VII Integrating ZfD 3.2 or ZfD 3.2 SP1 with Novell Cluster Services

This document contains information that will help you understand the tasks necessary for successfully installing and configuring Novell® ZENworks® for Desktops (ZfD) components in a Novell Cluster Services™ (NCS) environment. The topics include:

28 Installation Prerequisites

Before you install and configure Novell® ZENworks® for Desktops (ZfD) to run with Novell Cluster Services™ (NCS), make sure that all of the hardware and software requirements for the respective products are met, including:

- ❑ At least two NetWare® 5.1 or NetWare 6 servers (also called "nodes") where NCS can be installed
- ❑ NCS installed and running on the NetWare servers that will be part of the cluster
- ❑ A cluster volume created and cluster-enabled (this is called a virtual server)

  For more information on clustering, see the Novell Cluster Services documentation (http://www.novell.com/documentation).

In addition to these prerequisites, you must also perform the following procedures before you run the ZfD installation program on each cluster:

- Authenticate to cluster nodes that service the NCS virtual server. Authentication to each node facilitates updating that node with the software required by ZfD.

  HINT: It is necessary to authenticate only to those nodes that do not appear in the NetWork Neighborhood window.

- Prepare each cluster node for ZfD.

To authenticate to each node:

1. From a Novell Client™ login, use the Admin user and password to log in to the NCS virtual server.
2. Browse the directory tree where the cluster nodes are located.
3. Right-click a node object > click Authenticate.
4. Enter the user account (probably Admin) and the password necessary to authenticate.

To prepare cluster nodes for ZfD:

1. Upgrade each node to ConsoleOne® 1.3.2.

   ConsoleOne 1.3.2 (or later), included on the ZfD 3.2 *Companion* CD must be installed on each cluster node for ZfD to work properly. For more information, see Obtaining and Installing ConsoleOne in Installation and Setup in *ZENworks for Desktops 3.2 Getting Started Guide*.

   If you want to install ZfD 3.2 Support Pack 1, upgrade each node to ConsoleOne 1.3.3.

2. Unload Java* on each node.

   To avoid an error message displayed by the ZfD installation program if Java is running on the server (that is, the cluster node), you should unload Java before you begin the ZfD installation there. To do this, you need to have System console access to each servicing node. At the system console for each node, enter the following command:

```
unload java
```

3. For NetWare 5.*x* or NetWare 6 servers, see "Obtaining and Setting Up CVSBIND on Each Node for NetWare 5.x or NetWare 6 Servers" on page 442.

4. Install the Novell Client on the workstation. For more information about installing the appropriate client, see Obtaining and Installing the Novell Client in Installation and Setup in *ZENworks for Desktops 3.2 Getting Started Guide*.

Obtaining and Setting Up CVSBIND on Each Node for NetWare 5.*x* or NetWare 6 Servers

The Cluster Virtual Server Bindery (CVSBIND) utility advertises cluster virtual servers in the bindery and supports access to cluster volumes through a UNC pathname. Because the ZfD Workstation Inventory component uses UNC paths to roll up its data, CVSBIND must be set up before you install Workstation Inventory.

1. Download the CVSBIND self-extracting .ZIP file from Novell Support Web site (http://support.novell.com/cgi-bin/search/tidfinder.cgi?2957434). Double-click the file to extract these files: CVSBIND.NLM, CVSBIND.TXT, and CVSBIND_README.DOC.

2. Set up CVSBIND.

   2a. Down the cluster. At the system console of any node in the cluster, enter:

   ```
   cluster down
   ```

   2b. Unload NCS. At the system console of each node in the cluster, enter:

   ```
   uldncs
   ```

   2c. Copy CVSBIND.NLM to SYS:\SYSTEM on each server in the cluster.

   2d. On each cluster node, load CVSBIND. In the SYS:\SYSTEM\LDNCS.NCF, add the following command after the `cmon` command, but before the `cluster join` command.

   ```
   cvsbind
   ```

   2e. On each cluster node, unload CVSBIND. In the SYS:\SYSTEM\ULDNCS.NCF, add the following command after the `cluster leave` command, but before the `unload cmon` command.

