

Novell ZENworks® for Desktops

4.0.1

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UPGRADE GUIDE

June 18, 2004



Novell®

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Contents

- About This Guide** **7**

- 1 What's New in this Release?** **9**
 - What's New in Policies and Workstation Management 9
 - What's New in Workstation Import 10
 - What's New in Application Management 10
 - What's New in Application Management for ZfD 4 10
 - What's New in Application Management for ZfD 4 SP1/4.0.1. 12
 - What's New in Workstation Imaging 13
 - What's New in Remote Management. 14
 - What's New in Workstation Inventory. 14

- 2 Upgrading from ZENworks 2 or Starter Pack to ZfD 4.x** **17**
 - Upgrade Procedures: ZENworks 2 and Starter Pack to ZfD 4.x 17
 - Meeting the ZfD 4.x Installation Prerequisites 18
 - Checking eDirectory 22
 - Updating the eDirectory Schema 22
 - Installing or Upgrading ConsoleOne 24
 - Updating Search Policies 24
 - Upgrading ZENworks 2 Components on the Server 25
 - Replacing or Upgrading ZENworks 2 Workstation Inventory 26
 - Migrating Policies 27
 - Updating the Application Launcher Startup Method 28
 - Upgrading Application Objects 30
 - Updating Managed Workstations 31
 - Installing the ZfD Middle Tier Server 37

- 3 Upgrading from ZfD 3.x to ZfD 4.x** **39**
 - ZfD 3.x and ZfD 4.x Coexistence 39
 - Workstation Import 40
 - Policy Management 40
 - Application Management 40
 - Workstation Imaging 41
 - Remote Management 41
 - Workstation Inventory. 41
 - Upgrade Procedures: ZfD 3.x to ZfD 4.x 41
 - Meeting the ZfD 4.x Installation Prerequisites 42
 - Checking eDirectory 46
 - Renaming the ZfD 3.2 Support Pack Files 46
 - Extending the ZfD 3.x Schema to ZfD 4 or ZfD 4.0.1 46
 - Upgrading ConsoleOne 47
 - Updating Search Policies 47
 - Upgrading Workstation Inventory 49
 - Updating Workstation Imaging 58
 - Upgrading Policies 59
 - Updating the Application Launcher Startup Method 65

Updating Applications	67
Updating Managed Workstations	67
Updating the Novell Client on Managed Workstations.	67
Installing the ZfD Management Agent	68
Verifying Remote Control	75
After the Upgrade	75
4 Upgrading from ZfD 4 to ZfD 4 SP1/4.0.1	77
About the Upgrade Options	77
ZfD 4 Support Pack 1	77
ZfD 4.0.1	78
Preparing for the Upgrade.	78
Meeting the Upgrade Requirements for Server Software	78
Stopping ConsoleOne and Java Processes Before Installation	78
Upgrading the ZfD Server Software	79
Windows 2000 Support in a NetWare 6 Configuration.	79
Restarting the Inventory Components After Installation	79
Referencing the New ODBC Drivers for Application Management Reporting	80
Upgrading the ZfD Middle Tier Server Software.	80
Upgrading the ZfD Management Agent	81
Upgrading the ZfD Management Agent if Support Patches Have Been Applied	82
Rolling Back the ZfD Management Agent to an Earlier Version	82
5 Upgrading from DeFrame 2.01 to ZfD 4.01 DeFrame	83
Upgrade Order	83
Software Requirements	84
Terminal Server Requirements	84
Client Workstation Requirements	85
Directory Service Requirements	86
Novell iFolder Requirements (Optional)	86
Upgrading Workstations	86
Using Novell Application Launcher to Install the Workstation Software	87
Using the OnDemand Services Launch Item Gadget to Install the Workstation Software.	88
Manually Installing the Workstation Software	88
Upgrading Terminal Servers.	89
Setting Up Terminal Server User Accounts	89
Upgrading the DeFrame eDirectory Schema and Objects.	96
Upgrading Terminal Server Software	97
A ZfD Features Matrix	103
B Documentation Updates	107
November 11, 2002	107
December 5, 2002.	107
December 17, 2002	108
December 20, 2002	109
April 14, 2003 (Version 4 SP1/4.0.1)	109
October 10, 2003	110
January 16, 2004	110
March 15, 2004	111
June 18, 2004	111

About This Guide

This guide includes information for upgrading the ZENworks Starter Pack, ZENworks 2, and ZENworks for Desktops 3.x to work in a ZfD 4 environment. It also contains information about upgrading ZfD 4 to ZfD 4 SP1/4.0.1

The following sections are included:

- ◆ Chapter 1, “What’s New in this Release?,” on page 9
- ◆ Chapter 2, “Upgrading from ZENworks 2 or Starter Pack to ZfD 4.x,” on page 17
- ◆ Chapter 3, “Upgrading from ZfD 3.x to ZfD 4.x,” on page 39
- ◆ Chapter 4, “Upgrading from ZfD 4 to ZfD 4 SP1/4.0.1,” on page 77
- ◆ Chapter 5, “Upgrading from DeFrame 2.01 to ZfD 4.01 DeFrame,” on page 83

A table comparing the features of the various ZfD releases is included in an appendix:

- ◆ Appendix A, “ZfD Features Matrix,” on page 103

Changes to the content of this guide are included in the following appendix:

- ◆ Appendix B, “Documentation Updates,” on page 107

Additional Documentation

For information about the installing, planning, setting up, and testing processes that Novell® ZENworks® for Desktops (ZfD) 4, ZfD 4 Support Pack 1 (SP1) and ZfD 4.0.1 customers will typically encounter while implementing this product, see the *ZENworks for Desktops 4 Installation Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

For comprehensive, conceptual information that you can use as you configure and use ZfD 4/SP1/4.0.1 components in your production environment, see the *ZENworks for Desktops 4 Administration Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

For information about administering ZfD DeFrame™ to provide directory-enabled management and delivery of thin-client applications through Novell Application Launcher™, see the *ZENworks for Desktops 4.0.1 DeFrame Installation and Administration Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

For information about installing, deploying and administering ZfD Preboot Services, a component that finds imaging work specified for a workstation and provides the workstation with the files necessary to boot to the ZfD imaging environment, see the *ZENworks for Desktops 4 Preboot Services Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

For information about administering ZfD Personality Migration, a component that migrates a users' system and application settings, preferences, and data files from one workstation to another, see the *ZENworks for Desktops 4 Personality Migration Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

For information about installing, configuring and testing ZfD 4.0.1 (this version only) in a Novell Cluster Services environment, see the *ZENworks for Desktops 4.0.1 Clustering Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

For troubleshooting strategies that you can use and error messages that might be displayed for problems that could occur as you use ZfD 4/SP1/4.0.1 in your production environment, see the *ZENworks for Desktops 4 Troubleshooting Guide* (<http://www.novell.com/documentation/lg/zdpr/index.html>).

Documentation Updates

Check the *ZENworks for Desktops 4 Documentation Web site* (<http://www.novell.com/documentation/lg/zdpr/index.html>) for updates that might not be included on the documentation shipped on the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD*.

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 UNIX*, should use forward slashes as required by your software.

1

What's New in this Release?

This section includes the following information:

- ◆ “What's New in Policies and Workstation Management” on page 9
- ◆ “What's New in Workstation Import” on page 10
- ◆ “What's New in Application Management” on page 10
- ◆ “What's New in Workstation Imaging” on page 13
- ◆ “What's New in Remote Management” on page 14
- ◆ “What's New in Workstation Inventory” on page 14

What's New in Policies and Workstation Management

Novell® ZENworks® for Desktops (ZfD) 4 introduces the following new features for Workstation Management:

- ◆ The new Novell iPrint policy lets you install the Novell iPrint client to users' workstations. After it is installed, users can use a Web browser to install printers on their workstations. Users can then print to iPrint printers through applications just like any other printer, regardless of the printer's physical location. This policy replaces the Printer policies of earlier versions of ZENworks.
- ◆ The ZENworks for Desktops Management Agent policy lets you configure the ZfD Management Agent. The ZfD Management Agent lets you use ZfD 4 without using the Novell Client™. The ZfD Management Agent lets users access the ZENworks for Desktops Middle Tier Server by using a DNS name or an IP address.
- ◆ The following policies are no longer shipped with ZfD 4:
 - ◆ Client Configuration
 - ◆ RAS Configuration
 - ◆ Restrict Login
 - ◆ Earlier ZfD Printer policies

If you are upgrading from a previous version of ZENworks and are using these policies, ZfD 4 supports them.

- ◆ Although Microsoft* no longer supports Windows* 95, existing Windows 95/98 policies from a previous installation of ZENworks that are associated with Windows 95 machines or users will continue to function in ZfD 4. However, this release does not allow you to create new policies for Windows 95 machines or users.

NOTE: For more information about the end of support for Windows 95, see the [Windows Desktop Product Lifecycle Guidelines \(http://www.microsoft.com/windows/lifecycleconsumer.asp\)](http://www.microsoft.com/windows/lifecycleconsumer.asp).

What's New in Workstation Import

Automatic Workstation Import in ZfD 4 SP1/4.0.1 has been updated with new options that can be used at the command line or in the registry to facilitate the automatic import of workstations. The combinations of these options can save on the number of import servers needed. These options are fully described in [TID 10068910 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10068910.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10068910.htm) available from the Novell Support Web site.

What's New in Application Management

Refer to the following sections for information about new features in ZfD 4 and ZfD 4 SP1/4.0.1:

- ◆ “What's New in Application Management for ZfD 4” on page 10
- ◆ “What's New in Application Management for ZfD 4 SP1/4.0.1” on page 12

What's New in Application Management for ZfD 4

ZfD 4 introduces the following new features for Application Management:

- ◆ Novell Application Launcher™ no longer has a dependency on the Novell Client. If a user's workstation has the Novell Client installed, Application Launcher will use the Client to access Novell eDirectory™ and NetWare® servers. If not, access to eDirectory can be provided through the ZfD Management Agent (installed on the user's workstation) and the ZfD Middle Tier Server (installed on a network server). For more information, see “[Understanding Novell Application Launcher Components](#)” in “[Application Management](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ Terminology for Application Launcher has been changed to alleviate confusion when referring to different views that can be used with Application Launcher, and a new Web browser view has been added.
 - ◆ *Novell Application Launcher* or *Application Launcher* refers to the core application that must run on a user's workstation in order to distribute applications to the user.
 - ◆ Application Launcher includes three views that the user can run to display and launch distributed applications: 1) the *Application Window*, which is the standalone window that was previously referred to as Application Launcher or the Application Launcher window, 2) *Application Explorer*, which is the standalone window plus the Start menu, desktop, task bar, and system tray integration, and 3) a new Web browser view, the *Application Browser*, that enables distributed applications to be displayed and launched from a Web browser.

For more information about Novell Application Launcher and its three views, see “[Understanding Novell Application Launcher Components](#)” in “[Application Management](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- ◆ The ZfD Management Agent installation program installs the Novell Application Launcher files to the user's workstation and places an Application Window shortcut and Application Explorer shortcut on the Start menu (Start > Programs > ZENworks for Desktops 4). It also places an Application Browser button on the Web browser's standard button bar.
- ◆ The Novell Application Launcher Web installation program, which can be used in place of the ZfD Management Agent installation program, enables users to install Novell Application Launcher (NAL) from a Web server. When Application Launcher is installed this way, only user-associated applications are supported because Workstation Manager and the

Workstation Helper are not installed. In addition, only the Application Explorer and Application Browser views are available.

Because the application launcher service is not installed, the user needs local administrative rights to install or run NAL if the installation is completed using this method.

- ◆ Novell Application Launcher now supports three modes: local, remote, and disconnected.
 - ◆ Local: Used when Application Launcher is connected to eDirectory through a fast connection (for example, a LAN connection).
 - ◆ Remote: Used when Application Launcher is connected to eDirectory through a slow connection (for example, a modem connection).
 - ◆ Disconnected: Used when Application Launcher does not have access to eDirectory (or when a user chooses to work offline). All directory information is retrieved from the workstation's local cache.

You determine how Application Launcher knows whether it is in local or remote mode. You can configure Application Launcher to always assume local mode, always assume remote mode, prompt the user for the current mode, detect the mode from the network card's maximum interface speed, or detect the mode from the workstation's network address. For more about determining local and remote modes, see [“Configuring Novell Application Launcher Settings”](#) and [“Configuring User Settings”](#) in [“Configuring Novell Application Launcher Settings”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*. For more information about disconnected mode, see [“Supporting Disconnected Users”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- ◆ Several features have been added to support Novell Application Launcher's new remote mode:
 - ◆ Terminal server applications and Web applications, which work across slower connections better than standard applications, can be used while in remote mode. Creation and configuration of Application objects for both terminal server applications and Web applications have been simplified. For more information, see [“Distributing Applications to Users and Workstations”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
 - ◆ Checkpoint Restart provides users with a time estimate of how long it will take to download a standard application during distribution and enables users to postpone an in-progress download. When a user resumes a postponed download, Application Launcher resumes the download at the point it left off rather than starting over at the beginning. For more information, see [“Supporting Remote Users”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
 - ◆ Remote Alternate Application enables you to specify an alternate application to use when a user is in remote mode rather than local mode. For example, when a user is accessing an application while in local mode, you might want the application run from a network server installation. However, when the user is accessing the application while in remote mode, you might want it run through a terminal server. You would accomplish this by specifying the terminal server version of the application as the remote alternate application for the network server installation version. For more information, see [“Supporting Remote Users”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ Application Dependencies lets you establish a list of applications that must be installed before an application can be distributed. For example, assume that Application A requires Application B and Application C to be installed on a workstation before it will run. You can

create a dependency list for Application A that includes applications B and C. During distribution of Application A, if either Application B or Application C are not installed, Application Launcher will install them as part of the Application A distribution process. For more information, see [“Configuring Application Fault Tolerance, Load Balancing, and Site Lists”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- ◆ Application Launcher can generate event reports (install, uninstall, launch, cache, and so forth) in XML format and send the reports via standard HTTP or HTTPS protocol to a specified target URL. ZfD includes a Java* servlet, called the Application Management Reporting servlet, which can receive the XML reports, parse the XML data into an SQL query, locate the appropriate ZENworks Database object in eDirectory, and submit the SQL query to the database. If necessary, you can also create your own Java servlet rather than use the Application Management Reporting servlet. For more information, see [“Reporting Application Events”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ Application Launcher supports script engines in addition to the Novell Client script engine, which means that you can specify the script engine you want used when running a distribution script or launch script. For more information, see [“Distribution Scripts Page”](#) and [“Launch Scripts Page”](#) in [“Application Object Settings”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ The Application object for an MSI application now lets you define patches you want applied during the distribution process. It also lets you specify the actions (reinstall all files, reinstall old files, and so forth) you want to occur when a user verifies (repairs) an MSI application. For more information, see [“Application Object Settings”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ When Application Launcher starts it immediately reads eDirectory to get information about the applications associated with the user. The new Random Refresh feature instructs Application Launcher to retrieve its application information from the user's local cache directory during startup and then refresh that information from eDirectory at a later time. This allows you to reduce network traffic (generated by Application Launcher reading eDirectory) during peak times such as the morning login period. For more information, see [“Configuring User Settings”](#) in [“Configuring Novell Application Launcher Settings”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ Rogue Process Management lets you find out about and stop application processes not launched by Application Launcher.

What's New in Application Management for ZfD 4 SP1/4.0.1

In addition to the new features introduced in ZfD 4 (see [What's New in Application Management for ZfD 4](#) above), ZfD 4 SP1/4.0.1 introduces the following new features for Application Management. Unless otherwise noted, these features are available whether you used the ZfD 4.0.1 CD to create a new installation or used the ZfD 4 Support Pack 1 (SP1) or ZfD 4.0.1 CD to update an existing ZfD 4 installation.

- ◆ The Web-based ZfD installation manager used to install the NAL plug-in now determines which version of Application Launcher or the NAL plug-in is installed:
 - ◆ If no version is installed, the installation manager installs the NAL plug-in.
 - ◆ If an older NAL plug-in is installed, the installation manager installs the new NAL plug-in.

- ◆ If the Application Launcher included in pre-ZfD 4 versions is installed, the installation manager does not install the NAL plug-in.
- ◆ If the Application Launcher included with the ZfD Management Agent (version 4 or higher) is installed, the installation manager does not install the NAL plug-in.
- ◆ The NAL plug-in and its support files are now packaged as CAB files rather than included in an executable (.exe) installation program. This resolves the issue of users being prompted to confirm file overwrites during the update process. For information about the CAB files, see [“Installing the Application Launcher Plug-In”](#) in [“Application Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.
- ◆ (Not available in ZfD 4 SP1) Novell DeFrame™ is a new component of ZfD Application Management that can be used to distribute thin-client applications. In addition, DeFrame provides application load balancing between terminal servers, disconnected session tracking and management, integration with Novell iFolder® for file storage, and migration of application information from the Citrix Published Application Manager utility into Novell eDirectory. While the ZfD 4 method of thin-client application distribution is still available, DeFrame is the recommended method for distributing thin-client applications. If you have used DeFrame previously, see What’s New in ZfD DeFrame below.

To install DeFrame for the first time, see the [ZENworks for Desktops 4.0.1 Installation Guide](#). If you already have DeFrame installed (either as part of ZENworks OnDemand Services 2 or ZENworks Synergy) see [Chapter 5, “Upgrading from DeFrame 2.01 to ZfD 4.01 DeFrame,”](#) on page 83.

What’s New in ZfD DeFrame

The following changes have been made to DeFrame in this release:

- ◆ DeFrame no longer includes DeFrame Dynamic User (DDU) functionality for creating and managing local user accounts and roaming profiles. If you have been using DDU, you will need to use ZfD Workstation Manager and Dynamic Local User (DLU) policies.
- ◆ The DeFrame 2.01 services (DeFrame Access Control Service, DeFrame Watchdog Service, and DeFrame Disconnected Session Tracking Service) have been combined into one service called the Novell ZENworks Thin-Client Application Service (zencas.exe).
- ◆ A new utility, the DeFrame\OnDemand User Configuration utility, has been added. You can use the utility to enable multiple users as DeFrame users at one time. If you have ZENworks 6 Web Self-Service (formerly ZENworks OnDemand Services™), you can also use the utility to configure OnDemand user settings.
- ◆ Support for the Citrix Secure Gateway (relay mode only) has been added.

What’s New in Workstation Imaging

ZfD 4 introduces the following new features for Workstation Imaging:

- ◆ Performance enhancements for restore time on IDE hard drives.
- ◆ Support for USB keyboards.
- ◆ Preboot Services is included on the *ZENworks for Desktops 4 Program CD* or the *ZENworks 6 Desktop Management Program CD* so that you do not need to switch to a different CD during installation.
- ◆ Ability to start a multicast session from the server console

- ◆ Simultaneous multicast sessions. (In previous versions of ZfD, multicast sessions started at the same time were performed sequentially.)
- ◆ Utilities (zisview and zisedit) for viewing and editing image-safe data are available from the Linux* prompt.
- ◆ Support for workstation DNS information in the policies/image-safe data.
- ◆ The Linux kernel now is 2.4.18.

What's New in Remote Management

ZfD 4 introduces the following new features for Remote Management:

- ◆ Remote Management no longer has a dependency on the Novell Client.
You can initiate a Remote Management operation with workstations where Novell Client is not installed.
- ◆ Enhanced performance of remote control.
- ◆ You can start Remote Management operations through Password-Based Remote Management.
For ZfD 4 Remote Management, you do not need to register the workstation in eDirectory and import it as an eDirectory Workstation object. You can imitate a Remote Management operation using Password-Based Remote Management.
- ◆ You can start Remote Management operations from the User object as well as from the Workstation object.
- ◆ You can configure the Wake-on-LAN policy to perform a scheduled wake-up of a group of managed workstations
- ◆ Remote Management operations work across the firewall.
You can perform Remote Management operations on the workstations that are outside the firewall if port 1761 is open for the Remote Management operations.
- ◆ ZfD 4 has centralized audit information through the audit log
All the Remote Management audit information is stored in a centralized Inventory database. You can view the audit record of all workstations from ConsoleOne®.
- ◆ ZfD 4 has audit reports for Remote Management sessions
You can generate a predefined report to filter the Remote Management audit information from the Inventory database through Crystal Reports.

What's New in Workstation Inventory

ZfD 4 introduces the following new features for Workstation Inventory:

- ◆ Workstation Inventory no longer depends on the Novell Client.
- ◆ Roll-up of inventory information across eDirectory trees.
- ◆ Roll-up of inventory information across firewall.
- ◆ Support for the Inventory database on MS SQL Server 2000.
ZfD 4 allows the Inventory database to be configured for an MS SQL Server 2000 setup in your network. For more information, see [“Setting Up the Inventory Database for MS SQL](#)

Server 2000” in “Setting Up Workstation Inventory ”in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- ◆ Support for scanning for the user-defined attributes.

ZfD 4 lets you collect workstation information that is not part of the default hardware inventory. The Inventory scanner uses the Inventory database to store the user-defined attributes and the corresponding values along with the non-user-defined inventory attribute of the class in the Inventory database. For more information, see “Customizing the Hardware Inventory Scanning of Inventoried Workstations” in “Customizing the Inventory Information” in “Managing Inventory Information” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- ◆ Support for scanning of the product identification number of the Microsoft applications installed on the workstations.
- ◆ Support for scanning of the approximate installation path of the applications installed on the workstations

The Inventory scanner scans for the approximate installation path of the product executables that are installed on the workstations and stores the scan data in the Inventory database as the product location. If an application has more than one component and the components are installed to many levels of subdirectories, the Inventory scanner will scan for the path that is common to all the components.

- ◆ Support for configuring Microsoft’s Windows Management Instrumentation (WMI) and Desktop Management Interface (DMI) scanning and reporting.
- ◆ You can view the scan status of the workstation in eDirectory and the Inventory database from a specified time.
- ◆ Interoperability with ZENworks for Servers 3 (ZfS 3) Support Pack 1 (SP1).
- ◆ Predefined reports to filter the workstation inventory information from the Inventory database through Seagate* Crystal Reports*.
- ◆ Scans hardware and software information for all workstations that are registered to eDirectory but are temporarily disconnected from your network.

If the Inventory scanner is scheduled to collect the inventory for a workstation that is registered to eDirectory but not connected to the network, the Inventory scanner will wait until the workstation is reconnected to the network. After the workstation is reconnected, the Inventory scanner will collect the inventory of the workstation and will update the information to the Inventory database.

This helps the administrator to gather the inventory for the users who connect to the network less frequently but want their machines to be inventoried.

2

Upgrading from ZENworks 2 or Starter Pack to ZfD 4.x

This section provides the information you need for upgrading your existing installation of Novell® ZENworks® 2 or the ZENworks Starter Pack to ZENworks for Desktops (ZfD) 4 or ZENworks for Desktops 4.0.1. The section describes the ZfD functionality that might be affected by the coexistence of these ZfD versions and suggests ways to configure your systems to provide maximum functionality to your users.

To help you better understand how the features of these releases compare, see the feature comparison tables in [Appendix A, “ZfD Features Matrix,” on page 103](#).

NOTE: ZENworks for Desktops 4, ZENworks for Desktops 4 SP1, and ZENworks for Desktops 4.0.1 will hereafter be collectively referred to as ZfD 4.x.

Before you install ZfD 4.x on your network, it is necessary to upgrade user workstations and the data server where older versions of ZfD are installed.

ZfD 4.x does not support Windows 95, Windows 98 without the SE upgrade, Novell eDirectory™ versions before NDS® 8, NetWare® 4.x, or NetWare 5.0.

If you need assistance while upgrading ZENworks 2 or ZENworks Starter Pack to ZfD 4, you can consult the following resources:

- ♦ The ZENworks for Desktops Cool Solutions community at <http://www.novell.com/cool solutions/zenworks> (<http://www.novell.com/cool solutions/zenworks>).
- ♦ The Novell Support Knowledgebase at <http://support.novell.com> (<http://support.novell.com>)
- ♦ Novell NgageSM Consulting at <http://www.novell.com/solutions/ngage/consulting.html> (<http://www.novell.com/solutions/ngage/consulting.html>).

Upgrade Procedures: ZENworks 2 and Starter Pack to ZfD 4.x

The following sections outline the procedures that you should follow as you upgrade your existing ZENworks 2 or ZENworks Starter Pack system to a ZfD 4.x environment. To ensure a successful upgrade, you should perform these procedures in the following order:

1. [“Meeting the ZfD 4.x Installation Prerequisites” on page 18](#)
2. [“Checking eDirectory” on page 22](#)
3. [“Updating the eDirectory Schema” on page 22](#)
4. [“Installing or Upgrading ConsoleOne” on page 24](#)
5. [“Updating Search Policies” on page 24](#)
6. [“Upgrading ZENworks 2 Components on the Server” on page 25](#)
7. [“Replacing or Upgrading ZENworks 2 Workstation Inventory” on page 26](#)

8. [“Migrating Policies” on page 27](#)
9. [“Updating the Application Launcher Startup Method” on page 28](#)
10. [“Upgrading Application Objects” on page 30](#)
11. [“Updating Managed Workstations” on page 31](#)
12. [“Installing the ZfD Middle Tier Server” on page 37](#)

Meeting the ZfD 4.x Installation Prerequisites

Ensure that the workstations and servers on your network meet the necessary prerequisites.

- ◆ [“ZfD 4.x Hardware Requirements” on page 18](#)
- ◆ [“ZfD 4.x Software Requirements” on page 20](#)
- ◆ [“Software Notes for the Managed Workstation” on page 21](#)

For more information, see [“Platform Support for the ZfD Infrastructure”](#) and [“User Workstation Requirements”](#) in the *ZENworks for Desktops 4.0.1 Installation Guide*.

ZfD 4.x Hardware Requirements

The following table lists the recommended hardware configuration required for installation.

ZfD 4.x Role of the Network Computer	Operating System	Required Hardware Configuration
ZENworks Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium* III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 138 MB disk space
ZENworks Server	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 220 MB disk space
ZENworks Server	Windows 2000	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 220 MB disk space
ZfD Middle Tier Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 160 MB disk space
ZfD Middle Tier Server	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 160 MB disk space

ZfD 4.x Role of the Network Computer	Operating System	Required Hardware Configuration
ZfD Middle Tier Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 160 MB disk space
ZfD Inventory Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 138 MB disk space
ZfD Inventory Server	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 220 MB disk space
ZfD Inventory Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 220 MB disk space
ZfD Inventory Server	Windows* NT Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 220 MB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	Windows NT Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space

ZfD 4.x Role of the Network Computer	Operating System	Required Hardware Configuration
Managed Workstation	Windows XP	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space
Managed Workstation	Windows NT 4.0	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space
Managed Workstation	Windows 2000 Professional	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space
Managed Workstation	Windows 98 SE	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space

ZfD 4.x Software Requirements

The following table includes the software required to be installed on the various ZfD 4.x machines.

ZfD 4.x Role of the Network Computer	Operating System	Minimum Software Requirement
ZENworks Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Support Pack 4 ◆ eDirectory 8.62 ◆ JVM* 1.3.1
ZENworks Server	NetWare 6	<ul style="list-style-type: none"> ◆ Support Pack 1
ZENworks Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Service Pack 2 ◆ Novell Client™ 4.83 SP2 ◆ eDirectory 8.62 (or later) ◆ JVM 1.3.1
ZfD Middle Tier Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Support Pack 4 ◆ eDirectory 8.62 ◆ NIC1 2.4.0 ◆ Apache Web Server for NetWare 1.3.22 or 1.3.27 ◆ Novell Certificate Server™ 2.20 ◆ JVM 1.3.1

ZfD 4.x Role of the Network Computer	Operating System	Minimum Software Requirement
ZfD Middle Tier Server	NetWare 6	<ul style="list-style-type: none"> ◆ Support Pack 1 ◆ NICI 2.4.0
ZfD Middle Tier Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Service Pack 2 ◆ IIS Web Server ◆ NICI 2.4.0
ZfD Inventory Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Support Pack 4 ◆ eDirectory 8.62 ◆ JVM 1.3.1
ZfD Inventory Server	NetWare 6	<ul style="list-style-type: none"> ◆ Support Pack 1
ZfD Inventory Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Service Pack 2 ◆ Novell Client 4.83 SP1 ◆ eDirectory 8.62
ZfD Inventory Server	Windows NT Server	<ul style="list-style-type: none"> ◆ Service Pack 6a ◆ Novell Client 4.83 SP1 ◆ eDirectory 8.62
Managed Workstation	Windows XP Professional	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 4.82 (optional) ◆ Windows Installer 1.11
Managed Workstation	Windows NT 4 with Service Pack 6a	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 4.80 (optional)
Managed Workstation	Windows 2000 Professional with Service Pack 2	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 4.80 (optional)
Managed Workstation	Windows 98 SE	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 3.30 (optional)

Software Notes for the Managed Workstation

The following list details other things you need to know regarding the required software for managed workstations.

- ◆ ZfD 4.x does not support workstations with Windows 95 (no longer supported by Microsoft), Windows 98 without the SE upgrade, Windows Millennium Edition (ME), or Windows XP Home Edition operating systems. If you want to continue to use Windows 95, you need to upgrade to ZENworks for Desktops 3.2 and enhance it with the latest support pack.
- ◆ If you intend to continue to use the Novell Client for authentication to the ZENworks server, you must use the Novell Client 4.80 SP1 (minimum) for Windows NT/2000/XP workstations and Novell Client 3.30SP1 (minimum) for Windows 98 SE workstations. The ZfD components of the client are upgraded when you install the ZfD Management Agent on the workstation.

