

GETTING STARTED

PACE Suite 5.0





Table of Contents

1	Introduction.....	6
1.1	About This Document.....	6
1.2	Glossary.....	6
2	PACE Overview.....	7
2.1	Installation & Activation.....	8
2.1.1	Software Prerequisites.....	8
2.1.2	Hardware Prerequisites.....	8
2.1.3	Installing PACE Suite.....	9
2.1.4	Activating PACE Suite.....	14
3	How-To Manuals	16
3.1	Create MSI.....	16
3.1.1	Create Blank MSI	16
3.1.2	Generate MSI from Scratch	38
3.1.3	Convert (Repackage) EXE to MSI.....	47
3.1.4	Capture System Changes to MSI	67
3.2	Create MST.....	84
3.2.1	Create Blank MST	84
3.2.2	Create Response MST	108
3.2.3	Capture System Changes to MST	116
3.3	Create MSP	134
3.3.1	Create MSP Based On Difference.....	134
3.3.2	Save Changes to MSP.....	141
3.4	Create APPX.....	168
3.4.1	Create APPX from Scratch	168
3.4.2	Convert (Repackage) EXE, MSI to APPX.....	177
3.5	Create APPV	192
3.5.1	Create APPV from Scratch.....	192
3.5.2	Convert (Repackage) EXE, MSI to APPV 5.x.....	203
3.6	Create THINAPP	221
3.6.1	Create THINAPP from Scratch.....	221
3.6.2	Convert (Repackage) EXE, MSI to THINAPP	228



3.7	Edit MSI/MST	241
3.7.1	Pre-Condition	242
3.7.2	Files and Folders	244
3.7.2.1	Add System Folder	245
3.7.2.2	Add Subfolder	247
3.7.2.3	Import Files and COM	249
3.7.2.4	Change Compression Type	254
3.7.2.5	Set Permissions	258
3.7.2.6	Remove Permissions	262
3.7.2.7	Move Files, Folders	265
3.7.2.8	Set INSTALLDIR	267
3.7.2.9	Edit INI File	269
3.7.2.10	Edit File Properties	271
3.7.2.11	Edit Folder Properties	273
3.7.3	Shortcuts	275
3.7.3.1	Add Shortcut	276
3.7.3.2	Import Shortcuts	283
3.7.3.3	Move Shortcut	285
3.7.3.4	Edit Shortcut Properties	288
3.7.4	Registry	291
3.7.4.1	Add Registry Key	292
3.7.4.2	Add Registry Value	294
3.7.4.2.1	Add ActiveSetup	297
3.7.4.3	Add Value/Key Removal	302
3.7.4.4	Import Registry	304
3.7.4.5	Export Registry	308
3.7.4.6	Set Permissions	309
3.7.4.7	Remove Permissions	313
3.7.4.8	Move Value, Key	316
3.7.4.9	Edit Registry Key	318
3.7.4.10	Edit Registry Value	320
3.7.4.11	Edit Value/Key Removal	324

3.7.5	Custom Actions	326
3.7.5.1	Add Standard Actions	326
3.7.5.2	Add Custom Action	330
3.7.5.2.1	Run PowerShell script.....	335
3.7.5.3	Edit Custom Action	345
3.7.6	Drivers.....	350
3.7.6.1	Add Driver	350
3.7.6.2	Edit Driver.....	355
3.7.7	Features and Components	357
3.7.7.1	Add Feature	358
3.7.7.2	Add Component.....	360
3.7.7.3	Move Feature, Component	362
3.7.7.4	Edit Feature Properties	364
3.7.7.5	Edit Component Properties.....	366
3.7.7.6	Find Empty Components	370
3.7.7.7	Review Component Resources.....	372
3.7.8	Properties.....	374
3.7.8.1	Add Property	375
3.7.8.2	Edit Property.....	376
3.7.9	Summary Information	378
3.7.9.1	Edit MSI/MST Summary Information	378
3.7.10	Upgrades.....	380
3.7.10.1	Integrate Upgrades	380
3.7.11	Tables.....	382
3.7.11.1	Add Tables.....	383
3.7.11.2	Drop Tables.....	385
3.7.11.3	Import Tables (IDT).....	389
3.7.12	Merge Modules.....	392
3.7.12.1	Import Merge Modules (MSM)	392
3.8	Edit Project.....	397
3.8.1	Pre-Condition.....	397
3.8.2	File and Folders.....	399

3.8.2.1	Exclude Files and Folders	399
3.8.2.2	Include Files and Folders	400
3.8.2.3	Add Custom Folder	401
3.8.2.4	Import Files	403
3.8.3	Registry.....	405
3.8.3.1	Exclude Registry Entries.....	405
3.8.3.2	Include Registry Entries	406
3.8.3.3	Import Registry	407
3.8.3.4	Export Registry.....	409
3.8.4	Shortcuts.....	410
3.8.4.1	Import Shortcut.....	410
3.9	Edit APPV	413
3.10	Deploy (Publish) to SCCM	422
3.11	Generate Package Report.....	429
3.12	Validate Package.....	432
3.13	Get Package Complexity	435
3.14	Create Discovery Documentation	439
4	References	443
4.1	Contact.....	443
4.2	Social Networks.....	443



1 Introduction

1.1 About This Document

The Getting Started document describes how to perform common application packaging tasks with the help of PACE Suite.




1.2 Glossary

MSI	MSI is an installer package file format used by Windows. Its name comes from the program's original title, Microsoft Installer, which has changed to Windows Installer. MSI files are used for installation, storage, and removal of programs.
MST	MST is a settings file used by Microsoft Windows Installer, a component of the Windows operating system that enables software installations. It contains software configuration options, allows custom parameters for the installation.
APPV	Microsoft Application Virtualization (also known as App-V; formerly Softricity SoftGrid) is an application virtualization and application streaming solution from Microsoft.
APPX	APPX is the file format used to distribute and install Universal Windows Platform (UWP) apps on Windows 8.x and 10, Windows Phone 8.1, Windows 10 Mobile, Xbox One, HoloLens, and Windows 10 IoT Core.



2 PACE Overview

PACE Suite consists of the following components:

Tool name	Major functions
 MSI GENERATOR	<ul style="list-style-type: none">• Repackage any existing installation into Windows Installer (MSI), UWP app package (APPX) or a virtualization format (Microsoft App-V 5.x, and VMware ThinApp).• Auto-detection of embedded installers.• Create a response transform• Tune any existing Windows Installer package by applying your settings and saving them as a Windows Installer transform (MST).• Include the excluded files/registry back to a package.
 MSI EDITOR	<ul style="list-style-type: none">• Manage the contents of an MSI in a tree view• Import the desired resources• Manage Custom Actions• Integrate Device Drivers• Use a smart and advanced MSI database editor, with formatted string autocompleting, Excel-like formula bar, row reference tracking, and more.• Create patches (MSP)• Manage permission settings for file system and registry• Handle upgrades easily – just let MSI Editor know which MSI you want to be upgraded at runtime.• Publish your applications to Microsoft SCCM 2007, 2012, 2016.• See the estimated complexity of an app right away.• Generate package documentation containing the details about your package and configuration.• Undo-redo any manipulation and see the changes highlighted in the MSI tables
 DOCU GENERATOR	<ul style="list-style-type: none">• Automatically record your on-screen actions into a nice-looking document with screenshots and annotations

2.1 Installation & Activation

2.1.1 Software Prerequisites

Ensure that a target system contains necessary software prerequisites:

OS	Windows 10/8.1/8/7 SP1, Windows Server 2016/2012/2008 R2 SP1
	NOTE Building Universal Windows Platform app packages (APPX) is available under Windows 10 or Windows Server 2016 or newer.
Middleware	Microsoft .NET Framework 4.6.2 (https://www.microsoft.com/en-us/download/details.aspx?id=53345) or higher.
	NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed. NOTE For publishing MSI packages to Microsoft SCCM 2007 (SP1/SP2/R1/R2) or SCCM 2012 (SP1/SP2/R2/R2 SP1) server, ensure that your system contains Microsoft Management Framework 3.0 and Windows Remote Management (WinRM) service enabled.
Privileges	Administrative privileges on the system.

2.1.2 Hardware Prerequisites

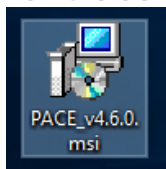
Ensure that a target system fulfils the minimum hardware conditions:

Processor	32-bit (x86) or 64-bit (x64) processor at 2 GHz or greater
	NOTE To repackage 64-bit applications or create 64-bit App-V packages, use PACE Suite on a 64-bit Windows operating system.
RAM	2 GB
Hard drive free space	1 GB
	NOTE Additional storage is required for your projects and packages and depends on their size and quantity.
Display	1280 x 768 resolution or higher.

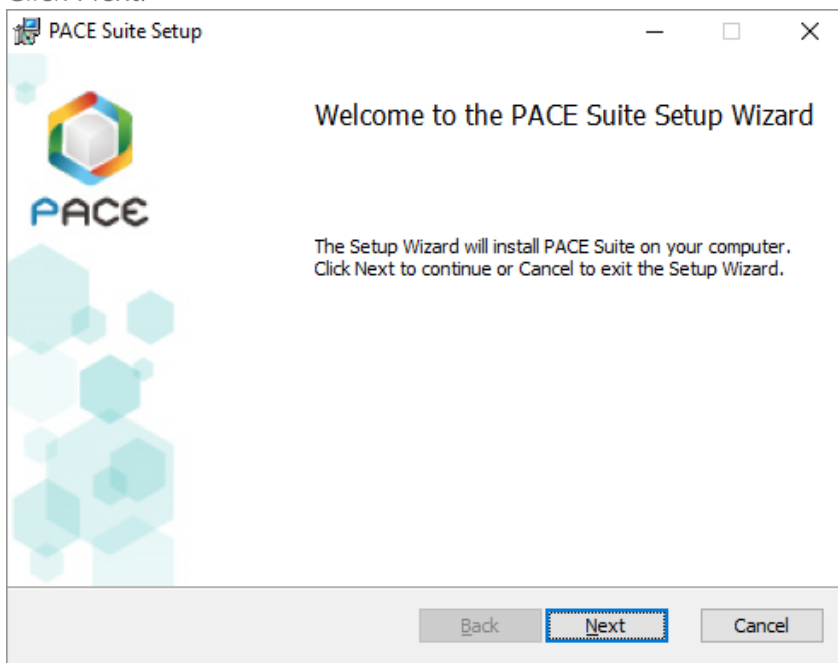
2.1.3 Installing PACE Suite

PACE Suite installation checks whether your license is compatible with the current PACE Suite version and whether your system meets minimum software requirements. Note that the installation requires the administrator privileges.

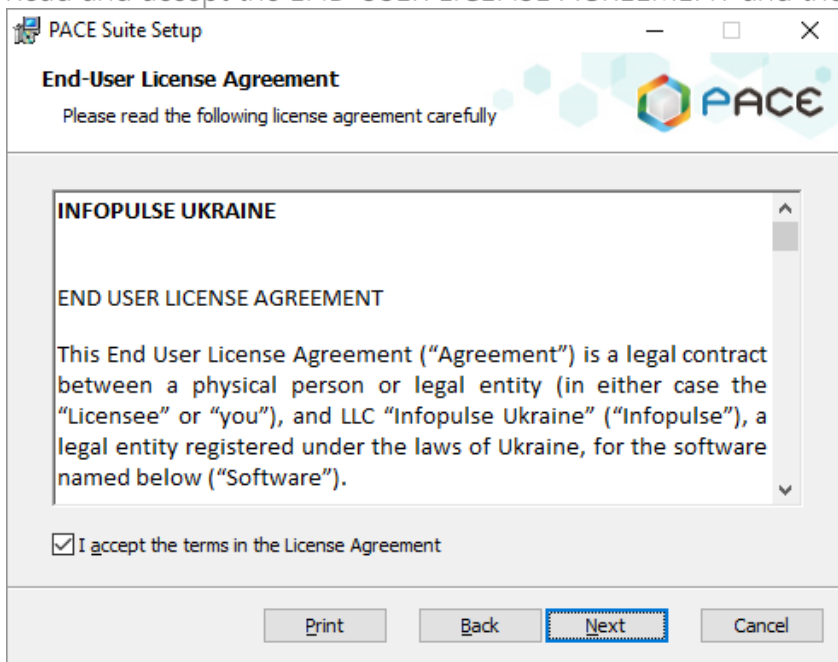
- [1]. Run the downloaded PACE Suite installer.



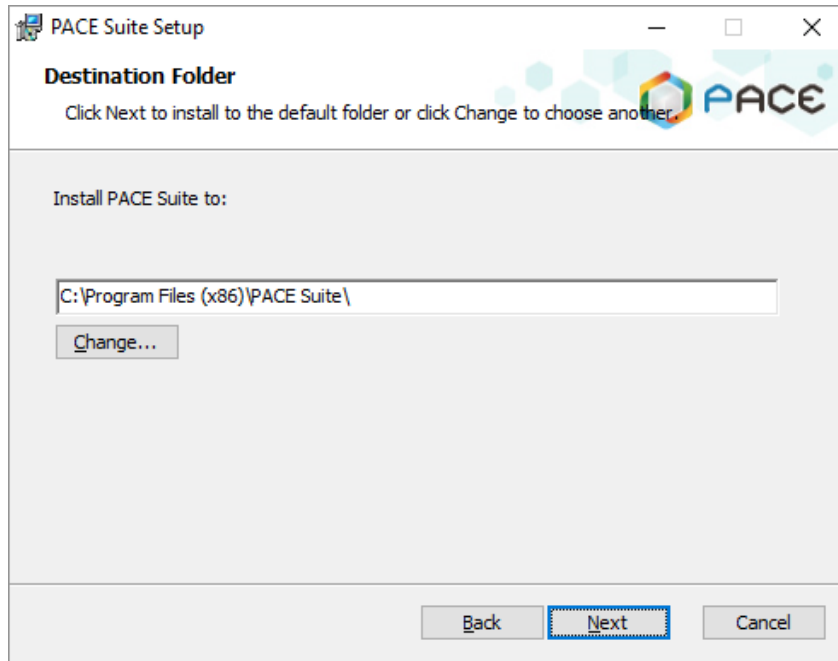
- [2]. Click Next.



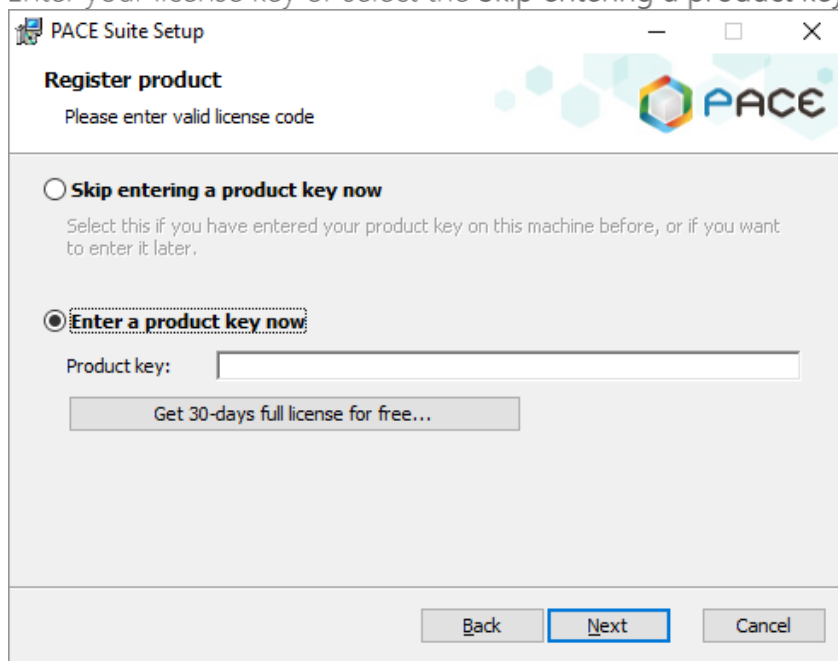
- [3]. Read and accept the END USER LICENSE AGREEMENT and then click Next.



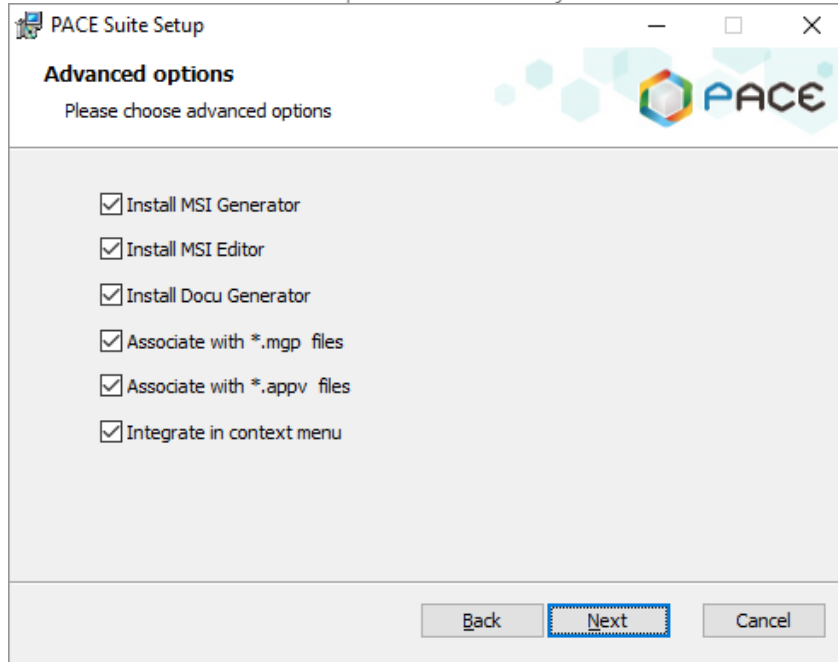
- [4]. Leave the default installation location or choose an alternative one and click Next.



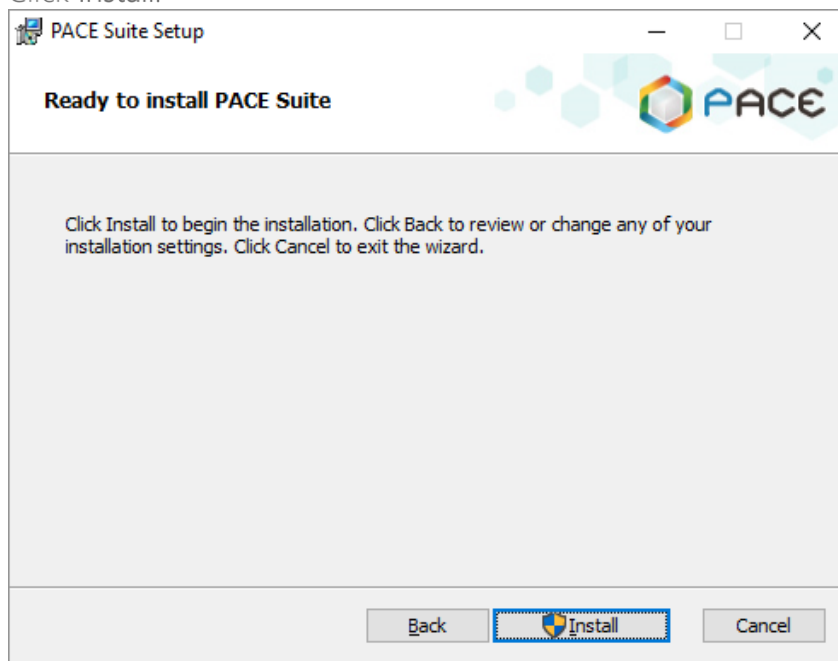
- [5]. Enter your license key or select the Skip entering a product key now option and click Next.



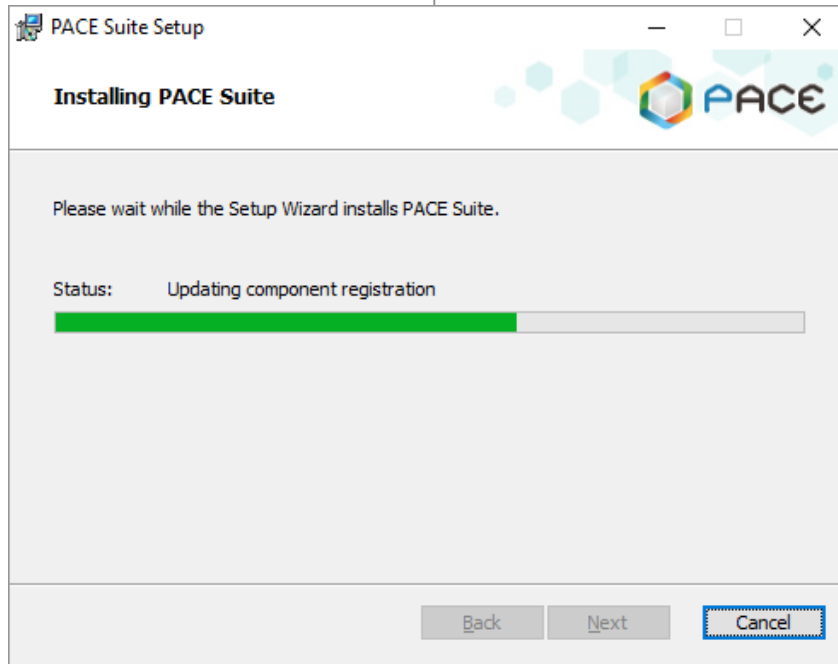
- [6]. Uncheck PACE Suite components, which you do not want to install, and click Next.



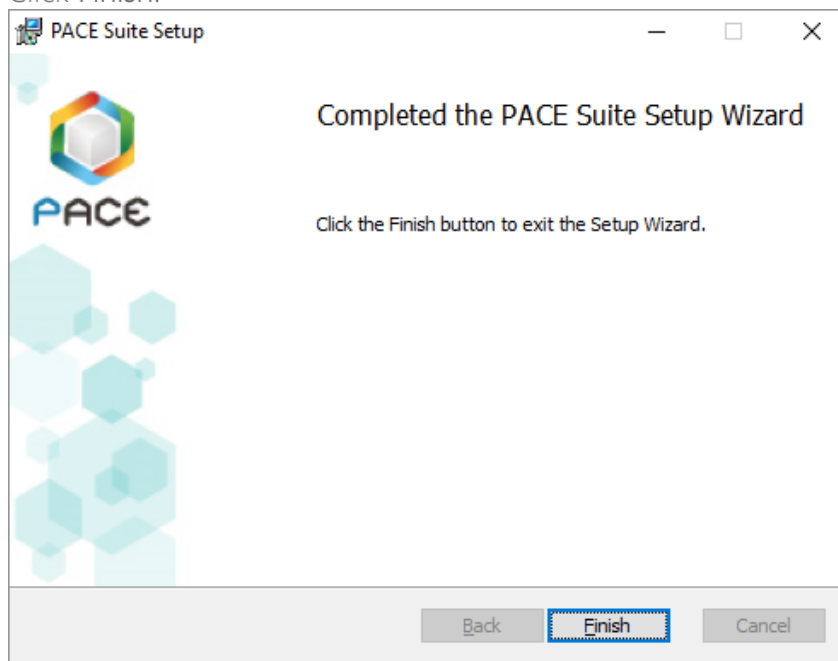
- [7]. Click Install.



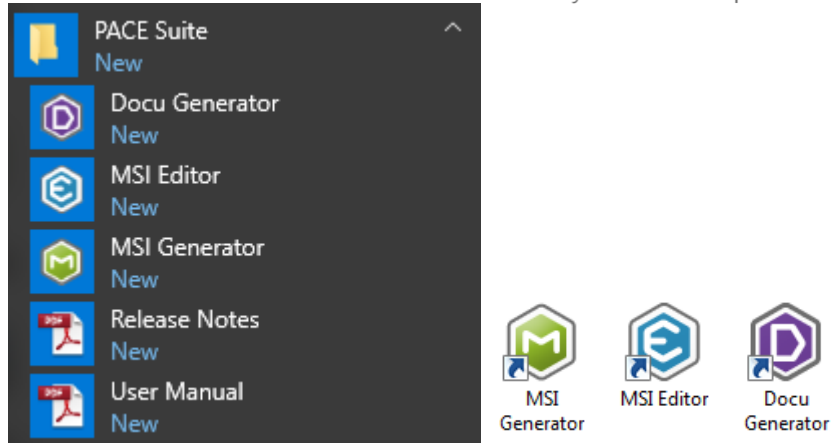
[8]. Wait until the installation is completed.



[9]. Click Finish.



[10]. Find the installed PACE Suite shortcuts on your Desktop and in the Start Menu.

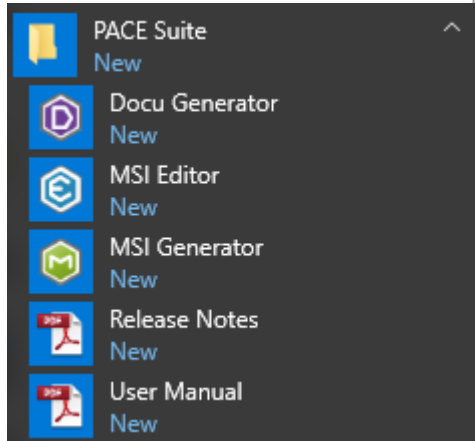


2.1.4 Activating PACE Suite

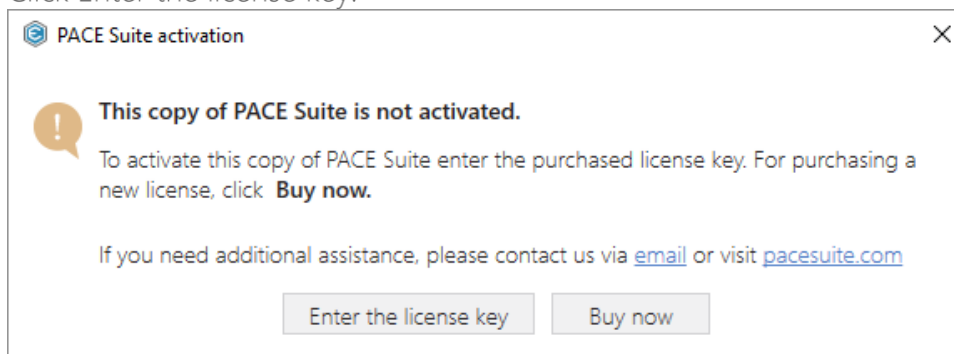
If you have installed PACE Suite with the **Skip entering a product key now** option or your current license is expired, you can activate your copy of PACE Suite with the provided license key.

As PACE Suite consists of MSI Editor, MSI Generator and Docu Generator, you have to activate all these products separately.

- Launch MSI Editor from the desktop or the start menu shortcut.

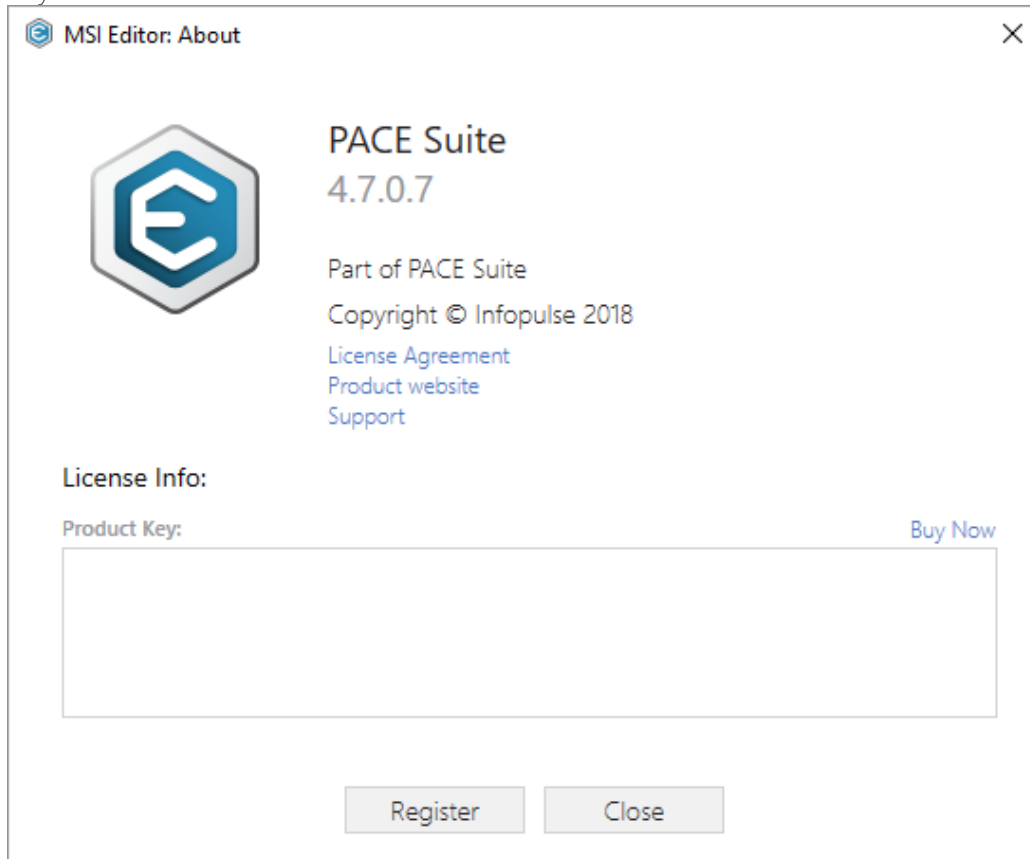


- Click Enter the license key.

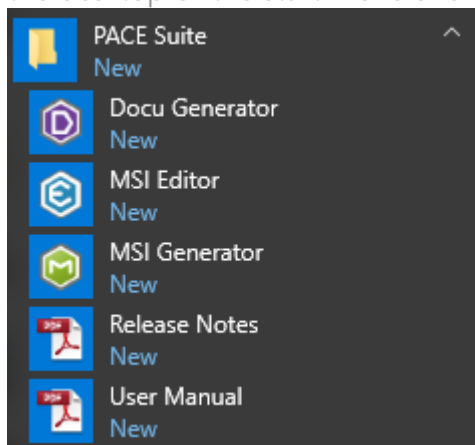


- Enter your license key and click Register. Note that if you are using the desktop version of Microsoft Outlook, ensure that the [Auto Remove Line Breaks feature](#) is disabled. Otherwise, your keys may be displayed incorrectly, and often that is the cause of obtaining the "Invalid

key" error.



- Repeat the activation process for MSI Generator and Docu Generator, launching them from the desktop or the start menu shortcut.



3 How-To Manuals

We regularly publish PACE Suite educational videos on YouTube. Please subscribe to our [channel](#).

3.1 Create MSI

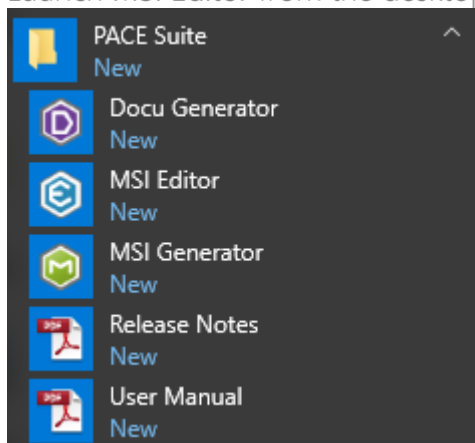
Choose a scenario that better suits your needs:

- **Create Blank MSI**, described in section 3.1.1
Create a new empty MSI database in MSI Editor, add folders, files, registry entries and shortcuts directly to the MSI package.
- **Generate MSI from Scratch**, described in section 3.1.2
Create a new empty project in MSI Generator, add folders, files, registry entries and shortcuts to this project and then generate the MSI package from this project.
- **Convert (Repackage) EXE to MSI**, described in section 3.1.3
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.
- **Capture System Changes to MSI**, described in section 3.1.4
Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.

3.1.1 Create Blank MSI

Create a new empty MSI database in MSI Editor, add folders, files, registry entries and shortcuts directly to the MSI package.

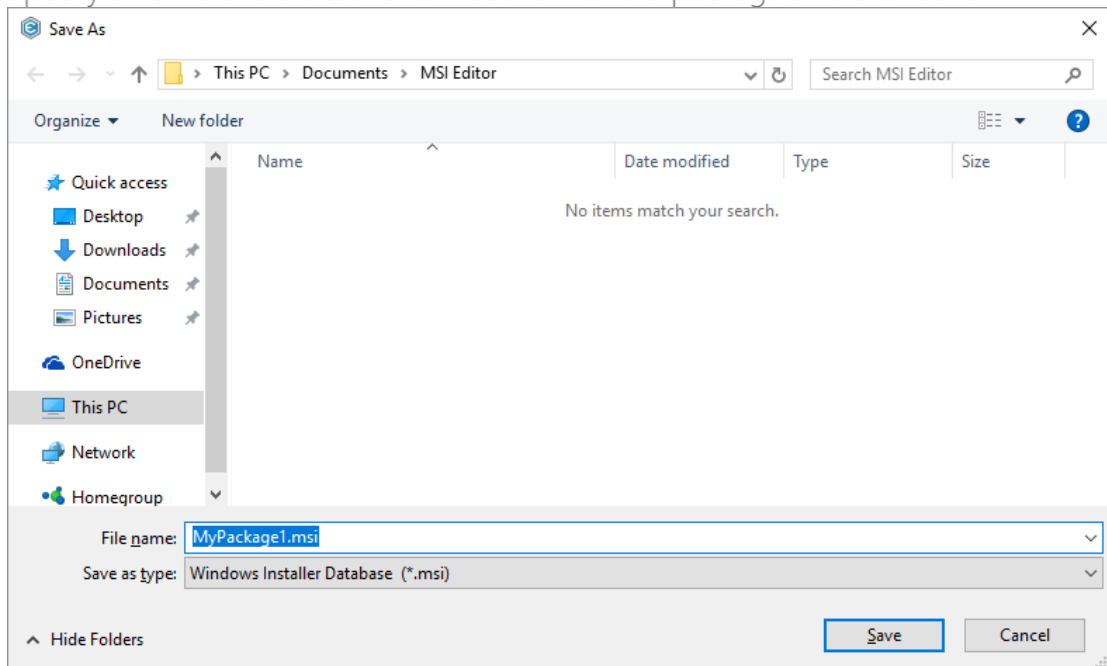
- Launch MSI Editor from the desktop or the start menu shortcut.



- Select New MSI... from the MENU to create a new empty MSI package.

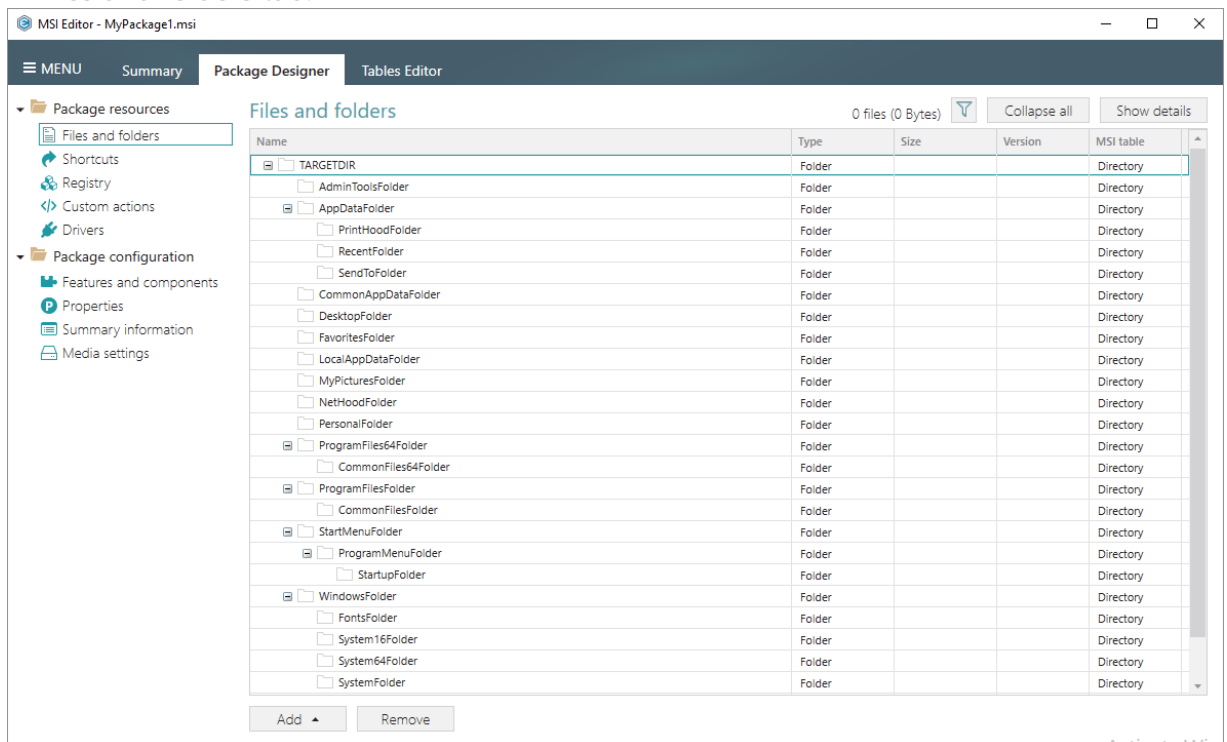


- Specify a name and a destination location for the package and click Save.

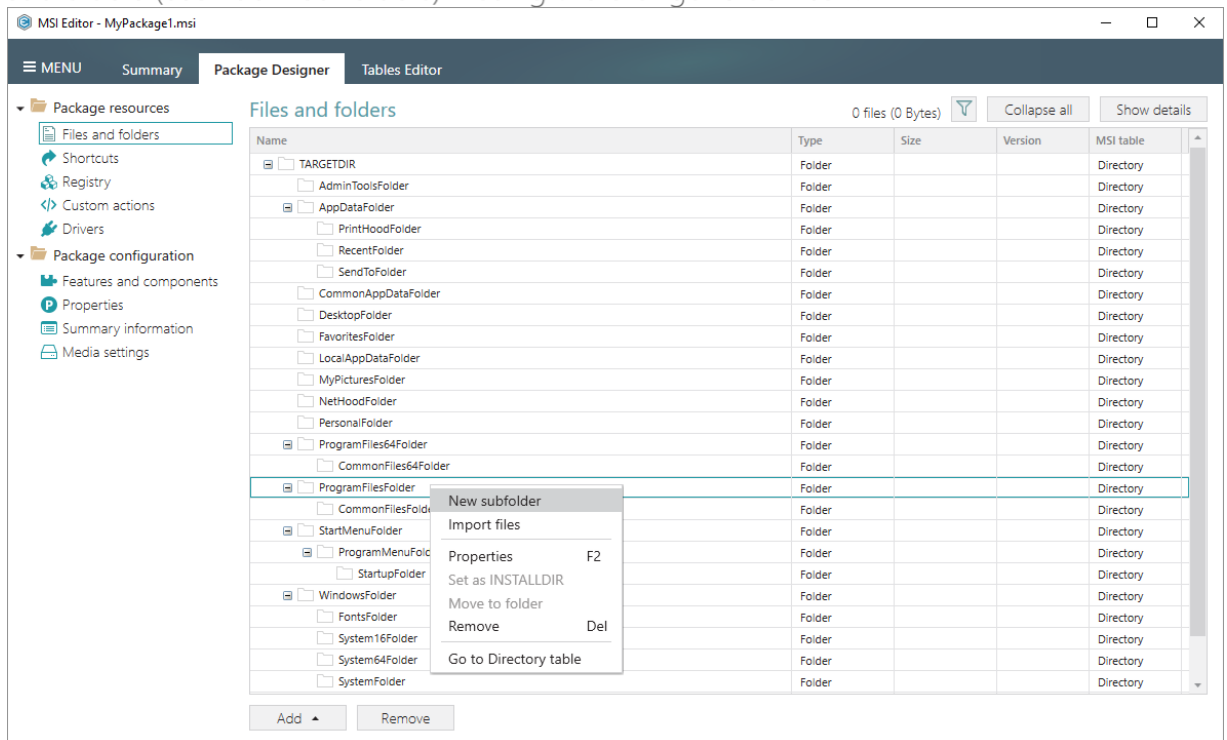


- Once the newly created package is opened automatically, you can start adding the necessary resources using MSI Editor. The steps from [5] to [14] describe how to create a new folder and import files to this folder; the steps from [15] to [23] describe how to create a new registry key, value, and import registry entries from the REG files; the steps from [24] to [32] describe how to create a new shortcut and import existing ones from the file system; and the last two steps [33] and [34] describe how to update the application details and save the MSI package.

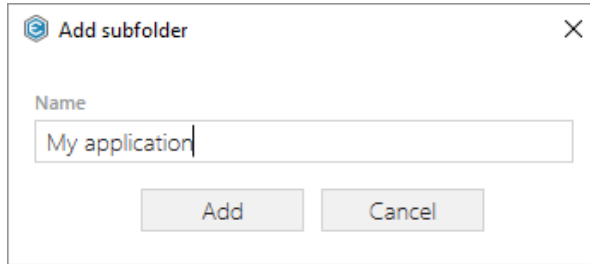
- In order to create a new folder and import files to this folder, go to the Package Designer – > Files and folders tab.



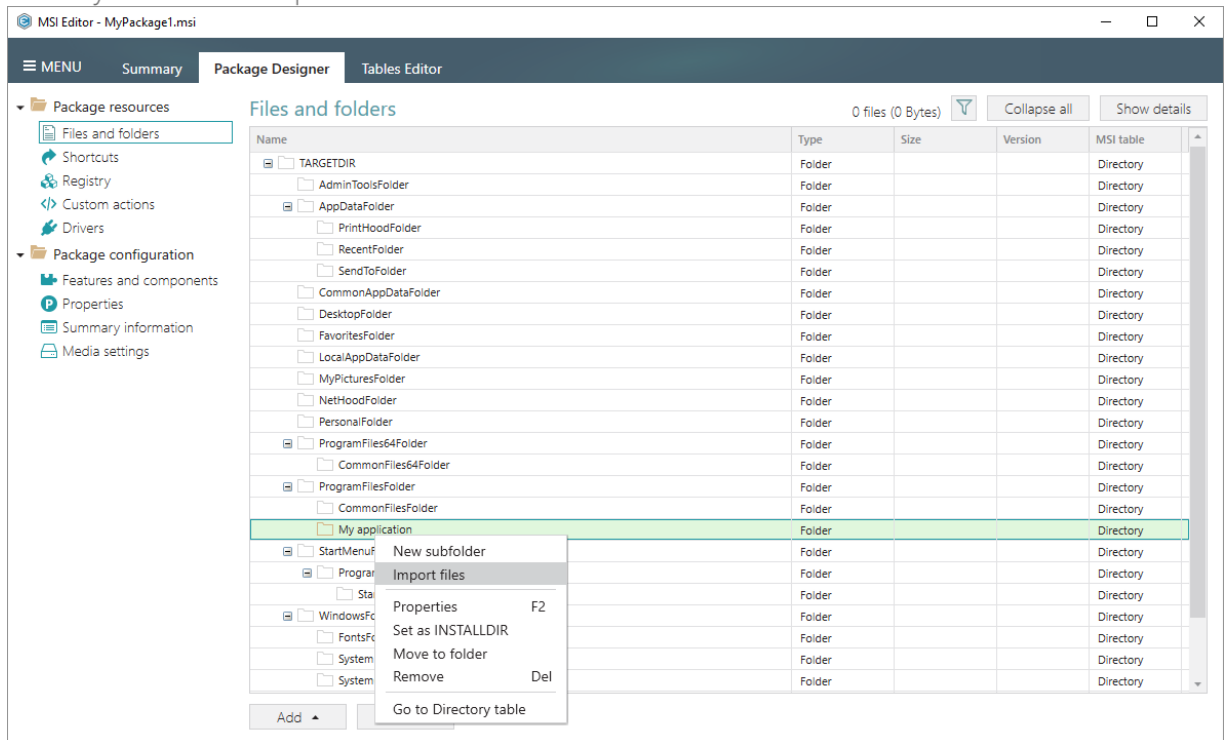
- Select New subfolder from the context menu of a folder, where you want to create a new subfolder. Note that system folders are displayed using the grey folder icon and the subfolders (user-defined folders) – using the orange folder icon.



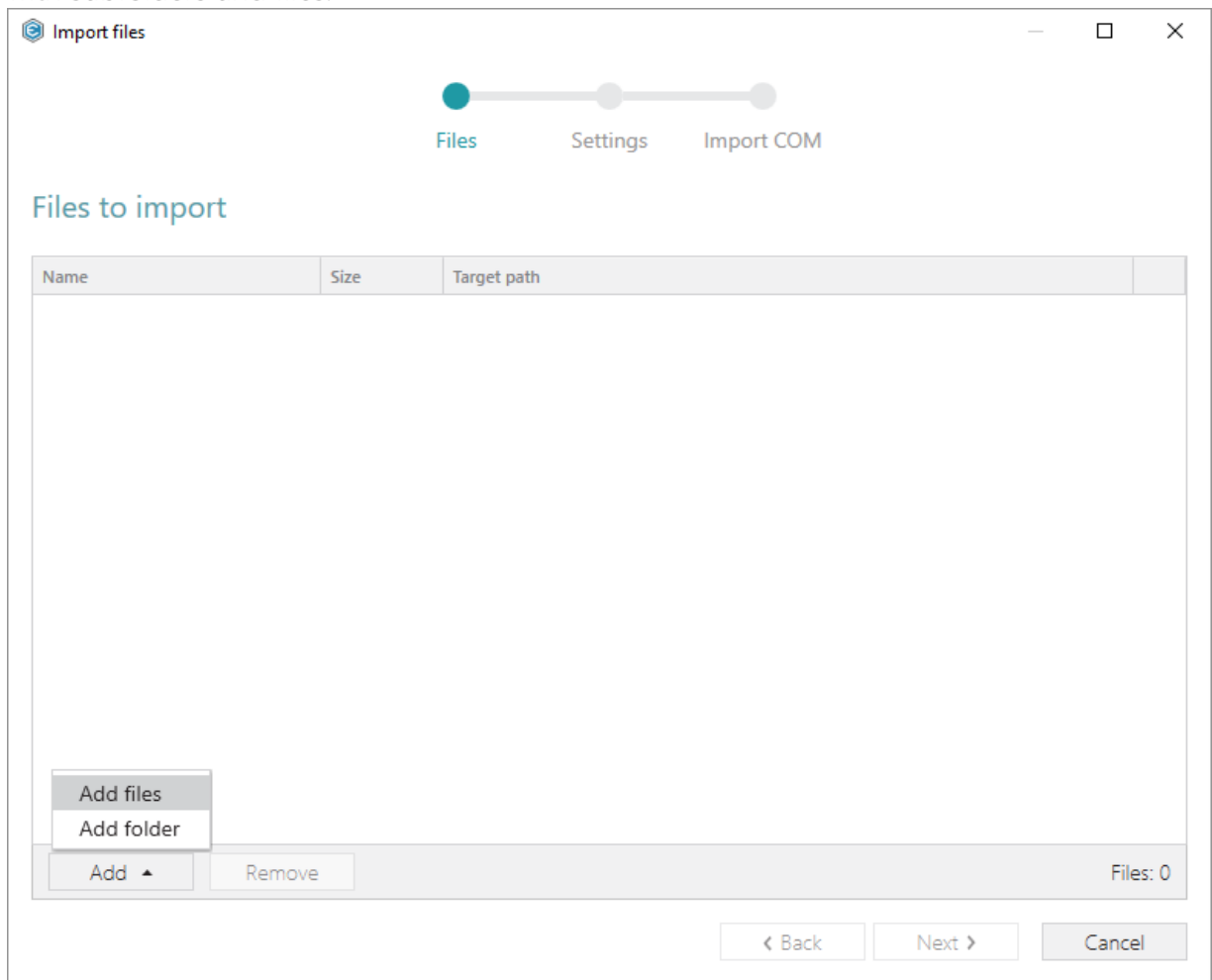
- Enter a folder name and click Add.



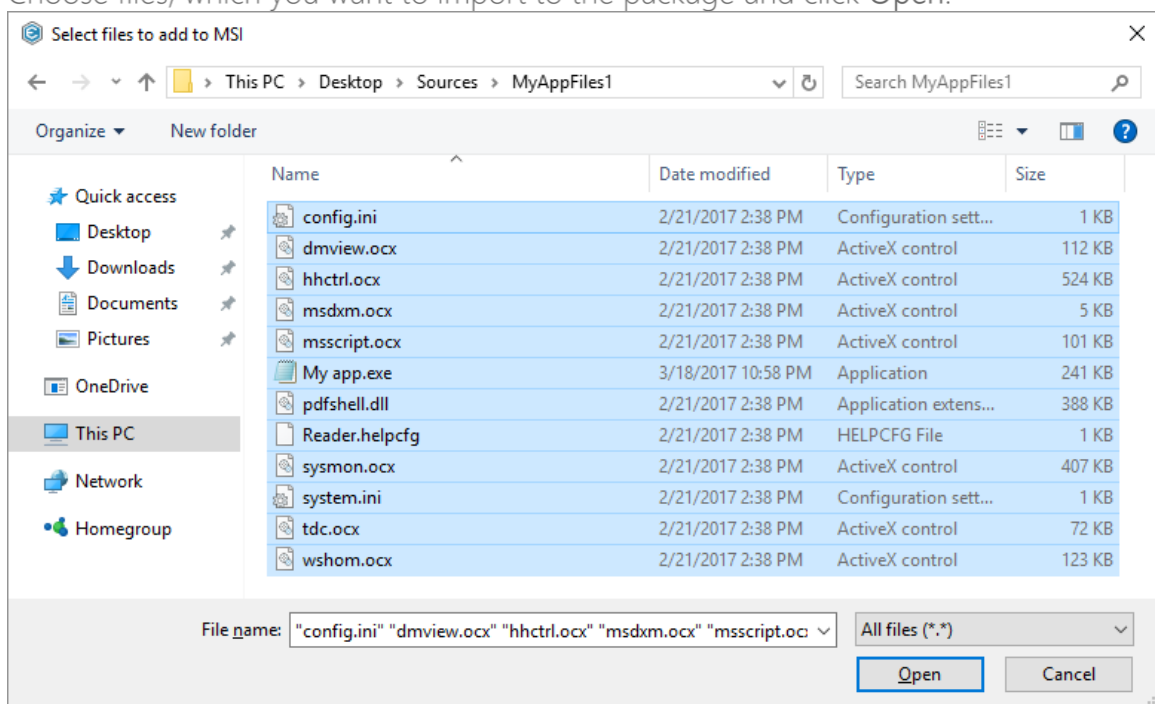
- For adding files to your package, select Import files from the context menu of a folder, to which you want to import files.



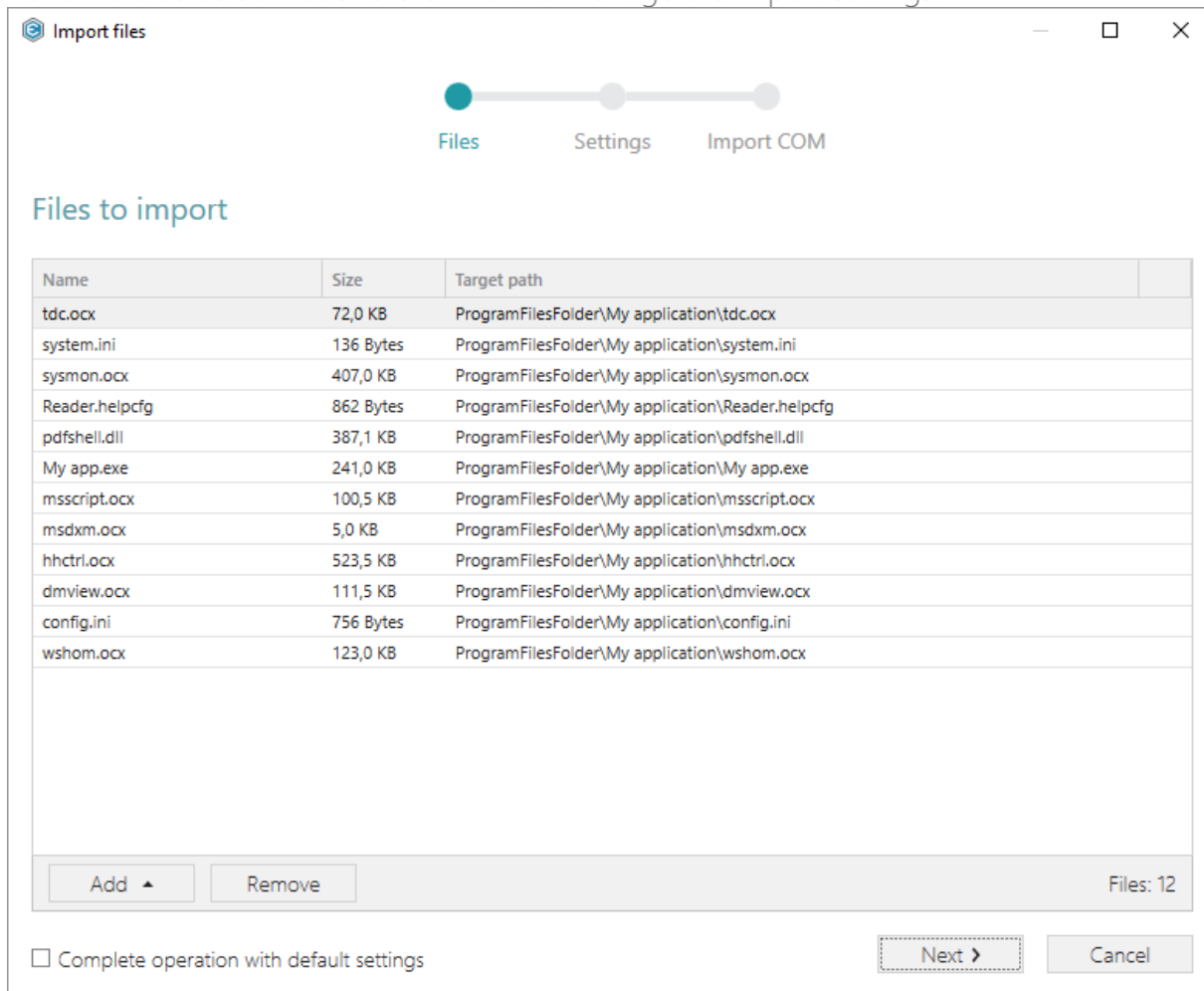
- Click Add -> Add files to choose files in a folder or Add -> Add folder to choose a folder with subfolders and files.



- Choose files, which you want to import to the package and click Open.



- Review the selected files and click **Next** to manage the import settings.



- At this step, you can manage how to save INI files, select an MSI Feature, to which components with files will be assigned. Below, in the tables, you will find the detailed description of these settings. Note that files compression types and other Media settings are represented on the separate **Media settings** tab of the Package Designer. Choose the desired settings and click **Next** to continue.

Import files

✓

Files

Settings

Import COM

Settings

INI handling

☒ Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

☐ Save all INI files to the 'File' table

☐ Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

[See invalid INI files](#)

Target feature

<PACE feature>

New feature

☒ Manage features automatically

☐ Complete now with default settings

< Back

Next >

Cancel

INI handling

Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data, will be saved to the 'File' table as binary files.

Save all INI files to the 'File' table

All INI files will be saved only to the 'File' table as binary files.

Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

A valid content of all INI files will be saved to the 'IniFile' table, and then all INI files will be saved to the 'File' table as binary files.
This allows installing INI files to the target system keeping their original structure with unsupported data, and update the necessary INI file values.

Target feature

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported files. Feature structure is based on the packaging best practices and depends on the destination location of files.

<a feature, selected from the list>

Components with files will be assigned to a feature, selected from the list.

- On the last step you can review COM information, extracted from the selected files. For importing this COM information along with files, select the **Import COM information** option. Click Finish to complete the import.

Import files

Files Settings **Import COM**

Extracted COM information

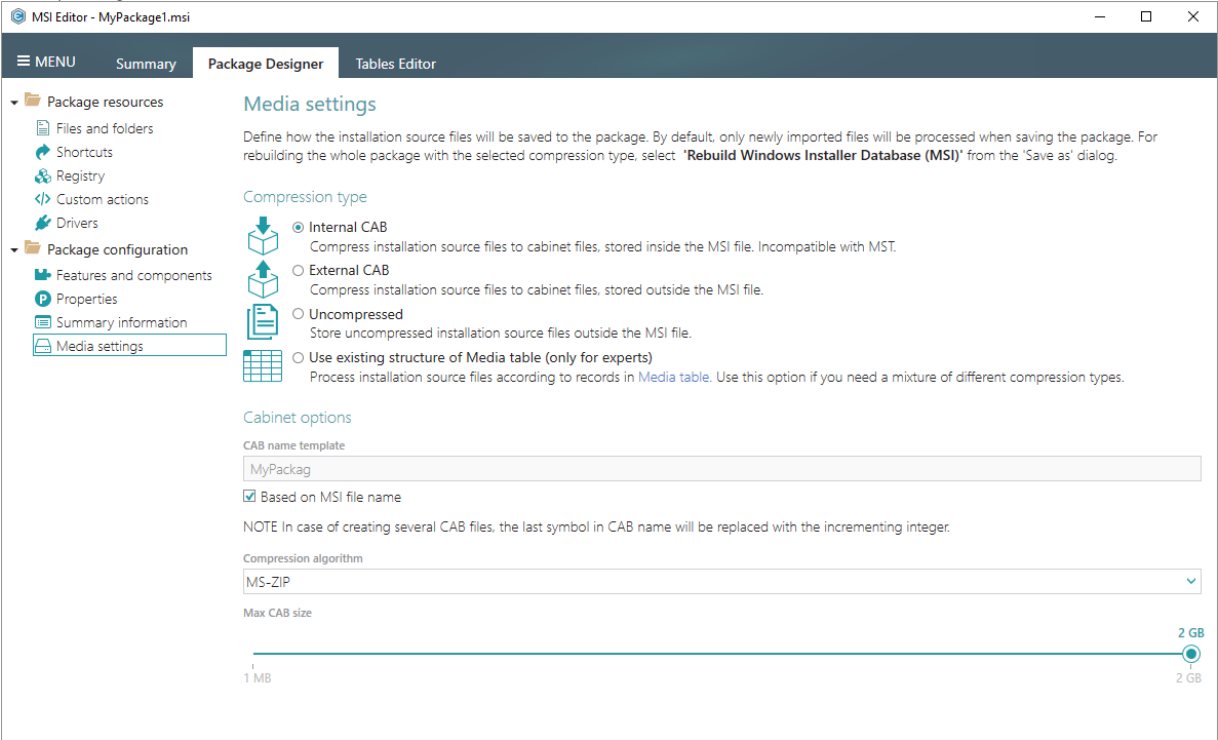
File	Root	Key	Value name	Value
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}	ThreadingModel	Apartment
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		131473
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		{AEB84C80-95DC-11D0-B7FC-B61140119C4A}
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		1.0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A}		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.PropertyPage
dmview.ocx	HKCR	DiskManagement.Control\CLSID		{AEB84C83-95DC-11D0-B7FC-B61140119C4A}

☐ Import COM information

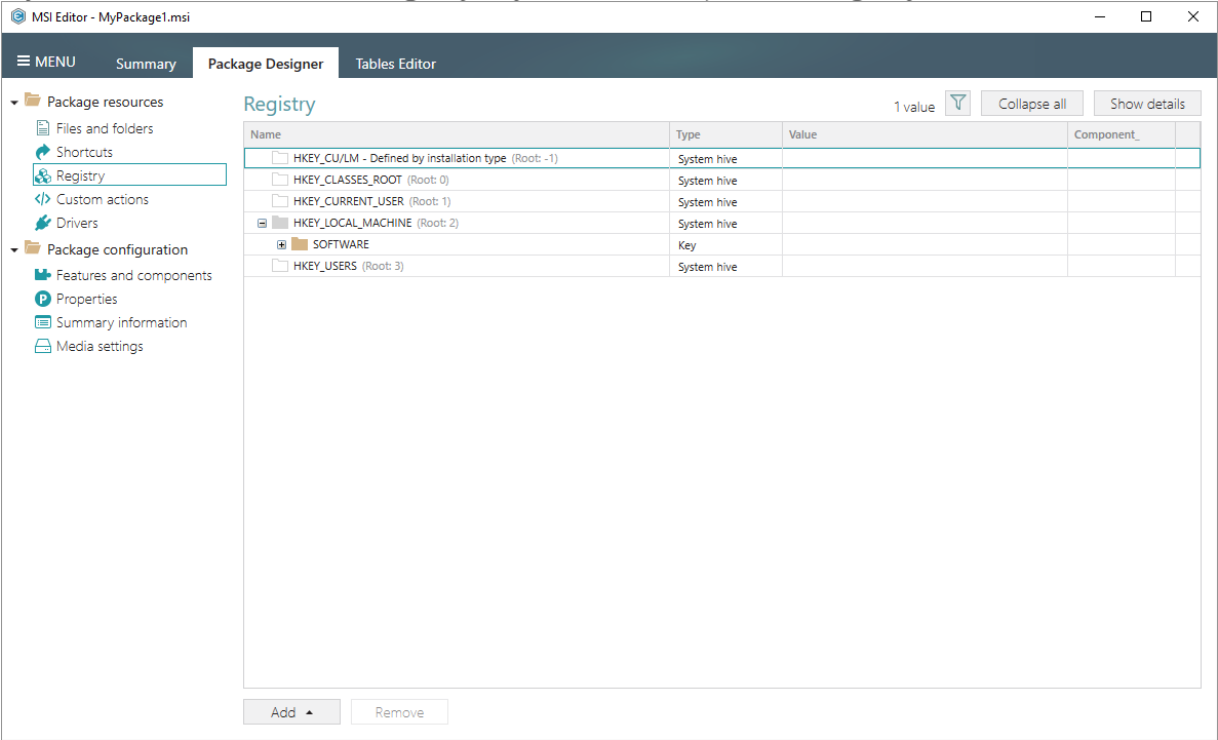
< Back Finish Cancel

- Go to the Media settings tab of the Package Designer and choose the necessary compression type for the imported files. For the compressed files you can manage cabinet options such as CAB name, compression algorithm and maximum CAB size. Cabinets will

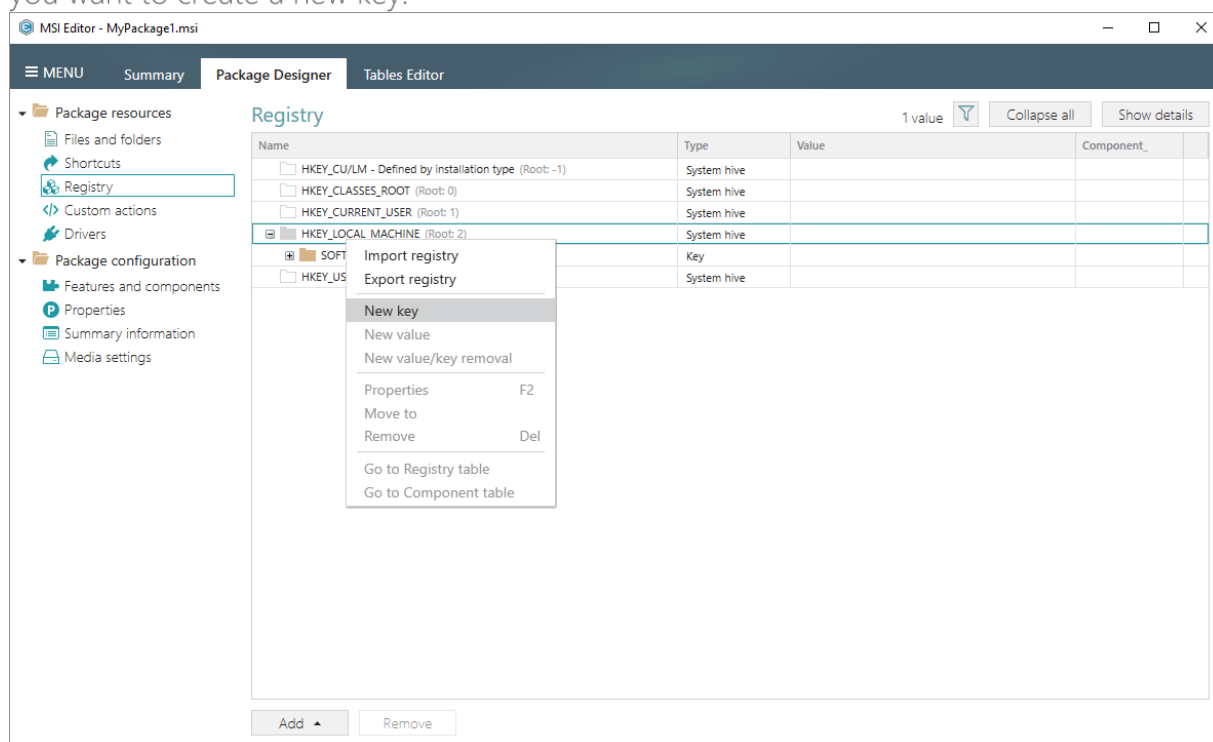
be spit by the selected maximum size.



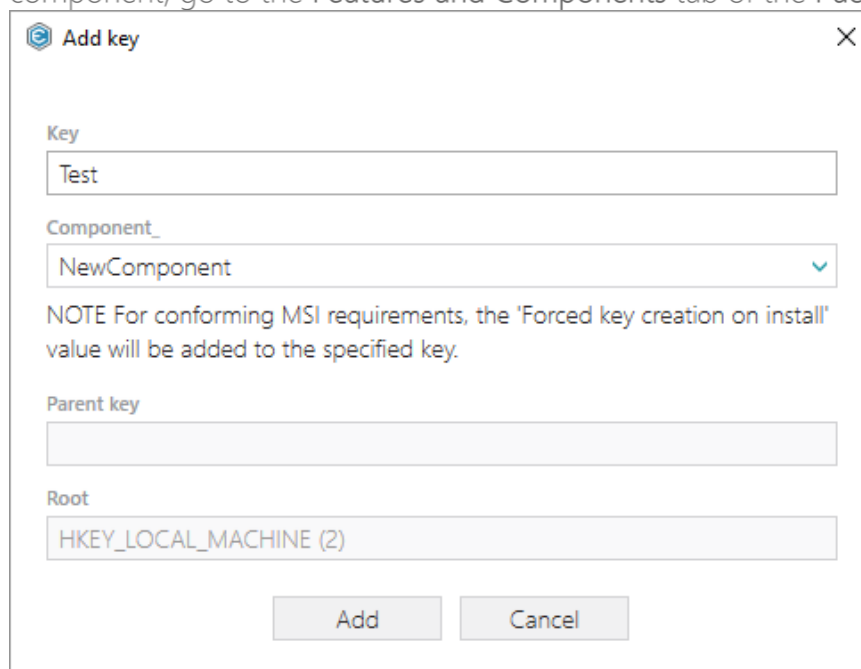
- If you need to create a new registry key or a value, open the Registry tab.



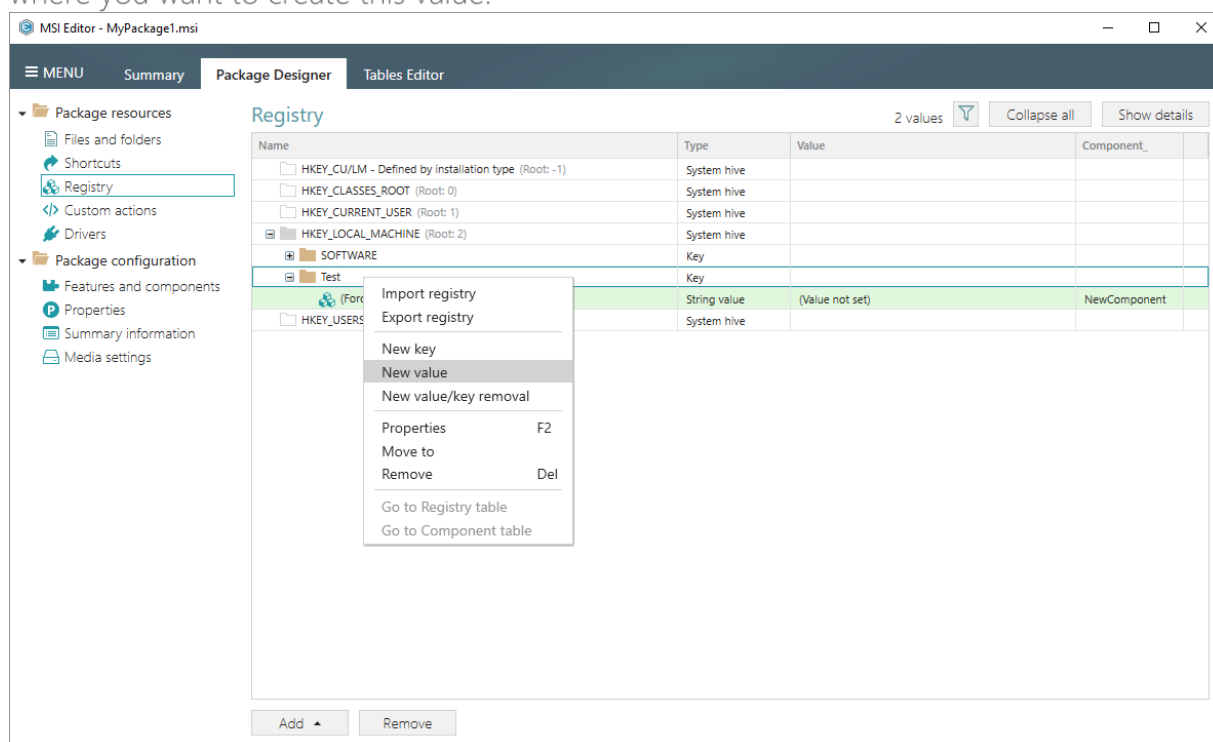
- Select **New key** from the context menu of a root hive (e.g. HKEY_LOCAL_MACHINE), where you want to create a new key.



- Enter a key name, select a component from the list, then click **Add**. For creating a new component, go to the **Features and Components** tab of the Package Designer.



- In order to create a new registry value, select **New value** from the context menu of a key, where you want to create this value.

