Installation Guide

Novell®
ZENworks® Linux Management

7.3 IR2

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Contents

About This Guide

This *Novell ZENworks Linux Management Installation Guide* includes information to help you successfully set up a ZENworks® system. The information in this guide is organized as follows:

Audience

This guide is intended for Novell® ZENworks Linux Management and Dell* PowerEdge* server administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to the Novell Documentation Feedback site (http://www.novell.com/documentation/feedback.html) and enter your comments there.

Additional Documentation

ZENworks Linux Management is supported by other documentation (in both PDF and HTML formats) that you can use to learn about and implement the product:

- *Novell ZENworks 7.3 Linux Management Administration Guide*
- *Novell ZENworks 7.3 Linux Management Troubleshooting Guide*

Documentation Conventions

In Novell documentation, a greater-than symbol ($>$) is used to separate actions within a step and items in a cross-reference path.

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When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux* or UNIX*, should use forward slashes as required by your software.

Overview

Novell® ZENworks® 7.3 Linux Management provides comprehensive management of Linux servers and workstations, collectively referred to as devices. Using ZENworks Linux Management, you can:

- Manage Dell PowerEdge servers using ZENworks Linux Management capabilities combined with the Dell OpenManage* toolkit capabilities.
- Manage your device software packages, including dependency resolution, SUSE® patch support, and previous version rollback.
- Manage your device configuration and application settings through the use of policies.
- Automate the application of images and scripted installs using YAST autoinstall and Red Hat* kickstart.
- Remotely manage devices using a secure and fast interface.
- Collect hardware and software inventory, as well as generate inventory reports.

For more information, see .

About ZENworks Linux Management

1

The following sections provide detail information about the capabilities of ZENworks Linux Management and a high-level overview of the ZENworks system architecture and administration.

1.1 Management Capabilities

The ZENworks Linux Management capabilities are divided as follows:

1.1.1 Software Package Management

ZENworks Linux Management lets you install, remove, and roll back software on your Linux devices. This is done through the use of bundles, which are collections of one or more software (RPM) packages. ZENworks automatically resolves dependencies for any software packages it is installing.

When you assign a bundle to a device, it is automatically installed on the device. If you want to give the device's user the choice of whether or not to install a software package, you can use catalogs. A catalog is simply a group of bundles that appears in the ZENworks Linux Management Software Updater client on the device; the user must initiate installation of any of the bundles in the catalog.

1.1.2 Policy-Based Device Management

ZENworks Linux Management provides a number of policies to help you manage the Novell Linux Desktop, Evolution™ e-mail client, Epiphany Web browser, and several other software applications.

Policies enable you to provide consistent operating system and application configuration settings for your devices. You can lock the configuration settings so that users cannot change them.

1.1.3 Automated Install and Imaging

ZENworks Linux Management includes a service called Preboot Services that enables you to perform tasks on devices before their operating systems boot up. Using Preboot Services, you can automatically or manually do the following to a Linux device when it boots up:

- Run scripted installations on the device, such as AutoYaST and kickstart.
- Run ZENworks imaging scripts on the device.
- Make an image of the device's hard drives and other storage devices.
- Restore an image to the device.
- Apply an existing image to multiple devices.
- Update the device's BIOS.

To accomplish these tasks automatically, you simply need to have PXE (Preboot Execution Environment) enabled on your devices, and have prebootable tasks configured and assigned to the devices (configuration is done in the ZENworks Control Center, discussed later). Then, the devices can automatically implement these tasks when they boot. Or, to manually implement the tasks, you can configure devices to require user intervention during bootup.

1.1.4 Remote Management

ZENworks Linux Management provides the ability to use ZENworks Control Center (ZCC) to remotely manage devices by using a graphical Web interface.

1.1.5 Inventory Collection

ZENworks Linux Management can gather extensive software and hardware inventory for all managed devices, and it also enables you to create and export custom reports.

1.1.6 ZENworks Linux Management Features Specific to Dell PowerEdge Servers

By combining ZENworks Linux Management capabilities with the Dell OpenManage toolkit capabilities, you can manage your Dell PowerEdge servers from out of the box through the entire server life cycle. ZENworks Linux Management provides the following features to help you deploy and manage Dell PowerEdge servers in your ZENworks system:

- **Dell Configuration bundles:** Let you configure the BIOS, BMC, RAID, and DRAC settings on Dell PowerEdge servers and create a Dell utility partition. You can also select to run another Preboot Services bundle after these configurations are complete. Dell Configuration bundles let you configure a bare-metal PowerEdge server and quickly and easily put the server into production.
- **Dell Update Package bundles:** Let you update and configure hardware and system settings (including BIOS, DRAC, RAID, BMC, and FRMW configurations) on Dell PowerEdge servers. After you obtain Dell Update Packages from Dell by using the mirroring capabilities of ZENworks Linux Management, you can easily assign the Dell Update Package bundles that are automatically created to PowerEdge servers in your ZENworks system. It is easy for you to determine if an updated Dell Update Package is available for PowerEdge servers in your system and deliver the update.

- **Advanced Dell inventory information:** Lets you display inventory information specific to Dell PowerEdge servers. This advanced inventory information helps you determine when PowerEdge configuration settings need to be updated.
- **Advanced Dell reports:** Let you run reports specific to Dell PowerEdge servers to find devices that do not have valid Dell Update Packages installed or to show devices with Dell applications installed (per device or per device model).

1.2 System Architecture

The ZENworks system architecture consists of two main components, ZENworks Servers and managed devices. These components, organized into management domains, are referred to as ZENworks Management Zones.

Figure 1-1 *ZENworks Management Zone with a Primary Server, a Secondary Server, and Several Managed Devices*
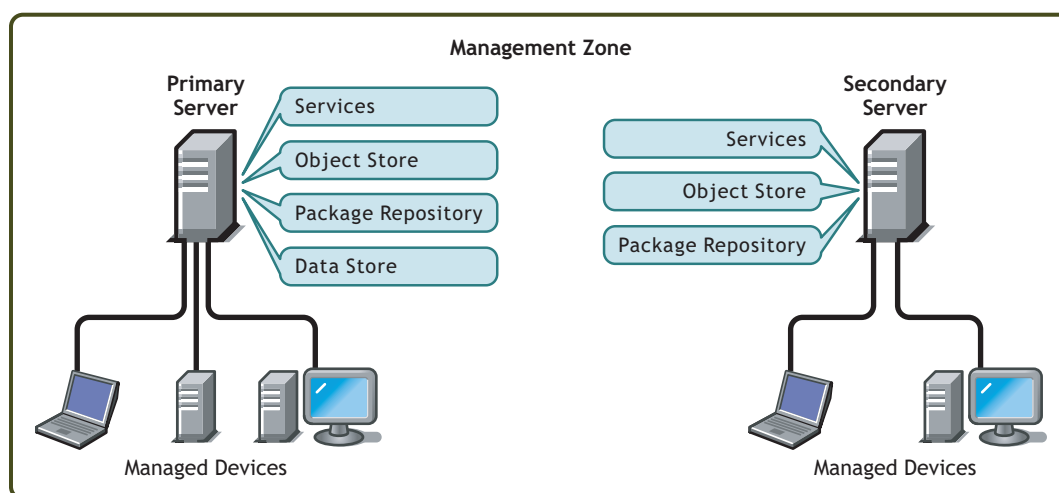
ZENworks Server

The ZENworks Server is the backbone of the ZENworks system. The first ZENworks Server installed is called the ZENworks Primary Server. The Primary Server contains the following ZENworks components:

- **ZENworks services:** The ZENworks software that provides package management, policy enforcement, inventory collection, imaging, and so forth. The main services are ZENworks Server, ZENworks Loader, ZENworks Imaging Service, ZENworks Preboot Policy Daemon, ZENworks Server Management, and ZENworks Management Daemon.
- **ZENworks Object Store:** The Object Store is the information repository for devices, groups, policies, bundles, and other ZENworks objects defined within the system. The Object Store, which is version 8.8.3 of Novell eDirectory™, is set up and configured during installation. The information in the Object Store is managed through the ZENworks Control Center.
- **Package repository:** The package repository contains the RPM packages that are available for delivery to managed devices within the system.
- **ZENworks Data Store:** The Data Store contains information about the software packages available for delivery, the hardware and software inventory lists collected from devices, and the actions scheduled to take place within the system.

The Data Store can reside on the ZENworks Primary Server or it can reside on a remote server. All ZENworks Servers require access to the Data Store. For accessibility and reliability purposes, you might want to consider locating the Data Store on a server cluster.

The Data Store must be either a PostgreSQL or Oracle* database. You can install the PostgreSQL database that is included with ZENworks Linux Management or you can use an existing Oracle 9i database or PostgreSQL database.

Depending on the number and location of the devices you want to manage with ZENworks, you might need additional ZENworks Servers, referred to as ZENworks Secondary Servers. Secondary Servers contain the services, package repository, and Object Store, but not the Data Store. Basically, Secondary Servers are mirrors of the Primary Server.

The ZENworks services and Object Store are added to a Secondary Server during installation and configuration of the ZENworks software. Packages are automatically replicated from the ZENworks Primary Server to all Secondary Servers based upon a schedule you can control (see "Replicating Content in the ZENworks Management Zone" in the *Novell ZENworks 7.3 Linux Management Administration Guide*). Like the Primary Server, a Secondary Server must have access to the Data Store, whether the Data Store is located on the Primary Server or on another server.

Managed Device

A managed device is a server or workstation that you want to manage using ZENworks. The ZENworks Agent must be installed on each device. The ZENworks Agent communicates with the ZENworks Server to enable delivery of software packages, enforcement of configuration policies, inventorying of hardware and software, and remote management of the device.

ZENworks Management Zone

A ZENworks Management Zone consists of one ZENworks Primary Server and one or more managed devices. In addition, the Management Zone can include one or more ZENworks Secondary Servers if required. The ZENworks Servers in the zone work together to manage the devices in the zone.

If necessary, you can have more than one ZENworks Management Zone. There are two main reasons for having multiple zones: 1) you have managed devices that are separated from your ZENworks Servers by a slow WAN link, or 2) you need to have autonomous zones for administrative purposes. These reasons are discussed in more detail in Section 6, "Installing a ZENworks Secondary Server," on page 47.

Information is not automatically shared between ZENworks Management Zones. However, you can use the zlmmirror utility to copy software catalogs, bundles, or packages from one Zone's Primary Server to another zone's Primary Server. The zlmmirror utility can also be used to pull catalogs, bundles, and packages from the following servers: Dell FTP, YaST Online Updates, Red Hat Network, Red Carpet® Enterprise™, ZENworks 6.x Linux Management, or Novell Updates. For more information, see "Mirroring Software" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

1.3 System Administration

The ZENworks system is administered at the Management Zone level through the ZENworks Control Center, a task-based Web browser console.

Figure 1-2 *ZENworks Control Center*
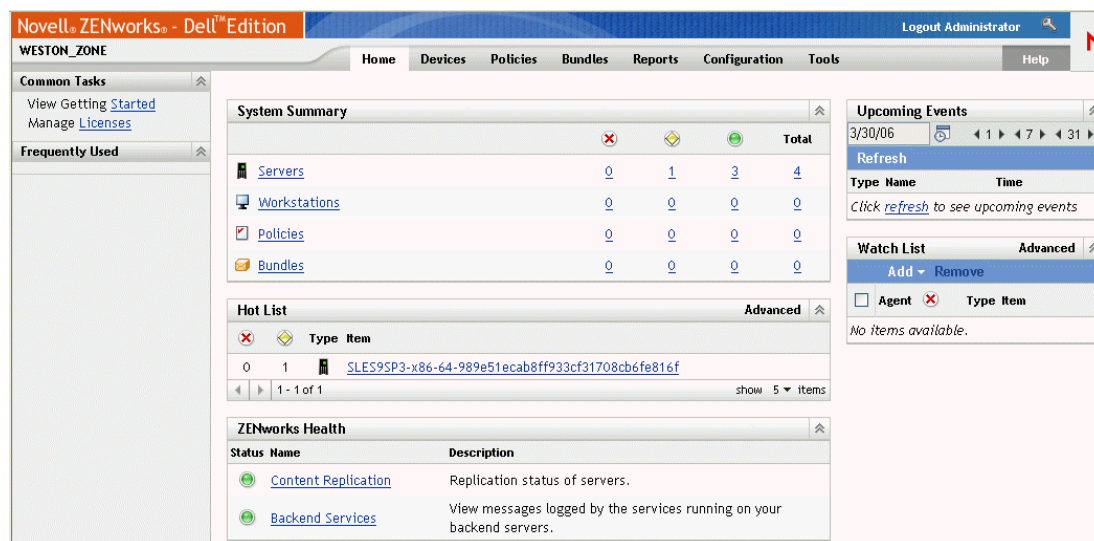
The ZENworks Control Center is installed on all ZENworks Servers in the Management Zone. You can perform all management tasks on the Primary Server and most management tasks on the Secondary Servers. The one management exception on Secondary Servers is the manipulation (adding, deleting, modifying) of RPM or Dell Update Packages in a bundle. This task is not supported because the Primary Server is the source server for packages, meaning that packages are replicated from the Primary Server to Secondary Servers on a regularly scheduled basis. Manipulating a package on a Secondary Server rather than on the Primary Server would result in the modified package being replaced (or removed) the next time the Secondary Server's packages were updated from the Primary Server.

If you use Novell iManager to administer other Novell products in your network environment, you can enable the ZENworks Control Center to be launched from iManager. For details, see "ZENworks Control Center" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

In addition to the ZENworks Control Center, you can use a command line utility, zlman, to manage the objects in your ZENworks system. For example, you can add packages to bundles, associate policies with devices, register devices, and assign administrator rights. The main advantage to using the command line utility is the ability to create scripts for handling repetitive or mass operations.

Like the ZENworks Control Center, the zlman utility is installed on all ZENworks Servers. It has the same management restriction as the ZENworks Control Center, meaning that you should not use it to manipulate packages on Secondary Servers. For more information about zlman, see "Command Line Administration Utilities" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

1.4 ZENworks Terms

This section contains explanations of the ZENworks Linux Management terms used in this overview.

Table 1-1 *ZENworks Terms*

Term	Description
bundle	ZENworks Linux Management has two types of bundles: RPM package bundles and Preboot bundles. An RPM package bundle is collection of software (RPM) packages. A Preboot bundle is a collection of scripts or images that are applied to a device at bootup.
catalog	A collection of RPM package bundles and Preboot bundles. Catalogs can contain one Preboot bundle and one or more RPM bundles. Bundles assigned to a device are automatically installed, but bundles included in a catalog are optional; the device's user must manually initiate the installation of the bundle.
managed device	A Linux server or workstation that has the ZENworks Agent installed and is registered in the ZENworks Management Zone.
policy	A set of information that defines the operating system and application configuration settings for a managed device.
software package	A collection of software installation files. ZENworks Linux Management supports RPM packages only.
ZENworks Agent	The software installed on a Linux server or workstation that enables it to be managed by a ZENworks Server. The ZENworks Agent consists of multiple components that support software package delivery, policy enforcement, imaging, remote management, and so forth.
ZENworks Control Center	The ZENworks Control Center is the Web-based administrative console used to manage the ZENworks Linux Management system.
ZENworks Data Store or Data Store	The Data Store contains information about the software packages available for delivery, the hardware and software inventory lists collected from devices, and the actions scheduled to take place within the system. The Data Store can reside on the ZENworks Primary Server or it can reside on a remote server. All ZENworks Servers require access to the Data Store.
ZENworks Management Zone or Management Zone	A ZENworks system is divided into one or more ZENworks Management Zones. Each Management Zone consists of at least one ZENworks Server and the devices managed by that server. During installation of a zone's first ZENworks Server, you give the zone a name for identification purposes. For more information, see "ZENworks Management Zone" on page 16.
ZENworks Primary Server or Primary Server	Each ZENworks Management Zone has one ZENworks Primary Server. The Primary Server is the first server installed and contains the ZENworks services, ZENworks Object Store, and software packages. Optionally, it might also contain the ZENworks Data Store. Each Managed Device is managed by a single server (either primary or secondary).
ZENworks Object Store or Object Store	The Object Store is the information repository for devices, groups, policies, bundles, and other ZENworks objects defined within the system. The Object Store, which is version 8.8.3 of Novell eDirectory, is set up and configured during installation. The information in the Object Store is managed through the ZENworks Control Center.

Term	Description
ZENworks Secondary Server or Secondary Server	Each ZENworks Management Zone has one ZENworks Primary Server. All other ZENworks Servers installed in the zone are called ZENworks Secondary Servers. A Secondary Server has the ZENworks services, the Object Store, and the software packages.
zlman	A command line interface that lets you manage your ZENworks system. The zlman utility is useful for automating tasks (through scripts) and performing mass management tasks that might be tedious to perform in the ZENworks Control Center.

Preparation

II
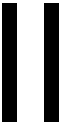
The following section will help you to prepare for installing Novell® ZENworks® Linux Management software in your network:

- Chapter 2, "System Requirements," on page 23

System Requirements

<div style="text-align: right; font-size: xx-large;">2</div>

The following sections provide the Novell® ZENworks® Linux Management requirements for hardware and software:

2.1 ZENworks Server Requirements

The network server where you install the ZENworks Server software must meet the requirements listed in the following table:

Table 2-1 *ZENworks Server Requirements*

Item	Requirement
Operating Systems	◆ SUSE® Linux Enterprise Server (SLES) 9, Support Pack (SP) 3, and SP4 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel* EMT64 and AMD* Opteron* processors).
	When you install SLES 9, we strongly recommend that you perform a Default installation. If you install SLES 9 using a Minimal installation, which does not include X Window System* support, see Section A.3, "Installing ZENworks Linux Management on a SLES 9 Server with a Minimal Installation," on page 123.
	◆ SLES 10, SP1, SP2 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors).
	When you install SLES 10, it is strongly recommended that you perform a Default installation. If you install SLES 10 by using a Customize installation, some packages are required for ZENworks 7.3 Linux Management to install successfully. For more information, see Section A.4, "Installing ZENworks Linux Management on a SLES 10 Server with a Customize Installation," on page 123.
	◆ SLES 11 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors).
	When you install SLES 11, it is strongly recommended that you perform a Default installation. If you install SLES 11 by using a customize installation, some packages are required for ZENworks 7.3 Linux Management to install successfully. For more information, see Section A.5, "Installing ZENworks Linux Management on a SLES 11 Server with a Customize Installation," on page 125.
	◆ Red Hat Enterprise Linux (RHEL) 4 AS Update 3 or later on the 64-bit Intel (x86_64) architecture.

Item	Requirement
Operating Systems additionally supported for ZENworks 7.3 Linux Management with IR1	SLES 10 SP3 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors).
Operating Systems additionally supported for ZENworks 7.3 Linux Management with IR2	The following operating systems are supported in ZENworks 7.3 Linux Management with IR2: ◆ RHEL 5.3 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors). ◆ RHEL 5.4 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD processors).
Hardware	◆ Processor: Pentium* III x86 (minimum), AMD64, or Intel EMT64 ◆ RAM: 1 GB minimum ◆ Disk Space: 500 MB minimum; 4 GB recommended. Depending on the number of packages you have to distribute, this number can vary greatly.
Hostname Resolution	The server must resolve device hostnames using a method such as DNS.
IP Address	The server must have a static IP address or a permanently leased DHCP address.
TCP Ports	The server must allow traffic on TCP ports 80, 443, 524, 1229, 2544, 5506, 10389, and 10636. The server cannot run other services on port 80. If Apache or another service is binding to port 80, remove the service or change the service's port. For more information on these ports, see Section 9.5, "Device Ports," on page 72.
Supported Virtual Environments	◆ VMware* ESX running on a supported ZENworks Server platform. The ZENworks Server is supported on the XEN virtual environment as a guest or host for the SLES 10 or SLES 11 operating systems.
Recommended File Systems	◆ XFS ◆ Reiserfs

2.2 Database Requirements

If you choose to use a database for the ZENworks Data Store other than the PostgreSQL database included with ZENworks Linux Management, the database must meet the following requirements:

Table 2-2 *Database Requirements*

Item	Requirement
Database Version	◆ PostgreSQL 7.4.7 or higher ◆ Oracle 9i Release 2 only ◆ Oracle 10g Release 2 only ◆ Oracle 11g Release 1 only
Default Character Set	UTF-8 required
Default Time Zone	UTC required
TCP ports	The server must allow ZENworks Agent and ZENworks Server communication on the database port (if you are using the default PostgreSQL database, port 5432).

2.3 Managed Device Requirements

ZENworks can manage any workstations and servers that meet the requirements listed in the following table:

Table 2-3 *Managed Device Requirements*

Item	Requirement	Additional information
Operating Systems	**SUSE Linux Enterprise** ◆ SLES 9, SP3, SP4 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors). ◆ SLES 10, SP1, and SP2 on the 32-bit (x86) and 64-bit (x86_64) architectures. The Intel EMT64 and AMD Opteron processors support all ZENworks Linux Management features. The PPC, IPF and zSeries processors support the Package Management features only. ◆ SUSE Linux Enterprise Desktop (SLED) 10 SP1, and SP2 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors). ◆ SLES 11 on the 32-bit (x86) and 64-bit (x86_64) architectures. The Intel EMT64 and AMD Opteron processors support all ZENworks Linux Management features. ◆ SLED 11 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors). The IPF and zSeries processors support the Package Management features only.	When you install SLES 9, we strongly recommend that you perform a Default installation. If you install SLES 9 using a Minimal installation, which does not include X Window System support, see Section A.3, "Installing ZENworks Linux Management on a SLES 9 Server with a Minimal Installation," on page 123. When you install SLES 10, we strongly recommend that you perform a Default installation. If you install SLES 10 using a Customize installation, some packages are required for ZENworks 7.3 Linux Management to install successfully. For more information, see Section A.4, "Installing ZENworks Linux Management on a SLES 10 Server with a Customize Installation," on page 123.
	Novell Linux Desktop ◆ Novell Linux Desktop 9, SP3 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors). **Novell Open Enterprise Server** ◆ Open Enterprise Server (OES) 1 on the 32-bit (x86) architecture. ◆ OES 2 SP1 on the 32-bit (x86) and 64-bit (x86_64) architectures. **RHEL** The following platforms are supported on the 32-bit (x86) and 64-bit (x86_64) architectures. ◆ RHEL 3 AS/ES/WS (latest patch) ◆ RHEL 4 AS/ES/WS (latest patch) ◆ RHEL 5 and RHEL 5.1	To ensure successful enforcement of the NLD GNOME* policy, you need Novell Linux Desktop 9 with Support Pack 2 with GNOME.

Item	Requirement	Additional information
Operating systems additionally supported for IR1	◆ SLES 10 SP3 on the 32-bit (x86) and 64-bit (x86_64) architectures ◆ SLED 10 SP3 on the 32-bit (x86) and 64-bit (x86_64) architectures ◆ Novell Linux Desktop 9 SP4 on the 32-bit (x86) and 64-bit (x86_64) architectures ◆ RHEL 4 AS on s390 and s390x architectures. ◆ RHEL 5.2 and RHEL 5.3 on the 32-bit (x86) and 64-bit (x86_64) architectures. ◆ RHEL 5.3 on the zSeries (s390x) architecture.	
Operating systems additionally supported for IR2	◆ Novell Open Enterprise Server 2 SP2 on the 32-bit (x86) and 64-bit (x86_64) architectures. ◆ RHEL 5.4 on 32-bit (x86), 64-bit (x86_64), and Zseries (s390x) architectures.	
Operating System for Dell PowerEdge Servers	The following versions of the OpenIPMI driver are required to support the Dell Update Package functionality: ◆ SLES 10: OpenIPMI-1.4.26-9.4 or newer ◆ SLES 9.3: OpenIPMI-36.7 or newer ◆ RHEL4: OpenIPMI-33.12 or newer ◆ RHEL3: OpenIPMI-35.12 or newer Additionally, the following version of the OpenIPMI driver is supported in ZENworks 7.3 Linux Management with IR1: ◆ SLES 11: OpenIPMI-2.0.14-1.25 or newer	If you plan to manage Dell PowerEdge servers by using ZENworks 7.3 Linux Management, the Dell PowerEdge Software Support Matrix lets you identify operating systems and Dell OpenManage software that your PowerEdge system supports. You can view the Support Matrix on the Dell Support site (http://support.dell.com/support/edocs/software/smsom/6.1/en/peosom/installa.htm#wp999358).