NOTE: The recommend version of the client for Windows NT/2000/XP is 4.83 SP2. The recommend version of the client for Windows 98 SE is 3.32 SP2.

- ◆ If Internet Explorer 6.0 is installed on any workstation, make sure that the privacy settings are configured to accept cookies. By default, Internet Explorer 6.0 does not accept cookies.
- ◆ The ZfD Management Agent installation program depends on the presence of the Microsoft Windows Installer (MSI) engine, so you need to check to see if user workstations have the MSI engine installed. For more information, see “[Deploying the Windows Installer \(MSI\) Engine](#)” on page 32.

For more information about these requirements, see “[User Workstation Requirements](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

Checking eDirectory

You need to check the health of your eDirectory tree both before and after you install ZfD 4.x and extend the directory schema with ZfD 4.x attributes. The following resources provide the information required to perform the health check:

- ◆ Directory Health Check Procedures - Cross Platform, [TID 10060600 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10060600.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10060600.htm), available from the Novell Support Web site.
- ◆ Checking the OS and DS Health for Inconsistent ZENworks behavior. - [TID 10062741 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10062741.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10062741.htm), available from the Novell Support Web site.
- ◆ [eDirectory Cool Solutions \(http://www.novell.com/cool solutions/nds\)](http://www.novell.com/cool solutions/nds)

Updating the eDirectory Schema

The ZfD 4.x installation program extends the eDirectory schema to allow the creation of new types of directory objects. Schema extension is not a reversible process.

The ZfD 4.x installation must be performed from a workstation running a supported version of Windows and the Novell Client. There are two possible scenarios.

- ◆ [Extending the ZENworks Starter Pack Schema \(ZfD 4 Only\)](#)
- ◆ [Extending the ZENworks 2 Schema \(ZfD 4/4.0.1\)](#)

Extending the ZENworks Starter Pack Schema (ZfD 4 Only)

Use the following steps to extend the directory schema in preparation for the ZfD 4.x upgrade from ZENworks Starter Pack:

- 1** From the installing workstation, log in to the network, authenticating to eDirectory as a user with administrative rights to the eDirectory tree.
- 2** Insert the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD* into the CD drive of the workstation. If the CD autoruns, cancel the winsetup.exe installation program.
- 3** Copy the contents of the entire *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD* to an accessible network server.
- 4** From the new network location, use a text editor to open the schema.txt file in the \zenworks\schema directory.

- 5** Edit schema.txt.
 - 5a** On line 1, change 26 to 27.
 - 5b** On line 7, insert the file name dmhelp.sch (this follows the line with dmwork.sch). The first seven lines of the file will look like this:


```
27
dmpolicy.sch
wmsched.sch
dmpackag.sch
dmsearch.sch
dmwork.sch
dmhelp.sch
```
 - 5c** Save the file and exit.
- 6** From the root of the new ZENworks for Desktops 4 installation directory you created in **Step 3**, run winsetup.exe.
- 7** From the installation menu, select Schema Extensions to start the schema extension routine.
- 8** In the Select Tree dialog box, select the authenticated tree where you want to extend the schema > click OK.
- 9** In the Schema Extensions confirmation dialog box, click Yes to confirm your selection and begin the schema extension.
- 10** (Optional) In the ZENworks Schema Extension confirmation dialog box, click View Log File to open the log file.
- 11** Perform the eDirectory health check.

Extending the ZENworks 2 Schema (ZfD 4/4.0.1)

Use the following steps to extend the directory schema in preparation for the ZfD 4.x upgrade from ZENworks 2:

- 1** From the installing workstation, log in to the network, authenticating to eDirectory as a user with administrative rights to the eDirectory tree.
- 2** Insert the *ZENworks for Desktops Program* CD or the *ZENworks 6 Desktop Management Program* CD into the CD drive of the workstation to autorun the winsetup.exe installation program.

If the CD does not autorun, you can launch winsetup.exe from the root of the CD.
- 3** From the installation menu, select Schema Extensions to start the schema extension routine.
- 4** In the Select Tree dialog box, select the authenticated tree where you want to extend the schema > click OK.
- 5** In the Schema Extensions confirmation dialog box, click Yes to confirm your selection and begin the schema extension.
- 6** (Optional) In the ZENworks Schema Extension confirmation dialog box, click View Log File to open the log file.
- 7** Perform the eDirectory health check.

Installing or Upgrading ConsoleOne

Novell ConsoleOne[®] is the centralized enterprise management console utilized by ZfD 4.x. All management tasks are performed in ConsoleOne, so if you are migrating from ZENworks 2 or earlier, you must move from the NetWare Administrator (nwadmn32.exe) to ConsoleOne 1.3.3 or later.

The Windows workstation where you run ConsoleOne must have the Novell Client installed.

For information about installing ConsoleOne, see [“Obtaining and Installing ConsoleOne”](#) in the *ZENworks for Desktops 4.0.1 Installation Guide*.

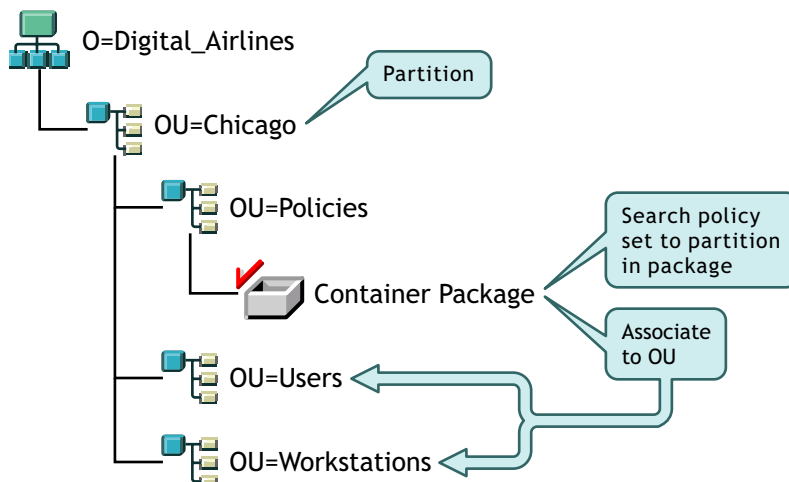
Updating Search Policies

Examine eDirectory to see if there are any Search policies in the tree. Search policies—part of the Container Package—are very important because they keep ZfD agents from walking to the root to find policies and configuration information.

If the tree does not have a Search policy, you need to create a new ZfD 4.x Search policy to ensure optimal performance of the ZfD agents. Until the ZfD 4.x Management Agent is installed on the workstation, the Search policy functions like a ZENworks 2 Search policy. After you install the ZfD 4.x Management Agent on the workstations, the Search Policy will function with new behavior.

Unlike ZENworks 2 agents, ZfD 4.x agents do not recognize the partition boundary of a container. Consequently, if you have any existing Search policies that are based on the partition boundary, the ZfD 4.x agents will search to the container where the Container Package is associated, regardless of whether the agents cross any partition boundaries in search of policies.

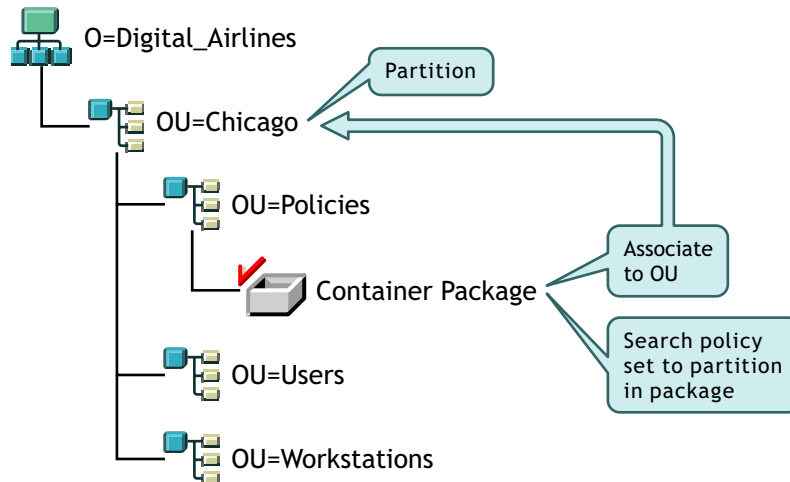
For example, assume that you have the following tree:



With ZENworks 2, the agents for the users or workstations would first walk to their parent container and find the associated Search policy that states that the agents should look only to the partition boundary for their policies. When the agents look for policies, they walk the tree only to the Chicago container (partition boundary).

With ZfD 4, the Partition option is not available in the Search Policy. It has been replaced with the Associated Container option. This means that any earlier Search Policies that were upgraded to ZfD 4.x the Partition option is now replaced with the Associated Container option. If you do not plan for this change, a different policy retrieval could result.

If you want to continue receive the same search results as when you used the Partition option as the search boundary, you need to associate the container package (that is, the policy package where the configured Search policy resides) to the eDirectory container that represents the partition boundary where you want user and workstation objects to end their search for policies.



When the ZfD 4.x agents search the tree now, they will find the Container Package with the Search Policy at Chicago, and then will search for policies up to Chicago, because it is the associated container.

NOTE: The container that is associated with the package determines where the agents will stop walking the tree. It is not based on where the package is actually stored in the directory. The search level in the Search policy will now apply to the associated container rather than the partition boundary.

Upgrading ZENworks 2 Components on the Server

After you meet the software requirements for the ZfD Server by upgrading the network operating system, the JVM, and ConsoleOne, you need to follow a specific procedure as you upgrade the network server to work with ZfD 4. The tasks include:

- ◆ [“Preparing the Autoexec.ncf File” on page 25](#)
- ◆ [“Installing the ZfD Server Software” on page 26](#)
- ◆ [“Designing and Implementing ZfD 4.x Automatic Workstation Import” on page 26](#)

Preparing the Autoexec.ncf File

If you want to upgrade the NetWare server where ZENworks Starter Pack or ZENworks 2 services are currently running, it will be necessary to remove commands from autoexec.ncf that load the ZENworks 2 services.

The standard ZENworks 2 installation appends various commands to the end of autoexec.ncf. As preparation for upgrade, you can create a new .ncf file and paste these lines into it. In autoexec.ncf, replace these lines with a call to the new .ncf file. Later, immediately before you upgrade to ZfD

4, shut down the ZENworks 2/Starter Pack components on the server and remove the references to the new .ncf file in autoexec.ncf.

Installing the ZfD Server Software

When you have adequately updated the server with the required software and you are ready to upgrade to ZfD 4, you need to install the ZfD Server software. For detailed information on how to perform the installation, see “[Installing the ZfD Server Software](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

Designing and Implementing ZfD 4.x Automatic Workstation Import

When you install the ZfD 4.x Server software and the ZfD 4.x Management Agent, you leave behind the ZENworks Starter Pack and ZENworks 2 workstation import design. You will need to design and implement the new ZfD 4.x Automatic Workstation Import component. For more information, see “[Understanding Automatic Workstation Import and Removal](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Replacing or Upgrading ZENworks 2 Workstation Inventory

Although the ZENworks Starter Pack did not include the Workstation Inventory component, ZENworks 2 did include it. In ZENworks 2, one central NetWare server ran the inventory database (Sybase* only), while workstations wrote to this database from anywhere in the enterprise. For more information, see the [ZENworks 2 Workstation Inventory documentation \(http://www.novell.com/documentation/lg/zen2/inv_enu/data/a2kvswg.html\)](http://www.novell.com/documentation/lg/zen2/inv_enu/data/a2kvswg.html).

ZfD 4.x uses a different, more efficient design with data roll-up capabilities for Workstation Inventory. It also gives you a choice of which database you want to use for the inventory data. For more information about understanding and deploying ZfD 4.x Workstation Inventory, see “[Understanding Workstation Inventory](#)” and “[Setting Up Workstation Inventory](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Because these two Workstation Inventory designs are so different, it might be to your advantage to gather any useful reports you might need from your existing ZENworks 2 workstation inventory database, then design and deploy a new inventory system based on the ZfD 4.x architecture without trying to upgrade the existing ZENworks 2 system.

However, if you are satisfied with how you have implemented ZENworks 2 Workstation Inventory in your network and you see no need to redesign and redeploy it based on the ZfD 4.x architecture, you can upgrade the existing ZENworks 2 Workstation Inventory components to ZfD 4.

Upgrading Workstation Inventory from ZENworks 2 to ZfD 4.x includes the following tasks:

- ◆ “[Upgrading the Database Server from ZENworks 2 to ZfD 4.x](#)” on page 26
- ◆ “[Upgrading the Inventory Server from ZENworks 2 to ZfD 4.x](#)” on page 27
- ◆ “[Upgrading the Inventory Agent from ZENworks 2 to ZfD 4.x](#)” on page 27

Upgrading the Database Server from ZENworks 2 to ZfD 4.x

Before you upgrade your ZENworks 2 database server to a ZfD 4.x database server, make sure that you have made and archived a reliable backup of the ZENworks 2 database.

The ZfD 4.x Server installation program automatically upgrades an existing ZENworks 2 database engine to ZfD 4. However, the existing ZENworks 2 inventory data will not be migrated from a ZENworks 2 database to a ZfD 4.x Inventory database.

The ZfD 4.x Server installation program automatically creates the Sybase database object, but you must manually configure the Database Location policy. If you want to install Oracle* or MS SQL 2000, you must manually create and configure the database objects. For more information, see [“Manually Creating the Inventory Database Object for Oracle”](#) in [“Setting Up the Inventory Database for Oracle”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide* or [“Configuring the Inventory Database for MS SQL Server 2000”](#) in [“Setting Up the Inventory Database for MS SQL Server 2000”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Upgrading the Inventory Server from ZENworks 2 to ZfD 4.x

You can upgrade the ZENworks 2 Inventory server by installing the ZfD 4.x Inventory server if the server where you want to install the ZfD 4.x Inventory server meets the installation requirements. For more information on how to install the ZfD 4.x Inventory server, see [“Installing the ZfD Server Software”](#) in the *ZENworks for Desktops 4.0.1 Installation Guide*.

er installing the ZfD 4.x Inventory server, you must manually create and configure the required policies, because the ZENworks 2 policies will not be migrated to ZfD 4.x. For more information, see [“Configuring the Workstation Inventory Policy”](#) in the *ZENworks for Desktops 4.0.1 Installation Guide*.

Upgrading the Inventory Agent from ZENworks 2 to ZfD 4.x

After upgrading the Inventory Agent to ZfD 4.x, you must rescan all the workstations attached to the server.

Migrating Policies

This section contains the following information about migrating ZENworks 2 policies to ZENworks for Desktops 4.x policies:

- ◆ [“How the Policies Are Migrated”](#) on page 27
- ◆ [“How the Migrated Policies are Organized”](#) on page 28
- ◆ [“Unusual Migration Scenarios”](#) on page 28

How the Policies Are Migrated

When you install ZfD 4, you are not required to migrate older policies because ZENworks 2 policy objects are not removed when extending the schema. This allows you to migrate the older policies in phases, such as by context. You should eventually migrate all ZENworks 2 or Starter Pack policies to obtain the better performance and ease of management that ZfD 4.x offers.

If you do not migrate ZENworks 2 or Starter Pack policies to ZfD 4, you must continue using NetWare Administrator for management purposes. ZfD 4.x uses ConsoleOne for management purposes. ConsoleOne will display only the effective policies in an object's properties for ZfD 4.x policies. If you have a mixed environment of ZENworks 2 policies and ZfD 4.x policies, you must use both NetWare Administrator and ConsoleOne. ZENworks 2 policies cannot be edited in ConsoleOne.

ZfD 4.x includes a policy migration tool launched from ConsoleOne that migrates ZENworks 2 policies to ZfD 4.x policies. The tool scans all of the existing policy packages, starting from the top of the tree and working down. The tool gives you the option of renaming the policy packages. We recommend that you perform a trial migration in a test environment to evaluate what is moved from ZENworks 2 to ZfD 4.x before you perform an actual migration.

NOTE: Default Package schedules are not migrated, so you will need to redefine these schedules for the migrated policies.

For more information about using the ZfD 4.x policy migration tool, see “[Migrating ZENworks 2 Policies into ZENworks for Desktops](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

How the Migrated Policies are Organized

The organization of ZENworks for Desktops policies differs in the ZENworks 2 and ZfD 4.x releases. In ZENworks 2 and Starter Pack, the policies are organized into two operating system groups: Windows 95/98 and Windows NT/2000. In ZfD 4, policies are combined into new packages. Because the policy packages are different in these releases, the existing ZENworks 2 policies are mapped to and migrated into new ZfD 4.x policy packages created by the migration tool. You cannot choose the packages where the old policies will be placed. Most ZENworks 2 policies are placed in either the User Package or Workstation Package.

The following table shows how ZENworks 2 policies are mapped and transferred into ZfD 4.x policy packages.

ZENworks 2 or Starter Pack Policy and Placement	ZENworks for Desktops 4 Policy and Placement
Windows 98	Windows 98
Windows NT/2000	Windows NT/2000/XP General

Unusual Migration Scenarios

Some ZENworks 2 policies were not carried forward into the ZfD 3 or ZfD 4.x releases (for example, Print Policy, Help Desk Requester, Login Restrictions). You cannot create these policies in ZfD 4. You can continue to use these policies to deliver login restrictions or traditional queue-based printing. The migration tool will migrate them and make them available for management in ZfD 4.x with no loss of functionality.

If you are currently running an older version of NetWare and NDS (for example, NetWare 4.11 and NDS 6 or NDS 7) and you decide to upgrade to a newer version of NetWare and eDirectory, it is possible to create a new directory tree and then use DirXML[®] to transfer your former users, groups, and other directory structures into this tree. If you install ZfD 4.x into this new tree, you will not be able to migrate any ZENworks 2 policies or transfer any ZENworks 2 policies that are no longer supported in ZfD 4. For more information, see the [DirXML documentation \(http://www.novell.com/documentation/lg/dirxml11a/index.html\)](http://www.novell.com/documentation/lg/dirxml11a/index.html).

Updating the Application Launcher Startup Method

When you upgrade the ZENworks Server to ZfD 4.x, nalexpld.exe and nal.exe are updated to launch naldesk or nalwin32 from the local directory where the ZfD 4.x Management Agent was installed. This change affects ZENworks 2 workstations using the Novell Client that have not been updated with the ZfD Management Agent.

Until you can update the ZENworks 2 workstations, you need to make sure that users are able to access the old Application Launcher. There are solutions for two scenarios:

- ◆ “[If Users Access the Application Launcher when Connected to the Network](#)” on page 29
- ◆ “[If Users Access the Application Launcher when Disconnected from the Network](#)” on page 30

If Users Access the Application Launcher when Connected to the Network

If your users primarily access the Novell Application Launcher while connected to the network, you might want to continue using the client login script to start the Application Launcher. One way of checking the workstation for updated ZfD 4.x files is to use the exist.exe tool to check c:\program_files\novell\zenworks for the existence of nalwin32.exe or naldesk.exe.

NOTE: The exist.exe tool can be downloaded from the Novell [ZENworks Cool Solutions page \(http://www.novell.com/cool solutions/tools/1067.html\)](http://www.novell.com/cool solutions/tools/1067.html). Run this tool from a login or application startup script to check for the presence of any file you specify. If the specified file is detected, the .exe returns ERROR_LEVEL of zero (0).

When you have downloaded exist.exe, edit your login scripts to put in a check to run the ZfD 3.x NAL locally, from the server, or to let the ZfD 4.x version run. These lines must be after the sys:\public directory is added to the search path or the exist.exe must have the full path specified. You need to modify the following (or an equivalent) line:

```
@z:\nalwin32.exe
```

This is how you need to modify the line:

```
; First check to see if the ZfD 4.x agent is present. If so, then you don't need
; to do anything; it will be launched automatically on the desktop.
#exist %<windir>\..\Program Files\Novell\Zenworks\naldesk.exe
; If the ZfD 4.x agent is NOT present, then keep checking
if "%ERRORLEVEL"!="0" then
; Check now to see if the ZfD 3.x App Launcher has been placed on the
workstation#exist %<windir>\system32\nalwin32.exe
; If the ZfD 3.x App Launcher has NOT been placed on the workstation then
; go and launch the App Launcher from the server.
if "%ERRORLEVEL"!="0" then
; Check our Windows 95 friends
#exist %<windir>\..\novell\client32\nalwin32.exe
if "%ERRORLEVEL"!="0" then
@z:\ZfD32NAL\nalwin32.exe
else
@%<windir>\..\novell\client32\nalwin32.exe
end
else
@%<windir>\system32\nalwin32.exe
end
end
```

This script change will launch Application Launcher in one of three ways:

- From the workstation copy of ZfD 4.x Agent (which will automatically start, so it does not need to be launched from the login script)
- From a local copy of the Application Launcher ZENworks 2 code, if it is present
- From the server if the ZfD 4.x Agent and the local ZENworks 2 Application Launcher code are not on the workstation.

The only difference in launching the ZENworks 2 files locally rather than from the server is that if you start the Application Launcher locally, updated ZENworks 2 Application Launcher files on the server are not pushed to the workstation. During a migration period, this is usually not necessary, but if it does become necessary, you can use an Application Launcher /i command line switch in a Policy package to update the local ZENworks 2 Application Launcher files.

NOTE: If your network environment contains roaming users, you should edit all of the login scripts at the same time, regardless of when the container, partition, or site is migrated to ZfD 4.x. This will prevent roaming users from having old Application Launcher files distributed to them.

If Users Access the Application Launcher when Disconnected from the Network

If your users are often disconnected from the network, you can start the Application Launcher by specifying in the ZfD 4.x Management Agent installation that the Application Launcher or the Application Explorer should be launched from the Startup Folder. Although this is the simplest method, command line parameters cannot be added to the shortcut and users sometimes remove items from the Startup folder.

If you want to specify command line parameters, you can start the Application Launcher by editing the Windows registry and adding NALWIN32 or NALDESK to the HKLM\Software\Microsoft\Windows\CurrentVersion\Run key.

Upgrading Application Objects

If you created Application objects using NetWare Administrator in ZENworks 2 or the ZENworks Starter Pack, the objects inside the directory will continue to work in ZfD 4. This is because when you extend the schema for ZfD 4.x, you are adding attributes to those objects that make them compatible with the updated software.

However, after the schema is extended, the ZfD Management Agent is installed, and the ZENworks 2 Application objects are opened with ConsoleOne, these ZENworks 2 Application objects are converted to ZfD 4.x objects and should never again be managed using NetWare Administrator. They must be managed with ConsoleOne.

There are some adjustments that you need to make to the updated Application objects:

- ◆ “Deselecting the Disconnectable Attribute” on page 30
- ◆ “Preparing the Application Object for Use with the ZfD Management Agent” on page 31

Deselecting the Disconnectable Attribute

When Application objects are converted from ZENworks 2 or Starter Pack format to ZfD 4.x format, they are all marked as disconnectable, which is an attribute that makes it possible for Application Launcher to continue to display the Application object icon even after the user has disconnected from eDirectory.

The only Application objects that should not have the disconnectable attribute enabled include:

- ◆ Applications that require network resources in order to run.
- ◆ Applications that map drives or ports.
- ◆ Applications that use scripts to utilize network resources.

If you want to avoid displaying applications requiring network resources to users working in a disconnected state, you need to modify the applications that require connectivity to the network to deselect the Disconnectable attribute.

- 1** In ConsoleOne, right-click the Application object > click Properties > Identification to display the Icon page.
- 2** Deselect the option to turn it off.
- 3** Click OK to save the changes.

For more information, see “Supporting Disconnected Users” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Preparing the Application Object for Use with the ZfD Management Agent

If you plan to use the Novell Client with ZfD 4.x, no change will be required to the migrated ZENworks 2 Application objects. The path to the application files, formatted with mapped drive designation, will continue to be valid and the applications will work as they were configured.

If you plan to deploy the ZfD Management Agent and not use the Novell Client on the workstation, refer to [TID 10081393](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10081393.htm) (<http://support.novell.com/cgi-bin/search/searchtid.cgi?/10081393.htm>) available from the Novell Support Web site.

Updating Managed Workstations

In order to utilize ZfD 4.x, the managed workstations will need to either be configured with the Novell Client and the ZfD 4 SP1/4.0.1 Management Agent, or with just the ZfD 4 SP1/4.0.1 Management Agent. The following sections outline the procedure for upgrading the Novell Client and installing the ZfD 4 SP1/4.0.1 Management Agent.

- ◆ “[Updating the Novell Client on Managed Workstations](#)” on page 31
- ◆ “[Installing the ZfD Management Agent](#)” on page 32

Updating the Novell Client on Managed Workstations

Although ZfD 4.x can manage workstations in the enterprise whether those workstations have the Novell Client installed or not, most administrators who upgrade from an earlier version of ZENworks for Desktops will probably want to continue to use the client after the upgrade. The client has significant performance and scalability advantages for accessing eDirectory and network servers.

If you want your users to continue using the Novell Client to access the network after you install ZfD 4.x, the user workstations need to have at least the minimum version of the client. Check the workstations for the minimum version required for ZfD 4.x and, if possible, upgrade to the most current version. You can obtain the latest Novell Client from the [Novell Product Download Web site](http://download.novell.com) (<http://download.novell.com>).

NOTE: If you continue to use the Novell Client after installing ZfD 4.x, the client will not authenticate through the ZfD Middle Tier Server if the workstation is inside the corporate firewall. For more information, see “[The Role of the Novell Client](#)” in “[Understanding the Novell Client](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Workstation OS	Novell Client Version (minimum)	Novell Client Version (recommended)
Windows 98 SE	3.30	3.32 SP2
Windows NT 4	4.80	4.83 SP2
Windows 2000	4.80	4.83 SP2
Windows XP	4.82	4.83 SP2

You can automatically update the Novell Client by using the Automatic Client Update (ACU). ACU can be delivered through a login script, by a ZfD application, or by a Scheduled Action in a policy package. For more information about ACU and other Client upgrade information, see “[Installing Novell Clients](#)” in the *Novell Client for Windows Installation and Administration Guide*.

IMPORTANT: If you install the latest version of Novell Client and use it with ZENworks 2 or the Starter Pack before you complete the upgrade to ZfD 4.x, some ZENworks components will fail. If you want to upgrade and use the Novell Client before you upgrade to ZfD 4.x, we recommend that you do not install ZfD components

(for example, Workstation Manager or Application Launcher) that are available during the client installation. When you are ready to upgrade to ZfD 4.x, these components are installed with the ZfD Management Agent.

ZfD 4.x requires the installation of the ZfD Management Agent, even if you intend to use the client exclusively for authentication. ZfD 4.x management components that also update the client for use with ZfD 4.x are included in the agent installation program.

Installing the ZfD Management Agent

When you have updated the Novell Client and the ZENworks Server, you need to install the ZfD Management Agent on the user workstations. This installation updates the Novell Application Launcher, Workstation Manager, and Remote Management software on the user workstation. It also installs the Workstation Inventory agent and the Image Safe Data service.

When you deploy the ZfD Management Agent, you will not be upgrading the ZENworks 2 Workstation Import or Remote Management software. Instead, you will be using entirely new ZfD components. For more information about ZfD 4.x Automatic Workstation Import, see [“Understanding Automatic Workstation Import and Removal”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*. For more information about ZfD 4.x Remote Management, see [“Understanding Remote Management”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.

You can uninstall the Novell Client from user workstations after you deploy the ZfD Management Agent as the exclusive means for users to authenticate to eDirectory. In this sense, ZfD 4.x can be "clientless;" that is, ZfD 4.x does not require the Novell Client if users log in with the ZfD Management Agent. For more information, see [“Using the Novell Client in a ZfD 4.x Environment”](#) in [“The Role of the Novell Client”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.

The workstation functionality afforded by ZENworks for Desktops 4.x components is available only if you install the ZfD Management Agent. This is true even if you currently have the Novell Client installed on that workstation. The ZfD Management Agent installation removes the ZfD features that were previously installed by the Novell Client and replaces them with selected ZfD workstation features.

The following tasks must be performed if you want to install the ZfD Management Agent on workstations that are currently using ZENworks 2 or ZENworks Starter Pack:

1. [“Deploying the Windows Installer \(MSI\) Engine”](#) on page 32
2. [“Distributing and Installing the ZfD 4.x Management Agent MSI Package”](#) on page 34

Deploying the Windows Installer (MSI) Engine

This installation utilizes Microsoft Windows Installer functionality. For detailed information about Microsoft Windows Installer, see the [MSI Web site \(http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp\)](http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp).

Because the Agent MSI installation depends on the presence of the MSI engine, you need to check to see if user workstations have the MSI engine installed. The following table lists the versions of the MSI that should already be installed on Windows workstations.

Windows Version	Version of MSI Engine Included
Windows 98 SE Workstations	MSI is not included unless another application installed it.
Windows NT 4 Workstations	MSI is not included unless another application installed it.
Windows 2000 Workstations	MSI 1.1 is included with the OS.

Windows Version	Version of MSI Engine Included
Windows 2000 SP3 Workstations	MSI 2.0 is included with the OS.
Windows XP Workstations	MSI 2.0 is included with the OS.

NOTE: You should consider whether to upgrade all of the user workstations to use the same version of the MSI engine.

If the MSI engine needs to be installed, you can use the Novell Application Launcher in ZENworks 2 or the Starter Pack to install it with a Simple Application distribution.

