InstallAware Multi Platform

Reviewer's Guide

December 2023





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Overview

Introduction

Thank you for your interest in reviewing InstallAware Multi Platform, the cutting-edge tool for software

installation authoring, application repackaging, and software virtualization on Linux, macOS and Windows.

This guide will give you an overview of some key benefits that are available only with InstallAware.

Product Description

InstallAware Multi Platform is the quickest and most scalable way to deliver rich, reliable, and dependable

Linux, macOS, and Windows installations. Jump start new projects using a wealth of samples and

templates. Convert any existing Linux, macOS, or Windows package into a cross-platform installation with

PackageAware Multi Platform - even if you don't have its sources. Directly load your InstallAware for

Windows projects, rebuilding them for Linux and macOS in a single click – while retaining 100% of your

customized dialogs and localizations. Dramatically reduce coding time, creating intelligent, adaptive

installers with graphically edited, conditionally flowing setup commands.

A fully visual two-way RAD IDE speeds you on your way, rendering your custom script in high-level

visual designers you may use to work on your projects without any coding, while also retaining the ability

to drop down to the code level for tweaking. Completely eliminate the need for platform-specific training,

saving yourself hundreds of hours of learning on the internals of a plethora of complicated, incompatible,

and competing package formats such as MSI(X), RPM, DEB, and PKG. Retain full compliance with

platform standards such as code signing and notarization, ensuring your packages operate seamlessly with

security features such as Gatekeeper on macOS and Microsoft Defender on Windows.

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

Sales Inquiries: sales@installaware.com

1InstallAware

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InstallAware Highlights

New and Interesting Features of InstallAware Multi Platform

- Single Source, Three Platforms, Native Code A single setup project, together with all of its assets such as custom dialogs, installation scripts, and localizations; is compiled into native code binaries for Linux (X64 and ARM64, each for both GTK2 and Qt5 widgets), macOS (Intel and Apple Silicon), and Windows platforms. Compiled executables have no dependencies whatsoever (no Java, or other runtimes), running out of the box on even the most hardened of environments.
- Interactive Console Setup Engine For the first time in its history, InstallAware now includes a pure character mode, text-only setup engine. All setup wizard pages render interactively on the Terminal, while retaining 100% of their developer designed functionality. User interaction from fields as diverse as text inputs, radio buttons, check boxes, feature selectors, folder browsers, check lists, and the like are captured on the Console. Setups run securely on SSH/tty connections.
- Mixed Mode Setups Many Linux operating systems in particular have countless incompatible standards of window managers and widget sets, making it literally impossible to build a single GUI package capable of deploying everywhere. Mixed Mode setups in InstallAware Multi Platform address this challenge by including both GUI and Console Setup Engines in built packages. Should the GUI fail to boot due to missing widgets (or for any other reason), the Console Engine takes over and sees the setup through to completion, preserving execution integrity. For the first time in history, a single package may now successfully install on all Linux operating systems!
- Code Signing and Notarization InstallAware Multi Platform is fully standards compliant, including platform-specific code signing and notarization support as an integral part of its package build process. Apple Notarization ensures packages get along well with the macOS Gatekeeper, dramatically improving the end-user experience during deployment, and alleviating security concerns.
- Partial Web Deployment InstallAware Multi Platform enables developers to break their setups
 into as many online and offline, shared or discrete segments as they like. Multiple redundant
 download URLs, automatically resumed downloads after network interruptions, and no server



software requirements make working with InstallAware's web deployment a breeze. Of course, web deployed setups install fully offline, when no online features have been chosen.

