

# Deploying Novell® ZENworks® for Desktops 4

in a Pure Microsoft\* Windows\* Environment

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WHITE PAPER

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**Novell®**

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# Introduction

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*“ZENworks is one of the leading tools for enterprise client configuration management, asset tracking and software distribution. It was previously only suitable for NetWare environments, but the recent updates eliminate the need for a Novell client and place the eDirectory component in the background. As a result, eDirectory requires minimal management. Clients should short list Novell ZENworks for client and server configuration management and asset tracking.”*

—David Friedlander,  
Giga Information  
Group article<sup>1</sup>,  
December 4, 2002

Novell® ZENworks® for Desktops 4 operates on the Windows® workstations regardless of the server environment in your network. ZENworks for Desktops 4 will function in any IP network running Novell eDirectory™, including Windows 2000/NT\*, Novell NetWare. 6 or NetWare 5.1 server-based networks and mixed environments.

ZENworks for Desktops has traditionally been deployed in a NetWare network or mixed NetWare and Windows environments. The initial versions of ZENworks for Desktops were dependent on many of the features and capabilities that only existed in a NetWare based LAN; however, as the product has matured, features have evolved, allowing ZENworks for Desktops 4 to provide significant functionality in a non-mixed, pure Windows environment. Everything that you require to run in a pure Windows environment is supplied in the ZENworks for Desktops 4 product.

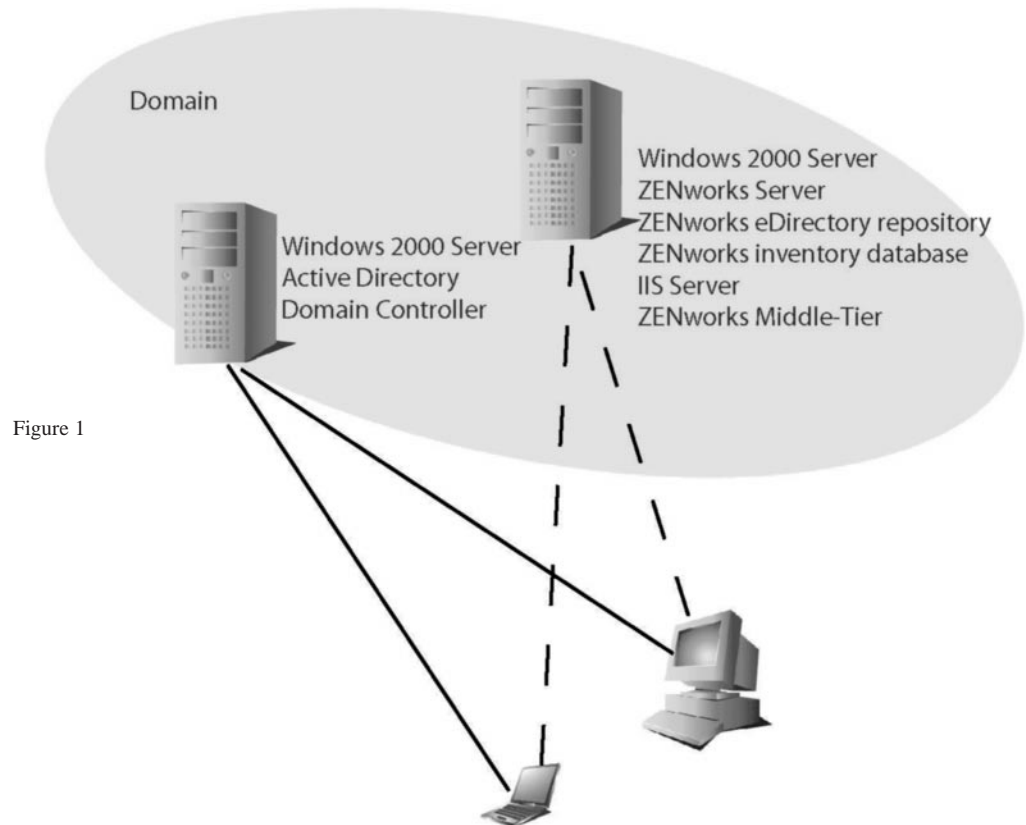


Figure 1

ZENworks can be deployed, as depicted in Figure 1, into an Active Directory\* Domain and provide all the services in the product through Windows 2000 servers and IIS. All administration of user accounts, etc. can continue through the domain, while administration of applications, desktops, etc. is done using eDirectory as the repository independent of Active Directory, for example. ZENworks ships with other Novell products to allow you to automatically synchronize your users and passwords between Active Directory (or NT Domains) and the eDirectory ZENworks repository. ZENworks is agent-based and requires no Novell client on the workstations or laptops. It will quietly authenticate in the background to eDirectory and retrieve applications and policies, delivering them onto your desktop through a browser, Start Menu, window or desktop icons.

This document will discuss how ZENworks for Desktops 4 can be deployed in a pure Windows environment and will walk through the installation steps to setup a trial configuration.

## ZENWORKS FOR DESKTOPS NETWORKING

### Minimum Network Requirements

ZENworks for Desktops requires the following in the network:

- Windows NT/2000 Server with IIS and SP2 in the domain.

### Expected Network Setup

The following Windows networking setup is assumed in a traditional windows environment:

- An Active Directory Domain.
- ZENworks for Desktops 4 Server installed on a Windows 2000 Server with Novell eDirectory, DirXML<sup>®</sup> 1.1a and Password Synchronization installed; not the Domain Controller. This server must be in the same domain as the Active Directory Domain Controller.
- ZENworks for Desktops 4 Middle-Tier installed on a Windows 2000 Server where Microsoft IIS is installed. This server must also be in the same domain as the Active Directory Domain Controller. This can also be the same server with eDirectory and ZENworks for Desktops 4 Server; however, you should consider keeping the IIS server independent to minimize performance issues.

### ZENworks for Desktops 4 Configuration Options

ZENworks for Desktops 4 can run in three modes on the workstation: Application Browser View Agent mode, Full agent mode, Novell client mode. It is assumed that in a pure Windows environment the Novell client will not be used; therefore, you need to decide on what features you need in your network.

#### *Application Browser View Agent Mode*

In this mode, a single Application Browser View agent is delivered when the user connects to IIS and opens their application page, provided by ZENworks for Desktops 4. The Web agent is automatically installed on the workstation, provided the user has rights to install local applications.