   ```
   unload cvsbind
   ```

   2f. At the system console of each node in the cluster, enter the following command to restart the cluster:

   ```
   ldncs
   ```

3. In ConsoleOne, edit the commands in the cluster volume resource load and unload scripts.

   CVSBIND.NLM supports commands that can add or delete bindery service entries in the SLP namespace to emulate the NetWare bindery.

   In the load and unload scripts, add the commands with the NCS virtual server name and its corresponding IP address, so that the Service Location Protocol URL service (bindery.novell) can emulate the bindery. The command syntax is similar to the NUDP ADD and NUDP DEL commands already found in the scripts:

   ```
   cvsbind add SERVER_NAME IP_address
   ```

   ```
   cvsbind del SERVER_NAME IP_address
   ```

NOTE: The simplest way to add the commands to the scripts is to copy and paste the appropriate NUDP command and substitute CVSBIND for NUDP.

Here is an example of the edited cluster volume resource load script:

```
nss /activate=TESTVOLmount TESTVOL VOLID=254trustmig TESTVOL watchCVSBIND
ADD CLUSTER_TESTVOL_SERVER 10.10.10.10NUDP ADD CLUSTER_TESTVOL_SERVER
10.10.10.10add secondary ipaddress 10.10.10.10
```

The following is an example of the edited cluster volume resource unload script:

```
del secondary ipaddress 10.10.10.10NUDP DEL CLUSTER_TESTVOL_SERVER
10.10.10.10CVSBIND DEL CLUSTER_TESTVOL_SERVER 10.10.10.10trustmig TESTVOL
unwatchdismount TESTVOL /forcenss /forcedeactivate=TESTVOL
```

NOTE: The CVSBIND command is not case-sensitive but the server name should be entered in upper-case letters.

You can inspect the SLP namespace with the following console commands:

```
display slp services
```

```
display slp attributes service:bindery.novell:
```

29 Installing ZfD Components in the Cluster

Because of some limitations of the current Novell® ZENworks® for Desktops (ZfD) installation procedure for installing in a cluster environment, you must change the ZfD installation procedure to account for the install location of ZfD files, the ZfD Inventory database mechanism and service, and the behavior of the Novell Client™ required for ZfD.

This information in the following sections will help you to install ZfD 3.2 or ZfD 3.2 SP1 in a clustered environment:

- "General ZfD 3.2 Installation Procedure" on page 445
- "General ZfD 3.2 SP1 Installation Procedure" on page 446

General ZfD 3.2 Installation Procedure

To install ZfD in a network configured with Novell Clustering Services (NCS):

1. From a network workstation configured with the proper Novell Client, log in as Admin to the directory tree where your cluster resides and map a drive to a previously configured cluster node.

   IMPORTANT: Make sure that this workstation and all other administrative workstations are not running ConsoleOne while the ZfD installation is running.

2. At the workstation, insert the ZfD *Program* CD.

   The WINSETUP.EXE program will autorun. If it does not autorun, run it from the root of the CD.

3. Click English > Install ZENworks to launch the Novell Installation Service (NIS) program.

   NOTE: You have the option of clicking Back to change your install preferences at any time while the NIS setup program is running.

4. Click Next to display the End User License Agreement for the ZfD software > read the agreement > click Accept if you agree with the terms of the license and the limited warranty.

   If you do not agree with the terms of the software agreement, do not install the software.

5. In the Install Prerequisites screen, check to see that the cluster node to which you are installing meets the minimum requirements listed > click Accept when you have read the list.

6. In the ZENworks Install Types dialog box, click Custom > Next.

7. In the Components dialog box, click the check boxes for the ZfD components that you want to install > click Next.

   NOTE: If you choose to install Workstation Imaging and PXE (that is, Preboot Services software) on the cluster nodes, the ZENworks installation program does not currently allow the installation of PXE on two or more servers with the same operating system. It is necessary to perform the PXE installation separately for every node in the cluster.

