

# InstallAware NX

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## *Reviewer's Guide*

August 2012



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## Overview

### *Introduction*

Thank you for your interest in reviewing InstallAware NX, the cutting-edge software installation authoring tool. This guide will give you an overview of some key benefits that are available only with InstallAware.

### *Product Description*

InstallAware NX is the fastest and most scalable way to deliver ultra-rich, ultra-fast Windows installations. Dramatically reduce coding time and create installers tens of times faster with MSIcode based development and a fully visual two-way RAD IDE. Completely eliminate the need for Windows Installer training, save on bandwidth and support costs, and build smart installers which adapt to their environment at runtime.

### *Contact Information*

We are here to support you throughout your evaluation period – and beyond. Please do not hesitate to contact us anytime.

**Technical Assistance:** [support@installaware.com](mailto:support@installaware.com)

**Sales Inquiries:** [sales@installaware.com](mailto:sales@installaware.com)

## InstallAware Highlights

### *New and Interesting Features of InstallAware NX*

- **Windows 8 Eco System** – InstallAware NX includes built-in application runtimes and technology support for the entire Windows 8 Eco System, including partial and full installations of the .NET Framework 4.5, SQL Server Express, SQL Server Native Client, Visual C++/F#/J# runtimes, IIS Express, Crystal Reports, and more. InstallAware NX integrates with Visual Studio versions 2003, 2005, 2008, 2010, and 2012; seamlessly creating and building setups (and App-V application virtualization packages) from your Visual Studio solutions right within the Visual Studio IDE, including automatic detection of all your runtime dependencies.
- **Code Signing for All Binaries** – Microsoft’s new Designed for Windows 8 logo program requirements mandate code signing for all binaries, which InstallAware NX provides.
- **Advanced Shortcut and Pinning Options** – InstallAware NX can pin any shortcut to the Windows Taskbar (Windows 7/8), and/or to the top of the Start Menu (Windows XP/Vista/7). Additionally, InstallAware NX can disable the built-in pinning functionality of the new Windows 8 Start Screen, or the highlighting functionality of the Windows 7 Start Menu, preventing your secondary applications/utilities from receiving an unnecessary spotlight. Also unique in InstallAware NX is the capability to mark any shortcut as “Run as Administrator” – ideal for deploying classic Visual Basic applications that enterprises rely upon.
- **ASP.NET Web Automation Interface** – InstallAware NX empowers software developers to produce web sites which build and deliver customized installers, all in response to user clicks on a web page. Software bundles with dynamically updated business rules are an ideal use case of this new technology, made possible only with InstallAware NX – and with zero effort for each build.
- **Template Projects** – InstallAware NX can promote any existing setup project to a generic installation template, maximizing code re-use and permitting the creation and enforcement of corporate installation standards.
- **ISO/IEC 19770-2:2009 Tags** – InstallAware NX fully supports “software self-instrumentation” through the implementation of industry standard software identification tags.
- **Direct MSI Builds** – Any setup project or patch may now be built directly as an MSI file – even those not based on Windows Installer but use InstallAware NX’s own Native Code Setup Engine.
- **For Each...Next Loops** – Easily iterate elements in collections using new MSIcode loops.
- **XML XPath Queries** – Query XML files using the industry standard XPath notation.
- **.NET Plug-In Bridge** – Build your own plug-ins for the IDE and setups using managed code.