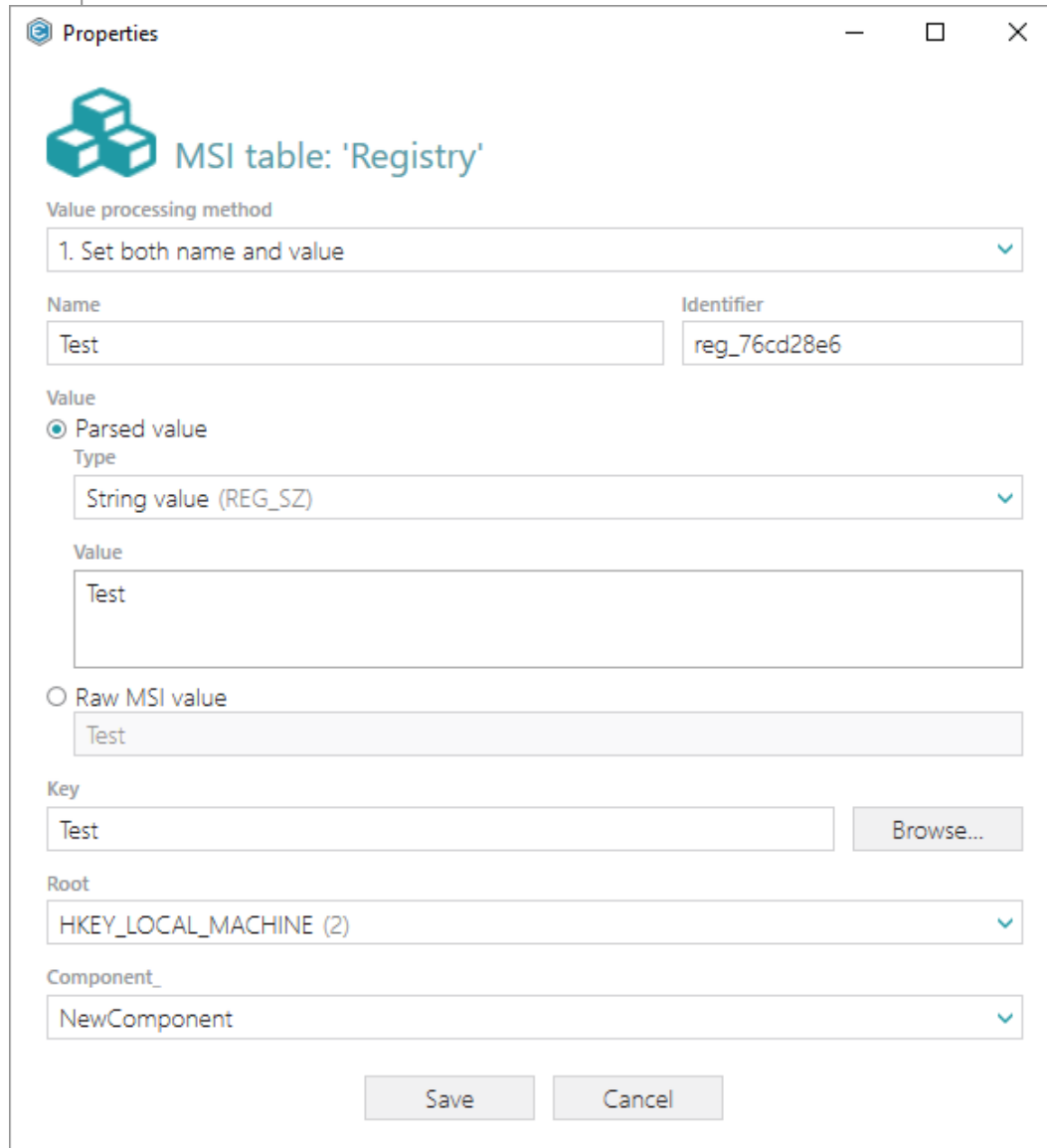


- For creating an ordinary registry value, specify a name and its value, choose a component from the list, to which this value will be assigned, and click **Save**.

For creating a Default key value, or securing a key creation and/or removal, select a respective option from the **Value processing method** field.

The **Parsed value** option serves easier creation of a registry value of the proper value type. However, the **Raw MSI value** option gives ability to manage what exactly will be saved to

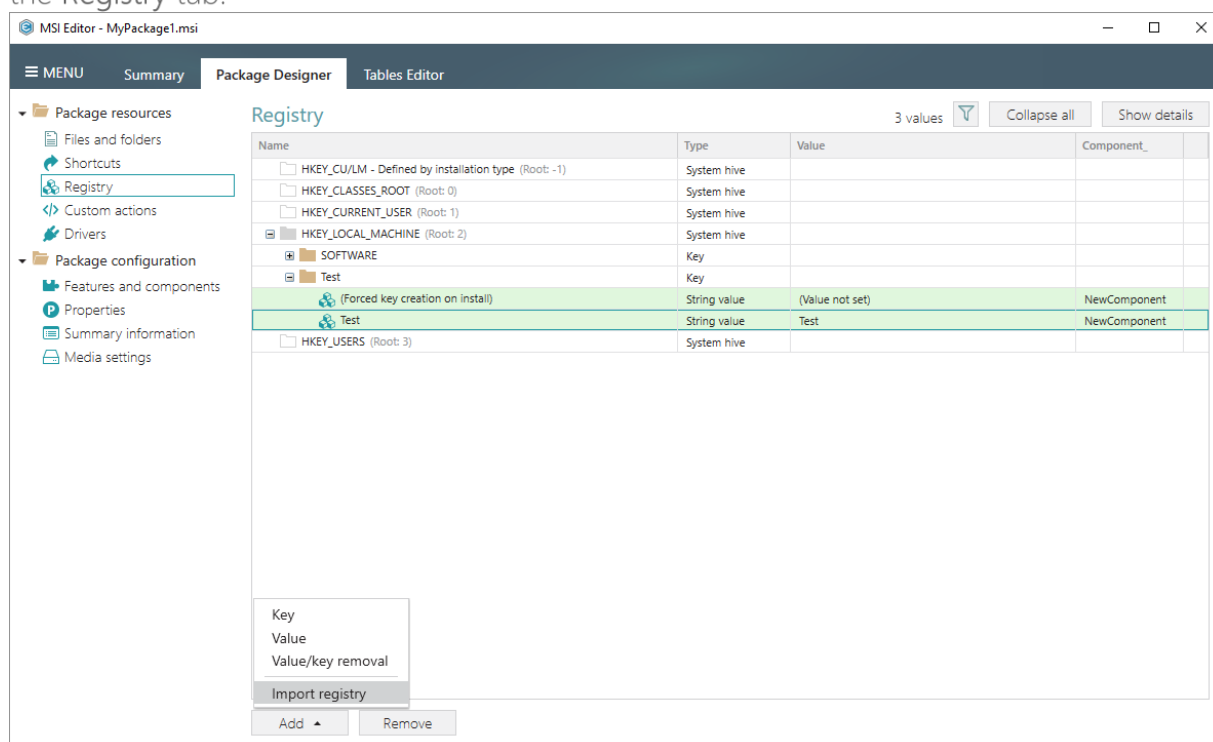
the opened MSI database.



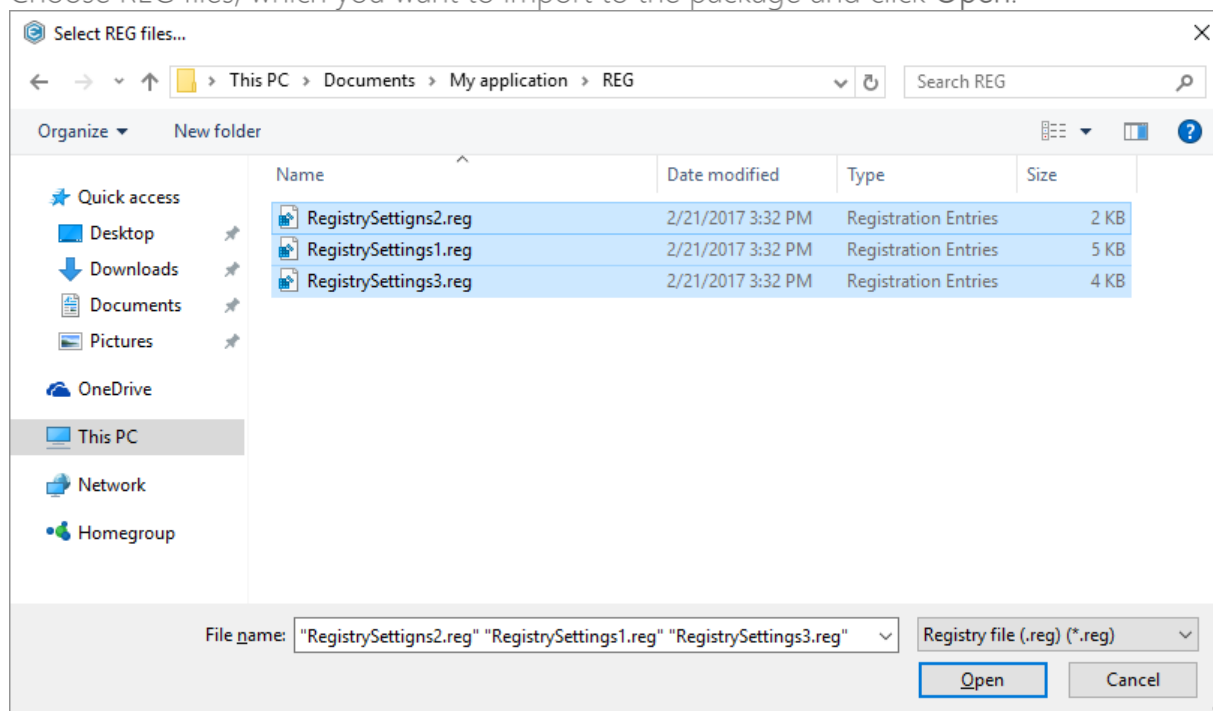
The screenshot shows a 'Properties' dialog box for an MSI table named 'Registry'. The dialog has a title bar with standard window controls. Below the title bar is a header section with a cube icon and the text 'MSI table: 'Registry''. The main area contains several fields and options:

- Value processing method:** A dropdown menu set to '1. Set both name and value'.
- Name:** A text field containing 'Test'.
- Identifier:** A text field containing 'reg_76cd28e6'.
- Value:** A section with two options:
 - Parsed value:** Selected with a radio button. Below it is a 'Type' dropdown set to 'String value (REG_SZ)' and a 'Value' text field containing 'Test'.
 - Raw MSI value:** Unselected with a radio button. Below it is a text field containing 'Test'.
- Key:** A text field containing 'Test' and a 'Browse...' button.
- Root:** A dropdown menu set to 'HKEY_LOCAL_MACHINE (2)'.
- Component_:** A dropdown menu set to 'NewComponent'.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom.

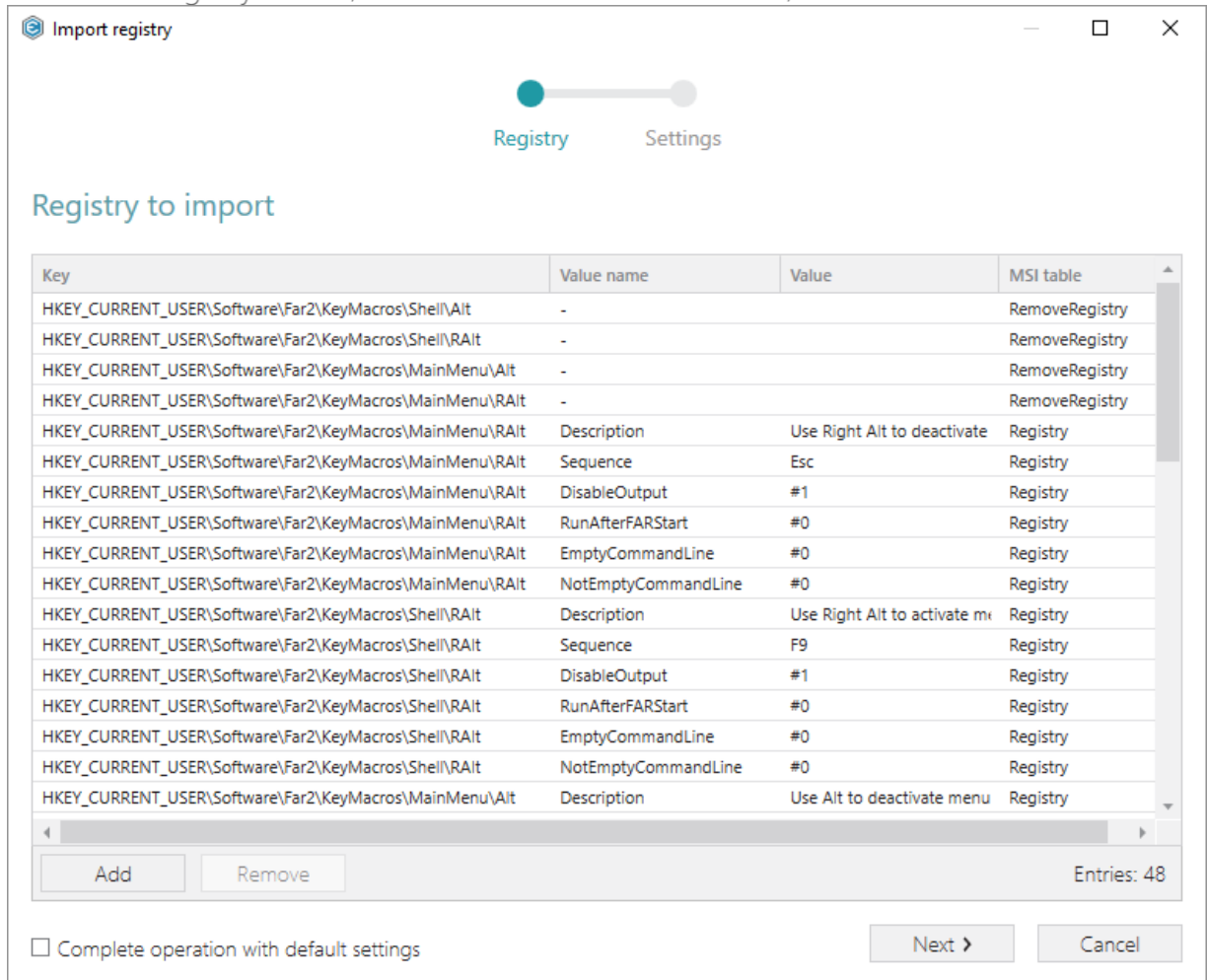
- For importing registry from the REG file, select Add -> Import registry from the toolbox of the Registry tab.



- Choose REG files, which you want to import to the package and click Open.



- Review the registry entries, read from the selected REG files, and click Next.



- At the Settings step, you can select an MSI Feature, to which components with the registry entries will be assigned. If the registry entries, which have been read, contain values in square brackets, you can select how these values will be processed – as MSI properties or as ordinary registry values. Below, in the tables, you will find the detailed description of these settings. Click Finish to complete the import.

Import registry

Registry

Settings

Settings

Target feature

<PACE feature>

New feature

☒ Manage features automatically

Values with special symbols

Key	Value name	Value	MSI table
HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\MaintenanceService	Test	[ProductCode]	Registry

☒ Escape square bracket characters to deliver original values (e.g. [[]String[]])

☐ Process values in square bracket as MSI properties (e.g. [String])

Back

Finish

Cancel

Feature settings

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported registry. Feature structure is based on the packaging best practices and depends on the registry key location.

<a feature, selected from the list>

Components with registry will be assigned to a feature, selected from the list.

Values with special symbols

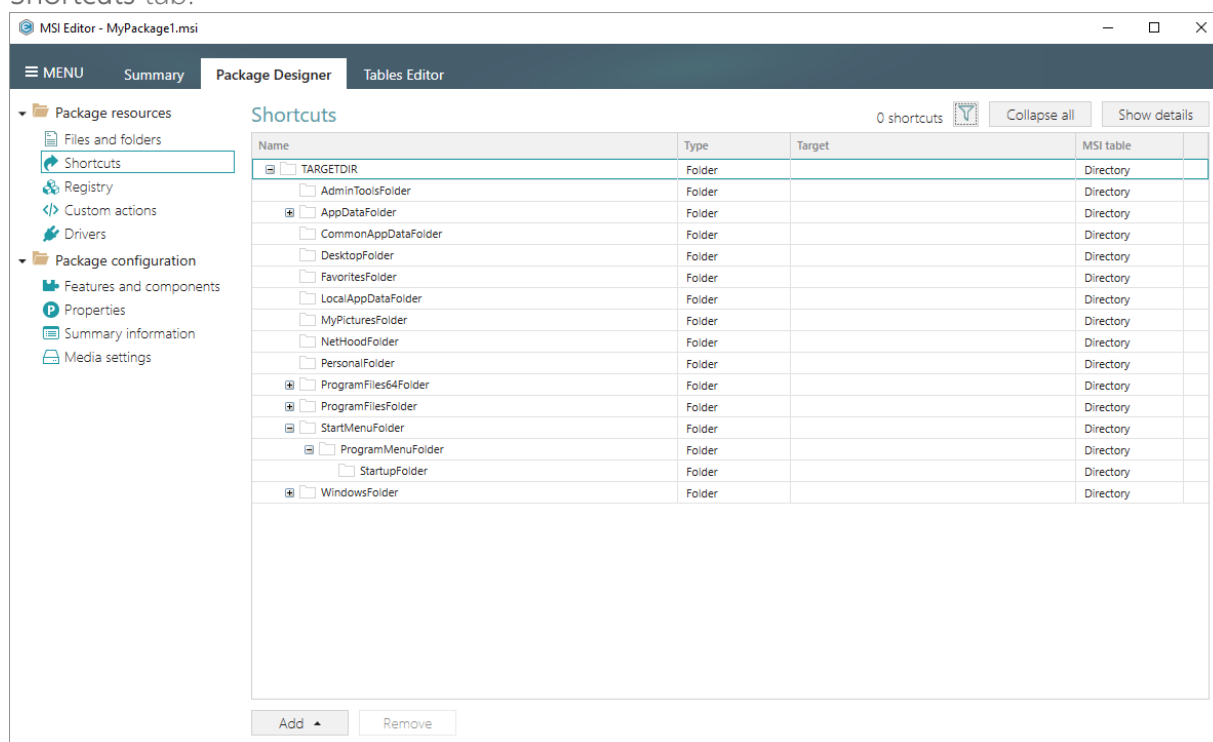
Escape square bracket characters to deliver original values

Values in square brackets, displayed in the list, will be saved to MSI as ordinary strings using the general rules for escaping the special characters. This approach guarantees the delivery of the imported registry entries to the target system with their original values.

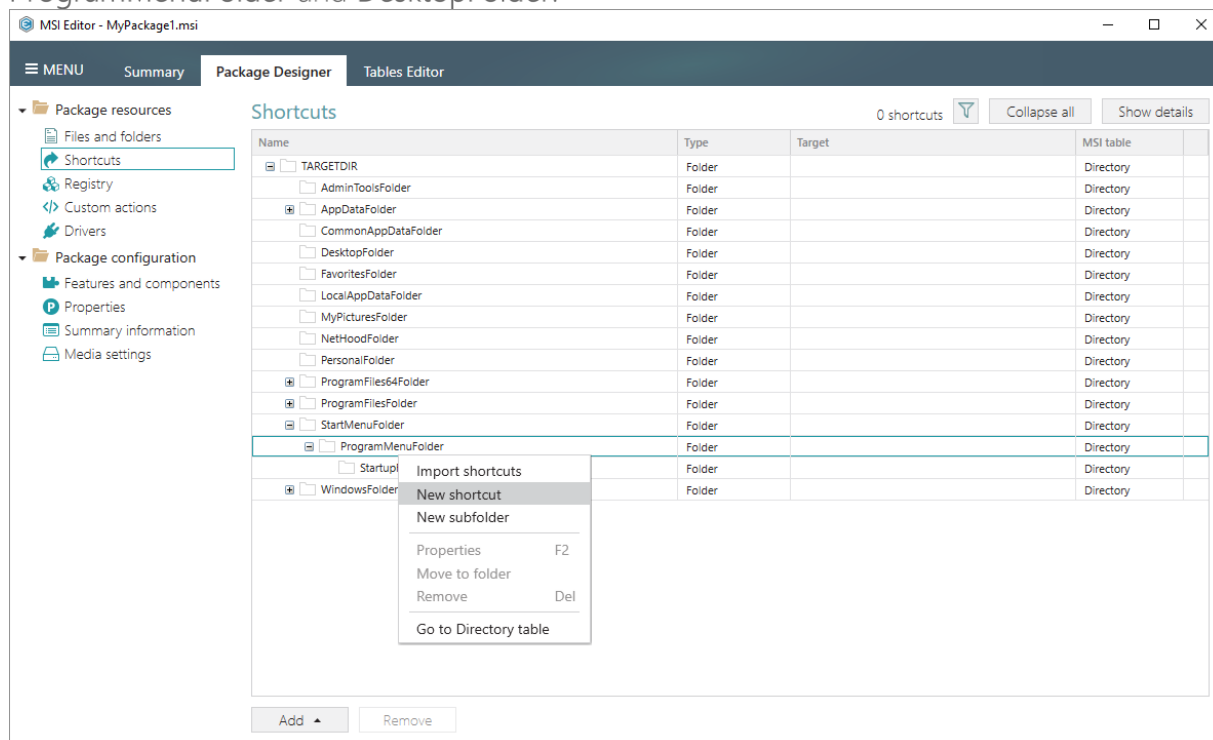
Process values in square brackets as MSI properties

Values in square brackets, displayed in the list, will be saved to MSI as MSI properties. Thus, each MSI property will be replaced with its value during the MSI installation. If a property does not exist in MSI during the installation, it will be replaced with the blank value.

- If you need to create a new or import the existing shortcuts to the package, go to the Shortcuts tab.

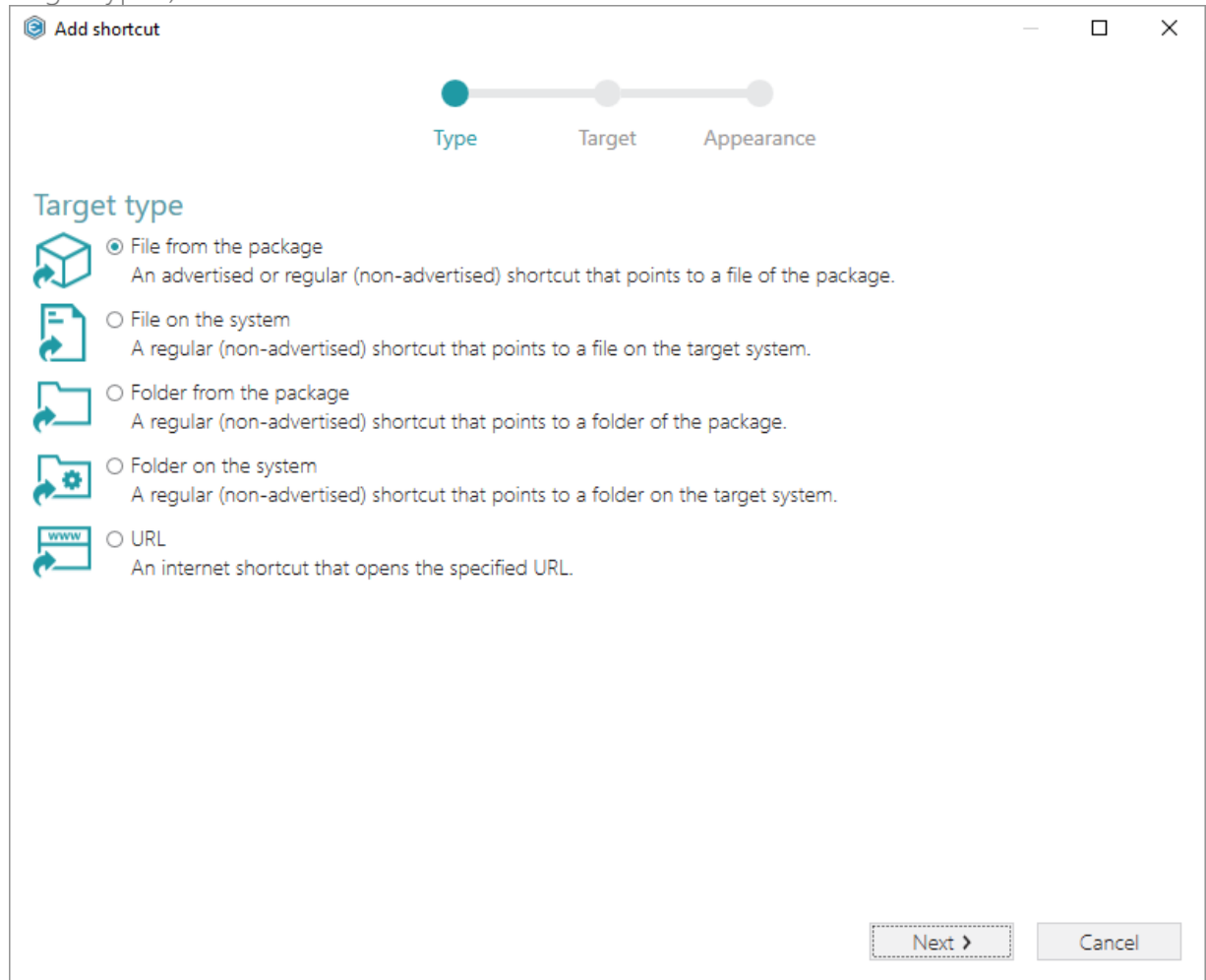


- In order to add a new shortcut, select **New shortcut** from the context menu of a folder, where you want to create this shortcut. Usually, application shortcuts are installed to the ProgramMenuFolder and DesktopFolder.



- Select a type of the shortcut target and click **Next**.
(The following instructions describe creation of the shortcut of the 'File from the package')

target type.)



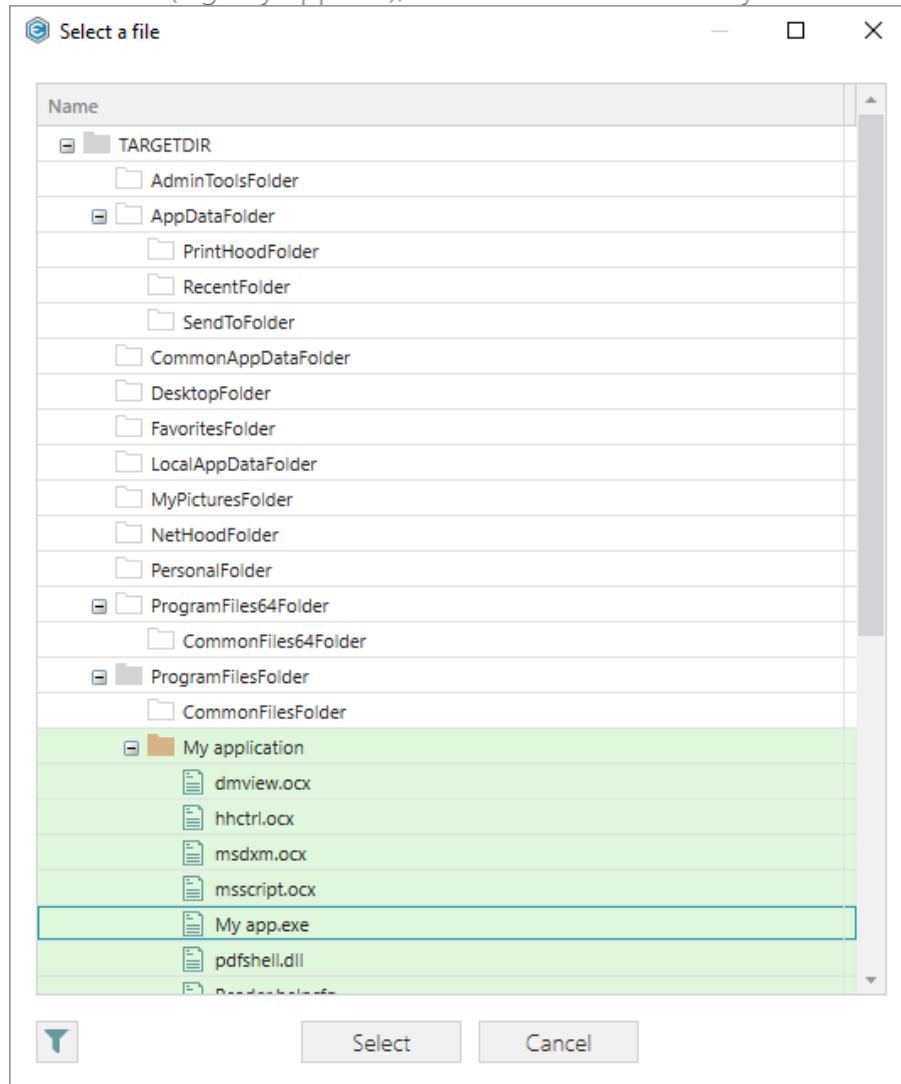
- On the second step, click **Browse**, located next to the Shortcut target field, to set a target of the shortcut.

The screenshot shows the 'Add shortcut' dialog box with the 'Target' step selected in a progress bar at the top. The progress bar has three steps: 'Type' (completed, marked with a checkmark), 'Target' (current step, marked with a dot), and 'Appearance' (not started, marked with a dot). The 'Target' section contains the following fields and controls:

- Shortcut target:** A text input field with a red exclamation mark icon and a 'Browse...' button to its right.
- Arguments:** A text input field.
- Start in (WkDir):** A dropdown menu showing 'Folder' with a downward arrow icon.
- Start in (WkDir):** A text input field with a red exclamation mark icon and a 'Browse...' button to its right.
- Shortcut type:** Two radio button options: 'Advertised shortcut' (selected) and 'Regular (non-advertised) shortcut'.

At the bottom right of the dialog, there are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

- Select a file (e.g. My app.exe), which will be launched by this shortcut, and click Select.



- If needed, enter a shortcut Arguments, change the Start in path (select a folder or a property), and select a Shortcut type. Note that only the Advertised shortcut supports advertisement and repair. This means that if the executable to which the shortcut is pointing is not there then windows installer will repair the application and replace the missing files.

Then, click Next.

Add shortcut

✓

TypeTargetAppearance

Target

Shortcut target

ProgramFilesFolder\My application\My app.exe (ID: My_app.exe)

Browse...

Arguments

Start in (WkDir)

Folder

ProgramFilesFolder\My application (ID: Myapplication)

Browse...

Shortcut type

☒ Advertised shortcut

☐ Regular (non-advertised) shortcut

< Back

Next >

Cancel

- On the last step, enter a **Shortcut name**, choose a shortcut icon and, if needed, specify the shortcut **Description**, **Hot key** and **Run** options. Click **Finish** to add the shortcut.

Add shortcut

✓


✓

Type

Target

Appearance

Appearance



Shortcut name

My app

Description

Hot key

Run

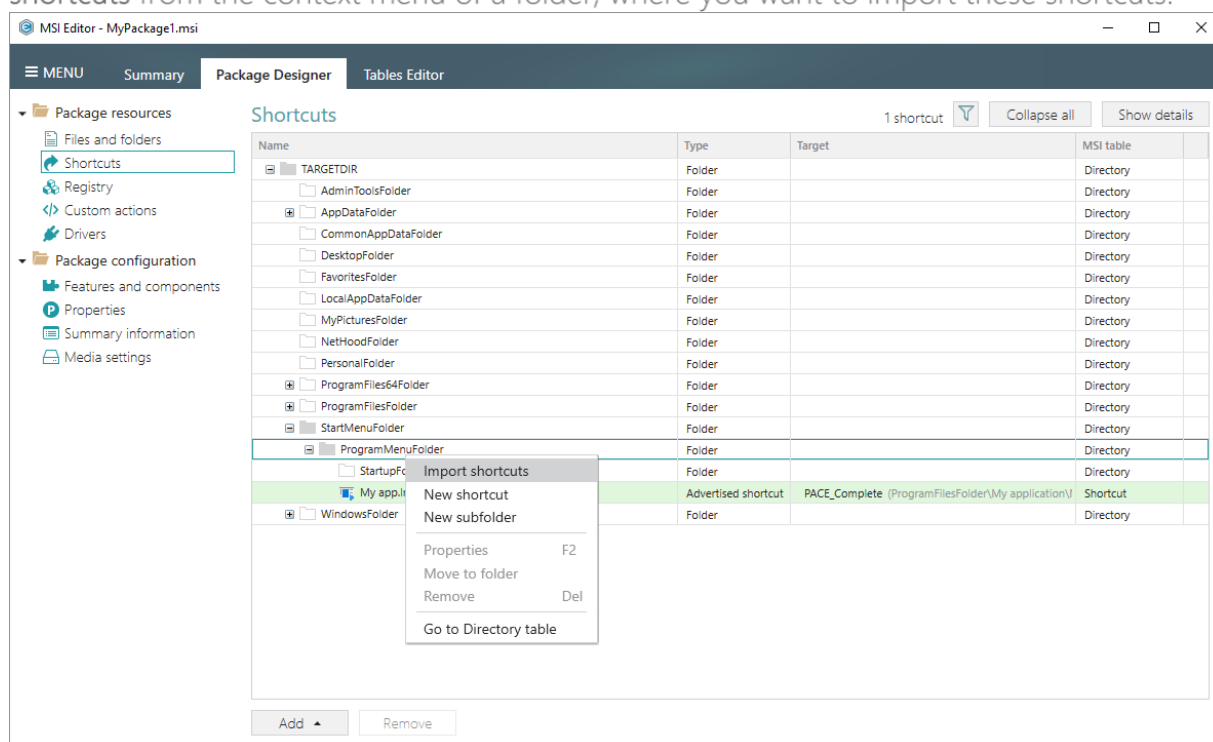
Normal window

< Back

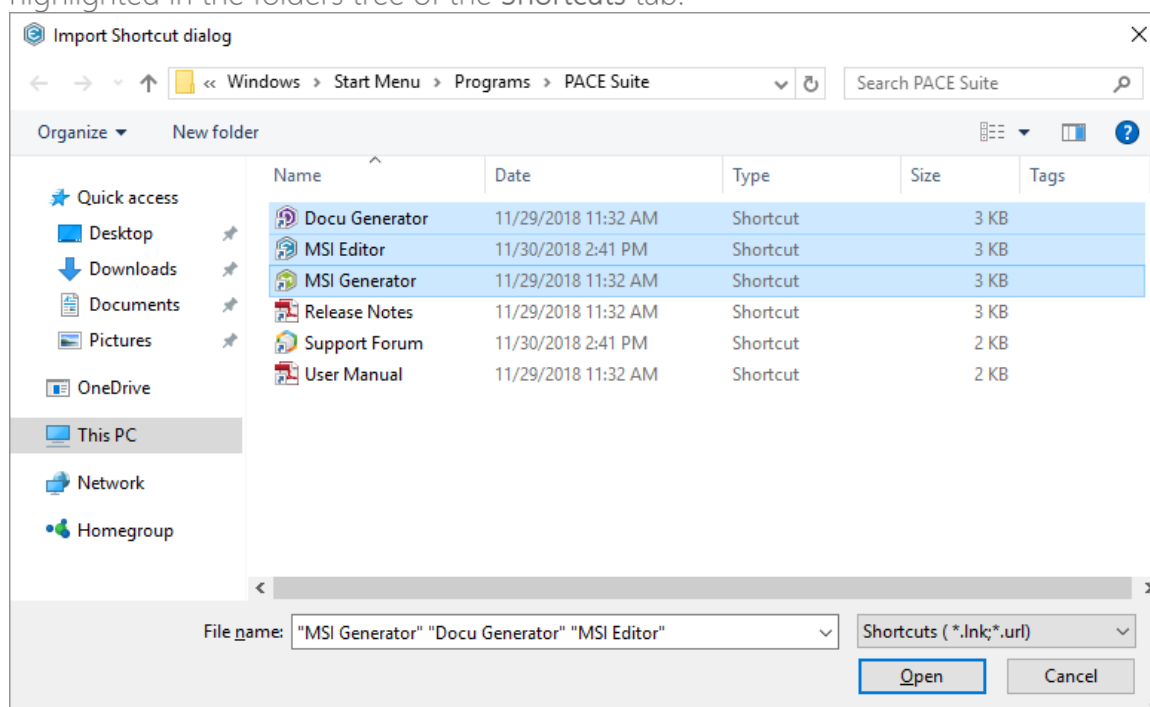
Finish

Cancel

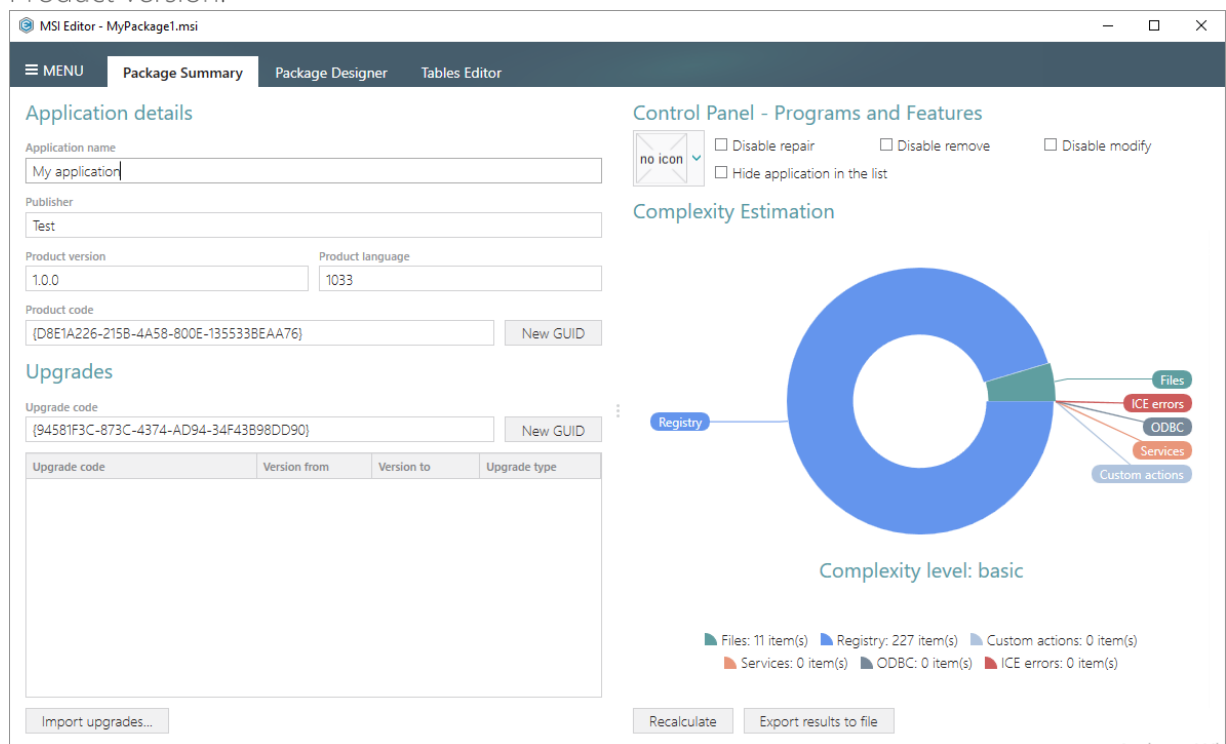
- In order to import existing shortcuts from the file system to the package, select **Import shortcuts** from the context menu of a folder, where you want to import these shortcuts.



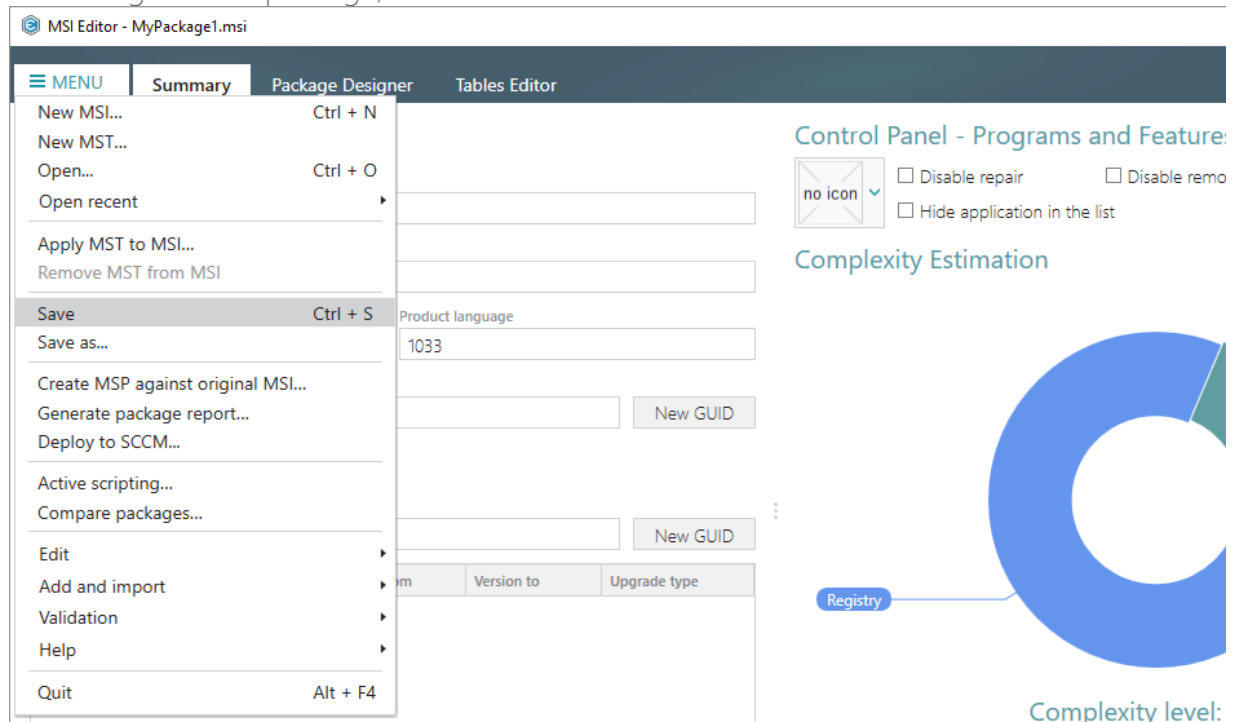
- Choose shortcuts you would like to import and click **Open**. The imported shortcuts will be highlighted in the folders tree of the Shortcuts tab.



- Finally, go to the Package Summary tab and enter the Application name, Publisher, and Product version.



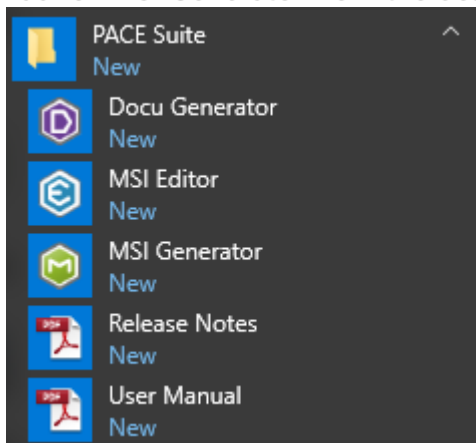
- For saving the MSI package, select Save from the MENU.



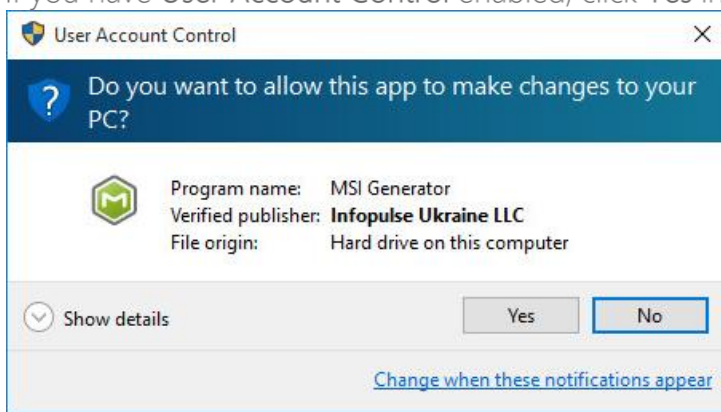
3.1.2 Generate MSI from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries and shortcuts to this project and then generate the MSI package from this project.

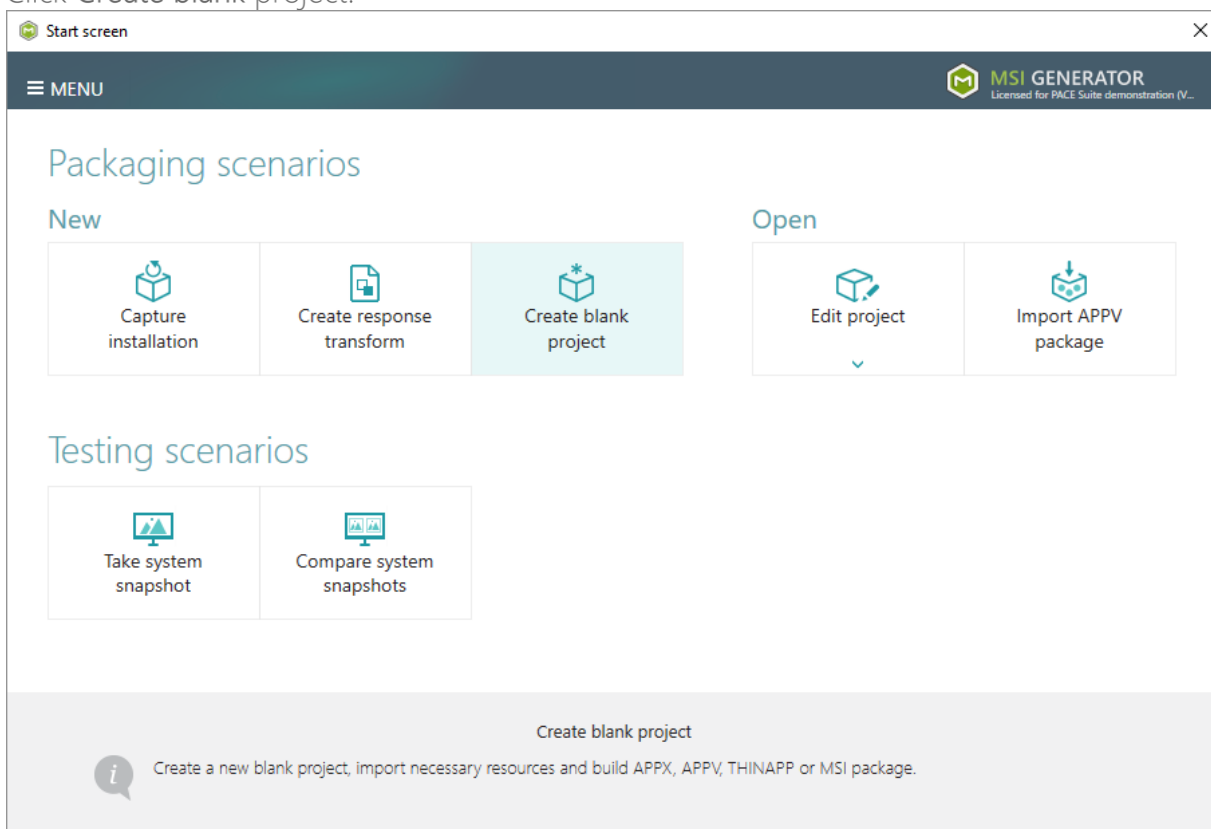
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



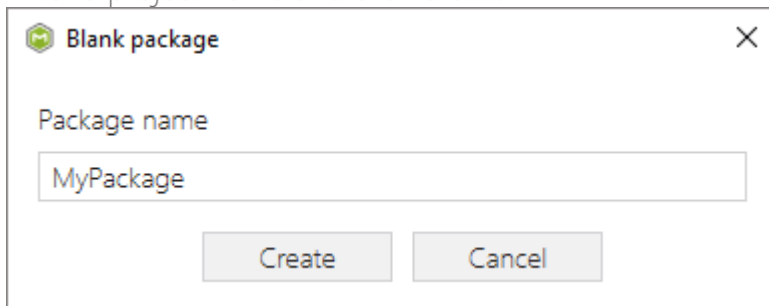
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click Create blank project.

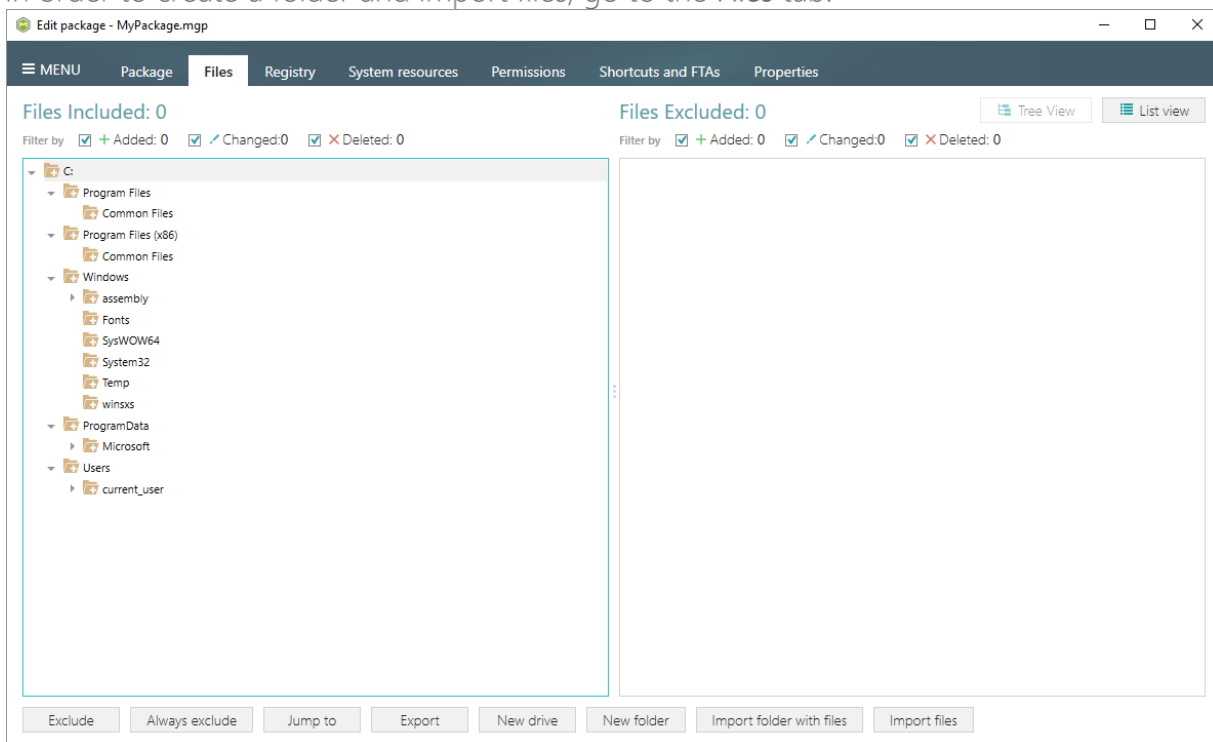


- [4]. Enter a project name and click Create.



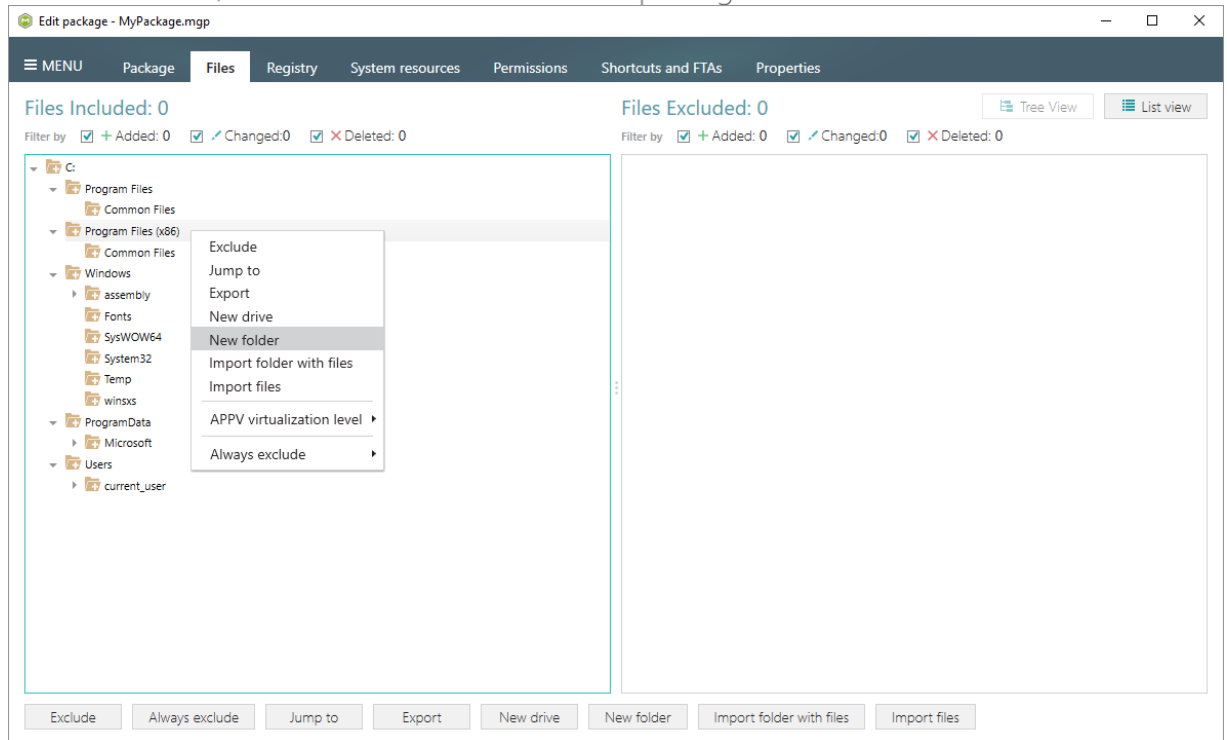
- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [10] describe how to create a new folder and import files to this folder; the steps from [11] to [13] describe how to import registry entries from the REG file; the steps from [14] to [17] describe how to import shortcuts to the project; and two last steps [18] and [19] describe how to build MSI package from the prepared project.

- [6]. In order to create a folder and import files, go to the Files tab.

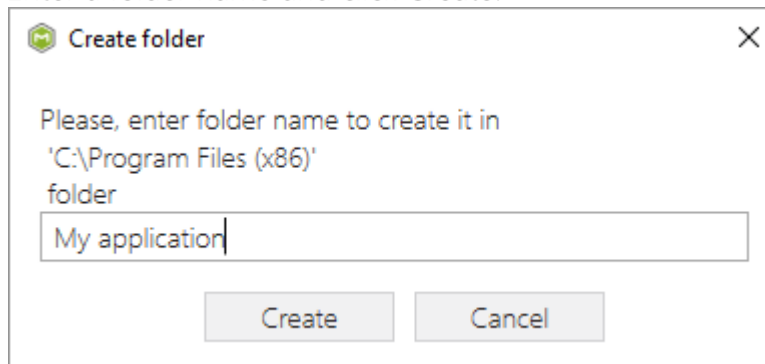


- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays

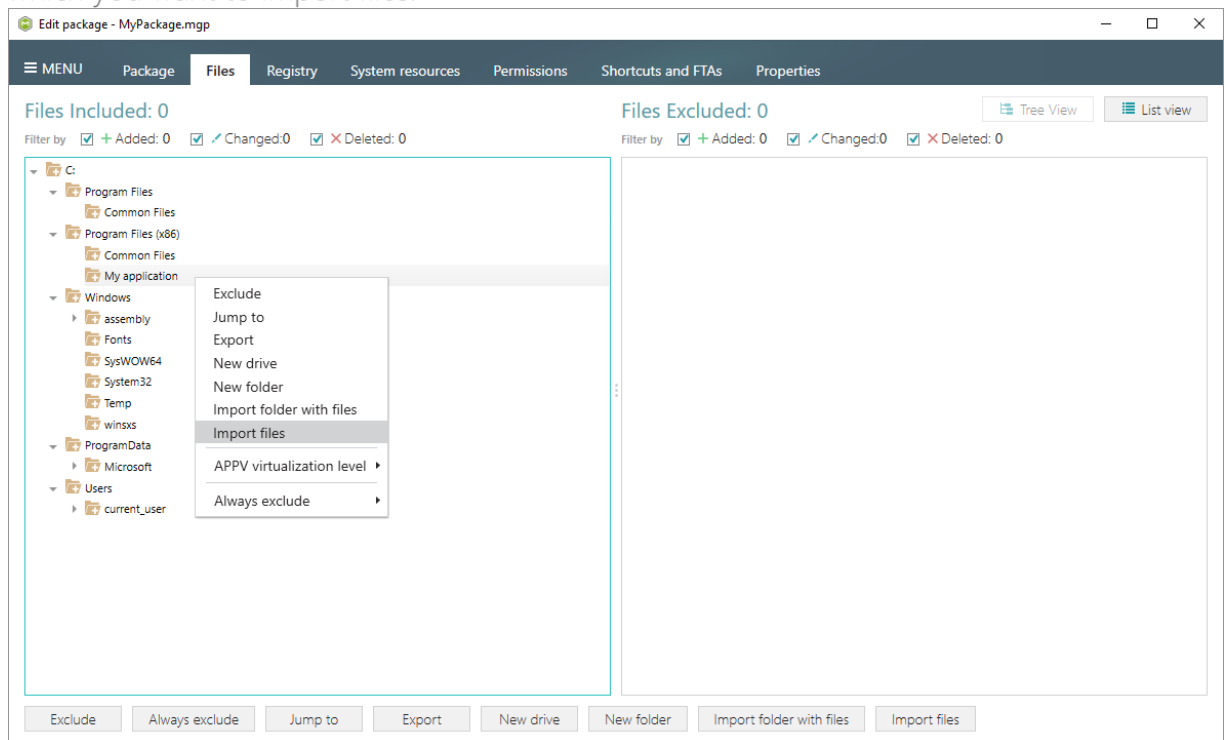
files and folders, which will not be saved to the package.



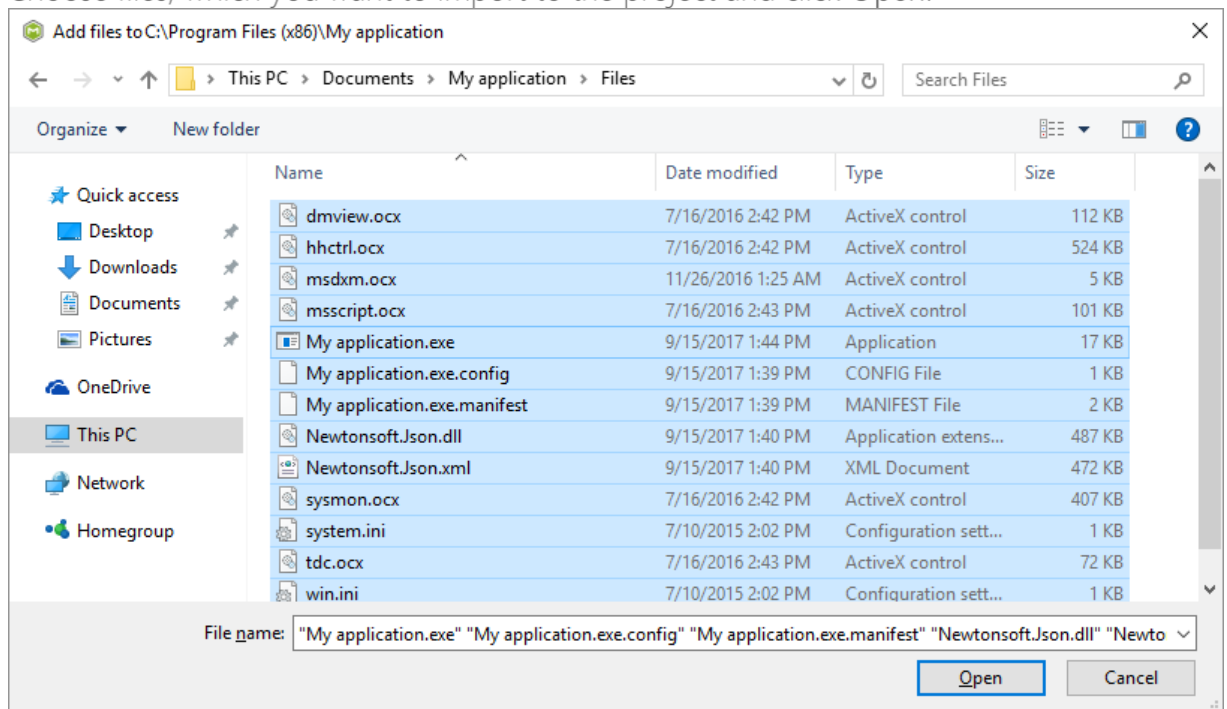
[8]. Enter a folder name and click Create.



- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.

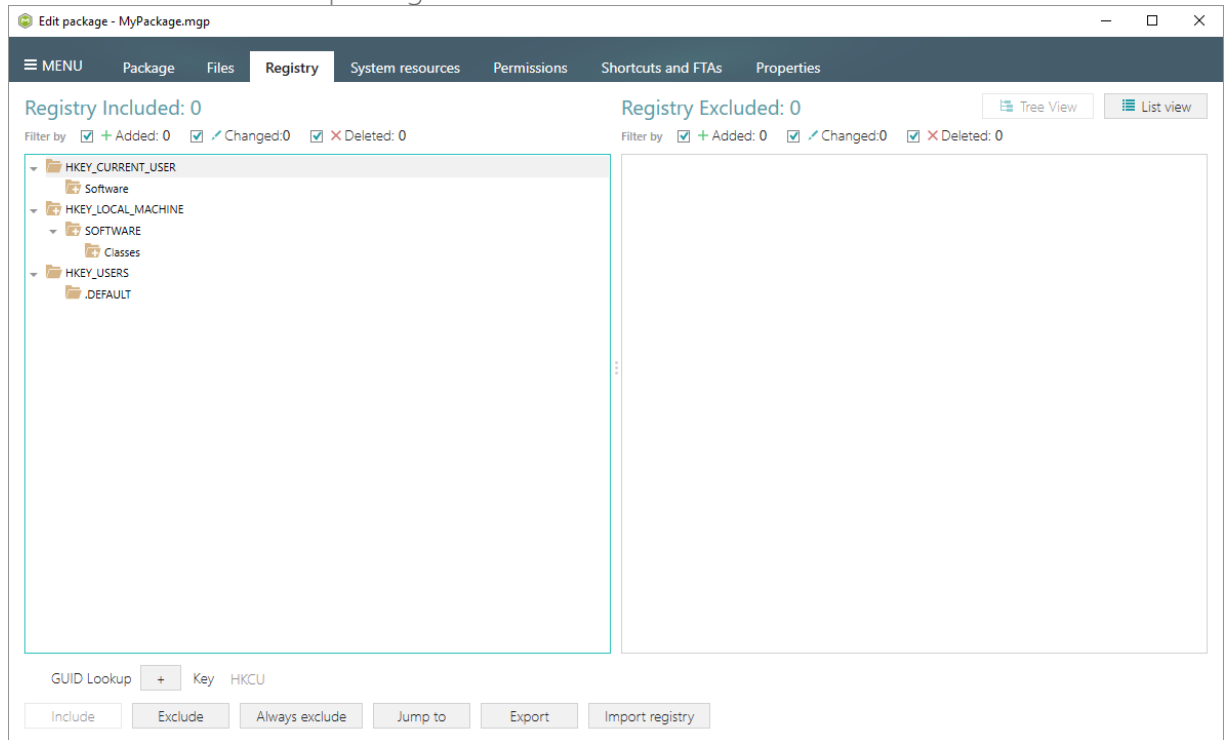


- [10]. Choose files, which you want to import to the project and click **Open**.

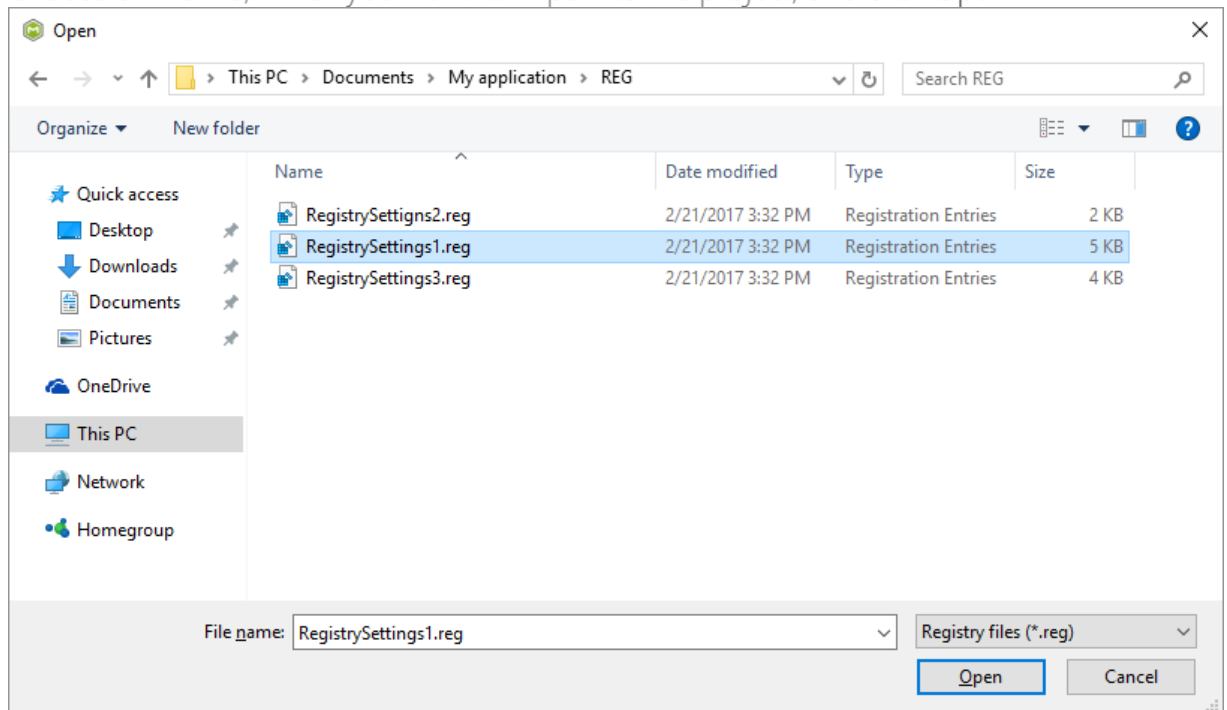


- [11]. In order to import registry entries from the REG file, go to the **Registry** tab and click the **Import registry** button, located in the bottom part of the window. Note that the left 'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which

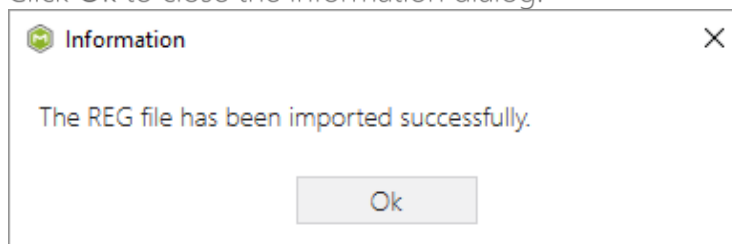
will not be saved to the package.



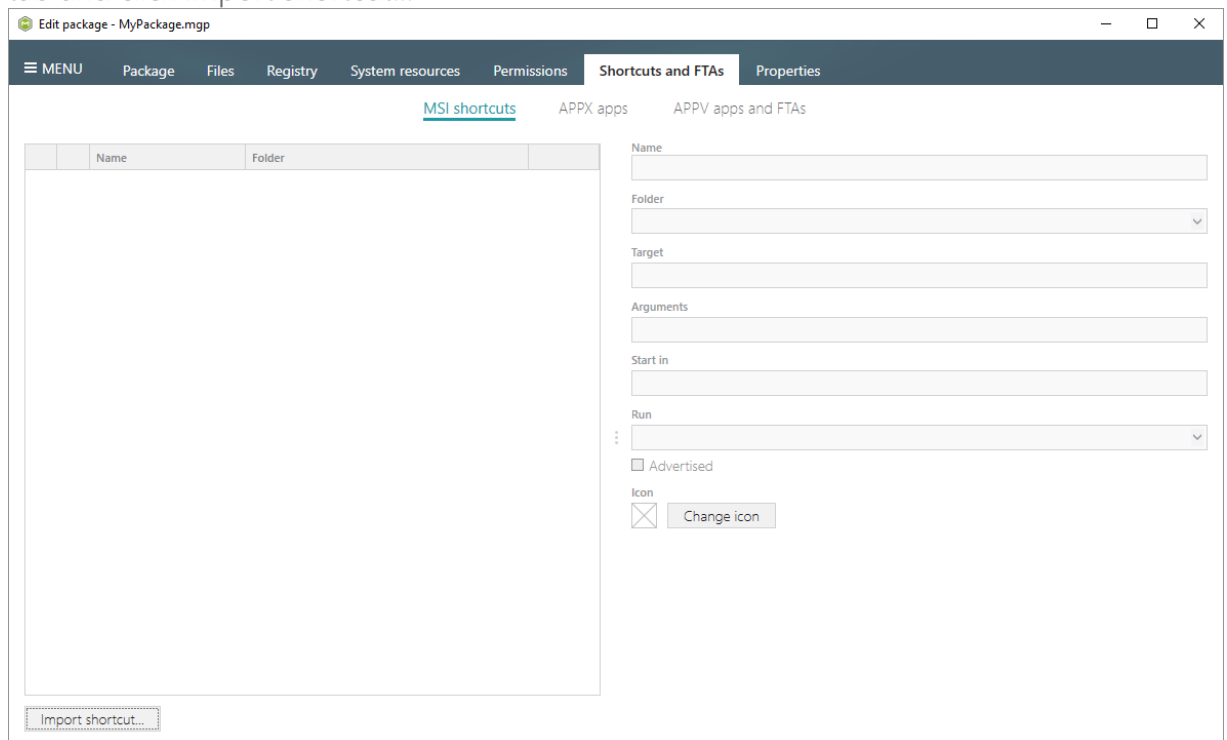
[12]. Choose a REG file, which you want to import to the project, and click Open.



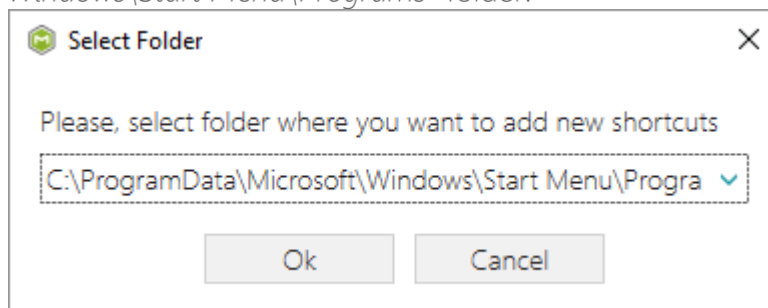
[13]. Click Ok to close the information dialog.