8. In the ZENworks Part Selection dialog box, click the check boxes for the parts you want to install, or uncheck the parts you don't want to install (files, schema extensions, directory objects) > click Next.
9. In the ZENworks List of Trees dialog box, click the check box for the name of the Novell eDirectory™ tree > click Next.
10. In the ZENworks List of Servers dialog box, click the check box for the name of the cluster node or nodes > click Next.
11. In the Inventory Database Server Selection dialog box, select the virtual server where you want to install the ZENworks Inventory database (you can also choose not to install the database at this time) > click Next.
12. If you choose to install the Inventory database, a dialog box will be displayed where you can choose the cluster volume. Click the check box for the name of the cluster volume > Next.
13. In the Languages dialog box, click the language of the files that you have chosen to be installed to the server > Next.

    NOTE: English is chosen by default and must be installed in addition to any other language you choose.
14. In the Automatic Workstation Import Management dialog box, select the Import (or Import/Removal) role for all of the servers where you are installing ZfD that will be part of the cluster > click Next.

    NOTE: All of the servers participating in the cluster should have exactly the same role for Automatic Workstation Import. You should also make sure that the HOSTS file on the workstations being imported points to the IP address of the virtual server.

    For more information about server roles in Automatic Workstation Import, see Installing Automatic Workstation Import and Removal in Automatic Workstation Import and Removal in *ZENworks for Desktops 3.2 Deployment Guide*.
15. In the Inventory Server Roles dialog box, select the assignment you want to give to each cluster node > click Next.

    NOTE: All cluster nodes participating in the cluster should have exactly the same role for Inventory.
16. In the ScanDir Volume dialog box, select a cluster volume where you want the scan data (.STR) files to be stored > click Next.
17. If you previously chose to install the database, enter a unique site ID and name in the Site ID for Database dialog box > click Next.
18. In the Summary dialog box, review the list of the products to be installed and the disk space that each product will consume when installed > click Finish to begin the installation process.

General ZfD 3.2 SP1 Installation Procedure

To install ZfD 3.2 SP1 in a network configured with Novell Clustering Services (NCS):

1. From a network workstation configured with the proper Novell Client, log in as Admin to the directory tree where your cluster resides and map a drive to a previously configured cluster node.

   IMPORTANT: Make sure that this workstation and all other administrative workstations are not running ConsoleOne while the ZfD installation is running.
2. Download and install the ZfD 3.2 SP1 server-side update from TID 2963839 at Novell Support Web site (http://support.novell.com).

For more information on how to install the ZfD 3.2 SP1 server-side update, see the ZfD 3.2 SP1 server-side Readme at the ZfD 3.2 documentation Web site (http://www.novell.com/documentation/lg/zdfs/index.html).

3. Run INSTALL.EXE from the directory where you downloaded ZfD 3.2 SP1.
4. Click English > Install ZENworks to launch the Novell Installation Service (NIS) program.

   NOTE: You have the option of clicking Back to change your install preferences at any time while the NIS setup program is running.
5. Click Next to display the End User License Agreement for the ZfD software > read the agreement > click Accept if you agree with the terms of the license and the limited warranty.

   If you do not agree with the terms of the software agreement, do not install the software.
6. In the Install Prerequisites screen, ensure that the cluster node to which you are installing meets the minimum requirements listed > click Accept when you have read the list.
7. In the ZENworks List of Trees dialog box, click the check box for the name of the eDirectory tree > click Next.
8. In the ZENworks List of Servers dialog box, click the check box for the name of the cluster node or nodes > click Next.
9. In the Languages dialog box, click the language of the files that you have chosen to be installed to the server > Next.

   NOTE: English is chosen by default and must be installed in addition to any other language you choose.
10. In the Summary dialog box, review the list of the products to be installed and the disk space that each product will consume when installed > click Finish to begin the installation process.

30 Configuring ZfD Components after Installing Clustering Services

After you have completed the Novell® ZENworks® for Desktops (ZfD) installation, you can continue preparing for using ZfD in Novell Cluster Services™ (NCS) by completing various other configuration tasks, including:

General Configuration Procedure

During the ZfD installation, some files are copied to the SYS:PUBLIC directory of the server where ZfD is installed. These ZfD files must reside on the cluster volume for ZfD to function properly with NCS. To avoid problems after the installation, copy the entire SYS:PUBLIC directory to the cluster volume.

Configuring Application Management

Application Object Templates (AOTs) must be stored on the cluster volume. Some AOTs are installed automatically by ZfD. You must move these AOTs to the cluster volume and update their SOURCE_PATH macro to point to the cluster volume. For more information about modifying Application object macros, see Chapter 14, "Application Object Settings," on page 115.