- Web Updates Unmetered updates, precision targeted by operating system, CPU architecture, language, and your own business logic. The update client itself has been built in InstallAware, so both its user interface and update script are entirely open source and customizable.
- Dialog Designer InstallAware Multi Platform is the only cross-platform solution to render a single dialog design, pixel-perfect, on all of the operating systems it supports. Craft your setup wizard pages using the rich array of provided controls. Graphically link input fields to script variables, and define interaction rules for controls; providing a rich UX. Automatically substitute unsupported Windows controls in your existing dialogs with their cross-platform counterparts.
- Setup Capture InstallAware Multi Platform is once again the only solution with a crossplatform setup capture tool for Linux, macOS, and Windows. Monitor the changes made to any operating system by any package, installer, or application at large; and convert the delta into a ready-to-build, customizable, cross-platform installation script.
- Command Line Builds Offering compile time customization capabilities and unattended builds.
- File Types InstallAware Multi Platform setups may register your applications as default file
 type handlers, with their custom icons, on Linux, macOS, and Windows. Your handler application
 is launched with the selected files passed as parameters on its command line, even on macOS –
 dramatically reducing your application's work in having to talk to the operating system, too.
- Mutating Commands Similar to File Types above, InstallAware Multi Platform setup commands automatically adapt to their underlying platforms, simplifying or completely eliminating platform specific conditionals and code you would otherwise have to write. For instance, the Run Program command automatically identifies app bundle entry points on macOS, and adds ".exe" file extensions for Windows greatly improving your script code readability.
- Intelligent Import When you open an InstallAware for Windows project in InstallAware Multi Platform for the first time, it scans your existing setup commands and converts parameters into their cross-platform equivalents, ensuring single-click cross-compiles just work, along with producing portable code that is simple to read, maintain, and extend.



Unique Features and Key Benefits for Developers

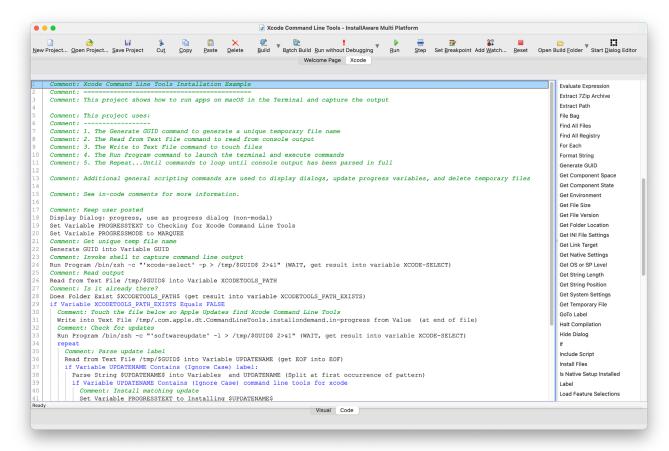
- Built on a mature installation engine, powering billions of deployments worldwide, and proven over the past two decades on Windows Desktops. At the heart of your setups is a human readable, conditionally flowing setup script, similar to a shell script. Your script is automatically compiled into a native code binary, which runs directly without any dependencies or breaking points.
- No stand-alone engine, runtime, or package manager is ever required, or pre-installed, at runtime.
 There are absolutely no dependencies such as Java, .NET, or any other frameworks; or package formats like RPM, DEB, PKG, or MSI(X) a fully independent executable with absolutely no moving parts/points of failure means nothing stands in the way of your successful deployments.
- Your setup script branches according to your underlying coded logic at runtime. You may even
 create/edit/delete your setup features at runtime, based on circumstances such as live system states
 or online license entitlement queries. This helps you build and maintain a single installer (and a
 single setup project) for all of your product editions, languages, and features greatly reducing
 integration workloads.
- Partial Web Deployment facilitates secure downloads of optional application components conditional upon successful user authentication, ensuring your proprietary bits never fall into the wrong hands (our could ever be downloaded from outside of their intended, secured Intranet).
- Directly download and run third party packages and installations from your own master installers, such as Homebrew (un)installation scripts, formulae, etc.
- Create and consume libraries of Include Scripts, building and leveraging reusable blocks of standard code that are shared across your many installation projects.
- Design highly customized user interfaces with 23 built-in dialog controls. Easily pass script variables between your setup dialogs and your script. Capture and submit business intelligence directly within your (un)installation wizard pages, without risking a click-away on external sites.
- In addition to runtime setup customization in your script, use Compiler Variables to conditionally include/exclude files and conditionally compile installation commands/logic at build time.
- Multiple upstream entry points help you take any existing Windows installation project you may
 have in InstallAware for Windows, and recompile it for Linux and macOS in a single click; or
 similarly take any existing installation package, be it on Linux, macOS, or Windows even if you
 don't have the sources of the original package in question and produce a ready-to-build, crossplatform installation project for it in InstallAware Multi Platform.
- Code produced by InstallAware Multi Platform avoids excessive use of platform specific conditionals, and is very easy to read and maintain even for non-developers.



