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Dynamic desktop management for your ever changing network

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Novell®

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About this Reviewer's Guide

This Reviewer's Guide was created to introduce ZENworks 2, the next generation of Novell's award-winning desktop management software. This version of ZENworks builds on the stability and flexibility of ZENworks 1.1 and introduces some exciting new features, including DMI-compliant hardware and software inventory, criteria-based software delivery, lights-out software distribution, and enhanced remote control functionality.

The reader will be introduced to the outstanding features and functions of ZENworks 2, with descriptions of how these activities are performed and how they can address some of the most pressing administrative challenges companies face today. The last section of this Reviewer's Guide will take the reader step-by-step through installing ZENworks 2 and performing many of the product's functions.

Introduction

Welcome to the Expensive World of Desktop Management

User and desktop management is well recognized as the most expensive part of owning a network – for the IT department as well as the average user, in terms of their productivity. The high cost of owning and maintaining networked personal computers is well documented by trade publications and industry pundits. According to the Gartner Group, the actual price of Network Operating System (NOS) software is generally only three to five percent of the total cost of deploying and maintaining a network.

Novell developed ZENworks 2 to address the most pressing issues in desktop management: application, workstation, and remote management. In order to reduce networking costs in these areas, a desktop management program needs to:

1. Make networking *effortless for users* and in turn improve user productivity.
2. Maximize IT efficiency by *reducing the cost and complexity* of owning and managing network PCs and thin clients.
3. Simplify adapting to organizational and other changes so that businesses can grow without disruption.

What kind of desktop management product can truly deliver on these promises? One that:

- Integrates with an object-oriented, cross-platform, scalable directory service.
- Addresses each user on the network as an individual.

Directory-Enabled Administration

ZENworks 2 is built on the strength and integrity of the industry's most powerful directory service, Novell Directory Services (NDS). The flexible, hierarchical structure of NDS makes it easier to administer any network. Just as NDS provides truly centralized network administration, ZENworks, because of its integration with NDS, enables enhanced, centralized management of Windows-based desktops and thin clients.

NDS creates and stores an identity record for *every component in an organization*, including all users and workstations. Examples of the kinds of information stored in NDS include what printer a user needs based on their location, or what application a user group needs, based on their department. Another example of the type of information stored in NDS is how each user is defined: by their role, responsibility, department, and location, among other things.

Employees in most organizations are given an office, desk, and telephone, since these are tools those employees require to perform their jobs. The network provides other such tools: software applications, printers, and shared files, for example. Every individual in an organization should have access to specific network resources or tools – such as applications, databases, and printers – they require to perform their job. Beyond this, individuals within a particular division or group should be given access to network resources that are associated with their division or group, and this access should be available as soon as the user account is created. ZENworks draws on this information from NDS and maintains digital personas comprised of the associations each user has to the network resources.

The Digital Persona

Each user's needs are unique and present distinct challenges to the administrator. What is the user's specific role? Will using customized applications help them be more productive? How should they be trained to use new software applications? What is the best way to support them if they have a question or problem? The sum of this information – all the requirements needed to help users be as productive as possible – makes up the **digital persona**.

Because ZENworks 2 is a directory-enabled application, and NDS is distributed throughout the network, the digital persona essentially “follows” users around the network. In other words, ZENworks tracks the users on the network and ensures that anywhere a user logs on, at whatever workstation, that user will find their respective digital persona settings, including access rights, application choices and shortcuts, desktop settings, and network mappings. This means that ZENworks 2 users do not have to be tied down to one particular machine. In the event that a user’s workstation needs to be replaced, repaired, or upgraded, or if that user must work from a different geographical location, they can still remain productive simply by logging onto any system on the network LAN or WAN.

In the end, the user finds the network more flexible, reliable, and easy to use.

Directory-Enabled + Digital Persona

The combination of NDS directory enablement and the maintenance of individual user digital personas results in a new genre of desktop management – one in which desktops are managed based on each user’s particular needs. ZENworks 2 is unique in this ability to ease network administration and encourage highly productive users. Users remain productive because they are not constantly interrupted by typical network administration activities such as upgrading applications, integrating new desktops and users, and conducting hardware and software inventory polling.

Another ZENworks feature that allows users to remain productive is the administrator’s capacity to address users’ needs quickly, effectively, and easily. Support activities, like applying a patch to an application, can be executed with little or no disruption to the users. Even more importantly, ZENworks’ self-healing application feature stops software configuration problems before they start, so users don’t have to stop working to wait for support.

Digital personas also contribute to enhanced security, because a persona can be assigned to a workstation, too. For example, if the administrator wants an application to “follow” a user around the network, it can; conversely, if the administrator wants the application to only load on workstations in a certain location, they can easily arrange this, instead.

ZENworks 2 can address the varying needs of businesses of all sizes. Large companies with different geographical divisions and many roaming users require a scalable and flexibly-administered network to reduce the time-consuming complexity of application management. Likewise, small companies often cannot afford expensive technical service telephone calls or on-site support visits. These companies will profit from using a management utility that can invisibly prevent common configuration and application errors and give users the power to easily help themselves when they do have problems.

In fact, there is no better network environment for Windows-based clients and thin clients than the combination of NDS and ZENworks 2.

Reducing Administrative Costs with ZENworks2

As mentioned at the beginning of this Reviewer’s Guide, the main bulk of today’s networking costs are administrative; this isn’t news to any network administrator or CIO. But while many desktop management products claim to reduce administrative costs, ZENworks 2 can actually deliver, by saving companies money on administrative tasks that cover the whole spectrum of desktop management – application management, workstation management, and remote management. NDS-enabled ZENworks 2 gives administrators the step-up they need to prevent workstation configuration problems, drastically cut down on common user interruptions, provide users the tools they need to be productive, and address any user concerns with the simplest support tools possible.

The scalability of ZENworks and NDS, combined with ZENworks’ digital persona and easy administration capabilities, gives companies the distinct and tremendously important advantage of being able to easily adapt to business changes. There is no more useless manner in which to spend administrative funds than to react slowly and painfully to company or industry changes – whether they be employee role changes, upgrading applications, adding another office in a different geographical location, or restructuring the entire business.

Anti-Virus Protection

One of the many concerns network administrators face is workstation viruses. Because it can take only one unscreened file download to cause hours – and even days – of network downtime as a result of virus proliferation, it is essential that companies utilize the best possible virus protection program available. Novell has teamed up with Network Associates to provide VirusScan for Workstations with ZENworks 2. Each ZENworks 2 client includes a six month subscription to the best-of-breed virus protection program (additional subscriptions are sold separately).

The administrator will be notified when it is time to download new virus patterns, and only needs to apply updates to the server hosting the VirusScan server piece. The client systems will automatically pull the updates down to their systems – eliminating the need for the administrator to perform these updates manually. VirusScan can also send automatic SNMP alerts to the administrator in the event of virus detection.

Year 2000

Finally, no discussion of network desktop management would be complete without mention of the Y2K problem. The impending calendar change is a relevant and pressing priority for everyone from the CEO on down the line. Especially in larger companies, the need for continual monitoring of desktops, even to the application data level, is occupying a great deal of energy and incurring phenomenal costs.

To meet the challenges of the Y2K issue, ZENworks 2 includes Greenwich Mean Time's (GMT) Check 2000 program. ZENworks and Check 2000 uses a three-pronged approach to the Y2K problem:

- **Assess** whatever changes or updates need to be made by running scheduled compliance checks on desktops as often as necessary.
- Recommend and apply **remedies** to any existing or potential incompatibility problems that exist on the network, using ZENworks to automatically deploy updates and patches.
- **Maintain** the network, by allowing ZENworks to store the solutions and prevent users from inadvertently causing subsequent Y2K incompatibility problems.

Check 2000's suite of diagnostic and corrective utilities addresses the five levels of Y2K verification for desktops:

1. BIOS
2. Operating System (OS)
3. Applications
4. Data in application files
5. Date Exchange (e.g., macro and ActiveX functionality)

Because changes occur second-to-second in a network, this kind of verification process affords companies peace of mind that cannot be measured in dollars.

The Check 2000 suite comes bundled with a five-user license. Additional licenses can be purchased for your other ZENworks clients, at a significant discount.

The ZENworks Starter Pack in NetWare 5 and NetWare 4.2

Both NetWare 5 and NetWare 4.2 ship with the ZENworks Starter Pack, as a free introduction to ZENworks. The features not included in the Starter Pack version of ZENworks are as follows:

- Hardware and Software Inventory
- Help Desk Request Policies
- Secure Remote Control (including Remote Execute and Remote File Transfer)
- Enhanced functionality in ZENworks 2
 - Hardware and software inventory
 - Advanced reporting
 - Even more software distribution options

Features and Benefits

To best introduce the functionality and benefits of ZENworks 2, it helps to refer to them in the three main categories of desktop management:

1. Application Management

Maintaining consistency and control of a network's applications

Making changes to the network's application suite in a quick and organized manner

2. Workstation Management

Simplifying networking for users

Keeping users productive by giving them uninterrupted access to the tools they need

Preventing user problems

Managing changes in personnel and inventory

Diagnosing and solving Y2K configuration issues

Maintaining inventories of hardware and software investments

Preventing or healing virus infections

3. Remote Management

Ensuring secure and effective remote control

Bridging the gap between the user and the support representative with Help Desk tools

Application Management

Application management, especially for the larger company, can be a costly headache. Perhaps the greatest expense associated with managing networked workstations is distributing applications to those workstations. Even applications from the server require personalization at the workstation, such as DLL files and registry settings. This personalization information can be applied with ZENworks and its Application Launcher to decrease the costs associated with application distribution and management. ZENworks' integration with NDS allows the administrator to automate this user customization, further contributing to cost savings.

With ZENworks 2 you can install applications and upgrade software easily from a central location. To install applications on workstations, you can push them to workstations automatically, or users can pull them to their workstations using setup programs. When you install an application on a server and give users rights to it, an icon automatically appears on those users' desktops; users simply click on the icon to launch the application. ZENworks 2 can even push individual user settings, such as user names, e-mail servers and addresses, and file path locations dynamically to each workstation, for each user session.

Potential Problem or Need

- New software needs to be installed or upgraded on 1,000 workstations overnight.
or
- You have to install an application patch, feature enhancement pack, or service pack on your entire network, and you cannot perform this manually at each workstation.

Feature/Solution

- ZENworks Novell Application Launcher, with personalized software distribution

How does it work?

- The administrator can install software to workstations across the network without having to visit each workstation individually.
- Software delivery can be “personalized” by drawing user-specific information from NDS into the application. Based on such criteria as hardware configuration, application dependencies, and operating system version, ZENworks can determine whether to attempt or forego an installation.
- Administrators can view and print reports outlining whether application installations succeeded or failed, and why.
- Microsoft Windows service packs may now be distributed to workstations, whether or not a user has logged on.

Potential Problem or Need

- Your users are very busy during the day and cannot give up their workstations to allow for new software installation. When can you upgrade? You don’t want to work all night. And what if users log off their workstations? You definitely don’t want to have to go to all the workstations and log in manually.

Feature/Solution

- “Lights-Out” software distribution

How does it work?

- The administrator notifies users to log out of their workstations for the evening, but leave the workstations turned on. During the evening hours, ZENworks 2 installs the specified application(s). Users return in the morning to updated workstations – even Windows NT workstations.

Potential Problem or Need

- A user complains that she cannot get an application to load on her workstation. The IS department is trying to cut costs by minimizing onsite service visits. How can the technician address the user’s problem at the least cost to the company?

Feature/Solution

- Use ZENworks 2’s Criteria-Based Software Distribution and the Remote Control facility

How does it work?

- The Application Launcher can perform criteria-based queries of hardware before it attempts to install the software to a workstation. If the workstation fails certain criteria, (for example, if the workstation does not have enough RAM), the application will fail to install and the desktop icon will be grayed out. If the user attempts to run the program, an error message will be generated, explaining why the software did not load properly. If further service is required, the support technician can use Remote Control and Remote View to diagnose the user’s problem, again without having to leave the help desk. *(See the Remote Management section of this Features and Benefits section for more information on Remote Control.)*

Potential Problem or Need

- Local NT Workstation User accounts do not have to follow users from workstation to workstation. The users must be able to log into the network from any workstation in order to remain productive. The administrator has 500 users and 500 workstations, thus requiring the administrator to create 250,000 user accounts! This could take months – in addition to being extremely impractical. How can user accounts be installed automatically?

Solution/Feature

- ZENworks 2 Dynamic Local User Policy packages

How does it work?

- ZENworks 2 can dynamically create a local NT user account and place it onto any workstation that a user logs onto. After authenticating to NDS, ZENworks 2 will install an NT user account within the workstation's own security database. The user account can be set as non-volatile, meaning the account remains in the security database, or it can be set as volatile, so the account is erased from the security database upon user logout.

Potential Problem or Need

- Only one workstation is equipped with an expensive plotter. Several employees have rights to the large Computer Aided Design (CAD) program used with this plotter. These employees don't always use the workstation with the plotter – and sometimes they work from home. Because the CAD program uses 50MB of workstation disk space and takes five minutes to install on a workstation, the administrator needs to find a way to associate the program not only with the appropriate users but also *with the plotter workstation*. Otherwise, precious network bandwidth is unnecessarily used, slowing down the network for everyone else. How can the administrator make sure that the CAD program only gets loaded onto the workstation with the plotter?

Solution/Feature

- The ability to create workstation associations

How does it work?

- ZENworks 2 Workstation Packages allow the administrator to associate a particular application to only one workstation. When an application is associated with a workstation, the application icon will appear on the user's desktop only when the user logs onto that particular workstation (provided that user also has rights to the application). The setting to specify this is located in the Windows NT Workstation packages within the NWAdmin utility.

Potential Problem or Need

- The administrator wants to distribute an application to the workstations, but some users have two local hard drives. Due to space constraints, a few of these users will need to install the application on their local "D" drives instead of their "C" drives. The administrator lacks the time to poll every user on the entire network and manually install the application on each workstation.

Feature/Solution

- Prompted macros in Application Launcher

How does it work?

- The Application Launcher now has enhanced macro-scripting features. These interactive programming commands allow administrators to give their users choices in their desktop environments. Users modify the installation process by making choices on custom pull-down menus. For example, users can be presented a choice of hard disk drives on which to install an application.

Potential Problem or Need

- When a user runs a previously installed application through the Application Launcher, the application launcher runs both launch and distribution scripts. This consumes network bandwidth unnecessarily, since only launch scripts are required to run the application. Can this be prevented?

Feature/Solution

- Pre- and Post-Distribution Script feature in Application Launcher

How does it work?

- The administrator can now separate launch and distribution scripts within Application Launcher, configured within NWAdmin. Thus, once an application is successfully installed to a workstation, ZENworks 2 remembers and will only run the launch script needed for the user to launch that application. The Pre- and Post-Distribution Script feature can also use third-party script tools (e.g. Winbatch) to execute part of the installation.

Potential Problem or Need

- A user accidentally deletes several critical .DLL files, and now the associated applications won't open. How can the application be quickly restored without the administrator having to go to the user's desktop and reinstall the application?

Solution/Feature

- Application "self-healing"

How does it work?

- The snAppShot utility takes a snapshot of a workstation before and after an application installation. snAppShot then creates a template of the workstation, containing a precise list of all the changes that have occurred on the workstation. If an application is damaged, snAppShot "heals" the application by referencing the snapshots taken during the installation. End-users get automatic repairs of "broken" applications without having to wait for support.
- System policies and profiles can be configured to prevent users from damaging existing applications and installing non-authorized software to their workstation.

