AUTHORIZED DOCUMENTATION

Integration and Streaming Guide

Novell® ZENworks® Application Virtualization

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About This Guide

This guide provides information about using Novell ZENworks Application Virtualization to prepare Novell products for use in your environment. The information in this guide is organized as follows:

- Chapter 1, “Overview,” on page 9
- Chapter 2, “Preparing GroupWise Messenger for Virtualization,” on page 13
- Chapter 3, “Preparing GroupWise and GroupWise Notify for Virtualization,” on page 17
- Chapter 4, “Preparing Novell OpenOffice for Virtualization,” on page 21
- Chapter 5, “Using Virtual Applications with ZENworks Configuration Management,” on page 25
- Chapter 6, “Streaming Virtual Applications,” on page 29
- Appendix A, “Documentation Updates,” on page 37

Audience

This guide is intended for administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the most recent version of the *ZENworks Application Virtualization Integration Guide*, visit the Novell Documentation Web site (http://www.novell.com/documentation/zav80).

Additional Documentation

ZENworks Application Virtualization is supported by other documentation (in PDF format) that you can use to learn about and implement the product. For additional documentation, see the ZENworks Application Virtualization Web site (http://www.novell.com/documentation/zav80/index.html). You can also click *Help* > *Novell ZENworks Application Virtualization* from within the program to access this information.

Overview

1

Novell ZENworks Application Virtualization lets you convert applications that run on Microsoft Windows into self-contained virtual applications. After being virtualized, an application becomes a single, isolated file that runs instantly from anywhere, including a thumb drive or other removable media. Unlike traditional installation methods, the single virtual application file does not require a separate setup process, and does not rely on external components and runtimes, reboots, or administrative privileges. The application is now isolated from other system applications, preventing DLL conflicts and other deployment nightmares, yet the experience for the application's user is unchanged.

ZENworks Application Virtualization lets you use the Configuration Wizard to prepare Novell GroupWise, GroupWise Messenger, and Novell OpenOffice for virtualization.

To virtualize GroupWise, GroupWise Messenger, and Novell OpenOffice, you have the following options:

- Use the options in the Configuration Wizard to virtualize these applications. This process is recommended for first time users.

  For more information, see Section 1.1, "Using the Configuration Wizard to Prepare Applications for Virtualization," on page 9.

- Configure these applications manually.

  This guide provides step-by-step information to help you use Novell ZENworks Application Virtualization to create virtual executable files to run Novell GroupWise, GroupWise Notify, GroupWise Messenger, and Novell OpenOffice.

  You can use the information in this guide to customize the virtualized files or you can use the information to better understand the virtualization process. For more information, see Section 1.2, "Manually Preparing Applications for Virtualization," on page 11.

  If you use Novell ZENworks Configuration Management in your environment, you can configure your virtual application so that it checks to ensure that the ZENworks Adaptive Agent is installed on the device and that the device is registered to your ZENworks Management Zone before the application can be launched. You can also Use ZENworks Application Virtualization to publish ZENworks bundles that you can distribute using ZENworks Configuration Management. For more information, see Appendix 5, "Using Virtual Applications with ZENworks Configuration Management," on page 25.

1.1 Using the Configuration Wizard to Prepare Applications for Virtualization

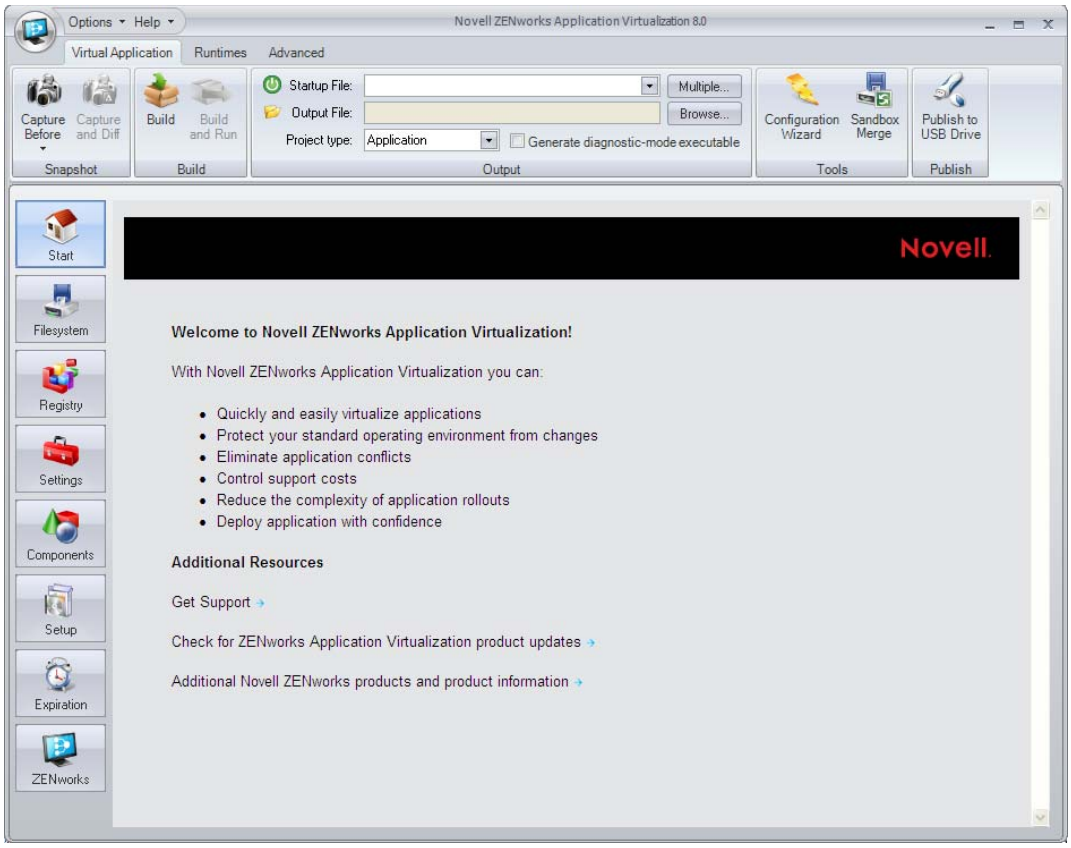
ZENworks Application Virtualization includes a Configuration Wizard that helps you prepare the following common applications for virtualization:

- **7-Zip:** An open-source utility used to manipulate archives.
- **Apple Safari:** An application used to browse the Internet.
- **Adobe Reader:** An application used to view and print PDF files.

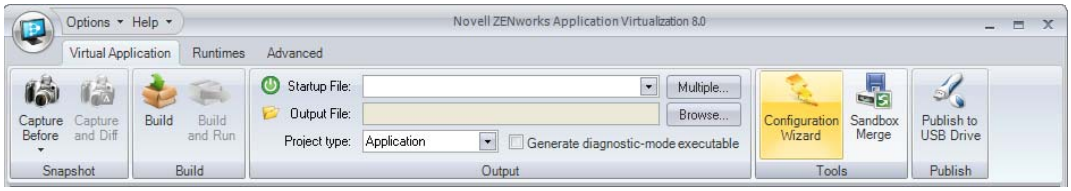
- **Citrix ICA Demo:** Lets you create a virtualized version of the Citrix xenapp client for executing applications published by Citrix xenapp.
- **GIMP:** GNU Image Manipulation Program. An open-source application used to process digital graphics and photographs.
- **Google Talk:** An application used for instant messaging and PC-to-PC voice calls.
- **Microsoft Internet Explorer:** An application used to browse the Internet.
- **Microsoft Office:** A suite of office-productivity applications.
- **Microsoft Project:** An application used to manage projects.
- **Microsoft Visio:** An application used to create diagrams.
- **Mozilla Firefox:** An open-source application used to browse the Internet.
- **Novell GroupWise Client:** A collaboration software solution used to provide information workers with e-mail, calendaring, instant messaging, task management, and contact and document management functions.
- **Novell GroupWise Messenger:** A corporate, cross-platform instant messaging application used to send instant messages in a secure environment and to create contact lists.
- **Novell OpenOffice:** A suite of office-productivity applications, including a word processor, presentation and spreadsheet applications, an HTML editor, and a drawing tool. Novell OpenOffice contains enhancements and bug fixes that are not available in the standard edition.
- **OpenOffice:** A suite of office-productivity applications, including a word processor, presentation and spreadsheet applications, an HTML editor, and a drawing tool.
- **Opera:** An application used to browse the Internet.

To use the Configuration Wizard to virtualize GroupWise, GroupWise Messenger, or Novell OpenOffice:

1. Click *Start* > *All Programs* > *Novell ZENworks Application Virtualization* 8.0.4 > *Novell ZENworks Application Virtualization 8.0.4* to start the application.