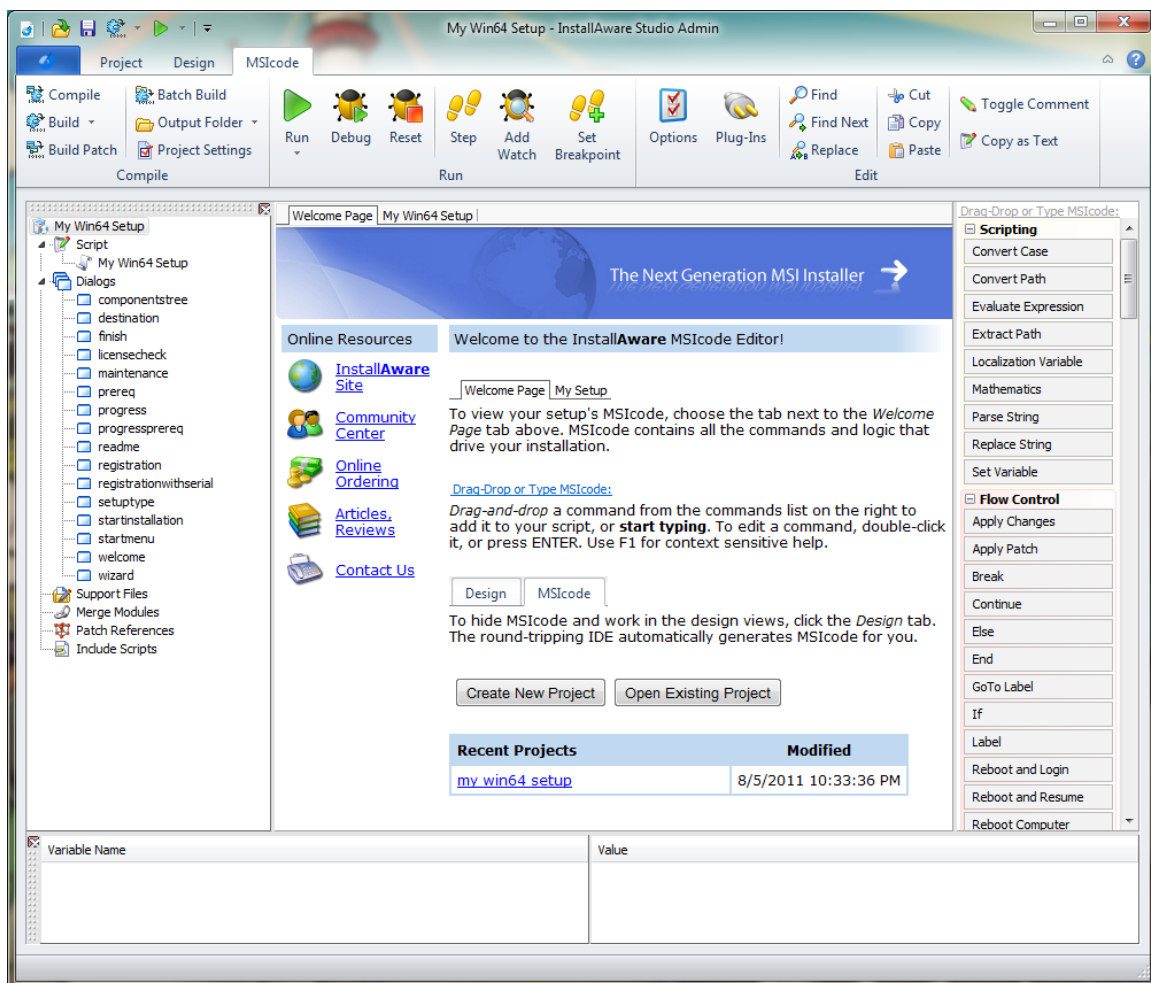
- **Hybrid App-V Builder** – InstallAware NX now ships with App-V Application Virtualization technology. Build any existing setup as an App-V virtualized package in a single click! Moreover, combine both your 32 bit and 64 bit applications inside a single App-V binary, leveraging InstallAware’s unique Hybrid App-V technology.
- **Native Code Setup Engine** – InstallAware NX features a new native code setup engine to complement and enhance Windows Installer. InstallAware’s new Native Engine eliminates all dependencies on Windows Installer and successfully empowers installations even on systems with corrupted Windows Installer stacks. Unlike Windows Installer, the Native Engine is capable of running in Windows Safe Mode, enabling your customers to install, repair, and uninstall your applications even when Windows cannot be started normally. The Native Engine outperforms Windows Installer installation speeds and offers enhanced functionality such as loop constructs in your MSIcode. The Native Engine also supports multi-tasking: more than one Native Engine setup may be run at the same time; simultaneously installing more than one software product on the target system (this is not possible with Windows Installer).
- **Hybrid Installation Technology** – InstallAware NX lets you use both the Windows Installer and the Native Engine installation engines in the same setup, simultaneously. You may freely switch between engines or use them to install different parts of your applications as needed. Of course, InstallAware continues to support both the latest 64 bit operating systems (such as Server 2012 64 bit) and the earliest of 32 bit operating systems (such as Windows 95 Gold) with both the Native Engine and the Windows Installer engine. In fact, a single InstallAware setup binary may be used to deploy 32 bit applications onto 32 bit platforms, and 64 bit applications onto 64 bit platforms.
- **Aero Glass Components** – InstallAware NX is the first and only installer to offer customizable Aero Glass support, along with updated installation themes and new themes built from scratch that take advantage of Aero Glass functionality. InstallAware NX setups look and work correctly on all five Windows themes – Aero, Basic, Luna, Classic, and Windows 8 – without any extra effort or manual coding on your part. InstallAware NX also includes a pre-built Aero Theme, which is the only installation user interface that fully complies with Microsoft’s Aero Wizard user interface specifications.
- **InstallAware Virtualization** – InstallAware NX can save all your existing setup projects as InstallAware Virtualization projects, enabling you to build virtualized applications from your existing projects in a single click.
- **Self-Mutating Setups** – A key strength of InstallAware NX is the ability to create setups which adapt to their runtime environment, in accordance with your business logic. Changing the setup features visible to end-users, for example, based on a setup key that has been entered, is very easy with InstallAware.