Potential Problem or Need

- The accounting department needs an internal audit performed to check compliance with all software licenses. There are hundreds of workstations and scores of applications loaded. How can an administrator keep track of so many applications?

Solution/Feature

- Software Metering

How does it work?

- The software metering feature works in tandem with the Application Launcher. The network administrator can install a "license certificate" within NDS which contains the number of licenses purchased by the company. Then, server-based software works with the Application Launcher and NDS to monitor and limit the usage of that application. Because the Application Launcher can control the usage of software installed locally or on a NetWare server, the software metering feature can control application usage regardless of where the application is installed. ZENworks 2 software metering works with all applications launched through the Application Launcher.

Workstation Management

At a time when most companies are attempting to minimize support costs, networks are becoming seemingly more complex. Workstation management is increasingly time-consuming and expensive, what with having to manage traditional workstations and thin clients using different platforms, meeting ever-changing hardware and software workstations requirements, and managing users in different offices of the same company over WAN connections. ZENworks 2's workstation management features offer network administrators and support personnel a variety of time- and money-saving options for managing their workstations.

One of the most costly and time-consuming aspects of managing a network is keeping all the end-users printing. In most cases, creating a new printer and installing the appropriate driver on an end-user's workstation requires a visit

from an individual in IS to the physical workstation. Moving employees to new locations or adding a new printer to a department can also generate help desk calls and prompt more onsite visits. Adding to support costs, each time a help desk representative leaves their desk, they are bombarded with questions or problems from other users in the same area.

The “crisis management” duties are only part of the network administrator’s job; they are also responsible for day-to-day maintenance. This includes performing inventories of desktop hardware and client software and maintaining some sense of order to the collection of different workstations under their watch.

In this hectic context, one of the more compelling new features of ZENworks 2 is support for Citrix thin clients. With this Citrix integration, an administrator can manage Windows PCs and thin clients from a single location. ZENworks and Citrix can also ensure that the user has access to the same applications and interface they see on the network, from any browser. More information about support for Citrix thin clients can be found at: <http://www.novell.com/products/nds/zenworks/thinclient.html>.

Another exciting addition to directory-enabled ZENworks is support for extensible policies; now the ZENworks administrator can minimize help desk phone calls and user disruptions by dragging and dropping user policies to select users, groups, or to the whole company! Users will enjoy desktop conformity, wherever they log on to the network. In addition, each user’s printer configuration can be assigned only to that particular workstation, so a roaming user’s printer settings won’t follow them.

Potential Problem or Need

- A new networked printer was installed this morning and 50 users need to use it – immediately. Installing the printer driver on 50 workstations could take days. Most users can’t give up their workstations because they are too busy, and some users are out of the office, using laptops. How can the administrator install the driver quickly and efficiently?

Solution/Feature

- Centralized Printer Management

How does it work?

- Administrators can minimize help desk calls and user disruptions by configuring the end users’ printing environment, including the appropriate driver, through NDS. ZENworks 2 provides the interface through NWAdmin for administrators to associate users or workstations with printers and printer drivers through NDS. After the association has been made, the next time the end user authenticates to the network, the printer will be created on the workstation and the printer driver will be installed automatically. All this is done without any user intervention and without the need to give administrative rights to end-users on the organization’s NT workstations.

Potential Problem or Need

- Users move from workstation to workstation, but their printer setups at one location should not follow them to another location. Can a user’s printer configuration be used only for certain workstations or locations?

Feature/Solution

- Printer Configuration with NWAdmin

How does it work?

- Since printer configurations can follow the user to whichever workstation they log into, they can often avoid needlessly configuring new printers. Even when a new printer must be added or the user moves to another PC, the network administrator can distribute any modifications across the network to the appropriate workstation with a single change, from *any location on the network*.

Potential Problem or Need

- Users move from workstation to workstation and want a familiar desktop interface, no matter where they are on the network. Consistent interfaces contribute to more productive users and fewer help desk requests. But there are hundreds of workstations and scores of applications on the network. How can the administrator provide this convenience to users.
- create and maintain specific user identities that provide consistent, customized desktop interfaces that can be accessed from any networked workstation?

Feature/Solution

- Directory-Enabled Policies

How does it work?

- Administrators can create and maintain specific user policies and profiles to provide a consistent interface. Users don't have to worry about changing desktop environments; this lessens the likelihood that they will create further inadvertent damage to their workstation's configuration or applications.
- Users can roam from one PC to another while maintaining their familiar interface and having access to the network resources they require.
- User logins can also be restricted to certain machines, through exclusionary policies.

Potential Problem or Need

- The company has hundreds of workstations, dispersed throughout two buildings. How do you efficiently track and report hardware inventories of networked client systems?

Feature/Solution

- Workstation Hardware Inventory

How does it work?

- This involves simplified hardware inventory management with easily obtained up-to-date information and reporting capabilities. Administrators can view and print reports, and can export them to common delimited (ASCII) text file formats.

Potential Problem or Need

- The administrator needs to create customized Windows NT policies for certain applications. These must be installed on hundreds of workstations. How can this be done quickly, efficiently, and – even more critical – accurately?

Feature/Solution

- Enhanced Extensible Desktop Policies feature

How does it work?

- ZENworks 2 can now provide customized NT policies contained with .ADM files, and overlay these .ADM files onto a workstation Registry. These policies, like other Windows NT policies, can be associated in ZENworks 2 with both users and groups.

Remote Management

The more disjointed and distributed a company's users are, the more valuable remote control capabilities are to support personnel. Remote Control can become an integral part of an effective, well-run help desk, reducing costs by giving help desk personnel and administrators more than only one (often expensive and time-consuming) option for addressing user problems and concerns.

ZENworks 2's enhanced remote control functionality speeds up the process of finding drivers and files or distributing and executing programs remotely. Another benefit of ZENworks' directory-enablement is that the remote control feature is policy-based. This allows for tailoring the remote control access and privileges. Not everyone with administrative access on the network has to have remote control access to all the workstations.

ZENworks 2 also trims support costs by including the advanced help desk requester. When a user experiences difficulty or requires service, ZENworks can automatically generate a help desk ticket that includes pertinent information to help the service representative address the user's problems much faster. The user is not required to know the more technical details about their workstation or their error – the help desk ticket will include these details automatically.

Potential Problem or Need

- Supporting users is one of the Help Desk's biggest hassles. Is there an alternative to physically visiting ailing workstations?
- Even supporting a local workstation in the same building can become more than a support technician bargains for, because when walking to the malfunctioning workstation, they will be waylaid by numerous other users requesting help. It is easier to prioritize these requests from a central location. How can this be done?
- A user suffers a malfunction, but did not copy down the error messages. The administrator needs to recreate and view the malfunction. How can the administrator do this without leaving his desk?
- Training classes can be quite expensive, and sometimes the user needs to learn only specific procedures. Is there a way to show a user how to perform a set of steps without being in the same room with them?

Feature/Solution

- Secure Remote Control

How does it work?

- Administrators can remotely take control of a workstation and, from their own desk, troubleshoot problems through a secure link to a workstation anywhere on the network. Remote control operations can be logged in a database for auditing purposes.
- Remote users can be shown how to perform certain steps by watching what the support representative does on their workstation during a remote control session.
- Access rights – meaning, which administrator can control which workstation, are controlled by NDS authentication. This ensures security and simplifies the process by which an administrator locates the workstation to be controlled.

Potential Problem or Need

- Help desk calls are increasing, and there's pressure from the top to reduce them. Better methods of identifying and explaining user problems to help desk personnel are always welcome, especially when dealing with users who are not technically savvy enough to explain their problem or their system's configuration. The support representative needs this kind of information – the sooner, the better. Less down time means more productive users.

Feature/Solution

- Help Request Tool

How does it work?

- ZENworks 2 can automatically inform end-users who to call in case of a malfunction.
- The Help Request Tool can be configured to generate an e-mail help request ticket that is sent to the appropriate administrator. This request ticket can include pertinent information about the user's system, and even the nature of their problem. This can speed up the support process significantly.

Potential Problem or Need

- Five users call the administrator to report a newly distributed application will not launch on their workstations. The administrator needs access to real-time information about their workstations.

Feature/Solution

- ZENworks 2's new Workstation Diagnostics

How does it work?

- Using NWAdmin the administrator can collect critical real-time information about the workstation. The administrator can ping the workstation for TCP/IP status, scan workstation RAM to list all the DLLs currently loaded, determine the amount of RAM available, and the driver versions in use. Also available to the support technician is a database of basic network workstation information, such as operating system revision, computer type, model, and NetWare client version.

Potential Problem or Need

- A user calls in with a problem that the administrator is fairly certain can be solved by installing the latest application patch. Without going farther into station diagnostics, how can the administrator find out if this patch will quickly solve the user's problem?

Features/Solutions

- Remote Execute and Remote File Transfer.

How do they work?

- Both of these new features allow an administrator to perform quick support activities — executing an application (including patches and diagnostics programs) on a remote workstation and transferring a file (such as an updated driver) via ftp to a remote workstation, without having to initiate a full-blown remote control session. The administrator can choose to make these activities invisible to the user of the client system, if necessary.

Anti-Virus Protection**Potential Problem or Need**

- The network has hundreds of workstations, all needing frequent scanning and anti-virus updates. How can the administrator ensure that anti-virus scans are performed and that anti-virus updates are distributed?

Feature/Solution

- Network Associates VirusScan for workstations

How does it work?

- Each ZENworks 2 workstation license comes with a six month subscription to Networks Associates' award-winning VirusScan program (additional subscriptions are sold separately). The administrator will be notified when it is time to download new virus patterns, and only needs to apply updates to the server hosting the VirusScan server piece. The client systems will automatically pull the updates down to their systems – eliminating the need for the administrator to perform these updates manually. VirusScan can also send automatic SNMP alerts to the administrator in the event of virus detection.

Year 2000 Verification

Potential Problem or Need

- The administrator needs to run Y2K checks on all servers and workstations at regular intervals. This includes scanning application data. Can these checks be run on a regularly scheduled basis? Does the administrator have to put every other important project on hold until after the year 2000, just to keep these tests running?

Feature/Solution

- Check 2000, from GMT

How does it work?

- Check 2000 for ZENworks identifies and alerts network administrators to potential Year 2000-related issues at the desktop, and ZENworks assists in repairing problems by pushing manufacturer's recommended solutions or other fixes to all network desktops and resources. ZENworks 2 comes with a 5-user license. Novell offers additional Check 2000 licenses for ZENworks clients at a significant discount.

Summary of what's new in ZENworks 2

Application Management

- Criteria-based software delivery: Software delivery can be based on such factors as hardware configuration, application dependencies, and client system operating system version.
- Application installation reports: a report detailing the success or failure of an installation can be viewed and printed; in the event of failure, the report will include an explanation.
- Applications can now be distributed to workstations even if no user is currently logged on.
- ZENworks 2 can deliver Windows NT service packs and applications to secured NT workstations.

Workstation Management

- ZENworks 2 allows administrators to conduct software inventories and create reports with such information as network configuration, installed applications, and driver information (version and number).
- Hardware inventory has been expanded reporting can be viewed and printed based on new hardware configuration BILL?
- When scanning DMI-compliant hardware and software on the network, ZENworks 2 can now recognize and track such information as component name, manufacturer, and serial number.
- Hardware and software inventory reports can now be stored on an ODBC-compliant server-side database, for improved scalability and accessibility of inventory information.
- Extensible policies

Remote Management

- Workstation diagnostics can be performed on remote workstations; this includes collecting details about the remote system's memory, BIOS, and DLL files.
- A Remote Execute feature has been added; when this feature is granted to a user (through a policy), the user can execute an application on a remote workstation without having to initiate a remote control session.
- Remote File Transfer is now available, which also saves support personnel time by allowing them to perform quick remote file transfers without having to establish a remote control connection.
- Remote control sessions with Windows NT clients is now even faster and more reliable than before.
- Remote control auditing reports: when a remote control session is established for auditing an NT workstation, a log is created with such information as who initiated the audit, who accepted, and how long the remote session lasted. Information is stored in the workstation's NT security log.

Anti-Virus Protection

- Network Associates VirusScan for workstations is provided, with a free virus protection engine and a six-month subscription to automatic database updates.

Year 2000 Verification

- Greenwich Mean Time (GMT) Check 2000 v 3.11 compliance software is integrated with NDS, improving the administration and information collection process of Y2K verification. This latest version of Check 2000 includes a vastly larger reference database than previous version. A 5-user license is included with ZENworks 2.

Product Architecture Overview

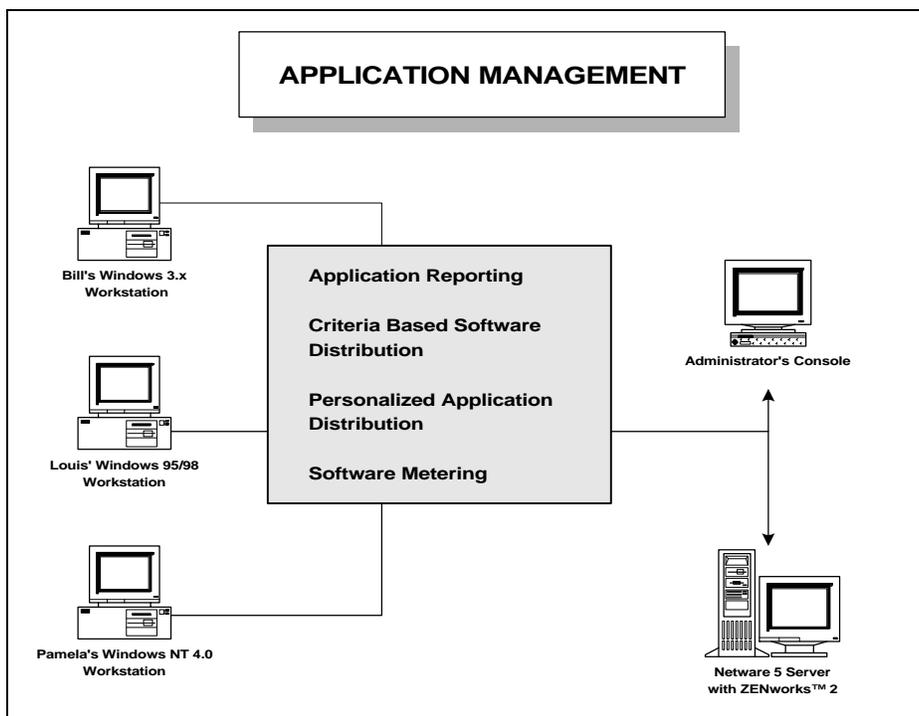
The combination of ZENworks 2 and NDS is a synergistic one – NDS is the backbone that makes ZENworks reliable and scalable, and ZENworks extends the NDS *database schema*. A database's schema is basically its definition: how the model is constructed, the way components fit together, and how the database reacts, replicates, and stores data. The NDS tree, the basis of any NDS network structure, is extended by all directory-enabled applications, including ZENworks. Because ZENworks 2 is directory-enabled, the program can manipulate items within the NDS database, such as users, groups, organizations, printers, workstations, applications, desktop configurations, and digital personas.