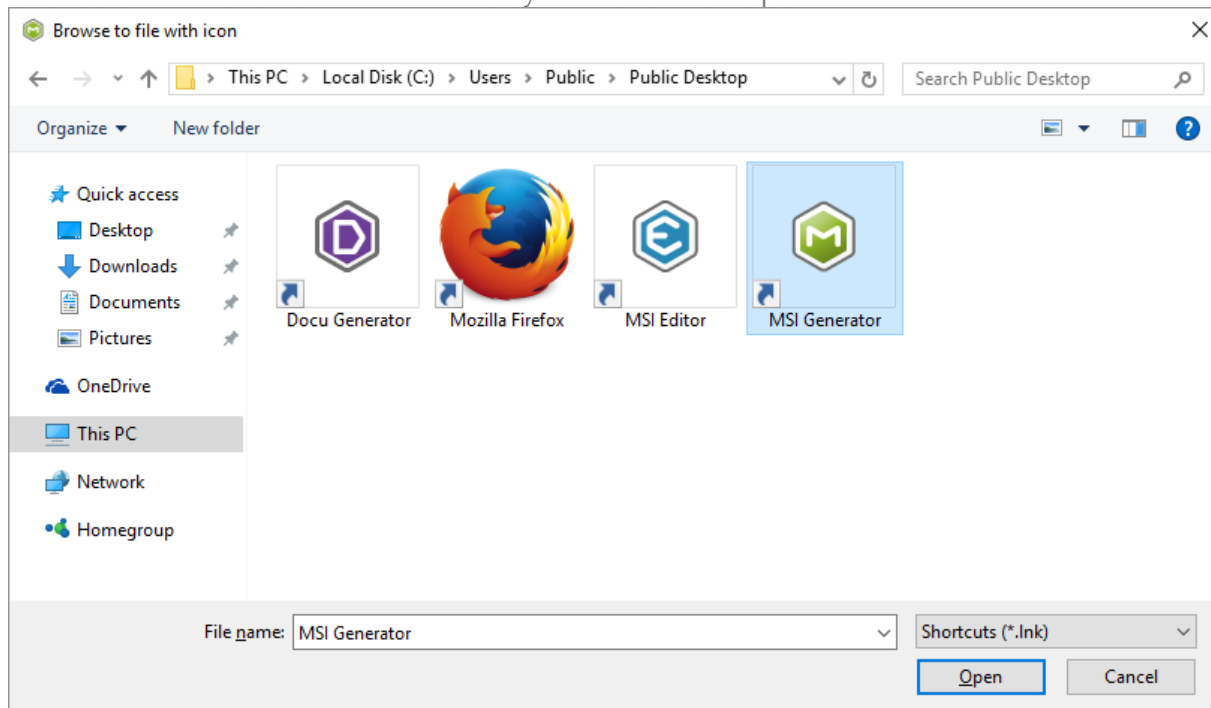
- [14]. If you need to add shortcuts to the project, go to the Shortcuts and FTAs -> MSI shortcuts tab and click Import shortcut...



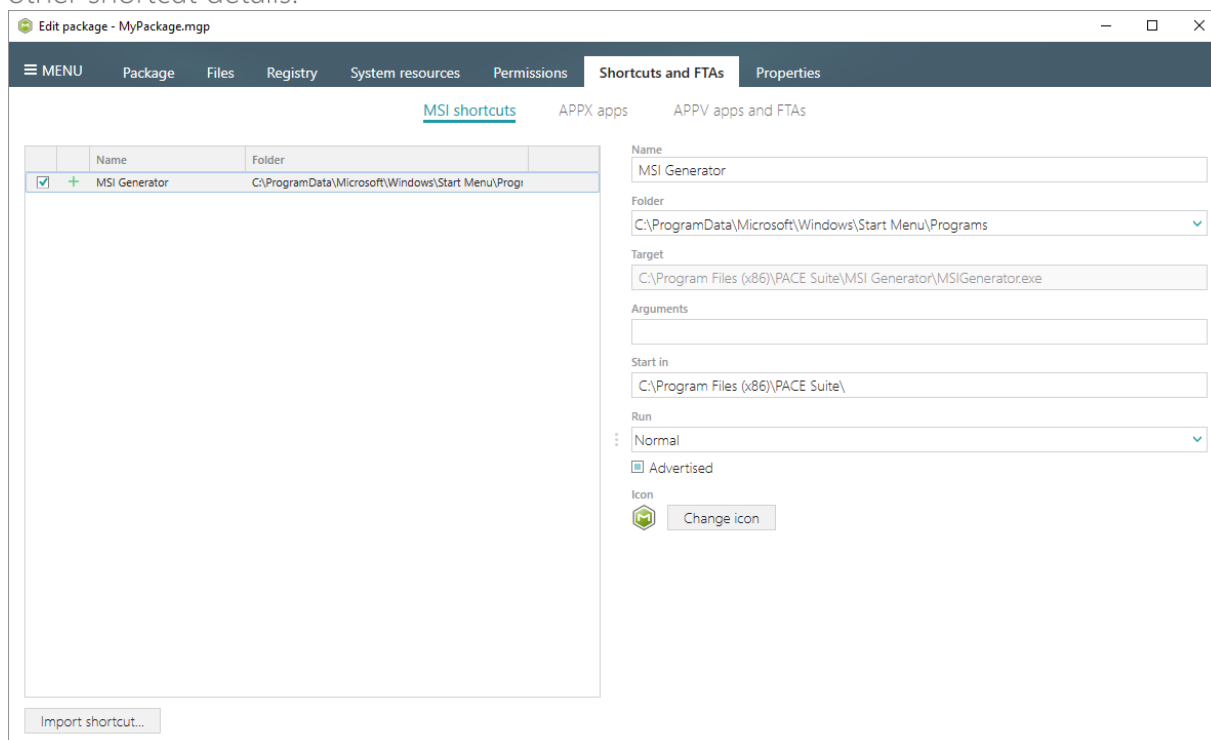
- [15]. Select a folder from the list, where your newly imported shortcut will be installed, and click Ok. Note that the Start menu shortcuts are located at "C:\ProgramData\Microsoft\Windows\Start Menu\Programs" folder.



[16]. Choose an LNK shortcut from the file system and click Open.



[17]. Using the details pane, you can update the shortcut Name, destination Folder, icon and other shortcut details.



[18]. In order to build MSI package from your project, navigate to the Package -> MSI tab, update Application Details like name, publisher, version, select INSTALLDIR and click Build

Edit package - MyPackage.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPV THINAPP

Application Details

Application name
My application

Publisher
My publisher

Version
1.0.0

Product language
1033

Product code
 New GUID...

Upgrade code
 New GUID...

☒ Generate new codes when build MSI

Summary Information

Title
Installation Database

Subject

Author

Keywords
Install.MSI

Comments
This installer database contains the logic and data required to install <product name>.

Platform
Autodetect

Languages
0

MSI Package Options

MSI settings profile
default Edit

MSI file name
C:\Users\pace\Documents\MSI Generator\Packages\MyPa Browse... Go to...

MSI CodePage
0 Neutral

INSTALLDIR
C:\Program Files (x86)\My application

Build log Detected MSI installations Open log

Type	Elapsed	Step

Elapsed time
00:00

Open MSI Build MSI

[19]. Click **Go to...**, located next to the **MSI file name** field, to open the package containing folder in Windows Explorer.

The screenshot shows the 'Edit package - MyPackage.mgp' window. The top navigation bar includes 'MENU', 'Package' (selected), 'Files', 'Registry', 'System resources', 'Permissions', 'Shortcuts and FTAs', and 'Properties'. Below this are tabs for 'MSI' (selected), 'MST', 'APPX', 'APPV', and 'THINAPP'.

Application Details

- Application name:** My application
- Publisher:** My publisher
- Version:** 1.0.0 | **Product language:** 1033
- Product code:** {6D0D4740-3D9A-4DDA-B5E4-D9C0AAEFE3F2} | New GUID...
- Upgrade code:** {DB23CEE3-5B68-4830-A9AF-AD40B671D5F5} | New GUID...
- ☒ Generate new codes when build MSI

Summary Information

Title	Subject
Installation Database	

Author	Keywords
	Install;MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform	Languages
Autodetect	0

MSI Package Options

- MSI settings profile:** default | Edit
- MSI file name:** C:\Users\pace\Documents\MSI Generator\Packages\MyPa... | Browse... | Go to...
- MSI CodePage:** 0 Neutral
- INSTALLDIR:** C:\Program Files (x86)\My application

Build log

Type	Elapsed	Step
[Green Bar]	00:00:12	Operation was completed successfully
[Green Bar]	00:00:12	Writing data to the _Validation table
[Green Bar]	00:00:12	Writing data to the CreateFolder table
[Green Bar]	00:00:12	Writing data to the AdvtExecuteSequence table
[Green Bar]	00:00:12	Writing data to the InstallExecuteSequence table
[Green Bar]	00:00:12	Writing data to the CustomAction table
[Green Bar]	00:00:12	Writing data to the MsiAssemblyName table
[Green Bar]	00:00:12	Writing data to the MsiAssembly table
[Green Bar]	00:00:12	Importing cabinet (CAB) file into the MSI - "MyPac1.cab"
[Green Bar]	00:00:12	Writing data to the Media table
[Green Bar]	00:00:11	Creating CAB file(s) completed

Elapsed time: 00:00:12

Detected MSI installations

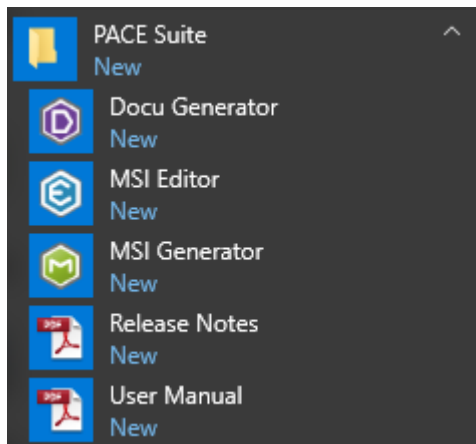
Open log

Open MSI | Build MSI

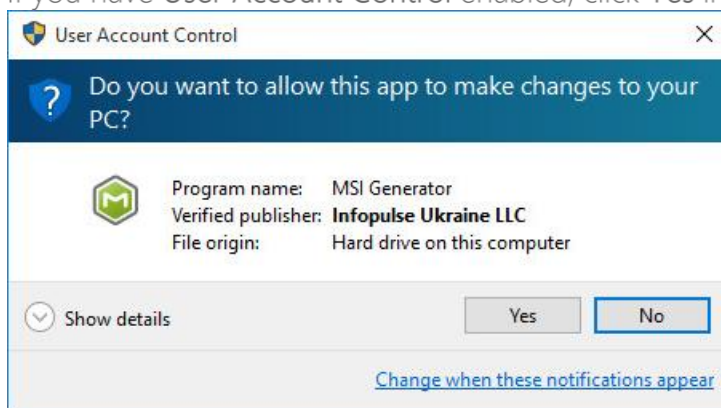
3.1.3 Convert (Repackage) EXE to MSI

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.

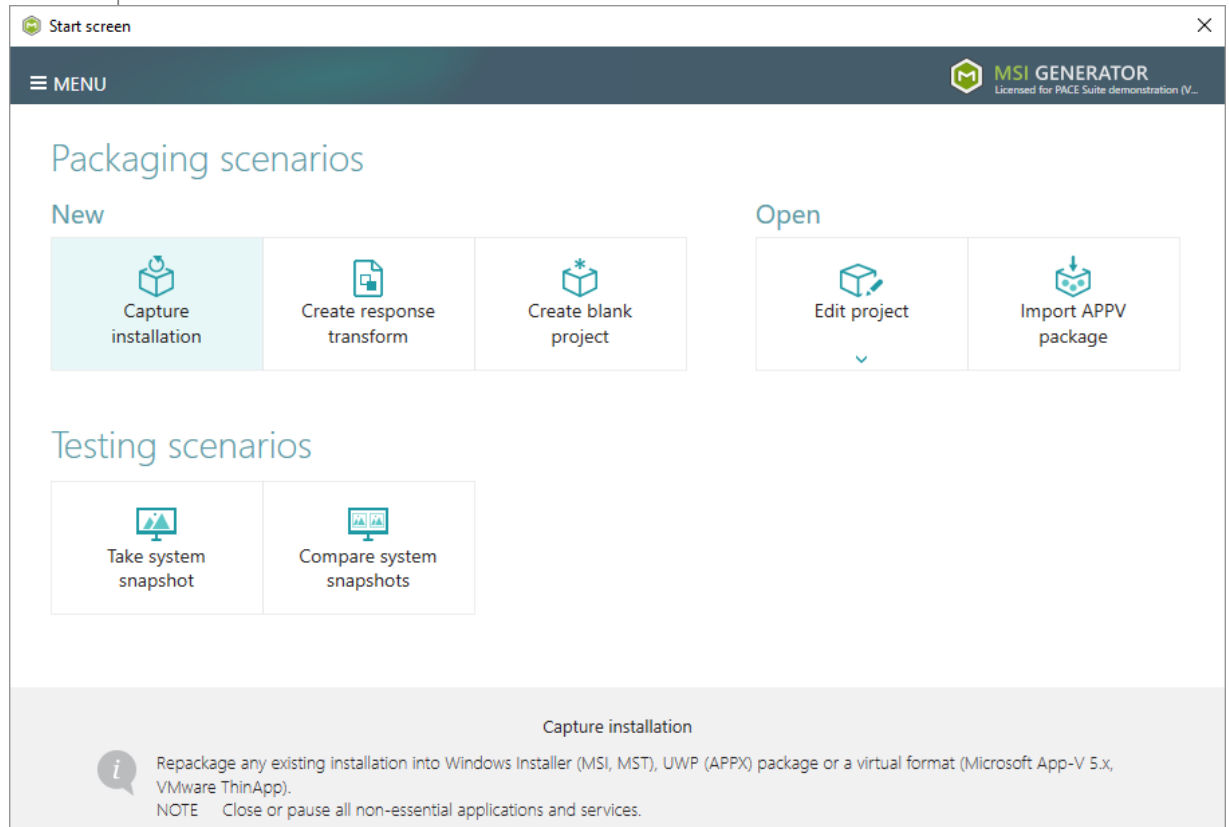
- Launch MSI Generator from the desktop or the start menu shortcut.



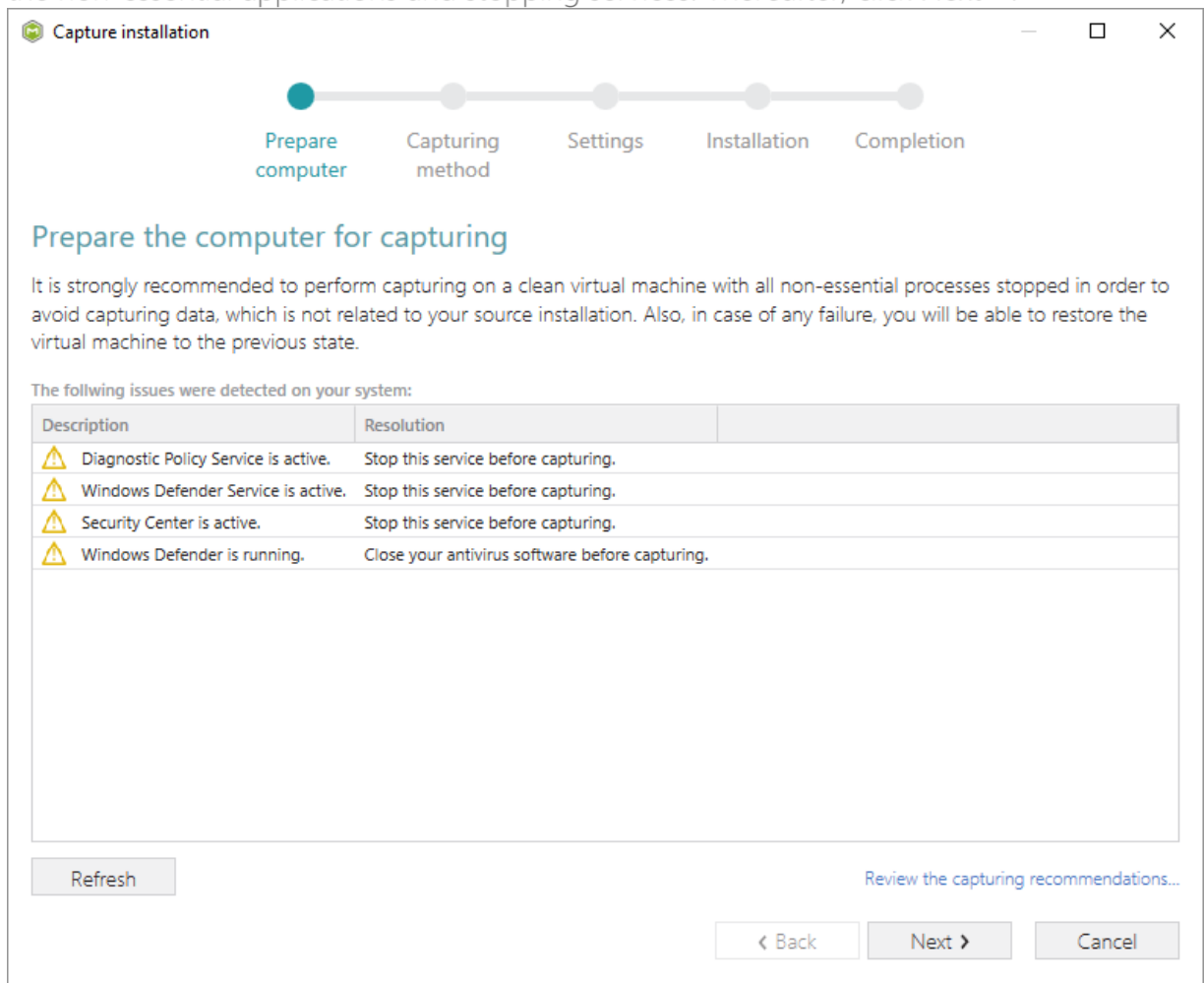
- If you have User Account Control enabled, click Yes in the opened window.



- Click Capture installation.



- Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click **Next >**.



- Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.

Capture installation

Prepare computer **Capturing method** Settings Installation Completion

Select a capturing method

☒ **Monitoring (quick)**
This method watches the installation and records system changes to a package.

☐ **Snapshotting (configurable)**
This method creates two system snapshots (before and after the installation) and builds a package, based on difference between snapshots. Use this option if your source installation requires the system restart.

< Back **Next >** Cancel

- Review and update package name. If needed, disable unnecessary exclusion filters and scanning areas. Click Next > to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

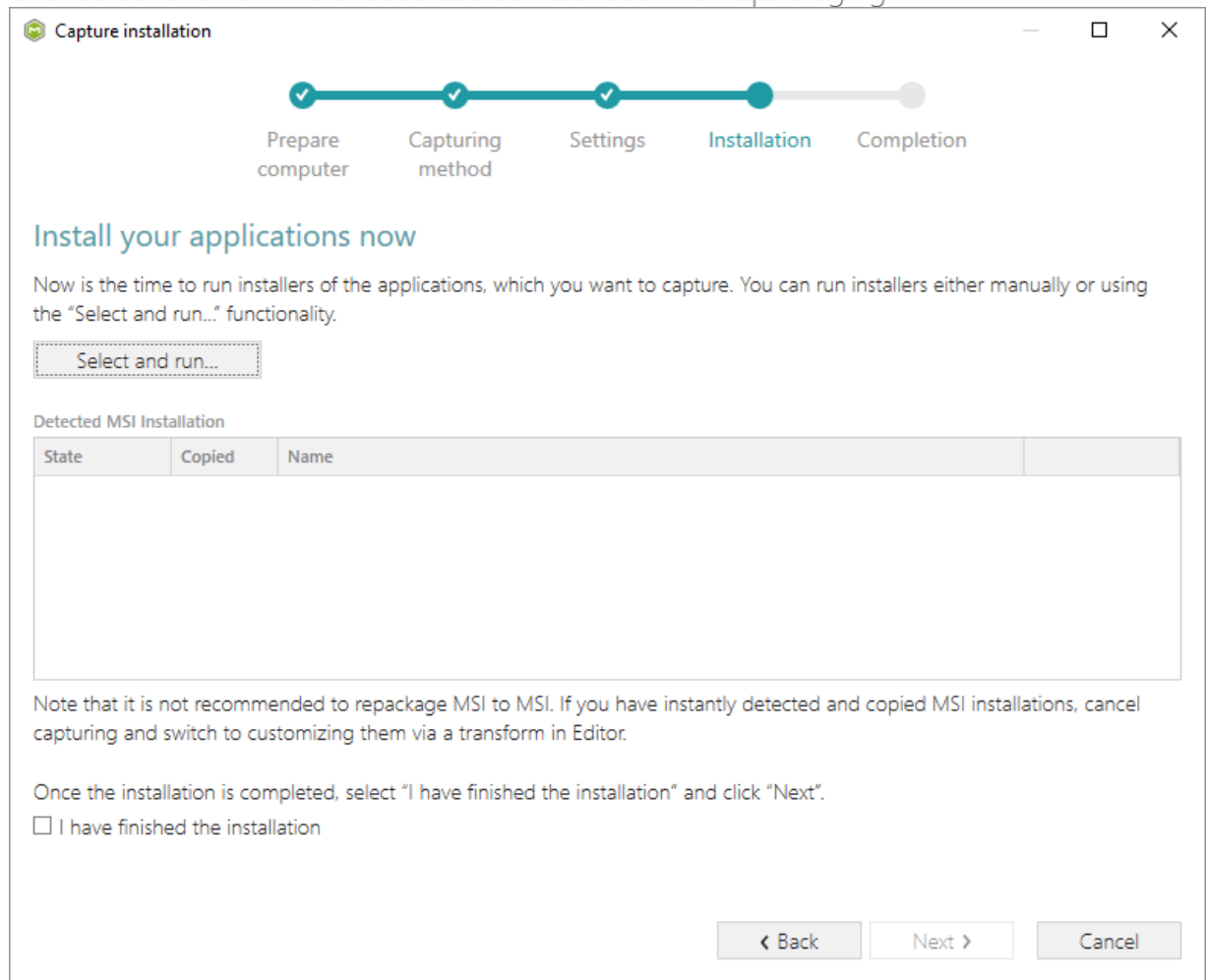
Scanning areas

Application objects:

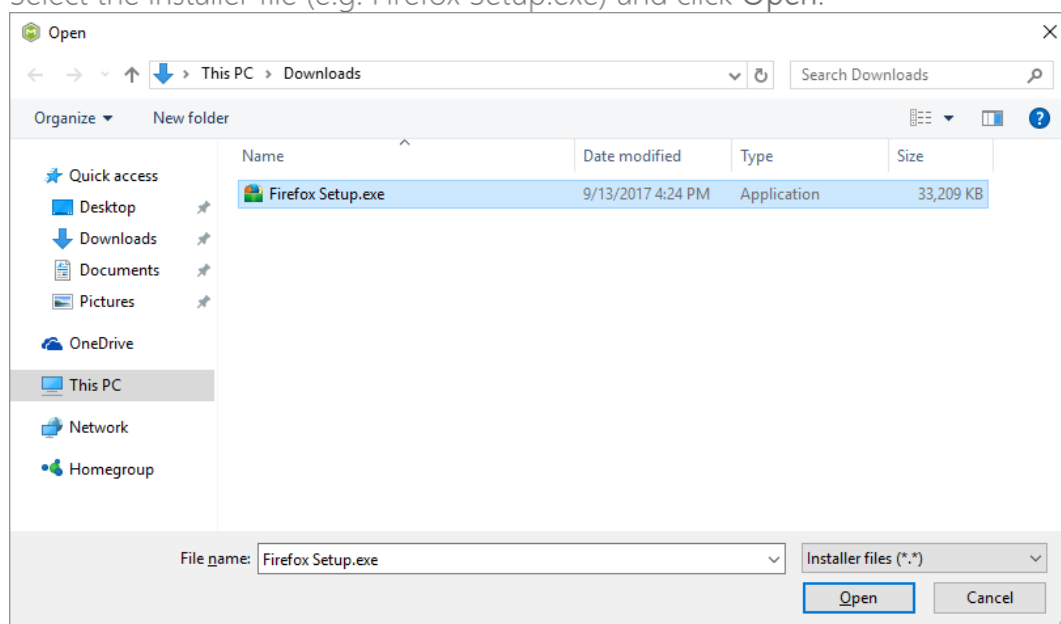
- ☒ Permissions
- ☒ Services
- ☒ Printers

< Back **Next >** Cancel

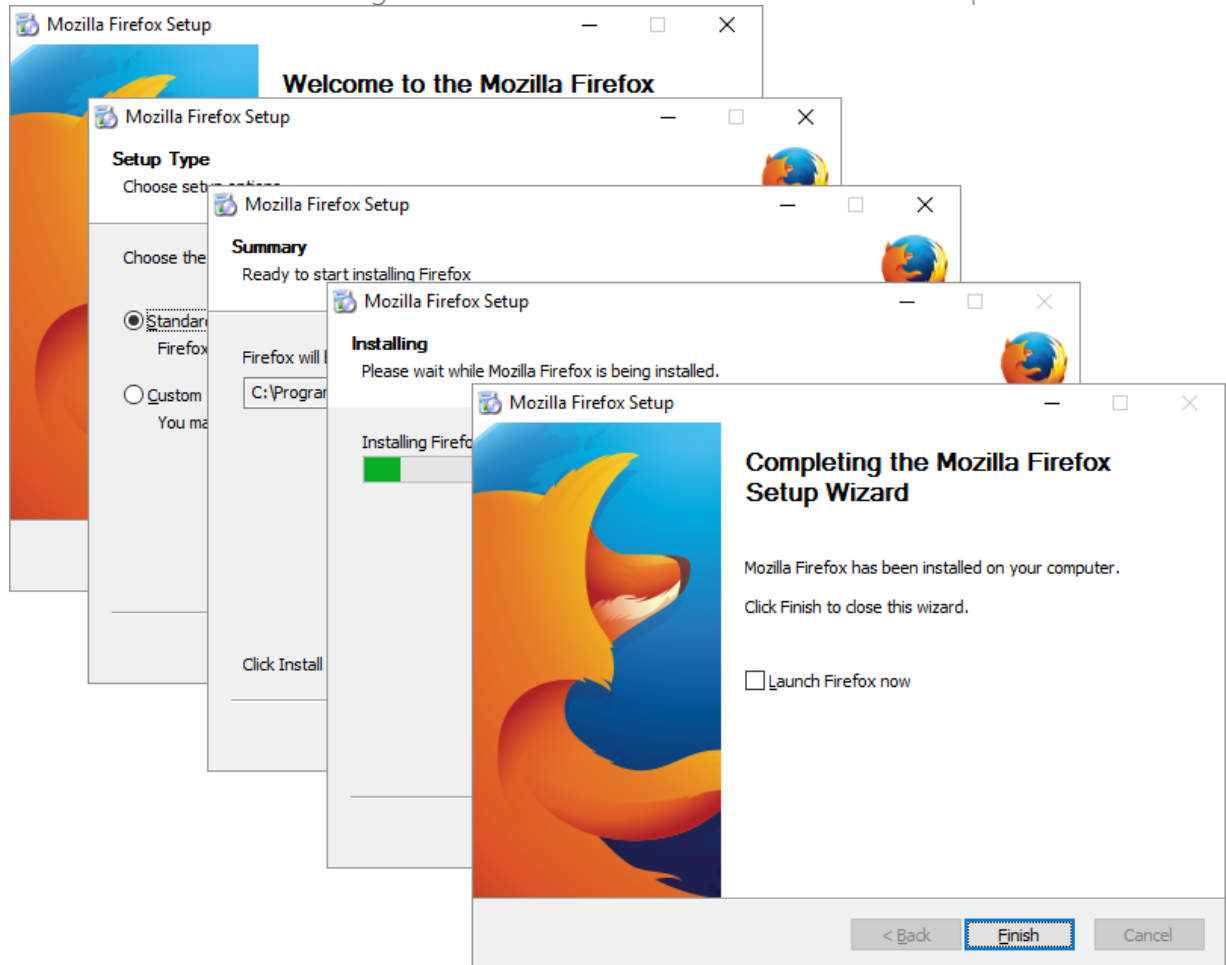
- Click **Select and run...** to choose source installation for repackaging.



- Select the installer file (e.g. Firefox Setup.exe) and click **Open**.

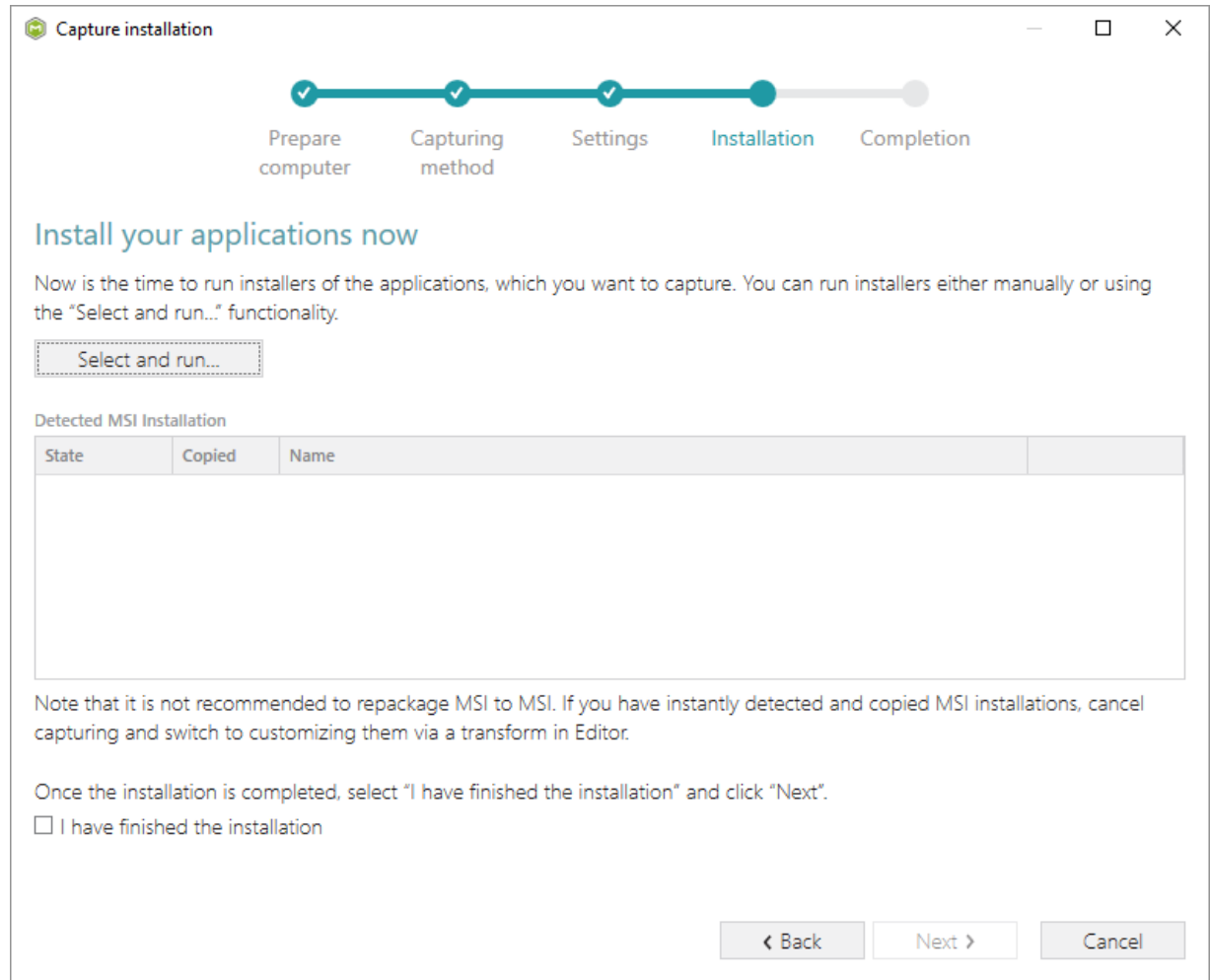


- Follow the installation dialogs of the launched source installation to complete it.



- Once the source installation is completed, we recommend to check if the **Detected MSI installations** tab does not contain found MSI installers. Even if your sources installation is an EXE file, it could contain embedded MSI installers, launched hiddednly. As you may know, repackaging existing vendor MSI installers into MSI is against Microsoft best practices. Thus, if the **Detected MSI installations** tab contains a found MSI installer, consider canceling this capturing (repackaging) process and switching to editing it in MSI Editor (Edit MSI/MST is described in section 3.7). Note that the found MSI installers are copied to the project

folder.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

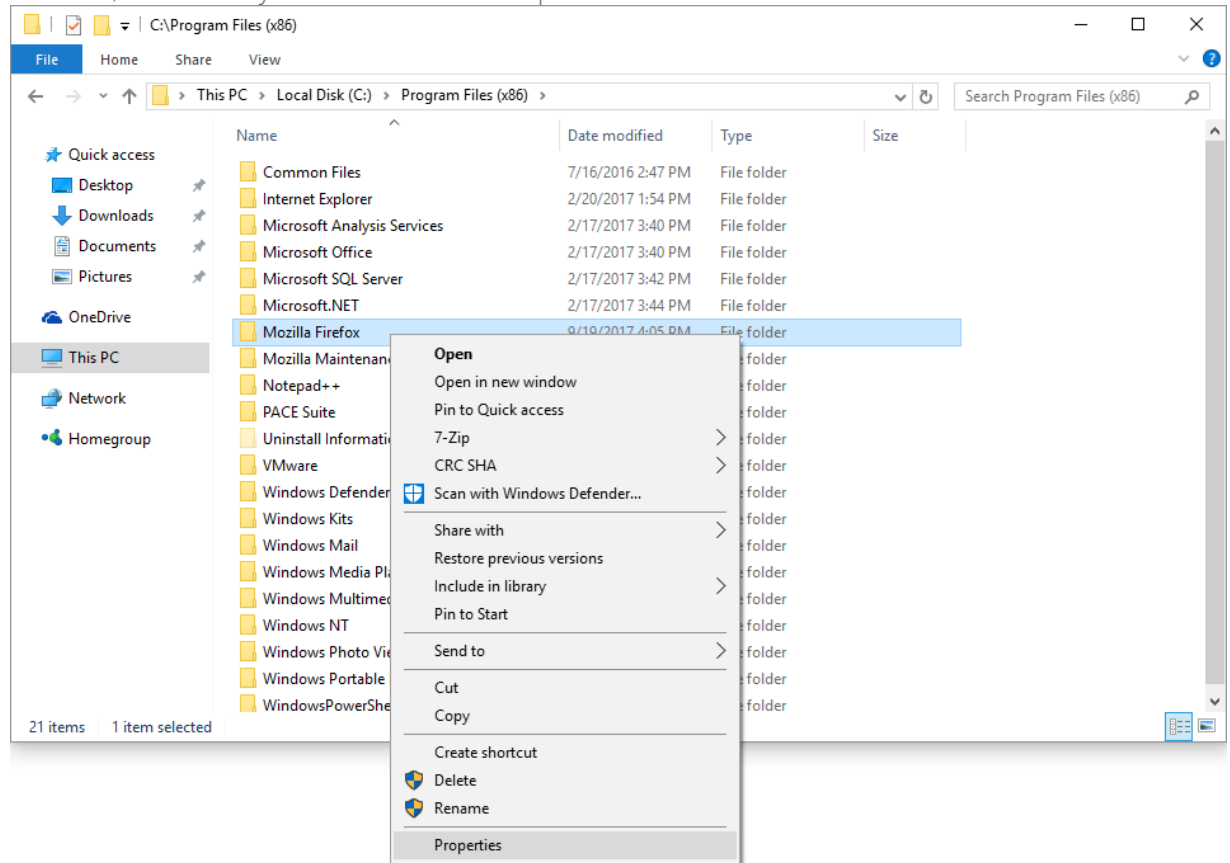
Once the installation is completed, select "I have finished the installation" and click "Next".

☐ I have finished the installation

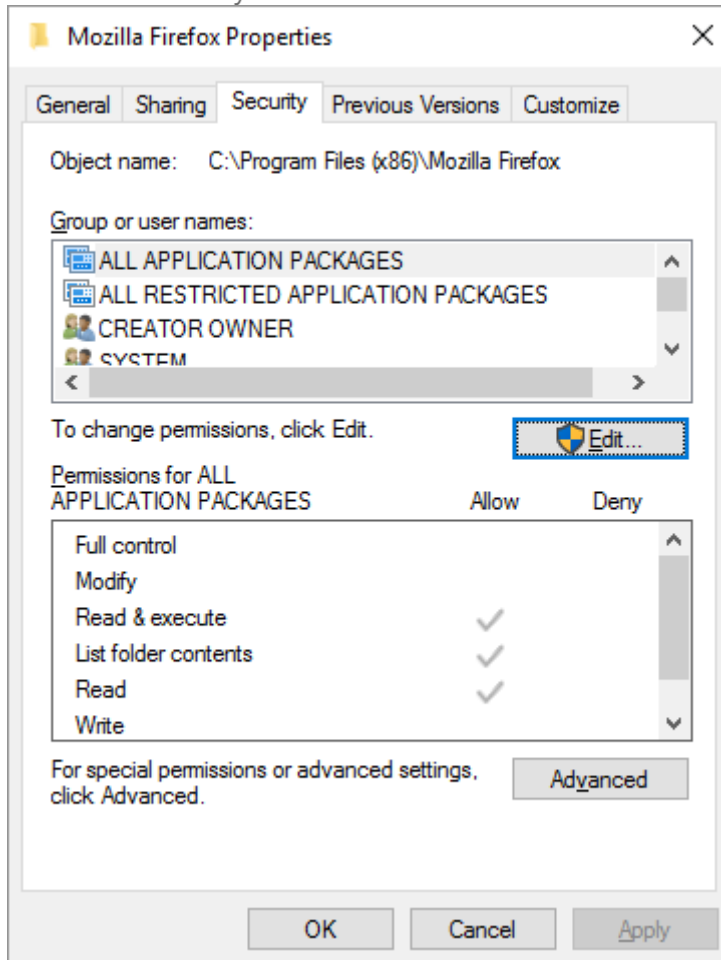
< Back Next > Cancel

- Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.
- If you additionally need to change the default permission settings on a folder or a file and include them to the package, select **Properties** from the Windows Explorer context menu of

a folder, on which you want to set new permissions.

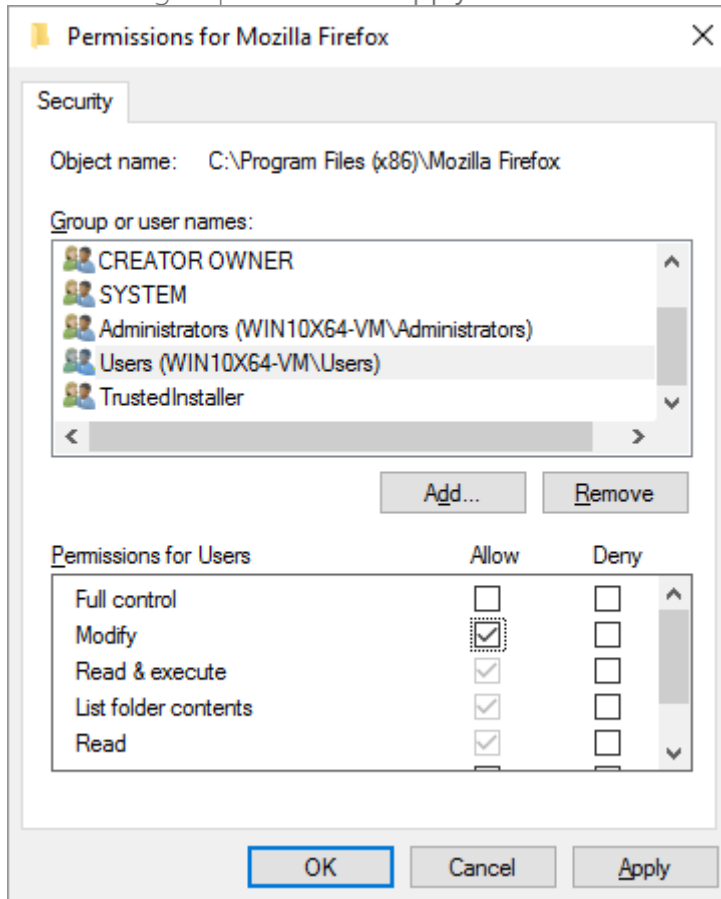


- Go to the Security tab and click Edit.

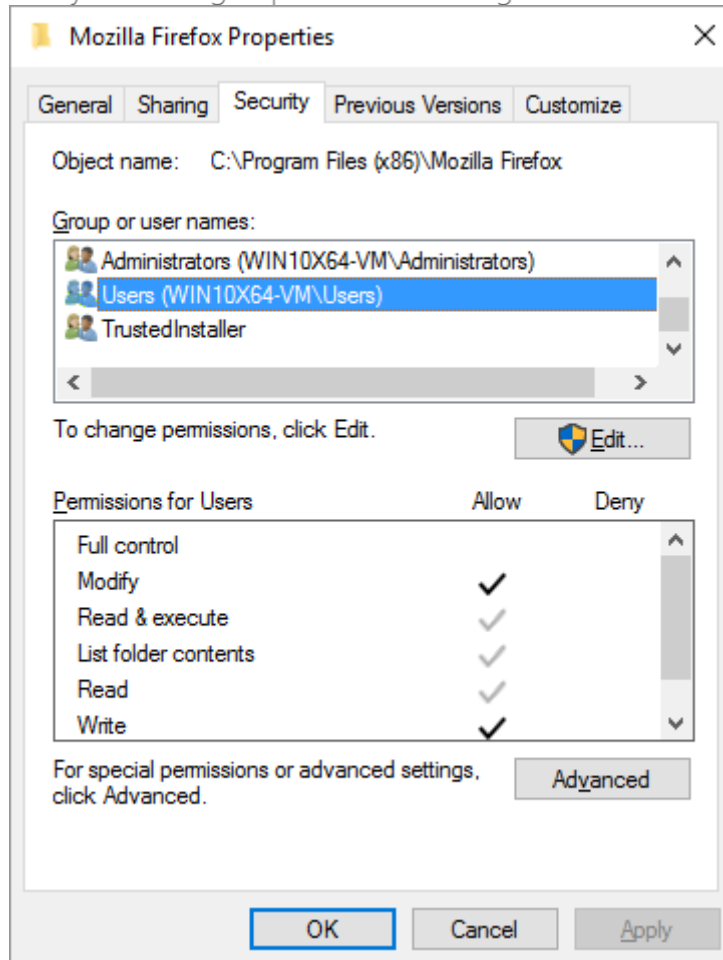


- Select a group or a user, for which you want to change the permissions and then select the necessary access rights. For example, lets set the 'Write' and the 'Modify' access rights for

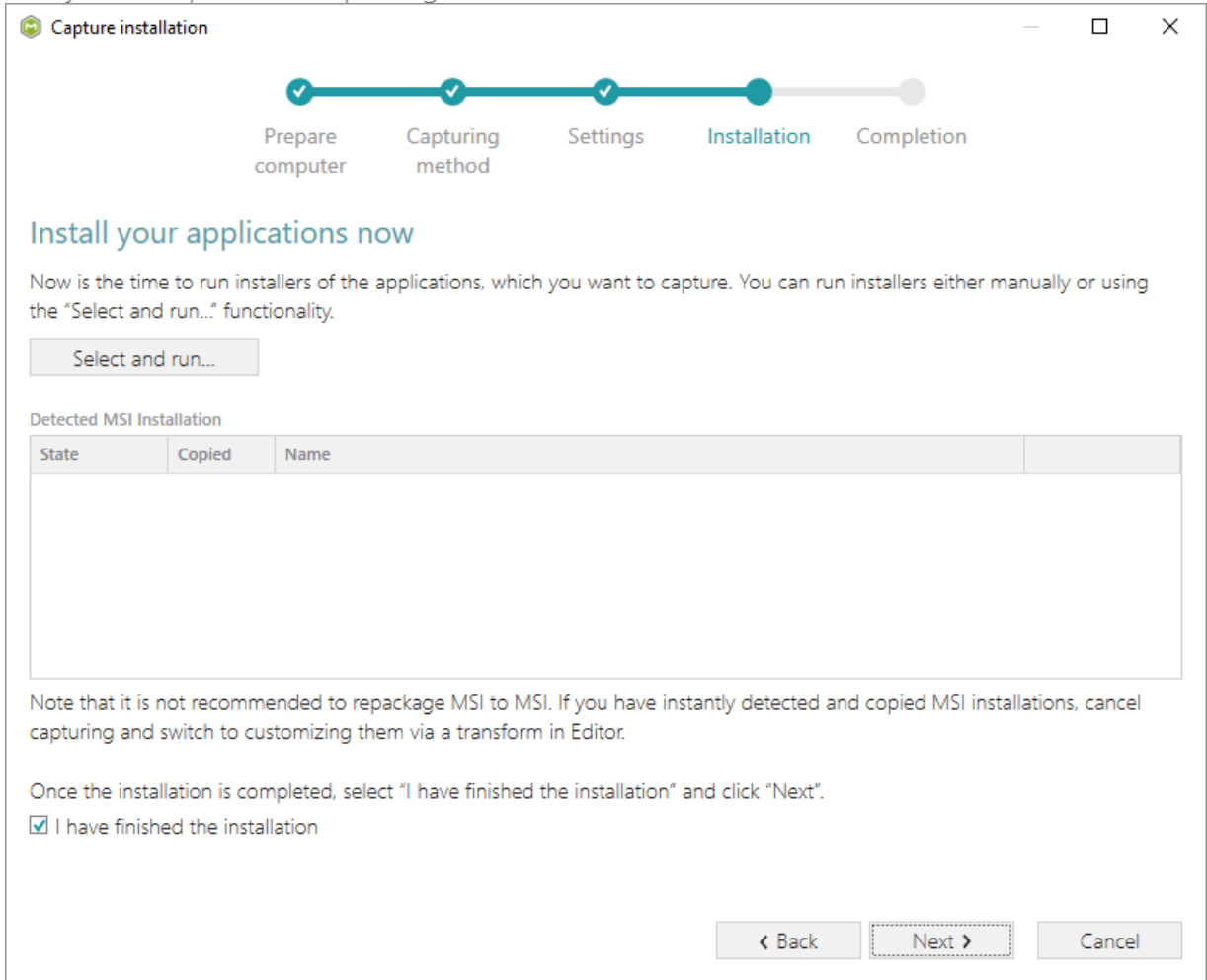
the 'Users' group. Then click Apply and OK.



- Verify the changed permission settings and click OK to close the window.



- Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

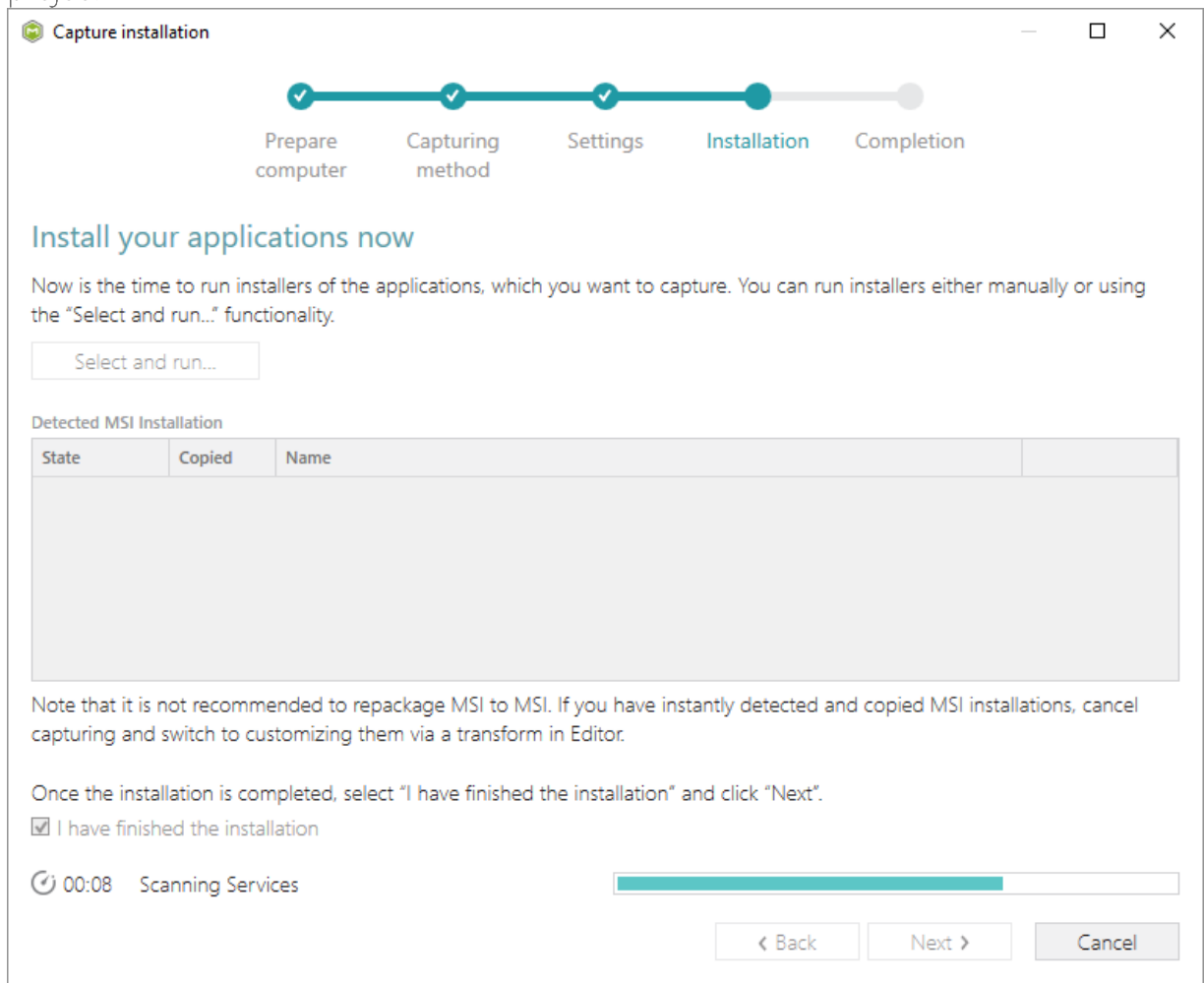
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

☒ I have finished the installation

< Back **Next >** Cancel

- Wait a little, while the capturing process is finishing, filtering captured data and creating the project.



- Leave selected both the Customize project in editor and Copy all captured files to the project folder now options and click Finish.

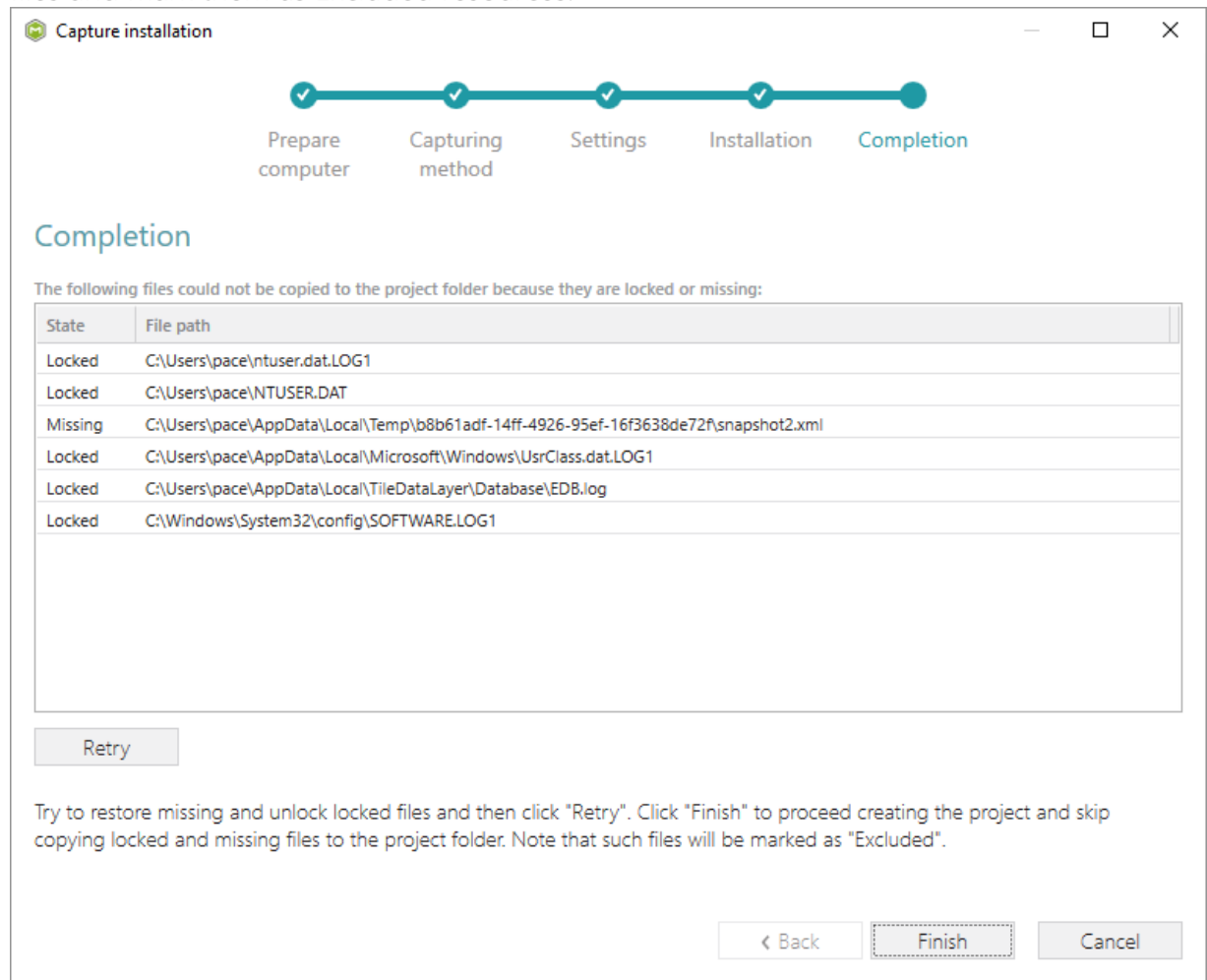
The screenshot shows a 'Capture installation' dialog box with a progress bar at the top. The progress bar has five steps: 'Prepare computer', 'Capturing method', 'Settings', 'Installation', and 'Completion'. The first four steps are marked with checkmarks, and the fifth step, 'Completion', is the current step. Below the progress bar, the title 'Completion' is displayed. A warning message states: 'Important: be informed that some of captured files and registry, which do not belong to your application, may affect package functionality. Exclude those unnecessary resources using editor.' There are two radio button options: 'Customize project in editor' (selected) and 'Stop now and save project'. A checkbox labeled 'Copy all captured files to the project folder now' is checked. Below these options is a 'Project summary' section containing a table of captured items:

Project folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-170913-154800 (Go to...)	
Files:	473 (909,7 MB)
Registry:	451
Services:	1
Permissions:	1
Printers:	0

At the bottom right of the dialog are three buttons: '< Back', 'Finish' (highlighted with a dashed border), and 'Cancel'.

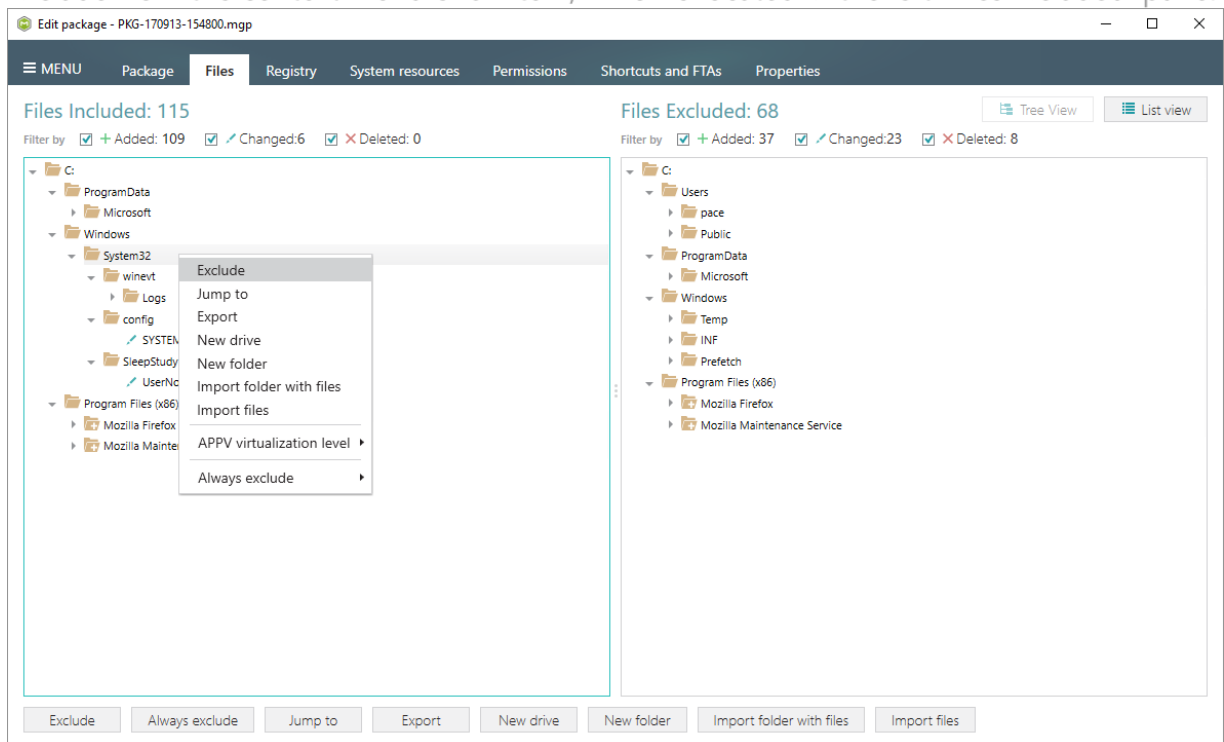
- The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing and locked

files and mark them as Excluded resources.

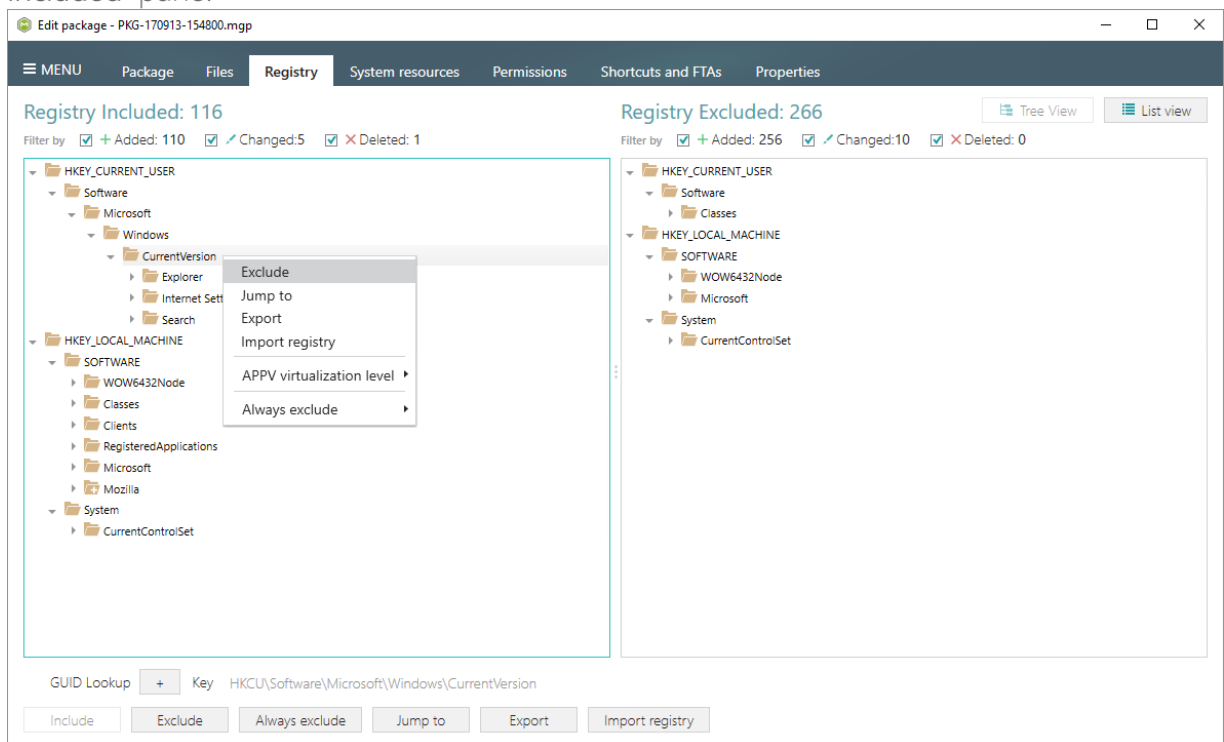


- Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).

- In order to review and exclude unnecessary files or folders, go to the **Files** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included' pane.

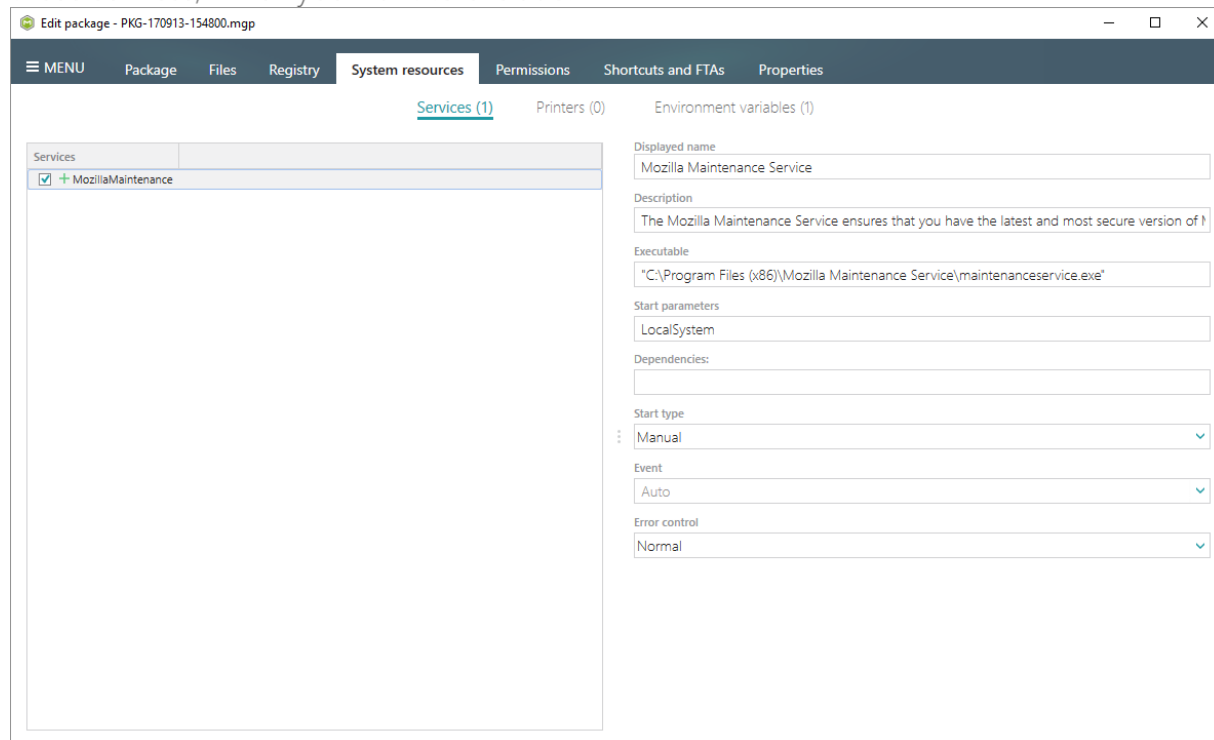


- In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

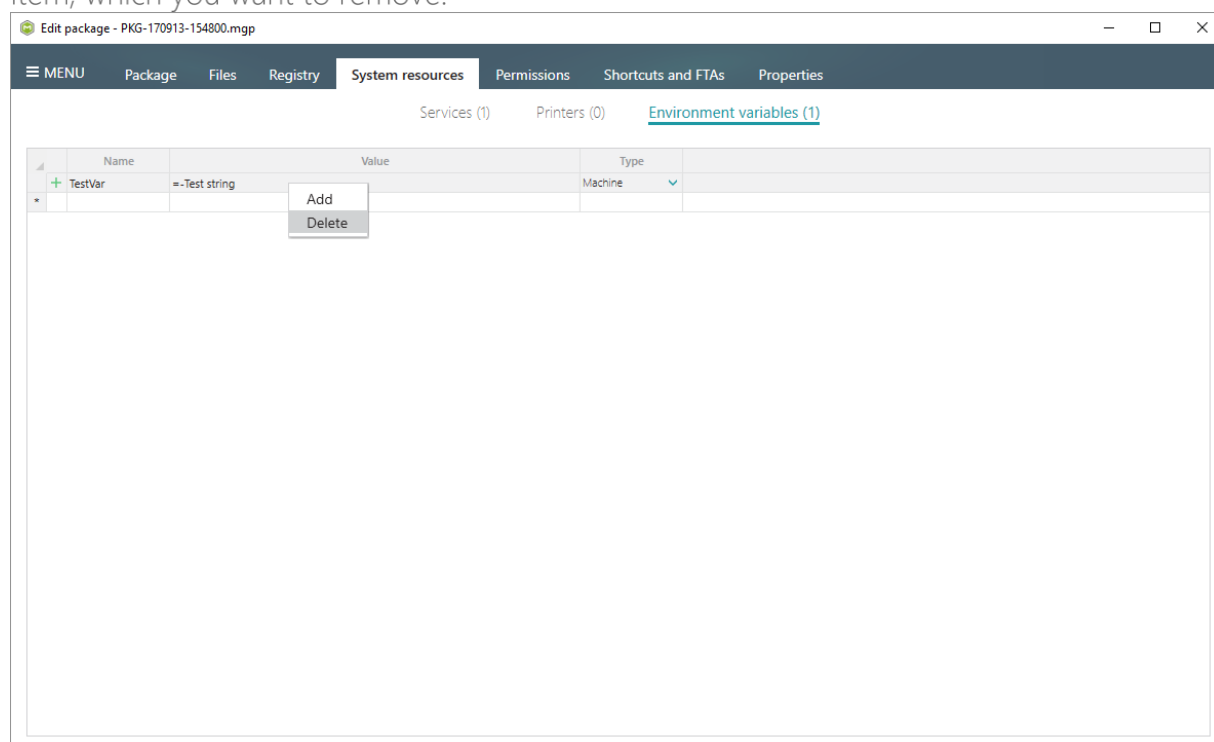


- In order to review and exclude unnecessary services, go to the **System resources** -> **Services** tab, and uncheck the checkbox, located before the service name in the list, for

those services, which you want to exclude.

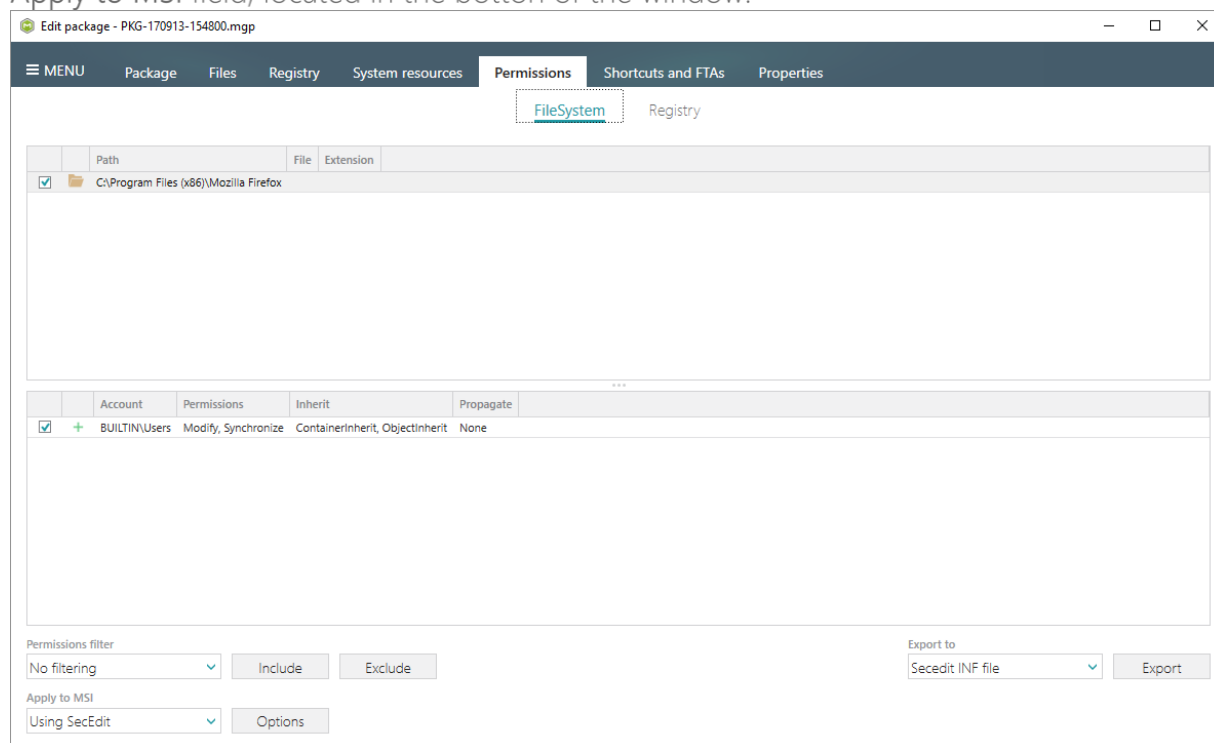


- In order to review and remove unnecessary Environment variables, go to the System resources -> Environment variables tab, and select Delete from the context menu of an item, which you want to remove.

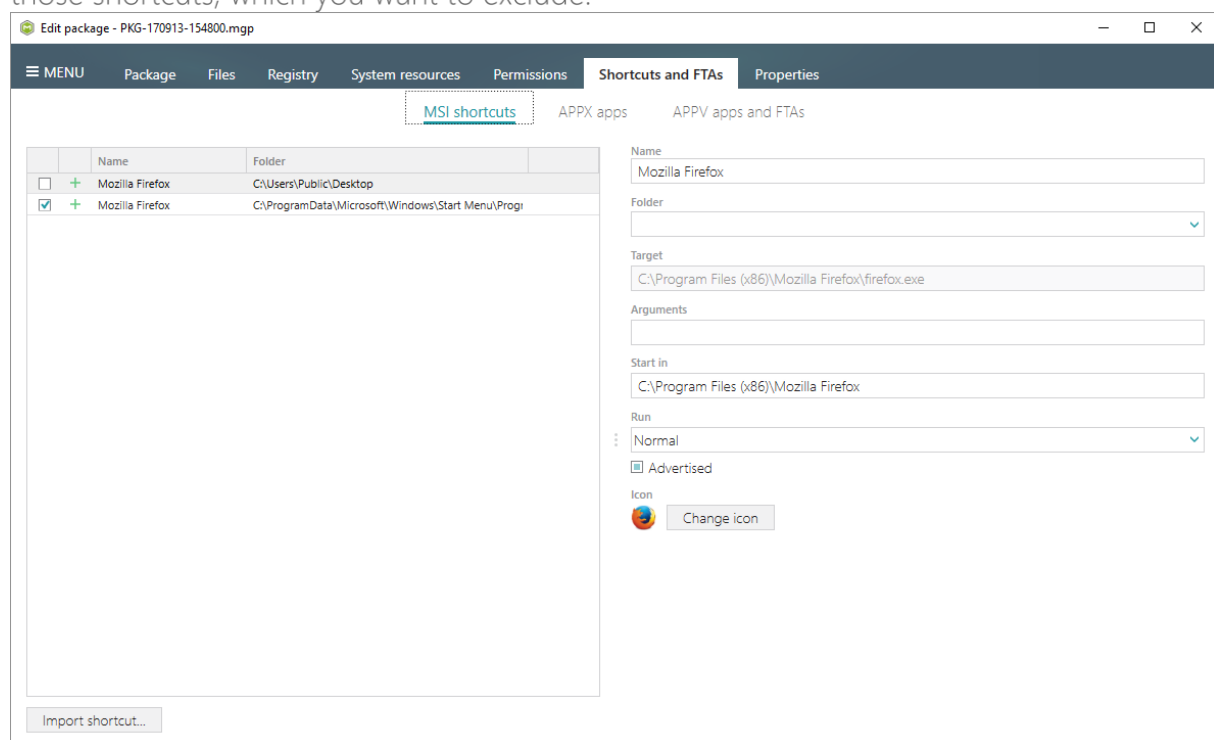


- On the Permissions tab you will find captured permissions for the file system and registry. For excluding unnecessary permission changes, either uncheck the checkbox, located before the path, for which permission changes were detected, or select Do not apply in the

Apply to MSI field, located in the bottom of the window.