Item	Requirement	Additional information
Hardware	The following are the minimum hardware requirements: ◆ Processor: Pentium II 266 MHZ, 64-bit AMD Opteron, or 64-bit Intel Xeon EMT ◆ RAM: 128 MB minimum; 256 MB recommended ◆ Disk Space: 800 MB minimum ◆ Display resolution: 800x600 **Dell PowerEdge Servers:** Managed Dell PowerEdge servers must be a 6, 7, 8, or 9 generation server to use the ZENworks Linux Management Dell features (Dell Configuration bundles, Dell Update Package bundles, and advanced reporting and inventory support). Use these requirements or the hardware requirements provided with your operating system, whichever is greater. For example, NLD recommends Pentium III or higher, so use those requirements rather than the ones listed here.	You can determine your PowerEdge server generation by examining the third number from the right in the model number. If the number is 8, the server generation is 8, and so forth. For example, ◆ **Generation 6 PowerEdge servers:** PowerEdge 650, PowerEdge 6600, etc. ◆ **Generation 7 PowerEdge servers:** PowerEdge 750, PowerEdge 1750, etc. ◆ **Generation 8 PowerEdge servers:** PowerEdge 800, PowerEdge 1850, etc. ◆ **Generation 9 PowerEdge servers:** PowerEdge 2950, PowerEdge 1955, etc. Before you can use the features specific to Dell PowerEdge servers, you must perform the procedure in Section 7.4, "Enabling Dell PowerEdge Support," on page 63.
TCP Ports	The device must allow ZENworks Agent and ZENworks Server communication on TCP port 443. You must open port 2544 to perform the following actions: ◆ Use the ZENworks Agent Status icon in the ZENworks Control Center ◆ Refresh the client from the ZENworks Control Center or from the zlman command line utility You must open port 5950 if you want to use remote control operations. You must open port 5951 if you want to use remote log-in operations.	
Supported Virtual Environments	◆ VMware ESX running a supported managed device platform ◆ XEN on SUSE Linux Enterprise Server 10 (SLES 10) and SUSE Linux Enterprise Desktop (SLED 10) managed devices ◆ XEN on SUSE Linux Enterprise Server 11 (SLES 11) and SUSE Linux Enterprise Desktop (SLED 11) managed devices	

2.4 Administration Workstation Requirements

Make sure the workstation (or server) where you run the ZENworks Control Center to administer your system meets the requirements listed below:

Table 2-4 *Administration Workstation Requirements*

Item	Requirement
Web Browser	◆ Firefox* 1.4 or higher ◆ Mozilla* 1.7 or higher ◆ Internet Explorer 6.0 SP1 (all Windows* platforms except Windows XP) ◆ Internet Explorer 6.0 SP2 (Windows XP) ◆ Internet Explorer 7.x
Java* 1.4 Web Browser plug-ins	Required to use the Remote Management functionality in the ZENworks Control Center. For information about installing the browser plug-ins on Firefox and Mozilla, see the Java Runtime Engine information at Mozdev.org (http://plugindoc.mozdev.org/linux.html). For information about installing the browser plug-ins on Internet Explorer, visit Java.com (http://www.java.com).
Hardware	◆ Processor: Pentium III, 64-bit AMD Opteron, or 64-bit Intel Xeon EMT ◆ RAM: 512 MB minimum ◆ Disk space: 500 MB minimum ◆ Display resolution: 1024 x 768

Installation

III

This section provides instructions for installing the Server and Agent software components of Novell® ZENworks® 7.3 Linux Management, ZENworks 7.3 Linux Management with Interim Release 1 (IR1), and ZENworks 7.3 Linux Management with Interim Release 2 (IR2).

Complete the tasks in the order listed:

1. If you intend to use an existing PostgreSQL or Oracle database installation for your ZENworks Data Store rather than have ZENworks install a new PostgreSQL database, you need to set up the database correctly. See Chapter 3, "Preparing the Database for the ZENworks Data Store," on page 33.

2. If desired, verify the signatures on the RPM packages. All packages are signed by Novell. You can verify the package signatures to ensure that the packages have not been tampered with. See Chapter 4, "Verifying the RPM Package Signatures," on page 39.

3. Install your first ZENworks Server and create your ZENworks Management Zone. The first ZENworks Server you install is called the ZENworks Primary Server. See Chapter 5, "Installing the ZENworks Primary Server," on page 41.

4. Install additional ZENworks Servers as needed. Any ZENworks Servers you install after the first one are called Secondary Servers. See Chapter 6, "Installing a ZENworks Secondary Server," on page 47.

5. Prepare managed devices for ZENworks Linux Management and install the ZENworks Agents on devices (servers and workstations) you want to manage, and register the devices in your Management Zone. See Chapter 7, "Setting Up Managed Devices," on page 53.

6. Ensure that there is no eDirectory™ service installed on the server. See Section 5.1, "What the Installation Program Does," on page 41.

If you are unfamiliar with any of the ZENworks components or terminology in the above task list, please review Section 1.2, "System Architecture," on page 15.

Preparing the Database for the ZENworks Data Store

3

ZENworks Linux Management requires either a PostgreSQL or Oracle database for the ZENworks Data Store. During installation of the ZENworks Primary Server, you are asked whether you want the installation program to create a new PostgreSQL database on the Primary Server or use an existing PostgreSQL or Oracle database located on either the Primary Server or another network server.

If you want to create a new PostgreSQL database on the Primary Server, you can skip the remainder of this section and continue with "Installing the ZENworks Primary Server" on page 41.

If you plan to use an existing PostgreSQL or Oracle database, you need to complete the tasks in the following sections before you install your Primary Server.

- Section 3.1, "Creating the Database Instance," on page 33
- Section 3.2, "Installing the Oracle Database Client," on page 34
- Section 3.3, "Configuring Oracle 10g Release 2 or Oracle 11g Release 1 as a Remote Database Server," on page 35
- Section 3.4, "Migrating the Data from one Oracle Database to another Oracle Database," on page 35
- Section 3.5, "Gathering the Database Information," on page 37

NOTE: For detailed information on backing up and restoring the ZENworks Data Store using PostgreSQL, and optimizing the server database performance, see "Maintaining the ZENworks Data Store on PostgreSQL" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

3.1 Creating the Database Instance

You need to create a new database instance to use for the ZENworks Data Store. If necessary, refer to your database documentation for instructions. Keep the following in mind when you create the database instance:

- The database version and host server must meet the requirements listed in Section 2.2, "Database Requirements," on page 24.
- The default character set must be UTF-8.
- The default time zone must be UTC.
- For PostgreSQL, you can name the database as desired.
- For Oracle, the SID (System Identifier) can be whatever you want; however, the SID and the service name must be the same.
- The database must require user and password authentication for access.

After you create the database instance for an existing PostgreSQL database, you need to perform some configuration tasks. For more information, see TID 10099586 in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp). If you create a new PostgreSQL

database during installation, additional configuration is not necessary because the ZENworks installation program creates the required database tables and configures the database to support ZENworks data.

3.2 Installing the Oracle Database Client

This section applies only if you are using an Oracle database for your ZENworks Data Store.

ZENworks Servers require an Oracle instant client to communicate with the Oracle database. You can obtain the instant client directly from the Oracle Web site (http://www.oracle.com/technology/tech/oci/instantclient/index.html).

You should download the Oracle Database 10g Instant Client. On the Oracle web page under the Platform Downloads section, click the appropriate platform link. More information about downloading and installing the client is included in the following sections:

- Section 3.2.1, "Linux x86 32-Bit," on page 34
- Section 3.2.2, "Linux x86 64-Bit," on page 34

3.2.1 Linux x86 32-Bit

Click the Instant Client for Linux x86 link, then follow the prompts to download the appropriate files. For the Linux x86 32-bit platform, Oracle supplies both `.zip` and `.rpm` files; you must download the `.rpm` files.

Install the following RPMs on the Primary Server and any Secondary Servers:

- `oracle-instantclient-basic-version_number.i386.rpm`
- `oracle-instantclient-jdbc-version_number.i386.rpm`
- `oracle-instantclient-sqlplus-version_number.i386.rpm`

3.2.2 Linux x86 64-Bit

Click the Instant Client for Linux x86-64 link, then follow the prompts to download the appropriate files. For the Linux x86 64-bit platform, Oracle Database 10g R2 supplies both .zip and .rpm files; you must download the .rpm files.

Install the following RPMs on the Primary Server and any Secondary Servers:

- `oracle-instantclient-basic-version_number.x86_64.rpm`
- `oracle-instantclient-jdbc-version_number.x86_64.rpm`
- `oracle-instantclient-sqlplus-version_number.x86_64.rpm`

If the Oracle JDBC Instant Client RPM package is not installed, you receive the following error message: "`The Oracle jdbc driver is not installed. An RPM (oracle-instantclient-jdbc) that contains the Oracle jdbc driver can be downloaded from oracle.com. The install cannot continue.`"

For Oracle Database 11g R1 Server, you must install the Oracle Database 10g R2 Instant Client RPMs on both the Primary Server and the Secondary Server.

3.3 Configuring Oracle 10g Release 2 or Oracle 11g Release 1 as a Remote Database Server

You can configure Oracle Database 10g R2 or Oracle Database 11g R1 as an external database on a dedicated server for ZENworks 7.3 Linux Management. Before installing the Oracle Database 10g R2 or Oracle Database 11g R1, ensure that the RPM packages of the Oracle Database 10g R2 Instant Client are installed on the ZENworks Linux Management server. For more information on installing the database client, see Section 3.2, "Installing the Oracle Database Client," on page 34.

To install Oracle Database 10g R2, see the Oracle 10g documentation (http://www.oracle.com/technology/documentation/database10gr2.html). To install Oracle Database 11g R1, see the Oracle 11g documentation (http://www.oracle.com/technology/documentation/database11gr1.html).

Review the following sections to configure the Oracle Database 10g R2 or Oracle Database 11g R1 on Linux and Windows:

- Section 3.3.1, "Configuring Oracle 10g R2 or Oracle 11g R1 as a Remote Database Server on Linux," on page 35
- Section 3.3.2, "Configuring Oracle 10g R2 or Oracle 11g R1 as a Remote Database Server on Windows," on page 35

3.3.1 Configuring Oracle 10g R2 or Oracle 11g R1 as a Remote Database Server on Linux

1 On the ZENworks 7.3 Linux Management server, go to `/opt/novell/zenworks/share/datamodel`, open the `linux-createdb-oracle-10g.sql` file, and follow the instructions in the file to configure the server.

2 Copy the `linux-createdb-oracle-10g.sql` server schema file and the `linux-init-oracle-10g.ora` initialization script file from `/opt/novell/zenworks/share/datamodel` to the Oracle 10g R2 or Oracle 11g R1 database server location specified in the `linux-createdb-oracle-10g.sql` file.

3.3.2 Configuring Oracle 10g R2 or Oracle 11g R1 as a Remote Database Server on Windows

1 On the ZENworks 7.3 Linux Management server, go to `/opt/novell/zenworks/share/datamodel`, open the `windows-createdb-oracle-10g.sql` file, and follow the instructions in the file to configure the server.

2 Copy the `windows-createdb-oracle-10g.sql` server schema file and the `windows-init-oracle-10g.ora` initialization script file from `/opt/novell/zenworks/share/datamodel` to the Oracle 10g R2 or Oracle 11g R1 database server location specified in the `windows-createdb-oracle-10g.sql` file.

3.4 Migrating the Data from one Oracle Database to another Oracle Database

ZENworks 7.3 Linux Management allows you to migrate the data from:

- Oracle 9i R2 to Oracle 10g R2

- Oracle 9i R2 to Oracle 11g R1
- Oracle 10 g R2 to Oracle 11g R1

You can also migrate the data across different releases of the same versions. For example, you can migrate the data from Oracle Database 10g R1 to Oracle Database 10g R2.

NOTE: In this section, the database from which you are migrating the data is referred to as the source, and the database to which you are migrating the data is referred to as the destination.

Do the following on the Primary Server and Secondary Servers existing in your Management Zone:

1 Install and configure the destination database.

For more information, see Section 3.3, "Configuring Oracle 10g Release 2 or Oracle 11g Release 1 as a Remote Database Server," on page 35.

While configuring the Oracle database, do not perform Steps 11, 12, and 13 in the `linux-createdb-oracle.sql` file on Linux, or in the `windows-createdb-oracle.sql` file.

2 On the ZENworks 7.3 Linux Management server configured with the source database, stop all the ZENworks services by using the following command:

`zlm-config --stop`

3 On the source database that has its database instance running, take a logical backup of the ZENworks database objects schema by running the export utilities as follows as an Oracle database user:

`exp zenadmin/novell@ORCL FILE=NOVELL-ZENWORKS-ORAZLM.DMP LOG=NOVELL-ZENWORKS-ORAZLM.LOG OWNER=ZENADMIN`

where ORCL is the default Oracle system identifier.

This creates the `NOVELL-ZENWORKS-ORAZLM.DMP` backup file and the `ZENWORKS-ORAZLM.LOG` log file on the Oracle Database server.

4 Manually copy the `NOVELL-ZENWORKS-ORAZLM.DMP` backup file that is created in Step 3 to the destination database.

5 Run the import utility as follows as an Oracle database user on the destination database to import the data and objects:

`imp zenadmin/novell@ORCL FILE=NOVELL-ZENWORKS-ORAZLM.DMP LOG=NOVELL-ZENWORKS-ORAZLM.LOG IGNORE=Y FROMUSER=ZENADMIN TOUSER=ZENADMIN`

where ORCL is the default Oracle system identifier, and novell is the default password for the zenadmin user.

IMPORTANT: Before running the import utility, take a reliable backup of the `/opt/oracle/novell/zenworks/database` directory on the destination database.

Ignore any compilation warnings that might occur during the object creation process.

6 On the destination database, login as `sysdba` user, and stop and start the Oracle instance by using the following commands at the SQL prompt:

`shutdown immediate`

`startup`

7 On the destination database server, stop and start the listener service by using the following commands at the SQL prompt:

```
lsnrctl stop

lsnrctl start
```

8 On the ZENworks 7.3 Linux Management server, edit the `/etc/opt/novell/zenworks/ hibernate.cfg.xml` configuration file to configure the hibernate connection properties used by the destination database server as follows:

8a Set the connection URL to `jdbc:oracle:thin:@//IP address:port/ORACLE_SID` where the IP address is the address of the Oracle database server, the port is the Oracle database port, and ORACLE_SID is the Oracle system identifier.

The default Oracle database port is 1521, and the default Oracle_SID is ORCL.

8b Set the connection username to the Oracle database username that is used to connect to the ZENworks database. The default username is zenadmin.

8c Set the connection password. The default password for the zenadmin user is novell.

8d Add the following line to allow the Oracle 10g JDBC client to support data greater than 32 KB for CLOB datatypes:

```
<property name="connection.SetBigStringTryClob">true</property>
```

9 On the ZENworks 7.3 Linux Management server, start all the ZENworks services by using the following command:

```
zlm-config --start
```

3.5 Gathering the Database Information

You must be ready to provide the following information during installation of the Primary Server:

- The IP address or DNS hostname of the server where the database resides.
- The port that the PostgreSQL or Oracle database server is listening on. The default PostgreSQL port is 5432. The default Oracle port is 1521.
- The name of the PostgreSQL database or the SID (System Identifier) of the Oracle database.
- The user name for an administrative account for the database.
- The password for the administrative account.

Verifying the RPM Package Signatures

4

All RPM packages on the *Novell ZENworks 7.3 Linux Management* and *Novell ZENworks 7.3 Linux Management with Interim Release 1* media are signed by Novell. To ensure that the RPM packages have not been tampered with, you can verify the RPM package signatures.

1 At the Linux machine, mount the product media of the ZENworks Linux Management version you want to install by using the `mount device mountpoint` command.

- Use the *Novell ZENworks 7.3 Linux Management* installation media to install ZENworks 7.3 Linux Management

- Use the *Novell ZENworks 7.3 Linux Management with Interim Release 1* media to install ZENworks 7.3 Linux Management with IR1.

- Use the ISO image of Novell ZENworks 7.3 Linux Management with Interim Release 1 which is available a the Novell Downloads Web site (http://download.novell.com/index.jsp) to install ZENworks 7.3 Linux Management with IR1.

- Use the *Novell ZENworks 7.3 Linux Management with Interim Release 2* media to install ZENworks 7.3 Linux Management with IR2.

For example, to install ZENworks 7.3 Linux Management, mount the product media by using `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux machine, then mount the image by using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

2 At the command line, change to the mount point.

3 Import the public key by using the following command:

```
rpm --import ./zlm73-publickey
```

4 Verify the RPM packages by using the following command:

```
rpm -K RPM_file
```

For example:

```
rpm -K mount_point/data/packages/zlm7de-runtime-deps/sles-9-x86_64/novell-
zenworks-server-7.3.0-0.x86_64.rpm
```

Rather than verifying packages individually, you can use the following script to verify all of the RPM packages on the media:

```
for i in 'find mount_point/data/packages -name *.rpm' ;
do rpm -K $i ;
done
```

Installing the ZENworks Primary Server

5

The first ZENworks Server you install is the ZENworks Primary Server. The Primary Server becomes the administration point for all ZENworks Servers and managed devices within the Management Zone. For more information, see Section 1.2, "System Architecture," on page 15.

To install your Primary Server, complete the tasks in the following sections:

5.1 What the Installation Program Does

During installation of the Primary Server, the ZENworks installation program does the following:

- Installs eDirectory Services.
- Creates the ZENworks Management Zone. You are prompted for a unique name for the zone. This name must be different from any other Management Zone names in your environment. If you are using Novell eDirectory in your environment, the Management Zone name must also be different from any eDirectory tree names.
- Creates a password for the default ZENworks Administrator account. You are prompted to supply the password.
- Creates the ZENworks Data Store. You are prompted to create a new PostgreSQL database or use an existing PostgreSQL or Oracle database. For more information, see Section 3, "Preparing the Database for the ZENworks Data Store," on page 33.
- Creates the ZENworks Object Store and installs the ZENworks Control Center.
- Installs and starts the ZENworks services.

5.2 Installing the ZENworks Server Software

To install the Primary Server:

1 Make sure the server meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

If you are installing to a device that is configured with DHCP, you might encounter the following eDirectory error in zlm-config:

```
eDir failed to start properly. Please ensure that this machine is
configured with a static IP or permanently-leased DHCP Address.
```

For detailed information on how to resolve the error, see Section A.6, "Installing a ZENworks Server on a Device Configured with DHCP," on page 127.

IMPORTANT: If other services run on port 80, the installation will fail; the server cannot run other services on port 80. If Apache or another service is binding to port 80, remove the service or change the service's port.

For example, change the Apache2 web server's Listen Port (on SLES 9 SP3 as found in `/etc/apache2/ listen.conf`) from 80 to 81. Make sure the Apache service is shut down and then run zlm-config.

2 If the `/etc/hosts` file contains the entry 127.0.0.2 *hostname*.localdomain *hostname,* then change it as follows:

Your_IP_address hostname`.localdomain` *hostname*

3 (Conditional) If you plan to use an existing database for the ZENworks Data Store, make sure you've prepared the database. See Section 3, "Preparing the Database for the ZENworks Data Store," on page 33.

4 At the Linux server, mount the product media of the ZENworks Linux Management version you want to install by using the `mount` *device mountpoint* command.

 ◆ Use the *Novell ZENworks 7.3 Linux Management Server* installation media to install ZENworks 7.3 Linux Management.

 ◆ Use the *Novell ZENworks 7.3 Linux Management with Interim Release 1 Server* media to install ZENworks 7.3 Linux Management with IR1.

 ◆ Use the *Novell ZENworks 7.3 Linux Management with Interim Release 2 Server* media to install ZENworks 7.3 Linux Management with IR2.

For example, to install ZENworks 7.3 Linux Management, mount the product media by using `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

`mount -o loop /`*tempfolderpath*`/`*isoimagename*`.iso` *mountpoint*

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

`mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install`

5 Log in as `root`, then start the installation program from the mount point by running the following command:

`./zlm-install`

IMPORTANT: If you want to install ZENworks 7.3 Linux Management on a SUSE® Linux Enterprise 11 device, you can install it from the text mode console (tty) rather than the X-session of the device. To install it by using the X-session of the device, update the gpg2 package with gpg2 2.0.9-25.25.1 version or later and update the gpg2-lang package with gpg2-lang 2.0.9-25.25.1 version or later. For more information, see "Upgrade" in the ZENworks 7.3 Linux Management with Interim Release 1 Readme (http://www.novell.com/documentation/zlm73/readme/readme_zlm_73_ir1.html).

The steps in this procedure perform a standard installation of ZENworks Linux Management. Depending on your situation, additional options can be used with the `zlm-install` command. For more information, see Appendix VI, "Appendixes," on page 119.

If you do not have the X Window System installed (for example, you installed a Minimal installation of SUSE Linux Enterprise Server 9), you need to install the glib2, XFree86-libs-32 bit, and compat-32bit packages to the server before installing ZENworks Linux Management. When you install ZENworks Linux Management on the server, you must use the `-x` switch to avoid dependency problems. Running `./zlm-install -x` skips any packages that require the X Window System. In Step 8 below, you must agree when it says that the installation lacks the zmd-gconfpolicyenforcer, novell-zenworks-zmd-rmagent, and vnc components.

For more information about installing ZENworks Linux Management on a SUSE Linux Enterprise Server with a Minimal installation, see "Operating Systems" on page 23.

6 When prompted to install ZENworks, enter Y to continue.

7 Review the Software License Agreement, press Page Down to scroll down the page, then enter Y to accept the agreement.

Installation of the software begins. There are ten software components to install. Installation progress is displayed for each component.

If you are installing on a SUSE Linux Enterprise Server 10 (SLES 10) device, a message might be displayed informing you that some packages are already installed (for example, rug, zmd-inventory, or zen-updater). Some packages that ship with ZENworks Linux Management also ship with SLES 10. Depending on the versions of these packages, you might be prompted to re-install these packages, which might overwrite configuration changes you have made. Press Y to continue.

If you are installing on a SUSE Linux Enterprise Server 11 (SLES 11) 64-bit device, a message might be displayed informing you that the nici packages are already installed. You might be prompted to reinstall these packages, which might overwrite configuration changes you have made. Press Y to continue.

8 When installation of the software is complete, enter Y to run `zlm-config` and configure the ZENworks Primary Server and Management Zone.

9 If you have multiple interfaces configured, you are prompted to enter the IP address to which you want to configure your server. Enter the IP address of the device. By default, the IP address of the first interface is selected as the device.

10 Provide the appropriate responses to the following prompts:

- **Is this the first server in your system?:** Enter Y for Yes.

- **Enter a unique Management Zone name:** Enter the name you want to use for your ZENworks Management Zone. For example, Novell_Boston. The name cannot be the same as any other ZENworks Management Zone in your network environment. If you use Novell eDirectory, it cannot be the same name as your eDirectory tree name.

- **Enter an Administrator password:** Enter the password you want assigned to the default ZENworks Administrator account.

- **Repeat the Administrator password:** Re-enter the password.

