



# AdminStudio 2016 SP2 Release Notes

1 August 2017

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# Introduction

AdminStudio Suite powers an enterprise's daily Application Readiness process for packaging, and compatibility testing of physical, virtual, and mobile applications, ensuring faster service delivery and predictable deployment.

AdminStudio's automation, integration with leading software distribution tools, and workflow capabilities help companies streamline day-to-day application packaging operations and reduce the time and cost of application virtualization, Windows migrations, and mobile application deployment.

Trusted by more than 10,000 organizations, AdminStudio Suite eliminates the need for multiple standalone tools and provides an integrated solution that is adaptive and scalable to changing business priorities. AdminStudio provides enterprise IT teams the most advanced solution to efficiently prepare reliable application packages for deployment with a complete suite of automated MSI packaging, customization, testing, and reporting capabilities.

## New Features in AdminStudio 2016 SP2

This section lists the new features that are included in AdminStudio 2016 SP2:

- [Support for PowerShell Wrapped Packages](#)
- [Support for Additional Types of Complex Installer Executables](#)
- [Java Detection Tests and Java Dependency Reports for Desktop Applications](#)
- [Best Practices and Risk Assessment Tests Split into Two Categories](#)
- [New Windows Server 2016 Compatibility Tests in Test Center](#)
- [Support for System Center Configuration Manager \(Current Branch\)](#)
- [Ability to Add Destination Group During System Center Configuration Manager Distribution](#)
- [Ability to Select Connection on Microsoft Configuration Manager Deployments Report](#)
- [Ability to Set Temporary Directory Location](#)
- [InstallShield 2016 SP2](#)

# Support for PowerShell Wrapped Packages

AdminStudio 2016 SP2 provides full support for PowerShell-wrapped packages, including converting Windows Installer packages (.msi) and complex installation packages (.exe) to PowerShell wrapped packages (PowerShell script .ps1 files) using the PowerShell App Deployment Toolkit.

PowerShell is a task automation and configuration management framework from Microsoft. The PowerShell App Deployment Toolkit provides a set of functions to perform common application deployment tasks and to interact with the user during a deployment. By wrapping an existing Windows Installer or complex installation package in a PowerShell script, you are able to automatically perform deployment tasks both before and after installation.

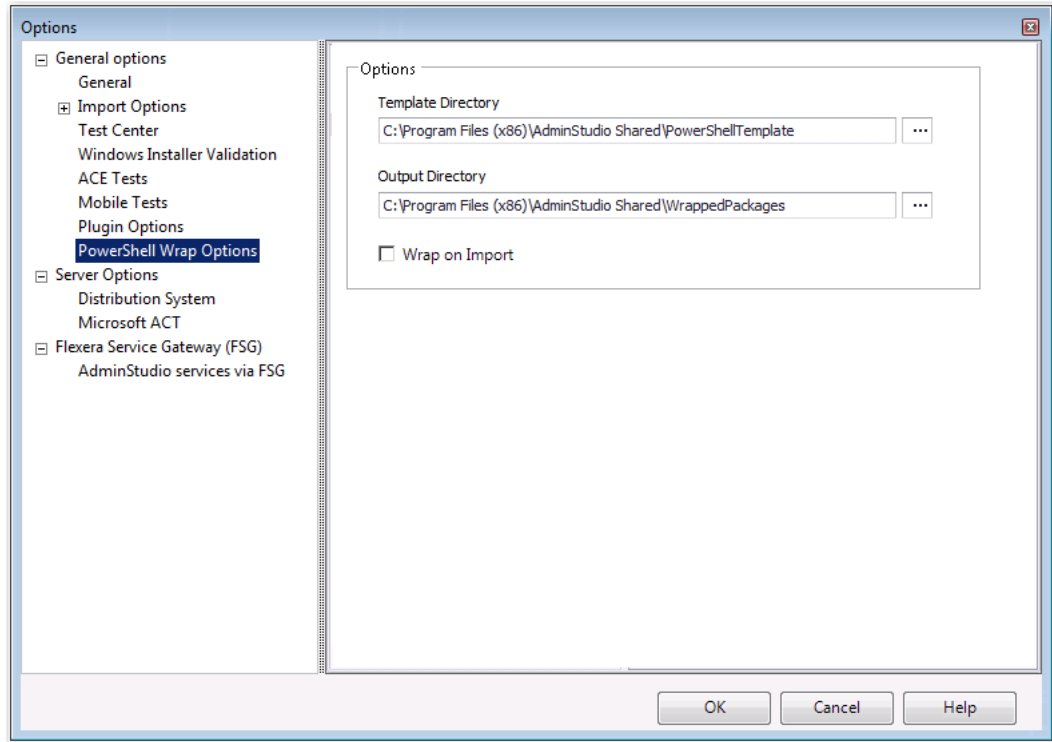
AdminStudio 2016 SP2 also supports importing existing PowerShell-wrapped packages into the Application Catalog, testing a PowerShell-wrapped package's bundled child packages using Test Center, testing PowerShell-wrapped packages on a virtual machine, and distributing PowerShell wrapped packages using Distribution Wizard. You can also convert a PowerShell-wrapped package to a virtual package using Automated Application Converter or the Conversion Wizard.

Information about AdminStudio 2016 SP2's support for PowerShell-wrapped packages is organized in the following topics:

- [Setting PowerShell Wrap Options](#)
- [PowerShell Script Template File](#)
- [Wrapping a Windows Installer \(.msi\) or Installer Executable \(.exe\)](#)
- [Importing PowerShell Wrapped Packages](#)
- [Viewing a Power Shell Wrapped Package's Bundled Child Applications](#)
- [Testing PowerShell Wrapped Packages](#)
- [PowerShell Wrapped Packages Report](#)
- [Distributing PowerShell Wrapped Packages](#)
- [Virtualizing PowerShell Wrapped Packages](#)
- [Testing PowerShell Wrapped Packages on a Virtual Machine](#)
- [Customizing the PowerShell Installer](#)
- [Editing a PowerShell-Wrapped Package](#)
- [API Support for Performing PowerShell Wrapping: Invoke-ASPowerShellWrap](#)

## Setting PowerShell Wrap Options

On a new tab of the Application Manager **Options** dialog box, **PowerShell Wrap Options**, you can specify the location of the PowerShell template, the output directory for PowerShell wrapped packages, and set an option to automatically wrap a package during import.



**Figure 1:** PowerShell Wrap Options Tab of Options Dialog Box

The **PowerShell Wrap Options** tab includes the following properties:

Option	Description
<b>Template Directory</b>	<p>Specify the location of the template that you want to use to create PowerShell script files. A default template, <code>Deploy-Application.ps1</code>, along with other necessary files are provided in the following location:</p> <p>C:\Program Files (x86)\AdminStudio Shared\PowerShellTemplate\</p> <p>You can click the browse button and select a different directory. For more information, see <a href="#">PowerShell Script Template File</a>.</p>
<b>Output Directory</b>	<p>Specify the location where the PowerShell-wrapped packages that you create using AdminStudio will be stored. By default, the location is:</p> <p>C:\Program Files (x86)\AdminStudio Shared\WrappedPackages\</p> <p>You can click the browse button and select a different directory.</p>

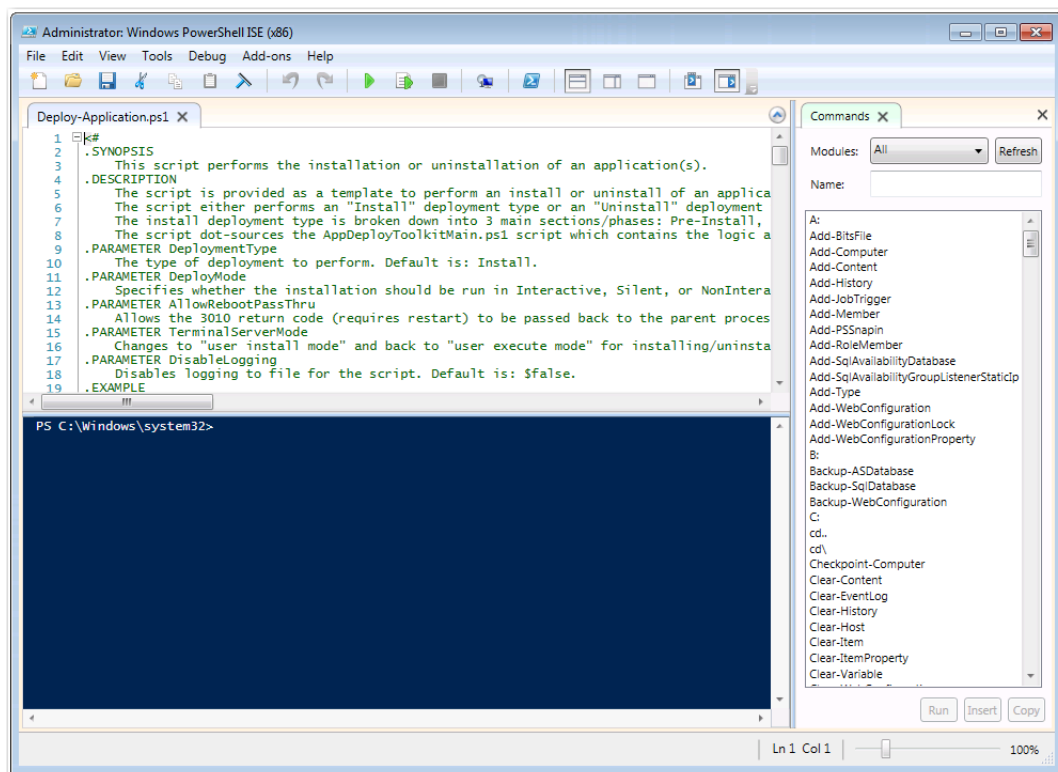
Option	Description
<b>Wrap on Import</b>	Select this option if you want to automatically convert Windows Installer packages (.msi) and complex installation packages (.exe) to PowerShell wrapped packages (PowerShell script .ps1 files) upon import into the Application Catalog. By default, this option is not selected.

## PowerShell Script Template File

A PowerShell script template file, Deploy-Application.ps1, is provided in the following location:

C:\Program Files (x86)\AdminStudio Shared\PowerShellTemplate\

You can customize this script to meet your deployment requirements by editing it in the Windows PowerShell ISE application.



**Figure 2:** PowerShell Script Template File, Deploy-Application.ps1, in Windows PowerShell ISE

This script is provided as a template to perform an install or uninstall of an application(s). The script either performs an "install" deployment type or an "uninstall" deployment type. The install deployment type is broken down into three main sections: Pre-Install, Install, and Post-Install. The script refers to the AppDeployToolkitMain.ps1 script which contains the logic and functions required to install or uninstall an application.

## Contents of the PowerShellTemplate Directory

In addition to the `Deploy-Application.ps1` template file, the `PowerShellTemplate` directory also includes these additional files:

File	Description
Deploy-Application.exe Deploy-Application.exe.config	Executable that invokes a PowerShell script.
Deploy-Application.ps1	PowerShell script template file which is modified by the PowerShell Package Wrap Wizard to contain the actual install logic for the specific package, including: <ul style="list-style-type: none"> <li>• Installer Path</li> <li>• Name</li> <li>• Version</li> <li>• Manufacturer</li> <li>• Language</li> <li>• Install Command Line</li> <li>• Uninstall Command Line</li> </ul>
AppDeployToolkit\AppDeployToolkitBanner.png	Banner image which can be customized to brand the PowerShell installer.
AppDeployToolkit\AppDeployToolkitLogo.ico	Image used when the PowerShell installer runs.
AppDeployToolkit\AppDeployToolkitConfig.xml	Contains configurable preferences for how the toolkit behaves, including language settings.
AppDeployToolkit\AppDeployToolkitExtensions.ps1	Script containing your extensions for the framework.
AppDeployToolkit\AppDeployToolkitMain.ps1	Main script with all functions.
AppDeployToolkit\AppDeployToolkitHelp.ps1	Help file explaining the functions.
AppDeployToolkit\AppDeployToolkitMain.cs	Additional functions.



## Rules for a Custom PowerShell Template

If you are creating a custom PowerShell template file, observe the following rules:

- **Do not rename Deploy-Application.ps1**—The Deploy-Application.exe application looks for a file named Deploy-Application.ps1. Therefore, if the .ps1 file name is changed to the package name or anything else, the install/uninstallation will fail.
- **Deploy-Application.ps1 must be in the root folder**—The Deploy-Application.exe application expects the Deploy-Application.ps1 file to be present in the root folder level, the same folder that contains the Deploy-Application.exe file.
- **Installer package must be in the Files folder**—The installer package (.msi or .exe) must be in the Files folder.
- **AppDeployToolkit must be in the root folder**—The AppDeployToolkit folder (along with all of its contents) must be in the root folder.




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**Note** • Installation/uninstallation is not obstructed if the Deploy-Application.exe.config file is not present in the parent folder level or is even deleted.




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**Note** • The \$dirFiles variable includes the path to the installer package. If you change the value of this variable, installation will fail.

## Wrapping a Windows Installer (.msi) or Installer Executable (.exe)

In AdminStudio 2016 SP2, you can convert a Windows Installer (.msi) or complex installation package (.exe) to a PowerShell wrapped package (PowerShell script .ps1 file) by selecting it in the Application Manager tree and selecting **Wrap package**.

By wrapping an existing Windows Installer or complex installation package in a PowerShell script, you are able to launch additional deployment tasks via the PowerShell script both before and after installation. The advantages of using PowerShell wrapping instead of repackaging or transforms to modify an installer include:

- **Package is not modified**—The original package is not modified.
- **Consistent UI experience**—You can provide a consistent UI experience to your users for all of your organization's installers.
- **Powerful PowerShell functionality**—The PowerShell scripting language provides a more powerful set of functionality than can be provided using transforms.

You can convert the following deployment types into a PowerShell wrapped package:

- Windows Installer packages (.msi)
- InstallShield InstallScript .exe files
- InstallShield Basic MSI installers that are compressed into a setup.exe file
- InstallShield Suite Installer .exe files
- Wise Package Studio .exe files
- Other executable file types that can be uncompressed by 7-ZIP

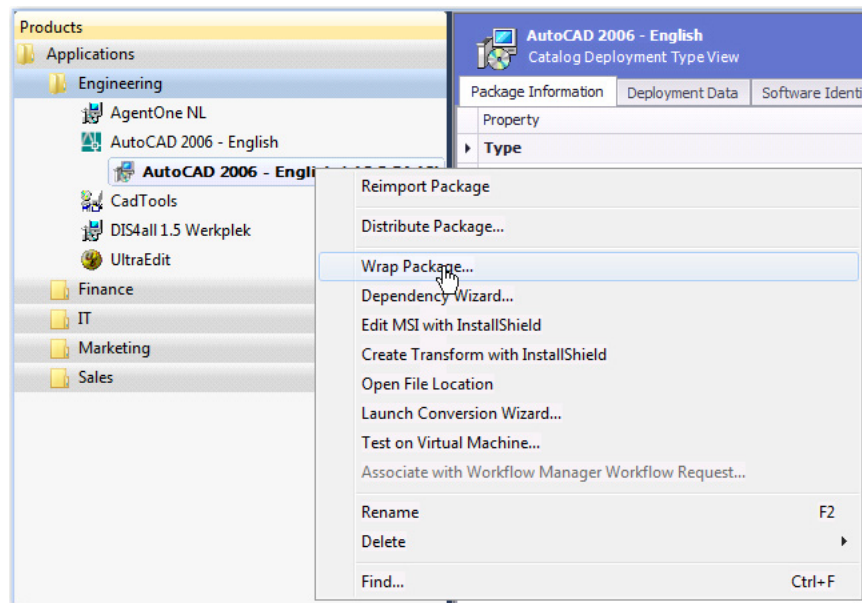
To convert a Windows Installer (.msi) or installation package (.exe) to a PowerShell-wrapped package, perform the following steps.



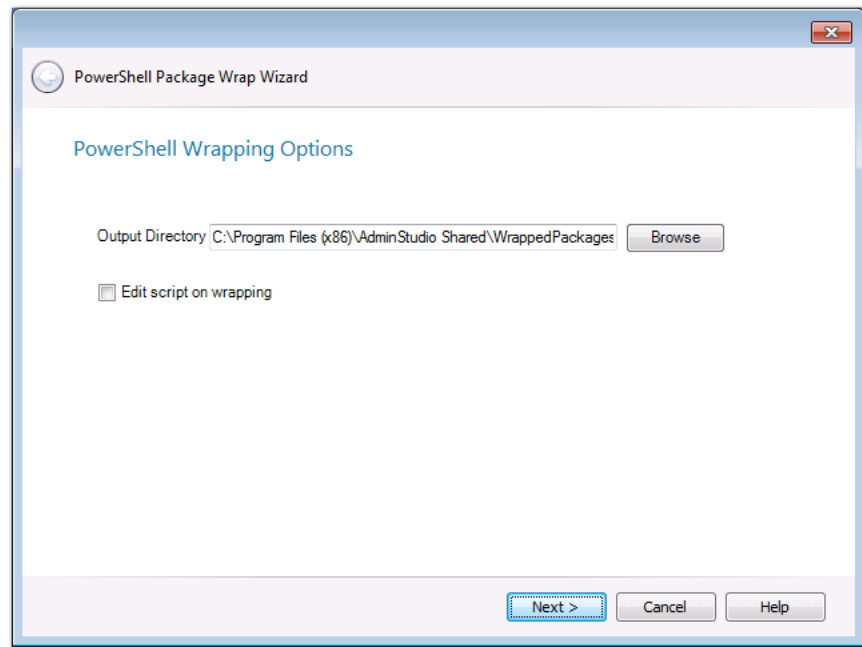
#### Task

#### **To convert a Windows Installer (.msi) or installation package (.exe) to a PowerShell wrapped package (.ps1):**

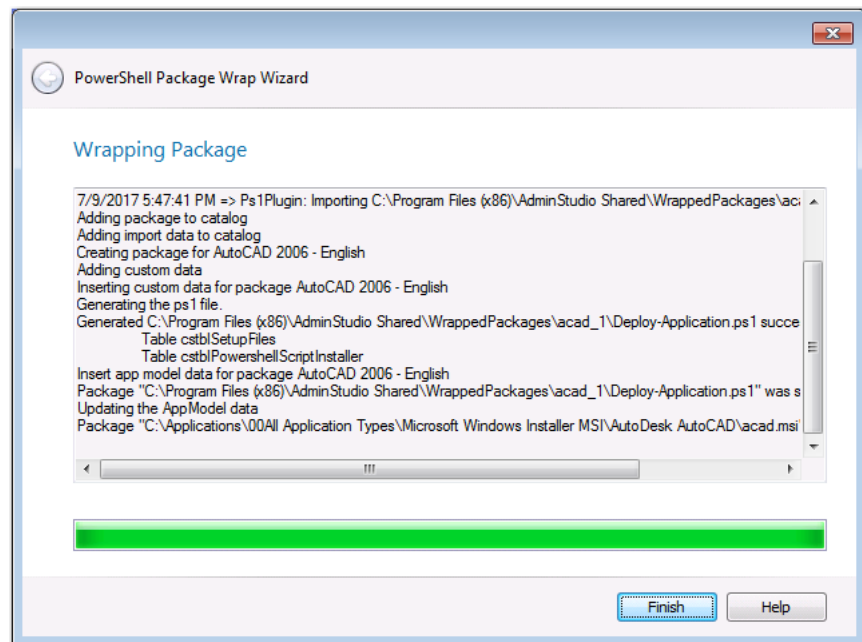
1. Select the Windows Installer (.msi) or installation package (.exe) package in the Application Manager tree and select **Wrap Package** from the context menu.



The **PowerShell Package Wrap Wizard** opens.

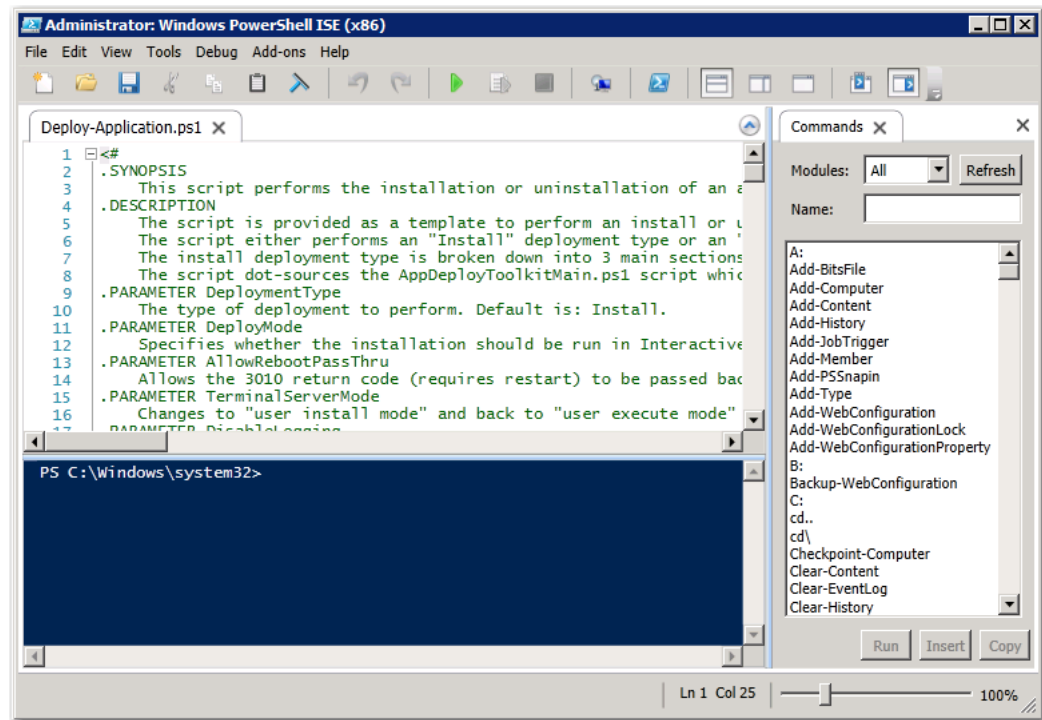


2. Specify the **Output Directory**, the location where the PowerShell-wrapped package will be stored.
3. If you want to edit the default PowerShell script file in Windows PowerShell ISE after the package has been wrapped, select **Edit script on wrapping** option.
4. Click **Next**. The **Wrapping Package** panel opens and wrapping is initiated. When the process is complete, confirmation messages are listed.

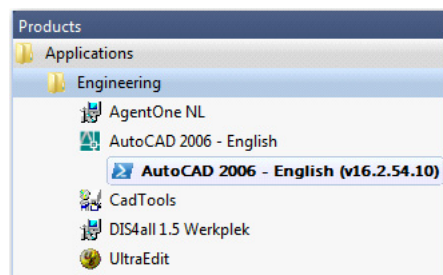


5. Click **Finish** to close the wizard.

If you selected the **Edit script on wrapping** option, the Windows PowerShell ISE application opens and you are prompted to edit the PowerShell script file that you just created.



6. Make any desired changes and save the script file.
7. In the Application Manager tree, view the package you just wrapped. You will see that the .msi or .exe deployment type icon for this package has been replaced with a PowerShell deployment type icon.



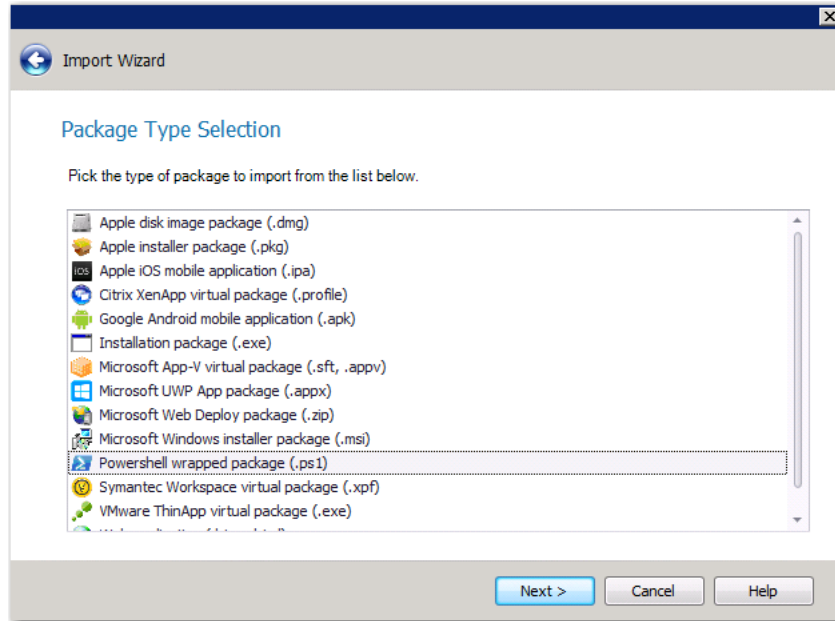
**Important** • All of the OS compatibility, application virtualization compatibility and best practices ICE tests results that were generated by testing the package before it was wrapped are carried over and are viewable on **Test Center** tab when you select its new PowerShell deployment type icon.



**Note** • Log files for the PowerShell Package Wrap Wizard can be found at:  
C:\Windows\Logs\Software.

## Importing PowerShell Wrapped Packages

In AdminStudio 2016 SP2, you can import existing PowerShell wrapped packages into the Application Catalog. The **Package Type Selection** panel of the **Import Wizard** now has a new selection type: **PowerShell wrapped package (.ps1)**.



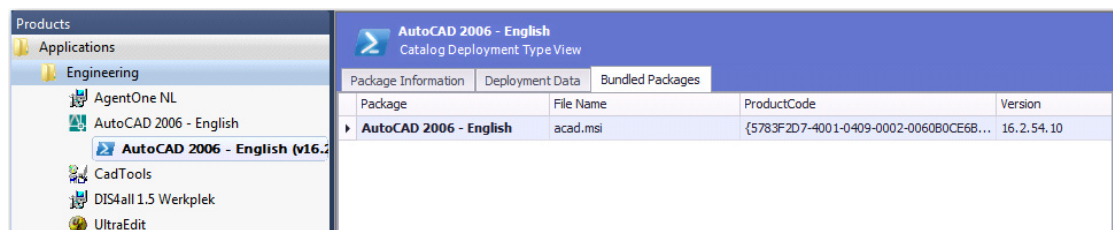
**Figure 3:** PowerShell Wrapped Package (.ps1) Option on Package Type Selection Panel of Import Wizard



**Note** • Also, if the **Wrap on Import** option is selected on the **PowerShell Wrap Options** tab of the **Options** dialog box, Windows Installer packages (.msi) and installation packages (.exe) packages will automatically be wrapped (converted to PowerShell script files) during import.

## Viewing a Power Shell Wrapped Package's Bundled Child Applications

You can view the child packages that are bundled within a PowerShell script file on the **Bundled Packages** tab of the **Catalog Deployment Type** view.



**Figure 4:** Displaying Child Packages of PowerShell Script File on Bundled Packages Tab

## Testing PowerShell Wrapped Packages

Using Test Center, you can perform OS compatibility, application virtualization compatibility, and best practices testing of the child .msi and .exe packages that are bundled in a PowerShell script file.

Products

Applications

Engineering

AgentOne NL

AutoCAD 2006 - English

AutoCAD 2006 - English (v16.2)

CadTools

DIS4all 1.5 Werkplek

UltraEdit

Finance

IT

Marketing

Sales

AutoCAD 2006 - English

Test Center Deployment Type View

Summary

Operating System Compatibility

Application Virtualization Compatibility

Best Practices

Test Category

Executed

Errors

Warnings

Auto Fix Available

Issues Suppressed

Overall Assessment

Operating System Compatibility

Windows 10 32-bit

Windows 8.1 32-bit

Windows 7 32-bit

Windows 10 64-bit

Windows 8.1 64-bit

Windows 7 64-bit

Windows Server 2016

Windows Server 2012

Windows Server 2008 R2

Application Virtualization Compatibility

Microsoft App-V 4.x

Microsoft App-V 5.x

VMware ThinApp 4.x

VMware ThinApp 5.x

Citrix XenApp Profile

Symantec Workspace Virtualization

Best Practices

Windows Installer Internal Consistency Evaluators

Risk Assessment

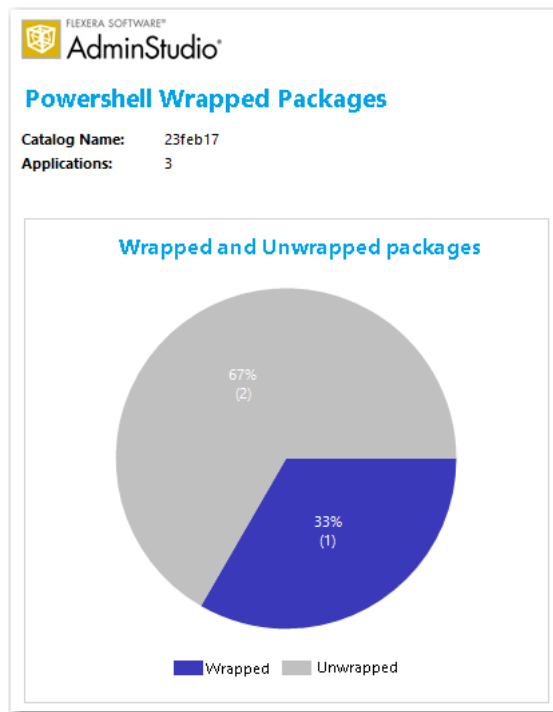
Windows Desktop Risk Assessment

**Figure 5:** Test Results for a PowerShell Wrapped Package

To test a PowerShell-wrapped package, open the **Test Center** tab, select the application or package in the Application Manager tree, and click **Execute Tests**.

## PowerShell Wrapped Packages Report

In AdminStudio 2016 SP2, new tests have been added to Report Center for the PowerShell-wrapped packages deployment type.



**Figure 6:** PowerShell Wrapped Packages Summary Report

When you click on one of the sections of the pie chart, a detailed report opens listing packages in that category.

The figure is a screenshot of the 'Unwrapped Packages' detail report. It displays a table with three columns: Product Name, Product Version, and Manufacturer. The table lists two packages: 'InstallsJava' (version 1.5, manufacturer My Company, Inc.) and 'InstallAnywhere' (version 18, 0, 0, 0, manufacturer Flexera Software).

Product Name	Product Version	Manufacturer
InstallsJava	1.5	My Company, Inc.
InstallAnywhere	18, 0, 0, 0	Flexera Software

**Figure 7:** PowerShell Wrapped Package Detail Report

## Distributing PowerShell Wrapped Packages

You can distribute PowerShell-wrapped packages to System Center Configuration Manager and Symantec Altiris Client Management Suite using the Distribution Wizard.

Select the application containing the PowerShell-wrapped package deployment type, and then click the **Distribute** button in the toolbar to open the Distribution Wizard, and proceed with distribution.

For more information, see [Distributing Applications Using the Distribution Wizard](#).

## Virtualizing PowerShell Wrapped Packages

In AdminStudio 2016 SP2, you can convert a PowerShell-wrapped package to a virtual package using the Conversion Wizard.

For more information, see [Using the Conversion Wizard](#).

## Testing PowerShell Wrapped Packages on a Virtual Machine

You can test the installation of a PowerShell wrapped package on a virtual machine using the **Test on Virtual Machine Wizard**. This wizard uses the capability of the Automated Application Converter tool to spin up the selected virtual machine and install the selected package.

For more information, see [Using Test on Virtual Machine Wizard](#).

## Customizing the PowerShell Installer

You can customize the banner image that is displayed in the PowerShell installer and the post-installation messages that are displayed.

- [Customizing the PowerShell Installer Banner Image](#)
- [Customizing Post-Installation Text Messages](#)

### Customizing the PowerShell Installer Banner Image

When AdminStudio converts a package to a PowerShell-wrapped package, the following image file is displayed at a banner at the top of the installer:

`\AdminStudio Shared\PowerShellTemplate\AppDeployToolkit\AppDeployToolkitBanner.png`

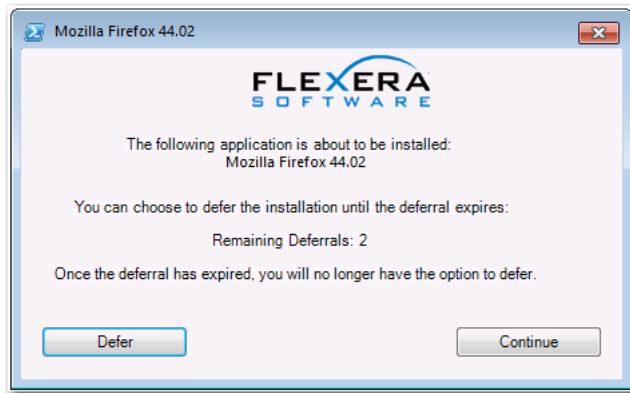
This image, by default, is the Flexera Software logo.



**Figure 8:** PowerShell Installer Default Banner

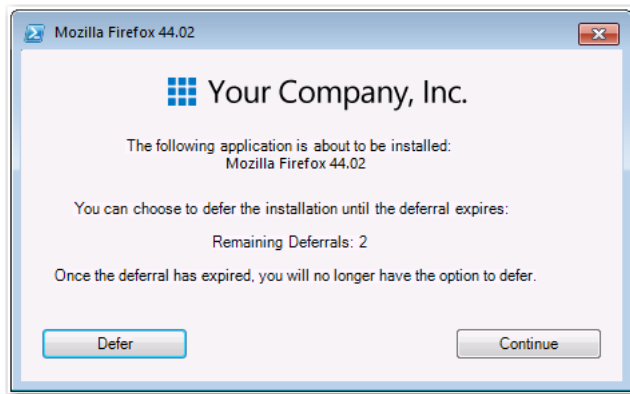


When this image is displayed in the PowerShell installer, it looks like this:



**Figure 9:** Banner Displayed in PowerShell Installer

You can customize this banner by replacing the content of the `AppDeployToolkitBanner.png` file.



**Figure 10:** PowerShell Installer with Customized Banner

## Customizing Post-Installation Text Messages

You can customize the post-installation messages that are displayed in the PowerShell installer by editing the `Show-InstallationPrompt -Message` value in the `Deploy-Application.ps1` file. By default, the message is: Thank you for using Flexera Software!.

```
##*=====
##* POST-INSTALLATION
##*=====
[string]$installPhase = 'Post-Installation'

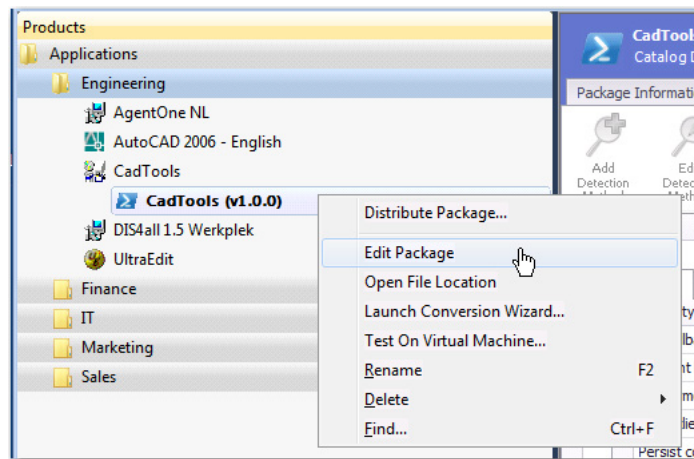
## <Perform Post-Installation tasks here>

## Display a message at the end of the install
If (-not $useDefaultMsi) { Show-InstallationPrompt -Message 'Thank you for using Flexera
Software!' -ButtonRightText 'OK' -Icon Information -Nowait }
```

## Editing a PowerShell-Wrapped Package

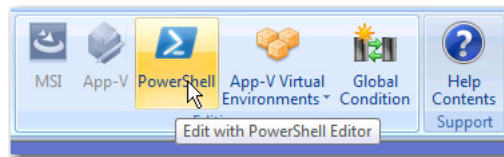
You can edit the PowerShell-wrapped package script (.ps1 file) using the Windows PowerShell ISE application. If you selected the **Edit script on wrapping** option on the **PowerShell Wrapping Options** panel of the **PowerShell Package Wrap Wizard**, the script file opens in the Windows PowerShell ISE application immediately after you close the wizard.