- In order to review and exclude unnecessary shortcuts, go to the Shortcuts and FTAs -> MSI shortcuts tab, and uncheck the checkbox, located before the shortcut name in the list, for those shortcuts, which you want to exclude.



- Finally, to build an MSI package from the project, navigate to the Package -> MSI tab, update Application details such as name, publisher, version, language, select INSTALLDIR

and click Build MSI.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX APPV THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: [New GUID...]

Upgrade code: [New GUID...]

☒ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject: []

Author: [] Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Autodetect Languages: 0

MSI Package Options

MSI settings profile: default [Edit]

MSI file name: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

MSI CodePage: 0 Neutral

INSTALLDIR: C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations [Open log]

Type	Elapsed	Step
------	---------	------

Elapsed time: 00:00

[Open MSI] [Build MSI]

- Once the package is built, click Go to..., located next to the MSI file name field, to open the package containing folder in Windows Explorer.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX APPV THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: [16315361-B140-4B5D-8C46-4ADE3389ADD2] [New GUID...]

Upgrade code: [9DE9322A-35BD-47E5-BFF6-EAE8476B686B] [New GUID...]

☒ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject: []

Author: [] Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Autodetect Languages: 0

MSI Package Options

MSI settings profile: default [Edit]

MSI file name: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

MSI CodePage: 0 Neutral

INSTALLDIR: C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations [Open log]

Type	Elapsed	Step
■	00:00:43	Operation was completed successfully
■	00:00:43	Writing data to the _Validation table
■	00:00:43	Writing data to the CreateFolder table
■	00:00:43	Writing data to the AdvtExecuteSequence table
■	00:00:43	Writing data to the InstallExecuteSequence table
■	00:00:43	Writing data to the CustomAction table
■	00:00:43	Writing data to the MsiAssemblyName table
■	00:00:42	Writing data to the MsiAssembly table
■	00:00:37	Importing cabinet (CAB) file into the MSI - "PKG1.1.cab"
■	00:00:37	Writing data to the Media table
■	00:00:37	Creating CAB file(s) completed

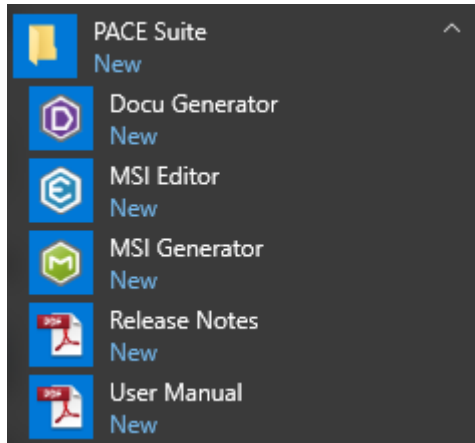
Elapsed time: 00:00:43

[Open MSI] [Build MSI]

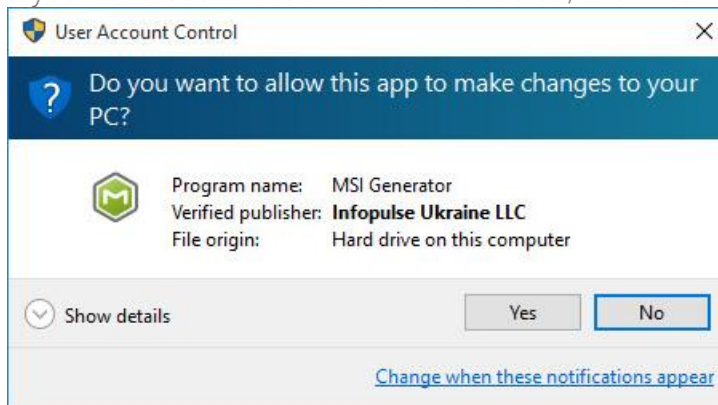
3.1.4 Capture System Changes to MSI

Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MSI package using MSI Generator. Along with files and registry, services and environment variables you, can capture file system and registry permission changes.

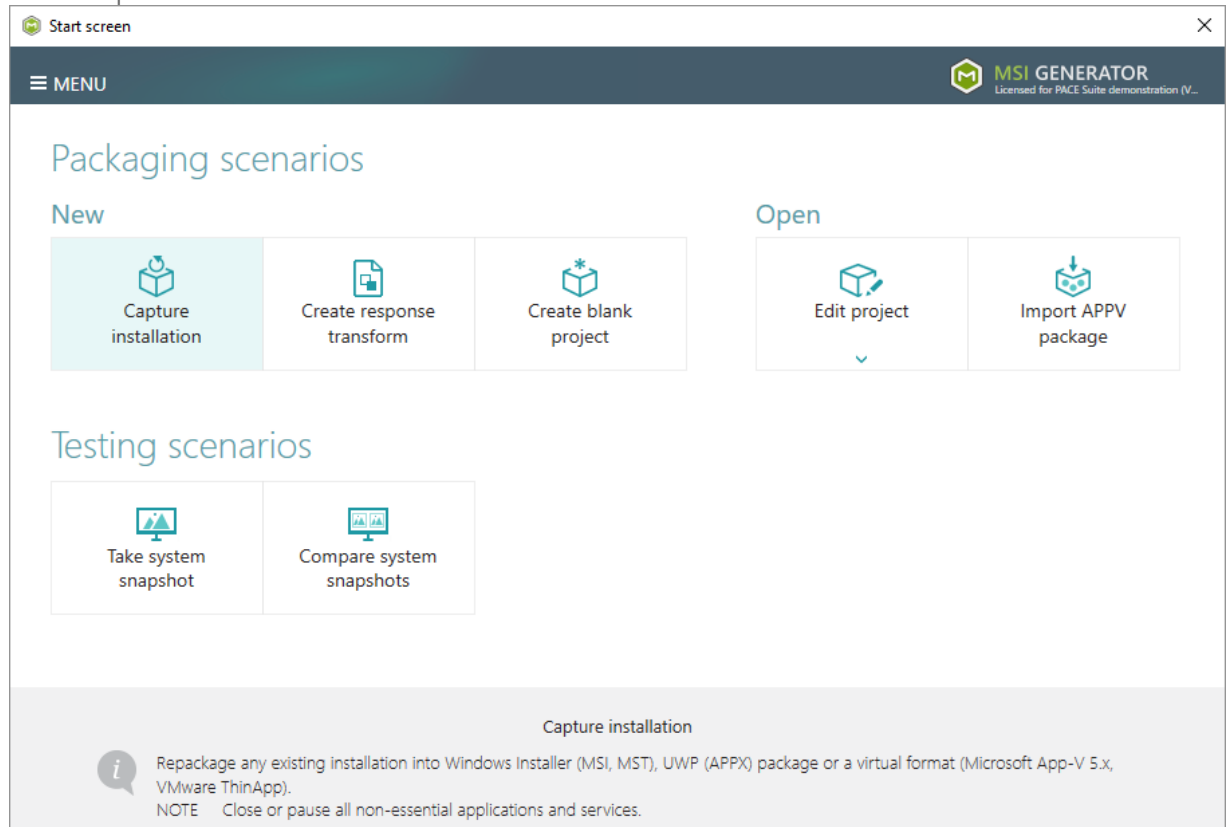
- Launch MSI Generator from the desktop or the start menu shortcut.



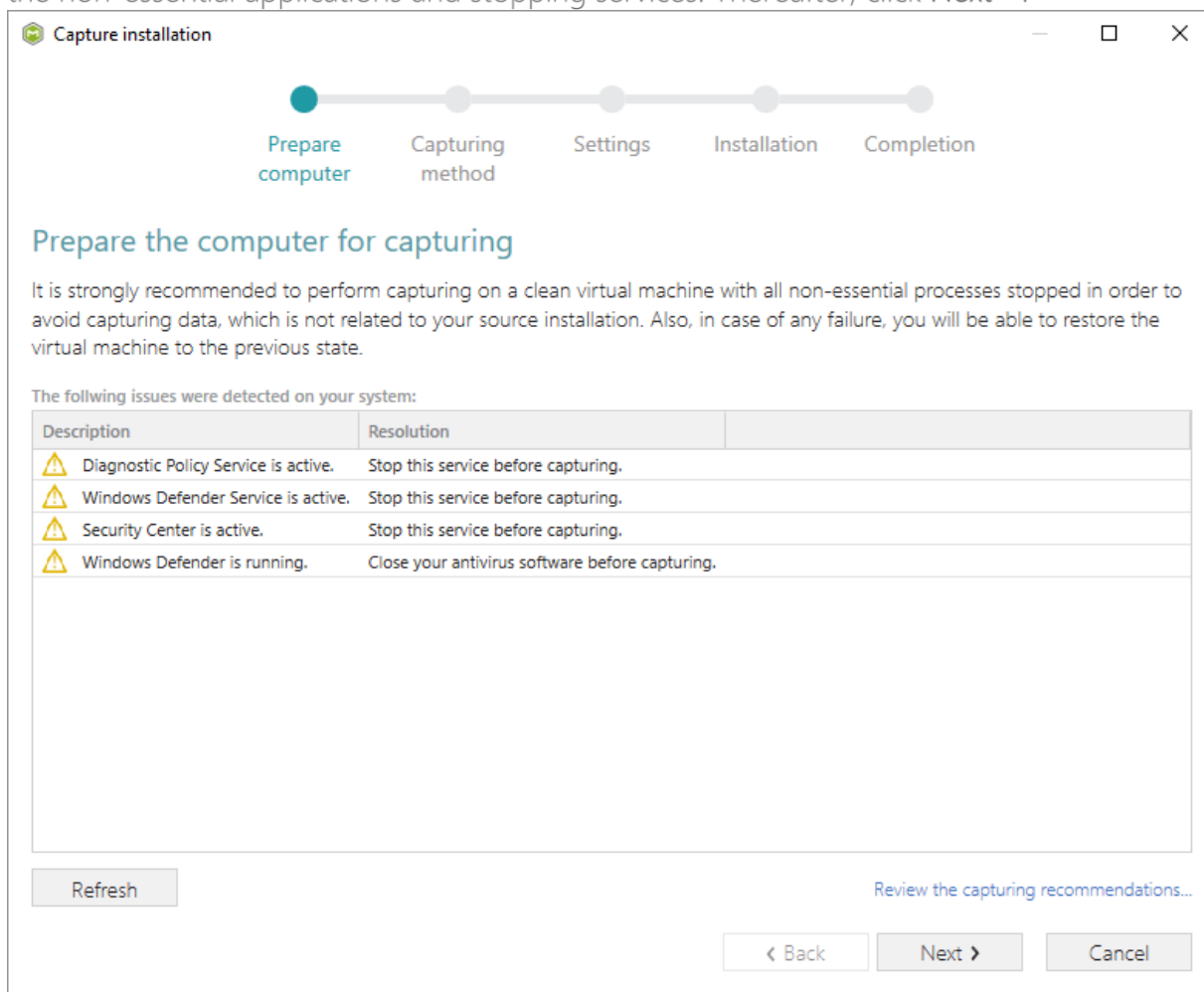
- If you have User Account Control enabled, click Yes in the opened window.



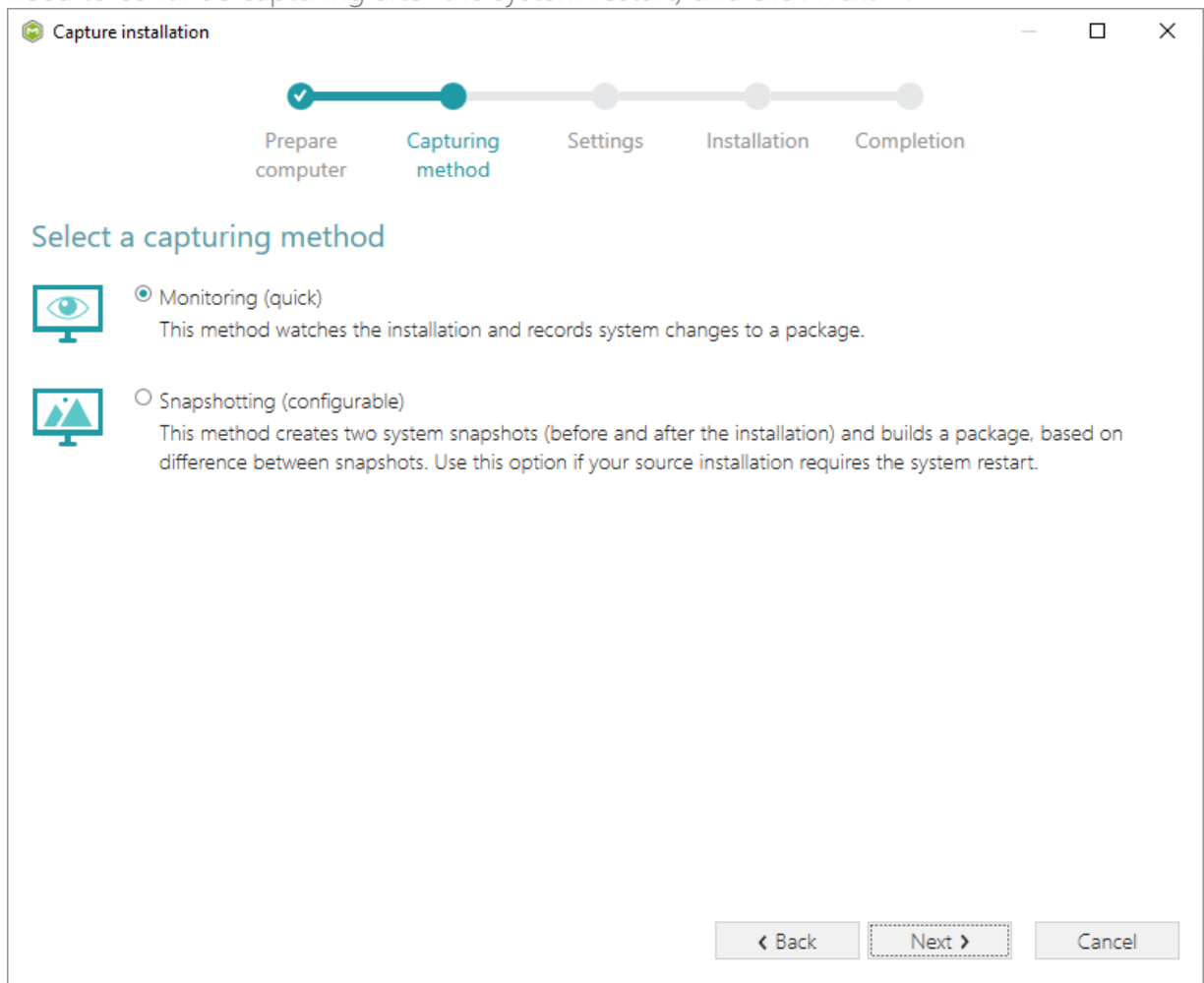
- Click Capture installation.



- Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click Next >.



- Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- Review and update package name. If needed, disable unnecessary exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

Scanning areas

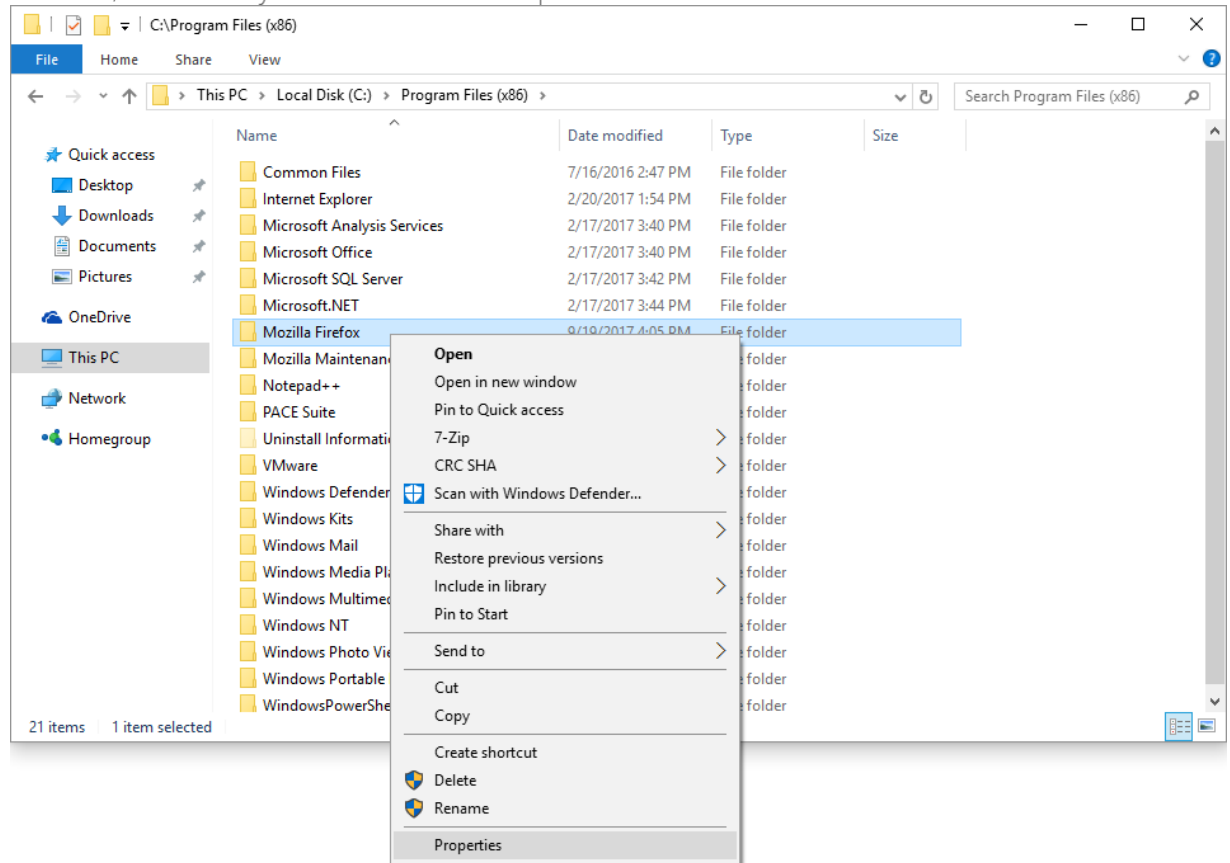
Application objects:

- ☒ Permissions
- ☒ Services
- ☒ Printers

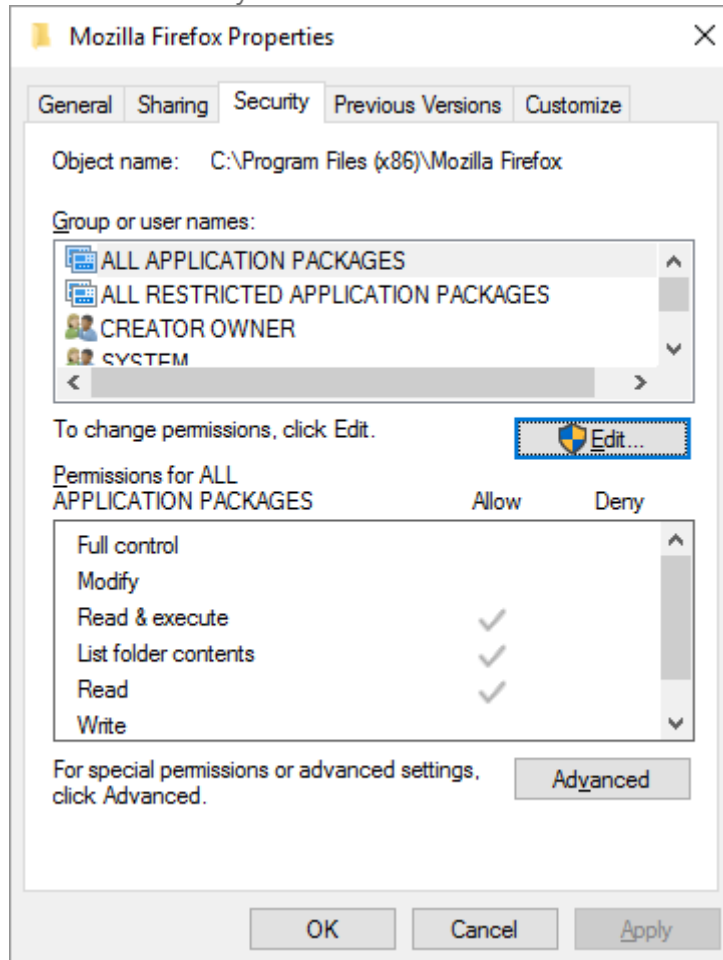
< Back **Next >** Cancel

- Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.
- If you additionally need to change the default permission settings on a folder or a file and include them to the package, select **Properties** from the Windows Explorer context menu of

a folder, on which you want to set new permissions.

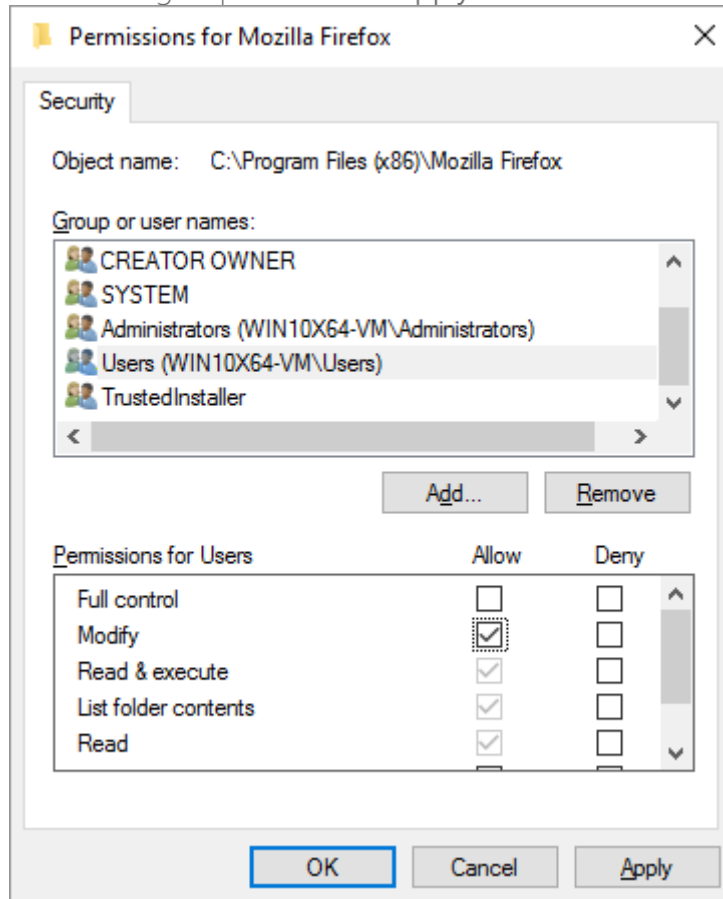


- Go to the Security tab and click Edit.

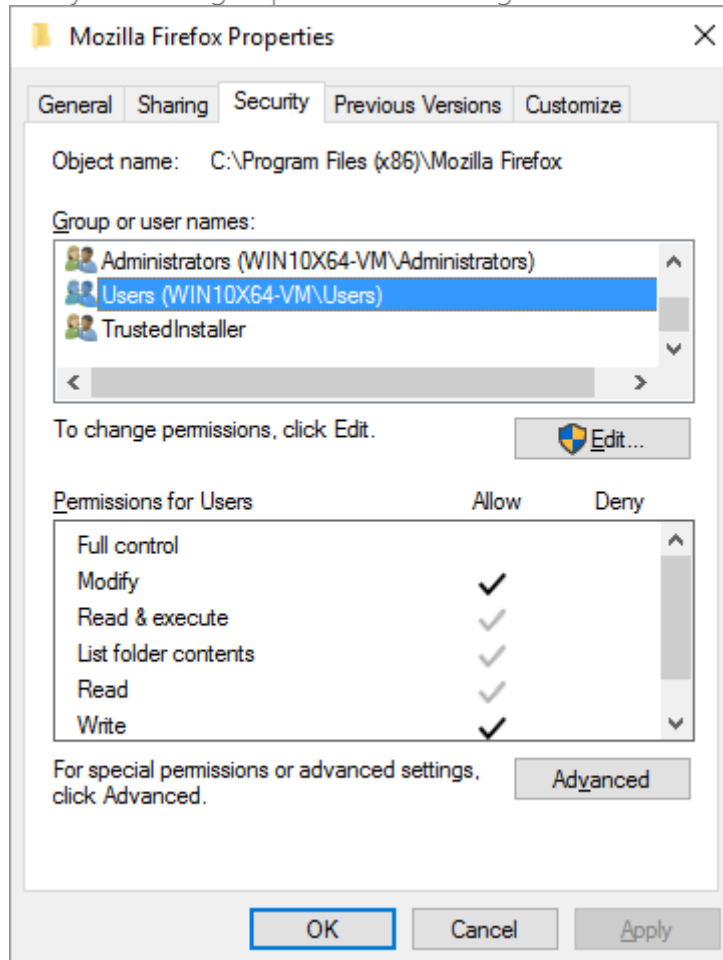


- Select a group or a user, for which you want to change the permissions and then select the necessary access rights. For example, lets set the 'Write' and the 'Modify' access rights for

the 'Users' group. Then click Apply and OK.



- Verify the changed permission settings and click OK to close the window.



- Finally, to complete the capturing, select I have finished the installation and click Next >.

Capture installation

✓

✓

✓

●

●

Prepare computer

Capturing method

Settings

Installation

Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name

Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

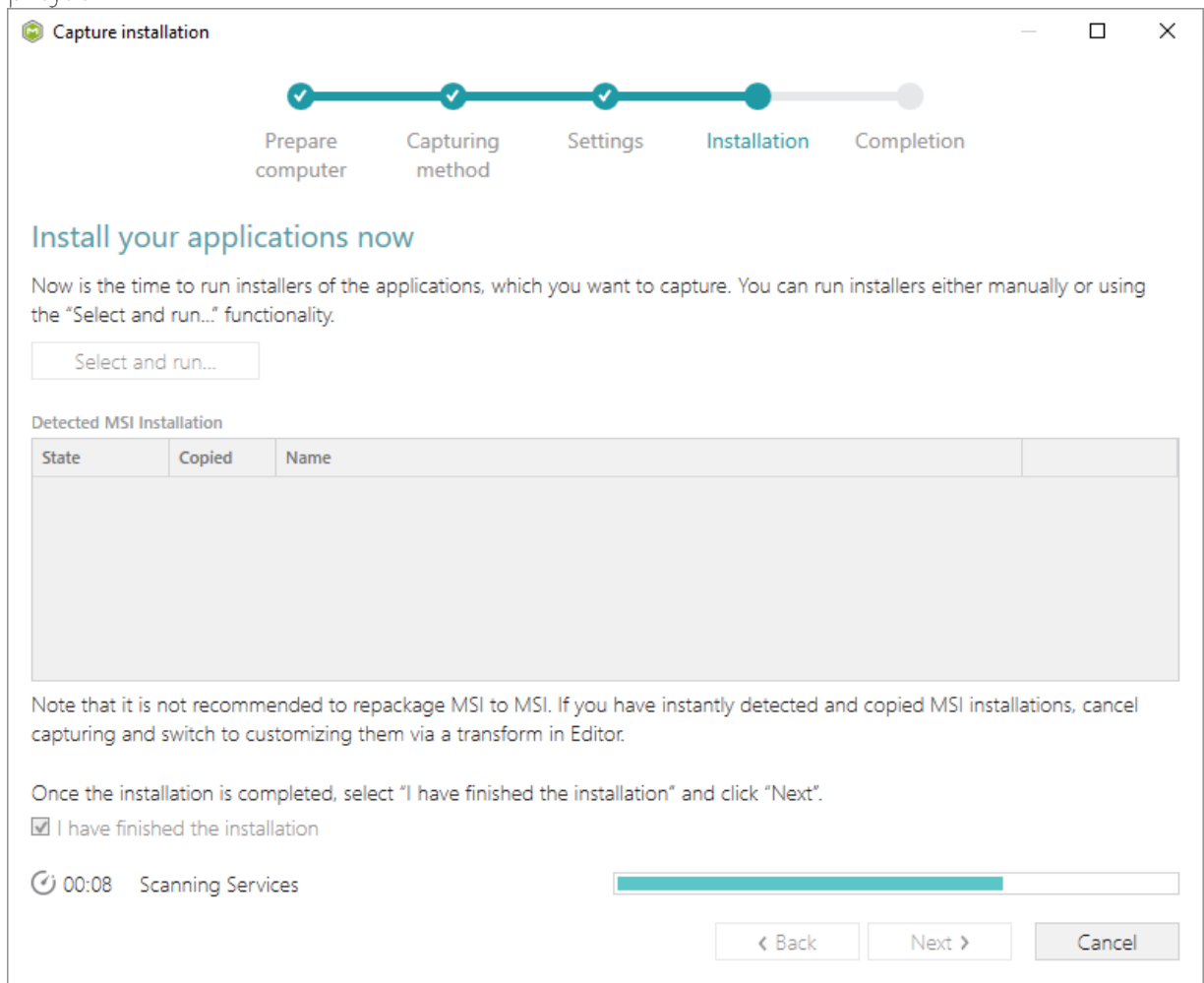
☒ I have finished the installation

< Back

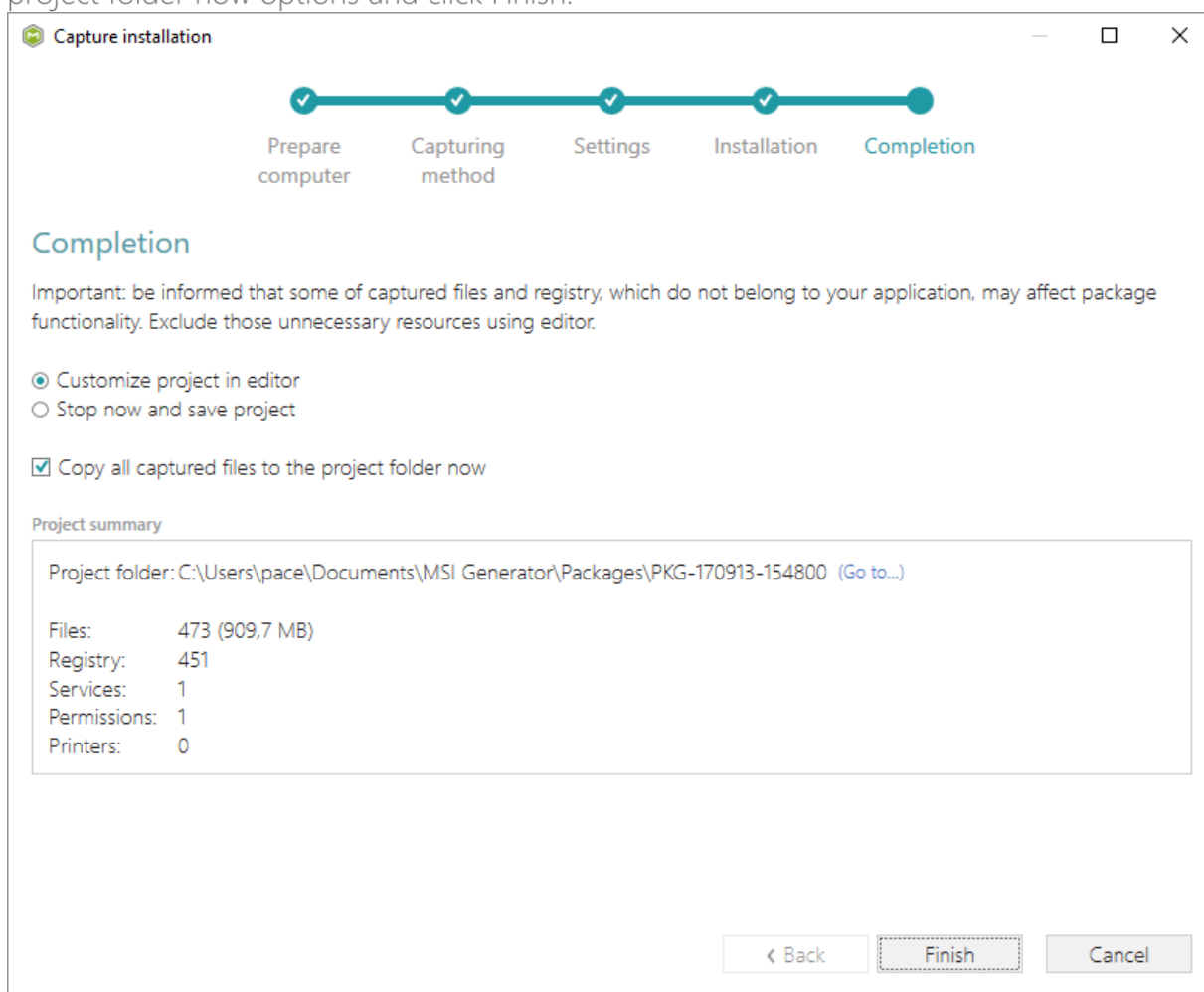
Next >

Cancel

- Wait a little, while the capturing process is finishing, filtering captured data and creating the project.

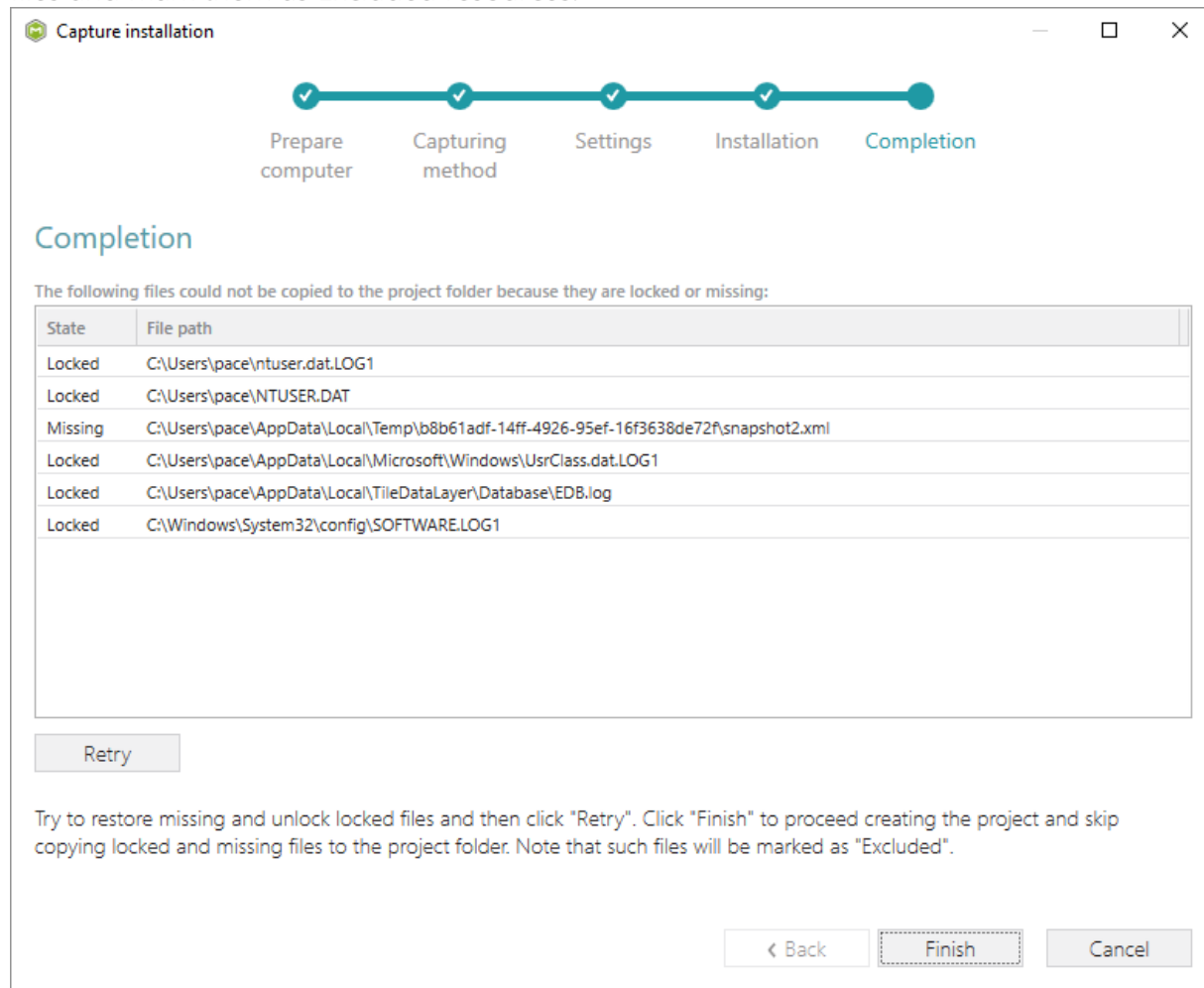


- Leave selected both the Customize project in editor and Copy all captured files to the project folder now options and click Finish.



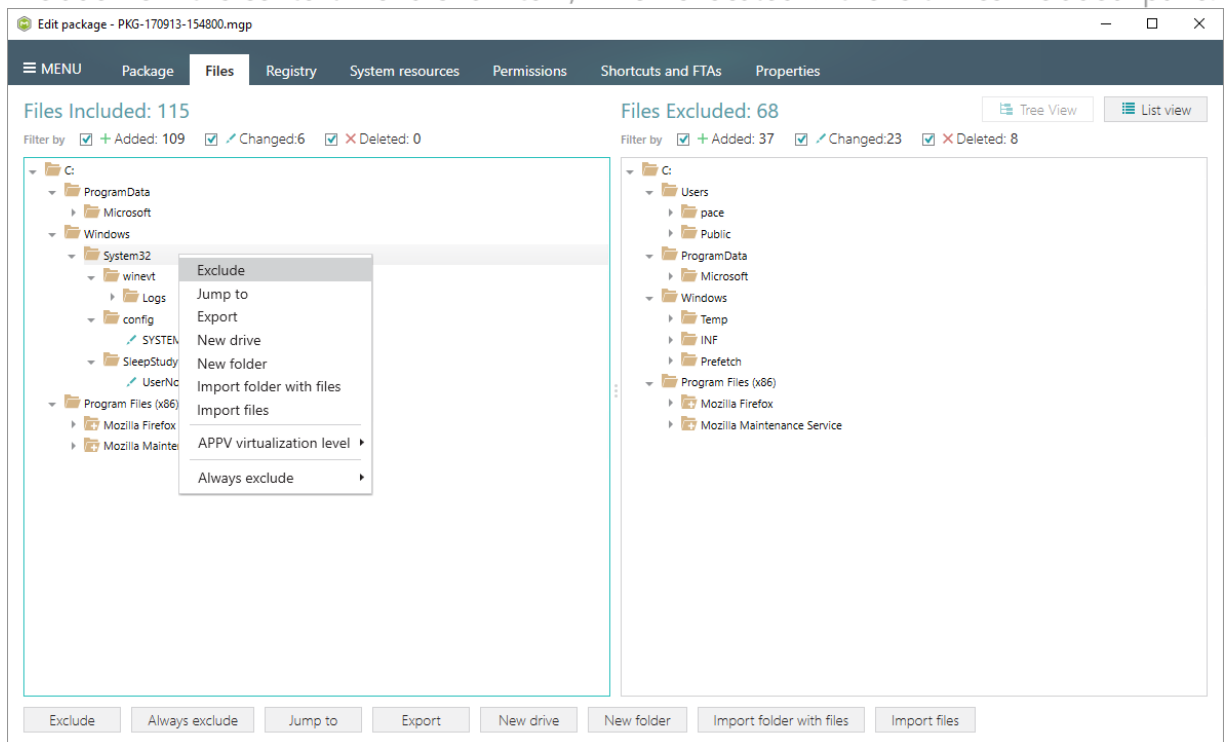
- The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing and locked

files and mark them as Excluded resources.

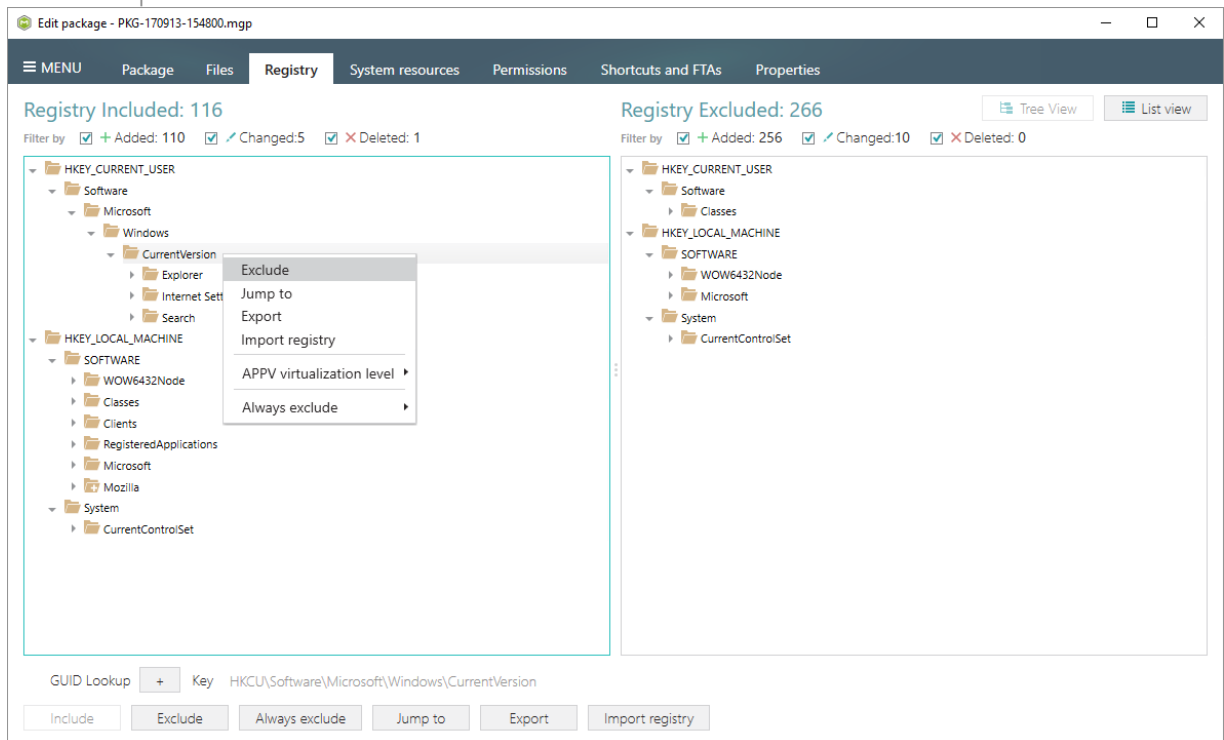


- Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).

- In order to review and exclude unnecessary files or folders, go to the **Files** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included' pane.

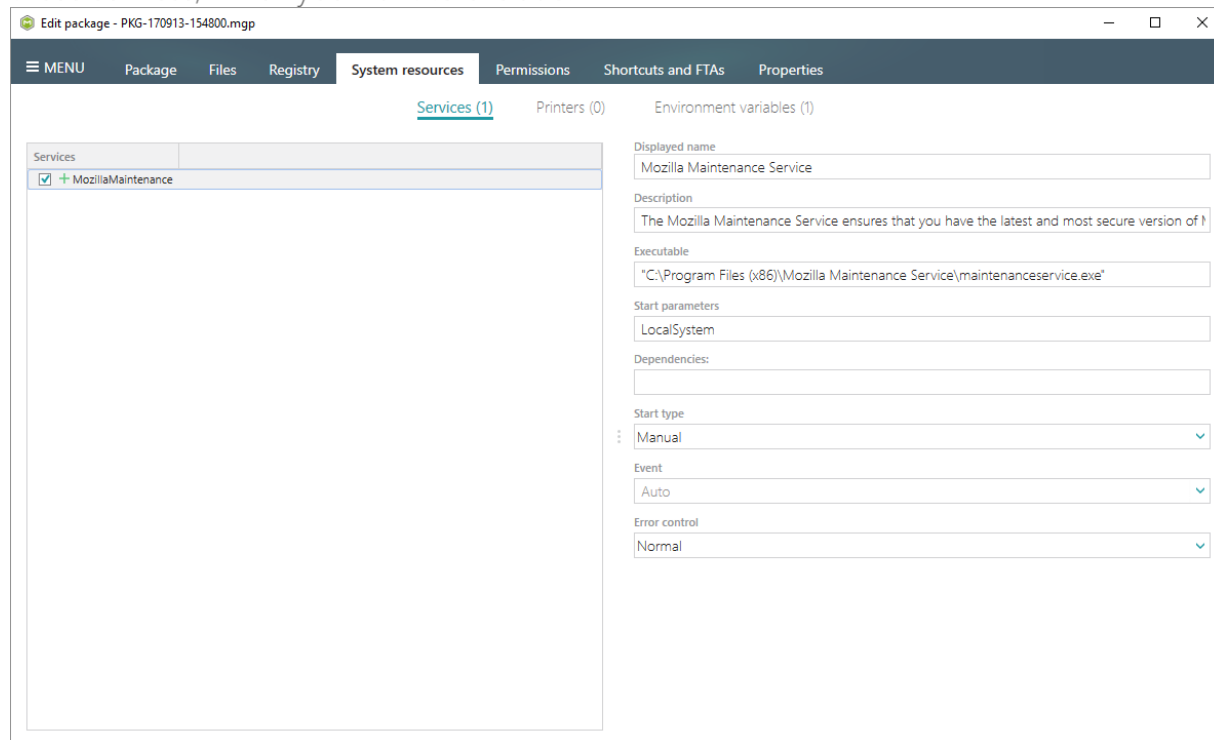


- In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

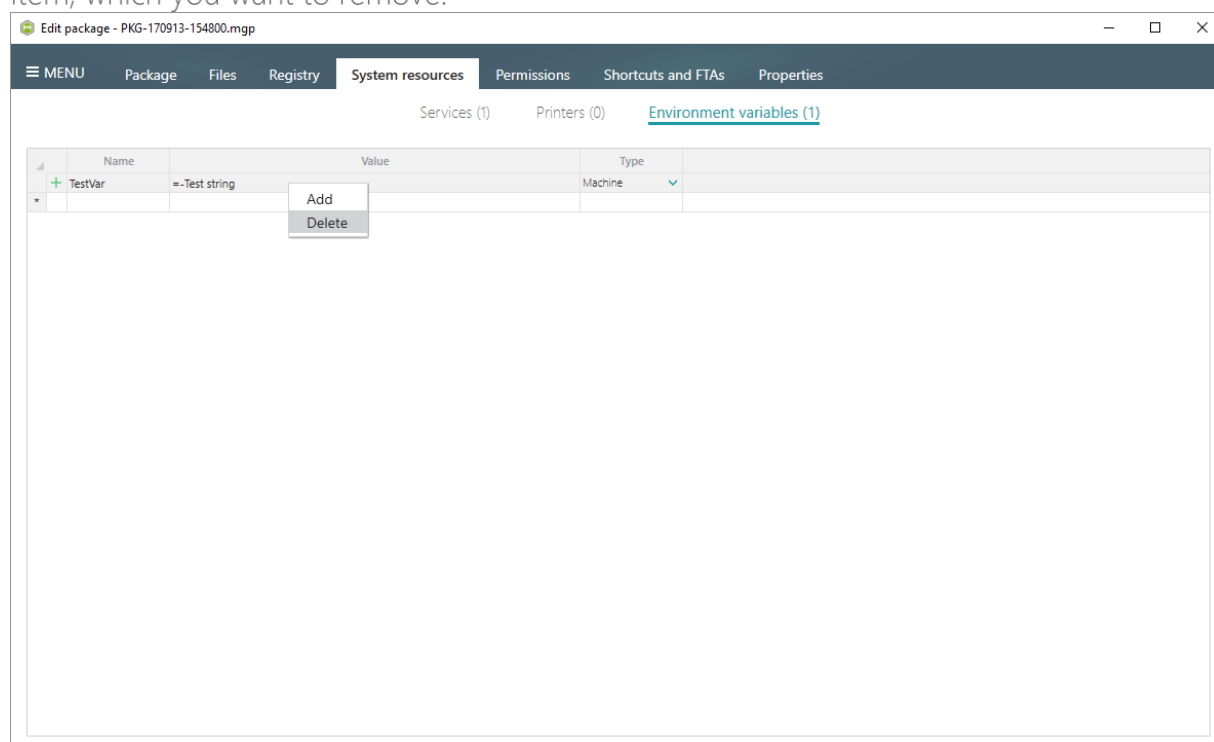


- In order to review and exclude unnecessary services, go to the **System resources** -> **Services** tab, and uncheck the checkbox, located before the service name in the list, for

those services, which you want to exclude.

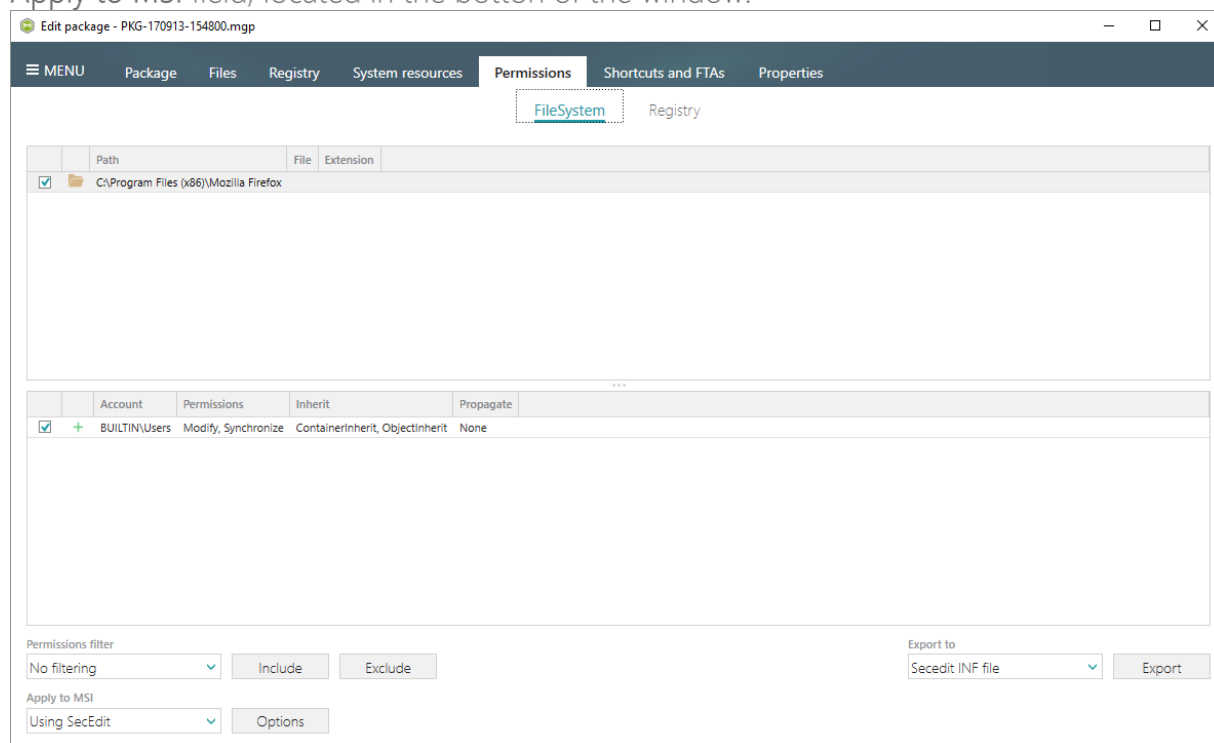


- In order to review and remove unnecessary Environment variables, go to the System resources -> Environment variables tab, and select Delete from the context menu of an item, which you want to remove.

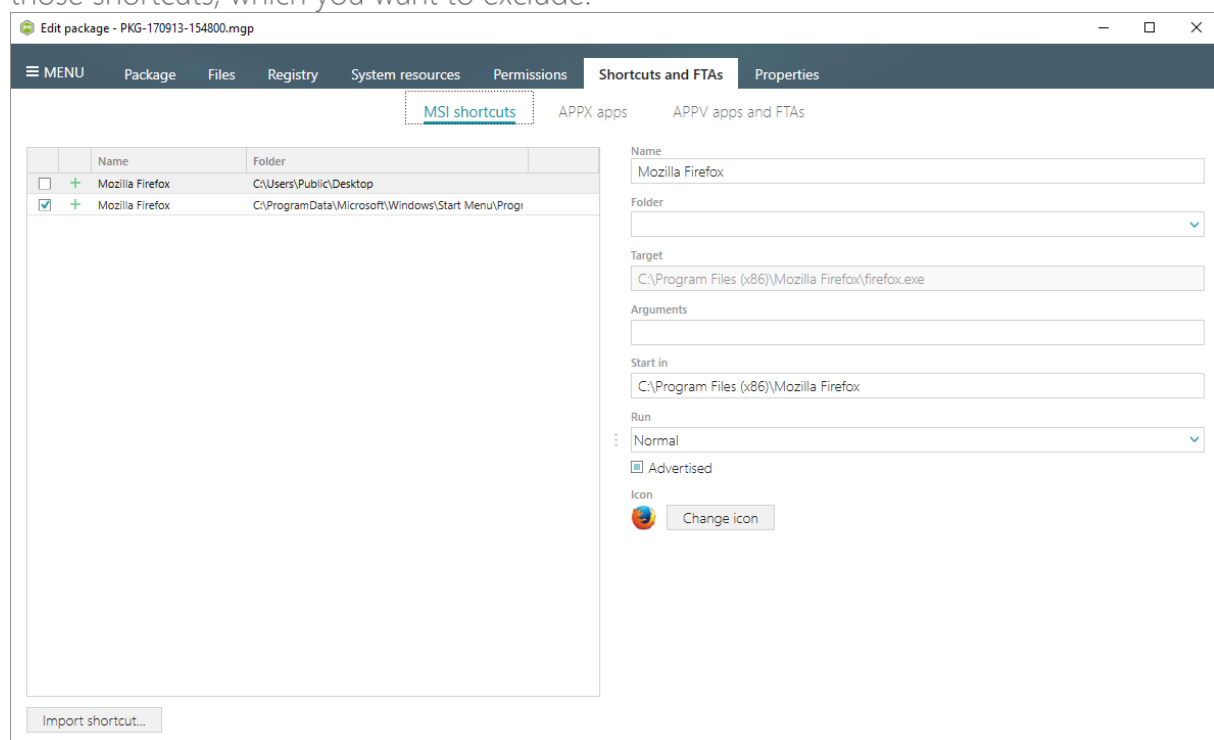


- On the Permissions tab you will find captured permissions for the file system and registry. For excluding unnecessary permission changes, either uncheck the checkbox, located before the path, for which permission changes were detected, or select Do not apply in the

Apply to MSI field, located in the bottom of the window.



- In order to review and exclude unnecessary shortcuts, go to the Shortcuts and FTAs -> MSI shortcuts tab, and uncheck the checkbox, located before the shortcut name in the list, for those shortcuts, which you want to exclude.



- Finally, to build an MSI package from the project, navigate to the Package -> MSI tab, update Application details such as name, publisher, version, language, select INSTALLDIR

and click Build MSI.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX APPV THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: [New GUID...]

Upgrade code: [New GUID...]

☒ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject: []

Author: [] Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Autodetect Languages: 0

MSI Package Options

MSI settings profile: default [Edit]

MSI file name: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

MSI CodePage: 0 Neutral

INSTALLDIR: C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations [Open log]

Type	Elapsed	Step
------	---------	------

Elapsed time: 00:00

[Open MSI] [Build MSI]

- Once the package is built, click Go to..., located next to the MSI file name field, to open the package containing folder in Windows Explorer.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX APPV THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher: Mozilla

Version: 55.0.3 Product language: 1033

Product code: [16315361-B140-4B5D-8C46-4ADE3389ADD2] [New GUID...]

Upgrade code: [9DE9322A-35BD-47E5-BFF6-EAE8476B686B] [New GUID...]

☒ Generate new codes when build MSI

Summary Information

Title: Installation Database Subject: []

Author: [] Keywords: Install.MSI

Comments: This installer database contains the logic and data required to install <product name>.

Platform: Autodetect Languages: 0

MSI Package Options

MSI settings profile: default [Edit]

MSI file name: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

MSI CodePage: 0 Neutral

INSTALLDIR: C:\Program Files (x86)\Mozilla Firefox

Build log Detected MSI installations [Open log]

Type	Elapsed	Step
[Success]	00:00:43	Operation was completed successfully
[Success]	00:00:43	Writing data to the _Validation table
[Success]	00:00:43	Writing data to the CreateFolder table
[Success]	00:00:43	Writing data to the AdvtExecuteSequence table
[Success]	00:00:43	Writing data to the InstallExecuteSequence table
[Success]	00:00:43	Writing data to the CustomAction table
[Success]	00:00:43	Writing data to the MsiAssemblyName table
[Success]	00:00:42	Writing data to the MsiAssembly table
[Success]	00:00:37	Importing cabinet (CAB) file into the MSI - "PKG1.1.cab"
[Success]	00:00:37	Writing data to the Media table
[Success]	00:00:37	Creating CAB file(s) completed

Elapsed time: 00:00:43

[Open MSI] [Build MSI]

3.2 Create MST

Choose a scenario that better suits your needs:

- **Create Blank MST**, described in section 3.2.1
Create a new empty transform file (MST) for your MSI package in MSI Editor. All changes, made to the opened MSI database, will be saved to the MST.
- **Create Response MST**, described in section 3.2.2
Capture all your inputs and changes, made to the Windows Installer UI dialogs of the MSI installation, and save them to the MST file using MSI Generator. The MSI installation will be simulated, which allows capturing all necessary changes very promptly and without affecting your real system.
- **Capture System Changes to MST**, described in section 3.2.3
Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MST file, generated against the selected MSI package using MSI Generator. Along with files and registry, services and environment variables you, can capture file system and registry permission changes.

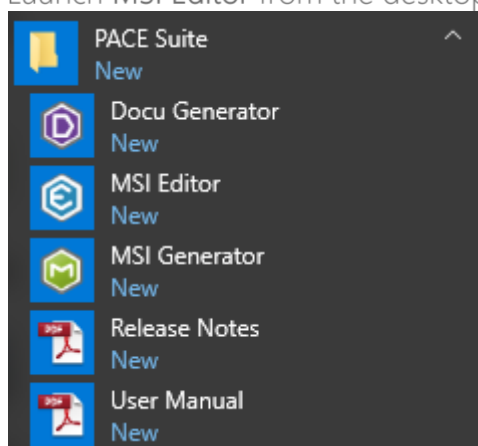
3.2.1 Create Blank MST

Create a new empty transform file (MST) for your MSI package in MSI Editor. All changes, made to the opened MSI database, will be saved to the MST.

NOTE PACE Suite supports two scenarios of saving changes to MST:

1. Open MSI -> **create MST** -> change MSI resources -> save (described below)
2. Open MSI -> change MSI resources -> **save changes as MST**

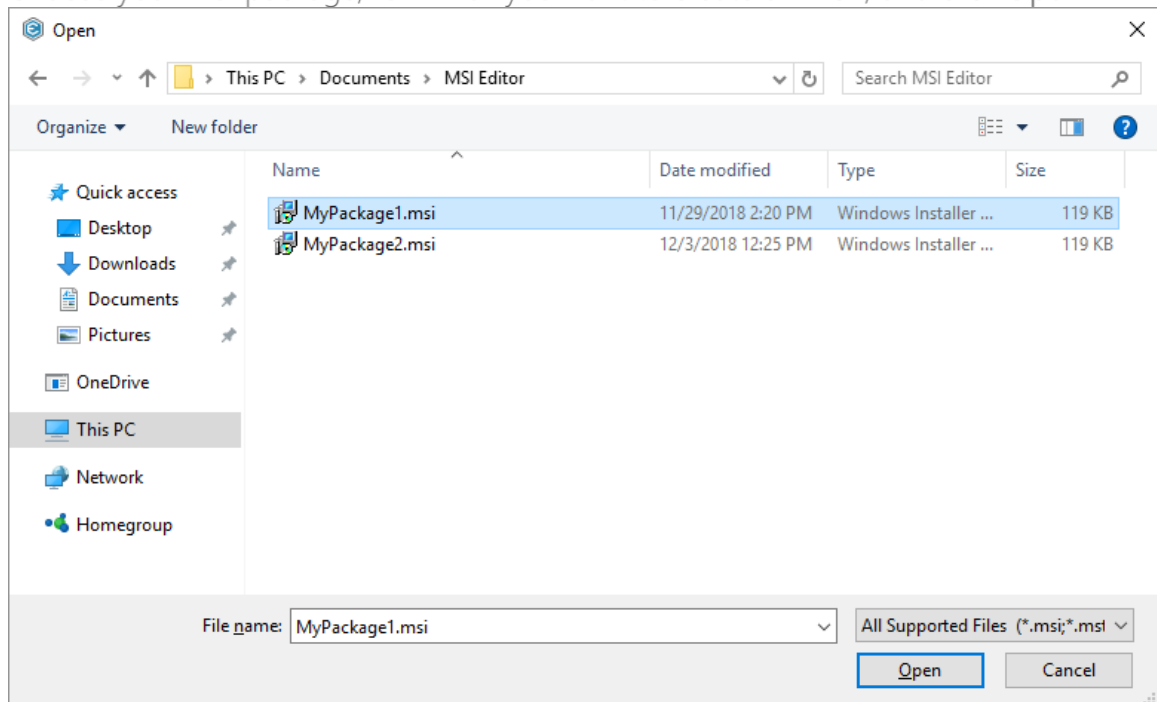
[1]. Launch MSI Editor from the desktop or the start menu shortcut.



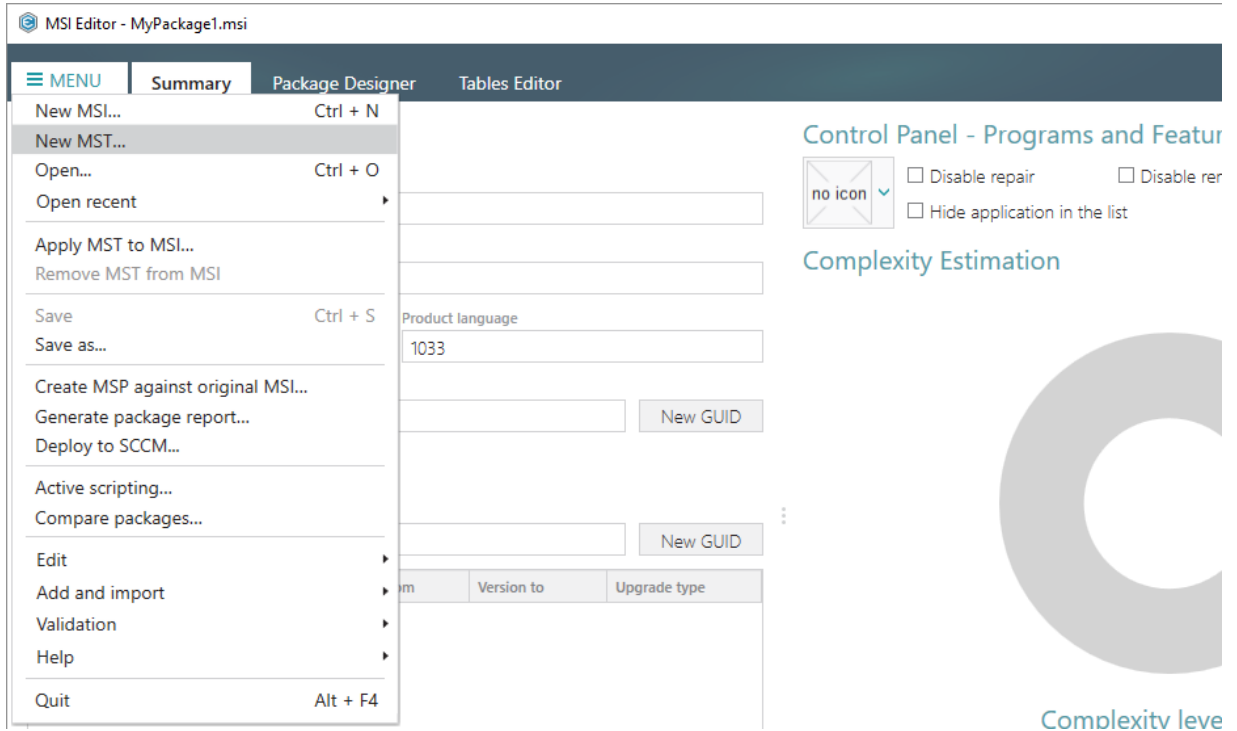
[2]. Select Open... from MENU.



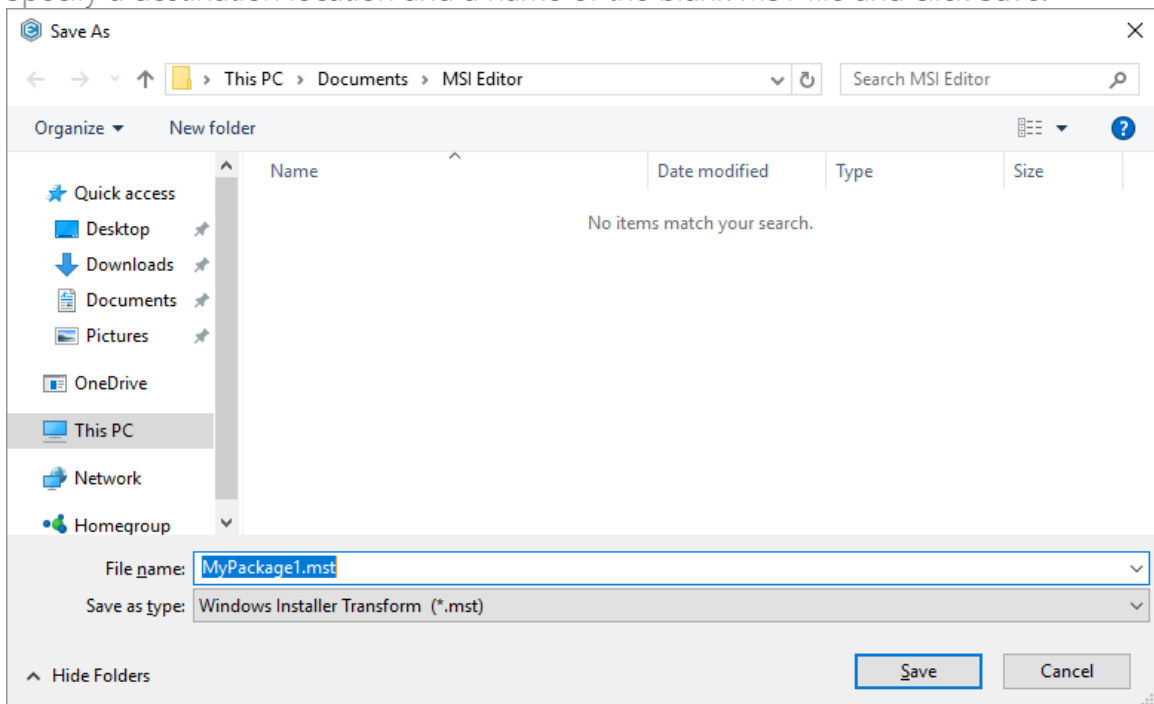
[3]. Choose your MSI package, for which you want to create an MST, and click Open.



- [4]. Select New MST... from MENU.

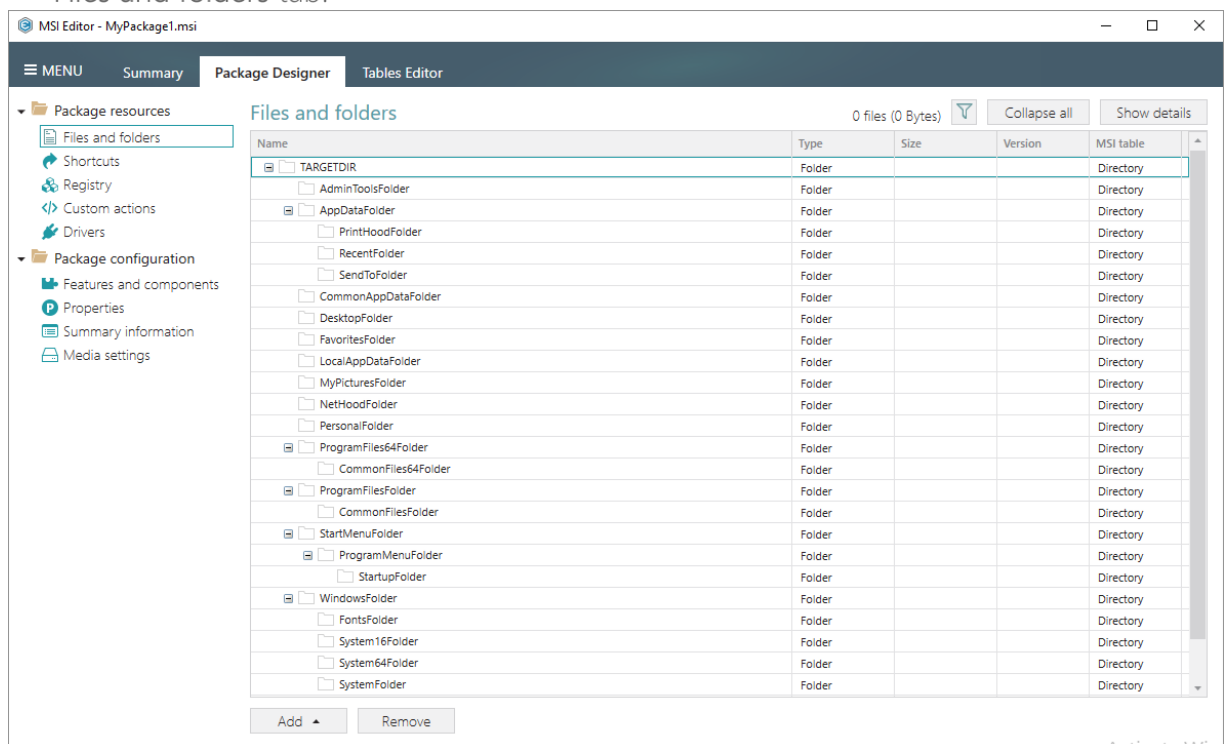


- [5]. Specify a destination location and a name of the blank MST file and click Save.