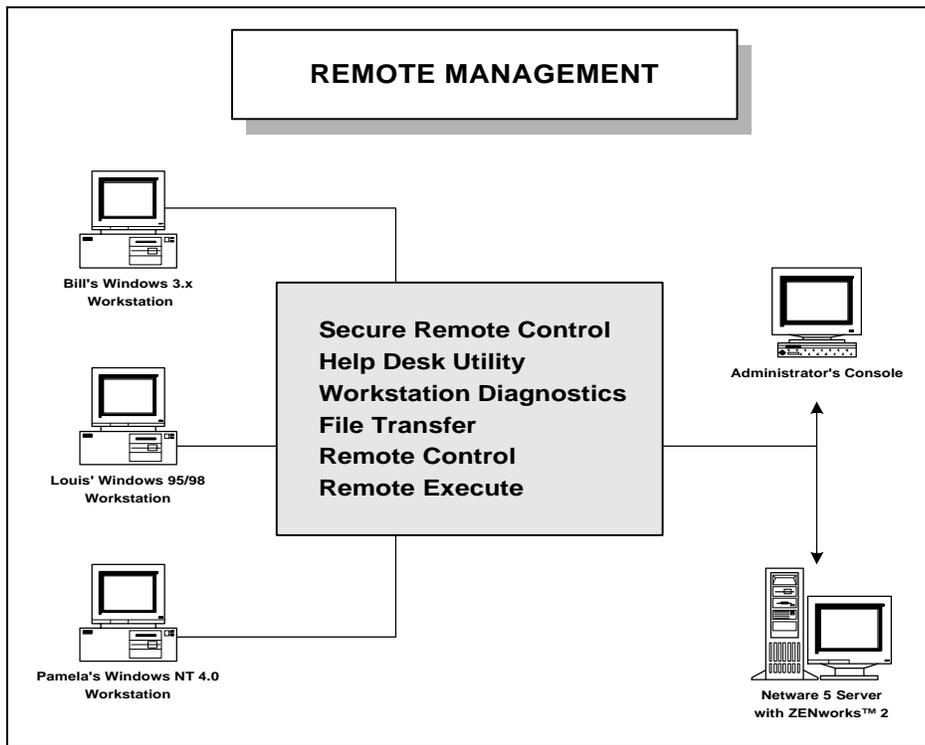
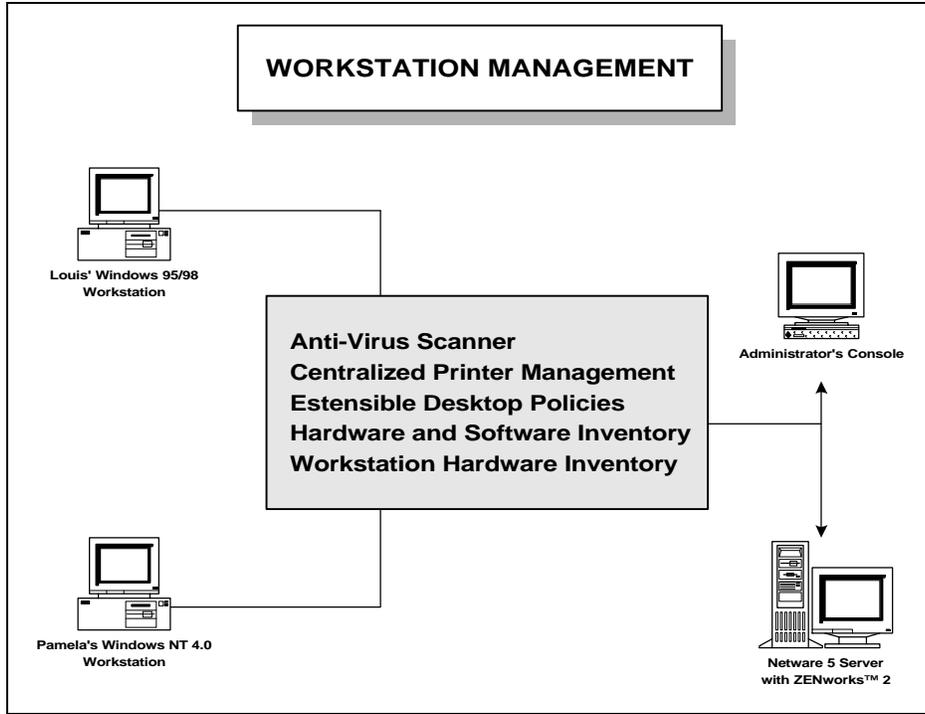
At installation, the ZENworks 2 installation wizard copies the various ZENworks application files into the specified NDS tree on the server. The wizard then updates the server's startup files, adding commands to load several server-based agents. The first agent, OSAgent, works with the workstation-based ZENworks 2 agents specially designed to run on Windows-based client and thin-client systems to gather information from the workstations. The second agent to load is the Java Interpreter, which interprets the information to and from the workstations and server database respectively. The third is the Sybase Adaptive Server Anywhere. This is an embedded SQL database that stores the information ZENworks collects.

These commands run on the server, activating ZENworks within the NDS tree without requiring a server restart. The server-based agents then communicate with the Novell NetWare Client loaded on each system. This liaison between server and workstation agents is key to the communication and control among ZENworks systems.

Novell recommends that you install the latest client software provided on the ZENworks 2 installation CD-ROM. Upon client update, see that the Novell Desktop Management and the ZENworks 2 Remote Management agents have been configured to load automatically upon Windows startup; these agents are required for the workstation to communicate with the ZENworks 2 server modules. The ZENworks 2 client agent software allows the client to run the ZENworks Actions as prescribed by the administrator. Once properly configured, ZENworks is then available to all users and applications within the entire NDS tree. ZENworks 2 supports systems with Windows NT Server and Workstation, Windows 95/98, Windows 3.x, and Citrix thin clients.

The diagrams below illustrate a simulated architecture of a LAN using ZENworks 2. ZENworks 2, Software Metering, Check 2000, and VirusScan all need to be loaded on only one NetWare server within an NDS tree.





Recommended Test Setup

Hardware and Software Requirements

While ZENworks 2 supports multiple platforms, in order to best demonstrate its key features, Novell recommends the following hardware setup:

- **Server**

- NetWare 5 with the Support Pack 2 installed (minimum: NetWare 4.11 with Support Pack 6).
- Disk Space: 125 MB of server disk space for software installation. An ample amount of free space is recommended for storage of hardware inventory information.
- Memory: 128 MB RAM
- Server binding TCP/IP (IPX only if running NetWare 4.2 or below)

Note: When NetWare is installed on the server, there is no need to install the ZENworks Starter Pack.

- **Workstation(s)**

- Microsoft Windows NT Workstation 4.0, Service Pack 3 or higher. Have the Windows NT Workstation CD-ROM on hand.
- Novell NetWare Client for Windows NT Workstation V4.60.302 or higher (included with the ZENworks 2 CD), binding both IP and IPX protocols.
- Pentium CPU or higher
- Memory: at least 32 MB RAM
- Make an NT Workstation account for each workstation. Name one workstation BLDG3DESK45, place an ordinary user account onto it named Bill, password Bill. On the other workstation name it BLD3DESK51, create an account Pamela, password Pamela. You are using generic workstation names, not named after a certain user. These generic workstation names illustrate how ZENworks 2 facilitates the use of any workstation by any user, anywhere, anytime.
- On both workstations you may want to create an account named admin, password admin. Make this account a member of the Administrators group. This will allow full administrative rights for both the workstation and NDS tree when you log into the NDS tree as Admin.

Note: Two Windows NT 4.0 workstations are required to test Remote Control features: one to act as the management console, and one to be the host (controlled) system.

Modifying NWAdmin

Did you know that you can modify which NDS objects your copy of NWAdmin displays? This will permit you to view the objects of your containers with less distraction. By following these instructions to modify your copy of NWAdmin, your screen will match the illustrations of NWAdmin presented in this document.

1. Select the container in which you wish to change your view.
2. From the menu bar select **View, Sort and Include**.

Minimum Requirements for ZENworks 2

While the recommended test setup is intended for maximum performance, these requirements are by no means the minimum requirements for server and client hardware or software, which are listed here:

Server (with Inventory Database installed)

- ◆ 220 MB Hard Disk Space (160 MB for server without inventory database)
- ◆ 128 MB RAM

Workstation (complete ZENworks installation)

- ◆ 5 MB Hard Disk Space
- ◆ Pentium (or higher), 25 MHz
- ◆ 16 MB RAM

3. Objects you wish to view should be placed in the *Included Classes* column. Objects you do not wish to view should be placed in the *Available Classes* column. Use the blue arrow keys to move objects between columns.
4. You may also arrange the order of objects. Highlight an *Included Classes* object, and use the blue up and down arrow keys to adjust its position in the list.
5. The objects used for this Reviewer's Guide are in ascending order:
 - Organization
 - Organizational Unit
 - NetWare Server
 - User
 - Volume
 - Policy Package
 - WinNT User Package
 - WinNT Workstation Package
 - Workstation
 - Application
 - Print Queue
 - Printer (Non NDPS)
 - Print Server (Non NDPS)
 - License Certificate
 - License Container

Install ZENworks 2

Before you start:

- For the best results, start with fresh client and server installations.
- Install NetWare5 and support pack 2 on your laboratory server.
- Configure your tree as illustrated in Figure 1.
- Make users Bill and Pamela ordinary users, with no special rights. Give them home directories in the path `\\server_name\sys:Users\` when creating their accounts within NWAdmin.

Designate one of the two workstations as your administrator's console, and insert the ZENworks 2 CD into the administrator's console. The GUI wizard auto-starts and guides the user through installing ZENworks 2, Software Metering, and the latest ZEN-capable Windows clients. Setup Help files and complete ZENworks 2 documentation are also accessible here. Third-party tools, such as the GMT Check 2000 and Network Associates VirusScan, are on the same installation CD-ROM.

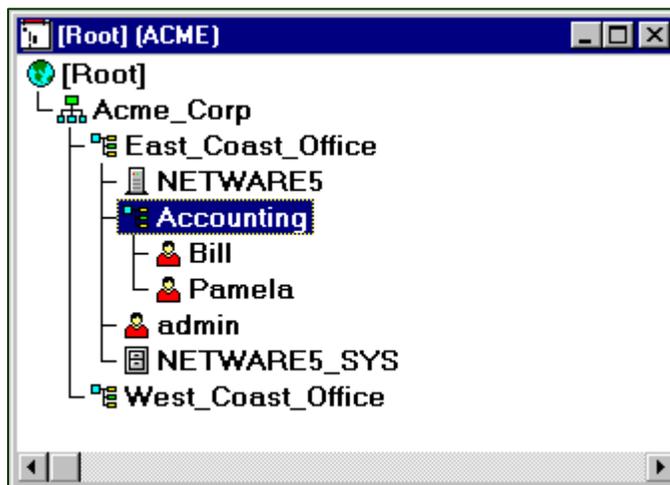


Figure 1

On Client systems:

1. Make sure that the NetWare client software is the latest version. If there is any doubt about this, insert the ZENworks 2 CD-ROM into the Windows NT client.
2. Select **English**, and then **Windows NT Client**.
3. Select **Install Novell Client**.
4. Select **Custom Install**. In the *Novell Client Installation* dialogue box, make sure the three bottom components are selected: *Workstation Manager*, *Application Launcher NT Service* and the *ZW Remote Control agent*.
5. In the *Network Protocols* dialogue box select **IP** or, if necessary, **IPX**.
6. In the *Login Authenticator* dialogue box select the **NDS** radio button.
7. Specify the NDS tree name of **ACME** for your test network in the *Workstation Manager* dialogue box. Click **Next**.
8. The client software should install without further user interaction. Choose **Finish** and then **Reboot** when prompted.

On the Server:

1. Insert the ZENworks 2 CD-ROM into the administrator's console.
2. When the installation wizard appears, choose **English** then choose **ZENworks**.
3. The following menu will appear:

Install ZENworks – Install ZENworks 2 on the server

Install Software Metering

View Quick Start – Displays ZENworks 2 setup Help

View Documentation – Displays the ZENworks 2 documentation without installing any other components

Third-party Products – Installs either GMT Check 2000 or VirusScan tools

4. To continue installing ZENworks 2, select **Install ZENworks**.
5. Follow the installation wizard through the *Welcome* and *License* dialogue boxes.
6. From the *ZENworks Setup Type* dialogue box select **Typical Install**.
7. Select the NDS tree and test server in which you wish to install ZENworks 2. Click **Next**.
8. Select the NDS tree and test server in which you wish to install the inventory database. Click **Next**.
9. Select the volume SYS in which to install the inventory database. Click **Next**.
10. The *Warning* dialogue box appears, warning that volume SYS is not recommended to store the inventory database. For the purposes of this exercise you can ignore this warning. Click **OK**. A second *Information* dialogue box should appear, warning you that some additional components may be automatically loaded onto the server. Click **OK**.
11. Select **English** as the language you wish to install.
12. Click **Next**. At this point, the *Start Copying Files* box appears, listing your current settings.
13. Click **Next**. ZENworks 2 will install onto the test server.
14. The *Novell ZENworks* box will appear. In this box you grant all users in your tree the right to register workstations. You will registering workstations after all the software modules are installed. Click **OK**; the *Novell ZENworks Workstation Auto-Registration Rights Utility* dialogue box will appear. Click **OK**.
15. The installation will run to completion.

A convenient feature of ZENworks 2 is that the installation does not need a server reboot!

Install Software Metering

1. Insert the ZENworks 2 CD-ROM into the administrator's console.
2. When the installation wizard appears, choose **English**, then **ZENworks**, then **Install Software Metering**.
3. Choose **Install Software Metering**.
4. Follow the installation wizard through the *Welcome* and *License* dialogue boxes.
5. At the *ZENworks List of Tree/Servers* dialogue box, select the NDS tree and server in which you wish to install Software Metering, then click **Next**.
6. Select **English** as the language you wish to install.
7. Click **Next**. At this point, the *Start Copying Files* box appears, listing your current settings.
8. Click **Next**. Software Metering will install onto the test server. The *Setup Complete* dialogue box appears. If you do not wish to view the **Read Me** or the **Setup Log** file, uncheck the two choices.
9. Choose **Next**.

Install GMT's Check 2000

1. On the server create a directory with the path of `sys:System\C2K`. This path is where you will install *Check2000* workstation data. You will use this path later in the installation process.
2. Insert the ZENworks 2 CD-ROM into the administrator's console.
3. When the installation wizard appears, select **English**.
4. Select **ZENworks**.
5. Select **Third-Party Tools**.
6. Choose **GMT Check 2000**. Choose **Install Check 2000**.
7. In the *GMT List of Tree/Servers* dialogue box select the NDS tree and server in which you wish to install *Check 2000*. The application will be installed in the `sys:Public` directory. Select **Next**.
8. In the *Choose Destination Location* dialogue box enter the server-based location created in Step 1. This is where the *Check 2000* data will be installed. You may use the **Browse** feature for ease of use. Choose **Next**.
9. Choose **Next** at the *Welcome* box. Choose **Yes** at the *Software License Agreement* box. GMT Check 2000 will now install on your server.
10. Choose **Finish** in the *Setup Complete* dialogue box. Now you need to install the *Data Collator*. The *Data Collator* will install to the administrator's local workstation. In addition, the *Data Scriptor* application will also be installed. Launch the installation wizard again; when the installation wizard appears, choose **English**, then **ZENworks, then Third-Party Products**.
11. Choose **GMT Check 2000**.
12. Choose **Install Data Collator**.
13. Follow the installation through the *Welcome* and *License* dialogue boxes. Take care to read the license agreement. The ZENworks 2 CD comes with a five-user evaluation license. Additional licenses may be purchased separately.
14. In the *User Information* dialogue box, enter your name and company. For test purposes type `Admin` and `Acme`.
15. In the *Choose Destination Location* dialogue box click **Next** to accept the default destination folder `C:\C2K\APPS\C2KDC`.
16. The *Select Program Folder* dialogue box will appear. Select **Next** to accept the default.
17. The application will then install. Upon completion, the *Setup Complete* dialogue box will appear. You may review the latest product information, or de-select the check mark and click **Finish**.