- **Do you want ZENworks to install and set up a local PostgreSQL database for you?:**

  If you want to use a new PostgreSQL database for the ZENworks Data Store and have it located on the Primary Server, enter Y for Yes. If you want to use an existing PostgreSQL or Oracle database, either on the Primary Server or on a remote server, enter N for No.

11 Choose to continue with a Self-Signed Certificate or to import your own PKCS12 certificate. If you choose to import your own PKCS12 certificate, you must enter the location of the certificate and the password.

For more information on the Self-Signed Certificates, see Section A.7, "Adding a Third-Party Certificate," on page 127.

12 If you chose to use an existing database, continue with Step 13.

or

If you chose to install and set up a local PostgreSQL database, skip to Step 14.

13 Provide the appropriate responses to the following prompts to configure access to an existing database:

   ◆ **IP address or hostname of the *database* server:** Enter the IP address or DNS hostname of the server hosting the database.

   ◆ **Port *database* is listening on:** Enter the listening port being used by the database server. The default PostgreSQL listening port is 5432. The default Oracle listening port is 1521.

   ◆ **Database name/SID:** For a PostgreSQL database, enter the name of the database. For an Oracle database, enter the SID (System Identifier).

   ◆ **Database user name:** Enter the user name for an administrative account that provides full access to the database.

   ◆ **Database user password:** Enter the account password.

14 When configuration of the ZENworks Server components is complete, you should verify the installation. To do so:

   14a Confirm that the ZENworks services are running by using the following command:

   ```
   /opt/novell/zenworks/bin/zlm-config --status
   ```

   The screen output should show that all services are running.

   ```
   Novell ZENworks Imaging Service is running

   Novell eDirectory is running

   Novell ZENworks Server Management is running

   Novell ZENworks Imaging Agent is running

   Novell ZENworks Server is running

   Novell ZENworks Preboot Policy Daemon is running

   Novell ZENworks Management Daemon is running

   Novell ZENworks Loader is running
   ```

   If a service is not running, use the following command to start it:

   ```
   /etc/init.d/servicename start
   ```

   Replace *servicename* with the name of the service that needs to be started.

Service	Service Name
Novell eDirectory	ndsd
Novell ZENworks Server	novell-zenserver
Novell ZENworks Loader	novell-zenloader
Novell ZENworks Imaging Service	novell-pbserv
Novell ZENworks Preboot Policy Daemon	novell-zmgprebootpolicy
Novell ZENworks Server Management	novell-zented

Service	Service Name
Novell ZENworks Management Daemon	novell-zmd
Novell Imaging Agent	novell-zislnx

For example, if the Novell ZENworks Management Daemon is not running, use the following command to start it:

```
/etc/init.d/novell-zmd start
```

For additional information about the ZENworks services, see "ZENworks Services" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

14b (Conditional) If you are using the PostgreSQL database, confirm that it is running by using the following command at the database server:

```
/etc/init.d/postgresql status
```

14c Access the ZENworks Control Center using a Web browser that meets the requirements listed in Section 2.4, "Administration Workstation Requirements," on page 29. Use the following URL to access the Control Center:

```
https://ZENworks_Primary_Server_Address
```

Replace *ZENworks_Primary_Server_Address* with the IP address or DNS name of the Primary Server.

The ZENworks Control Center requires an https:// connection; requests to http:// are redirected to https://.

When prompted for login credentials, use the Administrator user with the password you provided during the installation.

After you are in the Control Center, you can click the *Devices* tab, then click the *Servers* folder to view your ZENworks Primary Server.

15 After successfully installing the ZENworks Server components, take a reliable backup of the following files:

- ◆ `/etc/opt/novell/zenworks/hibernate.cfg.xml`
- ◆ `/etc/opt/novell/zenworks/tomcat/base/server.xml`
- ◆ `/etc/opt/novell/zenworks/serversecret`

16 (Conditional) Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.

17 Continue with the next section, Supplying Your Product License Code.

5.3 Supplying Your Product License Code

Your ZENworks system is installed with a 90-day evaluation license. For your system to continue to work after 90 days, you need to supply your product license. To do so:

1 Access the ZENworks Control Center using the following URL:

```
https://ZENworks_Primary_Server_Address
```

Replace *ZENworks_Primary_Server_Address* with the IP address or DNS name of the Primary Server.

2 Click the *Configuration* tab.

The Licensing section is located in the lower right corner of the *Configuration* page. The section displays the number of days remaining on the evaluation license.

3 Click *Change* to display the Product Activation box, provide your product license code, then click *OK*.

4 To install a Secondary Server, continue with the next section, Installing a ZENworks Secondary Server.

or

To set up devices to be managed, skip to Section 7, "Setting Up Managed Devices," on page 53.

Installing a ZENworks Secondary Server

6

Your ZENworks Management Zone has only one Primary Server. Any ZENworks Servers that you install after the Primary Server are called ZENworks Secondary Servers. A Secondary Server performs all of the same functions as the Primary Server. Complete the tasks in the following sections to install a Secondary Server:

6.1 Determining If a Secondary Server is Needed

There are two main factors that determine whether or not you need Secondary Servers in your system:

- **Number of devices:** The number of devices you intend to manage is one of the major factors in determining the number of ZENworks Servers you need. How many management tasks you'll be regularly performing on these devices is another contributing factor.

- **Network speed:** The ZENworks system has three key communication paths that should not be impeded by slow WAN links: 1) the ZENworks Primary Server to a ZENworks Secondary Server, 2) any ZENworks Servers to the ZENworks Data Store, and 3) any managed device to its ZENworks Server.

  In general, this means that to achieve the best performance, you should do the following:

  - Make sure that each managed device resides in the same local area network as its ZENworks Server. For example, if you have devices in a Los Angeles office and devices in a London offices and the two offices have a slow WAN link, you should have ZENworks Servers in both offices.

  - Make sure that all Secondary Servers reside in the same local area network as the Primary Server. The Primary Server replicates software packages and images to each Secondary Server in its Management Zone on a regularly scheduled basis. If there is a large amount of data to transfer, this process can consume extensive bandwidth.

  - Make sure that ZENworks Servers reside in the same local area network as the ZENworks Data Store. The servers consistently access the Data Store for ZENworks information.

Overall, you achieve best performance if all ZENworks Servers and managed devices within the same Management Zone are located on the same LAN or have fast WAN links. To facilitate consistency between different Management Zones, you can mirror the software packages between Primary Servers in the different zones (see "Mirroring Software" in the *Novell ZENworks 7.3 Linux Management Administration Guide*).

6.2 Installing the ZENworks Server Software as Secondary Server

To install a Secondary Server:

1 Synchronize the Secondary Server's system clock with the Primary Server's system clock to ensure correct operation of the system. If the two servers are not synchronized, the installation fails.

After synchronizing the clocks, restart eDirectory and all ZENworks Linux Management services on the Primary Server. To restart the ZENworks Linux Management services, enter the following command:

```
/opt/novell/zenworks/bin/zlm-config --restart
```

2 (Conditional) If ZENworks 7.3 Linux Management is configured with a PostgreSQL database, then go to the ZENworks Primary Server that you installed by following the steps in "Installing the ZENworks Primary Server" on page 41, and enter the following command:

```
zlm-config --allow-secondary=Secondary_Server
```

where *Secondary_Server* is the IP address or DNS name of the intended Secondary Server. This command identifies each Secondary Server before it is installed. Repeat this command for each Secondary Server that you install.

If you are installing to a SUSE Linux Enterprise Server 10 (SLES 10) device, see Section A.6, "Installing a ZENworks Server on a Device Configured with DHCP," on page 127.

NOTE: If you add a Secondary Server that has a router between it and the Primary Server, you get the following error message:

```
The installer was unable to connect to the specified database. Please
verify the values you entered and try again.
```

Check the `/var/opt/novell/log/zenworks/zlm-config.log` file on the Primary Server and see which IP address the Primary Server thinks is trying to connect with it. If the address is the router's address rather than the address of your Secondary Server, you most likely have masquerading running on the router.

The best solution to remedy this problem is to disable masquerading on the router. You can also use the router address when specifying the IP or DNS name of the Secondary Server but this causes potential security risks.

3 When prompted to restart ZENworks, enter Y for Yes.

4 Repeat Step 2 and Step 3 on page 48 each Secondary Server that you are installing.

5 Make sure the intended Secondary Server meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

IMPORTANT: If other services run on port 80, the installation will fail; the server cannot run other services on port 80. If Apache or another service is binding to port 80, remove the service or change the service's port.

For example, change the Apache2 web server's Listen Port (on SLES 9 SP1 as found in `/etc/apache2/ listen.conf`) from 80 to 81. Make sure the Apache service is shut down and then run zlm-config.

6 Make sure the Secondary Server's system clock is synchronized with the Primary Server's system clock.

System clock synchronization is required to ensure correct operation of the ZENworks system. If the two servers are not synchronized, the installation fails.

After synchronizing the clocks, restart eDirectory and all ZENworks Linux Management services on each server that had its clock's time changed. To restart the ZENworks Linux Management services, enter the following command:

```
/opt/novell/zenworks/bin/zlm-config --restart
```

7 At the intended Secondary Server, mount the product media of the ZENworks Linux Management version you want to install by using the `mount device mountpoint` command:

 ◆ Use the *Novell ZENworks 7.3 Linux Management* installation media to install ZENworks 7.3 Linux Management.

 ◆ Use the *Novell ZENworks 7.3 Linux Management with Interim Release 1 Server* installation media to install ZENworks 7.3 Linux Management with IR1.

 ◆ Use the *Novell ZENworks 7.3 Linux Management with Interim Release 2 Server* installation media to install ZENworks 7.3 Linux Management with IR2.

For example, to install ZENworks 7.3 Linux Management, mount the product media by using `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

```
:mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

8 Log in as `root`, then start the installation program from the mount point by running the following command:

```
./zlm-install
```

NOTE: The steps in this procedure perform a standard installation of ZENworks Linux Management. Depending on your situation, additional options can be used with the `zlm-install` command. For more information, see Section A.1, "Installation Options," on page 121.

If you do not have the X Window System installed (for example, you installed a Minimal installation of SUSE Linux Enterprise Server 9), you must install the glib2, XFree86-libs-32 bit, and compat-32bit packages and use the -x option while installing the ZENworks Agent. For more information, see "-x" on page 122.

For more information about installing ZENworks Linux Management on a SUSE Linux Enterprise Server with a Minimal installation, see "Operating Systems" on page 23.

---

9 When prompted to install ZENworks, enter `Y` to continue.

10 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

Installation of the software begins. There are ten software components to install. Installation progress is displayed for each component.

11 When installation of the software is complete, enter Y to run zlm-config and configure the ZENworks Secondary Server.

> **IMPORTANT:** If the default server rule is modified on the Primary Server while you are configuring the Secondary Server, ensure that the modified rule is applicable to all the servers that are registering to the Primary Server.

12 Provide the appropriate responses to the following prompts:

- **Is this the first server in your system?:** Enter N for No.
- **IP address or DNS name of the primary server:** Enter the IP address or DNS name of the Primary Server.
- **Is the system clock synchronized with the primary server?:** Enter Y to continue (Step 1 on page 48).
- **Administrator Password:** Enter the password for the ZENworks Administrator account.
- **Would you like to continue with installation into the Management Zone?:** The installation program displays the name of the ZENworks Management Zone in which the Secondary Server will be installed. Enter Y to continue.

The zlm-config utility adds the server to the ZENworks system as a ZENworks Secondary Server and then configures the ZENworks Server software components.

13 Choose to continue with a Self-Signed Certificate or to import your own PKCS12 certificate. If you choose to import your own PKCS12 certificate, you must enter the location of the certificate and the password.

For more information on the Self-Signed Certificates, see Section A.7, "Adding a Third-Party Certificate," on page 127.

14 When configuration of the ZENworks Server software components is complete, you should verify the installation. To do so:

14a Confirm that the ZENworks services are running by using the following command:

```
/opt/novell/zenworks/bin/zlm-config --status
```

The screen output should show that all services are running.

```
log dir: /var/opt/novell/log/zenworks
Novell eDirectory is running
Novell ZENworks Server is running
Novell ZENworks Loader is running
Novell ZENworks Imaging Service is running
Novell ZENworks Preboot Policy Daemon is running
Novell ZENworks Server Management is running
Novell ZENworks Management Daemon is running
```

If a service is not running, use the following command to start it:

```
/etc/init.d/servicename start
```

Replace *servicename* with the name of the service that needs to be started.

Service	Service Name
Novell eDirectory	ndsd
Novell ZENworks Server	novell-zenserver
Novell ZENworks Loader	novell-zenloader

Service	Service Name
Novell ZENworks Imaging Service	novell-pbserv
Novell ZENworks Preboot Policy Daemon	novell-zmgprebootpolicy
Novell ZENworks Server Management	novell-zented
Novell ZENworks Management Daemon	novell-zmd

For example, if the Novell ZENworks Management Daemon is not running, use the following command to start it:

```
/etc/init.d/novell-zmd start
```

For additional information about the ZENworks services, see "ZENworks Services" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

14b Access the ZENworks Control Center using the following URL:

```
https://ZENworks_Primary_Server_Address
```

Replace *ZENworks_Primary_Server_Address* with the IP address or DNS name of the Primary Server.

After you are in the Control Center, you can click the *Devices* tab, then click the *Servers* folder to view your ZENworks Secondary Server.

15 Repeat the steps in this section to set up additional Secondary Servers.

or

Continue with the next section, Defining a Content Replication Schedule.

6.3 Defining a Content Replication Schedule

When you define an package for delivery to managed devices within you system, the package is physically added to the package repository on the Primary Server. To ensure that packages are available on each ZENworks Server, you need to establish a schedule for replicating the packages from your Primary Server to your Secondary Servers. By default, no schedule is defined, which means that no replication can take place until you define the schedule.

1 Access the ZENworks Control Center by using the following URL:

```
https://ZENworks_Primary_Server_Address
```

Replace *ZENworks_Primary_Server_Address* with the IP address or DNS name of the Primary Server.

2 Click the *Configuration* tab.

3 In the Management Zone Settings list, click *Content Replication Schedule* to display the Content Replication Schedule page.

The Content Replication Schedule page determines how often bundles are replicated from the Primary Server to all Secondary Servers in the Management Zone. During replication of a bundle, only a new packages and updates to existing packages are sent.

4 Select a schedule type from the drop-down list.

The following schedules are available:

Schedule Type	Description
"Date Specific"	Select one or more dates on which to replicate the content to Secondary Servers and set other restrictions that might apply.
"Day of the Week Specific"	Select one or more days of the week on which to replicate content to Secondary Servers and set other restrictions that might apply.
"Monthly"	Select the day of the month on which to replicate content to Secondary Servers and set other restrictions that might apply.

5 Click *OK*.

6 To set up devices to be managed, continue with the next section, Setting Up Managed Devices.

Setting Up Managed Devices

7

Before a workstation or server can be managed by ZENworks Linux Management, it must have the ZENworks Agent installed and be registered in the Management Zone.

On a SLES 10 IA 64 platform, before installing or upgrading to ZENworks 7.3 IR2 Linux Management from the earlier versions of ZENworks Linux Management, make sure to change the security level preference from *Signature* to *None*. You can change the preference by using the `rug` command. For more information, see "rug (1)" in the *Novell ZENworks 7.3 Linux Management Administration Guide*. For more information on how to set the security-level preference by using ZENworks Control Center, see "Configuring the ZENworks Management Daemon (zmd) Settings"in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

NOTE: Installing the ZENworks Linux Management agent removes the previously added YaST installation sources from the device. You can add these installation sources again after the agent installation is complete by using either YaST or the `rug` command. The installation sources are automatically synchronized with ZENworks in YaST if the *Synchronize Changes with ZENworks* option is selected in the Installation Source pane.

The following sections provide setup instructions:

- Section 7.1, "Installing ZENworks Linux Management on SLES 10 IA 64," on page 53
- Section 7.2, "Installing the ZENworks Agent and Registering the Device," on page 54
- Section 7.3, "Setting Up the Open Enterprise Server 1 after Installing ZENworks Linux Management," on page 61
- Section 7.4, "Enabling Dell PowerEdge Support," on page 63

For more information about creating a ZENworks Agent ISO image or media and automating installation of the ZENworks Agent, see Appendix VI, "Appendixes," on page 119.

7.1 Installing ZENworks Linux Management on SLES 10 IA 64

1 Back up the `/bin/rpm` file by using the `cp /bin/rpm /bin/rpm.bak` command.

2 Change the security level preference to *None* by using the `rug set security-level none` command.

For more information, see "rug (1)" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

3 Open any text editor and create an install script `ia64_73_Install.sh` with the following information:

```
if [ ! -f /bin/rpm.orig/rpm ];then
    mkdir -p /bin/rpm.orig
    mv /bin/rpm /bin/rpm.orig

fi
echo "/bin/rpm.orig/rpm --nosignature \$*" > /bin/rpm
chmod +x /bin/rpm
```

4 Save the install script file and exit the editor.

5 Run the install script by using the `sh ia64_73_Install.sh` command.

6 Install ZENworks 7.3 Linux Management on the managed device. For more information on how to install, see Section 7.2, "Installing the ZENworks Agent and Registering the Device," on page 54.

7 Restore the `rpm.bak` file by using the `mv /bin/rpm.bak /bin/rpm` command.

7.2 Installing the ZENworks Agent and Registering the Device

The following instructions explain how to install the ZENworks Agent and register it to the Management Zone. You should follow the instructions on at least one device to become familiar with the installation and registration process. However, before installing the ZENworks Agent on a large number of devices, you should review the following sections:

- "Organizing Devices: Folders and Groups" and "Creating Registration Keys and Rules" in the *Novell ZENworks 7.3 Linux Management Administration Guide*. The first section explains how to best use folders and groups to minimize your management overhead. The second section explains how to use registration keys and rules to automatically assign a device to a folder and groups when the device is registered.

- Section A.2, "Automating Installation of the ZENworks Agent," on page 122. You can automate the installation of the ZENworks Agent through the use of a script and a response file.

Dell PowerEdge Servers: If you plan to update Dell PowerEdge servers by using Dell Update Packages, we recommend that you mirror the packages from the Dell FTP site before installing the ZENworks Agent on the managed PowerEdge servers. You can also mirror the packages after installing the ZENworks Agent on the managed PowerEdge servers but before registering them in the ZENworks Management Zone. Mirroring the Dell Update Packages prior to installing the ZENworks Agent or registering the servers in the Management Zone ensures that all Dell model numbers are loaded into the database, the standard reports are run as the servers register, and the Dell Update Packages exist in the ZENworks package repository. For more information, see "Using Dell Update Package Bundles" in the *Novell ZENworks 7.3 Linux Management Administration GuideNovell ZENworks 7.3 Linux Management Administration Guide*.

You can install the ZENworks Agent in any of the following ways:

- Section 7.2.1, "Manually Installing the ZENworks Agent," on page 54
- Section 7.2.2, "Installing the ZENworks Agent by Using the YaST Add-on," on page 57
- Section 7.2.3, "Installing the ZENworks Linux Management Agent by Using AutoYaST," on page 59
- Section 7.2.4, "Using the Default ZENworks Linux Management Agent to Install the ZENworks Agent," on page 61

7.2.1 Manually Installing the ZENworks Agent

To manually install the ZENworks Agent and register it in the Management Zone:

1 Make sure the device meets the necessary requirements. See Section 2.3, "Managed Device Requirements," on page 25.

2 At the Linux device, mount the media you are using for the install:

  ◆ *Novell ZENworks 7.3 Linux Management Agent* CD

  ◆ *Novell ZENworks 7.3 Linux Management with Interim Release 1 Agent* CD

  ◆ *Novell ZENworks 7.3 Linux Management with Interim Release 2 Agent* CD

Or

  ◆ ISO image

    The ISO image of ZENworks 7.3 Linux Management is available at the Novell Downloads Web site (http://download.novell.com/Download?buildid=qXhwtS89PvQ~).

    The ISO image of ZENworks 7.3 Linux Management with IR1 / IR2 is available at the Novell Downloads Web site (http://download.novell.com/index.jsp).

To mount a media, use the following command:

```
mount device mountpoint
```

For example:

```
mount /dev/cdrom /zlm73
```

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux device, then mount the image using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZENworks_Agent.iso /zlm/install
```

3 Log in as root, then start the installation program:

IMPORTANT: If you want to install ZENworks 7.3 Linux Management on a SUSE® Linux Enterprise 11 GM device, you can install it from the text mode console (tty) rather than the X-session of the device. To install it by using the X-session of the device, update the gpg2 package with gpg2 2.0.9-25.25.1 version or later and the gpg2-lang package with gpg2-lang 2.0.9-25.25.1 version or later. For more information, see "Upgrade" in the ZENworks 7.3 Linux Management with Interim Release 2 Readme (http://www.novell.com/documentation/zlm73/readme/readme_zlm_73_ir2.html).

  ◆ **For Workstations and Servers that are Not Dell PowerEdge Servers:** If you are installing the ZENworks Agent on a workstation or a server that you do not want to manage using the ZENworks Linux Management features specific to PowerEdge servers (on a server that is not a Dell PowerEdge server, for example), start the installation from the mount point using the following command:

    ```
    ./zlm-install -a
    ```

    The `-a` option installs only agent portions of ZENworks Linux Management. The `-a` option is optional because the agent iso, however, installs only the agent component.

  ◆ **For Dell PowerEdge Servers:** If you are installing the ZENworks Agent on a Dell PowerEdge server that you want to manage using the ZENworks Linux Management features specific to PowerEdge servers, start the installation program from the mount point using the following command:

```
./zlm-install -o
```

The `-o` option installs the OEM module for Dell hardware required to use the features specific to Dell PowerEdge servers in ZENworks Linux Management.

If you install the ZENworks Agent using the `-o` option, you cannot use the ZENworks Linux Management Dell functionality until you have completed the configuration steps in Section 7.4, "Enabling Dell PowerEdge Support," on page 63.

NOTE: The steps in this procedure perform a standard installation of ZENworks Linux Management. Depending on your situation, additional options can be used with the `zlm-install` command. For more information, see Section A.1, "Installation Options," on page 121.

If you do not have the X Window System installed (for example, you installed a Minimal installation of SUSE Linux Enterprise Server 9), see "-x" on page 122.

---

4 When prompted to install ZENworks, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

Installation of the ZENworks Agent software begins.

6 The installation checks whether the device is already registered to a ZENworks service, and prompts you to retain the existing registered ZENworks service.

   - If you enter `y`, the installation is completed. Skip to Step 8.
   - If you enter `n`, continue with Step 7.

7 Provide the appropriate responses to the following prompts to register the device:

   - **Registration Server Address:** Enter the IP address or DNS name of the ZENworks Server that you want to manage this device. This can be the Primary Server or a Secondary Server, and should be the server that has best network access to the device.

     If you leave this field blank, no service is added. You can register the device at a later time by using the rug command line interface.

     For SUSE Linux Enterprise Server 10 (SLES 10) and SUSE Linux Enterprise Desktop 10 (SLED 10) devices:

     ```
     /usr/bin/rug sa https://ZEN_Server_address
     ```

     For SUSE Linux Enterprise 11 (SLES 11) and SUSE Linux Enterprise Desktop 11 (SLED 11) devices:

     ```
     /usr/bin/rug sa https://ZEN_Server_address
     ```

     For other managed devices:

     ```
     /opt/novell/zenworks/bin/rug sa https://ZEN_Server_address
     ```

   - **(Optional) Registration Server Key:** You can leave this field blank. ZENworks has two default registration rules, one for servers and one for workstations. If you leave this field blank, ZENworks uses one of the two default registration rules to register the device. The rules cause the device to be added to either the `/Servers` folder or the `/Workstations` folder with the device's hostname used for its device name.