## Unique Features and Key Benefits for Developers

- Built on an excellent abstraction of Windows Installer called MSIcode. MSIcode is a human readable, conditionally flowing setup script, similar to a batch file. Your MSIcode script is automatically compiled into a logo compliant MSI database at build time, eliminating all need for Windows Installer training and the need to understand its complex relational database structure.
- MSIcode is more than just another descriptive language for creating setup packages: it is a layer on top of Windows Installer which directly modifies Windows Installer's runtime behavior.
- No scripting engine is required or pre-installed at runtime. Setups you build run on all 32 bit and 64 bit platforms, from the earliest release of Windows 95 to the latest Windows 8 Server 64 bit – all with the same setup binary.
- Your MSIcode script “magically branches” according to your underlying scripted logic at runtime. You may even create/edit/delete your setup features at runtime, based on system conditions or online live license authentication. This helps you build and maintain a single installer (and a single setup project) for all of your product editions, languages, and features.
- Securely download optional application components using Partial Web Deployment. Segment your setup files into multiple online and offline Web Media Blocks. Optional Web Media Blocks are downloaded only if necessary. A partially web deployed setup does NOT mandate an Internet connection if online Web Media Blocks have not been selected for installation. Web Media Blocks may be shared by more than one setup and are highly compressed.
- One-Click Patching: No special patch project types are required to create patches. Point to the built binaries of your old setup versions to build patches in a single click. Use MSIcode scripting to customize patch behavior at runtime, and perform additional custom tasks.
- Deploy an unlimited number of web updates to your installed customer base. Filter patches using MSIcode to preserve your business logic.
- “Shell” to Third Party Setups from your installations. Capture and display native, interactive installation progress in your own setup dialogs – never launching external setup windows means your dependencies are always installed with the correct parameters and as an integral part of your master installation.
- Design stunning user interfaces with the 43 built-in dialog controls. Easily pass MSIcode variables between your setup dialogs and script. Capture and submit business intelligence directly within your (un)installations, without risking a click-away on web pages.
- In addition to runtime setup customization in MSIcode, use MSIcode Compiler Variables to conditionally include/exclude files and logic from your setups at build time.

## InstallAware NX Two-Way Integrated IDE

InstallAware NX is the fastest and most scalable way to deliver ultra-rich, ultra-fast Windows installations. The two-way integrated IDE dramatically reduces coding time. The Design tab rapidly prototypes your setup, while the IDE seamlessly emits MSIcode in the background. Switch to the MSIcode tab and inject custom code exactly where needed. The visual and script parts of InstallAware projects are NOT disjoint, separate entities. Unlike other installation tools, the MSIcode script drives the entirety of your installation, has no hard coded elements, and is automatically emitted for you by the IDE as you use design views. This means that when you need to drop down to the code view after doing a lot of visual design work, everything you have done so far is immediately accessible and editable. The script is not a separate entity that is divorced from the actual files, registry keys, and other elements that comprise your installation.





## What Types of Setups are Created with InstallAware NX?

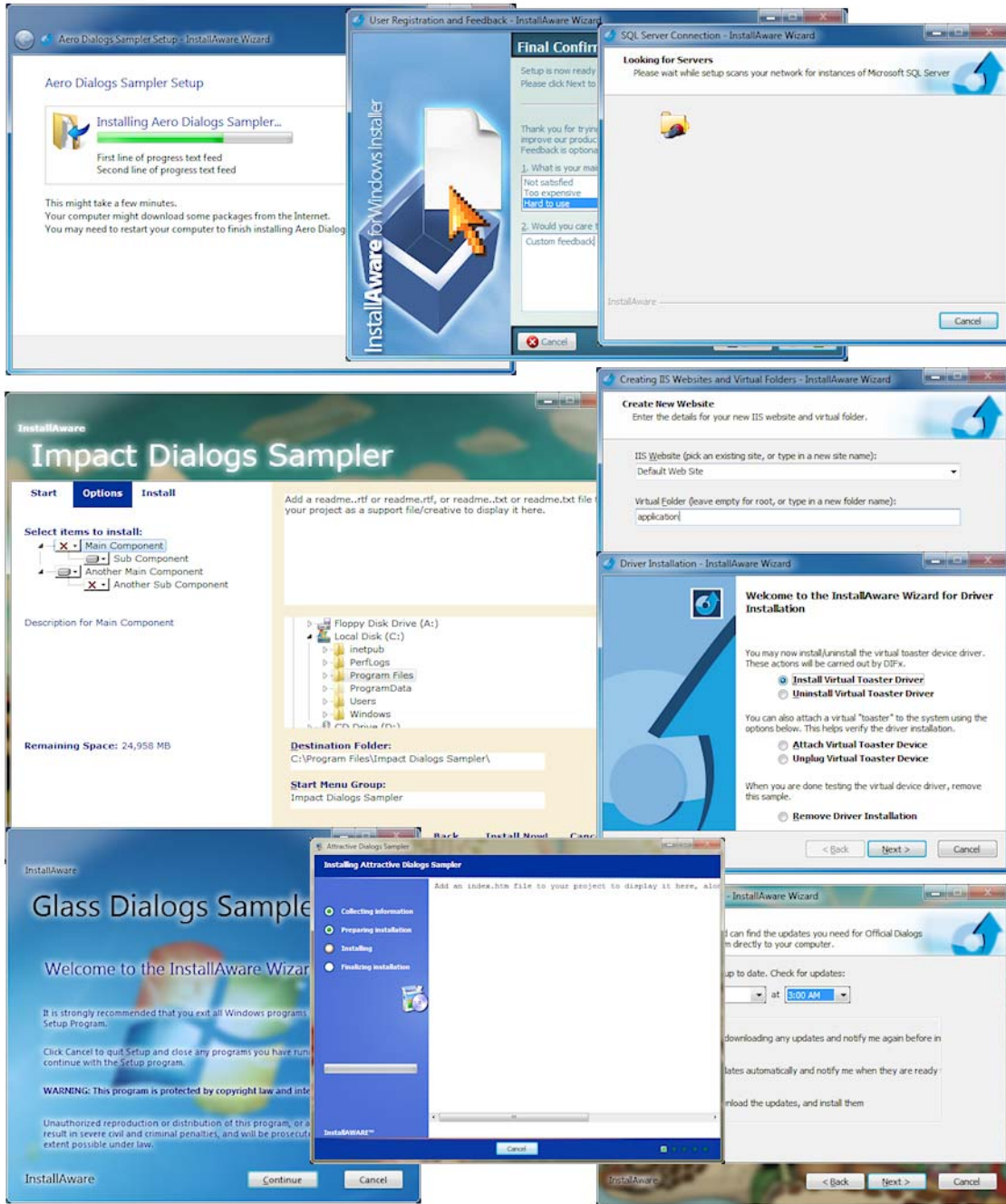
Mission-critical enterprise installs to complex desktop applications, driver installers, software development tools, and games; OEM, web, and database applications; including some hit commercial software like Crysis and Delphi; and OEM installations by Sony and BestBuy.