Install Network Associates VirusScan

Please Note: The Network Associates VirusScan software is included with ZENworks 2. It contains a six month free subscription. Additional subscriptions are available.

1. Insert the ZENworks 2 CD-ROM into the administrator's console.
2. When the installation wizard appears, choose **English**, then **ZENworks**, then **Third-Party Tools**.
3. Choose **NAI VirusScan**.
4. Choose **Copy NAI VirusScan**.
5. Follow the installation wizard through the *Welcome* and *License* dialogue boxes.
6. At the *ZENworks List of Trees* dialogue box select the NDS tree and server in which you wish to install *NAI AntiVirus*. For the test network there is only one choice, so click **Next**.
7. At the *ZENworks List Tree/Servers* dialogue box, select the tree and server in which you wish to install *NAI AntiVirus*. For the test network there is only one choice, so click **Next**.
8. The *Start Copying Files* dialogue box appears. Review the summarized settings if you wish, then click **Next**.
9. Click **Finish** in the *Setup Complete* dialogue box.

Hands-On Exercises

ZENworks 2 offers many capabilities that are not only new, but unique to desktop management products. Be sure to explore the features listed here to experience the full range of benefits and features in ZENworks 2.

Register Your Workstation

The first step is to register and import your workstation into the ZENworks 2 database. Many tasks performed by ZENworks 2 are associated with specific workstations; therefore this is the first step in ZENworks 2 hands-on exercises. This procedure encompasses all three feature areas of Application Management, Workstation Management, and Remote Management.

1. Login as the administrator (admin) from the administrator's console, and launch the NetWare Administrator (NWAdmin). The NWAdmin utility is located at \\Netware5\sys\publicwin32\nwadm32.exe.
2. You need to install a policy in the Accounting organizational unit. This policy will import information about all the workstations used by the users in the Accounting organizational unit. Select the **Accounting** organizational unit, right-click **Create**, select **Policy Package**, and click **OK**.
3. Select the **WinNT User Package** and click **Next**.
4. Accept the default name and context for the user package and click **Next**.
5. Choose the **Workstation Import Policy** by placing a check mark, and select **Details**.

The Workstation Import Policy dialogue box should appear. When it does you will adjust the settings for how the workstation objects are named within NWAdmin.

6. Make sure that *Allow importing of workstations* is checked, and *Create workstation objects in* is set to *User Container*. Click the *Workstation Naming* tab at the upper-right corner of the dialogue box.

Note: Here you add the name field of CPU type. This will cause the workstation objects within the NDS tree to be displayed as the combination of the Windows workstation name, the IP address, and the CPU type.

7. Click **Add**, select **CPU** in the *Add Name Field* dialogue box, click **OK**. Select **Network Address** and click the blue down arrow. This will cause the **Network Address** to appear last in the workstation objects name.
8. The *Workstation Import Policy* dialogue box should appear as illustrated in Figure 2. Make sure the *Preferred network address* is set to *IP Address*. Click **OK**.
9. In the *Policy Package Wizard* dialogue box, select **Next**.
10. The *Policy Package Wizard* should now ask you which container to associate this policy to. The *Accounting* container should be highlighted, so select **Next**.
11. Select **Finish**.

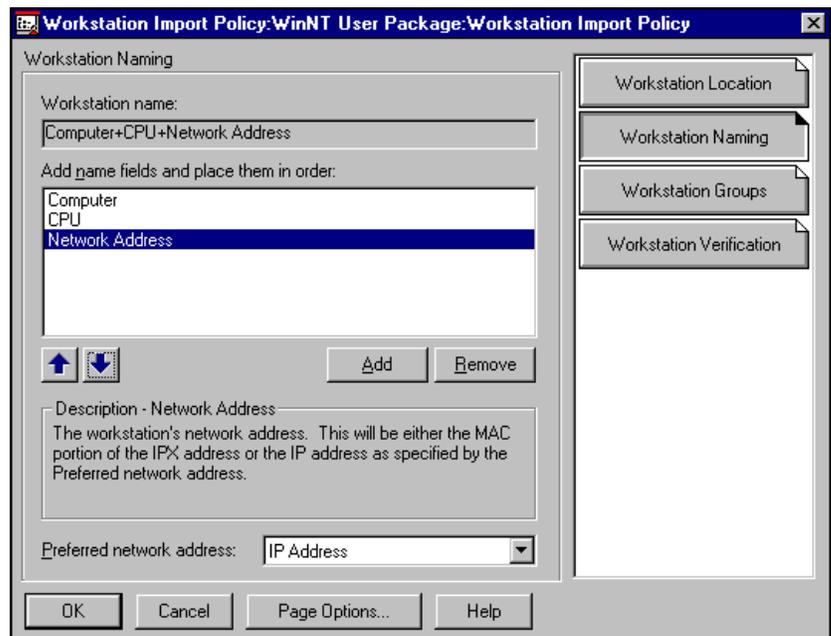


Figure 2

12. You should now be back to the

NWAdmin screen. The **WinNT User Package** object will not appear until you update the container. Double-click the *Accounting* container to close it, then double-click on the *Accounting* container again to open it. The *WinNT User Package* now appears.

13. Click **Edit**, set *Policy Schedule Type* to **Event**. Set *Run this policy when the following event happens* to **User Login**. Click **OK**.
14. Click **OK** to close the *WinNT User Package*.
15. Now you are ready to log into the network from a workstation. The policy now exists to allow the registration of workstations into the user's container. The registration is handled automatically between the ZENworks 2 server agents and the workstation agents. The workstation agents are installed upon client software installation. The client installation software automatically loads the Novell Desktop Management Scheduler.

16. Login as user Bill on the workstation BLDG03DESK45. The registration process runs in the background, and may not be visible to the user.
17. Login as user Pamela on the workstation BLDG03DESK51, with a context of *.Accounting.East_Coast_Office.Acme_Corp*.
18. From the *Start* menu choose **Programs, Novell(Common), Novell Scheduler**. The *Scheduler – Novell Desktop Management* screen should appear as illustrated in Figure 3. Notice that the *Workstation Registration/Syncher agent* is shown as having run to completion. This means that the workstation has registered with the workstation import policy.

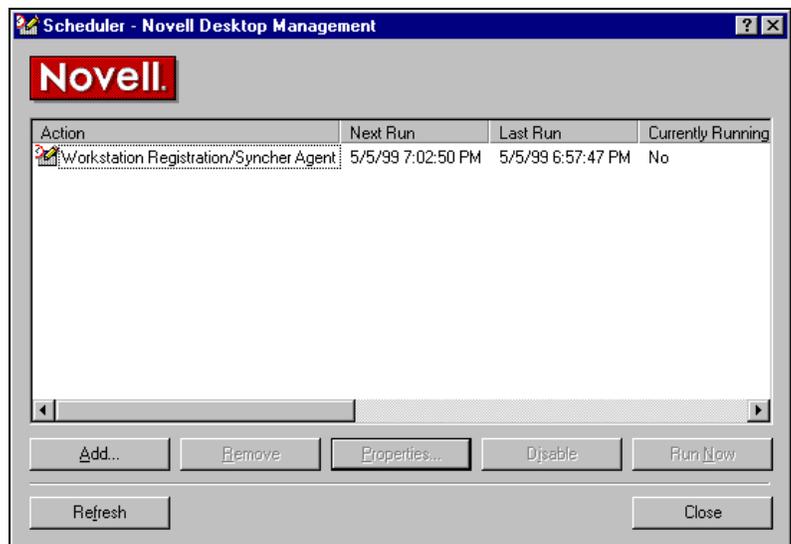


Figure 3

19. Login as "admin" to one of the workstations.
20. Run NWAdmin. Select the **Accounting** organizational unit. From the menu bar choose **Tools, Import Workstations**. The *Import Workstations* dialogue box appears, with the *Import From* tab selected by default. The default settings for this tab are already correct. Select the **Limit Policy Package** tab.

21. Enable the *Limit import users effected by this user policy package*. This will prevent either workstation from being imported as the administrator's console in Accounting's parent container.
22. Using the mouse, browse to the *Accounting* container and select the **WinNT User Package**. The screen should appear as illustrated in Figure 4. Click **OK** to import the registered workstations.

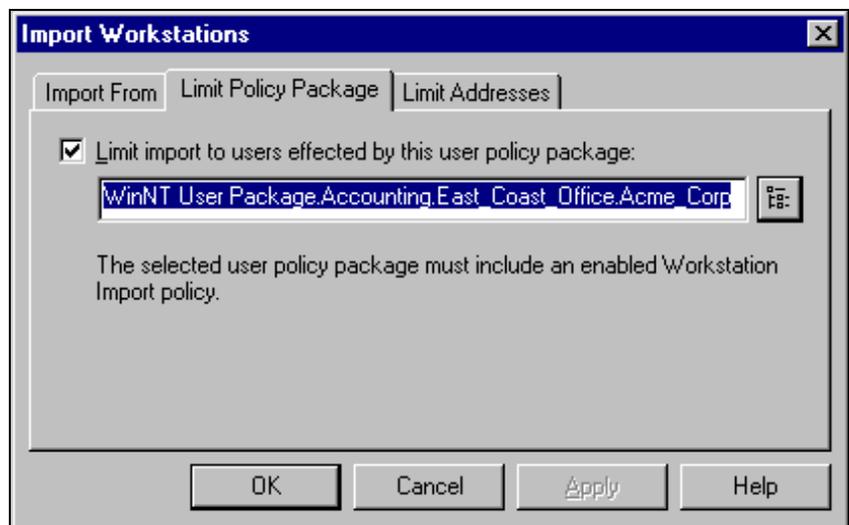


Figure 4

23. The *Import Workstations* dialogue box appears. This box shows which workstations were imported into the NDS tree. Both workstations should have been imported.
24. To see the newly imported workstation objects, you must close and then expand the *Accounting* container. This action will refresh the contents of the container to the screen. The two workstations should appear as illustrated in Figure 5. If one or both of the workstations did not register, proceed with Step 25. Otherwise, proceed with Step 26.

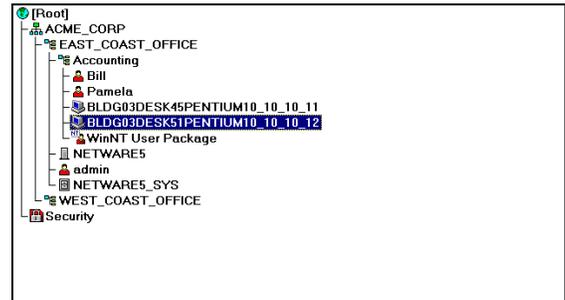


Figure 5

25. Highlight the ACME_CORP organization object within NWAdmin. From the menu bar select **Tools, Workstation Utilities, Prepare Workstation Administration**. Enable **Include Subdirectories** and click **OK**. This will grant users of all workstations within the ACME_CORP container the rights to register their workstations within that container. This procedure was run during the ZENworks 2 installation, but it may be warranted to perform this procedure a second time. Click **OK** to clear the success message.
26. Log into the workstation as the respective workstation's user.
27. Run the Sys:\public\Unreg32.exe utility from the workstation. This will reset a Windows registry setting that indicates that the workstation has already been registered into the NDS tree.
28. Manually run the Workstation Registration/Syncher Agent. From the *Star* menu, choose **Programs, Novell(Common), Novell Scheduler**. Select the **Workstation Registration/Syncher Agent**. Click **Run Now**. Wait until the agent runs until completion. Click **Close**.
29. Login as "admin" from administrator's console, run NWAdmin and perform Step 16 and Step 17.
30. If one or both workstations still do not register in the *Accounting* container, you can consult the Novell tech support web site at <http://support.novell.com>. Search for Technical Information Document number 2939246. This may help you register the workstations.

Create a Windows NT Workstation Policy Package

1. Login as the “admin” from a workstation and launch NWAdmin.
2. You will be installing a Workstation Policy in the Accounting organizational unit. This policy will be associated with all workstation objects that are imported into the Accounting organizational unit.
3. Select the **Accounting** organizational unit, right-click **Create**, select **Policy Package** and click **OK**.
4. Select the **WinNT Workstation Package** and click **Next**.
5. Accept the default name and context for the user package and click **Next**.
6. Do not enable any policies within this screen, simply click **Next**.
7. The policy is to be associated with the Accounting.East_Coast_Office.Acme_Corp organization unit. This means that any workstation or user within the *Accounting* container will be subject to the policies within your Workstation Package. Accept the default settings and click **Next**.
8. A summary of your choices appears; click **Finish**.
9. You should now be back at the NWAdmin screen. The **WinNT Workstation Package** object will not appear until you update the container. Double-click the **Accounting** container to close it, then double-click on the **Accounting** container again to open it. The **WinNT Workstation Package** should now appear.
10. Your tree should now appear similar to the tree illustrated in Figure 6.
11. Double-click the **WinNT Workstation Package**.
12. Click **Edit**. For the purposes of this demonstration, choose **Event** for *Policy Schedule Type*.
13. Select **User Login** for *Run this policy when the following event happens*. Click **OK**.