2 Click the *Configuration Wizard* button in the *Tools* section of the *Virtual Application* ribbon.



3 Click *Build a virtual application from a template*.

4 Select the desired application from the *Application* drop-down list.

5 Click *Next*, then follow the instructions in the wizard.

1.2 Manually Preparing Applications for Virtualization

Most commercial applications, including GroupWise and Novell OpenOffice, require complex combinations of file system and registry entries to function properly. To facilitate virtualization of these applications, ZENworks Application Virtualization creates snapshot application installations and automatically configures itself based on modifications made to the host system during application setup.

Snapshotting uses images of the host machine that are taken at different points in time to determine the virtual application configuration.

Prior to installing the application to be virtualized, a snapshot is taken that captures the state of the host device without the target application installed. After installing the application, a second snapshot is taken that captures all changes to the host device. ZENworks Application Virtualization then computes the changes, or delta, between the snapshots, and inserts these changes into the configuration.

You can use the configuration information to create executable files that behave differently, depending on the application you are preparing to use:

- **A Single Executable File to Launch an Application:** To prepare GroupWise Messenger, you can create a single executable file to launch the program. For more information, see Chapter 2, “Preparing GroupWise Messenger for Virtualization,” on page 13.

  To prepare Novell OpenOffice, you have the option to create a single executable file to launch the OpenOffice.org Quickstarter, which lets users choose the program to launch (Writer, Calc, Draw, Impress, or Math). For more information, see Chapter 4, “Preparing Novell OpenOffice for Virtualization,” on page 21.
- **A Single Executable File to Simultaneously Launch Multiple Applications:** To prepare GroupWise and Notify, you can create a single executable file to launch both programs simultaneously. For more information, see Chapter 3, “Preparing GroupWise and GroupWise Notify for Virtualization,” on page 17.
- **A Single Executable File to Expose Multiple Executable Startup Files:** To prepare Novell OpenOffice, you can create a single executable file to expose multiple executable startup files (Writer, Calc, Draw, Impress, or Math). ZENworks Application Virtualization allows multiple entry points into the virtual application to be triggered based on a command line argument to the virtual application executable. If you use Novell ZENworks Desktop Management or ZENworks Configuration Management to distribute applications, command line arguments let you use the same application object for all OpenOffice.org programs. For more information, see Chapter 4, “Preparing Novell OpenOffice for Virtualization,” on page 21.

Preparing GroupWise Messenger for Virtualization

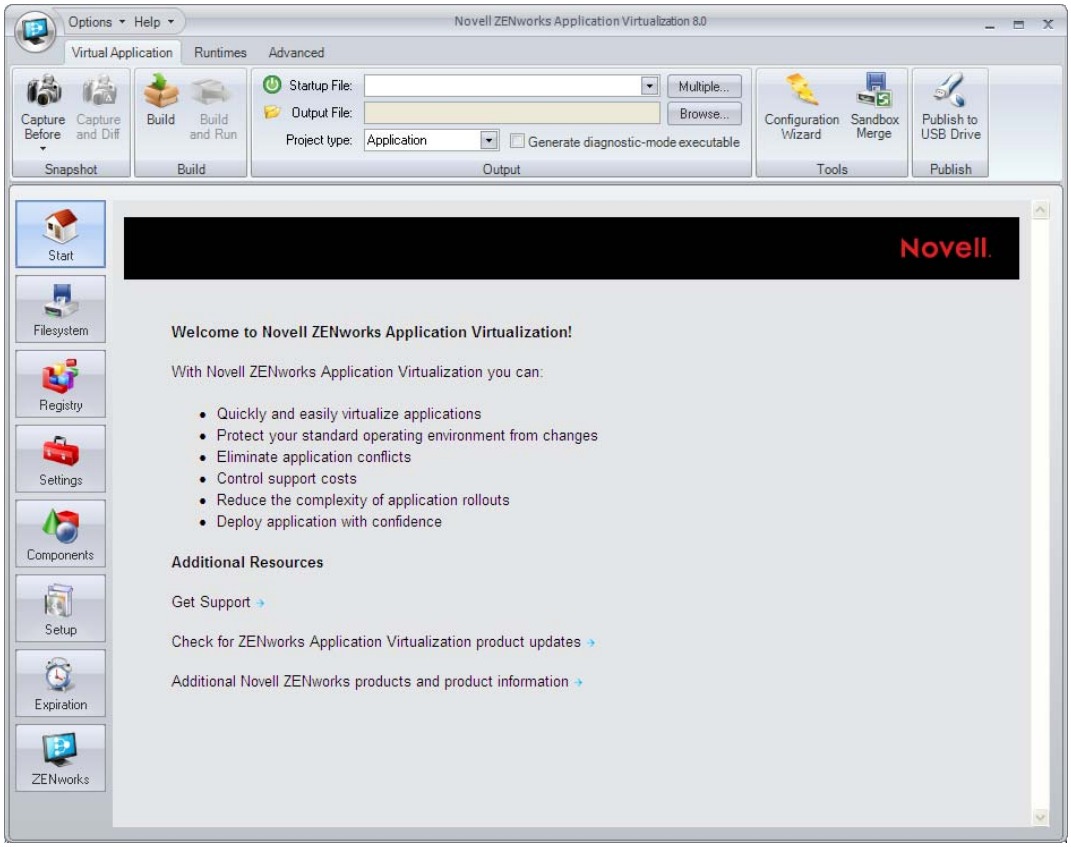
2

The section contains step-by-step information to help you use Novell ZENworks Application Virtualization to prepare Novell GroupWise Messenger to run as a virtual application.

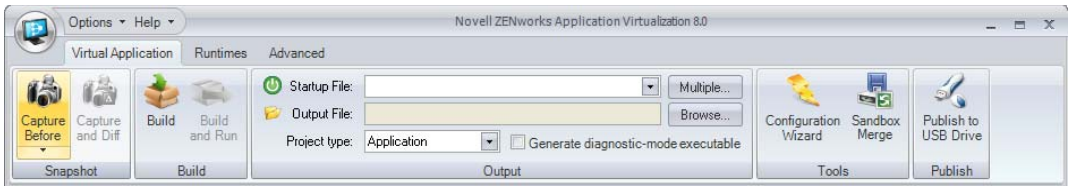
1. Install ZENworks Application Virtualization onto a clean machine.

   You can prepare a clean machine by uninstalling GroupWise Messenger. However, we recommend that you start the process on a machine that has only the desired Windows OS, any applicable OS service packs, and ZENworks Application Virtualization installed. Starting with a machine that includes only these items helps to ensure that your virtual application does not contain settings that might cause conflicts.

2. Click *Start* > *All Programs* > *Novell ZENworks Application Virtualization 8.0.4* > *Novell ZENworks Application Virtualization 8.0.4* to start the application.



3. Click *Capture Before* in the *Snapshot* section of the *Virtual Application* ribbon.



This process captures the first snapshot image. Snapshotting iterates through the file system and registry, and therefore might take several minutes to complete.

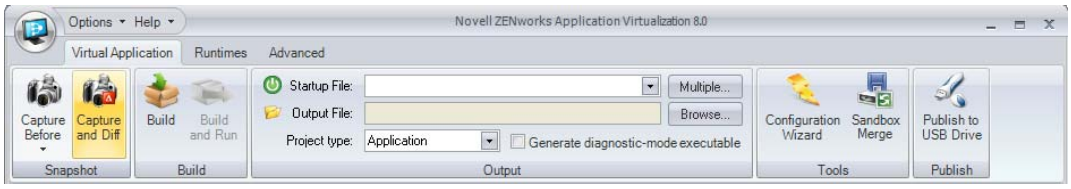
4 (Optional) Click the down-arrow on the bottom of the *Capture Before* button, then click *Save Snapshot*.

Saving the first snapshot lets you skip this step when snapshotting subsequent applications from the same clean machine image.

5 Install GroupWise Messenger on the clean machine.

For installation instructions, see the GroupWise Documentation Web site (http://www.novell.com/documentation/groupwise.html). Depending on the version of GroupWise Messenger that you want to deploy in your environment, click the appropriate link, then locate and display the *Installation Guide*.

6 Click *Capture and Diff* in the *Snapshot* section of the *Virtual Application* ribbon.



7 Browse to and select the destination folder to store the snapshot, then click *OK*.

This process captures the second snapshot, computes the delta between the two snapshots, and populates the virtual application with the delta entries. This process might take a few minutes.