InstallAware NX unlocks the potential of the developer's imagination and allows them to focus on the solution without having to worry about the underlying confines and limitations of Windows Installer. In fact, InstallAware often transcends inherent limitations of Windows Installer to save developers countless hours of training and especially the frustration of having to work around the straitjacket setup authoring experience that is found with other environments.

InstallAware NX offers a single source approach for building software installers that run on literally all 32 bit and all 64 bit Windows versions. A single setup project may be built as different editions of the same product, as patches for various versions of the same product, or even as a fully self-contained single installation binary with the runtime branching logic and intelligence to self-mutate on end-user systems to install just the appropriate product/edition/version.

MSIcode scripting enables unprecedented levels of flexibility at runtime which translate to reduced support costs and higher numbers of successful first time installations. The new Native Code Setup Engine in InstallAware NX builds on this strong heritage to exponentially increase the runtime capabilities of setups, completely side-stepping all limitations of Windows Installer, whilst not requiring platform exclusivity – setups may even switch between Native Code and Windows Installer setup engines at runtime as needed.

Because InstallAware generates standalone Windows executables without large and cumbersome runtime dependencies like Java or .NET, or script engines like InstallScript that need to be pre-installed and may fail with cryptic error messages, InstallAware setups always work on the largest possible number of target systems, out of the box, making sure your relationship with your customers starts off on the right footing. InstallAware NX's Native Engine completely side-steps all Windows Installer fragility on end-user systems and can even run setups in Windows Safe Mode. Of course, for Group Policy and Active Directory deployment and application administration, single file MSI packages can be created – even if your actual setup isn't actually based on Windows Installer!



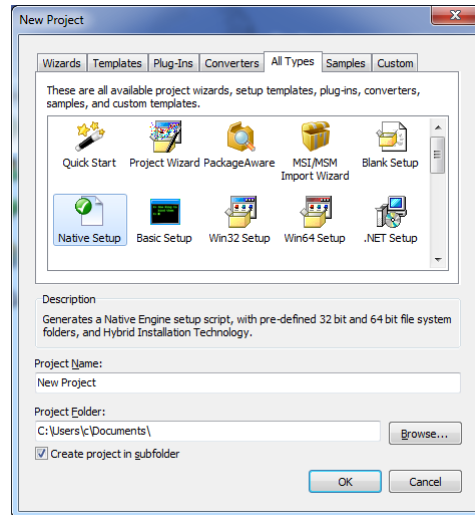
## Setup Development

After installing InstallAware, you will have the opportunity to decide what type of development you want to do.

- Setup repackaging based on system snapshots (setup capture)
- Direct import of Windows Installer setups and merge modules
- Direct import of InstallShield, Wise, and other popular setup projects
- Highly custom setups started with a completely empty project
- CD/DVD/Blu-Ray Autorun menus
- Setups that use the InstallAware Native Code Setup Engine
- Setups that use the Windows Installer Setup Engine
- Setups that use both engines with HIT (Hybrid Installation Technology)
- Win32 and Win64 application installers
- .NET and Java application installers, with optional download and installation of their frameworks
- Web update clients
- Multiple instance setups (installing more than one copy of the same application simultaneously)
- Obtaining end-user feedback, collecting and submitting business intelligence
- Validating serial numbers, both offline and online
- Localized setups
- Database installations that configure a named database instance and run a SQL script against it
- Web server installations that configure a web server and create websites/virtual folders on it
- Driver installations
- Setups which optionally download features from the Internet while NOT mandating a connection
- Setups which can dynamically define and delete setup features at runtime
- Binary byte level patches
- Virtualized applications
- Custom plug-ins which enhance the existing capabilities of the InstallAware MSIcode language
- Calling functions from any system DLL or custom DLL directly
- Bootstrappers which shell to and seamlessly install third party technologies and setups
- Checking for and removing old product versions, including those installed without InstallAware
- Checking for and installing technology frameworks, runtimes, and database/web servers
- And many others

## Projects in InstallAware NX

Once you start InstallAware NX, the first thing you will need to do is create a project.



This can be accomplished by clicking the InstallAware button and clicking the *New Project | Other* menu item. This is the object gallery and it displays all of the different types of projects that can be created. If you are not reviewing the Studio Admin edition with all features installed, some objects may not be available – just run InstallAware setup again and do a full install to make everything available.