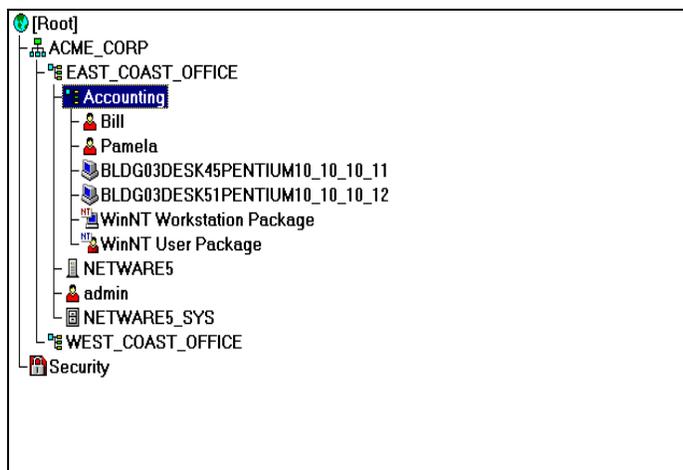


Figure 6

Application Management

Push an application to a desktop client, using criteria-based distribution

- **Why?** ZENworks 2 offers the administrator the enhanced ability to push software and software updates, such as service packs, to specifically targeted workstations.
- **How?**
 1. Login as “admin” to the administrator’s console. Exit from NWAdmin if it is running. Insert the ZENworks 2 CD. Exit the installation program, if it automatically starts.
 2. Run the snAppShot utility on the network drive found at sys:public\snapshot\snapshot.exe.
 3. Select **Custom**.
 4. Accept the default settings and click **Next**.
 5. Type `Netscape` for *NDS Application Object name* and press the TAB key. Click **Next**.
 6. Accept the default path for *Application file(s) location* and click **Next**.
 7. The snAppShot dialogue box appears. Select **Yes** to create the directory \\NETWARE5\SYS\PUBLIC\SNAPSHOT\Netscape.
 8. Accept the path for the .AOT file location and click **Next**.
 9. Click **Next** to scan all objects.
 10. Click **Next** to scan only the C: drive.
 11. A *Summary* screen appears. Review your settings and select **Next**. Your workstation is scanned. Then you are asked to run the installation routine for the application you are installing.
 12. Select **Run Application Install**. The *Select Setup program* dialogue box appears.
 13. Navigate to the path of your CDROM drive.
 14. Run **Winsetup.exe** from the root of your CDROM disc.
 15. Select **English**. Select **Windows NT Client**. Select **Install Netscape**.
 16. Select **Yes** to install Netscape Navigator.
 17. Proceed through the *Welcome* and *License* screens.
 18. Select **Custom** in the *Setup Type* dialogue box. Click **Next**. The *Question* dialogue box appears, asking if you want to create the directory C:\Netscape\Communicator. Click **Yes**.
 19. Remove the checkmarks next to **Netcaster** and **Multimedia Support**. Select **Next** in the *Netscape Navigator Options* dialogue box.
 20. Select **Next** in the *Setup Associations* dialogue box.
 21. Select **Next** in the *Select Program Folder* dialogue box.
 22. Select **Install** to start copying files.
 23. The application installs. Select **No** to skip viewing the README file.
 24. Select **OK** to close the Information dialogue box.
 25. The *Netscape Navigator* program group appears. Run **User Profile Manager**.

Snapping Netscape

The ZENworks 2 Cool Solutions web site has a white paper covering all aspects of distributing Netscape to the desktop. The white paper is located at:

<http://developer.novell.com/research/appnotes/1999/february/a2frame.htm>

26. Click **New** to create a new user profile. Click **Next**.
27. Enter `Default` in the *Full Name* field, and type `Default@Acme.com` for the *Email address*. Click **Next**.
28. The *New Profile Setup* dialogue box appears. The **Profile Name** should be set to **default** and the default directory should be set to **C:\Netscape\Users\Default**.
29. Click **Finish**.
30. From the menu bar select **Edit, Preferences**.
31. Select **Identity** from the *Category* column.
32. Type `Default` for *Your Name*.
33. For this exercise type `default@acme.com` for *Email address*. Select **OK**. Exit Netscape.
34. Select **Navigator** from the *Category* column.
35. Set the *Home Page* to `C:\`.
36. Click **OK**.
37. Exit from Netscape. Close the *Netscape Program Group*.
38. The *Novell Application Launcher snAppShot for Windows 95/NT* dialogue box appears. Accept the defaults and click **Next**.
39. The *Select Directory* dialogue box appears. Netscape will have installed to `C:\Netscape\Communicator\Program`. Click on the folder icon to and browse to the target path of **C:\Netscape\Communicator\Program**. Click **OK**. Click **Next**.
40. The *Novell Application Launcher snAppShot for Windows 95/NT* dialogue box appears. Click **Next**.
41. SnAppShot scans your workstation for changes made by Netscape. A summary screen of the changes to your workstation will appear.
42. Select **Finish**.
SnAppShot has completed its photograph of your workstation, and will generate a template file. Now you can create an application object icon within NWAdmin.
1. Run NWAdmin.
2. Open the *Accounting* container. Highlight the *Accounting* container.
3. Press the **INSERT** key; select **Application**; click **OK**.
4. Select **Create an Application object with an .aot / .axt file**. Click **Next**.
5. Browse to `sys:public\snapshot\Netscape\Netscape.AOT` for the *Path to .aot / .axt file*. Click **Next**.
6. The *Create Application Object* dialogue box appears. Select **Next**.
7. Select **Finish**. The Netscape application object should now appear within your *Accounting* container.
8. Double-click the **Netscape** application object.
9. Select the **Path to executable file** radio button. Use the folder icon to browse to the path of **C:\Netscape\Communicator\Program**. Highlight the file **Netscape.exe** and click **Open**.
10. Click **Modify** in the *Application Icon* box. The Netscape icon should be illustrated in the *Detail* box. Click **OK**.
11. Select the **System Requirement** tab.
12. Select **Add, Operating System**.
13. Select **Windows NT**. Check the *Version is* field. Set the criteria to **greater than or equal to 4.00**. Click **OK**.
14. Select the **Icons/Shortcuts** tab. Delete the four Icon/Shortcuts listed.

15. Select the *Associations* tab.
16. Select **Add**.
17. Select the **Accounting** organizational unit. Click **OK**.
18. The *Add Container Association* dialogue box appear. You may associate this application with the users in this container, the workstations, or both. Select **Users within the container**. Click **OK**.
19. Your screen will now appear as illustrated in Figure 7.
20. The Netscape Application icon is now configured properly. Select **OK**.
21. Select the **Accounting** container. Press the ENTER key.

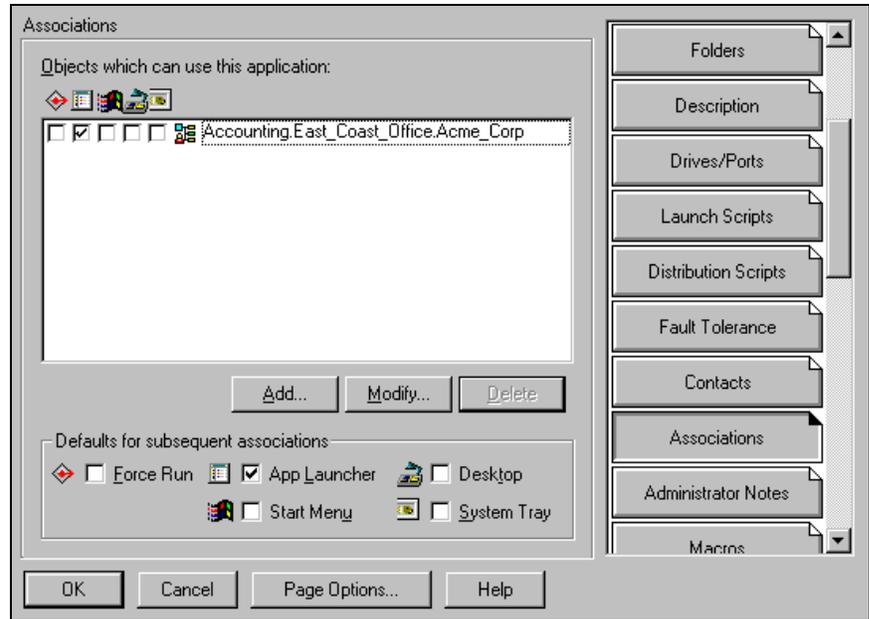


Figure 7

22. Select the *Login Script* tab.
23. In the *Login Script* column type the following text: @\\netware5\sys\public\nal.exe. This will execute the Application Launcher for any user who is a member of the Accounting container. Click **OK**.
24. Login to the other workstation as user Pamela.
25. The *Application Launcher* appears. Open the Acme tree icon, and select the *Accounting* folder.
26. In the right-hand column the *Netscape* icon appears. Double-click the icon to “pull” the application to the workstation.
27. The *System Settings Change* dialogue box appears. Click **Yes** to reboot your computer. Log back in as user Pamela.
28. The Novell Application Launcher (NAL) should start automatically. Double-click the Netscape icon within the NAL window to launch the program.

Note: The installation of Netscape in this exercise was simplified by the use of the user name of Default and the e-mail address of Default@Acme.com. snAppShot is capable of replacing a default value with an NDS variable, such as the user's login name, or whole name, or any value within NDS. For example, if user Tom installed Netscape to his workstation, the Netscape user name would be set to Tom with the address of Tom@Acme.com. snAppShot is also capable of performing customized registry settings for each user.

Heal an application

- **Why?** Suppose a user accidentally corrupts an application on their local hard drive. Instead of having to wait for the administrator to actually go to the workstation to reinstall the application, the user can get back to work right away with the help of the enhanced features of the snAppShot and Application Launcher utilities found within NWAdmin.
- **How?**
 1. Login to a workstation as user Pamela. Select the Netscape icon within the Novell Application Launcher (NAL) window to install the application (if not already installed). Exit from the Netscape application.
 2. Now you will simulate user error, damaging the Netscape application by deleting it. Select **My Computer** from the Windows desktop.
 3. Browse to the C:\Netscape\Communicator\Program directory. Delete the **Netscape.exe** program file. Exit from *My Computer*.
 4. Run NAL (if not already running) by selecting from the Windows taskbar **Start, Run**, and browse to F:\Public\Nal.exe. Click **OK**.
 5. Run *Netscape* from the NAL.
 6. The *Application Launcher Status* dialogue box should appear as illustrated in Figure 8. NAL has sensed that something has changed with the Netscape installation on this workstation. You want to restore this application, so click **Yes**.
 7. NAL looks at every file and setting, and only restores what is necessary to run Netscape. It appears to copy all files, but actually copies only files that are not there. Please be patient while NAL restores the files and settings. Netscape will launch automatically.
 8. The *System Settings Change* dialogue box will appear, prompting you to restart your computer. Select **Yes**.
 9. Login as Pamela. Launch Netscape from NAL. Netscape will now load without incident.

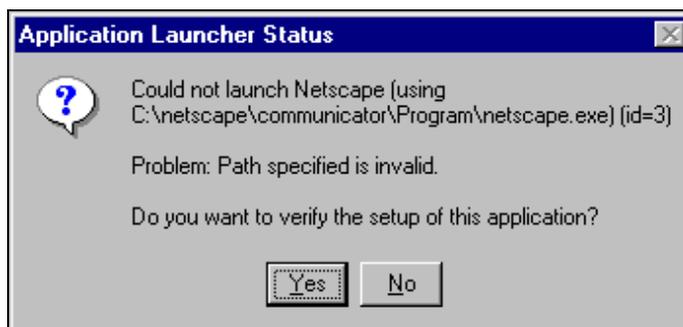


Figure 8

Perform software license metering on the network

- **Why?** Companies are continually taking stock of their investments – and this includes performing software and hardware inventories of the network.
- **How?**

Notes: ZENworks 2 can track application usage by your users. It does this by using a license object the administrator creates for the application. ZENworks 2 can only track application usage for those applications launched from the Novell Application Launcher.

1. Login as admin to a workstation. Run NWAdmin.
2. Highlight the *Accounting* container.
3. From the menu bar select **Tools, Install License, Create Metered Certificate**.
4. Enter the data as illustrated in Figure 9. Click **OK**.
5. The *Create Metering Certificate Message* dialogue box should appear. Click **OK**.
6. Select the *Netscape* application object created in a previous exercise. Scroll down and select the **Software Metering** tab.
7. Enable **Use Novell Licensing and Metering for this application**.
8. Select the browse button to find the certificate file. Highlight the *Netscape Communications* license object in the *Available Objects* column. Select **OK**.
9. Click **OK** to close the *Application:Netscape* dialogue box. Exit NWAdmin. Logout as admin.
10. Login in as Bill. Start the Novell Application Launcher. Within the NAL screen, start Netscape.
11. Login in Pamela to workstation BLDG03DESK51. Start NAL. Within the NAL screen, start Netscape.
12. You should receive the error message in Figure 10, stating that you only have one license to run Netscape. Click OK to clear the message.

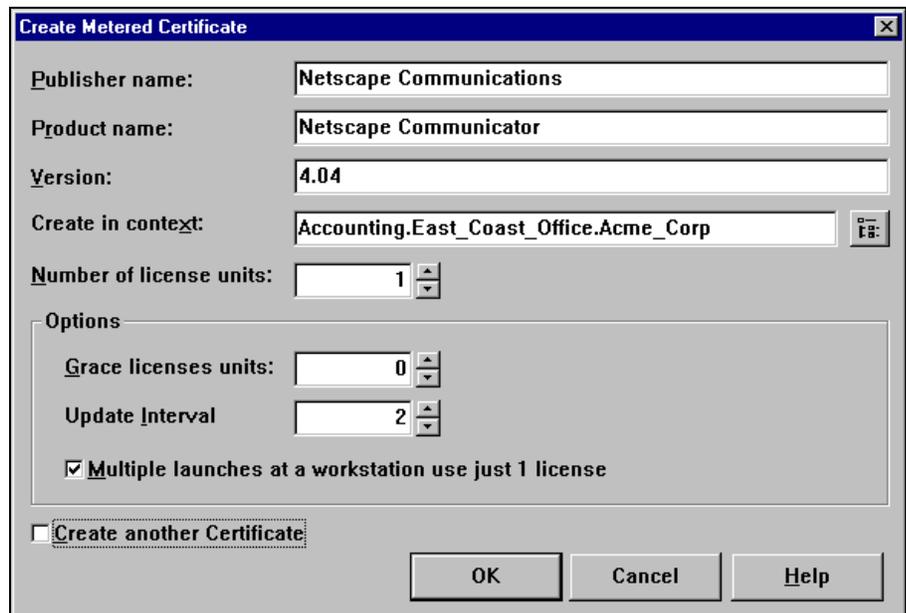


Figure 9

ZENworks 2 allows the administrator to easily create software licenses, and to instantly track software usage.

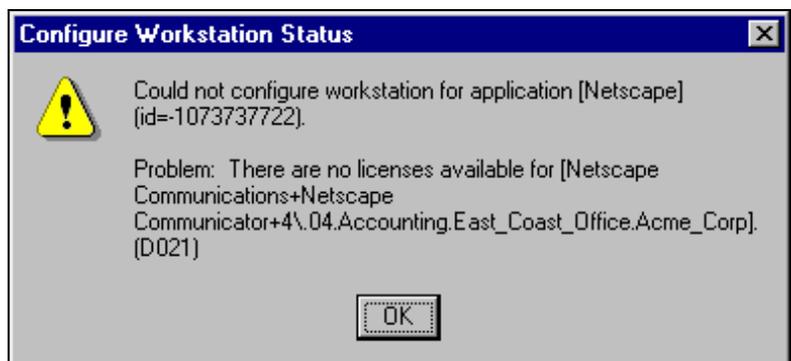


Figure 10

Generate Pre-Defined ZENworks Reports

- **Why?** You need to run reports covering hardware and software issues. You need to generate reports such as inventory lists and applications distributed.
- **How?**

ZENworks 2 Java-based Reporting Utility can generate pre-designed and custom query reports covering both hardware and software parameters. In this exercise you will generate a pre-defined report.

1. Login as admin to a workstation. Run NWAdmin.
2. Highlight the *Accounting* container. From the menu bar, select **Tools, ZENworks Reporting...**
3. In the ZENworks Reporting dialogue box click **File**, highlight **Inventory Lists**, then click **Workstation Scan Time**.
4. The *Workstation Scan Time Listing* report will appear.

*Feel free to examine the selection of pre-designed reports in the menu bar under **File**. Please note that inventory reports can be exported to a comma-delimited file, which can be imported to any third-party database or asset tracking database.*

WORKSTATION MANAGEMENT

How to set a user's custom policies and profiles

- **Why?** See how the ZENworks 2 administrator can streamline a user's desktop by creating a digital persona.