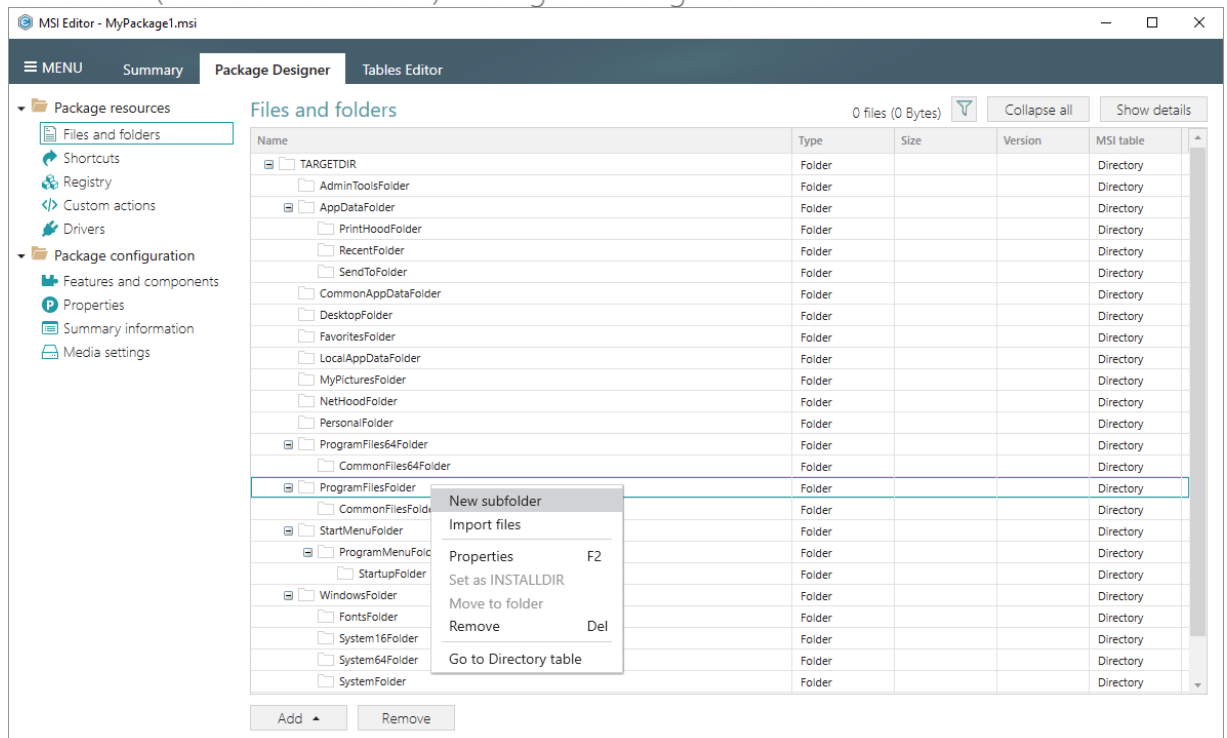


- [6]. Now you can add and edit resources of the opened MSI package via the MST. The steps from [7] to [16] describe how to create a new folder and import files to this folder; the steps from [17] to [25] describe how to create a new registry key, value, and import registry entries from the REG files; the steps from [26] to [34] describe how to create a new shortcut and import existing shortcuts from the file system to the package; and the last step [35] describes how to save all these changes to MST.

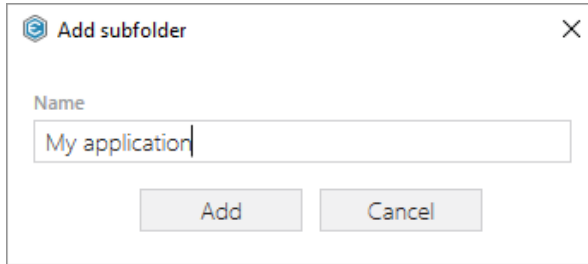
- [7]. In order to create a new folder and import files to this folder, go to the Package Designer –> Files and folders tab.



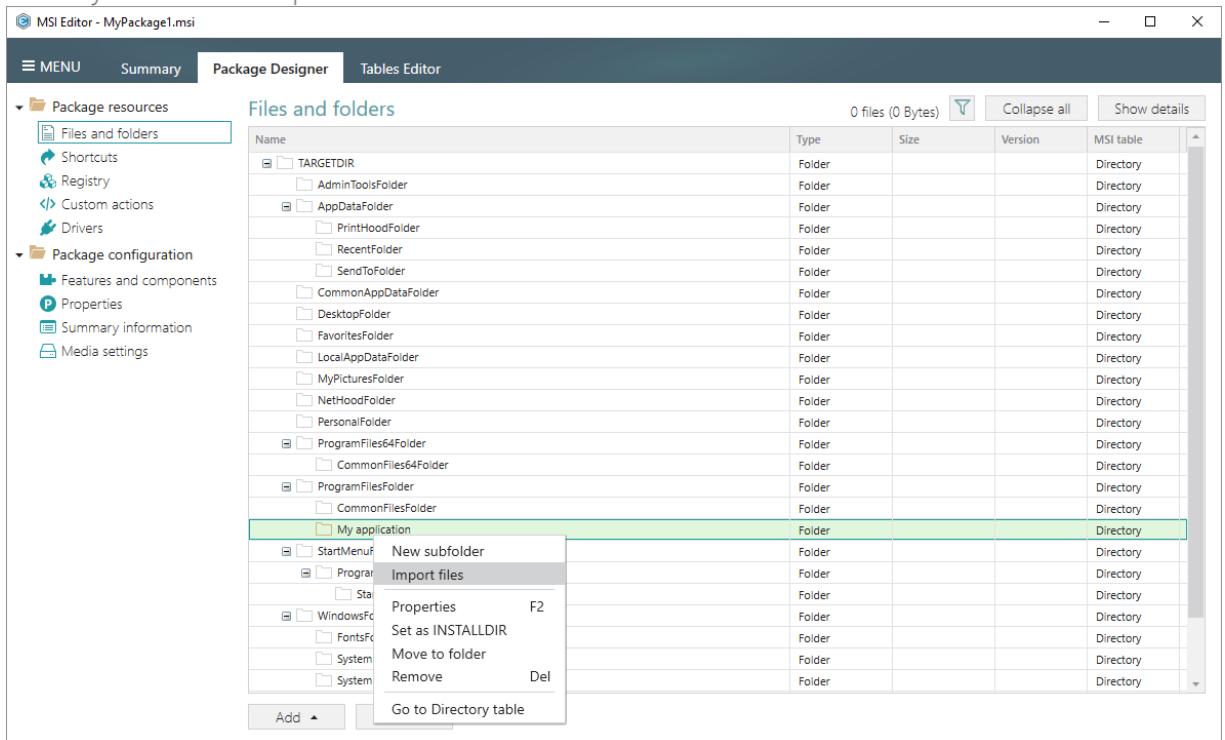
- [8]. Select New subfolder from the context menu of a folder, where you want to create a new subfolder. Note that system folders are displayed using the grey folder icon and the subfolders (user-defined folders) – using the orange folder icon.



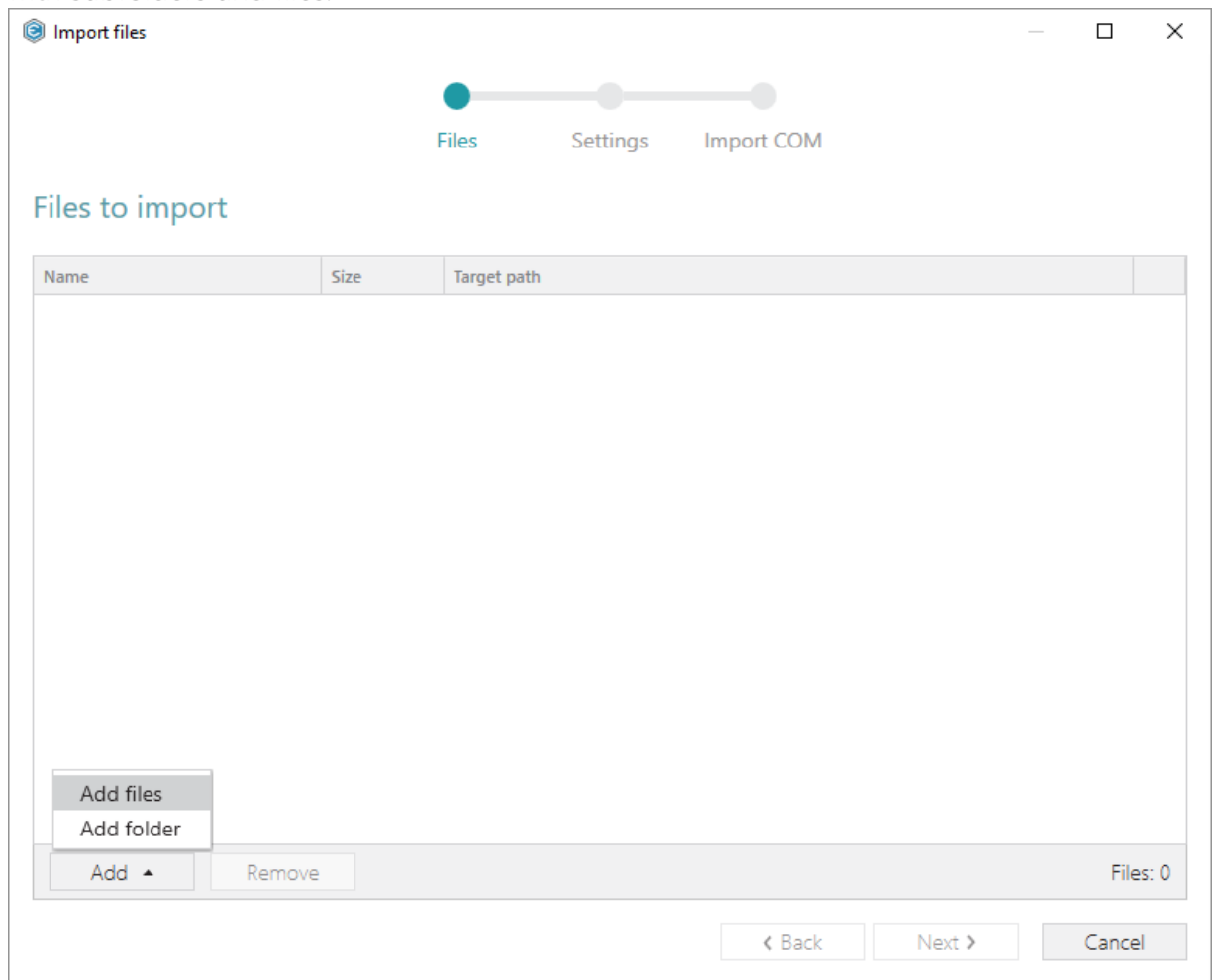
- [9]. Enter a folder name and click Add.



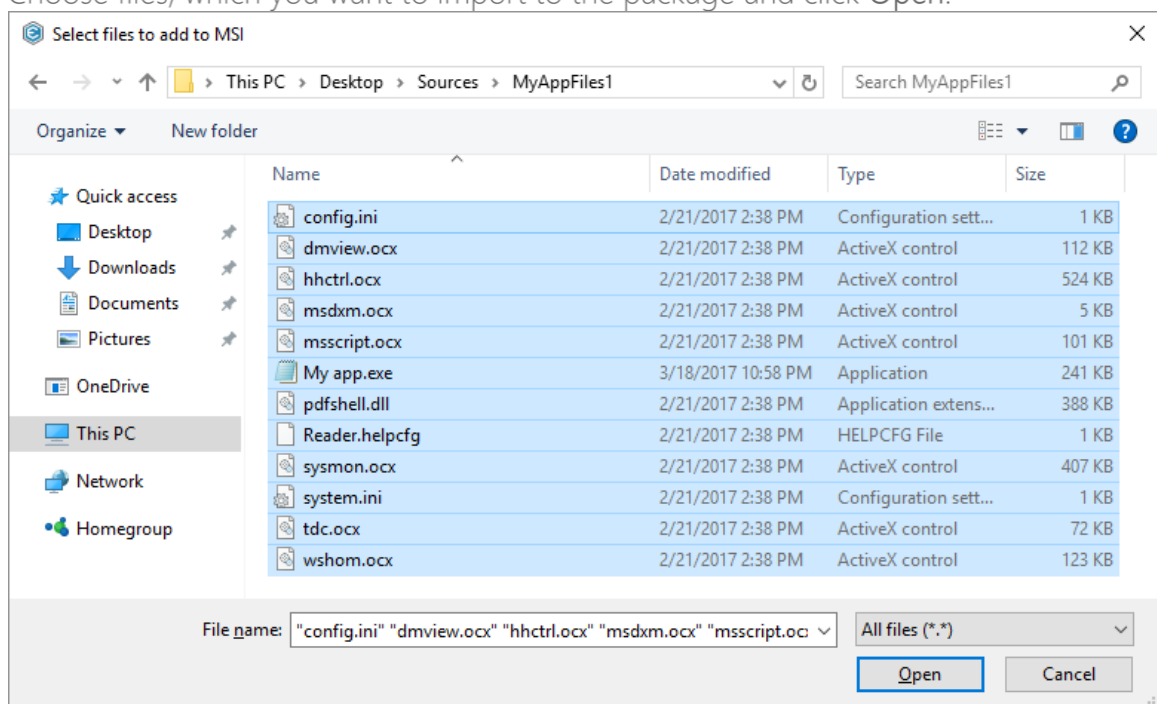
- [10]. For adding files to your package, select **Import files** from the context menu of a folder, to which you want to import files.



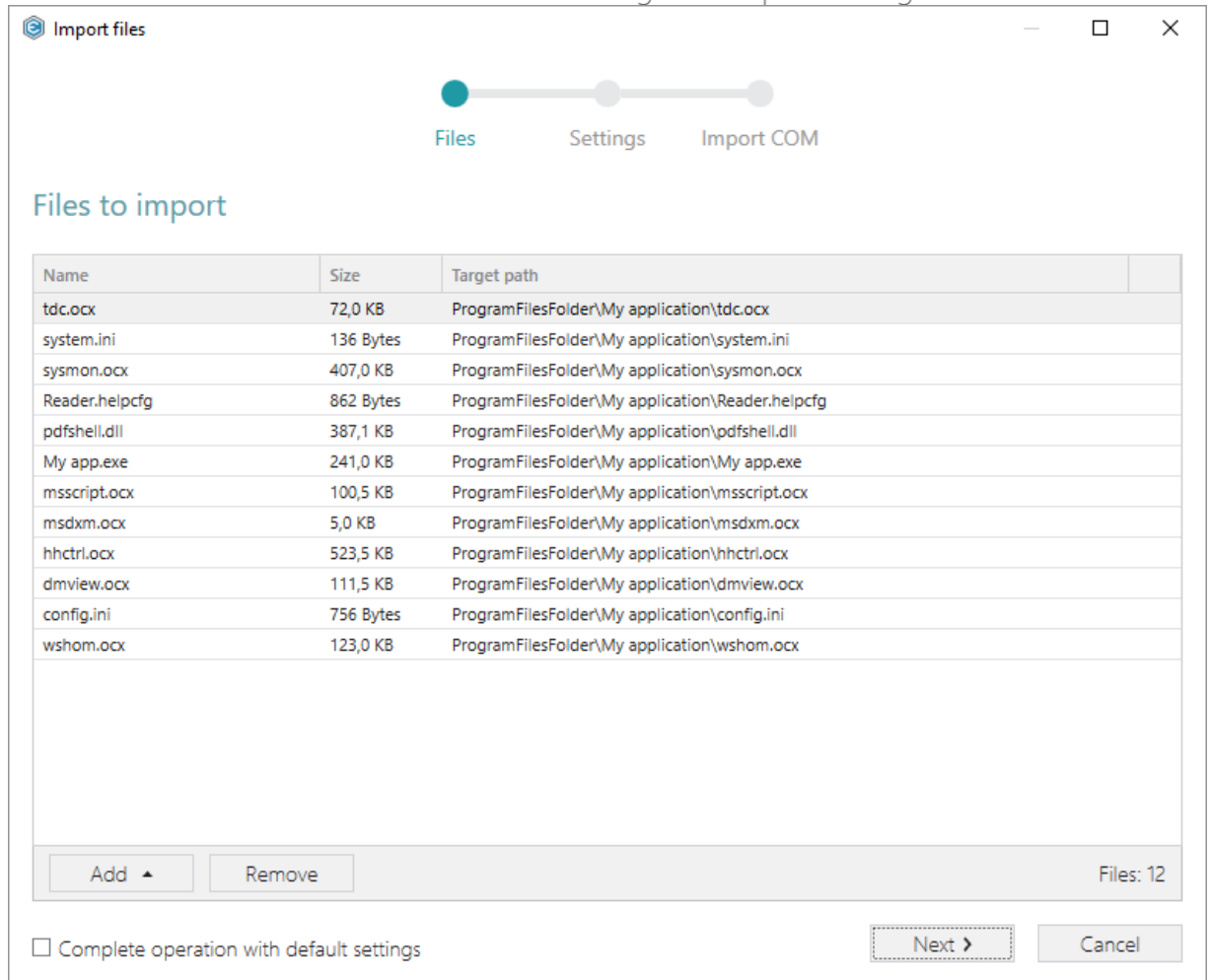
- [11]. Click Add -> Add files to choose files in a folder or Add -> Add folder to choose a folder with subfolders and files.



- [12]. Choose files, which you want to import to the package and click Open.



[13]. Review the selected files and click **Next** to manage the import settings.



[14]. At this step, you can manage how to save INI files, select an MSI Feature, to which components with files will be assigned. Below, in the tables, you will find the detailed description of these settings. Note that files compression types and other Media settings are represented on the separate **Media settings** tab of the **Package Designer**. Choose the desired settings and click **Next** to continue.

Import files

Files

Settings

Import COM

Settings

INI handling

☒ Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

☐ Save all INI files to the 'File' table

☐ Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

[See invalid INI files](#)

Target feature

<PACE feature>

New feature

☒ Manage features automatically

☐ Complete now with default settings

< Back

Next >

Cancel

INI handling

Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data, will be saved to the 'File' table as binary files.

Save all INI files to the 'File' table

All INI files will be saved only to the 'File' table as binary files.

Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

A valid content of all INI files will be saved to the 'IniFile' table, and then all INI files will be saved to the 'File' table as binary files.
This allows installing INI files to the target system keeping their original structure with unsupported data, and update the necessary INI file values.

Target feature

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported files. Feature structure is based on the packaging best practices and depends on the destination location of files.

<a feature, selected from the list>

Components with files will be assigned to a feature, selected from the list.

- [15]. On the last step you can review COM information, extracted from the selected files. For importing this COM information along with files, select the **Import COM information** option. Click **Finish** to complete the import.

Import files

✓

Files

✓

Settings

Import COM

Extracted COM information

File	Root	Key	Value name	Value
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A	ThreadingModel	Apartment
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		131473
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		{AEB84C80-95DC-11D0-B7FC-B6
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		1.0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A		DiskManagement.PropertyPage
dmview.ocx	HKCR	DiskManagement.Control\CLSID		{AEB84C83-95DC-11D0-B7FC-B6

☐ Import COM information

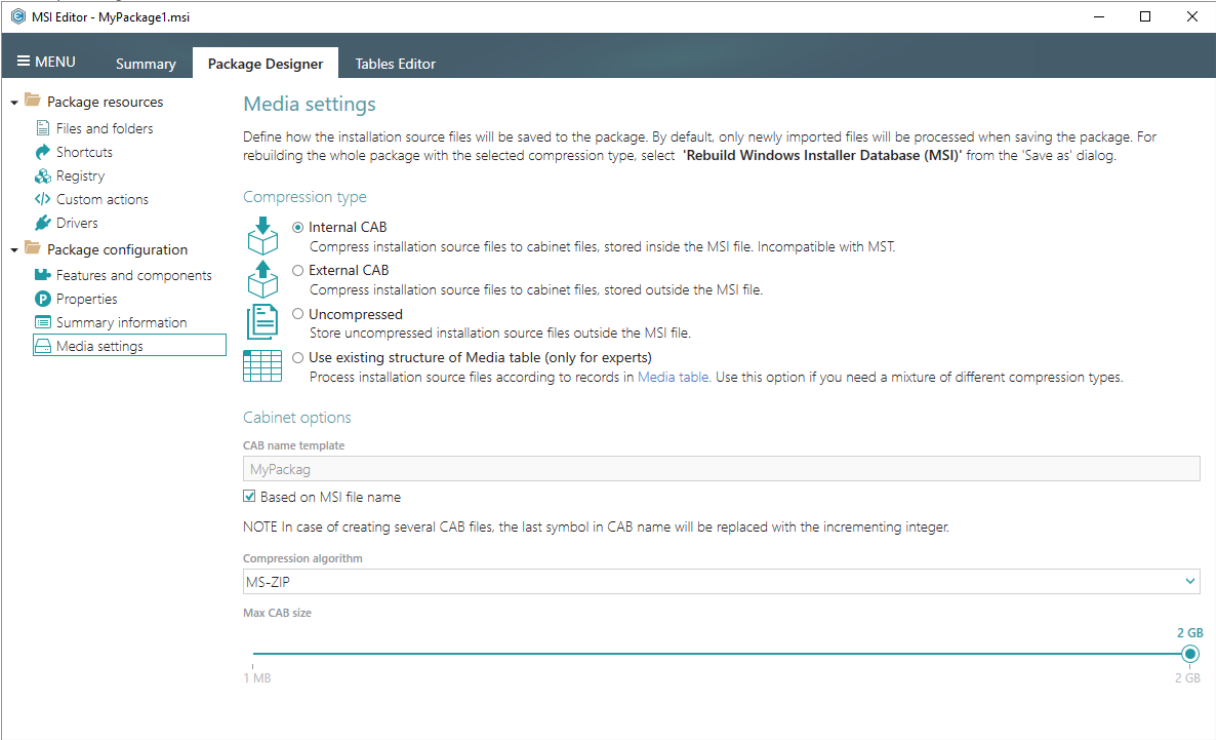
Back

Finish

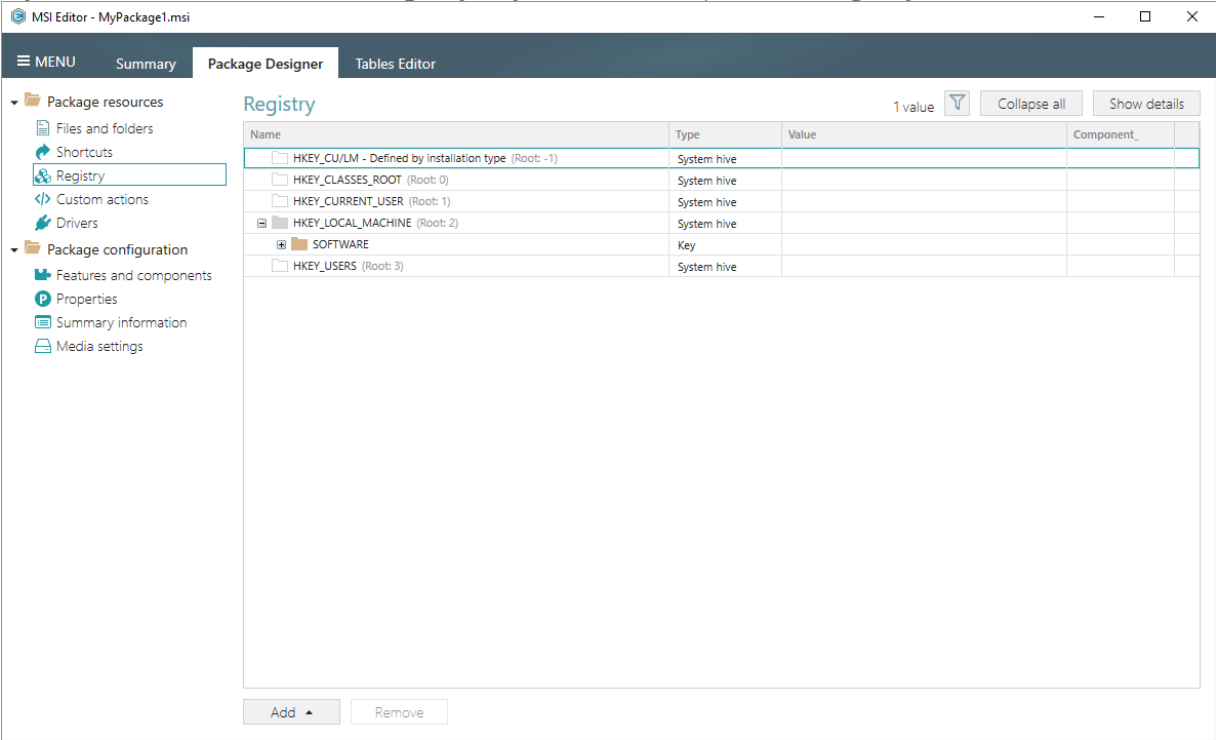
Cancel

- [16]. Go to the **Media settings** tab of the **Package Designer** and choose the necessary compression type for the imported files. For the compressed files you can manage cabinet options such as CAB name, compression algorithm and maximum CAB size. Cabinets will

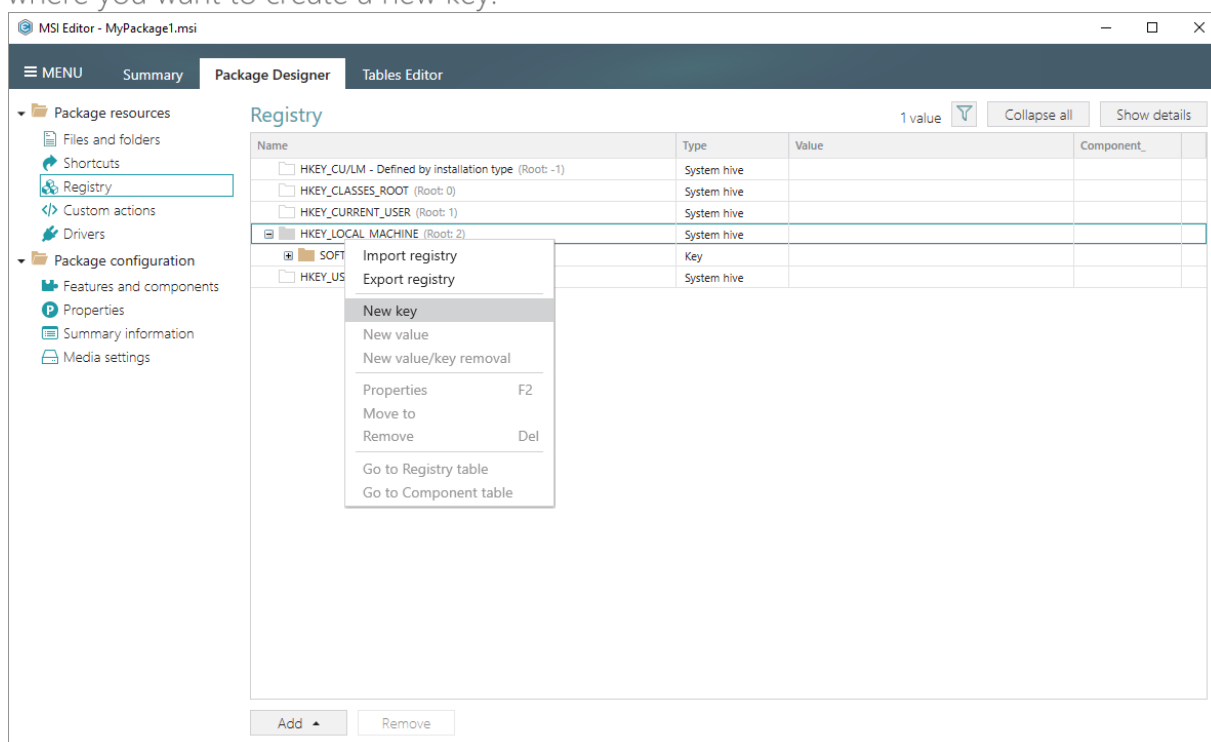
be spit by the selected maximum size.



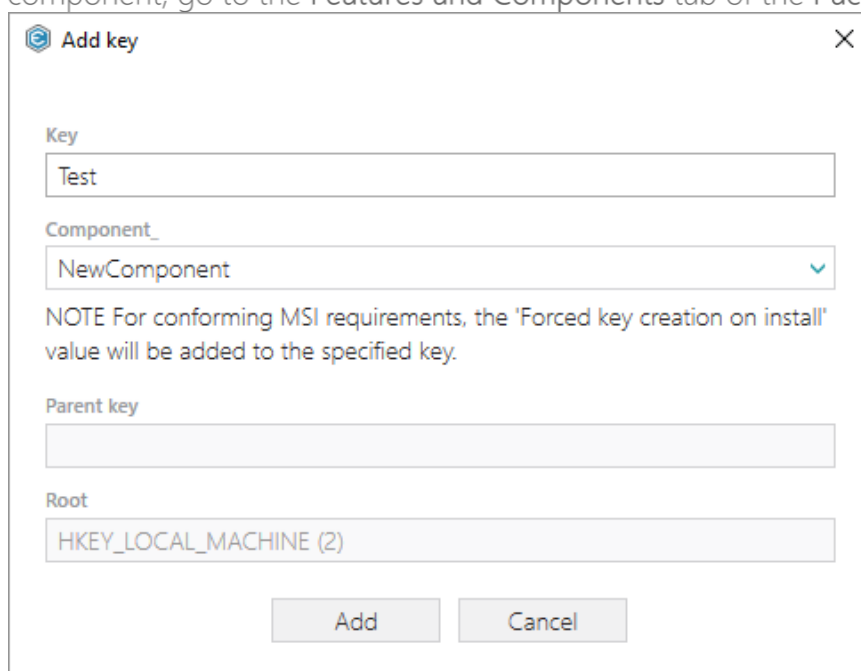
[17]. If you need to create a new registry key or a value, open the Registry tab.



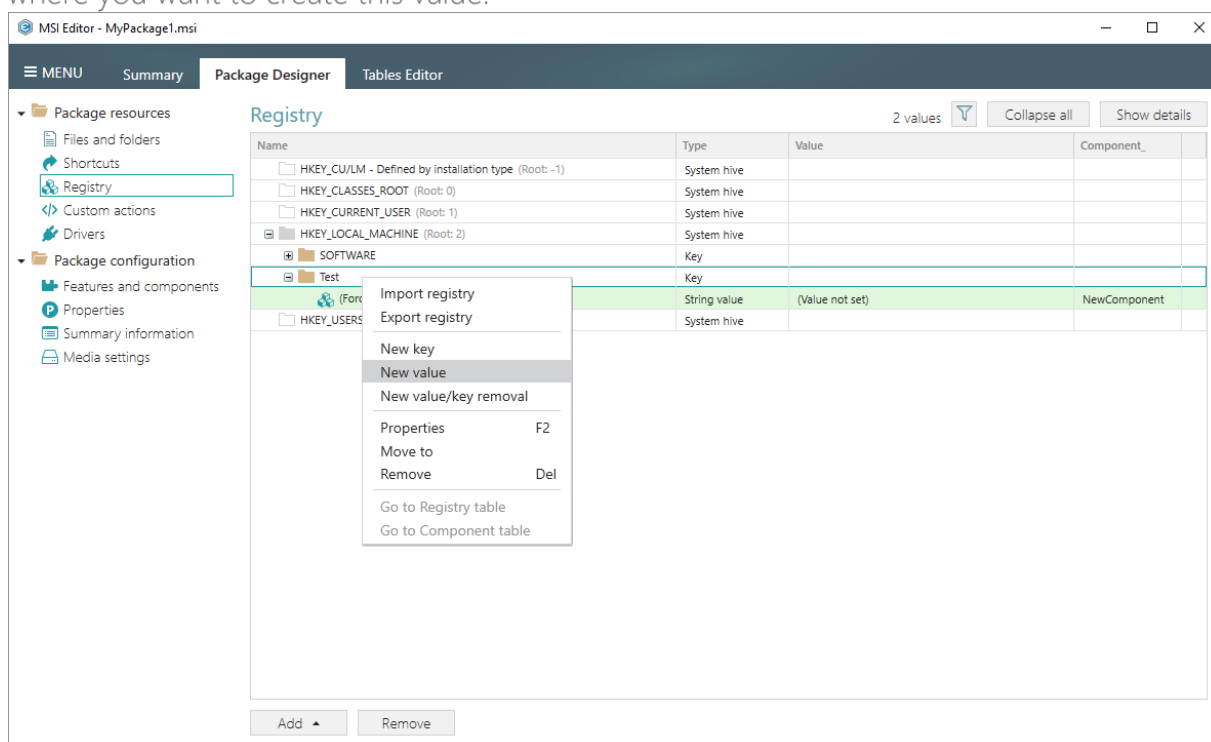
- [18]. Select **New key** from the context menu of a root hive (e.g. HKEY_LOCAL_MACHINE), where you want to create a new key.



- [19]. Enter a key name, select a component from the list, then click **Add**. For creating a new component, go to the **Features and Components** tab of the Package Designer.



- [20]. In order to create a new registry value, select **New value** from the context menu of a key, where you want to create this value.

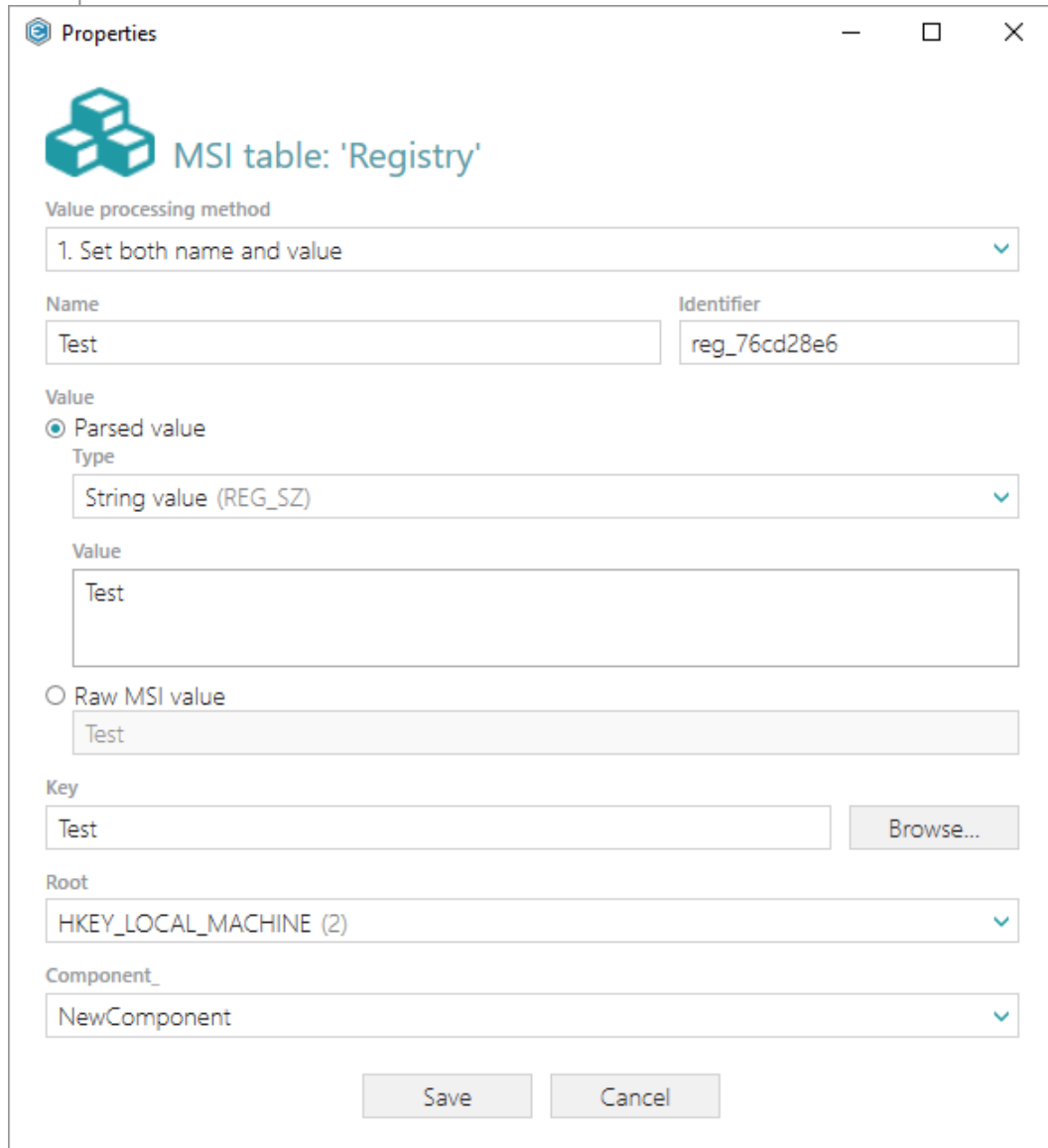


- [21]. For creating an ordinary registry value, specify a name and its value, choose a component from the list, to which this value will be assigned, and click **Save**.

For creating a Default key value, or securing a key creation and/or removal, select a respective option from the **Value processing method** field.

The **Parsed value** option serves easier creation of a registry value of the proper value type. However, the **Raw MSI value** option gives ability to manage what exactly will be saved to

the opened MSI database.

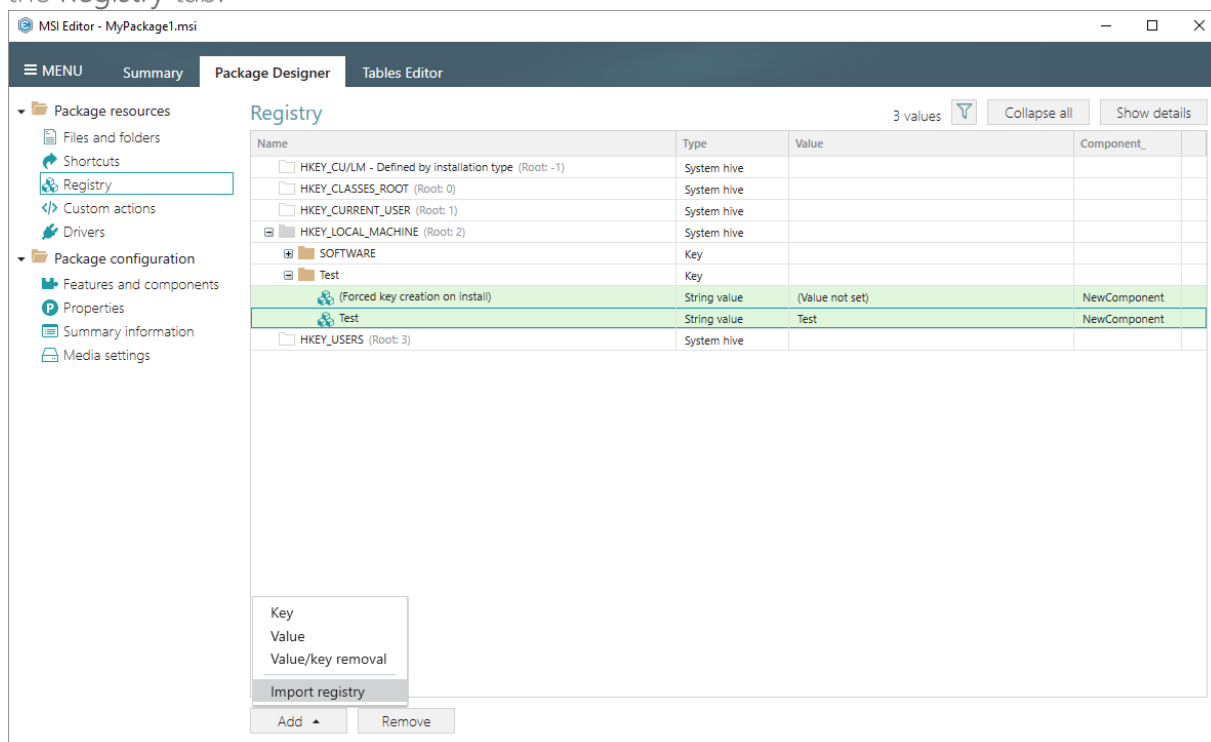


The screenshot shows a 'Properties' dialog box for an MSI table named 'Registry'. The dialog has a title bar with standard window controls. Below the title bar is a header section with a cube icon and the text 'MSI table: 'Registry''. The main area contains several fields and options:

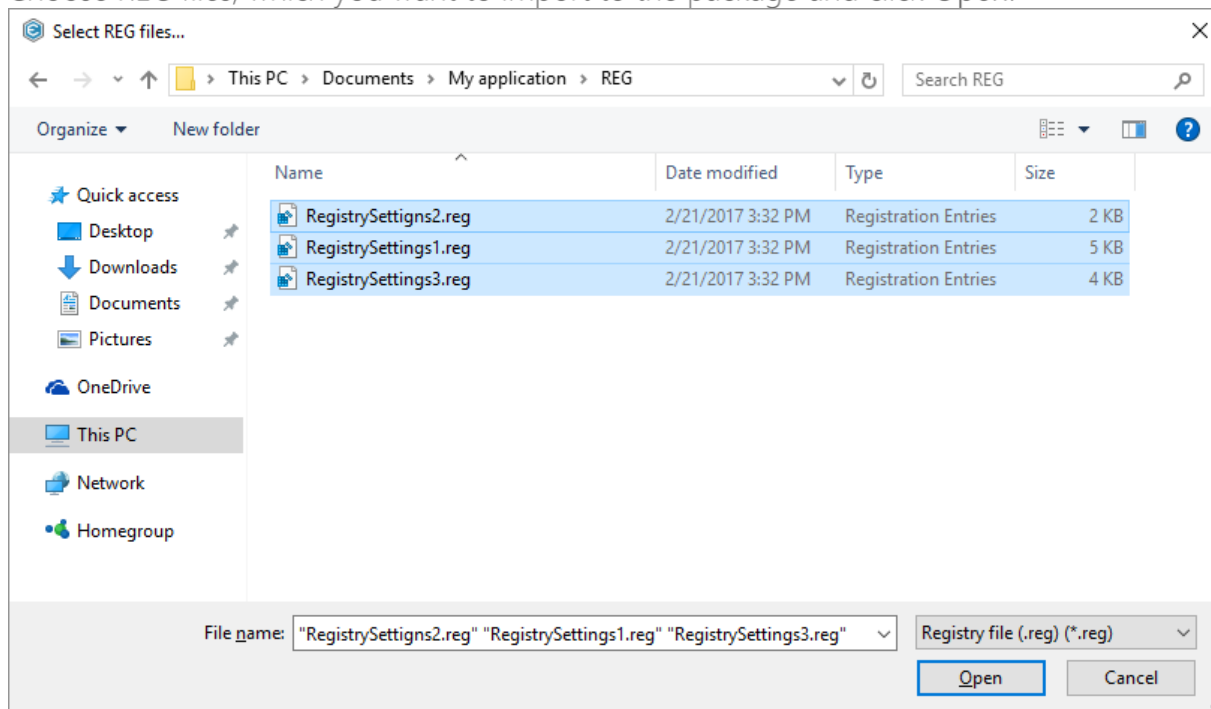
- Value processing method:** A dropdown menu set to '1. Set both name and value'.
- Name:** A text field containing 'Test'.
- Identifier:** A text field containing 'reg_76cd28e6'.
- Value:** A section with two options:
 - Parsed value:** Selected with a radio button. Below it is a 'Type' dropdown set to 'String value (REG_SZ)' and a 'Value' text field containing 'Test'.
 - Raw MSI value:** Unselected with a radio button. Below it is a text field containing 'Test'.
- Key:** A text field containing 'Test' and a 'Browse...' button.
- Root:** A dropdown menu set to 'HKEY_LOCAL_MACHINE (2)'.
- Component_:** A dropdown menu set to 'NewComponent'.

At the bottom of the dialog are 'Save' and 'Cancel' buttons.

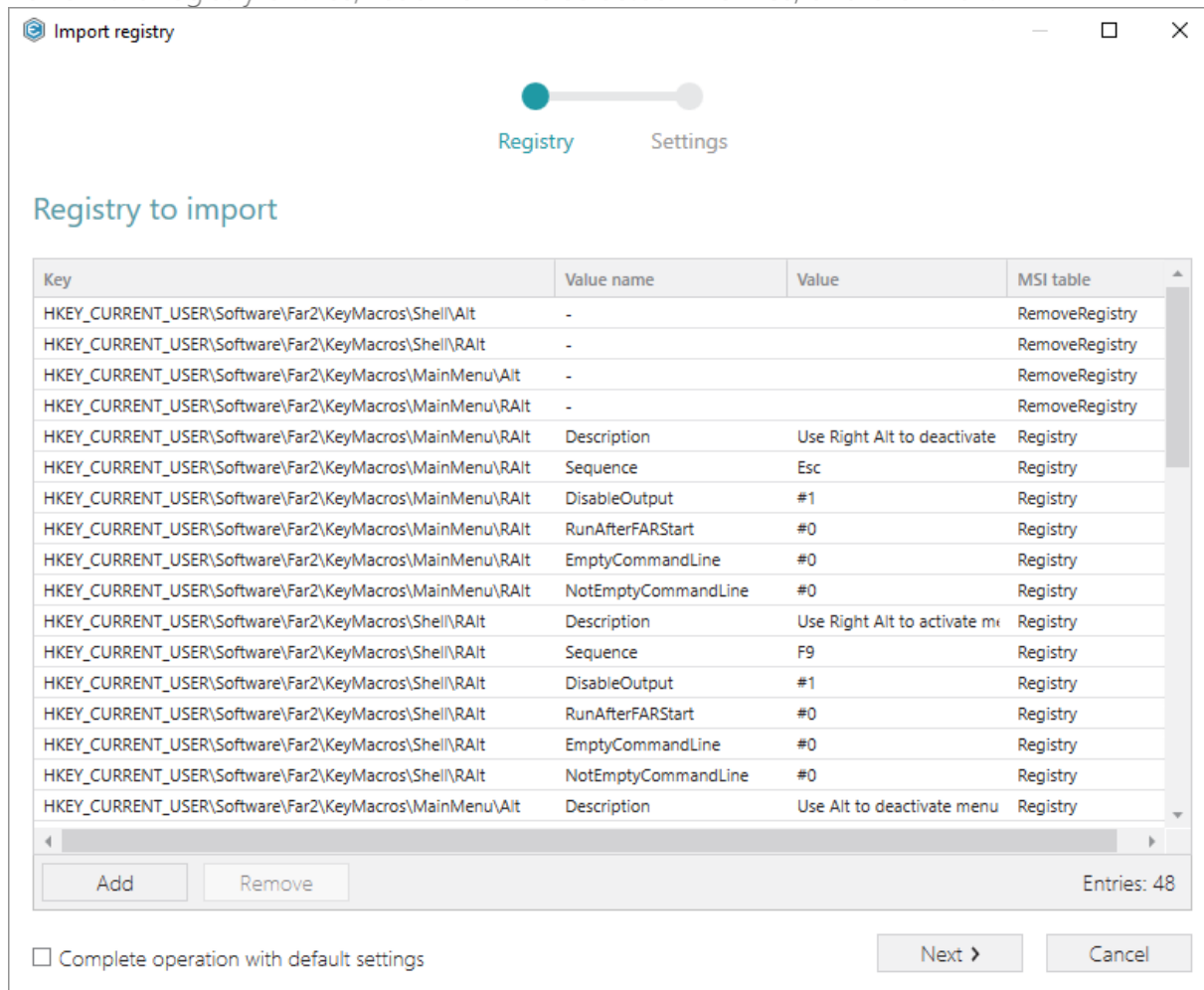
[22]. For importing registry from the REG file, select Add -> Import registry from the toolbox of the Registry tab.



[23]. Choose REG files, which you want to import to the package and click Open.



[24]. Review the registry entries, read from the selected REG files, and click Next.



[25]. At the Settings step, you can select an MSI Feature, to which components with the registry entries will be assigned. If the registry entries, which have been read, contain values in square brackets, you can select how these values will be processed – as MSI properties or as ordinary registry values. Below, in the tables, you will find the detailed description of

these settings. Click Finish to complete the import.

Import registry

Registry

Settings

Settings

Target feature

<PACE feature>

New feature

☒ Manage features automatically

Values with special symbols

Key	Value name	Value	MSI table
HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\MaintenanceService	Test	[ProductCode]	Registry

☒ Escape square bracket characters to deliver original values (e.g. [String[]])

☐ Process values in square bracket as MSI properties (e.g. [String])

Back

Finish

Cancel

Feature settings

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported registry. Feature structure is based on the packaging best practices and depends on the registry key location.

<a feature, selected from the list>

Components with registry will be assigned to a feature, selected from the list.

Values with special symbols

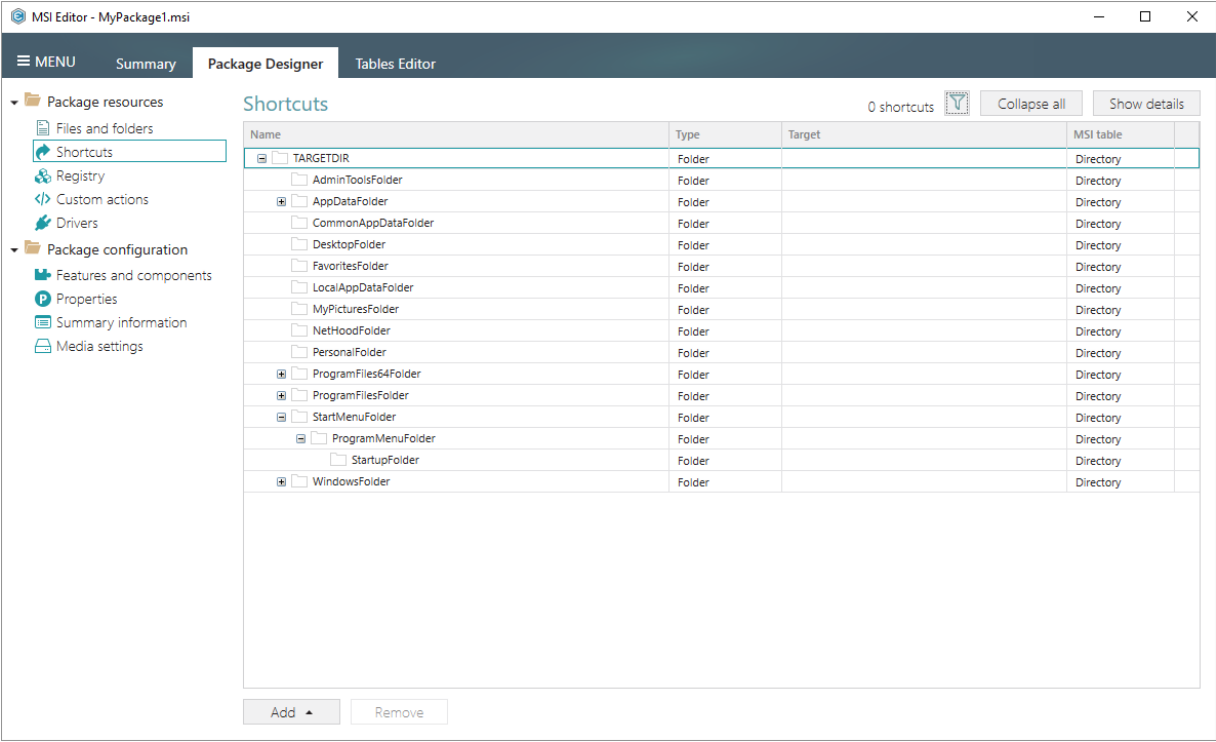
Escape square bracket characters to deliver original values

Values in square brackets, displayed in the list, will be saved to MSI as ordinary strings using the general rules for escaping the special characters. This approach guarantees the delivery of the imported registry entries to the target system with their original values.

Process values in square brackets as MSI properties

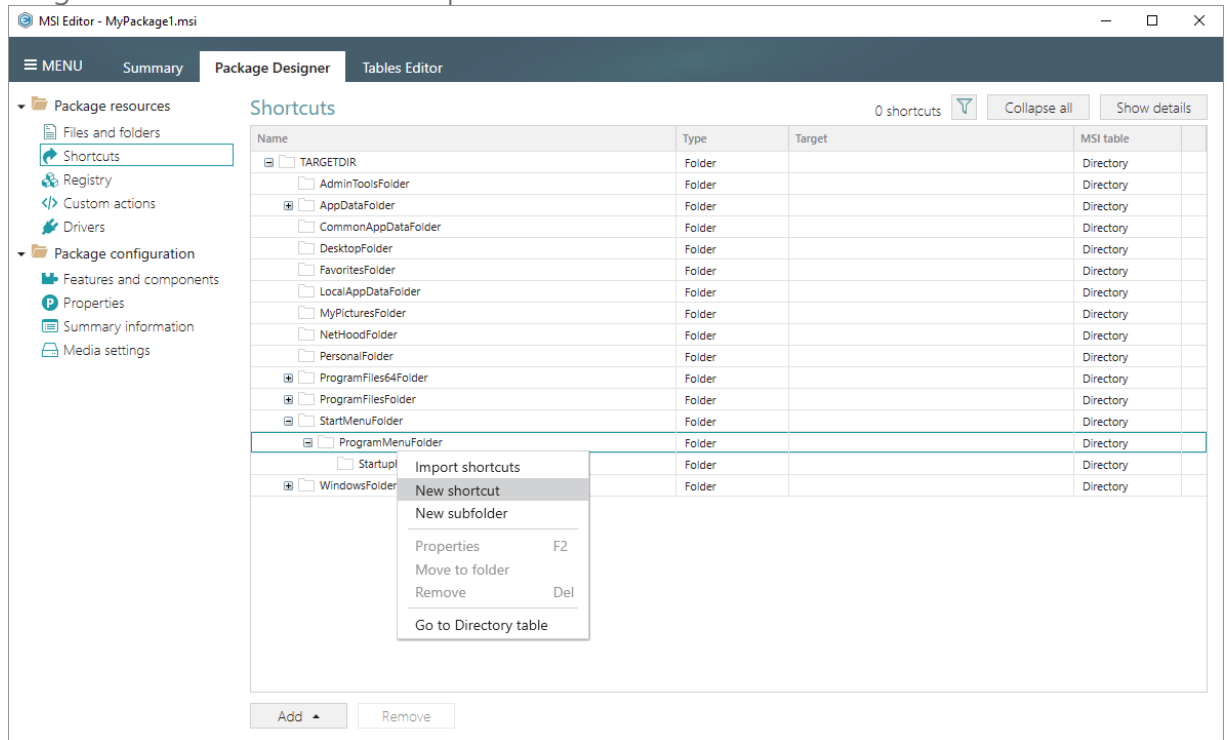
Values in square brackets, displayed in the list, will be saved to MSI as MSI properties. Thus, each MSI property will be replaced with its value during the MSI installation. If a property does not exist in MSI during the installation, it will be replaced with the blank value.

[26]. If you need to create a new or import the existing shortcuts to the package, go to the Shortcuts tab.



[27]. In order to add a new shortcut, select New shortcut from the context menu of a folder, where you want to create this shortcut. Usually, application shortcuts are installed to the

ProgramMenuFolder and DesktopFolder.



[28]. Select a type of the shortcut target and click Next.

(The following instructions describe creation of the shortcut of the 'File from the package')

target type.)


Add shortcut

Type


Target

Appearance


Target type




☒ File from the package
An advertised or regular (non-advertised) shortcut that points to a file of the package.




☐ File on the system
A regular (non-advertised) shortcut that points to a file on the target system.



☐ Folder from the package
A regular (non-advertised) shortcut that points to a folder of the package.



☐ Folder on the system
A regular (non-advertised) shortcut that points to a folder on the target system.



☐ URL
An internet shortcut that opens the specified URL.

Next >

Cancel

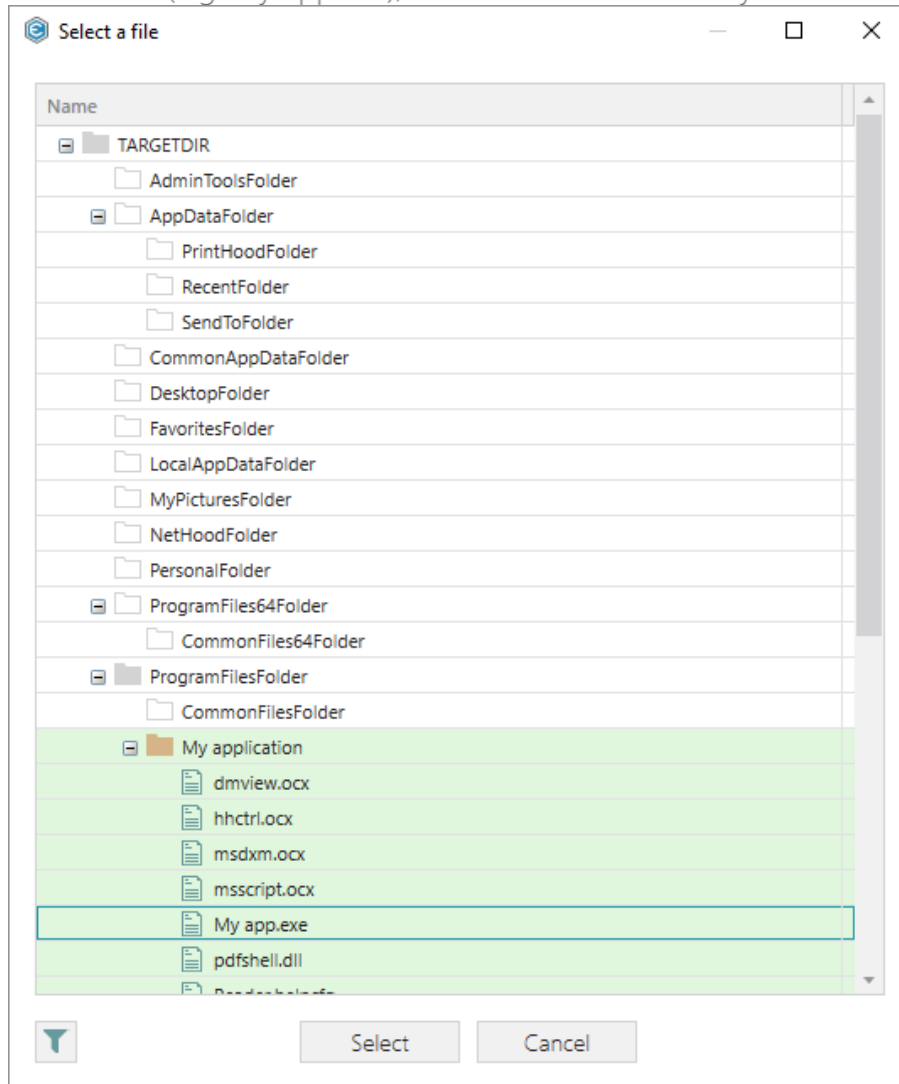
- [29]. On the second step, click **Browse**, located next to the **Shortcut target** field, to set a target of the shortcut.

The screenshot shows the 'Add shortcut' dialog box with the 'Target' step selected in a progress bar at the top. The progress bar has three steps: 'Type' (completed, marked with a checkmark), 'Target' (current step), and 'Appearance' (not started). The 'Target' section contains the following fields and controls:

- Shortcut target:** A text input field with a red exclamation mark icon and a 'Browse...' button to its right.
- Arguments:** A text input field.
- Start in (WkDir):** A dropdown menu currently showing 'Folder' with a downward arrow icon.
- Start in (WkDir):** A text input field with a red exclamation mark icon and a 'Browse...' button to its right.
- Shortcut type:** Two radio button options:
 - ☒ Advertised shortcut
 - ☐ Regular (non-advertised) shortcut

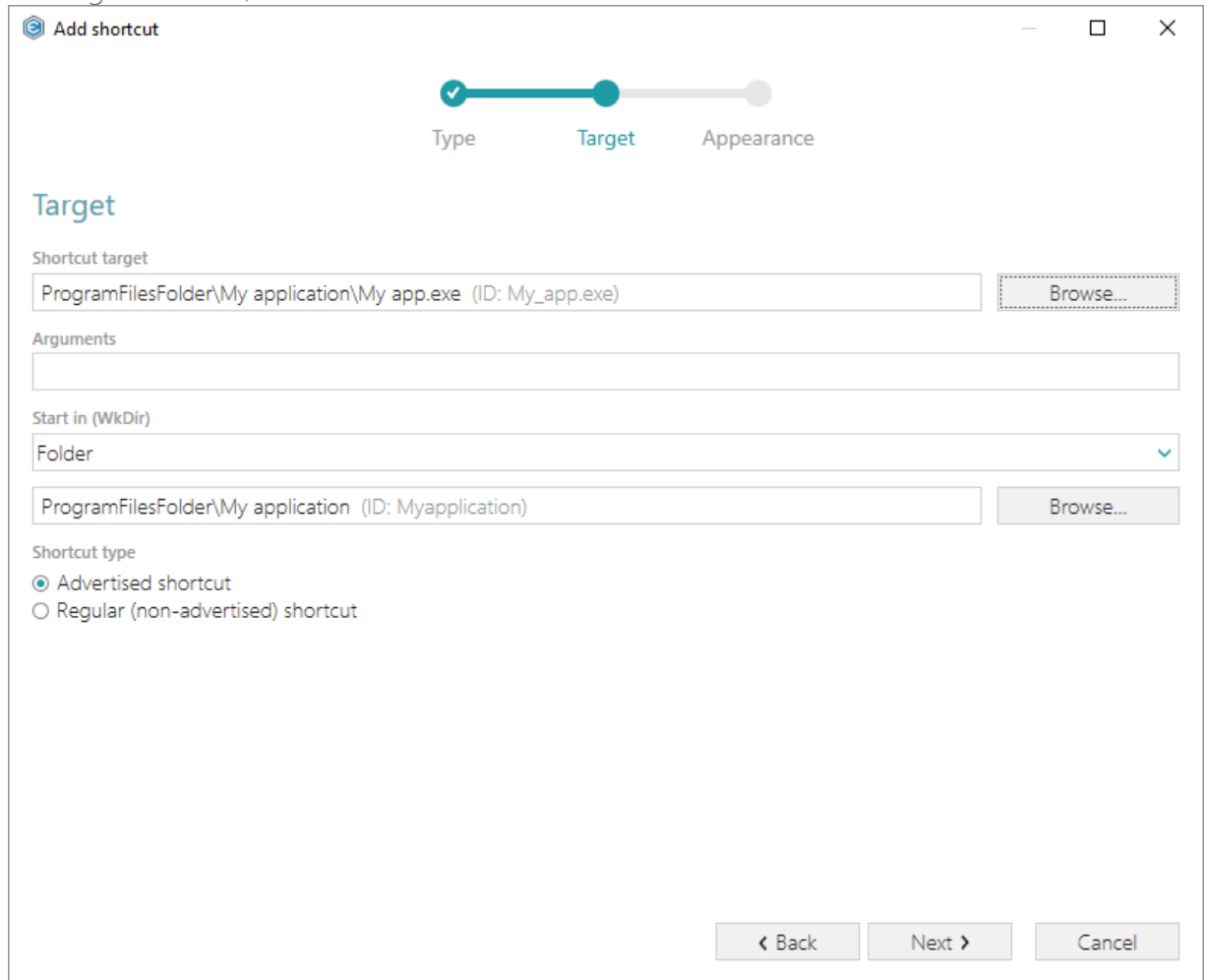
At the bottom of the dialog, there are three buttons: '< Back' (disabled), 'Next >' (active/highlighted), and 'Cancel'.

[30]. Select a file (e.g. My app.exe), which will be launched by this shortcut, and click Select.



[31]. If needed, enter a shortcut Arguments, change the Start in path (select a folder or a property), and select a Shortcut type. Note that only the Advertised shortcut supports advertisement and repair. This means that if the executable to which the shortcut is pointing is not there then windows installer will repair the application and replace the

missing files. Then, click Next.

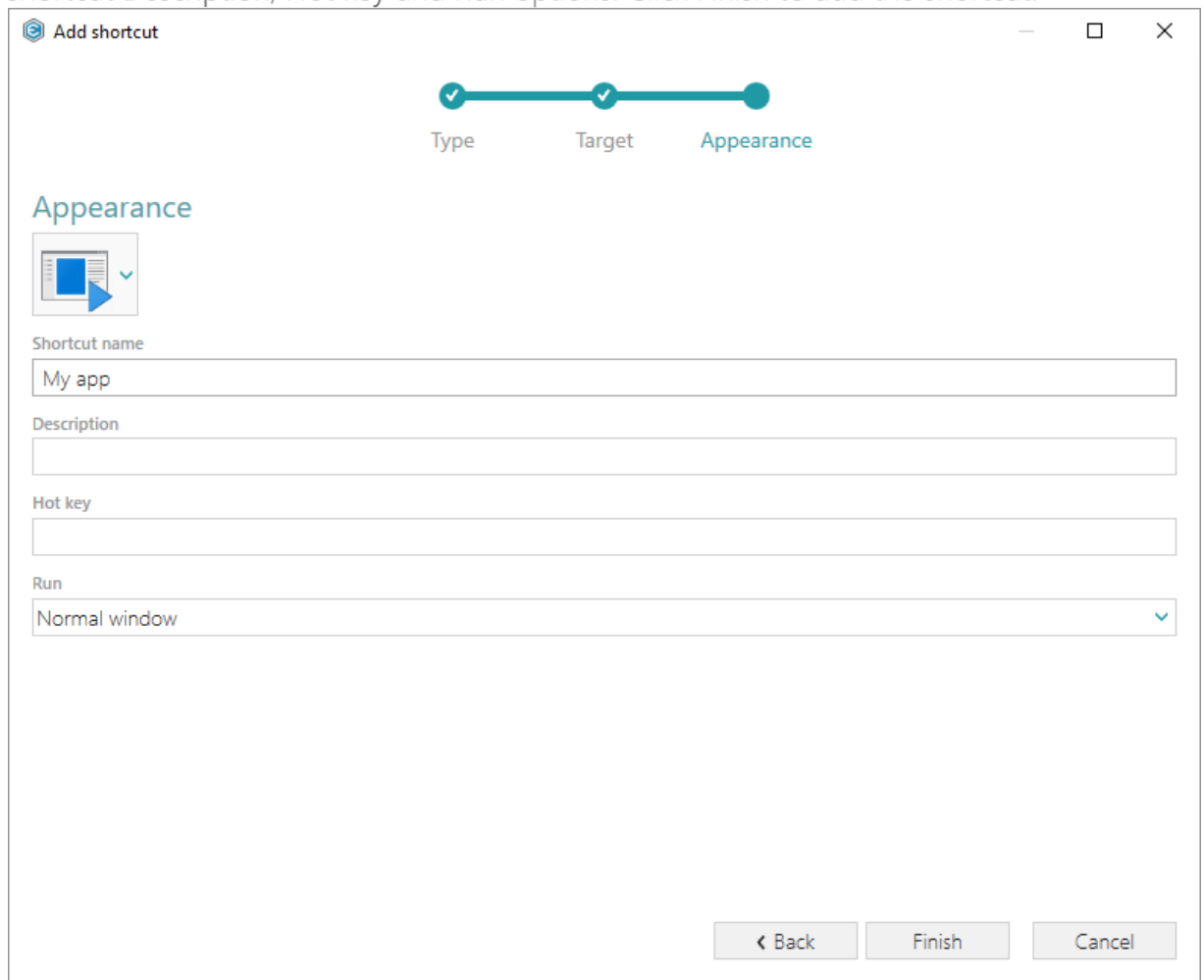


The screenshot shows the 'Add shortcut' wizard window. At the top, a progress bar has three steps: 'Type' (completed, marked with a checkmark), 'Target' (current step, marked with a dot), and 'Appearance' (not started, marked with a dot). The window title is 'Add shortcut'. Below the progress bar, the section 'Target' is highlighted. It contains the following fields and controls:

- Shortcut target:** A text box containing 'ProgramFilesFolder\My application\My app.exe (ID: My_app.exe)' and a 'Browse...' button to its right.
- Arguments:** An empty text box.
- Start in (WkDir):** A dropdown menu showing 'Folder' and a 'Browse...' button to its right.
- Shortcut type:** Two radio button options: 'Advertised shortcut' (selected) and 'Regular (non-advertised) shortcut'.

At the bottom right of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- [32]. On the last step, enter a **Shortcut name**, choose a shortcut icon and, if needed, specify the shortcut **Description**, **Hot key** and **Run** options. Click **Finish** to add the shortcut.