- **Wizards** – A list of standard wizards which guide you step by through setup project creation, including wizards which let you convert pre-existing setups (without access to their source codes).
- **Templates** – InstallAware projects which can be fleshed out in the IDE, including Win32, Win64, .NET, and Java application support; as well as highly custom applications such as Autorun apps.
- **Plug-Ins** – Create plug-ins that integrate with InstallAware’s MSIcode script, including rendering a custom line of script and participating in the setup build process. Now with managed code support, letting you author plug-ins using any .NET based language.
- **Converters** – Upgrade existing setups (for which you do have the source codes) into ready to build InstallAware projects in a single click.
- **Samples** – Various sample projects illustrating useful InstallAware programming concepts.
- **Custom** – Promote any existing InstallAware project into a generic template, maximizing code re-use and enforcing your organization’s installer standards. Inherit new projects from your self-made setup templates.

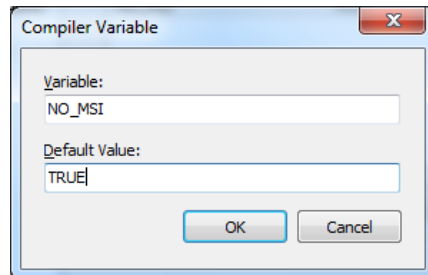
## Native Code Setups in InstallAware NX

If you have previously used InstallAware, you will be pleased that all it takes is a single line of code to upgrade your existing projects to use the new Native Code Setup Engine instead of Windows Installer:

```
1  
2  Comment: Enable Native Engine  
3  Set Variable NATIVE_ENGINE to TRUE  
4  
5  Comment: Enable Windows Installer Engine  
6  Set Variable NATIVE_ENGINE to FALSE  
7
```

As in the code example above, changing the value of the **NATIVE\_ENGINE** variable between **TRUE** and **FALSE** will toggle any installation between the Native Code and Windows Installer setup engines. This process may be repeated as many times as required in your installation.

InstallAware does not lock you into any particular setup authoring platform and gives you the power of choosing whichever setup engine is best suited for your requirements. Best of all, your existing scripts – all of them – are upgraded to work with the Native Engine in just one line of code!

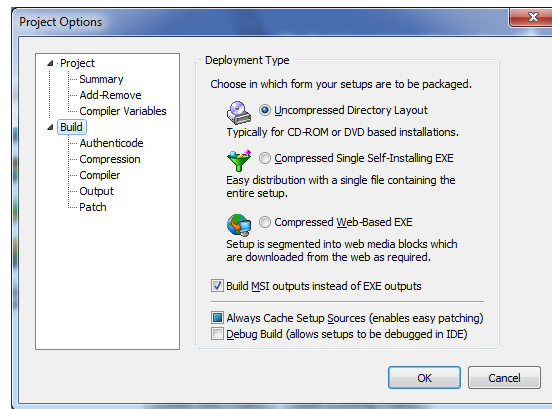


If you are sure that you will not be using the Windows Installer engine at all, you may prefer to skip building MSI files as part of your build process. This will reduce the size of your setup payload, and speed up the build process significantly. Just set the **NO\_MSI** compiler variable to **TRUE**.

Please see the help file topics *Pre-Defined Compiler Variables* and *Pre-Defined Variables* for many additional build time and runtime tweaks that can be applied to your setups for increasing performance and reliability. Remember, nothing is hard-coded in InstallAware!

## Deploying Setups

InstallAware offers a variety of build modes for your existing projects, all based on the same source files. I would like to highlight these.



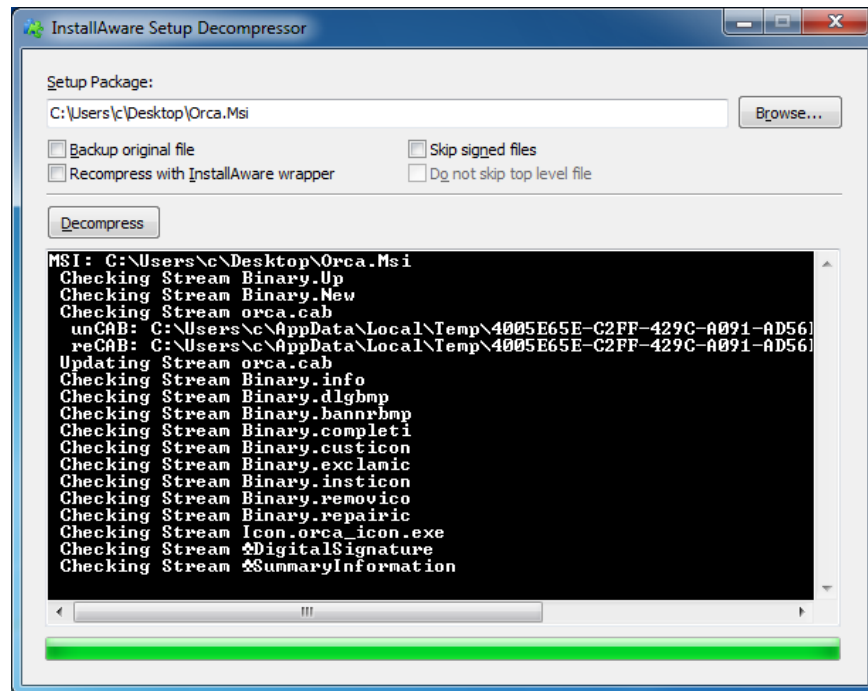
- **Uncompressed Directory Layout** is the fastest build option and ideal to use when you are coding and debugging your setups. It is also the best build mode to use if you will be distributing your setups on optical media or thumb drives, or other medium which can contain multiple folders.
- **Compressed Single Self-Installing EXE** takes the uncompressed output and packs it all inside a single, self-extracting executable. This is ideal for cases when a single monolithic file is required. All files are compressed to the smallest possible size.
- **Compressed Web Based EXE** is ideal for online distribution. The output is a compressed self-extracting executable, as well as several 7zip files which are the web media blocks containing your optional setup features. Unlike other web deployment schemes, the 7zip files are not mandatory and will be downloaded only if they are selected by the end-user for installation (and have not been previously downloaded). You get to precisely choose which source files are placed inside web media blocks, and which go inside the self-extracting “offline” setup executable.
- **Patch** is used to build your existing setup project as a patch, without having to create a new patch project type. Through the use of compiler variables, parts of your MSIcode script are conditionally included or excluded when building setups as patches. This helps you inject additional business and setup logic to the patch process whilst avoiding the need to create a new patch project.
- **Build MSI outputs instead of EXE outputs** converts any of the above EXE outputs into a Group Policy/Active Directory compatible MSI file, even when your original setup is not based on Windows Installer technology and uses the Native Engine instead.