- 1** From the *ZENworks for Desktops Companion CD* or the *ZENworks 6 Companion 1 CD*, copy the appropriate MSI engine installer utility to your ZENworks Server.
 - ♦ \windows installer\98\instmsia.exe installs the MSI 2.0 engine on Windows 98 machines.
 - ♦ \windows installer\nt\instmsiw.exe installs the MSI 2.0 engine on Windows NT/2000/XP machines.
- 2** Using the newly installed ZfD 4.x snap-ins in ConsoleOne, create a Simple Application object for the version of the MSI engine you want to install.

NOTE: If you want to install both versions, you must create a Simple Application object for each version.

- 2a** After you name the simple application, enter the path to the location from which the application's executable file will run. Include the executable file in the path. Because the ZENworks 2 Application Launcher will copy the file to a target directory on the workstation, specify the path as it will exist after the file is copied to the target directory.

Example: c:\temp\instmsiw.exe

- 2b** Define the system requirements that a workstation must meet before the MSI engine application will be distributed to it.

For more information, see “[Configuring the Application in eDirectory](#)” in “[Distributing Applications to Users and Workstations](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- 2c** Associate the application object to users or imported workstations > select the characteristics you want to apply to the association.

We recommend that you select the Force Run characteristic for the association so that the Application object will run as soon as the ZENworks 2 Application Launcher or Workstation Helper starts and the Application object is available.

For more information, see “[Configuring the Application in eDirectory](#)” in “[Distributing Applications to Users and Workstations](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- 3** Configure the Simple Application object.

- 3a** In the Application object Properties page, click the Distribution Options tab > Application Files.

You need to add the file to the Application Files list so that the ZENworks 2 Application Launcher will copy it to the workstation. For more information, see the online help in ConsoleOne.

- 3b** Click Add > File > fill in the following fields:

Source File: Select the MSI engine installer utility you want copied to the workstation (for example, q:\public\zenworks\instmsiw.exe).

Target File: Enter the full path, including the file name, where you want the file copied (for example, c:\temp\instmsiw.exe).

- 3c** Click OK to add the file to the list > click OK to save the Application Object information.
- 3d** In the Application object Properties page, click the Run Options tab > Environment > select the Run Normal option > set the Executable Security Level to Run as Unsecure System User > click OK to save the Application Object information.

The MSI Engine will be installed as soon as the Application Launcher starts and the Application object is available.

The MSI engine installs an executable that will be used later for installing the ZfD Agent MSI. The MSI engine installer utility installs this file, called `msiexec.exe`, in the `windows_drive:windows_directory\system` directory of the workstation.

Distributing and Installing the ZfD 4.x Management Agent MSI Package

After you have deployed the Windows MSI engine on workstations, you need to install the ZfD Management Agent. For more information about the ZfD Management Agent, see “[Understanding the ZfD Middle Tier Server and the ZfD Server](#)” and “[Understanding the ZfD Management Agent](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*. Use the following steps to install the Agent MSI on the workstations:

- 1** Download the ZfD Management Agent MSI.

The ZfD 4 SP1 Agent MSI is included as part of Consolidated Support Pack (CSP) 9, and can be downloaded individually from the [CSP download Web site \(http://support.novell.com/tools/csp\)](http://support.novell.com/tools/csp). The updated ZfD Agent MSI (ZfD 4 SP1/4.0.1) can also be downloaded from the [Novell Product Downloads Web site \(http://download.novell.com\)](http://download.novell.com).

- 2** Copy the Agent MSI package to an accessible location on a network server.
- 3** Using the newly installed ZfD snap-ins in ConsoleOne, create a Simple Application object.
 - 3a** After you name the simple application, the Application creation wizard displays a page where you can enter the path to the executable. Enter the filename `msiexec.exe`. This is the executable that will run the ZfD Agent MSI package.

NOTE: Because Windows will search for and execute all versions of `msiexec.exe` on the hard drive, there is no need to add the path to the Windows 98 MSI engine or to the Windows NT/2000/XP MSI engine.

- 3b** Define the system requirements that a workstation must meet before the ZfD 4 Agent MSI application will be distributed to it.

For more information, see “[Configuring the Application in eDirectory](#)” in “[Distributing Applications to Users and Workstations](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- 3c** Associate the application object to users or imported workstations > select the characteristics you want to apply to the association.

We recommend that you select the Force Run characteristic for the association so that the Application object will run as soon as the ZENworks 2 Application Launcher or Workstation Helper starts and the Application object is available.

For more information, see “Configuring the Application in eDirectory” in “Distributing Applications to Users and Workstations” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

4 Configure the Simple Application object.

- 4a** In the Application object Properties page, click the Distribution Options tab > Application Files.

You need to add the file to the Application Files list so that the ZENworks 2 Application Launcher will copy it to the workstation. For more information, see the online help in ConsoleOne.

- 4b** Click Add > File > fill in the following fields:

Source File: Select the ZfD Agent MSI file you want copied to the workstation (for example, q:\public\zenworks\zfdagent.msi).

Target File: Enter the full path, including the file name, where you want the file copied (for example, c:\temp\zfdagent.msi).

- 4c** Click OK to add the file to the list > click OK to save the Application Object information.

- 4d** In the Application object Properties page, click the Run Options tab > Environment > select the Run Normal option > set the Executable Security Level to Run as Unsecure System User > click OK.

This step elevates privileges so that users who are not the administrators of their own workstations can still install the ZfD Management Agent.

- 4e** Click the Run Options tab > Application > select Run Application Once > in the Parameters field, enter the parameters you want to use as you run the MSI engine to install the ZfD Agent MSI > click OK.

There are two required parameter types you can use in this field: Command Line Parameters and ZfD Agent MSI Installation Properties.

Command Line Parameters

The ZfD Agent MSI command line parameters are explained in the following table.

Parameter	Purpose
/i	Indicates the file that will be installed. Syntax: /i <i>filename</i> Example: /i zfdagent.msi
/qn	Activates the installation in silent mode; that is, no user intervention is required. The workstation will reboot after the silent installation is complete.
/qb	Displays the installation progress bar.

The /i command line parameter is mandatory. For more information about MSI command line syntax, see the [Windows Installer Command Line Options \(http://www.microsoft.com/windows2000/en/professional/help/default.asp?url=/windows2000/en/professional/help/sag_WinInstall_Command_Line_Syntax.htm\)](http://www.microsoft.com/windows2000/en/professional/help/default.asp?url=/windows2000/en/professional/help/sag_WinInstall_Command_Line_Syntax.htm) page.

ZfD Agent MSI Installation Properties

MSI installation properties can be added to pre-set certain values used by ZfD Agent that would otherwise need to be chosen manually during the installation.

The following table lists the properties you can use as you install the ZfD Agent MSI.

Property Name	Available Values	Meaning of the Values
ADDLOCAL	<ul style="list-style-type: none"> ◆ WorkstationManager ◆ ApplicationLauncher ◆ RemoteManagement ◆ MirrorDriver ◆ Inventory ◆ Imaging 	Comma-delimited list of features to install.
LOGIN_PASSIVE_MODE	0	Do not display the Novell Client login.
	1	(default) Display the Novell Client login at user login time.
	<p>The values for this property are effective only if the Novell Client is not installed on the workstation. If the Novell Client is already installed, the settings have no effect after zfdagent.msi installation.</p> <p>If the Novell Client is removed after zfdagent.msi is installed, these settings take effect.</p> <p>NOTE: If the Novell Client might be removed later and you want to use DLU, you need to assign a value of zero (0) to this property.</p>	
EDITABLE_MT_ADDRESS	1	Allow the user to change the ZENworks Middle Tier IP address where authentication will take place. This is available only if the Novell Client is not installed.
	0	(default) Do not allow the user to specify the Middle Tier address.
	<p>The values for this property are effective only if the Novell Client is not installed on the workstation. If the Novell Client is already installed, the settings have no effect after zfdagent.msi installation.</p> <p>If the Novell Client is removed after zfdagent.msi is installed, these settings take effect.</p>	
STARTUP_APEXPLORER	1	Launch Application Explorer on Windows startup.
	0	(default) Do not launch Application Explorer on Windows startup.
STARTUP_APPWINDOW	1	Launch Application Window on Windows startup.
	0	(default) Do not launch Application Window on Windows startup.
MT_SERVER_ADDRESS	Specifies the ZENworks Middle Tier Server IP address or DNS name. This property is not necessary if you are not using a Middle Tier Server.	
HTTP_PORT	0-65536	Specifies the HTTP port that will be used by the ZfD Agent when communicating with the Middle Tier server. This property must be added and its value defined if you are using a Middle Tier Server.
	80	Default HTTP port.

When completed with both command line parameters and MSI installation properties, the parameter field might look like this:

```
/i zfdagent.msi /qb STARTUP_APEXPLOER=1
```

Because the Parameters field of the Application object has a line length limitation, you might not be able to add a large number of MSI Installation properties. To work around this limitation, you can do one of two things:

- ◆ Use the Wise InstallTailor* to capture the installation properties and generate a transform (also known as an .mst file) to incorporate these customizations to the ZfD Agent MSI at runtime.

For more information about using the Wise InstallTailor, see “[Wise InstallTailor](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

- ◆ Use the Microsoft MSI editor, orca.exe, to edit the property table of the zfdagent.msi file and add all of the ZfD Agent MSI installation properties you want. You can then install the edited MSI with all of the newly-added properties included.

For information about how to install and use orca.exe, see the [Microsoft Knowledgebase Article 255905](http://support.microsoft.com/default.aspx?scid=KB;en-us;255905) (<http://support.microsoft.com/default.aspx?scid=KB;en-us;255905>) at the [Microsoft Support Web site](http://support.microsoft.com) (<http://support.microsoft.com>).

Installing the ZfD Middle Tier Server

After you have upgraded the ZfD Server, updated ZENworks 2 policies and applications, and updated the managed workstations with a new version of the Novell Client or the ZfD Management Agent (or both), you need to install the ZfD Middle Tier Server if you want users to authenticate without using the Novell Client or if you want them to authenticate when their workstations are outside the firewall.

For conceptual information about the ZfD Middle Tier Server, see “[Understanding the ZfD Middle Tier Server and the ZfD Server](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

For information about installing the ZfD Middle Tier Server, see “[Installing ZfD Middle Tier Server Software](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

3

Upgrading from ZfD 3.x to ZfD 4.x

This section provides information that can help you deploy Novell® ZENworks® for Desktops (ZfD) 4 or ZfD 4.0.1 in a network environment where ZfD 3 or ZfD 3.x is already installed and functioning. The section describes the ZfD functionality that might be affected by the coexistence of these ZfD versions and suggests ways to configure your systems to provide maximum functionality to your users.

To help you better understand how the features of these releases compare, see the feature comparison tables in [Appendix A, “ZfD Features Matrix,”](#) on page 103.

NOTE: ZENworks for Desktops 4, ZENworks for Desktops 4 SP1, and ZENworks for Desktops 4.0.1 will hereafter be collectively referred to as ZfD 4.x.

This information will be useful to you if you currently have ZfD 3.x in your network environment and you want to move to ZfD 4.x, or if you must continue to provide ZfD 3.x functionality to Windows 95 users in your networks, but you also want to provide new ZfD 4.x features to users of Windows NT/2000/XP workstations.

The following information is included in this section:

- ♦ [“ZfD 3.x and ZfD 4.x Coexistence”](#) on page 39
- ♦ [“Upgrade Procedures: ZfD 3.x to ZfD 4.x”](#) on page 41
- ♦ [“Updating Managed Workstations”](#) on page 67
- ♦ [“Verifying Remote Control”](#) on page 75
- ♦ [“After the Upgrade”](#) on page 75

If you need assistance while upgrading ZENworks for Desktops 3 or ZENworks for Desktops 3.2 to ZfD 4, you can consult the following resources:

- ♦ The ZENworks for Desktops Cool Solutions community at <http://www.novell.com/cool solutions/zenworks> (<http://www.novell.com/cool solutions/zenworks>).
- ♦ The Novell Support Knowledgebase at <http://support.novell.com> (<http://support.novell.com>)
- ♦ Novell NgageSM Consulting at <http://www.novell.com/solutions/ngage/consulting.html> (<http://www.novell.com/solutions/ngage/consulting.html>).

ZfD 3.x and ZfD 4.x Coexistence

With a few exceptions, ZfD 4.x is backward-compatible with ZfD 3.x features. However, you will notice a difference in the way ZfD 4.x handles some functionality. The following sections explain the differences that you need to be aware of.

- ♦ [“Workstation Import”](#) on page 40
- ♦ [“Policy Management”](#) on page 40

- ◆ [“Application Management” on page 40](#)
- ◆ [“Workstation Imaging” on page 41](#)
- ◆ [“Remote Management” on page 41](#)
- ◆ [“Workstation Inventory” on page 41](#)

Workstation Import

If the Import Service is upgraded to ZfD 4.x on a server, the ZfD 3.x workstations will register in the same way and the ZfD 4.x Import Service will import them. Both ZfD 3.x and ZfD 4.x workstations can be imported by a ZfD 4.x Import Server.

Policy Management

After you install ZfD 4.x, ZfD 4.x agents and policies will coexist with ZfD 3.x agents and policies in the following ways:

- ◆ The ZfD 4.x agents installed on a workstation will first look for ZfD 4.x policies. If the agents do not find ZfD 4.x policies, they will use ZfD 3.x policies as needed.
- ◆ ZfD 3.x agents cannot use new ZfD 4.x policies that didn't exist in ZfD 3.x, such as the new Novell iPrint policy and the ZENworks for Desktops Management Agent policy.
- ◆ ZfD 3.x policies can continue to be managed from ConsoleOne[®] upgraded with ZfD 4.x functionality.
- ◆ Search policies that stop on a partition boundary are not supported and are not functional with ZfD 4.x agents. For more information, see [“Updating Search Policies” on page 47](#).

ZfD 4.x does not support Windows 95, Windows 98 without the SE upgrade, Novell eDirectory[™] versions before NDS[®] 8, NetWare[®] 4.x, or NetWare 5.0. If these workstation and network server platforms are part of your network infrastructure and you cannot convert all of the workstations or servers at one time, you might want to purchase ZENworks for Desktops 3.2. ZfD 3.2 supports Windows 95/98 workstations and will install into the same DS tree as ZENworks for Desktops 4.x. This will let you deliver best-of-breed management to all your workstations while you upgrade to supported platforms.

For more information, see [“Upgrading Policies” on page 59](#).

Application Management

With ZfD 4.x, either the Application Window or the Application Launcher is launched from the local machine (usually from c:\program files\novell\zenworks). With ZfD 3.x, either nal.exe or nalepld.exe was launched from the server. If you are going to start the Application Launcher from the login script, make sure that every container's login script in your environment has built-in logic to determine whether the ZfD 4.x agent exists, then run the Application Launcher from the appropriate location. For more information, see [“Updating the Application Launcher Startup Method” on page 65](#).

Even if you are migrating only one site at a time to ZfD 4.x, this login script change needs to happen everywhere at the beginning of the migration process to accompany roaming users.

Workstation Imaging

When you upgrade Workstation Imaging from ZfD 3.x, make sure to use the same boot disk version as the version on the ZfD Server. For example, if you upgrade the Imaging server to ZfD 4.x, make sure to use a ZfD 4.x boot CD when you manually invoke imaging.

Remote Management

Use the ZfD 4.x Remote Management Console to control ZfD 3.x and ZfD 4.x workstations (a workstation becomes a ZfD 4.x workstation when the ZfD 4.x Management Agent is installed).

Workstation Inventory

After you install ZfD 4.x, ZfD 4.x Workstation Inventory pieces and ZfD 3 SP1 or ZfD 3.2 agents and policies will coexist in the following ways:

- ◆ Inventory data from ZfD 4.x agents cannot be sent to a ZfD 3 SP1 or ZfD 3.2 inventory server and placed in a ZfD 3 SP1 or ZfD 3.2 database. A ZfD 3 SP1 or ZfD 3.2 Inventory Agent cannot send its inventory data to a new ZfD 4.x Inventory server. It can send its inventory data only to a ZfD 3 SP1 or ZfD 3.2 Inventory server or to a ZfD 4.x Inventory server that has been upgraded from ZfD 3 SP1 or ZfD 3.2.
- ◆ ZfD 3 SP1 or ZfD 3.2 inventory servers can roll up their databases to a ZfD 4.x inventory server, but a ZfD 4.x inventory server cannot roll up its database to a ZfD 3 SP1 or ZfD 3.2 server.
- ◆ Any ZfD 3 SP1 or ZfD 3.2 inventory servers that roll up their data to a ZfD 4.x inventory server must be patched in order to function properly.
- ◆ A ZfD 3 SP1 or ZfD 3.2 inventory server cannot roll up its data to a ZfD 3 SP1, ZfD 3.2, or ZfD 4.x inventory server in another eDirectory tree.

In order for your network to support both ZfD 3 SP1 or ZfD 3.2 and ZfD 4.x, you must first install ZfD 3 SP1 or ZfD 3.2 into your network. Installing ZfD 4.x without first installing ZfD 3 SP1 or ZfD 3.2 will not have the Novell eDirectory schema or ConsoleOne plug-in support for ZfD 3 SP1 or ZfD 3.2 policies. On the other hand, installing ZfD 3 SP1 or ZfD 3.2 first places the ZfD 3 SP1 or ZfD 3.2 schema and the plug-ins into ConsoleOne. When you install ZfD 4.x after ZfD 3 SP1 or ZfD 3.2, the ZfD 3 SP1 or ZfD 3.2 schema and plug-ins remain.

Upgrade Procedures: ZfD 3.x to ZfD 4.x

The following sections outline the procedures that you should follow to provide the greatest opportunity for success in a dual ZfD 3.x and ZfD 4.x network environment. To ensure a successful upgrade, you should perform them in the following order:

1. [“Meeting the ZfD 4.x Installation Prerequisites” on page 42](#)
2. [“Checking eDirectory” on page 46](#)
3. [“Renaming the ZfD 3.2 Support Pack Files” on page 46](#)
4. [“Extending the ZfD 3.x Schema to ZfD 4 or ZfD 4.0.1” on page 46](#)
5. [“Upgrading ConsoleOne” on page 47](#)
6. [“Updating Search Policies” on page 47](#)
7. [“Upgrading Workstation Inventory” on page 49](#)

8. [“Updating Workstation Imaging” on page 58](#)
9. [“Upgrading Policies” on page 59](#)
10. [“Updating the Application Launcher Startup Method” on page 65](#)
11. [“Updating Applications” on page 67](#)

Meeting the ZfD 4.x Installation Prerequisites

Ensure that the workstations and servers on your network meet the necessary prerequisites.

- ◆ [“ZfD 4.x Hardware Requirements” on page 42](#)
- ◆ [“ZfD 4.x Software Requirements” on page 44](#)
- ◆ [“Software Notes for the Managed Workstation” on page 45](#)

For more information, see [“Platform Support for the ZfD Infrastructure”](#) and [“User Workstation Requirements”](#) in the *ZENworks for Desktops 4.0.1 Installation Guide*.

ZfD 4.x Hardware Requirements

The following table lists the recommended hardware configuration required for installation.

ZfD 4.x Role of the Network Computer	Operating System	Required Hardware Configuration
ZENworks Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 138 MB disk space
ZENworks Server	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 220 MB disk space
ZENworks Server	Windows 2000	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 220 MB disk space
ZfD Middle Tier Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 160 MB disk space
ZfD Middle Tier Server	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 160 MB disk space

ZfD 4.x Role of the Network Computer	Operating System	Required Hardware Configuration
ZfD Middle Tier Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 256 MB RAM (minimum); 1 GB RAM (recommended) ◆ 160 MB disk space
ZfD Inventory Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 138 MB disk space
ZfD Inventory Server	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 220 MB disk space
ZfD Inventory Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 220 MB disk space
ZfD Inventory Server	Windows NT Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 220 MB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	NetWare 5.1	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	NetWare 6	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space
ZfD Inventory Server with Database (25 GB for Root Database)	Windows NT Server	<ul style="list-style-type: none"> ◆ Pentium III ◆ 512 MB RAM (minimum); 1GB RAM (recommended) ◆ 1.5 GB disk space

ZfD 4.x Role of the Network Computer	Operating System	Required Hardware Configuration
Managed Workstation	Windows XP	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space
Managed Workstation	Windows NT 4	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space
Managed Workstation	Windows 2000 Professional	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space
Managed Workstation	Windows 98 SE	<ul style="list-style-type: none"> ◆ Pentium compatible (32-bit) ◆ 200 MHz ◆ 64 MB RAM ◆ 20 MB disk space

ZfD 4.x Software Requirements

The following table includes the software required to be installed on the various ZfD 4.x machines.

ZfD 4.x Role of the Network Computer	Operating System	Minimum Software Requirement
ZENworks Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Support Pack 4 ◆ eDirectory 8.62 ◆ JVM 1.3.1
ZENworks Server	NetWare 6	<ul style="list-style-type: none"> ◆ Support Pack 1
ZENworks Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Service Pack 2 ◆ Novell Client™ 4.83 SP1 ◆ eDirectory 8.62 ◆ JVM 1.3.1
ZfD Middle Tier Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Support Pack 4 ◆ eDirectory 8.62 ◆ NICI 2.4.0 ◆ Apache Web Server for NetWare 1.3.22 or 1.3.27 ◆ Novell Certificate Server™ 2.20 ◆ JVM 1.3.1

ZfD 4.x Role of the Network Computer	Operating System	Minimum Software Requirement
ZfD Middle Tier Server	NetWare 6	<ul style="list-style-type: none"> ◆ Support Pack 1 ◆ NICI 2.4.0
ZfD Middle Tier Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Service Pack 2 ◆ IIS Web Server ◆ NICI 2.4.0
ZfD Inventory Server	NetWare 5.1	<ul style="list-style-type: none"> ◆ Support Pack 4 ◆ eDirectory 8.62 ◆ JVM 1.3.1
ZfD Inventory Server	NetWare 6	<ul style="list-style-type: none"> ◆ Support Pack 1
ZfD Inventory Server	Windows 2000 Server	<ul style="list-style-type: none"> ◆ Service Pack 2 ◆ Novell Client 4.83 SP1 ◆ eDirectory 8.62
ZfD Inventory Server	Windows NT Server	<ul style="list-style-type: none"> ◆ Service Pack 6a ◆ Novell Client 4.83 SP1 ◆ eDirectory 8.62
Managed Workstation	Windows XP Professional	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 4.82 (optional) ◆ Windows Installer 1.11
Managed Workstation	Windows NT 4 with Service Pack 6a	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 4.80 (optional)
Managed Workstation	Windows 2000 Professional with Service Pack 2	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 4.80 (optional)
Managed Workstation	Windows 98 SE	<ul style="list-style-type: none"> ◆ Internet Explorer 5.5 SP2 ◆ Novell Client 3.3 (optional)

Software Notes for the Managed Workstation

The following list details other things you need to know regarding the required software for managed workstations.

- ◆ ZfD 4.x does not support workstations with Windows 95 (no longer supported by Microsoft), Windows 98 without the SE upgrade, Windows Millennium Edition (ME), or Windows XP Home Edition operating systems. If you want to continue to use Windows 95, you need to upgrade to ZENworks for Desktops 3.2 and enhance it with the latest support pack.
- ◆ If you intend to continue to use the Novell Client for authentication to the ZENworks server, you must use the Novell Client 4.82 (minimum) for Windows XP workstations, version 4.80 for Windows NT/2000 workstations, and Novell Client 3.3 (minimum) for Windows 98 SE workstations. The ZfD components of the client are upgraded when you install the ZfD Management Agent on the workstation.

- ◆ If Internet Explorer 6.0 is installed on any workstation, make sure that the privacy settings are configured to accept cookies. By default, Internet Explorer 6.0 does not accept cookies.
- ◆ The ZfD Management Agent installation program depends on the presence of the Microsoft Windows Installer (MSI) engine, you need to check to see if user workstations have the MSI engine installed. For more information, see “[Deploying the Windows Installer \(MSI\) Engine](#)” on page 69.

For more information about these requirements, see “[User Workstation Requirements](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

Checking eDirectory

You need to check the health of your eDirectory tree both before and after you install ZfD 4.x and extend the directory schema with ZfD 4.x attributes. The following resources provide the information required to perform the health check:

- ◆ Directory Health Check Procedures - Cross Platform, [TID 10060600 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10060600.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10060600.htm), available from the Novell Support Web site.
- ◆ Checking the OS and DS Health for Inconsistent ZENworks behavior. - [TID 10062741 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10062741.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10062741.htm), available from the Novell Support Web site.
- ◆ eDirectory Cool Solutions (<http://www.novell.com/cool solutions/nds>)

Renaming the ZfD 3.2 Support Pack Files

The ZfD 4 installation program does not overwrite ZfD 3.2 SP1/SP2/SP3 files because the ZfD 3.2 SP1/SP2/SP3 file dates are later the ZfD 4 file dates. If you want to upgrade from ZfD 3.2 SP1/SP2/SP3 to ZfD 4, you must apply [TID 10076066 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10076066.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10076066.htm).

The ZfD 4.0.1 installation program does not overwrite ZfD 3.2 SP3 files because the ZfD 3.2 SP3 file dates are later than ZfD 4.0.1 file dates. If you want to upgrade from ZfD 3.2 SP3 to ZfD 4.0.1, you must apply [TID 10076066 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10076066.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10076066.htm).

Extending the ZfD 3.x Schema to ZfD 4 or ZfD 4.0.1

The ZfD 4.x installation program extends the eDirectory schema to allow the creation of new types of directory objects. Schema extension is not a reversible process.

The ZfD 4.x installation must be performed from a workstation running a supported version of Windows and the Novell Client. Use the following steps to extend the directory schema in preparation for the ZfD 4.x upgrade from ZfD 3.x:

- 1** From the installing workstation, log in to the network, authenticating to eDirectory as a user with administrative rights to the eDirectory tree.
- 2** Insert the *ZENworks for Desktops Program* CD or the *ZENworks 6 Desktop Management Program* CD into the CD drive of the workstation to autorun the winsetup.exe installation program.

If the CD does not autorun, you can launch winsetup.exe from the root of the CD.

- 3** From the installation menu, select Schema Extensions to start the schema extension routine.
- 4** In the Select Tree dialog box, select the authenticated tree where you want to extend the schema > click OK.
- 5** In the Schema Extensions confirmation dialog box, click Yes to confirm your selection and begin the schema extension.
- 6** (Optional) In the ZENworks Schema Extension confirmation dialog box, click View Log File to open the log file.
- 7** Perform the eDirectory health check.

Upgrading ConsoleOne

ZfD 4.x requires ConsoleOne version 1.3.3 or later. If you have been using an earlier version of ConsoleOne, you need to upgrade. We recommend, however, that before you upgrade to version 1.3.3, you back up the current copy of ConsoleOne with ZfD 3.x snap-ins. You should always have a usable copy of ConsoleOne and ZfD snap-ins available to you.

Use the following steps to perform a ConsoleOne upgrade:

- 1** Create a holding directory for a copy of the current installation of ConsoleOne and ZfD 3.x snap-ins. Copy all of the files and subdirectories from the source ConsoleOne location to the holding directory.
- 2** Install ConsoleOne 1.3.3 (or later) from the *ZENworks for Desktops Companion* CD or the *ZENworks 6 Companion 1* CD to the path where the existing ConsoleOne resides.
This will result in an upgraded ConsoleOne with functioning ZfD 3.x snap-ins.
- 3** Copy the upgraded ConsoleOne and ZfD 3.x snap-ins you created in **Step 2** to another location.

Do not copy over ConsoleOne backup you created in **Step 1**; you might need to have this original version of ConsoleOne available.

Updating Search Policies

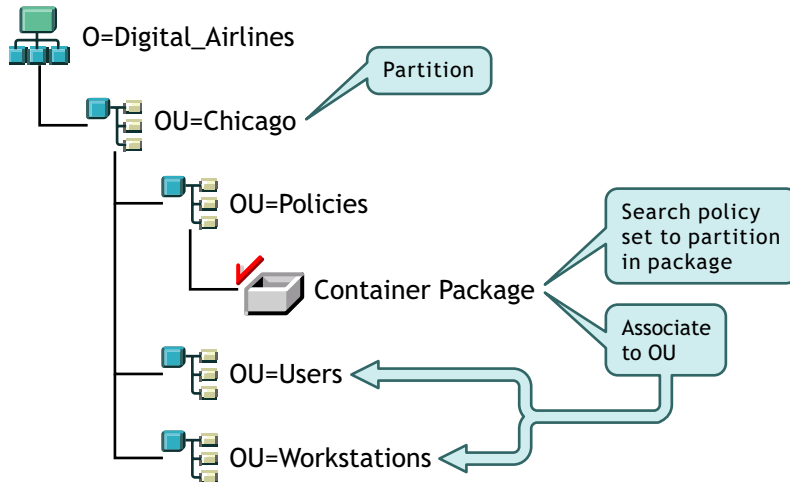
Examine eDirectory to see if there are any Search policies in the tree. Search policies—part of the Container Package—are very important because they keep ZfD agents from walking to the root to find policies and configuration information.

If the tree does not have a Search policy, you need to create a new ZfD 4.x Search policy to ensure optimal performance of the ZfD agents. There are some policy behaviors that you need to consider:

- ◆ If you plan to authenticate using only the Novell Client in your network environment, the search policy will function the same way as a ZfD 3.x Search policy.
- ◆ If you plan to use the ZfD 4.x Middle Tier Server and run the ZfD 4.x Management Agent on workstations without the Novell Client, the behavior of the search policies will change when you upgrade the network.

Unlike ZfD 3.x agents, ZfD 4.x agents do not recognize the partition boundary of a container. Consequently, if you have any existing Search policies that are based on the partition boundary, the ZfD 4.x agents will search to the container where the Container Package is associated, regardless of whether the agents cross any partition boundaries in search of policies.