The Application Browser View agent will only deliver applications to the workstation when the

*ZENworks was rated #1 over the competition. "ZENworks is a full-featured set of tools; no longer requires a NetWare server or the Novell client."*

*Rated high in mobile management, inventory, desktop configuration, and more.*

—Network World Fusion,  
February 2003

*“Lots of you already know about Novell’s ZENworks applications and many of you (those who have only Windows servers) may even be jealous of your NetWare manager colleagues who have been using ZENworks for Desktops for many years to do—with more ease and at lower cost—what Microsoft’s own IntelliMirror only promises.*

*Well, your wish has been granted and your dreams are about to come true. ZENworks for Desktops Version 4 will run on a Windows network with no NetWare server needed. It’s true that you’ll need to run Novell’s eDirectory for Windows 2000—but the next release of ZENworks will even do away with that requirement as it will run on top of any Lightweight Directory Access Protocol-compliant directory service, including Windows’ Active Directory. And surprisingly, I was reminded of this by someone deep inside Microsoft.”*

—Dave Kearns,  
Network World Fusion,  
June 3, 2002

user connects to their personalized application Web page. Dynamic local user account creation, hardware and software inventory, automated imaging services, and remote management capabilities are not included in this agent.

### *Full Agent Mode*

In this mode, the ZENworks for Desktops 4 agent is installed on the workstation. The installation can be done by an administrator, part of an image, or by the user. By installing the ZENworks for Desktops 4 agent you provide, to your users, all of the capabilities inherent in the product.

Should you need Dynamic local user account creation on the workstation, then you must configure ZENworks for Desktops 4 agent to prompt the user to log into eDirectory prior to the local windows login. When configured, the user is prompted for their eDirectory user name and password (which should be the same as their Active Directory account since they are being synchronized by DirXML), then ZENworks will create a local account on the workstation if one is not present, and then log the user into Windows with same username and password given.

If you do not require Dynamic Local User account creation, then ZENworks will silently retrieve the username and password from Windows, when the user logs into their workstation. The agents will then connect to eDirectory using the given username and password in order to provide the applications administered to the user.

With the full agents installed on the workstation, you may still choose to only deliver applications through the browser view.

### **DirXML Engine and Drivers**

The DirXML engine is an eDirectory module that provides the ability to synchronization eDirectory data with any outside data service. The DirXML engine is designed such that it may have several drivers running that describe how output and input should be sent between data sources.

The DirXML Driver for Active Directory (included with ZENworks for Desktops 4) is specifically designed to synchronize data between Novell eDirectory and Microsoft Active Directory. The synchronization is bi-directional; you determine whether information should flow to and from both directories, or whether information should flow only from one directory to the other.

There are many other DirXML Drivers available for other data sources, including PeopleSoft\*, JDBC, any LDAP directory, Lotus Notes\*, SAP\* HR, and WebSphere\* MQ. Check out <http://www.novell.com/dirxml> for other drivers that may become available.

DirXML architecture uses a publisher/subscriber model where the publisher’s responsibility is to place information into eDirectory while the subscriber’s job is to reflect changes in eDirectory back into the external, synchronized data source. The behavior of the publisher and subscriber and the attribute mapping is determined by a set of rules that are housed in eDirectory as part of the DirXML Driver. DirXML drivers can be customized through XML rules to deliver just about any data configuration desired. See <http://www.novell.com/documentation> for more details on how DirXML can be configured and look at the DirXML Novell

site (<http://www.novell.com/dirxml>) to see how we can help you customize your installation.

## INSTALLATION PROCEDURES

The following sections will walk you through a standard installation of ZENworks for Desktops 4 in a pure Windows environment with Active Directory.

### Configuration

For the purpose of developing your own test environment, the configuration used in this whitepaper is relatively small. Your systems may include, in fact, many servers for such needs as application execution, terminal services, etc.

For this whitepaper we will be using the following network layout.

- Windows 2000 server that is the Active Directory Domain Controller
- Windows 2000 server that will be the ZENworks Server and where we will install eDirectory and ZENworks Middle Tier server
- Windows XP Professional Workstation with the full ZENworks agents configured
- Windows XP Professional Workstation with the Application Browser View agent

In a more traditional system you may wish to put your ZENworks Middle Tier server onto another Windows 2000 server to provide maximum performance. This is not done in this paper to minimize hardware requirements. Should you decide to put the Middle Tier server on another server, the only requirements for this server is a Windows 2000 Server running IIS with all of the appropriate support packs.

### Installing ZENworks for Desktops 4

The following sections will discuss how to install ZENworks for Desktops 4 into a pure Windows environment.

#### *Pre-Installation Requirements*

The following must already have been installed and functioning:

- DA-01—Windows 2000 Server with Active Directory (DA domain) and SP2 installed.
- DA-02—Windows 2000 Server with Support Pack 2 or greater, IIS, and a member of the DA domain.
- WKS-01—Windows XP Professional Workstation
- WKS-02—Windows XP Professional Workstation

Download the following and save for use during the installation process:

- DirXML 1.1a for Windows NT/2000 from the <http://download.novell.com> Web site, choosing DirXML product.
- DirXML Password Synchronization for Windows from the <http://download.novell.com> Web site, choosing DirXML Password Synchronization for Windows product. This will download version 1.0.
- DirXML Password Synchronization update (pwdsnc1.exe) from the <http://support.novell.com/filefinder> Web site, entering pwdsnc1.exe in the search field.
- Print out TID# 2962702 from <http://support.novell.com> to instruct on how to apply the password synchronization update.

- eDirectory 8.7 or higher for Windows NT/2000 from the <http://download.novell.com> Web site, choosing eDirectory product.
- Download the update DirXML Active Directory driver and utilities found in TID#2964748 from the <http://support.novell.com> Web site through the knowledge base.