     Before installing the ZENworks Agent on a large number of devices and registering them, you should create registration keys and rules that enable you to place devices in specific folders and groups. Using folders and groups reduces the effort required to manage a large

number of devices. Registration keys and rules, as well as folders and groups, are discussed in "Understanding ZENworks Linux Management" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

> **NOTE:** Do not register the ZENworks Agent to a ZENworks Linux Management server that has bundles assigned to this agent. If you do so, the ZENworks Agent ceases to work after the bundles are installed. You can, however, choose to register the ZENworks Agent to the server after the ZENworks Agent installation is complete.

8 After the installation is complete, confirm that the ZENworks Agent is running by using the following command:

```
/etc/init.d/novell-zmd status
```

9 Confirm that the device has been added to the ZENworks Object Store by accessing the ZENworks Control Center:

```
https://ZENworks_Primary_Server_Address
```

Replace *ZENworks_Primary_Server_Address* with the IP address or DNS name of the Primary Server.

After you are in the Control Center, you can click the *Devices* tab, then click the *Servers* folder or *Workstation* folder to view the device.

The ZENworks Agent installation removes all the existing services that are registered through zmd on the managed device so that the managed devices with ZENworks 7.3 Linux Management installed contacts the ZENworks Server for all its management needs.

If you've installed the ZENworks Agent on the Open Enterprise Server 1, continue with Section 7.3, "Setting Up the Open Enterprise Server 1 after Installing ZENworks Linux Management," on page 61. To deploy and manage Dell PowerEdge servers, skip to Section 7.4, "Enabling Dell PowerEdge Support," on page 63.

7.2.2 Installing the ZENworks Agent by Using the YaST Add-on

You can create an ISO image that contains Novell ZENworks 7.3 Linux Management with IR2 packages, and use it to include ZENworks 7.3 Linux Management with IR2 as an add-on product.

Review the following sections:

- "Creating the ZENworks Linux Management Agent Add-On" on page 57
- "Adding the ZENworks Linux Management Agent Add-On to YaST and Installing the ZENworks Linux Management Agent" on page 58
- "Installing the ZENworks Linux Management Agent while Installing the Operating System" on page 59

Creating the ZENworks Linux Management Agent Add-On

1 At the Novell Downloads (http://download.novell.com), search for the `novell-zenworks-yast-add-on.rpm` keyword. This displays the list of available RPMs.

2 Download the required RPM to the device where you want to create the ZENworks Linux Management agent.

3 At the command prompt, install the RPM by using the following command:

```
rpm -ivh  filename
```

4 Create the ZENworks Linux Management agent add-on ISO by using the following command:

`zlm-create-yast-add-on` *options*

The following table describes the options that can be used with the command:

Option	Description
-i *ISO_name*	The name of the ISO image to be created. If you do not provide an ISO name; the default ISO name `zlm-add-on` is selected.
-m *mount_point*	The path where the ZENworks Linux Management agent is mounted.
-o *output_directory*	The directory to which the ISO image is written. If you do not specify an output directory, the ISO image is copied to the `/tmp` directory.
-c *value*	The values can be 9, 10, or 11.
	The number 10 is the default value to create the ZENworks Linux Management agent add-on for SLES 10, SLED 10, and OES 2 platforms. The number 9 is the value to create the ZENworks Linux Management agent add-on for SLES 9 platforms. The number 11 is the value to create the ZENworks Linux Management agent add-on for SLES 11 / SLED 11 platforms.
-h	Prints the help information.

For example, to create a `zlm-agent-add-on.iso` image for SLES 10, SLED 10 or OES 2, and store it in the `/mnt` directory, run the following command:

`zlm-create-yast-add-on` *-i* `zlm-agent-add-on` *-m* `/mnt/zlm-agent` *-o* `/mnt/` *-c 10*

Adding the ZENworks Linux Management Agent Add-On to YaST and Installing the ZENworks Linux Management Agent

1 Create the ZENworks Linux Management agent add-on ISO.

For more information on how to create the ZENworks Linux Management agent add-on ISO, see "Creating the ZENworks Linux Management Agent Add-On" on page 57.

2 Run the `yast2 add-on` command.

The *Add-on Product Media* Graphical User Interface is displayed.

3 Select the media where the agent add-on ISO is stored.

For example, if you have stored the agent add-on ISO on an NFS server, select the *NFS* option.

4 Click *Next*.

5 Provide the necessary details for the selected media.

6 Click *OK*.

7 Accept the license agreement.

The ZENworks Linux Management agent add-on is added to YaST.

8 Click *Next* to install the ZENworks Linux Management Agent.

9 (Conditional) Filter based on Patterns and select the required patterns for SLES 10 / SLED 10, SLES 11 / SLED 11, or OES 2 platforms.

The following table describes the patterns that are available with the agent add-on:

Patterns	Description
ZLM Agent no X	Agent installation without X-related packages. This pattern is for the agent on default clients.
ZLM Agent X	Agent installation with X.
ZLM Agent Imaging	Agent imaging agent component.
ZLM Agent OEM	Agent OEM package for Dell machines.
ZLM Agent All	Full installation of the agent.

10 (Conditional) Filter based on Selections and choose the required selections for SLES 9 platform.

11 Select *Packages > All in this List > Update unconditionally* to update the packages.

12 Click *Accept* to install the ZENworks Linux Management agent.

Installing the ZENworks Linux Management Agent while Installing the Operating System

1 Create the ZENworks Linux Management agent add-on ISO.

For more information on how to create the ZENworks Linux Management agent add-on ISO, see "Creating the ZENworks Linux Management Agent Add-On" on page 57.

2 In the Installation Mode window that is displayed while installing the operating system, select the *Include Add-on Products from Separate Media* check box, then click *Next*.

3 Select the *ISO Image* check box to include the ZENworks Linux Management agent add-on ISO to Yast as an add-on product, then click *Next*.

4 Accept the license agreement, then click *Next*.

5 In the Installation Settings window, click *Software*.

6 Filter the packages based on Patterns, then select the required patterns.

7 Click *Accept* and continue with the installation.

The ZENworks Linux Management agent is installed along with the operating system.

7.2.3 Installing the ZENworks Linux Management Agent by Using AutoYaST

To install the ZENworks Linux Management agent by using AutoYaST, an autoyast configuration file `autoinst.xml` with the ZENworks Linux Management agent add-on is required. You can create the `autoinst.xml` file with the ZENworks Linux Management agent add-on either while installing the operating system or by updating an existing `autoinst.xml` file.

NOTE: You cannot create an AutoYaST configuration file for the ZENworks Linux Management agent on SLES 9 devices.

You can create the AutoYaST configuration file with the ZENworks Linux Management agent add-on in any of the following ways:

- ◆ "Creating the AutoYaST Configuration File With the ZENworks Linux Management Agent Add-on While Installing the Operating System" on page 60
- ◆ "Adding ZENworks Linux Management Agent Add-on to an Existing AutoYaST Configuration File" on page 60

Creating the AutoYaST Configuration File With the ZENworks Linux Management Agent Add-on While Installing the Operating System

1 Create the ZENworks Linux Management agent add-on ISO. For more information on how to create the ZENworks Linux Management agent add-on ISO, see "Creating the ZENworks Linux Management Agent Add-On" on page 57.

2 In the Installation Mode window that is displayed while installing the operating system, select the *Include Add-on Products from Separate Media* check box, and click *Next*.

3 Select the *ISO Image* check box to include the ZENworks Linux Management agent add-on ISO to Yast as an add-on product, and click *Next*.

4 Accept the license agreement, and click *Next*.

5 In the Installation Settings window, click *Software*.

6 Filter the packages based on Patterns, and select the required patterns.

7 Click *Accept*.

8 Click *Install*.

9 After the installation is complete, select the *Clone This System for Autoyast* check box.

10 Click *Finish*.

The `autoinst.xml` configuration file is created in the */root* directory.

Adding ZENworks Linux Management Agent Add-on to an Existing AutoYaST Configuration File

1 Create the ZENworks Linux Management agent add-on ISO. For more information on how to create the ZENworks Linux Management agent add-on ISO, see "Creating the ZENworks Linux Management Agent Add-On" on page 57.

2 Run the `yast2 autoyast` command.

The *YaST 2* window is displayed.

3 Click *File > Open* and select the existing AutoYaST configuration file.

4 Click *Software > Add-on Product*.

5 Click *Configure*.

The Add-on product Installation window is displayed.

6 Select the media where the agent add-on ISO is stored.

For example, if the agent add-on ISO is stored on an NFS server, select the *NFS* option.

7 Click *Next*.

8 Provide the necessary details for the selected media.

9 Click *OK*.

10 Accept the license agreement and click *Next*.

11 Click *Software > Package Selection*.

12 Click *Configure*.

13 Filter the packages based on patterns and select the required patterns.

14 Click *Accept.*

15 Select *File > Save as* and save the updated AutoYast configuration file.

7.2.4 Using the Default ZENworks Linux Management Agent to Install the ZENworks Agent

A default instance of the ZENworks Linux Management agent is available on SLES 10 and SLED 10 managed devices. You can use it to install the ZENworks agent.

1 Create an upgrade bundle. For more information on how to create an upgrade bundle, see "Creating an Upgrade Bundle" on page 86.

2 Create a script for the upgrade bundle. For more information on how to create a script for the upgrade bundle, see "Creating a Script for Upgrade Bundles" on page 86.

3 Create a catalog for the upgrade bundle. For more information on how to create a catalog for an upgrade bundle, see "Creating Catalogs for Upgrade Bundles" on page 87.

4 Upgrade the SLES 10 or the SLED 10 managed device by using the upgrade bundle. For more information, see "Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle" on page 88.

7.3 Setting Up the Open Enterprise Server 1 after Installing ZENworks Linux Management

If you want to configure any other Novell products on the Novell Open Enterprise Server 1/SP1/SP2 after installing the ZENworks 7.3 Linux Management Agent, you must first remove the entries for the earlier version of rug, rcd, and red-carpet from `/opt/novell/oes_install/selections/novell-base.sel` by using a Text File policy.

1 Log into ZENworks Control Center.

2 Click the *Policies* tab.

3 In the *Policies* list, click *New*, then click *Policy* to display the Create New Policy page.

4 In the *Policy Type* list, click *Text File Policy*, then click *Next* to display the Policy Name page.

5 Fill in the fields:

- ◆ **Policy name:** (Required) Provide a unique name for the policy. The name you provide displays in the ZENworks Control Center interface, which is the administrative tool for ZENworks Linux Management.

- ◆ **Folder:** (Required) Type the name or browse to the folder that this policy will be created in. Folders display in the ZENworks Control Center.

- ◆ **Description:** Provide a short description of the policy. This description displays on the policy's Summary page in the ZENworks Control Center interface.

6 Click *Next* to display the General page.

7 Configure the following settings:

File Name: Specify `/opt/novell/oes_install/selections/novell-base.sel` as the filename.

Maximum number of versions to retain: Specify the maximum number of backups to be maintained for a file that has been changed. If the maximum limit of backups is reached, the oldest backup of a file is deleted. The backup is created in the same location as the specified file.

Change name: Specify `rug` as the change name.

Change mode: Select *Search file* from the drop-down list.

Search string: Specify `rug` as the search string

Case sensitive: Select this option to distinguish between uppercase and lowercase characters. When *Case sensitive* is selected, the system finds only those instances in which the capitalization matches the text you have specified in the search string.

Search occurrence: Select *First Occurrence* from the drop-down list. The system finds the first occurrence of the search string and performs the specified action on it.

Result action: Select *Delete line* from the drop-down list.

8 Click *Next* to display the Script page.

9 Fill in the fields:

Pre-change action: Specify the actions to perform before modifying the text files:

- **Executable type:** Select *Script* from the drop-down list.
- **Script to run:** Select *Define Your Own Script* from the drop-down list.
- **Define your own script:** Type the following in the box:

```
#!/bin/bash
INSTALLFILE=/opt/novell/oes_install/selections/novell-base.sel
if [ -f $INSTALLFILE ]; then
 chmod +w $INSTALLFILE
fi
```

- **Action when the execution fails:** Select an action you want the system to perform when an execution fails. You can continue modifying the file by selecting *Continue modifying the text file* or you can stop the modifications in the file by selecting *Do not modify the text file*.

  NOTE: The backup of the text file is taken after the pre-change action completes the execution and before the text file modification starts.

Post-change action: Specify the actions to perform after the actual changes are done in the file.

- **Executable type:** Select *Script* from the drop-down list.
- **Script to run:** Select *Define Your Own Script* from the drop-down list.
- **Define your own script:** Type the following in the box:

```
#!/bin/bash
INSTALLFILE=/opt/novell/oes_install/selections/novell-base.sel
if [ -f $INSTALLFILE ]; then
```

```
        chmod -w $INSTALLFILE

    fi
```

10 Click *Next* to display the Summary page.

11 Click *Finish* to create the policy as configured according to the settings on the Summary page. The policy is created but not assigned to any devices.

12 In the Policies page, click the newly created policy.

13 Click the *Details* tab to add two new changes to `/opt/novell/oes_install/selections/ novell-base.sel`, one for removing rcd and the other for removing red-carpet from the file.

> **13a** Select */opt/novell/oes_install/selections/novell-base.sel*.
>
> **13b** Click *New*, then click *Change* to display the Add New Change to File dialog box.
>
> **13c** Configure the following options:
>
> > **Change Name:** Specify `rcd` as the change name.
> >
> > **Change Mode:** Select *Search file* from the drop-down list.
> >
> > **Search String:** Specify `rcd ` as the search string.
> >
> > **Case sensitive:** Select this option to distinguish between uppercase and lowercase characters. When *Case sensitive* is selected, the system finds only those instances in which the capitalization matches the text you have specified in the search string.
> >
> > **Result Action:** Select *Delete line* from the drop-down list.
>
> **13d** Click *OK*.
>
> **13e** Repeat Step 13a through Step 13d to create a change for the red-carpet entry.

14 Click the Summary tab, and increment the revision number so that the changes made to the policy are applied during the next device refresh.

15 Assign the policy to device and set the policy enforcement schedule. For more information on how to assign the policy to a device, see "Assigning Policies" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

16 Refresh the managed device.

The policy is successfully applied to the device, and the entries for the earlier version of rug, red and red-carpet are removed from `/opt/novell/oes_install/selections/novell- base.sel`.

You can update the OES Linux server having ZENworks 7.3 Linux Management Agent installed by using the OES patch bundles. For detailed information, see TID 3738735 at Novell Support web site (http://www.novell.com/support/supportcentral/supportcentral.do?id=m1).

7.4 Enabling Dell PowerEdge Support

Novell ZENworks Linux Management provides advanced features to deploy and manage Dell PowerEdge servers. Before you can use these features, you must install a newer release of the OpenIPMI driver than that included in the currently supported Linux distributions.

The following features are available for Dell PowerEdge servers in ZENworks Linux Management:

◆ **Dell Configuration bundles:** Let you use Preboot Services to configure a Dell PowerEdge server's BIOS, BMC, RAID, and DRAC settings and to create a Dell utility partition. For more information, see "Using Dell Configuration Bundles" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

◆ **Dell Update Package bundles:** Let you update and configure hardware and system settings on Dell PowerEdge servers. For more information, see "Using Dell Update Package Bundles" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

◆ **Dell inventory:** Lets you display inventory information specific to Dell PowerEdge servers. After discovering the hardware information about your Dell PowerEdge servers, you can use Dell Update Packages to update them, if necessary. For more information, see "Hardware and Software Inventory" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

◆ **Dell reports:** Let you run reports specific to Dell PowerEdge servers to find devices that do not have valid Dell Update Packages installed or to show devices with Dell applications installed (per device or per device model). For more information, see "Dell Reports" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

Dell provides the updated OpenIPMI driver as well as the Dynamic Kernel Module Support (DKMS) package to assist in compiling and installing the driver.

OpenIPMI is an open-source project to develop an Intelligent Platform Management Interface manager implementation for servers. Dell servers depend on OpenIPMI to collect low-level system information about the Backplane device, the Baseboard Management Controller, and so forth.

To install OpenIPMI and DKMS:

1 On a "golden client" system that has an identical setup to your managed Dell PowerEdge servers, install the kernel source and a development environment (gcc, make, and glibc-devel.).

A "golden client" system is a Dell PowerEdge server you want to configure manually and then use ZENworks Linux Management to configure a larger number of PowerEdge servers in your ZENworks system the same way. The "golden client" system must have the same operating system installed as the servers that you intend to manage. You perform these configuration steps on one representative device and then use ZENworks Linux Management to automate the installation of the other servers. The purpose of the "golden client" system is to eliminate the need to install the kernel source and the development environment on every managed PowerEdge server in your ZENworks system.

The kernel source and development environment (gcc, make, and glibc-devel) can be found on the media that you used to install SUSE Linux Enterprise Server or Red Hat Enterprise Linux. Use the package management software specific to your Linux operating system to install the necessary build tools. On SUSE Linux Enterprise Server, for example, you use YaST to install the kernel source and development environment.

2 Download DKMS and the latest OpenIPMI driver for your specific operating system from the Dell Linux Community Web (http://linux.dell.com/files/openipmi/). Both files are included in the appropriate tarball for your server's operating system.

3 Install the DKMS and the latest OpenIPMI packages on your "golden client" system using the provided install shell script (`install.sh`). Detailed instructions are included in the Readme file (named `README`).

4 Use the `mkrpm` parameter to DKMS to build the RPM package of the OpenIPMI driver tailored to your "golden client" system setup. Detailed instructions are included in the DKMS man page (`man dkms`).

For example,

```
dkms mkrpm -m openipmi -v version_number.os
```

Where *version_number.os* represents the version number and operating system of the file that you downloaded in Step 2 on page 64. For example, if you downloaded the `openipmi-36.8.SLES9-1dkms.tar.gz` file, you would run the following command:

```
dkms mkrpm -m openipmi -v 36.8.SLES9
```

5 Using the ZENworks Control Center, create a bundle that has the DKMS, the OpenIPMI driver, and the novell-zenworks-zmd-oem package from the *Novell ZENworks 7.3 Linux Management* media.

You can find the individual packages in the following locations:

  ◆ **DKMS:** In the directory that you extracted the tarball to, `dkms-`*version_number*`.noarch.rpm`

  Where *version_number* is the version number of DKMS that you downloaded in Step 2 on page 64.

  ◆ **OpenIPMI driver:** `/usr/scr/packages/RPMS/noarch/openipmi-`*version_number.os-package_release_number*`dkms.noarch.rpm`

  Where *version_number.os* is the version number and operating system of the file that you downloaded in Step 2 on page 64. For example, if you downloaded the `openipmi-36.8.SLES9-1dkms.tar.gz` file, the *version_number* is 36.8.SLES9. *Package_release_number*dkms refers to the package release number of DKMS. For example, 1dkms in the previous file example.

  ◆ **novell-zenworks-zmd-oem:** In the directory that you mounted the media to, data/packages/*distribution*/zlm7de-snapshots/novell-zenworks-zmd-oem-7.3.0-0.*architecture*.rpm.

For more information, see "Creating RPM Bundles" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

6 Use ZENworks Linux Management to deploy the bundle containing DKMS, OpenIPMI driver, and the novell-zenworks-zmd-oem package to your Dell PowerEdge servers where you have installed the ZENworks Agent. For more information, see "Creating RPM Bundles" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

What's Next

After you complete the setup of your ZENworks Servers and a few managed devices, you should become familiar with general ZENworks administration concepts and tasks. "Understanding ZENworks Linux Management" in the *Novell ZENworks 7.3 Linux Management Administration Guide* introduces these concepts and tasks while helping you understand the ZENworks approach to successfully managing workstations and servers.

In particular, the tutorial explains how you can use folders and groups to minimize your management overhead and why you should create folders and groups before you register the devices in your system. It also provides brief instructions for delivering software packages, creating policies, collecting inventory, performing tasks prior to a device booting to its operating system, and monitoring events that occur within the system.

Security

IV

The information in this section includes the following:

Understanding the Security of ZENworks Linux Management System

9

The following sections provide information you should be aware of as you consider the security of your Novell® ZENworks® Linux Management system:

9.1 Clear Text Passwords

The following files contain the ZENworks Data Store password in clear text. All of the files are located on the ZENworks Server and are accessible only as `root`.

```
/etc/opt/novell/zenworks/hibernate.cfg.xml
/etc/opt/novell/zenworks/tomcat/base/server.xml
```

We recommend that you do not grant users additional permissions to the following directories:

- `/etc/opt/novell/zenworks`
- `/var/opt/novell/zenworks`
- `/opt/novell/zenworks`

9.2 Server Certificates

ZENworks Linux Management uses a self-signed certificate. The certificate's private keys are of type RSA and the key size is 1024 bits. The certificate is created during installation through the use of the Java keytool utility, which is part of the JDK*1.4 JSSE module.

The certificate can be replaced with a certificate signed by a trusted authority, at the user's discretion. For more information, see Section A.7, "Adding a Third-Party Certificate," on page 127.

9.3 ZENworks Agent

The ZENworks Agent, which is installed on all ZENworks Servers and all managed devices, runs as `root`. By default, remote services are enabled for the agent (allowing it to be controlled from another device).

IMPORTANT: The default setting for remote services on SUSE® Linux Enterprise Server 10 is set to false (remote-enabled=false). After you install the ZENworks agent on a SLES 10 device, the remote services setting is changed to true (remote-enabled=true).

For remote services, the agent listens on port 2544. If you want to secure the ZENworks Agent so that it can only be controlled from the local device, use the `novell-zmd no-remote` command. If you want to change the listening port, use the `rug set remote-port` *port_number* command, then restart the agent (`novell-zmd restart`).

On Intel Itanium* IA64 managed devices, the privileges of the user application connecting to the XLM-RPC socket (`/var/run/zmd/zmd-web.socket`) are not checked.

9.4 Database Connections

All connections to the ZENworks Object Store are secured through SSL. However, all connections from the ZENworks Server to the ZENworks Data Store are not secure because they use an unencrypted JDBC* connection. You might want to take precautions to ensure that the connections between all ZENworks Servers and the ZENworks Data Store are as secure as possible. For example, you might want to use a private network for all communications between the ZENworks Server and its Data Store.

ZENworks administrator credentials are stored in the ZENworks Object Store. No administrator credentials are stored in the Data Store, which ensures that they are not passed as clear text.

9.5 Device Ports

By default, the ZENworks Agent listens on ports 2544, 5950, and 5951. The ZENworks Server listens on ports 80, 443, 998, 1229, 1521, 5432 (PostgreSQL), 5505, 5506, and 8089, and also uses certain ports for eDirectory™ services.

9.5.1 Agent Listening Ports

The following table explains the services available on the Agent ports.

Table 9-1 *ZENworks Agent Listening Ports and Services*

Ports	Used For
2544	◆ Triggering device refresh actions from the ZENworks Server
	◆ Deploying bundles and immediate install schedules
	◆ Sending agent registration requests to the ZENworks Server
	◆ Checking the health status of the ZENworks Agent
5950	◆ Remote Control and Remote View
5951	◆ Remote Login

9.5.2 Server Listening Ports

An external ZENworks agent uses only port 443 to directly communicate with the ZENworks Server, but the server also uses other ports for other services, as indicated in the following table:

Table 9-2 *ZENworks Server Listening Ports and Services*

Ports	Used For
443	◆ Redirecting secure HTTP requests or Web service requests to the ZENworks Server for services like agent registration to the server, or bundle or policy installation on the agent. ◆ Enforcing the device settings from ZENworks Server to the ZENworks Agent during refresh.
80	◆ Redirecting HTTP requests to the ZENworks Server. ◆ Redirecting HTTP requests in ZENworks Control Center to port 443 by default.
998	◆ Imaging by the novell-pbserv service.
1229	◆ Communicating UDP packets to the SOAP server. ◆ Communication between the Primary Server and Secondary Server for content replication actions.
69	◆ Communicating UDP packets to the TFTP. server.
13331	◆ Communicating UDP packets to the Preboot Policy Server.
1521	◆ Communicating with the Oracle database server.
5505	◆ Communicating with the SOAP server running on the ZLM server for service modules like the server module, policy manager module, and settings module.
5506	◆ Communicating with the SOAP server: ◆ rcmirrordistribution SOAP service during content replication ◆ File browser SOAP client service when browsing the image file path on the server through ZENworks Control Center ◆ Zenloader refresh SOAP client for refresh queue actions on the ZENworks server
5432	◆ Communicating with the PostgreSQL database server.
8089	◆ Used as a receiver port during inventory roll-up from ZENworks Control Center. ◆ Used by the Primary Server (as a distributor) during content replication.