Configuring Workstation Imaging

This section contains the following information:

Creating a Server Policy Package that has an Imaging Policy

If you create a Server Policy package that includes an Imaging policy, the ZfD imaging engine will not recognize the policy package if it is associated to a virtual server. To work around this limitation, you should associate this Server Policy Package to all of the nodes that are involved in the failover process for the virtual server in the cluster.

Configuring Option 60

By default, a NetWare® 5.1 server will not support both the NetWare DHCP server (DHCPSRVR.NLM) and the ZENworks 3.2 PXE proxy DHCP server on the same server. If both are loaded, the DHCP server will not be able to hand out addresses. This can be corrected by using components shipped with NetWare 6. These updates are also included NetWare 5.1 SP4.

Use the following steps to enable PXE Proxy DHCP services and configure Option 60 on the same server that runs the Novell DHCP server:

1. Install the DNS-DHCP client from NetWare 6.
2. Copy DHCPSRVR.NLM, DNIPINST.NLM and NDDPREFS.DAT files from the SYS\SYSTEM directory on the NetWare 6 CD to the SYS:SYSTEM directory on the server. (You might want to back up these files first.)
3. Using the DNS-DHCP console, export the DNS and DHCP records.

   Note the NDS locations of the DNS-DHCP locator and group objects and the DNS zone objects.
4. At the system console, type **`load DNIPINST -R`** to remove DNS, DHCP and related schema extensions.
5. At the console, load DNIPINST to install the updated DNS-DHCP and schema extensions.
6. Using the DNS-DHCP console, import the DNS and DHCP records.
7. Using the DNS-DHCP console add Option 60 (global options or subnet) and set the text string to PXEClient.
8. At the system console type **`load NAMED`**.
9. At the system console, type **`load DHCPSRVR`**.
10. If you have not already done so, install ZENworks 3.2 imaging services with PXE support.
11. Using a text editor, make the following changes to SYS:SYSTEM\PDCHP.INI:

    ```
    Set USE_DHCP_PORT to 0.

    Make sure USE_BINL_PORT is set to 1.
    ```
12. Unload and reload PDHCP.NLM.

Configuring Workstation Inventory

This section explains how to configure Workstation Inventory after installing cluster services in the following scenarios:

- “Scenario 1: Configuring Workstation Inventory After Installing ZfD 3.2” on page 450
- “Scenario 2: Configuring Workstation Inventory After Upgrading From ZfD 3.2 to ZfD 3.2 SP1” on page 453

Scenario 1: Configuring Workstation Inventory After Installing ZfD 3.2

After installing ZfD 3.2, follow these steps to configure Inventory:

1. During the ZfD installation, some files are copied to the SYS:PUBLIC directory of the server where ZfD is installed. These ZfD files must reside on the cluster volume for ZfD to function

properly with NCS. To avoid problems after the installation, copy the entire SYS:PUBLIC directory to the cluster volume.

2 Configure the Inventory database object. If you have selected Sybase* during ZfD installation, the installation program creates the Database object (ZfDInventoryDatabase) and configures the properties of this object. Skip to Step 3. If you are using Oracle*, continue with step 2a.

2a If you are maintaining the Inventory database in Oracle, ensure that you have created the Database object and configured the properties. For more information, see Configure the Policies for the Database in Workstation Inventory in *Getting Started*.

3 To configure the Database object for a cluster environment: In ConsoleOne®, right-click the Database object > click Properties > click ZENworks Database > browse for the DN (NCP server object) of the virtual server or specify the IP address of the virtual server > click OK.

4 On the cluster node, edit the Sybase startup file (SYS:\SYSTEM\MGMTDBS.NCF file) to modify the IP address specified in this file. You should specify the IP address of the virtual server. This specifies the database on the cluster volume.

```
load SYS:\zenworks\Database\dbsrv7 -gn 50 -c 32M -tl 300 -ti 0 -m -n
ipaddress_of_the_server -x tcpip Clustervol:\Zenworks\Database\mgmtdb.db
SYS:\Zenworks\Database\nal.db
```

5 Copy the MGMTDBS.NCF file from the SYS:\SYSTEM directory to other cluster nodes that have Inventory installed.

6 To configure the Inventory server:

6a Edit the AUTOEXEC.NCF file on all cluster nodes that have Inventory installed.