You can also edit the .ps1 file by right-clicking on the PowerShell-wrapped package node in the Application Manager tree, and then clicking **Edit Package** on the menu.



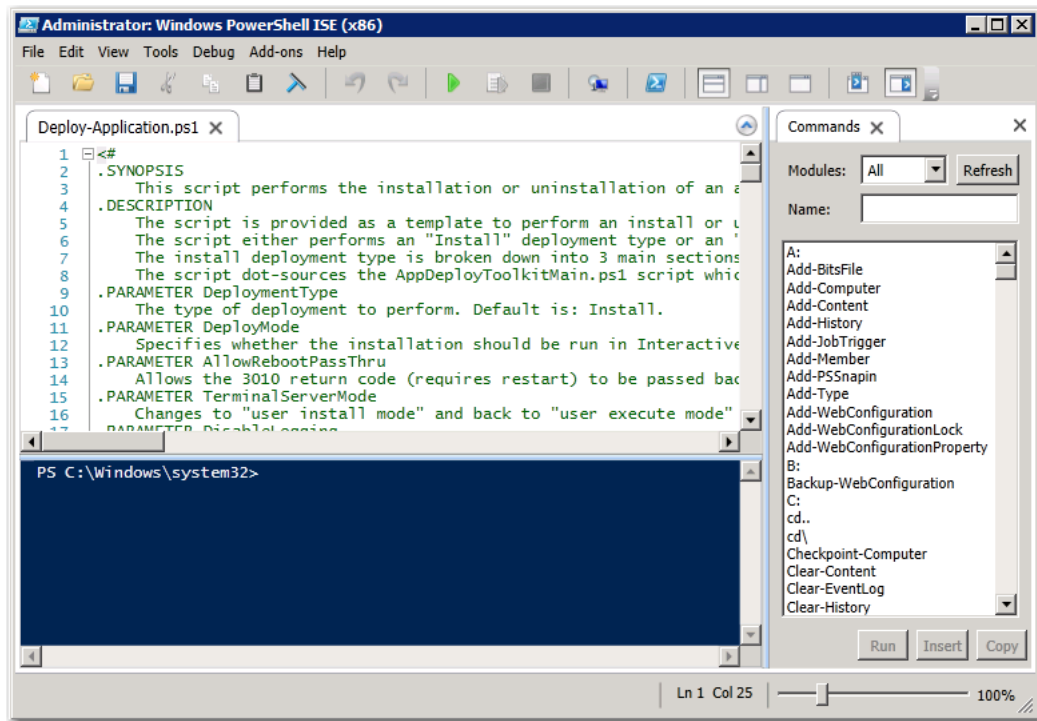
**Figure 11:** Editing a PowerShell-Wrapped Package

You can also launch the PowerShell editor by clicking the **Edit with PowerShell Editor** button in the ribbon.



**Figure 12:** Edit with PowerShell Editor Button

Windows PowerShell ISE application opens, where you can edit the PowerShell script file.



**Figure 13:** Editing a PowerShell Script File in Windows PowerShell ISE

## API Support for Performing PowerShell Wrapping: Invoke-ASPowerShellWrap

In AdminStudio 2016 SP2, a new PowerShell API command has been added to AdminStudio to support performing PowerShell wrapping. You can use the `Invoke-ASPowerShellWrap` command to convert a Windows Installer (.msi) or installation package (.exe) to a PowerShell wrapped package file (.ps1).

The following is an example of the `Invoke-ASPowerShellWrap` command:

```
Invoke-ASPowerShellWrap -PackageId 25 -OutputDirectory "D:\WrappedPackagesFeb"
```

For more information, see [Invoke-ASPowerShellWrap](#).

# Support for Additional Types of Complex Installer Executables

As described in [Ability to Inspect and Test Complex Installer Executables](#), expanded support for complex installer executable files (which contain bundled Windows Installer packages) was introduced in AdminStudio 2016, allowing you to view the names of the bundled Windows Installer packages and to perform OS compatibility, application virtualization compatibility, and best practices testing on those bundled packages. At this time, support for the following complex installer executable types was provided:

- InstallShield InstallScript .exe files
- InstallShield Basic MSI installers that are compressed into a setup.exe file
- InstallShield Suite Installer .exe files
- Wise Package Studio .exe files
- Other executable file types that can be uncompressed by 7-ZIP

In AdminStudio 2016 SP2, enhanced identification of imported complex installer executables is provided. AdminStudio can now detect the following additional types and read information from those packages, including the following types:

- InnoSetup




---

**Note** • See [Enabling Support for InnoSetup Executables](#).

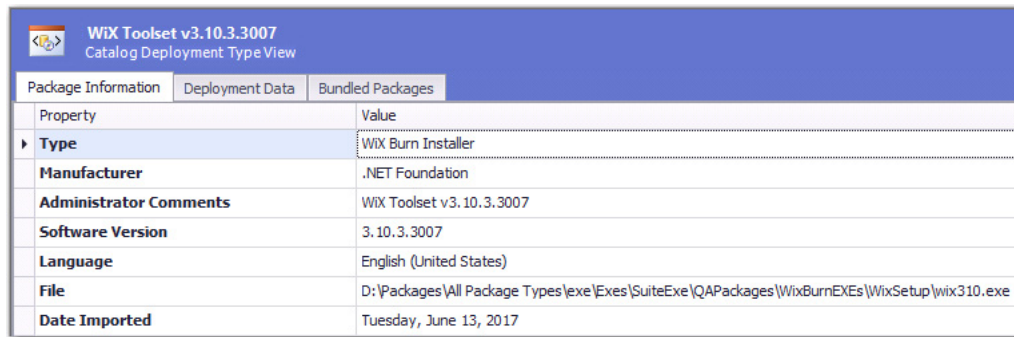
- Nullsoft
- WiseScript
- WiX Burn
- Advanced Installer
- InstallAnywhere




---

**Note** • If AdminStudio is unable to identify the .exe type of an imported package, by default it is categorized as a legacy installer.

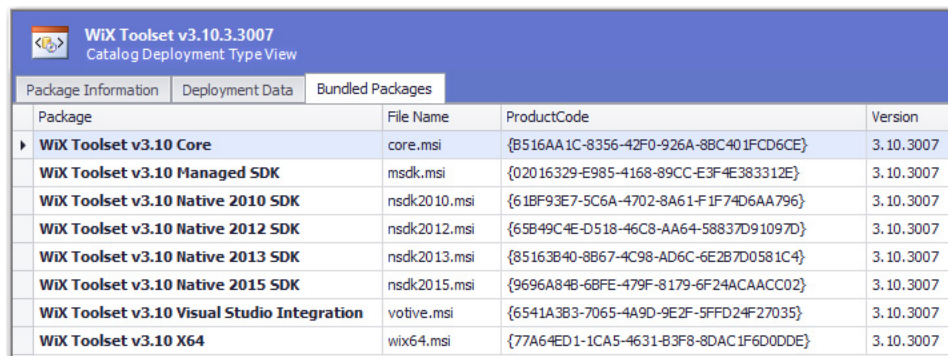
These new legacy application types are identified in the **Type** field on the **Package Information** tab of the **Catalog Deployment Type View**, identified as a **WiX Burn Installer** in the following example:



WiX Toolset v3.10.3.3007 Catalog Deployment Type View	
Package Information	Deployment Data
Property	Value
Type	WiX Burn Installer
Manufacturer	.NET Foundation
Administrator Comments	WiX Toolset v3.10.3.3007
Software Version	3.10.3.3007
Language	English (United States)
File	D:\Packages\All Package Types\exe\Exes\SuiteExe\QAPackages\WixBurnEXEs\WixSetup\wix310.exe
Date Imported	Tuesday, June 13, 2017

**Figure 14:** Legacy Installer Type on Package Information Tab of Catalog Deployment Type View

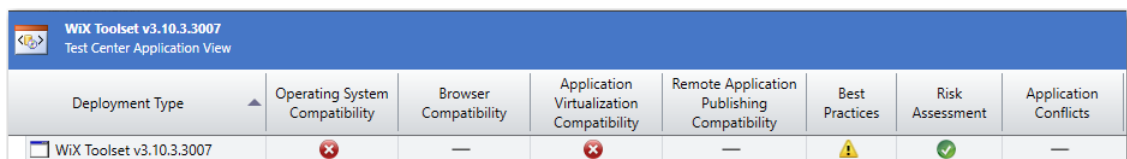
You can also view the bundled packages of these newly supported legacy application types on the **Bundled Packages** tab of the **Catalog Deployment Type View**.



WiX Toolset v3.10.3.3007 Catalog Deployment Type View				
Package Information	Deployment Data	Bundled Packages		
Package	File Name	ProductCode	Version	
WiX Toolset v3.10 Core	core.msi	{B516AA1C-8356-42F0-926A-8BC401FCD6CE}	3.10.3007	
WiX Toolset v3.10 Managed SDK	msdk.msi	{02016329-E985-4168-89CC-E3F4E383312E}	3.10.3007	
WiX Toolset v3.10 Native 2010 SDK	nsdk2010.msi	{61BF93E7-5C6A-4702-8A61-F1F74D6AA796}	3.10.3007	
WiX Toolset v3.10 Native 2012 SDK	nsdk2012.msi	{65B49C4E-D518-46C8-AA64-58837D91097D}	3.10.3007	
WiX Toolset v3.10 Native 2013 SDK	nsdk2013.msi	{85163B40-8B67-4C98-AD6C-6E2B7D0581C4}	3.10.3007	
WiX Toolset v3.10 Native 2015 SDK	nsdk2015.msi	{9696A84B-6BFE-479F-8179-6F24ACAACC02}	3.10.3007	
WiX Toolset v3.10 Visual Studio Integration	votive.msi	{6541A3B3-7065-4A9D-9E2F-5FFD24F27035}	3.10.3007	
WiX Toolset v3.10 X64	wix64.msi	{77A64ED1-1CA5-4631-83F8-8DAC1F6D0DDE}	3.10.3007	

**Figure 15:** Bundled Packages of Newly Supported Complex Executable Installer Types

You can test those bundled packages of the newly supported complex executable types in Test Center.



WiX Toolset v3.10.3.3007 Test Center Application View							
Deployment Type	Operating System Compatibility	Browser Compatibility	Application Virtualization Compatibility	Remote Application Publishing Compatibility	Best Practices	Risk Assessment	Application Conflicts
WiX Toolset v3.10.3.3007	✗	—	✗	—	⚠	✓	—

**Figure 16:** Test Results of Bundled Packages of Newly Supported Complex Executable Installer Types

## Enabling Support for InnoSetup Executables

AdminStudio 2016 SP2 supports the latest version of InnoSetup: innounp.exe (version 0.46.0.0).

In order for AdminStudio to extract child packages from InnoSetup executables, you need to perform the following steps.



### Task

#### To enable support for InnoSetup executables:

1. Download the **InnoSetup Unpacker** RAR file (innounp046.rar) from the following location:

<https://sourceforge.net/projects/innounp/files/innounp/innounp%200.46/innounp046.rar/download>

2. Uncompress the innounp046.rar file to obtain the innounp.exe file.
3. Copy the innounp.exe file to the following location on your AdminStudio machine:

C:\Program Files (x86)\AdminStudio\2016\Common\Tools

## Using Invoke-ASUpdatePackage to Extract Details on Bundled Child Packages of Imported Packages

Starting with AdminStudio 2016, when you import suite executables (.exe) that contain child packages, the child packages are automatically extracted during import and are available for testing.

However, if you are upgrading an existing Application Catalog (from releases prior to AdminStudio 2016) that already contains installers with bundled child packages, you will need to run the Invoke-ASUpdatePackage command on each of those existing installers to extract details on the child packages bundled with those installers.

The Invoke-ASUpdatePackage command is run on an existing .exe package to extract the bundled .msi details. Along with child package extraction, the Invoke-ASUpdatePackage also extracts Java dependency information and identifies the type of suite .exe.

The following is an example of the Invoke-ASUpdatePackage command:

```
Invoke-ASUpdatePackage -PackageId 2
```

For more information, see [Invoke-ASUpdatePackage](#).

# Java Detection Tests and Java Dependency Reports for Desktop Applications

AdminStudio 2016 SP2 includes new Java version dependency detection tests for desktop applications and Java dependency reports.

- [Java Detection Tests](#)
- [Java Dependency Information](#)
- [Java Runtime Environment Dependency Report](#)

## Java Detection Tests

AdminStudio 2016 SP2 includes new Java detection tests for Windows and macOS desktop applications that determine whether an application has a dependency on a Java version (required during either package installation or after package installation) that has been designated as end of life/end of support. Either an Error or Warning is generated:

- **Error**—Generated if application is dependent upon a Java version that has been designated as end-of-life/end-of-support.
- **Warning**—Generated if application depends upon a version of Java that is not the most recent version.

The new tests are:

- EOLMAC001 and EOLWIN001: Java Versions Required
- EOLMAC002 and EOLWIN002: Java Installer Versions

## Java Dependency Information

Java dependency information is extracted during package import of Windows and macOS desktop applications. You can view this Java dependency information for a package in a new table (ASCMPackageJavaSummary) viewable on the **Tables View**.



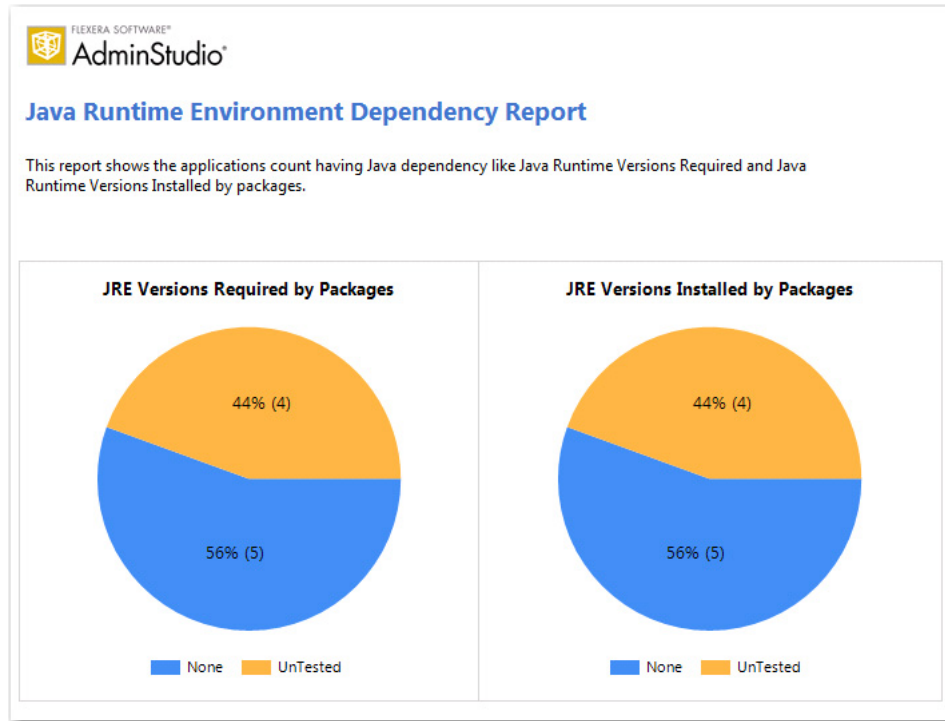
OID	PkgRowID	InstallsJava	InstallerVersions	RequiresJava	VersionsRequired	JNLPCount	JARCount	HTMCount	ClassCount	AppletTagCount	EmbedTagCount	ObjectTagCount	OptimisticLockField	GCRecord
22	39	False		False		0	0	0	0	0	0	0		

**Figure 17:** ASCMPackageJavaSummary Table

## Java Runtime Environment Dependency Report

A new Java Runtime Environment Dependency report has been introduced in AdminStudio 2016 SP2, which is opened by selecting **Dependencies > Java Runtime Dependencies** on the **Report Center** tab.

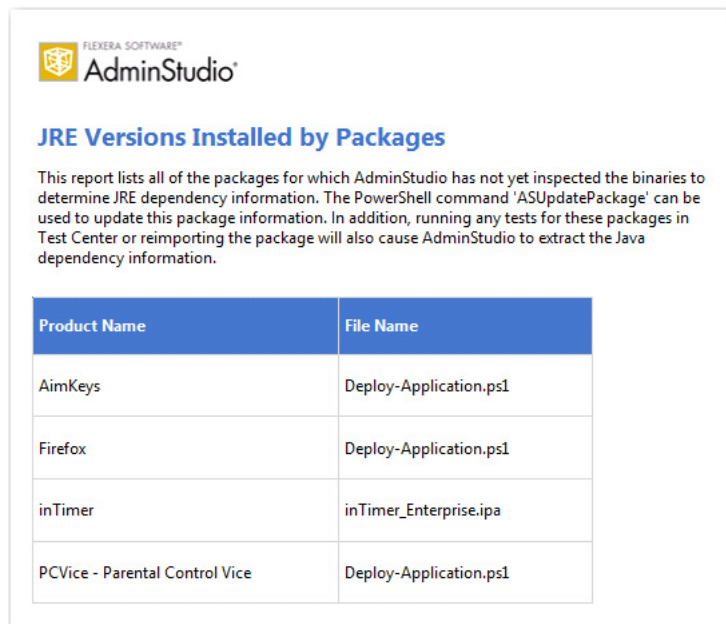
The initial view of this report shows the number of applications that require a Java Runtime version to run, and the number of applications that install a specific Java Runtime version during installation.



**Figure 18:** Java Runtime Environment Dependency Report / Overview



When you click on these charts, you see more detailed information about the applications that fall into each category. For example, the following is the detailed report on applications that install a Java Runtime version during installation:



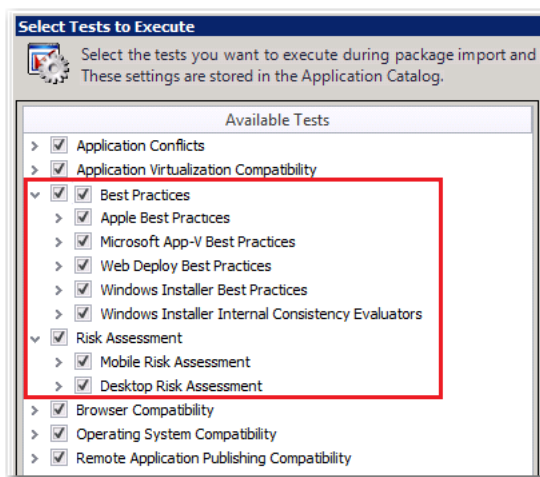
The screenshot shows a report from AdminStudio titled "JRE Versions Installed by Packages". It includes an introductory paragraph explaining that the report lists packages for which AdminStudio has not yet inspected the binaries to determine JRE dependency information. It also mentions that the PowerShell command 'ASUpdatePackage' can be used to update this information, and that running tests in the Test Center or reimporting the package will also cause AdminStudio to extract the Java dependency information.

Product Name	File Name
AimKeys	Deploy-Application.ps1
Firefox	Deploy-Application.ps1
inTimer	inTimer_Enterprise.ipa
PCVice - Parental Control Vice	Deploy-Application.ps1

**Figure 19:** JRE Versions Installed by Packages

## Best Practices and Risk Assessment Tests Split into Two Categories

In AdminStudio 2016 SP2, the Test Center test group named **Best Practices and Risk Assessment Tests** has been split into two separate categories.

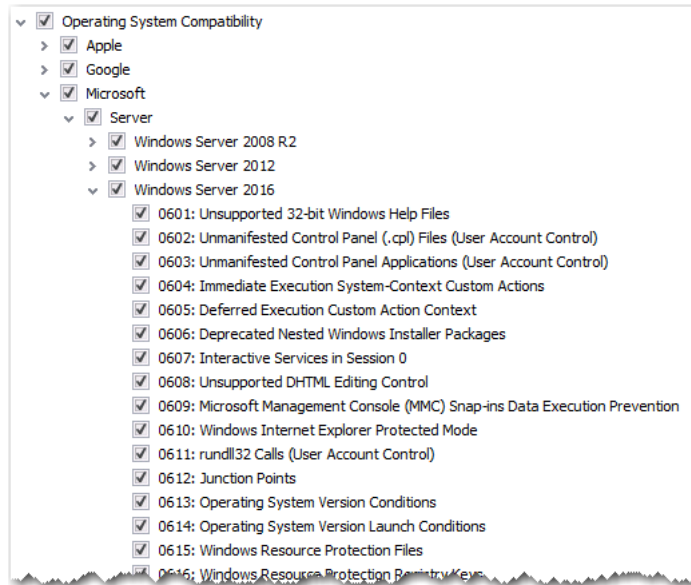


**Figure 20:** Best Practices and Rest Assessment Test Groups on the Select Tests to Execute Dialog Box

In previous releases, all of these tests were grouped in one category.

# New Windows Server 2016 Compatibility Tests in Test Center

In AdminStudio 2016 SP2, 53 OS compatibility tests for Windows Server 2016 have been added.



**Figure 21:** Windows Server 2016 OS Compatibility Tests

## Support for System Center Configuration Manager (Current Branch)

AdminStudio 2016 SP2 supports System Center Configuration Manager (Current Branch). You can connect Application Manager to a System Center Configuration Manager (Current Branch) server, which enables you to import packages from and distribute packages to that server.



**Note** • AdminStudio 2016 SP2 support for System Center Configuration Manager (Current Branch) was tested using Build 1610.

Note the following about AdminStudio's support for System Center 2016 Configuration Manager:

- System Center Configuration Manager (Current Branch) only supports the **Fast Retry** type return code for Microsoft UWP app packages (.appx). The following return code types are not supported: **Success (no reboot)**, **Failure (no reboot)**, **Hard Reboot**, and **Soft Reboot**.



**Note** • UWP is the packaging format used to distribute and install apps on Windows 8.x and 10, and is the only format allowed for Universal Windows Platform (UWP) apps.

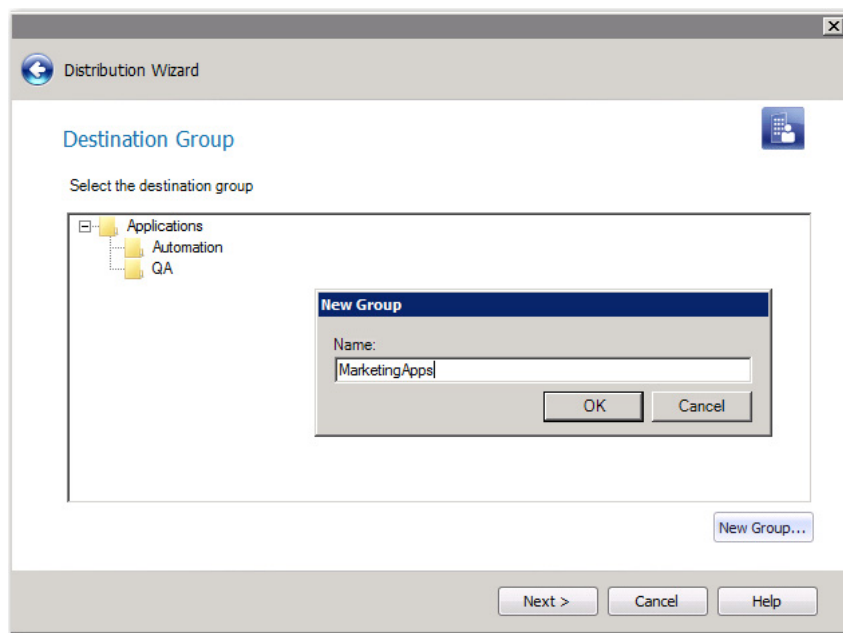
- System Center Configuration Manager (Current Branch) supports Apple mobile apps only for operating systems iOS7 or later.

# Ability to Add Destination Group During System Center Configuration Manager Distribution

In previous releases, when distributing applications to System Center Configuration Manager using the Distribution Wizard, you were prompted to select an existing distribution group on the System Center Configuration Manager server to publish the applications to.

In AdminStudio 2016 SP2, you can now create a new destination group in System Center Configuration Manager directly from the **Destination Group** panel of the Distribution Wizard.

To create a new group, click the **New Group** button on the **Destination Group** panel and then enter a name for the new group in the **New Group** dialog box. AdminStudio will create that group on the specified System Center Configuration Manager server, and publish the applications to that group.

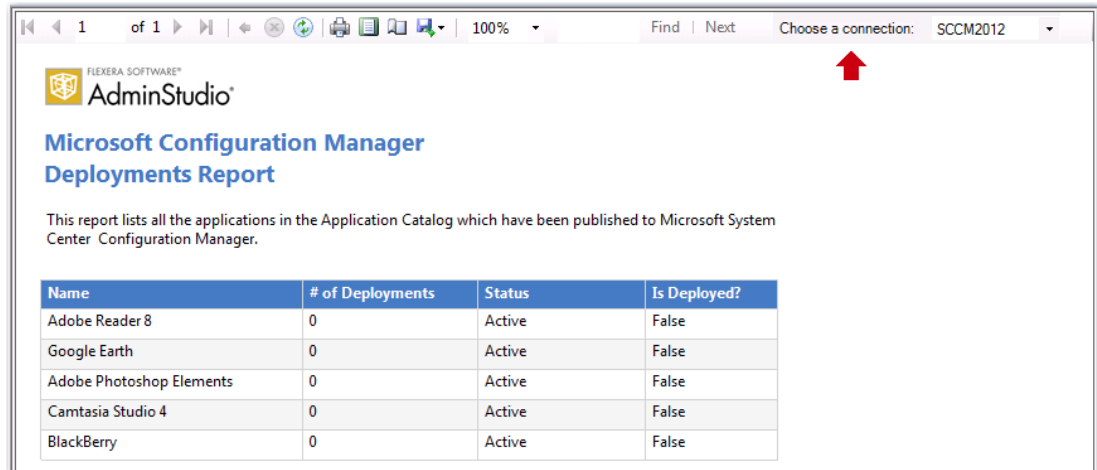


**Figure 22:** Adding a New Group on Destination Group Panel of Distribution Wizard

# Ability to Select Connection on Microsoft Configuration Manager Deployments Report

When viewing the **Microsoft Configuration Manager Deployments Report** in AdminStudio 2016 SP2, you can now choose which System Center Configuration Manager connection that you want to view a report on.

If you have multiple connections to System Center Configuration Manager servers, select the connection that you want to view a report on from the **Choose a connection** list.

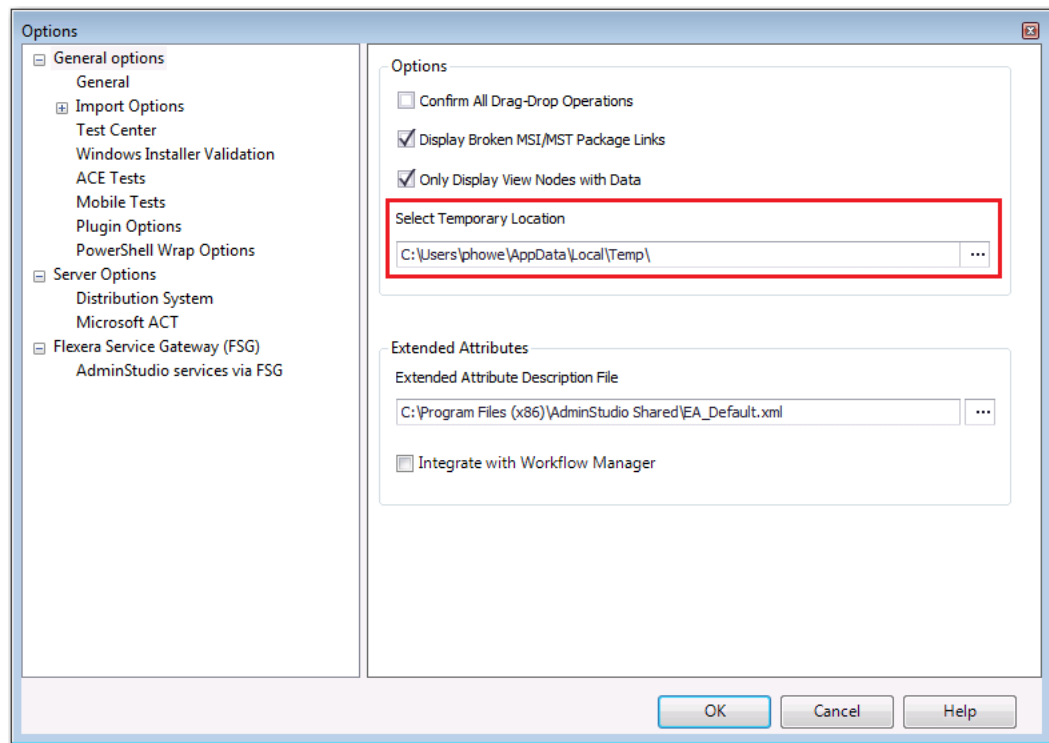


**Figure 23:** Choosing a Connection on the Microsoft Configuration Manager Deployments Report

# Ability to Set Temporary Directory Location

During import, packages are copied to an AdminStudio temporary directory to extract all of the data needed during import and testing. After package extraction, the files are deleted. In some cases, certain locations on a machine might be locked down and AdminStudio would be unable to access them, which would cause package extraction to fail.

Previously, you were unable to change the location of the AdminStudio temporary directory. In AdminStudio 2016 SP2, a new option, **Select Temporary Location**, has been added to the **General Options > General** tab of the Application Manager **Options** dialog box where you can specify the AdminStudio temporary directory. In this field, specify a location that AdminStudio has access to.



**Figure 24:** Select Temporary Location Option



**Note** • This feature was tracked as issue IOJ-1799678.

# InstallShield 2016 SP2

AdminStudio 2016 SP2 includes InstallShield 2016 SP2, which includes the following new features:

- [Integration with FlexNet Code Aware](#)
- [Support for Microsoft Visual Studio 2017](#)
- [Support for the Latest Releases of Windows Operating Systems](#)
- [Microsoft SQL Server 2016 Support](#)
- [Support for Creating UWP App Packages](#)
- [SQL Support Added to Suites](#)
- [Tile Configurations](#)
- [New InstallShield Prerequisites for Microsoft Visual C++ 2015, .NET Framework 4.6, and More](#)
- [Predefined System Searches for Adobe Reader, Microsoft Office and the .NET Framework](#)
- [Direct Editor View Enhancements](#)
- [Suite UI Enhancements](#)
- [Kill Process Custom Action Enhanced](#)
- [Ability to Set the Default Value Used for Component Attributes](#)
- [Ability to Filter Items by Features in Additional Views](#)
- [Digital Signature Updates](#)



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**Note** • For more information, see the [InstallShield 2016 SP2 Release Notes](#).

## Integration with FlexNet Code Aware

InstallShield now includes integration with FlexNet Code Aware, an automated open source risk assessment and package discovery solution that enables you to quickly scan your products for security and intellectual property (IP) compliance risk.


The current release of FlexNet Code Aware supports analysis of the following files:

- Java Packages
- Node Packages
- Nuget Packages
- RPM Packages
- Ruby Packages
- EXE & DLL Files

Security vulnerabilities are looked up against the [National Vulnerability Database \(NVD\)](#).

## Running FlexNet Code Aware

FlexNet Code requires a separate license from InstallShield. There is also trial/evaluation version. For more information, refer to the [FlexNet Code Aware product page](#) of the Flexera Software website.

To run FlexNet Code Aware from within InstallShield, click **Scan Project using FlexNet Code Aware** from the InstallShield **Project** menu. This menu option is disabled out if you are not currently in an open InstallShield project. A FlexNet Code Aware icon  is also available on the InstallShield standard toolbar.

When FlexNet Code Aware completes the scan of your project, a summary displays showing the number of files scanned, and the number of open-source packages and vulnerabilities found. A **View report** button is provided if you have a fully licensed version of FlexNet Code Aware. For more information about the details provided in this report, refer to [Reading the FlexNet Code Aware Report](#).



**Figure 25:** FlexNet Code Aware Report

## Reading the FlexNet Code Aware Report



**Note** • The FlexNet Code Aware Report is not available in trial/evaluation mode. A fully licensed version of FlexNet Code Aware is required.

To view the FlexNet Code Aware Report, click **View report** on the summary dialog that appears after FlexNet Code Aware has scanned your project.

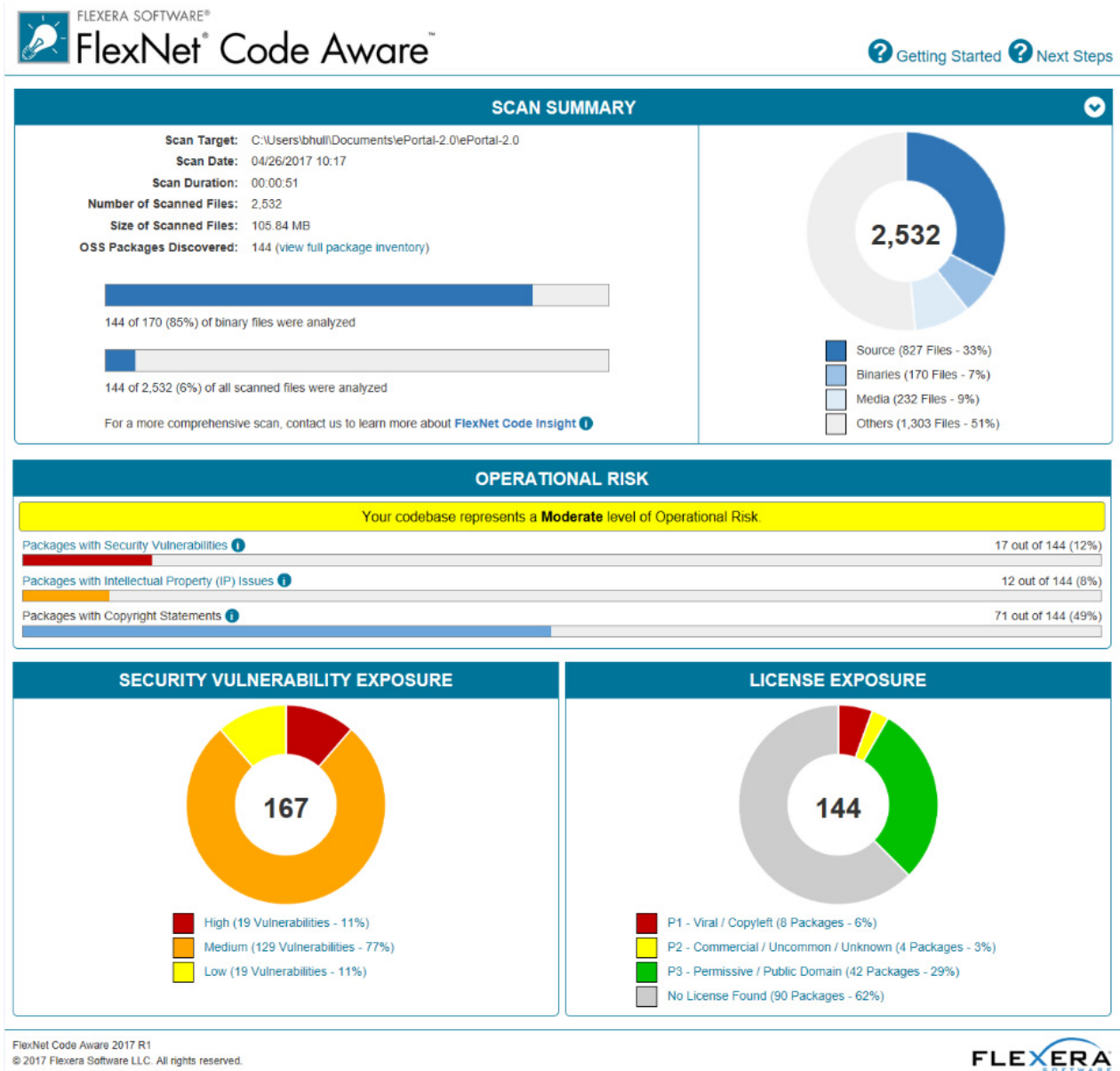
The FlexNet Code Aware report consists of several sections:

- The initial Summary View presents the user with a **Scan Summary**, **Operational Risk** assessment, **Security Vulnerability Exposure**, and **License Exposure**.
  - The **Scan Summary** section provides details regarding the codebase that was scanned, including a breakdown of file types, percent of files analyzed, and number of findings.
  - The **Operational Risk** section provides a composite risk rating based on the combination of packages with Intellectual Property (IP) issues and packages with Security Vulnerabilities.
  - The **Security Vulnerability Exposure** and **License Exposure** sections provide a breakdown of the types and categories of identified issues.
- The Package Inventory View, available by clicking **view full package inventory** in the **Scan Summary** section, provides a complete list of discovered open source and third-party packages with associated licenses, security vulnerabilities, dependencies, and detected copyright statements.