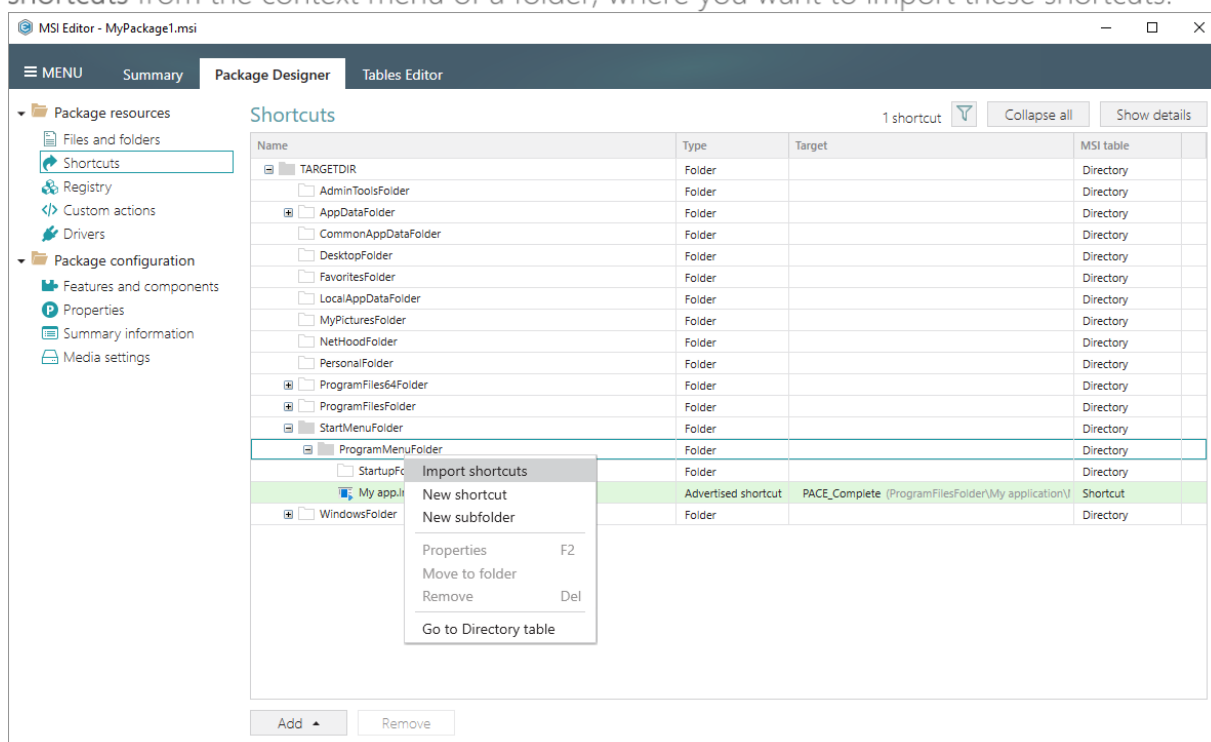


The screenshot shows the 'Add shortcut' dialog box with a progress bar at the top indicating three steps: Type, Target, and Appearance. The 'Appearance' step is currently active. Below the progress bar, there is a section titled 'Appearance' with a small icon of a document and a blue arrow. The form contains the following fields:

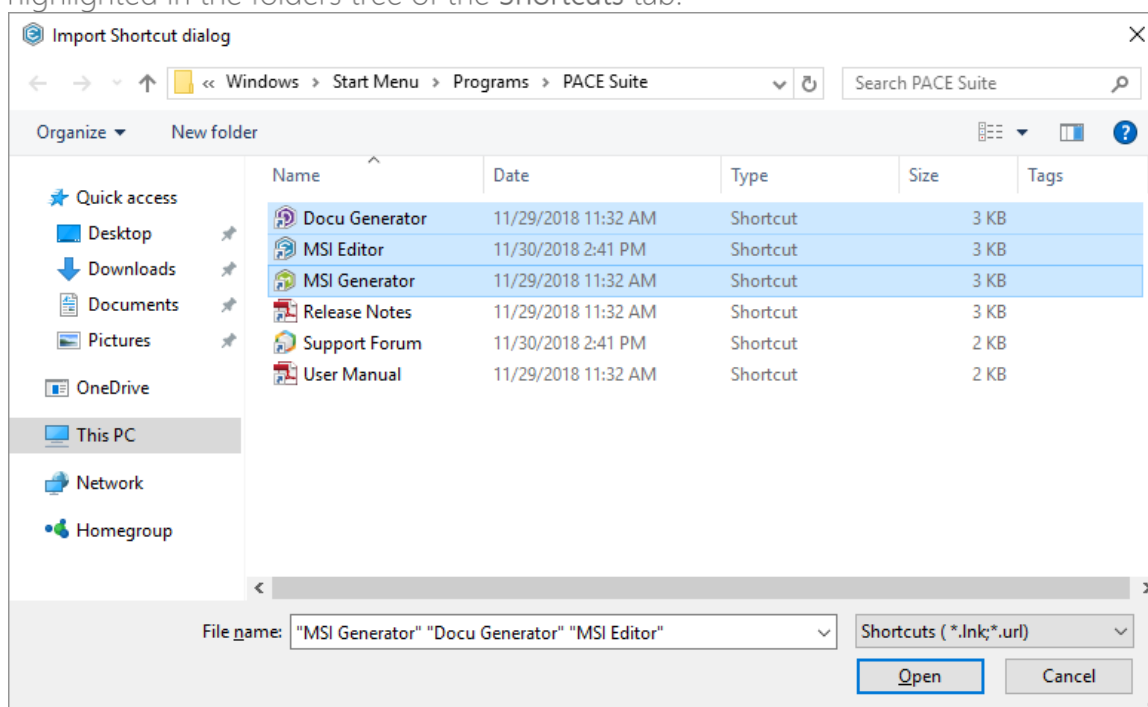
- Shortcut name:** A text input field containing 'My app'.
- Description:** An empty text input field.
- Hot key:** An empty text input field.
- Run:** A dropdown menu with 'Normal window' selected.

At the bottom right of the dialog, there are three buttons: '< Back', 'Finish', and 'Cancel'.

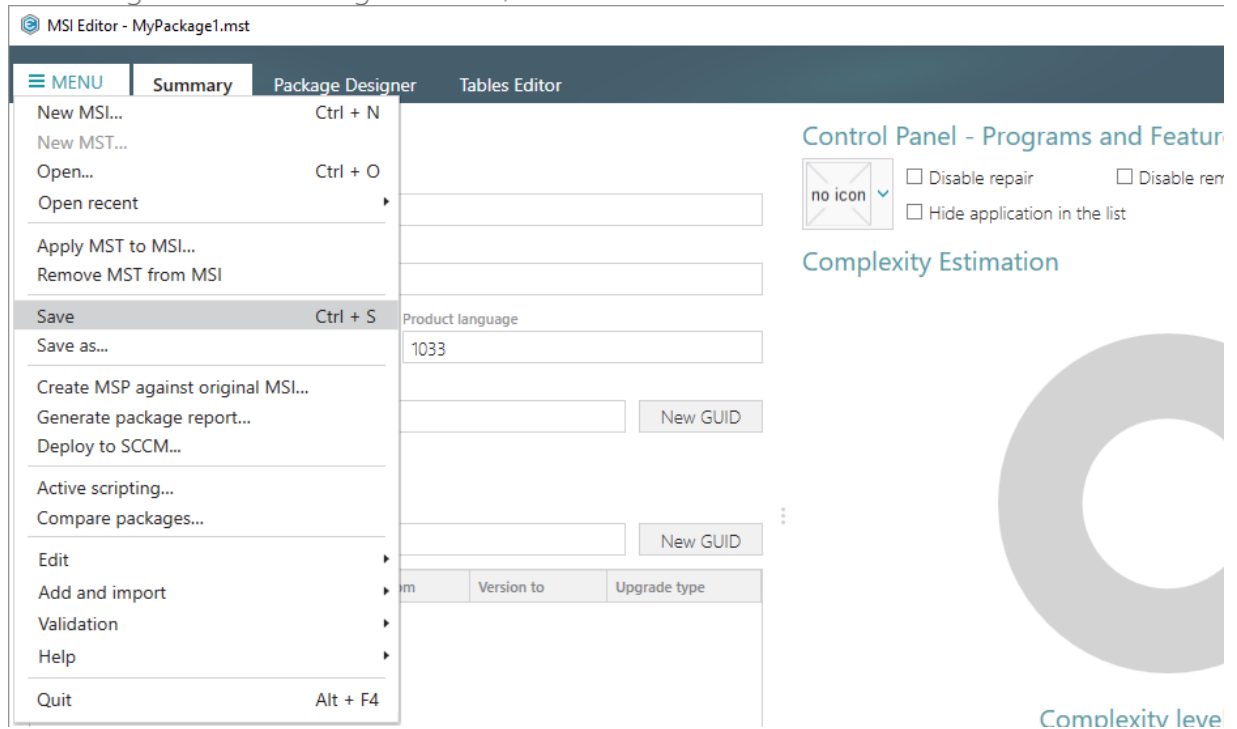
[33]. In order to import existing shortcuts from the file system to the package, select **Import shortcuts** from the context menu of a folder, where you want to import these shortcuts.



[34]. Choose shortcuts you would like to import and click **Open**. The imported shortcuts will be highlighted in the folders tree of the Shortcuts tab.



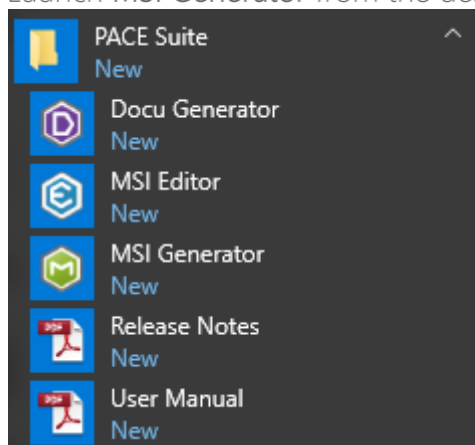
[35]. For saving the made changes to MST, select **Save** from the **MENU**.



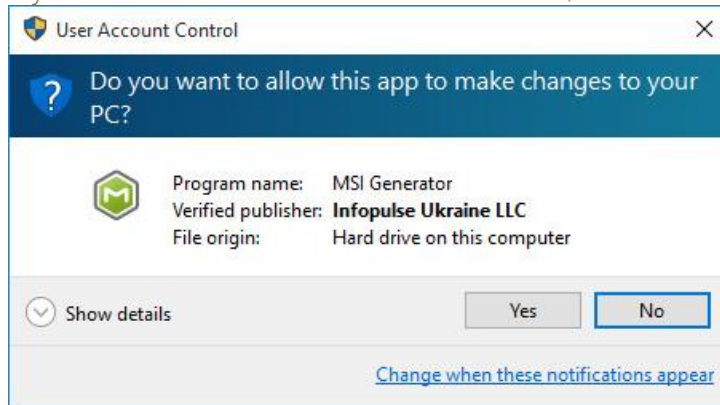
3.2.2 Create Response MST

Capture all your inputs and changes, made to the Windows Installer UI dialogs of the MSI installation, and save them to the MST file using MSI Generator. The MSI installation will be simulated, which allows capturing all necessary changes very promptly and without affecting your real system.

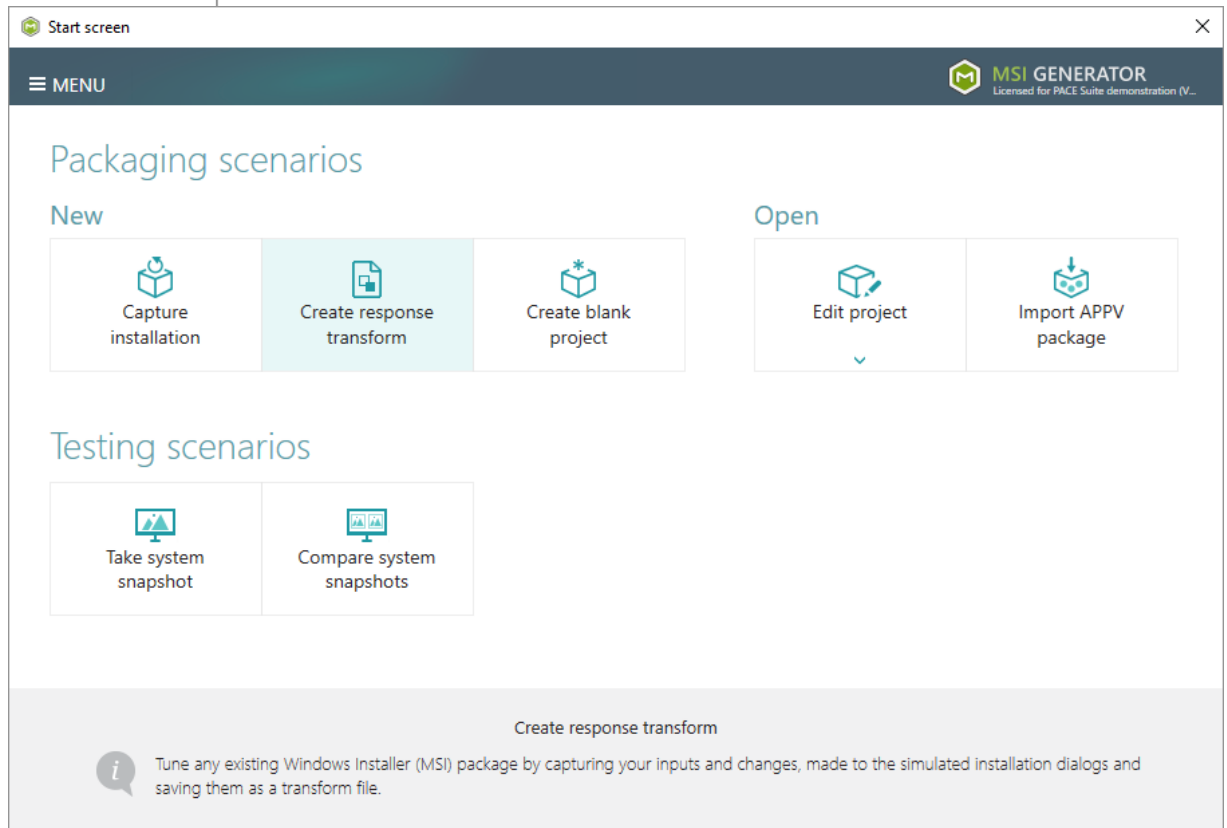
[1]. Launch MSI Generator from the desktop or the start menu shortcut.



- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click Create response transform.

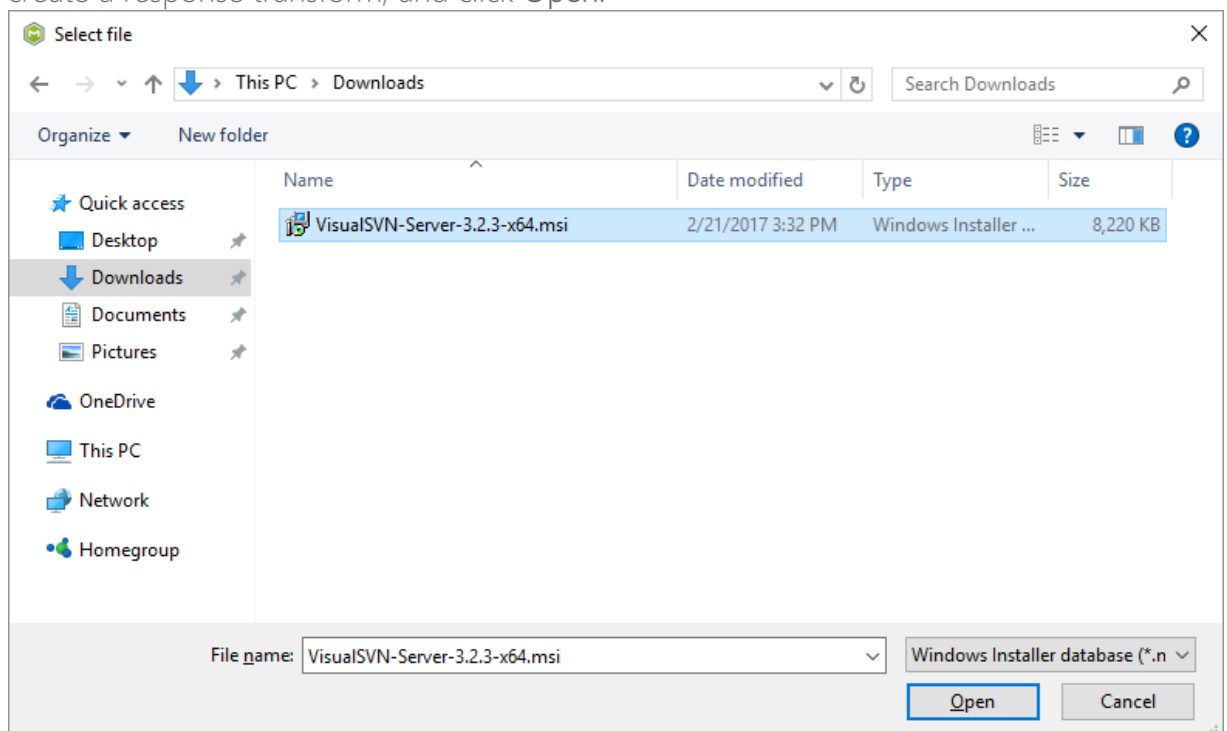


- [4]. Click **Browse...**, located next to the MSI package for tailoring field, to select an MSI package for tailoring. Note that the MSI installation will be simulated and will not affect

your real system.

The screenshot shows the 'Create a response transform' wizard. At the top, a progress bar has four steps: 'MSI for tailoring' (selected), 'Installation simulation', 'Captured changes', and 'Completion'. Below the progress bar, the title 'Select an MSI for Tailoring' is displayed. The main area contains three input fields: 'MSI package for tailoring' with a 'Browse...' button, 'Apply transform (optional)' with a 'Browse...' button, and 'Command-Line options (MSI properties only)' with a text box. There is an unchecked checkbox labeled 'Ignore MSI launch condition'. A note at the bottom states: 'NOTE A response transform is an MST file containing all yours inputs and changes, made to the Windows Installer (UI) Dialogs of the simulated MSI installation. The simulated MSI installation will not affect your system.' At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- [5]. Choose an MSI package (e.g. VisualSVN-Server-3.2.3-x64.msi), for which you want to create a response transform, and click Open.



- [6]. The Apply transform (optional) and Command-Line options (MSI properties only) fields are optional and they allow applying additional MST and setting MSI properties before the MSI tailoring. Select the Ignore MSI launch condition option to skip all condition from the LaunchCondition MSI table.

Create a response transform

MSI for tailoring Installation simulation Captured changes Completion

Select an MSI for Tailoring

MSI package for tailoring
C:\Users\pace\Downloads\VisualSVN-Server-3.2.3-x64.msi Browse...

Apply transform (optional)
 Browse...

Command-Line options (MSI properties only)

☐ Ignore MSI launch condition

NOTE A response transform is an MST file containing all yours inputs and changes, made to the Windows Installer (UI) Dialogs of the simulated MSI installation. The simulated MSI installation will not affect your system.

< Back Next > Cancel

[7]. Click Next to start the MSI installation simulation.

Create a response transform

MSI for tailoring Installation simulation Captured changes Completion

Select an MSI for Tailoring

MSI package for tailoring
C:\Users\pace\Downloads\VisualSVN-Server-3.2.3-x64.msi Browse...

Apply transform (optional)
 Browse...

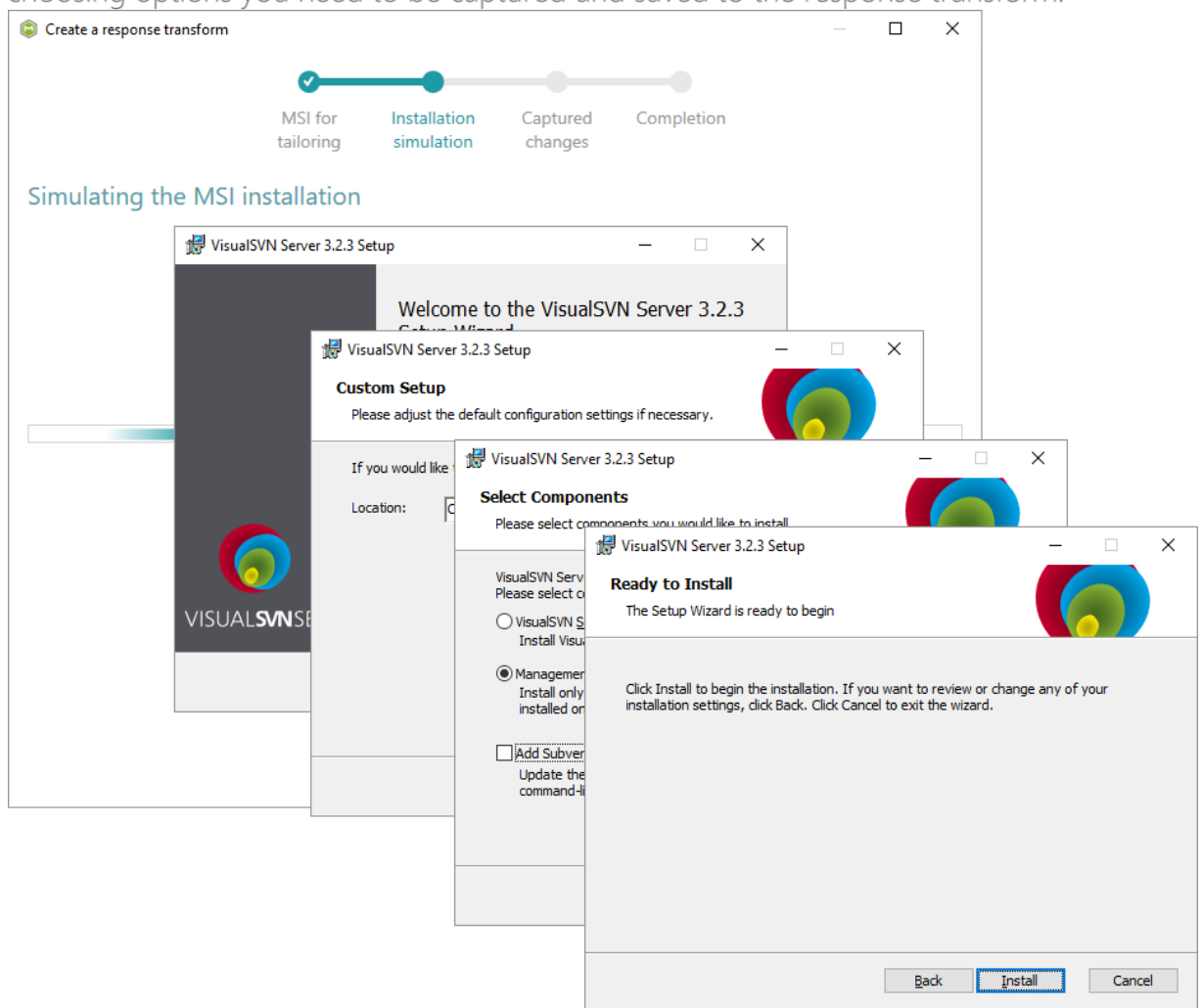
Command-Line options (MSI properties only)

☐ Ignore MSI launch condition

NOTE: A response transform is an MST file containing all your inputs and changes, made to the Windows Installer (UI) Dialogs of the simulated MSI installation. The simulated MSI installation will not affect your system.

< Back Next > Cancel

- [8]. Complete the simulated MSI installation following the Windows Installer dialogs and choosing options you need to be captured and saved to the response transform.



- [9]. Review captured information, which will be saved to the response transform (MST) file, by opening the Properties, Features and Directories tabs. Click Add to create new or click

Remove to remove the selected item in the opened tab.

Create a response transform

MSI for tailoring

Installation simulation

Captured changes

Completion

Captured changes

Properties

Features

Directories

Items	Old value	New value	Captured state
LicenseAccepted		1	Created
ShowMigratePermissionsReport		0	Created
Feature_AddSvnToPath		1	Created
_BrowseProperty		INSTALLDIR	Created
ManagerOnly	0	1	Updated
SideBannerBitmap	WixUI_Bmp_Side	WixUI_Png_Side	Updated
TopBannerBitmap	WixUI_Bmp_Top	WixUI_Png_Top	Updated
UpdatePathVariable	1		Removed

Add

Remove

Total rows: 8

< Back

Next >

Cancel

[10]. Click Next to choose the saving options.

Create a response transform

MSI for tailoring Installation simulation **Captured changes** Completion

Captured changes

Properties Features Directories

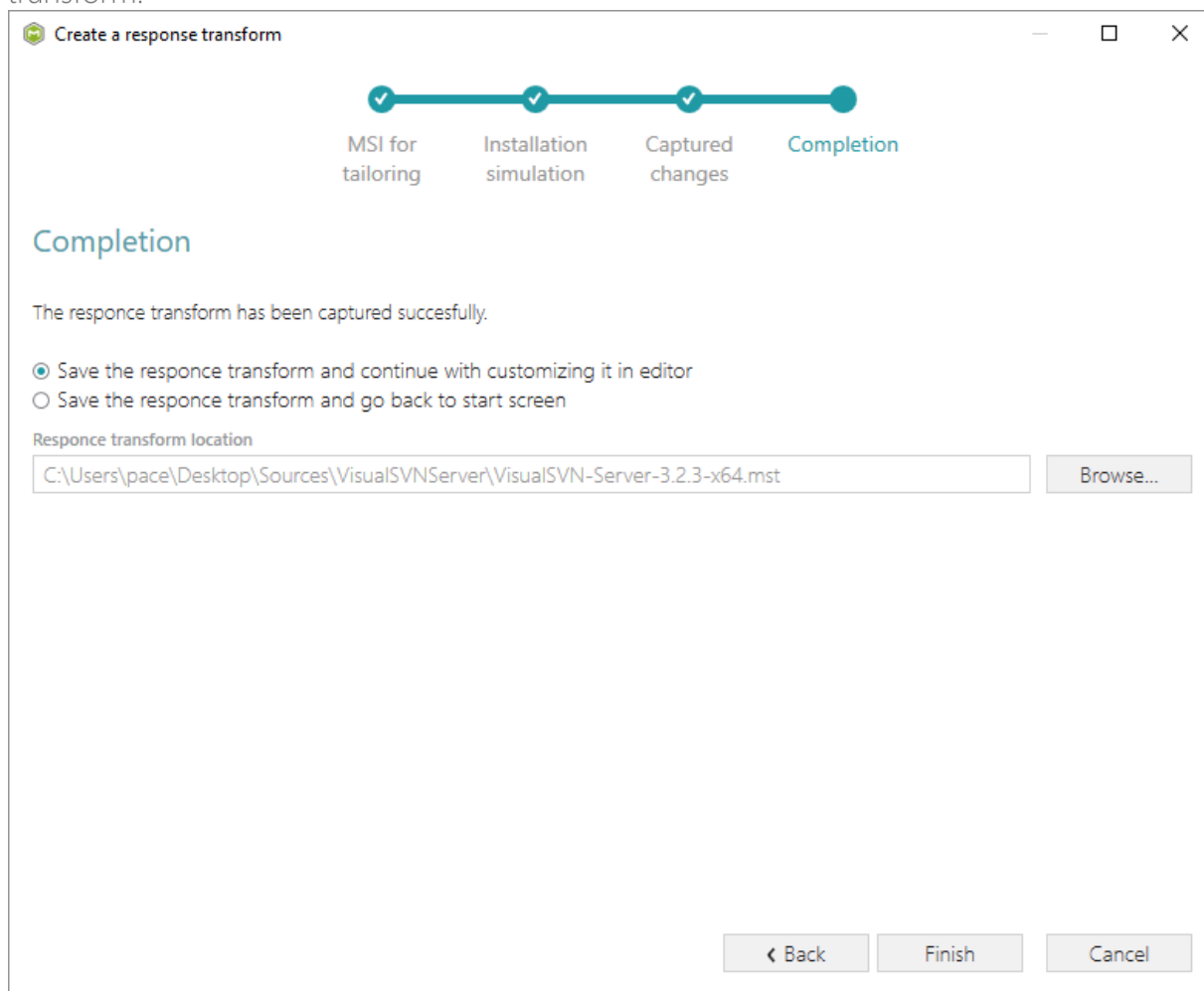
Items	Old value	New value	Captured state
LicenseAccepted		1	Created
ShowMigratePermissionsReport		0	Created
Feature_AddSvnToPath		1	Created
_BrowseProperty		INSTALLDIR	Created
ManagerOnly	0	1	Updated
SideBannerBitmap	WixUI_Bmp_Side	WixUI_Png_Side	Updated
TopBannerBitmap	WixUI_Bmp_Top	WixUI_Png_Top	Updated
UpdatePathVariable	1		Removed

Add Remove Total rows: 8

◀ Back Next ▶ Cancel

[11]. We recommend to leave the Save the response transform and continue with customizing it in editor option selected to open the generated MST in MSI Editor. For changing the destination location and MST file name click **Browse...** Click **Finish** to create the response

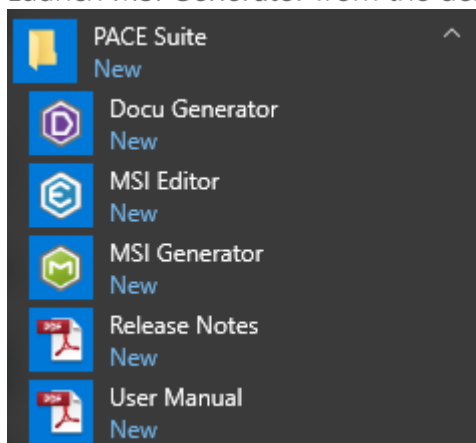
transform.



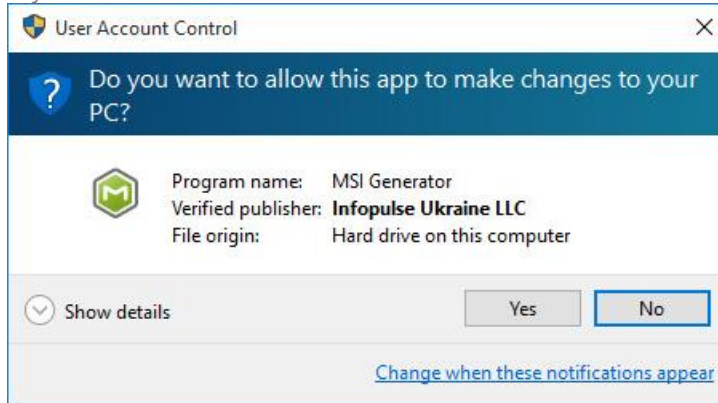
3.2.3 Capture System Changes to MST

Capture system changes, which were made to the file system and registry, by script, by application or manually and save them into MST file, generated against the selected MSI package using MSI Generator. Along with files and registry, services and environment variables, you can capture file system and registry permission changes.

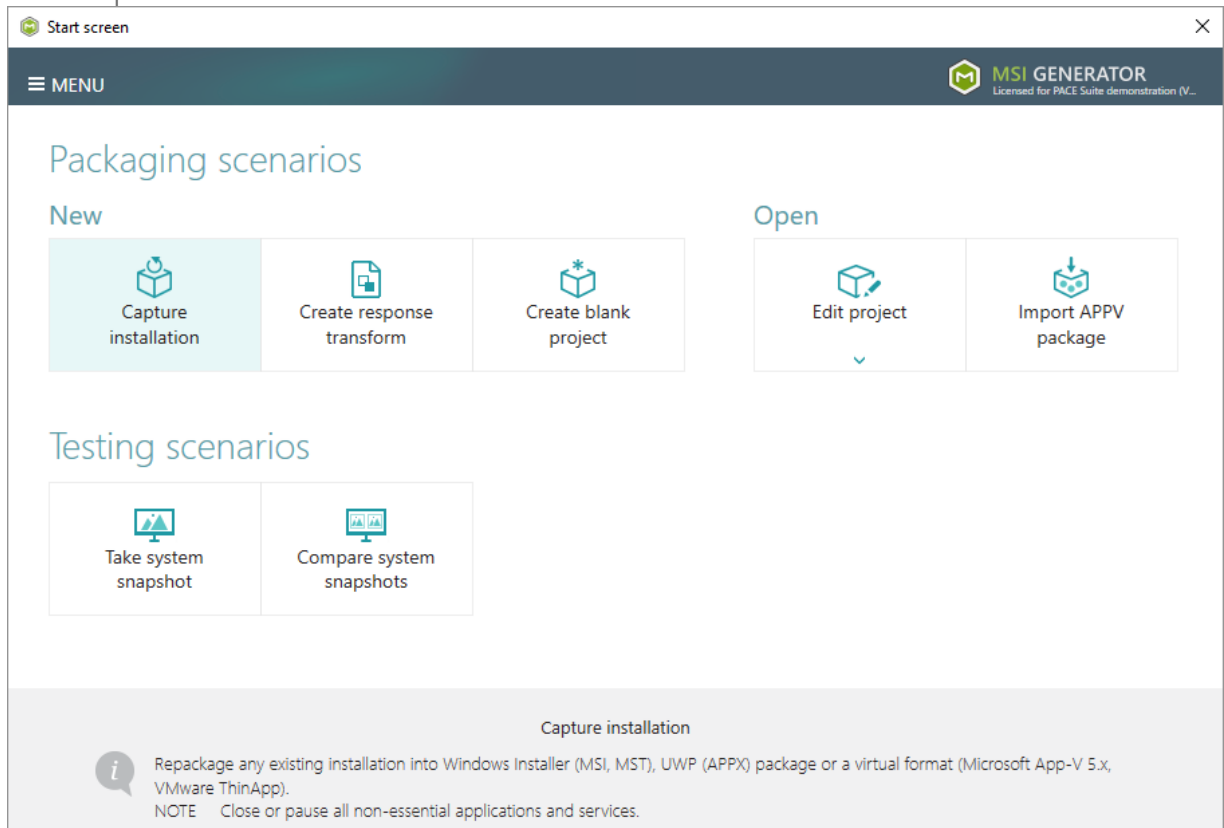
- Launch MSI Generator from the desktop or the start menu shortcut.



- If you have User Account Control enabled, click Yes in the opened window.



- Click Capture installation.



- Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click Next >.

Capture installation

Prepare computer

Capturing method

Settings

Installation

Completion

Prepare the computer for capturing

It is strongly recommended to perform capturing on a clean virtual machine with all non-essential processes stopped in order to avoid capturing data, which is not related to your source installation. Also, in case of any failure, you will be able to restore the virtual machine to the previous state.

The following issues were detected on your system:

Description	Resolution
Diagnostic Policy Service is active.	Stop this service before capturing.
Windows Defender Service is active.	Stop this service before capturing.
Security Center is active.	Stop this service before capturing.
Windows Defender is running.	Close your antivirus software before capturing.

Refresh

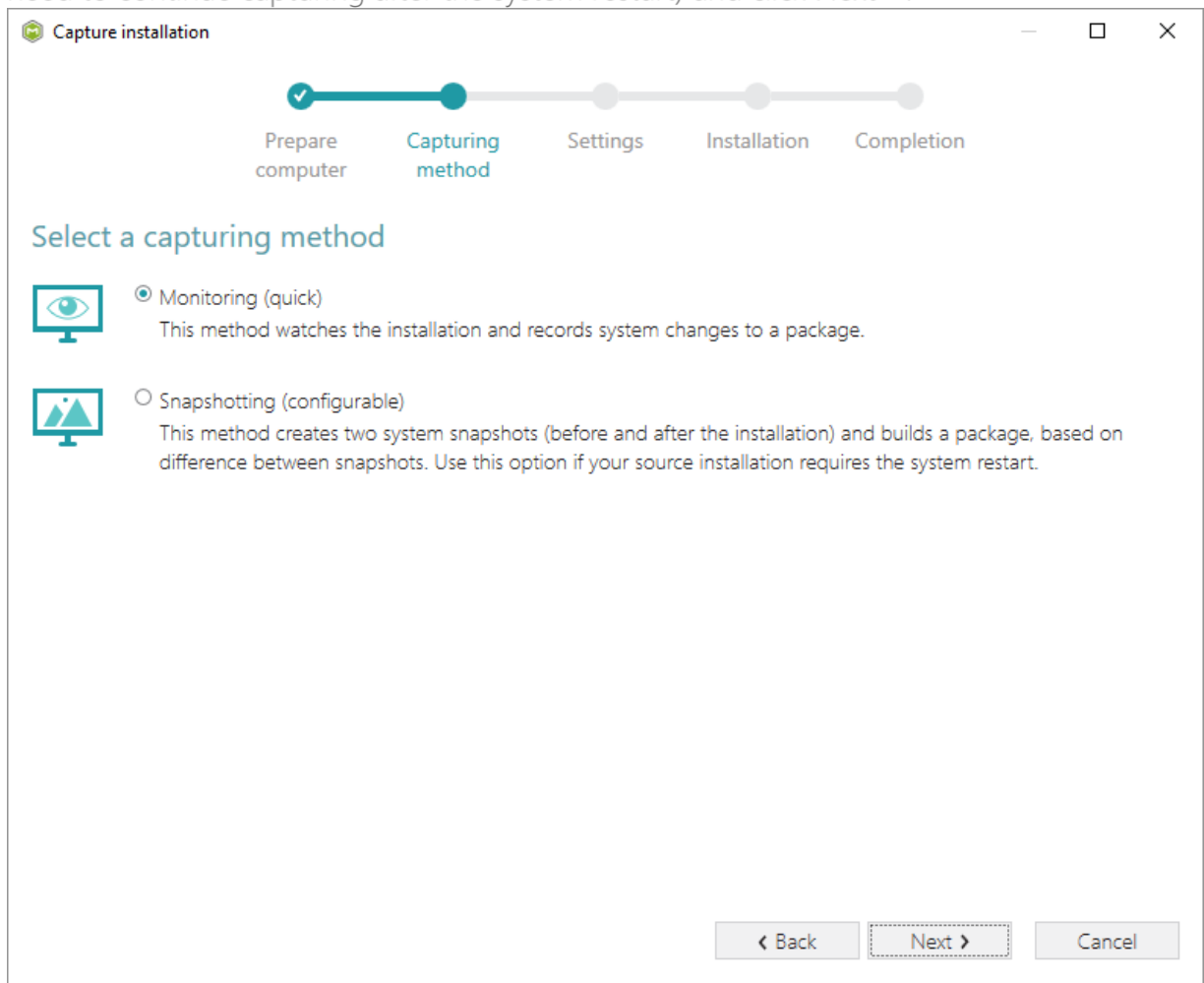
[Review the capturing recommendations...](#)

< Back

Next >

Cancel

- Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- Review and update package name. If needed, disable unnecessary exclusion filters and scanning areas. Click **Next >** to start the capturing.

The screenshot shows the 'Capture installation' window with the 'Settings' tab selected. At the top, a progress bar indicates the steps: Prepare computer, Capturing method, Settings (current), Installation, and Completion. The 'Package name' field contains 'PKG-170912-154800'. Under 'Exclusion filters', three filters are checked: AllWindowsOS, Win7, and Win8-10. Under 'Scanning areas', three application objects are checked: Permissions, Services, and Printers. At the bottom right, there are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

Scanning areas

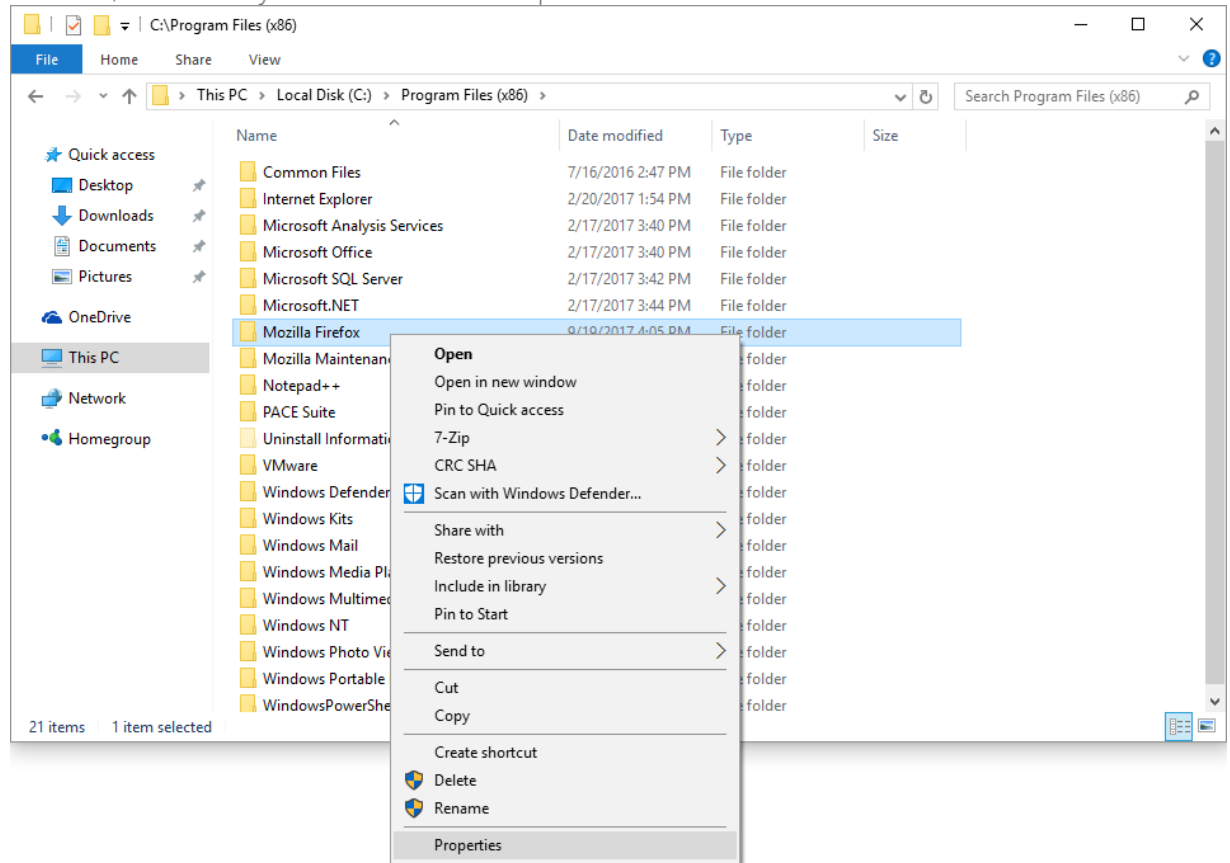
Application objects:

- ☒ Permissions
- ☒ Services
- ☒ Printers

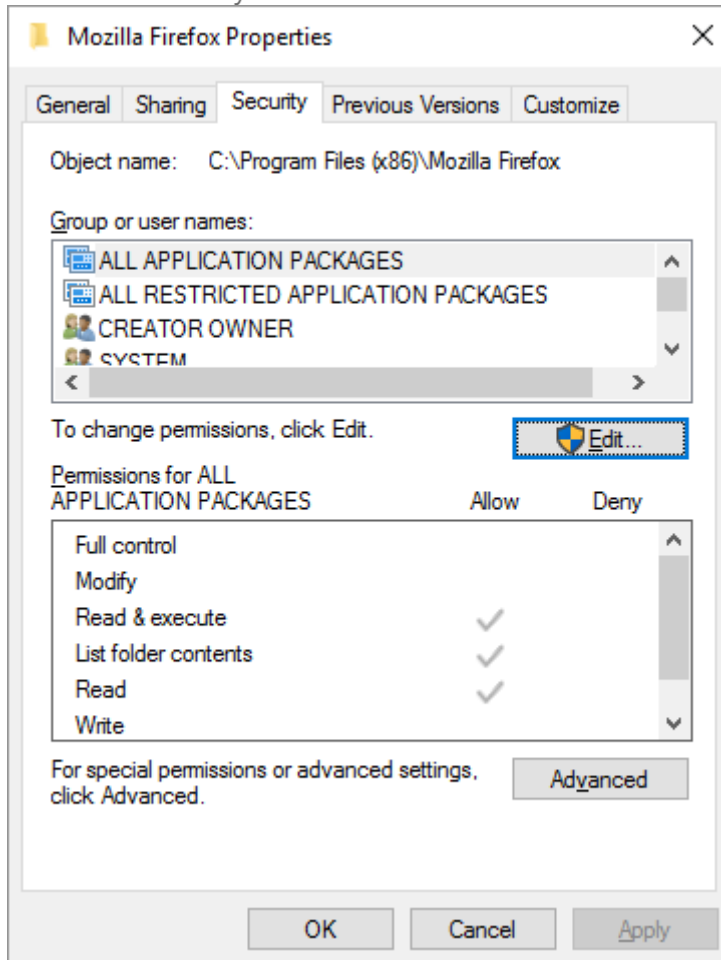
< Back **Next >** Cancel

- Now you can make any changes to the file system and registry, which you want to capture and include to the transform (MST) file. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.
- If you additionally need to change the default permission settings on a folder or a file and include them to the package, select **Properties** from the Windows Explorer context menu of

a folder, on which you want to set new permissions.

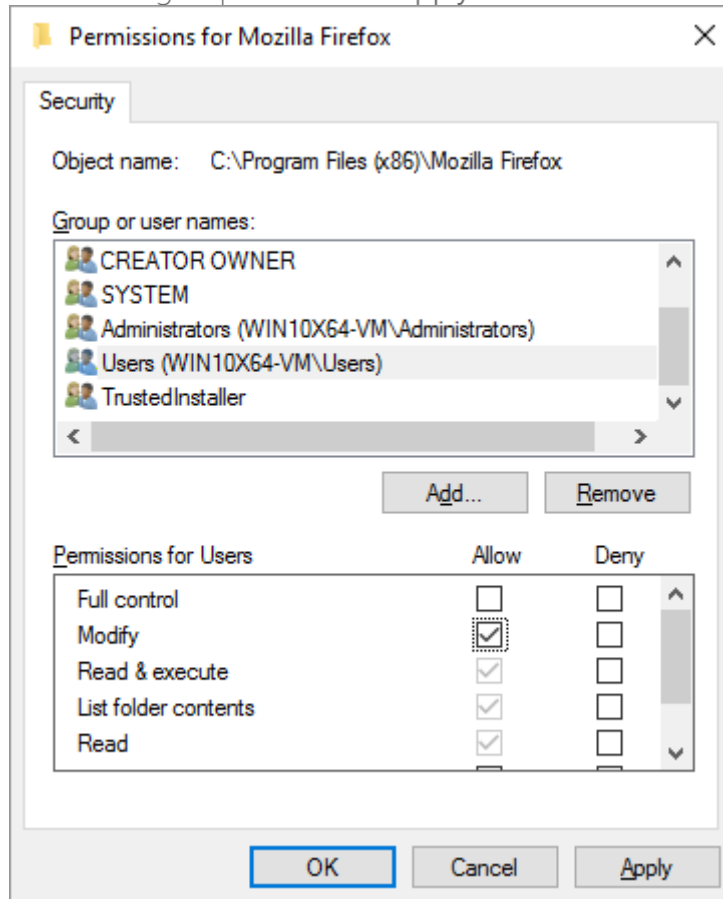


- Go to the Security tab and click Edit.

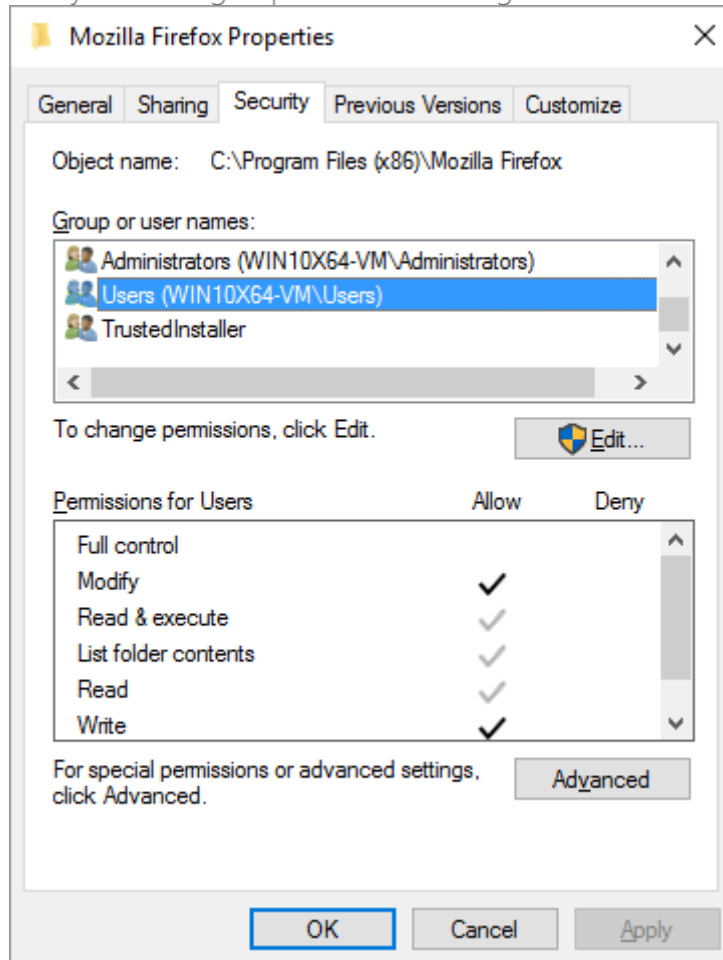


- Select a group or a user, for which you want to change the permissions and then select the necessary access rights. For example, let's set the 'Write' and the 'Modify' access rights for

the 'Users' group. Then click Apply and OK.



- Verify the changed permission settings and click OK to close the window.



- Finally, to complete the capturing, select I have finished the installation and click Next >.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

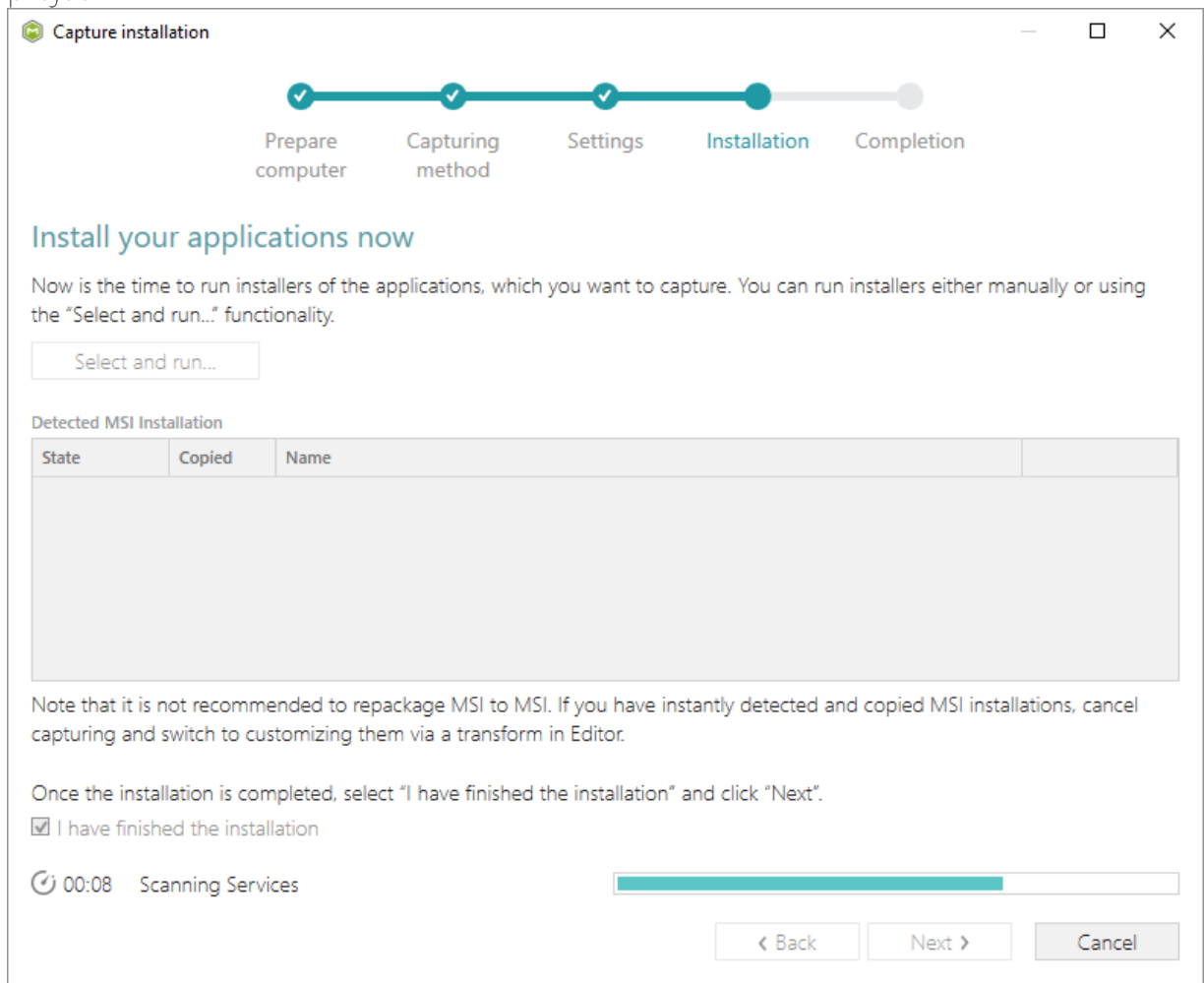
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

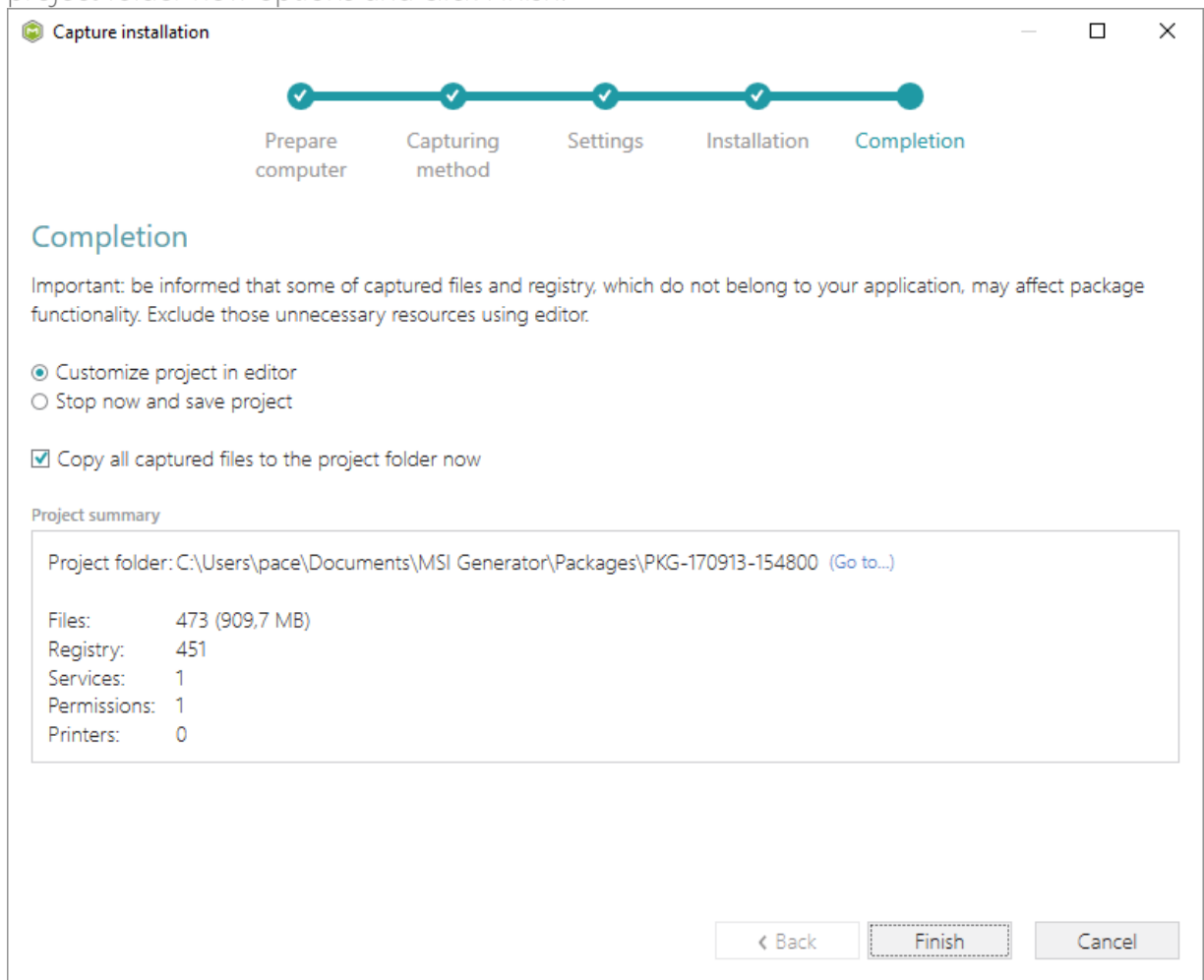
☒ I have finished the installation

< Back **Next >** Cancel

- Wait a little, while the capturing process is finishing, filtering captured data and creating the project.



- Leave selected both the Customize project in editor and Copy all captured files to the project folder now options and click Finish.



Capture installation

Prepare computer Capturing method Settings Installation **Completion**

Completion

Important: be informed that some of captured files and registry, which do not belong to your application, may affect package functionality. Exclude those unnecessary resources using editor.

☒ Customize project in editor
☐ Stop now and save project

☒ Copy all captured files to the project folder now

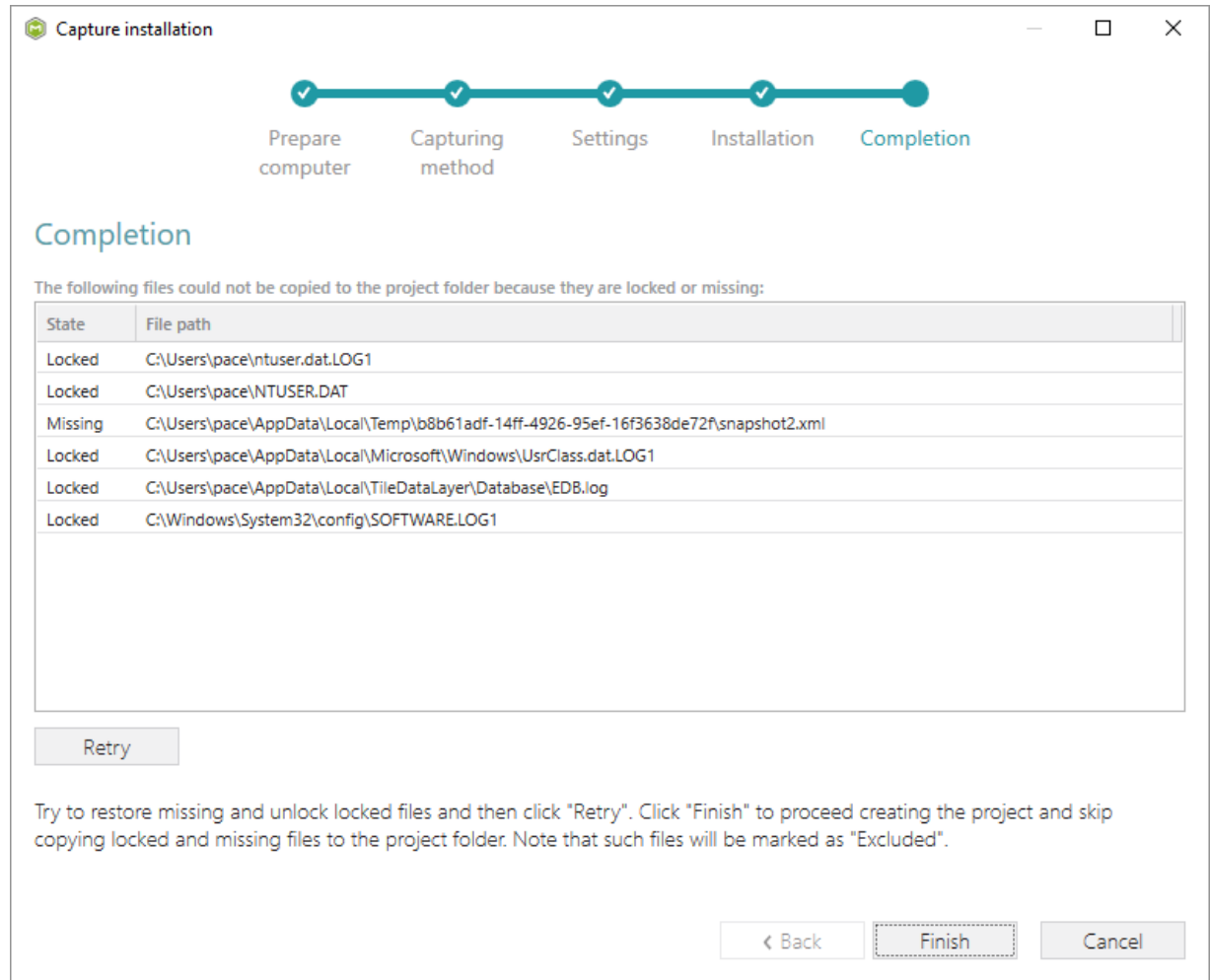
Project summary

Project folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-170913-154800 ([Go to...](#))

Files:	473 (909,7 MB)
Registry:	451
Services:	1
Permissions:	1
Printers:	0

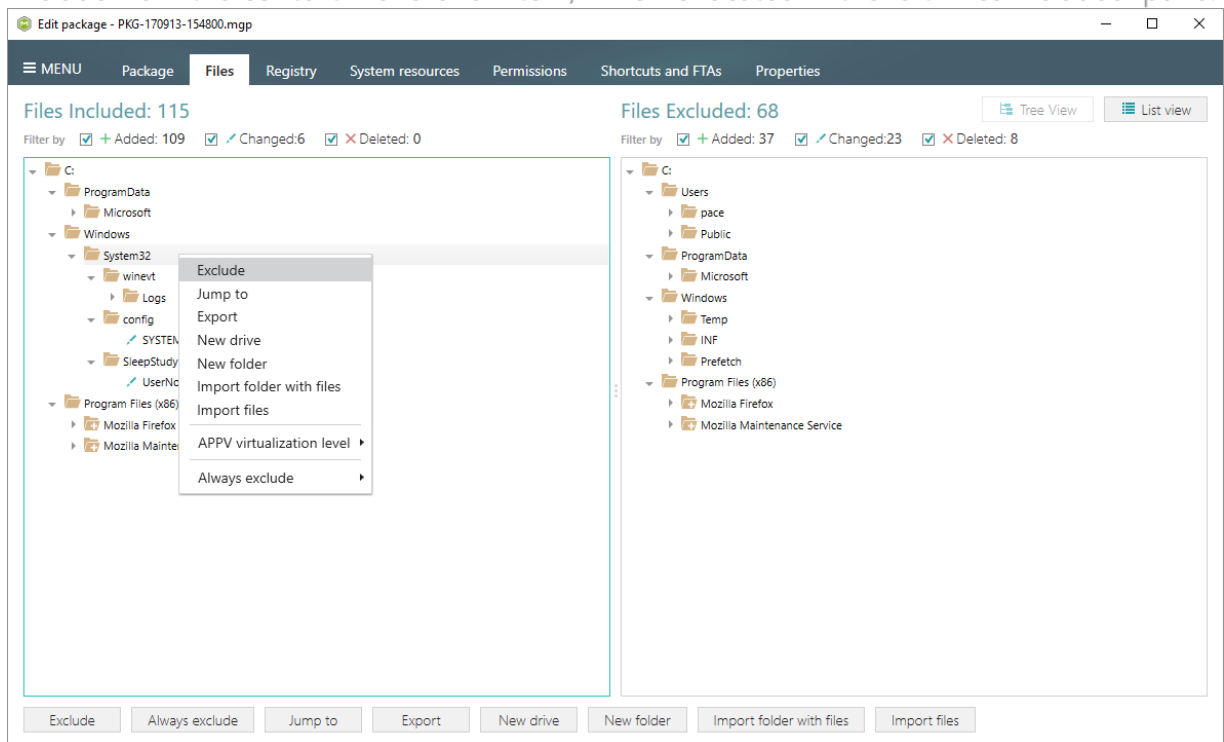
- The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing and locked

files and mark them as Excluded resources.

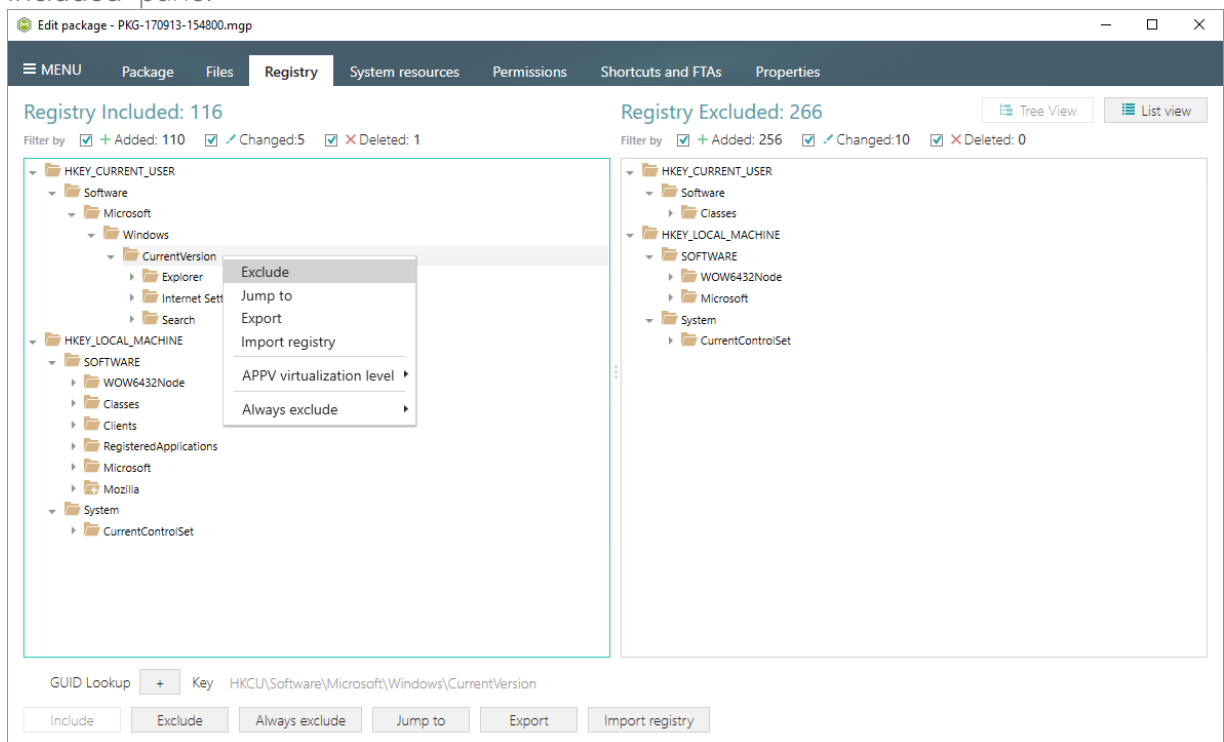


- Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).

- In order to review and exclude unnecessary files or folders, go to the **Files** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included' pane.

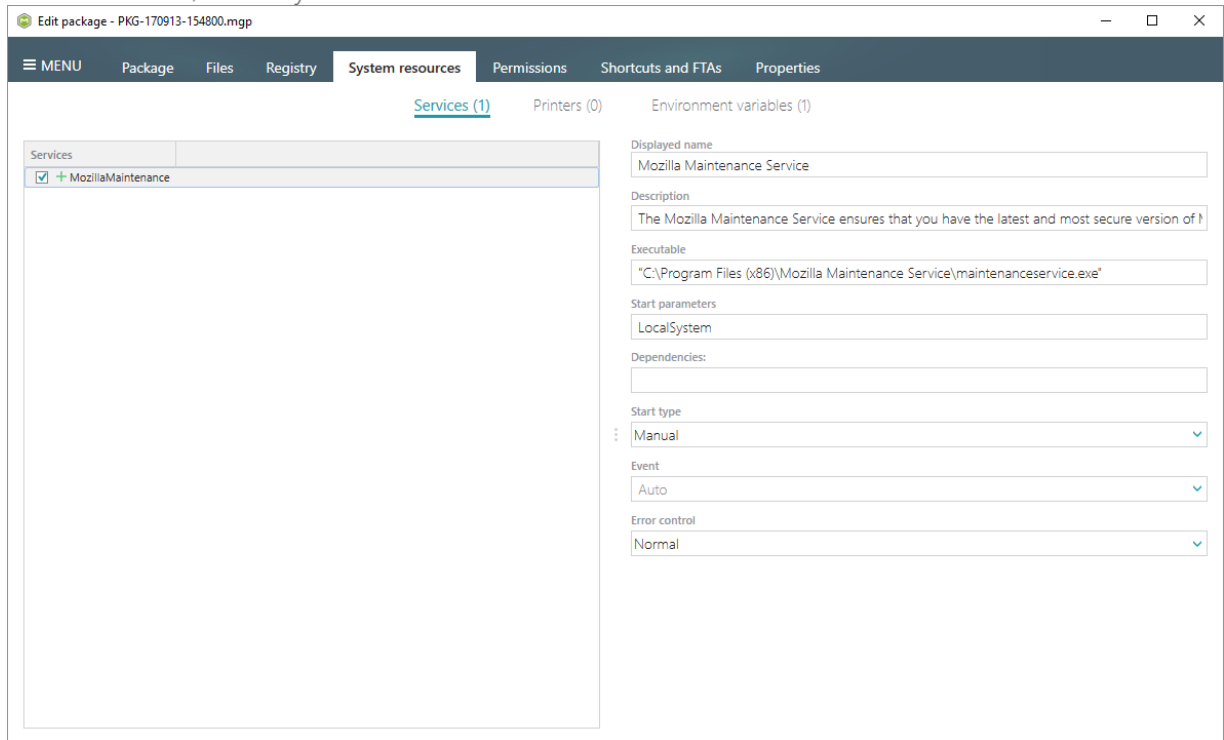


- In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.

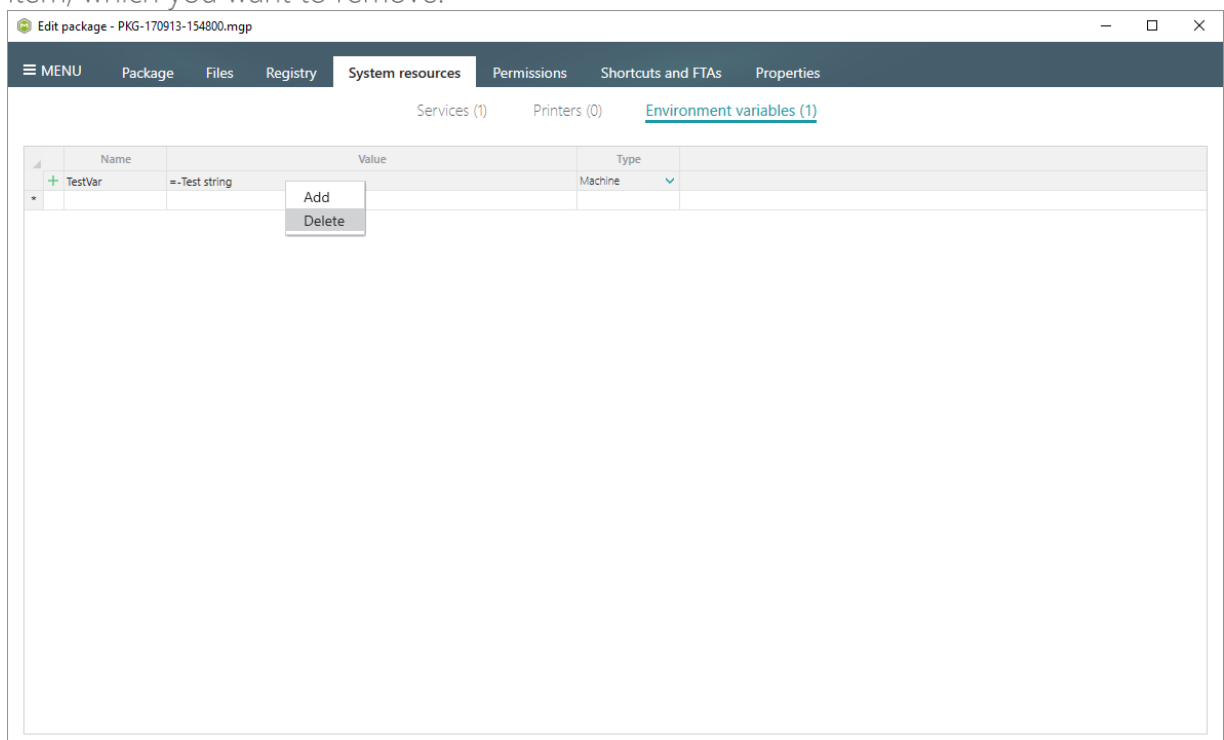


- In order to review and exclude unnecessary services, go to the **System resources** -> **Services** tab, and uncheck the checkbox, located before the service name in the list, for

those services, which you want to exclude.