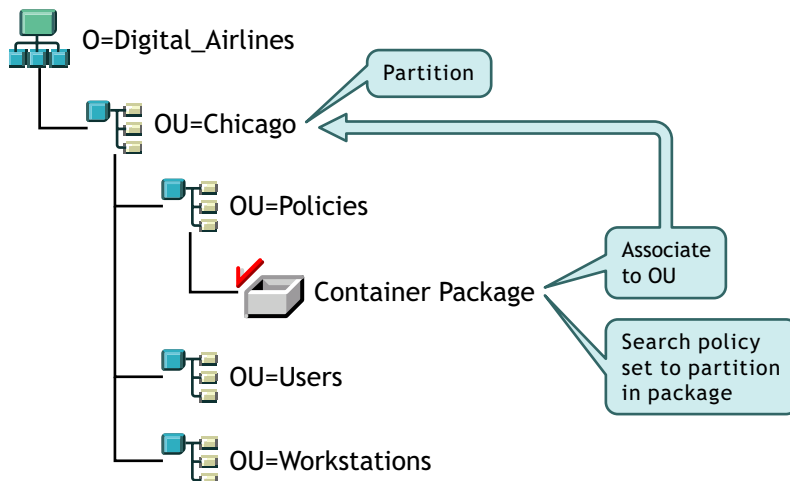
For example, assume that you have the following tree:



With ZENworks for Desktops 3.x, the agents for the users or workstations would first walk to their parent container and find the associated Search policy that states that the agents should look only to the partition boundary for their policies. When the agents look for policies, they walk the tree only to the Chicago container (partition boundary).

With ZfD 4, the Partition option is not available in the Search Policy. It has been replaced with the Associated Container option. This means that any earlier Search Policies that were upgraded to ZfD 4.x the Partition option is now replaced with the Associated Container option. If you do not plan for this change, a different policy retrieval could result.

If you want to continue receive the same search results as when you used the Partition option as the search boundary, you need to associate the container package (that is, the policy package where the configured Search policy resides) to the eDirectory container that represents the partition boundary where you want user and workstation objects to end their search for policies.



When the ZfD 4.x agents search the tree now, they will find the Container Package with the Search Policy at Chicago, and then will search for policies up to Chicago, because it is the associated container.

NOTE: The container that is associated with the package determines where the agents will stop walking the tree. It is not based on where the package is actually stored in the directory. The search level in the Search policy will now apply to the associated container rather than the partition boundary.

Upgrading Workstation Inventory

If the Inventory server is running ZENworks for Desktops 3.0 (ZfD 3), you must install ZENworks for Desktops 3 Support Pack 1 (SP1) or ZfD 3.2, and start the Inventory service and the database at least once prior to upgrading the server to ZfD 4.x. For more information on how to install ZfD 3 SP1, see the [Novell Support Web site \(http://support.novell.com\)](http://support.novell.com).

Before you upgrade ZfD 3 SP1 or ZfD 3.2 Inventory components, review the following facts:

- ◆ ZfD 4.x Workstation Inventory supports backward compatibility with ZfD 3 SP1 or ZfD 3.2 Inventory servers residing on the same eDirectory tree.
- ◆ ZfD 3 SP1 or ZfD 3.2 Inventory servers must be upgraded to ZfD 4.x in a top-down order. If you perform roll-up of your inventory data, the root server must be upgraded first, then the intermediate servers, and lastly the leaf servers.
- ◆ A ZfD 4.x Inventory server cannot send its inventory data to a ZfD 3 SP1 or ZfD 3.2 Inventory server.
- ◆ Do not attach a ZfD 4.x Inventory database directly to a ZfD 3 SP1 or ZfD 3.2 Inventory server and vice versa.
- ◆ A ZfD 4.x Inventory server can process the .str files of the ZfD 3 SP1 or ZfD 3.2 inventoried workstations.
- ◆ A ZfD 3 SP1 or ZfD 3.2 Inventory server can roll up its database information to ZfD 3.2 or ZfD 4.x Inventory server.
- ◆ A ZfD 4.x Inventory server can process the .zip files of the ZfD 3 SP1 or ZfD 3.2 Inventory servers.
- ◆ Do not delete the ZfD 3 SP1 or ZfD 3.2 .str and .zip files in SCANDIR and its subdirectories of a ZfD 3 SP1 or ZfD 3.2 Inventory server that has been migrated to ZfD 4.
- ◆ Do not have a ZfD 3 SP1 or ZfD 3.2 Inventory server and a ZfD 4.x Inventory server store the inventory data directly to the same Inventory database.
- ◆ Do not specify an Inventory server residing in another eDirectory tree as the next-level server in the Roll-Up policy of a ZfD 3 SP1 or ZfD 3.2 Inventory server.
- ◆ Do not associate a ZfD 3.2 Roll-up policy to a ZfD 4.x Inventory server.
- ◆ The ZfD 3 SP1 or ZfD 3.2 Inventory server and a ZfD 4.x Inventory server can use a ZfD 3 SP1 or ZfD 3.2 Roll-Up policy that has been migrated to ZfD 4.x.
- ◆ Upgrading a ZfD 3 SP1 or ZfD 3.2 Inventory server to ZfD 4.x does not change the role of the Inventory server.
- ◆ A ZfD 3 SP1 or ZfD 3.2 Inventory Agent cannot send its inventory data to a new ZfD 4.x Inventory server. It can send its inventory data only to a ZfD 3 SP1 or ZfD 3.2 Inventory server or to a ZfD 4.x Inventory server that has been upgraded from ZfD 3 SP1 or ZfD 3.2.
- ◆ A ZfD 3 SP1 or ZfD 3.2 or ZfD 4.x Inventory Agent can use a ZfD 3 SP1 or ZfD 3.2 Inventory policy that has been migrated to ZfD 4.x, or they can use a newly created ZfD 4.x Inventory policy.
- ◆ A ZfD 4.x Inventory Agent cannot send its inventory data to a ZfD 3 SP1 or ZfD 3.2 Inventory server.
- ◆ You can use ZfD 4.x ConsoleOne snap-ins to administer both ZfD 3 SP1 or ZfD 3.2 and ZfD 4.x inventory data and inventory objects (such as Inventory Service object, database objects, Workstation Inventory policy, Roll-Up policy and Database Location policy).

- ◆ Do not use both ZfD 3 SP1 or ZfD 3.2 and ZfD 4.x management consoles to configure the same ZfD 3 SP1 or ZfD 3.2 Inventory objects.
- ◆ You cannot use a ZfD 3 SP1 or ZfD 3.2 management console to administer ZfD 4.x inventory data and inventory objects.

To upgrade from ZfD 3 SP1 or ZfD 3.2 to ZfD 4.x, perform the following tasks in this sequence:

1. [“Upgrading the Database Server from ZfD 3.x to ZfD 4.x” on page 50](#)
2. [“Upgrading the ZfD 3.x Inventory Server to ZfD 4.x” on page 52](#)

For a sample upgrade scenario, see [“Upgrading the Inventory Servers in a Roll-Up Scenario” on page 54](#).

Upgrading the Database Server from ZfD 3.x to ZfD 4.x

Before you upgrade from ZfD 3.x to ZfD 4.x, you need to perform the following tasks:

- ◆ Make sure that you have made and archived a reliable backup of the ZfD 3 SP1 or ZfD 3.2 database.
- ◆ Make sure that the ZfD 3 SP1 or ZfD 3.2 database is not accessed from any applications such as ConsoleOne, database-vendor specific applications (such as Interactive SQL for Sybase, Query Analyzer for MS SQL or SVRMGR for Oracle), or the Inventory Service Manager. Also, make sure that all connections to the ZfD 3 SP1 or ZfD 3.2 database are closed.

During the ZfD 4.x Server installation, if you choose to install Sybase and you do not choose to overwrite the database files, the server installation program automatically upgrades the existing ZfD 3 SP1 or ZfD 3.2 database engine and database objects and migrates the data only,

However, if you have a ZfD 3 SP1 or ZfD 3.2 Oracle database object, or if you have manually created Sybase database objects, you must manually migrate the database object using the Inventory Migration tool. For more information, see [“Manually Migrating the Database Objects” on page 51](#).

If you have a ZfD 3 SP1 or a ZfD 3.2 database running Oracle, you must perform the following tasks after the migration:

- 1** Shut down the migrated Inventory database.
- 2** In *inventory_database_installation_path\init.ora_path\init.ora*, set the value of `db_block_buffers`.

The minimum value must be 16384. This allocates 64 MB of database cache for the Inventory database.

If the existing value of `db_block_buffers` is greater than 16384, do not change the value.

- 3** (Optional) If you want to improve the performance of the Inventory database, in the *inventory_database_installation_path_start.sql* file, delete the existing entries and add the following entries:

```
SET ECHO ON

CONNECT INTERNAL

SET ECHO OFF

STARTUP PFILE=inventory_database_installation_path\
path_to_init.ora\init.ora

SET NUMWIDTH 20
```

```

SET CHARWIDTH 40

SET ECHO ON

connect mw_dba;

SET ECHO OFF

alter table cim.t$product cache;

SET ECHO ON

connect internal

SET ECHO OFF

@<path to oracle home directory>/rdbms/admin/dbmspool

call sys.dbms_shared_pool.keep('zenworks.zenpin','P');

EXIT

```

4 Mount the Inventory database.

For more information on how to improve the performance of the Inventory database, see [“Performance Tips”](#) in the *ZENworks for Desktops 4.0.1 Administration Guide*.

After upgrading the database server, you must upgrade the Inventory server where the database is attached and start the Inventory service. For more information on how to upgrade the ZfD 3 SP1 or ZfD 3.2 Inventory server, see [“Upgrading the ZfD 3.x Inventory Server to ZfD 4.x”](#) on page 52.

IMPORTANT: You can upgrade multiple Inventory servers and database servers at the same time by running the ZfD 4.x Server installation program.

However, you must manually migrate the existing ZfD 3 SP1 or ZfD 3.2 Workstation Inventory policy, Database Location policy, and Roll-up policy. If you have manually created the database object, you must also migrate the database object. For more information on how to manually migrate the policies, see [“Manually Migrating the Database Objects”](#) on page 51.

When you start the ZfD 4.x Inventory service, the Upgrade Service automatically migrates the ZfD 3 SP1 or ZfD 3.2 database schema and the inventory data to a ZfD 4.x database. The data migration process might take a significant amount of time.

Manually Migrating the Database Objects

- 1 In ConsoleOne with ZfD 4.x Workstation Inventory snap-ins installed, click Tools > ZENworks Inventory > Inventory Migration.
- 2 Click Browse to browse for and select the database object to be migrated or the container that has the database object.
- 3 If you selected a container in [Step 2](#), do the following:
 - 3a If you want to search for the database object in all the subcontainers within the selected container, select the Search SubContainers check box.
The Search SubContainers check box is available only if you select a container in Search Context.
 - 3b Select the Search for Database Objects check box to search for the database objects within the selected container to be migrated.
This option is available only if you select a container in Search Context. By default, this option is selected.
 - 3c Click Find.

All the ZfD 3 SP1 or ZfD 3.2 database objects that are found within the specified context are displayed in the Report panel.

4 Click Migrate.

5 Click Close.

Upgrading the ZfD 3.x Inventory Server to ZfD 4.x

Before you upgrade a ZfD 3.x Inventory server, you need to perform the following tasks:

1. Stop the Sender service on all Inventory servers that roll up the inventory data to this Inventory server.
2. In the Workstation Inventory policy, deselect the Enable Scan of Machine option to turn off the inventory scanning for all inventoried workstations that send the inventory data directly to this Inventory server.
3. Make sure that you have upgraded the associated database server.

You can upgrade the ZfD 3 SP1 or ZfD 3.2 Inventory server by installing ZfD 4.x Inventory server if the server where you want to install the ZfD 4.x Inventory server meets the installation requirements. For more information on how to install the ZfD 4.x Inventory server, see [“Installing the ZfD Server Software”](#) in the *ZENworks for Desktops 4.0.1 Installation Guide*. The ZfD 4.x Inventory server supports the same set of roles as ZfD 3 SP1 or ZfD 3.2. Therefore, when you upgrade from ZfD 3 SP1 or ZfD 3.2 to ZfD 4.x, the role of the Inventory server is retained.

IMPORTANT: If you have a ZfD 3 SP1 or ZfD 3.2 Inventory server attached to a ZfD 3 SP1 or ZfD 3.2 database and if you upgrade either the Inventory server or the database to ZfD 4.x, you must upgrade the associated component to ZfD 4.x (the ZfD 3 Inventory services should not interact with ZfD 4.x compliant database and vice versa).

If you have multiple ZfD 3 SP1 or ZfD 3.2 Inventory servers connected to a ZfD 3 SP1 or ZfD 3.2 database server and if you upgrade the database server to ZfD 4.x, you must also upgrade all the associated ZfD 3 SP1 or ZfD 3.2 Inventory servers.

The ZfD 4.x installation program automatically migrates only the ZfD 3 SP1 or ZfD 3.2 Inventory Service object to ZfD 4.x. Before starting the Inventory service, you must manually migrate the existing ZfD 3 SP1 or ZfD 3.2 policies to ZfD 4.x policies using the ZfD Inventory Migration tool. For more information, see [“Manually Migrating ZfD 3.x Policies to ZfD 4.x Inventory Policies”](#) on page 54.

After migrating the policies, do the following:

1. Ensure that the Inventory database has been successfully migrated.
2. If a ZfD 3 SP1 Inventory server is rolling up its information to a ZfD 4.x Inventory server, you must apply the following authentication patches that are bundled with the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD* in `zenworks\product\rminv\zfd3xpatch\zfd30sp1` directory:

Server	Source File	Target Destination
NetWare	<code>inv\common\public\zenworks\wminv\lib\desktopcommonutility.jar</code>	<code>sys:\public\zenworks\wminv\lib</code>
	<code>nw\java\bin\zenws.nlm</code>	<code>sys:\java\bin</code>
	<code>nw\java\lib\autowsmanagement.jar</code>	<code>sys:\java\lib</code>
	<code>nw\java\lib\zencommon.jar</code>	<code>sys:\java\lib</code>

Server	Source File	Target Destination
	nw\java\lib\zenws.jar	sys:\java\lib
Windows NT/2000	inv\common\public\zenworks\wminv\lib\desktopcommonutility.jar	sys_share\public\zenworks\wminv\lib
	nt\jre\1.2\bin\zenws.dll	sys_share\zenworks\jre\1.2\bin
	nt\jre\1.2\lib\autowsmanagement.jar	sys_share\zenworks\jre\1.2\lib
	nt\jre\1.2\lib\zencommon.jar	sys_share\zenworks\jre\1.2\lib
	nt\jre\1.2\lib\zenws.jar	sys_share\zenworks\jre\1.2\lib

We recommend that you apply the latest patches. For more information on the latest patches, see [Novell Support \(http://support.novell.com\)](http://support.novell.com).

- If a ZfD 3.2 Inventory server is rolling up its information to a ZfD 4.x Inventory server, you must apply the following authentication patches that are bundled with the *ZENworks for Desktops 4 Program CD* or the *ZENworks 6 Desktop Management Program CD* in zenworks\product\rminv\zfd3xpatch\zfd32 directory:

Server	Source File	Target Destination
NetWare	inv\common\public\zenworks\wminv\lib\desktopcommonutility.jar	sys:\public\zenworks\wminv\lib
	nw\java\bin\zenws.nlm	sys:\java\bin
	nw\java\lib\autowsmanagement.jar	sys:\java\lib
	nw\java\lib\zencommon.jar	sys:\java\lib
	nw\java\lib\zenws.jar	sys:\java\lib
Windows NT/2000	inv\common\public\zenworks\wminv\lib\desktopcommonutility.jar	sys_share\public\zenworks\wminv\lib
	nt\jre\1.2\bin\zenws.dll	sys_share\zenworks\jre\1.2\bin
	nt\jre\1.2\lib\autowsmanagement.jar	sys_share\zenworks\jre\1.2\lib
	nt\jre\1.2\lib\zencommon.jar	sys_share\zenworks\jre\1.2\lib
	nt\jre\1.2\lib\zenws.jar	sys_share\zenworks\jre\1.2\lib

We recommend that you to apply the latest patches such as Patch K and TID 2963557, or any support pack. For more information on the latest patches or support packs, see [Novell Support \(http://support.novell.com\)](http://support.novell.com).

- In the Workstation Inventory policy, select the Enable Scan of Machine option to reactivate the inventory scanning for all the inventoried workstations that send the inventory data directly to this Inventory server.
- If the inventory data is rolled up, start the Sender service running on all lower-level Inventory servers that roll up the inventory data to this Inventory server.

Manually Migrating ZfD 3.x Policies to ZfD 4.x Inventory Policies

- 1** In ConsoleOne with ZfD 4.x Workstation Inventory snap-ins installed, click Tools > ZENworks Inventory > Inventory Migration.
- 2** Click Browse to browse for and select the Inventory Service object or the container that has the Inventory Service object.
- 3** If you selected a container in **Step 2**, do the following:
 - 3a** If you want to search for the Inventory Service object in all the subcontainers within the selected container, select the Search SubContainers check box.

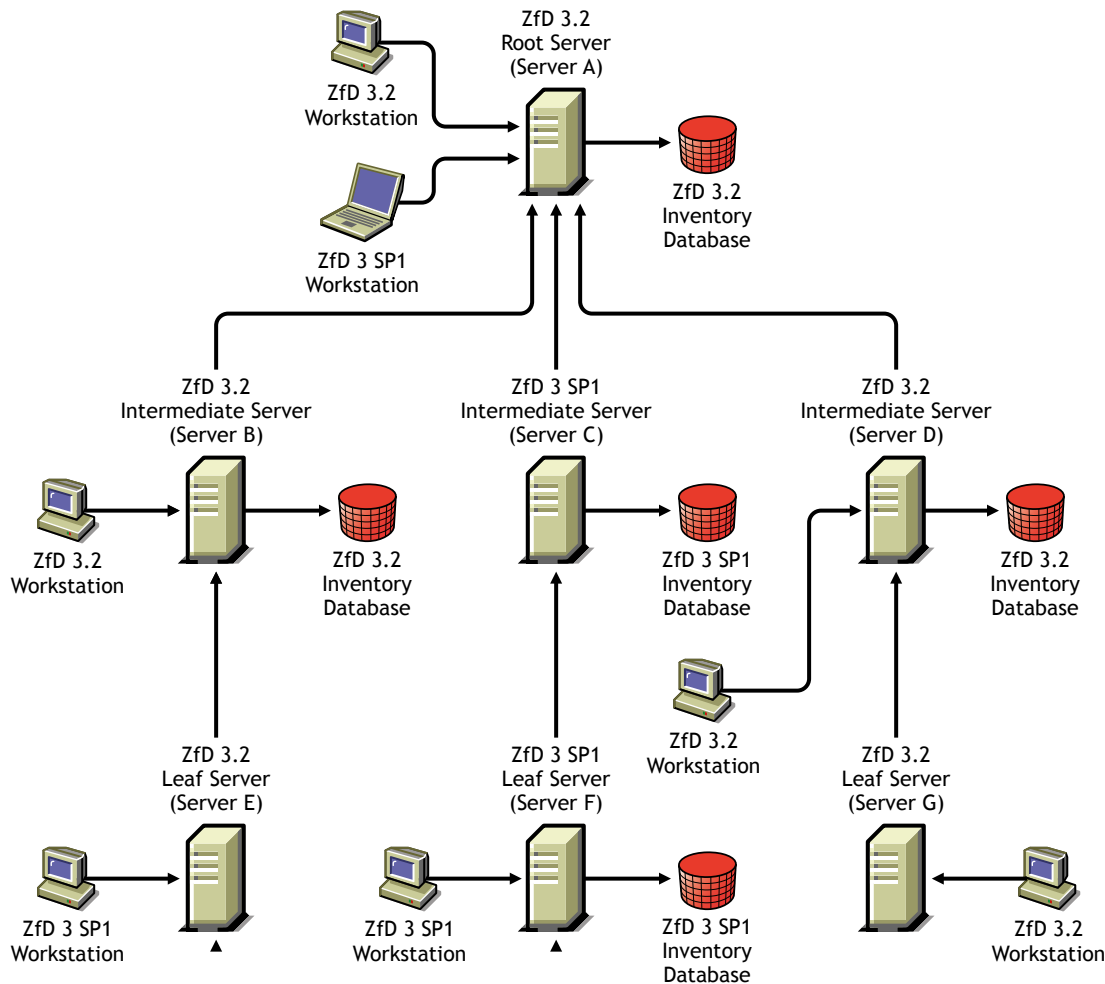
The Search SubContainers check box is available only if you select a container in Search Context.
 - 3b** Select the Search for Policies check box to search for the Inventory policies associated with the Inventory Service object within the selected container.

This option is available only if you select a container in Search Context. By default, this option is selected.
 - 3c** Click Find.

All the ZfD 3 SP1 or ZfD 3.2 Inventory policies that are associated with the Inventory Service object and are found within the specified context are displayed in the Report panel.
- 4** Click Migrate.
- 5** Click Close.

Upgrading the Inventory Servers in a Roll-Up Scenario

The following illustration shows a scenario with a mixed installation of ZfD 3.2 and ZfD 3 SP1 Inventory servers with different roles.



In this inventory tree, ZfD 3.2 and ZfD 3 SP1 Leaf Servers roll up the inventory scan data to ZfD 3.2 or ZfD 3 SP1 Intermediate Servers. The ZfD 3.2 and ZfD 3 SP1 Intermediate Servers roll up the inventory scan data to the Root Server. The Root Server A has ZfD 3.2 and ZfD 3 SP1 workstations directly attached to it.

To upgrade your Inventory servers to ZfD 4.x, proceed in this sequence:

1. “Upgrading the ZfD 3.x Root Server” on page 55
2. “Upgrading the ZfD 3.x Intermediate Servers” on page 56
3. “Upgrading the ZfD 3.x Leaf Servers” on page 57

Upgrading the ZfD 3.x Root Server

- 1** Stop the Sender services running on Intermediate Servers B,C, and D.
- 2** In the Workstation Inventory policy, deselect the Enable Scan of Machine option to turn off inventory scanning for all inventoried workstations that send inventory data directly to this Inventory server.
- 3** Upgrade the database server associated with Root Server A and the Root Server.
- 4** Start the Inventory services.

This will migrate the Inventory database and allow the Inventory database to accept the ZfD 4.x inventory scan data.

- 5** Migrate the Inventory policies and the Inventory objects associated with Root Server A.
- 6** In the Workstation Inventory policy, select the Enable Scan of Machine option to reactivate inventory scanning for all the inventoried workstations that send inventory data directly to this Inventory server.
- 7** (Optional) You can now upgrade all or some workstations attached to Root Server A.
You can upgrade the workstations later.
- 8** Apply the authentication patches to the Intermediate Servers (B,C, and D) to enable the Intermediate Servers roll up their inventory scan data to Root Server A.
- 9** Start the Sender services on the Intermediate Servers (B,C, and D).

The Leaf Servers (E, F, and G) do not require any changes because they are still receiving the inventory scan data only from ZfD 3 SP1 or ZfD 3.2 workstations and, they are still rolling up the inventory scan data to ZfD 3.2 or ZfD 3 SP1 Inventory servers.

Upgrading the ZfD 3.x Intermediate Servers

You can now upgrade any of the Intermediate Servers (B, C, or D).

If you choose to upgrade Intermediate Server D, proceed in this sequence:

- 1** Ensure that Root Server A, which receives scan data from Intermediate Server D, has been upgraded to ZfD 4.
- 2** Stop the Sender service running on the corresponding Leaf Server G.
- 3** In the Workstation Inventory policy, deselect the Enable Scan of Machine option to turn off inventory scanning for all inventoried workstations that send inventory data directly to this Inventory server.
- 4** Upgrade the database server associated with Intermediate Server D.
- 5** Start the Inventory services.
This will migrate the Inventory database and allow the Inventory database to accept the ZfD 4.x inventory scan data.
- 6** Migrate the Inventory policies and the Inventory objects associated with Intermediate Server D.
- 7** In the Workstation Inventory policy, select the Enable Scan of Machine option to reactivate inventory scanning for all the inventoried workstations that send inventory data directly to this Inventory server.
- 8** (Optional) Upgrade some or all workstations attached to the Intermediate Server D.
You can upgrade the workstations later.
- 9** Apply the authentication patches to Leaf Server G to enable Leaf Server G to roll up its inventory scan data to Intermediate Server D.
- 10** Start the Sender service on Leaf Server G.
- 11** Upgrade the other Intermediate Servers (B and C) or Leaf Server G.

Upgrading the ZfD 3.x Leaf Servers

You can now upgrade any of the Leaf Servers (E, F, or G).

If you choose to upgrade Leaf Server G, proceed in this sequence:

- 1** Ensure that Intermediate Server D, which receives scan data from Leaf Server G, has been upgraded to ZfD 4.
- 2** In the Workstation Inventory policy, deselect the Enable Scan of Machine option to turn off inventory scanning for all inventoried workstations that send inventory data directly to this Inventory server.
- 3** Upgrade Leaf Server G to ZfD 4.x and start the Inventory services.
- 4** Migrate the Inventory policies and the Inventory objects associated with Leaf Server G.
- 5** In the Workstation Inventory policy, select the Enable Scan of Machine option to reactivate inventory scanning for all the inventoried workstations that send the inventory data directly to this Inventory server.
- 6** (Optional) Upgrade all or some workstations attached to Leaf Server G.
You can upgrade the workstations later.
- 7** Upgrade the other Leaf Servers of your inventory tree (E and F).

NOTE: While upgrading Leaf Server F, ensure that you upgrade the database server before upgrading the Inventory server.

Upgrading the ZfD 3.x Inventory Server in a Standalone Scenario

- 1** In the Workstation Inventory policy attached to this inventory server, deselect the Enable Scan of Machine option to turn off inventory scanning for all inventoried workstations that send inventory data directly to this Inventory server.
- 2** Upgrade the database server and the Inventory server to ZfD 4.
- 3** Start the Inventory services.
This will migrate the Inventory database and allow the Inventory database to accept ZfD 4.x inventory scan data.
- 4** Migrate the Inventory policies and the Inventory objects associated with this inventory server.
- 5** In the Workstation Inventory policy, select the Enable Scan of Machine option to reactivate inventory scanning for all the inventoried workstations that send inventory data directly to this Inventory server.
- 6** (Optional) Upgrade all or some workstations attached to the Inventory server.
You can upgrade the workstations later.

Upgrading Multiple ZfD 3.x Intermediate Servers or Leaf Servers Connected to an Inventory Database

- 1** Stop the Inventory services on all the Intermediate Servers or Leaf Servers that are connected to the Inventory database.
- 2** Upgrade the database server.
- 3** Upgrade each Intermediate Server or Leaf Server.
- 4** If workstations are attached to the Inventory server, you can upgrade the workstations now or later.

Updating Workstation Imaging

When you install ZfD 4.x, you should upgrade your ZfD 3.x Workstation Imaging to benefit from the new ZfD 4.x image compression features.

- ◆ “[Upgrading the Imaging Server](#)” on page 58
- ◆ “[Upgrading Imaging When the Linux Partition Resides on Workstations](#)” on page 58
- ◆ “[Upgrading to ZfD 4.x Preboot Services](#)” on page 58

Upgrading the Imaging Server

Use the following steps to upgrade to the ZfD 4.x Workstation Imaging server:

- 1** Using the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD*, run the ZfD 4.x installation program to install Workstation Imaging.

This will upgrade your ZfD 3.x imaging server.

- 2** Open each of the existing .zmg files on the imaging server with the imgexp.exe tool and create new, compressed images of these existing files.

NOTE: Because the compression feature was included in ZfD 3.2, this step is necessary only if you are upgrading from ZfD 3.

Upgrading Imaging When the Linux Partition Resides on Workstations

If you continue to use the Linux partition on your workstations, one of the following events will occur after you upgrade to ZfD 4.x imaging:

- ◆ If the workstations are running the ZfD 3.0 imaging engine in the Linux partition, only the imaging engine will be automatically updated the first time the workstations contact the ZfD 4.x imaging server.
- ◆ If your workstations are running ZfD 3.0 SP1, ZfD 3.2, or have just updated their imaging engine as explained above, the imaging engine will be updated when the workstations next contact the imaging server. If necessary, all other Linux OS files will also be copied to the Linux partition and installed.

Following the automatic updates, all of the workstations with Linux partitions will be running the ZfD 4.x system.

Upgrading to ZfD 4.x Preboot Services

If you decide to move to ZfD 4.x Preboot Services (PXE) to eliminate the Linux partitions on your workstations, use the following steps:

- 1** Install ZfD 4.x Preboot Services on a network server.

For installation instructions, see “[Installing and Setting Up ZENworks for Desktops Preboot Services](#)” in the *ZENworks for Desktops 4 Preboot Services Installation and Configuration Guide*. You can also open this document from the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD*.

You might need to make some configuration changes to the DHCP server.

- 2** Verify that ZfD 4.x Preboot Services is working either through the PXE supplied on your network cards, or through a PXE bootable floppy you generate with pxebuilder.exe.
- 3** In ConsoleOne, right-click the ZENworks Imaging Policy in Server Policy Package > click Properties > General > Imaging Partition.

4 Disable the ZENworks imaging partition.

This procedure will make the Linux partition non-bootable on the workstation hard drive. It will not eliminate the Linux partition.

If you want to eliminate the Linux partition, you need to restore a base image on the workstation and select the option to delete the existing Linux partition in the Image object, which you can reference in the Server Policy package or the Workstation Policy package.