The Workstation Inventory installation adds entries to the server's AUTOEXEC.NCF file that load certain ZENworks services. You must comment the following lines in the file:

```
search add sys:\java\njclv2\bin
```

```
zfdstart.ncf
```

Ensure that you comment all occurrences of these lines.

6b In the volume load script of the virtual server, append these entries:

```
search add sys:\java\njclv2\bin
```

```
zfdstart.ncf
```

6c On the cluster nodes that have Inventory installed, add the following line before the STARTINV.NCF entry in the ZFDSTART.NCF file:

```
SYS:\SYSTEM\MGMTDBS.NCF
```

Ensure that you make this change on all cluster nodes.

6d In the volume unload script of the virtual server, add the following entry as the first entry in the file:

```
zfdstop.ncf
```

6e On all the cluster nodes, edit the ZFDSTOP.NCF file.

Ensure that the entries in this file follow this exact sequence:

```
Java -killzenWSImp
```

```
Java -killzenWSRem
```

```
Java -killzenWSInv

delay time_in_seconds

Unload imgserv <<y

Unload dbsrv7.nlm <<y
```

where *time_in_seconds* is the delay time in seconds. We recommend that you set *time_in_seconds* to 8 seconds.

Comment out the following entries in the ZFDSTOP.NCF file:

```
ZENworks for Desktops 3.0 Settings

 --Remove Inventory services and the Inventory database.

StopSer *

ZENworks for Desktops 3.0 DB Settings
```

7 On all cluster nodes, configure the Inventory Server Property file.

You must modify the inventory server's property file if you have defined the role of the cluster node as one of the following:

Make the necessary modifications on all cluster nodes.

Server Type	Server Property File
Root Server	ROOT_DB.PROPERTIES
Root Server with Workstations	ROOT_DB_WKS.PROPERTIES
Intermediate Server	INT.PROPERTIES
Intermediate Server with Workstations	INT_WKS.PROPERTIES
Intermediate Server with Database	INT_DB.PROPERTIES
Intermediate Server with Database and Workstations	INT_DB_WKS.PROPERTIES

The Standalone Server does not require modifications in the properties file.

The server property file is located in the \PUBLIC\ZENWORKS\WMINV\PROPERTIES directory.

To edit the server property file on the cluster node, modify the Arguments entry in the [Receiver Service] section: `Arguments=Cluster`

8 Launch scanners from the cluster volume.

8a Ensure that you have copied the files from \SYS:\PUBLIC\ZENWORKS to the cluster volume as instructed in Step 1 on page 450.

8b The Inventory installation assigns the [Root] as a Trustee of the SYS:\PUBLIC\ZENWORKS directory with Read and File Scan rights. Ensure that this directory on the cluster volume has the Read and File Scan rights permissions.

9 Configure the Inventory settings.

Before following any of these tasks, ensure that you specify any one Inventory Service object for configuring inventory. When you configure the selected Inventory Service object, these settings will apply to other nodes.

You must also modify the \PUBLIC\ZENWORKS\WMINV \PROPERTIES\CONFIG.PROPERTIES file of all cluster nodes in the inventory setup to specify the DN of the Inventory Service object of the virtual server that has been configured for inventory.

9a In the CONFIG.PROPERTIES file, modify the InventoryServiceDN entry for all other cluster nodes:

```
NDSTree=tree_name

InventoryServiceDN=dn_of_the_inventory_service_object

SingletonPort=65433
```

10 Configure the Inventory Policy settings for the virtual server:

10a Ensure that you have configured the Inventory settings. This is required before you configure the Inventory Policy settings for the virtual server.

NOTE: You must configure the Inventory policy settings only for the virtual server. The Inventory policy should not be configured for other cluster nodes.

10b From ConsoleOne, click Tools > click Configure Inventory for Cluster.

10c Fill in the following details:

Virtual Server DN: Specify the DN of the virtual server.