InstallAware Multi Platform Two-Way Integrated IDE

InstallAware Multi Platform is the fastest way to deliver scalable, reliable, and trusted cross-platform installers with rich UIs that run literally on every Desktop. The two-way integrated IDE dramatically reduces coding time. The Visual tab rapidly prototypes your setup, while the IDE seamlessly emits code for you the background. Switch to the Code tab any time, and inject custom code exactly where needed.

The visual and scripting parts of Install Aware projects are NOT disjoint, separate entities. Unlike other installation tools, the script drives the entirety of your installation, has no hard-coded elements (including dialogs), and is automatically emitted for you by the IDE as you use the graphical designers. 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 features, files, and other elements that comprise your installation. It is maintained seamlessly by the IDE in visual designer mode.





What Types of Setups are Created with InstallAware?

Mission-critical enterprise installs to complex desktop applications; repackaged, virtualized, or combined suite installations; driver installers, software development tools, and games; and OEM, web, and database applications. Some hit commercial games like Crysis and compilers like Delphi, vertical software such as Native Instruments' Traktor, and OEM setups by Sony and BestBuy have been built using InstallAware.

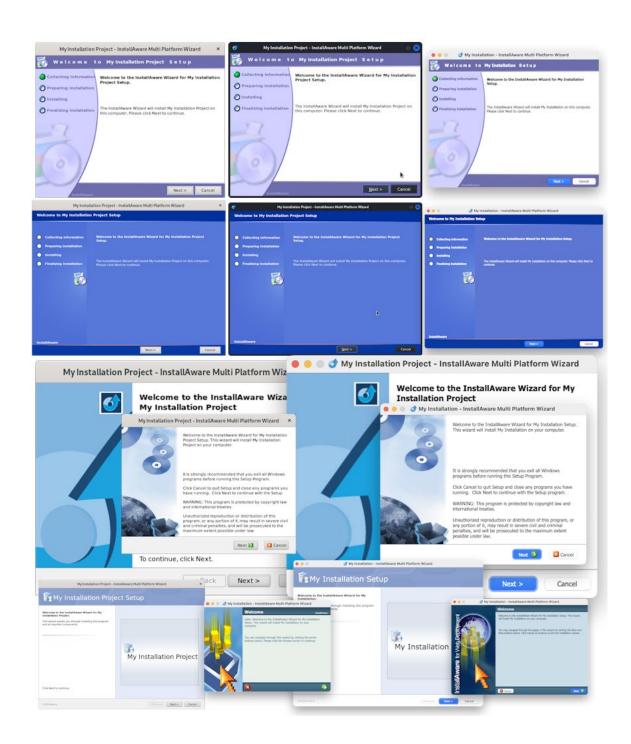
InstallAware Multi Platform unlocks the potential of the developer's imagination and allows them to focus on the solution without having to worry about the underlying confines and limitations of a particular deployment platform or operating system. InstallAware saves developers countless hours of platform-locked training, and especially the frustration of having to work around the straitjacket package authoring experience that is so very often found to be extremely constricting in many environments.

The Mixed Mode Setup Engine in InstallAware Multi Platform exponentially increases the runtime capabilities of Linux setups, completely side-stepping all limitations of a particular distribution or package manager – the days of incompatible DEB vs. RPM packages are long gone. A developer could do a setup capture on any DEB or RPM package using the included PackageAware Multi Platform, build it as a native code Mixed Mode native installer, and run that on literally any Linux distribution for a successful delivery.

Since InstallAware Multi Platform generates standalone, native code executables, without large or cumbersome runtime dependencies like Java or .NET, or packaging engine dependencies such as APT or YUM; InstallAware Multi Platform setups always do work everywhere, out of the box, making sure your relationship with your customers starts off on the right footing – and helping your actual product shine.

Just as in its Windows brethren, InstallAware Multi Platform features built-in uninstallation support, too. This helps Linux and macOS enjoy a convenience PC users have had for three decades and counting – the possibility to cleanly uninstall applications, as intended by the original setup author. Of course, while it takes a single script command to roll back all changes done to the target system by the setup engine, the uninstall process is also fully customizable and may be extended in any manner required – including the user interface, the gathering of analytics, running custom script commands, and the like. Moreover, default InstallAware Multi Platform samples and templates also include code which creates maintenance tools for applications that are managed by InstallAware Multi Platform. These maintenance tools repair applications in the event of user error, or change the installed feature sets of applications – adding or removing product components – all without any manual coding required.