Upgrading Policies

When you first install ZfD 4.x into your eDirectory tree, additional ZfD 4.x policy schemas are placed there. Existing ZfD 3.x policies are automatically migrated into your tree when new ZfD 4.x policies are created. The following tables include information to help you understand how these policies are organized in an updated ZfD 4.x system:

- ◆ [“Organization of the Container Policy Package” on page 59](#)
- ◆ [“Organization of the Server Policy Package” on page 59](#)
- ◆ [“Organization of the Service Location Policy Package” on page 60](#)
- ◆ [“Organization of the User Policy Package” on page 60](#)
- ◆ [“Organization of the Workstation Policy Package” on page 63](#)

Organization of the Container Policy Package

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
General	Search Policy	Search Policy	Partition option removed.

Organization of the Server Policy Package

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
General	Imaging Server Policy	Imaging Server Policy	Added named servers and a DNS domain suffix to the policy to push as part of the image-safe data.
General	Workstation Import	Workstation Import	No changes.
General	Workstation Removal	Workstation Removal	No changes.
General	zeninvRollupPolicy	Roll-Up Policy	Renamed. Added an IP/DNS entry for server to cross trees. Also added the Proxy server configuration.
General	n/a	ZENworks Database	Allows configuration of the database type and URL. If Workstation Inventory is installed, you can specify the inventory database location on server. This setting will override the setting in the Service Location Package.
Windows	Imaging Server Policy	Imaging Server Policy	Added named servers and DNS domain suffixes to the policy to push as part of the image-safe data.
Windows	Workstation Import	Workstation Import	No changes.

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
Windows	Workstation Removal	Workstation Removal	No changes.
Windows	zeninvRollupPolicy	Roll-Up Policy	Renamed. Added an IP/DNS entry for server to cross trees. Also added the Proxy server configuration.
Windows	n/a	ZENworks Database	Allows configuration of the database type and URL. If Workstation Inventory is installed, you can specify the inventory database location on server. This setting will override the setting in the Service Location Package.
NetWare	Imaging Server Policy	Imaging Server Policy	Added named servers and a DNS domain suffix to the policy to push as part of the image-safe data.
NetWare	Workstation Import	Workstation Import	No changes.
NetWare	Workstation Removal	Workstation Removal	No changes.
NetWare	zeninvRollupPolicy	Roll-Up Policy	Renamed. Added an IP/DNS entry for the server to cross trees. Also added the Proxy server configuration.
NetWare	n/a	ZENworks Database	Allows configuration of the database type and URL. If Workstation Inventory is installed, you can specify the inventory database location on server. This setting will override the setting in the Service Location Package.

Organization of the Service Location Policy Package

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
General	SMTP Host	SMTP Host	No changes.
General	SNMP Trap Targets	SNMP Trap Targets	No changes.
General	n/a	XML Targets	New policy. Provides URL targets for XML logging data.
General	ZENworks Database	ZENworks Database	Allows configuration of the database type and URL.

Organization of the User Policy Package

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
General	Help Desk Policy	Removed	Present only if upgraded.
General	Remote Control Policy	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
General	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	Dynamic Local User	Dynamic Local User	No changes.

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	Help Desk Policy	Removed	Present only if upgraded.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	NT Desktop Preferences	Windows Desktop Preferences	Renamed.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	NT User Printer	Removed	Present only if upgraded.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	NT User System Policies	Removed	Present only if upgraded.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	Remote Control Policy	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	User Extensible Policies	User Extensible Policies	No changes.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	Windows 2000 Group Policy	Windows 2000 Group Policy	Renamed.
WinNT-2000 renamed to WinNT-2000-XP in ZfD 4	Windows Terminal Server Policy	Relocated	Moved to Win2000-XP (general), Win2000 Terminal Server, and WinXP Terminal Server platforms in the User Package.
Win 9x	95 Desktop Preferences	Windows Desktop Preferences	Renamed.
Win 9x	95 User System Policies	Removed	Present only if upgraded.
Win 9x	Help Desk Policy	Removed	Present only if upgraded.
Win 9x	Remote Control Policy	Removed	Chat removed. Enhanced for password-based remote control and NAT.
Win 9x	User Extensible Policies	User Extensible Policies	No changes.
Win 9x	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.

Tab Name in the Policy Package	ZfD 3.x Policies Included	ZfD 4.x Policies Included	Differences in ZfD 4.x
WinNT (new tab)	n/a	Dynamic Local User	No changes; new category.
WinNT (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
WinNT (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
WinNT (new tab)	n/a	User Extensible Policies	No changes.
WinNT (new tab)	n/a	Windows Desktop Preferences	No changes.
Win2000 (new tab)	n/a	Dynamic Local User	No changes; new category.
Win2000 (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
Win2000 (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
Win2000 (new tab)	n/a	User Extensible Policies	No changes.
Win2000 (new tab)	n/a	Windows Desktop Preferences	No changes.
Win2000 (new tab)	n/a	Windows Group Policy	No changes.
WinXP (new tab)	n/a	Dynamic Local User	No changes; new category.
WinXP (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
WinXP (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
WinXP (new tab)	n/a	User Extensible Policies	No changes.
WinXP (new tab)	n/a	Windows Desktop Preferences	No changes.
Win2000 Terminal Server (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
Win2000 Terminal Server (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
Win2000 Terminal Server (new tab)	n/a	User Extensible Policies	No changes.
Win2000 Terminal Server (new tab)	n/a	Windows Desktop Preferences	No changes.
Win2000 Terminal Server (new tab)	n/a	Windows Group Policy	No changes.
Win2000 Terminal Server (new tab)	n/a	Windows Terminal Server Policy	No changes.

Organization of the Workstation Policy Package

Tab Name in the Policy Package	ZfD 3.x Policies included	ZfD 4.x Policies Included	Differences in ZfD 4.x
General	Remote Control Policy	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
General	Workstation Imaging Policy	Workstation Imaging Policy	No changes.
General	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
General	n/a	ZENworks for Desktops Management Agent Policy	New policy. Provides configuration for management agents.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	Computer Extensible Policies	Computer Extensible Policies	No changes.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	NT Client Configuration	Removed	Present only if upgraded.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	NT Computer Printer	Removed	Present only if upgraded.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	NT RAS Configuration	Removed	Present only if upgraded.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	Remote Control Policy	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	Restrict Login	Removed	Present only if upgraded.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	Windows 2000 Group Policy	Windows Group Policy	Renamed. Warning message added regarding the validity of the policy for the local platform only.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	Workstation Imaging Policy	Relocated	Removed from this category. Available only under the General tab.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	Workstation Inventory	Workstation Inventory Policy	Added configuration for Hardware and Software scan and customized software scan features.
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.

Tab Name in the Policy Package	ZfD 3.x Policies included	ZfD 4.x Policies Included	Differences in ZfD 4.x
WinNT-2000 (tab renamed to WinNT-2000-XP in ZfD 4)	n/a	ZENworks for Desktops Management Agent Policy	New policy. Provides configuration for the management agents.
Win 9x	95 Client Configuration	Removed	Present only if upgraded.
Win 9x	95 Computer Printer	Removed	Present only if upgraded.
Win 9x	95 Computer System Policies	Removed	Present only if upgraded.
Win 9x	95 RAS Configuration	Removed	Present only if upgraded.
Win 9x	Computer Extensible Policies	Computer Extensible Policies	No changes.
Win 9x	Remote Control Policy	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
Win 9x	Restrict Login	Removed	Present only if upgraded.
Win 9x	Workstation Imaging Policy	Relocated	Removed from this category. Available only under the General tab.
Win 9x	Workstation Inventory	Workstation Inventory Policy	Added configuration for Hardware and Software scan and customized software scan features.
Win 9x	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
Win 9x	n/a	ZENworks for Desktops Management Agent Policy	New policy. Provides configuration for management agents.
WinNT (new tab)	n/a	Computer Extensible Policies	No changes.
WinNT (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
WinNT (new tab)	n/a	Workstation Inventory Policy	Added configuration for Hardware and Software scan and customized software scan features.
WinNT (new tab)	n/a	ZENworks for Desktops Management Agent Policy	New policy. Provides configuration for management agents.
WinNT (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
Win2000 (new tab)	n/a	Computer Extensible Policies	No changes.
Win2000 (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.

Tab Name in the Policy Package	ZfD 3.x Policies included	ZfD 4.x Policies Included	Differences in ZfD 4.x
Win2000 (new tab)	n/a	Workstation Inventory Policy	Added configuration for Hardware and Software scan and customized software scan features.
Win2000 (new tab)	n/a	ZENworks for Desktops Management Agent Policy	New policy. Provides configuration for management agents.
Win2000 (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.
Win2000 (new tab)	n/a	Windows Group Policy	Renamed. Warning message added regarding the validity of the policy for the local platform only.
WinXP (new tab)	n/a	Computer Extensible Policies	No changes.
WinXP (new tab)	n/a	Remote Control Policy	Chat removed. Enhanced for password-based remote control and NAT.
WinXP (new tab)	n/a	Workstation Inventory Policy	Added configuration for Hardware and Software scan and customized software scan features.
WinXP (new tab)	n/a	ZENworks for Desktops Management Agent Policy	New policy. Provides configuration for management agents.
WinXP (new tab)	n/a	Novell iPrint Policy	New policy. Allows configuration of the iPrint agent.

Notes about Upgrading Policies

The list below includes some things you need to know when you upgrade ZfD 3.x policies:

- ◆ If a workstation with the ZfD 3.x agents and the Novell Client installed is upgraded to the new ZfD 4.x agents, with the client remaining, the workstation will continue to use the policies that were created in the directory prior to the ZfD 4.x upgrade.
- ◆ If a workstation with the ZfD 3.x agents and the Novell Client is upgraded to the new ZfD 4.x agents and the client is removed, the workstation will use only those policies that are valid in ZfD 4.x (for example, the RAS configuration policy would not be enforced).
- ◆ If a new workstation has only the ZfD 4.x agents installed (no client or ZfD 3.x agents), the workstation will use only those policies that are valid in ZfD 4.
- ◆ If you install ZfD 4.x without upgrading an existing ZfD 3.x installation, only the valid ZfD 4.x policies will be present. The original ZfD 3.x policies will be present only if an upgrade is performed.

Updating the Application Launcher Startup Method

When you upgrade the ZENworks Server to ZfD 4.x, `nalexpld.exe` and `nal.exe` are updated to launch `naldesk` or `nalwin32` from the local directory where the ZfD 4.x Management Agent was installed. This change affects ZENworks 2 and ZfD 3.x workstations using the Novell Client that have not been updated with the ZfD Management Agent.

Until you can update the 3.x workstations, you need to make sure that users are able to access the old Application Launcher. There are solutions for two scenarios:

- ◆ “If Users Access the Application Launcher when Connected to the Network” on page 66
- ◆ “If Users Access the Application Launcher when Disconnected from the Network” on page 67

If Users Access the Application Launcher when Connected to the Network

If your users primarily access the Novell Application Launcher while connected to the network, you might want to continue using the client login script to start the Application Launcher. One way of checking the workstation for updated ZfD 4.x files is to use the exist.exe tool to check c:\program_files\novell\zenworks for the existence of nalwin32.exe or naldesk.exe.

NOTE: The exist.exe tool can be downloaded from the Novell [ZENworks Cool Solutions page \(http://www.novell.com/cool solutions/tools/1067.html\)](http://www.novell.com/cool solutions/tools/1067.html). Run this tool from a login or application startup script to check for the presence of any file you specify. If the specified file is detected, the .exe returns ERROR_LEVEL of zero (0).

When you have downloaded exist.exe, edit your login scripts to put in a check to run the ZfD 3.x NAL locally, from the server, or to let the ZfD 4.x version run. These lines must be after the sys:\public directory is added to the search path or the exist.exe must have the full path specified. You need to modify the following (or an equivalent) line:

```
@z:\nalwin32.exe
```

This is how you need to modify the line:

```
; First check to see if the ZfD 4.x agent is present. If so, then you don't need
; to do anything; it will be launched automatically on the desktop.
#exist %<windir>\..\Program Files\Novell\Zenworks\naldesk.exe
; If the ZfD 4.x agent is NOT present, then keep checking
if "%ERRORLEVEL"!="0" then
; Check now to see if the ZfD 3.x App Launcher has been placed on the
workstation#exist %<windir>\system32\nalwin32.exe
; If the ZfD 3.x App Launcher has NOT been placed on the workstation then
; go and launch the App Launcher from the server.
if "%ERRORLEVEL"!="0" then
; Check our Windows 95 friends
#exist %<windir>\..\novell\client32\nalwin32.exe
if "%ERRORLEVEL"!="0" then
@z:\ZfD32NAL\nalwin32.exe
else
@%<windir>\..\novell\client32\nalwin32.exe
end
else
@%<windir>\system32\nalwin32.exe
end
end
```

This script change will launch Application Launcher in one of three ways:

- ◆ From the workstation copy of ZfD 4.x Agent (which will automatically start, so it does not need to be launched from the login script)
- ◆ From a local copy of the Application Launcher ZfD 3.x code, if it is present
- ◆ From the server if the ZfD 4.x Agent and the local ZfD 3.x Application Launcher code are not on the workstation.

The only difference in launching the ZfD 3.x files locally rather than from the server is that if you start the Application Launcher locally, updated ZfD 3.x Application Launcher files on the server

are not pushed to the workstation. During a migration period, this is usually not necessary, but if it does become necessary, you can use an Application Launcher /i command line switch in a Policy package to update the local ZfD 3.x Application Launcher files. For more information, see the *ZENworks for Desktops 3.2 Administration Guide* in the archived ZENworks for Desktops 3.2 documentation at <http://www.novell.com/documentation/lg/zdfs/index.html> (<http://www.novell.com/documentation/lg/zdfs/index.html>).

NOTE: If your network environment contains shared workstations, you should edit all of the login scripts at the same time, regardless of when the container, partition, or site is migrated to ZfD 4.x. This will prevent shared workstations from having old Application Launcher files distributed to them.

If Users Access the Application Launcher when Disconnected from the Network

If your users are often disconnected from the network, you can start the Application Launcher by specifying in the ZfD 4.x Management Agent installation that the Application Launcher or the Application Explorer should be launched from the Startup Folder. Although this is the simplest method, command line parameters cannot be added to the shortcut and users sometimes remove items from the Startup folder.

If you want to specify command line parameters, you can start the Application Launcher by editing the Windows registry and adding NALWIN32 or NALDESK to the HKLM\Software\Microsoft\Windows\CurrentVersion\Run key.

Updating Applications

Next, you should prepare your applications to move to ZfD 4.x. With ZfD 4.x, you need to decide if you are going to continue to have the Novell Client installed on your workstations or if you are moving to ZfD feature delivery through the Middle Tier Web interface.

If you are going to continue to use the Novell Client, application objects require no changes in order to function in the new ZfD 4.x environment.

If you plan to deploy the ZfD Management Agent and not use the Novell Client on the workstation, refer to [TID 10081393](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10081393.htm) (<http://support.novell.com/cgi-bin/search/searchtid.cgi?/10081393.htm>) available from the Novell Support Web site.

Additionally, any MSI applications to be delivered outside the corporate firewall must be marked Forced Cache. The Microsoft MSI installer is not aware of the ZfD Middle Tier Server and cannot properly request applications through the browser; consequently, all of the files must be cached on the local workstation prior to installation.

Updating Managed Workstations

Before you upgrade to ZfD 4.x, it will be necessary to upgrade either the Novell Client or to install the ZfD Management Agent. One of these will be used as your means to authenticate to eDirectory. See the following sections:

- ◆ “Updating the Novell Client on Managed Workstations” on page 67
- ◆ “Installing the ZfD Management Agent” on page 68

Updating the Novell Client on Managed Workstations

Although ZfD 4.x can manage workstations in the enterprise whether those workstations have the Novell Client installed or not, most administrators who upgrade from an earlier version of

ZENworks for Desktops will probably want to continue to use the client after the upgrade. The client has significant performance and scalability advantages for accessing eDirectory and network servers.

If you want your users to continue using the Novell Client to access the network after you install ZfD 4.x, the user workstations need to have at least the minimum version of the client. Check the workstations for the minimum version required for ZfD 4.x and, if possible, upgrade to the most current version. You can obtain the latest Novell Client from the [Novell Product Download Web site \(http://download.novell.com\)](http://download.novell.com).

NOTE: If you continue to use the Novell Client after installing ZfD 4.x, the client will not authenticate through the ZfD Middle Tier Server if the workstation is inside the corporate firewall. For more information, see “[The Role of the Novell Client](#)” in “[Understanding the Novell Client](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Workstation OS	Novell Client Version (minimum)	Novell Client Version (recommended)
Windows 98 SE	3.30	3.32 SP2
Windows NT 4	4.80	4.83 SP2
Windows 2000	4.80	4.83 SP2
Windows XP	4.82	4.83 SP2

You can automatically update the Novell Client by using the Automatic Client Update (ACU). ACU can be delivered through a login script by a ZfD application. For more information about ACU and other Client upgrade information, see “[Installing Novell Clients](#)” in the *Novell Client for Windows Installation and Administration Guide*.

ZfD 4.x requires the installation of the ZfD Management Agent, even if you intend to use the client exclusively for authentication. ZfD 4.x management components that also update the client for use with ZfD 4.x are included in the agent installation program.

Installing the ZfD Management Agent

When you have updated the Novell Client and the ZENworks Server, you need to install the ZfD Management Agent on the user workstations. This installation updates the Novell Application Launcher, Workstation Manager, and Remote Management software on the user workstation. It also installs the Workstation Inventory agent and the Image Safe Data service.

You can uninstall the Novell Client from user workstations after you deploy the ZfD Management Agent as the exclusive means for users to authenticate to eDirectory. In this sense, ZfD 4.x can be “clientless;” that is, ZfD 4.x does not require the Novell Client if users log in with the ZfD Management Agent. For more information, see “[Using the Novell Client in a ZfD 4.x Environment](#)” in “[The Role of the Novell Client](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

The workstation functionality afforded by ZENworks for Desktops 4.x components is available only if you install the ZfD Management Agent. This is true even if you currently have the Novell Client installed on that workstation. The ZfD Management Agent installation removes the ZfD features that were previously installed by the Novell Client and replaces them with selected ZfD workstation features.

The following tasks must be performed if you want to install the ZfD Management Agent on workstations that are currently using ZfD 3.x:

1. “Deploying the Windows Installer (MSI) Engine” on page 69
2. “Distributing and Installing the ZfD 4.x Management Agent MSI Package” on page 34
3. “Manually Installing the ZfD Agent” on page 74

Deploying the Windows Installer (MSI) Engine

The ZfD Management Agent installation program, `zfdagent.msi`, requires a minimum of Microsoft Windows Installer (MSI) 1.11 technology during the installation process. You can upgrade Windows 98 and Windows NT 4 workstations that have a pre-1.11 version of MSI by manually installing version MSI 1.11 (or later) with administrator rights on every workstation prior to the installation.

The following table lists the versions of the MSI that should already be installed on Windows workstations.

Windows Version	Version of MSI Engine Included
Windows 98 SE Workstations	MSI is not included unless another application installed it.
Windows NT 4 Workstations	MSI is not included unless another application installed it.
Windows 2000 Workstations	MSI 1.1 is included with the OS.
Windows 2000 SP3 Workstations	MSI 2.0 is included with the OS.
Windows XP Workstations	MSI 2.0 is included with the OS.

NOTE: You should consider whether to upgrade all of the user workstations to use the same version of the MSI engine.

For your convenience, MSI 2.0 for Windows NT/2000 or Windows 98 is available in the `\windows installer` folder of the *ZENworks for Desktops Companion* CD or the *ZENworks 6 Companion 1* CD.

For detailed information about Microsoft Windows Installer, see the [MSI Web site \(http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp\)](http://www.microsoft.com/windows2000/techinfo/administration/management/wininstaller.asp).

If the MSI engine needs to be installed, you can use the Novell Application Launcher in ZfD 3.x to install it with a Simple Application distribution.

- 1 From the *ZENworks for Desktops Companion* CD or the *ZENworks 6 Companion 1* CD, copy the appropriate MSI engine installer utility to your ZENworks Server.
 - ♦ `\windows installer\98\instmsia.exe` installs the MSI 2.0 engine on Windows 98 machines.
 - ♦ `\windows installer\nt\instmsiw.exe` installs the MSI 2.0 engine on Windows NT/2000/XP machines.
- 2 Using the newly installed ZfD 4.x snap-ins in ConsoleOne, create a Simple Application object for the version of the MSI engine you want to install.

NOTE: If you want to install both versions, you must create a Simple Application object for each version.

- 2a After you name the simple application, enter the path to the location from which the application's executable file will run. Include the executable file in the path. Because the Application Launcher will copy the file to a target directory on the workstation, specify the path as it will exist after the file is copied to the target directory.

Example: c:\temp\instmsiw.exe

- 2b** Define the system requirements that a workstation must meet before the MSI engine application will be distributed to it.

For more information, see “[Configuring the Application in eDirectory](#)” in “[Distributing Applications to Users and Workstations](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- 2c** Associate the application object to users or imported workstations > select the characteristics you want to apply to the association.

We recommend that you select the Force Run characteristic for the association so that the Application object will run as soon as the Application Launcher or Workstation Helper starts and the Application object is available.

For more information, see “[Configuring the Application in eDirectory](#)” in “[Distributing Applications to Users and Workstations](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

- 3** Configure the Simple Application object.

- 3a** In the Application object Properties page, click the Distribution Options tab > Application Files.

You need to add the file to the Application Files list so that the Application Launcher will copy it to the workstation. For more information, see the online help in ConsoleOne.

- 3b** Click Add > File > fill in the following fields:

Source File: Select the MSI engine installer utility you want copied to the workstation (for example, q:\public\zenworks\instmsiw.exe).

Target File: Enter the full path, including the file name, where you want the file copied (for example, c:\temp\instmsiw.exe).

- 3c** Click OK to add the file to the list > click OK to save the Application Object information.

- 3d** In the Application object Properties page, click the Run Options tab > Environment > select the Run Normal option > set the Executable Security Level to Run as Unsecure System User > click OK to save the Application Object information.

The MSI Engine will be installed as soon as the Application Launcher starts and the Application object is available.

The MSI engine installs an executable that will be used later for installing the ZfD Agent MSI. The MSI engine installer utility installs this file, called msiexec.exe, in the *windows_drive:windows_directory\system* directory of the workstation.

Using the Novell Application Launcher to Distribute and Install the ZfD Management Agent

The zfdagent.msi package is a complex application that will install many files and make many configuration changes to the workstation. The most efficient method for installing the ZfD Management Agent is to distribute it to workstations as an MSI application using the Novell Application Launcher. The Novell Application Launcher not only distributes the Agent MSI package, it also calls the Windows Installer to perform the installation on the workstation.

This section provides the steps for configuring the MSI package for distribution with the Application Launcher, including:

- ◆ “[Downloading the Agent MSI Package](#)” on page 71

- ◆ “Creating and Configuring the MSI Application Object” on page 71
- ◆ “Other MSI Application Object Configurations” on page 72
- ◆ “Modifying Installed Features in the MSI Application Object” on page 72
- ◆ “Adding Properties to the MSI Application Object Running in Silent Mode” on page 73

Downloading the Agent MSI Package

When you download ZfD4 SP1, you should copy the zfdagent.msi file to a network server location that will be accessible later to the Novell Application Launcher.

When you run the MSI download file, or when you browse the \agentinstall directory of the *ZENworks for Desktops Program CD* or the \zenworks for desktops 4.0.1 directory on the *ZENworks 6 Desktop Management Program CD*, you will see the following language folders and files:

english\zfdagent.msi (English installation file)
 portugue\zfdagent.msi (Portuguese installation)
 francais\zfdagent.msi (French installation)
 deutsch\zfdagent.msi (German installation)
 espanol\zfdagent.msi (Spanish installation)

Creating and Configuring the MSI Application Object

- 1** In ConsoleOne, right-click the container where you want to create the Application object > click New > click Object to display the New Object dialog box.
- 2** In the New Application dialog box, select the Application That Has an .MSI File option > click Next.
- 3** Specify the path to the network location where you copied the .msi file.
- 4** Click Next > modify the fields as necessary to customize the Application object.
- 5** Click Next > define the system requirements that a workstation must meet before the Agent MSI will be distributed to it.
- 6** Click Next > associate the Agent MSI Application object with the users to whom you want to distribute it.

NOTE: Upgrading the ZfD Management Agent (including an agent updated with support patches) requires that you associate the SP1/4.0.1 Agent MSI package to users rather than workstations. Workstation associated applications will accept only one MSI property at a time. This is a known Novell Application Launcher issue that is fixed in ZfD 4 SP1; that is, it is corrected when the ZfD 4.0.1/SP1 Management Agent is installed on the workstation.

- 7** Click Next > review the Application object settings > click Finish to create the Application object.

IMPORTANT: Before you distribute the Agent MSI (or any MSI package) using the Novell Application Launcher, we recommend that you make sure the Agent MSI application object is set to Force Cache and that the user credentials on the local workstation, in eDirectory, and in Active Directory (if used) are synchronized.

For more information about creating an MSI Application object, see “Creating the Application Object from a Windows Installer (.MSI) File” in “Configuring the Application in eDirectory” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Other MSI Application Object Configurations

This section explains the other MSI Application object configurations that you should be aware of.

- ◆ Identification Tab, Icon Page
- ◆ Modifying Installed Features in the MSI Application Object

Identification Tab, Icon Page

If the workstation receiving the distribution already has the original ZfD 4 Management Agent installed, we recommend that you do not configure the distribution of the ZfD Management Agent MSI with the User Interface Level set at Full or Reduced. Doing so will generate a Windows error message stating that the file you are trying to uninstall is in use.

If you configure the MSI Application object for a manual uninstall in the Application Window, a similar error will be displayed.

When the error message is displayed, users can click Ignore to continue with the MSI installation. All of the necessary agent files will be copied to the workstation.

Modifying Installed Features in the MSI Application Object

By default, all of the following features are installed by the ZfD 4 SP1/4.0.1 MSI Agent package:

- ◆ **Application Management:** This feature uses the Novell Application Launcher to provide users access to workstation applications that the administrator can install and then manage.
- ◆ **Workstation Manager:** This feature lets administrators configure and manage workstations by using eDirectory.
- ◆ **Workstation Inventory:** This feature helps administrators collect hardware and software inventory information from scanned workstations.
- ◆ **Remote Management:** This feature lets an administrator manage remote workstations from a remote console. Workstation Manager is selected by default when you select this feature.
- ◆ **Mirror Driver:** This feature provides video adapter independence and co-existence with other Remote Control Solutions. If this feature is selected, the MSI installation overrides video driver checks and suppresses any Windows messages. If you do not want this driver, you can deselect it and the default optimization driver will be installed.
NOTE: The Mirror Driver is not yet signed by Microsoft.
- ◆ **Workstation Imaging:** This feature lets an administrator take an image of a workstation's hard drive and put it on other workstations over the network.

If you want to modify this default install, you can add MSI features as public properties of the zfdagent.msi Application object. Use the following steps to modify the list of installed features:

- 1** On the Properties page of the MSI tab of the Application Object, click Add to display the Select Property to Add dialog box.
- 2** In the Value Name field, enter ADDLOCAL as the property name, then specify the property's value in the Value Data field. Use one or more of the following feature names as a property value:
 - ◆ ApplicationLauncher
 - ◆ WorkstationManager
 - ◆ RemoteManagement

- ◆ MirrorDriver (this property will not work unless you add the RemoteManagement property)
- ◆ Imaging
- ◆ Inventory

You can add more than one of these values to the list by separating them with a comma (no spaces). For example, if you wanted to add Application Launcher and Workstation Manager as features, you would type ADDLOCAL as the property and ApplicationLauncher,WorkstationManager as the values for that property.

3 Click OK to add the property to the Properties list.

Adding Properties to the MSI Application Object Running in Silent Mode

If you want to run the Agent MSI in silent mode, set the User Interface Level to Silent on the Icon page of the Identification tab of the object properties. If you run the installation in this mode, you can add other properties to the object.

These properties and their values (including definitions for the values) are listed in the table below. If one of these properties is listed without a value, it will use the default value.

Property	Value	Meaning
ADDLOCAL	<ul style="list-style-type: none"> ◆ WorkstationManager ◆ ApplicationLauncher ◆ RemoteManagement ◆ MirrorDriver ◆ Inventory ◆ Imaging 	Comma-delimited list of features to install.
LOGIN_PASSIVE_MODE	0	Displays a Novell login at user login time.
	1	Default. Does not display a Novell login unless the Novell Client has been installed. If the Novell Client is installed, its login is displayed.
<p>The values for this property are effective only if the Novell Client is not installed on the workstation. If the Novell Client is already installed, the settings have no effect after zfdagent.msi installation.</p> <p>If the Novell Client is removed after zfdagent.msi is installed, these settings take effect.</p> <p>NOTE: If the Novell Client might be removed later and you want to use Dynamic Local User, you need to assign a value of zero (0) to this property.</p>		
EDITABLE_MT_ADDRESS	1	Allow the user to change the ZENworks Middle Tier IP address where authentication will take place. This is available only if the Novell Client is not installed.
	0	Default. Do not allow the user to specify the Middle Tier address.
<p>The values for this property are effective only if the Novell Client is not installed on the workstation. If the Novell Client is already installed, the settings have no effect after the zfdagent.msi installation.</p> <p>If the Novell Client is removed after zfdagent.msi is installed, these settings take effect.</p>		

Property	Value	Meaning
STARTUP_APPEXPLORER	1	Launch Application Explorer on Windows startup.
	0	Default. Do not launch Application Explorer on Windows startup.
STARTUP_APPWINDOW	1	Launch Application Window on Windows startup.
	0	Default. Do not launch the Application Window on Windows startup.
MT_SERVER_ADDRESS	This property specifies the ZENworks Middle Tier Server IP address or DNS name. It is not necessary to specify this property if you are not using a Middle Tier Server.	
HTTP_PORT	0-65536	Specifies the HTTP port that will be used by the ZfD Management Agent when communicating with the Middle Tier server. This property must be added and its value defined if you are using a Middle Tier Server.
	80	Default HTTP port.