Location of Inventory Scanner: Specify the directory location of the scanner executables (WINSCAN.EXE and NTSCAN32.EXE) on the cluster volume. On an inventory server, these files exist in the SYS:\PUBLIC\ZENWORKS directory. Specify the directory location on the virtual server.

Scan Directory Path: Specify the directory for storing the scan data files (.STR) on the virtual server.

The SCANDIR directory is created in the specified location on the cluster volume.

10d Click OK.

IMPORTANT: If you want to make any modifications to the Scan Directory path, you must use the Configure Inventory for Cluster window. Do not modify the Scan Directory path from the Inventory Service object property page.

Scenario 2: Configuring Workstation Inventory After Upgrading From ZfD 3.2 to ZfD 3.2 SP1

After upgrading from ZfD 3.2 to ZfD 3.2 SP1, follow these steps to configure Workstation Inventory:

To configure ZfD 3.2 SP1 Workstation Inventory in a clustered environment that has ZfD 3.2 Workstation Inventory installed and configured:

1. During the ZfD installation, some files are copied to the SYS:PUBLIC directory of the server where ZfD is installed. These ZfD files must reside on the cluster volume for ZfD to function properly with NCS. To avoid problems after the installation, copy the entire SYS:PUBLIC directory to the cluster volume.
2. Edit the AUTOEXEC.NCF file on all cluster nodes that have Inventory installed.

   The Workstation Inventory installation adds entries to the server's AUTOEXEC.NCF file that load certain ZENworks services. You must comment the following lines in the file:

```
search add sys:\java\njclv2\bin

zfdstart.ncf
```

Ensure that you comment all occurrences of these lines.

3 On all the cluster nodes, edit the ZFDSTOP.NCF file to do the following:

3a Comment out the following entry:

```
Unload dbsrv7.nlm <<y
```

3b Ensure that the entries in this file follow this exact sequence:

```
Java -killzenWSImp

Java -killzenWSRem

Java -killzenWSInv

delay time_in_seconds

Unload imgserv <<y

;Unload dbsrv7.nlm <<y

SYS:\SYSTEM\STOPDB.NCF

DELAY 10
```

where *time_in_seconds* is the delay time in seconds. We recommend that you set *time_in_seconds* to 8 seconds.

4 Launch scanners from the cluster volume.

4a Ensure that you have copied the files from \SYS:\PUBLIC\ZENWORKS to the cluster volume as instructed in Step 1 on page 453.

4b The Inventory installation assigns the [Root] as a Trustee of the SYS:\PUBLIC\ZENWORKS directory with Read and File Scan rights. Ensure that this directory on the cluster volume has the Read and File Scan rights permissions.

31 Troubleshooting ZfD in a Novell Clustering Environment

The purpose of this section is to identify issues that may arise with some of the Novell® ZENworks® for Desktops (ZfD) components when they are installed in a Novell Cluster Services™ (NCS) environment. The following information is included:

Workstation Imaging

The following events may occur as you attempt to use the Workstation Imaging component of ZfD in a clustering environment:

Imaging Session Fails

Problem: When the cluster-enabled volume is migrated to another node, a workstation currently pulling down or pushing up images loses its connection.

Explanation: When a workstation requests an image from the image proxy server (the virtual server), the workstation has, in effect, opened an imaging session. When the cluster-enabled volume is migrated to another node, that session is disconnected.

Action: Restart the workstation imaging process from the beginning.

Image Multicasting Does Not Work

Problem: Image multicasting will not work in a from a virtual server in a clustering environment.

Explanation: Although the virtual server's representation in the directory is identical to a physical node, the ZfD properties of a physical node that are normally visible to the image engine are not visible in the virtual server.

Action: Do not attempt to multicast images from a virtual server in a clustering environment.

Imaging Server Does Not Fail Over

Problem: When an imaging session is in progress in a clustering environment and a failover occurs, IMGSERV.NLM does not unload properly.

Explanation: The load and unload commands for IMGSERV.NLM are issued in the ZFDSTART.NCF and ZFDSTOP.NCF files, which are integrated to execute from the load and unload script of the virtual server. The <<y appendage in the script unloads IMGSERV.NLM properly if the unload command is issued through ZFDSTOP.NCF.