- **How?**

1. Login as "admin" on the administrator's console. Launch NWAdmin.
2. Select the *Accounting* container and double-click **WinNT User Package**.
3. Enable **Dynamic Local User**, choose **Details**. (Note: a quicker way to enable policies in this screen is to simply double-click them.)
4. Check **Enable Dynamic Local User**.

5. Check **Manage Existing NT Account**.

6. Check **Use NetWare Credentials**.

7. Check **Volatile User**.

8. Your screen should now appear as illustrated in Figure 11. Click **OK**.

Note: You can make this policy's user a member of any local NT group. This feature can be used to control rights to local directory structures. If you have specific directory restrictions on local workstations, this is how you would control access.

9. Double-click **NT Desktop Preferences**.

10. The *NT Desktop Preferences Control Panel* should appear.

This where you can define the workstation's look and feel. These settings will follow the user to any workstation. Do not change any of the settings for this exercise. Select the **Roaming Profile** tab.

11. This is where you enable Roaming Profiles. ZENworks 2 enhances and extends Microsoft's own Roaming Profiles. A profile defines the user's environment, such as screen colors, desktop icons, etc. By enabling Roaming Profiles and saving each user's profile to their NetWare Home Directory, a user will receive the same screen regardless of which networked computer they log into. ZENworks 2 greatly simplifies the use of Roaming Profiles, as compared to Microsoft's own utilities.

12. Check **Roaming Profile**.

13. Check **Enable Storage of Roaming Profiles**.

14. Select **Store User Profile in User Home Directory**. Click **OK**.

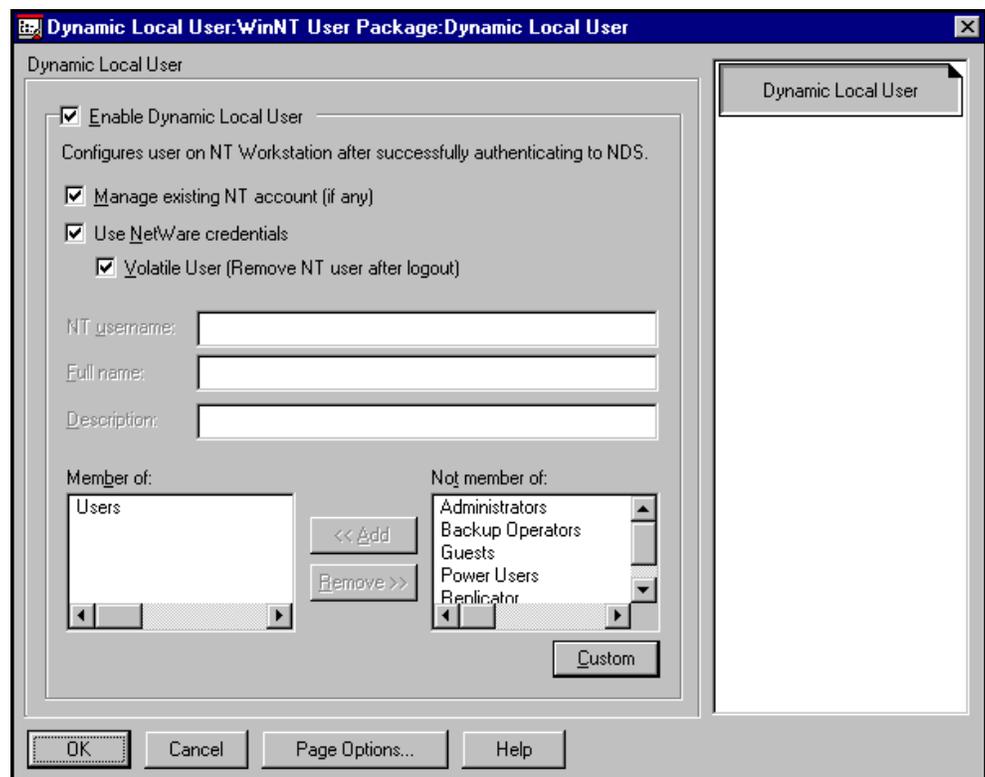


Figure 11

15. Double-click **NT User System Policies**. For test purposes, you will only modify **Control Panel** and **Shell**.
16. Double-click **Shell**.
17. Double-click **Restrictions**.

18. Select **Remove Run command from Start menu**.
19. Select **Remove Find command from Start menu**.
20. Select **Hide Network Neighborhood**.
21. Your screen should appear as illustrated in Figure 12.
22. Click **OK**. Click **OK** to close the *WinNT User Package* object screen.

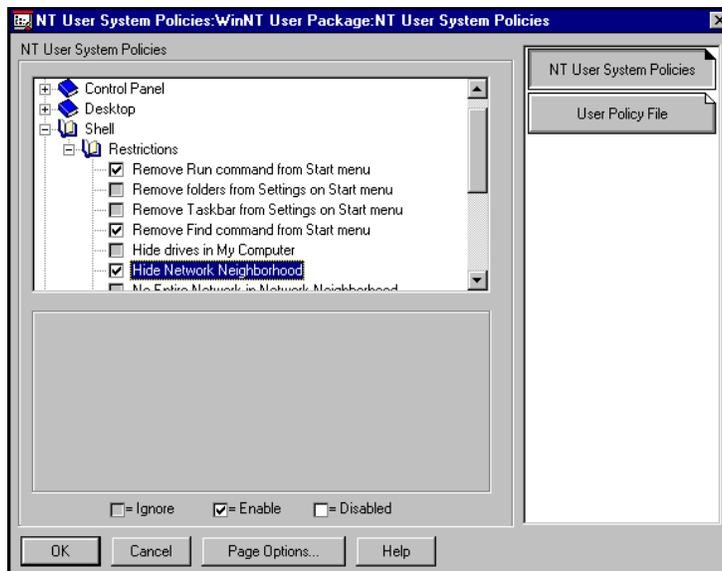


Figure 12

23. Login as Pamela on workstation BLDG03DESK51. Notice that the *Run* and *Find* commands do not appear in the *Start* menu. Notice also that the *Network Neighborhood* icon does not appear on the desktop. These features are no longer enabled; for they were restricted by the policies you just activated.

24. Login as Bill (it will automatically log out Pamela) on workstation BLDG03DESK51. Notice the *Run* and *Find* commands do not appear in the *Start* menu, and the *Network Neighborhood* icon does not appear on the desktop. Notice, too, that a Windows NT local account named Bill is dynamically created. It is also volatile, in that, once you log out as Bill, the account is deleted from the workstation's database. This is a powerful capability of ZENworks 2, because latent accounts are not left on workstations for potential hackers to scavenge.

How to set user and computer extensible policies

- **Why?** Microsoft's own policy editor, POLEDIT.exe, leaves much to be desired. It is cumbersome to create and deploy policies. Use ZENworks 2 to deploy and administer Windows policies for both users and workstations. Extensible policies are unique; they allow policy files to be developed for specific applications such as Outlook and the Microsoft Office Suite.
- **How?** By enabling extensible policies and associating them for both users and workstations. In this exercise you will create an extensible policy associated with users, not workstations. However, any .ADM file may be used for either user or computer based policies.

In this exercise you will enable a user extensible policy. The policy file was loaded by default through the ZENworks installation utility. Any Window-based application may have an .ADM file. Microsoft makes available numerous examples on their web site, such as policy files for Word and PowerPoint. Third-party applications may also have .ADM files available. For this exercise you may obtain the Common.ADM file found on the Windows NT 4 Server installation CD. Copy the file to your server, and place it in the F:\public\win32\ directory.

1. Login as "admin" on the administrator's console. Launch NWAdmin. Select the **Accounting** organizational unit.
2. Double-click the **WinNT User Package**.
3. Double-click **User Extensible Policies**. This will enable the policy.
4. Click the **Extensible Policy** tab.
5. Double-click the **User Policy** icon.
6. Click **Add**. Browse to sys:\public\win32\ and select the Common.ADM file; click **Open**. Click **OK**.
7. Highlight the **Common.ADM** file in the *ADM Files* column. Note the policies displayed in the *Policies* tab.
8. Now you will enable a user policy. Click on the "+" next to **System** and then the "+" sign next to **Restrictions**. Place a check mark next to **Hide Network Neighborhood**.
9. Click **OK** three times to return to the *Accounting* container.
10. Login as Pamela to workstation BLDG03DESK51. Notice the Network Neighborhood icon is not present on the desktop.

Please note that computer extensible policies are created in the same manner as user extensible policies.

Update a client configuration remotely

- **Why?** A High School network administrator has student users flooding the network with prank broadcast messages. The administrator needs to disable this user ability to send broadcast messages. Normally this would require modifying all 300 workstations individually. The principal wants this done overnight.
- **How?**
 1. Login as "admin." Run NWAdmin.
 2. Select the *Accounting* container, double-click the **WinNT Workstation Package**.
 3. Double-click to enable the **NT Novell Client Configuration** policy.
 4. Click **Settings**.
 5. Select the **All View** option.
 6. Double-click **Client** within the *Parameters* window.
 7. Select the **Advanced Setting** tab.
 8. Select **Receive Broadcast Messages** from the *Parameter Groups* list. Select **Server Only** for the *Setting*.
 9. Select **Send Message** from the *Parameter Groups* list. Select **Off** for the *Setting*.
 10. Click **OK**; click **OK**; click **OK**.
 11. Login to a workstation as Bill or Pamela.
 12. Click **Start**. Click **Programs**.
 13. Click **Novell(Common)**.
 14. Click **Novell Send Message**. The *NetWare Services* dialogue box appears, stating that you are not allowed to send messages.

More Powerful Example

Suppose you, the administrator, must change the context for 1,000 user accounts within the NDS tree by 9AM tomorrow morning. How do you update 1,000 workstations overnight?

Use the Remote Client Configuration capability of ZENworks 2 to push the new context automatically to your users.

Protect the user's desktop

- **Why?** Users can install unauthorized applications, which could de-stabilize their workstations. ZENworks 2 and the Application Launcher can completely control your user's desktop environment.
- **How?**

For this exercise you will continue to use ZENworks WinNT User and Workstation packages to remove the users' ability to alter their workstation desktops. You will now place some very restrictive settings on your user's desktop.

1. Login in as "admin" on a workstation. Run NWAdmin.
2. Open the **Accounting** container. Double-click **WinNT User Package**.
3. Double-click **NT User System Policies**.
4. Double-click **Control Panel**, then double-click **Display**.
5. Check **Restrict Display**. Below that, check **Deny access to display icon**.
6. Double-click **Shell**. Double-click **Restrictions**.
7. **Check to enable the following choices: Remove Run command from Start Menu, Remove folders from Settings on Start menu, Remove Find command from Start menu, Hide drives in My Computer, Hide Network Neighborhood.** Feel free to explore the other restrictions that can enable be increase security.
8. Click **OK**. Select either **OK** or **Cancel**, depending upon whichever is enabled. If only Cancel is enabled, do not be concerned; your changes will be saved.
9. Login to the other workstation as user Bill or Pamela. Notice that the user now cannot install any new software to the workstation. Thus you can use ZENworks 2 to prevent users from installing unauthorized and non-standard software.

Tricking Melissa

Two administrators utilized ZENworks to stop the Melissa virus in her tracks. Read about it on the ZENworks Cool Solutions Web Site at

http://www.novell.com/cool solutions/zenworks/reality_check_melissa.html

NAL as the Shell

A second, more radical technique to protect your desktops is to replace Windows Explorer as the workstation's operating system shell with the Novell Application Launcher.

This provides protection against even the most sophisticated of users attempts to subvert workstation security. Read more about it in Novell Technical Document #2933680 on the Novell support site at <http://support.novell.com>.

Take inventory of a desktop system and create a report

- **Why?** How many workstations are on the network? Instead of manually counting, administrators utilizing ZENworks 2 can have the answers generated automatically.

- **How?**

1. Login as “admin.” Run NWAdmin.
2. Select the Accounting container. Select the **WinNT Workstation Package**.
3. Double-click the **Workstation Inventory** policy.
4. *Schedule* should be set to **Event**. *Run this policy when the following event happens* should be set to **User Login**.

ZENworks provides your NetWare4 or Netware5 server with the ability to scan and store workstation inventory information.

5. Select the **Scanner Configuration** tab. Configure your screen as it appears illustrated in Figure 13.
6. Click **Software Scan Policy**.
7. You will enable the scanner to scan all known data file types. Select **Check All**. Click **OK**. The server will take a short time to register these updates.

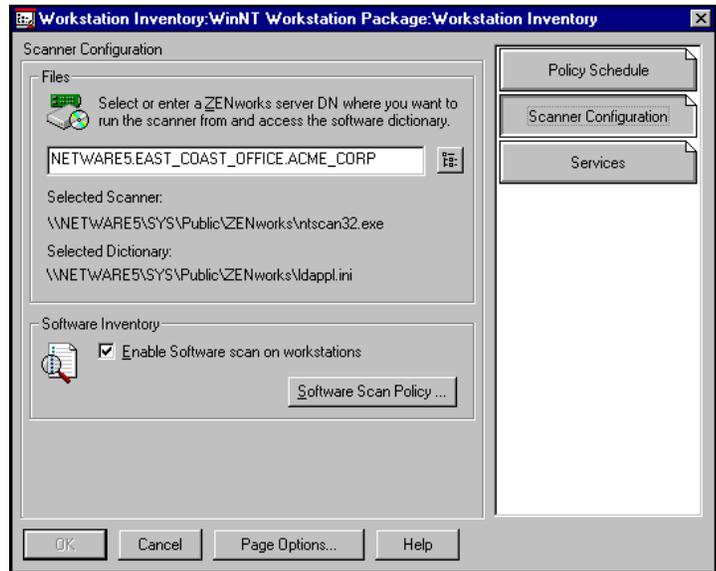


Figure 13

8. Click **OK** to close the *Workstation Inventory Screen*.
9. Click **OK** if enabled, or **Cancel** to close the *WinNT Workstation Package* dialogue box. (Do not concern yourself that the **OK** key is disabled; your changes will be saved.)
10. Login to one workstation as Bill, and the other workstation as Pamela.
For this exercise you need to make sure the Workstation Inventory agent on each workstation runs to completion.
11. Choose **Programs** from the Windows *Start* menu. Choose **Novell (Common), Novell Scheduler**.
12. Highlight **Workstation Inventory:WinNT Workstation Package action**. This is the workstation-based agent that works with the server database. This agent allows ZENworks 2 to thoroughly scan your workstations.
13. Scroll to the right and check the *Last Run* and *Currently Running* fields. If they are current, then you may log out. If it is still running, wait several minutes for the action to run to completion.
14. Login as admin from one of the workstations. Run NWAdmin.
15. Highlight the **Accounting** container.
16. From the menu bar choose **Tools, ZENworks Workstation Remote Management, Inventory Query**.
17. The *Select Inventory Server* dialogue box should appear. Select **NetWare5.East_Coast_Office.Acme_Corp** for the *Inventory Server to use for this Operation*. Note that, if you have more than one inventory server, you could choose from a list. Click **OK**.
18. The query should connect to the database server. The *Workstation Inventory Query* dialogue box should then appear.
19. Now you will do a **Quick** inventory search of the *Accounting* container.

20. Change the search attribute by selecting the *Attribute* browse button.
21. Select the “+” sign next to **Hardware**.
22. Select the “+” sign next to **Processor**.
23. Highlight the **Processor Family**. Click **OK**.

Note: Your workstations must be DMI 2.0 compliant for your DMI information to be populated.