#### *ZENworks for Desktops 4 Installation*

Perform the following steps to install the ZENworks for Desktops 4 system into the identified environment:

**Step One: Getting eDirectory**—Download Novell eDirectory. This is done by performing the following:

- a. Go to <http://download.novell.com> and choose to download eDirectory product with the Windows 2000 platform.
- b. Choose eDirectory 8.7 for Windows NT/2000 from the list and download the full installation.
- c. Go to [http://www.novell.com/products/edirectory/customer\\_license.html](http://www.novell.com/products/edirectory/customer_license.html)
- d. Press the "I Accept" button on the license agreement.
- e. Select the appropriate eDirectory version from the list of licenses available.
- f. Fill in the contact information. Make sure you put in your correct e-mail address as your licenses will be sent to that address. Press the submit button.
- g. A license will be sent to your e-mail address. When received, open the e-mail and save the two files to a floppy diskette. (ZENworks for Desktops 4 provides a one-for-one license of eDirectory for Windows)

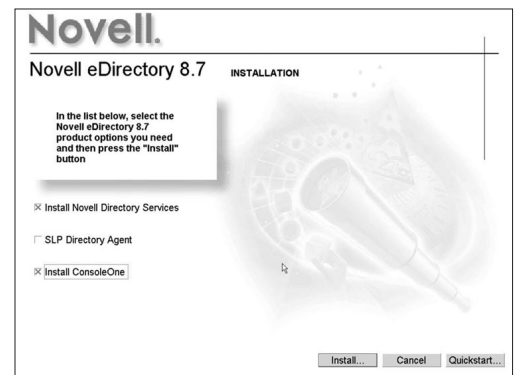
#### **Step Two: Getting Updated DirXML Active**

**Directory Drivers**—Take the new AD drivers and support tools you downloaded from TID#2964748 and put them on the server in some directory you create (not in ConsoleOne) or onto a floppy. These files should include: AD-DRIVER.XML, AD-DRIVER\_EN.XLF, AD-DRIVER-SCHEMA.LDI, and READDOMAINGUID.EXE.

#### **Step Three: Installing eDirectory**—Install

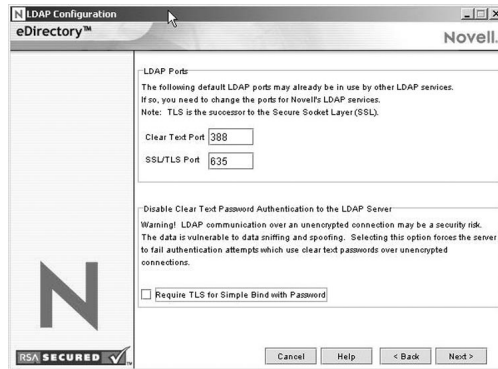
eDirectory onto DA-02. This is done by performing the following:

- a. Log onto the DA-02 Windows 2000 server as administrator and launch the eDirectory execution program, downloaded in the pre-installation procedures.
- b. Choose to install both eDirectory and ConsoleOne onto the server. Press Install.



- c. The first step that eDirectory installation performs is the installation of the Novell client. Perform the following to install the client:
  1. Press Yes on the license agreement.
  2. Choose custom installation and press Next.
  3. Verify that only the client is chosen on the modules list. Press Next.

4. Choose IP only and Remove IPX if present.  
Press Next.
  5. Choose NDS. to instruct the client to default to using NDS connections.  
Press Next.
  6. Press Finish.
- d. The eDirectory License Installation will begin automatically. Press Next.
  - e. Read the license agreement and press I Accept.
  - f. Insert the license diskette you made in the previous step.
  - g. Select "Install license diskette, A:License" and press Next.
  - h. Press Close on the licensing installation success dialog.
  - i. The system will now install NICI cryptography system. Once that is installed, the system will prompt you to be rebooted.
  - j. Remove the floppy diskette and press OK on the dialog box requesting to reboot. Once the system is rebooted, eDirectory will complete its installation.
  - k. When the system next comes up you will be presented with the client login dialog.  
Press Ctrl-Alt-Delete.
  - l. Choose workstation only and log into the system as the administrator. Press OK.
  - m. The installation of eDirectory will automatically continue.
  - n. On the welcome screen for the installation, press Next.
  - o. View the license and press "I Accept".
  - p. Select the desired languages and press Next.
- q. Accept the default installation path and press Next.
  - r. Press Yes on the dialog box to create the new directory that does not exist.
  - s. Choose to create a new eDirectory tree.  
Press Next.
  - t. Choose a tree name, context for the DA-02 server and admin user object along with the passwords. At the very minimum you want the server and admin under a container, so append a "<dot>containername" (where <dot> is a period and you do not enter the double quotes) after the server name. For this document we'll assume the container you created was da. So, for example, tree name would be DA-TREE. The server object would be DA-02-NDS.servers.da and the admin name would be admin and the context would be da.  
Press Next.
  - u. Accept the HTTP Stack Ports as default, since there will be no conflicting ports on this server. Press Next.
  - v. Accept the defaults on the certificate server objects wizard page and press Next.
  - w. Proceed and create a certificate authority for the tree, pressing OK on the warning dialog.
  - x. Since eDirectory will need to not interfere with Active Directory that is using the default 389/636 ports we need to change them. Change the clear text port to 388 and the SSL port to 635. Uncheck the Require TLS for Simple Bind with Password. This is necessary in order to allow password synchronization to function. Press Next.

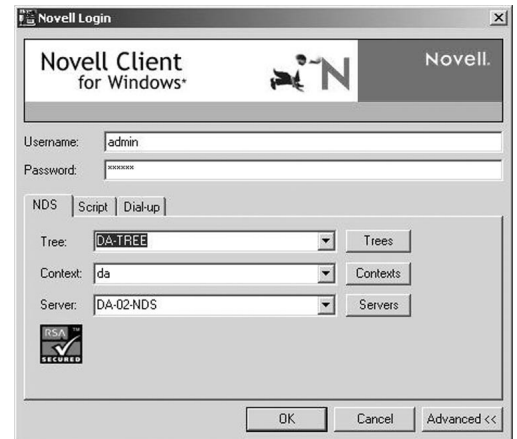


- y. Accept the default NMAS™ Login Methods by pressing Next.
- z. Complete the installation of eDirectory by pressing Finish on the wizard.
- aa. eDirectory will now perform its installation on the DA-02 server. When completed, press Close on the success dialog box.
- bb. The installation of ConsoleOne will now automatically start. Proceed through the wizard to install ConsoleOne onto the DA-02 server.
  1. Press Next on the welcome screen.
  2. Read the licensing agreement and press "I Accept".
  3. Select any additional languages you wish to install. Press Next.
  4. Accept the default installation path and press Next.
  5. Accept the default set of components to install and press Next.
  6. Accept the JInfoNet licensing agreement and press Next.
  7. Press Finish on the summary page and ConsoleOne will now install on the server.
  8. Press Close on the successful installation dialog.