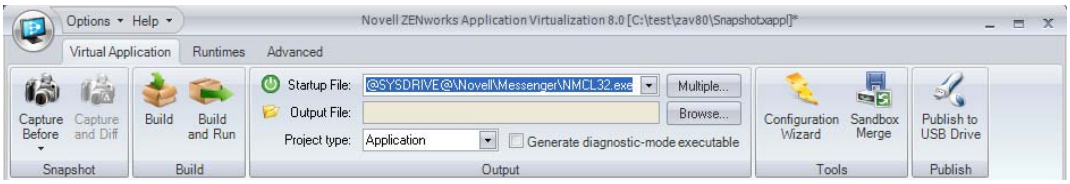
8 (Optional) Click the *Filesystem* button on the left side of the ZENworks Application Virtualization console to review the file system and registry entries.

You can remove any files or settings that are not required for proper execution of your virtual application. Removing unused entries reduces virtual application size. However, accidental removal of a required resource might cause your virtual application to not function properly.

9 (Conditional) If you use ZENworks Configuration Management in your environment and you want to control how virtual applications are used or to create and publish ZENworks bundles, click the *ZENworks* button on the left side of the ZENworks Application Virtualization console to display the ZENworks options.

For more information, continue with the instructions in Appendix 5, “Using Virtual Applications with ZENworks Configuration Management,” on page 25.

10 From the *Startup File* drop-down list, select the GroupWise Messenger executable file (`NMCL32.exe`).



11 Click *Build* in the *Build* section of the *Virtual Application* ribbon to process the application.

12 Specify the location and filename of the virtual application executable file.

13 Test the virtual application executable file on another machine.

The executable file is now ready to distribute to users. You can use any method you want to distribute the file, including USB thumb drives.

You can also use Novell ZENworks or Novell ZENworks Configuration Management to distribute the file. For more information, see the ZENworks Documentation Web site (http://www.novell.com/documentation/zenworks.html).

Users must authenticate to the GroupWise Messenger system after they launch the virtual application.

Preparing GroupWise and GroupWise Notify for Virtualization

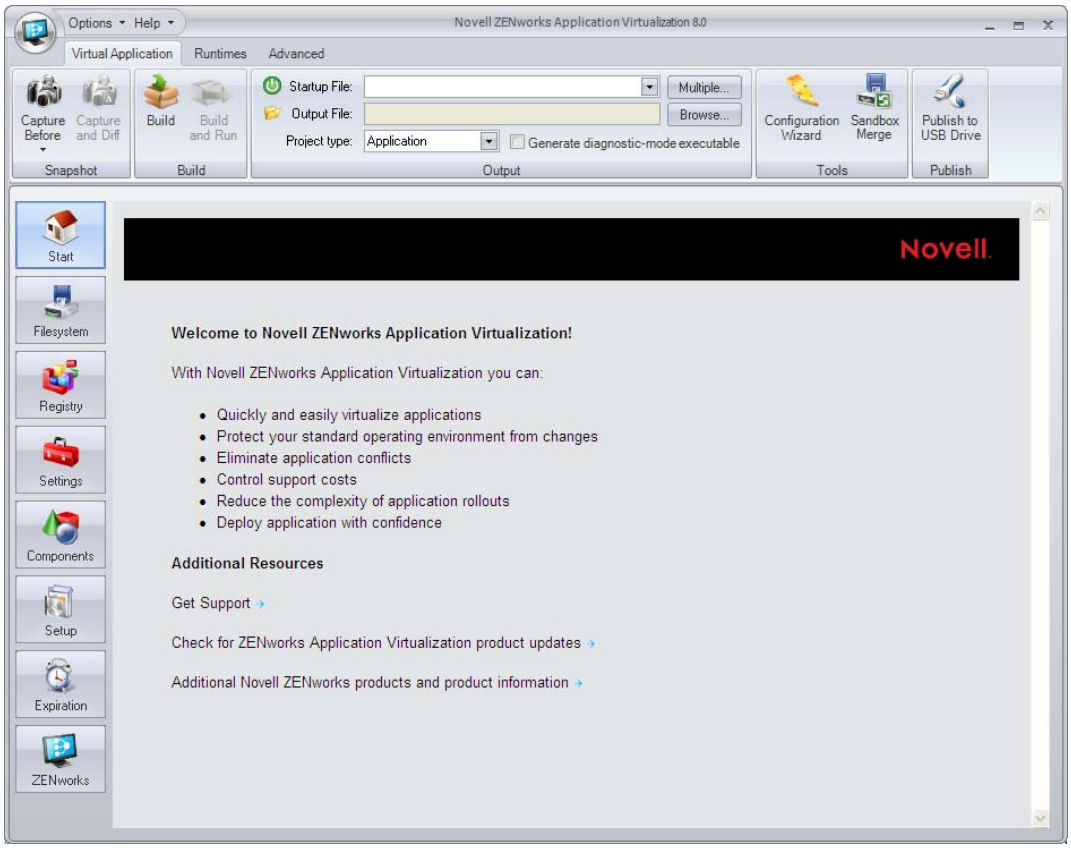
3

The section contains step-by-step information to help you use Novell ZENworks Application Virtualization to prepare Novell GroupWise and GroupWise Notify to run as virtual applications.

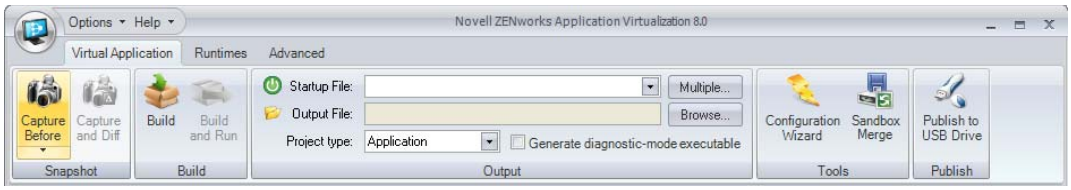
1. Install ZENworks Application Virtualization onto a clean machine.

   You can prepare a clean machine by uninstalling GroupWise and GroupWise Notify. However, we recommend that you start the process on a machine that has only the desired Windows OS, any applicable OS service packs, and ZENworks Application Virtualization installed. Starting with a machine that includes only these items helps to ensure that your virtual application does not contain settings that might cause conflicts.

2. Click *Start* > *All Programs* > *Novell ZENworks Application Virtualization 8.0.4* > *Novell ZENworks Application Virtualization 8.0.4* to start the application.



3. Click *Capture Before* in the *Snapshot* section of the *Virtual Application* ribbon.



This process captures the first snapshot image. Snapshotting iterates through the file system and registry, and might take several minutes to complete.

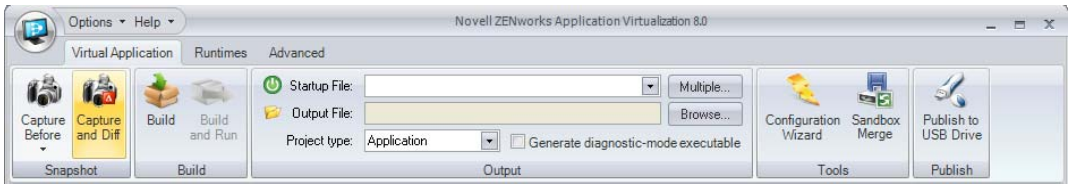
4 (Optional) Click the down-arrow on the bottom of the *Capture Before* button, then click *Save Snapshot*.

Saving the first snapshot lets you skip this step when snapshotting subsequent applications from the same clean machine image.

5 Install GroupWise on the clean machine.

For installation instructions, see the GroupWise Documentation Web site (http://www.novell.com/documentation/groupwise.html). Depending on the version of GroupWise that you want to deploy in your environment, click the appropriate link, then locate and display the *Installation Guide*.

6 Click *Capture and Diff* in the *Snapshot* section of the *Virtual Application* ribbon.



7 Browse to and select the destination folder to store the snapshot, then click *OK*.

This process captures the second snapshot, computes the delta between the two snapshots, and populates the virtual application with the delta entries. This process might take a few minutes.

8 (Optional) Click the *Filesystem* button on the left side of the ZENworks Application Virtualization console to review the file system and registry entries.

You can remove any files or settings that are not required for proper execution of your virtual application. Removing unused entries reduces virtual application size. However, accidental removal of a required resource might cause your virtual application to not function properly.

9 (Conditional) If you plan to use the GroupWise Caching mode or the Archive feature, click the *Filesystem* button on the left side of the ZENworks Application Virtualization console, then add the sandbox data area folders you want to embed in the application executable to store cached or archived data. For example, you could created a `Cache` folder and an `Archive` folder for users.

Caching mode stores a copy of a user's network mailbox, including messages and other information, on a local drive. The archive saves mail or phone messages, appointments, reminder notes, or tasks to a designated database on a local drive. For more information, see the GroupWise Documentation Web site (http://www.novell.com/documentation/groupwise.html).