Manually Installing the ZfD Agent

If you want to install to a single workstation at a time, you can install zfdagent.msi manually. For more information, see “[Manually Installing the ZfD Management Agent](#)” in “[Installing](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

When completed with both manual command line parameters and MSI installation properties, the parameter field might look like this:

```
/i zfdagent.msi /qb STARTUP_APPEXPLORER=1
```

Because the Parameters field of the Application object has a line length limitation, you might not be able to add a large number of MSI Installation properties. To work around this limitation, you can do one of two things:

- ◆ Use the Wise InstallTailor* to capture the installation properties and generate a transform (also known as an .mst file) to incorporate these customizations to the ZfD Agent MSI at runtime.

For more information about using the Wise InstallTailor, see “[Wise InstallTailor](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

- ◆ Use the Microsoft MSI editor, orca.exe, to edit the property table of the zfdagent.msi file and add all of the ZfD Agent MSI installation properties you want. You can then install the edited MSI with all of the newly-added properties included.

For information about how to install and use orca.exe, see the [Microsoft Knowledgebase Article 255905](#) (<http://support.microsoft.com/default.aspx?scid=KB;en-us;255905&>) at the [Microsoft Support Web site](http://support.microsoft.com) (<http://support.microsoft.com>).

Verifying Remote Control

ZfD 4.x ConsoleOne snap-ins can remotely control both the ZfD 3.x agent workstations and the ZfD 4.x agent workstations. Be aware, however, that the ZfD 4.x ConsoleOne snap-ins will not provide any features that have been discontinued and the ZfD 3.x agents will not support any enhancements provided in ZfD 4.

NOTE: It is no longer necessary to use Remote Management Application objects to control the Remote Management Agents on workstations. The Remote Management Agents are now installed on the workstation as part of the ZfD 4.x Management Agent installation.

After the Upgrade

When you have successfully installed ZfD 4.x onto your ZfD 3.x system, you should be able to continue to migrate your workstations to the new features at your own pace. In doing so, you will begin to realize the increased return on investment that the new ZfD 4.x features provide.

4

Upgrading from ZfD 4 to ZfD 4 SP1/4.0.1

This section includes information for upgrading your Novell® ZENworks® for Desktops (ZfD) 4 system to ZENworks for Desktops 4 SP1 or ZENworks for Desktops 4.0.1. It includes the following sections:

- ♦ “About the Upgrade Options” on page 77
- ♦ “Preparing for the Upgrade” on page 78
- ♦ “Upgrading the ZfD Server Software” on page 79
- ♦ “Upgrading the ZfD Middle Tier Server Software” on page 80
- ♦ “Upgrading the ZfD Management Agent” on page 81

About the Upgrade Options

If you want to upgrade ZfD 4 to either ZfD 4 SP1 or ZfD 4.0.1, you need to run the new installation program for the ZfD Server and the ZfD Middle Tier Server. For more information, see “Upgrading the ZfD Server Software” on page 79 and “Upgrading the ZfD Middle Tier Server Software” on page 80. Special procedures must be followed to upgrade the ZfD 4 Management Agent. For more information, see “Upgrading the ZfD Management Agent” on page 81.

ZfD 4 Support Pack 1

ZfD 4 Support Pack 1 only contains updates for all components contained in the ZENworks for Desktops 4 product. The purpose of this Support Pack is to provide a bundle of fixes that have all been tested together. These files have undergone component testing, core OS testing, and integration testing with other Novell products.

Do not install individual files from the Support Pack.

Install the NetWare® Support Pack before installing other Novell product Support Packs like GroupWise® and ZENworks for Servers. These Support Packs are included with the Consolidated Support Pack, or they can be downloaded individually from <http://support.novell.com/tools/csp> (<http://support.novell.com/tools/csp>).

For information on the latest Consolidated Support Pack issues, see TID 10077724 at the [Novell Support Web site](http://support.novell.com/search/kb_index.htm) (http://support.novell.com/search/kb_index.htm).

To order the Support Pack CD, go to the [Consolidated Support Pack ordering information page](http://support.novell.com/tools/csp/orderinfo.html) (<http://support.novell.com/tools/csp/orderinfo.html>).

If you are installing ZfD 4 SP1 from Consolidated Support Pack (CSP 9), download and install CSP 9 and copy the self-extracting file for ZfD 4 SP1 to a temporary directory on a server, then expand the self-extracting archive at the root directory.

If you are installing ZfD 4 SP1 from a Novell Support Web site, follow the prompts on the Web site to download the Support Pack and copy it to a temporary directory on a server and expand the self-extracting archive at the root directory.

When you have met the hardware and software requirements and prerequisites for installation, use the instructions in this document to install ZfD software on a NetWare or Windows server.

ZfD 4.0.1

To upgrade, run the ZfD Server installation and the ZfD Middle Tier Server installation programs in ZfD 4.0.1. The updated software in ZfD 4.0.1 is identical to the software in ZfD SP1 except for two features:

- ◆ ZfD 4 SP1 does not support being installed in a NetWare clustering environment, but ZfD 4.0.1 can be installed in a NetWare clustering environment. For more information, see the *ZENworks for Desktops 4.0.1 Clustering Guide*.
- ◆ ZfD 4 SP1 does not support Novell DeFrame™ as part of ZfD Application Management to distribute thin-client applications, but ZfD 4.0.1 does support DeFrame. For more information, see the *ZENworks for Desktops 4.0.1 DeFrame Installation and Administration Guide*.

Preparing for the Upgrade

Before you can perform the upgrade from ZfD 4 to ZfD 4 SP1/4.0.1, you need to prepare the workstations and servers where you will install the new software. This section contains information and references to the information you will need to prepare for the upgrade.

- ◆ “Meeting the Upgrade Requirements for Server Software” on page 78
- ◆ “Stopping ConsoleOne and Java Processes Before Installation” on page 78

Meeting the Upgrade Requirements for Server Software

Before you upgrade to ZfD 4 SP1/4.0.1, make sure that the servers where you plan to install the new version of the ZfD Middle Tier Server software and the ZfD Server software meet the requirements for ZfD 4 SP1/4.0.1. For more information, see “Preparing for Installation” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

Stopping ConsoleOne and Java Processes Before Installation

Before you install the ZfD Server or ZfD Middle Tier Server components on a NetWare server, you need to exit ConsoleOne® sessions and stop the Java components running on that server. If they are running, these processes will hold open a number of files that will not be updated because they are in use.

To stop Java components on the NetWare server, enter the following commands at the server console:

```
zfdstop
java -killall
java -exit
```

Upgrading the ZfD Server Software

Do not install the ZfD 4 SP1 Inventory, Database, or Remote Management components over a ZfD 4.0.1 installation. ZfD 4 SP1 includes defect fixes intended for ZfD version 4.0 only. The ZfD 4 SP1 installation will not work over a ZfD 4.0.1 installation.

The ZfD Server installation program for ZfD 4 SP1 does not support installing ZfD Server software to a NetWare cluster server. However, this functionality is supported in the ZfD Server installation program for ZfD 4.0.1. For more information about using ZENworks for Desktops in a clustering environment, see the *ZENworks for Desktops 4.0.1 Clustering Guide* at the [ZENworks for Desktops documentation Web site](http://www.novell.com/documentation/lg/zdpr/index.html) (<http://www.novell.com/documentation/lg/zdpr/index.html>).

- 1** At a Windows 2000 or Windows XP workstation, browse to the location where you downloaded the ZfD 4 Support Pack 1, or insert the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD* and run the winsetup.exe program to begin the installation.
- 2** Click the language you want to use for the installation. A window with general installation options will be displayed.
- 3** Choose whether to extend the schema for ZfD 4 SP1 before installing, or install with the option of extending the schema during the installation.
 - 3a** To extend the schema first, select Schema Extensions to display a list of the trees where you are authenticated. Select a tree from this list where you want to add ZfD 4 SP1 schema extensions, click OK, then click Yes.
 - 3b** If you want to extend the schema during the installation, click Installation to display a window with more installation options.
- 4** Click Install Server to launch the ZfD Server installation program.
- 5** Follow the prompts during the ZfD Server installation program to upgrade the ZfD Server files to SP1.

NOTE: No ZfD 4 SP1 components will be installed unless you are installing SP1 over a previous installation of ZfD 4.

If you attempt to install ZfD 4 SP1 after a previous installation of ZfD 4.0.1, the SP1 version of the Workstation Inventory, Remote Management, and Sybase database components will not be installed.

Windows 2000 Support in a NetWare 6 Configuration

ZfD 4 SP1 and ZfD 4.0.1 include support for a configuration where ZfD Middle Tier server software is installed on Windows 2000 with ZfD Server software on NetWare 6.

For more information, see the *ZENworks for Desktops 4.0.1 Installation Guide* at the [ZENworks for Desktops Documentation Web site](http://www.novell.com/documentation/lg/zdpr/index.html). (<http://www.novell.com/documentation/lg/zdpr/index.html>)

Restarting the Inventory Components After Installation

If you install Workstation Inventory and the Sybase* database on a NetWare Server as part of the ZfD Server installation, enter the following commands at the server console after the installation to restart the inventory service and the database:

```
mgmt dbs
start inv
```

Referencing the New ODBC Drivers for Application Management Reporting

ZfD 4 SP1 and ZfD 4.0.1 include a new ODBC driver (dbodbc7.dll) for use with Sybase databases. The updated ODBC driver is installed by the ZfD Management Agent installation program (see [“Upgrading the ZfD Management Agent” on page 81](#)).

If you’ve created Sybase databases for use with Application Management reporting, you need to modify the ODBC driver information associated with the database’s eDirectory object. This ensures that Application Launcher uses the correct ODBC driver to access the database.

To modify the ODBC driver information:

- 1 In ConsoleOne, right-click the ZENworks Database object > click Properties.
- 2 Click the ODBC Driver Information tab.
- 3 In the Driver File Name field, delete the driver file name.

If desired, you can enter dbodbc7.dll (for ZfD 4 SP1 or ZfD 4.0.1). However, if you leave the field empty, Application Launcher automatically detects the installed driver (either dbodbc6.dll or dbodbc7.dll). This enables users whose workstations have not yet been updated to continue to log application events to the database.

- 4 Click OK to save the ODBC driver information.

Upgrading the ZfD Middle Tier Server Software

- 1 At a Windows 2000 or Windows XP workstation, browse to the location where you downloaded the ZfD 4 Support Pack 1, or insert the *ZENworks for Desktops Program* CD or the *ZENworks 6 Desktop Management Program* CD and run the winsetup.exe program to begin the installation.
- 2 Click the language you want to use for the installation. A window with general installation options will be displayed.
- 3 Click Install ZfD Middle Tier Server to launch the Middle Tier Server installation program.
- 4 Follow the prompts during the Middle Tier Server installation program to upgrade the ZfD Middle Tier Server files to ZfD 4 SP1 or ZfD 4.0.1.

NOTE: If you install NetWare 6 SP3 to a server where a previous installation of ZfD 4 already exists, the NetWare install will not copy new NetStorage file to that server. The ZfD 4 SP1 Middle Tier Server installation installs the current ZfD 4 SP1 files to the server.

- 5 If you have users who are accessing the myapps.html page on the Middle Tier Server through their Web browser, review the information below. Otherwise, continue with the next section, [“Upgrading the ZfD Management Agent” on page 81](#).

ZfD 4 SP1 and ZfD 4.0.1 includes a new component, the ZfD installation manager. The installation manager controls the installation of the NAL plug-in files used with the myapps.html page. When a user accesses the myapps.html page on the upgraded Middle Tier Server, the installation manager is copied to and registered on the workstation. If a Windows NT/2000/XP user has restricted rights on the workstation, the operation will fail and the user will receive a plug-in install error.

There are several ways you can resolve this issue:

- ◆ **Perform an administrator installation:** Log in to the workstation through an account with administrator rights and then access the myapps.html page on the upgraded Middle Tier Server to install the new files.

- ◆ **Continue to use the ZfD 4 NAL plug-in files:** The ZfD 4 NAL plug-in files will continue to work with your upgraded ZfD Server and ZfD Middle Tier Server. Therefore, you can instruct users to access the older ZfD 4 myapps.html page on their workstation (c:\program files\novell\zenworks\nls\english\myapps.html) or you can replace the new myapps.html page on the upgraded Middle Tier Server with the old ZfD 4 myapps.html file. The ZfD 4 myapps.html page does not reference the new installation manager. Therefore, neither the ZfD installation manager or any of the new ZfD 4 SP1/4.0.1 NAL plug-in files will be installed.

This issue will also affect users who are running the ZfD Management Agent (not just the NAL plug-in) on their workstation. If you upgrade a restricted workstation to the ZfD 4 SP1/4.0.1 Management Agent and then the user accesses the myapps.html file on the upgraded Middle Tier Server, the new myapps.html page will initiate the download and registration of the ZfD installation manager. The operation will fail and users will be unable to access their applications through the myapps.html page.

For more information about the ZfD installation manager and the NAL plug-in, see “[Installing the Application Launcher Plug-In](#)” in “[Installing and Starting Novell Application Launcher](#)” in “[Application Management](#)” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Upgrading the ZfD Management Agent

After you have upgraded the ZfD Server software and the ZfD Middle Tier Server software, you need to upgrade to the ZfD 4 SP1/4.0.1 Management Agent. If you installed the original version of the ZfD Agent, the Windows Installer package should have been installed on the workstations. For more information, see “[Upgrading the Windows Installer \(MSI\) on Each Workstation Prior to a New Installation](#)” in “[Installing](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

The version of the ZfD Management Agent that shipped with ZfD 4 (setup.exe) is no longer supported. You need to replace the older version of the agent with the version of the agent shipping with ZfD 4 SP1 or ZfD 4.0.1 (zfdagent.msi). ZfD 4 SP1 is included as part of Consolidated Support Pack (CSP) 9, and can be downloaded individually from the [CSP download Web site \(http://support.novell.com/tools/csp\)](http://support.novell.com/tools/csp). The updated ZfD Agent MSI (ZfD 4 SP1/4.0.1) can also be downloaded from the [Novell Product Downloads Web site \(http://download.novell.com\)](http://download.novell.com).

When you install zfdagent.msi over setup.exe, the newer version of the ZfD Management Agent uninstalls the older version and runs its own installation. As the ZfD Management agent is being upgraded, the installation program attempts to keep all of the registry settings made by the original installation except the LOGIN_PASSIVE_MODE property and the EDITABLE_MT_ADDRESS property, which are kept in a restricted area of the registry. Make sure that the values for these two properties are set the way you want them when you are upgrading to ZfD 4 SP1/4.0.1. You can add these properties and the appropriate values on the command line if you are installing from the command line (that is, a manual installation). For example:

```
msiexec/i zfdagent.msi LOGIN_PASSIVE_MODE=0 EDITABLE_MT_ADDRESS=1
```

For more information about MSI command line syntax, see the [Windows Installer Command Line Options \(http://www.microsoft.com/windows2000/en/professional/help/default.asp?url=/windows2000/en/professional/help/sag_WinInstall_Command_Line_Syntax.htm\)](http://www.microsoft.com/windows2000/en/professional/help/default.asp?url=/windows2000/en/professional/help/sag_WinInstall_Command_Line_Syntax.htm) page.

If you are distributing an MSI Application object from Application Launcher, you can configure these properties and the values you want when you configure the object. For more information, see “[Creating and Configuring the MSI Application Object](#)” in “[Using the Novell Application Launcher to Distribute and Install the ZfD Management Agent](#)” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

This section includes information that you need to know for the following scenarios:

- ◆ “Upgrading the ZfD Management Agent if Support Patches Have Been Applied” on page 82
- ◆ “Rolling Back the ZfD Management Agent to an Earlier Version” on page 82

For more information about the ZfD Agent, see “Understanding the ZfD Management Agent” in the *ZENworks for Desktops 4.0.1 Administration Guide*.

Upgrading the ZfD Management Agent if Support Patches Have Been Applied

If you have downloaded and applied interim patches from Novell Support for the ZfD 4 Management Agent (setup.exe), you need to upgrade the ZfD Management Agent with either an interim patch or with an .aot file that prepares the workstation for the latest ZfD Agent. The SP1/4.0.1 upgrade detects that the agent is already installed on the workstation and then silently uninstalls it. After the uninstall is performed, the new installation (copying files, writing to the Windows registry) is executed.

If your Windows NT/2000/XP or Windows 98 workstations have the original ZfD 4 Management Agent (setup.exe, August 13, 2002) installed, or if you installed the original release of the zfdagent.msi (January 8, 2003), or if you have installed Patch 4 (zfd4patch4a.exe) to either of these versions, you can apply ZfD Agent 4 SP1/4.0.1 directly to those workstations.

If you applied Support Patch 1 (zfd4patch1.exe, 2 January 2003), Patch 2 (zfd4patch2a, 24 January 2003), or Patch 3 (zfd4patch3.exe, 24 January 2003) to workstations that had the original setup.exe installed, you must install zfdagntpatchfix.aot before you can apply 4 SP1/4.0.1.

You can download zfdagntpatchfix.aot from [TID 29652811 \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/2965281.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/2965281.htm), available from the Novell Support Web site.

Upgrading the Agent to ZENworks for Desktops 4.0.1 IR4

If you want to upgrade the ZfD 4.0.1 Management Agent installed on a Windows 98 workstation to a later version (for example ZENworks for Desktops 4.0.1 IR4), you must either uninstall the agent before upgrading or use the REINSTALLMODE property either on the command line (that is, using the /i attribute) or in the properties of the MSI Application object you intend to distribute. You must specify the value of **vamus** to force the install to always overwrite any files currently found on the workstation.

Syntax: /i REINSTALLMODE=vamus

Rolling Back the ZfD Management Agent to an Earlier Version

If you want to revert from the ZfD Management Agent installed on a workstation to an earlier version or patch, you must use the REINSTALLMODE property on the command line (that is, using the /i attribute) or in the properties of the MSI Application object you intend to distribute. You must specify the value of **vamus** to force the install to always overwrite any files currently found on the workstation. If you do not specify this value, the default value, **omus** (replace files only if older) will be used.

For more information about configuring the distribution properties of the MSI Application object, see “Creating and Configuring the MSI Application Object” in “Using the Novell Application Launcher to Distribute and Install the ZfD Management Agent” in the *ZENworks for Desktops 4.0.1 Installation Guide*.

NOTE: If you attempt to install setup.exe over any previous installation of zfdagent.msi, the installation will appear to proceed, but the installation will not actually be completed. We recommend that you do not try to install setup.exe over zfdagent.msi as a rollback option.

5

Upgrading from DeFrame 2.01 to ZfD 4.01 DeFrame

This section provides information to help you deploy Novell® ZENworks® for Desktops (ZfD) 4.0.1 DeFrame™ in a network environment where Novell DeFrame 2.01 is already installed and functioning. DeFrame 2.01 is the version included with Novell ZENworks OnDemand Services™ 2.

Refer to the following sections for upgrade information and instructions:

- ◆ “Upgrade Order” on page 83
- ◆ “Software Requirements” on page 84
- ◆ “Upgrading Workstations” on page 86
- ◆ “Upgrading Terminal Servers” on page 89

For information about what has changed in this DeFrame version, see “What’s New in Application Management for ZfD 4 SP1/4.0.1” on page 12.

Upgrade Order

The required upgrade order is listed below. In some cases, the order can be altered as indicated.

1. **ZfD Server, Middle-Tier Server, and User Workstations:** Upgrade your ZfD 3.2 software to ZfD 4.0.1. The ZfD server installation also updates the DeFrame snap-ins for ConsoleOne; therefore, we recommend that you back up the ConsoleOne directory that has the DeFrame 2.01 snap-ins so that you can continue to administer DeFrame 2.01 objects between the time you update the ZfD server and the time you update DeFrame.

For instructions on upgrading ZfD 3.2 to ZfD 4.0.1, see [Chapter 3, “Upgrading from ZfD 3.x to ZfD 4.x,”](#) on page 39.

2. **DeFrame User Workstations:** The DeFrame workstation software includes the DeFrame client, the ICA Web client, the RDP Web client, and the DeFrame Web browser plug-in. The ZfD 4.0.1 DeFrame workstation software is compatible with the DeFrame 2.01 terminal server software, which means that users will continue to have access to their DeFrame applications during the time between their workstation upgrade and your terminal servers upgrade.

Alternate Order 1: You can upgrade the DeFrame workstation software before you upgrade the ZfD software. However, when you upgrade the ZfD software first, you can use Novell Application Launcher™ and the predefined OnDemand Client Application object to distribute the workstation software. You can also do this with ZfD 3.2 Novell Application Launcher, but you will need to create the Application object.

Alternate Order 2: You can upgrade the DeFrame workstation software at the same time you upgrade the DeFrame terminal servers. You might want to consider this upgrade order if you

are using ZENworks OnDemand Services 2. OnDemand Services 2 must be upgraded at the same time as the DeFrame terminal servers. Therefore, by waiting to upgrade the workstation software until you upgrade OnDemand Services, you can use the new OnDemand Services portal to automatically distribute the workstation software.

For workstation software upgrade instructions, see [“Upgrading Workstations” on page 86](#).

3. **DeFrame Terminal Servers:** Upgrading DeFrame terminal servers requires you to 1) establish the ZfD Dynamic Local User (DLU) policies required for terminal server user account management, 2) upgrade the DeFrame eDirectory schema and objects, and 3) install the new DeFrame terminal server software. For instructions, see [“Upgrading Terminal Servers” on page 89](#).

If you are using ZENworks OnDemand Services 2 for application provisioning, you need to upgrade the OnDemand Services 2 portal to ZENworks 6 Web Self-Service at the same time as your DeFrame terminal servers. Otherwise, load balancing will stop working.

You can maintain your current portal while you upgrade so that users will continue to have access to applications while you prepare your new portal. When your new portal is ready, you can upgrade your DeFrame terminal servers and switch over to the new portal. For instructions about upgrading your OnDemand Services portal software, see the Web Self-Service upgrade documentation at the [ZENworks 6 documentation Web site \(http://www.novell.com/documentation/lg/zenworks6\)](http://www.novell.com/documentation/lg/zenworks6).

Software Requirements

Because DeFrame is now a component of ZfD 4.0.1, some of the software requirements are slightly different. You should read the following sections and ensure that your environment meets the requirements:

- ◆ [“Terminal Server Requirements” on page 84](#)
- ◆ [“Client Workstation Requirements” on page 85](#)
- ◆ [“Directory Service Requirements” on page 86](#)
- ◆ [“Novell iFolder Requirements \(Optional\)” on page 86](#)

Terminal Server Requirements

The following are the minimum Windows terminal server requirements:

Item	Minimum Requirement
Operating System	Windows 2000 Server with Service Pack 2 (latest service pack recommended).
Windows Terminal Services	Version supported by the Windows 2000 Server operating system.
Novell Client™	Novell Client 4.83 (or later) for Windows NT/2000.

Item	Minimum Requirement
ZENworks for Desktops Management Agent	ZENworks for Desktops 4.0.1. You can install all Management Agent components, but DeFrame support requires only the Application Management and Workstation Management components. The ZfD Management Agent installation program, which you use to install the Application Management and Workstation Management components, also installs the DeFrame software.
Internet Explorer	Internet Explorer 5.5 with Service Pack 2 (latest service pack recommended). DeFrame does not actually require IE 5.5, but the ZfD Management Agent installation program does.
Citrix MetaFrame* (Optional)	If you use Citrix MetaFrame, the minimum requirements are: <ul style="list-style-type: none"> ◆ Citrix MetaFrame 1.8 with Service Pack 3. The latest service pack and hotfixes are recommended. You can download them at the Citrix Web site (http://www.citrix.com). <p style="text-align: center;">or</p> <ul style="list-style-type: none"> ◆ Citrix MetaFrame XP Feature Release 2 (FR2). The latest service pack and hotfixes are recommended. You can download them at the Citrix Web site (http://www.citrix.com).

Client Workstation Requirements

The following are the minimum requirements for a workstation that will run a thin-client application from a DeFrame terminal server.

Item	Minimum Requirement
Operating System	The minimum requirement is the same as for ZENworks for Desktops 4.0.1 (see “ ZfD 4.x Software Requirements ” on page 44): <ul style="list-style-type: none"> ◆ Windows 98 SE ◆ Windows NT 4.0 Workstation with SP6a ◆ Windows 2000 Professional with SP2 ◆ Windows XP Professional
Novell Client	The minimum requirement is the same as for ZENworks for Desktops 4.0.1: <ul style="list-style-type: none"> ◆ Novell Client for Windows 95/98, version 3.31 or later ◆ Novell Client for Windows NT/2000/XP, version 4.81 or later. <p>NOTE: If you are using a ZfD Middle Tier Server, the Novell Client is not required.</p>

Item	Minimum Requirement
ZENworks for Desktops Management Agent	ZENworks for Desktops 4.0.1. You can install all Management Agent components, but DeFrame support requires only the Application Management component. NOTE: The Management Agent is not required if the user will launch DeFrame thin-client applications only from the ZENworks OnDemand Services portal. The OnDemand Services portal is part of the ZENworks 6 suite. The Management Agent is only required 1) to launch DeFrame thin-client applications from Novell Application Launcher or 2) to launch ZfD desktop applications from the OnDemand Services portal.

Directory Service Requirements

DeFrame uses Novell eDirectory™ as its directory service. The ZfD Server installation program extends the eDirectory schema to support DeFrame objects and installs the DeFrame snap-in for ConsoleOne.

DeFrame accesses eDirectory through the Novell Client, which must be installed on each terminal server (see “[Terminal Server Requirements](#)” on page 84). You do not need to have eDirectory installed on your terminal servers.

Item	Minimum Requirement
eDirectory	Version 8.5. As with ZfD, version 8.6.2 or later is recommended.
ConsoleOne	Version 1.3.2. As with ZfD, version 1.3.5 or later (included on the <i>ZENworks for Desktops Companion</i> CD or the <i>ZENworks 6 Companion 1</i> CD) is recommended.

Novell iFolder Requirements (Optional)

You can use Novell iFolder® to enable users to save files from a thin-client application to one or more network storage locations. DeFrame makes the storage locations available when a user launches an application and removes the user’s access when he or she exits the application. If you want the storage locations available to users even when they are not using DeFrame thin-client applications, you can install the standard iFolder client to their workstations.

DeFrame supports iFolder 1.x and iFolder 2.x

Upgrading Workstations

The DeFrame workstation software consists of the following components:

- ◆ **DeFrame Client:** Required to launch ZfD DeFrame thin-client applications from the OnDemand Services Launch Item gadget and Novell Application Launcher.
- ◆ **ICA Client:** Required to launch ZfD DeFrame thin-client applications in an ICA client session.
- ◆ **RDP Client:** Required to launch ZfD DeFrame thin-client applications in an RDP client session.

- ◆ **NAL Plug-in:** Required to launch ZfD desktop applications from the OnDemand Services Launch Item gadget. The UsageClient files are also included with the plug-in. The NAL plug-in is installed but will only be used if you install ZENworks 6 Web Self-Service.

There are several ways to install the DeFrame software to a user's workstation:

- ◆ Use Novell Application Launcher to install the workstation software. For instructions, see [“Using Novell Application Launcher to Install the Workstation Software” on page 87](#).
- ◆ If you have already installed ZENworks 6 Web Self-Service, use the OnDemand Services Launch Item gadget. The first time a user launches a DeFrame thin-client application from the Launch Item gadget, the software is installed to his or her workstation. For instructions, see [“Using the OnDemand Services Launch Item Gadget to Install the Workstation Software” on page 88](#).
- ◆ Run the Workstation installation program on the workstation. The installation program will need to be run from each workstation that requires the software, and the user who installs the software must have installation rights on the workstation. For instructions, see [“Manually Installing the Workstation Software” on page 88](#).

Using Novell Application Launcher to Install the Workstation Software

The steps you must complete to distribute the workstation software through Novell Application Launcher depend on whether you are using ZfD 4.0.1 or ZfD 3.2.

- ◆ [“ZfD 4.0.1” on page 87](#)
- ◆ [“ZfD 3.2” on page 88](#)

ZfD 4.0.1

During installation of the ZfD 4.0.1 Server software to a network server, the installation program created an OnDemand Client Application object in the same eDirectory container as the ZfD Server object.

The OnDemand Client Application object is configured to run the Workstation setup program one time. The setup program requires user interaction to confirm installation of the various clients (DeFrame client, ICA client, RDP client, and NAL plug-in); users will not need to provide configuration information such as installation paths. You might want to manually run the setup program one time to see how users will need to interact.

