



BY JOHN E. JOHNSTON

Z.E.N.works — Zero Effort Networking for Users: Part II — Application Distribution

The facilities of Z.E.N.works can be used to automatically distribute applications to end user workstations. This allows the network administrator to control the distribution of applications using the NetWare Administrator utility as the single point of control.

SOFTWARE distribution is an Achilles' heel for many organizations. In order for a company to maintain an edge over the competition, new software releases must be constantly deployed. The faster this new software is deployed, the quicker the end users can begin using the software to help the company stay ahead of the competition and make money. This article demonstrates how to use the tools available in Z.E.N.works from Novell (referred to as ZEN throughout) to automate the process of distributing new and updated applications to the end users' desktops.

APPLICATION DISTRIBUTION

The ZEN application distribution tool utilizes the NDS to manage images of application software. The NDS contains information on where the application's program, INI files and Registry entries are stored. When an application software product is to be installed on a new workstation or to a new user, this image is used to distribute the application's files, INI files and Registry modifications to the desktop. The NDS is also used to determine which users have access to which applications.

The following steps are required to distribute an application using ZEN:

1. Obtain a baseline PC.
2. Run snAppShot to Create AOT/AXT files.
3. Create an Application Object.
4. Modify the Application Object to specify recipients.
5. Run NALEXPLD.EXE on the user's desktop.

Tip: You can also distribute simple applications (applications that do not modify the

Registry or INI files) without the use of AOT/AXT files. This process is very simple to perform and will not be covered in this article. For more information on distributing applications without AOT/AXT files, please refer to the help files that are distributed with ZEN.

The Baseline PC

The first phase of the snAppShot application distribution process is to take a "before" image of a typical (baseline) workstation. This workstation should be a Windows 95 or Windows NT Workstation (whichever is more prevalent in your environment). The baseline workstation should have a typical configuration for your environment.

For many applications, you can use a Windows NT Workstation as the baseline PC, then use the AOT/AXT files created from that PC to distribute applications to Windows 95 workstations. Conversely, you can also use a Windows 95 workstation as a baseline PC and use the AOT/AXT files from that PC to distribute applications to Windows NT Workstations. However, because of the differences between the Windows 95 and the Windows NT Workstation Registries, this practice can cause problems. However, there are ways to work around this Registry conflict problem. For example, the Novell tip located at www.novell.com/cool-solutions/zenworks/tip_registry_magic.html shows us how to resolve Registry conflicts associated with distributing the Microsoft Office 97 applications to both Windows NT and Windows 95 workstations from a single set of AOT/AXT files.

Tip: The safest way to resolve this issue is to create one set of AOT/AXT files from a

Figure 1: Entering the Name of the Application

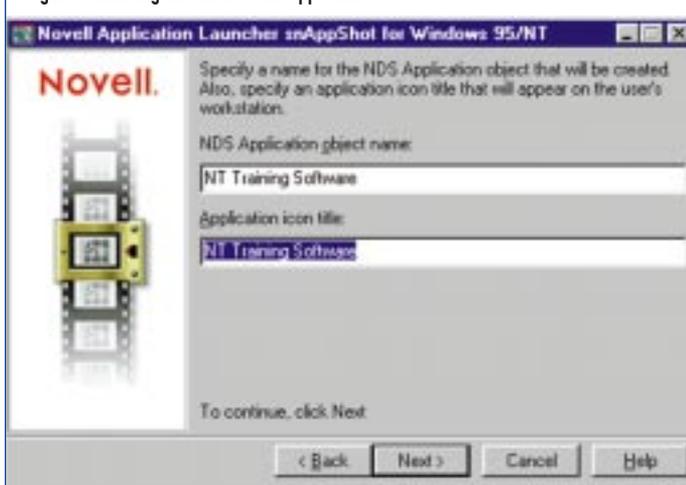
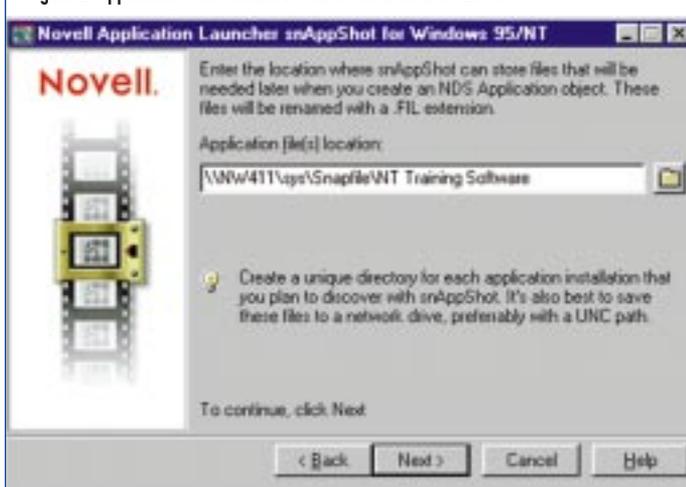