The Package Inventory View provides filters that you can use to execute targeted queries to refine the list to various package types of interest.




The following figures show the initial Summary View of a sample FlexNet Code Aware Report.



**Figure 26:** FlexNet Code Aware Initial Summary View

The following figures show the Package Inventory View of a sample FlexNet Code Aware Report.



FLEXERA SOFTWARE®

# FlexNet® Code Aware™

[? Getting Started](#)
[? Next Steps](#)

**Search**

Enter keyword...

Enter CVE (CVE-XXXX-XXXX)...

Enter copyright holder

**Security Vulnerabilities**

☐ ■ High Severity (CVSS 7.0 - 10.0)

☐ ■ Medium Severity (CVSS 4.0 - 6.9)

☐ ■ Low Severity (CVSS 0.0 - 3.9)

**Detected Licenses**

☐ ■ P1 - Viral / Copyleft

☐ ■ P2 - Commercial / Uncommon / Unknown

☐ ■ P3 - Permissive / Public Domain

☐ No License Found

**Apply** Or Criteria

**Filter** **Reset**

**Browsing 1-10 of 144 Packages**

Licenses Legend: ■ P1 - Viral / Copyleft ■ P2 - Commercial / Uncommon / Unknown ■ P3 - Permissive / Public Domain

Vulnerabilities Legend: ■ High Severity (CVSS 7.0 - 10.0) ■ Medium Severity (CVSS 4.0 - 6.9) ■ Low Severity (CVSS 0.0 - 3.9)

Package	License	Vendor	Vulnerabilities	# Copyrights
mysql_connector_c 5.1.7	No License Found	Mysql	<span style="color: red;">■</span> 94   <span style="color: red;">■</span> 5 <span style="color: orange;">■</span> 71 <span style="color: yellow;">■</span> 18	None Found
struts 1.2.7	<span style="color: green;">■</span> Apache-2.0	Apache	<span style="color: red;">■</span> 7   <span style="color: red;">■</span> 2 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Springsource	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Pivotal_software	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found
spring_framework 3.0.5.RELEASE	<span style="color: green;">■</span> Apache-2.0	Springsource	<span style="color: red;">■</span> 6   <span style="color: red;">■</span> 1 <span style="color: orange;">■</span> 5 <span style="color: yellow;">■</span> 0	None Found

10
⏪ ⏩ 1 2 3 4 5 ... 15 ⏪ ⏩

**Figure 27:** FlexNet Code Aware Package Inventory View

## Viewing Package Details

Click a vulnerability count listed in the Vulnerabilities column of the Package Inventory report page for each package you want to review:

**Vulnerabilities**

■
7

■
2
■
5
■
0

■
6

■
1
■
5
■
0

**Figure 28:** FlexNet Code Aware Vulnerabilities Column of Package Inventory Report

The **Vulnerabilities Detail** page appears, covering a portion of the Package Inventory report:

struts 1.2.7


Name

struts 1.2.7


Version


1.2.7


License


 Apache-2.0

Vulnerabilities

 7

 2

 5

 0

Description

The core of the Struts framework is a flexible control layer based on standard technologies like Java Servlets, JavaBeans, ResourceBundle, and Extensible Markup Language (XML), as well as various Jakarta Commons packages. Struts encourages application architectures based on the Model 2 approach, a variation of the classic Model-View-Controller (MVC) design paradigm. Struts provides its own Controller component and integrates with other technologies to provide the Model and the View. For the Model, Struts can interact with any standard data access technology, including Enterprise Java Beans, JDBC, and Object Relational Bridge. For the View, Struts works well with JavaServer Pages, including JSTL and JSF, as well as Velocity Templates, XSLT, and other presentation systems. The Struts framework provides the invisible underpinnings every professional web application needs to survive. Struts helps you create an extensible development environment for your application, based on published standards and proven design patterns.

Path

C:\Users\bhull\Documents\Portal-2.0\Portal-2.0\extras\struts-1.2.7\contrib\struts-el\lib\struts.jar

C:\Users\bhull\Documents\Portal-2.0\Portal-2.0\extras\struts-1.2.7\lib\struts.jar

Evidence

pom.xml

Type

Maven GAV

struts:struts:1.2.7

Vendor


Apache

Copyrights

None Found

Security Vulnerabilities

CVE ID: [CVE-2006-1547](#)

Severity:  High

CVSS Score: 7.8

**Figure 29:** FlexNet Code Aware Vulnerabilities Detail Page

## Support for Microsoft Visual Studio 2017

InstallShield includes support for Visual Studio 2017. You can create InstallShield projects from within this version of Visual Studio.

## Support for the Latest Releases of Windows Operating Systems

InstallShield supports the latest releases of the Windows operating system:

- Windows 10 Anniversary Update
- Windows Server 2016

Not only can you install InstallShield on these operating systems, but you can also create installers that target these operating systems.

## Microsoft SQL Server 2016 Support



**Project** • Microsoft SQL Server 2016 support is available in the following project types:

- Basic MSI
- DIM
- InstallScript
- InstallScript MSI

InstallShield now includes support for running SQL scripts on SQL Server 2016 database servers. In addition, InstallShield includes SQL Server 2016 in the predefined list of database servers that you can select when you are specifying in the SQL Scripts view the target database servers that your product supports.

If your installation targets SQL Server 2016, the SQLBrowse run-time dialog that is displayed when end users choose to browse for a database server can now list instances of SQL Server 2016, SQL Server 2016 Express, and SQL Server 2014 Express LocalDB. In addition, the SQLBrowse run-time dialog that is displayed when end users choose to browse for a database catalog can now list catalogs on the specified SQL Server 2016 database server.

See [New InstallShield Prerequisites for Microsoft Visual C++ 2015, .NET Framework 4.6, and More](#) for a complete list of new InstallShield prerequisites added to InstallShield.



**Note** • Microsoft SQL Server 2016 is now 64-bit (x64) only.

## Support for Creating UWP App Packages



**Project** • UWP app creation is available in Basic MSI projects.



**Important** • The Windows 10 Anniversary Update is required for installing and testing a UWP app package (.appx) with desktop extensions (Desktop Bridge, formerly known as Project Centennial). To digitally sign the UWP app package, InstallShield must be installed on a Windows 10 machine or a machine with the Windows 10 SDK installed.

The UWP app package (.appx) format is the simple and secure packaging format used to distribute and install apps on Windows 8.x and 10 and is the only format allowed for Universal Windows Platform (UWP) apps. Benefits of UWP app packages include:

- High availability, reliability, and durability, resulting in applications that operate continuously without failure for extended periods of time
- A smooth installation experience through static builds that require minimal configuration and no customizable UI
- The option to sell or provide the application through the Windows Store
- The ability to leverage UWP functionality such as live tiles as well as the ability to utilize UWP APIs
- The only package format with native support on Windows Nano Server

InstallShield now supports creating the UWP app package format (.appx) and its desktop and server extensions through an alternate build output and provides suitability testing to help you identify items unsuitable for the UWP app package format. Refer to the following subsections for details about new functionality added to InstallShield to support the creation of UWP app packages.

- [UWP App Settings in the Releases View](#)
- [UWP App Logo Customization in the Shortcuts View](#)
- [UWP App Suitability Testing](#)
- [New UWP Condition Checks added to Suites](#)

### UWP App Settings in the Releases View

When you select a release in the **Releases** view, a new per-release tab titled **Windows App** has been added that includes settings to create a UWP app package. Here, various core settings can be specified that impact the UWP app package build process. In particular, the **Distribution Method** and **Include Desktop Extensions** or **Include Server Extensions** options will affect what warnings or errors are encountered for certain kinds of installer project data.

For complete information on these new settings, refer to the “Windows App Tab for a Release” topic in the InstallShield Help Library.

## UWP App Logo Customization in the Shortcuts View

In addition to the new UWP app settings added to the **Releases** view, there are new settings to configure the tiles created in an UWP app package. These settings are located in the new **UWP App Package Tile Overrides** area of the **Shortcuts** view.

For complete information on these new settings, refer to the “Shortcut Settings” topic in the InstallShield Help Library.

## UWP App Suitability Testing

InstallShield has added the new InstallShield UWP App Suitability Suite that scans an .msi package for signs of items that are unsuitable for the UWP app package format. To access it, on the **Build** menu, point to **Validation**, and then click **InstallShield UWP App Suitability Suite**.

The InstallShield UWP App Suitability Suite provides a report in the **Releases** view that indicates all tests that found issues and for each issue, an associated column in the report indicates applicability to the known UWP app variants. For traditional CUBs, these columns are not populated. You can view this report by navigating to the **Releases** view and selecting the Validations folder under your release. For complete information, including descriptions of the new ISUWP validations included, refer to the “InstallShield UWP App Suitability Suite” topic in the InstallShield Help Library.

## New UWP Condition Checks added to Suites

When you are building a conditional statement for an exit, detection, eligibility, feature, or wizard interface condition in an Advanced UI or Suite/Advanced UI project, or for an action condition in a Suite/Advanced UI project, you can select from a number of different types of checks that you want to be evaluated on target systems. The following condition checks have been added to Suites.

- **UWP App Package Eligible**—Check target systems for the run time dependencies of the UWP app package to prevent any attempts to install a UWP app package onto a version of Windows or Windows Server that does not support it.




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**Note** • This condition is available only for the eligibility condition of a UWP app package. If it is used in any other package type, it will not function correctly.

- **UWP Type Present**—Check target systems for the presence of UWP functionality. For example, to create a conditional statement that checks for the presence of the Desktop Bridge, check for the type `Windows.ApplicationModel.FullTrustProcessLauncher`. This can be used to conditionally block installation, or to choose between installing .msi and UWP app package (.appx).




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**Note** • This always evaluates as false on operating systems before Windows 10. Use of the Type Name `Windows.ApplicationModel.FullTrustProcessLauncher` requires Windows 10 Anniversary Update or newer.

## SQL Support Added to Suites



**Project** • This information applies to Suite/Advanced UI projects.



**Edition** • The Suite/Advanced UI project type is available in the Premier edition of AdminStudio.

SQL servers are integral to many applications, especially those that benefit from the multiple package support provided by InstallShield Suite installations. Previously, InstallShield SQL support was limited to Basic MSI, InstallScript, and InstallScript MSI projects. Now, SQL support has been added to Suite/Advanced UI projects, giving you the ability to:

- [Add a New SQLLogin Predefined Wizard Page](#)
- [Execute SQL Statements Directly from Suites](#)

To learn more, see the following topics in the InstallShield Help Library:

- [Adding a SQLLogin Predefined Wizard Page in a Suite/Advanced UI Project](#)
- [Configuring an Action for an Element in the Wizard Interface](#)
- [Predefined Task Pages Panel](#)

### Add a New SQLLogin Predefined Wizard Page

AdminStudio adds SQL support to Suite/Advanced UI projects by providing a new **SQLLogin** predefined wizard page that can be added to your Suite/Advanced UI project. Previously, if you added an .msi package containing SQL support to a Suite/Advanced UI project, the Advanced UI or Suite/Advanced UI setup launcher automatically suppressed the user interface of Windows Installer. You were required to manually create a custom SQLLogin wizard page for your Suite/Advanced UI project installation.

When adding a new predefined page to your project, select the **Enter login information for a database server** task page and complete the panels in the wizard as needed. The SQLLogin predefined wizard page is then added to your project. This SQLLogin wizard page lets end users enter database server login information (database server name, authentication credentials, database catalog name, etc.) in order to establish a connection to the database server that is targeted by one or more .msi packages in the suite.

Adding a SQLLogin wizard page to your project allows you to:

- Specify properties that identify the SQL login settings in the Suite project and then select the .msi package that receives these properties
- Specify the properties that identify the SQL login settings in the .msi package
- Choose the database technology (Microsoft SQL Server, Microsoft Windows Azure, MySQL, or Oracle) and select the ODBC driver to be targeted

## Execute SQL Statements Directly from Suites

Suite/Advanced UI projects now support directly executing SQL statements on SQL database servers from the user interface, which helps allow SQL database servers to be examined before proceeding with the installation.

The SQL query result can then be accessed in a Suite property. To provide this support, a **Run a SQL String** option is now available in the New Action menu of UI events. The SQL statement is executed using properties and database metadata specified by additional new options available in the New Action menu of UI events: **Configure Database Metadata** and **Override SQL Login Properties**.

## Tile Configurations




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**Project** • *This information applies to Basic MSI, InstallScript MSI, and InstallScript project types.*

Windows 8 introduced a grid of application tiles to the Start screen, replacing the usual list of shortcuts, and also presented tiles in place of shortcuts. InstallShield supports customizing the appearance of a desktop app's tile on the Start screen. The following tile configuration settings are available:

- A toggle between light or dark text when including the app name on medium-sized (150x150) tiles
- Choice of tile background color
- Option to use custom tile images (small: 70x70 and medium:150x150)
- Preference to show or hide the app name on medium-sized tiles

The **Tile Configurations** node appears in the main **Shortcuts** view and in each component's **Shortcuts** subview. Any applicable tile configurations are listed.

To learn more, see the following topics in the InstallShield Help Library:

- *Configuring the Appearance of a Desktop App's Tile on the Start Screen*
- *Tile Configuration Settings*



## New InstallShield Prerequisites for Microsoft Visual C++ 2015, .NET Framework 4.6, and More



**Project** • *InstallShield prerequisites can be added to Advanced UI, Basic MSI, InstallScript, InstallScript MSI, and Suite/Advanced UI projects.*

InstallShield includes the following new InstallShield prerequisites:

- Microsoft .NET Framework 4.6.1 Full
- Microsoft .NET Framework 4.6.1 Web
- Microsoft ReportViewer 2015
- Microsoft SQL Server 2014 Express System CLR Types (x86)
- Microsoft SQL Server 2016 Express RTM (x64)
- Microsoft SQL Server 2016 Express RTM LocalDB (x64)
- Microsoft Visual C++ 2015 Update 3 Redistributable Package (x86)
- Microsoft Visual C++ 2015 Update 3 Redistributable Package (x64)
- Windows Management Framework 4.0 for Windows 7 SP1 and Server 2008 R2 SP1 (x64)
- Windows Management Framework 4.0 for Windows Server 2012 (x64)
- Windows Management Framework 5.0 for Windows 7 SP1 (x86)
- Windows Management Framework 5.0 for Windows 7 SP1 and Server 2008 R2 SP1 (x64)
- Windows Management Framework 5.0 for Windows 8.1 (x86)
- Windows Management Framework 5.0 for Windows 8.1 and Server 2012 R2 (x64)
- Windows Management Framework 5.0 for Windows Server 2012 (x64)

These prerequisites install the appropriate technologies on supported target systems.



**Note** • *The **Web** prerequisite for the .NET Framework requires an Internet connection. This prerequisite downloads the required redistributable files if appropriate. The **Full** prerequisite for the .NET Framework is a stand-alone installation that does not require an Internet connection.*

## Predefined System Searches for Adobe Reader, Microsoft Office and the .NET Framework



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**Project** • *Predefined System Searches apply to Basic MSI and InstallScript MSI projects.*

AdminStudio has new predefined system searches:

- Adobe Reader 11
- Adobe Reader DC
- Microsoft Office 2013
- Microsoft Office 2016
- Microsoft .NET Framework 4.5.1
- Microsoft .NET Framework 4.5.2
- Microsoft .NET Framework 4.6
- Microsoft .NET Framework 4.6.1

If your installation requires one or both of these, you can use the **System Search** view or the Installation Requirements page in the Project Assistant to add these system searches to your project. When end users launch your installation, Windows Installer checks the target system to see if the requirements are met; if they are not met, the installation displays the error message that is defined for the system search.

## Direct Editor View Enhancements



**Project** • The Direct Editor is available in the following project types:

- *Basic MSI*
- *DIM*
- *InstallScript*
- *InstallScript MSI*
- *InstallScript Object*
- *Merge Module*
- *MSI Database*
- *MSM Database*
- *QuickPatch*
- *Transform*

InstallShield now adds several Direct Editor enhancements that provide visual insights into tables, schema information, and validation errors designed to boost the productivity of setup authors or packagers who use the Direct Editor for troubleshooting to identify and resolve advanced problems. These enhancements are described in the following sections:

- [Directory Table Displays Resolved Target Directory Path](#)
- [Column Header Schema Information Tooltips](#)
- [Table Record Reference Tracking](#)
- [Broken References Indicator](#)

For complete information, refer to the “Direct Editor” topic in the InstallShield Help Library.

### Directory Table Displays Resolved Target Directory Path

When showing the Directory table, InstallShield shows a read-only, grayed out column that displays the resolved path of each row's directory location. This column is not actually stored in the project file. You can sort by its visible text, but you cannot insert, update, or delete its values.

## Column Header Schema Information Tooltips

InstallShield now provides tooltips added to column headers that display the following schema information to indicate the column data type allowed:

- **nullable**—The column can be left empty.
- **required**—The column must contain a non-empty value.
- **char(*nn*)**—Character string with fixed-length *nn*.
- **small integer**—Integer numerical (no decimal), containing a value from -32767 to +32767.
- **long integer**—Integer numerical (no decimal), containing a value from -2147483647 to +2147483647.
- **localizable**—This column contains a string that can be translated. Columns without this marker are not localized.
- **stream**—Binary stream, such as the contents of a file.



**Tip** • The **Directory**, **Binary**, and **CustomAction** Direct Editor tables display several of these column types.

## Table Record Reference Tracking

The Direct Editor now includes a Reference Tracking pane that lets you easily visualize relationships between table records. A **Show Reference Tracking** button is added to at the top of the Direct Editor that provides a show/hide toggle of the pane.

Each record may reference one or more other records or be referenced by one or more other records. When a record is highlighted that refers to other records or is referred from other records, the Reference Tracking pane is populated with a **Reference Tables** section showing the tables in which the references reside and an additional section that displays the actual record references. The record references section includes arrow icons that indicate the direction of the reference, where:

- A green arrow pointing to the right indicates that the record that is selected in the Direct Editor table **references** the record displayed in the Reference Tracking pane.
- A blue arrow pointing to the left indicates that the record selected in the Direct Editor table is **referenced by** the record displayed in the Reference Tracking pane.
- Two arrows in both directions (a green arrow pointing right and a blue arrow pointing left) that indicate the record selected in the Direct Editor table **references and is referenced by** the record displayed in the Reference Tracking pane.



**Note** • When multiple Direct Editor records are selected, only the “focused” record’s references are shown. In addition, if multiple tables appear in the **Reference Tables** section, this indicates that the record selected in the Direct Editor table references or is referenced by records in multiple tables. You can click any table in the **Reference Tables** section to view the associated records references.



**Tip** • In the Reference Tracking pane, you can quickly jump between record references by double-clicking within a cell.

## Broken References Indicator

There are instances where a Direct Editor table record might reference a foreign key record that no longer exists. InstallShield now displays the cells of such broken references with a red fill color to call attention to the broken reference.

For example, if the **Directory\_** column in the **Component** table references a directory name that is not found in the **Directory** table, then the **Directory\_** column is filled in red.



**Note** • The Direct Editor broken reference indicator is unrelated to the **Maintain referential integrity** check box on the [Preferences tab](#) of the Options dialog box. While the **Maintain referential integrity** setting is designed to update the foreign keys when you modify a primary key, the purpose of the broken reference indicator is to display broken references to help you easily identify orphaned records. Therefore, broken references are displayed regardless of the selection of the **Maintain referential integrity** setting.

## Suite UI Enhancements



**Project** • This information applies to the following project types:

- [Advanced UI](#)
- [Suite/Advanced UI](#)



**Edition** • The Advanced UI project type is available in the Professional edition of AdminStudio. The Suite/Advanced UI project type is available in the Premier edition of AdminStudio. For information about the differences between these two project types, see the “Advanced UI Projects vs. Suite/Advanced UI Projects” topic in the InstallShield Help Library.

To better support various use cases, InstallShield has added the following functionality to Advanced UI and Suite/Advanced UI projects:

- [New Close Window and Stop Event UI Actions](#)
- [Suite Loading Splash Screen Added](#)

## New Close Window and Stop Event UI Actions

InstallShield includes the following new UI actions:

- [Close Window](#)
- [Stop Event](#)

To learn more, see the “Configuring an Action for an Element in the Wizard Interface” topic in the InstallShield Help Library.

### Close Window

This type of action closes a main wizard page or secondary window, or in some cases, provides conditional closing of a secondary window.

Close Window accepts parameters corresponding to the following predefined Return Code IDs: IDOK, IDCANCEL, IDABORT, IDRETRY, IDIGNORE, IDYES, IDNO, and IDCLOSE.

The behavior of the Close Window action differs slightly on wizard pages and secondary windows:

- For wizard pages, the Close Window action prompts the end user to cancel if its Return Code parameter is set to IDCANCEL (and then interrupts the wizard if the end user specifies Yes). For all other Return Code IDs, the wizard immediately closes.
- For secondary windows, the Close Window action closes the secondary window and in special cases such as with the ISRMFilesInUse and ISRMFileInUse secondary windows, the specified Return Code value is returned.

InstallShield currently provides the following secondary windows that contain customized behavior that is dependent upon the specified Return Code ID:

- ISDownloadProgress
- ISPromptForSourceMedia
- ISFilesInUse
- ISRMFilesInUse
- ISUpgradeParcel

### Stop Event

This type of action allows you to conditionally stop further actions from being processed. For example, this action can be used to prevent the default behavior of a button from occurring.

## Suite Loading Splash Screen Added

During a suite installation where the loading process takes more than half a second, InstallShield will now display a splash screen to indicate that the program has launched and that a loading process needs to complete before the Install Welcome dialog appears. For the splash screen, InstallShield utilizes the largest provided version of the **setup.exe** icon and includes a progress bar on it.

This feature resolves issue: IOJ-1729167.

## Kill Process Custom Action Enhanced



**Project** • This information applies to the following project types:

- Basic MSI
- InstallScript MSI

A new **Processes** setting has been added to the Kill-Process Custom Action settings that lets you directly enter executable file names or PIDs of the processes that you want to terminate without having to create a property using the Property Manager and format its value correctly for the action to work.

To learn more, see the “Calling a Kill-Process Custom Action” topic in the InstallShield Help Library.



**Tip** • The value of the **Processes** setting may be written to the **ISTerminateProcesses** property. If you have additional kill-process custom actions that do not specify a value in the **Processes** setting, such as those migrated from InstallShield 2015 or earlier, shared use of the **ISTerminateProcesses** property may result in undesired behavior.

## Ability to Set the Default Value Used for Component Attributes

Support for a new property has been added to the **InstallShield** table that lets you set the default value used for component attributes. If a property of **MsiComponentAttributes** exists in the **InstallShield** table, its value overrides the default **Attributes** column value in the **Component** table from 8 to whatever is specified.

For example, to make new components 64-bit, add 256 to the **MsiComponentAttributes** value. You can specify 264 (for 64-bit shared) or optionally enter 256 (for 64-bit unshared). In doing so, the **64-Bit Component** setting and **Shared** settings (shown on the in the General area of the **Components** view) will be updated to Yes or No accordingly.

For more information about the bit values used in calculating the **Attributes** column of the Component table, refer to the [Component Table](#) page in the MSDN Library.



**Note** • To set the default value used for component attributes, the **MsiComponentAttributes** property must be updated manually in the **InstallShield** table in the **Direct Editor** of each project. The **Template Summary** setting for a product configuration is ignored for this use case.

## Ability to Filter Items by Features in Additional Views

The following views now contain a View Filter that lets you filter the view list by any feature in your project:

- **Environment Variables View**—You can use the View Filter list at the top of this view to show and hide environmental variables that are associated to a particular feature in your project. You can also select a feature from the View List in order to associate only that feature with a subsequent event (e.g., the creation, modification, or removal of an environmental variable). Lastly, to see all of the environmental variables that are in your project, select the All Application Data option in the View Filter list. For more information, refer to the “Environment Variables View” topic in the InstallShield Help Library.
- **Text File Changes View**—You can use the View Filter list at the top of this view to show and hide text file change sets that are associated to a particular feature in your project. You can select a feature from the View List in order to associate only that feature with a subsequent event (e.g., the creation, modification, ordering, or removal of change sets). The resulting modification takes place at run time on the target system when the feature is installed. Lastly, to see all of the text file change sets that are in your project, select the All Application Data option in the View Filter list. For more information, refer to the “Text File Changes View” topic in the InstallShield Help Library.
- **INI File Changes View**—You can use the View Filter list at the top of this view to show and hide initialization (.ini) files that are associated to a particular feature in your project. You can select a feature from the View List in order to associate only that feature with a subsequent event (e.g., the creation, importing, modification, or removal of .ini files). The resulting modification takes place at run time on the target system when the feature is installed. Lastly, to see all of the .ini files that are in your project, select the All Application Data option in the View Filter list. For more information, refer to the “INI File Changes View” topic in the InstallShield Help Library.

## Digital Signature Updates

Beginning with AdminStudio 2015, support was added to enable you to use digital certificates that use the SHA-256 hashing algorithm for signing your installations and files at build time.

In AdminStudio 2016, support for SHA-256 digital certificates has been enhanced for Windows Installer and InstallScript projects to:

- Give you the ability to specify a digest type using the new **Signature Digest** drop-down on the Certificate Selection Dialog Box
- RFC3161 timestamping is now supported and can be specified in **settings.xml**, noting that:
  - DigitalSignature/@Timestamp can be an Authenticode or RFC3161 server for .msi, .exe, and .dll files
  - DigitalSignature/@TimestampRFC3161 used for UWP app package files must be an RFC3161 server
- Handle similarly-named certificates in the Certificate Store





**Note** • Any new signatures created or timestamped after Jan 1, 2016 must be SHA-256-based signatures. Any files signed with an SHA-1 certificate need to have a timestamp showing a date and time prior to Jan 1, 2016 in order to continue to be supported. Those files will still be allowed through the 'Mark-of-the-web' system until Jan 14, 2020, when all SHA-1 support will stop in all current versions of Windows.

## New Features in AdminStudio 2016 SP1

This section lists the new features that are included in AdminStudio 2016 SP1:

- [InstallShield 2016](#)
- [Support for the Microsoft UWP App Package \(.appx\) Format](#)
- [New API Commands to Set and Get Package Distribution Properties](#)
- [New OS Compatibility and Risk Assessment Test Center Tests](#)
- [New Devices in Device Compatibility Reports](#)
- [Applications Are Not Automatically Tested Upon Import](#)
- [Default ACE and ICE Tests are No Longer Specified on the ACE Tests Tab of Options Dialog Box](#)

# InstallShield 2016

AdminStudio 2016 SP1 includes InstallShield 2016, the industry standard for authoring high quality Windows Installer– and InstallScript–based installations, as well as Microsoft App–V packages. InstallShield 2016 introduces support for the Desktop Bridge (Project Centennial), enabling you to create Universal Windows Platform app packages and Windows Server App packages.

InstallShield 2016 includes the following new features and enhancements:

- [Support for the Latest Releases of Windows Operating Systems](#)
- [Microsoft SQL Server 2016 Support](#)
- [Support for Creating UWP App Packages](#)
- [SQL Support Added to Suites](#)
- [Tile Configurations](#)
- [New InstallShield Prerequisites for Microsoft Visual C++ 2015, .NET Framework 4.6, and More](#)
- [Predefined System Searches for Adobe Reader, Microsoft Office and the .NET Framework](#)
- [Direct Editor View Enhancements](#)
- [Suite UI Enhancements](#)
- [Kill Process Custom Action Enhanced](#)
- [Ability to Set the Default Value Used for Component Attributes](#)
- [Ability to Filter Items by Features in Additional Views](#)
- [Digital Signature Updates](#)

## Support for the Latest Releases of Windows Operating Systems

InstallShield 2016 supports the latest releases of the Windows operating system:

- Windows 10 Anniversary Update
- Windows Server 2016

Not only can you install InstallShield on these operating systems, but you can also create installers that target these operating systems.

## Microsoft SQL Server 2016 Support



**Project** • Microsoft SQL Server 2016 support is available in the following project types:

- Basic MSI
- DIM
- InstallScript
- InstallScript MSI

InstallShield now includes support for running SQL scripts on SQL Server 2016 database servers. In addition, InstallShield includes SQL Server 2016 in the predefined list of database servers that you can select when you are specifying in the SQL Scripts view the target database servers that your product supports.

If your installation targets SQL Server 2016, the SQLBrowse run-time dialog that is displayed when end users choose to browse for a database server can now list instances of SQL Server 2016, SQL Server 2016 Express, and SQL Server 2014 Express LocalDB. In addition, the SQLBrowse run-time dialog that is displayed when end users choose to browse for a database catalog can now list catalogs on the specified SQL Server 2016 database server.

See [New InstallShield Prerequisites for Microsoft Visual C++ 2015, .NET Framework 4.6, and More](#) for a complete list of new InstallShield prerequisites added to InstallShield.



**Note** • Microsoft SQL Server 2016 is now 64-bit (x64) only.

## Support for Creating UWP App Packages



**Project** • UWP app creation is available in Basic MSI projects.



**Important** • The Windows 10 Anniversary Update is required for installing and testing a UWP app package (.appx) with desktop extensions (Desktop Bridge, formerly known as Project Centennial). To digitally sign the UWP app package, InstallShield must be installed on a Windows 10 machine or a machine with the Windows 10 SDK installed.

The UWP app package (.appx) format is the simple and secure packaging format used to distribute and install apps on Windows 8.x and 10 and is the only format allowed for Universal Windows Platform (UWP) apps. Benefits of UWP app packages include:

- High availability, reliability, and durability, resulting in applications that operate continuously without failure for extended periods of time
- A smooth installation experience through static builds that require minimal configuration and no customizable UI
- The option to sell or provide the application through the Windows Store

- The ability to leverage UWP functionality such as live tiles as well as the ability to utilize UWP APIs
- The only package format with native support on Windows Nano Server

InstallShield now supports creating the UWP app package format (.appx) and its desktop and server extensions through an alternate build output and provides suitability testing to help you identify items unsuitable for the UWP app package format. Refer to the following subsections for details about new functionality added to InstallShield to support the creation of UWP app packages.

- [UWP App Settings in the Releases View](#)
- [UWP App Logo Customization in the Shortcuts View](#)
- [UWP App Suitability Testing](#)
- [New UWP Condition Checks added to Suites](#)

## UWP App Settings in the Releases View

When you select a release in the **Releases** view, a new per-release tab titled **Windows App** has been added that includes settings to create a UWP app package. Here, various core settings can be specified that impact the UWP app package build process. In particular, the **Distribution Method** and **Include Desktop Extensions** or **Include Server Extensions** options will affect what warnings or errors are encountered for certain kinds of installer project data.

For complete information on these new settings, refer to the “Windows App Tab for a Release” topic in the InstallShield Help Library.

## UWP App Logo Customization in the Shortcuts View

In addition to the new UWP app settings added to the **Releases** view, there are new settings to configure the tiles created in an UWP app package. These settings are located in the new **UWP App Package Tile Overrides** area of the **Shortcuts** view.

For complete information on these new settings, refer to the “Shortcut Settings” topic in the InstallShield Help Library.

## UWP App Suitability Testing

InstallShield has added the new InstallShield UWP App Suitability Suite that scans an .msi package for signs of items that are unsuitable for the UWP app package format. To access it, on the **Build** menu, point to **Validation**, and then click **InstallShield UWP App Suitability Suite**.

The InstallShield UWP App Suitability Suite provides a report in the **Releases** view that indicates all tests that found issues and for each issue, an associated column in the report indicates applicability to the known UWP app variants. For traditional CUBs, these columns are not populated. You can view this report by navigating to the **Releases** view and selecting the Validations folder under your release. For complete information, including descriptions of the new ISUWP validations included, refer to the “InstallShield UWP App Suitability Suite” topic in the InstallShield Help Library.

## New UWP Condition Checks added to Suites

When you are building a conditional statement for an exit, detection, eligibility, feature, or wizard interface condition in an Advanced UI or Suite/Advanced UI project, or for an action condition in a Suite/Advanced UI project, you can select from a number of different types of checks that you want to be evaluated on target systems. The following condition checks have been added to Suites.

- **UWP App Package Eligible**—Check target systems for the run time dependencies of the UWP app package to prevent any attempts to install a UWP app package onto a version of Windows or Windows Server that does not support it.




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**Note** • This condition is available only for the eligibility condition of a UWP app package. If it is used in any other package type, it will not function correctly.

- **UWP Type Present**—Check target systems for the presence of UWP functionality. For example, to create a conditional statement that checks for the presence of the Desktop Bridge, check for the type `Windows.ApplicationModel.FullTrustProcessLauncher`. This can be used to conditionally block installation, or to choose between installing .msi and UWP app package (.appx).




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**Note** • This always evaluates as false on operating systems before Windows 10. Use of the Type Name subsetting `Windows.ApplicationModel.FullTrustProcessLauncher` requires Windows 10 Anniversary Update or newer.

## SQL Support Added to Suites




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**Project** • This information applies to Suite/Advanced UI projects.




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**Edition** • The Suite/Advanced UI project type is available in the Premier edition of AdminStudio.

SQL servers are integral to many applications, especially those that benefit from the multiple package support provided by InstallShield Suite installations. Previously, InstallShield SQL support was limited to Basic MSI, InstallScript, and InstallScript MSI projects. Now, SQL support has been added to Suite/Advanced UI projects, giving you the ability to:

- [Add a New SQLLogin Predefined Wizard Page](#)
- [Execute SQL Statements Directly from Suites](#)

To learn more, see the following topics in the InstallShield Help Library:

- [Adding a SQLLogin Predefined Wizard Page in a Suite/Advanced UI Project](#)
- [Configuring an Action for an Element in the Wizard Interface](#)
- [Predefined Task Pages Panel](#)

## Add a New SQLLogin Predefined Wizard Page

AdminStudio adds SQL support to Suite/Advanced UI projects by providing a new **SQLLogin** predefined wizard page that can be added to your Suite/Advanced UI project. Previously, if you added an .msi package containing SQL support to a Suite/Advanced UI project, the Advanced UI or Suite/Advanced UI setup launcher automatically suppressed the user interface of Windows Installer. You were required to manually create a custom SQLLogin wizard page for your Suite/Advanced UI project installation.

When adding a new predefined page to your project, select the **Enter login information for a database server** task page and complete the panels in the wizard as needed. The SQLLogin predefined wizard page is then added to your project. This SQLLogin wizard page lets end users enter database server login information (database server name, authentication credentials, database catalog name, etc.) in order to establish a connection to the database server that is targeted by one or more .msi packages in the suite.

