

# Novell snAppShot versus AdminStudio's Repackager

by Roel van Bueren

## About the Author

Roel van Bueren is an expert on Novell ZENworks and software packaging. He runs the Website [msiwisdom.com](http://msiwisdom.com) and conducts the training class "[Novell ZENworks, Windows Installer & AdminStudio: basics](#)".

## Introduction

About two years ago, Novell partnered with Macrovision in order to ship a 'Software Packaging' component with the ZENworks Suite. This 'Software Packaging' component, entitled AdminStudio ZENworks Edition', is a limited version of AdminStudio Professional Edition, containing the Repackager, the Tuner, and the Distribution Wizard components.

Repackager is a component with which so-called legacy setups (non-MSI setups) can be repackaged to a MSI package. However, so far most ZENworks Administrators have repackaged their legacy setups with Novell's own 'snAppShot' utility. This article focuses on the benefits for the ZENworks Administrator of using the Repackager instead of Novell snAppShot.

## Novell snAppShot

When Novell created the snAppShot utility, which was before the Microsoft Office 2000 team invented MSI technology, there was no common packaging format available in the marketplace. So, at that time Novell created a format which is known as 'AOT' or 'AXT'. AOT stands for 'Application Object Template'. It contains the binary logic of what has to be done on a workstation to install an application (e.g., which files have to be copied to which directory and which registry settings or .ini files have to be added or changed). This logic is captured by running snAppShot. snAppShot takes an image of your Windows OS before you install the application and takes a second image after the installation. The difference between the two snapshots is being stored in the AOT file.

AXT stands for 'Application Object Text Template'. An AXT file just contains the same logic but then stores it in a text format. Therefore, you can edit an AXT file in order to refine the logic when needed. After creating an AOT file, you can create a ZENworks application object based on this AOT file and deploy the application to your users and/or workstations.

## Going in a Different Direction

When the Microsoft Office 2000 team invented a new 'open' packaging methodology called Windows Installer or 'MSI', it became the common and accepted industry standard for Windows applications. Novell is therefore moving away from snAppShot and their packaging format, which only can be used in ZENworks environments, and promoting using Windows Installer and repackaging legacy setups with AdminStudio's Repackager instead.