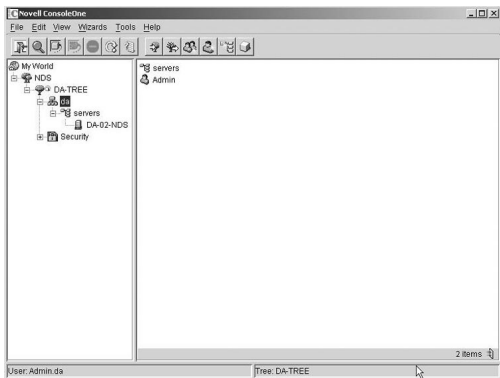
#### Step Four: Verifying that eDirectory is Functioning Properly—Now that you have

installed eDirectory, let's make sure that everything is functioning as we would expect. Let's do a quick check, by doing the following:

- a. Right-click on the red N in the task bar and select login.
- b. Enter in user admin, your password for eDirectory. Press Advanced and fill in the tree name, context of admin, and server.



- c. Press OK. This should log you into eDirectory.
- d. Verify that you are logged into the tree as admin by right-clicking on the red N in the taskbar and selecting connections. Verify that you have a resource for the tree and the server and the user name of CN=Admin. Authentication state on the server should be Directory Services and the Tree should be DA-TREE. Close dialog box.
- e. Now launch ConsoleOne and see if the tree is visible and the admin along with server objects are present.



- f. Create a shortcut on your server for  
c:\novell\nds\ndscons.exe. NDSConsole is a utility that allows you to view the state of the eDirectory tree and the services running.
- g. Launch ndscons and verify that at least ds.dlm and nldap.dlm are running.

Congratulations. You now have an eDirectory tree running on your Windows 2000 server.

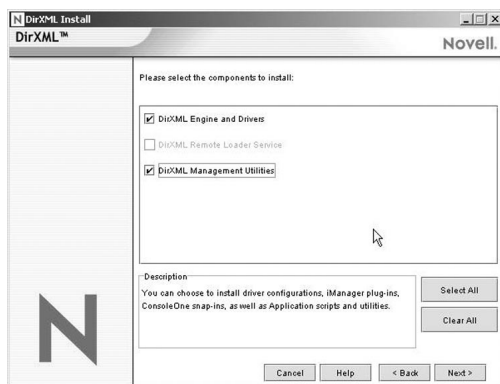
**Step Five: Creating an Administrator Active Directory Account for DirXML**—In order to isolate changes that may occur with other administrator accounts, Novell recommends that you create a separate account for DirXML with Administrator privileges in Active Directory. To create this administrator user:

- a. Log onto the DA-01 server as administrator of the domain.
- b. Launch the Active Directory Users and Computers MMC by launching Start->Programs ->Administrative Tools->Active Directory Users and Computers.
- c. From Active Directory Users and Computers, select the container where you want to add the DirXML administrator user, then click Create a New User.

- d. Enter the names for the user. For example, enter Novell as the First name, DirXML as the last name, Novell DirXML as the full name. User login name should be **novelldirxml@da.com**.
- e. Next, then set the password for the new user. Mark Password Never Expires so that a password won't disable the driver unexpectedly.
- f. Click Next, review the summary, then click Finish.
- g. In the Tree view, select Builtin->Administrator's properties->Members->Add.
- h. Select the full name of the user you created (Novell DirXML), click Add, click OK, then click OK again.
- i. Close the Active Directory Users and Computers window.
- j. In the Administrative Tools window, select Domain Controller Security Policy.
- k. In the Tree View, expand Security Settings ->Local Policies->User Rights Assignment.
- l. Set Log On As a Service->Security->Add ->Browse.
- m. Select the user you created (Novell DirXML), click Add, click OK, click OK, then click OK again.
- n. Close the Domain Controller Security Policy.
- o. Reboot the system.

**Step Six: Installing DirXML**—Now that eDirectory is running you need to install DirXML so that users can be synchronized between your Active Directory Domain and eDirectory. Install DirXML by performing the following:

- a. Log onto the DA-02 Windows 2000 server as administrator and into eDirectory as admin.
- b. Launch the DirXML 1.1a installation program, downloaded in the pre-installation procedures (nt\install.exe).
- c. Press Next on the DirXML welcome screen.
- d. Read the licensing agreement and press "I Accept".
- e. Choose to install "DirXML Engine and Drivers" and "DirXML Management Utilities" on the component installation page. Press Next.



- f. On the following component page choose "DirXML Engine" and the appropriate Core Driver ( "DirXML Driver 2.0a for Active Directory"). Proceed with the installation by pressing Next.
- g. Verify that the tree is appropriate and enter, or browse to, the admin user and password. Your admin user name will be "CN=admin.O=da". Press Next.
- h. Choose "ConsoleOne snapins for DirXML", and "DirXML Preconfigured Drivers" for additional installation. Press Next.
- i. Deselect all of the preconfigured drivers except the appropriate Active Directory driver. Press Next.

- j. Press Finish on the summary dialog.
- k. The installation of DirXML will continue. First it will shutdown eDirectory and then the install will proceed.
- l. Press OK on the dialog box warning about the possible conflict with eDirectory and the LDAP system. (We fixed that when we installed eDirectory.)
- m. When it is completed eDirectory will be brought back up.
- n. On the final dialog box, uncheck "Launch ConsoleOne DirXML Configuration Wizards" and press Close. We will be launching the configuration wizards at a different time.
- o. Congratulations. You have now installed DirXML. The drivers need to be configured before synchronization will occur, so that's the next thing to do.

**Step Seven: Configuring DirXML Drivers**—Now that eDirectory and DirXML have been installed on your DA-02 server, you need to configure your DirXML drivers and get synchronization to begin between your Active Directory Domain and eDirectory. Configure your DirXML drivers by doing the following:

- a. Login to the DA-02 server as administrator and eDirectory as admin.
- b. Open a DOS box and execute the readDomainGUID.exe program. Make sure you run the tool from the c:\novell\nds directory. Cut and Paste the GUID returned by the tool into a text file for later use.
- c. Launch ConsoleOne.

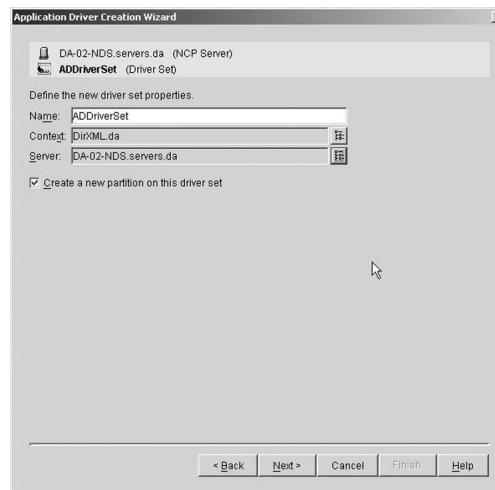
d. We need to extend the eDirectory schema to accommodate the new Active Directory driver.