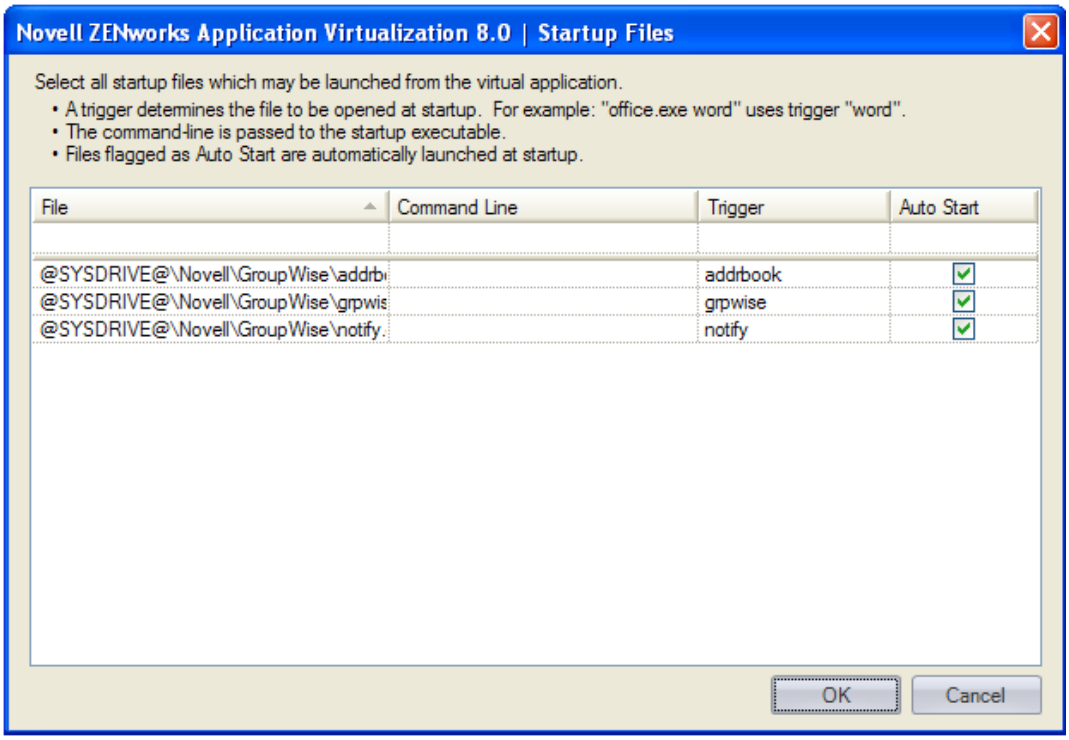
Ensure that you have enough disk space in your ZENworks Application Virtualization sandbox to store that mailbox. For information, see the *Configuring the sandbox location* topic in online help (click *Help* > click *Novell ZENworks Application Virtualization Documentation 7* >

expand the *Virtual Application Customization* book > click *Configuring the sandbox location*) or see the *Editing the virtual filesystem* topic in the online help (expand the *Configuring Virtual Applications* book > click *Editing the virtual filesystem*).

10 (Conditional) If you use ZENworks Configuration Management in your environment and you want to control how virtual applications are used or to create and publish ZENworks bundles, click the *ZENworks* button on the left side of the ZENworks Application Virtualization console to display the ZENworks options.

For more information, continue with the instructions in Appendix 5, “Using Virtual Applications with ZENworks Configuration Management,” on page 25.

11 Click the *Multiple* button on the right side of the *Startup File* drop-down list to display the Startup Files dialog box.



ZENworks Application Virtualization lets you launch both GroupWise, GroupWise Notify, and the GroupWise Address Book when users click the virtual application executable file.

12 Click the *Auto Start* check box next to the desired files so that they always automatically launched on virtual application startup, then click *OK*.

The *Auto Start* flag can be specified for multiple startup files to automatically launch multiple applications that are typically used together in a single session (also known as shotgunning).

13 Click *Build* in the *Build* section of the *Virtual Application* ribbon to process the application.

14 Specify the location and filename of the virtual application executable file.

15 Test the virtual application executable file on another machine.

The executable file is now ready to distribute to users. You can use any method you want to distribute the file, including USB thumb drives.

You can also use Novell ZENworks or Novell ZENworks Configuration Management to distribute the file. For more information, see the ZENworks Documentation Web site (http://www.novell.com/documentation/zenworks.html).

Users must authenticate to the GroupWise system after they launch the virtual application. The virtual application executable, as configured above, does not populate the username, password, or post office information. When the user logs in to the virtual GroupWise application the first time, the user can choose to save this information.

Users can use the virtualized GroupWise application on a machine that already has GroupWise installed. However, both instances of GroupWise cannot run at the same time. The authentication and post office information for the installed instance are not used for the virtualized instance of GroupWise.

The virtual executable file can be used to run GroupWise in Online, Remote, or Caching mode. For more information on these modes, see the GroupWise Documentation Web site (http://www.novell.com/documentation/groupwise.html).

Preparing Novell OpenOffice for Virtualization

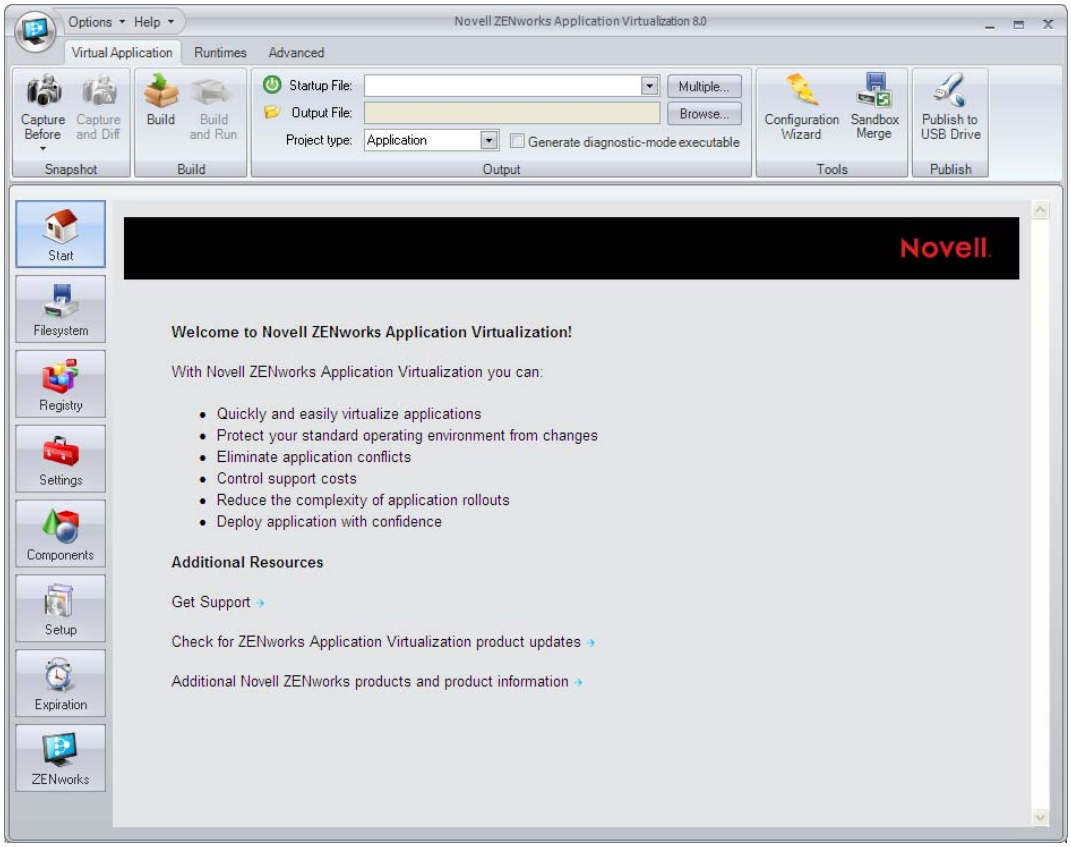
4

The section contains step-by-step information to help you use Novell ZENworks Application Virtualization to prepare the programs in Novell OpenOffice to run as virtual applications.

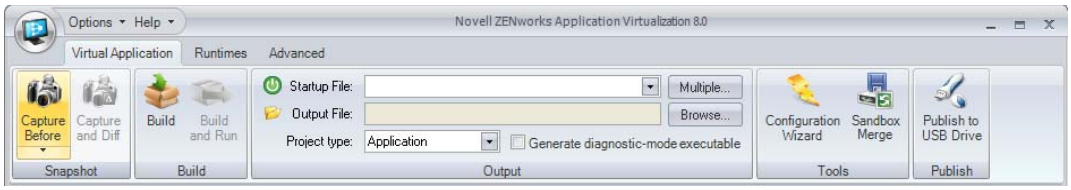
1. Install ZENworks Application Virtualization onto a clean machine.

