go to [Verifying Installation of Required RPM Files](#) on page 15.

Upgrading Red Hat Enterprise Linux ES 3.0 or AS 3.0 to Red Hat Enterprise Linux ES 4.0 or AS 4.0

To upgrade Red Hat Enterprise Linux ES 3.0 or Red Hat Enterprise Linux AS 3.0 to Red Hat Enterprise Linux ES 4.0 or Red Hat Enterprise Linux AS 4.0, perform the following steps:

1. Insert the first Red Hat Enterprise Linux ES or AS 4.0 CD into the CD-ROM drive, restart the server, and start the Red Hat Enterprise Linux System Installer in graphical mode.
2. Follow the prompts until you come to the Welcome page.
3. Click the **Next** button.

The Upgrade Examine page appears.

4. Click the **Upgrade an existing installation** option button, and click the **Next** button.
5. From the drop-down list box, select the system you want to upgrade, and click the **Next** button.

The Upgrade Boot Loader Configuration page appears.
6. Click the **Next** button to accept the default settings.

The About to Upgrade page appears.
7. Click the **Next** button.

The installation status bar appears.
8. Continue with the upgrade installation.
9. When the upgrade installation is complete, click the **Reboot** button.
10. After the server reboots, go to [Verifying Installation of Required RPM Files](#) on page 15.

Verifying Installation of Required RPM Files

After you install or upgrade the Red Hat Linux operating system, verify the Red Hat Package Manager (RPM) files listed below are installed.

- **mgetty**

The mgetty RPM is required for remote maintenance by Avaya Services. This may not be required if alternate remote network access (RAS/VPN) is being provided to Avaya Services personnel.

- **ppp**

The ppp RPM is required for remote maintenance by Avaya Services. This may not be required if alternate remote network access (RAS/VPN) is being provided to Avaya Services personnel.

- **vnc** (located in System Tools)

The vnc RPM is required for remote maintenance by Avaya Services for access to graphical user interfaces for troubleshooting purposes. This may not be required if an alternate method for displaying the XWindow desktop of the Linux server is provided.

- **vnc-server** (located in X Windows System)

The vnc-server RPM is required for remote maintenance by Avaya Services for access to graphical user interfaces for troubleshooting purposes. This may not be required if an alternate method for displaying the X Window desktop of the Linux server is provided.

To determine whether these RPM files are installed, perform the following steps:

1. In the terminal emulation window, at the command prompt, type **rpm -q <name of RPM package>**.
2. To search for RPM files using a partial RPM package name, at the command prompt type:
rpm -qa | grep <partial name>

For example, type **rpm -qa | grep vnc** to determine if any RPM packages beginning with “vnc” have been installed.

If any of these RPM files are not installed, see [Installing Required RPM Files](#) on page 16.

Note:

If you installed the 64-bit version of the Red Hat Enterprise Linux Release 4.0 operating system, you must install the **Compatibility Arch Support** RPM package, if you did not do so when you installed the operating system. This package installs the 32-bit compatibility RPMs.

Installing Required RPM Files

To install additional RPM files, perform the following steps:

1. Insert the Red Hat installation CD in the CD-ROM drive.
2. Open a terminal emulation window.
3. Type **cd /mnt/cdrom/RedHat/RPMS**.

Note:

If Linux responds “directory does not exist,” you may have to manually mount the CD-ROM drive. To do so, perform the following steps:

- d. Type **mount /dev/cdrom**.
- e. Type **cd /dev/cdrom/RedHat/RPMS**.
4. At the command prompt, type **rpm -iv <name of RPM package>**.

RPM Files Installed by System Management R4.0

When you install Avaya Integrated Management Release 4.0 System Management, the RPM files listed below are automatically installed. If any of these RPM files are already installed on the Linux server, the System Management installation wizard will remove them and install the appropriate version.

- **httpd**

The httpd RPM is required by Avaya Integrated Management Database.

- **tomcat**

- **php** (located on Web Server)

The php RPM is required by Avaya Integrated Management Database.

- **php-pgsql** (located on Web Server)

The php-pgsql RPM is required by Avaya Integrated Management Database.

- **openldap (2.0.23-4)** (located on Network Server)

The openldap RPM is required by Avaya MultiSite Administration for Modular Messaging and SSH support.

- **cyrus-sasl (1.5.24-25)**

The cyrus-sasl RPM is required by Avaya MultiSite Administration for Modular Messaging and SSH support.

- **openssl (0.9.6b-18)**

The openssl RPM is required by Avaya MultiSite Administration for Modular Messaging and SSH support.

Security Considerations

In order to strengthen system security, it is recommended that you turn off the Remote Procedure Calls (RPC) service on all Linux servers that run Avaya Integrated Management applications. To turn off the RPC service, you must close all related ports that provide the service.

Note:

You must have root access to turn off the RPC service.

Perform the following steps:

1. To turn off the service, at the command line prompt in the terminal emulation window, type **service portmap stop**.
2. To turn off the service so that it does not start again when the Linux server is restarted, at the command line prompt in the terminal emulation window, type **chkconfig -levels 12345 portmap off**.