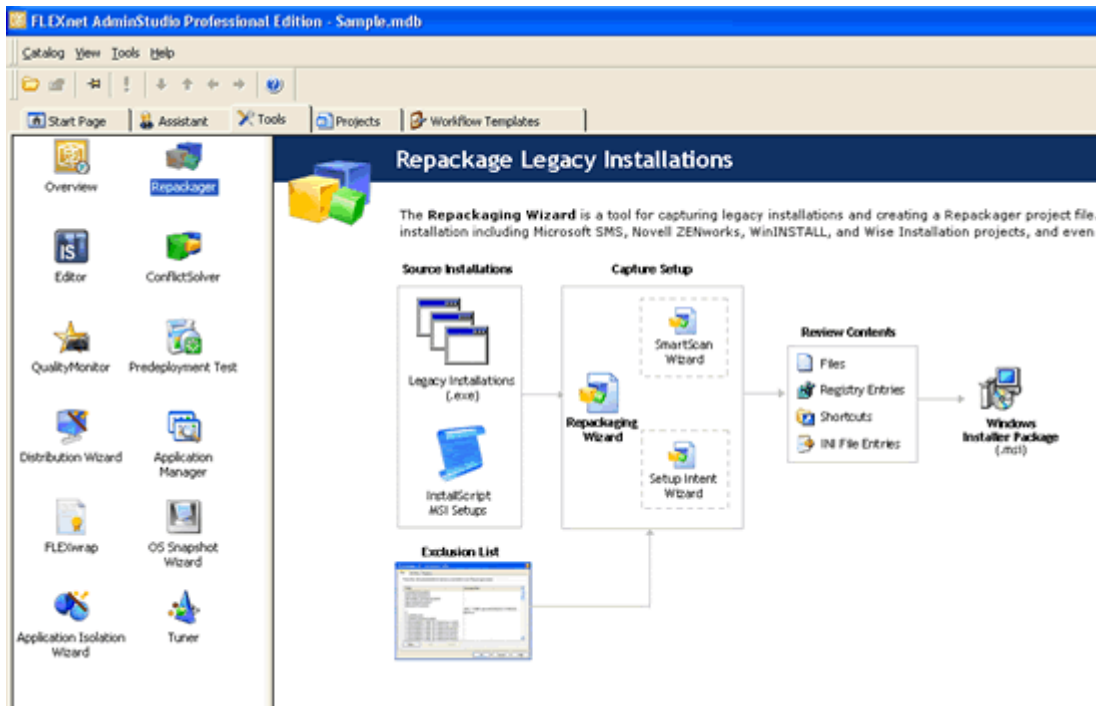


Figure 1 - Repackager

"Consistently Consistent", written by Blair Symes and Richard Whitehead, is a good related article: [http://www.novell.com/connectionmagazine/2004/11/tech\\_talk\\_2.html](http://www.novell.com/connectionmagazine/2004/11/tech_talk_2.html). ZENworks Administrators can also benefit from resources like <http://www.appdeploy.com> and <http://www.desktopengineer.com> because MSI technology isn't depended on the distribution method or product being used.

## Different Types of Software Setups

When you want to deploy an application, you typically encounter four types of software setups:

1. Vendor-supplied MSI packages

MSI packages do not require repackaging. You can customize the deployment by creating a Transform file with the Tuner component found in AdminStudio ZENworks Edition. You can recognize these setups if you see this screen at the beginning:

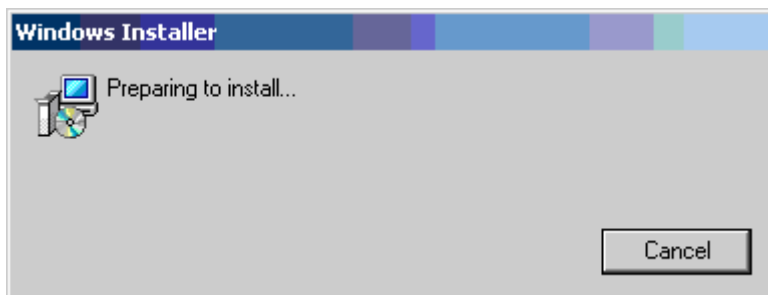


Figure 2 - Preparing to install ... is a screen you will see with every MSI setup

2. Vendor-supplied MSI packages driven by InstallScript

Some MSI packages can't be installed by directly launching the MSI package or by creating a MSI based 'Install only' application object with ZENworks, otherwise you will get this error message:

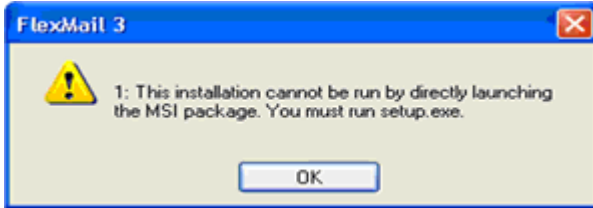


Figure 3 - Embedded MSI setups

These setups contain an embedded MSI setup driven by an InstallScript user interface and have to be repackaged by AdminStudio's Repackager also. The Repackager automatically extracts the MSI package, preserves the original components, and converts it to a basic MSI package but preserves the installation logic.