However, if IMGSERV.NLM is unloaded through the ZFDSTOP.NCF file from the virtual server unload script, the unload message is first sent to the shared resource console with an accompanying message: `Unload module Y/N?` The yes answer (already imbedded in the <<y appendage) is sent to the system console, where it is not expected. In this way, IMGSERV.NLM never unloads because it is waiting to receive the Yes command.

Action: Use the following steps to spell out the "unload imgserv.nlm <<y" in the shared resource unload script.

1. From ConsoleOne® running on a Windows workstation, click the cluster object > click the shared resource object > click the Unload Script tab to open the script.
2. At the beginning of the shared resource unload script, type the following commands:

```
Java -killzenWSImp
Java -killzenWSRem
Java -killzenWSInv
delay 8
Unload imgserv <<y
pxestop.ncf
```

3. Close the shared resource unload script.

Workstation Inventory Error Messages

The following sections contain detailed explanations of the error messages that may be generated while you are using the ConsoleOne snap-in for Workstation Inventory in NCS:

Unable to update virtual server DN in the directory

Source: Cluster snap-in

Severity: Critical

Explanation: The inventory settings for the server are stored in the directory. This error occurs if the attributes cannot be written to the directory.

Possible Cause: The network is down.

Action: Ensure that the network is up and the network connections are active.

Possible Cause: There may be a problem with the directory.

Action: See the Novell eDirectory documentation Web site (http://www.novell.com/documentation) for troubleshooting information about Novell eDirectory™ problems.

Action: Ensure that you have sufficient rights to modify the directory attributes.

Unable to update scanner location in the directory

Source: Cluster snap-in

Severity: Critical

Explanation: The inventory settings for the server are stored in the directory. This error occurs if the attributes cannot be written to the directory.

Possible Cause: The network is down.

Action: Ensure that the network is up and the network connections are active.

Possible Cause: There may be a problem with the directory.

Action: See the eDirectory documentation Web site (http://www.novell.com/documentation) for troubleshooting information about the directory problems.

Action: Ensure that you have sufficient rights to modify the directory attributes.

Unable to update the scan directory path in the directory

Source: Cluster snap-in

Severity: Critical

Explanation: The inventory settings for the server are stored in the directory. This error occurs if the attributes cannot be written to the directory.

Possible Cause: The network is down.

Action: Ensure that the network is up and the network connections are active.

Possible Cause: There may be a problem with the directory.

Action: See the eDirectory documentation Web site (http://www.novell.com/documentation) for troubleshooting information about directory problems.

Action: Ensure that you have sufficient rights to modify the directory attributes.

The selected virtual server DN does not represent a cluster. Select a valid virtual server

Source: Cluster snap-in

Severity: Critical

Explanation: You can open the Configure Inventory Cluster window for any Inventory Service object. This error occurs if you have not selected a virtual server DN that represents a cluster.

Action: Select a virtual server to configure the inventory settings.

Select a directory on the virtual server instead of volume

Source: Cluster snap-in

Severity: Warning

Explanation: To configure the Inventory Policy settings for the virtual server, you must specify the SCANDIR directory for storing the scan data files (.STR) on the virtual server. The SCANDIR directory is created in the specified location on the virtual server.

This error occurs when the specified scanner location or the scan directory path in the directory

contains the volume location instead of the directory location.

Action: Ensure that you specify a directory location on the virtual server.

D Documentation Updates

This section lists updates to the Integrating ZfD 3.2 with Novell Cluster Services part of the *Administration* guide that have been made since the initial release of Novell® ZENworks® for Desktops (ZfD) 3.2. 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 *Administration* guide was updated and republished:

October 31, 2002 (ZfD 3.2 Support Pack 1)

Location	Update
"General ZfD 3.2 SP1 Installation Procedure" on page 446	Added instructions to accommodate users of ZfD 3.2 SP1 who want to integrate Novell Clustering with the support pack release.
"Scenario 2: Configuring Workstation Inventory After Upgrading From ZfD 3.2 to ZfD 3.2 SP1" on page 453	Added instructions to accommodate users of ZfD 3.2 SP1 who want to integrate Novell Clustering with the support pack release.
Chapter 28, "Installation Prerequisites," on page 441	Added a paragraph to the first step to indicate the version of ConsoleOne used with ZfD 3.2 SP1.