The following are examples of how you can use the OnDemand Client Application object:

- ◆ You can directly associate the OnDemand Client Application object with users, in which case they will need to launch the Application object to run the setup program. For information about associating Application objects to users, see [“Distributing Applications to Users and Workstations” in “Application Management” in the *ZENworks for Desktops 4.0.1 Administration Guide*](#) guide.
- ◆ You can assign the OnDemand Client Application object as an application dependency for DeFrame thin-client Application objects (or any type of Application objects if you want to ensure that the files are installed). By making the OnDemand Client Application object a dependency for the thin-client applications, the setup program will run the first time a user launches one of the thin-client applications. For information about setting up application dependencies, see [“Configuring Application Dependencies and Chains” in “Application Management” in the *ZENworks for Desktops 4.0.1 Administration Guide*](#) guide.

If you have not yet installed ZfD 4.0.1, you can create an OnDemand Client Application object to distribute the workstation software. To do so:

- 1** Locate the setup.exe file in one of the following locations:
 - ◆ The \DFWorkstationSetup directory on the *ZENworks for Desktops 4.0.1 Companion CD*.
 - ◆ The \WorkstationSetup directory on the *ZENworks 6 Web Self-Service Program CD*.
- 2** Copy the file to one of the following locations on your ZfD 3.2 server:
 - ◆ \zenworks\ondemand\setup
 - ◆ \public\zenworks\thinInt\setup

You will need to create the ondemand\setup directories or the thinInt\setup directories.

NOTE: You do not need to use these directories. These are the directories in which the setup.exe file will be installed when you upgrade the server to ZfD 4.0.1. However, you can copy setup.exe to any network directory to which the user has Read and File Scan rights (or the equivalent Windows rights).

- 3** Locate the ondemandclient.aot file in one of the following locations:
 - ◆ The \zenworks\aot directory on the *ZENworks for Desktops 4.0.1 Companion CD*.
 - ◆ The \zenworks\aot directory on the *ZENworks 6 Desktop Management Program CD*.
- 4** Use the ondemandclient.aot file to create an OnDemand Client Application object in ConsoleOne. Make sure you:
 - ◆ Modify the Source Path field (or SOURCE_PATH macro) to point to the setup.exe program.
 - ◆ Associate the Application object with the appropriate users.

By default, the OnDemand Client Application object is configured to run the Workstation setup program one time. The setup program requires user interaction to confirm installation of the various clients (DeFrame client, ICA client, RDP client, and NAL plug-in); users will not need to provide configuration information such as installation paths. You might want to manually run the setup program one time to see how users will need to interact.

Using the OnDemand Services Launch Item Gadget to Install the Workstation Software

If you have already installed ZENworks 6 Web Self-Service, the Launch Item gadget automatically installs the workstation software the first time a user launches a thin-client application. For more information, see the Web Self-Service documentation at the [ZENworks 6 documentation Web site \(http://www.novell.com/documentation/lg/zenworks6\)](http://www.novell.com/documentation/lg/zenworks6).

Manually Installing the Workstation Software

- 1** Make sure the user has the rights required to install software to his or her workstation. For Windows 2000/XP workstations, the user needs to belong to the Administrator group.
- 2** Run the setup.exe program from one of the following locations:
 - ◆ The \DFWorkstationSetup directory on the *ZENworks for Desktops 4.0.1 Companion CD*.

- ◆ The \WorkstationSetup directory on the *ZENworks 6 Web Self-Service Program* CD.
- ◆ The \zenworks\ondemand\setup directory on a ZfD 4.0.1 server.
- ◆ The \public\zenworks\thinclnt\setup directory on a ZfD 4.0.1 server.

Upgrading Terminal Servers

To upgrade your DeFrame terminal servers, complete the tasks in the following sections:

- ◆ [“Setting Up Terminal Server User Accounts” on page 89](#)
- ◆ [“Upgrading the DeFrame eDirectory Schema and Objects” on page 96](#)
- ◆ [“Upgrading Terminal Server Software” on page 97](#)

Setting Up Terminal Server User Accounts

ZfD 4.0.1 DeFrame no longer includes DeFrame Dynamic User (DDU) functionality for creating and managing local user accounts and roaming profiles. If you have been using DDU, you will need to use ZfD Workstation Manager and Dynamic Local User (DLU) policies. For instructions, see [“Migrating From DDU to ZfD DLU Policies” on page 89](#).

If you have been using DLU to manage terminal server user accounts and profiles, changes made to the DLU policies require you to reconfigure the policies you’ve been using to manage terminal server accounts. For instructions, see [“Migrating ZfD 3.2 DLU Policies to ZfD 4.0.1 DLU Policies” on page 95](#)

Migrating From DDU to ZfD DLU Policies

Complete the tasks in the following sections to use ZfD Workstation Manager and Dynamic Local User (DLU) policies to manage user accounts or profiles on your DeFrame terminal servers.

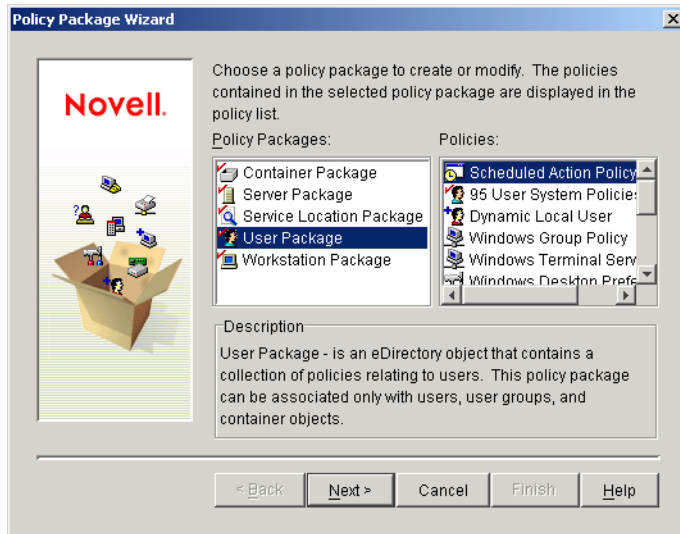
- ◆ [“Creating a User Policy Package” on page 89](#)
- ◆ [“Configuring Dynamic Local User Accounts” on page 92](#)
- ◆ [“Configuring Roaming User Profiles” on page 93](#)
- ◆ [“Associating the User Package with Users” on page 95](#)

IMPORTANT: After completing these tasks to configure DLU, DDU will continue to be used until you upgrade the DeFrame software and ZfD Management Agent on the terminal server (see [“Upgrading Terminal Server Software” on page 97](#)). At that point, Workstation Manager and the DLU policies will be used.

Creating a User Policy Package

You use the Windows 2000 Terminal Server policies, available in a User Policy package, to manage dynamic local user accounts and roaming user profiles. You can use an existing User Policy package, or you can create a new User Policy packages specifically for Windows 2000 Terminal Server policies. If you already have a User Policy package that you want to use, skip to [“Configuring Dynamic Local User Accounts” on page 92](#). Otherwise, complete the following steps to create a User Policy package:

- 1 In ConsoleOne, right-click the container where you want to create the User Policy Package object > click New > click Policy Package to display the Policy Package Wizard.



2 In the Policy Packages list, select User Package > click Next.

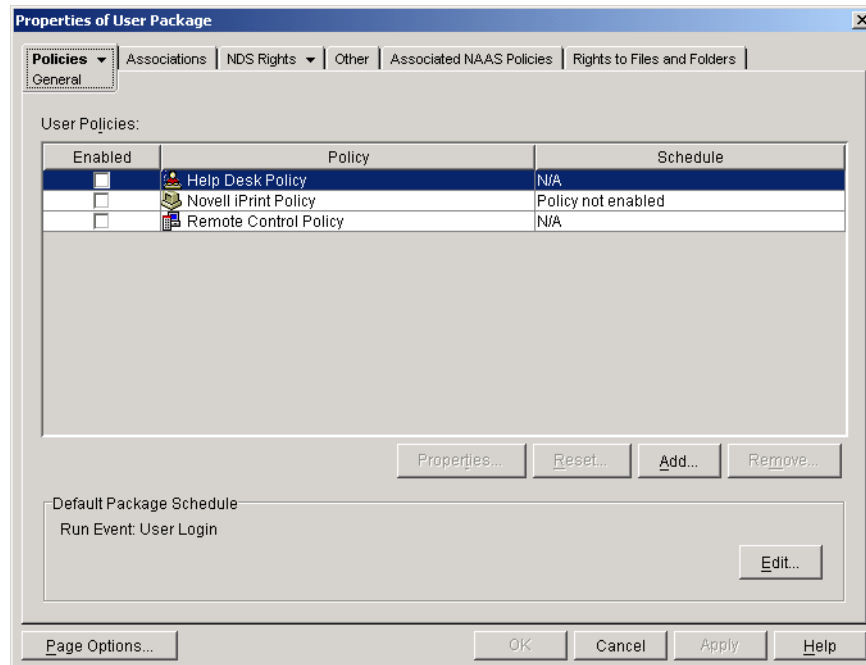


The package object's name must be unique within the container where it will be created. If you plan to create multiple User Policy packages, you might want to use a more descriptive name, such as Win2000 TS User Package. Or, you might want to create the policy in the same container where the policy's users reside.

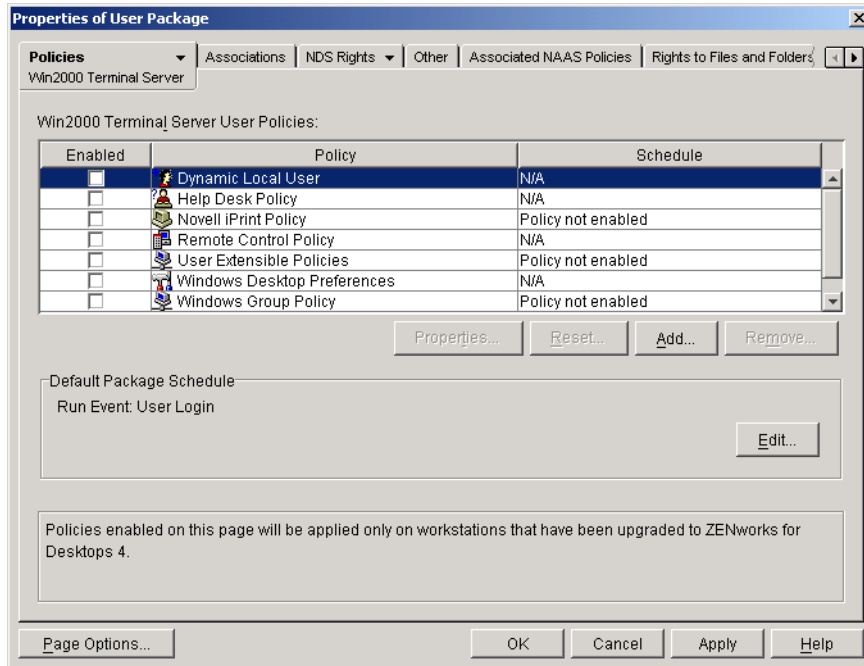
3 If necessary, change the package's object name and the container where it will be created > click Next.



- 4 In the Summary page, select Define Additional Properties > click Finish to create the User Package object and display the object's property pages.



- 5 Click the Policies tab > Win2000 Terminal Server to display the Win2000 Terminal Server policies page.

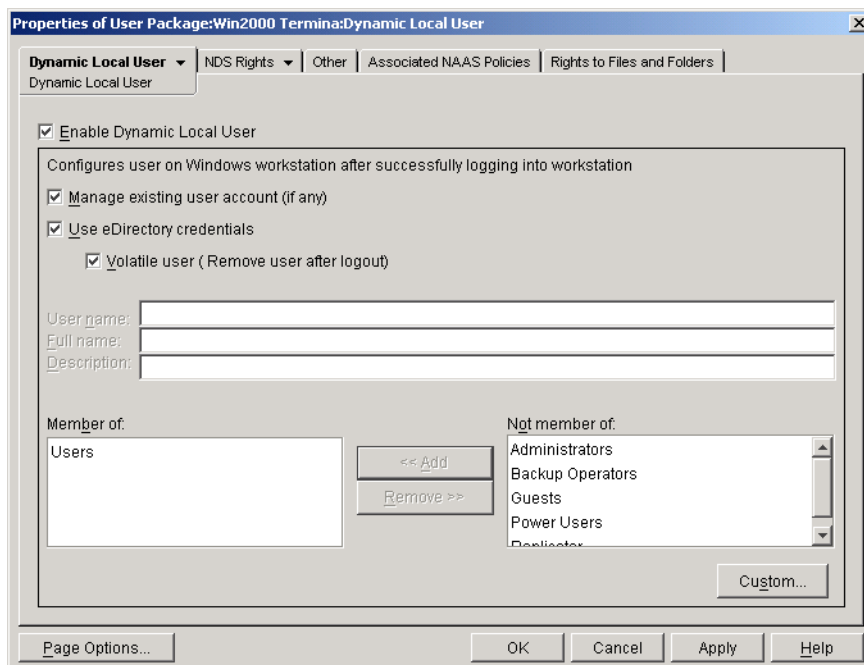


6 Continue with the next section, [Configuring Dynamic Local User Accounts](#).

Configuring Dynamic Local User Accounts

You use the Dynamic Local User (DLU) policy to configure how Workstation Manager creates user accounts on the terminal server.

- 1** In the Windows 2000 Terminal Server Policies page, click the check box to the left of the Dynamic Local User Policy to enable the policy > click Properties to display the Dynamic Local Users property page.



2 Configure the following fields:

Enable Dynamic Local User: Select this option to enable Workstation Manager to dynamically create user accounts.

Manage Existing User Account (if any): If you want Workstation Manager to apply the DLU policy to existing user accounts, select this option. Otherwise, the DLU policy will apply only to new user accounts.

Use eDirectory Credentials: Select this option to use eDirectory usernames and passwords when creating user accounts. With the user's eDirectory and Windows credentials synchronized and contextless login configured (see [“Upgrading Terminal Server Software” on page 97](#)), the user will not be prompted for any credentials when launching a DeFrame thin-client application from a terminal server.

Volatile User (Remove User after Logout): Select this option if you want a user's account removed after the user exits the thin-client application and the session is closed. All user account information is removed. If you want to retain user profiles, you can configure roaming profiles. Instructions are provided in the next section, [Configuring Roaming User Profiles](#).

Member Of/Not Member Of: In the Not Member Of list, select the group (or groups) that you want users made members of > click Add. Group membership determines a user's access rights on the terminal server. If none of the groups listed provides the exact file system rights you want assigned to user accounts, you can use the File Rights page (Dynamic Local User tab > File Rights page).

3 Click OK to save your changes and close the Dynamic Local Users property page.

4 Continue with the next section, [Configuring Roaming User Profiles](#).

Configuring Roaming User Profiles

There are two policies you can use to configure roaming user profiles:

- ◆ **Windows Terminal Server Policy:** The Windows Terminal Server policy enables you to specify a network storage location for roaming user profiles. There are several advantages to using this policy: 1) It is applied only when a user logs into a terminal server, either through a remote or local session 2) It contains other configuration settings you can use to control client sessions.

Using this policy for user profiles is the same as configuring the Terminal Services Profile properties page for a user account on a Windows terminal server.

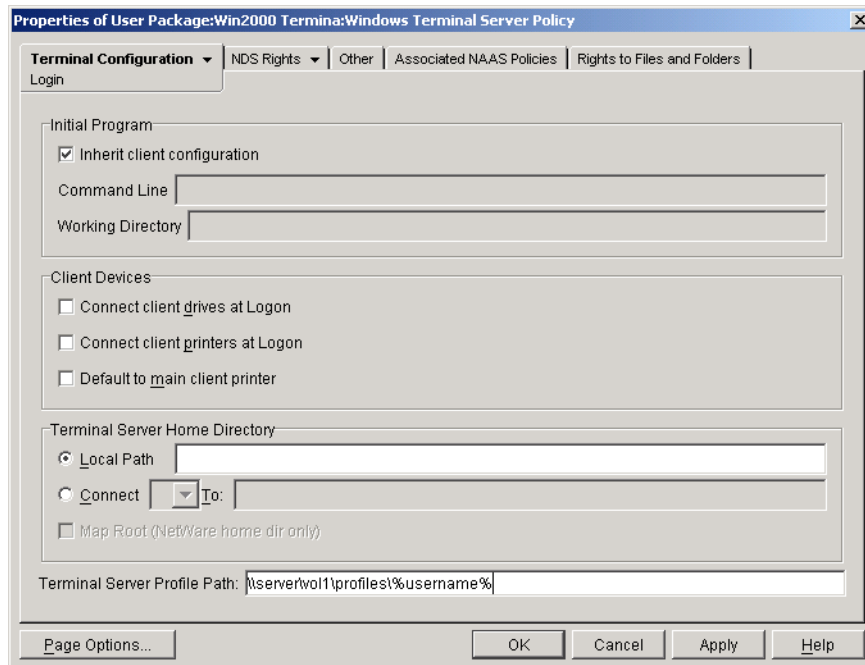
- ◆ **Windows Desktop Preferences Policy:** The Windows Desktop Preferences policy also enables you to specify a network storage location for roaming user profiles. However, it will be applied whenever a user logs into a workstation or terminal server, so you should only use it if you want the same user profile used in both situations.

In general, we recommend that you use the Windows Terminal Server policy to configure the roaming profile settings. If you configure roaming profile settings on both policies, the settings on the Windows Terminal Server policy are used unless you select the Override Terminal Server Profile setting on the Windows Desktop Preferences policy.

The following steps explain how to configure the Windows Terminal Server policy. If you want to use the Windows Desktop Preferences policy, see [“Setting Up User Package Policies”](#) in [“Creating Policy Packages and Setting Up Policies”](#) in [“Workstation Management”](#) in the [ZENworks for Desktops 4.0.1 Administration Guide](#) guide.

To configure the Windows Terminal Server policy:

- 1 On the Windows 2000 Terminal Server Policies page, click the check box to the left of the Windows Terminal Server Policy to enable the policy > click Properties to display the policy's property pages.
- 2 Click the Terminal Configuration tab > click Login to display the Login page.



- 3 Enable the Inherit Client Configuration option.

IMPORTANT: If you don't enable this option, when a user launches a DeFrame thin-client application, the policy will cause the session to open to the terminal server's desktop rather than the launched application.
- 4 In the Terminal Server Profile Path field, enter the path to the network location where you want profiles specified. Keep in mind the following:
 - ◆ Make sure you use the %username% variable to ensure that each user's profile is saved to a separate directory. For example:


```
\\server\vol1\profiles\%username%
```

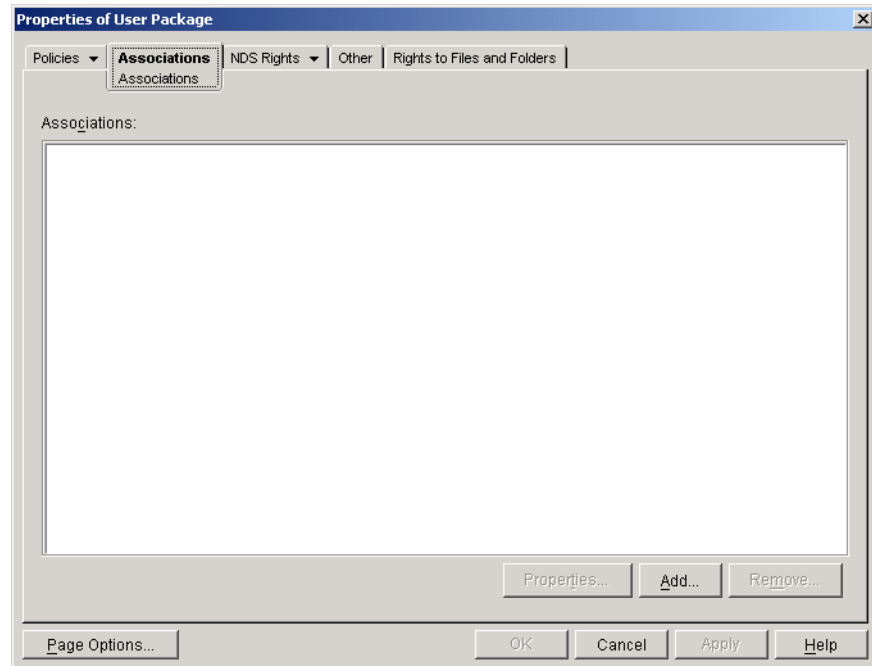
 Using the above path, the profile for user jsmith would be saved to the following location:


```
\\server\vol1\profiles\jsmith
```
 - ◆ Make sure the user's profile directory already exists. In the above example, \\server\vol1\profiles\jsmith must already exist for jsmith's profile to be saved there.
 - ◆ Make sure the user has rights to his or her profile directory. If the profile directory is on a NetWare server, you can assign rights through eDirectory. If the profile directory is on a Windows server, you must assign share rights through the user's Windows account.
- 5 Click OK to save your changes and close the Windows Terminal Server property pages.
- 6 Continue with the next section, [Associating the User Package with Users](#).

Associating the User Package with Users

You must associate the User Policy package with users before it will take effect.

- 1 If the User Package object's property page is not open, right-click the User Package > click Properties.
- 2 Click the Associations tab to display the Associations page.



- 3 Click Add > browse to and select the users you want the policy package applied to. You can add users, user groups, or containers.
- 4 When you've finished adding users, click OK to save your information.

Migrating Zfd 3.2 DLU Policies to Zfd 4.0.1 DLU Policies

In Zfd 3.2, there were two policies you could use to configure dynamic local user accounts and user profiles:

- ♦ WinNT-2000-XP DLU Policy
- ♦ WinNT-2000-XP Windows Terminal Server Policy

The WinNT-2000-XP policies applied to users not only when they logged in to a Windows 2000 terminal server but also when they logged in to a Windows NT/2000/XP workstation.

In Zfd 4.0.1, because of the need to provide different configurations for users on workstations versus users on terminal servers, Win2000 Terminal Server policies have been added, including a DLU policy and a Windows Terminal Server policy.

When users log in to a terminal server, the Zfd 4.0.1 Workstation Manager reads the Win2000 Terminal Server policies and ignores the WinNT-2000-XP policies. Therefore, you need to migrate your WinNT-2000-XP DLU and Windows Terminal Server policy settings to the Win2000 Terminal Server policies. The best way to do this is to complete the steps in [“Configuring Dynamic Local User Accounts” on page 92](#) and [“Configuring Roaming User Profiles” on page 93](#), referring to your current WinNT-2000-XP DLU and Windows Terminal Server policies as necessary as you configure the new Win2000 DLU and Windows Terminal Server policies.

Upgrading the DeFrame eDirectory Schema and Objects

During installation of the ZfD Server software to a network server, the installation program installed the ZfD DeFrame snap-in for ConsoleOne. Before installing the DeFrame software on terminal servers, you need to run the DeFrame activation wizard in ConsoleOne. The activation wizard does the following:

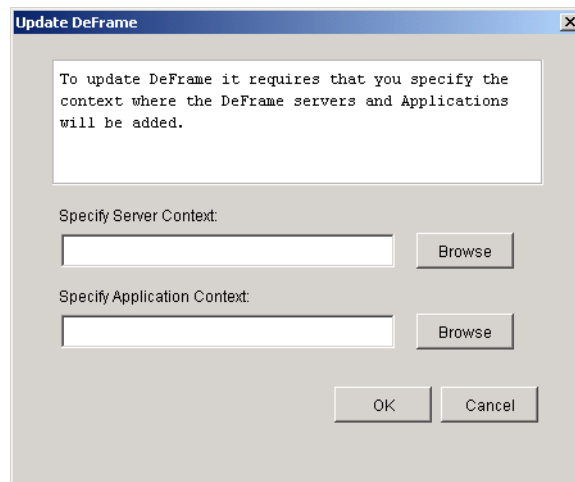
- ◆ Lets you specify the containers to use for DeFrame servers and DeFrame applications.
- ◆ Updates the existing DEFAULT_REG and PASS_ADMIN objects to ensure that the DEFAULT_REG object points to the specific DeFrame server and DeFrame applications containers.
- ◆ Cleans up attributes used when configuring an Application object for a DeFrame thin-client application. Because of these attribute changes, if you are using the OnDemand Services 2 gadgets, users will not be able to launch DeFrame thin-client applications until you upgrade OnDemand Services 2 to ZENworks 6 Web Self-Service.

To update the DeFrame eDirectory schema and objects:

- 1** At a Windows workstation, launch ConsoleOne from a ZfD 4.0.1 server.

If you've copied the ZfD server's ConsoleOne directory to the local workstation, you can launch ConsoleOne from the local directory.

- 2** In ConsoleOne, click the Tools menu > DeFrame Tools > Activate DeFrame to display the Update DeFrame dialog box.



- 3** Fill in the following fields:

Server Context: This field populates the DeFrame Server Container field in the DEFAULT_REG object. Whenever you install and start the DeFrame software on a new DeFrame terminal server, a DeFrame Server object is created in this container to represent the terminal server. You should specify the container in which existing DeFrame Server objects reside. This ensures that any new DeFrame Server objects will be created in the container where your current DeFrame Server objects reside and that the PASS_ADMIN object has sufficient rights to the container.

Application Context: This field populates the DeFrame Application Container field in the DEFAULT_REG object. Application objects created by the DeFrame Published Application Synchronization utility are created in this container. You should specify the container in which your existing DeFrame Application objects reside. The DeFrame Published

Application Synchronization utility imports applications from Citrix Published Application Manager utility into eDirectory. For more information about this utility, see the ZENworks for Desktops *ZENworks for Desktops 4.0.1 DeFrame Installation and Administration Guide* guide.

- 4 Click OK to update the DeFrame schema and objects.

Upgrading Terminal Server Software

After using the DeFrame activation wizard to upgrade the DeFrame eDirectory schema and objects, your DeFrame terminal servers will not work until you upgrade their DeFrame software.

The ZfD Management Agent installation program installs the DeFrame software to a terminal server. You need to run the ZfD Management Agent installation program on each existing DeFrame terminal server to upgrade the DeFrame software.

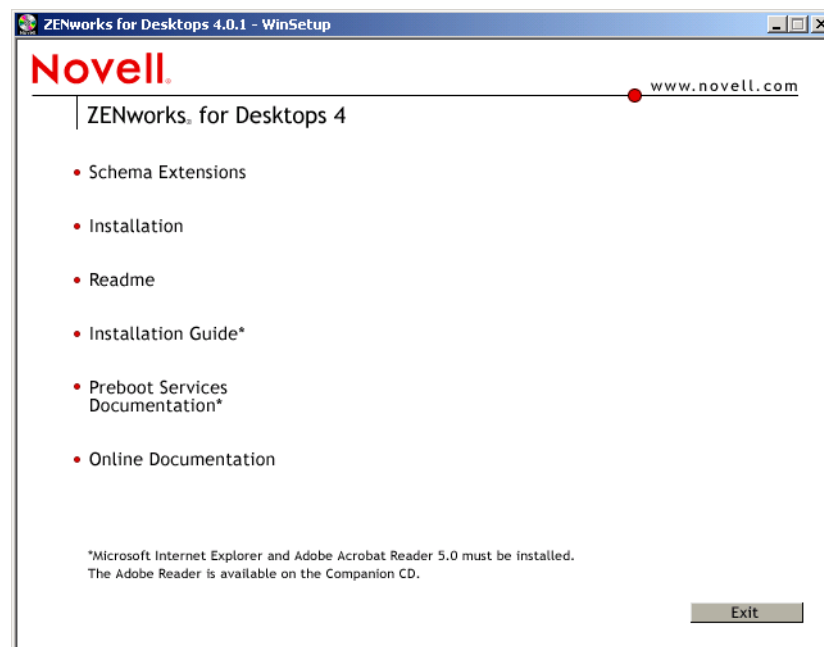
- 1 Make sure the Novell Client, version 4.83 or newer, is installed on the terminal server.
- 2 Make sure you are logged in to the eDirectory tree where you activated DeFrame and that your primary connection is to that tree.

To ensure that your primary tree connection is correct, right-click the N icon in the status area of the taskbar > click NetWare Connections > select the correct tree > click Set Primary.

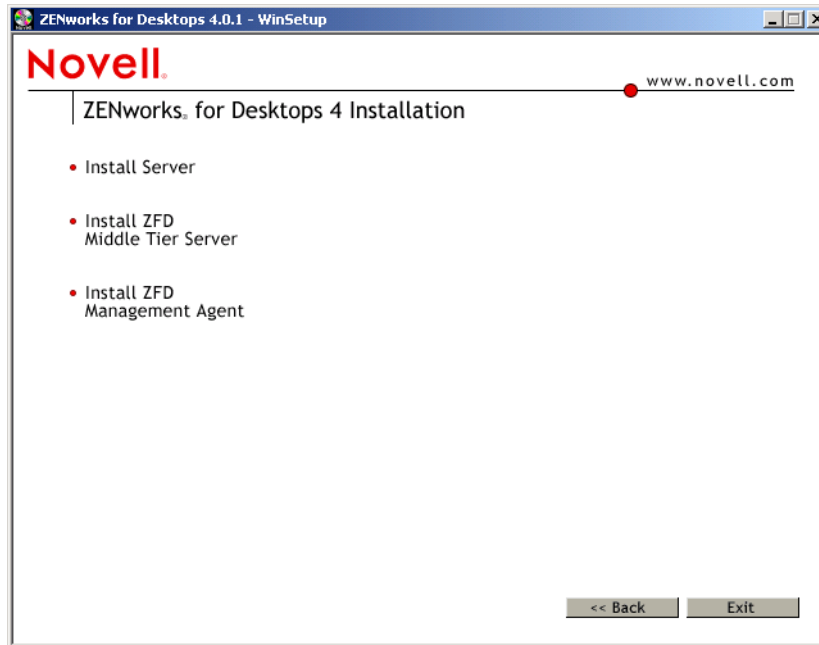
- 3 At the terminal server, insert the *ZENworks for Desktops Program CD* or the *ZENworks 6 Desktop Management Program CD*. The winsetup.exe program will automatically run. If it does not automatically run, run winsetup.exe from the root of the CD.