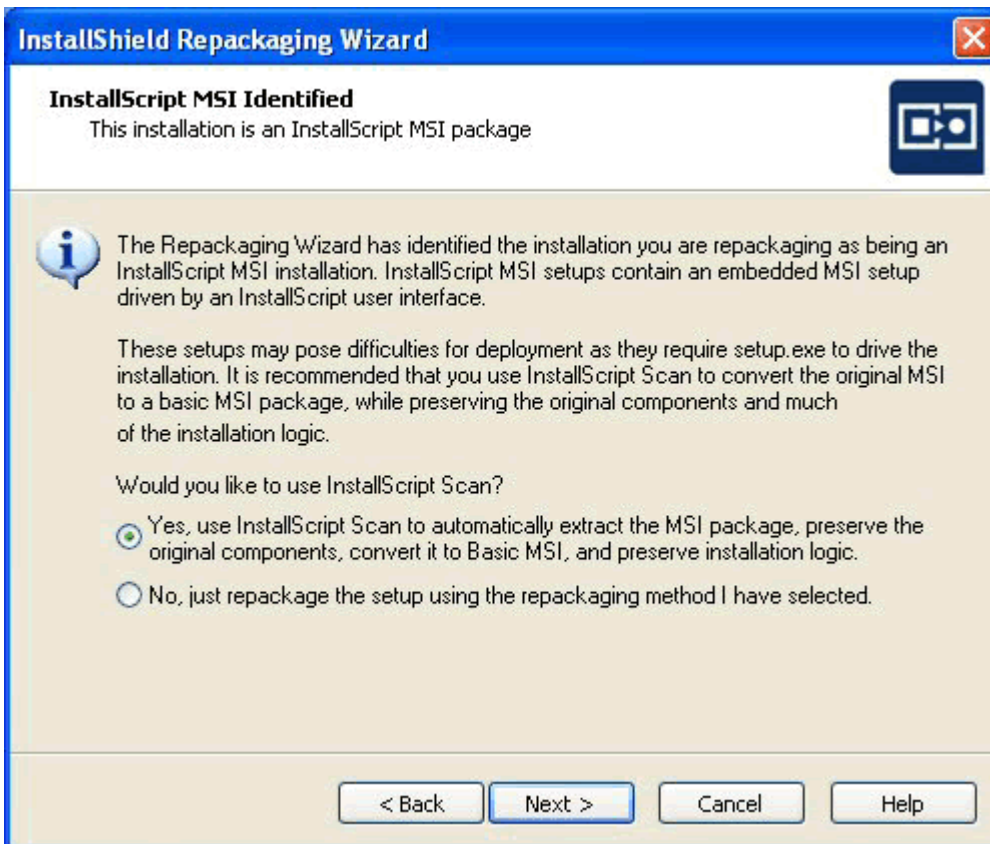


Figure 4 - Repackaging Wizard

3. Legacy setups (non-MSI setups)

These setups can be recognized by non-MSI setup screens like these

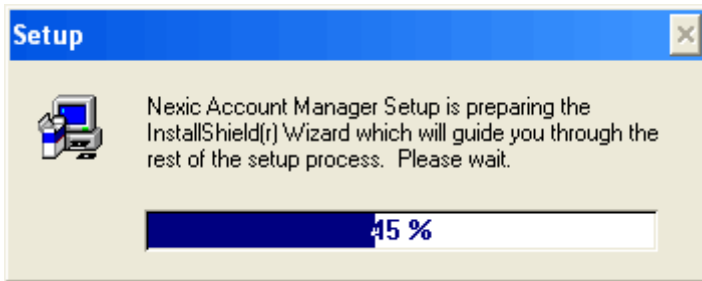


Figure 5 - Non-MSI Setup



Figure 6 - Another Non-MSI Setup

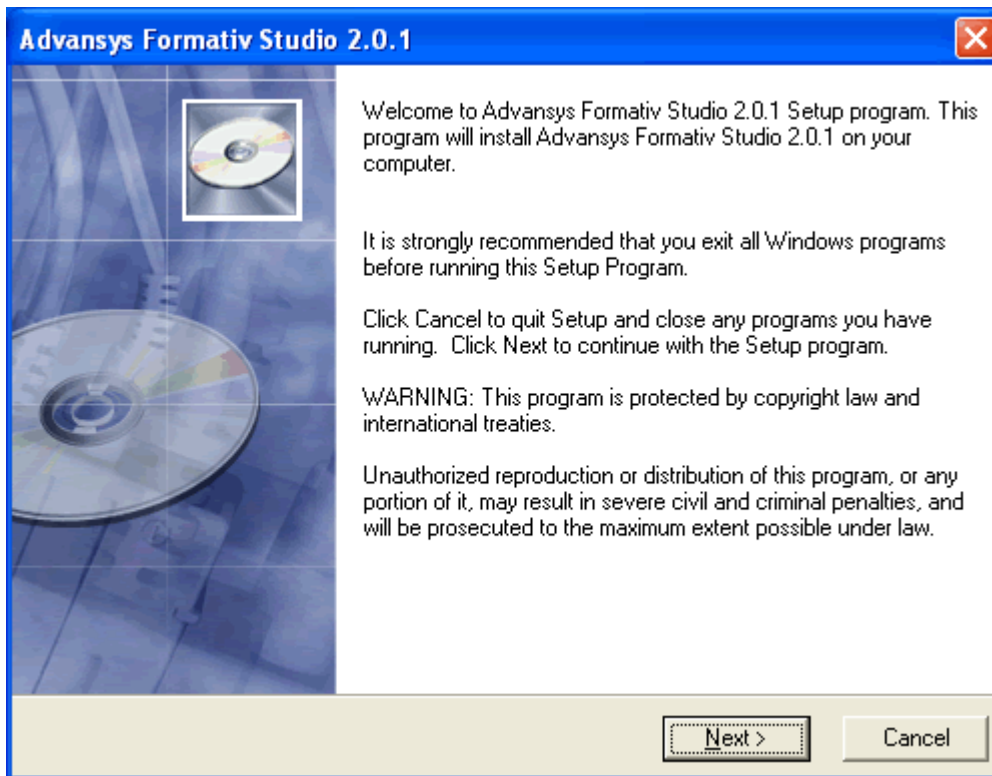


Figure 7 - Yet Another Non-MSI Setup

These setups are made by using non-MSI based installer software, such as InstallShield from Macrovision.

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4. ZENworks snAppShot AOT or AXT files (GroupWise 6.5 client)