Setup Development

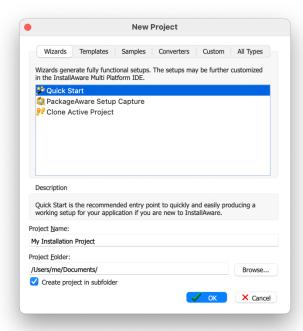
After installing InstallAware, you will have the opportunity to decide what type of development you want to do:

- Application repackaging based on system snapshots
- Project upgrades from Windows
- An empty setup with a fully fleshed out script implementing support for multiple features, installation, maintenance (adding/removing features after the initial installation), repair, and uninstallation operations out-of-the-box
- Highly custom projects (which don't even technically need to be setups at all) started with a completely empty script
- User mode setups that run without requiring elevation
- Setups that run with administrator rights only, and with automatic, formal password requests conforming to the underlying operating system's native elevation routines
- Setups that use the InstallAware Mixed Mode Setup Engine
- Setups successfully delivering payloads to all Linux operating systems of a given CPU architecture from a single binary
- Web update clients
- Obtaining end-user feedback, collecting and submitting business intelligence
- Validating serial numbers (both offline and online), generating serial keys from the same setup project conditionally compiled as a key generator instead of an installation
- Localized setups
- Setups which optionally download features from the Internet while NOT mandating an Internet connection for basic installations (those that do not access online components)
- Setups dynamically defining and deleting setup features at runtime, directly on end-user machines
- Calling any system program with any number of command line parameters
- Bootstrappers which seamlessly install third party application frameworks and runtimes
- Checking for and removing old product versions, including those installed without InstallAware
- Directly downloading (and running) any number of packages or files from the Internet
- Checking for and installing technology frameworks, runtimes, and database/web servers
- Delivering dynamically sourced offers with your applications
- Templates featuring your organization's user experience design ethos, and implementing your standard installation actions
- And many others



Projects in InstallAware Multi Platform

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



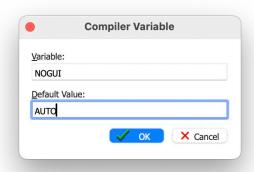
This can be accomplished by clicking the *New Project* button on the IDE toolbar. This is the setup solution gallery and it displays all of the different types of solutions that can be created.

- 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** Install**Aware** projects which can be fleshed out in the IDE, including empty, default, and single click installations; as well as highly custom applications such as media Autorun apps.
- Samples Various sample projects illustrating useful InstallAware programming concepts, such
 as the Apple Game Porting Toolkit Installer (also running Windows apps on macOS through
 Wine).
- Converters Open any InstallAware for Windows project, adapting it to a cross-platform
 installation by way of automatically adjusting script command parameters in conformity with
 updated InstallAware Multi Platform programming standards.
- Custom Promote any existing InstallAware Multi Platform 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.

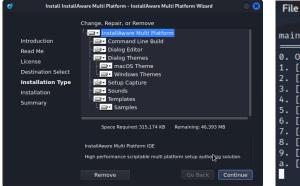


Mixed Mode Setups in InstallAware Multi Platform

You will be pleased to know that in InstallAware Multi Platform, mixed mode setups are enabled by default in Linux builds. The value of the #NOGUI# compiler variable determines whether setups are built in Console mode (TRUE), GUI mode (FALSE – the default value for macOS and Windows), or mixed mode (AUTO – the default value for Linux):



Remember, you will not need to do anything extra to build or run your setups in Console mode. InstallAware Multi Platform takes care of everything, including properly displaying all your custom dialogs in your chosen renderer, and ensuring the execution integrity of your installation script.