This is accomplished by doing the following:

1. Launch schema import tool by selecting in ConsoleOne Wizards->NDS Import/Export.
  2. Select Import LDIF file, press Next.
  3. Browse to and select the AD-Driver-Schema.ldif file on your ZENworks floppy or directory where you downloaded the files from TID#2964748. Press Next.
  4. Enter in the Server DNS Name/IP Address field 127.0.0.1 and 388 in Port field.
  5. Select Authenticated Login and enter your admin user object and password in the fields. Remember to enter the LDAP version of the admin user name including the container (cn=admin,o=da). Press Next.
  6. Press Finish on the summary screen.
  7. You should get a scrolled output of the import. Look to verify that the total entries processed is 3 and that there were no errors.
  8. Press Close.
- e. Create an organizational unit (OU) container in the directory under your da organizational container. Call this new OU DirXML. We will create all of the objects related to DirXML under this container.
- f. If desired, create a user organizational unit container under da.
- g. Select the parent container (da) of the new DirXML organizational unit, then on the

menu select "Wizards->Create a new Application Driver".

- h. On the creation wizard, select "In a new driver set". Press Next.
- i. Enter a driver set name, such as ADDriverSet. Browse to and select the DirXML container for the context and the DA-02 server for the server field. Press Next.



- j. The wizard will now create the objects for the driver set.
- k. Next select "Import preconfigured driver" and browse to and select AD-Driver.xml on your ZENworks floppy. Press Next.
 

**Warning:** The install of DirXML will put an addriver.xml file in the system. This will also come up on the list. Make sure you choose the new \AD-Driver.xml.
- l. Now you must configure the driver parameters. They are all on the presented wizard page and are visible by using the scrollbar.
  - Field 1—Driver name. Leave the name of the driver as the default.

- Field 2—Active Directory Account.  
Enter the domain administrator account you created (novelldirxml@da.com).
  - Field 3—Authentication Password.  
Enter the password for the domain administrator account.
  - Field 4—Retype the Password.  
Re-enter the domain administrator account password.
  - Field 5—DNS name of Domain Controller.  
Enter “LDAP://<DNS name of DA-01>” into the address of Active Directory Domain controller field. Do not enter an IP address. This would be LDAP://da-01.da.com.
  - Field 6—Domain GUID. Enter the GUID for the domain. Cut and Paste the GUID that you saved in a text file above into this field.
  - Field 7—Data Flow. Leave this to the default Bi-Directional.
  - Field 8—Active Directory Base Container.  
Enter the base container in Active Directory. This is the container where you want users to be synchronized with eDirectory (e.g., CN=Users,DC=da,DC=com).
  - Field 9—eDirectory Base Container.  
Enter the container where you want your users to be created and synchronized with Active Directory (e.g., users.da). You can browse for this container by pressing the browse button. If you are going to mirror the Active Directory containers, then this would be the top container in eDirectory.
  - Field 10—Publisher Placement. Choose if you want flat or mirror. If you choose flat, then all user objects coming from Active Directory will be put in the same container. If you choose mirror, then the user objects and the containers will be recreated in eDirectory.
  - Field 11—Subscriber Placement. See field 10 to choose your placement.
  - Field 12—Driver Polling Interval. Enter the polling interval you desire. In the lab it should probably be around one minute whereas in production you probably will want it around 15 minutes.
  - Field 13—Use Secure Authentication. Leave this the default yes.
  - Field 14—Enable PasswordSync. Leave this the default yes.
  - Field 15—Install Driver as Remote/Local. Set this to Local.
  - Field 16—Remote Host Name and Port. Ignore and leave as defaulted.
  - Field 17—Driver Password. Ignore and leave blank.
  - Field 18—Retype the password. Ignore and leave blank.
  - Field 19—Remote Password. Ignore and leave blank.
  - Field 20—Retype the password. Ignore and leave blank.
- m. Press OK.
- n. Press yes to set the security equivalences of the driver.

- o. Press the Add button and browse to the admin.da user and add it to the list. Press OK.
- p. Press yes on the "Novell recommends you identify all objects that represent 'Administrative Roles' ..." dialog box.
- q. Press the Add button and browse to and select all users that are administrators of eDirectory. This will prevent them from being created in the Active Directory domain and synchronized. Press OK.
- r. Press Finish on the summary page to complete the wizard.

Before we can get the DirXML driver running we need to install the Password Synchronization software as described in the next step.

#### Step Eight: Installing Password Synchronization—

Once you have installed eDirectory and DirXML, you need to install Password Synchronization. This will allow the user objects that you create in Active Directory, that get automatically created in DirXML to have the same password as their corresponding user in Active Directory. This is necessary to allow for single-login to both Active Directory and eDirectory when your users log into their workstations.

You should be aware that Password Synchronization requires that the platform-specific password policies are not in conflict with each other. Password policies that are in conflict will prevent successful password synchronization. For example, if eDirectory passwords are required to be at least eight characters while Windows passwords have no length requirements, then users

could create shorter Windows passwords that wouldn't be accepted by eDirectory. In this case, the passwords will not be synchronized. Password Synchronization does not override platform policies.

DirXML allows you to generate an initial password for an account based on the account's attributes or other information available through Java services. For instance, you can generate a password based on a user's Surname plus a four-digit number. Generating an initial password required driver customization, but is a great way to manage passwords when provisioning an account through your existing HR toolset.

ConsoleOne lets you set an initial password when creating a user account by marking the Assign NDS Password checkbox and then selecting the Prompt During Creation radio button. In this case, ConsoleOne sets the password before an account is associated in NT or Active Directory accounts, thus preventing the initial password from being synchronized. Passwords will be synchronized only after the first password change.

To avoid this delay, you can

- Unmark Assign NDS Password during user creation and assign the password later. A brief delay will allow account associations to be completed.
- Select Prompt user on first login so that password setting is delayed until the account is actually used.