## Additional Advanced Tools in InstallAware

InstallAware NX includes many features beyond those covered in this Reviewer's Guide. There are a few that deserve special mention, just to remind you, the reviewer, of the power of these tools and the value they add to the InstallAware setup authoring environment.

- **Setup Decompressor** – Originally developed at the request of *Microsoft* to reduce the size of the .NET 1.1 Runtime, this tool optimizes MSI files for recompression, without changing any of the data or logic contained within them. It works by unpacking all compressed streams contained inside an MSI file, and then storing them with zero compression back inside the original MSI. This way, when the MSI is included inside a master InstallAware setup, InstallAware's advanced compression works miracles.

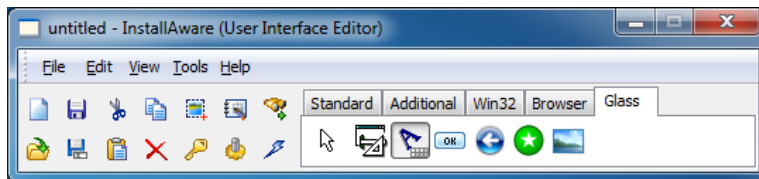
The already compressed size of the .NET 1.1 Runtime was reduced from 23 MB to 11 MB using this tool.



- **Dialog Designer** – Just as nothing has been hard-coded in InstallAware, setup dialogs too are fully editable and customizable. While InstallAware ships with 17 pre-built themes and even more custom made dialogs in sample projects, nothing prevents you from creating highly customized, richly branded user interfaces that offer your customers a compelling installation experience.

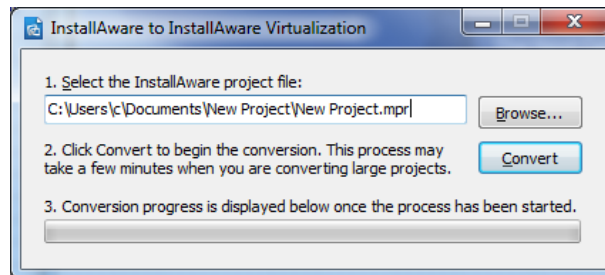
As illustrated in the *Impact* theme, you may even combine controls from multiple dialogs inside a single dialog to provide a streamlined workflow for your customers, just like Visual Studio’s own setup routine! And remember, since InstallAware captures the native installation progress of setups you spawn from your master setup, the progress feedback of these third party installations will be displayed interactively, inside the setup dialogs that you have designed!

New with InstallAware NX, you may also load dialog bitmaps programmatically at runtime to re-brand your installation on end-user systems without rebuilding anything! Custom dialogs are also a great place to collect and submit user data directly within your setup user interface, without ever launching external web browsers and risking the possibility of a click-away.



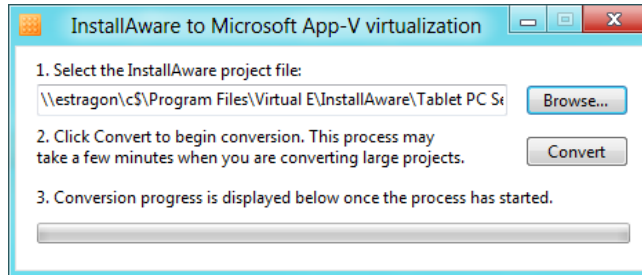
- **Export to InstallAware Virtualization** – It takes a single click in this tool to convert any existing InstallAware setup project to an InstallAware Virtualization project.

Explore how well your applications run virtualized – without being pre-installed or even extracted to a temporary folder – using this tool.