Adding a SQLLogin wizard page to your project allows you to:

- Specify properties that identify the SQL login settings in the Suite project and then select the .msi package that receives these properties
- Specify the properties that identify the SQL login settings in the .msi package
- Choose the database technology (Microsoft SQL Server, Microsoft Windows Azure, MySQL, or Oracle) and select the ODBC driver to be targeted

## Execute SQL Statements Directly from Suites

Suite/Advanced UI projects now support directly executing SQL statements on SQL database servers from the user interface, which helps allow SQL database servers to be examined before proceeding with the installation.

The SQL query result can then be accessed in a Suite property. To provide this support, a **Run a SQL String** option is now available in the New Action menu of UI events. The SQL statement is executed using properties and database metadata specified by additional new options available in the New Action menu of UI events: **Configure Database Metadata** and **Override SQL Login Properties**.

## Tile Configurations



**Project** • This information applies to Basic MSI, InstallScript MSI, and InstallScript project types.

Windows 8 introduced a grid of application tiles to the Start screen, replacing the usual list of shortcuts, and also presented tiles in place of shortcuts. InstallShield supports customizing the appearance of a desktop app's tile on the Start screen. The following tile configuration settings are available:

- A toggle between light or dark text when including the app name on medium-sized (150x150) tiles
- Choice of tile background color
- Option to use custom tile images (small: 70x70 and medium:150x150)
- Preference to show or hide the app name on medium-sized tiles

The **Tile Configurations** node appears in the main **Shortcuts** view and in each component's **Shortcuts** subview. Any applicable tile configurations are listed.

To learn more, see the following topics in the InstallShield Help Library:

- *Configuring the Appearance of a Desktop App's Tile on the Start Screen*
- *Tile Configuration Settings*

## New InstallShield Prerequisites for Microsoft Visual C++ 2015, .NET Framework 4.6, and More



**Project** • InstallShield prerequisites can be added to Advanced UI, Basic MSI, InstallScript, InstallScript MSI, and Suite/Advanced UI projects.

InstallShield includes the following new InstallShield prerequisites:

- Microsoft .NET Framework 4.6.1 Full
- Microsoft .NET Framework 4.6.1 Web
- Microsoft ReportViewer 2015
- Microsoft SQL Server 2014 Express System CLR Types (x86)
- Microsoft SQL Server 2016 Express RTM (x64)
- Microsoft SQL Server 2016 Express RTM LocalDB (x64)
- Microsoft Visual C++ 2015 Update 3 Redistributable Package (x86)
- Microsoft Visual C++ 2015 Update 3 Redistributable Package (x64)
- Windows Management Framework 4.0 for Windows 7 SP1 and Server 2008 R2 SP1 (x64)
- Windows Management Framework 4.0 for Windows Server 2012 (x64)
- Windows Management Framework 5.0 for Windows 7 SP1 (x86)
- Windows Management Framework 5.0 for Windows 7 SP1 and Server 2008 R2 SP1 (x64)
- Windows Management Framework 5.0 for Windows 8.1 (x86)
- Windows Management Framework 5.0 for Windows 8.1 and Server 2012 R2 (x64)
- Windows Management Framework 5.0 for Windows Server 2012 (x64)

These prerequisites install the appropriate technologies on supported target systems.



**Note** • The **Web** prerequisite for the .NET Framework requires an Internet connection. This prerequisite downloads the required redistributable files if appropriate. The **Full** prerequisite for the .NET Framework is a stand-alone installation that does not require an Internet connection.

## Predefined System Searches for Adobe Reader, Microsoft Office and the .NET Framework



**Project** • *Predefined System Searches apply to Basic MSI and InstallScript MSI projects.*

AdminStudio has new predefined system searches:

- Adobe Reader 11
- Adobe Reader DC
- Microsoft Office 2013
- Microsoft Office 2016
- Microsoft .NET Framework 4.5.1
- Microsoft .NET Framework 4.5.2
- Microsoft .NET Framework 4.6
- Microsoft .NET Framework 4.6.1

If your installation requires one or both of these, you can use the **System Search** view or the Installation Requirements page in the Project Assistant to add these system searches to your project. When end users launch your installation, Windows Installer checks the target system to see if the requirements are met; if they are not met, the installation displays the error message that is defined for the system search.

## Direct Editor View Enhancements



**Project** • *The Direct Editor is available in the following project types:*

- *Basic MSI*
- *DIM*
- *InstallScript*
- *InstallScript MSI*
- *InstallScript Object*
- *Merge Module*
- *MSI Database*
- *MSM Database*
- *QuickPatch*
- *Transform*



InstallShield now adds several Direct Editor enhancements that provide visual insights into tables, schema information, and validation errors designed to boost the productivity of setup authors or packagers who use the Direct Editor for troubleshooting to identify and resolve advanced problems. These enhancements are described in the following sections:

- [Directory Table Displays Resolved Target Directory Path](#)
- [Column Header Schema Information Tooltips](#)
- [Table Record Reference Tracking](#)
- [Broken References Indicator](#)

For complete information, refer to the “Direct Editor” topic in the InstallShield Help Library.

## Directory Table Displays Resolved Target Directory Path

When showing the Directory table, InstallShield shows a read-only, grayed out column that displays the resolved path of each row’s directory location. This column is not actually stored in the project file. You can sort by its visible text, but you cannot insert, update, or delete its values.

## Column Header Schema Information Tooltips

InstallShield now provides tooltips added to column headers that display the following schema information to indicate the column data type allowed:

- **nullable**—The column can be left empty.
- **required**—The column must contain a non-empty value.
- **char(*nn*)**—Character string with fixed-length *nn*.
- **small integer**—Integer numerical (no decimal), containing a value from -32767 to +32767.
- **long integer**—Integer numerical (no decimal), containing a value from -2147483647 to +2147483647.
- **localizable**—This column contains a string that can be translated. Columns without this marker are not localized.
- **stream**—Binary stream, such as the contents of a file.




---

**Tip** • The **Directory**, **Binary**, and **CustomAction** Direct Editor tables display several of these column types.

## Table Record Reference Tracking

The Direct Editor now includes a Reference Tracking pane that lets you easily visualize relationships between table records. A **Show Reference Tracking** button is added to at the top of the Direct Editor that provides a show/hide toggle of the pane.

Each record may reference one or more other records or be referenced by one or more other records. When a record is highlighted that refers to other records or is referred from other records, the Reference Tracking pane is populated with a **Reference Tables** section showing the tables in which the references reside and an additional section that displays the actual record references. The record references section includes arrow icons that indicate the direction of the reference, where:

- A green arrow pointing to the right indicates that the record that is selected in the Direct Editor table **references** the record displayed in the Reference Tracking pane.
- A blue arrow pointing to the left indicates that the record selected in the Direct Editor table is **referenced by** the record displayed in the Reference Tracking pane.
- Two arrows in both directions (a green arrow pointing right and a blue arrow pointing left) that indicate the record selected in the Direct Editor table **references and is referenced by** the record displayed in the Reference Tracking pane.



**Note** • When multiple Direct Editor records are selected, only the “focused” record’s references are shown. In addition, if multiple tables appear in the **Reference Tables** section, this indicates that the record selected in the Direct Editor table references or is referenced by records in multiple tables. You can click any table in the **Reference Tables** section to view the associated records references.



**Tip** • In the Reference Tracking pane, you can quickly jump between record references by double-clicking within a cell.

## Broken References Indicator

There are instances where a Direct Editor table record might reference a foreign key record that no longer exists. InstallShield now displays the cells of such broken references with a red fill color to call attention to the broken reference.

For example, if the **Directory\_** column in the in the **Component** table references a directory name that is not found in the **Directory** table, then the **Directory\_** column is filled in red.



**Note** • The Direct Editor broken reference indicator is unrelated to the **Maintain referential integrity** check box on the [Preferences tab](#) of the Options dialog box. While the **Maintain referential integrity** setting is designed to update the foreign keys when you modify a primary key, the purpose of the broken reference indicator is to display broken references to help you easily identify orphaned records. Therefore, broken references are displayed regardless of the selection of the **Maintain referential integrity** setting.

## Suite UI Enhancements



**Project** • This information applies to the following project types:

- [Advanced UI](#)
- [Suite/Advanced UI](#)



**Edition** • The Advanced UI project type is available in the Professional edition of AdminStudio. The Suite/Advanced UI project type is available in the Premier edition of AdminStudio. For information about the differences between these two project types, see the “Advanced UI Projects vs. Suite/Advanced UI Projects” topic in the InstallShield Help Library.

To better support various use cases, InstallShield has added the following functionality to Advanced UI and Suite/Advanced UI projects:

- [New Close Window and Stop Event UI Actions](#)
- [Suite Loading Splash Screen Added](#)

### New Close Window and Stop Event UI Actions

InstallShield includes the following new UI actions:

- [Close Window](#)
- [Stop Event](#)

To learn more, see the “Configuring an Action for an Element in the Wizard Interface” topic in the InstallShield Help Library.

#### Close Window

This type of action closes a main wizard page or secondary window, or in some cases, provides conditional closing of a secondary window.

Close Window accepts parameters corresponding to the following predefined Return Code IDs: IDOK, IDCANCEL, IDABORT, IDRETRY, IDIGNORE, IDYES, IDNO, and IDCLOSE.

The behavior of the Close Window action differs slightly on wizard pages and secondary windows:

- For wizard pages, the Close Window action prompts the end user to cancel if its Return Code parameter is set to IDCANCEL (and then interrupts the wizard if the end user specifies Yes). For all other Return Code IDs, the wizard immediately closes.
- For secondary windows, the Close Window action closes the secondary window and in special cases such as with the ISRMFilesInUse and ISRMFileInUse secondary windows, the specified Return Code value is returned.

InstallShield currently provides the following secondary windows that contain customized behavior that is dependent upon the specified Return Code ID:

- ISDownloadProgress
- ISPromptForSourceMedia
- ISFilesInUse
- ISRMFilesInUse
- ISUpgradeParcel

## Stop Event

This type of action allows you to conditionally stop further actions from being processed. For example, this action can be used to prevent the default behavior of a button from occurring.

## Suite Loading Splash Screen Added

During a suite installation where the loading process takes more than half a second, InstallShield will now display a splash screen to indicate that the program has launched and that a loading process needs to complete before the Install Welcome dialog appears. For the splash screen, InstallShield utilizes the largest provided version of the **setup.exe** icon and includes a progress bar on it.

## Kill Process Custom Action Enhanced




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**Project** • This information applies to the following project types:

- Basic MSI
- InstallScript MSI

A new **Processes** setting has been added to the Kill-Process Custom Action settings that lets you directly enter executable file names or PIDs of the processes that you want to terminate without having to create a property using the Property Manager and format its value correctly for the action to work.

To learn more, see the “Calling a Kill-Process Custom Action” topic in the InstallShield Help Library.




---

**Tip** • The value of the **Processes** setting may be written to the **ISTerminateProcesses** property. If you have additional kill-process custom actions that do not specify a value in the **Processes** setting, such as those migrated from InstallShield 2015 or earlier, shared use of the **ISTerminateProcesses** property may result in undesired behavior.

## Ability to Set the Default Value Used for Component Attributes

Support for a new property has been added to the **InstallShield** table that lets you set the default value used for component attributes. If a property of **MsiComponentAttributes** exists in the **InstallShield** table, its value overrides the default **Attributes** column value in the **Component** table from 8 to whatever is specified.

For example, to make new components 64-bit, add 256 to the **MsiComponentAttributes** value. You can specify 264 (for 64-bit shared) or optionally enter 256 (for 64-bit unshared). In doing so, the **64-Bit Component** setting and **Shared** settings (shown on the in the General area of the **Components** view) will be updated to Yes or No accordingly.

For more information about the bit values used in calculating the **Attributes** column of the Component table, refer to the [Component Table](#) page in the MSDN Library.



**Note** • To set the default value used for component attributes, the **MsiComponentAttributes** property must be updated manually in the **InstallShield** table in the **Direct Editor** of each project. The **Template Summary** setting for a product configuration is ignored for this use case.

## Ability to Filter Items by Features in Additional Views

The following views now contain a View Filter that lets you filter the view list by any feature in your project:

- Environment Variables View**—You can use the View Filter list at the top of this view to show and hide environmental variables that are associated to a particular feature in your project. You can also select a feature from the View List in order to associate only that feature with a subsequent event (e.g., the creation, modification, or removal of an environmental variable). Lastly, to see all of the environmental variables that are in your project, select the All Application Data option in the View Filter list. For more information, refer to the “Environment Variables View” topic in the InstallShield Help Library.
- Text File Changes View**—You can use the View Filter list at the top of this view to show and hide text file change sets that are associated to a particular feature in your project. You can select a feature from the View List in order to associate only that feature with a subsequent event (e.g., the creation, modification, ordering, or removal of change sets). The resulting modification takes place at run time on the target system when the feature is installed. Lastly, to see all of the text file change sets that are in your project, select the All Application Data option in the View Filter list. For more information, refer to the “Text File Changes View” topic in the InstallShield Help Library.
- INI File Changes View**—You can use the View Filter list at the top of this view to show and hide initialization (.ini) files that are associated to a particular feature in your project. You can select a feature from the View List in order to associate only that feature with a subsequent event (e.g., the creation, importing, modification, or removal of .ini files). The resulting modification takes place at run time on the target system when the feature is installed. Lastly, to see all of the .ini files that are in your project, select the All Application Data option in the View Filter list. For more information, refer to the “INI File Changes View” topic in the InstallShield Help Library.

## Digital Signature Updates

Beginning with AdminStudio 2015, support was added to enable you to use digital certificates that use the SHA-256 hashing algorithm for signing your installations and files at build time.

In AdminStudio 2016, support for SHA-256 digital certificates has been enhanced for Windows Installer and InstallScript projects to:

- Give you the ability to specify a digest type using the new **Signature Digest** drop-down on the Certificate Selection Dialog Box
- RFC3161 timestamping is now supported and can be specified in **settings.xml**, noting that:
  - **DigitalSignature/@Timestamp** can be an **Authenticode** or **RFC3161 server** for .msi, .exe, and .dll files
  - **DigitalSignature/@TimestampRFC3161** used for UWP app package files must be an **RFC3161 server**
- Handle similarly-named certificates in the Certificate Store



**Note** • Any new signatures created or timestamped after Jan 1, 2016 must be SHA-256-based signatures. Any files signed with an SHA-1 certificate need to have a timestamp showing a date and time prior to Jan 1, 2016 in order to continue to be supported. Those files will still be allowed through the "Mark-of-the-web" system until Jan 14, 2020, when all SHA-1 support will stop in all current versions of Windows.

## Support for the Microsoft UWP App Package (.appx) Format

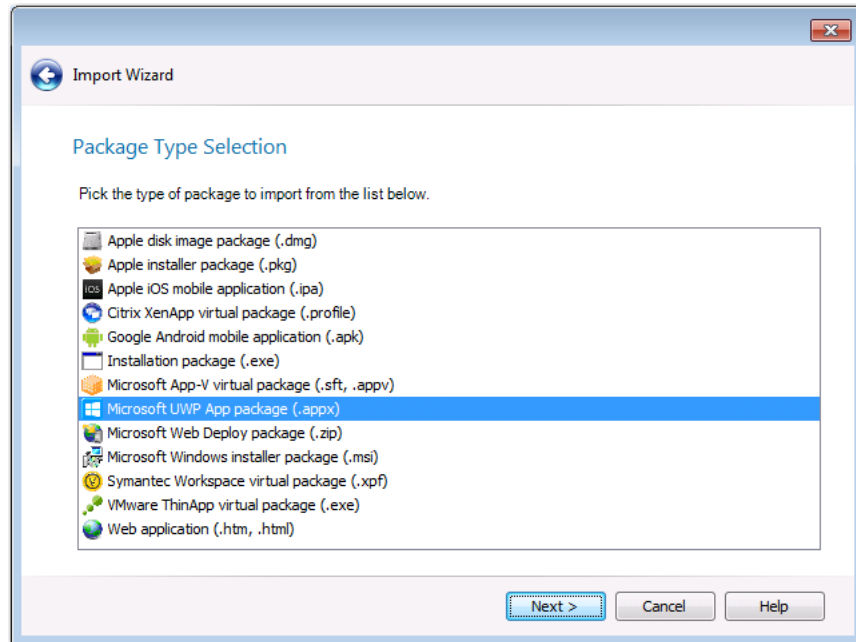
AdminStudio 2016 SP1 supports the import, testing, and distribution of Microsoft UWP app packages (.appx). The UWP app package format is the simple and secure packaging format used to distribute and install apps on Windows 8.x and 10 and is the only format allowed for Universal Windows Platform (UWP) apps. You have the option of selling or providing Microsoft UWP app packages through the Windows Store.

InstallShield 2016, also included with AdminStudio 2016 SP1, supports creating the UWP app package format (.appx) and its desktop and server extensions through an alternate build output and provides suitability testing to help you identify items unsuitable for the UWP app package format.

- [Support for Importing UWP App Packages](#)
- [Support for Testing UWP App Packages](#)
- [Support for Distributing UWP App Packages to System Center Configuration Manager](#)

## Support for Importing UWP App Packages

You can import Microsoft UWP app packages using the Import Wizard by selecting the **Microsoft UWP App package (.appx)** option on the **Package Type Selection** panel of the **Import Wizard**. You can also import Microsoft UWP app packages from System Center Configuration Manager.



**Figure 30:** Microsoft UWP App Package (.appx) Option on Package Type Selection Panel of Import Wizard

## Support for Testing UWP App Packages

In AdminStudio 2016 SP1, you can use Application Manager Test Center to test imported Microsoft UWP app packages for operating system compatibility with Windows 8.1 and Windows 10, and for mobile risk assessment.

## Support for Distributing UWP App Packages to System Center Configuration Manager

In AdminStudio 2016 SP1, you can use the Distribution Wizard to distribute Microsoft UWP app packages to System Center 2012 Configuration Manager and later.

# New API Commands to Set and Get Package Distribution Properties

AdminStudio 2016 SP1 includes two new API commands to set and get package distribution properties.

- **Set-ASDistributionProperty**—You can use the Set-ASDistributionProperty command to set the property value of the distribution system for a package. The following is an example of the Set-ASDistributionProperty command:

```
Set-ASDistributionProperty -PackageId 10 -SystemConnectionName 'Altiris'  
-PropertyName 'PackageName' -PropertyValue 'PackageABC'
```

- **Get-ASDistributionProperty**—You can use the Get-ASDistributionProperty command to retrieve the property value of the distribution system for a package. The following is an example of the Get-ASDistributionProperty command:

```
Get-ASDistributionProperty -PackageId 9 -SystemConnectionName 'Altiris'  
-PropertyName 'PackageName'
```

# New OS Compatibility and Risk Assessment Test Center Tests

AdminStudio 2016 SP1 includes new tests for operating system compatibility with the latest versions of desktop and mobile operating systems. It also includes additional mobile risk assessment tests.

- [New OS Compatibility Tests](#)
- [New Mobile Risk Assessment Tests](#)

## New OS Compatibility Tests

AdminStudio 2016 SP1 includes operating system compatibility tests for the following additional operating systems:

- Mac OS 10.12 (Sierra)
- Android 6.0 (Marshmallow) and Android 7.0 (Nougat)
- Apple iOS 9 and iOS 10
- Windows Server 2016



## New Mobile Risk Assessment Tests

AdminStudio 2016 SP1 includes new mobile risk assessment tests for both iOS and Android operating systems.

### New Apple Mobile Risk Assessment Tests

The following new mobile risk assessment tests were added for iOS mobile apps:

- 3D Touch (M153)
- ARM64 (M154)
- Siri Voice Assistance (SiriKit) (M155)

### New Android Mobile Risk Assessment Tests

The following new mobile risk assessment tests were added for Android mobile apps:

- Android Pay (M260)
- Fingerprint Scanner (M261)
- Direct Share (M262)
- VR Mode (M263)

## Report Center Enhancements

AdminStudio 2016 SP1 includes the following Report Center enhancements:

- [New Devices in Device Compatibility Reports](#)
- [New Mac Desktop OS Application Compatibility Dashboard Report](#)
- [Mac Installer Best Practices Report](#)

## New Devices in Device Compatibility Reports

AdminStudio 2016 SP1's Device Compatibility reports in Report Center now include the following additional iOS devices:

### New iOS Devices

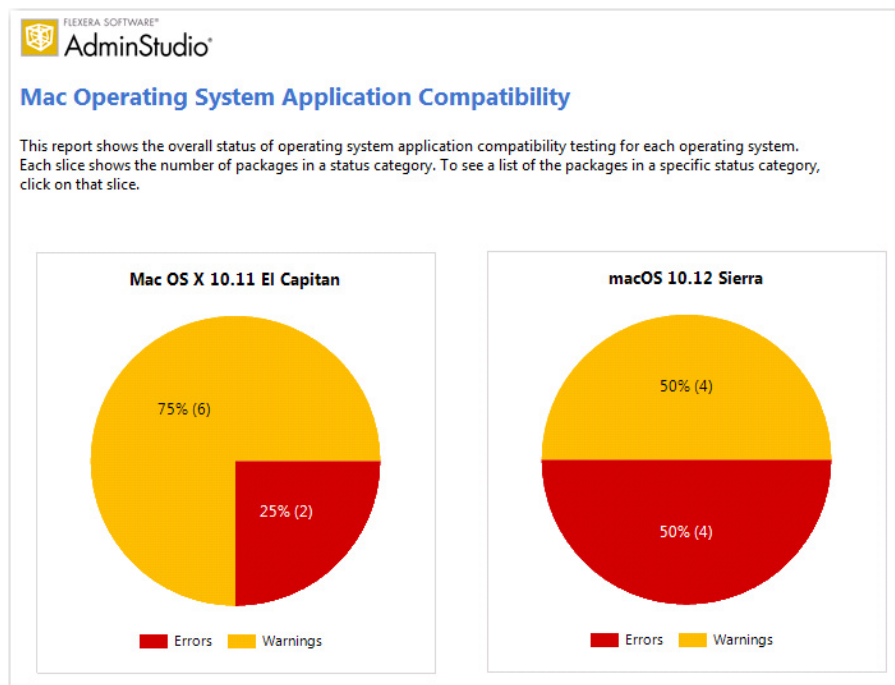
- iPad Pro 9.7 and 9.7 LTE
- iPad Pro 12.9 and 12.9 LTE
- iPad Mini 4 and 4 LTE
- iPhone 6s, 6s Plus, and SE

## New Android Devices

- Google/LG Nexus 5X, 6P
- Samsung Galaxy Note 4, 5, 6, 7
- Samsung Galaxy S7
- Samsung Galaxy Tab S2

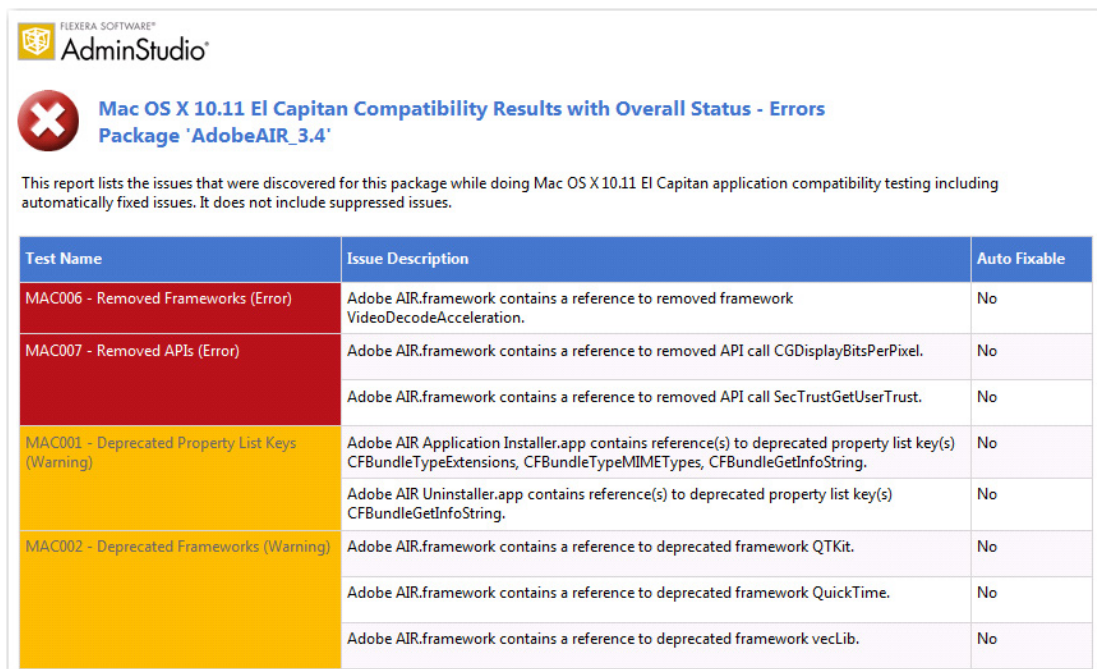
## New Mac Desktop OS Application Compatibility Dashboard Report

AdminStudio 2016 SP1 includes a new Mac Operating System Application Compatibility dashboard report that shows the overall status of operating system application compatibility testing for Mac OS X 10.11 (El Capitan) and Mac OS 10.12 (Sierra).



**Figure 31:** Mac OS Application Compatibility Dashboard

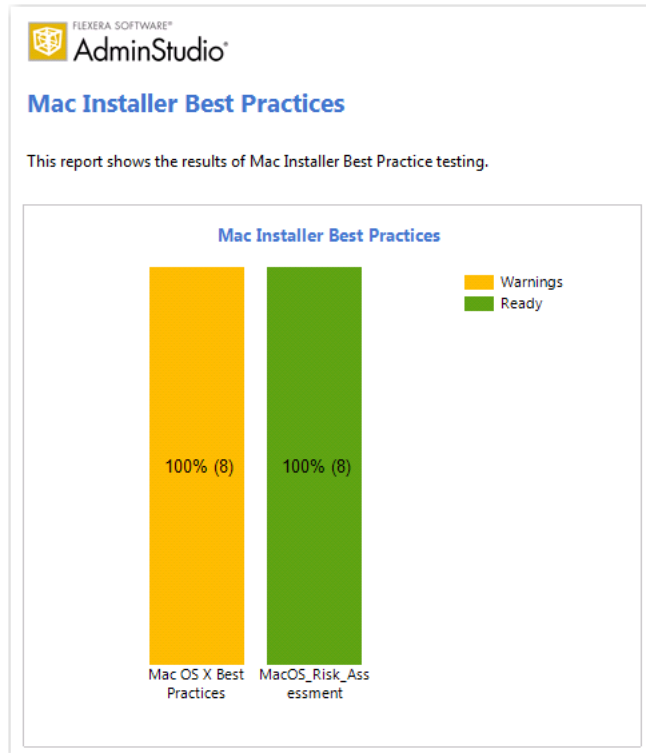
You can click on wedges of the pie charts in this dashboard report to drill down to view more detailed reports.



**Figure 32:** Mac OS X 10.11 El Capitan Compatibility Results With Overall Status Report

## Mac Installer Best Practices Report

AdminStudio 2016 SP1 includes a new Mac Installer Best Practices report that shows the results of Mac OS Installer best practices testing.



**Figure 33:** Mac Installer Best Practices Report

You can click on the bars in this report to drill down to view more detailed reports.



**Figure 34:** Mac OS X Best Practices Compatibility Results Report

## Applications Are Not Automatically Tested Upon Import

In AdminStudio 2016, Application Manager was configured to automatically test packages against all selected compatibility, best practices, and risk assessment tests as part of the import process. By default, the **Automatically Execute Tests After Import** option on the **Import Options** tab of the Application Manager **Options** dialog box was selected.

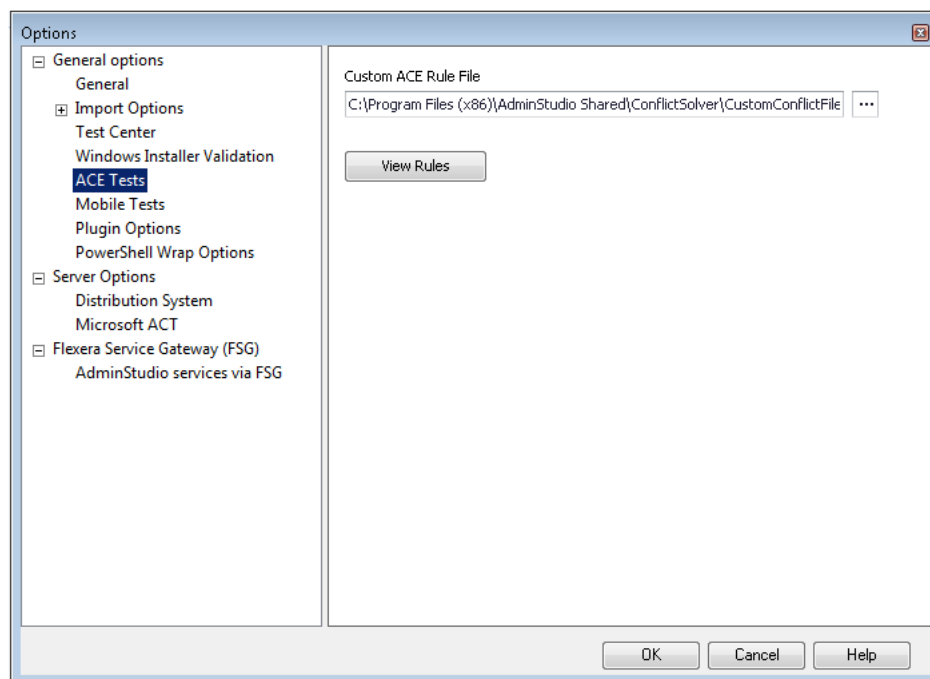
in AdminStudio 2016 SP1, the **Automatically Execute Tests After Import** option on the **Import Options** tab of the **Options** dialog box is no longer selected by default.

## Default ACE and ICE Tests are No Longer Specified on the ACE Tests Tab of Options Dialog Box

In previous releases, you could specify the default ACE and ICE rules that you wanted to use in testing on the **ACE Tests** tab of the Application Manager **Options** dialog box. The selections that you made on the **ACE Tests** tab would be reflected on the **Select Tests to Execute** dialog box, accessible on the Test Center tab.

Starting with AdminStudio 2016 SP1, you no longer specify default ACE and ICE rules on the **ACE Tests** tab. Instead, you specify default ACE and ICE rules to run on the **Select Tests to Execute** dialog box only.

On the **ACE Tests** tab of the **Options** dialog box, you can still access the **Rules Viewer**—which can be used to add user defined ACEs—and you can still specify a custom ACE rule file.



**Figure 35:** ACE Tests Tab of Application Manager Options Dialog Box

# New Features in AdminStudio 2016

This section lists the new features that are included in AdminStudio 2016:

- [Import and Test Mac OS X Desktop Applications](#)
- [Ability to Inspect and Test Complex Installer Executables](#)
- [Improved FlexNet Manager Suite Integration](#)
- [Enhanced Automation Capabilities to Streamline Application Import and Testing](#)
- [Automated Application Converter Enhancements](#)
- [New Wizard to Install and Launch Windows Installer Packages on a Virtual Machine for Testing](#)
- [Productivity Shortcuts](#)
- [New System Center Configuration Manager Settings View](#)

## Import and Test Mac OS X Desktop Applications

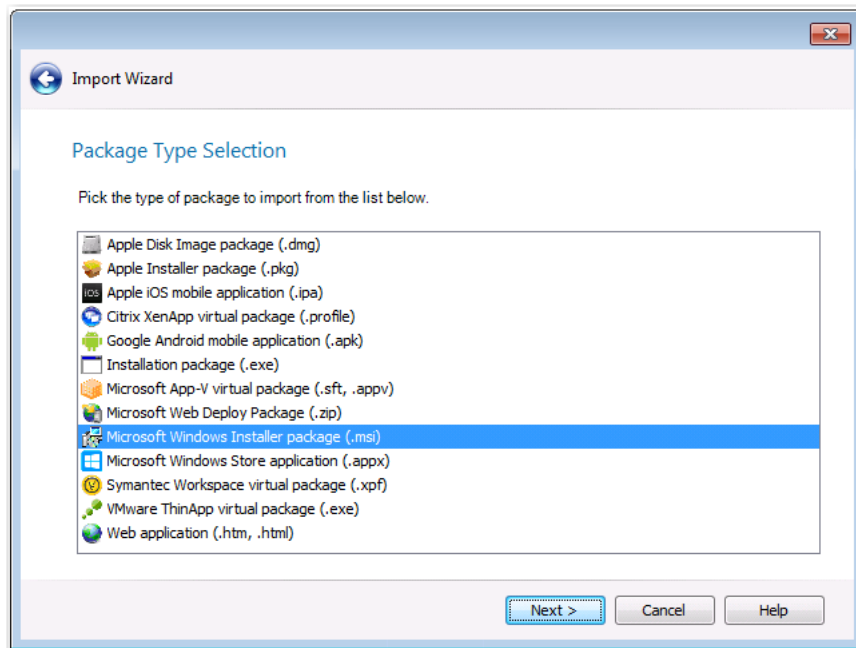
In its 2016 release, AdminStudio is extending its application readiness capabilities to Mac OS X desktop applications. You can now import Mac OS X applications into the Application Catalog for testing and distribution to a JAMF Casper Suite server. Additionally, because App Portal also supports Casper, when you publish DMG and PKG files to Casper, you can choose to automatically generate App Portal catalog items for those packages.

- [Import Mac OS X Desktop Applications \(DMG and PKG Files\)](#)
- [Import Links to OS X Desktop Applications in the Mac App Store](#)
- [Test Mac OS X Desktop Applications](#)
- [Publish Mac OS X Desktop Applications to Casper With Integration to App Portal](#)

## Import Mac OS X Desktop Applications (DMG and PKG Files)

In AdminStudio 2016, you can import Apple disk images (**.dmg**) and Mac OS X installer packages (**.pkg**) into the Application Catalog for inspection, customization, testing, and distribution to Casper.

The **Package Type Selection** panel of the Import Wizard now includes two new selections to support the import of Mac OS X desktop applications into the Application Catalog.



**Figure 36:** New Apple Installer Packages on Package Type Selection Panel

The following are the two new package types that were added to the **Package Type Selection** panel to support Mac OS X desktop applications:

- **Apple Disk Image package (.dmg)**—When you double-click a **.dmg** file, an Apple disk image is “mounted” as a volume within the Finder. To install the application, you usually drag the application icon from the disk image into the Applications folder.
- **Apple installer package (.pkg)**—Double-clicking a **.pkg** file launches the Apple installer application, where the package is installed by proceeding through an installation wizard.

You can import these newly supported package types as single applications, part of a batch import of applications in a selected folder, or as part of a monitored directory using the Package Auto Import feature. You can also publish these package types to a JAMF Casper Suite server.

### Inspecting Bundled Packages

Both **.dmg** and **.pkg** files can contain child **.dmg** or **.pkg** files bundled within the file. These bundled packages can be viewed on the imported package’s **Bundled Packages** tab of the **Catalog Deployment Type View**. For more information, see [Inspect Bundled Applications in DMG and PKG Installers](#).