Microsoft Management Console lets you set an initial password on a user account simply by typing the password at account creation. The password is

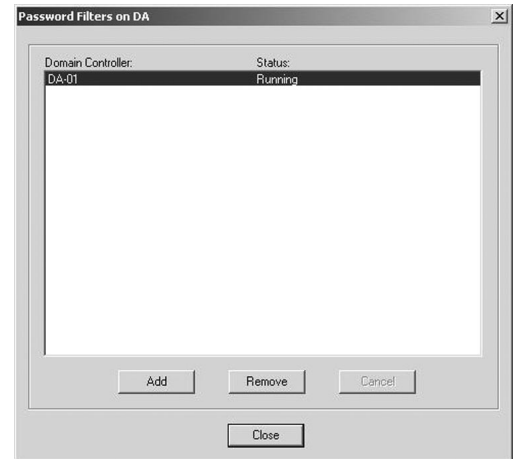
set before Password Synchronization is able to associate an eDirectory account with the Active Directory account, so Password Synchronization service is not able to update the eDirectory account immediately. However, the service will retry the password update and the account will be properly updated within several minutes.

Install Password Synchronization on your servers by performing the following:

- a. Login to DA-02 as administrator and Admin in eDirectory.
- b. Make sure the ConsoleOne is closed.
- c. Launch the installation of Password Sync that you downloaded from the Novell Web site.
- d. Press Next on the welcome screen.
- e. Read the license and press Yes to accept.
- f. Select both the Password Synchronization Service and PasswordSync Snap-in for ConsoleOne on the component menu. Press Next.
- g. Press Next on the review settings page. The installation will now copy the files to your DA-02 server.
- h. On the Setup dialog box, select the DA domain and browse to the ADDriver (ADDriver.ADDriverSet.DirXML.da) object in eDirectory. Press OK.
- i. For the object name leave it the default. For the Context, verify that it is the DirXML container that you have created. Press OK.
- j. When asked to give the password sync object rights, select the container where your user objects, synchronized from Active Directory, are expected to reside. Make sure you give

these rights for every container of users that you are synchronizing. Press OK.

- k. When prompted to put filters on each Domain Controller, press Yes.



- l. You will be given a list of Domain Controllers. Select DA-01 and press Add. Warning: This will cause DA-01 to be rebooted.
- m. Wait until DA-01 is rebooted and the dialog shows DA-01 status of Running.
- n. Press close.
- o. Press finish.
- p. Follow the instructions on TID# 2962702 that you downloaded. This will apply the update of Password Synchronization that you downloaded. Don't forget to reboot both DA-01 and DA-02 after applying the update.

#### Step Nine: Finalizing DirXML Driver

**Configuration**—Now that we have installed and configured both the DirXML drivers and the PasswordSync driver then we need to finalized the configuration to have these drivers start automatically and function properly. This can be achieved by doing the following:

- a. Login to DA-02 as administrator and Admin in eDirectory.
- b. Launch ConsoleOne.
- c. Select the ADDriverSet object under the DirXML container in ConsoleOne and right-mouse click to select properties.
- d. Select the DirXML->Drivers tab.
- e. Select the ADDriver in the list and press the start button. Verify that the driver has started by watching the status field change to Running.
- f. Press the properties button.
- g. Select the Startup Option tab and change the startup to be automatic.
- h. Press Apply.
- i. Press Close.
- j. Open NDSCons.exe and verify that the dirxml.dlm is running.

#### Step Ten: Verifying DirXML and Password

**Synchronization are Working**—Verify that your eDirectory, DirXML and Password Synchronization are working properly in your environment. This will be done by having us create a few users in Active Directory and see if they are automatically created in eDirectory, with the proper passwords.

- a. Login to DA-01 as the administrator of the AD Domain.
- b. Launch the Active Directory administration tool and create a test user in Active Directory (e.g., **TestUser1@da.com**).
- c. Login to DA-02 as the administrator of the domain and as admin in eDirectory.
- d. Open ConsoleOne and verify that TestUser1 has been created in the administered container. Remember that you may have to wait for a

synchronization cycle to complete before the user will be in eDirectory.

- e. Login to eDirectory as that user and verify that the password is the same as was given in Active Directory and you successfully authenticated to eDirectory. Remember that it may take another synchronization cycle before the password is updated.
- f. For completeness, you can now create a user in eDirectory, using ConsoleOne as admin, and verify that the user is now in the domain and you can log into the domain as that user with the password you specified in eDirectory. Don't forget to login to the directory as admin.

**Note:** The default synchronization rules will not create an Active Directory user until the full name attribute field is populated in eDirectory. This can be done under the properties of the user object, in the General tab.

Now that eDirectory, DirXML, and Password Synchronization is working and users are being synchronized, you can proceed to activate your DirXML licenses and then install ZENworks.

#### Step Eleven: Obtaining and Applying an Activator

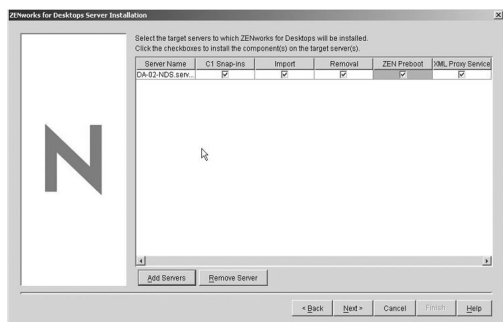
**License for DirXML**—Now that you have DirXML and Password Synchronization working you need to get an activator license to properly license DirXML and the drivers. This can be done with the following:

- a. Login to DA-02 as the administrator of the domain and as admin in eDirectory.
- b. Launch ConsoleOne, browse to and select the DirXML container.