Some vendors like Novell and Advansys provide you AOT files with which you can use to create ZENworks application objects.

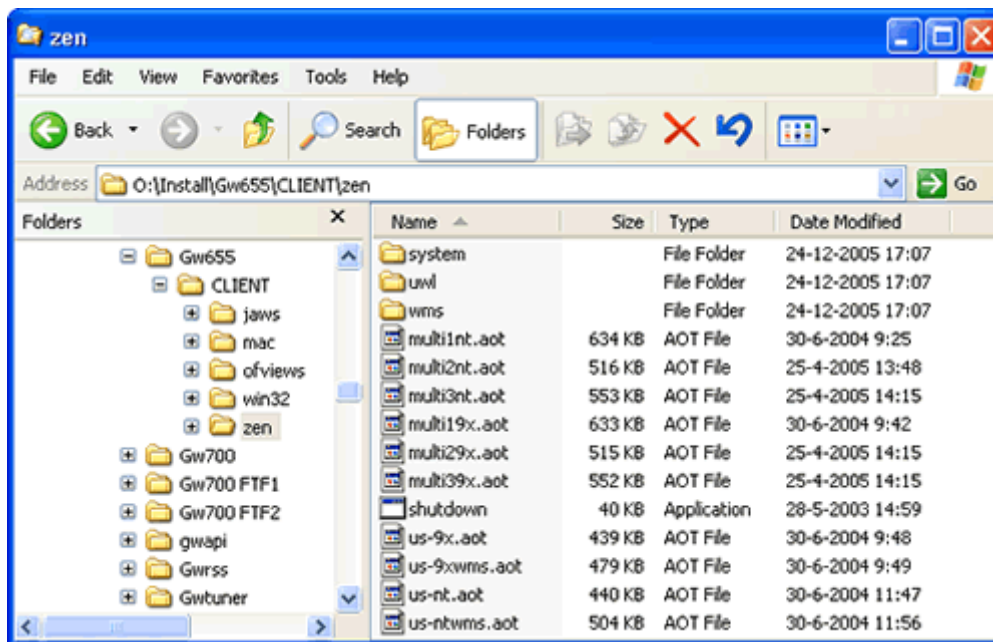


Figure 8 - AOT Files

## Repackaging Using AdminStudio's Installation Monitoring

When you start AdminStudio's Repackaging Wizard from the Repackager main screen, you will have to select a 'repackaging method'. The first option is 'Snapshot', which is comparable to what Novell snAppShot does. But although it's the second option, you should always try to repackage your application by using 'Installation Monitoring' first.