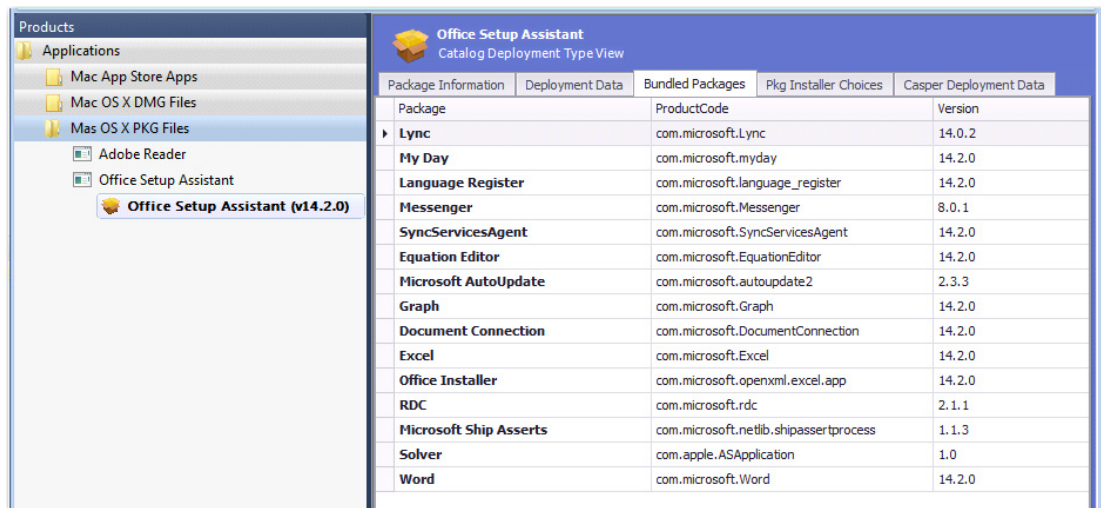


## Customizing Installer Settings

The installer settings of a **.pkg** file can be modified on the **Pkg Installer Choices** tab of the **Catalog Deployment Type View**. For more information, see [Customize Apple Installer Package PKG Installer Settings](#).

## Inspect Bundled Applications in DMG and PKG Installers

If an Apple disk image package (**.dmg**) or Apple installer package (**.pkg**) contains child packages bundled within it, those child packages will be listed on the new **Bundled Packages** tab of the **Catalog Deployment Type** view.



**Figure 37:** Bundled Packages Tab of Catalog Deployment Type View for Apple Installer Package (.pkg)

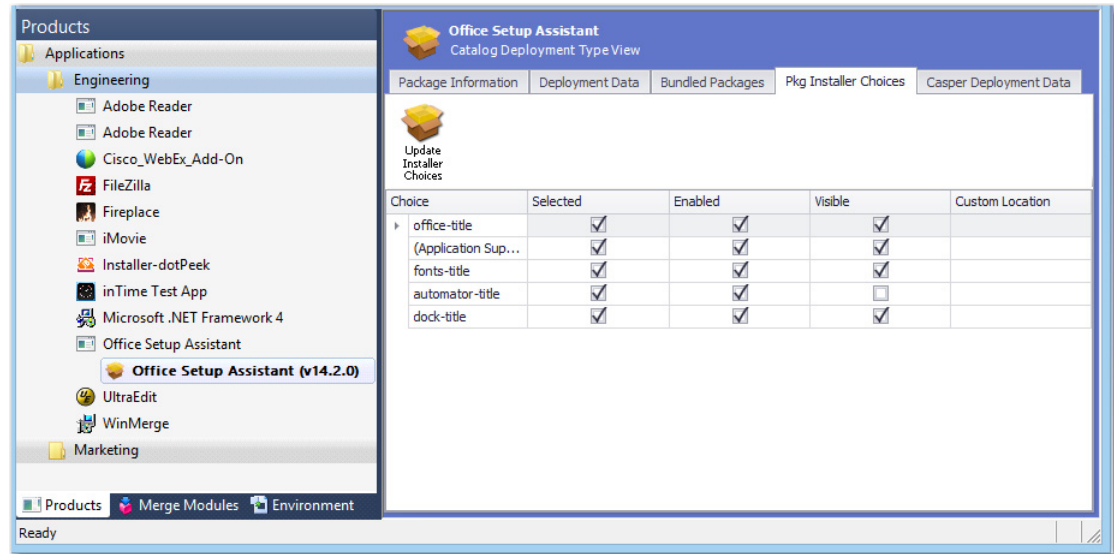
When the imported **.dmg** or **.pkg** file is tested, each of these child packages is also tested, and the combined test results are listed in Test Center, as described in [Combined Testing of Child Applications of DMG and PKG Files](#).



**Note** • AdminStudio will only inspect Mac OS X package files one level deep. If a **.dmg** or **.pkg** package contains another **.dmg** or **.pkg** package bundled within it, that child package will not be inspected.

## Customize Apple Installer Package PKG Installer Settings

Just as a Windows Installer package can be customized by adding a transform file, an Apple installer package (.pkg) can be customized by editing an XML file that is embedded within it. In AdminStudio 2016, the settings defined in a .pkg file's embedded XML file are displayed on the new **PKG Installer Choices** tab of the package's **Catalog Deployment Type** view.



**Figure 38:** New PKG Installer Choices Tab of Catalog Deployment Type View for Mac PKG Installer

The **PKG Installer Choices** tab lists all settings that have been defined in that .pkg file's embedded XML settings file by the application manufacturer. To customize this installer (such as to prepare it for silent installation by Casper), you can make changes to the settings on this tab and then click **Update Installer Choices**. AdminStudio will then save your changes in the package's embedded settings file.

For each installer **Choice** listed on the **PKG Installer Choices** tab, the following options are available:

Option	Description
<b>Visible</b>	<p>This option can be either selected or not selected:</p> <ul style="list-style-type: none"> <li>● <b>Selected</b>—This choice setting will be displayed in the installer.</li> <li>● <b>Not selected</b>—This choice setting will not be displayed in the installer.</li> </ul>
<b>Selected</b>	<p>This option can be either selected or not selected:</p> <ul style="list-style-type: none"> <li>● <b>Selected</b>—If this choice setting is displayed in the installer, its check box will be checked.</li> <li>● <b>Not selected</b>—If this choice setting is displayed in the installer, its check box will not be checked.</li> </ul>
<b>Enabled</b>	<p>This option can be either selected or not selected:</p> <ul style="list-style-type: none"> <li>● <b>Selected</b>—If this choice setting is displayed in the installer, it will be enabled.</li> <li>● <b>Not selected</b>—If this choice setting is displayed in the installer, it will be disabled.</li> </ul>
<b>Custom Location</b>	<p>If this choice setting explicitly permits the user to specify a user-defined installation path, the path entered in this field would populate the user-defined installation path when it is displayed in the installer.</p>



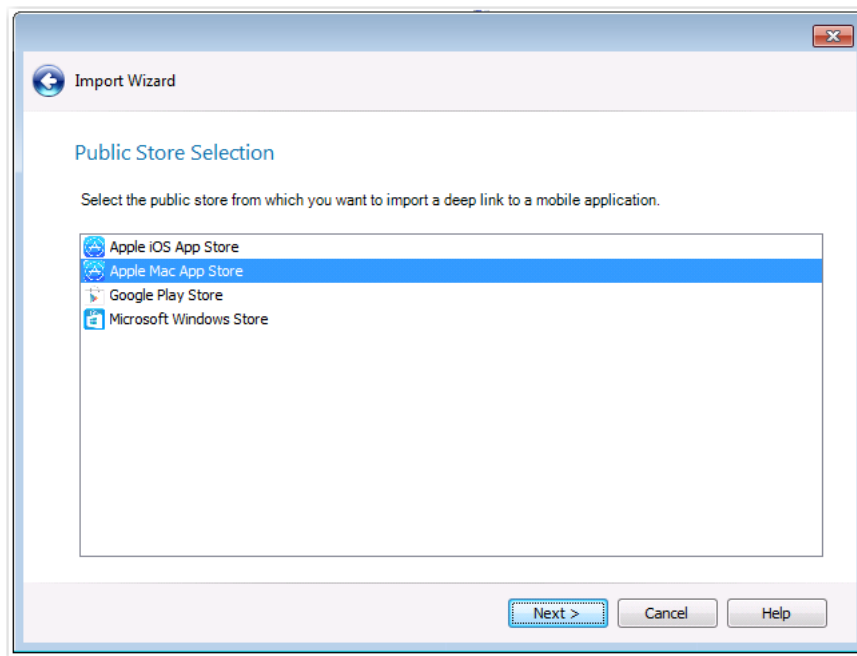
**Note** • *Modifying the installer choices of an Apple installer package does not affect the digital signature of the package.*

## Import Links to OS X Desktop Applications in the Mac App Store

In previous releases, you could import links to iOS mobile apps in the iTunes App Store. To do this, you selected, **Apple Store** on the **Public Store Selection** panel of the Import Wizard.

In AdminStudio 2016, in addition to being able to import links to iOS mobile apps in the iTunes App Store, you can now also import links to Mac OS X desktop applications in the Mac App Store. On the **Public Store Selection** panel of the Import Wizard, you now have two different Apple public store options:

- **Apple iOS App Store** (for iOS mobile apps)
- **Apple Mac App Store** (for OS X desktop apps)



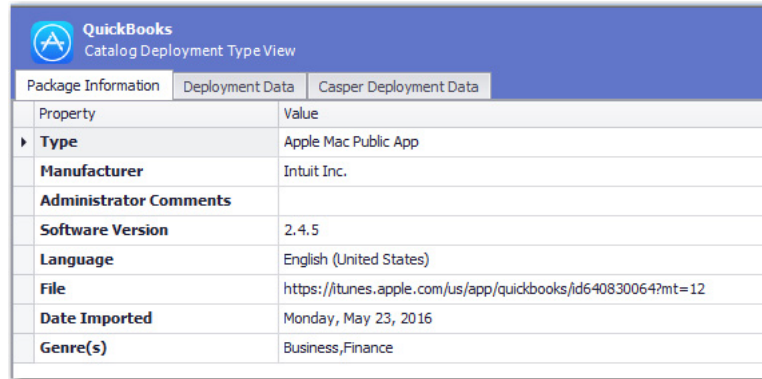
**Figure 39:** Apple Mac App Store Option on Public Store Selection Panel

After you have imported a Mac OS X desktop application into the Application Catalog, you can test it and distribute it to a Casper server. For more information, see:

- [Test Mac OS X Desktop Applications](#)
- [Publish Mac OS X Desktop Applications to Casper With Integration to App Portal](#)

## New Field That Identifies Genre of Mac Public Store Apps (Both iOS and OS X)

For Apple public store apps imported into the Application Catalog (both iOS and OS X apps), a new **Genre(s)** field is listed on the **Package Information** tab of the **Catalog Deployment Type** View, which lists the category that the application belongs to in the public store.

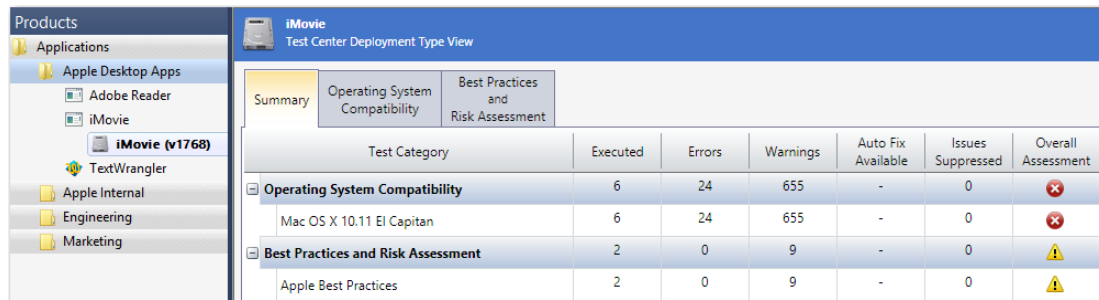


QuickBooks Catalog Deployment Type View	
Package Information	Deployment Data
Property	Value
Type	Apple Mac Public App
Manufacturer	Intuit Inc.
Administrator Comments	
Software Version	2.4.5
Language	English (United States)
File	https://itunes.apple.com/us/app/quickbooks/id640830064?mt=12
Date Imported	Monday, May 23, 2016
Genre(s)	Business, Finance

**Figure 40:** Genre(s) Field on Package Information Tab

## Test Mac OS X Desktop Applications

You can use Test Center to test all three types of supported Mac OS X desktop applications: DMG files, PKG files, and Mac App Store apps. Tests are available in the **Operating System Compatibility** and **Best Practices and Risk Assessment** test categories.



Products		iMovie Test Center Deployment Type View						
Applications		Summary	Operating System Compatibility	Best Practices and Risk Assessment				
		Test Category	Executed	Errors	Warnings	Auto Fix Available	Issues Suppressed	Overall Assessment
iMovie (v1768)		Operating System Compatibility	6	24	655	-	0	✖
		Mac OS X 10.11 El Capitan	6	24	655	-	0	✖
		Best Practices and Risk Assessment	2	0	9	-	0	⚠
		Apple Best Practices	2	0	9	-	0	⚠

**Figure 41:** Test Results for Mac OS X Desktop App

In AdminStudio 2016, the following new tests for Mac OS X desktop applications have been added:

Category	Test Name	Description	Supported Package Types
<b>Operating System Compatibility</b>	MAC001	<b>Deprecated Property List Keys</b>	DMG, PKG
	MAC002	<b>Deprecated Frameworks</b>	DMG, PKG
	MAC003	<b>Application Requires Specific Minimum OS Version</b>	DMG, PKG, Mac App Store
	MAC004	<b>Deprecated APIs</b>	DMG, PKG
	MAC005	<b>Application Requires 64-bit Processor</b>	Mac App Store
	MAC006	<b>Removed Frameworks</b>	DMG, PKG
	MAC007	<b>Removed APIs</b>	DMG, PKG
<b>Apple Best Practices</b>	MAC701	<b>Recommended Property List Keys</b>	DMG, PKG
	MAC702	<b>Code Signature</b>	DMG, PKG
	MAC703	<b>Volume Purchase Program</b>	Mac App Store
	MAC704	<b>Allows In-App Purchases</b>	Mac App Store

## Combined Testing of Child Applications of DMG and PKG Files

If an Apple disk image package (**.dmg**) or Apple installer package (**.pkg**) contains child packages bundled within it, those child packages are also tested when the parent package is tested. Test results of the parent package and all of its child packages are combined and are displayed in Test Center.

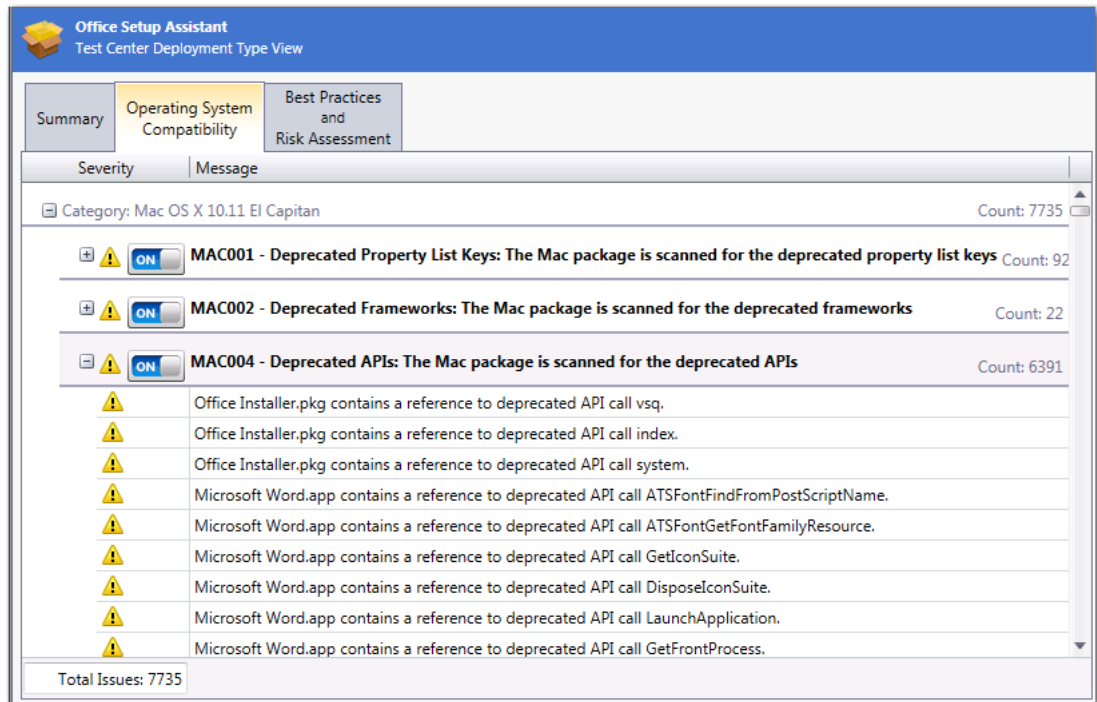
Office Setup Assistant

Test Center Deployment Type View

Summary	Operating System Compatibility	Best Practices and Risk Assessment						
Test Category			Executed	Errors	Warnings	Auto Fix Available	Issues Suppressed	Overall Assessment
<input checked="" type="checkbox"/>	Operating System Compatibility		6	1230	6505	-	0	
	Mac OS X 10.11 El Capitan		6	1230	6505	-	0	
<input checked="" type="checkbox"/>	Best Practices and Risk Assessment		2	0	143	-	0	
	Apple Best Practices		2	0	143	-	0	

**Figure 42:** Consolidated Test Results for Apple Installer Package (.pkg)

When you view detailed test results, the name of the child **.dmg**, **.pkg**, or **.app** file that generated the error or warning is listed.



**Figure 43:** Detailed Consolidated Test Results for Apple Installer Package (.pkg)

## Publish Mac OS X Desktop Applications to Casper With Integration to App Portal

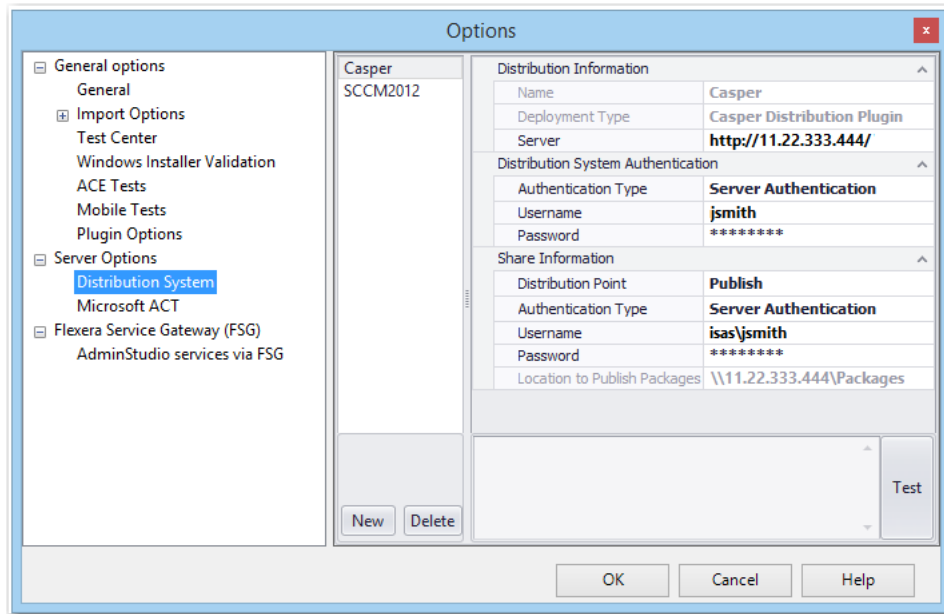
In AdminStudio 2016, you can publish Mac OS X desktop applications (DMG, PKG, and Mac App Store apps) to a JAMF Casper Suite server.

Because AdminStudio is also integrated with App Portal (which also supports Casper), you can choose to automatically create App Portal catalog items for DMG and PKG applications in your Application Catalog when you publish them to a Casper server.

- [Setting Up a Connection to a Casper Server](#)
- [Automatically Creating App Portal Catalog Items for DMG and PKG Applications](#)
- [Viewing Casper Deployment Data for an Application](#)

## Setting Up a Connection to a Casper Server

On the **Server Options > Distribution Options** tab of the Application Manager **Options** dialog box, you can now create a named connection to a Casper server.



**Figure 44:** Named Connection to a Casper Server

After you select **Casper Distribution Plugin** from the **Deployment Type** field, the settings required for connecting to a Casper server are listed.



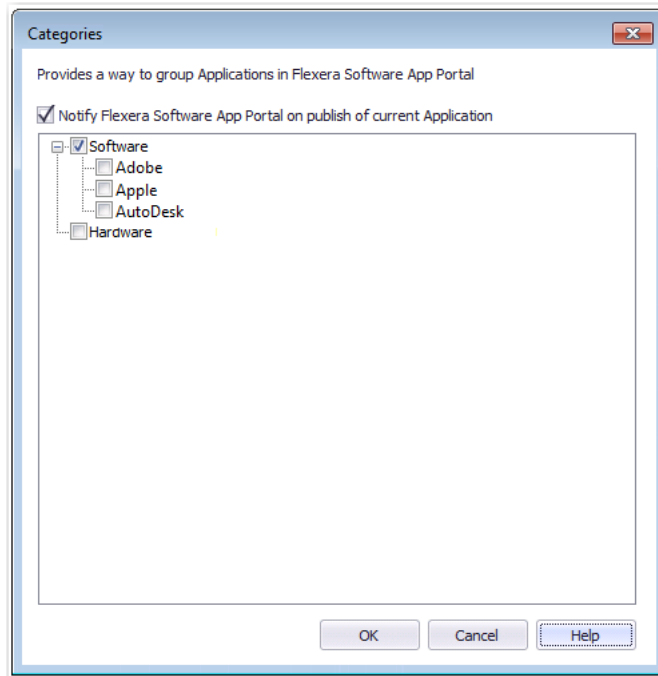
**Note** • Casper supports multiple server infrastructures, but AdminStudio only supports the **File Share Distribution Points** infrastructure, and copies packages to a UNC File Share Distribution Point in Casper. AdminStudio currently does not support copying packages to JDS Instances, Cloud Distribution Points, Software Update Servers, or NetBoot Servers.



## Automatically Creating App Portal Catalog Items for DMG and PKG Applications

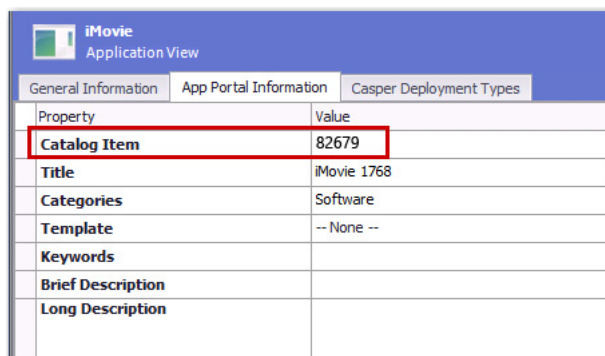
When you distribute DMG and PKG applications to Casper Suite Server, you can instruct AdminStudio to automatically create App Portal catalog items for each of those applications.

To do this, first set up a named connection to a Casper server and connect to the Flexera Service Gateway. Then, open the **App Portal Information** tab of the DMG or PKG application's **Application View**, and click on the **Categories** field to open the **Categories** dialog box. On the **Categories** dialog box, select the **Notify Flexera Software App Portal on publish of current application** option and select one or more App Portal categories where the catalog item will be available.



**Figure 45:** Selecting App Portal Options on Categories Dialog Box

When this application is published to Casper, a catalog item in the selected category will automatically be created, and the **Catalog Item** field on the **App Portal Information** view will display the App Portal Catalog ID for that catalog item.



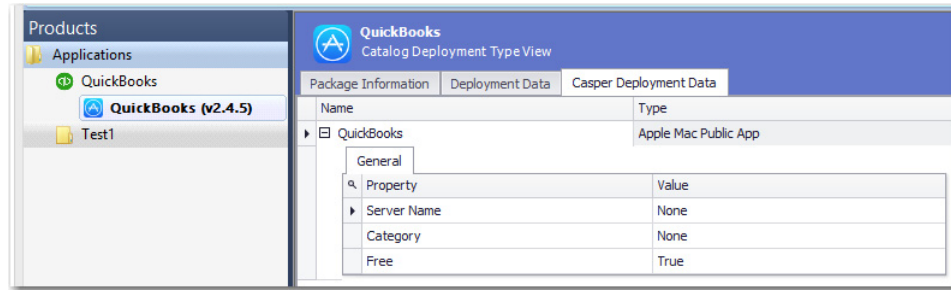
**Figure 46:** Catalog Item Field on App Portal Information Tab



**Note** • If an App Portal catalog item has not been created for an application, the **Catalog Item** field will display *Not Published to App Portal*.

## Viewing Casper Deployment Data for an Application

In AdminStudio 2016, you can view and modify Casper deployment settings for Mac OS X desktop applications on the new **Casper Deployment Data** tab of the **Catalog Deployment Type View**.






**Figure 47:** Casper Deployment Data Tab of Catalog Deployment Type View




The **Casper Deployment Data** tab can include up to three subtabs that display Casper deployment data: **General**, **Options**, and **Limitations**.



**Note** • The **Options** and **Limitations** subtabs are not displayed for Mac App Store apps.

The **Casper Deployment Data** tab displays the following properties:

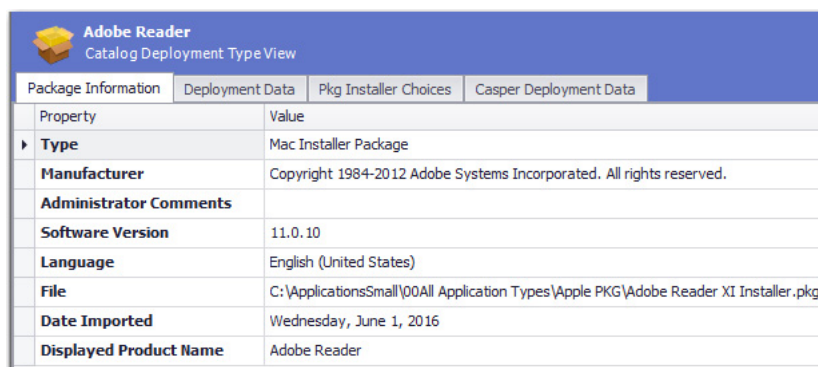
Subtab	Property	Description
General	Server Name	Name of the Casper server.
	Category	Category in Casper that the package will be added to.  <b>Note</b> • Casper lets you create custom categories. If AdminStudio has matched this application to an entry in the Application Recognition Library (ARL), AdminStudio will use the ARL category when publishing to Casper, creating it if necessary.
	Info	Information to display to the administrator when the package is deployed or uninstalled
	Notes	Notes to display about the package (such as the name of the person who built it and when it was built).  <b>Note</b> • Not displayed for Mac App Store apps.
	Free	Indicates whether or not the Mac App Store app is available for free ( <b>True</b> ) or whether it requires payment ( <b>False</b> ).  <b>Note</b> • Only displayed for Mac App Store apps.

Subtab	Property	Description
Options	<b>Priority</b>	<p>Priority to use for deploying or uninstalling the package. For example, a package with a priority of <b>1</b> is deployed or uninstalled before other packages.</p> <p>When several applications are deployed together, the one with the highest priority is installed first. Therefore, if one application requires that another application be installed first before it can be successfully installed, you should assign the required application a higher priority (lower number) than the dependent application.</p>
	<b>Fill user templates (FUT)</b>	<p>Set this property to <b>True</b> to fill new home directories with the contents of the home directory in the package's <b>Users</b> folder.</p> <p>This setting can be changed when deploying or uninstalling the package using a policy.</p>  <p><b>Note</b> • Only applicable to DMG packages.</p>
	<b>Fill existing user home directories (FEU)</b>	<p>Set this property to <b>True</b> to fill existing home directories with the contents of the home directory in the package's <b>Users</b> folder.</p> <p>This setting can be changed when deploying or uninstalling the package using a policy.</p>  <p><b>Note</b> • Only applicable to DMG packages.</p>
	<b>Requires restart</b>	<p>Set this property to <b>True</b> to require that computers must be restarted after installing the package.</p>
	<b>Install on boot drive after imaging</b>	<p>Set this property to <b>True</b> to ensure that the package is installed on the boot drive after imaging.</p>  <p><b>Note</b> • This setting is only used when deploying a package with an OS image, like with an OSD. It does not affect day-to-day package delivery.</p>

Subtab	Property	Description
Limitations	<b>Operating System Requirement</b>	Enter operating system version numbers, separated by commas, to specify that the package only be permitted to be deployed to computers with these operating system versions. To restrict installation to OS X 10.6.8, 10.7.x, or 10.8, you would enter the following:  10.6.8, 10.7.x, 10.8
	<b>Install Only if Available in Software Update</b>	Set to <b>True</b> to require that this package only be installed if it is available in a software update.
	<b>Limit Architecture Type</b>	Set to <b>True</b> to require that this package only be installed on machines matching the selected <b>Architecture Type Requirement</b> .
	<b>Architecture Type Requirement</b>	If <b>Limit Architecture Type</b> is set to <b>True</b> , select the one of the following to specify the architecture type required to deploy the package: <ul style="list-style-type: none"> <li>PowerPC</li> <li>Intel/X86</li> </ul>
	<b>Substitute Package</b>	If you want to specify a different package to deploy to computers that do not meet the architecture type requirement, click the Browse button in this field to open the <b>Select Substitute Package</b> dialog box, and select a substitute package from either Casper or the Application Catalog.

## Product Name Displayed in Casper Listed on the Catalog Deployment Type View

For DMG and PKG packages imported into the Application Catalog, a **Displayed Product Name** field is listed on the **Package Information** tab of the **Catalog Deployment Type** View, listing the property that is mapped to the **File Name** property in Casper.



**Figure 48:** Displayed Product Name Field on Package Information Tab

# Ability to Inspect and Test Complex Installer Executables

In previous releases, you could import complex installer executable files (.exe) that contain bundled Windows Installer packages into the Application Catalog, but you could not view the names of those bundled packages and you could not test those packages. You were limited to just viewing general package information and deployment data.

In AdminStudio 2016, you can now view the names of bundled Windows Installer packages and perform operating system compatibility, application virtualization compatibility, and best practices testing on those bundled packages.

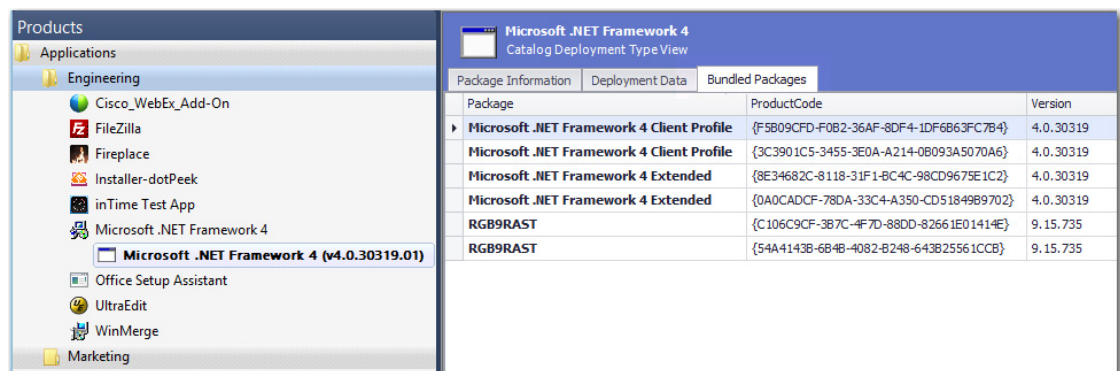
- [Bundled Windows Installer Packages Now Listed on New Bundled Packages Tab](#)
- [Can Perform Testing of Child Windows Installer Packages of Complex Installer Executables](#)

## Bundled Windows Installer Packages Now Listed on New Bundled Packages Tab

There are multiple installation executable types that can contain embedded Windows Installer packages, including the following:

- InstallShield InstallScript **.exe** files
- InstallShield Basic MSI installers that are compressed into a **setup.exe** file
- InstallShield Suite Installer **.exe** files
- Wise Package Studio **.exe** files
- Other executable file types that can be uncompressed by 7-ZIP

In AdminStudio 2016, Application Manager can inspect the child **.msi** packages in these complex installer **.exe** files, and display a list of those child packages on the new **Bundled Packages** tab of the **Catalog Deployment Type View**.



**Figure 49:** Bundled Packages Tab of Catalog Deployment Type View / Microsoft .NET Framework 4 Suite

When inspecting these child **.msi** packages, Application Manager extracts the information about each package, such as product name and version number. This makes it much more likely that Application Manager will be able to assign a Flexera Identifier to these applications.



**Note** • AdminStudio will only inspect complex installer **.exe** files one level deep. If a complex installer **.exe** file contains another complex installer **.exe** file bundled within it, that child **.exe** file will not be inspected.

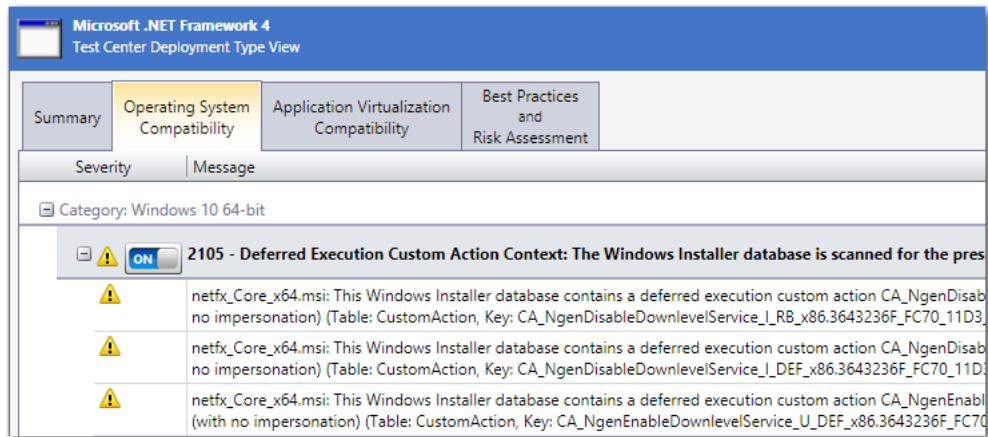
## Can Perform Testing of Child Windows Installer Packages of Complex Installer Executables

When a complex installer **.exe** file is tested, its child Windows Installer packages are also tested and the test results are combined and displayed in Test Center.

Products		Microsoft .NET Framework 4 Test Center Deployment Type View						
Applications		Summary						
Engineering		Operating System Compatibility						
Cisco_WebEx_Add-On		Application Virtualization Compatibility						
FileZilla		Best Practices and Risk Assessment						
Fireplace								
Installer-dotPeek								
inTime Test App								
Microsoft .NET Framework 4								
Microsoft .NET Framework 4 (v4.0.30319.01)								
Office Setup Assistant								
UltraEdit								
WinMerge								
Marketing								
		Test Category	Executed	Errors	Warnings	Auto Fix Available	Issues Suppressed	Overall Assessment
		<b>Operating System Compatibility</b>	12	0	198	-	0	⚠
		Windows 10 32-bit	0	0	0	-	0	⚪
		Windows 8 32-bit	0	0	0	-	0	⚪
		Windows 7 32-bit	0	0	0	-	0	⚪
		Windows 10 64-bit	12	0	198	-	0	⚠
		Windows 8 64-bit	0	0	0	-	0	⚪
		Windows 7 64-bit	0	0	0	-	0	⚪
		Windows Server 2012	0	0	0	-	0	⚪
		Windows Server 2008 R2	0	0	0	-	0	⚪
		<b>Application Virtualization Compatibility</b>	131	107	36	-	-	✖
		Microsoft App-V 4.x	27	17	12	-	-	✖
		Microsoft App-V 5.x	23	17	6	-	-	✖
		VMware ThinApp 4.x	23	25	6	-	-	✖
		VMware ThinApp 5.x	22	23	6	-	-	✖
		Citrix XenApp Profile	28	25	6	-	-	✖
		Symantec Workspace Virtualization	8	0	0	-	-	✓
		<b>Best Practices and Risk Assessment</b>	102	847	5750	0	0	✖
		Windows Installer Internal Consistency Evaluators	102	847	5750	0	0	✖

**Figure 50:** Consolidated Test Results for Windows Installer Suite Package

When you view detailed test results, the name of the child Windows Installer package that generated the error or warning is listed.