NOTE: The ZfD Management Agent installation program is a Microsoft Windows Installer package (zfdagent.msi). Rather than launching the installation program through the ZfD winsetup.exe program, you can launch it directly from the agentinstall\english directory on the *ZENworks for Desktops Program CD*, the agentinstall\english directory on the *ZENworks 6 Desktop Management Program CD*, or the public\zenworks\zfdagent\english directory on the ZfD server. If you do so, skip to **Step 7** below.

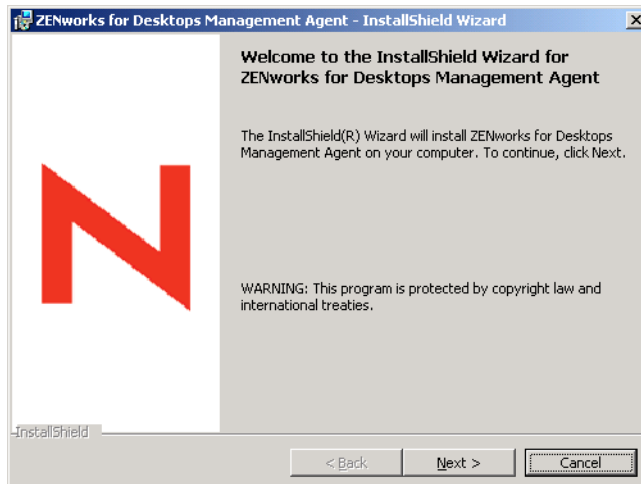
- 4 Click English to display the ZfD main installation page.



5 Click Installation to display the ZfD installation options page.



6 Click Install ZfD Management Agent to launch the installation program.

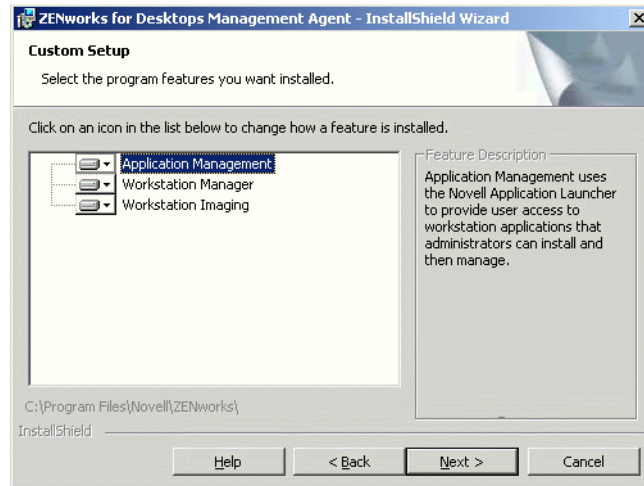


7 Read the introductory text > click Next.

8 Read the License Agreement. If you agree to the terms of the license, click I Accept the Terms in the License Agreement.

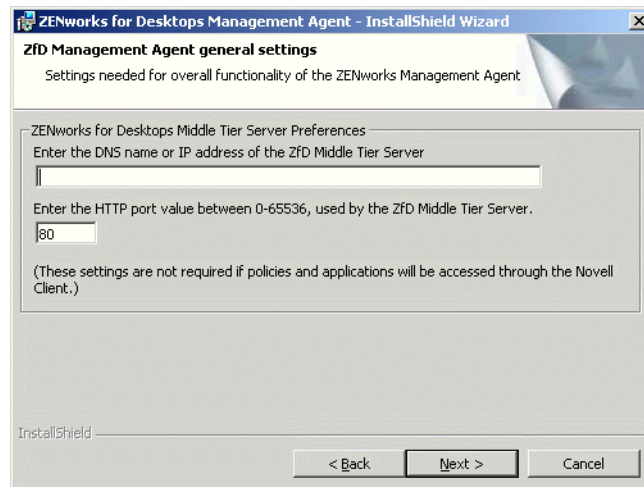
or

Click I Do Not Accept the Terms in the License Agreement. This closes the installation program.



By default, all features are selected and will be installed. You must install the Application Management and Workstation Manager features. The Workstation Imaging feature is optional.

- 9 If you don't want to install Workstation Imaging on the terminal server, click the feature's icon > select This Feature Will Not Be Available.
- 10 Click Next to display the General Settings page.

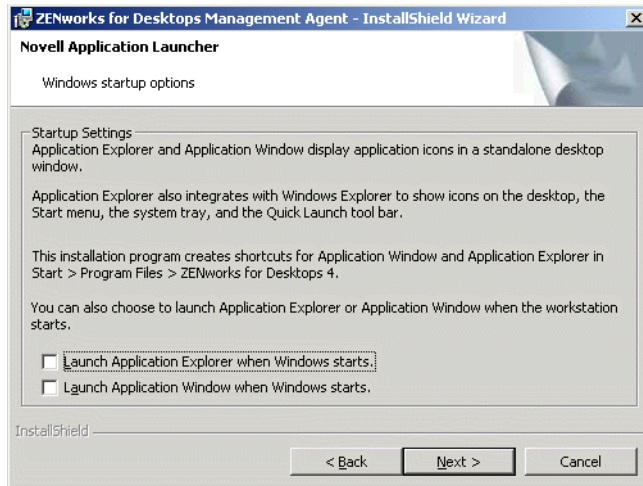


This page lets you define a ZfD Middle Tier Server that the Management Agent can connect to in the absence of the Novell Client.

For users to run DeFrame thin-client applications from this server, you do not need to specify a Middle Tier Server; all eDirectory authentication occurs through the Novell Client.

If you specify a Middle Tier Server, anyone who does a Windows logon at the terminal server will be able to access Novell Application Launcher applications and Workstation Manager policies without authenticating to eDirectory through the Novell Client.

- 11 If desired, on the General Settings page, enter the DNS name or IP address of the ZfD Middle Tier Server that the agent can connect to > enter the HTTP or HTTPS port number that the Apache Web Server (NetWare) or the IIS Web Server (Windows) will use to listen for the Agent login, > click Next.



- 12** If you want Novell Application Launcher to start when a user logs in to Windows at the terminal server, select the view (Application Explorer, Application Window, or both) that you want started > click Next

This will not affect users who launch DeFrame thin-client applications from the terminal server. It only affects users who log in to Windows at the terminal server.

- 13** In the Ready to Install Program page, click Install to begin the installation.
- 14** When installation is complete, select the option to restart the terminal server > click Finish.

The DeFrame 2.01 services (DeFrame Access Control Service, DeFrame Watchdog Service, and DeFrame Disconnected Session Tracking Service) have been combined into one service called the Novell ZENworks Thin-Client Application Service (zencas.exe). By default, the ZENworks Thin-Client Application Service is configured to start automatically on server startup.

- 15** If you need to manually start the service
- 15a** Click the Start menu > Settings > Control Panel > Administrative Tools > Services.
 - 15b** Double-click the Novell ZENworks Thin-Client Application Service.
 - 15c** Click Start.
 - 15d** Click OK.
- 16** Verify that Workstation Manager is installed and running on the terminal server by checking for the Workstation Manager service in the Services window:
- 16a** At the terminal server, click the Start menu > Settings > Control Panel > Network Identity.
 - 16b** In the Novell Network Identity dialog box, click Settings.
 - 16c** Verify that the Enable Workstation Manager box is checked and that the tree is set correctly.

If you have multiple eDirectory trees, make sure Workstation Manager is configured to read the eDirectory tree where your User objects reside.
 - 16d** (Optional) Check the Tree value in the Windows registry, underneath the HKEY_LOCAL_MACHINE/SOFTWARE/NOVELL/Workstation Manager/ Identification key.

Configuring Contextless Login

To simplify the process of launching thin-client applications, DeFrame provides contextless login. With contextless login, a user is not prompted for a username and password when he or she launches a thin-client application, if the user's eDirectory account and Windows user account have the same username and password.

If you've been using contextless login, contextless login will continue to work. If you have not been using it, or if it no longer works after upgrading the DeFrame software or ZfD Management Agent software on the terminal server, complete the following steps:

- 1** Turn on the terminal server's Use Client Provided Logon Information setting and turn off the Always Prompt for Password setting:
 - 1a** At the terminal server, click Start > Programs > Administrative Tools > Terminal Services Configuration.
 - 1b** Highlight a connection type (the default is RDP-Tcp) and double-click to enter the properties.
 - 1c** In the Logon Settings tab, check the Use Client Provided Logon Information setting and uncheck the Always Prompt for Password setting.
 - 1d** Repeat for each connection type.
- 2** Configure the default profile for the terminal server's Novell Client:
 - 2a** At the terminal server, right-click the Novell icon (N icon) in the status area of the taskbar > click Novell Client Properties.
 - 2b** Click the Location Profiles tab.
 - 2c** In the Location Profiles list, select Default > click Properties to display the Location Profiles Properties dialog box.
 - 2d** Select Login Service in the Service list, select Default in the Service Instance List > click Properties to display the Novell Login dialog box.
 - 2e** Deselect (turn off) the Save Profile After Successful Login option.
 - 2f** Click the NDS tab.
 - 2g** In the Tree field, select the eDirectory tree where the thin-client applications are configured as Application objects.
 - 2h** Delete any information from the Context and Server fields.
 - 2i** To save the configuration settings, click OK until you've closed all dialog boxes.
- 3** If the terminal server is an Active Directory Domain Controller (rather than a member server or a workgroup server), modify the terminal server's DeFrame Server object to include the domain name rather than the server name.

During contextless login, the username and password are used to log into eDirectory and then into the Windows terminal server. In addition to the username and password, the Windows terminal server login requires the domain name or server name (in the From field of the Windows Workstation login dialog box). During creation of the DeFrame Server object, the object is populated with the server name. If the terminal server is a Domain Controller, the domain name is required. To change to the domain name:

- 3a** In ConsoleOne, right-click the DeFrame Server object > click Properties to display the DeFrame Server object's property pages.
- 3b** Click the DeFrame Server Environment tab to display the Environment page.

3c In the Domain field, enter the terminal server's domain.

3d Click OK to save your changes.

A

ZfD Features Matrix

Novell® ZENworks® for Desktops 4 includes more features and functionality than ever before. The following table shows a comparison of the features available with the ZENworks Starter Pack, ZENworks 2, ZENworks for Desktops 3, ZENworks for Desktops 3.2, ZENworks for Desktops 4, ZENworks for Desktops 4 SP1, and ZENworks for Desktops 4.0.1.

ZENWORKS FOR DESKTOPS 4/SP1/4.0.1 FEATURES MATRIX

FEATURE	ZENWORKS STARTER PACK	ZFD 2	ZFD 3	ZFD 3.2	ZFD 4	ZFD 4 SP 1	ZFD 4.0.1
CLIENT REQUIREMENTS SUPPORT							
Novell Client32™	●	●	●	●	●	●	●
No Novell Client32 required	○	○	○	○	■	●	●
Firewall friendly	○	○	○	○	■	●	●
Internet protocol support—http/https	○	○	○	○	■	●	●
Integration with Novell Portal Services	○	○	○	○	■	●	●
Web-based application delivery	○	○	○	○	■	●	●
MOBILE USER SUPPORT							
Application delivery	○	○	●	●	●	●	●
Policy delivery	○	○	○	○	■	●	●
Inventory	○	○	○	○	■	●	●
Remote control	○	○	○	○	■	●	●
Imaging	○	○	●	●	●	●	●
NALcache checkpoint restart	○	○	○	○	■	●	●
APPLICATION MANAGEMENT							
Delivery of applications by users	●	●	●	●	●	●	●
Delivery of applications by workstation	○	●	●	●	●	●	●
"Lights-out" distribution	○	●	●	●	●	●	●
Installation of ZENworks apps—Windows 9x,NT4,W2K	●	●	●	●	●	●	●
Support for Windows XP Professional	○	○	○	▲	■	●	●
Installation of MSI applications	○	○	●	●	●	●	●
Advanced MSI support	○	○	○	○	■	●	●
Self-healing	●	●	●	●	●	●	●
Remote/mobile support	○	○	●	●	●	●	●
Uninstall	○	○	●	●	●	●	●
Application status alert via SNMP	○	▲	●	●	●	●	●
Application status logging to file	○	▲	●	●	●	●	●
Application status logging to database	○	○	●	●	●	●	●
Support for Windows NT 4/Windows 2000 Terminal Services	○	▲	▲	●	●	●	●
Launch Terminal Server applications through NAL	○	○	○	○	○	■	■
Smart Launch of Terminal Server applications using DeFrame™, such as Single Sign-On and Load Balancing	○	○	○	○	○	■	■
Application license metering	○	●	●	●	●	●	●

Key: ● Yes ○ No ▲ Limited ■ With ZENworks Preboot Services (an integral part of ZENworks for Desktops 4) ■ New in this version
NAL = Novell Application Launcher

FEATURE	ZENWORKS STARTER PACK	ZFD 2	ZFD 3	ZFD 3.2	ZFD 4	ZFD 4 SP 1	ZFD 4.0.1
APPLICATION MANAGEMENT CONTINUED							
Enterprise application management; integration with ZFS Tiered Electronic Distribution	○	○	●	●	●	●	●
Chained applications	○	○	○	○	■	●	●
Silent installation of app dependencies	○	○	○	○	■	●	●
Suite applications—linked to many icons	○	○	○	○	■	●	●
Auto-verify of dependencies	○	○	○	○	■	●	●
Application patching	○	○	○	○	■	●	●
NAL Cache checkpoint restart	○	○	○	○	■	●	●
Rogue process termination	○	○	○	○	■	●	●
NAL customization	○	○	○	▲	●	●	●
Integration with Novell Portal Services	○	○	○	○	■	●	●
Web-based application delivery	○	○	○	○	■	●	●
DeFRAME SUPPORT							
DeFrame management using ConsoleOne®	○	○	○	○	○	○	■
Application load balancing between terminal servers	○	○	○	○	○	○	■
Disconnected session tracking and management	○	○	○	○	○	○	■
Integration with Novell iFolder® for file storage	○	○	○	○	○	○	■
Migration of application information from the Citrix Published Application Manager into Novell eDirectory™	○	○	○	○	○	○	■
Support for Citrix Secure Gateway in Relay Mode	○	○	○	○	○	○	■
NOVELL CLUSTERING SUPPORT							
Able to install a server running NetWare 6 with Novell Cluster Services™	○	○	○	○	○	○	■
exteNd DIRECTOR SUPPORT							
Includes Web Self-Service	○	○	○	○	○	○	■
Includes exteNd Director™ 4.1 Platform Edition	○	○	○	○	○	○	■
POLICY MANAGEMENT							
Traditional POLEDIT policy management	●	●	●	●	●	●	●
Terminal Server policy	○	○	●	●	●	●	●
Windows 2000 Group policy management	○	○	●	●	●	●	●
Enhanced modular Windows 2000 Group policy management	○	○	○	●	●	●	●
Granular NT4/Windows 2000/Windows XP policies					●	●	●
INVENTORY							
Hardware inventory	○	○	●	●	●	●	●
Software inventory	○	○	●	●	●	●	●
Enterprise database roll-up	○	○	○	●	●	●	●
Delta inventory scanning	○	○	○	●	●	●	●
DMI inventory scanning	○	●	●	●	●	●	●
WMI inventory scanning	○	○	○	●	●	●	●
Dynamic software scanning	○	○	●	●	●	●	●
Sybase ASA Database (NW)	○	●	●	●	●	●	●
Sybase ASA Database	○	○	●	●	●	●	●
Oracle 8i* support (NW, NT)	○	○	●	●	●	●	●
Oracle 8i support (Linux, Solaris*)	○	○	○	●	●	●	●
MS SQL 2000 support (Windows 2000)	○	○	○	○	■	●	●
Disconnected Inventory scanning (Scanning for mobile and laptop users)	○	○	○	○	■	●	●
Custom inventory scanning	○	○	○	○	■	●	●
Cross-tree inventory roll-up	○	○	○	○	■	●	●
Software scan for Microsoft Product ID	○	○	○	○	■	●	●

Key: ● Yes ○ No ▲ Limited ■ With ZENworks Preboot Services (an integral part of ZENworks for Desktops 4) ■ New in this version
NAL = Novell Application Launcher

FEATURE	ZENWORKS STARTER PACK	ZFD 2	ZFD 3	ZFD 3.2	ZFD 4	ZFD 4 SP 1	ZFD 4.0.1
INVENTORY REPORTING							
Integrated hardware and software reporting	○	●	●	●	●	●	●
Data export wizard	○	○	●	●	●	●	●
Custom reporting solutions—ODBC drivers and documentation	○	○	○	●	●	●	●
Crystal Reports integration					■	●	●
REMOTE MANAGEMENT							
Secure remote management	○	●	●	●	●	●	●
Performance-enhanced remote control	○	○	○	●	●	●	●
Remote diagnostics	○	●	●	●	●	●	●
Host blanking and KB and mouse lock during RC session	○	○	●	●	●	●	●
Tracking user login-logout during RC session	○	○	●	●	●	●	●
Remote Agent ping	○	●	●	●	○	○	○
File transfer	○	●	●	●	●	●	●
Chat	○	●	●	●	○	○	○
Wake-On-LAN	○	○	●	●	●	●	●
Scheduled Wake-On-LAN	○	○	○	○	■	●	●
Remote control of non-imported workstation	○	○	○	○	■	●	●
DESKTOP IMAGING							
Windows desktop imaging, FAT12, FAT16, FAT32, NTFS4, NTFS5	○	○	●	●	●	●	●
Windows XP NTFS support					■	●	●
Compression on disk	○	○	○	●	●	●	●
Compression over the wire	○	○	○	●	●	●	●
Peer-to-peer multicast	○	○	●	●	●	●	●
Client/server multicast	○	○	○	●	●	●	●
Advanced imaging policy	○	○	○	●	●	●	●
Imaging engine from FDD	○	○	●	●	●	●	●
Imaging engine from HDD (Linux imaging partition)	○	○	●	●	●	●	●
Imaging engine from CD-ROM	○	○	●	●	●	●	●
Imaging engine from network (PXE boot)	○	○	○	■	●	●	●
Token-ring support	○	○	○	●	●	●	●
PREBOOT SERVICES							
PXE boot support for imaging engine	○	○	○	■	●	●	●
Preboot support for non-PXE-enabled hardware (PXE on Disk)	○	○	○	■	●	●	●
WINDOWS 2000 PROFESSIONAL SUPPORT							
Manage Windows 2000 professional without W2K server and Active Directory*	○	▲	●	●	●	●	●
ZENworks Application installation on Windows 2000	○	▲	●	●	●	●	●
MSI application management	○	○	●	●	●	●	●
Group policy support	○	○	●	●	●	●	●
Enhanced modular Windows 2000 Group policy management	○	○	○	●	●	●	●
Traditional policy management	○	▲	●	●	●	●	●
Inventory	○	▲	●	●	●	●	●
WINDOWS XP PROFESSIONAL SUPPORT							
Manage Windows XP Professional without Active Directory and Windows 2000 server	○	○	○	▲	■	●	●
ZENworks Application installation on Windows XP Professional	○	○	○	▲	■	●	●
MSI application management	○	○	○	▲	■	●	●
Advanced MSI application management	○	○	○	○	■	●	●

Key: ● Yes ○ No ▲ Limited ■ With ZENworks Preboot Services (an integral part of ZENworks for Desktops 4) ■ New in this version
NAL = Novell Application Launcher

FEATURE	ZENWORKS STARTER PACK	ZFD 2	ZFD 3	ZFD 3.2	ZFD 4	ZFD 4 SP 1	ZFD 4.0.1
WINDOWS XP PROFESSIONAL SUPPORT CONTINUED							
Windows XP Group policy Support	○	○	○	▲	■	●	●
Traditional policy management	○	○	○	▲	■	●	●
Inventory	○	○	○	▲	■	●	●
Remote Control	○	○	○	▲	■	●	●
ADMINISTRATOR TOOLS							
Automatic Workstation Import	○	○	●	●	●	●	●
Automatic Workstation Removal	○	○	●	●	●	●	●
Policy Deployment wizard	○	○	○	●	●	●	●
ACCESSIBILITY							
US Section 508 compliant	○	○	○	●	●	●	●
MANAGEMENT CONSOLE							
NetWare® Administrator	●	●	○	○	●	○	○
ConsoleOne	○	○	●	●	●	●	●
Partner integration toolkit; integration of Remote Management and Inventory with framework and help desk	○	○	○	●	●	●	●
SERVER OS SUPPORT							
NetWare 4.2	●	●	●	●	○	○	○
NetWare 5.1	●	●	●	●	●	●	●
NetWare 6	○	○	●	●	●	●	●
Windows NT 4 server	○	○	●	●	●	●	●
Windows 2000 server	○	○	●	●	●	●	●
Windows NT 4 Terminal Server Edition	○	▲	●	●	●	●	●
Windows 2000 Terminal Services	○	○	▲	●	●	●	●
DESKTOP OS SUPPORT							
Windows 95	●	●	●	●	○	○	▲
Windows 98 SE	●	●	●	●	●	●	●
Windows NT 4 workstation	●	●	●	●	●	●	●
Windows 2000 Professional	▲	▲	●	●	●	●	●
Windows XP Professional	○	○	○	▲	●	●	●

Key: ● Yes ○ No ▲ Limited ■ With ZENworks Preboot Services (an integral part of ZENworks for Desktops 4) ■ New in this version
NAL = Novell Application Launcher

B

Documentation Updates

This section lists updates to the *ZENworks for Desktops 4 Upgrade Guide* that have been made since the initial release of Novell® ZENworks® for Desktops (ZfD) 4. The information will help you to keep current on documentation updates and, in some cases, software updates (such as a Support Pack release).

The information is grouped according to the date when the guide was updated and republished. Updates were made to this guide on the following dates:

- ◆ “November 11, 2002” on page 107
- ◆ “December 5, 2002” on page 107
- ◆ “December 17, 2002” on page 108
- ◆ “December 20, 2002” on page 109
- ◆ “April 14, 2003 (Version 4 SP1/4.0.1)” on page 109
- ◆ “October 10, 2003” on page 110
- ◆ “January 16, 2004” on page 110
- ◆ “March 15, 2004” on page 111
- ◆ “June 18, 2004” on page 111

November 11, 2002

Location	Update
“Upgrading the ZfD 3.x Inventory Server to ZfD 4.x” on page 52	Added this section as a supplement to the original guide published in MS Word format and posted on the ZENworks for Desktops Documentation Web site. NOTE: This section was later integrated into another section. For more information, see “December 5, 2002” on page 107 .

December 5, 2002

Location	Update
Chapter 2, “Upgrading from ZENworks 2 or Starter Pack to ZfD 4.x,” on page 17	Added this section to cover necessary information about upgrading from ZENworks Starter Pack or ZENworks 2 to ZENworks for Desktops 4.

Location	Update
Chapter 3, "Upgrading from ZfD 3.x to ZfD 4.x," on page 39	Adapted the former MS Word document, "Upgrading from ZENworks for Desktops 3.2 to ZENworks for Desktops 4" for HTML and PDF formats. This section also integrates another section that was formerly posted separately, "Upgrading the ZfD 3.x Inventory Server to ZfD 4.x" on page 52.
Appendix A, "ZfD Features Matrix," on page 103	Added this section to illustrate the features in ZENworks Starter Pack, ZENworks 2, ZENworks for Desktops 3, ZENworks for Desktops 3.2, and ZENworks for Desktops 4.

December 17, 2002

Location	Update
"Upgrade Procedures: ZENworks 2 and Starter Pack to ZfD 4.x" on page 17	Added information to clarify the version of ZfD that will work with Windows 95 workstations.
"ZfD 4.x Software Requirements" on page 20	Added information to clarify that ZfD 4 is not designed to run on Windows 98 workstations without the SE upgrade.
"Upgrading Application Objects" on page 30	Added information to clarify the actions that actually convert ZENworks 2 objects to ZfD 4 objects.
"Updating Search Policies" on page 24	Rewrote this section to match the Search Policy information in Upgrading from ZfD 3.x to ZfD 4.x .
"Replacing or Upgrading ZENworks 2 Workstation Inventory" on page 26	Deleted the section indicating the need to upgrade ConsoleOne [®] snap-ins. ZENworks 2 does not use ConsoleOne; therefore, it is not necessary to upgrade it.
"Deselecting the Disconnectable Attribute" on page 30	Added information to clarify the circumstances under which the disconnectable attribute of an Application Object should be enabled.
"Preparing the Application Object for Use with the ZfD Management Agent" on page 31	Changed the section to clarify how the drive mappings of an Application object can be facilitated by the use of the Windows Group Policy.
"Installing the ZfD Management Agent" on page 32	Added a note to clarify the reason for configuring the Agent MSI with the Run as Secure System User attribute.
"Distributing and Installing the ZfD 4.x Management Agent MSI Package" on page 34	Added information about another method (Wise InstallTailor) for configuring the Agent MSI with multiple installation properties.
"Policy Management" on page 40	Added information about using ZfD 3.2 to support Windows 95 workstations and the coexistence of ZfD 3.2 and ZfD 4.

Location	Update
“Organization of the Server Policy Package” on page 59	Added information about the ZENworks Database policy in the Server Policy package.
“Updating the Application Launcher Startup Method” on page 65	Replaced the information from the previous posting, called "Updating Application Delivery." This is all new information.
“Updating Applications” on page 67	Reworded the information to clarify the need to resolve paths in migrated applications.
“Verifying Remote Control” on page 75	Added a note to explain that the ZENworks 2 Remote Management Application objects are no longer used to update the Remote Management Agents.
Appendix A, “ZfD Features Matrix,” on page 103	Deleted a line in the matrix that specified the "Auto Updating Agents" as a new feature in ZfD 4. There is no feature by that name in ZfD 4.

December 20, 2002

Location	Update
“Extending the ZENworks Starter Pack Schema (ZfD 4 Only)” on page 22	Added this section to differentiate it from the procedure for extending the ZENworks 2 schema to ZfD 4.
“Extending the ZENworks 2 Schema (ZfD 4/4.0.1)” on page 23	Added this section to differentiate it from the procedure for extending the ZENworks Starter Pack schema to ZfD 4.
“Deselecting the Disconnectable Attribute” on page 30	Added the word "not" to clearly identify the Application objects that do not have the disconnectable attribute enabled.

April 14, 2003 (Version 4 SP1/4.0.1)

Location	Update
Chapter 1, “What’s New in this Release?,” on page 9	Moved this chapter from the <i>ZENworks for 4 Desktops Installation Guide</i> and added the following references: <ul style="list-style-type: none"> ◆ What’s New in Application Management for ZfD 4 SP1/4.0.1. ◆ What’s New in Workstation Import
Chapter 2, “Upgrading from ZENworks 2 or Starter Pack to ZfD 4.x,” on page 17	Reorganized this chapter to match the organization of Chapter 3.

Location	Update
“Updating Search Policies” on page 24	Changed text and graphics in this section to correctly indicate the placement of the partition boundary and to explain the Associated Container option as a substitute for the partition option.
“Updating Managed Workstations” on page 31	Revised the introductory sentence to clarify the need for the ZfD Management Agent, even in an environment where the Novell Client is already installed.
“Updating Search Policies” on page 47	Changed text and graphics in this section to correctly indicate the placement of the partition boundary and to explain the Associated Container option as a substitute for the partition option.
“Organization of the User Policy Package” on page 60	Deleted or revised references to tab names that are no longer included in ConsoleOne snap-ins.
Chapter 4, “Upgrading from ZfD 4 to ZfD 4 SP1/ 4.0.1,” on page 77	Added this section to cover necessary information about upgrading from ZfD 4 to ZfD 4 SP1 or ZfD 4.0.1.
Chapter 5, “Upgrading from DeFrame 2.01 to ZfD 4.01 DeFrame,” on page 83	DeFrame™, formerly included in ZENworks OnDemand Services, is now included in ZfD 4.0.1. It is not included in ZfD 4 SP1. Added information about upgrading from DeFrame 2.01 (included in ZENworks OnDemand Services) to ZfD 4.0.1 DeFrame.
Appendix A, “ZfD Features Matrix,” on page 103	Reformatted the matrix figures in this appendix to include ZfD 4 SP1 and ZfD 4.0.1. This was done so that newer features could be indicated on the matrix.

October 10, 2003

Location	Update
“Renaming the ZfD 3.2 Support Pack Files” on page 46	Added this section as a necessary step to help users complete a successful upgrade to ZENworks for Desktops 4.x.

January 16, 2004

Location	Update
“ZfD 4.x Software Requirements” on page 44	Revised references to the version of the Novell Client required (if the Client is wanted) on a Windows 98 SE workstation.
and	
“Software Notes for the Managed Workstation” on page 45	

March 15, 2004

Location	Update
“Upgrading from ZENworks 2 or Starter Pack to ZfD 4.x” on page 17	<p>Revised the chapter introductory text to delete references to ZENworks for Desktops 3.2 as a purchased, co-installed alternative for support Windows 95 and other older operating systems on workstations and servers.</p> <p>Because Novell is ending support for ZENworks for Desktops 3.2 as of February 27, 2004, the purchase of this product is no longer possible.</p>

June 18, 2004

Location	Update
“Upgrading the Agent to ZENworks for Desktops 4.0.1 IR4” on page 82	<p>Added this section to cover necessary information about upgrading the ZfD Agent from ZfD 4.0.1. to ZfD 4.0.1 IR4.</p>