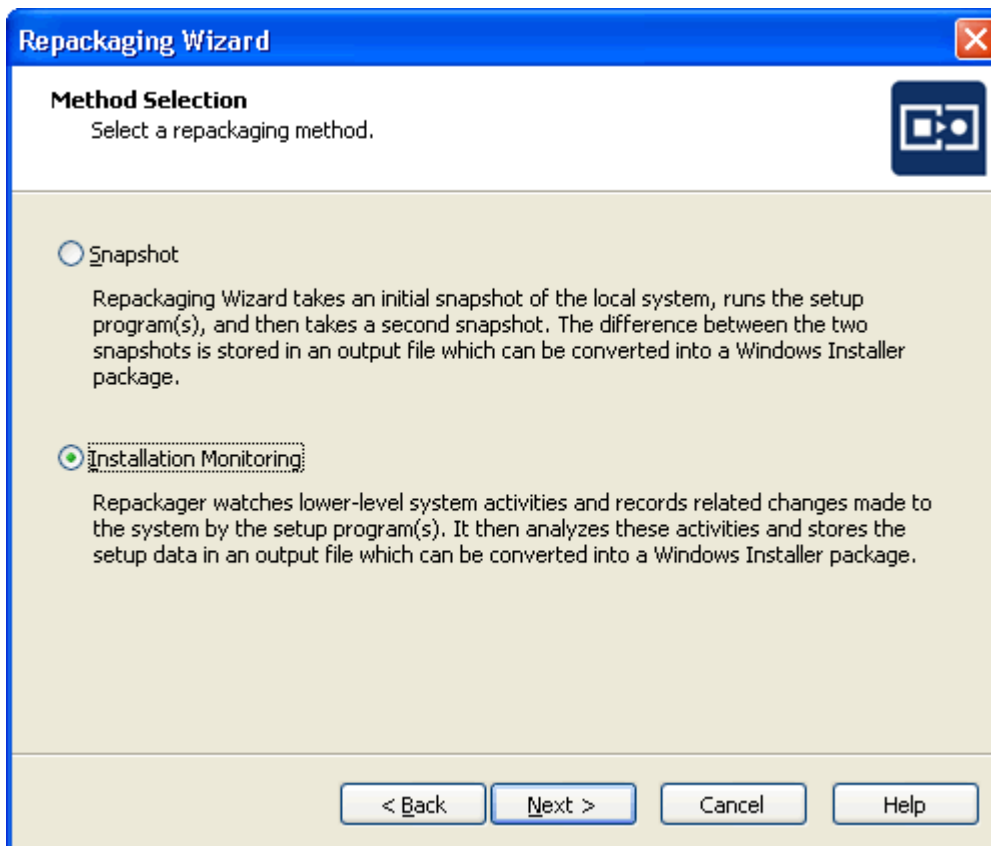


Figure 9 - Installation Monitoring

'Installation Monitoring' watches lower-level system activities and records related changes made to the system by the setup program. It's a bit comparable to how Sysinternals' 'Regmon' and 'Filemon' utilities work. Instead of repackaging based on making snapshots, Repackager just hooks into the installation to find out what it's doing. Not only the time to repackage, compared to using the 'snapshot' option, is remarkably shorter, but the result is also better.

**Repackaging Wizard**

**Collect Product Information**  
Provide product information for repackaging. Items with asterisks (\*) are required.

Setup Programs

\*Program File: Z:\Install\Firefox Setup 1.5.0.1.exe

Command-line Argument(s):