**Figure 51:** Combined Suite Installer Test Results

## Improved FlexNet Manager Suite Integration

In AdminStudio 2016, several new features have been added to improve integration with FlexNet Manager Suite. You can now generate a list of all applications in the Application Catalog that do not have an associated Flexera Identifier, and can create local Application Recognition Library entries for internally developed, repackaged, or unrecognized applications.

- [Ability to Search Application Catalog for Unrecognized Applications](#)
- [Ability to Create Local Flexera Identifier Entries for Internal or Repackaged Applications](#)
- [Ability to Enter FlexNet Manager Suite URL](#)

### Ability to Search Application Catalog for Unrecognized Applications

A Flexera Identifier is a unique code, stored in the Application Recognition Library, that is assigned to applications by FlexNet Manager Suite. It is used to link application information from Application Manager with application information in AdminStudio Inventory and Rationalization, FlexNet Manager Suite, and App Portal.

If both Application Manager and FlexNet Manager Suite are connected to the same Flexera Service Gateway, each time you import an application into the Application Catalog, a search for the application's Flexera Identifier is performed, and if it is found, it is listed on the **General Information** tab of the **Application View**.



However, sometimes an application's Flexera Identifier is not found, such as when:

- **Incorrect information**—The value of the information in the application's Product Name, Version, Edition, or Publisher fields is either incorrect or too specific.
- **Internally developed applications**—The application has been developed internally.
- **Repackaged applications**—The application has been repackaged.

In previous releases, there was no way to quickly identify all of the applications in your Application Catalog that did not have an assigned Flexera Identifier. You were required to review each application one by one.

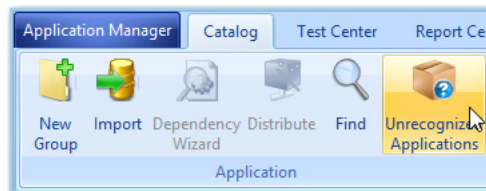
In AdminStudio 2016, you can now generate a list of all applications in the Application Catalog that do not have an associated Flexera Identifier, so that you can search for and assign an existing Flexera Identifier to the application or create a new local Flexera Identifier.



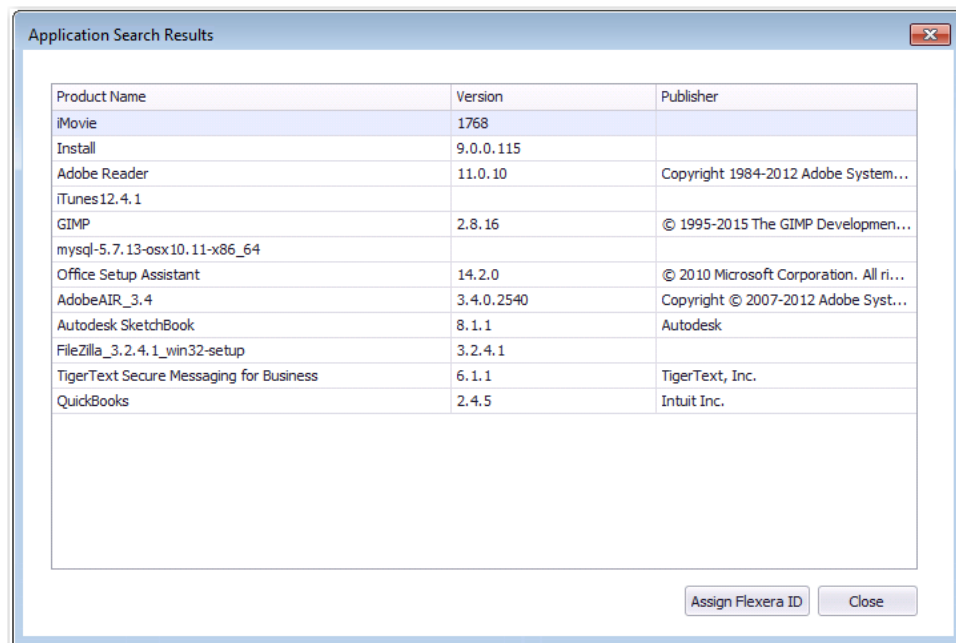
### Task

#### To search Application Catalog for unrecognized applications:

1. Click **Unrecognized Applications** in the toolbar of the Application Manager **Catalog** tab.



The **Application Search Results** dialog box opens, listing all applications in the Application Catalog that do not have an associated Flexera Identifier.



2. Select an application in the list and click **Assign Flexera ID**. The **Flexera Identifier** dialog box opens.

Flexera Identifier

Current Flexera Identifier:  × Create New...

Search Criteria

Use the following search fields to locate and select a Flexera Identifier

Product Name:  ×

Version:  ×

Edition:  ×

Publisher:  ×

Search

Matching Application(s):

#	Flexera Identifier	Product Name	Version	Edition	Publisher
---	--------------------	--------------	---------	---------	-----------

OK Cancel Help

3. Edit the text in the **Search Criteria** fields to either correct the information or make it less specific, and then click **Search**. A list of possible matching applications will be generated and will be listed in the **Matching Application(s)** list.
4. Do one of the following:
  - **Matching application found**—If the correct matching application is listed, select it from the list and click **OK**. The selected Flexera Identifier will be saved in the Application Catalog and will be listed on the **General Information** tab of the **Application View** for that application.
  - **Matching application not found**—If a matching application is not listed, continue with the steps in [Ability to Create Local Flexera Identifier Entries for Internal or Repackaged Applications](#) to create a new local Flexera Identifier.

## Ability to Create Local Flexera Identifier Entries for Internal or Repackaged Applications

In AdminStudio 2016, you can create new local Flexera Identifier entries for the FlexNet Manager Suite Application Recognition Library. These may be required for internally developed applications, repackaged applications, and other applications that are not recognized by FlexNet Manager Suite.



### Task

#### **To create a local Flexera Identifier for an application:**

1. Open the **Application View** of the unrecognized application and click the browse button in the empty **Flexera Identifier** field. The **Flexera Identifier** dialog box opens.

Flexera Identifier

Current Flexera Identifier:  × Create New...

Search Criteria

Use the following search fields to locate and select a Flexera Identifier

Product Name:  ×

Version:  ×

Edition:  ×

Publisher:  ×

Search

Matching Application(s):

#	Flexera Identifier	Product Name	Version	Edition	Publisher
---	--------------------	--------------	---------	---------	-----------

OK Cancel Help

2. Use the search fields to locate and select a Flexera Identifier.

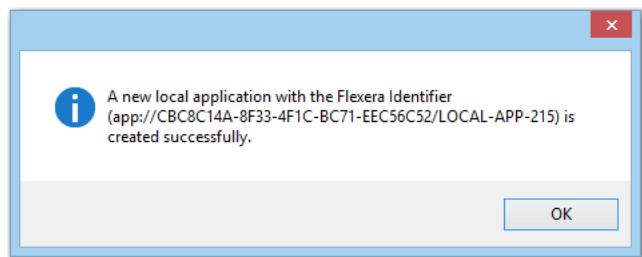
3. If no Flexera Identifier is found, click **Create New**. The **Flexera Local Identifier** dialog box opens.

4. Enter the following information:

Property	Description
<b>Product Name</b>	The basic name of the application, excluding references to versions or editions, and without mentioning the publisher.
<b>Version</b>	The release number (or release identifier) of an application.
<b>Edition</b>	Enter the edition of this application.
<b>Publisher</b>	The name of the publisher of this software, responsible for its development and distribution.

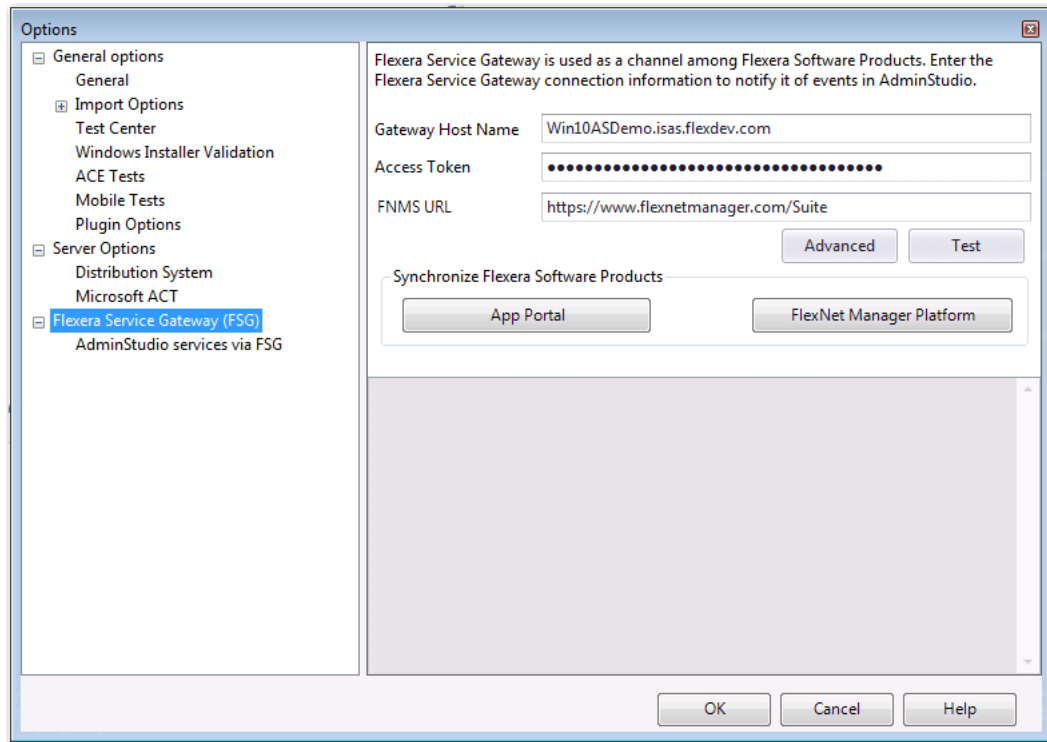
Property	Description
<b>Classification</b>	<p>To indicate how this application is classified, select one of the following options:</p> <ul style="list-style-type: none"> <li>● <b>Beta</b>—A pre-release application (covers such items as beta releases, alpha releases, or release candidates) that you have under some special arrangement.</li> <li>● <b>Commercial</b>—The application requires a license to be purchased for use in a commercial setting.</li> <li>● <b>Freeware</b>—Licensed for use in a commercial environment free-of-charge.</li> <li>● <b>Malware</b>—A potentially harmful application (a virus, Trojan, and the like), and should be treated as malware. If installations of this application are identified, you need to address the corresponding incidents or security issues.</li> <li>● <b>Shareware</b>—The application is available for downloading from web sites, and typically uses a “try-before-you-buy” licensing model that might include reminder messages, functional limitations, or other restrictions until a full license is purchased.</li> <li>● <b>X Rated</b>—The application contains potentially objectionable or sexually explicit material. You might want to consider whether corporate policies require any action.</li> <li>● <b>Update</b>—The application represents an update, for example, a service pack, to another application, and is issued for free to all customers regardless of purchasing agreements or support contracts (a “minor” update).</li> </ul>

5. Click **Create**. A confirmation message appears stating that a new local Flexera Identifier has been created.



## Ability to Enter FlexNet Manager Suite URL

In AdminStudio 2016, you can now more easily configure your connection to FlexNet Manager Suite by entering the FlexNet Manager Suite URL in the **FNMS URL** field on the **Flexera Service Gateway (FSG)** tab of the Application Manager **Options** dialog box.



**Figure 52:** FNMS URL Field on Flexera Service Gateway (FSG) Tab of Options Dialog Box

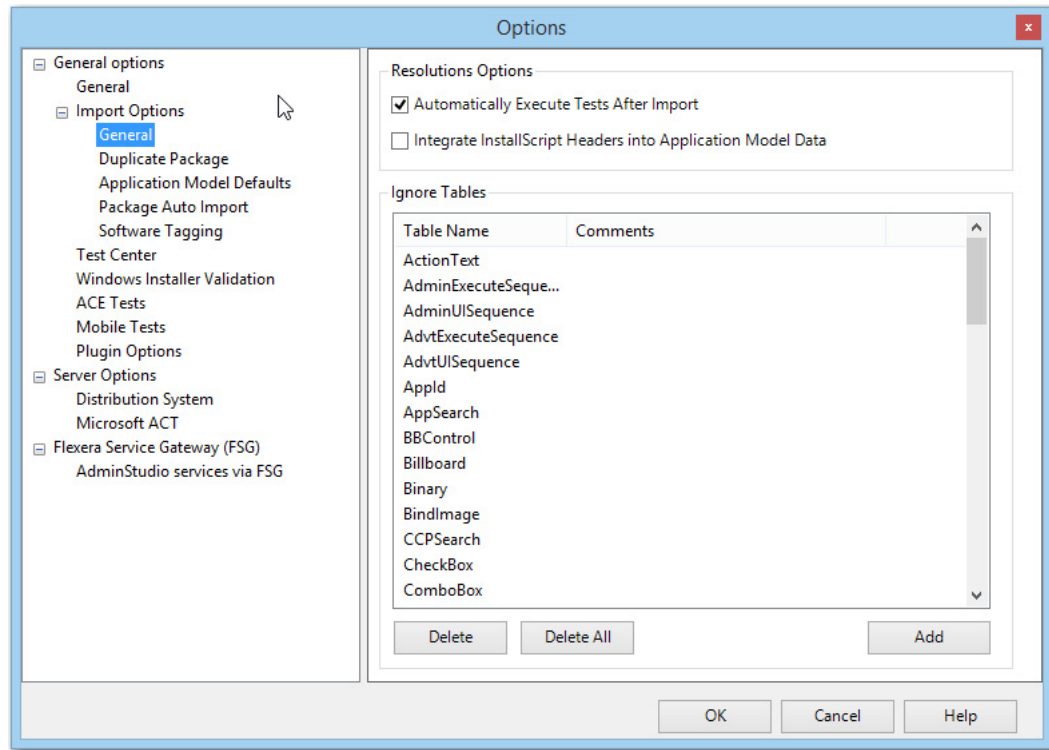
## Enhanced Automation Capabilities to Streamline Application Import and Testing

AdminStudio 2016 offers several new automation features that help you to streamline the application import and testing process.

- [Applications Are Automatically Tested Upon Import](#)
- [Enhancements to Package Auto Import Feature](#)
- [Enhanced Control When Using Import Wizard to Perform Batch Import from a Directory](#)

## Applications Are Automatically Tested Upon Import

In AdminStudio 2016, Application Manager is now configured to automatically test packages against all selected compatibility, best practices, and risk assessment tests as part of the import process. By default, the **Automatically Execute Tests After Import** option on the **Import Options** tab of the Application Manager **Options** dialog box is selected. In previous releases, this option was not selected by default.



**Figure 53:** Automatically Execute Tests After Import Option

While having this option selected will mean longer import times for each application, packages will have all testing details populated immediately after import. However, if you are concerned with the length of import time, you may want to clear the selection of this option.



**Note** • In previous releases of AdminStudio, the **Automatically Execute Tests After Import** option was not selected by default; in AdminStudio 2016, this option is selected by default. Therefore, for users upgrading from previous releases of AdminStudio, they will inherit the new default selection, which means that, by default, this option will be selected and tests will be run immediately after import. To have the same user experience as you did in previous versions, you need to clear the selection of this option.

## Enhancements to Package Auto Import Feature

The Application Manager **Package Auto Import** feature enables you to automatically import or re-import packages in shared network directories into your Application Catalog. Application Manager periodically checks these directories and imports all new packages it finds, and reimports all updated packages.

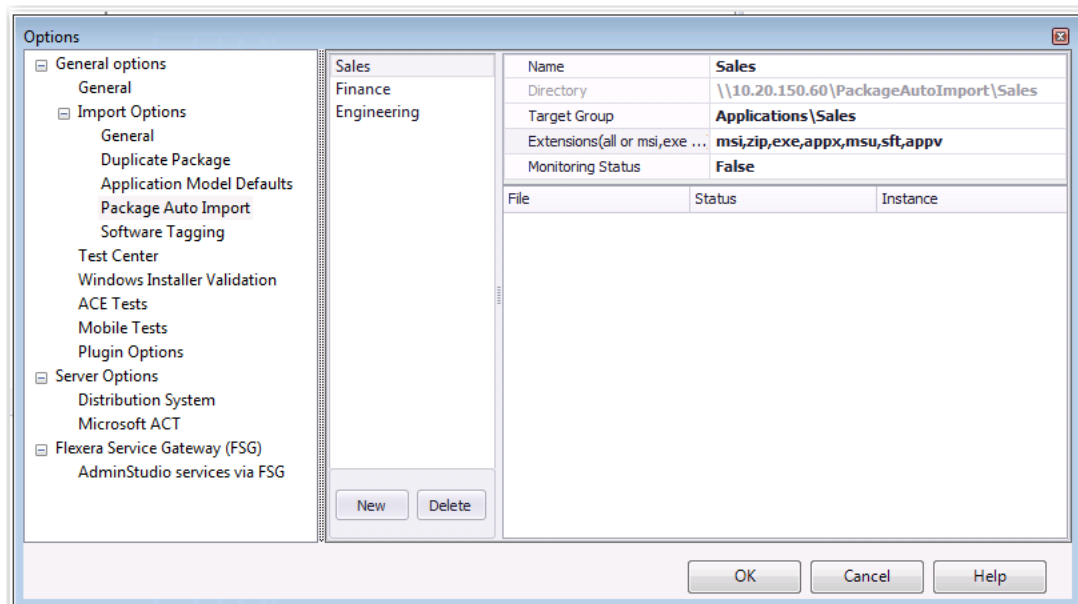
In AdminStudio 2016, the following enhancements have been added to this feature to make it even more powerful and useful:

- [Can Monitor Multiple Directories Simultaneously](#)
- [Can Select File Types to Monitor](#)
- [Can Perform Batch Auto Import of Microsoft Security Patch Files and iOS Enterprise Policy Files](#)

### Can Monitor Multiple Directories Simultaneously

In previous releases, when setting up the Package Auto Import feature, you could only specify a single directory to scan for new or updated packages to import.

In AdminStudio 2016, you can specify multiple directories to monitor. On the **General Options > Import Options > Package Auto Import** tab of the **Options** dialog box, you can add a directory to monitor by clicking the **New** button. There is no limit to the number of directories you can monitor.




**Figure 54:** Import Options > Package Auto Import Tab of Options Dialog Box

After the initial auto-import operation, packages will be imported or reimported into the Application Catalog whenever:

- A new package is added to one of the monitored directories.
- An existing package in one of the monitored directories is updated.



Each time you specify a directory to monitor, you need to provide the following information.

Property	Description
<b>Directory</b>	<p>Enter the directory to monitor. You can either enter a directory path or click the browse button and select a directory.</p>  <p><b>Important</b> • The directory must be in UNC format and it must be a shared directory.</p>
<b>Target Group</b>	Specify the group in the Application Manager tree into which the packages will be imported.
<b>Monitoring Status</b>	Set this option to <b>True</b> to begin monitoring this directory for new and updated packages. Set it to <b>False</b> to stop monitoring the directory.
<b>Extensions</b>	Click the browse button to open the <b>Select Watcher Extensions</b> dialog box, where you will specify the package types to import, as described in <a href="#">Can Select File Types to Monitor</a> .

The monitoring of the specified Package Auto Import directories is a task that can be distributed among the AdminStudio Host processes of all of the installations of AdminStudio in your network that have access to the specified shared directory.

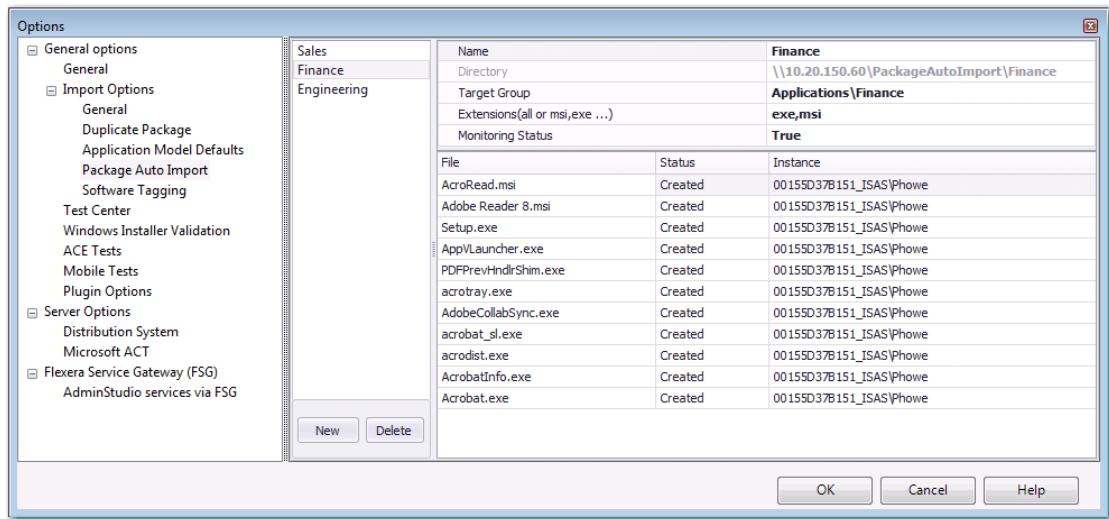
After you have specified a directory on the **Package Auto Import** tab and have set the **Monitoring Status** field to **True**, the AdminStudio Host processes that are connected to the same Application Catalog will begin to monitor these directories.

Packages in the monitored directories will be imported as soon as one of the AdminStudio Host processes connected to the same Application Catalog is running but is not currently being used. This ensures that if someone is actively using one of AdminStudio's tools, the import (and subsequent testing) of packages by the Package Auto Import process will not slow down the performance of AdminStudio.



**Tip** • To make sure that the batch import activities of the Package Auto Import process take place when AdminStudio tools are not in use, you could launch AdminStudioHost.exe as a scheduled task during off peak hours and it will perform the import of packages from the monitored directories at that time.

After a directory's **Monitoring Status** has been set to **True**, the packages (of the selected package type) in that directory are listed on the **Package Auto Import** tab.



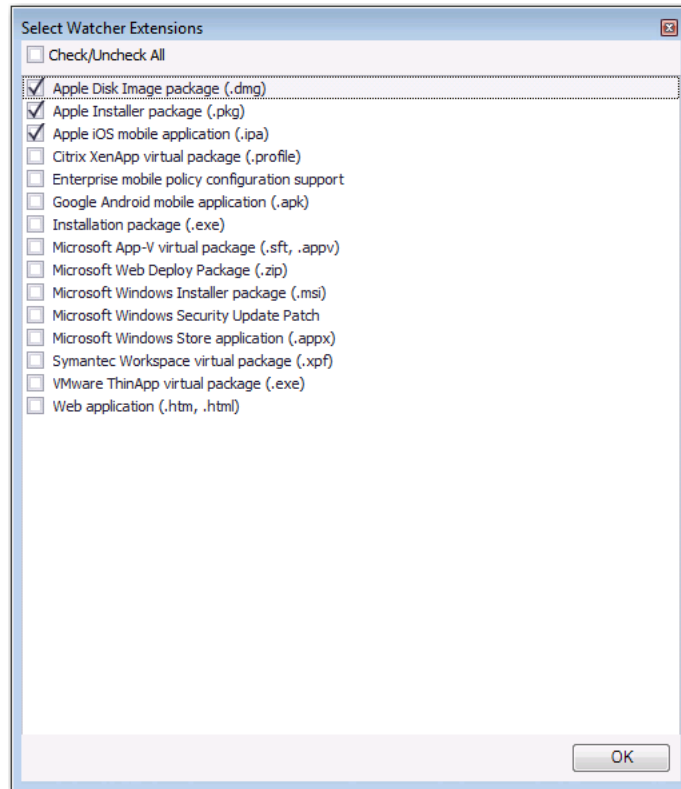
**Figure 55:** Monitoring the Import of Packages in a Directory on the Package Auto Import Tab

In the **Status** column, packages will have one of the following statuses:

- **Created**—Package will be imported as soon as one of the AdminStudio Host processes connected to this Application Catalog is running but is not currently being used.
- **Imported**—Package has been imported into the Application Catalog.
- **Canceled**—User canceled the import of the package into the Application Catalog.
- **Error**—There was an error during import of the package into the Application Catalog.

## Can Select File Types to Monitor

When setting up a directory to monitor for a Package Auto Import process, you can now specify the specific package types in that directory to import. To do this, you click the browse button in the **Extensions** field of the **Package Auto Import** tab of the **Options** dialog box to open the **Select Watcher Extensions** dialog box.



**Figure 56:** Select Watcher Extensions Dialog Box

Only those packages of the package type you select on this dialog box will be imported from the monitored directory.

## Can Perform Batch Auto Import of Microsoft Security Patch Files and iOS Enterprise Policy Files

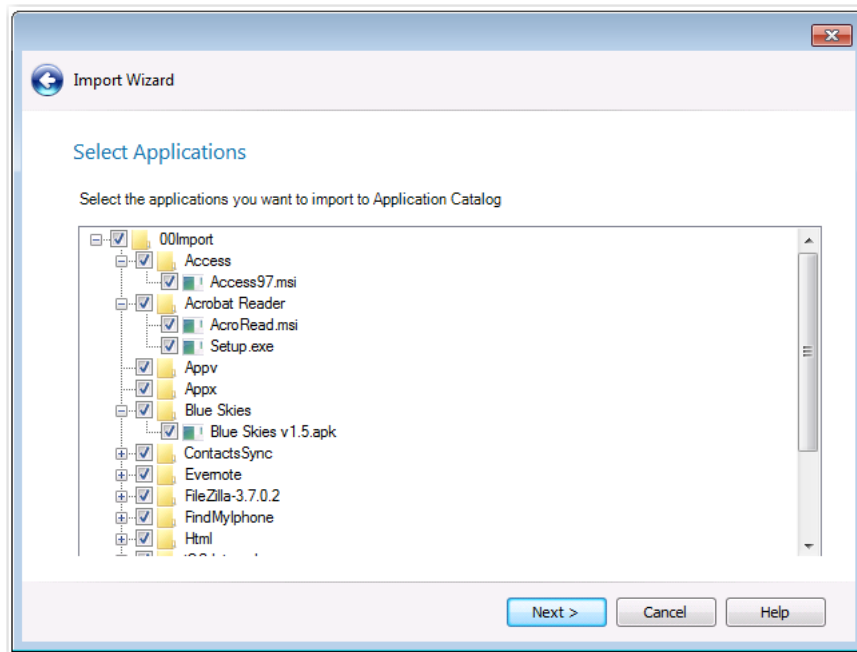
Previously, you could only import Microsoft Security Patch files (**.msu**) and iOS Enterprise Policy Configuration Files (**.mobileconfig** or **.plist**) one at a time using the Import Wizard.

In AdminStudio 2016, you can now perform a batch import of Microsoft Security Patch files and iOS Enterprise Policy Configuration files using the Package Auto Import feature. To do this, select the **Microsoft Windows Security Update Patch** and/or the **Enterprise mobile policy configuration support** options on the **Select Watcher Extensions** dialog box.

## Enhanced Control When Using Import Wizard to Perform Batch Import from a Directory

When using the Import Wizard to import a folder of applications, you can now choose to import only the packages that you select rather than all packages of the selected package type in the directory.

After you select the package types that you want to import from the selected directory on the **Package Type Selection** panel of the Import Wizard, a new panel named **Select Applications** opens, prompting you to select specific applications to import from the selected directory.



**Figure 57:** Select Applications Panel of Import Wizard

By default, all packages of the selected package type are selected. You can clear the selection of any packages you do not want to import.

# Automated Application Converter Enhancements

AdminStudio 2016 contains several enhancements to the Automated Application Converter tool to expand its functionality.

- [Automated Application Converter for Repackaging Now Included in Professional and Enterprise Editions](#)
- [Ability to Edit Default Automated Application Converter Settings From Application Manager](#)
- [Can Edit Conversion Settings From the Conversion Wizard on a Per-Run Basis](#)

## Automated Application Converter for Repackaging Now Included in Professional and Enterprise Editions

In AdminStudio 2016, the Professional and Enterprise editions now include Automated Application Converter—which you can use to perform automated repackaging on a virtual machine—without requiring you to purchase the Virtualization add-on pack.

- **Professional edition**—You can perform automated repackaging one package at a time.
- **Enterprise edition**—You can perform batch automated repackaging of a group of packages.



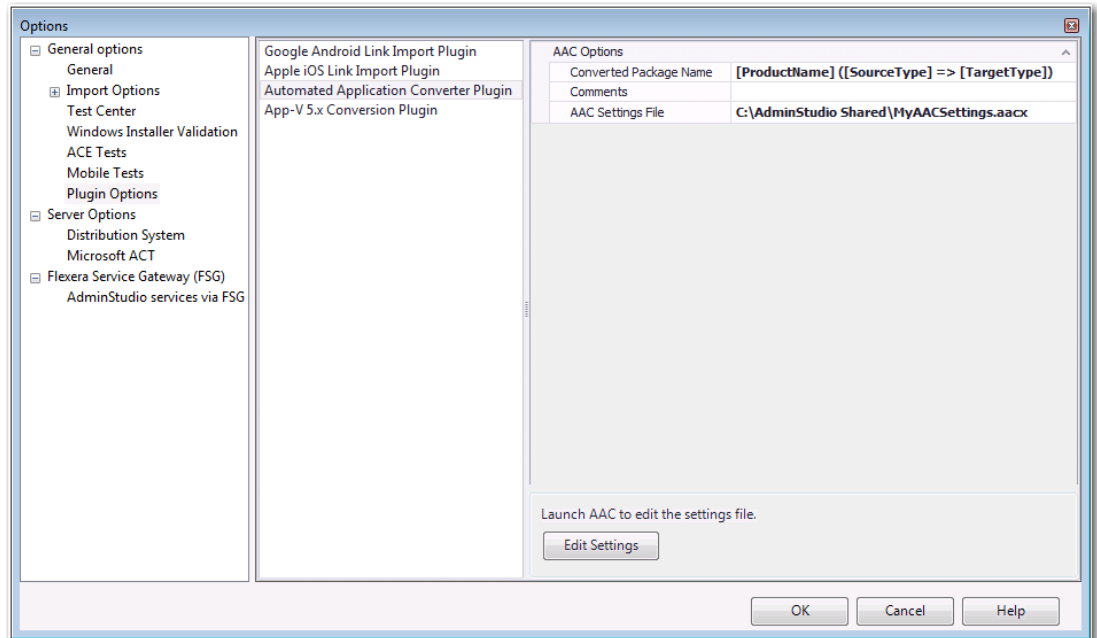
**Note** • *In order to use Automated Application Converter to convert packages to virtual formats, you will still be required to purchase the Virtualization add-on pack.*

You can choose to perform automated repackaging using either the Automated Application Converter interface or by using the Conversion Wizard, which is launched from Application Manager by right-clicking on a package or group of packages and then selecting **Launch Conversion Wizard** from the shortcut menu. Previously, the Conversion Wizard feature of Application Manager was only included with AdminStudio if you purchased the Virtualization add-on pack.

## Ability to Edit Default Automated Application Converter Settings From Application Manager

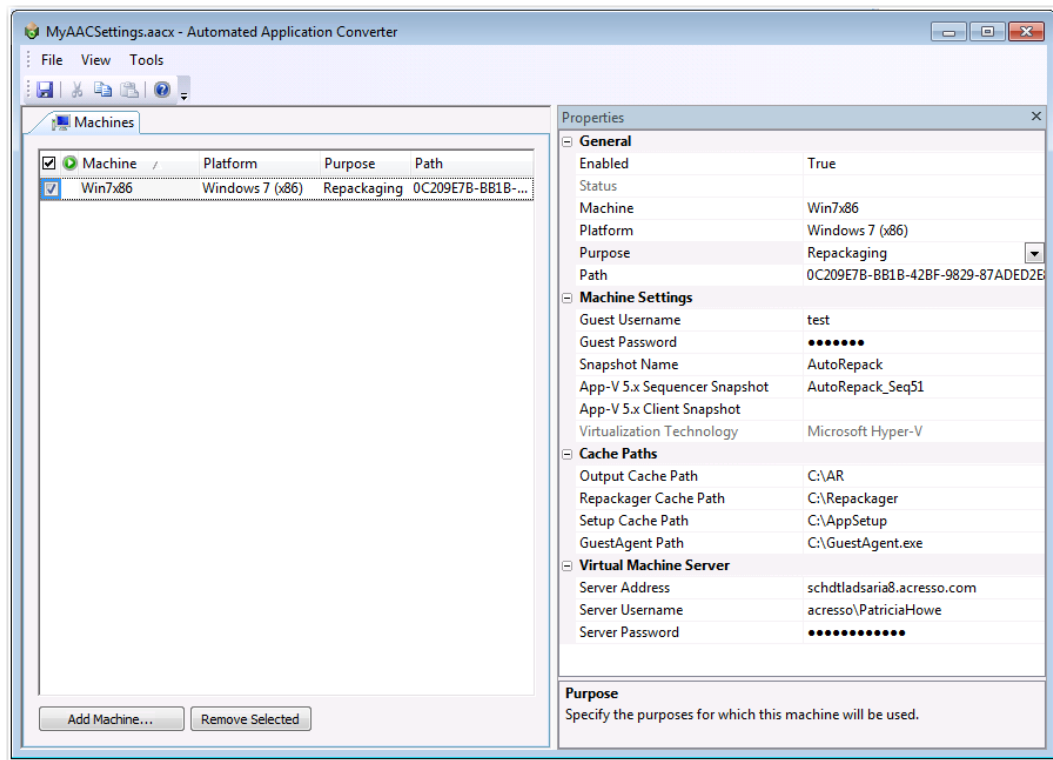
In previous releases, you were able to use the Application Manager Conversion Wizard to quickly convert one or multiple Windows Installer packages or legacy installers to virtual packages (of the specified type) using *default* Automated Application Converter settings. However, to edit those default settings, you were required to launch Automated Application Converter and open the default project file.

In AdminStudio 2016, you can now edit the default settings file by clicking the new **Edit Settings** button on the **Plugin Options > Automated Application Converter Plugin** tab of the **Options** dialog box:



**Figure 58:** Edit Settings Button on Plugin Options > Automated Application Converter Plugin Tab

When you click **Edit Settings**, a limited version of Automated Application Converter opens, displaying the **Machines** tab, where you can quickly edit any of these default conversion settings and save them into this default project file.

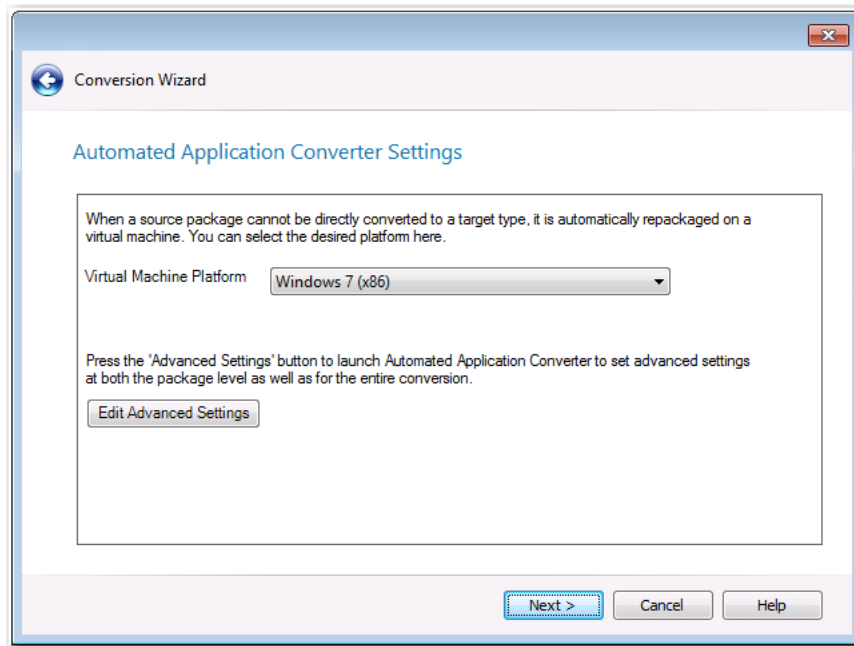


**Figure 59:** Editing the Default Automated Application Converter Settings File

## Can Edit Conversion Settings From the Conversion Wizard on a Per-Run Basis

In AdminStudio 2016, you now have the option of modifying the default conversion settings for a single run of the Conversion Wizard.