Figure 2: Application Files Should Be Stored on a Network Drive



Windows 95 baseline PC to use for distributing applications to Windows 95 workstations; then, create a separate set of AOT/AXT files from a Windows NT Workstation to be used for distributing applications to Windows NT Workstations.

Running snAppShot to Create AOT/AXT Files

Now that you have a baseline Windows 95 or Windows NT Workstation PC (or both), you are ready to run the snAppShot application to create the AOT/AXT files. ZEN uses snAppShot version 2.5 to distribute complex Windows applications. snAppShot works as follows:

- ◆ A “before” image is taken of a baseline workstation.
- ◆ A new application is installed on the baseline workstation.
- ◆ An “after” image is taken of the baseline workstation.
- ◆ The “before” and “after” images are compared.
- ◆ The files that were copied to the baseline PC by the application’s installation program are copied into .FIL files.
- ◆ The location of the application’s files (.FIL files) and the Registry entries that were added to the baseline PC are stored in Application Object Template (AOT and AXT) files.
- ◆ The shortcut(s) that were created on the baseline PC are added to the AOT/AXT files. Information about the application is stored in the NDS, including the location of the application’s AOT and AXT file(s).

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An AXT file and an AOT file describe the Application Object. These files contain the same information, but the AXT files are in text format and the AOT files are in binary format. AXT files are readable (and can be modified) but AOT files import and export much faster.

The following is a step-by-step procedure to create the AOT/AXT files for a 32-bit Windows application. You should perform the following steps from your baseline PC:

1. Run SYS:\PUBLIC\SNAPSHOT\SNAPSHOT.EXE.
 2. Click on Standard. Figure 1 will be displayed.
 3. Enter the name of the NDS object and the Application icon title. “NT Training Software” was chosen in this example.
 4. Click on Next. Figure 2 will be displayed.
 5. Enter the path where application files (.FIL files) will be located. This should be a directory on one of your NetWare servers. Directories will be created if they do not exist. Choose a separate directory for each application in order to keep the .FIL files from each application separated.
- Tip:** You should use UNC paths for the specification of the location of the application files.
6. Click on Next. You will be prompted for a path where the Application Object Template (AOT/AXT) files will be stored as shown in Figure 3. You should place this file in the same directory as the application files.
 7. Click on Next. You will be prompted for the drives on the baseline PC that are to be scanned by snAppShot. In most cases you will select the C: drive. If your baseline PC has multiple drives, you should add these drive(s) to the scan.
 8. Click on Next. A Setting Summary screen will be displayed. Review these settings, then click on Next. snAppShot will now scan the baseline PC to take a “before” image.
 9. Next, you will be prompted to install the application, as shown in Figure 4.
 10. Click on “Run Application Install.” You will then be required to browse to the location of the setup program for the application

Figure 3: AOT/AXT Files Should Reside in the Same Directory as the Application Files