   You can prepare a clean machine by uninstalling Novell OpenOffice. However, we recommend that you start the process on a machine that has only the desired Windows OS, any applicable OS service packs, and ZENworks Application Virtualization installed. Starting with a machine that includes only these items helps to ensure that your virtual application does not contain settings that might cause conflicts.

2. Click *Start > All Programs > Novell ZENworks Application Virtualization 8.0.4 > Novell ZENworks Application Virtualization 8.0.4* to start the application.



3. Click *Capture Before* in the *Snapshot* section of the *Virtual Application* ribbon.



This process captures the first snapshot image. Snapshotting iterates through the file system and registry, and might take several minutes to complete.

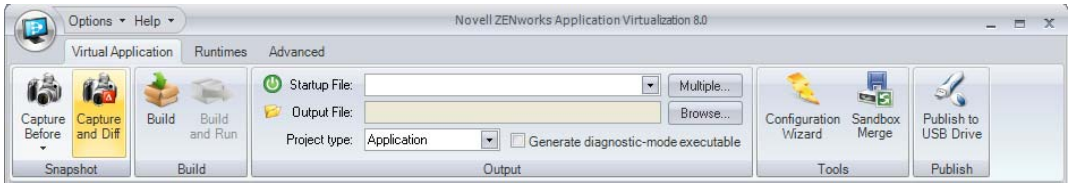
4 (Optional) Click the down-arrow on the bottom of the *Capture Before* button, then click *Save Snapshot*.

Saving the first snapshot lets you skip this step when snapshotting subsequent applications from the same clean machine image.

5 Install Novell OpenOffice.org on the clean machine.

You can download Novell OpenOffice from the Novell Downloads page (http://download.novell.com).

6 Click *Capture and Diff* in the *Snapshot* section of the *Virtual Application* ribbon.



7 Browse to and select the destination folder to store the snapshot, then click *OK*.

This process captures the second snapshot, computes the delta between the two snapshots, and populates the virtual application with the delta entries. This process might take a few minutes.

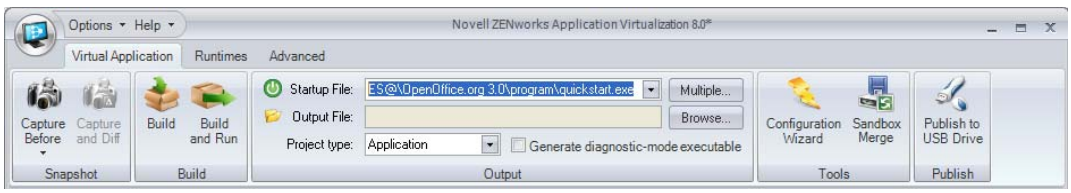
8 (Optional) Click the *Filesystem* button on the left side of the ZENworks Application Virtualization console to review the file system and registry entries.

You can remove any files or settings that are not required for proper execution of your virtual application. Removing unused entries reduces virtual application size. However, accidental removal of a required resource might cause your virtual application to not function properly.

9 (Conditional) If you use ZENworks Configuration Management in your environment and you want to control how virtual applications are used or to create and publish ZENworks bundles, click the *ZENworks* button on the left side of the ZENworks Application Virtualization console to display the ZENworks options.

For more information, continue with the instructions in Appendix 5, “Using Virtual Applications with ZENworks Configuration Management,” on page 25.

10 From the *Startup File* drop-down list, select the `quickstart.exe` file.

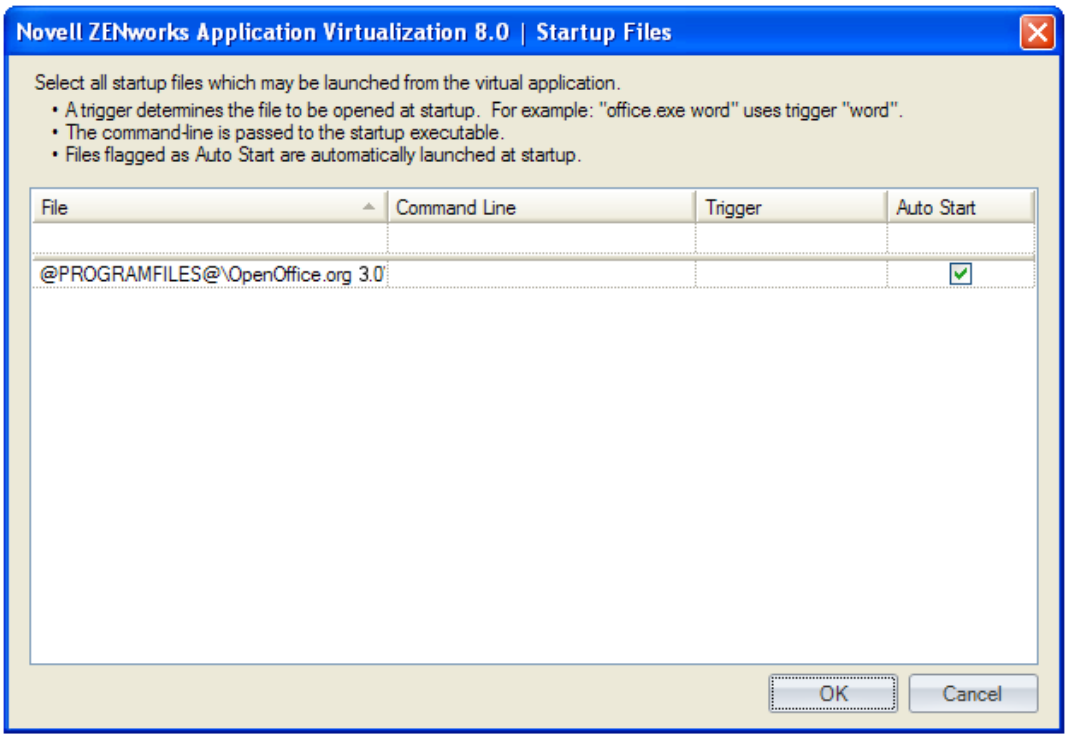


Selecting the `quickstart.exe` file causes the resulting executable file to launch the OpenOffice Quickstarter. The OpenOffice Quickstarter, which displays in the notification area, lets users choose which OpenOffice application to launch (Writer, Calc, Draw, Impress, or Math).

You can also create a single executable file to expose multiple executable startup files (Writer, Calc, Draw, Impress, or Math). ZENworks Application Virtualization allows multiple entry points into the virtual application to be triggered based on a command line argument to the virtual application executable. If you use Novell ZENworks or Novell ZENworks Configuration Management to distribute applications, command line arguments let you use the same application object for all OpenOffice.org programs.

If you want to use the OpenOffice Quickstarter, skip to Step 12. If you want the virtual application executable file to expose multiple applications, continue with Step 11.

11 (Optional) Click the *Multiple* button on the right side of the *Startup File* drop-down list to display the Startup Files dialog box.



11a Click the *File* column on the first empty row in the startup file list, select `scalc.exe`, then press Enter.

NOTE: If you cannot see the entire path to the scalc.exe file, expand the *File* column. To expose the drop-down arrow to select the executable file, click in the *File* field.

11b Click the *File* column on the first empty row in the startup file list, select `sdraw.exe`, then press Enter.

11c Click the *File* column on the first empty row in the startup file list, select `simpress.exe`, then press Enter.

11d Click the *File* column on the first empty row in the startup file list, select `smath.exe`, then press Enter.

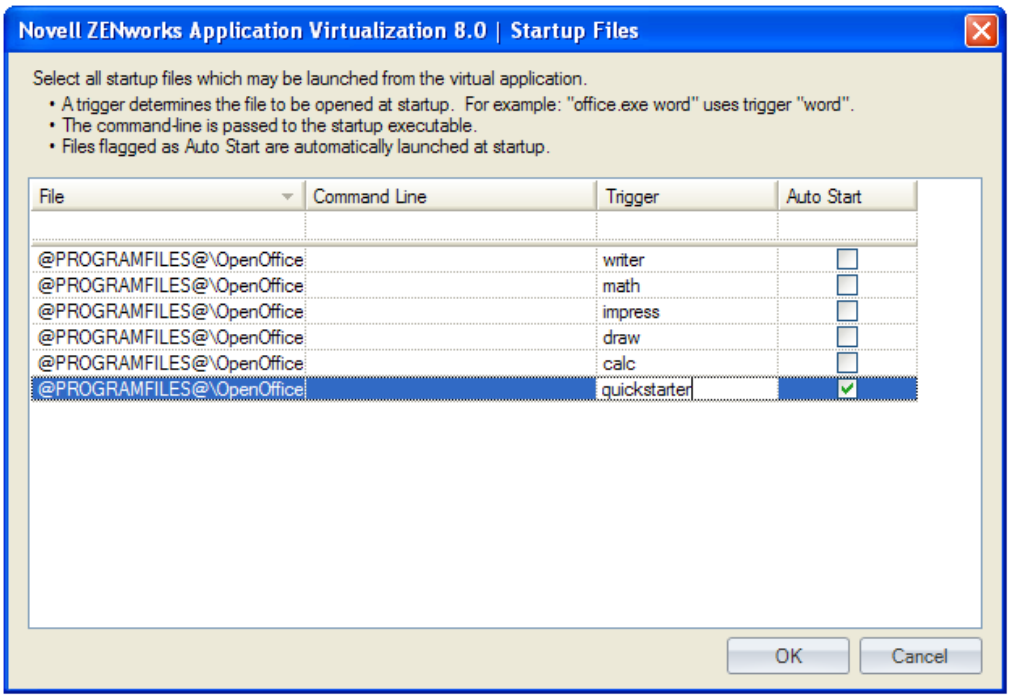
11e Click the *File* column on the first empty row in the startup file list, select `swriter.exe`, then press Enter.