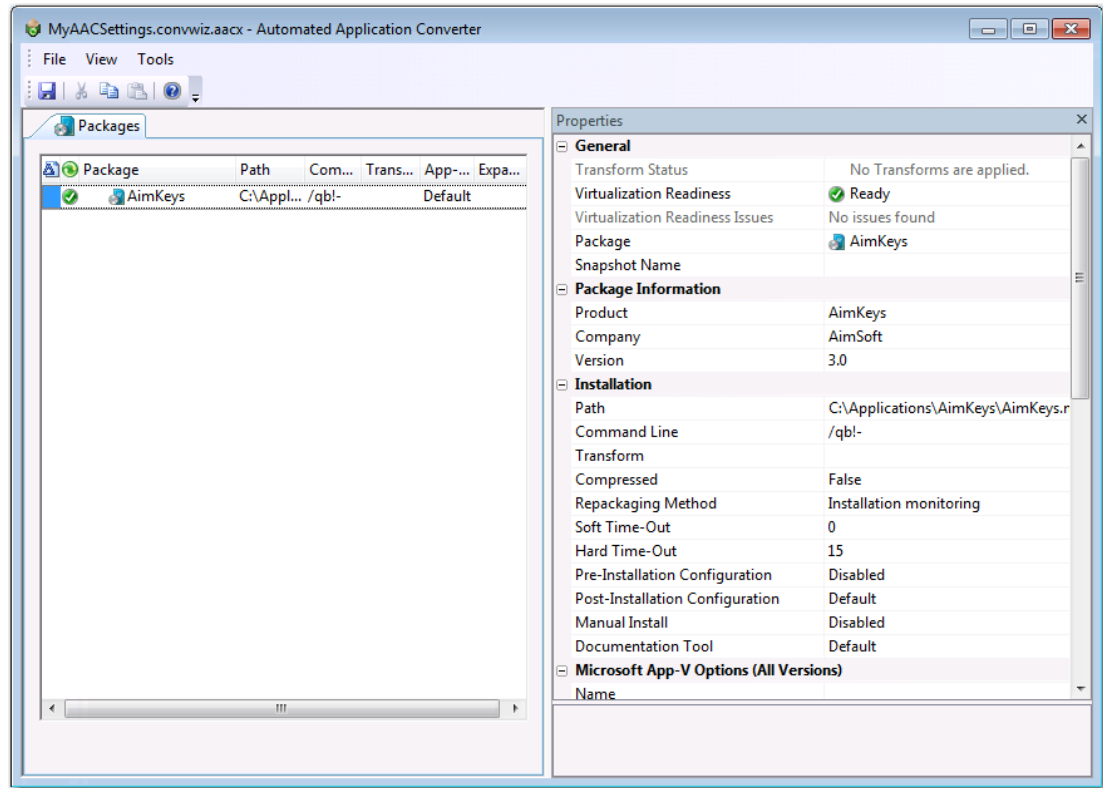
There is a new panel in the Conversion Wizard entitled **Automated Application Converter Settings**. On this panel, the virtual machine platforms defined in the settings file are listed in the **Virtual Machine Platform** list, and you can choose which platform to use for this run of the Conversion Wizard.



**Figure 60:** Automated Application Converter Settings Panel of Conversion Wizard



If you want to edit additional advanced settings, you can click the **Edit Advanced Settings** button. A copy of the default conversion settings file (that is specified on the **Plugin Options > Automated Application Converter Plugin** tab of the **Options** dialog box) is opened, displaying the **Packages** tab of Automated Application Converter.



**Figure 61:** Editing the Default Conversion Settings

You can change any of these settings. When you save this file and exit the **Packages** tab of Automated Application Converter, you are returned to the Conversion Wizard where you can proceed with the conversion.

# New Wizard to Install and Launch Windows Installer Packages on a Virtual Machine for Testing

In AdminStudio 2016, the process of resetting a VM snapshot, powering it on, and copying the application for testing into it can be automated using the new **Test on Virtual Machine Wizard**, which is available with Professional and Enterprise Editions.

The **Test on Virtual Machine Wizard** uses the capability of the Automated Application Converter tool to quickly launch a specified virtual machine, install a selected Windows Installer (.msi) or installation executable (.exe) package, and enable you to launch a remote desktop session to that virtual machine so that you can perform testing.



**Note** • Both legacy installers and complex installer executables (which contain bundled Windows Installer packages) can be tested using the Test on Virtual Machine Wizard.

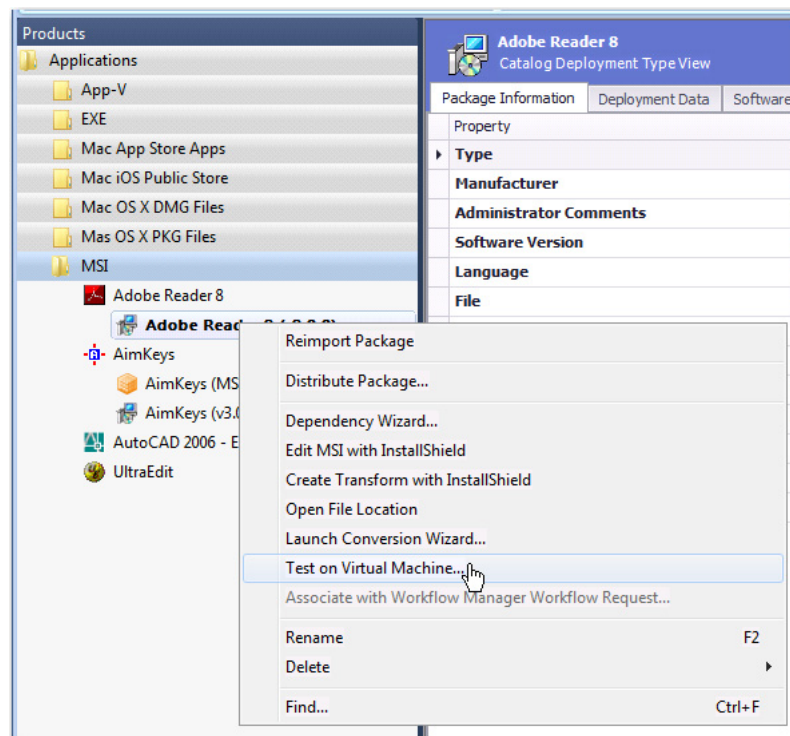
To use the Test on Virtual Machine Wizard to test a package, perform the following steps.



## Task

### To use the Test on Virtual Machine Wizard to test a package:

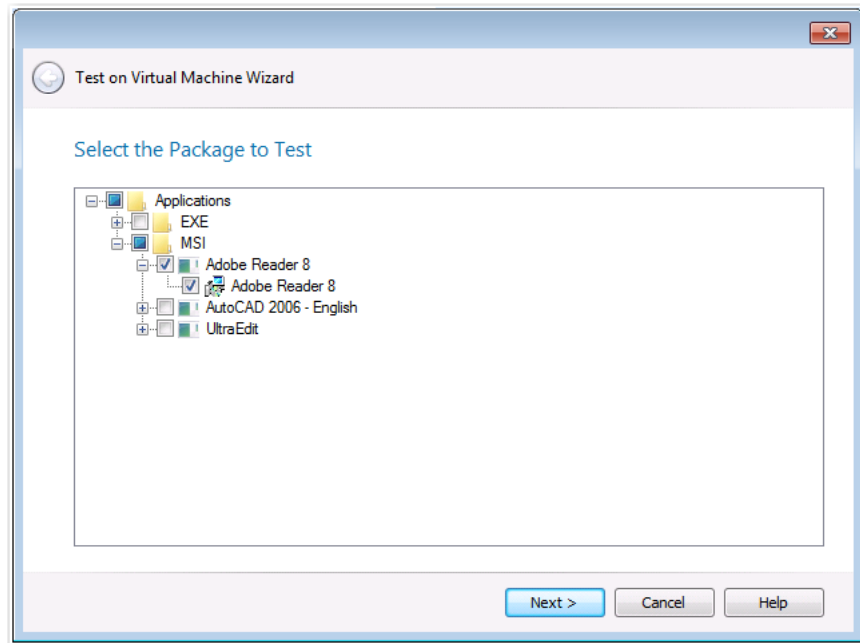
1. Right click a Windows Installer (.msi) or installer executable (.exe) package (or on an application containing an .msi or .exe package) and select **Test on Virtual Machine** from the shortcut menu.





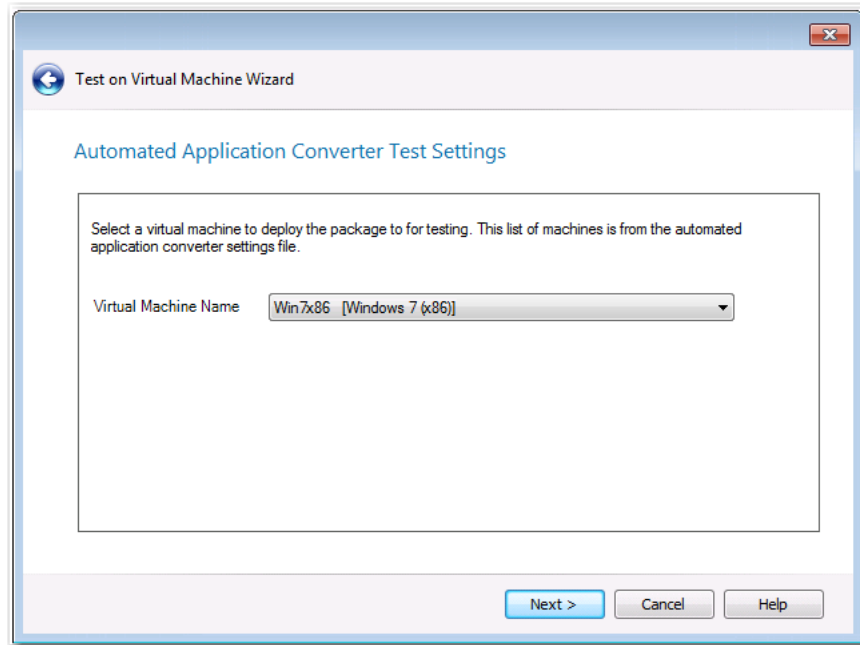
**Note** • The **Test on Virtual Machine** selection on the shortcut menu is available on both the **Catalog** and the **Test Center** tabs of *Application Manager*.

The **Select Package to Test** panel opens. The Application Manager tree is displayed, with the package that was selected when you opened the wizard automatically selected.

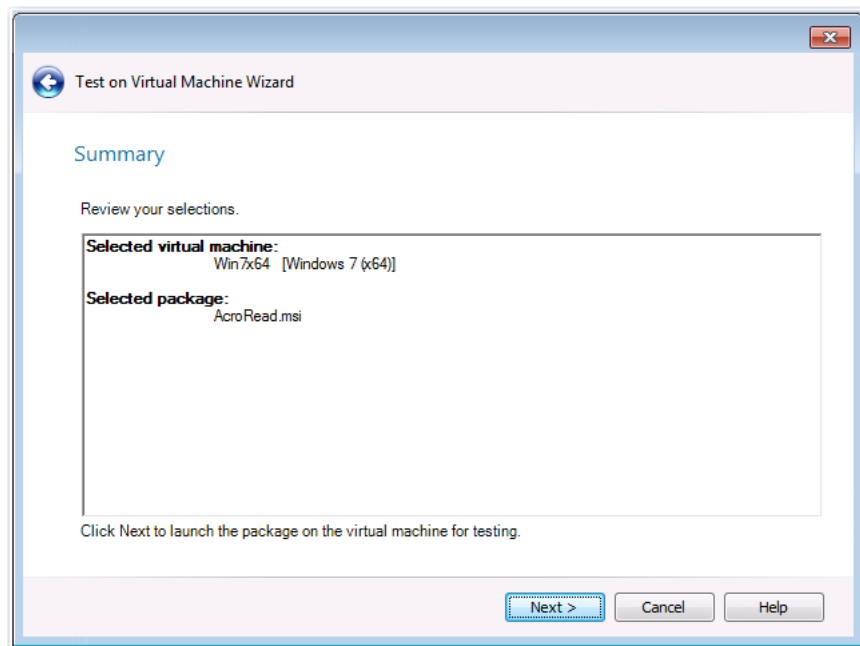


2. Confirm the selection of the package that you want to test and click **Next**.

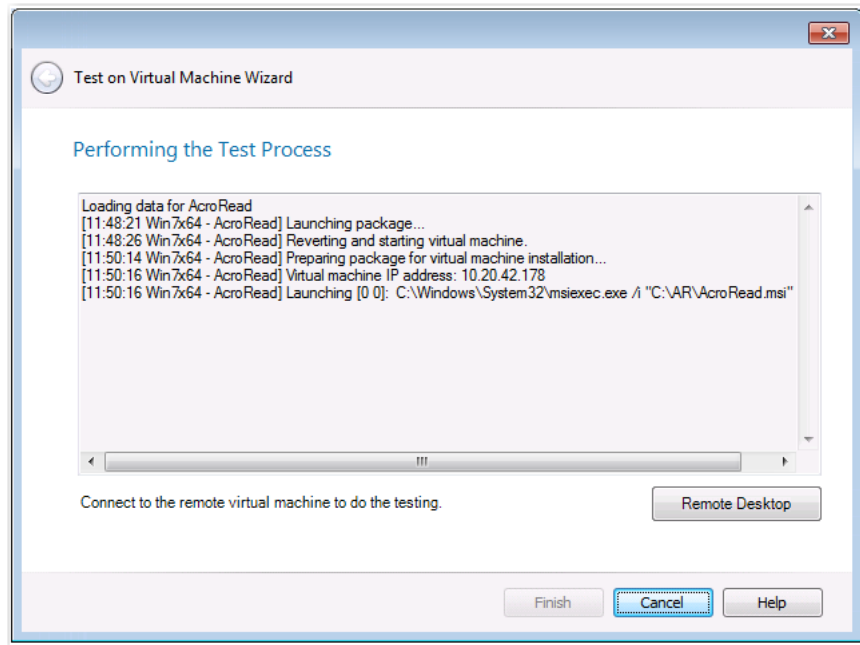
The **Automated Application Converter Test Settings** panel opens, listing the virtual machines defined in the Automated Application Converter settings file that is selected on the **Plugin Options** > **Automated Application Converter Plugin** tab of the **Options** dialog box:



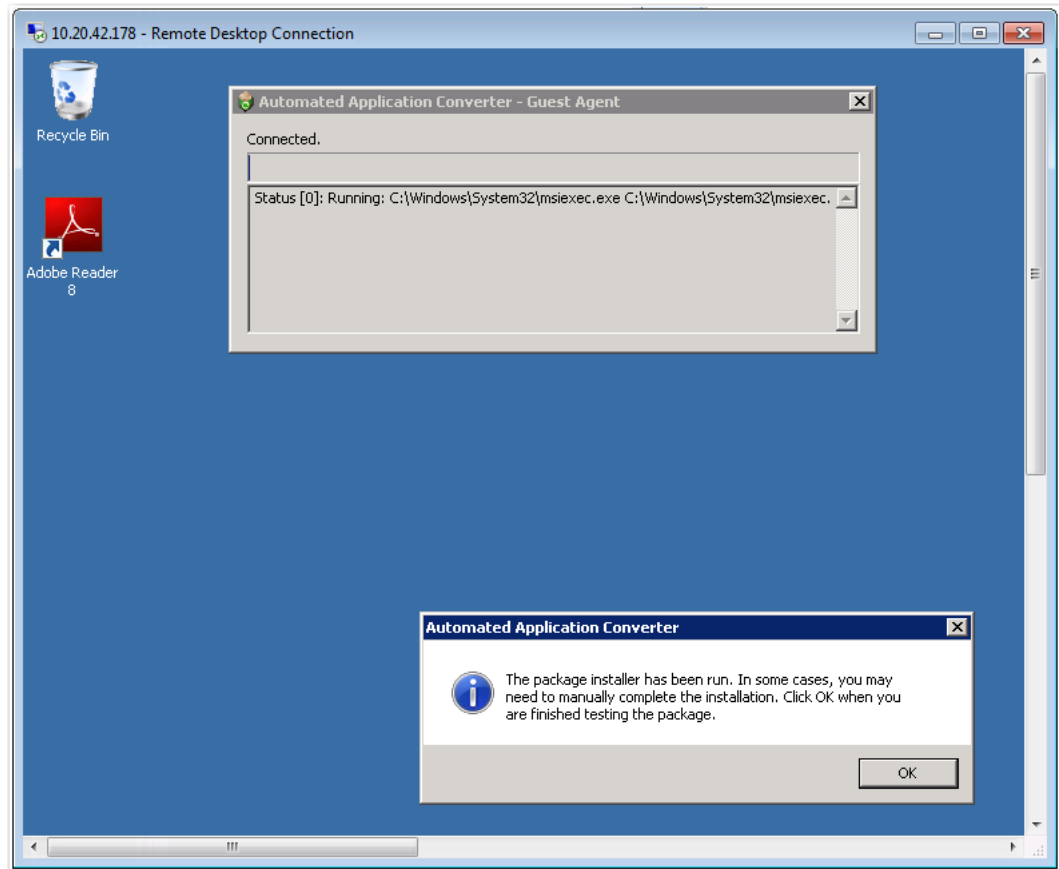
3. Select the name of the virtual machine that you want to use for testing and click **Next**. The **Summary** panel opens.



4. Click **Next** to launch the package on the specified virtual machine for testing. The **Performing the Test Process** panel opens, listing progress messages. When the package has been installed and launched on the virtual machine, the **Remote Desktop** button will become enabled.



5. Click **Remote Desktop** to connect to the virtual machine and perform testing. You may be prompted for login credentials to the virtual machine image. A Remote Desktop session opens displaying the virtual image where this package has been installed.



6. Use the installed shortcuts to launch the package and perform the desired testing.
7. When you have finished testing the package, click **OK** to close the Remote Desktop session and shut down the virtual machine.
8. Return to the **Test on Virtual Machine Wizard** and click **Finish** to close the wizard.

# Productivity Shortcuts

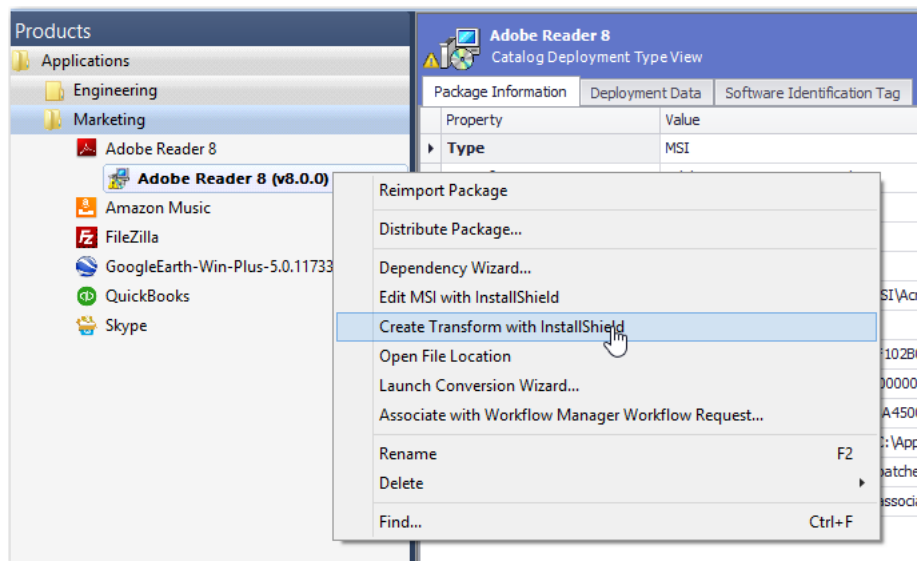
Several productivity shortcuts have been added to AdminStudio in the 2016 release.

- [New Shortcut to Automatically Create Transform for Selected Package in InstallShield](#)
- [Ability to Browse to Package Location from Application Manager Tree](#)

## New Shortcut to Automatically Create Transform for Selected Package in InstallShield

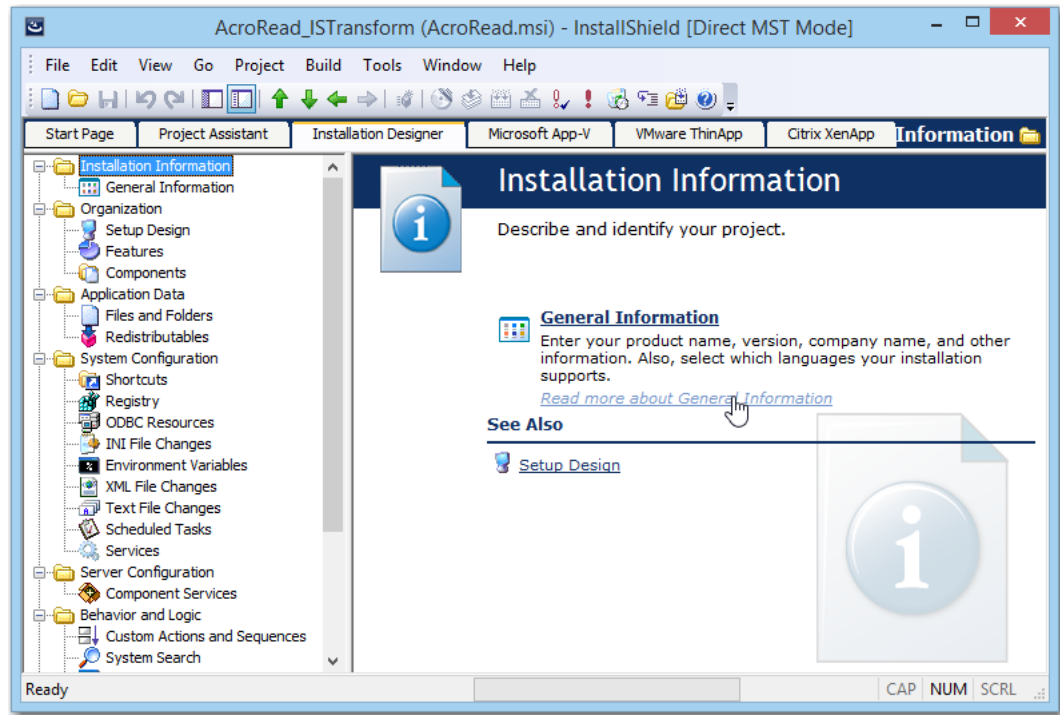
In previous releases, you were able to select **Edit with InstallShield** from the shortcut menu to quickly open a Windows Installer package in InstallShield. However, the only option you had was to open the package in Direct Edit Mode, which results in modifying the Windows Installer **.msi** file itself.

In AdminStudio 2016, you can quickly create a new transform project for a Windows Installer package by right-clicking on the package in the Application Manager tree and then selecting **Create Transform with InstallShield** from the shortcut menu.



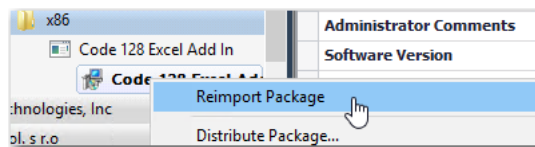
**Figure 62:** Create Transform with InstallShield

A new transform project (named **PackageName\_ISTransform.mst**) for the selected package opens in InstallShield in Direct MST mode.



**Figure 63:** Transform File Open in InstallShield Direct MST Mode

After you have finished customizing this transform file in InstallShield and have saved it, you can then reimport the Windows Installer package along with its newly created transform file into the Application Catalog by right-clicking on the Windows Installer package in the Application Manager tree and selecting **Reimport Package** from the shortcut menu. This lets Application Manager know that you are done editing the transform file.

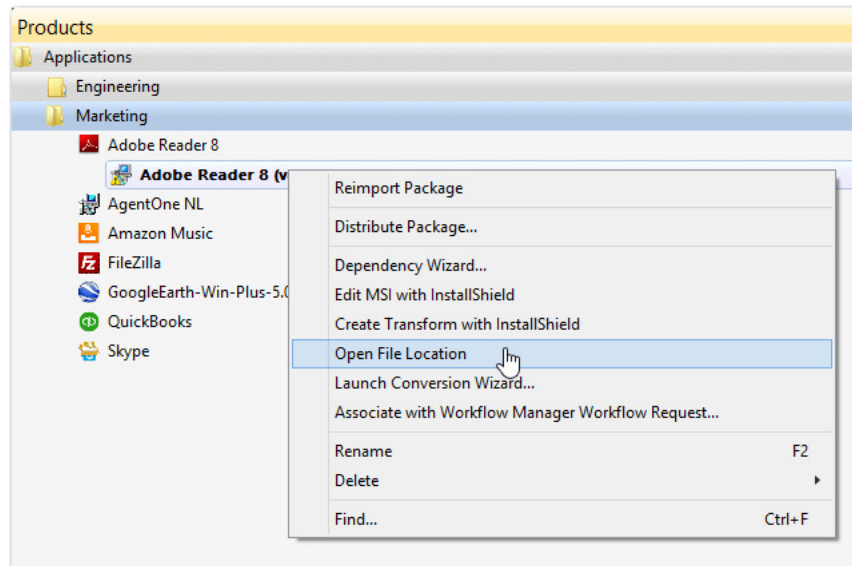


**Figure 64:** Reimport Package Command on Shortcut Menu



## Ability to Browse to Package Location from Application Manager Tree

In AdminStudio 2016, you can quickly browse to the directory location of your source package files by right-clicking on the package in the Application Manager tree and then selecting **Open File Location** from the shortcut menu. This new option is available on both the **Catalog** and the **Test Center** tabs of Application Manager.



**Figure 65:** New “Open File Location” Command on Shortcut Menu

A new File Explorer window opens, listing the package’s source files.

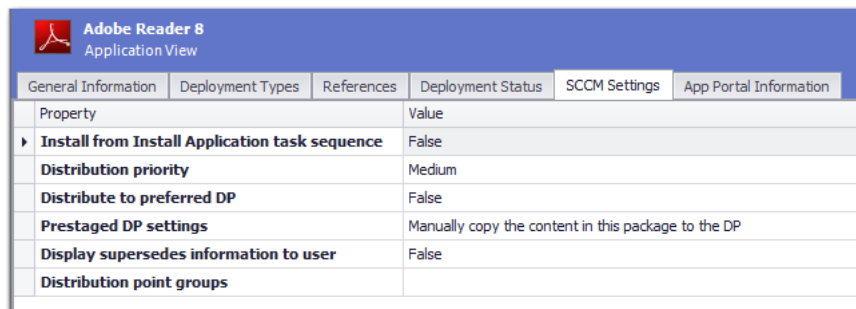
Name	Date modified	Type	Size
Abcpy.ini	3/25/2003 1:01 AM	INI File	2 KB
AcroRead.msi	10/23/2006 3:31 PM	Windows Installer ...	3,459 KB
AcroRead_IstTransform.mst	5/26/2016 8:19 AM	InstallShield proje...	20 KB
AcroRead_Softwareld.cab	5/26/2016 10:26 AM	Cabinet File	2 KB
AcroRead_Softwareld.mst	5/26/2016 10:26 AM	InstallShield proje...	24 KB

**Figure 66:** File Location of Imported Package’s Source Files

# New System Center Configuration Manager Settings View

In previous releases, an application's System Center Configuration Manager settings were listed on the **General Information** tab of the **Application View**. These settings were displayed whether or not you had configured a connection to a System Center Configuration Manager server.

In AdminStudio 2016, a new tab has been added to the **Application View** entitled **SCCM Settings** where these System Center Configuration Manager settings are now displayed. The **SCCM Settings** tab is only displayed if you have set up a connection to a System Center Configuration Manager server.



The screenshot shows the 'Adobe Reader 8' application view in AdminStudio. The 'SCCM Settings' tab is selected, displaying a table of properties and their values.

Property	Value
Install from Install Application task sequence	False
Distribution priority	Medium
Distribute to preferred DP	False
Prestaged DP settings	Manually copy the content in this package to the DP
Display supersedes information to user	False
Distribution point groups	

**Figure 67:** SCCM Settings Tab of Application View

# Components/Editions

AdminStudio 2016 SP2 is available in Standard, Professional, and Enterprise Editions. You can also purchase additional Application Virtualization, Application Compatibility, and/or Mac and Mobile add-on packs.

Edition	Add On	Tools	Functionality
Standard	None	<b>Repackager</b>	Repackage applications into Windows Installer format  Perform basic ISO tagging, including creation of tag files
		<b>Package Distribution Wizard</b>	Prepare packages for distribution
		<b>InstallShield 2016 SP2 (Professional Edition)</b>	Customize Windows Installer packages by either directly editing them or by creating transforms
		<b>Tuner</b>	Customize Windows Installer packages by creating transforms
		<b>Application Isolation Wizard</b>	Resolve component versioning conflicts
		<b>Application Virtualization</b>	<b>Automated Application Converter (Single Application Version)</b> <b>Conversion Wizard (Single Application Version)</b> Convert a package to a virtual application in the following formats: <ul style="list-style-type: none"> <li>• Microsoft App-V (4.x and 5.1)</li> <li>• Citrix XenApp</li> <li>• VMware ThinApp (4.x and 5.x)</li> <li>• Symantec Workspace</li> </ul> Convert one package at a time
		<b>Virtual Package Editor</b>	Edit App-V packages
		<b>Microsoft App-V Assistant</b>	Create a customized virtual package from an InstallShield project
		<b>ThinApp Assistant</b> <b>Citrix Assistant</b>	

Edition	Add On	Tools	Functionality
<b>Professional</b>	None	<i>Same as Standard, plus:</i>	
		<b>Application Manager / Catalog</b>	<p>Manage applications in an Application Catalog database</p> <p>Manage a package's System Center Configuration Manager (2012 or Current Branch) and Symantec Altiris Client Management Suite deployment data</p> <p>View an application's System Center Configuration Manager (2012 or Current Branch) deployment status</p> <p>Perform advanced ISO tag file creation, editing, and storage</p>
		<b>Application Manager / Test Center</b>	<p>Perform tests in the following categories:</p> <ul style="list-style-type: none"> <li>• Windows Installer Internal Consistency Evaluators</li> <li>• Windows Installer Best Practices</li> <li>• Application Conflicts</li> </ul> <p>Test and fix one package at a time</p>
		<b>Distribution Wizard</b>	<p>Publish applications to System Center Configuration Manager (2012 or Current Branch) and Symantec Altiris Management Server.</p>
		<b>OS Snapshot Wizard</b>	<p>Capture basic operating system configuration in an OS Snapshot, which can be imported into the Application Catalog to check for potential OS conflicts.</p>
		<b>QualityMonitor</b>	<p>Perform Windows Installer testing, including testing in a locked down environment</p>
		<b>Automated Application Converter (Single Application Version)</b>  <b>Conversion Wizard (Single Application Version)</b>	<p>Automatically repackage a legacy package (.exe) into a Windows Installer package (.msi)</p> <p>Repackage one package at a time</p>
		<b>Test on Virtual Machine Wizard</b>	<p>Automatically launch a specified virtual machine and install a selected Windows Installer (.msi), PowerShell-wrapped package (.ps1), or installation executable (.exe) package for testing.</p>

Edition	Add On	Tools	Functionality
<b>Professional</b> (Continued)	<b>Application Virtualization</b>	<i>Same as Standard, plus:</i>	
		Enhancements to <b>Application Manager / Catalog</b>	Import virtual packages into Application Catalog View virtual package data in Application Manager Manage System Center Configuration Manager (2012 or Current Branch) deployment data for App-V 4.x and 5.1 packages Manage Citrix XenApp Server deployment data for Citrix XenApp profiles and App-V 4.x packages Manage Symantec Altiris Client Management Suite deployment data for Symantec Workspace and VMware ThinApp packages Manage App-V Server deployment data for App-V 4.x and 5.1 packages
		Enhancements to <b>Application Manager / Test Center</b>	Test packages for compatibility to be virtualized to App-V, ThinApp, XenApp, and Symantec Workspace formats Test App-V packages for best practices Test App-V packages for conflicts with other packages
		Enhancements to <b>Distribution Wizard</b>	Publish applications containing App-V 4.x and 5.1 packages to Microsoft App-V Server Publish applications containing App-V packages to System Center Configuration Manager (2012 or Current Branch) and Citrix XenApp Server Publish applications containing Citrix XenApp profiles and App-V 4.x packages to Citrix XenApp Server Publish applications containing Symantec Workspace and VMware ThinApp packages to Symantec Altiris Client Management Suite Server
		Enhancements to <b>Test on Virtual Machine Wizard</b>	Automatically launch a specified virtual machine and install an App-V (.appv) package for testing.