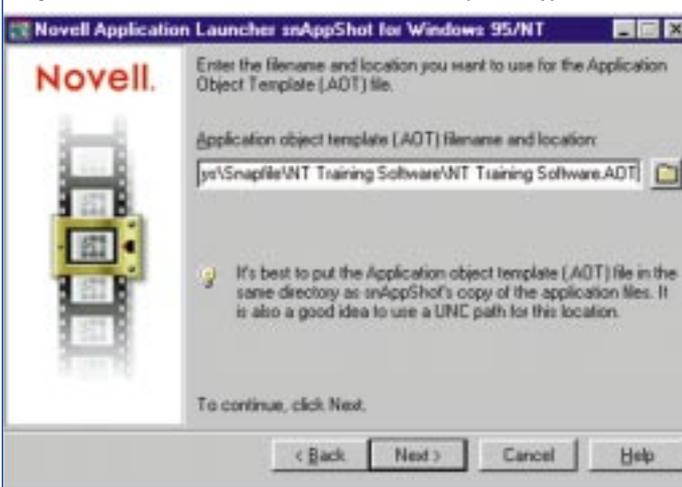
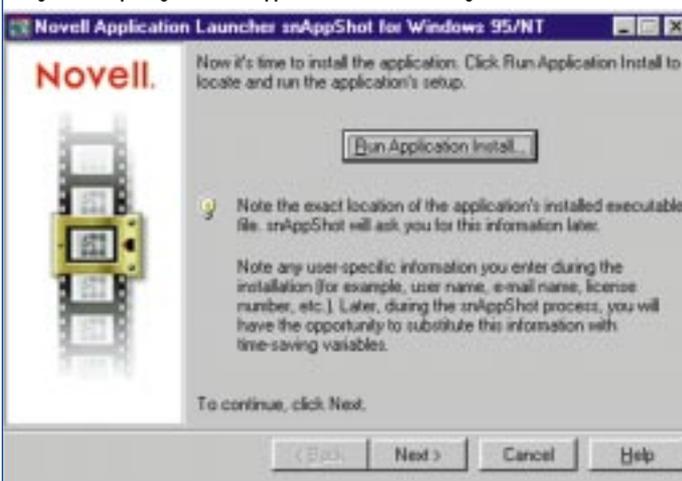


Figure 4: Preparing to Run the Applications Installation Program



being installed. snAppShot will wait while the application's set up program runs.

11. Follow the prompts required to install the application software. Make a note of the directory where the application's setup program installs the software. This directory must be re-entered during the "after" image re-scan. When the application setup program completes, click on Next on the snAppShot utility.
12. You will now be prompted for the application's installation directory. This is the directory where the install program has installed the application, such as C:\Program Files. In this example, the application was installed into C:\NETESS. snAppShot will now perform the "after" image scan on the baseline PC. All changes made by the application's setup program will be captured by this process and stored in the snAppShot application files.
13. Next, the application template will be generated as shown in Figure 5. When finished, the screen shown in Figure 6 will be displayed. You may want to print this information and save it for future reference.

14. Click on Finish when ready. At this point, the AOT/AXT and supporting application files (FIL) have been created. Take a look in the directory specified for the snAppShot files (specified in Figures 2 and 3) just to see what files this single execution of snAppShot created. Take a look at the AXT file created in this directory and you will see the information that snAppShot found when comparing the "before" and "after" images of the baseline PC.

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CREATING THE APPLICATION OBJECT

Once we have the AOT/AXT files created, we are ready to create the NDS Application Object. The Application Object contains a great deal of information about each application and actions to be performed before and after the launching of the application, including:

- ◆ workstation operating system requirements (Windows 95, Windows NT, Windows 3.x)
- ◆ drive(s) to be mapped
- ◆ ports to be captured
- ◆ scripts to be run
- ◆ users to whom the application will be distributed to
- ◆ information on the application's Registry settings
- ◆ information on the application's INI settings
- ◆ information of the application's files
- ◆ information on the shortcuts to be established for the application
- ◆ rights to files and directories

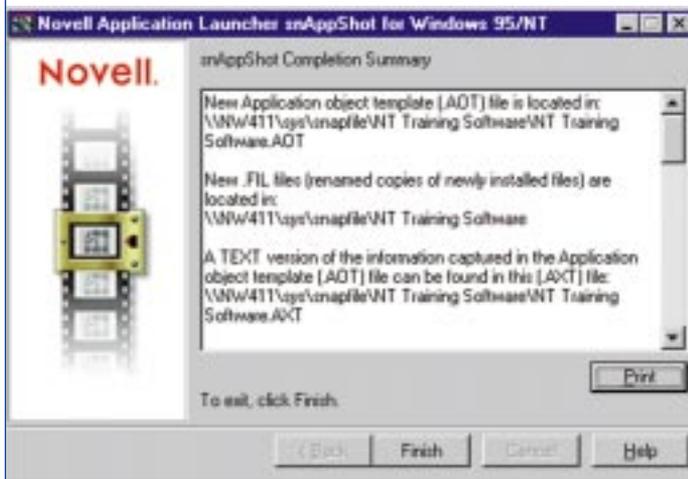
As you can see, a great deal of information about each application is stored in the NDS Application Object. This information allows you to quickly see what resources are associated with a given application. The Application Object also provides tools for you to control the environment of the end user's workstation prior to and during the launching of the application. For example, you can run scripts, map drives and capture printer ports in order to customize the user's environment prior to the launch of the application.