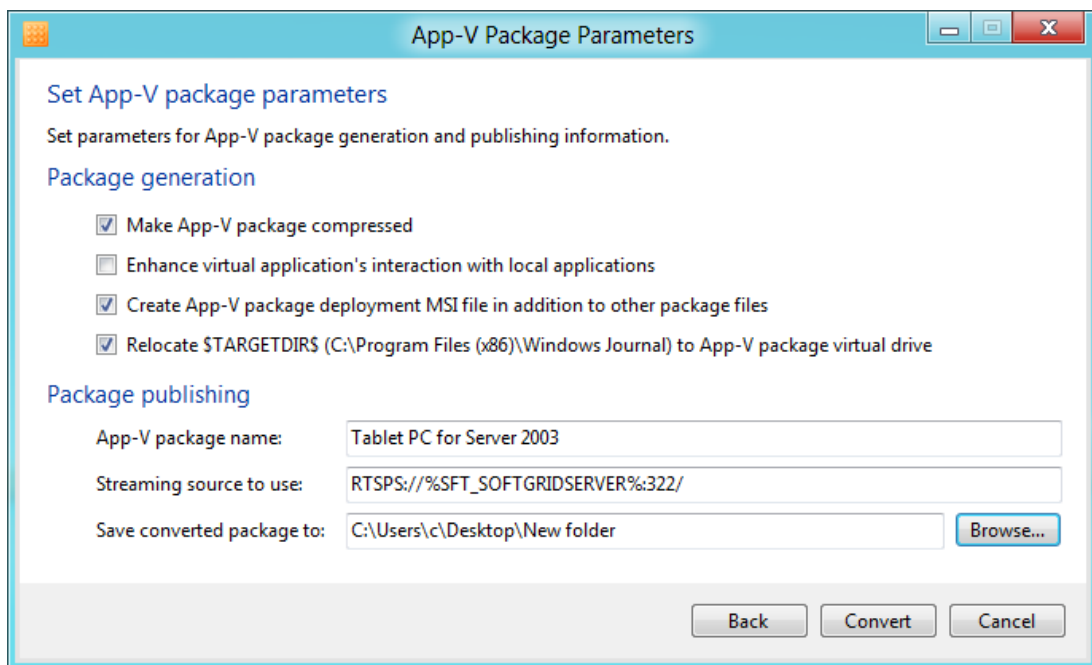




- **App-V Builder** – The new App-V Builder produces an App-V Application Virtualization package out of any existing InstallAware setup project. There’s absolutely nothing new to learn, and no need for costly sequencing operations.



After selecting the InstallAware project to build as an App-V package, choose your entry point applications and other package creation options.

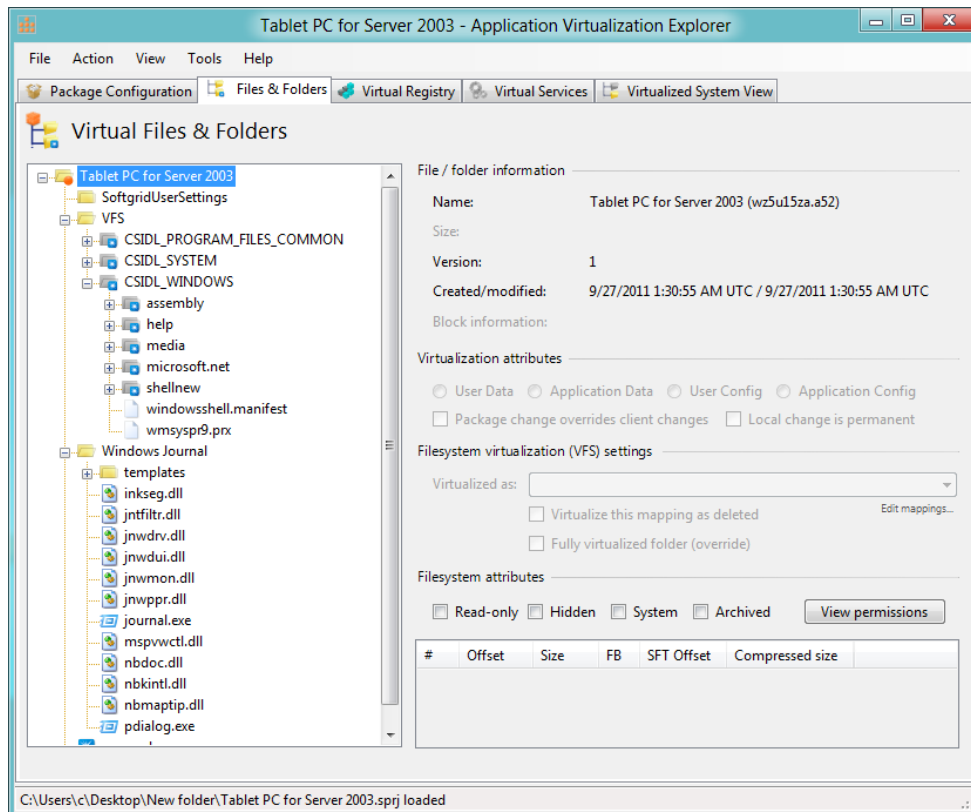


InstallAware’s unique Hybrid App-V Technology ensures that your packages may contain both 32 bit and 64 bit components, and run successfully on clients of both businesses.

You may also create an MSI file to push your App-V package using Active Directory/Group Policy, or other forms of unattended deployment.



- **App-V Viewer** – Also included in InstallAware NX is a full-fledged App-V Viewer, capable of viewing the contents of any App-V package, regardless of the technology it was built with. Inspect the folders, files, registry keys, environment variables, shortcuts/entry point applications, file type associations, and even the virtual services that the package is made of.