11f Specify the desired command line trigger in the *Trigger* column for each row.

If you create a trigger for each application in Novell OpenOffice, you can use the trigger as a command line option in ZENworks Desktop Management or ZENworks Configuration Management to launch the desired application from an application object. For example, if you specify `writer` for the trigger for OpenOffice Writer, you could use `writer` as the command line option to open Writer when the user opens the executable.

11g (Conditional) Click the *Auto Start* check box next to any startup files that you want to always automatically launch on virtual application startup.

The *Auto Start* flag can be specified for multiple startup files to automatically launch multiple applications that are typically used together in a single session (also known as shotgunning).



11h Click *OK*.

12 Click *Build* in the *Build* section of the *Virtual Application* ribbon to process the application.

13 Specify the location and filename of the virtual application executable file.

14 Test the virtual application executable file on another machine.

The executable file is now ready to distribute to users. You can use any method you want to distribute the file, including USB thumb drives.

You can also use Novell ZENworks or Novell ZENworks Configuration Management to distribute the file. For more information, see the ZENworks Documentation Web site (http://www.novell.com/documentation/zenworks.html).

Using Virtual Applications with ZENworks Configuration Management

5

If you use Novell ZENworks Configuration Management in your environment, you can control how virtual application are used and you can create and publish ZENworks bundles used to distribute virtual applications to users.

The following sections contain more information:

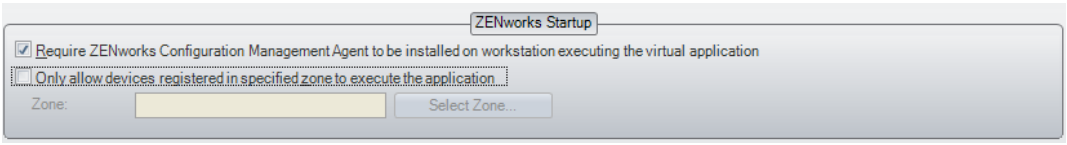
- Section 5.1, “ZENworks Startup Options,” on page 25
- Section 5.2, “ZENworks Bundle Publishing,” on page 26

5.1 ZENworks Startup Options

ZENworks Application Virtualization can be configured to require the ZENworks Adaptive Agent to be installed on the host device executing the virtual application. By default, virtual applications built with ZENworks Application Virtualization do not require the ZENworks Adaptive Agent.

To configure the ZENworks Startup options:

1. While configuring the virtual application, click the *ZENworks* button on the left side of the ZENworks Application Virtualization console to display the ZENworks Startup settings.



2. Select the *Require ZENworks Configuration Management Agent to be installed on workstation executing the virtual application* check box.

   The ZENworks Adaptive Agent is part of the ZENworks Configuration Management software that is installed on each managed device to let the ZENworks administrator manage devices over the network.

   If the ZENworks Adaptive Agent is not installed on the device attempting to launch the virtual application, it cannot be launched.

3. (Conditional) Select the *Only allow devices registered in specified zone to execute the application* check box, click *Select Zone*, specify the ZENworks Server Address and the Zone, then click *OK*.

   The Management Zone is the management domain that includes the ZENworks Primary Servers and managed devices in your ZENworks system.

   When specifying the ZENworks Server Address, you might need to use the secure HTTP prefix (`https://`) to connect to a secure ZENworks Configuration Management Server. If the ZENworks Configuration Management Server has been configured to use a custom port number, you might need to use a port number suffix (:81).

If the device attempting to launch the virtual application is not registered to the specified Management Zone, the application cannot be launched.

4 Continue with the steps for configuring the virtual application:

- GroupWise Messenger: Step 10 on page 14.
- GroupWise and GroupWise Notify: Step 11 on page 19.
- Novell OpenOffice: Step 10 on page 22.

5.2 ZENworks Bundle Publishing

The ZENworks Bundle Publishing options let you create a ZENworks Configuration Management bundle that contains the virtualized application and publish the bundle to your ZENworks system.

Software is distributed by ZENworks Configuration Management through the use of bundles. A bundle consists of all the files, configuration settings, installation instructions, and so forth required to deploy and manage the application or files on a device.

1 While configuring the virtual application, click the *ZENworks* button on the left side of the ZENworks Application Virtualization console to display the ZENworks Bundle Publishing settings.

2 Fill in the fields:

Project Type: Select *MSI* or *Executable*. The MSI or Executable must be built before publication.

Zone: Click *Select Zone*, specify the ZENworks Server Address, click *Connect*, log in to the ZENworks Server with the appropriate Username and Password, then click *OK*.

The Management Zone is the management domain that includes the ZENworks Primary Servers and managed devices in your ZENworks system.

Bundle Name: Specify a name for the bundle.

Bundle Folder: Specify the name of the ZENworks Control Center folder where you want the bundle to reside.

A folder is an organizational object. Folders are used to structure bundles and bundle groups into a manageable hierarchy for the ZENworks system.

Install Path: Specify the installation path that you want to use for the application on managed devices.

Account: Specify the ZENworks Configuration Management administrator username and password.

3 (Optional) Select the *Store Zone credentials in .xappl file* option to avoid being prompted to specify the administrator username and password in the future.

IMPORTANT: This is a potential security risk because the ZENworks credentials are stored in the `.xappl` configuration file as plain text.

---

4 (Optional) Select the *Automatically publish applications as ZENworks bundle after successful build* option to automatically create the ZENworks bundle after it is built.

5 (Conditional) Select the *Automatically publish applications as ZENworks bundle after successful build* option to automatically publish the bundle to the folder you specified in Step 2.

or

Click *Publish Now* to publish the bundle to the folder you specified in Step 2.

6 (Conditional) If you selected the *Automatically publish applications as ZENworks bundle after successful build* option, continue with the steps for configuring the virtual application:

- GroupWise Messenger: Step 10 on page 14.
- GroupWise and GroupWise Notify: Step 11 on page 19.
- Novell OpenOffice: Step 10 on page 22.

Streaming Virtual Applications

6

Using tools that ship with Novell ZENworks Application Virtualization, you can stream virtual applications either from the Internet or from a shared network resource.

- Section 6.1, “Streaming Tools Included in the Product Download,” on page 29
- Section 6.2, “Streaming Virtual Applications from the Web,” on page 29
- Section 6.3, “Streaming Virtual Applications from a Network Share,” on page 35

6.1 Streaming Tools Included in the Product Download

The ZENworks Application Virtualization 8.0.4 product is packaged for download as zav804.zip. This .zip archive includes the following streaming application files:

Extract the `zav804.zip` archive and save the appropriate files on the machines where you want them. For more details, see Section 6.2, “Streaming Virtual Applications from the Web,” on page 29 or Section 6.3, “Streaming Virtual Applications from a Network Share,” on page 35.

6.2 Streaming Virtual Applications from the Web

You can set up a Spoon Standalone server plug-in that allows users to receive applications that are created in Novell ZENworks Application Virtualization and streamed from the Web.

- Section 6.2.1, “Preparing Applications for Streaming,” on page 29
- Section 6.2.2, “Setting Up Files on a Web Server,” on page 30
- Section 6.2.3, “Adding File Types to the Server’s MIME Type List,” on page 31
- Section 6.2.4, “Streaming License Certificates,” on page 32
- Section 6.2.5, “Adding Applications to the Server,” on page 32
- Section 6.2.6, “Testing the Spoon Standalone Setup,” on page 34

6.2.1 Preparing Applications for Streaming

To build a model for streaming an application, you must first package and profile the application or product. This section includes the steps that make a product ready for streaming.

Packaging

You need to package the application to prepare it for profiling.