Edit Setup List

Product Information

\*Product Name: Firefox Version: 1.5.0.1

Product URL: http://www.mozilla.com/ Support URL: ww.mozilla.com/support

Company Name: Mozilla

< Back Next > Cancel Help

Figure 10 - Collective Product Information

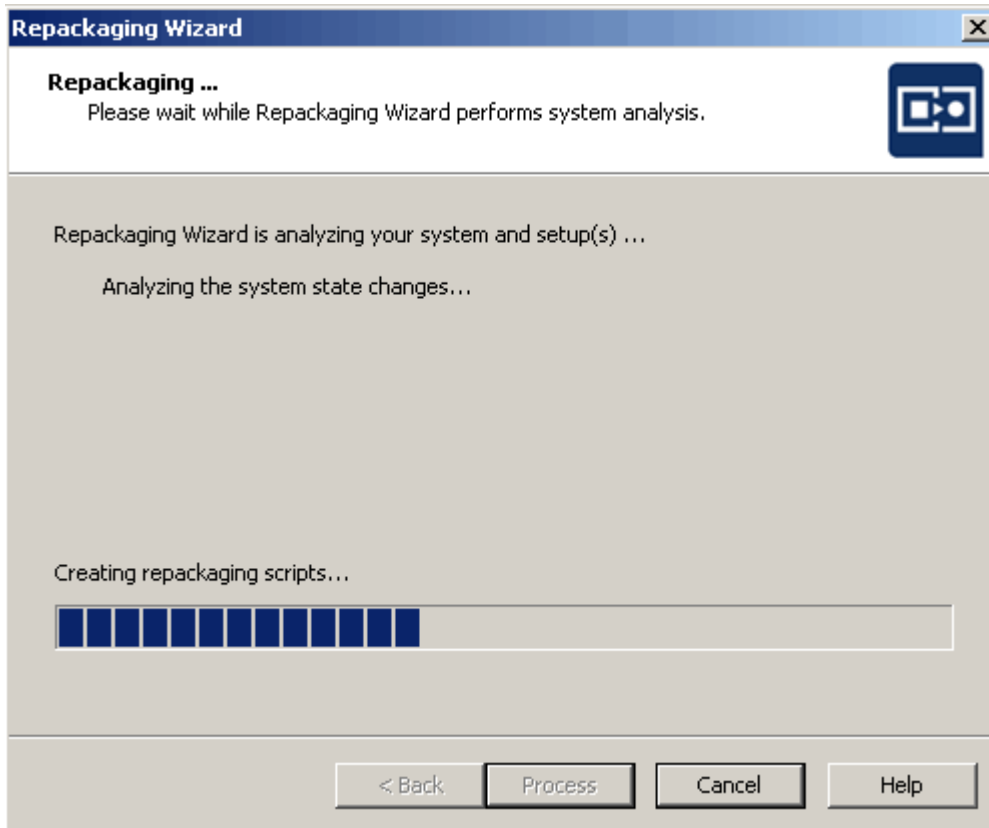


Figure 11 - Repackaging Wizard

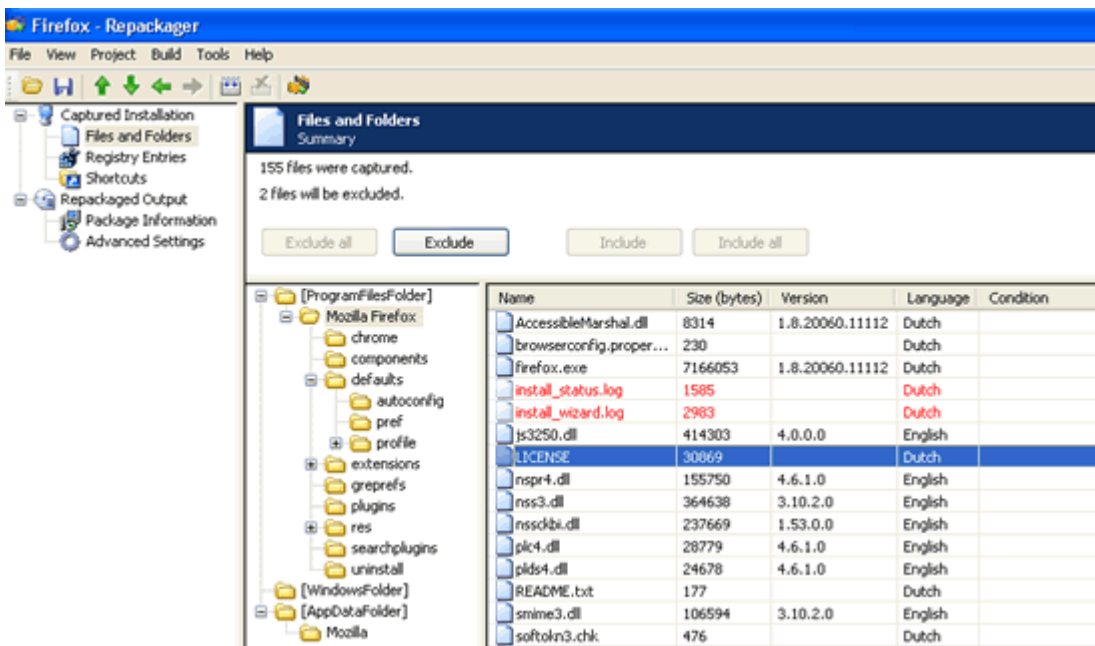


Figure 12 - Repackaging Firefox

After using 'Snapshot' or 'Installation Monitoring', a Repackager project file (.irp) is created. By opening up this project file, you can verify whether the correct files, registry settings, shortcuts, and .ini file changes have been captured.

Simply by selecting one or more items you can 'Exclude' or 'Include' those in your target MSI file. After verification you can select 'Build' to build the MSI file. After testing this MSI file you can go back into the project file to change the Includes or Excludes if necessary.

This is much easier compared to working in a ZENworks Application Object in ConsoleOne. When you erroneously delete a file or registry setting, you will have to create the Application Object from scratch.

## Repackaging Using AdminStudio's Snapshot Method

Again, the 'Snapshot' method in AdminStudio is comparable to what Novell snAppShot does. The average results however are far better, because Repackager uses more advanced techniques than snAppShot does.