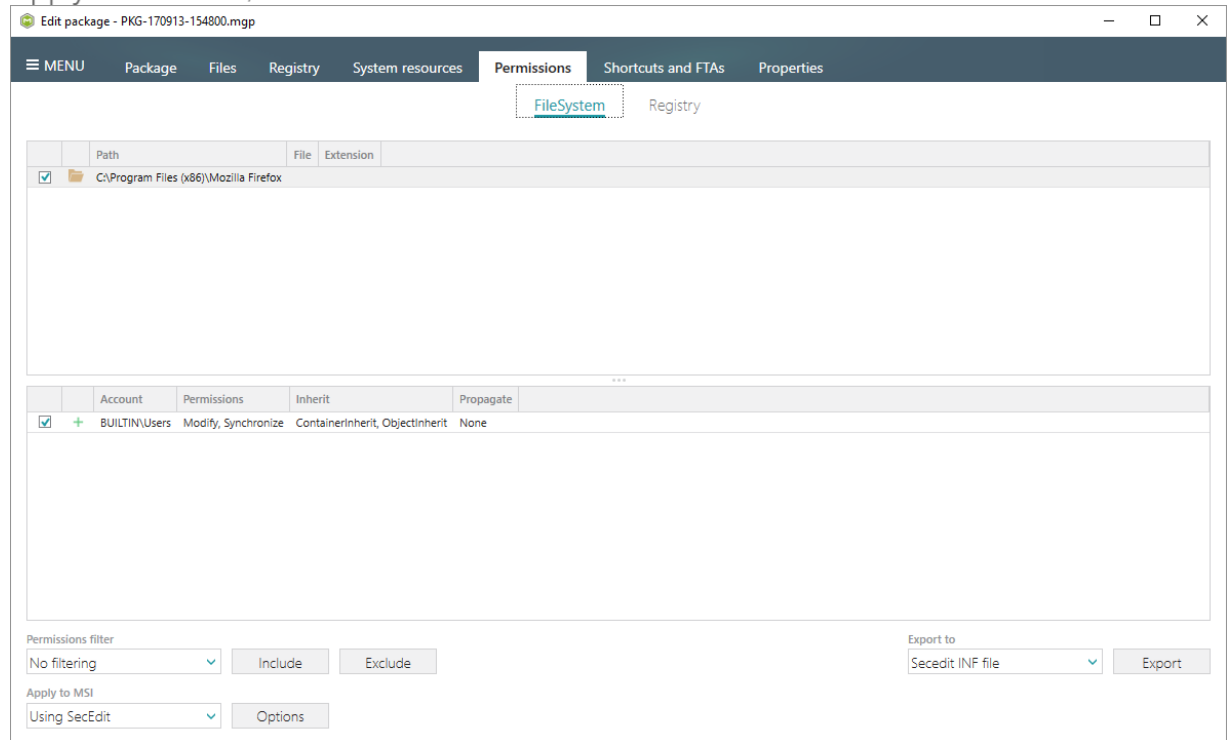


- In order to review and remove unnecessary Environment variables, go to the System resources -> Environment variables tab, and select Delete from the context menu of an item, which you want to remove.

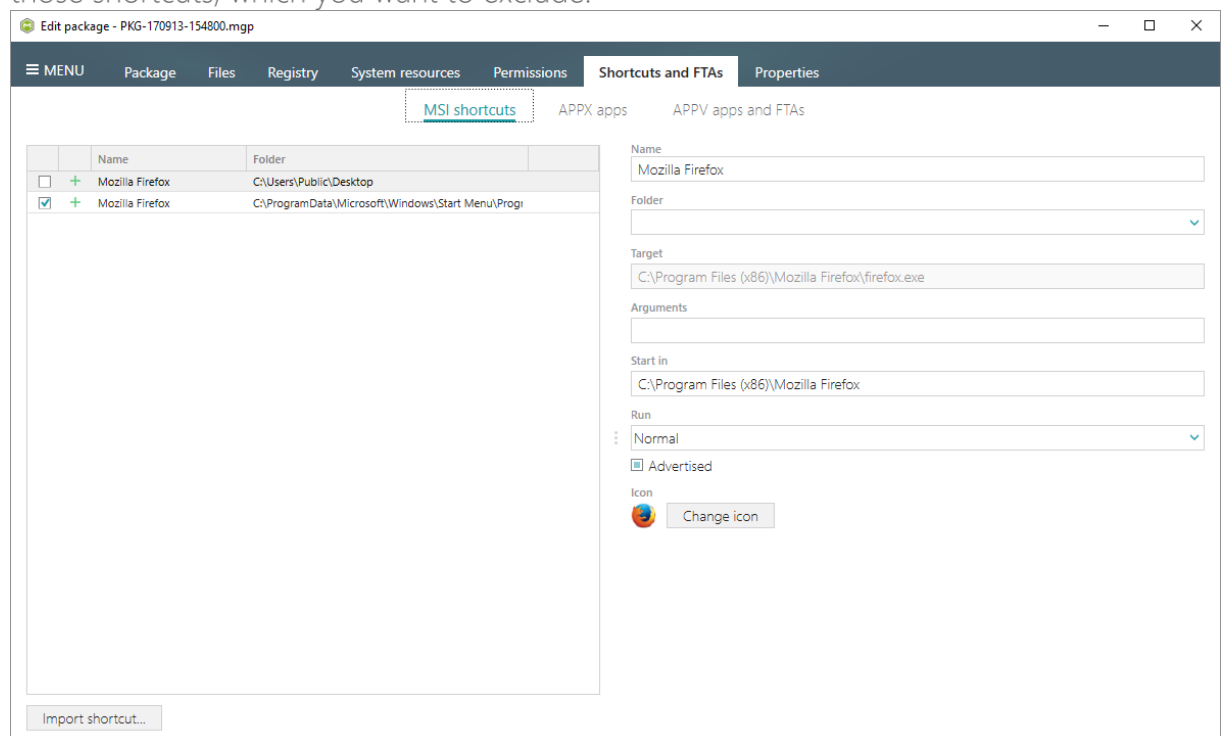


- On the Permissions tab you will find captured permissions for the file system and registry. For excluding unnecessary permission changes, either uncheck the checkbox, located before the path, for which permission changes were detected, or select Do not apply in the

Apply to MSI field, located in the bottom of the window.



- In order to review and exclude unnecessary shortcuts, go to the Shortcuts and FTAs -> MSI shortcuts tab, and uncheck the checkbox, located before the shortcut name in the list, for those shortcuts, which you want to exclude.



- Finally, to build an MST from the project, navigate to the Package -> MST tab, click Browse..., located next to the MSI file name field.

- Choose an MSI package (e.g. Firefox.msi), against to which you want to create a transform (MST), and click Open.

Name	Date modified	Type	Size
Firefox.msi	9/13/2017 6:39 PM	Windows Installer ...	81,614 KB

- Update Application details such as name, publisher, version, language and click Build MST to generate a transform (MST) file. Note that the generated MST will contain only those resources that do not exist in the selected MSI package (in other words, MST will contain

Edit package - PKG-170913-154800.mgp

MENU

Package

Files

Registry

System resources

Permissions

Shortcuts and FTAs

Properties

MSI

MST

APPX

APPV

THINAPP

Application Details

Application name

Mozilla Firefox 55.0.3 (x86 en-US)

Publisher

Mozilla

Version

55.0.3

Product language

1033

Product code

New GUID...

Upgrade code

New GUID...

☐ Generate new codes when build MSI

Summary Information

Title

Installation Database

Subject

Author

Keywords

Install.MSI

Comments

This installer database contains the logic and data required to install <product name>.

Platform

Intel

Languages

0

Transform Options

MSI settings profile

default

Edit

MST file name

Firefox.mst

Browse...

Go to...

MSI file name

Firefox.msi

Browse...

Go to...

Transform

☒ Properties
☒ Update files
☒ Update registry

☒ Features
☒ Add files
☒ Add registry

Build log

Detected MSI installations

Open log

Type	Elapsed	Step

Elapsed time

00:00

Open MST

Build MST

- Edit package - PKG-170913-154800.mpg

MENU

Package

Files

Registry

System resources

Permissions

Shortcuts and FTAs

Properties

MSI

MST

APPX

APPV

THINAPP

Application Details

Application name

Mozilla Firefox 55.0.3 (x86 en-GB)

Publisher

Mozilla

Version

55.0.3

Product language

1033

Product code

(6E606E8F-95F8-4F38-B901-9AA159F13DC0)

New GUID...

Upgrade code

(2B3587BC-9CD5-4639-B617-8350C1B88050)

New GUID...

☐ Generate new codes when build MSI

Summary Information

Title

Installation Database

Author

Comments

This installer database contains the logic and data required to install <product name>.

Subject

Keywords

Install.MSI

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Transform Options

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default

Edit

MSI file name

Firefox.mst

Browse...

Go to...

MSI file name

Firefox.msi

Browse...

Go to...

Transform

☒ Properties

☒ Update files

☒ Update registry

☒ Features

☒ Add files

☒ Add registry

Build log

Detected MSI installations

Open log

Type	Elapsed	Step
	00:00:14	Operation was completed successfully
	00:00:14	Operation was completed successfully
	00:00:14	Writing data to the _Validation table
	00:00:14	Writing data to the CreateFolder table
	00:00:14	Writing data to the AdvtExecuteSequence table
	00:00:14	Writing data to the InstallExecuteSequence table
	00:00:14	Writing data to the CustomAction table
	00:00:14	Writing data to the MsiAssemblyName table
	00:00:13	Writing data to the MsiAssembly table

Elapsed time

00:00:15

Open MST

Build MST

3.3 Create MSP

Choose a scenario that better suits your needs:

- **Create MSP Based On Difference**, described in section 3.3.1
Create a Patch (MSP) package, based on differences between two MSI packages: recent and old ones.
- **Save Changes to MSP**, described in section 3.3.2
Save changes, made to the opened MSI database, as a Patch (MSP) package.

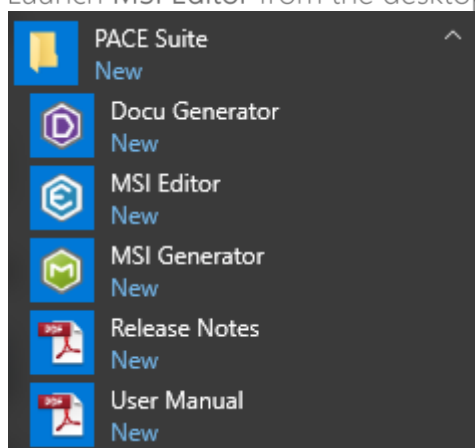
NOTE Adhere to the following restrictions during creating a Patch package:

- Do not move files from one folder to another.
- Do not move files from one cabinet to another.
- Do not change the order of files in a cabinet.
- Do not change the sequence number of existing files. The sequence number is the value specified in the Sequence column of the File Table.
- Any new files that are added by the patch must be placed at the end of the existing file sequence. The sequence number of any new file in the upgraded image must be greater than the largest sequence number of existing files in the target image.
- Do not change the primary keys in the File Table between the original and new .msi file versions.

3.3.1 Create MSP Based On Difference

Create a Patch (MSP) package, based on differences between two MSI packages: recent and old ones.

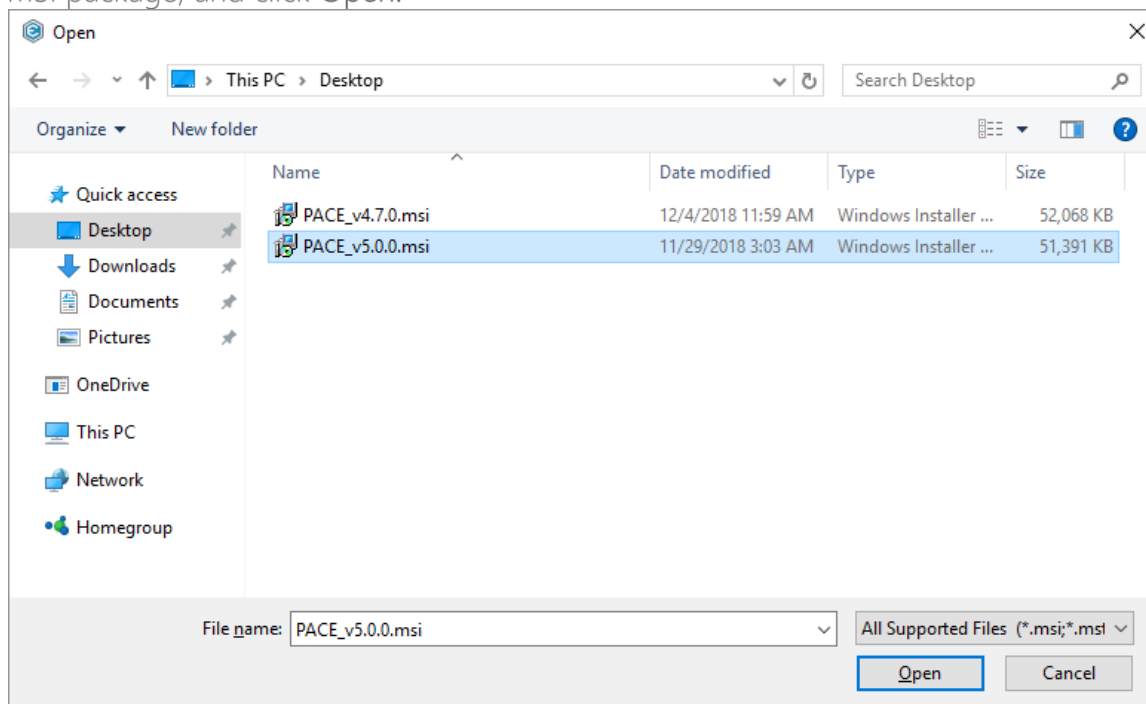
- [1]. Launch MSI Editor from the desktop or the start menu shortcut.



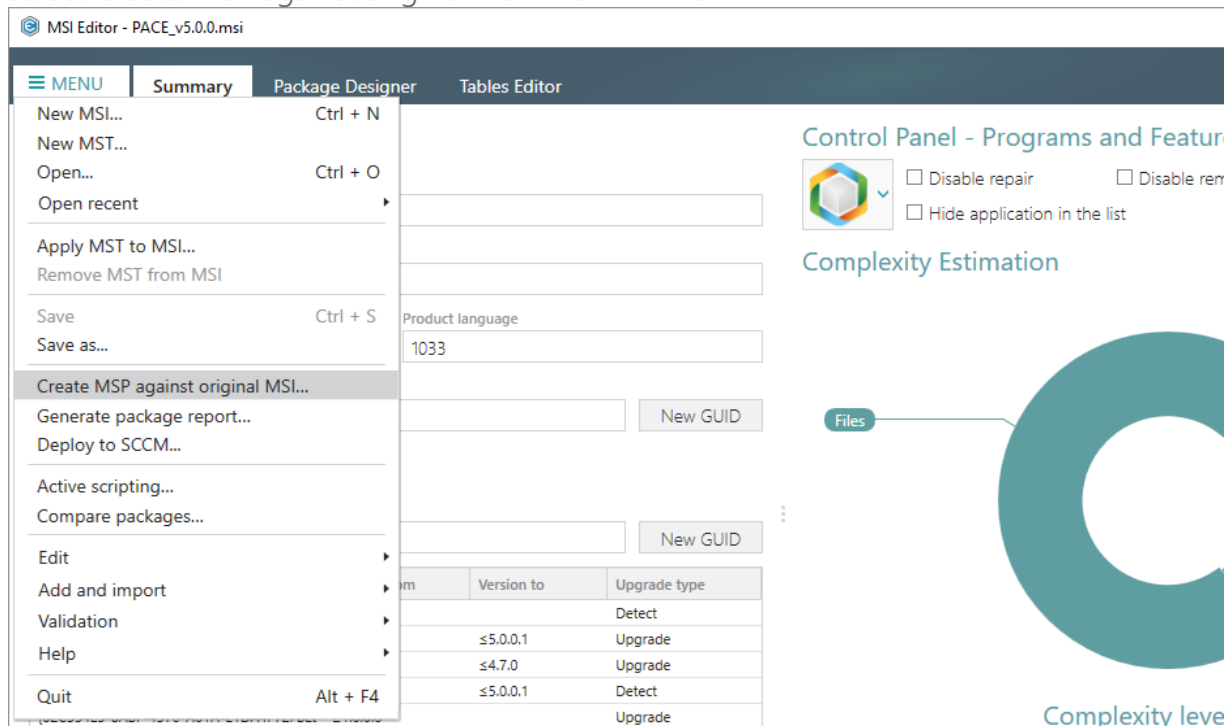
- [2]. Select Open... from MENU.



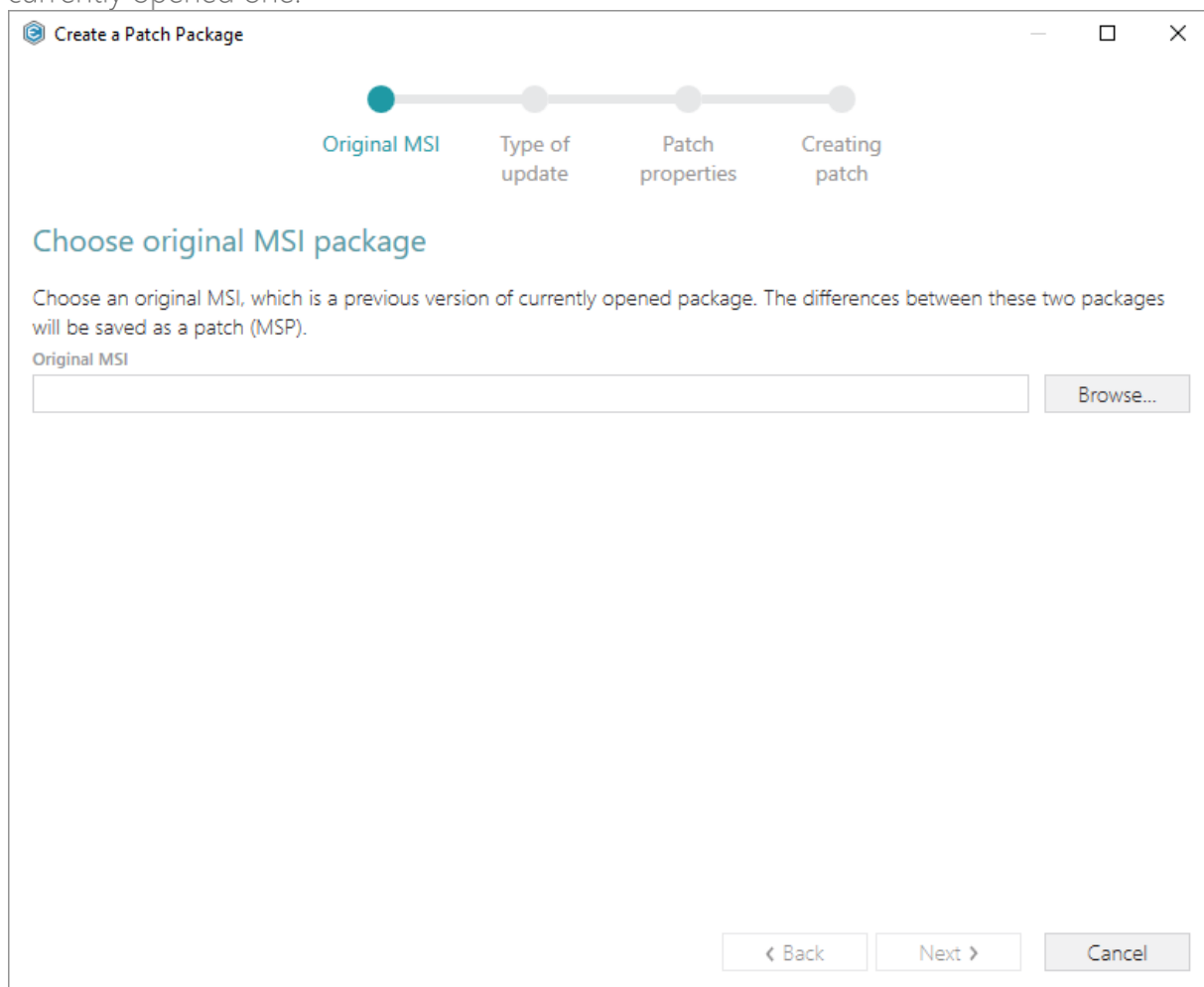
- [3]. Choose a recent MSI package, containing new resources in comparison to the previous MSI package, and click Open.



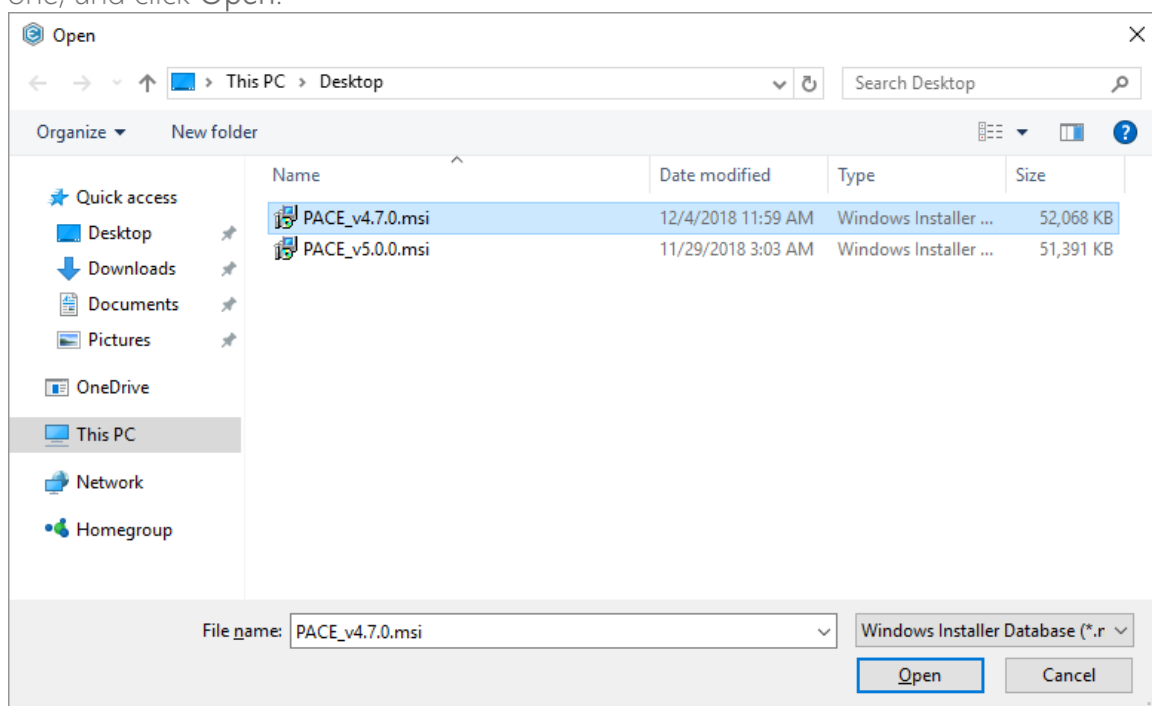
- [4]. Select Create MSP against original MSI... from MENU.



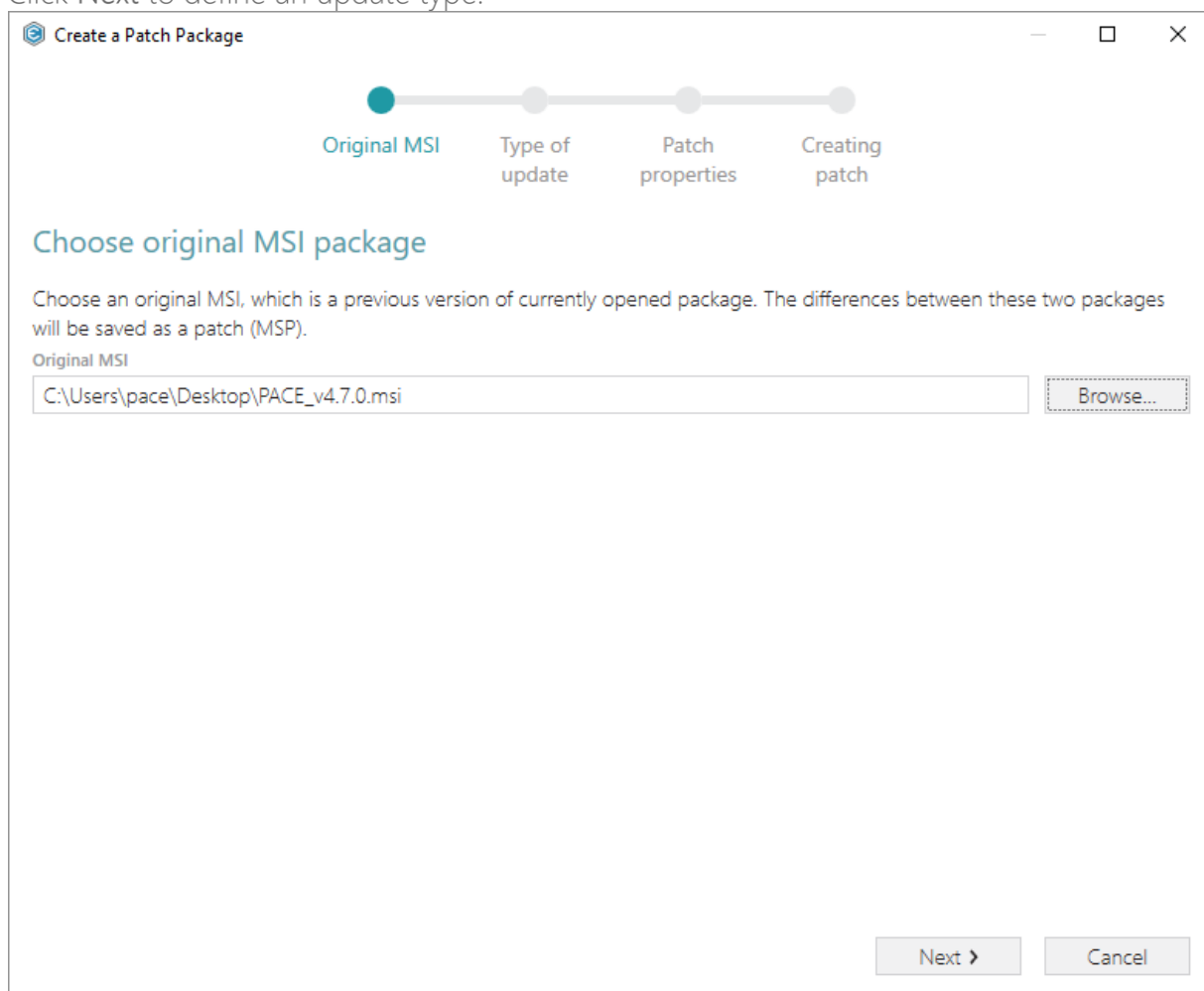
- [5]. Click Browse... to choose an original MSI package, which is a previous version of the currently opened one.



- [6]. Choose an original (old) MSI package, which is a previous version of the currently opened one, and click Open.



- [7]. Click Next to define an update type.



- [8]. Increase a **Product version** value for the minor and major update and leave default one for the small update. Generate new **Product code** only for the major update and leave default one for the minor and small update. If needed, update a **Target product name** in order to change the Product Name of the updated application. Click **Next** to select a patch properties.

The screenshot shows the 'Create a Patch Package' dialog box with the title bar 'Create a Patch Package'. At the top, a progress bar indicates four steps: 'Original MSI' (completed, marked with a checkmark), 'Type of update' (current step, highlighted in blue), 'Patch properties', and 'Creating patch'. Below the progress bar, the section 'Type of update' contains the instruction: 'Increase version for minor and major update and leave default value for small update'. There are three input fields: 'Product version' with the value '5.0.0.4', 'Product code' with the value '{CFE7D213-DB0C-4B8B-9732-FF995F09B482}' and a 'New GUID' button to its right, and 'Target product name' with the value 'PACE Suite'. At the bottom, there is a link 'Review the instructions to create a patch package successfully...' and three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

Create a Patch Package

Original MSI **Type of update** Patch properties Creating patch

Type of update

Increase version for minor and major update and leave default value for small update

Product version
5.0.0.4

Generate new code only for major update and leave default value for minor and small update

Product code
{CFE7D213-DB0C-4B8B-9732-FF995F09B482} New GUID

Target product name
PACE Suite

[Review the instructions to create a patch package successfully...](#)

< Back **Next >** Cancel

- [9]. Update Patch Display name, Description and select the necessary Patch properties. Click Create to create the Patch (MSP) package.

Create a Patch Package

Original MSI Type of update **Patch properties** Creating patch

Patch properties

Display name
PACE Suite 5.0.0.4 Patch

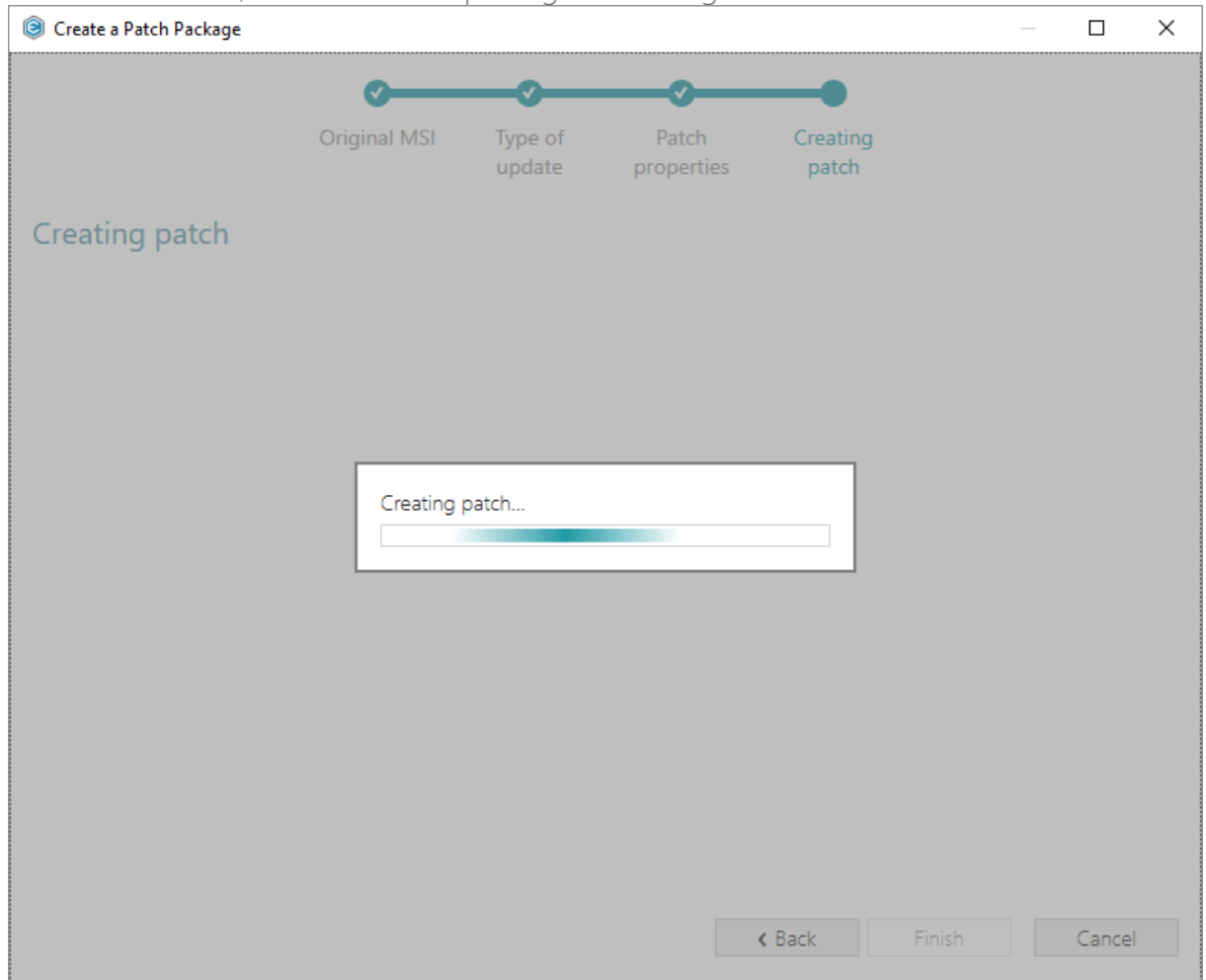
Description
Patch description

☒ Make this patch uninstallable
The only method to remove a patch that is not uninstallable is to uninstall the patched application and then reinstall the application without reapplying the patch.

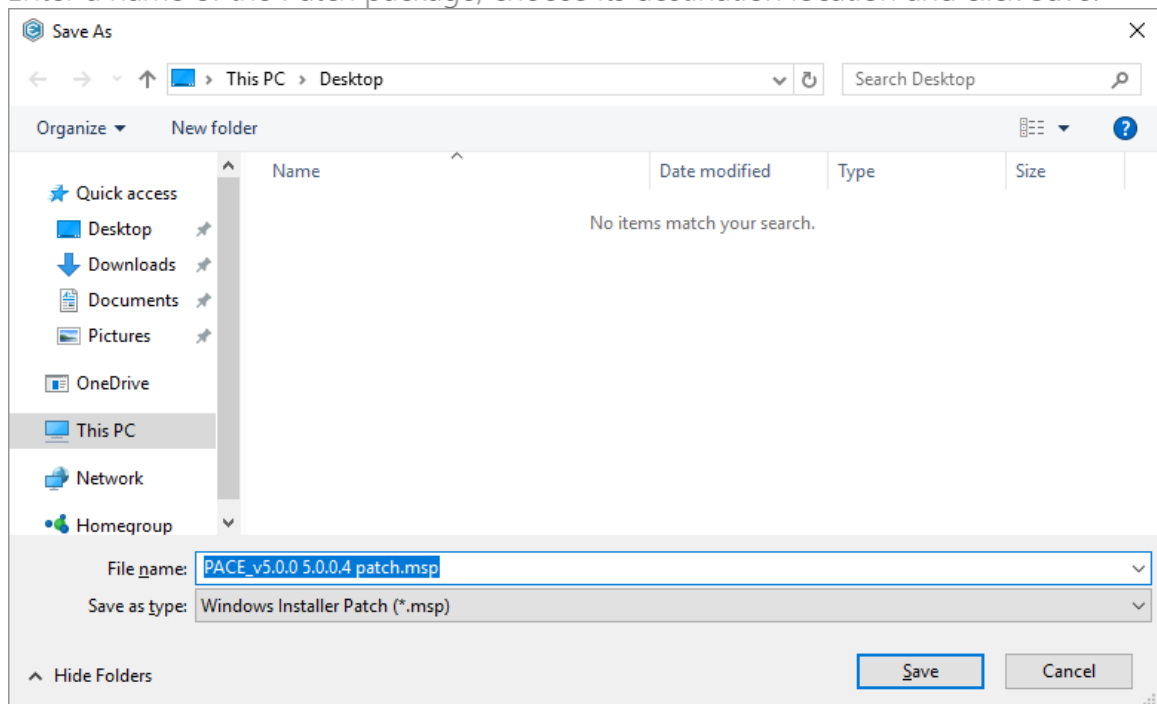
☐ Include whole files only
Changed files are to be included in their entirety when creating the patch package instead of creating a binary file patch. The patch files will be bigger in size but the API runs faster.

< Back **Create >** Cancel

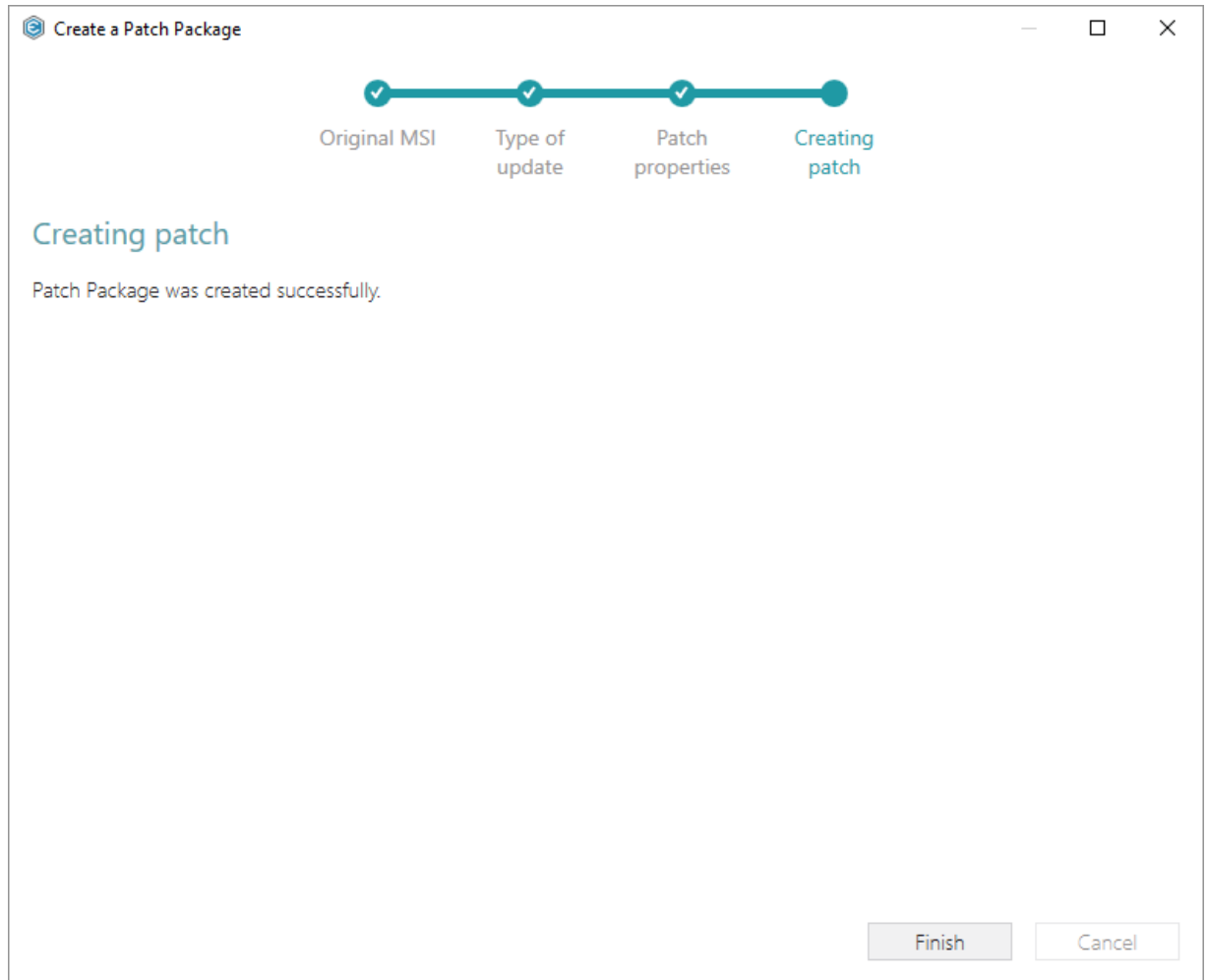
[10]. Please wait a little, while the Patch package is creating.



[11]. Enter a name of the Patch package, choose its destination location and click Save.



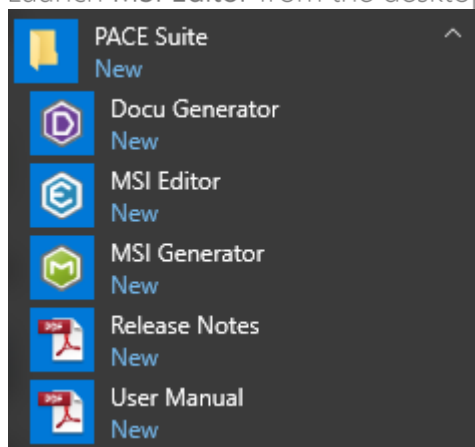
[12]. Click Finish to close the wizard.



3.3.2 Save Changes to MSP

Save changes, made to the opened MSI database, as a Patch (MSP) package.

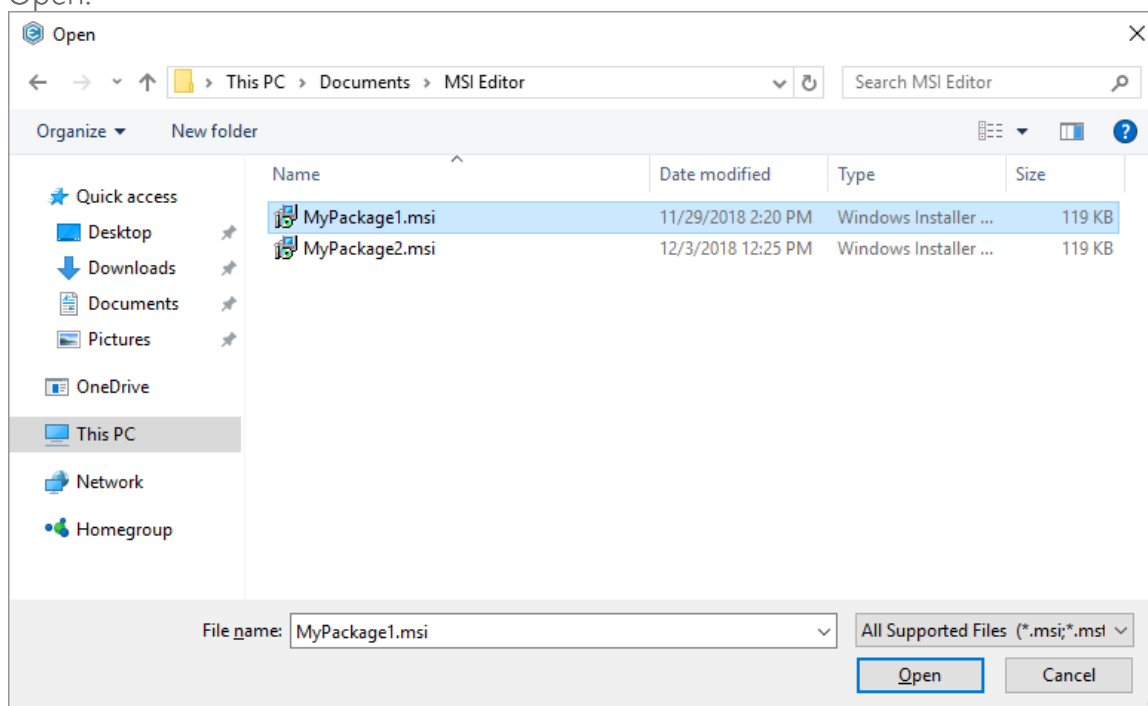
[1]. Launch MSI Editor from the desktop or the start menu shortcut.



- [2]. Select Open... from MENU.

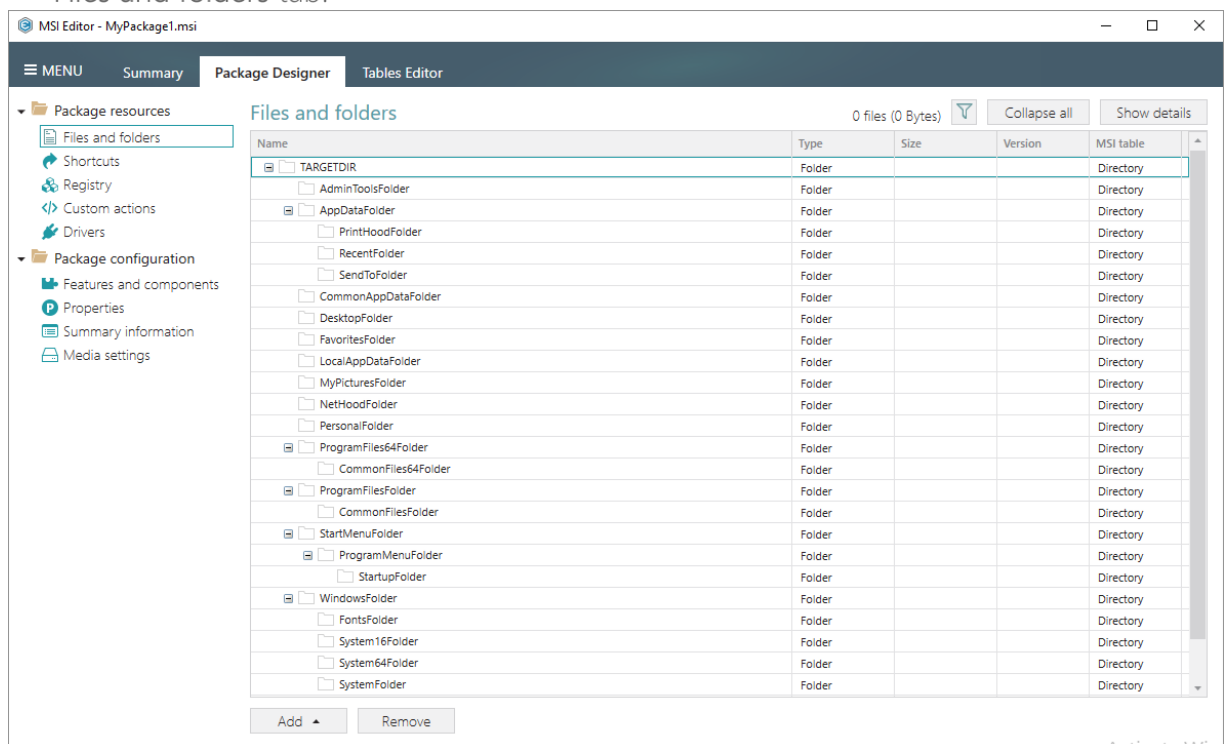


- [3]. Choose an MSI package, for which you want to create a Patch (MSP) package, and click Open.

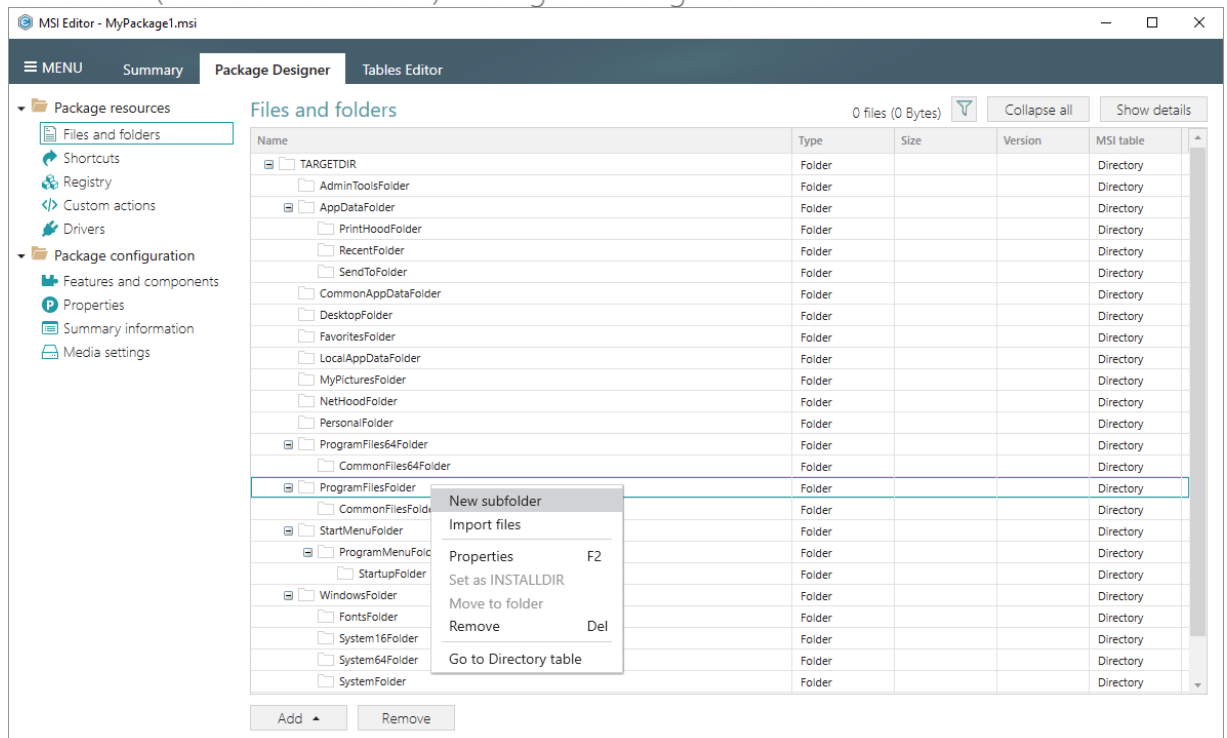


- [4]. Now you can start adding the necessary resources, which you want to include to the Patch (MSP) package, using MSI Editor. The steps from [5] to [13] describe how to create a new folder and import files to this folder; the steps from [14] to [22] describe how to create a new registry key, value, and import registry entries from the REG files; the steps from [23] to [31] describe how to create a new and import existing shortcuts; and the steps [32]-[38] describe how to save all these changes to the Patch (MSP) package.

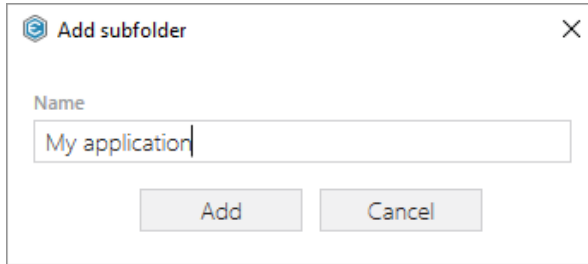
- [5]. In order to create a new folder and import files to this folder, go to the Package Designer –> Files and folders tab.



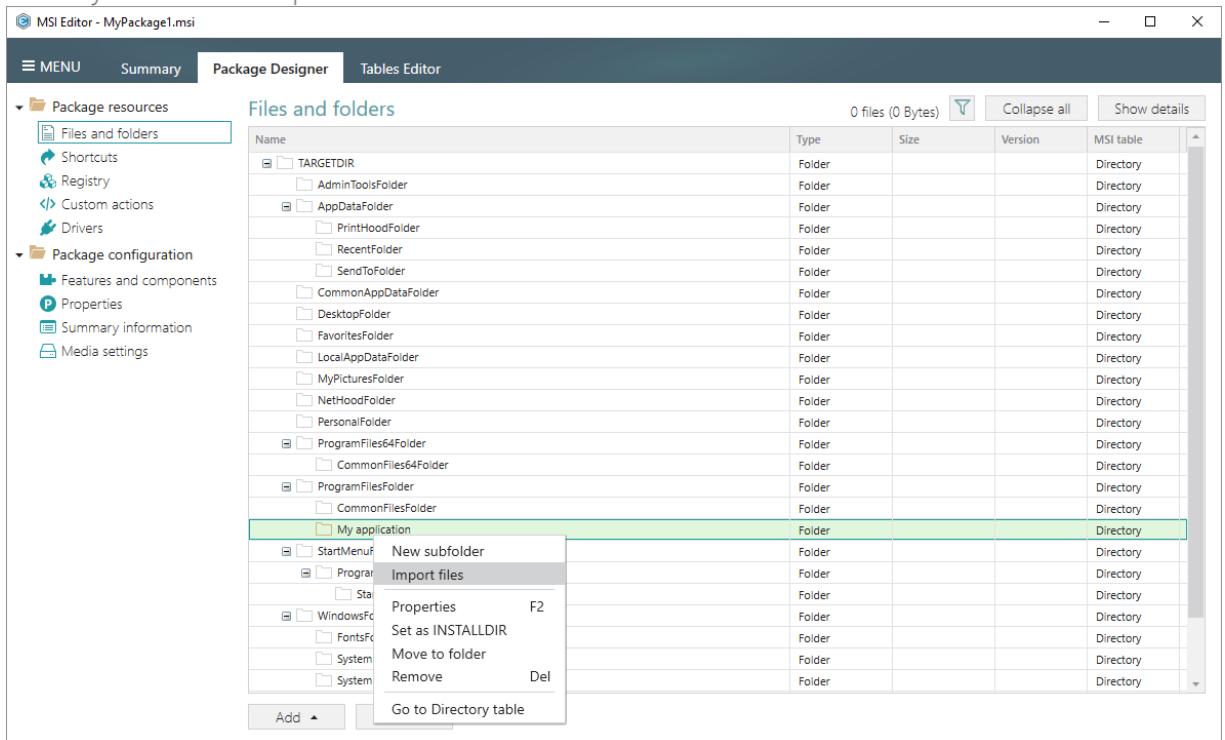
- [6]. Select New subfolder from the context menu of a folder, where you want to create a new subfolder. Note that system folders are displayed using the grey folder icon and the subfolders (user-defined folders) – using the orange folder icon.



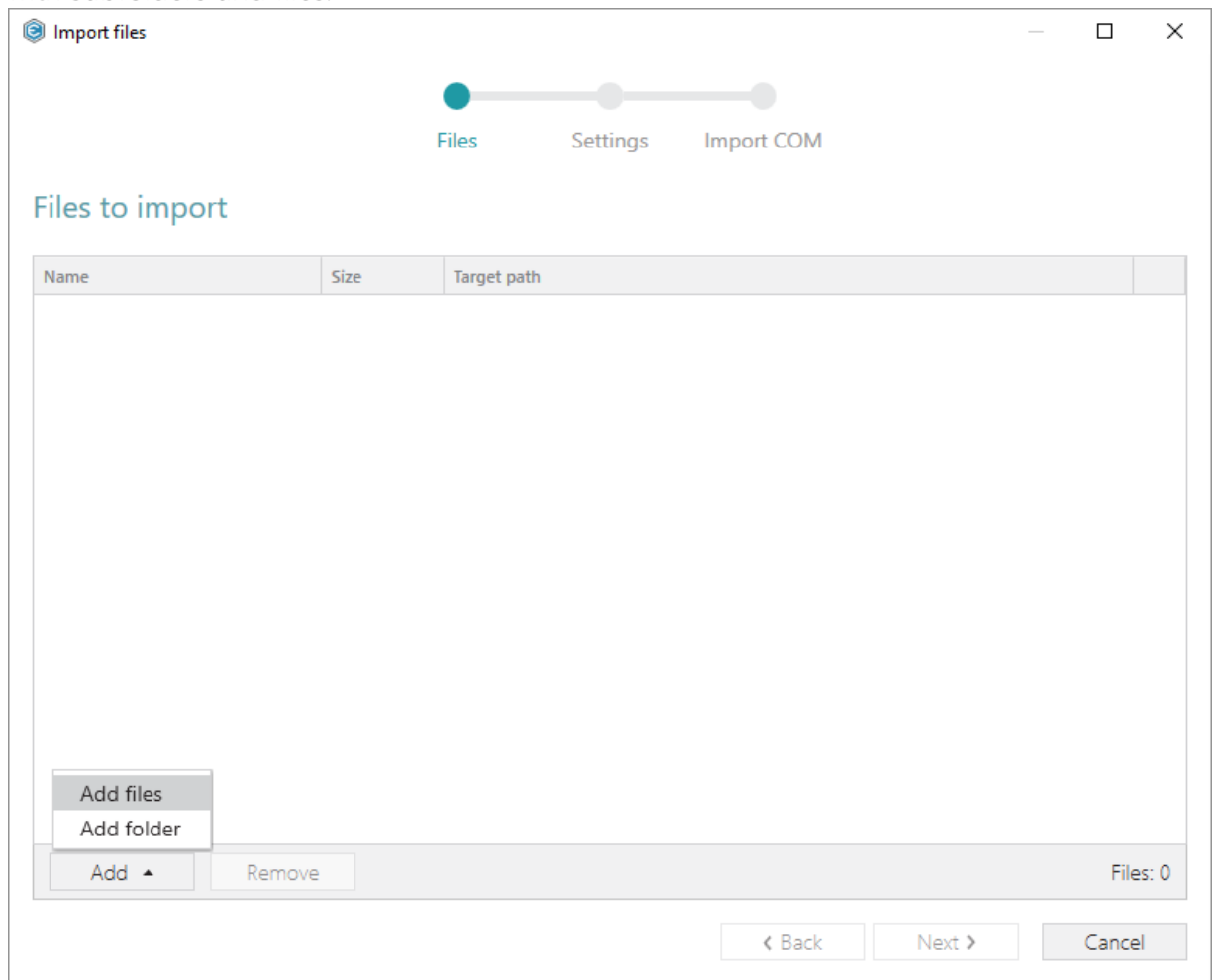
- [7]. Enter a folder name and click Add.



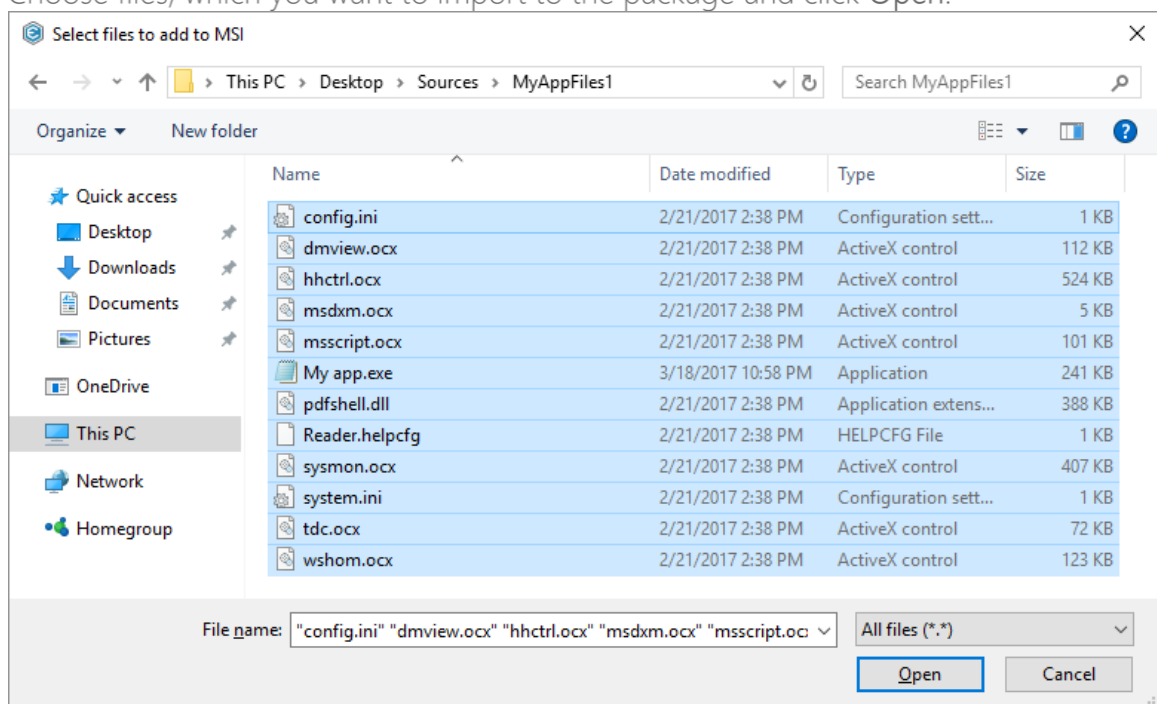
- [8]. For adding files to your package, select Import files from the context menu of a folder, to which you want to import files.



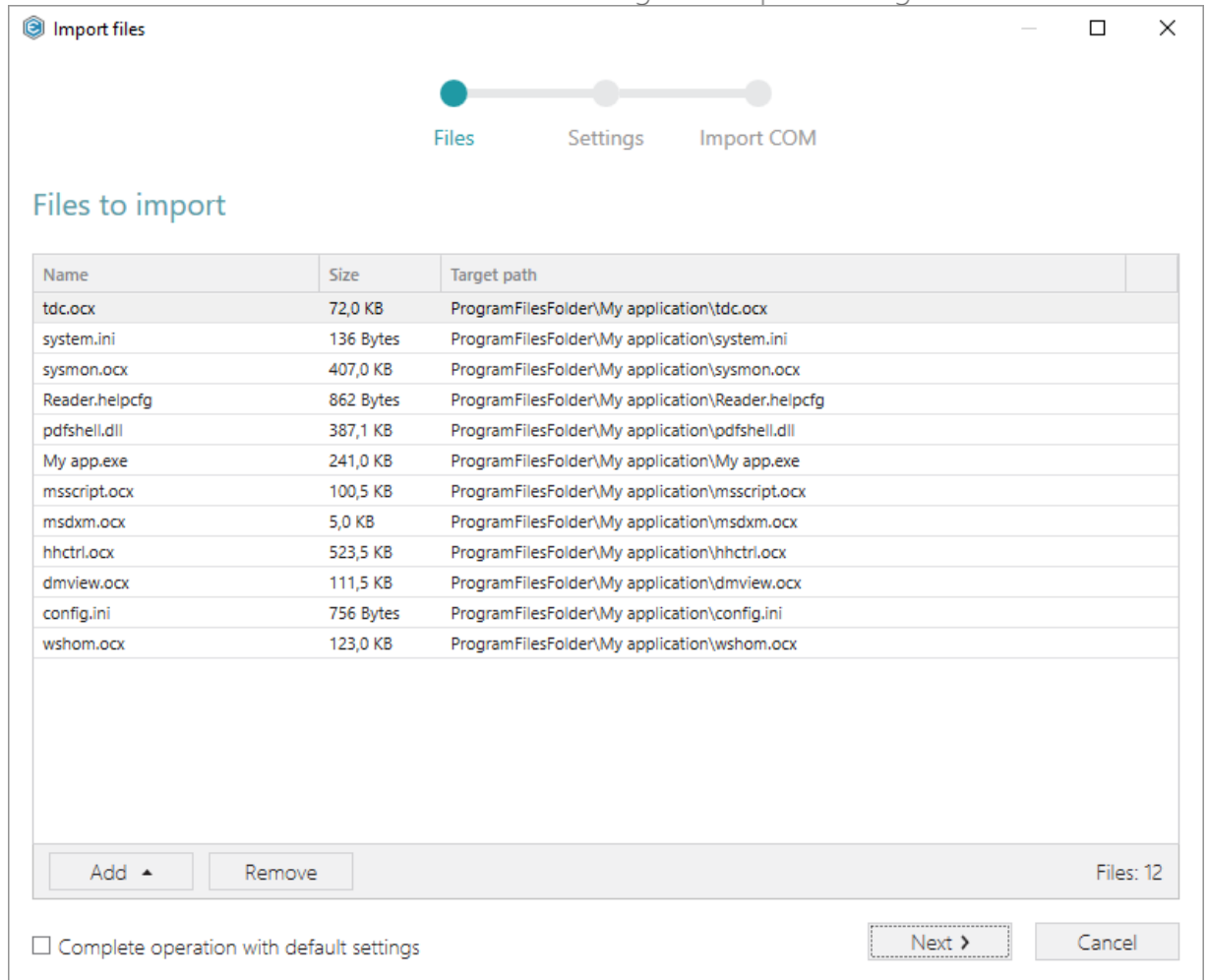
- [9]. Click Add -> Add files to choose files in a folder or Add -> Add folder to choose a folder with subfolders and files.



- [10]. Choose files, which you want to import to the package and click Open.



[11]. Review the selected files and click **Next** to manage the import settings.



[12]. At this step, you can manage how to save INI files, select an MSI Feature, to which components with files will be assigned. Below, in the tables, you will find the detailed description of these settings. Note that files compression types and other Media settings are represented on the separate **Media settings** tab of the **Package Designer**. Choose the desired settings and click **Next** to continue.

Import files

Files

Settings

Import COM

Settings

INI handling

☒ Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

☐ Save all INI files to the 'File' table

☐ Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

[See invalid INI files](#)

Target feature

<PACE feature>

New feature

☒ Manage features automatically

☐ Complete now with default settings

< Back

Next >

Cancel

INI handling

Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data, will be saved to the 'File' table as binary files.

Save all INI files to the 'File' table

All INI files will be saved only to the 'File' table as binary files.

Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

A valid content of all INI files will be saved to the 'IniFile' table, and then all INI files will be saved to the 'File' table as binary files.
This allows installing INI files to the target system keeping their original structure with unsupported data, and update the necessary INI file values.

Target feature

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported files. Feature structure is based on the packaging best practices and depends on the destination location of files.

<a feature, selected from the list>

Components with files will be assigned to a feature, selected from the list.

- [13]. On the last step you can review COM information, extracted from the selected files. For importing this COM information along with files, select the **Import COM information** option. Click **Finish** to complete the import.

Import files

Files Settings **Import COM**

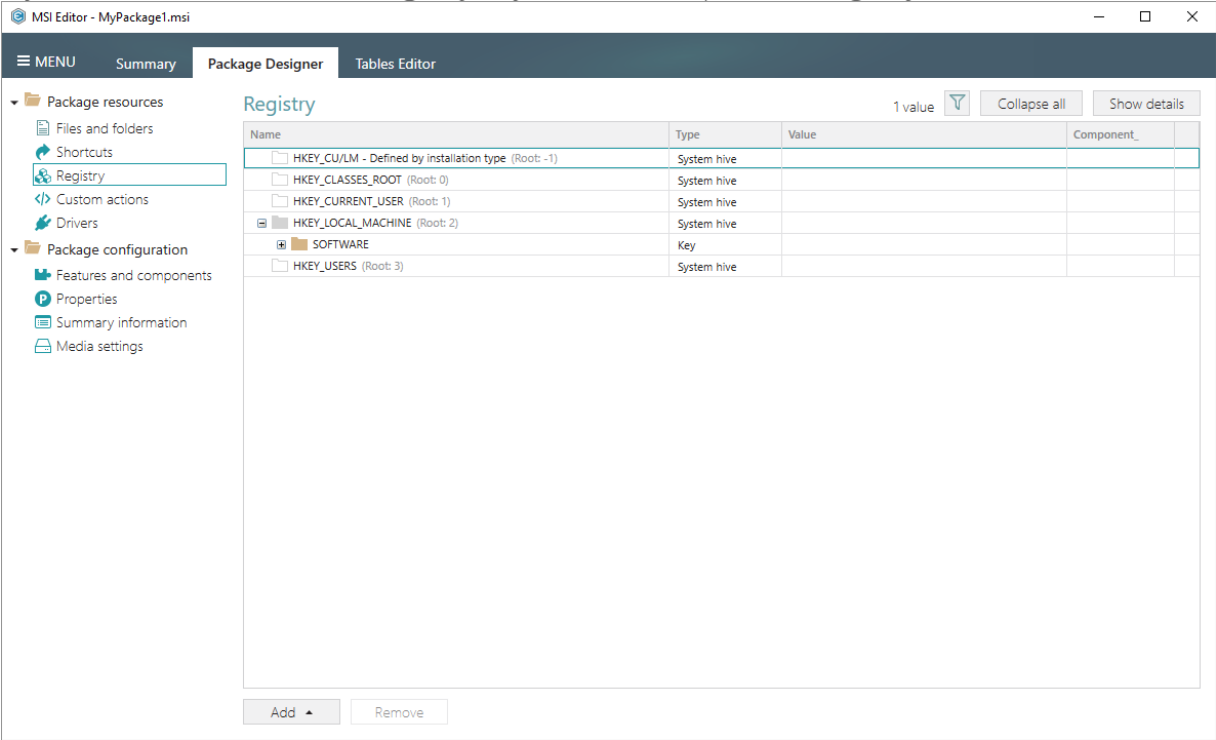
Extracted COM information

File	Root	Key	Value name	Value
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A	ThreadingModel	Apartment
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		131473
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		{AEB84C80-95DC-11D0-B7FC-B61140119C4A
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		1.0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A		C:\Users\pace\Desktop\Sources\
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A		DiskManagement.PropertyPage
dmview.ocx	HKCR	DiskManagement.Control\CLSID		{AEB84C83-95DC-11D0-B7FC-B61140119C4A

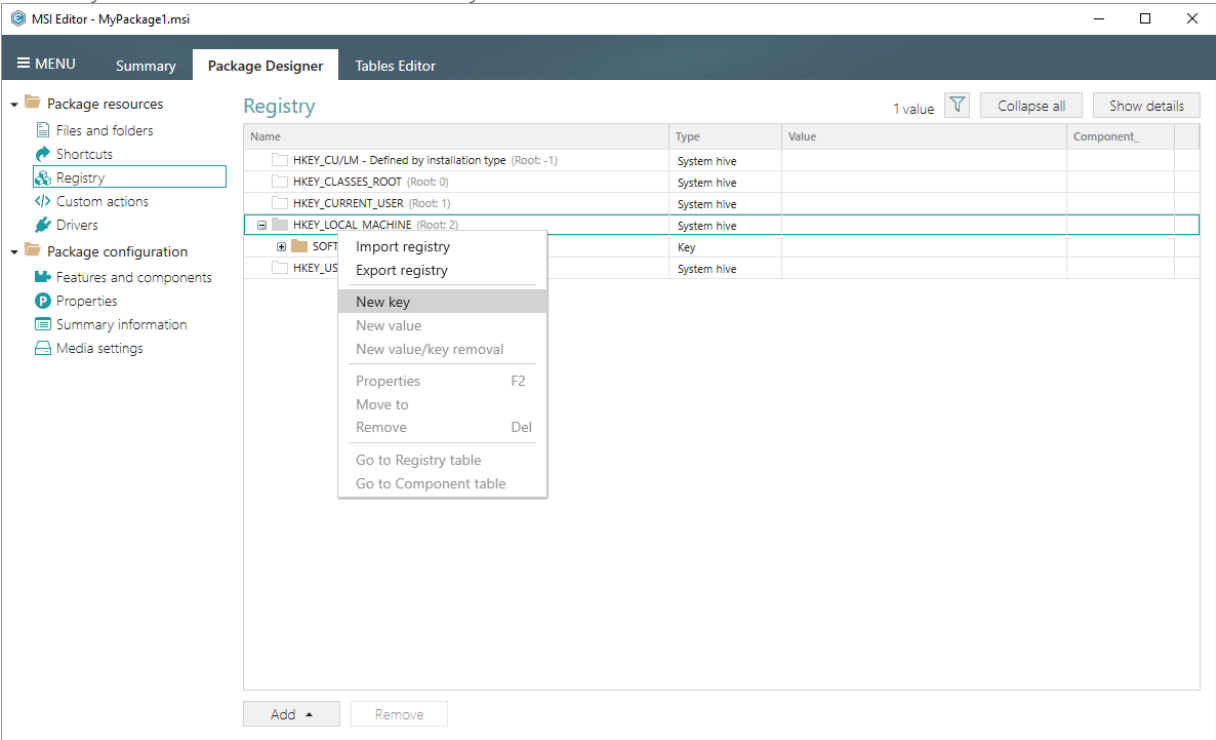
☐ Import COM information

Back Finish Cancel


[14]. If you need to create a new registry key or a value, open the Registry tab.



[15]. Select New key from the context menu of a root hive (e.g. HKEY_LOCAL_MACHINE), where you want to create a new key.



[16]. Enter a key name, select a component from the list, then click **Add**. For creating a new component, go to the **Features and Components** tab of the **Package Designer**.

 **Add key** ✕

Key

Test

Component_

NewComponent

NOTE For conforming MSI requirements, the 'Forced key creation on install' value will be added to the specified key.

Parent key

Root

HKEY_LOCAL_MACHINE (2)

Add

Cancel

[17]. In order to create a new registry value, select **New value** from the context menu of a key, where you want to create this value.