I will not be delving into all of the specifics of the Application Object. The best way to learn how to use the tools available with the Application Object is to experiment. Set up a few test applications and manipulate the various settings and tools. You will quickly find that the Application Object is a very powerful tool for controlling the application distribution and usage in your organization.

Figure 5: Application Template Generation Process



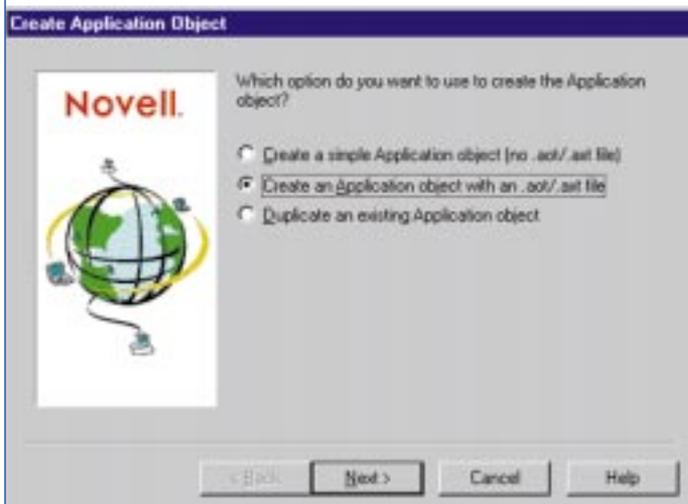
Figure 6: Print or Review the snAppShot Completion Summary



The following steps will show you how to create an Application Object for a 32-bit Windows application using the AOT file created in the previous section:

1. Start nwadmin32.exe.
2. You must now decide where you want to place your application objects. In this example, a new OU, named Applications, was created to store all application objects.
3. Right click on the OU to contain the application object.
4. Click on Create.
5. From the pull-down menu, select Application.
6. Select the “Create an Application object with an .AOT/.AXT file” option, as shown in Figure 7, then click Next.
7. Browse to and select the AOT file just created. This file will be located in the directory specified in Figure 3.
8. Next, the panel shown in Figure 8 will be displayed. Pay particular attention to the Object Name and

Figure 7: Creating an Application Object Using an AOT File



Target_Path fields and verify their accuracy, then click on Next.

9. The next panel will provide a summary for your review concerning the properties of the new application object. If all of the information is accurate, click on Finish to complete the creation of the application object.

MODIFYING THE APPLICATION OBJECT TO SPECIFY RECIPIENTS

Now that the Application Object has been created, we are ready to specify the users who are to receive the application. To do this, perform the following steps:

1. Start nwadmin32.
2. Right click on the application object (NT Training Software in this example). Then click on Details.
3. Click on the Associations page; then add the user(s) that you wish to receive the application.
4. Click on the System Requirements page. The application used in this example requires either Windows 95 or Windows NT, so these boxes were checked, as shown in Figure 9.

RUNNING NAEXPLD.EXE ON THE END USER'S WORKSTATION

We are now ready to make our application available to the end users. To do this on Windows 95 and Windows NT workstations, the program \\nwserver\SYS\PUBLIC\NALEXPLD.EXE must be run. The actual launch of the NALEXPLD.EXE program can be performed in the NetWare login script, which will be explained a bit later in this article. Before updating your login script, you should test NALEXPLD.EXE on one of your workstations. To start NALEXPLD.EXE from a Windows 95 or Windows NT workstation, click on Start > Run and enter the path to the program, for example:

```
\\nwserver\SYS\PUBLIC\NALEXPLD.EXE
```

After launching NALEXPLD.EXE, you should see the Application Explorer icon on your Windows desktop. Double click on this