The ZENworks Server uses specific eDirectory ports. Refer to the following table to understand the services of these ports:

Table 9-3 *eDirectory Ports used by the ZENworks Server*

eDirectory ports	Services
10636	Used by LDAP TLS / SSL
10389	Used by LDAP TCP
524	NCP™ request TCP port that is used by ndsd process
427	SLP request port that is used by the slpd process
8028	iMonitor listens on the TCP port for HTTP requests
8030	iMonitor listens on the TCP port for HTTPS requests

9.6 Denial-of-Service Attacks

ZENworks Linux Management software has no mechanism for protecting against denial-of-service (DoS) attacks. This is typically not an issue within the confines of a corporate network; however, appropriate network monitoring should be in place in networks where this a concern.

9.7 Root

The ZENworks Linux Management software, on both ZENworks Servers and managed devices, considers the root user to be a trusted user. No attempt is made to secure the ZENworks software or credentials used by the software from the root user.

Upgrade

V

This section includes information about new enhancements in Novell® ZENworks® 7.3 Linux Management and information about how to upgrade from earlier versions of ZENworks Linux Management to ZENworks 7.3 Linux Management, ZENworks 7.3 Linux Management with IR1, and ZENworks 7.3 Linux Management with IR2.

What's New in ZENworks Linux Management

10

10.1 What's New in ZENworks 7.3 Linux Management

The following sections describe the new features and enhancements in Novell® ZENworks® 7.3 Linux Management:

10.1.1 Support for New Platforms as Servers

ZENworks 7.3 Linux Management lets you manage the following devices:

- SUSE® Linux Enterprise Server (SLES) 11 devices on 32-bit (x86) and 64-bit (x86_64) architectures running on Intel EMT64 and AMD Opteron processors
- SUSE Linux Enterprise Desktop (SLED) 11 devices on 32-bit (x86) and 64-bit (x86_64) architectures
- XEN virtual environment as a guest or host on SLES 10 and SLES 11

For more information, see Section 2.1, "ZENworks Server Requirements," on page 23.

10.1.2 Support for New Platforms as Managed Devices

ZENworks 7.3 Linux Management lets you manage the following devices:

- SLES 11 devices on 32-bit (x86) and 64-bit (x86_64) architectures

The Intel EMT64 and AMD Opteron processors support all ZENworks Linux Management features. The IPF and zSeries processors support the Package Management features only.

- SLED 11 devices on 32-bit (x86) and 64-bit (x86_64) architectures
- XEN virtual environment as a guest or host on SLES 10 and SLES 11

For more information, see Section 2.3, "Managed Device Requirements," on page 25.

10.1.3 Cleaning Up Inactive Devices

You can configure the Cleanup schedule to remove the inactive or obsolete devices from the ZENworks Server. In the ZENworks Control Center, click the *Configuration* tab, then click the *Inactive Device Cleanup Schedule*. The Inactive Device Cleanup Schedule page provides options to remove the obsolete devices. However, you cannot remove the inactive devices that are Primary Servers or Secondary Servers.

For more information on configuring the Cleanup schedule, see "Cleaning Up Inactive Devices" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

10.1.4 Setting Bundle Lock from the Server

The Bundle Lock feature allows you to lock the mandatory bundles on the managed devices from the ZENworks Linux Management server. The locked bundles can neither be removed nor upgraded from the managed devices. However, you can install them. The Bundle lock option is only available during the assignment of bundle or bundle groups to the managed devices.

10.1.5 Support for the Oracle 11g Release 1 Database

You can now install and configure Oracle 11g R1 as an external database on a new installation of ZENworks 7.3 Linux Management. For more information, see Section 3.3, "Configuring Oracle 10g Release 2 or Oracle 11g Release 1 as a Remote Database Server," on page 35.

You can also migrate ZENworks data from your Oracle 9i R2, Oracle 10g R2, or Oracle 11g R1 database to an Oracle 10g R2 or Oracle 11g R1 database if you have installed ZENworks 7.3 Linux Management.

For more information on installing the Oracle 11g Release 1 database, see Section 3.4, "Migrating the Data from one Oracle Database to another Oracle Database," on page 35.

10.1.6 System Preferences

The proxy-url preference is updated and the real-time-package-updates preference is newly added in ZENworks 7.3 Linux Management.

For more information on these preferences, see "Editing System Preferences" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

10.1.7 Adding a Third-Party Certificate

ZENworks 7.3 Linux Management, by default, uses a self-signed certificate for Web services to authenticate a server. You can generate or import your own SSL certificate by using the `zlm-config --tomcat-certificate` command.

For more information on how to generate and import the SSL certificate, see Section A.7, "Adding a Third-Party Certificate," on page 127.

10.1.8 Retaining the Bundle GUID while Mirroring Bundles

The `zlmmirror` command provides the `-g` switch during the mirroring process to retain the bundle GUID when mirroring bundles between ZENworks Linux Management Servers located in different management zones. By default, the bundles are created in the `Bundles/zlmmirror` directory.

This option is useful in case of migration of agents between ZENworks Linux Management Servers in different zones. The new assignments for the bundles installed are not enforced again on the agent after it is migrated. By default, the mirrored bundles are created in the `/Bundles/zlmmirror` directory on the ZENworks Linux Management local server.

For more information on retaining the bundle GUID while mirroring bundles, see "Mirror Command" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

10.1.9 Discover Operating System Support Pack Version

ZENworks 7.3 Linux Management provides support for the Inventory to discover the operating system support pack version in order to generate the reports or queries based on the support pack version.

For more information, see "Reviewing Hardware (General)" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

10.2 What's New in ZENworks 7.3 Linux Management with Interim Release 1

The following sections describe the new features and enhancements in Novell® ZENworks® 7.3 Linux Management with Interim Release 1 (IR1):

- Section 10.2.1, "ZENworks Linux Management Server Support for SLES 10 SP3," on page 79
- Section 10.2.2, "Support for New Platforms as Managed Devices," on page 79
- Section 10.2.3, "Mirroring Red Hat Updates from the NU Repository," on page 80

10.2.1 ZENworks Linux Management Server Support for SLES 10 SP3

ZENworks 7.3 Linux Management with IR1 supports the server components on SLES 10 SP3 on the 32-bit (x86) and 64-bit (x86_64) architectures (Intel EMT64 and AMD Opteron processors).

For more information, see Section 2.1, "ZENworks Server Requirements," on page 23.

10.2.2 Support for New Platforms as Managed Devices

ZENworks 7.3 Linux Management with IR1 lets you manage the following devices:

- SLES 10 SP3 on the 32-bit (x86) and 64-bit (x86_64) architectures running on Intel EMT64, AMD Opteron, PPC, IPF, and zSeries processors

- RHEL 5.2 on the 32-bit (x86) and 64-bit (x86_64) architectures
- RHEL 5.3 on the 32-bit (x86) and 64-bit (x86_64) architectures
- RHEL 4AS on the s390 and x390x architectures
- RHEL 5.3 on the zSeries (s390x) architecture

For more information, see Section 2.3, "Managed Device Requirements," on page 25.

10.2.3 Mirroring Red Hat Updates from the NU Repository

ZENworks 7.3 Linux Management with IR1 lets you mirror the Red Hat updates available in the RES channels from the NU repository by using a YUM subscription and updating the RHEL devices.

For more information, see "Mirroring Red Hat Updates from the NU Repository by Using a YUM Subscription" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

10.3 What's New in ZENworks 7.3 Linux Management with Interim Release 2

The following sections describe the new features and enhancements in Novell® ZENworks® 7.3 Linux Management with Interim Release 2 (IR2):

- Section 10.3.1, "Support for New Platforms as Servers," on page 80
- Section 10.3.2, "Support for New Platforms as Managed Devices," on page 80

10.3.1 Support for New Platforms as Servers

ZENworks 7.3 Linux Management with IR2 lets you manage the following devices on 32-bit (x86) and 64-bit (x86_64) architectures running on Intel EMT64 and AMD Opteron processors:

- Red Hat Enterprise Linux (RHEL) 5.3
- RHEL 5.4

For more information, see Section 2.1, "ZENworks Server Requirements," on page 23.

10.3.2 Support for New Platforms as Managed Devices

ZENworks 7.3 Linux Management with IR2 lets you manage the following devices:

- Novell Open Enterprise Server 2 SP2 on 32-bit (x86) and 64-bit (x86_64) architectures
- RHEL 5.4 on 32-bit (x86), 64-bit (x86_64), and zseries (s390x) architectures

For more information, see Section 2.3, "Managed Device Requirements," on page 25.

Upgrading to ZENworks 7.3 Linux Management

11

You can upgrade to ZENworks 7.3 Linux Management from the following previous versions:

- **ZENworks 7 Linux Management with IR1:** Your current system must have ZENworks 7 Linux Management with IR1 installed.
- **ZENworks 7 Linux Management - Dell Edition:** Your current ZENworks 7 Linux Management - Dell Edition system must have the latest patches installed. This release was available as an OEM release to Dell PowerEdge customers only.
- **ZENworks 7.2 Linux Management with IR1/IR1a:** Your current system must have ZENworks 7.2 Linux Management with IR1/IR1a installed.
- **ZENworks 7.2 Linux Management with IR2:** Your current system must have ZENworks 7.2 Linux Management with IR2 installed.

You can upgrade the managed devices of the following versions to ZENworks 7.3 Linux Management:

- **ZENworks 7 Linux Management with IR1:** Your current system must have ZENworks 7 Linux Management with IR1 installed.
- **ZENworks 7 Linux Management - Dell Edition:** Your current ZENworks 7 Linux Management - Dell Edition system must have the latest patches installed. This release was available as an OEM release to Dell PowerEdge customers only.
- **ZENworks 7.2 Linux Management with IR1/IR1a:** Your current system must have ZENworks 7.2 Linux Management with IR1/IR1a installed.
- **ZENworks 7.2 Linux Management with IR2:** Your current system must have ZENworks 7.2 Linux Management with IR2 installed.

NOTE: You can upgrade to ZENworks 7.3 Linux Management if the system language is either English, Spanish, or Portugal.

You cannot upgrade from ZENworks 6.6.*x* Linux Management directly to ZENworks 7.3 Linux Management.

If you have ZENworks 6.6.*x* Linux Management systems that you want to migrate to ZENworks 7.3 Linux Management, you must first migrate to ZENworks 7 Linux Management with IR1 and then upgrade to ZENworks 7.3 Linux Management. Be aware that because of the expanded architecture between ZENworks 6.6.x Linux Management and ZENworks 7.3 Linux Management, there is limited upgrade support between the two versions.

IMPORTANT: You must upgrade the ZENworks Server and ZENworks Agent software components in the order listed below:

1. Upgrade the ZENworks Primary Server.
2. Upgrade the ZENworks Secondary Server.
3. Upgrade the managed devices.

The following sections provide more information:

11.1 Upgrading the ZENworks Servers and the Managed Devices to ZENworks 7.3 Linux Management

You can upgrade the ZENworks Linux Management Server to ZENworks 7.3 Linux Management by performing an in-place upgrade over the previous version.

Before performing any type of upgrade, do the following:

- Take a reliable backup of your object and data stores, and eDirectory. For more information, see "ZENworks Object Store and Data Store Maintenance" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.
- Ensure that eDirectory is listening on port 10389.
- Take an image of the ZENworks servers.
- Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.
- Remove Openldap2 server package from the ZENworks Server, if it is installed on platforms other than RHEL 4.

  1. To verify whether Openldap 2 has been installed, execute `rpm -qa |grep openldap2` at the server console prompt. This displays the installed package version.
  2. To remove Openldap 2, execute `rpm -e openldap2`.

- To view the log information of the upgrade process in the `zmd-messages.log` file, set the value of the zmd preference *log-level* to *debug* in the ZENworks Control Center. For more information on how to set the zmd preference, see "Configuring the ZENworks Management Daemon (zmd) Settings" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

Performing an in-place upgrade lets you upgrade from a previous ZENworks Linux Management release to ZENworks 7.3 Linux Management using the same ZENworks Primary Server. For example, suppose your Primary Server on your ZENworks 7 Linux Management IR1 system is

installed on a SLES 9 32-bit device and you want to upgrade to ZENworks 7.3 Linux Management. Using an in-place upgrade results in the previously described ZENworks Linux Management system being upgraded to ZENworks 7.3 Linux Management on that same SLES 9 32-bit device.

The upgrade process upgrades the ZENworks Server and lets you create upgrade bundles for each supported platform. The individual upgrade bundles are then pushed to assigned devices to install the new ZENworks Agent on each device.

An in-place upgrade is best suited for smaller ZENworks Linux Management systems consisting of fewer than 100 devices managed by a single ZENworks Primary Server. An in-place upgrade allows for an upgrade without scheduling down-time for the system because the server and devices are upgrading relatively quickly.

Perform the following procedures in the order listed to upgrade the ZENworks servers and ZENworks Agent software components.

1. "Performing an In-Place Upgrade on the ZENworks Primary Server" on page 83
2. "Performing an In-Place Upgrade on a ZENworks Secondary Server" on page 84
3. "Upgrading Managed Devices Manually" on page 85 or "Upgrading Managed Devices by Using Upgrade Bundles" on page 85

11.1.1 Performing an In-Place Upgrade on the ZENworks Primary Server

1 Make sure that the server is running, and meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

2 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management* media by using the `mount` *device mountpoint* command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

`mount -o loop /tempfolderpath/isomimagename.iso mountpoint`

Replace `tempfolderpath` with the path to the temporary folder and replace `mountpoint` with the path to the file system location where you want to mount the image. The path specified by `mountpoint` must already exist.

For example:

`mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install`

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

`./zlm-upgrade`

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

6 Enter `Y` when you are asked if you are upgrading a ZENworks Primary Server.

Make sure all ZENworks services on Secondary Servers are stopped. You can execute `/opt/novell/zenworks/bin/zlm-config --stop` to shut down the services on Secondary Servers.

7 Press Enter to continue.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then upgrades the database schema.

8 (Conditional) If you have ZENworks Secondary Servers to upgrade, continue with "Performing an In-Place Upgrade on a ZENworks Secondary Server" on page 84.

9 Continue with Section 11.5.2, "Upgrading the Managed Devices," on page 94.

11.1.2 Performing an In-Place Upgrade on a ZENworks Secondary Server

You must upgrade the ZENworks Primary Server before upgrading ZENworks Secondary Servers. For step-by-step information, see "Performing an In-Place Upgrade on the ZENworks Primary Server" on page 83.

1 Start all ZENworks Services on the Secondary Server by running the `zlm-config --start` command.

2 Make sure the server meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

3 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management Server* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location where you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

4 Log in as `root`, then start the upgrade program from the mount point by running the following command:

```
./zlm-upgrade
```

5 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

6 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

7 Enter `N` when you are asked if you are upgrading a ZENworks Primary Server.

8 Enter `Y` when you are asked if you have upgraded the ZENworks Primary Server.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, and runs upgrade scripts.

After the upgrade is complete, the ZENworks services are restarted. This might take a few minutes.

9 (Conditional) Repeat Step 1 through Step 8 for each ZENworks Secondary Server that you want to upgrade.

10 Continue with "Upgrading Managed Devices Manually" on page 85.

or

Continue with "Upgrading Managed Devices by Using Upgrade Bundles" on page 85.

11.1.3 Upgrading Managed Devices Manually

1 Make sure the managed device meets the requirements. See Section 2.3, "Managed Device Requirements," on page 25.

2 At the Linux managed device, mount the *Novell ZENworks 7.3 Linux Management Agent* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux managed device, then mount the image using the following command:

`mount -o loop /tempfolderpath/isoimagename.iso mountpoint`

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

`mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install`

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

`./zlm-upgrade`

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

11.1.4 Upgrading Managed Devices by Using Upgrade Bundles

Upgrading managed devices to ZENworks 7.3 Linux Management installs the new ZENworks Agent.

Make sure the managed device meets the requirements. See Section 2.3, "Managed Device Requirements," on page 25.

Complete the following tasks in the order listed:

1. "Creating an Upgrade Bundle" on page 86
2. "Creating a Script for Upgrade Bundles" on page 86
3. "Creating Catalogs for Upgrade Bundles" on page 87

Creating an Upgrade Bundle

1 On the ZENworks Linux Management server, mount the agent ISO by using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

2 Run the `./zlm-upgrade -b` command to create an upgrade bundle on the ZENworks Linux Management server.

The command lists the platforms for which you can create the upgrade bundle.

3 Type the desired platform and press Enter.

Creating a Script for Upgrade Bundles

1 In the ZENworks Control Center, click the *Bundles* tab.

2 Click the folder that you created while performing an in-place upgrade on the ZENworks Primary Server to hold the upgrade bundles.

3 Click the underlined name of the desired upgrade bundle to display its details.

4 Click the *Details* tab.

5 In the *Scriptable Actions* section at the bottom of the Details page, click *New* to display the New Scriptable Action dialog box.

6 In the *Scriptable action* drop-down list, select *Pre-Installation*.

7 In the *Script to run* drop-down list, select *Define your own script*.

8 Paste the contents of the `pre-install.sh` script file into the *Script content* box. You can access the script file from the `/data` directory located within the directory on which ZENworks 7.3 Linux Management is mounted. For example, if ZENworks 7.3 Linux Management is mounted on `/zlm73/install`, the `pre-install.sh` script file resides in the `/zlm73/install/data` directory.

If the managed device has bundle locks or package locks (`package-locks.xml`), the Pre-Installation script takes a backup of the bundle locks or package locks and places the backup in the `/tmp/zmd` directory.

9 Click *OK*.

10 In the *Scriptable Actions* section at the bottom of the Details page, click *New* to display the New Scriptable Action dialog box.

11 In the *Scriptable action* drop-down list, select *Post-Installation*.

12 In the *Script to run* drop down list, select *Define your own script*.

13 Paste the contents of the `post-install.sh` script file into the *Script content* box. You can access the script file from the `/data` directory located within the directory on which ZENworks 7.3 Linux Management is mounted. For example, if ZENworks 7.3 Linux Management is mounted on `/zlm73/install`, the `post-install.sh` script file resides in the `/zlm73/install/data` directory.

NOTE: In the `post-install.sh` script file, the messages indicating the progress of the upgrade are commented out by default. If you want the messages to be displayed on the managed device, uncomment the messages.

The Post Installation script performs the following tasks:

  ◆ Restores the bundle locks and package locks backup from the `/tmp/zmd` directory to the appropriate directories.

  ◆ Creates the `/tmp/zmd/upgrade_final.sh` shell script that automatically stops the zmd service, removes the system catalogs, and restarts the service.

  ◆ Uses the atd server to assign a scheduled task and execute the `upgrade_final.sh` shell script two minutes after the `post-install.sh` has completed execution.

14 Click *OK*.

15 Click *Apply* at the bottom of the Details page.

16 In the RPM Package Bundle Settings section of the Details page, click *Deploy* to deploy the new version of the bundle.

17 Continue with “Creating Catalogs for Upgrade Bundles” on page 87.

Creating Catalogs for Upgrade Bundles

1 In the ZENworks Control Center, click the *Bundles* tab.

2 Click *New*, then click *Catalog* to open the Create New Catalog Wizard.

3 Specify a name for the catalog, then click *Next* to display the Catalog Attributes page.

4 Click *Next* to display the Summary page.

5 On the Summary page, click *Next*.

6 Click *Add* to display the Select Bundles dialog box.

7 Navigate to and click the desired upgrade bundle to move it to the *Selected* list, then click *OK*.

8 Click *Next* to display the Catalog Assignments page.

9 Click *Add*, navigate to and click the desired devices to move them to the *Selected* list, then click *OK* to display the Bundles Options page.

10 Click *Next* to display the Finish page, review the information, then click *Finish*.

11 Depending on your needs, continue with “Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle” on page 87 or “Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle” on page 88.

Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle

1 In the ZENworks Control Center, click the *Policies* tab.

2 Click *New*, then click *Policy* to display the Policy Type page.

3 Select *Remote Execute Policy*, then click *Next* to display the Policy Name page.

4 Specify a name for the policy, then click *Next* to display the Remote Execute Policy page.

5 From the *Script to run* drop-down list, choose *Define your own script*.

6 Paste the contents of the `policy.sh` script file into the *Script content* box. You can access the script file from the mount point `/data` directory.

The Policy script performs the following tasks:

- ◆ Subscribes to the catalog containing the upgrade bundle.
- ◆ Installs the upgrade bundle on the managed device.

7 Edit the script so that *catalog_name* is the catalog you created in "Creating Catalogs for Upgrade Bundles" on page 87 and *bundle* is the bundle that you specified while creating the catalog (Step 7 on page 87).

8 Click *Next* to display the Summary page, then click *Next* to display the Policy Assignments page.

9 Click *Add* to display the Select Assignments dialog box, browse to and select the devices to which you want to assign the Remote Execute policy, then click *OK*.

10 Click *Next* to display the Policy Schedule page.

11 In the *Schedule Type* drop-down list, select *Date Specific*, specify a start date and time to apply the policy, then click *Next* to display the Policy Groups page.

> **NOTE:** If you want to verify the upgrade immediately, set the start date to today and the start time to 12 a.m. The Remote Execute policy is executed at the next scheduled refresh for the devices. Alternately, you can manually refresh the devices.

12 Click *Next* to display the Finish page, then click *Finish*.

The Remote Execute policy is enforced as scheduled, after the managed devices' next scheduled refresh. If the time you specified in Step 11 occurs before the next scheduled refresh, the policy is enforced on the next refresh.

> **IMPORTANT:** It takes approximately five minutes for the upgrade bundle to be installed and for the upgrade process to be performed. Do not perform any rug commands such as `rug ref` during the upgrade process. Executing rug commands during the upgrade process might cause the process to fail.
>
> After the upgrade completes, you can verify that the upgrade was successful by executing the `rug ping` command or refer to `upgrade.log`. The upgrade was successful if the version of zmd is 7.3.0. If you perform the `rug ping` command prematurely, you receive an exception message. You can recover by stopping and restarting zmd. The `/tmp/zmd/upgrade.log` must contain the "`Starting ZENworks Management Daemon...`" message in the last line.

NOTE: Bundle history, Package history, Catalog subscription, and Package Lock are not migrated from ZENworks 7.0 Linux Management with IR1 to ZENworks 7.3 Linux Management.

Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle

Perform the following steps on the SLES 10 or SLED 10 managed device:

1 Ensure that the agent is registered to the ZENworks Linux Management server. For more information on how to register devices, see "Registering Devices" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

2 Execute the `/usr/bin/rug sub` *catalog_name* command, where *catalog_name* is the catalog assigned to the managed device.

3 Execute the `/usr/bin/rug bin -y` *upgrade_bundle_name* command, where *upgrade_bundle_name* is the upgrade bundle in the catalog assigned to the managed device.

IMPORTANT: It takes approximately five minutes for the upgrade bundle to be installed and for the upgrade process to be performed. Do not perform any rug commands such as `rug ref` during the upgrade process. Executing rug commands during the upgrade process might cause the process to fail.

After the upgrade completes, you can verify that the upgrade was successful by executing the `rug ping` command or refer to upgrade.log. The upgrade was successful if the version of zmd is 7.3.0. If you perform the `rug ping` command prematurely, you receive an exception message. You can recover by stopping and restarting zmd. The `/tmp/zmd/upgrade.log` must contain the "`Starting ZENworks Management Daemon...`" message in the last line.