You can opt for a 'Single Step' snapshot, but for complex setups there's also a 'Multiple Steps' setup to choose from.

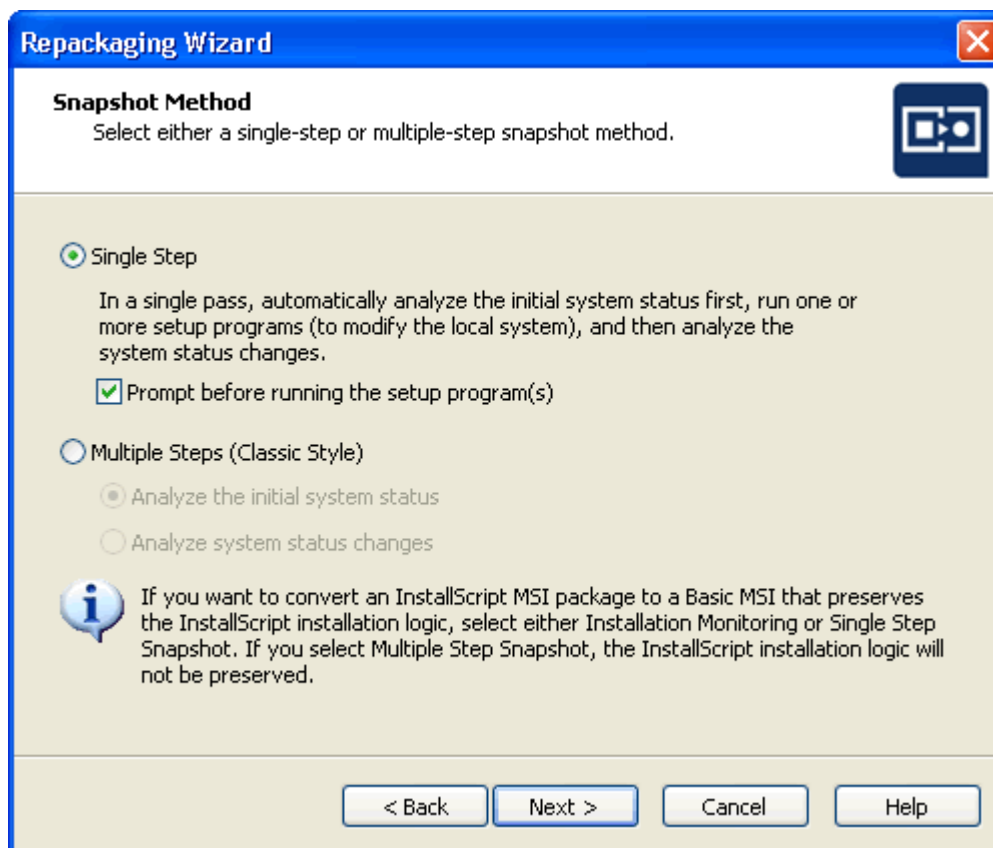


Figure 13 - Snapshot Method

## VMware

Since AdminStudio is integrated with VMware, the advice is to use a 'clean' VMware Virtual Machine for repackaging applications. The beauty of the integration is that you can launch the Repackager off the host within your Virtual Machine. So, no AdminStudio components have to be installed in the Virtual Machine. By using the 'Snapshot' feature of VMware, which is of course not the same as the 'Snapshot' feature of the Repackager, you can switch

back to a clean Virtual Machine after you've repackaged and tested your application(s).

### Converting AOT/AXT Projects

If you want to convert a single AOT or AXT project, AdminStudio's Repackager has the option to convert this in a new Repackager project with which you then can use to build a MSI from.

AdminStudio 7.0 and later versions have the option to even perform a bulk conversion of these ZENworks Projects by using the -Z command line switch. After a .ini file like this:

```
[General]
```

```
OutputFormat=MSI|INC|ISM
```

```
[AOT]
```

```
Z:\snapshot\Firefox 1.5\Firefox 1.5.axt
```

```
Z:\snapshot\Firefox 1.5\Gaim 1.5.axt
```

```
Z:\snapshot\Firefox 1.5\Thunderbird 1.5.axt
```

You can use 'ISLC.exe -Z"MyZENworksProjects.ini"' to convert these projects. The result is stored in the same directory as where the original ZENworks project files reside.