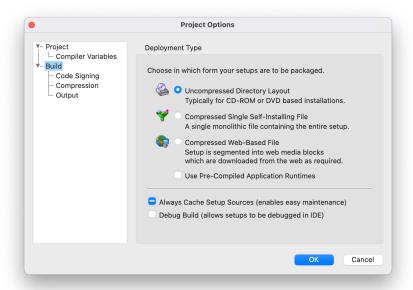


Please see the help file topics *Pre-Defined Compiler Variables* and *Pre-Defined Variables* for many additional build time and runtime tweaks that can be applied to your setups for increasing performance and reliability. Remember, nothing is hard-coded in InstallAware!



Deploying Setups

Install**Aware** offers a variety of build modes for your existing projects, all based on the same, single, unitary setup sources. These settings are accessible in the *Project Options* window.



- Uncompressed Directory Layout is the fastest build option, and ideal to use while you are
 developing 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 on other media capable of hosting
 multiple folders.
- Compressed Single Self-Installing File takes the uncompressed output and packs it all inside a
 single, self-extracting executable, or in the case of macOS, a DMG image. This is ideal when a
 single monolithic file is required. All files are compressed using the chosen compression
 algorithm.
- Compressed Web Based File is ideal for online distribution. The output is a compressed self-extracting executable (or DMG), as well as several 7ZIP files which are the Web Media Blocks containing your optional setup features. Unlike other web deployment schemes, these 7ZIP files are not mandatory and would be downloaded only if they have been selected by the end-user (and are not already found on disk). You get to precisely choose which source files are placed inside Web Media Blocks, and which go inside the self-extracting "offline" setup executable/DMG.
- Always Cache Setup Sources is a great option to check when your users may be wanting to add
 more features to their installed products in the future, and run the risk of misplacing their original
 setup downloads (the self-extracting executables and/or DMGs) containing your data bits.



Additional Advanced Tools in Install Aware

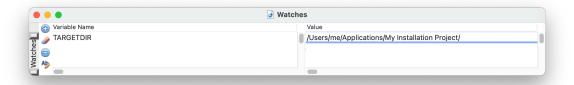
InstallAware Multi Platform includes many features beyond those covered in this Reviewer's Guide. There are a few that deserve special mention, just to remind you, the reviewer, of the power of these tools and the value they add to the InstallAware setup authoring environment.

• Command Line Builds – Indispensable for build automation, you may also easily pass command line parameters to change default build settings, override compiler variable values, and so forth.

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```

As with the rest of your development stack, the command line build tool is also native code, implemented in the native CPU architecture of the edition of InstallAware Multi Platform you installed, delivering the highest performance and reliability.

Integrated Debugger – InstallAware Multi Platform lets you step through your code line-by-line
directly in the IDE, viewing/changing variable values, setting breakpoints, resetting execution, etc.





• Dialog Designer – Just as nothing has been hard-coded in InstallAware, your setup dialogs too are fully editable and customizable. While InstallAware Multi Platform ships with many pre-built themes and includes 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.

With InstallAware Multi Platform, you may even load dialog bitmaps programmatically at runtime to re-brand your installation on end-user systems, without rebuilding your packages!

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 clickaway.



 PackageAware – Also unique in InstallAware Multi Platform is the industry's only crossplatform setup capture utility. PackageAware Multi Platform performs snapshot-based system scans, comparing two system snapshots to obtain the delta of any type of system modification.





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:

Scripting:

www.installaware.com/msicode scripting technology.pdf

Web Deployment (Web Media Blocks):

www.installaware.com/webaware installation technology.pdf

Web Updates:

www.installaware.com/installaware web updates.pdf

Frequently Asked Questions:

www.installaware.com/installaware faq.ppt

Community Forums:

www.installaware.com/forum/

Procurement:

www.installaware.com/buyx.asp

InstallAware Blog:

www.installaware.com/blog/



About InstallAware Software

InstallAware Software, founded in 2003, the leader in software installation, repackaging, and virtualization solutions for application developers and enterprises; now supports Linux and macOS targets as first-class citizens, in addition to Windows. InstallAware has been recognized by multiple awards coming from Microsoft, SDTimes "Leader of the Software Development Industry", Visual Studio Magazine Reader's Choice, ComponentSource, and WindowsITPro, among other recognition. InstallAware Multi Platform is available in a free edition for all open source developers, and in paid editions with prices starting at \$1,799. For a fully functional 14-day trial and more information, visit www.installaware.com/installaware-multi-platform.htm.

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