- c. Select Wizards->Create a DirXML Activation Request.
  - d. On the welcome screen, browse to and select the DirXML driver set (ADDriverSet.DirXML.da).
  - e. Press Next.
  - f. Enter your Novell customer ID. Press Next.
  - g. Insert your ZENworks floppy and store the activator request onto the floppy.
  - h. Press Next.
  - i. Press Finish to exit the activator wizard.
  - j. On a machine that has Internet access, launch your browser and go to the Novell activator Web site (<http://www.novell.com/activator>).
  - k. Login to the Web site with your Novell profile user name and password.
  - l. Press the Browse button on the Web page and browse to and select the request.req file on the ZENworks floppy.
  - m. Press Submit at the bottom of the page.
  - n. On the Novell Product Activator page, select DirXML Password Synchronization and press Submit. This will generate and activator license for you DirXML 1.1a engine, the Active Directory Driver, and the Password Synchronization driver.
  - o. This will result in an e-mail sent to you.
  - p. You will receive an e-mail with an attached Activation Credential file (<bunch of numbers>.act). Save this file onto your ZENworks floppy.
  - q. Go back to DA-02 and login as administrator of the domain and as admin in eDirectory.
  - r. Launch ConsoleOne, browse to and select the DirXML container.
  - s. Select Wizards->Install a DirXML\_Activation.
  - t. On the welcome screen, browse to and select the DirXML driver set (ADDriverSet.DirXML.da).
  - u. Press Next.
  - v. Insert the ZENworks floppy into DA-02.
  - w. In the "Specify a file..." field, browse to and select the .act file that you saved on your ZENworks floppy. Press Open.
  - x. Press Next.
  - y. On the conclusion page, press View to see if the activation file installed is considered valid.
  - z. Press Cancel.
  - aa. Press Finish.
- Congratulations! You have now completed the installation and activation of eDirectory, DirXML and Password Synchronization on your server. Now it is time to install ZENworks into the system.
- Step Twelve: Installing ZENworks for Desktops 4 Server**—Now we are prepared to install ZENworks for Desktops into your Pure-Windows environment. This document will show how to install all components of ZENworks for Desktops, although only a small portion is needed based on your desires. ZENworks for Desktops can be broken into five main categories: Policy Management, Application Management, Imaging, Inventory, Remote Control.
- You may also choose for your environment to have workstation objects in your eDirectory tree or not. This can impact whether certain features are available. See ZENworks for Desktops documentation for more information regarding these features (<http://www.novell.com/documentation>).

Now we will install the ZENworks for Desktops server onto DA-02, where eDirectory is located in the environment by doing the following:

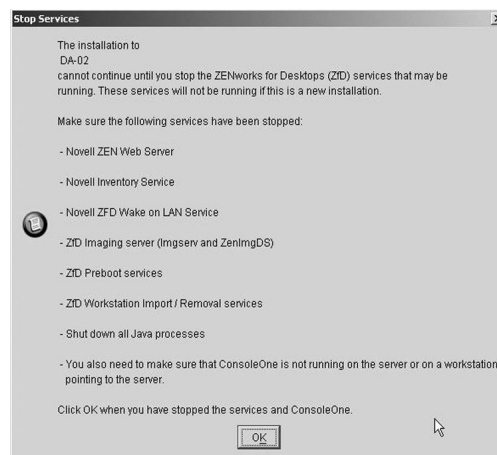
- a. Login to DA-02 as administrator of the domain and admin for eDirectory.
- b. Insert the ZENworks for Desktops program CD.
- c. Choose English.
- d. Choose New Installation.
- e. Choose Install ZENworks for Desktops Server.  
The installation wizard will now be started.
- f. Read welcome, press Next.
- g. Read license agreement, choose Accept and then press Next.
- h. Press Next on information page.
- i. Browse and select your eDirectory tree you installed on DA-02 (DA-TREE). Make sure the extend schema option is checked. Press Next.
- j. Select all of the components of ZENworks for Desktops that you desire. Press Next.
- k. Press Add server and add DA-02-NDS to the server list and select all of the appropriate components to install on this server.



- l. Press Next.
- m. Press Next on the Database file installation path to accept the defaults.
- n. Select Configure Standalone for Inventory.  
The container should be the same as

where your server is located (servers.da).  
Press Next.

- o. Press Next on XML Proxy configuration to accept the defaults.
- p. Press Next on Remote Management File installation paths to accept the defaults.
- q. Press Finish on the summary dialog box.
- r. The schema will now be extended in eDirectory. Then press OK on the Schema extended successfully dialog box.
- s. A dialog pops up giving warning about certain ZENworks for Desktops process and services that cannot be running. Since this is the first time that we have installed ZENworks for Desktops, none should be running. Make sure that you have closed ConsoleOne. Press OK.



- t. The ZENworks for Desktops software and services will now begin to install on DA-02.
- u. Press OK on the Please Reboot dialog box.
- v. Press No on the view log files dialog box.
- w. Reboot server DA-02 to complete the installation. When DA-02 comes back up, additional installation processes will be activated and completed.

### Step Thirteen: Installing ZENworks for Desktops

**Middle Tier Server**—Now we need to install the ZENworks for Desktops middle-tier, if we wish to deliver our ZENworks for Desktops features through the browser and over the Internet. We will install ZENworks for Desktops middle-tier server on DA-01, where IIS is present. You need to be aware that the installation of the Middle-Tier requires the Novell client already be installed on the server that runs the installation; therefore we will install the Middle-Tier onto DA-01 from DA-02 where the client is already running with eDirectory.

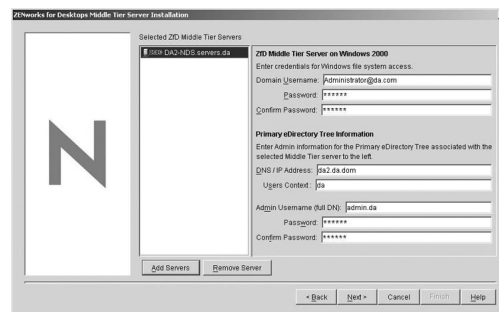
Install the ZENworks Middle-Tier by performing the following:

- a. Login to DA-02 as admin of eDirectory and administrator of the domain.
- b. Insert the ZENworks for Desktops Program CD.
- c. English.
- d. Choose New Installation.
- e. Choose Install ZENworks for Desktops Middle-Tier Server. The installation wizard will now be launched.
- f. On welcome screen, press Next.
- g. Read licenses, choose to accept the license and press Next.
- h. On information screen, press Next.
- i. On Select Middle Tier Server screen, choose Add Server.
- j. On the Add Server dialog choose DA-02. Then press OK.
- k. Back on the Select Middle Tier Server screen, in the sections devoted to ZENworks for Desktops Middle Tier Server on Windows 2000, enter the following:

1. login name (**administrator@da.com**) in the Domain Username field.
2. Enter the administrator password in the Password and Confirm Password fields.

In the section on Primary eDirectory Tree Information, enter the following:

1. DNS/IP—enter the address or DNS name of DA-02.
2. Users context—enter the context of the eDirectory tree that contains the user objects that will be using this Middle Tier.
3. Admin username—enter the administrators user object (e.g., admin.da) and password.



- l. Press Next.
- m. Press Finish on the summary screen.
- n. The ZENworks Middle Tier system will now install.
- o. Press OK on the Please Reboot dialog.
- p. Do not view the log files of the installation.
- q. Reboot DA-02 to complete the installation.