Figure 8: These Fields Will Be Filled in From the Data Stored in the AOT File

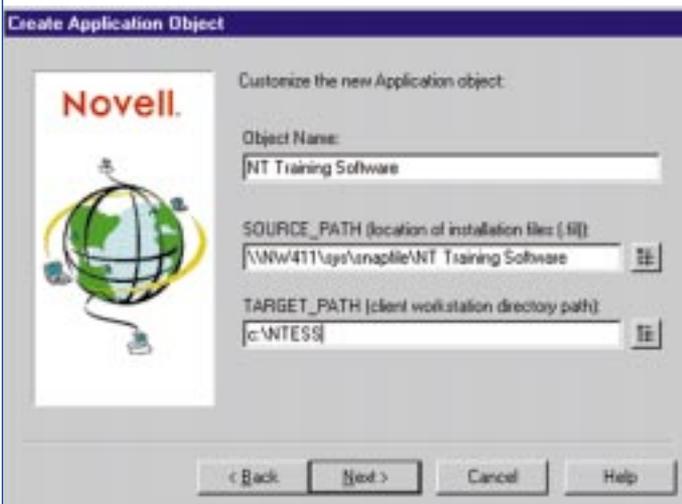


Figure 9: Specify Which Desktop Operating System(s) the Application Requires

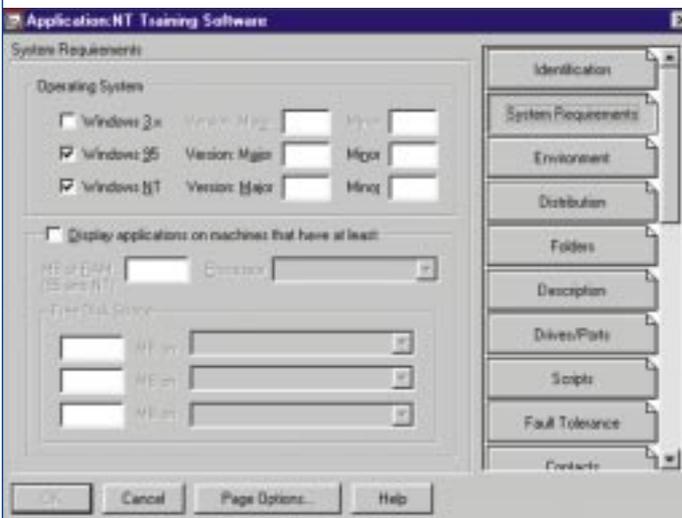
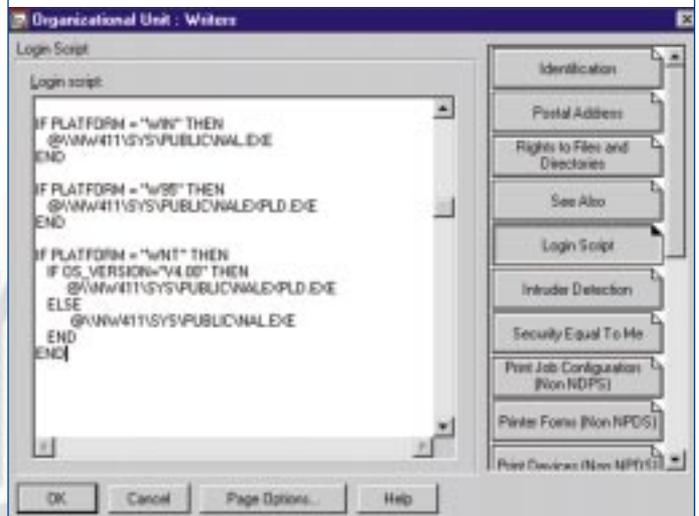


Figure 10: Applications Available to the End User Running NALEXPLD.EXE



Figure 11: Automatically Launching NALEXPLD.EXE via NetWare Login Scripts



CONCLUSION

In many organizations, just keeping the network up and running is enough to keep a network administrator busy 40 hours a week. ZEN has the tools that can help these administrators get their arms around their most time consuming tasks — managing workstations and applications. For more information on Z.E.N.works, visit the Novell web site at www.novell.com/products/nds/zenworks/index.html.



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icon and you should see a screen similar to the one illustrated in Figure 10. Notice that our new application, NT Training Software, is now available.

Note: The additional icons in the NALEXPLD folder shown in Figure 10 are applications that were automatically installed during the Z.E.N.works installation.

If the user double clicks on the NT Training Software icon, the application will be loaded on the user's hard drive.

After the distribution completes, the new program will be placed in the user's Windows Start Menu. To actually start the NT Training Software application, the user navigates through the Start menu just like any other local application.

Adding NALEXPLD.EXE to the Login Script

Once you have tested NALEXPLD.EXE on a test workstation, you are ready to automatically launch NALEXPLD.EXE via your NetWare login script(s). The login script commands shown in Figure 11 should be entered into your existing login script(s) to automatically launch NALEXPLD.EXE. Notice that for 16-bit Windows we are launching the 16-bit NAL.EXE program.