1. Create a virtual application by using the templates available, or take a snapshot and capture the information.
2. While creating the application, select *Settings* > *Process Configuration* and ensure that the *Compressed Payload* option is disabled.
3. Build the application.

Profiling

The profiling feature generates transcripts or profiles which are then used to create a streaming model for the virtual application. Clicking on profile launches the application and creates a single transcript file based on observed user behavior during that run. It is recommended that multiple transcripts are created before creating a streaming model. Using multiple transcripts allows the streaming system to take into consideration different use cases for the application. It is also recommended that at least one transcript must be created for each operating system that the application runs on.

NOTE: Only uncompressed virtual applications can be profiled and streamed. Compression is automatically disabled during the model build process.

Learning the product for building application streams.

1. Click *Advanced*, select *Profiling*, and choose the virtual application to be profiled. This application is the one created in "Packaging" on page 29.
2. When you open the virtual application, its profiling begins.
3. Let the application run for a few of minutes to complete profiling and close the application. This step completes the profiling activity.If profiling is not complete, wait for a minute and select *Stop* to stop the profiling.

Building a Model

Once the necessary transcripts have been created, the streaming model is ready to be built. The model build process uses the transcripts and Connection Speed parameter to compute a model for execution. After the model build process is complete, the streaming files are written to the selected output folder. The Connection Speed setting is used to optimize delivery of application content to the end-user.

To make the product ready for streaming.

1. Select the desired Connection Speed. The 1.5Mbps connection speed setting is recommended in most scenarios.
2. Click *BuildModel* and create a model file for the virtual application.
3. Create a new temporary location.
4. For streaming the application from the Web server, move the entire directory from the Client or temporary location to the Web server under the *layers* folder. This directory contains one model.xm file and a number of *.xs files.

6.2.2 Setting Up Files on a Web Server

ZENworks Application Virtualization Streaming Server can be set up using any standard web server. For the purposes of this guide, Internet Information Services (IIS) Manager has been used to install a web server.

Once a directory for the root folder of the server site has been configured, files can be added to the root folder. Setup files for ZENworks Application Virtualization Streaming Server are included in the `StandaloneTemplate.zip` file from Novell.

The `StandaloneTemplate.zip` file contains the following files and folders:

- The config folder: Contains the xreg and xvm configuration files, and will be the eventual location of your virtual application configuration files.
- The doc folder: Contains documentation for setting up ZENworks Application Virtualization Streaming Server.
- The images folder: Contains the Novell logo, which will appear in the application buffering dialog during application launch.
- The layers folder: Contains the xreg, xvm, and Spoon plugin layer files, and will be the eventual location of your virtual application streaming model files, and/or SVMs.
- The scripts folder: Contains the scripts for the ZENworks Application Virtualization Streaming Server web site.
- The launch file: The HTML file used to run the virtual application from the server web site.
- The plugin-check file: The HTML file used to check whether or not the Spoon plugin has been installed.

Use the following steps to set up Spoon Standalone plug-in files on a Web server.

1. Extract `StandaloneTemplate.zip` to the `root` folder for the Spoon Web site.
2. In the root folder, edit `scripts\spoon_config.js` to specify the correct location on the Web server and the correct plug-in version. Do this by making sure that the `Spoon_SiteRoot` variable in this file refers to the `root` folder on the Web site where the Spoon files are found.

   Example 1: If the files are copied to `http://www.mysite.com/spoon/`, edit the variable like this:

   ```
   Spoon_SiteRoot='/spoon/';
   ```

   Example 2: If the files are copied to `http://www.mysite.com/products/streaming/`, edit the variable like this:

   ```
   Spoon_SiteRoot='/products/streaming/';
   ```

3. In the root folder, update the `config\xvm.xml` file and the `config\spoonreg.xml` file:

   3a. Find the `<Configuration …/>` element (located near the end of each file).

   3b. In this element, update the layer URL to point to the correct location.

   Example: `<Layer entry="True" type="Exe">http://www.mysite.com/layers/spoonreg/8-0-1271-4__0/spoonreg.exe</Layer>`

4. In the root folder, modify `launch.html` by setting the `Spoon_Config` variable to the full URL path of the application configuration file to be used for launching the application.

   Example: `Spoon_Config = 'http://www.mysite.com/config/myappconfig.xml';`

   For more information, see "Creating an App Configuration File by Using the Command Line Utility" on page 33.

6.2.3 Adding File Types to the Server's MIME Type List

The Spoon plugin utilizes certain special file types which must be added to the web server's MIME type list in order to be recognized.

The following is a list of file extensions to be added, along with the MIME type in parentheses:

- .svm (application/octet-stream)

- .xs (application/octet-stream)
- .xm (application/octet-stream)
- .xlayer (application/octet-stream)

6.2.4 Streaming License Certificates

ZENworks Application Virtualization allows you to generate site license certificates to validate that the application is running in a licensed environment. Application configuration files are then generated using the site license certificate to be used with the Novell standalone streaming server. This section describes how to generate site license certificates in ZENworks Application Virtualization.

1. Launch the ZENworks Application Virtualization console, then click *Advanced*.
2. In the *App Certificates* box, click *Request Certificate*.
3. Enter the following details in the fields provided:
   - **Organization Name:** Provide a name for the organization.
   - **Unit:** Provide a name for the user per unit.
   - **Allowed Portal Hosts:** Provide the allowed port or ports of a server from which the application streams.
4. Click *Request* to request the license certificate, then select *Save File* to save it to a desired location.

6.2.5 Adding Applications to the Server

This section describes how to make new application configurations available on the Spoon Standalone server that requires adding the `.svm` or streaming files to the Web server and create a configuration file which references the application.

- "Adding Streaming Files to the Web Server" on page 32
- "Creating an App Configuration File by Using ZENworks Application Virtualization" on page 33
- "Creating an App Configuration File by Using the Command Line Utility" on page 33

Adding Streaming Files to the Web Server

After you use ZENworks Application Virtualization to package and profile the application you want to stream, create a folder on the Web server to host the files.

Example Path for a Streamed Application: `http://site/site_root/layers/application_name/version__revision/xstream/model_revision/`

A concrete example of a path for a streamed application might be

`http://www.mysite.com/spoon/layers/firefox/3.5.0.8__0/xstream/0/`

Example Path for a Non-Streamed Application: `http://site/site_root/layers/application_name/version__revision/`

A concrete example of a path for a non-streamed application might be

`http://www.mysite.com/spoon/layers/firefox/3.5.0.8__0/`

Creating an App Configuration File by Using ZENworks Application Virtualization

ZENworks Application Virtualization now allows you to generate site license certificates, which can then be used to generate application configurations for use with Novell's standalone streaming server.

1. Launch the ZENworks Application Virtualization console, then click *Advanced*.
2. In the *App Certificates* box, click *Request App Config*.
3. Enter the following details in the fields provided:
   - **Application Name:** Provide a name for the application.
   - **Application Version:** Provide a version number for the application in the following format: Major.Minor.Build.Revision format, for example, 3.8.12.895.
   - **Layer Revision:** Provide the current revision of the application build.
   - **Type:** Select either SVM or XM (streaming).
   - **Layer URL:** Include the path to the location where the application is hosted. The file will be of the `.svm` or `.xm` format, as defined by the type check box).
   - **Xvm Config URL:** Path to the location of the virtual machine configuration.
   - **SpoonReg Config Url:** Path to the location of the SpoonReg configuration.
   - **Certificate Path:** Path to the requested application license certificate that was saved during generation of the application license certificate. Click to search for this location.
4. Click *Request* to request the application configuration.

Creating an App Configuration File by Using the Command Line Utility

Each application delivered by using the Spoon Standalone requires a unique `.xml` configuration file. Each configuration file is linked to a private key. An application configuration file is copied to the Web server and referenced on the Web page where the application is launched. The Spoon Standalone plug-in uses the configuration file to validate the application and determine where to locate the files to stream and launch the application.

Use the `LicenseUtil-Novell.exe` command line tool (extracted from `StandaloneTemplate.zip`) to create application configuration files.

IMPORTANT: The LicenseUtil-Novell.exe command line tool requires Microsoft .NET Framework 3.5 for correct operation.