24. Select **Pentium Family** for the *Value* field. The query should now appear as illustrated in Figure 14.
25. Click **Find**.
26. The *Inventory Query Results* dialogue box should appear, listing both of the workstations.
27. Close the dialogue boxes and return to NWAdmin.

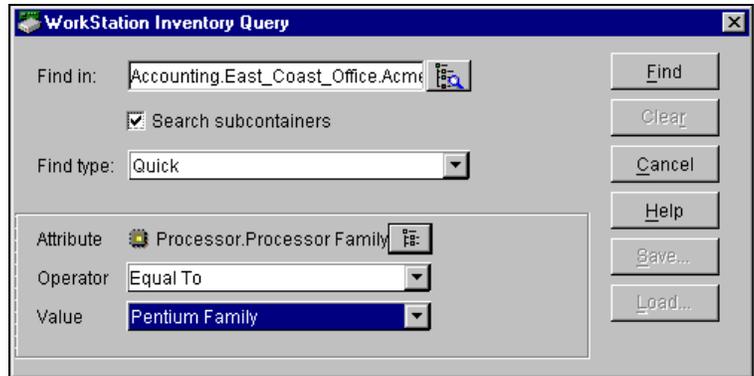


Figure 14

Install a printer driver

- **Why?** Network administrators can avoid the tedium and inefficiencies of manually installing printer drivers to any number of workstations through the Printer Policies feature within ZENworks 2.
- **How?**

First you need to create an active print queue, printer object, and print server.

1. Login as "admin." Run NWAdmin.
2. Double-click to open the *Accounting* container.
3. Choose **Object** from the menu bar, **Create**, choose **Print Server(NON NDPS)**, click **OK**.
4. Type *Accounting_Print_Server* for **Print Server Name**. Click **Create**.
5. Choose **Object** from the menu bar, **Create**, choose **Printer(NON NDPS)**, click **OK**.
6. Type *Accounting_Printer* for *Printer Name*. Click **Create**.
7. Choose **Object** from the menu bar, **Create**, choose **Print Queue**, click **OK**.
8. Type *Accounting_Queue* for *Print Queue Name*.
9. Type *NETWARE5_SYS.East_Coast_Office.Acme_Corp* for **Print Queue Volume**. Click **Create**.
10. Double-click the *Accounting* container twice, to refresh its contents. Your screen should now appear similar to Figure 15.
11. Double-click the **Accounting_Print_Server** object.
12. Click **Assignments**. Click **Add**.
13. Highlight the **Accounting_Printer** object. Click **OK**; Click **OK**.
14. Double-click the **Accounting_Printer** object.
15. Click **Assignments**; click **Add**.
16. Highlight the **Accounting_Queue** object. Click **OK**; Click **OK**.
17. Switch to the server console. Switch the screen to the System Console.
18. Type `Load PSERVER` then press ENTER.
19. The *Enter print server name* dialogue box appears. Press the INSERT key, highlight [**ACME_CORP**] and press ENTER. Highlight [**EAST_COAST_OFFICE**] and press ENTER. Highlight [**Accounting**] and press ENTER. Highlight **Accounting_Print_Server** and press ENTER. The *Available Options* dialogue box will appear. The print server is now active.

You are now ready to configure ZENworks to install a printer driver.

20. You can configure a printer policy for either workstations or users. If a workstation policy is enabled, any user logged into a workstation associated with that policy will receive that printer driver. If a user policy is enabled, the printer driver follows users to whichever workstation they log into.
21. Switch back to a workstation. Login as "admin" and run NWAdmin.
22. Open the *Accounting* container. Double-click **NT User Package**; Double-click **NT User Printer**. Click **Add**.
23. Select **Accounting_Queue** and click **OK**.
24. Click **New Driver**.

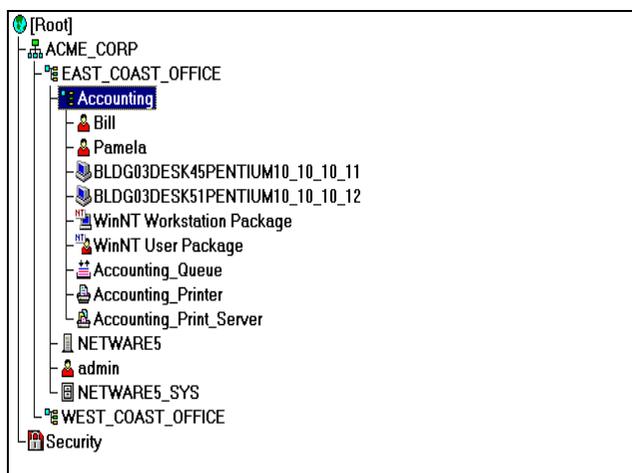


Figure 15

25. Click **Select Printer Model**.
26. Select **HP** for the *Manufacturers*.
27. Select **HP LaserJet 5** for the printer. Click **OK**.
28. You are prompted to insert your Windows NT Workstation CD. Insert it and click **OK**.
29. Select your CDROM drive letter for *Copy files from*. You may have to browse to <CDROM drive>:\i386\ directory. Click **OK**.
30. The printer driver will install. Click **OK** to close the *Setup Printer Driver* dialogue box.

Notice that there is a driver listed in the Driver column of the NT User Printer dialogue box. This driver was saved to your server, and ZENworks will push these files to your workstations.

1. Click **Toggle Default** to make this printer the user's default printer.
2. Click **OK** to close the *NT User Printer* dialogue box.
3. Click **OK** to close the *WinNT User Package* dialogue box.
4. Login as Pamela from a workstation.
5. Choose Programs from the Windows *Start* menu; choose **Settings, Printers**. The print queue Accounting_Queue.Accounting.East_Coast_Office.Acme_Corp should be set at the default.

The drivers have loaded automatically. Imagine the time saved by having ZENworks 2 push this driver to hundreds of workstations!

Remote Management

Demonstrate how the Help Desk utility can gather user information

- **Why?** The Help Desk utility can provide support personnel with information about a user's hardware and software configuration and enables the user to cut and paste error messages into an e-mail help request ticket. Thus support personnel begin the call with more information, and the problem can then be solved far more quickly, raising the level of efficiency for all.
- **How?**
 1. Login as "admin" and run NWAdmin.
 2. Select the *Accounting* container. Double-click **WinNT User Package**.
 3. Double-click **Help Desk Policy**.
 4. Click the Information tab. Type Administrator for *Contact Name*, admin@acme.com for *Email Address* and x123 for *Telephone Number*.
 5. Select the **Configuration** tab. Enable both the *Allow user to launch Help Requester* and *Allow user to send trouble tickets from the Help Requester*.
 6. ZENworks 2 is capable of utilizing either GroupWise or a MAPI compliant e-mail system. Select either for *Trouble Ticket Delivery Mode*.
 7. Type Accounting Trouble Ticket for *Trouble ticket subject lines*.
 8. Select the **Trouble Tickets** tab.
 9. Check in all the boxes. This will provide the maximum amount of information sent to the administrator via an e-mail trouble ticket.
 10. Click **OK**. Click **OK** to close the *WinNT User Package* dialogue box.
 11. Highlight the **Accounting** container and press ENTER.
 12. Select the **Application** tab.
 13. Select **Add** for *Associated with Users*.
 14. Double-click the **HelpReq32** application object in the *Available Objects* column.
 15. Check to install the application icon on the user's Application Launcher, Start Menu, Desktop and System Tray. Your screen should appear as illustrated in Figure 16. Click **OK**.

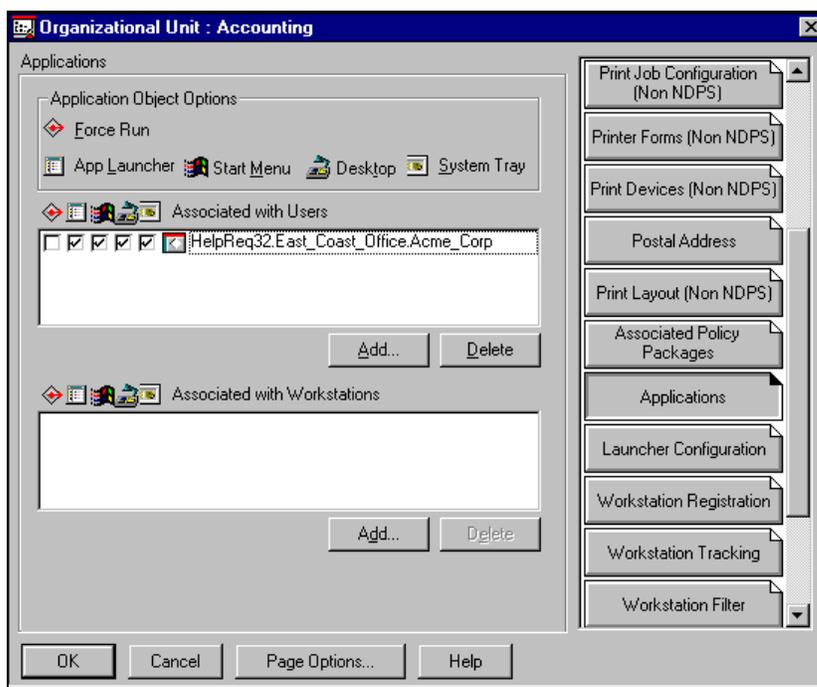


Figure 16

To see the Help Request application launch, you must configure the Novell Application Launcher to run. Please refer to section entitled **Protect the User's Desktop in the Application Management**.

Remotely take control of a Windows NT workstation

- **Why?** See how remote control lets Help Desk personnel attend to problem client systems from any location on the network by taking remote control of the workstation.
- **How?**

Remote management policies can be associated with either users or workstation. For example, if a user who is not associated with a remote management policy logs into a workstation that is associated with a remote control policy, that user can be remotely controlled. In this exercise, you will create a workstation Remote Management Policy. You will use one workstation, as the administrator, to remotely control the other.

1. Login to a workstation **BLDG03DESK45** as “admin.” Run NWAdmin
2. Open the *Accounting* container. Double-click **WinNT Workstation Package**. Double-click **Remote Management Policy**.
3. Check **Enable Chat**, **Enable Diagnostics** and **Display Remote Management Agent Icon to users**. Set the *Default protocol* to **IP**.
4. Select the **Control** tab. Place a check mark in each of the boxes. Note the privacy options available to the administrator in configuring remote management.
5. Click the **View** tab. Check each of the boxes.
6. Click the **File Transfer** tab. Place a check mark in each of the boxes.
7. Click the **Execute** tab. Place a check mark in each of the boxes.
8. Click **OK** to close the WinNT Workstation Package. Do not log out as admin.
9. Login as Pamela on the other workstation. When you login, the new Workstation Policy Package will be pushed down to all workstations associated with that policy.
10. Switch back to the administrator’s console. Double-click **BLDGDESK51PENTIUM**.
11. Select the **Remote Management** tab. Click **Remote Operations**. Select **Remote Control**.
12. The *Remote Management* dialogue box appears, informing you that the workstation’s policy agent is “Asking for User’s Permission.”
13. Switch to the workstation’s keyboard. Click **Yes** to permit the administrator to gain remote control.
14. Switch back to the administrator’s console. The *Remote Control* window of Pamela’s workstation should appear similar to that illustrated in Figure 17.
15. You can have some fun now. Click the **Start** icon in the upper right-hand corner of the screen.
16. Now switch to Pamela’s workstation. Notice that the *Start* menu has popped up. Feel free to experiment here.
17. To close this window on the administrator’s console, press ALT + F4. Press the *Start* icon in the upper right-hand corner of the screen.

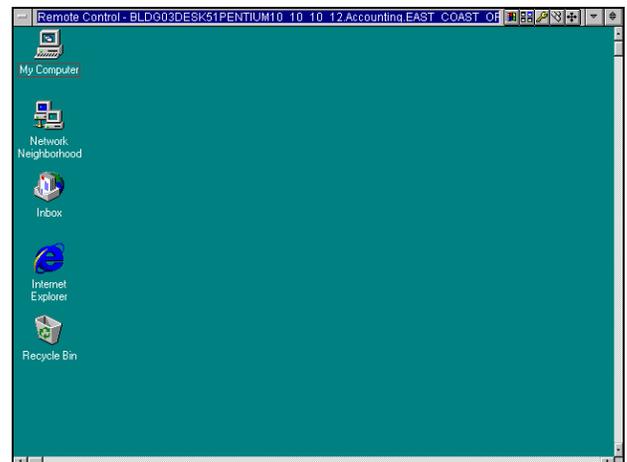


Figure 17

Perform diagnostics on the workstation

- **Why?** Continue exploring the remote support capabilities of ZENworks 2 by performing diagnostics on the workstation from the exercise.
- **How?**
 1. To perform workstation diagnostics, simply click **Remote Operations** again, and select **Diagnostics**.
 2. The *Workstation Diagnostics* dialogue box should appear.
 3. Double-click **Operating System, Memory, Windows Memory**.
 4. Your screen should appear as illustrated in Figure 18.
 5. Feel free to explore the various Operating System and Network components.
 6. To close select **File, Exit**.

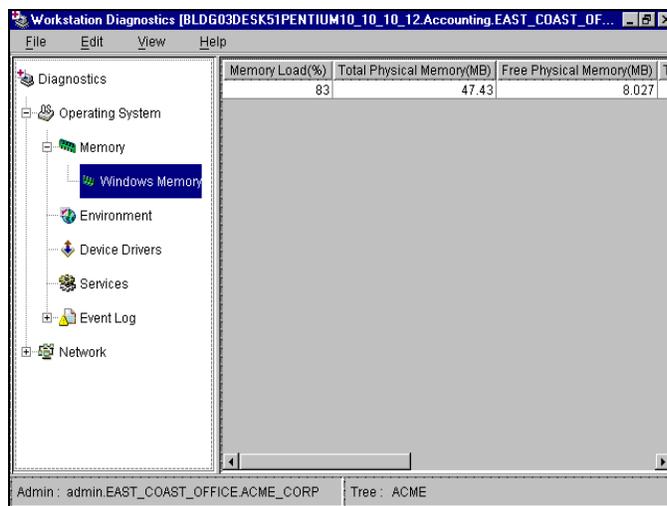


Figure 18

Perform File Transfer

- **Why?** See how ZENworks 2 allows you to perform quick file transfers and execute workstation files without having to establish a remote control session.
- **How?**
 1. To perform workstation diagnostics, simply click **Remote Operations** again, and select **File Transfer**.
 2. The user Pamela is asked if they want to permit the administrator to transfer files. Switch to Pamela's workstation and select **Yes**.
 3. Switch back to the administrator's console. The *File Transfer* dialogue box should appear.

The File Transfer dialogue box is a Java-based FTP utility.
 4. To copy a file, select one from the left column. Right-click and select **Copy**.
 5. Move the mouse pointer to the right column and click **Paste**.
 6. Feel free to explore this utility and review the on-line Help learn of the various features.
 7. To close select **File, Exit**.

Perform Remote Execute

1. To perform workstation diagnostics, simply click **Remote Operations** again, and select **Remote Execute**.
2. The user Pamela is asked if they want to allow the administrator to execute a program. Switch to Pamela's workstation and select **Yes**.
3. Switch back to the administrator's console. The *Remote Execute* dialogue box should appear.
4. Type `C:\WINNT\notepad.exe` and click **Execute**.
5. Switch to Pamela's workstation.
6. The Notepad Application should have launched.
7. Select **File, Exit** to close the application.