4 If the device does not have the X Window System installed:

   4a In ZENworks Control Center, click the upgrade bundle.

   4b Click the *Details* tab.

   4c In the *Packages* panel, select the following packages:

        novell-zenworks-x11vnc-0.6.1-2
        novell-zenworks-zmd-gconfpolicyenforcers-7.3.0-0
        novell-zenworks-tightvnc-1.2.9-6, zen-updater-7.3.0-0

   4d Click *Action > Set Freshen*.

5 (Optional) If SLES 10 or SLED 10 are running on Dell server and the managed devices have the default zmd agent installed, do the following if you want to collect the Dell inventory of the devices:

   5a In the *Packages* panel, select novell-zenworks-zmd-oem.

   5b Click *Action > Unset Freshen*.

11.2 Increasing the Security Level After Upgrading a ZENworks Server from ZENworks 7 Linux Management with IR1

If you upgrade a ZENworks Server from ZENworks 7 Linux Management with IR1 to ZENworks 7.3 Linux Management, the default PostgreSQL database security level requires authentication, but you can optionally increase the security level of the database. In most corporate settings, the PostgreSQL database resides on a corporate LAN with firewall protection. If you want to increase the security level of the database, edit the `/var/lib/pgsql/pg_hba.conf` file to add the IP address and subnet mask for the ZENworks Primary Server and for all ZENworks Secondary Servers as well as for the local host. An unedited file has a series of zeroes in place of the IP addresses and subnet masks; you replace the zeroes with the information for your primary and secondary ZENworks servers.

If you upgrade from ZENworks 7 Linux Management - Dell* Edition, this process is not necessary. See the PostgreSQL documentation for more information.

11.3 Changes to Bundle Schedules in ZENworks 7.3 Linux Management

Because of the elimination of certain schedule types for bundles in ZENworks 7.3 Linux Management, the deployment and installation schedules for bundles that existed in your ZENworks system prior to upgrading might behave differently.

ZENworks 7.3 Linux Management supports the following schedule types for bundles:

◆ "Date Specific"
◆ "Relative to Refresh"

The following schedule types are no longer supported for bundles in ZENworks 7.3 Linux Management, although they are still supported for certain policies:

◆ "Day of the Week Specific"
◆ "Monthly"

In an upgrade from ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition, any bundles that were configured using the Day of the Week or Monthly schedules are treated as Relative to Refresh after the upgrade.

If you look at a bundle's properties in the ZENworks Control Center after the upgrade, an upgraded bundle that was originally configured using the Day of the Week Specific or Monthly schedule has the eliminated schedule type listed, but deploys or installs using the Relative to Refresh schedule. You can manually change the bundle's displayed schedule type to one of the two valid schedule types at your convenience.

11.4 Upgrade Options

The following options can be used with the `zlm-upgrade` command:

Option	Description
-a	Upgrades the ZENworks Agent on a managed device.
-b	Creates bundles that can be used to upgrade ZENworks Linux Management devices.
	This option must be executed only on the ZENworks Primary Server.

If you are installing ZENworks Linux Management rather than performing an upgrade from a previous version, installation options are available for use with the `zlm-install` command. For more information, see Section A.1, "Installation Options," on page 121.

11.5 Upgrading from ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition to ZENworks 7.3 Linux Management

The following sections provide information on upgrading from ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition to ZENworks 7.3 Linux Management:

- Section 11.5.1, "Upgrading the Servers," on page 91
- Section 11.5.2, "Upgrading the Managed Devices," on page 94

11.5.1 Upgrading the Servers

You can upgrade the ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition server to ZENworks 7.3 Linux Management by performing an in-place upgrade over the previous version.

Before performing any type of upgrade, do the following:

- Take a reliable backup of our object and data stores, and eDirectory. For more information, see "ZENworks Object Store and Data Store Maintenance" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.
- Ensure that eDirectory is listening on port 10389.
- Take an image of the ZENworks servers.
- Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.
- Remove Openldap2 from the ZENworks Server, if it is installed.
    1. To verify whether Openldap2 has been installed, execute `rpm -qa /grep openldap2` at the server console prompt. This displays the installed package version.
    2. To remove Openldap2, execute `rpm -e openldap2`.

Performing an in-place upgrade lets you upgrade from the ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition release to ZENworks 7.3 Linux Management by using the same ZENworks Primary Server. For example, suppose your ZENworks Primary Server on your ZENworks 7 Linux Management with IR1 system is installed on a SLES 9 32-bit device and you want to upgrade to ZENworks 7.3 Linux Management. Using an in-place upgrade results in the previously described ZENworks Linux Management system being upgraded to ZENworks 7.3 Linux Management on that same SLES 9 32-bit device.

The upgrade process upgrades the ZENworks Server and lets you create upgrade bundles for each supported platform. The individual upgrade bundles are then pushed to assigned devices to install the new ZENworks Agent on each device.

An in-place upgrade is best suited for smaller ZENworks Linux Management systems consisting of fewer than 100 devices managed by a single ZENworks Primary Server. An in-place upgrade allows for an upgrade without scheduling down-time for the system because the server and devices are upgrading relatively quickly.

Perform the following procedures in the order listed to upgrade the ZENworks server.

1. "Performing an In-Place Upgrade on the ZENworks Primary Server" on page 92
2. "Performing an In-Place Upgrade on a ZENworks Secondary Server" on page 93

IMPORTANT: The ZENworks server cannot be upgraded from ZENworks 7 Linux Management with IR1 to ZENworks 7.3 Linux Management if the upgrade is interrupted. If the upgrade process is interrupted, contact Novell Support (http://www.novell.com/support).

Performing an In-Place Upgrade on the ZENworks Primary Server

1 Make sure that the server is running, and meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

2 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

`mount -o loop /tempfolderpath/isomimagename.iso mountpoint`

Replace `tempfolderpath` with the path to the temporary folder and replace `mountpoint` with the path to the file system location where you want to mount the image. The path specified by `mountpoint` must already exist.

For example:

`mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install`

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

`./zlm-upgrade`

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

6 Enter `Y` when you are asked if you are upgrading a ZENworks Primary Server.

Make sure all ZENworks services on Secondary Servers are stopped. You can execute `/opt/novell/zenworks/bin/zlm-config --stop` to shut down the services on Secondary Servers.

7 Press Enter to continue.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then upgrades the database schema.

8 (Conditional) If you have ZENworks Secondary Servers to upgrade, continue with "Performing an In-Place Upgrade on a ZENworks Secondary Server" on page 93.

9 Continue with Section 11.5.2, "Upgrading the Managed Devices," on page 94.

Performing an In-Place Upgrade on a ZENworks Secondary Server

You must upgrade the ZENworks Primary Server before upgrading ZENworks Secondary Servers. For step-by-step information, see "Performing an In-Place Upgrade on the ZENworks Primary Server" on page 92.

1 Make sure that the server is running, and meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

2 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

`mount device mountpoint`

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command.

`mount -o loop /tempfolderpath/isoimagename.iso mountpoint`

Replace `tempfolderpath` with the path to the temporary folder and replace `mountpoint` with the path to the file system location where you want to mount the image. The path specified by `mountpoint` must already exist.

For example:

`mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install`

3 Log in as `root`, then start the upgrade program form the mount point by running the following command:

`./zlm-upgrade`

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

6 Enter `N` when you are asked if you are upgrading a ZENworks Primary Server.

7 Enter `Y` when you are asked if you have upgraded the ZENworks Primary Server.

Ignore any "failed to stop" errors that you receive. For example, you receive an error indicating that eDirectory could not be stopped, but it was already stopped when you executed `/opt/novell/zenworks/bin/zlm-config --stop` in Step 6 on page 92.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, and runs upgrade scripts.

After the upgrade is complete, the ZENworks services are restarted. this might take a few minutes.

8 Delete `ostargets.xml` by executing `rm /var/opt/novell/zenworks/lib/www/ostargets.xml` at the server console prompt.

9 Manually copy `ostargets.xml` from `/var/opt/novell/zenworks/lib/www/` on the ZENworks Primary Server to `/var/opt/novell/zenworks/lib/www/` on the Secondary Server.

10 Change the ownership of `ostargets.xml` to `zenworks` by executing `chown zenworks:` `zenworks /var/opt/novell/zenworks/lib/www/ostargets.xml` at the server console prompt.

11 (Conditional) Repeat Step 1 through Step 10 for each ZENworks Secondary Server that you want to upgrade.

11.5.2 Upgrading the Managed Devices

Upgrading managed devices to ZENworks 7.3 Linux Management installs the new ZENworks Agent.

You can upgrade a managed device from the ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition to ZENworks 7.3 Linux Management either manually or by using the upgrade bundles. For more information on how to upgrade the managed devices manually, see Section 11.1.3, "Upgrading Managed Devices Manually," on page 85.

IMPORTANT: Before upgrading, ensure that you unassign the policies that were enforced on the device if you do not want them to be enforced again after upgrading to ZENworks 7.3 Linux Management.

To upgrade the managed devices by using the upgrade bundles:

1 Create an upgrade bundle. For more information on how to create an upgrade bundle, see "Creating an Upgrade Bundle" on page 86.

2 Create a script for the upgrade bundle. For more information on how to create the script for the upgrade bundle, see "Creating a Script for Upgrade Bundles" on page 86.

3 Create a catalog for the upgrade bundle. For more information on how to create a catalog for the upgrade bundle, see "Creating Catalogs for Upgrade Bundles" on page 87.

4 Upgrade the managed device by using the upgrade bundle. For more information, see "Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle" on page 87.

NOTE: The ZMD settings in ZENworks 7 Linux Management with IR1 and ZENworks 7 Linux Management - Dell Edition do not have the security-level preference. However, the ZMD settings in ZENworks 7.3 Linux Management do have the security-level preference. When you upgrade from ZENworks 7 Linux Management with IR1 or ZENworks 7 Linux Management - Dell Edition to ZENworks 7.3 Linux Management, the ZMD security-level preference is set to the default value *Signature*. You can change the preference to the desired value either by using the `rug` command or through the ZENworks Control Center. For more information on how to use the `rug` command, see "rug (1)" in the *Novell ZENworks 7.3 Linux Management Administration Guide*. For more information on how to set the security-level preference by using the ZENworks Control Center, see "Configuring the ZENworks Management Daemon (zmd) Settings" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

11.6 Upgrading from ZENworks 7.2 Linux Management with IR1 or ZENworks 7.2 Linux Management with IR1 - Dell Edition to ZENworks 7.3 Linux Management

The following sections provide information to upgrade from ZENworks 7.2 Linux Management with IR1 or ZENworks 7.2 Linux Management with IR1 - Dell Edition to ZENworks 7.3 Linux Management.

- Section 11.6.1, "Upgrading the Servers," on page 95
- Section 11.6.2, "Upgrading the Managed Device," on page 96

11.6.1 Upgrading the Servers

1 Before performing the upgrade, do the following:

- Take a reliable backup of your object and data stores, and eDirectory. For more information, see "ZENworks Object Store and Data Store Maintenance" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.
- Ensure that eDirectory is listening on port 10389.
- Take an image of the ZENworks servers.
- Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.
- Remove Openldap2 server package from the ZENworks Server, if it is installed on platforms other than RHEL 4.

    1. To verify whether Openldap2 has been installed, execute `rpm -qa /grep openldap2` at the server console prompt. This displays the installed package version.

    2. To remove Openldap2, execute `rpm -e openldap2`.

2 If the ZENworks 7.3 Linux Management server has OES2 devices registered, apply TID 3073502. For more information, see TID 3073502 in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

3 Perform an in-place upgrade on the ZENworks Primary Server. For more information, see Section 11.1.1, "Performing an In-Place Upgrade on the ZENworks Primary Server," on page 83.

WARNING: While upgrading from ZENworks 7.2 Linux Management to ZENworks 7.3 Linux Management on a SUSE Linux Enterprise Server or Red Hat Enterprise Linux Server platforms, do not modify the default content of the `/etc/issue` file located on the ZENworks Linux Management Server. If you edit the file, the Novell eDirectory 8.8.3 packages are not completely updated.

4 Perform an in-place upgrade on the ZENworks Secondary Server. For more information, see Section 11.1.2, "Performing an In-Place Upgrade on a ZENworks Secondary Server," on page 84.

11.6.2 Upgrading the Managed Device

Upgrading managed devices to ZENworks 7.3 Linux Management installs the new ZENworks Agent.

You can upgrade a managed device from the ZENworks 7.2 Linux Management with IR1 or ZENworks 7.2 Linux Management with IR1 - Dell Edition to ZENworks 7.3 Linux Management either manually or by using the upgrade bundle. For more information on how to upgrade the managed devices manually, see Section 11.1.3, "Upgrading Managed Devices Manually," on page 85.

To upgrade the managed devices by using the upgrade bundles, do the following:

1 Create an upgrade bundle. For more information on how to create an upgrade bundle, see "Creating an Upgrade Bundle" on page 86.

2 Create a script for the upgrade bundle. For more information on how to create a script, see "Creating a Script for Upgrade Bundles" on page 86.

3 Assign the bundle to the managed device that you want to upgrade.

11.7 Upgrading from ZENworks 7.2 Linux Management with IR2 or ZENworks 7.2 Linux Management with IR2 - Dell Edition to ZENworks 7.3 Linux Management

The following sections provide information to upgrade from ZENworks 7.2 Linux Management with IR2 or ZENworks 7.2 Linux Management with IR2 - Dell Edition to ZENworks 7.3 Linux Management.

* Section 11.7.1, "Upgrading the Servers," on page 96
* Section 11.7.2, "Upgrading the Managed Device," on page 97

11.7.1 Upgrading the Servers

1 Before performing the upgrade, do the following:

* Take a reliable backup of your object and data stores, and eDirectory. For more information, see "ZENworks Object Store and Data Store Maintenance" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

* Ensure that eDirectory is listening on port 10389.

* Take an image of the ZENworks servers.

* Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.

* Remove Openldap2 server package from the ZENworks Server, if it is installed on platforms other than RHEL 4.

    1. To verify whether Openldap2 has been installed, execute `rpm -qa /grep openldap2` at the server console prompt. This displays the installed package version.

    2. To remove Openldap2, execute `rpm -e openldap2`.

2 Perform an in-place upgrade on the ZENworks Primary Server. For more information, see Section 11.1.1, "Performing an In-Place Upgrade on the ZENworks Primary Server," on page 83.

> **WARNING:** While upgrading from ZENworks 7.2 Linux Management to ZENworks 7.3 Linux Management on a SUSE Linux Enterprise Server or Red Hat Enterprise Linux Server platforms, do not modify the default content of the `/etc/issue` file located on the ZENworks Linux Management Server. If you edit the file, the Novell eDirectory 8.8.3 packages are not completely updated.

3 Perform an in-place upgrade on the ZENworks Secondary Server. For more information, see Section 11.1.2, "Performing an In-Place Upgrade on a ZENworks Secondary Server," on page 84.

11.7.2 Upgrading the Managed Device

Upgrading managed devices to ZENworks 7.3 Linux Management installs the new ZENworks Agent.

You can upgrade the managed device from the ZENworks 7.2 Linux Management with IR2 or ZENworks 7.2 Linux Management with IR2 - Dell Edition to ZENworks 7.3 Linux Management either manually or by using the upgrade bundles. For more information on upgrading the managed devices manually, see Section 11.1.3, "Upgrading Managed Devices Manually," on page 85.

To upgrade the managed devices by using the upgrade bundles, do the following:

1 Create an upgrade bundle. For more information on how to create a bundle, see "Creating an Upgrade Bundle" on page 86.

2 Create a script for the upgrade bundle. For more information on how to create a script for the upgrade bundle, see "Creating a Script for Upgrade Bundles" on page 86.

3 Assign the upgrade bundle to the managed device that you want to upgrade.

Upgrading to ZENworks 7.3 Linux Management with IR1

<div style="text-align: right">12</div>

You can upgrade to ZENworks 7.3 Linux Management with IR1 from the following previous versions:

- **ZENworks 7.3 Linux Management:** Your current system must have ZENworks 7.3 Linux Management installed.

- **ZENworks 7.3 Linux Management - Dell Edition:** Your current ZENworks 7.3 Linux Management - Dell Edition system must have the latest patches installed. This release was available as an OEM release to Dell PowerEdge customers only.

- **ZENworks 7.3 Linux Management with Hot Patch 1:** Your current system must have ZENworks 7.3 Linux Management with Hot Patch 1 installed.

You can upgrade the managed devices of the following versions to ZENworks 7.3 Linux Management with IR1:

- **ZENworks 7.3 Linux Management:** Your current system must have ZENworks 7.3 Linux Management installed.

- **ZENworks 7.3 Linux Management - Dell Edition:** Your current ZENworks 7.3 Linux Management - Dell Edition system must have the latest patches installed. This release was available as an OEM release to Dell PowerEdge customers only.

- **ZENworks 7.3 Linux Management with Hot Patch 1:** Your current system must have ZENworks 7.3 Linux Management with Hot Patch 1 installed.

NOTE: You can upgrade to ZENworks 7.3 Linux Management with IR1 if the system language is either English, Spanish, or Portugal.

You cannot upgrade from ZENworks 6.6.*x* Linux Management directly to ZENworks 7.3 Linux Management with IR1.

If you have ZENworks 6.6.*x* Linux Management systems that you want to migrate to ZENworks 7.3 Linux Management with IR1, you must first migrate to ZENworks 7.3 Linux Management and then upgrade to ZENworks 7.3 Linux Management with IR1. Be aware that because of the expanded architecture between ZENworks 6.6.x Linux Management and ZENworks 7.3 Linux Management, there is limited upgrade support between the two versions.

IMPORTANT: You must upgrade the ZENworks Server and ZENworks Agent software components in the following order:

1. Upgrade the ZENworks Primary Server
2. Upgrade the ZENworks Secondary Server
3. Upgrade the managed devices

The following sections provide more information:

12.1 Upgrading from ZENworks 7.3 Linux Management or ZENworks 7.3 Linux Management - Dell Edition to ZENworks 7.3 Linux Management with IR1

You can upgrade the server from ZENworks 7.3 Linux Management to ZENworks 7.3 Linux Management with IR1 by performing an in-place upgrade over the previous version.

Review the following sections:

12.1.1 Upgrading the Servers

Before performing any type of upgrade, do the following:

- Take a reliable backup of your object and data stores, and eDirectory. For more information, see "ZENworks Object Store and Data Store Maintenance" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

- Ensure that eDirectory is listening on port 10389.

- Take an image of the ZENworks servers.

- Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.

- Remove openldap2 server package from the ZENworks Server, if it is installed on platforms other than RHEL 4.

  1. To verify whether openldap2 has been installed, execute `rpm -qa |grep openldap2` at the server console prompt. This displays the installed package version.
  2. To remove openldap2, execute `rpm -e openldap2`.

- To view the log information of the upgrade process in the `zmd-messages.log` file, set the value of the zmd preference *log-level* to *debug* in the ZENworks Control Center. For more information on how to set the zmd preference, see "Configuring the ZENworks Management Daemon (zmd) Settings" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

- If you want to upgrade the ZENworks 7.3 Linux Management server to ZENworks 7.3 Linux Management with IR1 by performing an in-place upgrade, you must additionally perform the following steps on the server if it was previously upgraded from ZENworks 7.2 Linux Management:

  1. Run the following as a bash script:

     ```
     /etc/init.d/ndsd stop
     ```

```
mv /etc/opt/novell/eDirectory/conf/nds.conf /etc
sed -i "s~/etc/opt/novell/eDirectory/conf~/etc~g" /etc/opt/novell/
eDirectory/conf/.edir/instances.0
/etc/init.d/ndsd start
```

2. Run the `./zlm-upgrade` command to manually upgrade to ZENworks 7.3 Linux Management with IR1.

Performing an in-place upgrade lets you upgrade from a previous ZENworks Linux Management release to ZENworks 7.3 Linux Management with IR1 by using the same ZENworks Primary Server. For example, suppose your Primary Server on your ZENworks 7.3 Linux Management system is installed on a SLES 9 32-bit device and you want to upgrade to ZENworks 7.3 Linux Management with IR1. Using an in-place upgrade results in the previously described ZENworks Linux Management system being upgraded to ZENworks 7.3 Linux Management with IR1 on that same SLES 9 32-bit device.

The upgrade process upgrades the ZENworks Server and lets you create upgrade bundles for each supported platform. The individual upgrade bundles are then pushed to assigned devices to install the new ZENworks Agent on each device.

An in-place upgrade is best suited for smaller ZENworks Linux Management systems consisting of fewer than 100 devices managed by a single ZENworks Primary Server. An in-place upgrade allows for an upgrade without scheduling down-time for the system because the server and devices are upgrading relatively quickly.

You can upgrade the server from ZENworks 7.3 Linux Management to ZENworks 7.3 Linux Management with IR1 in one of the following ways:

- "Upgrading Servers by Performing an In-Place Upgrade" on page 101
- "Upgrading Servers by Using the Hot Patch 2 Channel" on page 103

Upgrading Servers by Performing an In-Place Upgrade

Before performing an in-place upgrade, verify if the ZENworks 7.3 Linux Management server was upgraded from ZENworks 7.2 Linux Management. If you have upgraded your ZENworks 7.3 Linux Management server from ZENworks 7.2 Linux Management, upgrading to ZENworks 7.3 Linux Management with IR1 fails because the default path of the eDirectory (8.8) configuration file, `nds.conf`, is changed from `/etc` to `/etc/opt/novell/eDirectory/conf` when you upgrade the server from ZENworks 7.2 Linux Management to ZENworks 7.3 Linux Management.

Do the following to avoid failure while upgrading to ZENworks 7.3 Linux Management with IR1 if the ZENworks Linux Management server was originally upgraded from ZENworks 7.2 Linux Management:

1 Run the following content as a bash script:

```
/etc/init.d/ndsd stop
mv /etc/opt/novell/eDirectory/conf/nds.conf /etc
 sed-i"s~/etc/opt/novell/eDirectory/conf~/etc~g"/etc/opt/novell/
eDirectory/conf/.edir/instances.0
/etc/init.d/ndsd start
```

2 Run the `./zlm-upgrade` command to manually upgrade to ZENworks 7.3 Linux Management with IR1.

Perform the following procedures in the order listed to upgrade the ZENworks Servers:

1. Performing an In-Place Upgrade on the ZENworks Primary Server
2. Performing an In-Place Upgrade on a ZENworks Secondary Server

Performing an In-Place Upgrade on the ZENworks Primary Server

1 Make sure that the server is running, and meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

2 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management with Interim Release 1* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

```
mount -o loop /tempfolderpath/isomimagename.iso mountpoint
```

Replace `tempfolderpath` with the path to the temporary folder and replace `mountpoint` with the path to the file system location where you want to mount the image. The path specified by `mountpoint` must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

```
./zlm-upgrade
```

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

6 Enter `Y` when you are asked if you are upgrading a ZENworks Primary Server.

Make sure all ZENworks services on Secondary Servers are stopped. You can execute `/opt/novell/zenworks/bin/zlm-config --stop` to shut down the services on Secondary Servers.

7 Press Enter to continue.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then upgrades the database schema.

8 (Conditional) If you have ZENworks Secondary Servers to upgrade, continue with "Performing an In-Place Upgrade on a ZENworks Secondary Server" on page 102.

9 Continue with "Upgrading Managed Devices Manually" on page 104.

Performing an In-Place Upgrade on a ZENworks Secondary Server

You must upgrade the ZENworks Primary Server before upgrading the ZENworks Secondary Servers. For step-by-step information, see "Performing an In-Place Upgrade on the ZENworks Primary Server" on page 102.