### Step Fourteen: Installing ODBC Drivers for

**Sybase**—Now if you installed inventory onto the ZENworks for Desktops server you will want to be able to run reports and queries against this database. To do this, you must install the ODBC

driver for the Sybase database. This can be accomplished, by doing the following:

- a. Login to DA-02 as admin of eDirectory and administrator of the domain.
- b. Insert the ZENworks for Desktops Companion CD.
- c. Open the ODBC container on the CD.
- d. Follow the instructions in the readme.txt file on the CD to setup the address of the Sybase and verify that you can make a connection.

#### Step Fifteen: Deploying ZENworks for Desktops

**Agents**—Now you have a ZENworks for Desktops system running in a Windows-only environment. The next step is to install the ZENworks management agents onto your workstations and begin to use the ZENworks features to manage those devices.

The full agents may be installed on a workstation by running the setup.exe found in \\DA-02\novell\public\zenworks. The Application Viewer agent is automatically installed when the user first goes to the myapps.html page on the ZENworks server (<http://DA-02.da.com/myapps.html>).

If you wish to have the Web page install the full agents (approximately 8.5 MB) then copy the

setup.exe to the \\da-02\inetpub\wwwroot directory and replace the following line in the myapps.html:

```
document.write("codebase=\"http://da-02.  
da.com:80/ZfdWebSw.exe\"");
```

with the following:

```
document.write("codebase=\"http://da-02.  
da.com:80/setup.exe\"");
```

#### CONCLUSION

Now that you have completed the installation of ZENworks for Desktops in a Pure Windows environment, you can configure and use the features of ZENworks for Desktops in your system. Review the administrator guide found at <http://www.novell.com/documentation/lg/zdpr/index.html>.

See the following resources for additional information:

<http://www.novell.com/zenworks>

[http://www.novell.com/coolsolutions/  
zenworks](http://www.novell.com/coolsolutions/zenworks)

<http://www.novell.com/dirxml>

<http://www.novell.com/documentation>

Now you can install other ZENworks family products onto this same ZENworks server and have them work in your Windows-only environment.

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[www.gigaweb.com](http://www.gigaweb.com)

"Novell ZENworks Updates Provide Robust Windows Management Capability"

David Friedlander

#### Catalyst

Vendor briefings

#### Question

Should we short-list Novell ZENworks as a Windows desktop management tool?

#### Answer

Novell recently introduced ZENworks for Desktops 4 and has added full support for Windows domains and Active Directory (AD) integration. The ZENworks tools no longer require the Netware client or a full Novell directory implementation, making it a viable tool for managing desktops in a Windows domain or directory. Although ZENworks uses eDirectory (formerly Novell Directory Services, or NDS) as an underlying framework, the Novell directory is nearly invisible to the user, and synchronizes with Active Directory. Combined with the other ZENworks products (Server, OnDemand and Handhelds), it offers a powerful client and server configuration and asset tracking management suite, with platform support for Windows, Linux, Solaris, handhelds and NetWare. The desktop product is designed primarily for Windows platform management, with the server and handheld products addressing a number of other platforms.

Previously, the ZENworks product suite was not appropriate for managing devices in a Windows domain or directory. Novell has long had robust inventory and configuration management tools for desktops and servers, but has lacked a play in the Windows market. As Microsoft domain and AD deployments have grown, it has become increasingly difficult for Novell to compete by forcing customers onto its own directory platform. Novell clearly recognized the need for integrated, seamless configuration management for Windows and other environments. It has released several updated products, including ZENworks for Desktops 4, ZENworks 3 for Servers and ZENworks for Handhelds 5 (formerly Callisto) that offer significant improvements.

The most significant improvements include AD integration and synchronization options and the client-independent architecture (ZENworks no longer requires the Novell client). Previously, the lack of AD support and proprietary client requirement made ZENworks largely unsuitable outside of NetWare environments. For companies that haven't implemented an enterprise directory, ZENworks doesn't force users to make a choice. The ZENworks for Desktops 4 product adds Internet-based client management, which uses HTTPS to facilitate firewall traversal for managing remote devices. ZENworks has strong Windows management capabilities, but also offers support for Linux, Solaris, Netware and handheld devices (specifically in the ZENworks for Handhelds 5 module (see *IdeaByte, Use Specialized Tools for Managing Laptops and Mobile Devices, David Friedlander and Ken Smiley*). The server management component was enhanced earlier this year to support Windows, Linux and Solaris (see *IdeaByte, Novell ZENworks 3 – A Surprising Way to Manage Windows 2000 Networks, Laura DiDio*).

Although ZENworks uses eDirectory, it acts as primarily as a database with more robust capabilities around directory services integration than other tools. Other client configuration management and inventory tools require a database as well, so from a manageability perspective, ZENworks doesn't impose an additional burden on IT. Users and groups are replicated via Microsoft Intellimirror to Active Directory, though policies are stored in eDirectory. The ZENworks management console is used to manage policies, inventory and other client management functions. While AD users will have two management consoles – one for the directory, one for ZENworks – the same would be true of any other configuration management tool, including Microsoft Systems Management Server (SMS). Previously, users with ZENworks and AD had to manage users and groups separately in AD and eDirectory, adding significant complexity to client management. The eDirectory and AD synchronization eliminates this issue and provides much stronger manageability for Windows environments.

The eDirectory component can run on any Windows, NetWare, Linux or Solaris server, and based on Novell's benchmarks, a single server can easily support a 5,000 to 10,000-seat deployment. The use of eDirectory as a database engine for

configuration management has the added advantage of allowing policybased management using user and group policies that are established in AD or any other directory service.

There are some limitations users should consider as well. Companies will need to leverage tools from other vendors for help desk, PC and server migration and complete asset management. ZENworks includes imaging tools, and Novell partners with other vendors to provide migration tools. Additionally, ZENworks does not currently support **Hewlett-Packard (HP)/UX**, the Mac OS or Linux desktop clients. It provides distribution and patch management for Linux servers, but does not yet support inventory or remote control. HP/UX has strong native management tools on the server side. However, companies that have a significant requirement for configuration management of Mac OS or Linux servers or clients should evaluate vendors such as **Marimba** or **Tivoli**. Microsoft-centric shops that deploy ZENworks will clearly add another vendor to the mix, though the added functionality provides a significant value-add over SMS.

ZENworks is one of the leading tools for enterprise client configuration management, asset tracking and software distribution. It was previously only suitable for NetWare environments, but the recent updates eliminate the need for a Novell client and place the eDirectory component in the background. As a result, eDirectory requires minimal management. Clients should short list Novell ZENworks for client and server configuration management and asset tracking.

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