Anti-Virus Protection

Scan your desktops for viruses

- **Why?** You need to check for viruses.
- **How?** The NAI Anti-Virus application object installs itself into the NDS tree. In this exercise you will create a policy to push the anti-virus package to a workstation, and scan your workstations for viruses.

1. Login as "admin." Run NWAdmin.
2. Select the *Accounting* container, right-click and select **Details**.
3. Select the **Applications** tab. In the *Associated with Workstations* column select **Add**.
4. Highlight the application object **VscanNT** from the Available Objects column. Click **OK**.
5. Place a check mark in the **Force Run** box in the *Associated with Workstations* column. (Refer to the legend in the *Application Object Options* box above *Associated with Users*.)

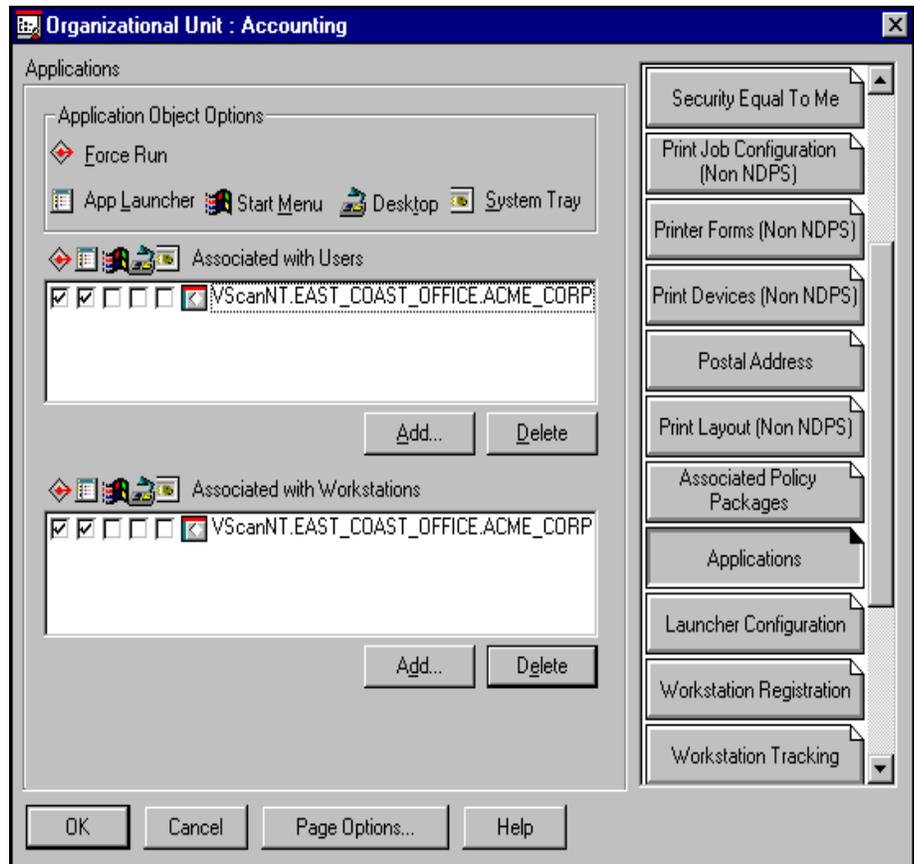


Figure 19

6. In the *Associated with Users* column select **Add**.
7. Highlight the application object **VscanNT** from the Available Objects column. Click **OK**.
8. Place a check mark in the **Force Run** box in the *Associated with Users* column. Your screen should appear as illustrated in Figure 19.
9. Click **OK** to close the *Organizational Unit: Accounting* dialogue box.
10. *The VscanNT application object is set run only once and then reboot the user's workstation to complete the installation. By enabling these settings you could push this software to thousands of workstations automatically! You will now log in as an ordinary user, and watch the application automatically install.*
11. Login as "Pamela" to one of the workstations. Run the Novell Application Launcher (if it does not start automatically) by selecting **Start** from the taskbar, **Run**, browse to F:\public\nal.exe, and click **OK**.
12. The Novell Application Launcher will start. The VirusScan for WinNT icon should appear, and automatically install. Upon completion of its installation routine, it will prompt the user to reboot. Follow the prompts to reboot the workstation.

13. Log in again as "Pamela." Notice upon startup that the Network Associates VirusScan NT software loads automatically. Feel free to launch the VirusScan software from the desktop and scan your workstations. You can launch the scanner by selecting **Start** from the Windows task bar, **Programs, Network Associates VirusScan NT, VirusScan**.

Included with the VirusScan software is the VirusScan Scheduler for Windows NT. This software is an aid for the administrator. The Scheduler can be programmed to automatically download virus updates from the Network Associates FTP site, and then push them to every workstation. You will enable the Scheduler software on the administrator's console in the following exercise.

14. Login as "admin" on workstation BLDG03DESK45 and run the Novell Application Launcher (F:\public\nal.exe).
15. In the NAL screen, highlight the *.admin.East_Coast_Office.Acme_Corp* folder. In the right-hand column double-click **Schedule VirusScan for Win NT**. The application will install, with no noticeable screen activity.
16. From the **Start** menu on the Windows taskbar, select **Programs, Network Associates VirusScan NT, VirusScan Console**.
17. Double-click the task **Automatic DAT Update**. The *Automatic Update/Upgrade Properties* dialogue box will appear. The dialogue box has two tabs, one to schedule the download of the anti-virus update files, the second to schedule the download of any application upgrades. Feel free to explore the options. Click **OK** to close the dialogue box.

Year 2000 Verification

Run the Check 2000 program on a client

- **Why?** Verify year 2000 compliance of all workstations and applications by using GMT's Check 2000 utility.
- **How?**

1. Login as "admin" to the administrator's console.

First you need to prepare the workstations to run the Check 2000 scanner via ZENworks 2. This requires that you run the Check 2000 Scriptor utility. Within the Scriptor utility you will modify the Scriptor's workstation installation INI file. Within this INI file you will adjust settings to deny users any chance to affect the scan, and set the target to path for the data of the scanning results.

2. Choose **Run** from the Windows *Start* menu; click **Browse**; point to the file `sys:public\C2K\Install\Scriptor\Scriptor.exe` and click **OK**.
3. The *Check 2000 Scriptor* dialogue box appears. Click **Next** to run the Scriptor utility.
4. The *Open C2kInst File* dialogue box appears. From the menu bar select **File, Open** and browse to the directory `sys:Public\C2K\APPS\C2KWC32\`. click **OK**. Select **No**; you will be using another file.
5. Select the **Screen Options** tab. Disable all choices but for the first, entitled *Select drives (Server Scanner only)*.
6. Select the **Output Directory** tab. Click **Select Root Directory**. Browse to `sys:System\C2K`. Click **OK**.
7. Select the **Run Cycle** tab. The *Always* radio button should be enabled.
8. Select the **Processing** tab. Disable all choices. In the *Automatic Start* box disable **Wait for User to Start**. Make sure the *Start after* field is set to zero seconds.
9. Select the **User & PC** tab. Select **Enable ZENworks**.
10. Click **Finish**; click **Yes** to save your changes to the file.
11. Now you will associate the NT Client scanner application with the *Accounting* container. This will cause the application to run automatically, and will push the resulting data to the `sys:System\C2K` directory.
12. Run NWAdmin from the administrator's console. Open the *East_Coast_Office* container. Double-click to open the **Check2000-32** application object.
13. The screen should default to the *Identification* tab. Select the **Associations** tab.
14. Click **Add**. Select the **Accounting** container, then click **OK**. The *Add Container Association* dialogue box appears. Select **Workstations within this container**. Click **OK**. Your screen should appear as illustrated in Figure 20. Click **OK**.

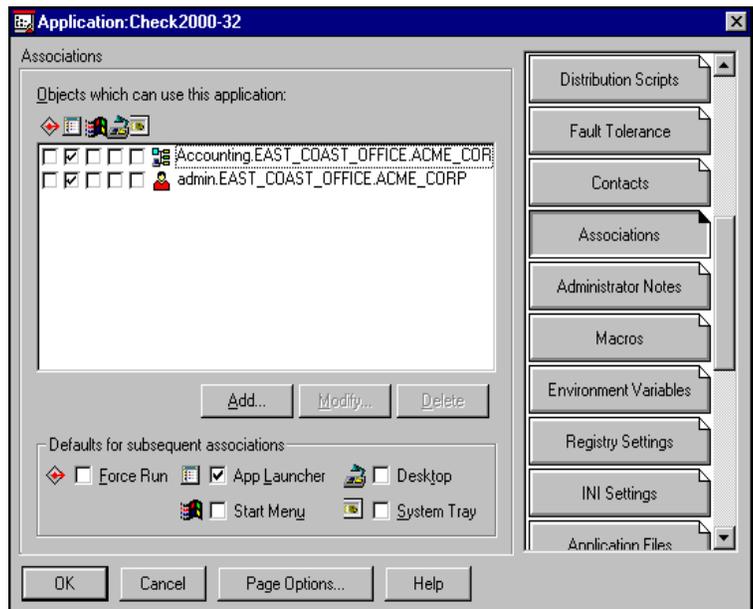


Figure 20

15. Place a check mark to enable *Force Run* for the *Accounting.East_Coast_Office.Acme_Corp* container. This will force the application to run upon the launching of NAL.

16. Click **OK** to close the *Application:Check2000-32* dialogue box.

17. Login as user Bill on workstation BLDG03DESK45 and as user Pamela on workstation BLDG03DESK51. NAL should launch automatically, if it was properly configured in the earlier Snapshot exercise. If NAL does not start, choose **Run** from the Windows *Start* menu. Point to the application file sys:public\nal.exe. and click **OK**. The Check 2000 workstation scanner should run and terminate without additional user interaction.

18. Your next step is to run the Check 2000 Data Collator. This application was installed locally onto the administrator's console upon Check 2000 installation.

19. Log in as admin to workstation BLDG03DESK45, or the workstation that contains the Check 2000 Data Collator. Choose **Programs** from the Windows *Start* Menu; choose **Check 2000 Data Collator**; select **Check 2000 Data Collator**. Select **Next** to continue.

20. Select **Load Check 2000 Results**.

21. Select **New Load**.

22. Browse to and select the path of **F:\System\C2K\EAST_COAST_OFFICE\ACCOUNTING**. Your screen should appear as illustrated in Figure 20. Notice that each of your two workstations are listed as a separate directory. The workstation scanner creates a separate directory for each workstation's files.

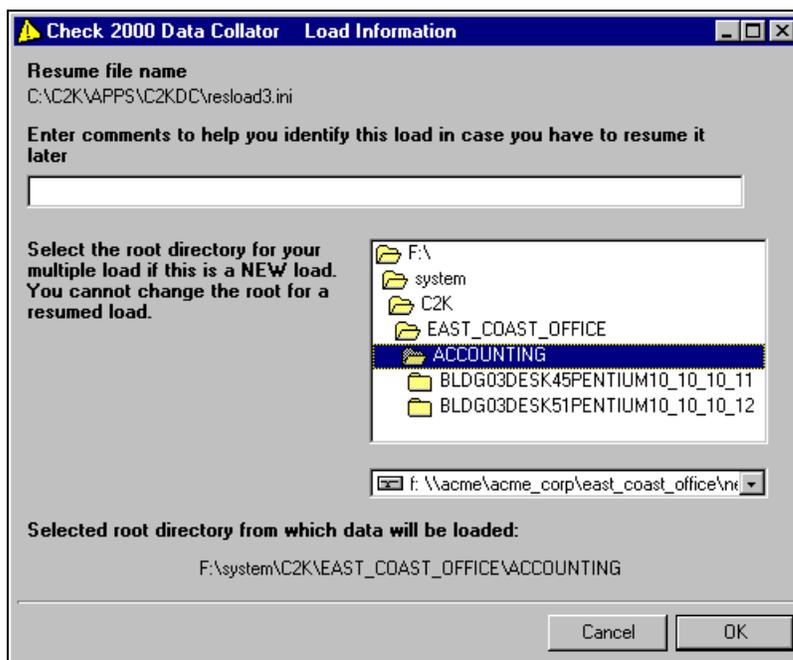


Figure 20

23. Click **OK** to load the information.
24. The *Check 2000 Data Collator Multiple Load in Progress* dialogue box should appear, stating that the multiple load successfully completed. Click **OK**.
25. Check 2000 can analyze and give advice to solve hardware and data problems. You will now examine your network's software issues. Select **View total software issues**.
26. A spreadsheet-like screen should appear, listing all applications with date dependency issues. Scroll to the far right column and select a cell with the word "Status #." Double-click any cell with "Status #" for more details. The details screen should appear as illustrated in Figure 21. Feel free to search your applications for your Y2K situation.
27. Click **OK** to close.
28. Click **Finish** to close the Collator.
29. Check 2000 can also scan your server. From the administrator's console, choose **Programs** from the Windows *Start* menu; choose **Check 2000 Server Scanner**; select **Check 2000 Server Scanner**.
30. Click **Next** twice.
31. Check the **F** drive. Click **Next**.
32. Check 2000 scans your server.
33. Select **User Data Files** to view the scan results. Double-click on any cell for more details. Click **OK** to close.
34. Click **Finish** to close the server scanner.

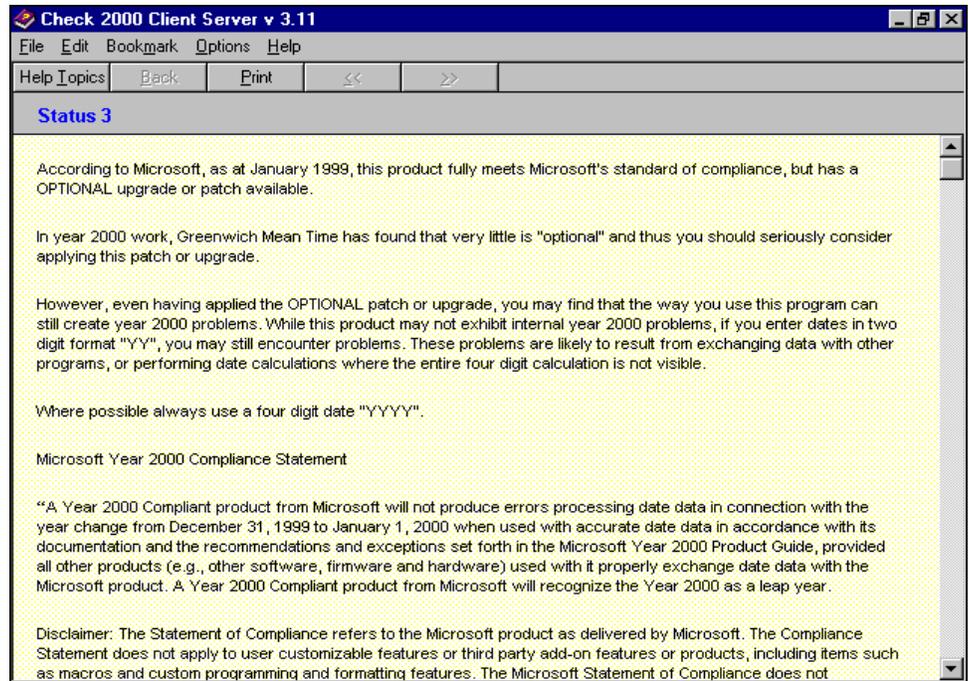


Figure 21