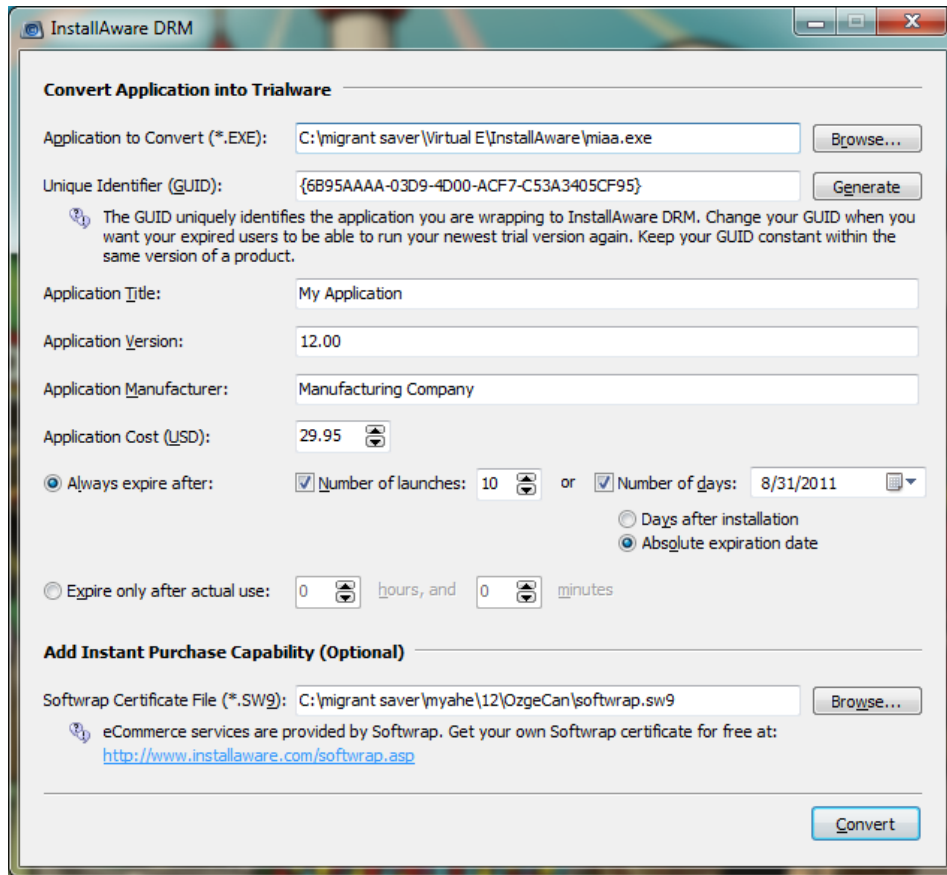


- **Digital Rights Management** – The stand-alone DRM tool lets you take control over how your applications are converted into trialware products.

While the InstallAware IDE may automatically convert any application as a seamless part of building your setup, this tool is available for your use at any time, should you wish to manually protect any application with InstallAware DRM, outside of a setup build process.

The stand-alone InstallAware DRM tool may also be run from the command line, permitting inclusion in automated build processes.

Any Win32, Win64, or .NET application may be protected using InstallAware DRM – without requiring any changes to your existing source code!



## Basic Introduction

Keep in mind that this guide barely scratches the surface of what is possible with InstallAware. Please refer to the following additional resources that help you get the most out of the product:

**MSIcode Scripting:**

[http://www.installaware.com/msicode\\_scripting\\_technology.pdf](http://www.installaware.com/msicode_scripting_technology.pdf)

**Partial Web Deployment (Web Media Blocks):**

[http://www.installaware.com/webaware\\_installation\\_technology.pdf](http://www.installaware.com/webaware_installation_technology.pdf)

**Building Custom Application Runtimes:**

[http://www.installaware.com/installaware\\_extending\\_application\\_runtimes\\_view.pdf](http://www.installaware.com/installaware_extending_application_runtimes_view.pdf)

**Patching:**

[http://www.installaware.com/installaware\\_patching.pdf](http://www.installaware.com/installaware_patching.pdf)

**Web Updates:**

[http://www.installaware.com/installaware\\_web\\_updates.pdf](http://www.installaware.com/installaware_web_updates.pdf)

**Frequently Asked Questions:**

[http://www.installaware.com/installaware\\_faq.ppt](http://www.installaware.com/installaware_faq.ppt)

**InstallAware Edition Comparison Matrix:**

<http://www.installaware.com/right-edition.htm>

**Community Forums:**

<http://www.installaware.com/forum/>

**Procurement:**

<http://www.installaware.com/buydirect.asp>

**InstallAware Blog:**

<http://www.installaware.com/blog/>

## About InstallAware Software

Focusing solely on the Microsoft platform for software installations, InstallAware is the premier provider of application installation and repackaging tools for systems administrators, enterprises, ISVs, and software publishers. Founded in 2003 by InstallShield alumni, InstallAware is supported by tens of thousands of users worldwide, and was named a “Leader of the Software Development Industry” by SD Times in 2012. For more information, please visit our website at [www.installaware.com](http://www.installaware.com).

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