1 Start all ZENworks Services on the Secondary Server by running the `zlm-config --start` command.

2 Make sure the server meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

3 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management with Interim Release 1 Server* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

`mount -o loop /tempfolderpath/isoimagename.iso mountpoint`

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location where you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

`mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install`

4 Log in as `root`, then start the upgrade program from the mount point by running the following command:

`./zlm-upgrade`

5 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

6 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

7 Enter `N` when you are asked if you are upgrading a ZENworks Primary Server.

8 Enter `Y` when you are asked if you have upgraded the ZENworks Primary Server.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, and runs upgrade scripts.

After the upgrade is complete, the ZENworks services are restarted. This might take a few minutes.

9 (Conditional) Repeat Step 1 through Step 8 for each ZENworks Secondary Server that you want to upgrade.

10 Continue with "Upgrading Managed Devices Manually" on page 104.

or

Continue with "Upgrading Managed Devices by Using Upgrade Bundles" on page 104.

Upgrading Servers by Using the Hot Patch 2 Channel

1 Apply ZENworks 7.3 Linux Management Hot Patch 2. For more information on how to obtain and apply the Hot Patch, see TID 7003346 at Novell Support (http://www.novell.com/support).

12.1.2 Upgrading the Managed Devices

Upgrading the managed devices to ZENworks 7.3 Linux Management with IR1 installs the new ZENworks Agent.

You can upgrade the managed devices from ZENworks 7.3 Linux Management to ZENworks 7.3 Linux Management with IR1 in one of the following ways:

- ◆ "Upgrading Managed Devices Manually" on page 104
- ◆ "Upgrading Managed Devices by Using Upgrade Bundles" on page 104
- ◆ "Upgrading Managed Devices by Using the Hot Patch 2 Channel" on page 108

Upgrading Managed Devices Manually

1 Make sure the managed device meets the requirements. See Section 2.3, "Managed Device Requirements," on page 25.

2 At the Linux managed device, mount the *Novell ZENworks 7.3 Linux Management with Interim Release 1 Agent* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux managed device, then mount the image using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

```
./zlm-upgrade
```

4 When prompted to upgrade ZENworks Linux Management, enter Y to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter Y to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

Upgrading Managed Devices by Using Upgrade Bundles

Upgrading managed devices to ZENworks 7.3 Linux Management with IR1 installs the new ZENworks Agent.

Make sure the managed device meets the requirements. See Section 2.3, "Managed Device Requirements," on page 25.

Complete the following tasks in the order listed:

1. "Creating an Upgrade Bundle" on page 105
2. "Creating a Script for Upgrade Bundles" on page 105
3. "Creating Catalogs for Upgrade Bundles" on page 106

Creating an Upgrade Bundle

1 On the ZENworks Linux Management server, mount the agent ISO by using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

2 Run the `./zlm-upgrade -b` command to create an upgrade bundle on the ZENworks Linux Management server.

The command lists the platforms for which you can create the upgrade bundle.

3 Type the desired platform and press Enter.

Creating a Script for Upgrade Bundles

1 In the ZENworks Control Center, click the *Bundles* tab.

2 Click the folder that you created while performing an in-place upgrade on the ZENworks Primary Server to hold the upgrade bundles.

3 Click the underlined name of the desired upgrade bundle to display its details.

4 Click the *Details* tab.

5 In the *Scriptable Actions* section at the bottom of the Details page, click *New* to display the New Scriptable Action dialog box.

6 In the *Scriptable action* drop-down list, select *Pre-Installation*.

7 In the *Script to run* drop-down list, select *Define your own script*.

8 Paste the contents of the `pre-install.sh` script file into the *Script content* box. You can access the script file from the `/data` directory located within the directory on which ZENworks 7.3 Linux Management with IR1 is mounted. For example, if ZENworks 7.3 Linux Management with IR1 is mounted on `/zlm73/install`, the `pre-install.sh` script file resides in the `/zlm73/install/data` directory.

If the managed device has bundle locks or package locks (`package-locks.xml`), the Pre-Installation script takes a backup of the bundle locks or package locks and places the backup in the `/tmp/zmd` directory.

9 Click *OK*.

10 In the *Scriptable Actions* section at the bottom of the Details page, click *New* to display the New Scriptable Action dialog box.

11 In the *Scriptable action* drop-down list, select *Post-Installation*.

12 In the *Script to run* drop down list, select *Define your own script*.

13 Paste the contents of the `post-install.sh` script file into the *Script content* box. You can access the script file from the `/data` directory located within the directory on which ZENworks 7.3 Linux Management with IR1 is mounted. For example, if ZENworks 7.3 Linux Management with IR1 is mounted on `/zlm73/install`, the `post-install.sh` script file resides in the `/zlm73/install/data` directory.

NOTE: In the `post-install.sh` script file, the messages indicating the progress of the upgrade are commented out by default. If you want the messages to be displayed on the managed device, uncomment the messages.

The Post Installation script performs the following tasks:

◆ Restores the bundle locks and package locks backup from the `/tmp/zmd` directory to the appropriate directories.

◆ Creates the `/tmp/zmd/upgrade_final.sh` shell script that automatically stops the zmd service, removes the system catalogs, and restarts the service.

◆ Uses the atd server to assign a scheduled task and execute the `upgrade_final.sh` shell script two minutes after the `post-install.sh` has completed execution.

14 Click *OK*.

15 Click *Apply* at the bottom of the Details page.

16 In the RPM Package Bundle Settings section of the Details page, click *Deploy* to deploy the new version of the bundle.

17 Continue with .

Creating Catalogs for Upgrade Bundles

1 In the ZENworks Control Center, click the *Bundles* tab.

2 Click *New*, then click *Catalog* to open the Create New Catalog Wizard.

3 Specify a name for the catalog, then click *Next* to display the Catalog Attributes page.

4 Click *Next* to display the Summary page.

5 On the Summary page, click *Next*.

6 Click *Add* to display the Select Bundles dialog box.

7 Navigate to and click the desired upgrade bundle to move it to the *Selected* list, then click *OK*.

8 Click *Next* to display the Catalog Assignments page.

9 Click *Add*, navigate to and click the desired devices to move them to the *Selected* list, then click *OK* to display the Bundles Options page.

10 Click *Next* to display the Finish page, review the information, then click *Finish*.

11 Depending on your needs, continue with or .

Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle

1 In the ZENworks Control Center, click the *Policies* tab.

2 Click *New*, then click *Policy* to display the Policy Type page.

3 Select *Remote Execute Policy*, then click *Next* to display the Policy Name page.

4 Specify a name for the policy, then click *Next* to display the Remote Execute Policy page.

5 From the *Script to run* drop-down list, choose *Define your own script*.

6 Paste the contents of the `policy.sh` script file into the *Script content* box. You can access the script file from the mount point `/data` directory.

The Policy script performs the following tasks:

- Subscribes to the catalog containing the upgrade bundle.
- Installs the upgrade bundle on the managed device.

7 Edit the script so that *catalog_name* is the catalog you created in Creating Catalogs for Upgrade Bundles and *bundle* is the bundle that you specified while creating the catalog (Step 7 on page 106).

8 Click *Next* to display the Summary page, then click *Next* to display the Policy Assignments page.

9 Click *Add* to display the Select Assignments dialog box, browse to and select the devices to which you want to assign the Remote Execute policy, then click *OK*.

10 Click *Next* to display the Policy Schedule page.

11 In the *Schedule Type* drop-down list, select *Date Specific*, specify a start date and time to apply the policy, then click *Next* to display the Policy Groups page.

NOTE: If you want to verify the upgrade immediately, set the start date to today and the start time to 12 a.m. The Remote Execute policy is executed at the next scheduled refresh for the devices. Alternately, you can manually refresh the devices.

---

12 Click *Next* to display the Finish page, then click *Finish*.

The Remote Execute policy is enforced as scheduled, after the managed devices' next scheduled refresh. If the time you specified in Step 11 occurs before the next scheduled refresh, the policy is enforced on the next refresh.

IMPORTANT: It takes approximately five minutes for the upgrade bundle to be installed and for the upgrade process to be performed. Do not perform any rug commands such as `rug ref` during the upgrade process. Executing rug commands during the upgrade process might cause the process to fail.

After the upgrade completes, you can verify that the upgrade was successful by executing the `rug ping` command or refer to `upgrade.log`. The upgrade was successful if the version of zmd is 7.3.0. If you perform the `rug ping` command prematurely, you receive an exception message. You can recover by stopping and restarting zmd. The `/tmp/zmd/upgrade.log` must contain the "`Starting ZENworks Management Daemon...`" message in the last line.

Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle

Perform the following steps on the SLES 10 or SLED 10 managed device:

1 Ensure that the agent is registered to the ZENworks Linux Management server. For more information on how to register devices, see "Registering Devices" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

2 Execute the `/usr/bin/rug sub` *catalog_name* command, where *catalog_name* is the catalog assigned to the managed device.

3 Execute the `/usr/bin/rug bin -y` *upgrade_bundle_name* command, where *upgrade_bundle_name* is the upgrade bundle in the catalog assigned to the managed device.

IMPORTANT: It takes approximately five minutes for the upgrade bundle to be installed and for the upgrade process to be performed. Do not perform any rug commands such as `rug ref` during the upgrade process. Executing rug commands during the upgrade process might cause the process to fail.

After the upgrade completes, you can verify that the upgrade was successful by executing the `rug ping` command or refer to upgrade.log. The upgrade was successful if the version of zmd is 7.3.0. If you perform the `rug ping` command prematurely, you receive an exception message. You can recover by stopping and restarting zmd. The `/tmp/zmd/upgrade.log` must contain the "`Starting ZENworks Management Daemon...`" message in the last line.

4 If the device does not have the X Window System installed:

4a In ZENworks Control Center, click the upgrade bundle.

4b Click the *Details* tab.

4c In the *Packages* panel, select the following packages:

novell-zenworks-x11vnc-0.6.1-2
novell-zenworks-zmd-gconfpolicyenforcers-7.3.0-0
novell-zenworks-tightvnc-1.2.9-6, zen-updater-7.3.0-0

4d Click *Action > Set Freshen*.

5 (Optional) If SLES 10 or SLED 10 are running on Dell server and the managed devices have the default zmd agent installed, do the following if you want to collect the Dell inventory of the devices:

5a In the *Packages* panel, select novell-zenworks-zmd-oem.

5b Click *Action > Unset Freshen*.

Upgrading Managed Devices by Using the Hot Patch 2 Channel

Upgrading managed devices to ZENworks 7.3 Linux Management with IR1 installs the new ZENworks Agent.

1 Apply ZENworks 7.3 Linux Management Hot Patch 2. For more information on how to obtain and apply the Hot Patch, see TID 7003346 at Novell Support (http://www.novell.com/support).

12.2 Upgrade Options

The following options can be used with the `zlm-upgrade` command:

Option	Description
-a	Upgrades the ZENworks Agent on a managed device.
-b	Creates bundles that can be used to upgrade ZENworks Linux Management devices.
	This option must be executed only on the ZENworks Primary Server.

If you are installing ZENworks Linux Management rather than performing an upgrade from a previous version, installation options are available for use with the `zlm-install` command. For more information, see Section A.1, "Installation Options," on page 121.

Upgrading to ZENworks 7.3 Linux Management with IR2

<div style="text-align: right; font-size: 2em;">13</div>

You can upgrade to ZENworks 7.3 Linux Management with IR2 from the following previous versions:

- **ZENworks 7.3 Linux Management:** Your current system must have ZENworks 7.3 Linux Management installed.
- **ZENworks 7.3 Linux Management - Dell Edition:** Your current ZENworks 7.3 Linux Management - Dell Edition system must have the latest patches installed. This release was available as an OEM release to Dell PowerEdge customers only.
- **ZENworks 7.3 Linux Management with Hot Patch 1:** Your current system must have ZENworks 7.3 Linux Management with Hot Patch 1 installed.
- **ZENworks 7.3 Linux Management with IR1:** Your current system must have ZENworks 7.3 Linux Management with IR1 installed.

You can upgrade the managed devices of the following versions to ZENworks 7.3 Linux Management with IR2:

- **ZENworks 7.3 Linux Management:** Your current system must have ZENworks 7.3 Linux Management installed.
- **ZENworks 7.3 Linux Management - Dell Edition:** Your current ZENworks 7.3 Linux Management - Dell Edition system must have the latest patches installed. This release was available as an OEM release to Dell PowerEdge customers only.
- **ZENworks 7.3 Linux Management with Hot Patch 1:** Your current system must have ZENworks 7.3 Linux Management with Hot Patch 1 installed.
- **ZENworks 7.3 Linux Management with IR1:** Your current system must have ZENworks 7.3 Linux Management with IR1 installed.

NOTE: You can upgrade to ZENworks 7.3 Linux Management with IR2 if the system language is either English, Spanish, or Portugal.

You cannot upgrade from ZENworks 6.6.*x* Linux Management directly to ZENworks 7.3 Linux Management with IR2.

If you have ZENworks 6.6.*x* Linux Management systems that you want to migrate to ZENworks 7.3 Linux Management with IR2, you must first migrate to ZENworks 7.3 Linux Management and then upgrade to ZENworks 7.3 Linux Management with IR2. Be aware that because of the expanded architecture between ZENworks 6.6.x Linux Management and ZENworks 7.3 Linux Management, there is limited upgrade support between the two versions.

IMPORTANT: You must upgrade the ZENworks Server and ZENworks Agent software components in the following order:

1. Upgrade the ZENworks Primary Server

2. Upgrade the ZENworks Secondary Server

3. Upgrade the managed devices

The following sections provide more information:

- Section 13.1, "Upgrading from ZENworks 7.3 Linux Management or ZENworks 7.3 Linux Management - Dell Edition to ZENworks 7.3 Linux Management with IR2," on page 110
- Section 13.2, "Upgrade Options," on page 118

13.1 Upgrading from ZENworks 7.3 Linux Management or ZENworks 7.3 Linux Management - Dell Edition to ZENworks 7.3 Linux Management with IR2

You can upgrade the server from ZENworks 7.3 Linux Management to ZENworks 7.3 Linux Management with IR2 by performing an in-place upgrade over the previous version.

Review the following sections:

- Section 13.1.1, "Upgrading the Servers," on page 110
- Section 13.1.2, "Upgrading the Managed Devices," on page 113

13.1.1 Upgrading the Servers

Before performing any type of upgrade, do the following:

- Take a reliable backup of your object and data stores, and eDirectory. For more information, see "ZENworks Object Store and Data Store Maintenance" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.
- Ensure that eDirectory is listening on port 10389.
- Take an image of the ZENworks servers.
- Ensure that the ZENworks Linux Management server and the server on which the Oracle or the PostgreSQL database is running are in time sync.
- Remove openldap2 server package from the ZENworks Server, if it is installed on platforms other than RHEL 4.

   1. To verify whether openldap2 has been installed, execute `rpm -qa |grep openldap2` at the server console prompt. This displays the installed package version.

   2. To remove openldap2, execute `rpm -e openldap2`.

- To view the log information of the upgrade process in the `zmd-messages.log` file, set the value of the zmd preference *log-level* to *debug* in ZENworks Control Center. For more information on how to set the zmd preference, see "Configuring the ZENworks Management Daemon (zmd) Settings" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

◆ If you want to upgrade the ZENworks 7.3 Linux Management server to ZENworks 7.3 Linux Management with IR2 by performing an in-place upgrade, you must additionally perform the following steps on the server if it was previously upgraded from ZENworks 7.2 Linux Management:

1. Run the following as a bash script:

```
/etc/init.d/ndsd stop

mv /etc/opt/novell/eDirectory/conf/nds.conf /etc

sed -i "s~/etc/opt/novell/eDirectory/conf~/etc~g" /etc/opt/novell/
eDirectory/conf/.edir/instances.0

/etc/init.d/ndsd start
```

2. Run the `./zlm-upgrade` command to manually upgrade to ZENworks 7.3 Linux Management with IR2.

Performing an in-place upgrade lets you upgrade from a previous ZENworks Linux Management release to ZENworks 7.3 Linux Management with IR2 by using the same ZENworks Primary Server. For example, suppose your Primary Server on your ZENworks 7.3 Linux Management system is installed on a SLES 9 32-bit device and you want to upgrade to ZENworks 7.3 Linux Management with IR2. Using an in-place upgrade results in the previously described ZENworks Linux Management system being upgraded to ZENworks 7.3 Linux Management with IR2 on that same SLES 9 32-bit device.

The upgrade process upgrades the ZENworks Server and lets you create upgrade bundles for each supported platform. The individual upgrade bundles are then pushed to assigned devices to install the new ZENworks Agent on each device.

An in-place upgrade is best suited for smaller ZENworks Linux Management systems consisting of fewer than 100 devices managed by a single ZENworks Primary Server. An in-place upgrade allows for an upgrade without scheduling down-time for the system because the server and devices are upgrading relatively quickly.

You can upgrade the server from ZENworks 7.3 Linux Management to ZENworks 7.3 Linux Management with IR2 in the following way:

◆ "Upgrading Servers by Performing an In-Place Upgrade" on page 111

Upgrading Servers by Performing an In-Place Upgrade

Perform the following procedures in the order listed to upgrade the ZENworks Servers:

1. Performing an In-Place Upgrade on the ZENworks Primary Server
2. Performing an In-Place Upgrade on a ZENworks Secondary Server

Performing an In-Place Upgrade on the ZENworks Primary Server

1 Make sure that the server is running, and meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

2 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management with Interim Release 2* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image by using the following command:

```
mount -o loop /tempfolderpath/isomimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location where you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

```
./zlm-upgrade
```

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

6 Enter `Y` when you are asked if you are upgrading a ZENworks Primary Server.

Make sure all ZENworks services on Secondary Servers are stopped. You can execute `/opt/novell/zenworks/bin/zlm-config --stop` to shut down the services on Secondary Servers.

7 Press Enter to continue.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then upgrades the database schema.

8 (Conditional) If you have ZENworks Secondary Servers to upgrade, continue with "Performing an In-Place Upgrade on a ZENworks Secondary Server" on page 112.

9 Continue with "Upgrading Managed Devices Manually" on page 113.

Performing an In-Place Upgrade on a ZENworks Secondary Server

You must upgrade the ZENworks Primary Server before upgrading the ZENworks Secondary Servers. For step-by-step information, see "Upgrading Servers by Performing an In-Place Upgrade" on page 111.

1 Start all ZENworks Services on the Secondary Server by running the `zlm-config --start` command.

2 Make sure the server meets the requirements. See Section 2.1, "ZENworks Server Requirements," on page 23.

3 At the Linux server, mount the *Novell ZENworks 7.3 Linux Management with Interim Release 2 Server* media by using the `mount device mountpoint` command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux server, then mount the image using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location where you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

4 Log in as `root`, then start the upgrade program from the mount point by running the following command:

`./zlm-upgrade`

5 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

6 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

7 Enter `N` when you are asked if you are upgrading a ZENworks Primary Server.

8 Enter `Y` when you are asked if you have upgraded the ZENworks Primary Server.

The upgrade program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, and runs upgrade scripts.

After the upgrade is complete, the ZENworks services are restarted. This might take a few minutes.

9 (Conditional) Repeat Step 1 through Step 8 for each ZENworks Secondary Server that you want to upgrade.

10 Continue with "Upgrading Managed Devices Manually" on page 113.

or

Continue with "Upgrading Managed Devices by Using Upgrade Bundles" on page 114.

13.1.2 Upgrading the Managed Devices

Upgrading the managed devices to ZENworks 7.3 Linux Management with IR2 installs the new ZENworks Agent.

You can upgrade the managed devices from ZENworks 7.3 Linux Management to ZENworks 7.3 Linux Management with IR2 in one of the following ways:

- "Upgrading Managed Devices Manually" on page 113
- "Upgrading Managed Devices by Using Upgrade Bundles" on page 114

Upgrading Managed Devices Manually

1 Make sure the managed device meets the requirements. See Section 2.3, "Managed Device Requirements," on page 25.

2 At the Linux managed device, mount the *Novell ZENworks 7.3 Linux Management with Interim Release 2 Agent* media by using the `mount` *device* *mountpoint* command.

For example, `mount /dev/cdrom /zlm73`.

If you are using an ISO image rather than a physical media, copy the ISO to a temporary folder on the Linux managed device, then mount the image using the following command:

`mount -o loop /`*tempfolderpath*`/`*isoimagename*`.iso` *mountpoint*

Replace *tempfolderpath* with the path to the temporary folder and replace *mountpoint* with the path to the file system location you want to mount the image. The path specified by *mountpoint* must already exist.

For example:

```
mount -o loop /zlm73/ZEN73_LinuxMgmt.iso /zlm73/install
```

3 Log in as `root`, then start the upgrade program from the mount point by running the following command:

```
./zlm-upgrade
```

4 When prompted to upgrade ZENworks Linux Management, enter `Y` to continue.

5 Review the Software License Agreement, pressing Page Down to scroll down the page, then enter `Y` to accept the agreement.

The install program stops ZENworks services, subscribes to the upgrade channels, upgrades RPMs, upgrades zmd, runs upgrade scripts, and then restarts the ZENworks services.

Upgrading Managed Devices by Using Upgrade Bundles

Upgrading managed devices to ZENworks 7.3 Linux Management with IR2 installs the new ZENworks Agent.

Make sure the managed device meets the requirements. See Section 2.3, "Managed Device Requirements," on page 25.

Complete the following tasks in the order listed:

1. "Creating an Upgrade Bundle" on page 114
2. "Creating a Script for Upgrade Bundles" on page 114
3. "Creating Catalogs for Upgrade Bundles" on page 115
4. "Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle" on page 116
5. "Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle" on page 117

Creating an Upgrade Bundle

1 On the ZENworks Linux Management server, mount the agent ISO by using the following command:

```
mount -o loop /tempfolderpath/isoimagename.iso mountpoint
```

2 Run the `./zlm-upgrade -b` command to create an upgrade bundle on the ZENworks Linux Management server.

The command lists the platforms for which you can create the upgrade bundle.

3 Type the desired platform and press Enter.

Creating a Script for Upgrade Bundles

1 In ZENworks Control Center, click the *Bundles* tab.

2 Click the folder that you created while performing an in-place upgrade on the ZENworks Primary Server to hold the upgrade bundles.

3 Click the underlined name of the desired upgrade bundle to display its details.

4 Click the *Details* tab.

5 In the *Scriptable Actions* section at the bottom of the Details page, click *New* to display the New Scriptable Action dialog box.

6 In the *Scriptable action* drop-down list, select *Pre-Installation*.

7 In the *Script to run* drop-down list, select *Define your own script*.

8 Paste the contents of the `pre-install.sh` script file into the *Script content* box. You can access the script file from the `/data` directory located within the directory on which ZENworks 7.3 Linux Management with IR2 is mounted. For example, if ZENworks 7.3 Linux Management with IR2 is mounted on `/zlm73/install`, the `pre-install.sh` script file resides in the `/zlm73/install/data` directory.

If the managed device has bundle locks or package locks (`package-locks.xml`), the Pre-Installation script takes a backup of the bundle locks or package locks and places the backup in the `/tmp/zmd` directory.

9 Click *OK*.

10 In the *Scriptable Actions* section at the bottom of the Details page, click *New* to display the New Scriptable Action dialog box.

11 In the *Scriptable action* drop-down list, select *Post-Installation*.

12 In the *Script to run* drop down list, select *Define your own script*.

13 Paste the contents of the `post-install.sh` script file into the *Script content* box. You can access the script file from the `/data` directory located within the directory on which ZENworks 7.3 Linux Management with IR2 is mounted. For example, if ZENworks 7.3 Linux Management with IR2 is mounted on `/zlm73/install`, the `post-install.sh` script file resides in the `/zlm73/install/data` directory.

> **NOTE:** In the `post-install.sh` script file, the messages indicating the progress of the upgrade are commented out by default. If you want the messages to be displayed on the managed device, uncomment the messages.

The Post Installation script performs the following tasks:

- Restores the bundle locks and package locks backup from the `/tmp/zmd` directory to the appropriate directories.
- Creates the `/tmp/zmd/upgrade_final.sh` shell script that automatically stops the zmd service, removes the system catalogs, and restarts the service.
- Uses the atd server to assign a scheduled task and execute the `upgrade_final.sh` shell script two minutes after the `post-install.sh` has completed execution.

14 Click *OK*.

15 Click *Apply* at the bottom of the Details page.

16 In the RPM Package Bundle Settings section of the Details page, click *Deploy* to deploy the new version of the bundle.

17 Continue with .

Creating Catalogs for Upgrade Bundles

1 In ZENworks Control Center, click the *Bundles* tab.

2 Click *New*, then click *Catalog* to open the Create New Catalog Wizard.

3 Specify a name for the catalog, then click *Next* to display the Catalog Attributes page.

4 Click *Next* to display the Summary page.

5 On the Summary page, click *Next*.

6 Click *Add* to display the Select Bundles dialog box.

7 Navigate to and click the desired upgrade bundle to move it to the *Selected* list, then click *OK*.

8 Click *Next* to display the Catalog Assignments page.

9 Click *Add*, navigate to and click the desired devices to move them to the *Selected* list, then click *OK* to display the Bundles Options page.

10 Click *Next* to display the Finish page, review the information, then click *Finish*.

11 Depending on your needs, continue with "Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle" on page 116 or "Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle" on page 117.

Upgrading Managed Devices Other Than SLES 10 and SLED 10 by Using an Upgrade Bundle

1 In ZENworks Control Center, click the *Policies* tab.

2 Click *New*, then click *Policy* to display the Policy Type page.

3 Select *Remote Execute Policy*, then click *Next* to display the Policy Name page.

4 Specify a name for the policy, then click *Next* to display the Remote Execute Policy page.

5 From the *Script to run* drop-down list, choose *Define your own script*.

6 Paste the contents of the `policy.sh` script file into the *Script content* box. You can access the script file from the mount point `/data` directory.

The Policy script performs the following tasks:

- Subscribes to the catalog containing the upgrade bundle.
- Installs the upgrade bundle on the managed device.

7 Edit the script so that *catalog_name* is the catalog you created in Creating Catalogs for Upgrade Bundles and *bundle* is the bundle that you specified while creating the catalog (Step 7 on page 116).

8 Click *Next* to display the Summary page, then click *Next* to display the Policy Assignments page.

9 Click *Add* to display the Select Assignments dialog box, browse to and select the devices to which you want to assign the Remote Execute policy, then click *OK*.

10 Click *Next* to display the Policy Schedule page.

11 In the *Schedule Type* drop-down list, select *Date Specific*, specify a start date and time to apply the policy, then click *Next* to display the Policy Groups page.

> **NOTE:** If you want to verify the upgrade immediately, set the start date to today and the start time to 12 a.m. The Remote Execute policy is executed at the next scheduled refresh for the devices. Alternately, you can manually refresh the devices.

12 Click *Next* to display the Finish page, then click *Finish*.

The Remote Execute policy is enforced as scheduled, after the managed devices' next scheduled refresh. If the time you specified in Step 11 occurs before the next scheduled refresh, the policy is enforced on the next refresh.

IMPORTANT: It takes approximately five minutes for the upgrade bundle to be installed and for the upgrade process to be performed. Do not perform any rug commands such as `rug ref` during the upgrade process. Executing rug commands during the upgrade process might cause the process to fail.

After the upgrade completes, you can verify if the upgrade was successful by executing the `rug ping` command or refer to `upgrade.log`. The upgrade is successful if the version of zmd is 7.3.0. If you perform the `rug ping` command prematurely, you receive an exception message. You can recover by stopping and restarting zmd. The `/tmp/zmd/upgrade.log` must contain the "`Starting ZENworks Management Daemon...`" message in the last line.

Upgrading SLES 10 or SLED 10 Managed Devices by Using an Upgrade Bundle

Perform the following steps on the SLES 10 or SLED 10 managed device:

1 Ensure that the agent is registered to the ZENworks Linux Management server. For more information on how to register devices, see "Registering Devices" in the *Novell ZENworks 7.3 Linux Management Administration Guide*.

2 Execute the `/usr/bin/rug sub` *catalog_name* command, where *catalog_name* is the catalog assigned to the managed device.

3 Execute the `/usr/bin/rug bin -y` *upgrade_bundle_name* command, where *upgrade_bundle_name* is the upgrade bundle in the catalog assigned to the managed device.

IMPORTANT: It takes approximately five minutes for the upgrade bundle to be installed and for the upgrade process to be performed. Do not perform any rug commands such as `rug ref` during the upgrade process. Executing `rug` commands during the upgrade process might cause the process to fail.

After the upgrade completes, you can verify if the upgrade was successful by executing the `rug ping` command or refer to `upgrade.log`. The upgrade is successful if the version of zmd is 7.3.0. If you perform the `rug ping` command prematurely, you receive an exception message. You can recover by stopping and restarting zmd. The `/tmp/zmd/upgrade.log` must contain the "`Starting ZENworks Management Daemon...`" message in the last line.

4 If the device does not have the X Window System installed:

    4a In ZENworks Control Center, click the upgrade bundle.

    4b Click the *Details* tab.

    4c In the *Packages* panel, select the following packages:

        novell-zenworks-x11vnc-0.6.1-2
        novell-zenworks-zmd-gconfpolicyenforcers-7.3.0-0
        novell-zenworks-tightvnc-1.2.9-6, zen-updater-7.3.0-0

    4d Click *Action > Set Freshen*.

5 (Optional) If SLES 10 or SLED 10 are running on Dell server and the managed devices have the default zmd agent installed, do the following if you want to collect the Dell inventory of the devices:

    5a In the *Packages* panel, select novell-zenworks-zmd-oem.

    5b Click *Action > Unset Freshen*.

13.2 Upgrade Options

The following options can be used with the `zlm-upgrade` command:

Option	Description
-a	Upgrades the ZENworks Agent on a managed device.
-b	Creates bundles that can be used to upgrade ZENworks Linux Management devices.
	This option must be executed only on the ZENworks Primary Server.

If you are installing ZENworks Linux Management rather than performing an upgrade from a previous version, installation options are available for use with the `zlm-install` command. For more information, see Section A.1, "Installation Options," on page 121.

Appendixes

VI

The following sections are referenced from other sections in this *Novell® ZENworks® 7.3 Linux Management Installation Guide*:

Additional Installation Information

A

The following sections contain additional information to help you install Novell® ZENworks® Linux Management:

A.1 Installation Options

When you installed Novell ZENworks Linux Management on a ZENworks Primary Server or on secondary ZENworks servers as described in Section 5, "Installing the ZENworks Primary Server," on page 41 or Section 6, "Installing a ZENworks Secondary Server," on page 47, you performed a standard installation without using additional installation options.

When you installed ZENworks Agent on managed devices as described in Section 7.2, "Installing the ZENworks Agent and Registering the Device," on page 54, you used the -a or -o installation options.

NOTE: If you are performing an upgrade from a previous version of ZENworks Linux Management, as explained in "Upgrade" on page 75, you can use upgrade options with the `zlm-upgrade` command. For more information, see Section 11.4, "Upgrade Options," on page 90.

The following options can be used with the `zlm-install` command:

Table A-1 *Options that can be used with the ZLM-install command*

Option	Description
`-p`	Prompt before adding each package.
`-s`	Run silently using data from a previous configuration. Specify the response file that you want to use. This is the response file that you recorded user input by using the -r command. The following command shows the option's usage: `zlm-install -s `*`config_file`*

Option	Description
-r	Record user input, including passwords, to be used in future silent-configuration installations. Specify the response file that you want to record the user input to. This is the response file that you use with the -s command to run a silent configuration. The following command shows the option's usage: `zlm-install -r config-file`
-a	Install only agent portions of ZENworks Linux Management.
-x	Skip packages that require the X Window System. If you do not have the X Window System installed (for example, you installed a Minimal installation of SUSE® Linux Enterprise Server 9), you need to install the glib2, XFree86-libs-32 bit, and compat-32bit packages to the device before installing ZENworks Linux Management. When you install ZENworks Linux Management on the device, you must use the -x switch to avoid dependency problems. Running `./zlm-install -a -x` skips any packages that require the X Window System. During the installation process, you must agree when it says that the installation lacks the zmd-gconfpolicyenforcer, novell-zenworks-zmd-rmagent, and vnc components.
-i	Skip imaging packages.
-o	Install the OEM module specific to Dell PowerEdge servers. If you do not install the OEM module, you cannot use the following features: ◆ **Dell Configuration Bundles:** Lets you use Preboot Services to configure a Dell PowerEdge server's BIOS, BMC, RAID, and DRAC settings and to create a Dell utility partition. ◆ **Dell Update Bundles:** Let you update and configure hardware and system settings on Dell PowerEdge servers. ◆ **Dell Inventory:** Lets you display inventory information specific to Dell PowerEdge servers. ◆ **Dell Reports:** Lets you run reports specific to Dell PowerEdge servers to find devices that do not have valid Dell Update Packages installed or to show devices with Dell applications installed (per device or per device model). You can run the -o option during the installation of the ZENworks Agent on a managed device by running `zlm-install -a -o`, as explained in , or you can install the OEM module on a device after installing the ZENworks Agent by running `zlm-install -o`.
-h	Print these options.

A.2 Automating Installation of the ZENworks Agent

You can automate the installation of the ZENworks Agent. The level of automation depends on what you want to accomplish. You can simply create a response file that enables users to manually run the install without being prompted for information. Or, you can create the response file and add the installation commands to a script so that users aren't even required to run the install.

To automate installation of the ZENworks Agent:

1 Create the response file. To do so:

    1a At the Linux device, mount the media you are using for the install: the *Novell ZENworks 7 Linux Management* installation media, the ZENworks Agent media, or the ISO image.

    For mount instructions, see Step 2 under Section 7.2, "Installing the ZENworks Agent and Registering the Device," on page 54.

    1b Run the ZENworks Agent installation program on a device by using the following command:

```
./zlm-install -a -r path_to_response_file.txt
```

    Replace *response_file.txt* with a filename you want. For example:

```
./zlm-install -a -r /zlm73-agent/zenworks-agent.txt
```

    The steps in this procedure perform a standard installation of ZENworks Linux Management. Depending on your situation, additional options can be used with the `zlm-install` command. For more information, see Section A.1, "Installation Options," on page 121.

    1c Follow the prompts to install the ZENworks Agent on the device.

    Your answers to the prompts are stored in the response file.

2 Perform the scripted installation on a device by using the following command:

```
./zlm-install -a -s path_to_response_file.txt
```

3 If desired, place the above command in a script (for example, a login script).

Make sure the installation program and files are available to the device. For example, copy the installation files to a network location, mount the media as a network drive, or copy the files to the device's local drive.

A.3 Installing ZENworks Linux Management on a SLES 9 Server with a Minimal Installation

When you install SUSE Linux Enterprise Server (SLES 9), we strongly recommend that you perform a Default installation.

If you install SLES 9 using a Minimal installation, which does not include X Window System support, ensure that you do the following:

◆ Before installing ZENworks Linux Management on the server, install the glib2, XFree86-libs, and compat packages to the device.

◆ Use the `-x` option when you install ZENworks Linux Management. Running `./zlm-install -x` skips any packages that require the X Window System. For more information about installing ZENworks Linux Management on a ZENworks Primary Server, see Step 5 on page 42. For more information about installing ZENworks Linux Management on a secondary ZENworks server, see Step 3 on page 55.

A.4 Installing ZENworks Linux Management on a SLES 10 Server with a Customize Installation

When you install SLES 10, we strongly recommend that you perform a Default installation.

If you install SLES 10 using a Customize installation, the following packages must be installed before ZENworks Linux Management can be successfully installed:

aaa_base (postgresql)
atk (gtk-sharp)
bash (multiple)
binutils (postgresql)
boost (libzypp-zmd-backend)
bzip2 (libzypp)
cabextract (mirroring)
compat (eDir)
compat-32bit (eDir on x86_64)
coreutils
curl (libzypp)
db (python)
dbus-1 (libzypp)
dbus-1-glib (libzypp)
fillup (postgres)
gconf2 (policyenforcers)
gdbm (python)
gettext (multiple)
glib2 (multiple)
glibc (multiple)
glibc-locale (multiple)
grep (eDirectory)
gtk2 (gtk-sharp)
hal (libzypp)
insserv (postgres)
krb5 (postgres)
libacl (policyenforcers)
libcom_err (postgres)
libgcc (libzypp)
libglade2
libidn (libzypp)
libjpeg (x11vnc)
libjpeg-32bit
libstdc++ (libzypp)
libxml2 (multiple)
libzypp-zmd-backend
mktemp (multiple)
mono-core
ncurses (python)
openssl (libzypp)
orbit2 (policyenforcers)
pam (postgresql)

pango (gtk-sharp)
popt (libzypp)
pwdutils (multiple)
python (we install)
readline (postgres, python)
rpm
sed (postgres)
sqlite (zmd, libzypp)
xinetd (remote management)
xorg-x11-libs (eDir, vnc)
xorg-x11-libs-32bit
zlib (libzypp, remote management)
zlib-32bit
zmd
perl-TimeDate
qt3
gtk-sharp2
glib-sharp2

NOTE: Make sure that yast2-core-devel, yast2-devel, and zmd-devel packages are not installed on SLES 10.

A.5 Installing ZENworks Linux Management on a SLES 11 Server with a Customize Installation

When you install SLES 11, we strongly recommend that you perform a Default installation.

If you install SLES 11 by using a Customize installation, the following packages must be installed before ZENworks Linux Management can be successfully installed:

aaa_base (postgresql)
atk (gtk-sharp)
bash (multiple)
binutils (postgresql)
bzip2 (libzypp)
coreutils
curl (libzypp)
db (python)
dbus-1 (libzypp)
dbus-1-glib (libzypp)
fillup (postgres)
gconf2 (policyenforcers)
gdbm (python)
gettext (multiple)
glib2 (multiple)
glibc (multiple)

glibc-locale (multiple)

grep (eDirectory)

gtk2 (gtk-sharp)

hal (libzypp)

insserv (postgres)

krb5 (postgres)

libacl (policyenforcers)

libcom_err (postgres)

libgcc (libzypp)

libglade2

libglade2-32 bit

libidn (libzypp)

libjpeg (x11vnc)

libjpeg-32bit

libstdc++ (libzypp)

libxml2 (multiple)

mktemp (multiple)

ncurses (python)

openssl (libzypp)

orbit2 (policyenforcers)

pam (postgresql)

pango (gtk-sharp)

popt (libzypp)

pwdutils (multiple)

python (we install)

readline (postgres, python)

rpm

sed (postgres)

sqlite (zmd, libzypp)

xinetd (remote management)

xorg-x11-libs (eDir, vnc)

xorg-x11-libs-32bit

zlib (libzypp, remote management)

zlib-32bit

perl-TimeDate

qt3

NOTE: Make sure that yast2-core-devel, yast2-devel, and zmd-devel packages are not installed on SLES 11.

A.6 Installing a ZENworks Server on a Device Configured with DHCP

Installing a ZENworks Linux Management server on a device that is configured with DHCP causes the installation to fail. As noted in Part II, "Preparation," on page 21, the ZENworks server must have a static IP address or a permanently leased DHCP address.

If the ZENworks Linux Management installation program detects that you are installing on a device configured with DHCP, the following error displays:

```
eDir failed to start properly. Please ensure that this machine is configured
with a static IP or permanently-leased DHCP Address.
```

To resolve this error:

1 Make sure that the following entry is present in `/etc/hosts` before installing ZENworks Linux Management:

```
127.0.0.1 localhost.localdomain localhost
```

If the entry 127.0.0.2 *hostname*.localdomain *hostname* is present in the file, add 127.0.0.1 *hostname*.localdomain *hostname* before the entry to look similar to the following:

127.0.0.1 *hostname*.localdomain *hostname*

127.0.0.2 hostname.localdomain *hostname*

This change might affect other network applications. You might want to delete this change after the installation is completed. Changing back to the original setting does not impact ZENworks Linux Management.

NOTE: If you failed to change the `hosts` file prior to installing ZENworks Linux Management, make the previously mentioned changes in the `hosts` file and then run `zlm-config`. You do not need to restart the installation program.

You might also receive this error with a static IP address if you have more than one loopback address in your `/etc/hosts` file. The same resolution fixes this problem.

2 Delete the secondary loopback entry by entering the following command at the server prompt:

```
ip addr delete 127.0.0.2 dev lo
```

3 Run `zlm-config`.

A.7 Adding a Third-Party Certificate

Certificates are digitally signed statements that verify the authenticity of a server for security purposes. By default, ZENworks 7.3 Linux Management uses self-signed certificate Web services to authenticate a server. You can also import your own Secure Sockets Layer (SSL) certificate into the server.

Use the `zlm-config --tomcat-certificate` command to generate or import the SSL certificate. The command lists the following menu options:

- Section A.7.1, "Generate a New Certificate and a New Certificate Signing Request," on page 128
- Section A.7.2, "Generate Certificate Signing Request (CSR) from the Existing Keystore," on page 128

A.7.1 Generate a New Certificate and a New Certificate Signing Request

Use this option to generate a new SSL certificate and a Certificate Signing Request (CSR) for it. Provide the required details, such as the name of the organization, the state, and the first two letters of the country name to generate the certificate. The hostname of the server for which the certificate is generated is CN.

A new certificate is created with the specified details and the CSR is stored in the specified path.

A.7.2 Generate Certificate Signing Request (CSR) from the Existing Keystore

Use this option to generate the Certificate Signing Request (CSR) from the existing Tomcat certificate. You must specify the absolute file path to store the CSR. The default path is `/tmp/zlm-cert.csr`. You must use this CSR to get the certificate signed by a trusted Certificate Authority. For more information, see Section A.7.3, "Import the Signed Certificate into the Keystore," on page 128

A.7.3 Import the Signed Certificate into the Keystore

After you use the CSR to have your certificate signed, use this option to import the certificate into the keystore. You must specify the absolute file path to store the certificate.

A.7.4 Import New PKCS12 Certificate into the Keystore

Use this option to import a third-party signed certificate into the Tomcat certificate store. If your certificate is not a PKCS12 certificate, you must first convert the certificate into PKCS12 format, and then use this option to import it. For more information on converting the certificate to PKCS12 format, see Section A.8, "Converting a Signed Certificate into PKCS12 Format," on page 129.

A.7.5 Import a CA Certificate into the Keystore

Use this option to import the CA certificates into the keystore. You must import the chain of CAs to successfully add the CA certificate in to the certificate store.

A.7.6 Exit

Use this option to exit the menu options.

A.8 Converting a Signed Certificate into PKCS12 Format

If you have the private key in Base64 format, use the following command to generate PKCS8 private key:

```
openssl pkcs8 -inform PEM -nocrypt -in base64_private_key_file -out
output_filename
```

Example:

```
openssl pkcs8 -inform PEM -nocrypt -in /home/b64_private.key -out /home/
pkcs8_private.key
```

If you have the private key in PKCS8 format and a certificate file, use the following command to generate a PKCS12 certificate file:

```
openssl pkcs12 -export -out pkcs12_outfile -inkey pkcs8_private_key file_path
-in certificate_file_path
```

Example:

```
openssl pkcs12 -export -out pkcs12.cert -inkey /home/pkcs8_private.key  -in /
home/mycert.cer
```

Documentation Updates

B

This section contains information on documentation content changes that were made in this *Installation Guide* after the initial release of Novell® ZENworks® 7.3 Linux Management. The information can help you to keep current on updates to the documentation.

All changes that are noted in this section are also made in the documentation. The documentation is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the documentation changes listed in this section.

The documentation update information is grouped according to the date the changes are published. Within a dated section, the changes are alphabetically listed by the names of the main table of contents sections in the guide.

If you need to know whether a copy of the PDF documentation you are using is the most recent, the PDF document contains its publish date on the front title page.

The documentation was updated on the following dates:

B.1 February 12, 2010 (Interim Release 2)

Updates were made to the following sections. The changes are explained below.

B.1.1 Preparation

The following changes were made in this section:

Location	Change
Section 2.1, "ZENworks Server Requirements," on page 23	◆ Reorganized the content. ◆ Updated the list of operating systems for the following platforms: ◆ RHEL 5.3 ◆ RHEL 5.4
Section 2.3, "Managed Device Requirements," on page 25	◆ Reorganized the content. ◆ Updated the list of operating systems for the following platforms: ◆ OES 2 SP2 ◆ RHEL 5.4

B.1.2 Upgrade

The following changes were made in this section:

Location	Change
Section 10.3, "What's New in ZENworks 7.3 Linux Management with Interim Release 2," on page 80	Added this section with information for IR2.
Section 12.1.1, "Upgrading the Servers," on page 100	Added a new prerequisite to be fulfilled to perform an in-place upgrade if the server was originally upgraded from ZENworks 7.2 Linux Management.
Chapter 13, "Upgrading to ZENworks 7.3 Linux Management with IR2," on page 109	Added this section with information for IR2.

B.2 November 4, 2009

Location	Change
"Creating the ZENworks Linux Management Agent Add-On" on page 57	Updated this section.

B.3 October 12, 2009 (Interim Release 1)

Updates were made to the following sections. The changes are explained below.

- Section B.3.1, "Installation," on page 132
- Section B.3.2, "Preparation," on page 133
- Section B.3.3, "Upgrade," on page 133
- Section B.3.4, "Appendixes," on page 133

B.3.1 Installation

The following changes were made in this section:

Location	Change
Section 5.2, "Installing the ZENworks Server Software," on page 41	Updated Step 5 for information on installing ZENworks 7.3 Linux Management on a SUSE® Linux Enterprise 11 device.
Section 7.1, "Installing ZENworks Linux Management on SLES 10 IA 64," on page 53	Added this section.
Section 7.2.1, "Manually Installing the ZENworks Agent," on page 54	Updated Step 3 for information on installing ZENworks 7.3 Linux Management on a SUSE Linux Enterprise 11 device.

B.3.2 Preparation

The following changes were made in this section:

Location	Change
Section 2.1, "ZENworks Server Requirements," on page 23	◆ Added SLES 10 SP3 to the list of operating systems supported for ZENworks 7.3 Linux Management with IR1. ◆ Added information on the recommended file systems.
Section 2.3, "Managed Device Requirements," on page 25	Updated the list of operating systems for the following platforms: ◆ SLES ◆ Novell Linux Desktop ◆ RHEL

B.3.3 Upgrade

The following changes were made in this section:

Location	Change
Chapter 10, "What's New in ZENworks Linux Management," on page 77	Reorganized the content.
Section 10.2, "What's New in ZENworks 7.3 Linux Management with Interim Release 1," on page 79	Added this section with information for IR1.
Section 11.1.2, "Performing an In-Place Upgrade on a ZENworks Secondary Server," on page 84	Updated this section.
Chapter 12, "Upgrading to ZENworks 7.3 Linux Management with IR1," on page 99	Added this section with information for IR1.

B.3.4 Appendixes

The following changes were made in this section:

Location	Change
Section A.5, "Installing ZENworks Linux Management on a SLES 11 Server with a Customize Installation," on page 125	Updated the section with the following packages: ◆ libglade2 ◆ libglade2-32 bit
Section A.7, "Adding a Third-Party Certificate," on page 127	Updated the section with information for the *Exit* menu option.

B.4 July 28, 2009

Updates were made to the following sections. The changes are explained below.

- Section B.4.1, "Upgrade," on page 134

B.4.1 Upgrade

The following changes were made in this section:

Location	Change
Section 11.6.1, "Upgrading the Servers," on page 95	Updated this section.
Section 11.7.1, "Upgrading the Servers," on page 96	Updated this section.