Edition	Add On	Tools	Functionality
<b>Professional</b> (Continued)	<b>Application Compatibility</b>	Enhancements to <b>Application Manager / Test Center</b>	<p>Test packages for compatibility with the following operating systems:</p> <ul style="list-style-type: none"> <li>• Windows 7 (32-bit and 64-bit)</li> <li>• Windows 8.1 (32-bit and 64-bit)</li> <li>• Windows 10 (32-bit and 64-bit)</li> <li>• Windows Server 2008 R2</li> <li>• Windows Server 2012 and 2012 R2</li> <li>• Windows Server 2016</li> </ul> <p>On the <b>Operating System Compatibility</b> tab of the Test Center <b>Deployment Type View</b>, you can see detailed data for only the last package tested; for all other packages in the Application Catalog, this tab is blank (even if the package has been previously tested)</p> <p>Ability to display Microsoft Application Compatibility Toolkit (ACT) database test results on <b>ACT Summary</b> tab of the <b>Test Center Deployment Type View</b></p>
	<b>Mac and Mobile</b>	Enhancements to <b>Application Manager / Catalog</b>	<ul style="list-style-type: none"> <li>• Import of the following Mac OS X desktop applications into the Application Catalog:               <ul style="list-style-type: none"> <li>• Apple disk image (.dmg file)</li> <li>• Apple installer package (.pkg file)</li> <li>• Mac App Store app (public store link)</li> </ul> </li> <li>• Import of the following mobile app formats into the Application Catalog:               <ul style="list-style-type: none"> <li>• Apple iOS mobile apps (local and public store link)</li> <li>• Google Android mobile apps (local and public store link)</li> <li>• Microsoft Windows Store mobile apps (local and public store link)</li> <li>• Microsoft UWP app packages (.appx)</li> </ul> </li> <li>• Ability to import iOS Enterprise Policy Configuration files, view their settings, and determine the policy compatibility of iOS mobile apps.</li> <li>• Ability to view iOS and Android mobile app reporting on feature use, device compatibility, and OS compatibility.</li> </ul>

Edition	Add On	Tools	Functionality
<b>Professional</b> (Continued)	<b>Mac and Mobile</b> (Continued)	Enhancements to <b>Application Manager / Catalog</b> (Continued)	<ul style="list-style-type: none"> <li>• Ability to customize Apple Installer Package PKG installer settings</li> <li>• Ability to view deployment data for Windows Store mobile apps and Microsoft UWP app packages, including detection methods and framework customizations</li> <li>• Ability to manage AirWatch Server deployment data for both Apple iOS and Google Android mobile apps (local and public store link)</li> <li>• Ability to view and modify Casper deployment settings for Mac OS X desktop applications</li> </ul>
		Enhancements to <b>Application Manager / Test Center</b>	<ul style="list-style-type: none"> <li>• Test Apple iOS mobile apps for best practices</li> <li>• Test Apple iOS, Microsoft Windows, and Google Android mobile apps for risk assessment</li> <li>• Test Apple iOS, Microsoft Windows, and Google Android mobile apps for operating system compatibility</li> <li>• Test Mac OS X desktop applications (.dmg, .pkg, and Mac App Store apps) for operating system compatibility and best practices</li> </ul>
		Enhancements to <b>Distribution Wizard</b>	<p>Ability to publish applications containing the following mobile app formats to System Center Configuration Manager (2012 R2 or Current Branch) and AirWatch Server:</p> <ul style="list-style-type: none"> <li>• Apple iOS mobile apps (local and public store link)</li> <li>• Google Android mobile apps (local and public store link)</li> </ul> <p>Ability to publish applications containing the following mobile app format to System Center Configuration Manager (2012 R2 or Current Branch):</p> <ul style="list-style-type: none"> <li>• Microsoft UWP app packages (.appx)</li> <li>• Windows Store (local and public store link)</li> </ul> <p>Ability to publish applications containing the following package formats to JAMF Casper Suite:</p> <ul style="list-style-type: none"> <li>• Apple disk image (.dmg file)</li> <li>• Apple installer package (.pkg file)</li> <li>• Mac App Store app (public store link)</li> </ul>

Edition	Add On	Tools	Functionality
<b>Enterprise</b>	None	<i>Same as Professional, plus:</i>	
		<b>InstallShield 2016 SP2 (Premier Edition instead of Professional Edition)</b>	Advanced customization of Windows Installer packages by either directly editing them or by creating transforms
		<b>Application Manager / Report Center</b>	Advanced reports including detailed summary and dashboard reports on Test Center test results, package data, and deployment information
		<b>Platform API</b>	Use to integrate your existing .NET applications or scripting environments like Microsoft PowerShell with AdminStudio
		<b>Software Repository</b>	Secure storage system for AdminStudio package data, including version management
		<b>Report Center</b> (Web Tool)	Generate reports on packages stored in the Application Catalog, including reports using custom SQL queries
		<b>Security Console</b> (Web Tool)	Manage AdminStudio user accounts and directory services  Manage AdminStudio roles and permissions
		<b>Automated Application Converter (Multiple Application Version)</b>  <b>Conversion Wizard (Multiple Application Version)</b>	Automatically repackage legacy packages (.exe) into Windows Installer packages (.msi)  Ability to perform automated repackaging of multiple packages at a time



Edition	Add On	Tools	Functionality
<b>Enterprise</b> (Continued)	<b>Application Virtualization</b>	<i>Same as Professional, plus:</i>	
		<b>Automated Application Converter (Multiple Application Version)</b>  <b>Conversion Wizard (Multiple Application Version)</b>	Ability to perform automated conversion of multiple packages at a time
		Enhancements to <b>Application Manager / Report Center</b>	<p>Includes the Application Virtualization Compatibility Dashboard report</p> <p>Report Center's Application Readiness Dashboard includes an Application Virtualization Compatibility summary chart and App-V Best Practices and App-V Conflicts test results summary charts.</p>
	<b>Application Compatibility</b>	<i>Same as Professional, plus:</i>	
		Enhancements to <b>Application Manager / Test Center</b>	<p>Ability to test and fix multiple packages or groups of packages simultaneously</p> <p>Ability to view package-level test details for <b>Operating System Compatibility</b> and <b>Browser Compatibility</b> tests for all packages in the Application Catalog, not just the last one tested</p> <p>Import of web applications and web deploy packages into the Application Catalog</p> <p>Test web applications for compatibility with the following browsers:</p> <ul style="list-style-type: none"> <li>● Internet Explorer 9</li> <li>● Internet Explorer 10</li> <li>● Internet Explorer 11</li> <li>● Microsoft Edge</li> </ul> <p>Test web deploy packages for compatibility with the following platforms:</p> <ul style="list-style-type: none"> <li>● Windows Server 2012 R2</li> <li>● Windows Server 2016</li> <li>● Microsoft Azure Application Services</li> </ul> <p>Test web deploy packages for best practices.</p> <p>Test web deploy packages for browser compatibility.</p>

Edition	Add On	Tools	Functionality
<b>Enterprise</b> (Continued)	<b>Application Compatibility</b> (Continued)	Enhancements to <b>Application Manager / Report Center</b>	Display of Microsoft ACT database test results on the Report Center tab
		Enhancements to <b>Platform API</b>	Ability to use the Test-ASPackage and Resolve-ASPackage Platform API commands to perform batch package testing and issue resolution.
	<b>Mac and Mobile</b>	<i>Same as Professional</i>	

# System Requirements

This section lists the requirements for the AdminStudio machine, Application Catalog database server, Web server, Software Repository server, and virtual machines.

- [Compatibility Summary](#)
- [AdminStudio Machine](#)
- [Distribution Systems](#)
- [Application Catalog Database Server](#)
- [AdminStudio Enterprise Server / Workflow Manager Server](#)
- [Software Repository](#)
- [Automated Application Converter](#)

## Compatibility Summary

AdminStudio 2016 SP2 supports the following versions of the listed software.

Category	Item	Supported Versions
<b>Operating System for:</b> <ul style="list-style-type: none"> <li>• <b>AdminStudio</b></li> <li>• <b>Standalone Repackager</b></li> <li>• <b>Standalone Tuner</b></li> </ul>	<b>Microsoft Windows</b>	<ul style="list-style-type: none"> <li>• Windows 7</li> <li>• Windows 8 and 8.1</li> <li>• Windows 10</li> <li>• Windows Server 2008 R2</li> <li>• Windows Server 2012</li> <li>• Windows Server 2012 R2</li> <li>• Windows Server 2016</li> </ul>
<b>AdminStudio Web Server Operating System (AdminStudio Enterprise Server, AdminStudio Inventory and Rationalization, Workflow Manager)</b>	<b>Microsoft Windows Server</b>	<ul style="list-style-type: none"> <li>• Windows Server 2008 R2</li> <li>• Windows Server 2012</li> <li>• Windows Server 2012 R2</li> <li>• Windows Server 2016</li> </ul>
<b>Application Catalog Database</b>	<b>Microsoft SQL Server</b>	<ul style="list-style-type: none"> <li>• 2008 R2</li> <li>• 2012</li> <li>• 2014</li> </ul>

Category	Item	Supported Versions
<b>Flexera Software Product Integration</b>	<b>FlexNet Manager Platform / FlexNet Manager Suite (On Premises)</b>	9.2 SP1 or later
	<b>FlexNet Manager Suite (Cloud)</b>	2014 or later
	<b>App Portal</b>	7.5.3 or later
	<b>Workflow Manager</b>	2015
	<b>Flexera Service Gateway</b>	1.0
<b>Virtual Machines for Virtualization</b>	<b>VMware Workstation</b>	6.5 or later
	<b>VMware ESXi</b>	VMware ESX/ESXi Server, Version 3.5 Update 3 or later
	<b>VMware vSphere</b>	5.5
	<b>Microsoft Hyper-V Server</b>	2008 R2 or later
<b>Virtual Formats</b>	<b>App-V</b>	App-V 4.5 through 5.1
	<b>VMware ThinApp</b>	4.x and 5x
	<b>Symantec Workspace Virtualization</b>	7.6
<b>Microsoft App-V Sequencer</b>	<b>App-V Sequencer</b>	5.1
<b>Desktop Distribution (Applications)</b>	<b>System Center Configuration Manager</b>	2007, 2012 R2, 2012 R2 SP1, Current Branch
	<b>Microsoft App-V Server</b>	5.1
	<b>Symantec Altiris Client Management Suite</b>	7.5
	<b>Citrix XenApp Server</b>	6.5




Category	Item	Supported Versions
<b>Desktop Distribution (Packages)</b>	<b>Novell ZENworks Configuration Management</b>	10 and 11
	<b>LANDESK Management Suite</b>	9
	<b>System Center Configuration Manager</b>	2007, 2012 R2, 2012 R2 SP1, Current Branch
	<b>Altiris Notification Server</b>	6.5
	<b>Marimba NCP</b>	4.7.2
<b>Mobile Distribution</b>	<b>AirWatch Server</b>	6.5
	<b>Microsoft App-V Server</b>	5.1
	<b>Microsoft System Center Configuration Manager</b>	2012 R2, 2012 R2 SP1
<b>Desktop Operating Systems</b>  Supported for compatibility testing	<b>Windows</b>	<ul style="list-style-type: none"> <li>• 7 (32-bit and 64-bit)</li> <li>• 8.1 (32-bit and 64-bit)</li> <li>• 10 (32-bit and 64-bit)</li> </ul>
	<b>Windows Server</b>	<ul style="list-style-type: none"> <li>• 2008 R2</li> <li>• 2012</li> <li>• 2016</li> </ul>
	<b>Mac OS</b>	<ul style="list-style-type: none"> <li>• 10.11 (El Capitan)</li> <li>• 10.12 (Sierra)</li> </ul>

Category	Item	Supported Versions
<b>Mobile Operating Systems</b>  Supported for compatibility testing	<b>Apple iOS</b>	<ul style="list-style-type: none"> <li>• 6 (32-bit)</li> <li>• 7 (32-bit and 64-bit)</li> <li>• 8 (32-bit and 64-bit)</li> <li>• 9 (32-bit and 64-bit)</li> <li>• 10 (32-bit and 64-bit)</li> </ul>
	<b>Google Android</b>	<ul style="list-style-type: none"> <li>• 4.1 Jelly Bean</li> <li>• 4.2 Jelly Bean</li> <li>• 4.3 Jelly Bean</li> <li>• 4.4 KitKat</li> <li>• 5.0 Lollipop</li> <li>• 6.0 Marshmallow</li> <li>• 7.0 Nougat</li> </ul>
	<b>Windows Phone</b>	<ul style="list-style-type: none"> <li>• 8.1</li> <li>• 10</li> </ul>
<b>Internet Browsers</b>  Supported for browser compatibility testing	<b>Microsoft Internet Explorer</b>	9, 10, 11
	<b>Microsoft Edge</b>	Current version
<b>Internet Browsers</b>  For viewing AdminStudio Enterprise Server, AdminStudio Inventory and Rationalization, and Workflow Manager	<b>Mozilla Firefox</b>	Firefox for Windows 25.0 or later
	<b>Google Chrome</b>	Chrome for Windows 33.0 or later
	<b>Microsoft Internet Explorer</b>	Microsoft Internet Explorer 9.0 or later
	<b>Microsoft Edge</b>	Current version
	<b>Apple Safari</b>	Safari for Mac OS X and iOS

Category	Item	Supported Versions
Mobile Devices	<b>Apple iOS Devices</b>	<ul style="list-style-type: none"> <li>● iPad WiFi</li> <li>● iPad 2 3G and iPad 2 WiFi</li> <li>● iPad Third Gen and iPad Third Gen 4G</li> <li>● iPad Fourth Gen and iPad Fourth Gen 4G</li> <li>● iPad Fifth Gen and iPad Fifth Gen 4G</li> <li>● iPad Sixth Gen and iPad Sixth Gen LTE</li> <li>● iPad Pro 9.7, 9.7 LTE</li> <li>● iPad Pro 12.9, 12.9 LTE</li> <li>● iPad Mini</li> <li>● iPad Mini 3 and iPad Mini 3LTE</li> <li>● iPad Mini 4G</li> <li>● iPad Mini 4 and 4LTE</li> <li>● iPad Mini Retina and iPad Mini Retina 4G</li> <li>● iPhone 4S</li> <li>● iPhone 5, iPhone 5c, and iPhone 5s</li> <li>● iPhone 6 and iPhone 6 Plus</li> <li>● iPhone 6s and iPhone 6s Plus</li> <li>● iPhone SE</li> </ul>
	<b>Google Android Devices</b>	<ul style="list-style-type: none"> <li>● Samsung Galaxy Grand 2</li> <li>● Google Nexus 5, 5X, 6, 6P, 9</li> <li>● Samsung Galaxy Note 2, 3, 4, 5, 6, 7</li> <li>● Samsung Galaxy Note Pro</li> <li>● Samsung Galaxy S4, S5, S7</li> <li>● Samsung Galaxy Tab S2, 3</li> </ul>
	<b>Windows Phone Devices</b>	<ul style="list-style-type: none"> <li>● Microsoft Lumia535</li> <li>● Microsoft Lumia 930</li> <li>● Microsoft SurfacePro 3</li> </ul>
API	PowerShell	4.x
Application Compatibility	Microsoft Application Compatibility Toolkit (ACT)	5.6

# AdminStudio Machine

The following table lists the recommended system configuration for a machine running AdminStudio.

Item	Description
<b>Processor</b>	32-bit or 64-bit processor at 2 GHz or greater   <b>Note</b> • All of the AdminStudio tools run on 64-bit Windows operating systems. To repackage 64-bit applications or create 64-bit App-V packages, install AdminStudio on a 64-bit Windows operating system.
<b>RAM</b>	4 GB
<b>Hard Disk</b>	4 GB of free space
<b>Display</b>	Designed for XGA at 1024 x 768 resolution or higher
<b>MSXML</b>	MSXML 6.0   <b>Note</b> • MSXML is installed by the AdminStudio installer.
<b>Operating Systems</b>	<ul style="list-style-type: none"> <li>• Windows 7</li> <li>• Windows 8 and Windows 8.1</li> <li>• Windows 10</li> <li>• Windows Server 2008 R2</li> <li>• Windows Server 2012, Windows Server 2012 R2, Windows Server 2016</li> </ul>  <b>Note</b> • Support for Windows Vista was removed due to a modification made by Microsoft. For more information, see the following articles: <ul style="list-style-type: none"> <li>• <a href="#">An ADO application does not run on down-level operating systems after you recompile it on a computer that is running Windows 7 SP 1 or Windows Server 2008 R2 SP 1 or that has KB983246 installed [Microsoft Article 2517589]</a></li> <li>• <a href="#">A Better Solution for the Windows 7 SP1 ADO GUID Changes</a></li> </ul>
<b>Browser</b>	Microsoft Internet Explorer 7.0 or later
<b>Privileges</b>	Administrative privileges on the system




# Distribution Systems

AdminStudio supports distribution of both applications and packages.

## Application Distribution

AdminStudio supports the following distribution systems for the distribution of applications.

Distribution System	Support Version(s)
<b>System Center Configuration Manager</b>	2007, 2012 R2, 2012 R2 SP1, Current Branch
<b>Symantec Altiris Client Management Suite</b>	7.5
<b>JAMF Casper Suite Server</b>	9.9
<b>Citrix XenApp Server</b>	6.5
<b>AirWatch Server</b>	6.5 [Mobile applications only]
<b>Microsoft App-V Server</b>	5.1
	 <p><b>Note</b> • In order for you to distribute packages to a Microsoft App-V Server, the WinRM service must be running, and the App-V Server must be in the list of trusted hosts. Both of these can be accomplished from PowerShell by running the following command:</p> <pre>set-item wsman:\localhost\Client\TrustedHosts -value &lt;Machine Name&gt;</pre>

## Package Distribution

AdminStudio supports the following distribution systems for the distribution of packages using the Legacy Distribution Wizard.

Distribution System	Supported Versions
<b>Altiris Notification Server</b>	Version 6.5
<b>LANDESK Management Suite</b>	Version 9
<b>Novell ZENworks Configuration Management</b>	Versions 10 and 11
<b>Microsoft System Center Configuration Manager</b>	2007, 2012 R2, 2012 R2 SP1, Current Branch

# Application Catalog Database Server

The following table lists the recommended system configuration for a database server to store AdminStudio Application Catalog databases.



**Note** • While minimum requirements are listed below, the recommended system configuration for a database server is dependent upon the number of users and the number of packages that will be imported into the Application Catalog database.

Item	Description
<b>Processor</b>	32-bit or 64-bit processor at 2 GHz or greater
<b>RAM</b>	4 GB or greater (8 GB preferred)
<b>Hard Disk Space</b>	80 GB or greater
<b>Operating System</b>	Windows Server 2008 R2 or later (Windows Server 2012 preferred)
<b>Database Software</b>	<p>SQL Server 2008 R2 or later databases, including SQL Server 2012, SQL Server 2014, and SQL Server 2016.</p> <ul style="list-style-type: none"> <li> <b>Dictionary sort order</b>—SQL Server must be installed with case-insensitive dictionary sort order 52 on Code Page 1252 for non-Unicode data. For more information, use the <code>sp_helpsort</code> T-SQL command, which returns the following:    Latin1-General, case-insensitive, accent-sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL Server Sort Order 52 on Code Page 1252 for non-Unicode data </li> <li> <b>Collation setting</b>—SQL_Latin1_General_CP1_CI_AS is the required collation setting for AdminStudio database server. It is the only supported collation. </li> </ul>



**Note** • Before attempting to connect to an existing Microsoft SQL Server, open SQL Server Configuration Manager and make sure that the following three protocols are enabled:

- Shared Memory
- Named Pipes
- TCP/IP

# AdminStudio Enterprise Server / Workflow Manager Server

The following table lists the system requirements for the Web server that hosts the Workflow Manager Data Web service and the actual Workflow Manager Web site and/or AdminStudio Enterprise Server.



**Note** • While minimum requirements are listed below, the recommended system configuration for this web server is dependent upon the number of users.

Item	Description
<b>Processor</b>	32-bit or 64-bit processor at 2 GHz or greater
	<p><b>Note</b> • AdminStudio Enterprise Server / Workflow Manager runs in 32-bit mode on a 64-bit OS.</p>
<b>RAM</b>	4 GB or greater (8 GB preferred)
<b>Hard Disk Space</b>	100 GB or greater
<b>Operating System</b>	Windows Server 2008 R2 or later / English base language (Windows Server 2012 preferred)
<b>IIS</b>	IIS 7.0 or later
<b>.NET</b>	.NET Framework 4.0
<b>MSXML</b>	MSXML 6.0
	<p><b>Note</b> • MSXML is installed by the AdminStudio Enterprise Server / Workflow Manager installer.</p>

# Software Repository

The following tables lists the recommended system configuration for the machine that stores the Software Repository files.

Item	Description
<b>Processor</b>	1 GHz or greater
<b>RAM</b>	2 GB or greater
<b>Hard Disk Space</b>	500 GB or greater
<b>Operating System</b>	Windows 8, Windows 7, Windows Vista, or Windows Server 2008 or later

## Automated Application Converter

This section lists the requirements for the virtual machines used by Automated Application Converter to perform repackaging. Also, the software requirements for specific virtual technologies are listed.

- [Virtual Machine Requirements](#)
- [Virtual Technology Requirements](#)

## Virtual Machine Requirements



**Edition** • Automated Application Converter is included with AdminStudio Application Virtualization.

Automated Application Converter performs automated repackaging on virtual machines. This section lists the virtual machine platform and virtual machine image system requirements.

- [Supported Virtual Machine Platforms](#)
- [VMware Requirements](#)
- [Microsoft Hyper-V Server Requirements](#)
- [Virtual Machine Image Requirements](#)

### Supported Virtual Machine Platforms

The Automated Application Converter supports automated repackaging on virtual machines from the following platforms:

- VMware ESX/ESXi Server, Version 3.5 Update 3 or later
- VMware Workstation 6.5 or later
- VMware vSphere 5.5
- Microsoft Hyper-V Server 2008 R2 or later

## VMware Requirements

As described above, Automated Application Converter supports automated repackaging on VMware ESX/ESXi Server and VMware Workstation.

- [VMware VIX API Requirement](#)
- [VMware ESX/ESXi Server Permission Requirements](#)
- [vSphere 5.5 Account Requirements](#)

### VMware VIX API Requirement

In order for Automated Application Converter to perform automated repackaging, it needs to communicate with the virtualization technology that you are using. If you are using VMware virtualization technology (VMware ESX or ESXi Server or a local VMware Workstation), the VMware VIX API needs to be installed on the same machine as the Automated Application Converter. You can do this by either installing VMware Workstation on that machine or by downloading and installing the VMware VIX API from the following location:

<http://www.vmware.com/support/developer/vix-api>



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**Note** • When using VMware Workstation, it is recommended that you install VMware Workstation on the same machine as Automated Application Converter so that Automated Application Converter will use the version of the VIX API that was designed for that specific version of VMware Workstation. Although it is likely that newer versions of the VIX API will also work, it seems that the best approach is for Automated Application Converter to use the version of the VIX API that was bundled with your version of VMware Workstation.

### VMware ESX/ESXi Server Permission Requirements

If you plan to use a VMware ESX/ESXi Server in conjunction with Automated Application Converter, make sure that the account that you use to log in to this server has the permissions/roles needed to automatically open a VM using VMware VIX API. The account needs to either have an administrator role assigned or, at least, have the following three roles assigned:

- All Privileges/Virtual Machine/State/Create Snapshot
- All Privileges/Virtual Machine/State/Delete Snapshot
- All Privileges/Virtual Machine/Interaction/Console Interaction

If the login account does not have these permissions/roles, Automated Application Converter will be unable to automatically boot up a virtual machine on that server.

## vSphere 5.5 Account Requirements

In order to make Automated Application Converter (AAC) work with VMware virtual machines residing under vSphere 5.5, there are certain minimum permissions required for the vSphere user account. To assign these permissions to a vSphere user account, perform the following steps:



### Task

**To configure a vSphere 5.5 account to be used with Automated Application Converter:**

1. In vSphere 5.5, open the **Assign Permissions** dialog box and assign a user the **Virtual machine power user (sample)** role, which consists of the following permissions:

Category	Permission	
<b>Datastore</b>	<ul style="list-style-type: none"> <li>• Browse datastore</li> </ul>	
<b>Global</b>	<ul style="list-style-type: none"> <li>• Cancel task</li> </ul>	
<b>Scheduled task</b>	<ul style="list-style-type: none"> <li>• Create task</li> <li>• Modify task</li> <li>• Remove task</li> <li>• Run task</li> </ul>	
<b>Virtual machine &gt; Configuration</b>	<ul style="list-style-type: none"> <li>• Add existing disk</li> <li>• Add new disk</li> <li>• Add or remove device</li> <li>• Advanced</li> <li>• Change CPU count</li> <li>• Change resource</li> <li>• Disk lease</li> <li>• Memory</li> <li>• Modify device settings</li> <li>• Remove disk</li> <li>• Rename</li> <li>• Reset guest information</li> <li>• Settings</li> <li>• Upgrade virtual machine compatibility</li> </ul>	
<b>Virtual machine &gt; Interaction</b>	<ul style="list-style-type: none"> <li>• Answer question</li> <li>• Configure CD media</li> <li>• Configure floppy media</li> <li>• Console interaction</li> <li>• Device connection</li> <li>• Guest operating system management by VIX API</li> <li>• Power off</li> <li>• Power on</li> <li>• Reset</li> <li>• Suspend</li> <li>• VMware Tools install</li> </ul>	
<b>Virtual machine &gt; Snapshot management</b>	<ul style="list-style-type: none"> <li>• Create snapshot</li> <li>• Remove snapshot</li> <li>• Rename snapshot</li> <li>• Revert to snapshot</li> </ul>	

2. Also give the user account read-only access to the rest of the server.

## Microsoft Hyper-V Server Requirements

As described above, Automated Application Converter supports automated repackaging on Microsoft Hyper-V Server. When preparing a Hyper-V Server for use with Automated Application Converter, make sure that the following conditions are met:

- **Configuration tools**—Verify that the Hyper-V configuration tools are installed on the Hyper-V server machine. These tools can be installed using the Microsoft Hyper-V Management Console.
- **Connection**—Verify that you can successfully connect to the Hyper-V Server from the machine where AdminStudio Automated Application Converter is installed.
- **Permissions**—Make sure that the Hyper-V Server user has the following permissions to perform operations on the Hyper-V machines:
  - Permission to create/restore/delete VM snapshots
  - Permission to start and stop virtual machines
  - Permission to access console sessions
- **Configuration settings**—Connecting to a WMI namespace on a remote computer running Windows Vista or Windows Server 2008 may require changes to configuration settings. Check the following configuration settings on the AdminStudio machine as well as on the Hyper-V Server machine:
  - Windows Firewall Settings
  - User Account Control (UAC) Settings
  - DCOM Settings
  - Common Information Model Object Manager (CIMOM) Settings

For detailed information, see [Connecting to WMI Remotely](#) at:

[http://msdn.microsoft.com/en-us/library/aa822854\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/aa822854(VS.85).aspx)

## Virtual Machine Image Requirements

Automated Application Converter uses virtual machines to perform automated repackaging. These virtual machines have the following requirements:

### Virtual Machine System Requirements

When creating a virtual machine image that will be hosted on one of the virtual machine platforms listed above, the recommended minimum requirements should meet those required by the applications you are trying to repackage. Since you repackage on the target deployment platform, the virtual machine image should closely resemble the target deployment environment.

## Preparing Your Virtual Machines for Use With the Automated Application Converter

You need to prepare each virtual machine that you are going to use with the Automated Application Converter to perform automated repackaging by running the Virtual Machine Preparation setup and by creating a snapshot. For instructions, see [Preparing Your Virtual Machines for Use With the Automated Application Converter](#).

## Virtual Technology Requirements

In order to convert to some virtual formats, there are some software requirements:

Virtual Format	Requirement
<b>App-V 5.1</b>	<ul style="list-style-type: none"> <li>• <b>Conversion</b>—To convert a package to App-V 5.1 format using Automated Application Converter's <b>App-V 5.x with Sequencer</b> method, the Microsoft Application Virtualization 5.1 Sequencer must be installed on the virtual machine where the conversion will take place.</li> <li>• <b>Upgrade</b>—To upgrade an imported App-V 4.x package to App-V 5.1 format directly from Application Manager using the <b>App-V Upgrade Wizard</b>, the Microsoft Application Virtualization 5.1 Sequencer must be installed on the same machine as AdminStudio.</li> <li>• <b>Testing</b>—To test an App-V package using Automated Application Converter, the Microsoft Application Virtualization 5.1 Client must be installed on the same machine as AdminStudio.</li> </ul>
<b>VMware ThinApp</b>	To convert a package to VMware ThinApp format, VMware ThinApp must be installed on the same machine as AdminStudio, and all license agreements must have been accepted.
<b>Symantec Workspace</b>	To convert a package to a Symantec Workspace virtual package, the Symantec Workspace Virtualization Agent must be installed on the same machine as AdminStudio.



# Downloading AdminStudio Installers

You can download the installers for AdminStudio, AdminStudio Service Packs, Standalone Repackager, Standalone Quality Monitor, and the FlexNet Licensing Server from the **Flexera Software Product and License Center**:

<https://flexerasoftware.flexnetoperations.com>

For information on using the Flexera Software Product and License Center, see the **Download and License Overview for AdminStudio**:

<http://www.flexerasoftware.com/downloads/instructions/productlicensing/en/adminstudio.htm>

## AdminStudio 2016 SP2 Evaluation Restrictions

When you run AdminStudio in trial/evaluation mode, all of the features in the AdminStudio Enterprise Edition tools are fully available, with the following restrictions:

- **Can create only one Application Catalog**—You are permitted to create only one Application Catalog, and it must be named AdminStudio Evaluation Catalog.
- **Ten package import limit**—Only 10 total packages (of one or more deployment types) can be imported into the Application Catalog.
- **Package deletion not permitted**—After you import a package into the Application Catalog, you are not permitted to delete it.
- **AdminStudio Platform API support is disabled**—All platform support is disabled.

# Resolved Issues

This section lists the customer issues that were resolved in the following versions of AdminStudio:

- [AdminStudio 2016 SP2](#)
- [AdminStudio 2016 SP1](#)
- [AdminStudio 2016](#)

## AdminStudio 2016 SP2

The following table lists the customer issues that were resolved in AdminStudio 2016 SP2.

Issue Number	Issue Summary
<b>IOJ-1739564</b>	When deploying a package to SCCM 2007 and creating a catalog item in App Portal, the catalog item deployment information is displayed on the <b>Deployment &gt; SCCM 2012</b> tab of the App Portal Catalog Item Properties dialog box instead of the <b>SCCM 2007</b> tab.
<b>IOJ-1777583</b>	When repacking certain packages using the Installation Monitoring method, the shortcut icons are not retained in the built MSI. When repacking the same package using the Snapshot method, the icons are retained as expected.
<b>IOJ-1777934</b>	When repackaging an .exe installer into an .msi package, the shortcut icon image is blank.
<b>IOJ-1799678</b>	During import, packages are copied to an AdminStudio temporary directory to extract all of the data needed during import and testing. Request to enable users to specify their own TEMP directory, to avoid folder locking issues.
<b>IOJ-1800340</b> <b>IOJ-1800341</b>	Request to improve error messages that are displayed when importing an MSI deployment from SCCM that uses a script for the installation program.
<b>IOJ-1808929</b>	Request an editable/customizable <b>Title</b> field for the App Portal catalog item title on the <b>App Portal Information</b> tab of the Application View.
<b>IOJ-1811358</b>	Unable to import OS security patches in order to perform patch impact analysis.

# AdminStudio 2016 SP1

The following table lists the customer issues that were resolved in AdminStudio 2016 SP1.

Issue Number	Issue Summary
<b>IOJ-1645208</b>	Request to prevent the creation of a Software ID tag file when you open a Repackager file if the <b>Enable creation of software ID tag transforms during import and repackaging</b> option is not selected on the <b>Build Options</b> tab of the Repackager <b>Options</b> dialog box.
<b>IOJ-1722516</b>	An InstallShield project file created from a Repackager project does not display a folder in the <b>Files and Folders</b> view if a folder is created on the root of C:\[WindowsVolume] and data is added to this directory.
<b>IOJ-1743163</b>	The method used to launch Application Manager determines whether it will use the AdminStudio permissions assigned to a role in AdminStudio Enterprise Server. If Application Manager is launched directly or by using the Start menu shortcut, then the AdminStudio permissions assigned to a role in AdminStudio Enterprise Server are used. If Application Manager is launched through the AdminStudio client user interface, then the AdminStudio permissions are not used for Application Manager and the user has full access.
<b>IOJ-1743169</b>	Request to decrease the time it takes to cancel a conversion run of Automated Application Converter.
<b>IOJ-1745255</b>	When using Repackager on a Russian operating system to capture a Russian application, the capture is successful and the .irp is created without error. However, within the InstallShield project, the files and folders which should contain Russian text have been converted to gibberish.
<b>IOJ-1748667</b>	Command line bulk import fails for .sft and .appv files.
<b>IOJ-1759789</b>	Request to remove outdated PowerShell scripts from the AdminStudio installation directory.
<b>IOJ-1767088</b>	The "Drivers with known Windows compatibility issues" tests cause false positive errors with certain drivers even though those drivers do not cause any problems.
<b>IOJ-1767253</b>	AdminStudio has been updated to use MSXML 6.0.
<b>IOJ-1767384</b>	Repackager crashes on Windows 7 when the time zone is not set to a U.S. time zone.
<b>IOJ-1769974</b>	AdminStudio 2016 activation fails if performing a silent installation.
<b>IOJ-1774587</b>	Compatibility testing fails to execute on Windows Installer packages that are imported through the command line and that reference transform files.

Issue Number	Issue Summary
<b>IOJ-1776829</b>	If an application was created in SCCM 2012, an error occurs when you try to import that application into the Application Manager Application Catalog. However, if you originally deployed that package to SCCM 2012 using Application Manager, it can be imported successfully.
<b>IOJ-1776841</b>	Packages that require repackaging prior to virtualization mistakenly show up as Ready for conversion and no issues are listed on the Application Virtualization Compatibility tab in Test Center.
<b>IOJ-1777092</b>	If you connect Application Manager to SCCM 2012 or later and test the connection, you will get the following warning: Configuration Manager 2012 SP1 is older than what is supported by AdminStudio.
<b>IOJ-1777095</b>	Unable to distribute updated App-V packages to App-V Server.

## AdminStudio 2016

The following table lists the customer issues that were resolved in AdminStudio 2016.

Issue Number	Issue Summary
<b>IOJ-1724747</b>	Dependencies are not listed in the Dependencies node view of the package after Patch Impact Analysis is run.
<b>IOJ-1727335</b>	When repackaging using the Installation Monitoring method, the InstallScript/MSI installer hangs.
<b>IOJ-1736087</b>	Request to improve the resolution of runtime value for ProgramFilesFolder when converting to App-V format.
<b>IOJ-1737236</b>	When importing using the Import Wizard, the Package Type Selection panel does not list package types.
<b>IOJ-1738631</b>	When using the legacy Distribution Wizard to distribute a package to System Center Configuration Manager, the package name is truncated.
<b>IOJ-1742085</b>	Request to clean up extracted files after an MSI with a patch is imported.
<b>IOJ-1742220</b>	File/folder permissions on repackaged application are not set correctly. After the MSI is built, the ISLockPermissions table is not present in the MSI, and you are not able to set permissions on files/folders.
<b>IOJ-1743436</b>	The content location specified in AdminStudio during distribution is ignored for certain packages.

Issue Number	Issue Summary
<b>IOJ-1743438</b>	Request to provide more logging during distribution. The verbose logging created during AdminStudio distribution does not capture anything specific to the content location.
<b>IOJ-1744011</b>	During repackaging, application is crashing during installation when using the Installation Monitoring method.
<b>IOJ-1744365</b>	InstallShield Editor is missing from the tools list in AdminStudio interface after upgrading to AdminStudio 2015 SP1. The InstallShield shortcut can still be launched from the Start Menu but this initiates a self-repair install.
<b>IOJ-1744441</b>	When you attempt to import a security patch and you are using non US English operating system settings, the package fails to import.
<b>IOJ-1744443</b>	Unable to import or test Web Deploy packages due to licensing issue.
<b>IOJ-1744464</b>	The OS Snapshot Wizard can capture and create a Windows 10 image, but when it is imported into the Application Catalog, AdminStudio recognizes it as a Windows 8 machine.
<b>IOJ-1744823</b>	When repackaging certain packages, the Repackaging Wizard will not progress past the "Running the setup program(s)" dialog box.
<b>IOJ-1749194</b>	Request for a way to mitigate or suppress reboots during a silent installation.
<b>IOJ-1749216</b>	On iOS and Android Feature Use reports, the mobile app is listed multiple times, once for each feature, instead of showing all features on one line.
<b>IOJ-1749414</b>	Request to optimize file copy when republishing a package in Altiris (and other distribution systems). Instead of copying all files, just copy the files that have changed.
<b>IOJ-1751224</b>	Distribution from AdminStudio to Altiris fails.
<b>IOJ-1751231</b>	If you load a Custom ACE rule file, the custom rules are not be displayed properly on the General Options > ACE Tests tab of the Options dialog box.
<b>IOJ-1753385</b>	AdminStudio Host can cause files to be held in use causing issues with "Content Location" during distribution to System Center Configuration Manager.
<b>IOJ-1753930</b>	Database created manually are missing table entries, which prevents plugins from functioning properly.
<b>IOJ-1754786</b>	When trying to repackage an application that contains a file named rnuninst.dll using the Snapshot method, Repackager will not capture the file.
<b>IOJ-1755267</b>	Certain tests results are not being displayed if the database was upgraded or created with a certain build of AdminStudio 2015 SP1.

Issue Number	Issue Summary
<b>IOJ-1755270</b>	On Windows 7 SP1, if KB2922229 is not installed on the system, AdminStudio will not be able to create a database or upgrade a database.
<b>IOJ-1756714</b>	When using the Software Repository, the wrong error message is displayed when an error is encountered during test execution in Test Center.
<b>IOJ-1756810</b>	When Adminstudio is activated with an "Enterprise with Application Compatibility" License, Windows Server operating system results are not shown when viewing the "Overall Package Testing Results" report.

## Known Issues

For a complete list of known issues that pertain to the AdminStudio 2016 SP2 release, see the AdminStudio Support Knowledge Base article at:

[https://flexeracommunity.force.com/customer/articles/en\\_US/INFO/AdminStudio-2016-Known-Issues](https://flexeracommunity.force.com/customer/articles/en_US/INFO/AdminStudio-2016-Known-Issues)

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