When you create a configuration file, the first parameter must be `CreateAppConfig`. For other command line parameters, refer to the following list:

- **/pc:** The path to the private key (`ZAV80-NOV-`*`xxxxxx`*`.xml`) file on your Web server.
- **/an:** The name of the application (limited to ASCII characters).
- **/av:** Application version information (*`application_version`*`;`*`layer_revision`*`;`*`model_revision_if_applicable`*).
  - **Streamed Application Example:** `1.0.0.0;0;0`
  - **Non-Streamed Application Example:** `1.0.0.0;0`

- **/au:** The URL to the model file for a streamed application or to the `.svm` file for a non-streamed application.
  - **Streamed Application Example:** `http://www.mysite.com/layers/myapp/1.0.0.0__0/xstream/0/model.xm`
  - **Non-Streamed Application Example:** `http://www.mysite.com/layers/myapp/1.0.0.0__0/myapp.svm`
- **/vm:** The version information for `xvm.exe` *`version;revision`*, such as `8.1.1398.1;0`

  To locate the version number, from the extracted `StandaloneTemplate.zip` folder, go to `layers`, select either `xreg` or `xvm` folder. Copy the directory name `8-1-1398-1__0` and replace it in the command line as `8.1.1398.1;0`
- **/xvm:** The URL to the `.xvm` configuration file.
- **/xreg:** The URL to the `.xreg` configuration file.

  NOTE: The `spoonreg` version and revision information is assumed to be identical to the `xvm` version and revision.
- **/o:** The output file.

The following is an example of the command line syntax that was used to create a GroupWise application configuration file.

```
C:\inetpub\wwwroot>LicenseUtil-Novell.exe CreateAppConfig /pc c:\bh\Zav8-
Internal-Spoon Certs\ZAV80-NOV-0000#.xml /an groupwise /av 8.0.1.0;0;0 /au
http://164.99.186.184/spoon/layers/groupwise/8-0-1-0__0/xtream/0/model.xm /
xvm http://164.99.186.184/config/xvm.xml /spoonreg http://164.99.186.184/
spoon/config/spoonreg.xml /vm 8.0.1236.1;0 /o groupwise.xml
```

After you generate the configuration file, save it in a convenient location on the Web server, for example, `http://`*`site`*`/`*`site_root/configs/`*.

6.2.6 Testing the Spoon Standalone Setup

Testing the ZENworks Application Virtualization Streaming Server setup involves installing the Spoon plug-in and launching an application. This section includes the following information:

- "Testing the Plug-in Install" on page 34
- "Testing the Application Launch" on page 35
- "Troubleshooting an Application That Fails to Buffer" on page 35

Testing the Plug-in Install

1. (Conditional) On the Windows desktop, click *Start* > *Control Panel* > *Add or Remove Programs*, select *Spoon Sandbox Manager*, then click *Remove*.

   Repeat this step to remove all previous installations (versions) of the Spoon Sandbox Manager.

   NOTE: Although this step is unnecessary for end-users, it helps you to ensure that the plug-in installer is correctly referenced.
2. Use a Web browser to navigate to `plugin-check.html`. For example,

`http://www.mysite.com/spoon/plugin-check.html`

3 Install the plug-in.

Testing the Application Launch

1 From a text editor, open `launch.html` and edit the `Spoon_Config` variable to reference one of the application configuration files available on the Web server.

2 Use a Web browser to navigate to `plugin-check.html`.

The page then redirects to `launch.html`.

3 Click the `Run` link on the page. A security dialog box might appear requesting to run the application. If so, allow the application to run.

The application buffers and then launches.

NOTE:

- The application configuration file is cached by the plug-in for up to 15 minutes. If the application configuration is changed, it is best to restart the Spoon plug-in (select *Start* > *All Programs* > *Startup* > *Spoon Sandbox Manager*) before retesting.
- To register the streamed applications to a local machine, modify the RunApp function in the `launch.html` file as follows: `spoon.RunApp(Spoon_config, true);`

Troubleshooting an Application That Fails to Buffer

The DebugView tool from Microsoft generates the logging information output from the Spoon plug-in. Use the following steps to obtain, configure, and use the tool.

1 Download the DebugView tool from the Microsoft Web site (http://technet.microsoft.com/en-us/sysinternals/bb896647.aspx).

2 Run the debug tool (`dbgview.exe`) to immediately start capturing the debug output.

3 In `HKEY_CURRENT_USER\Software\Code Systems\Spoon` of the Windows registry, create the *TraceLevel* value and add `Debug` as a new String value.

4 On the Windows desktop, select *Start* > *All Programs* > *Startup* > *Spoon Sandbox Manager* to restart the Spoon plug-in.

5 Navigate to `launch.html`.

6 Inspect the DebugView output for possible errors in the application configuration file.

6.3 Streaming Virtual Applications from a Network Share

The SpoonPlay command line tool is a utility for running streamed applications from a network share. After you package the application and create the streaming files, you can store the files on a network share or a Web server. SpoonPlay manages the launch and local cache of streamed virtual applications from a network share to a desktop.

- Section 6.3.1, “Setting Up SpoonPlay to Stream Applications,” on page 36
- Section 6.3.2, “Using the SpoonPlay Command Line,” on page 36
- Section 6.3.3, “Integrating SpoonPlay with the SpoonReg Command Line Tool,” on page 36

6.3.1 Setting Up SpoonPlay to Stream Applications

The SpoonPlay command line tool (`spoonplay.exe`) ships with `xvm.exe`. Copy this file to the same folder where you run `spoonplay.exe`. The `spoonplay.exe` file streams the application, and the `xvm.exe` file runs it.

6.3.2 Using the SpoonPlay Command Line

There are only two available command line options in SpoonPlay. The run option defines the application to launch.

Syntax Example: `/run \\path_to_streaming_files\streamingfile.xm`

The cache option defines whether to cache the application locally and where the application should be cached.

Syntax Example: `/cache C:\path_to_cache_location`

6.3.3 Integrating SpoonPlay with the SpoonReg Command Line Tool

You can use the spoonreg command line tool to supply shell integration such as desktop shortcuts, Start menu shortcuts, and file associations.

To use spoonreg with SpoonPlay, use the cache option and execute spoonreg only after caching is complete. When the application is completely cached, SpoonPlay returns an exit code of zero (0). Based on this, you can write a script to launch a streaming model and register the application when caching is complete and the application is closed.

The following example shows the use of command line options and integration of spoonreg in a script:

```
spoonplay.exe /run \\path\to\model\model.xm /cache
C:\path\to\svm\application.svm spoonreg.exe C:\path\to\svm\application.svm
```

Documentation Updates

A

This section contains information about documentation content changes that were made in the *Novell ZENworks Application Virtualization 8.0.4 Integration and Streaming Guide* after its original April 19, 2010 release date. The changes are listed according to the date they were published.

The documentation for this product is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the changes listed in this section.

If you need to know whether a copy of the PDF documentation that you are using is the most recent, the PDF document includes a publication date on the title page.

The documentation was updated on the following dates:

- Section A.1, “March 03, 2011,” on page 37
- Section A.2, “November 30, 2010,” on page 37
- Section A.3, “August 20, 2010,” on page 38
- Section A.4, “May 7, 2010,” on page 38
- Section A.5, “April 28, 2010,” on page 38

A.1 March 03, 2011

Updates were made to the following sections:

Location	Change
Section 6.2.1, “Preparing Applications for Streaming,” on page 29	Updated content in sections on Profiling and Building a Model.
Section 6.2.2, “Setting Up Files on a Web Server,” on page 30	Updated the section introduction and the list of files and folders.
Section 6.2.3, “Adding File Types to the Server’s MIME Type List,” on page 31	Added section on MIME type list.
Section 6.2.4, “Streaming License Certificates,” on page 32	Updated content in introduction section.
Section 6.2.5, “Adding Applications to the Server,” on page 32	Updated content in introduction section.
Section 6.2.6, “Testing the Spoon Standalone Setup,” on page 34	Updated content in introduction section, application launch steps, and notes.

A.2 November 30, 2010

Updates were made to the following sections:

Location	Change
Chapter 6, “Streaming Virtual Applications,” on page 29	The `Xreg.exe` command is now replaced with `SpoonReg.exe`. The `Xreg` command is still used when performing streaming activities.
Chapter 6, “Streaming Virtual Applications,” on page 29	The `ModelPlay.exe` command is now replaced with `SpoonPlay.exe`.
Chapter 6, “Streaming Virtual Applications,” on page 29	The `LicenseUtil.exe` command is now replaced with `LicenseUtil-novell.exe`.
Chapter 6, “Streaming Virtual Applications,” on page 29	The `template.zip` file is now replaced with `StandaloneTemplate.zip`.

A.3 August 20, 2010

Updates were made to the following sections:

Location	Change
Chapter 6, “Streaming Virtual Applications,” on page 29	Revamped entire chapter for current changes.

A.4 May 7, 2010

Updates were made to the following sections:

Location	Change
“Creating an App Configuration File by Using the Command Line Utility” on page 33	Corrected the `/vm` command line parameter syntax example.

A.5 April 28, 2010

Updates were made to the following sections:

Location	Change
“Creating an App Configuration File by Using the Command Line Utility” on page 33	Added an important note to alert users to the need to have the .NET Framework 3.5 install3ed on the machine where they use the `LicenseUtil-Novell.exe` command line utility.