MSI Editor - MyPackage1.msi

MENU

Summary

Package Designer

Tables Editor

Package resources

Files and folders

Shortcuts

Registry

Custom actions

Drivers

Package configuration

Features and components

Properties

Summary information

Media settings

Registry

2 values

Collapse all

Show details

Name	Type	Value	Component_
HKEY_CU/LM - Defined by installation type (Root: -1)	System hive		
HKEY_CLASSES_ROOT (Root: 0)	System hive		
HKEY_CURRENT_USER (Root: 1)	System hive		
HKEY_LOCAL_MACHINE (Root: 2)	System hive		
SOFTWARE	Key		
Test	Key		
Test (Forced)	String value	(Value not set)	NewComponent
HKEY_USERS	System hive		

Add

Remove

Import registry

Export registry

New key

New value

New value/key removal

Properties F2

Move to

Remove Del

Go to Registry table

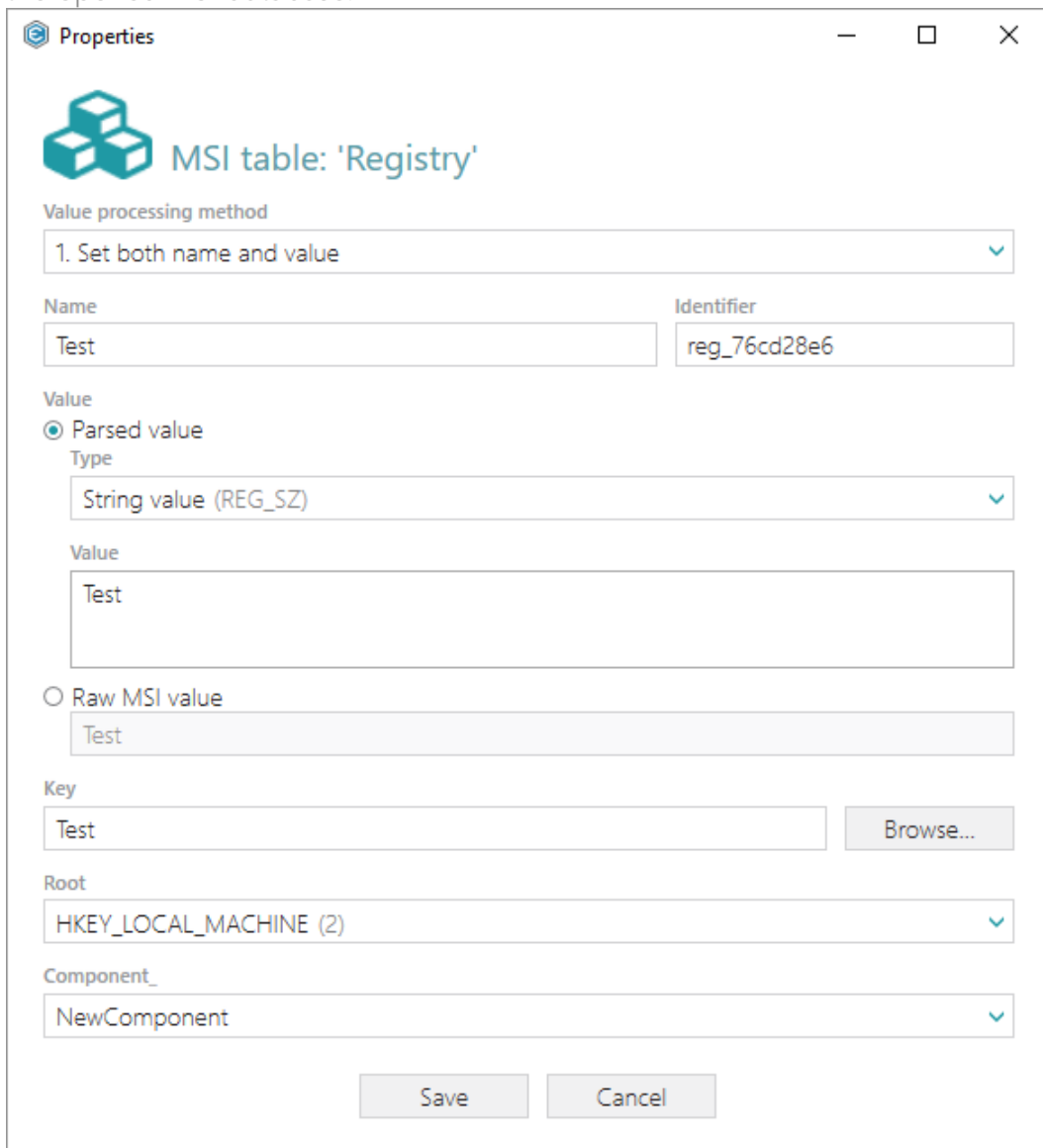
Go to Component table

[18]. For creating an ordinary registry value, specify a name and its value, choose a component from the list, to which this value will be assigned, and click **Save**.

For creating a Default key value, or securing a key creation and/or removal, select a respective option from the **Value processing method** field.

The **Parsed value** option serves easier creation of a registry value of the proper value type.

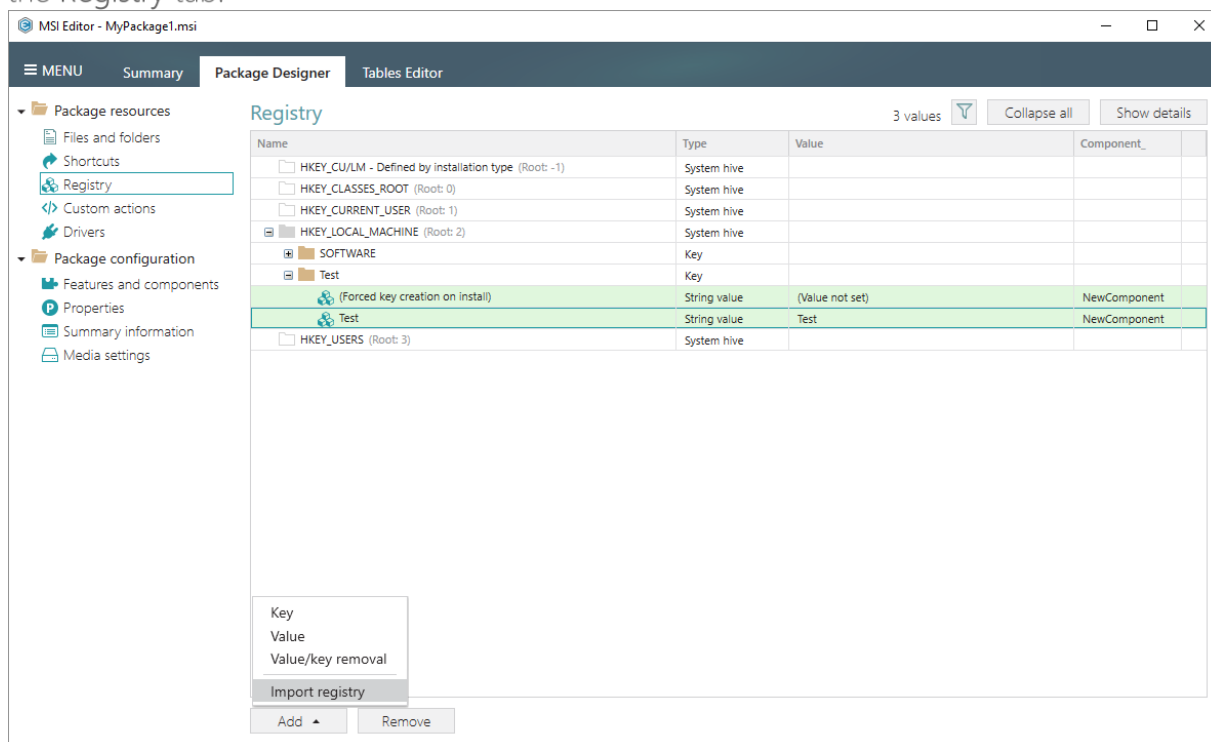
However, the Raw MSI value option gives ability to manage what exactly will be saved to the opened MSI database.



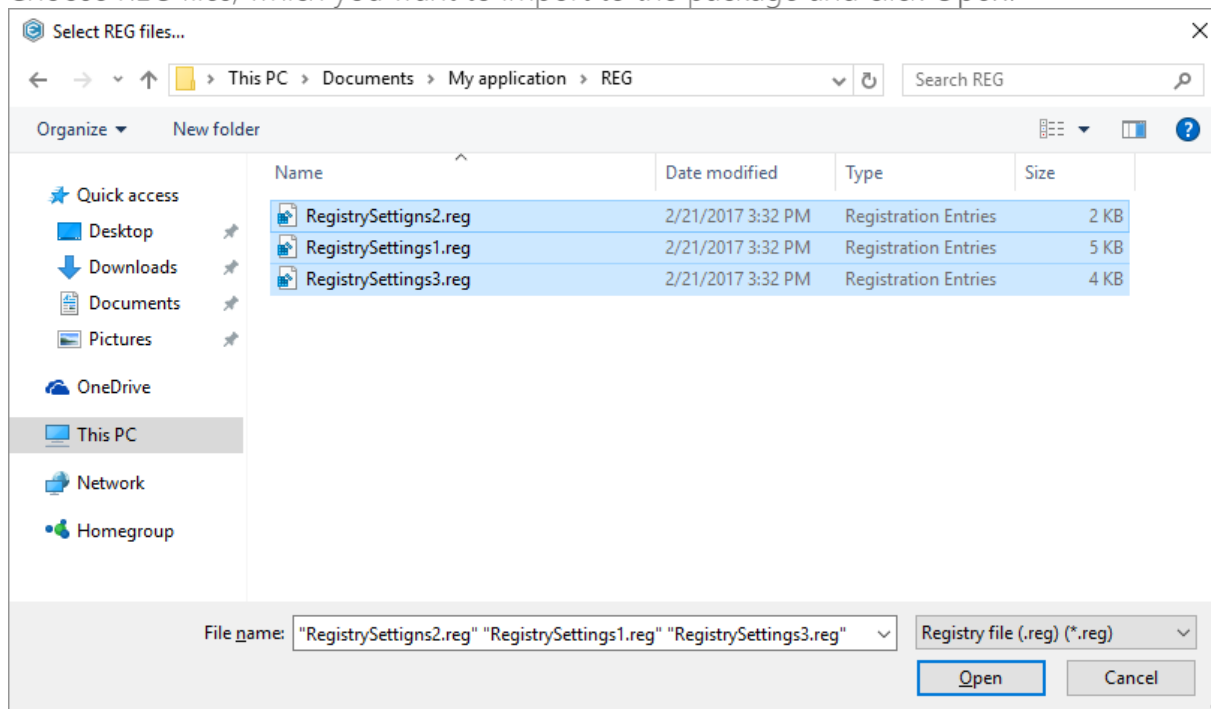
The screenshot shows a 'Properties' dialog box for an MSI table named 'Registry'. The dialog has a title bar with standard window controls. Below the title bar is a header section with a cube icon and the text 'MSI table: 'Registry''. The main area contains several fields and options:

- Value processing method:** A dropdown menu set to '1. Set both name and value'.
- Name:** A text field containing 'Test'.
- Identifier:** A text field containing 'reg_76cd28e6'.
- Value:** A section with two radio buttons:
 - Parsed value:** Selected. Below it is a 'Type' dropdown set to 'String value (REG_SZ)' and a 'Value' text field containing 'Test'.
 - Raw MSI value:** Unselected. Below it is a text field containing 'Test'.
- Key:** A text field containing 'Test' and a 'Browse...' button.
- Root:** A dropdown menu set to 'HKEY_LOCAL_MACHINE (2)'.
- Component_:** A dropdown menu set to 'NewComponent'.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom.

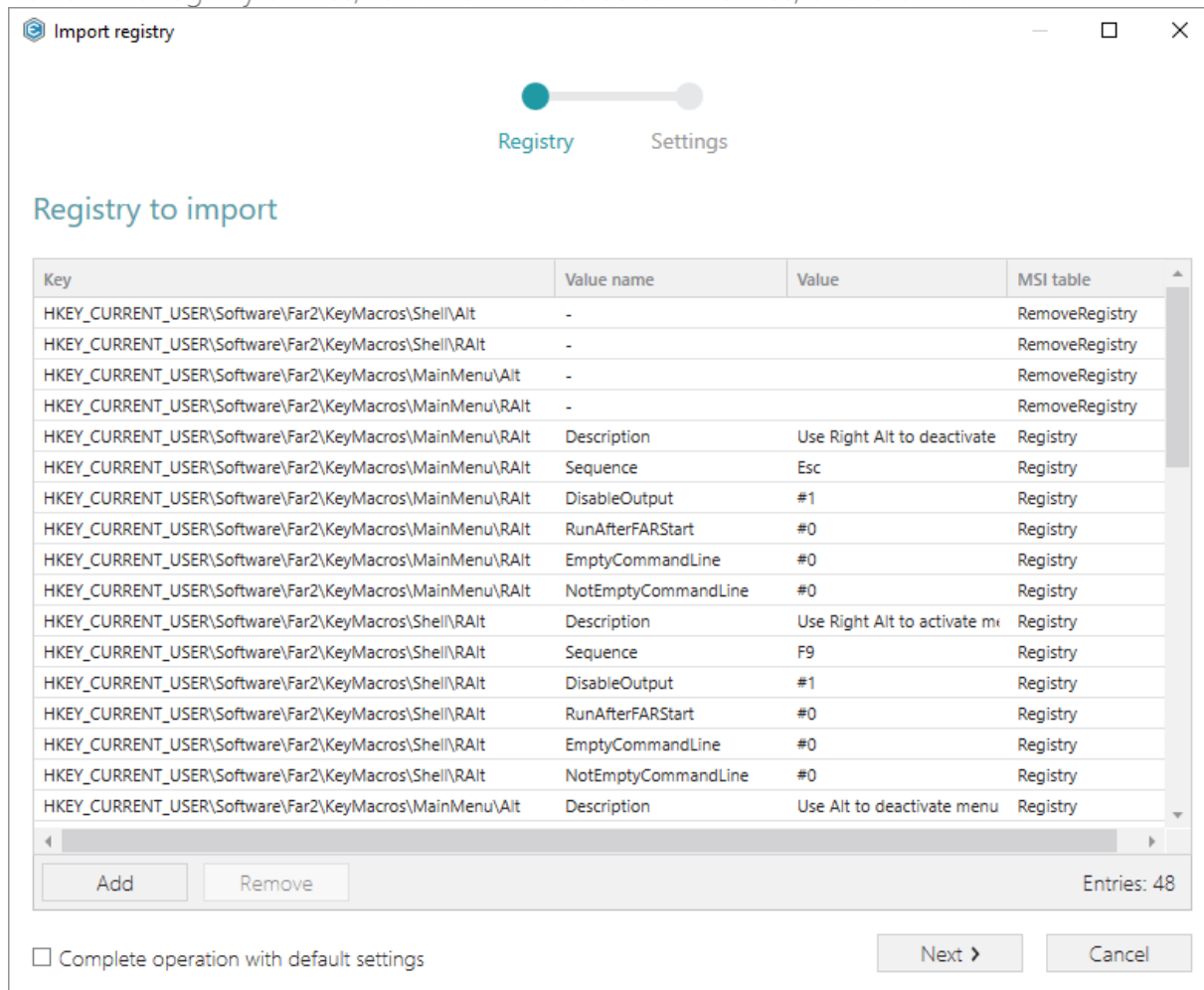
- [19]. For importing registry from the REG file, select Add -> Import registry from the toolbox of the Registry tab.



- [20]. Choose REG files, which you want to import to the package and click Open.



[21]. Review the registry entries, read from the selected REG files, and click Next.



[22]. At the Settings step, you can select an MSI Feature, to which components with the registry entries will be assigned. If the registry entries, which have been read, contain values in square brackets, you can select how these values will be processed – as MSI properties or as ordinary registry values. Below, in the tables, you will find the detailed description of

these settings. Click Finish to complete the import.

Import registry

Registry

Settings

Settings

Target feature

<PACE feature>

New feature

☒ Manage features automatically

Values with special symbols

Key	Value name	Value	MSI table
HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\MaintenanceService	Test	[ProductCode]	Registry

☒ Escape square bracket characters to deliver original values (e.g. [String[]])

☐ Process values in square bracket as MSI properties (e.g. [String])

Back

Finish

Cancel

Feature settings

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported registry. Feature structure is based on the packaging best practices and depends on the registry key location.

<a feature, selected from the list>

Components with registry will be assigned to a feature, selected from the list.

Values with special symbols

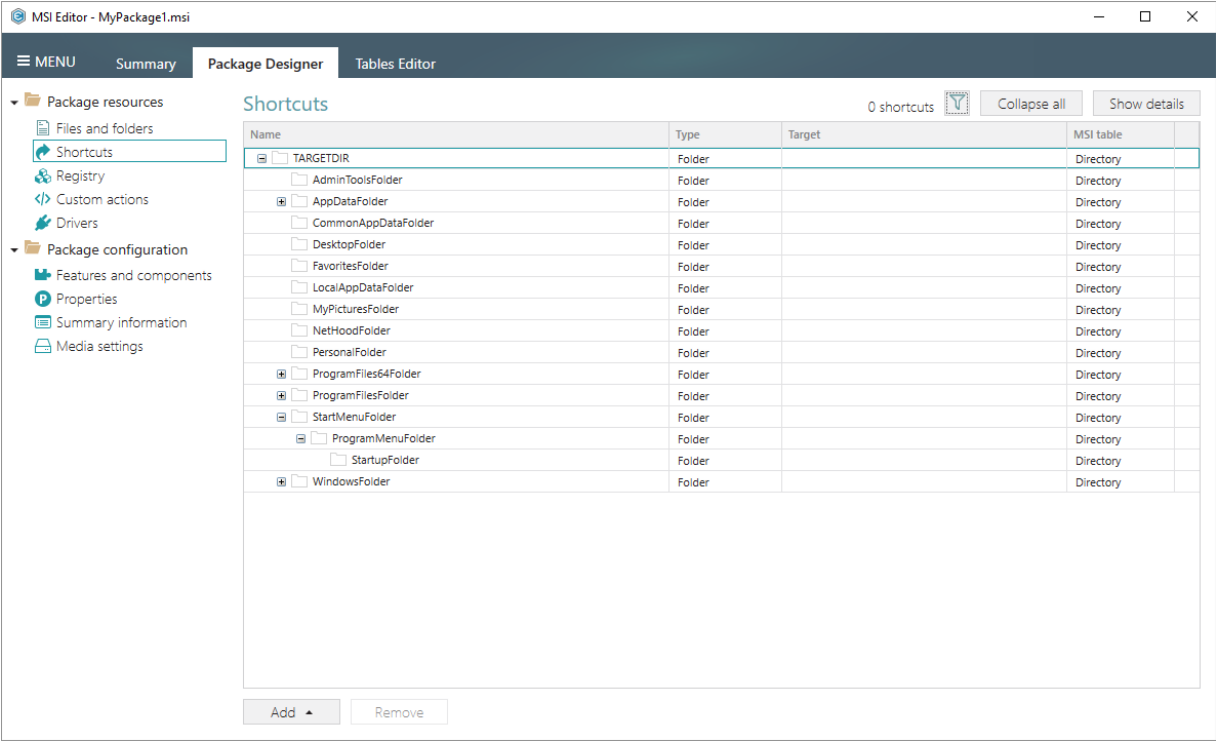
Escape square bracket characters to deliver original values

Values in square brackets, displayed in the list, will be saved to MSI as ordinary strings using the general rules for escaping the special characters. This approach guarantees the delivery of the imported registry entries to the target system with their original values.

Process values in square brackets as MSI properties

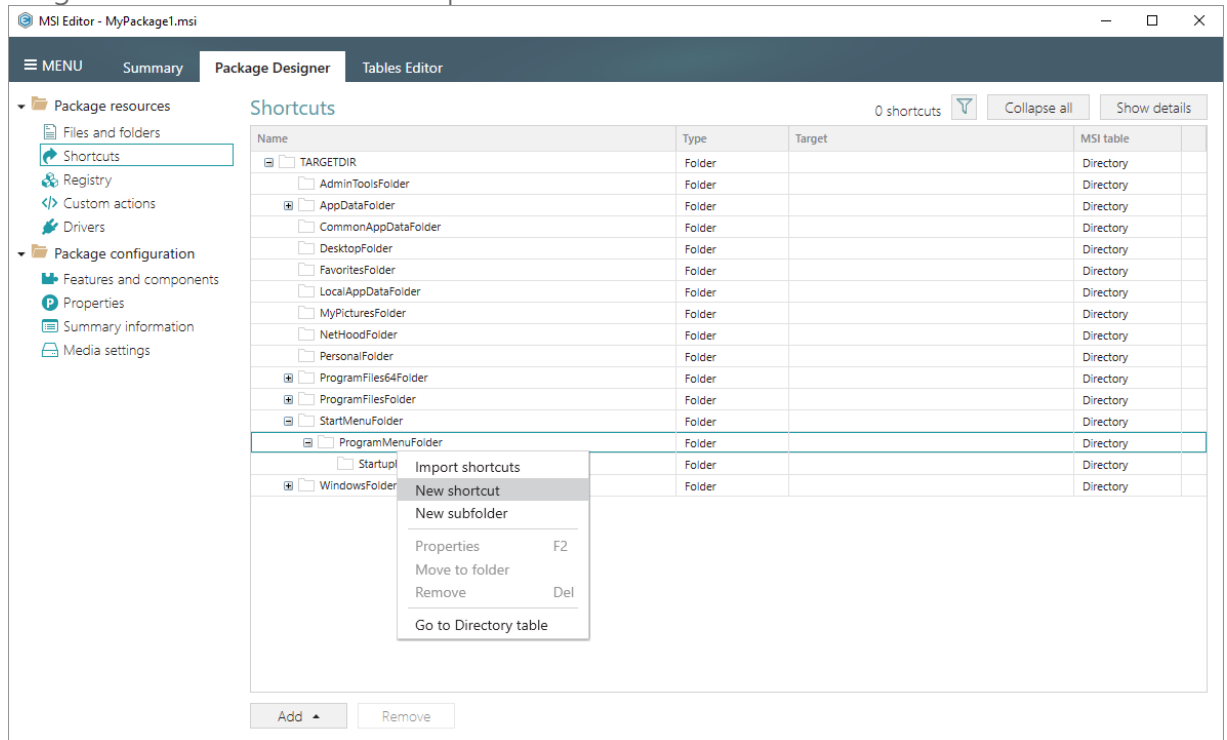
Values in square brackets, displayed in the list, will be saved to MSI as MSI properties. Thus, each MSI property will be replaced with its value during the MSI installation. If a property does not exist in MSI during the installation, it will be replaced with the blank value.

[23]. If you need to create a new or import the existing shortcuts to the package, go to the Shortcuts tab.



[24]. In order to add a new shortcut, select New shortcut from the context menu of a folder, where you want to create this shortcut. Usually, application shortcuts are installed to the

ProgramMenuFolder and DesktopFolder.



[25]. Select a type of the shortcut target and click Next.

(The following instructions describe creation of the shortcut of the 'File from the package')

target type.)


Add shortcut

Type


Target

Appearance


Target type




☒ File from the package
An advertised or regular (non-advertised) shortcut that points to a file of the package.




☐ File on the system
A regular (non-advertised) shortcut that points to a file on the target system.



☐ Folder from the package
A regular (non-advertised) shortcut that points to a folder of the package.



☐ Folder on the system
A regular (non-advertised) shortcut that points to a folder on the target system.



☐ URL
An internet shortcut that opens the specified URL.

Next >

Cancel

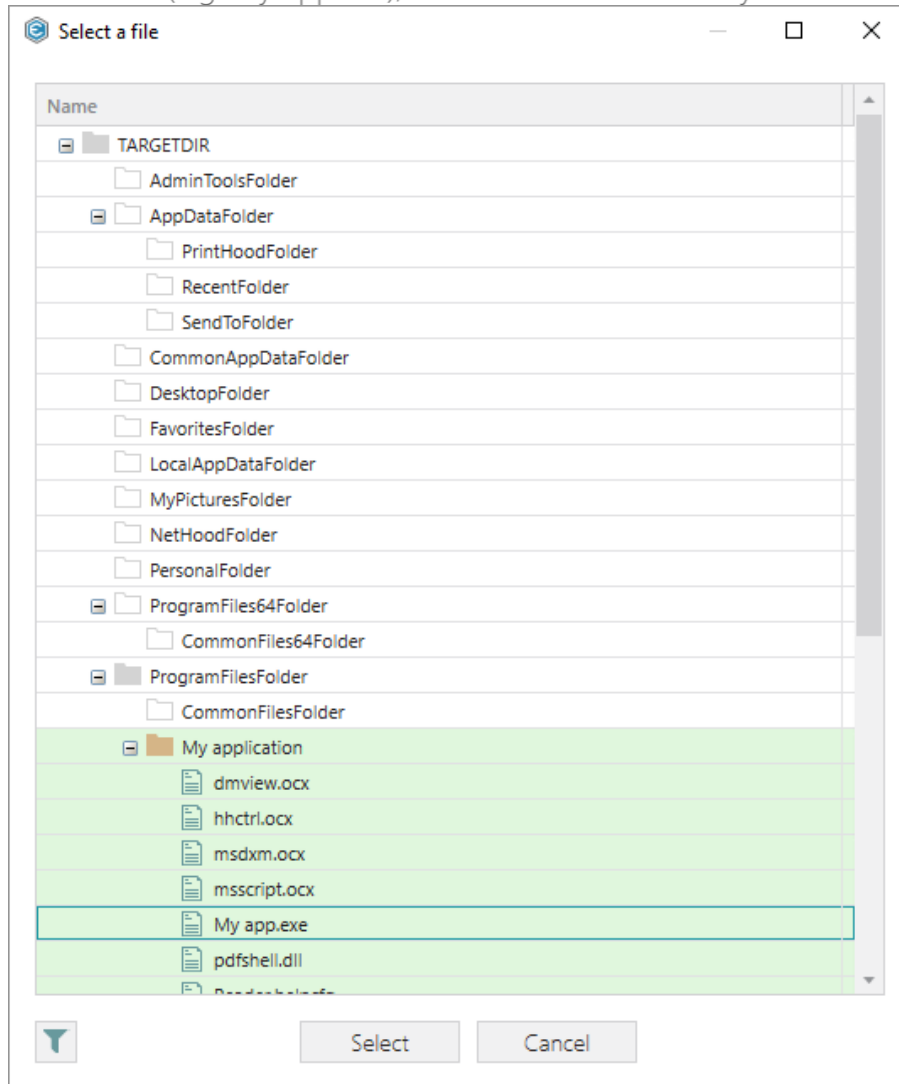
- [26]. On the second step, click **Browse**, located next to the **Shortcut target** field, to set a target of the shortcut.

The screenshot shows the 'Add shortcut' dialog box with the 'Target' step selected in a progress bar at the top. The progress bar has three steps: 'Type' (completed, marked with a checkmark), 'Target' (current step), and 'Appearance' (not started). The 'Target' section contains the following fields:

- Shortcut target:** A text input field with a red exclamation mark icon and a 'Browse...' button to its right.
- Arguments:** A text input field.
- Start in (WkDir):** A dropdown menu showing 'Folder' with a downward arrow icon.
- Start in (WkDir):** A text input field with a red exclamation mark icon and a 'Browse...' button to its right.
- Shortcut type:** Two radio button options: 'Advertised shortcut' (selected) and 'Regular (non-advertised) shortcut'.

At the bottom of the dialog, there are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

[27]. Select a file (e.g. My app.exe), which will be launched by this shortcut, and click Select.



[28]. If needed, enter a shortcut Arguments, change the Start in path (select a folder or a property), and select a Shortcut type. Note that only the Advertised shortcut supports advertisement and repair. This means that if the executable to which the shortcut is pointing is not there then windows installer will repair the application and replace the

missing files. Then, click Next.

The screenshot shows the 'Add shortcut' dialog box with the 'Target' tab selected. At the top, a progress bar indicates the current step is 'Target', with 'Type' and 'Appearance' as previous and subsequent steps. The 'Shortcut target' field contains the text 'ProgramFilesFolder\My application\My app.exe (ID: My_app.exe)' and has a 'Browse...' button to its right. Below this is an empty 'Arguments' text box. The 'Start in (WkDir)' section has a dropdown menu set to 'Folder' and a text box containing 'ProgramFilesFolder\My application (ID: Myapplication)', with a 'Browse...' button to its right. Under 'Shortcut type', the 'Advertised shortcut' radio button is selected, and the 'Regular (non-advertised) shortcut' option is also visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Add shortcut

Type Target Appearance

Target

Shortcut target
ProgramFilesFolder\My application\My app.exe (ID: My_app.exe) Browse...

Arguments

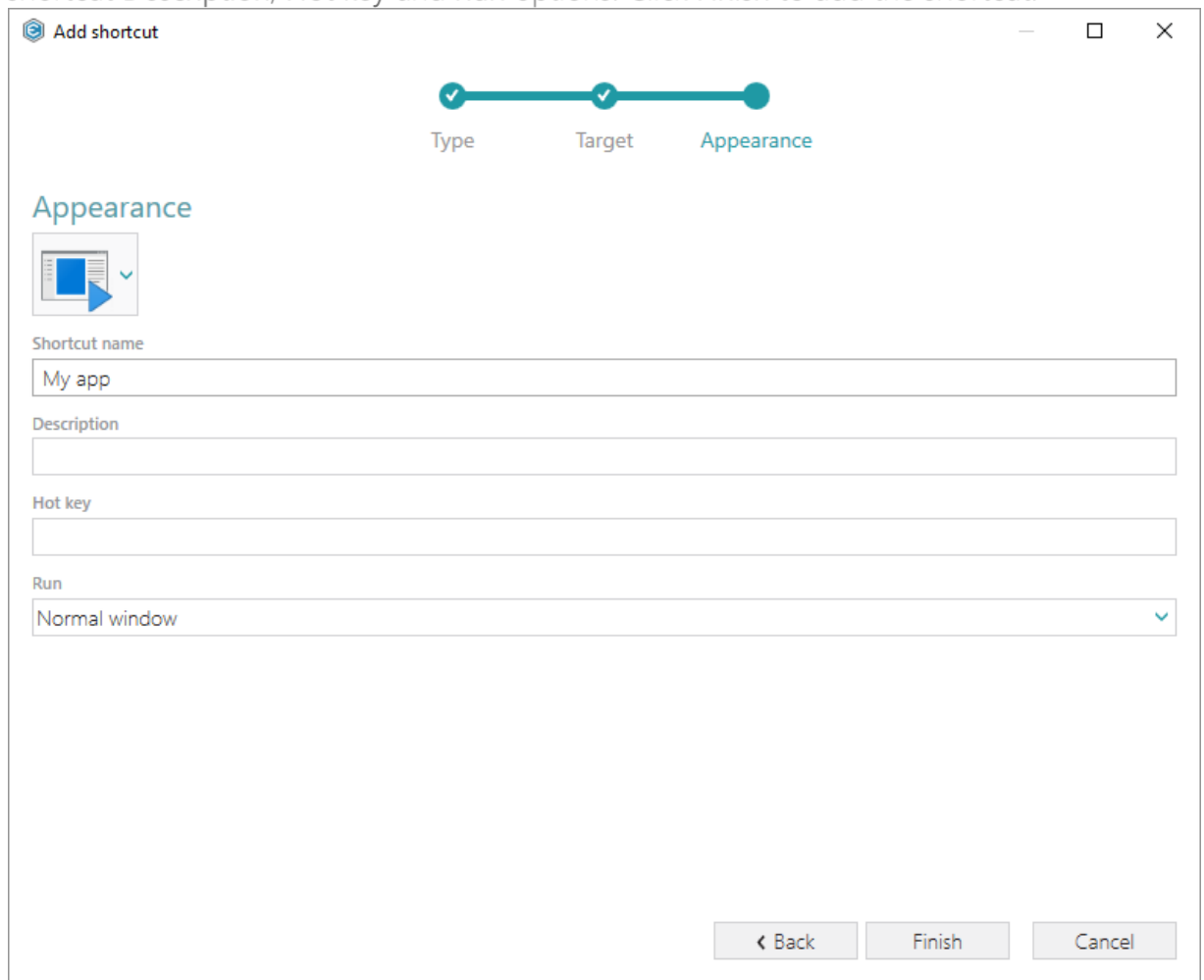
Start in (WkDir)
Folder Folder

ProgramFilesFolder\My application (ID: Myapplication) Browse...

Shortcut type
☒ Advertised shortcut
☐ Regular (non-advertised) shortcut

< Back Next > Cancel

- [29]. On the last step, enter a **Shortcut name**, choose a shortcut icon and, if needed, specify the shortcut **Description**, **Hot key** and **Run** options. Click **Finish** to add the shortcut.



Add shortcut

Progress bar: Type (checked), Target (checked), Appearance (active)

Appearance

Shortcut icon: [Document icon]

Shortcut name: My app

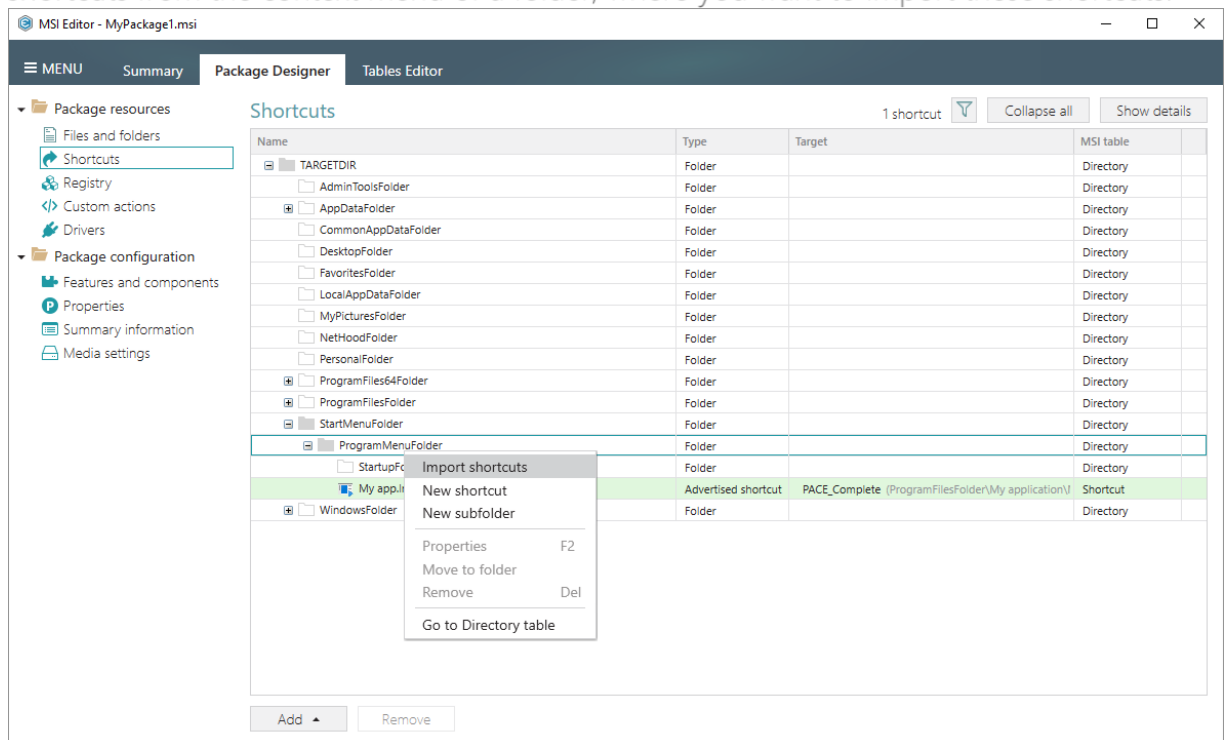
Description:

Hot key:

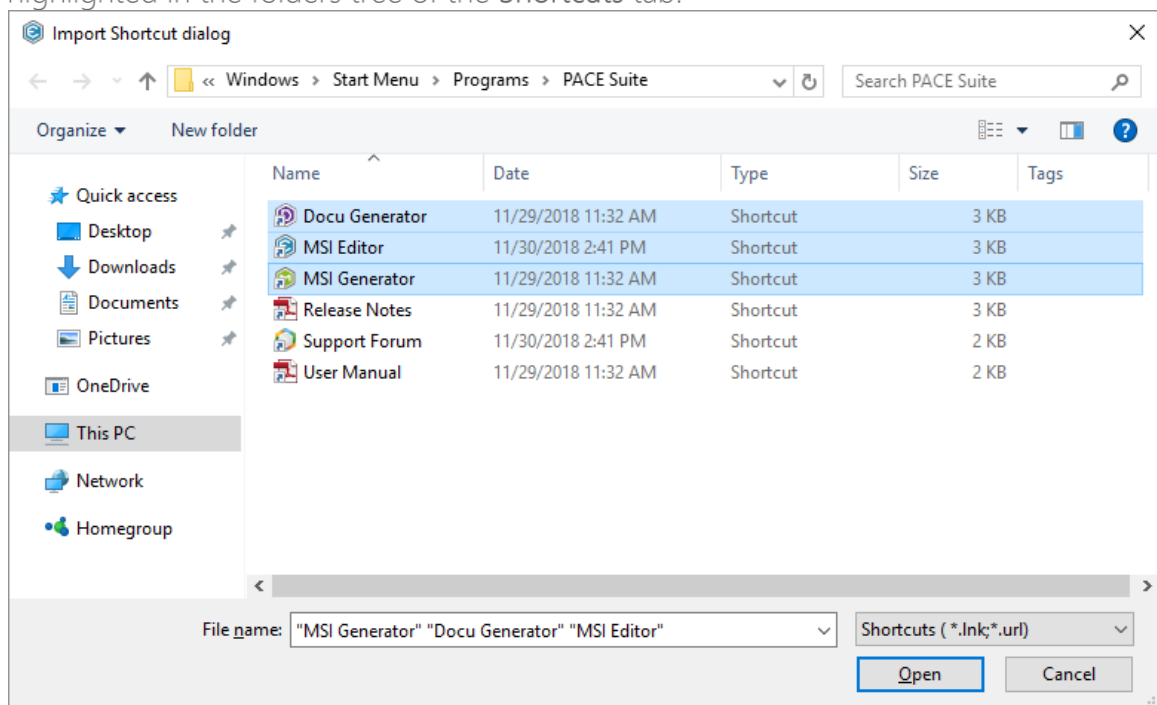
Run: Normal window

Buttons: < Back, Finish, Cancel

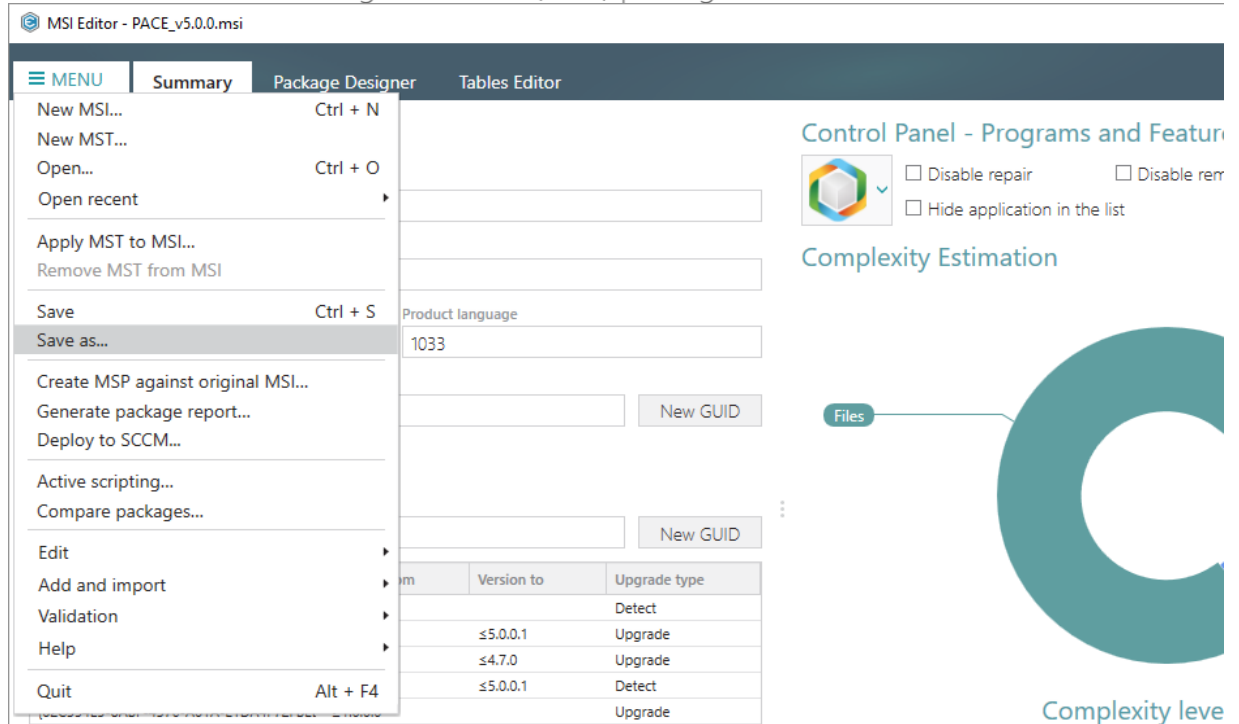
[30]. In order to import existing shortcuts from the file system to the package, select **Import shortcuts** from the context menu of a folder, where you want to import these shortcuts.



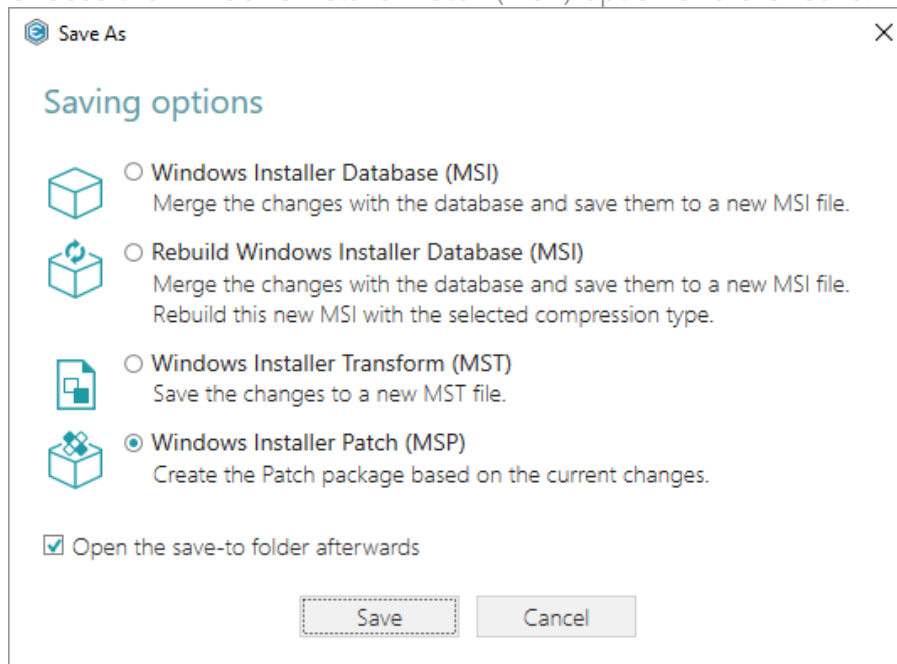
[31]. Choose shortcuts you would like to import and click **Open**. The imported shortcuts will be highlighted in the folders tree of the Shortcuts tab.



[32]. In order to save made changes as Patch (MSP) package, select Save as... from MENU.



[33]. Choose the Windows Installer Patch (MSP) option and click Save.



[34]. Increase a Product version for the minor and major update and leave default for the small update. Generate new Product code only for the major update and leave default for the minor and small update. If needed, update a Target product name in order to change the

Product Name of the updated application. Click **Next** to select patch properties.

Create a Patch Package

Type of update

Patch properties

Creating patch

Type of update

Increase version for minor and major update and leave default value for small update

Product version

Generate new code only for major update and leave default value for minor and small update

Product code

New GUID

Target product name

[Review the instructions to create a patch package successfully...](#)

Next >

Cancel

- [35]. Update Display name and Description of the Patch package and select the necessary properties. Click Create to create the Patch (MSP) package.

Create a Patch Package

Progress bar: Type of update (✓), Patch properties (●), Creating patch (○)

Patch properties

Display name
PACE Suite 5.0.0.4 Patch

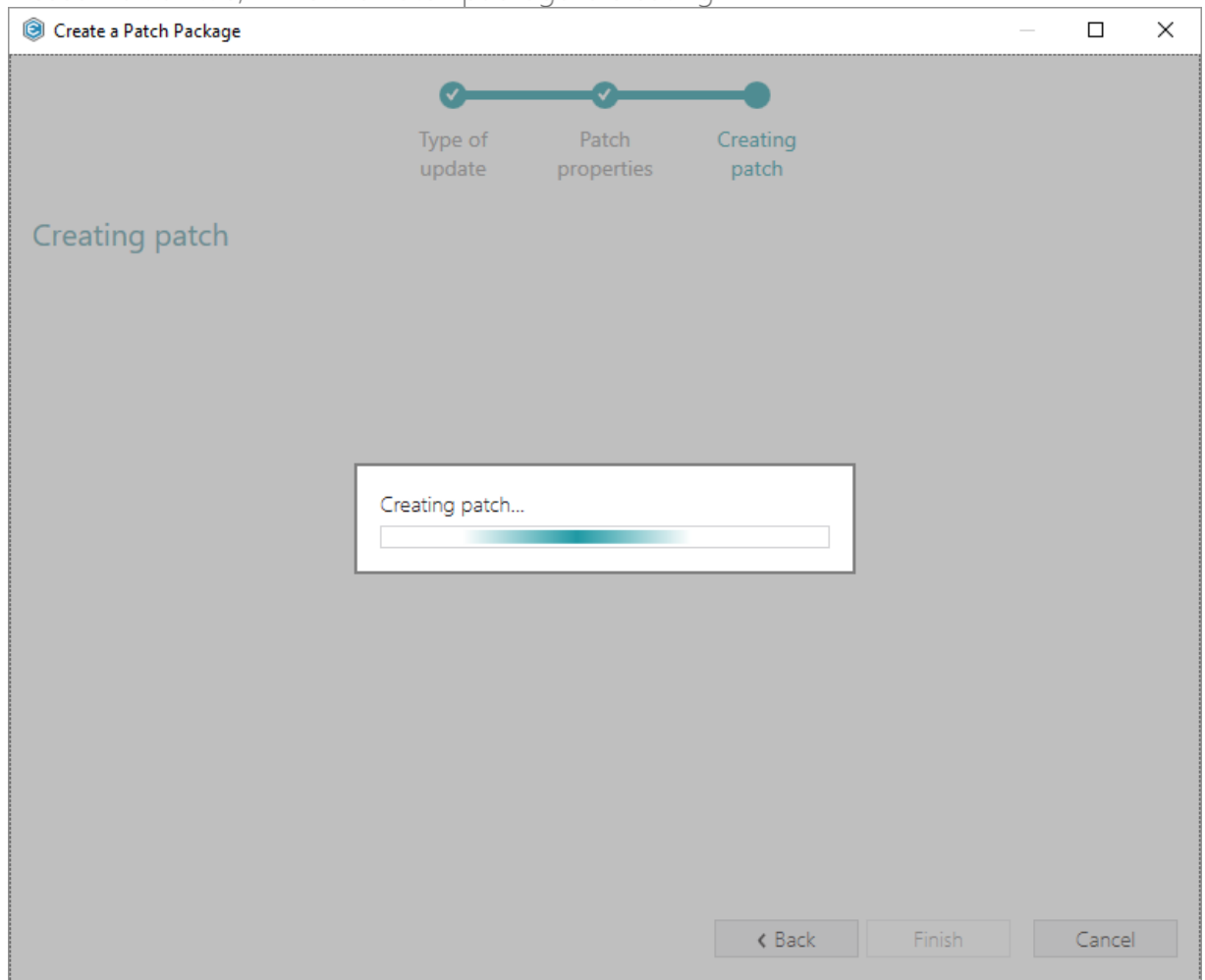
Description
Patch description

☒ Make this patch uninstalleable
The only method to remove a patch that is not uninstalleable is to uninstall the patched application and then reinstall the application without reapplying the patch.

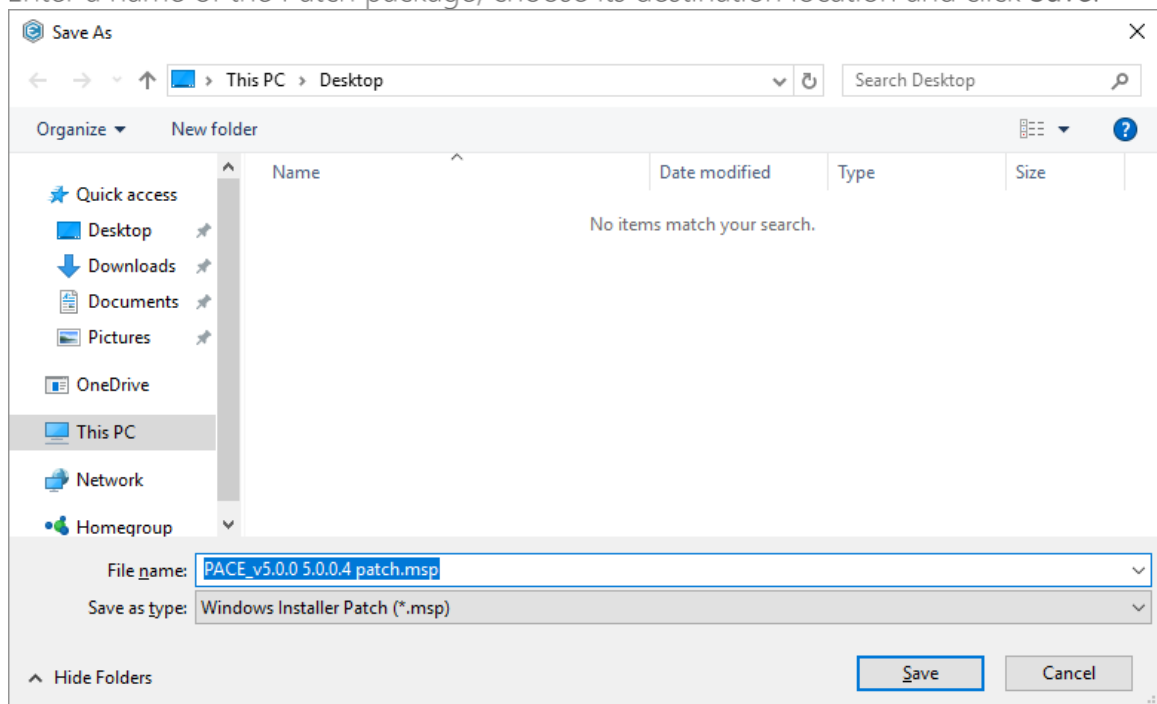
☐ Include whole files only
Changed files are to be included in their entirety when creating the patch package instead of creating a binary file patch. The patch files will be bigger in size but the API runs faster.

< Back Create > Cancel

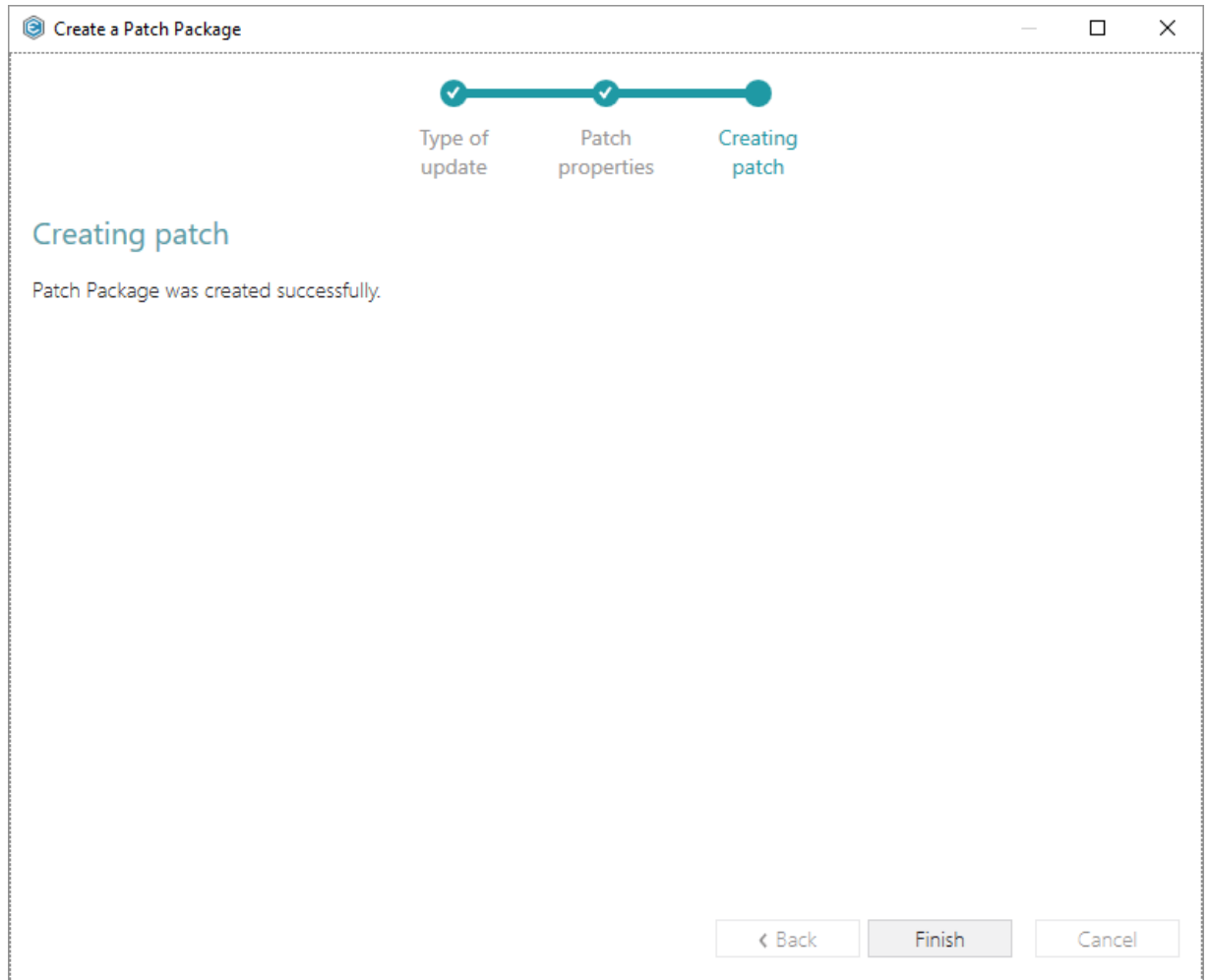
[36]. Please wait a little, while the Patch package is creating.



[37]. Enter a name of the Patch package, choose its destination location and click Save.



[38]. Click Finish to close the wizard.



3.4 Create APPX

NOTE Building Universal Windows Platform app packages (APPX) is available under Windows 10 or Windows Server 2016 or newer.

NOTE Before packaging your app to APPX, review [UWP application limitations](#).

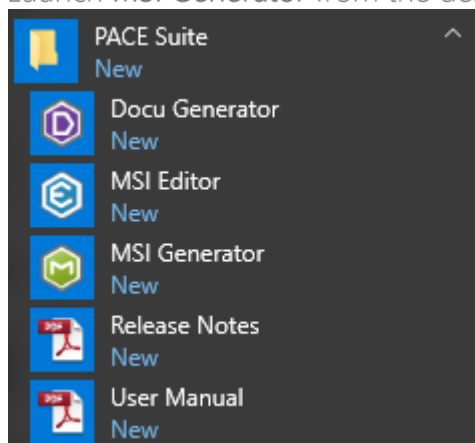
Choose a scenario that better suits your needs:

- **Create APPX from Scratch**, described in section 3.4.1
Create a new empty project in MSI Generator, add folders, files, registry entries and APPX apps (shortcuts) to this project and then generate the Universal Windows Platform app package (APPX) from this project.
- **Convert (Repackage) EXE, MSI to APPX**, described in section 3.4.2
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into Universal Windows Platform app package (APPX) using MSI Generator.

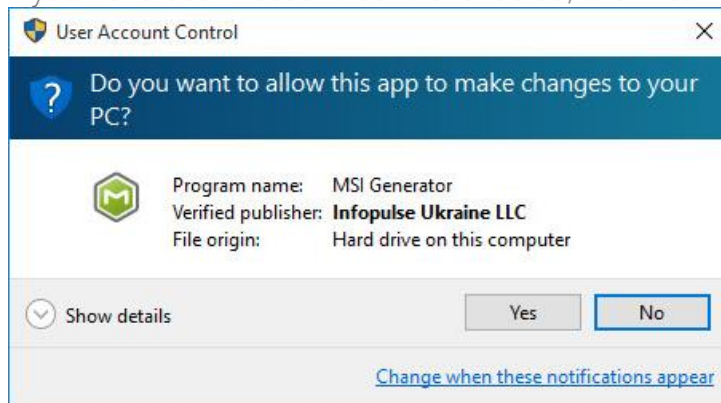
3.4.1 Create APPX from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries and APPX apps (shortcuts) to this project and then generate the Universal Windows Platform app package (APPX) from this project.

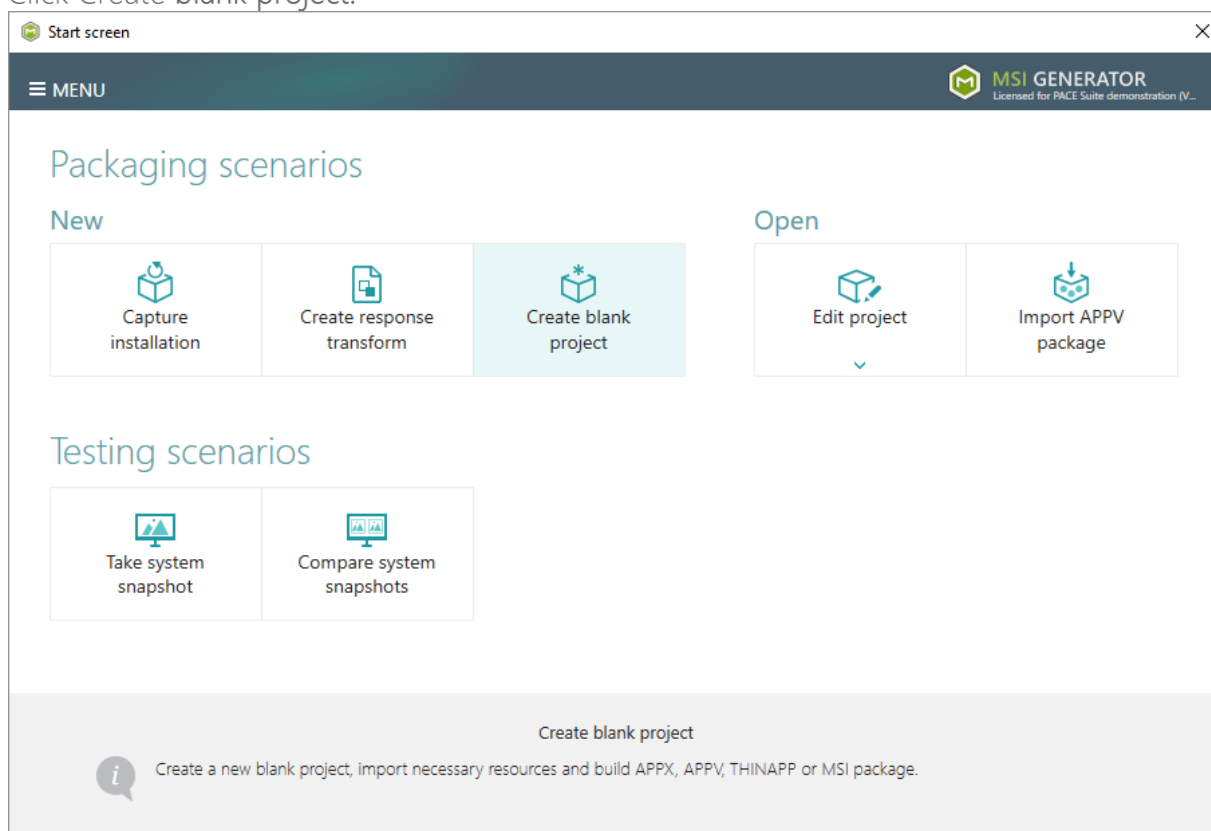
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



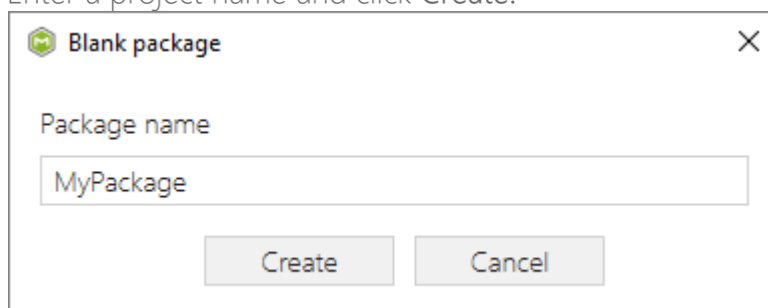
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click Create blank project.



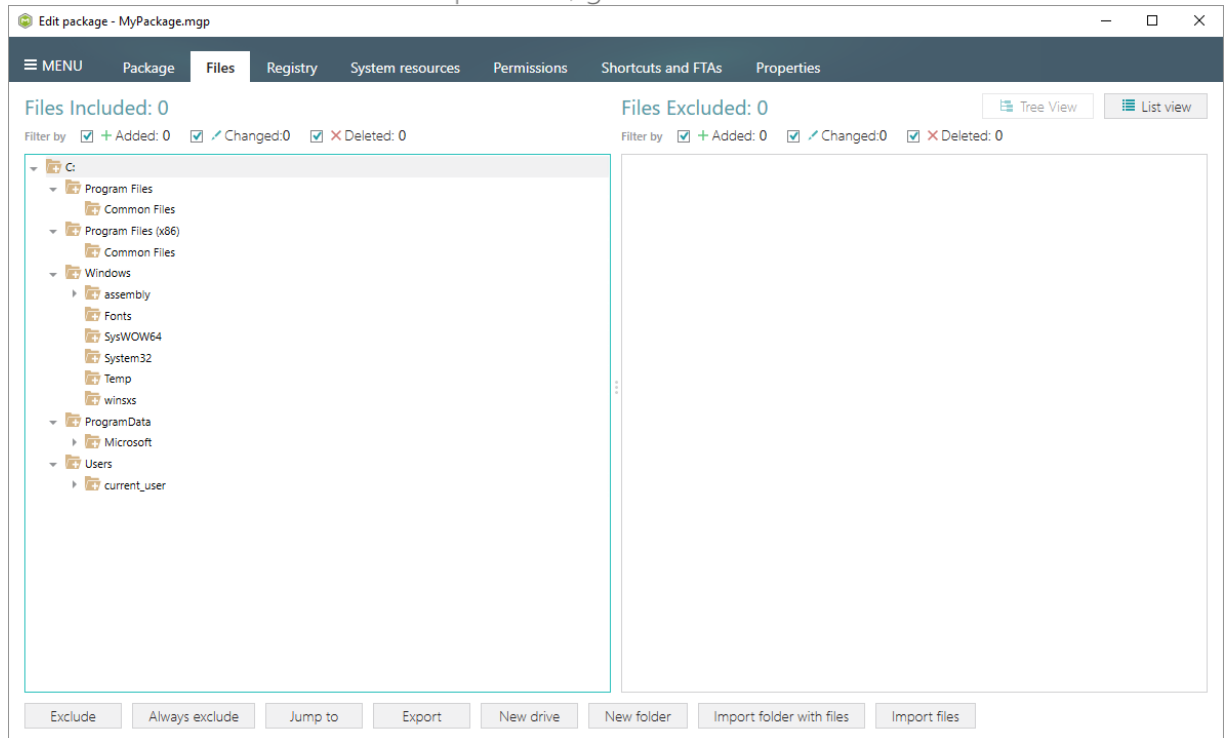
- [4]. Enter a project name and click Create.



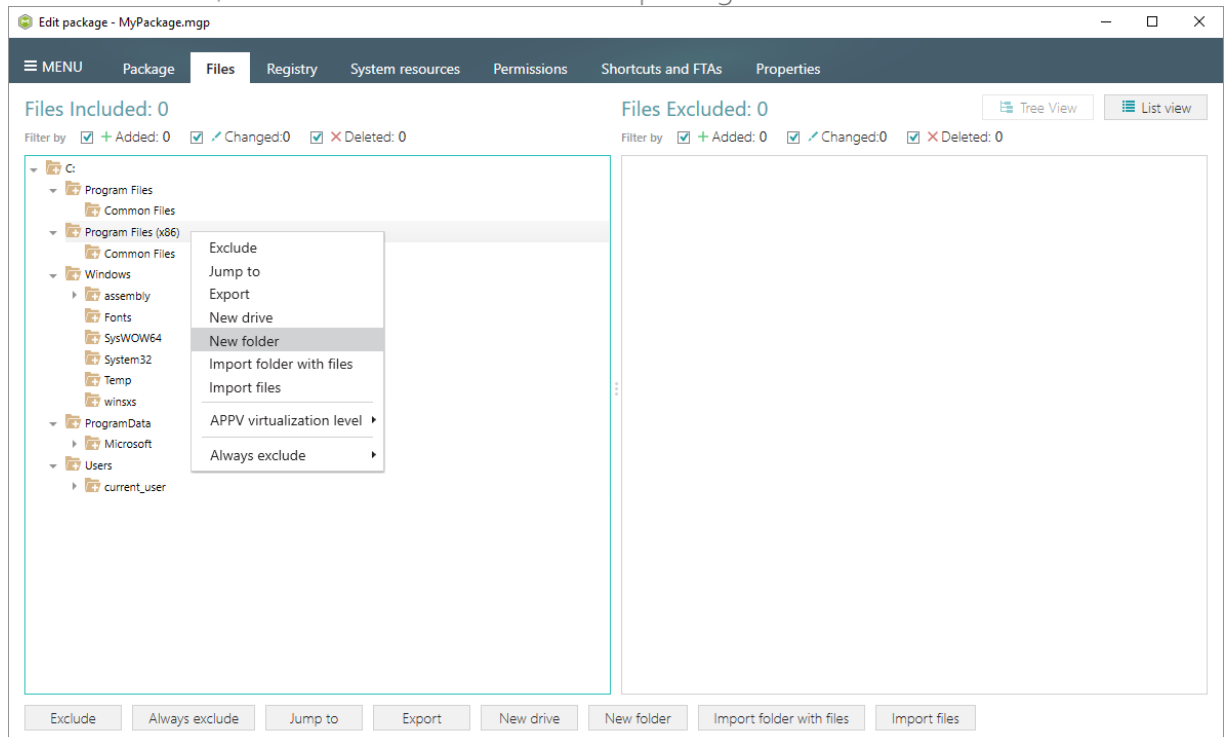
- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [10] describe how to create a new folder and import files to this folder; the steps from [11] to [13] describe how to import registry entries from the REG file; the steps from [14] to [16] describe how to add

APPX app (shortcut) and its logos; and two last steps [17] and [19] describe how to build APPX package from the prepared project.

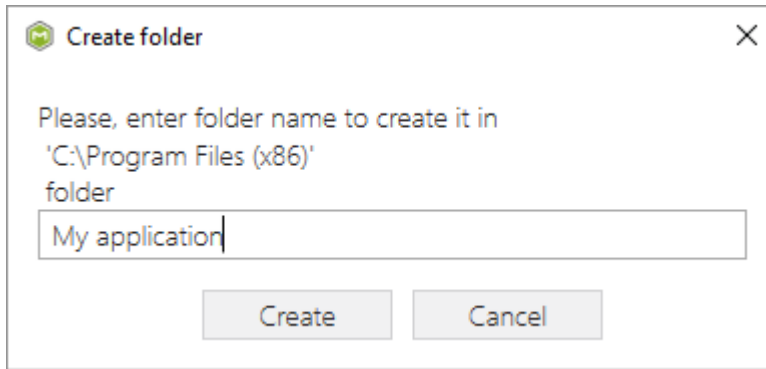
- [6]. In order to create a folder and import files, go to the Files tab.



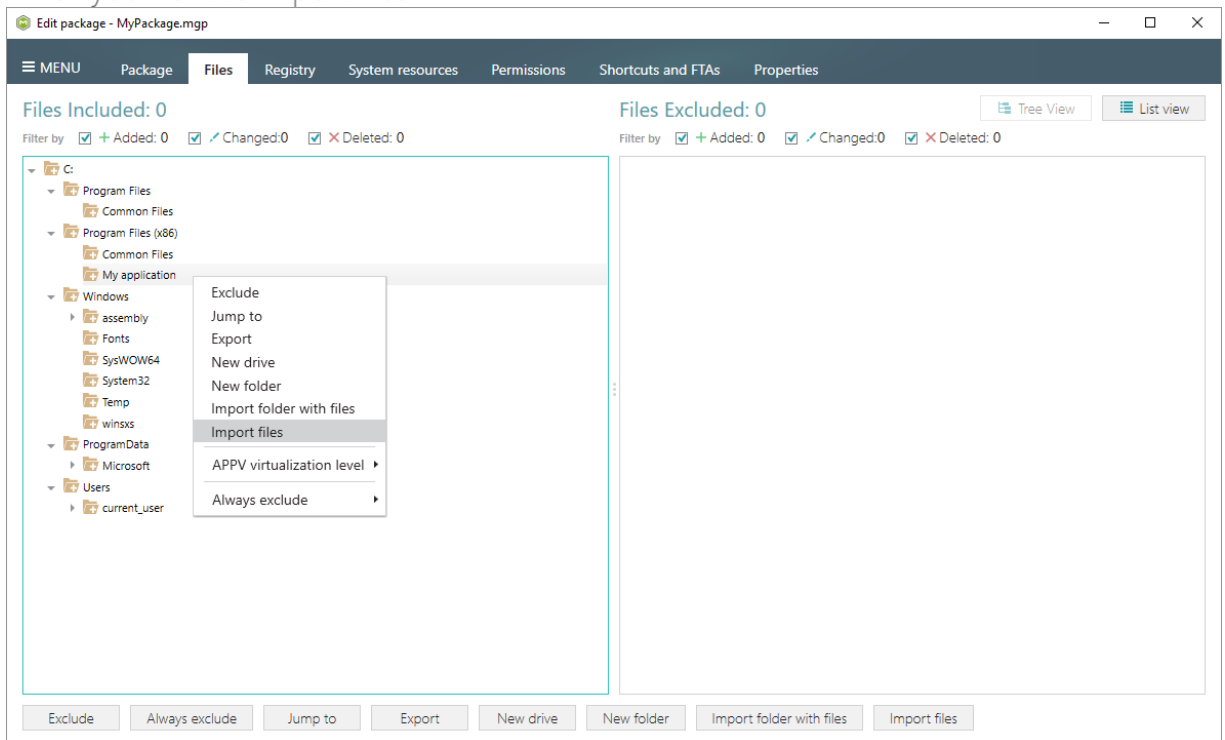
- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



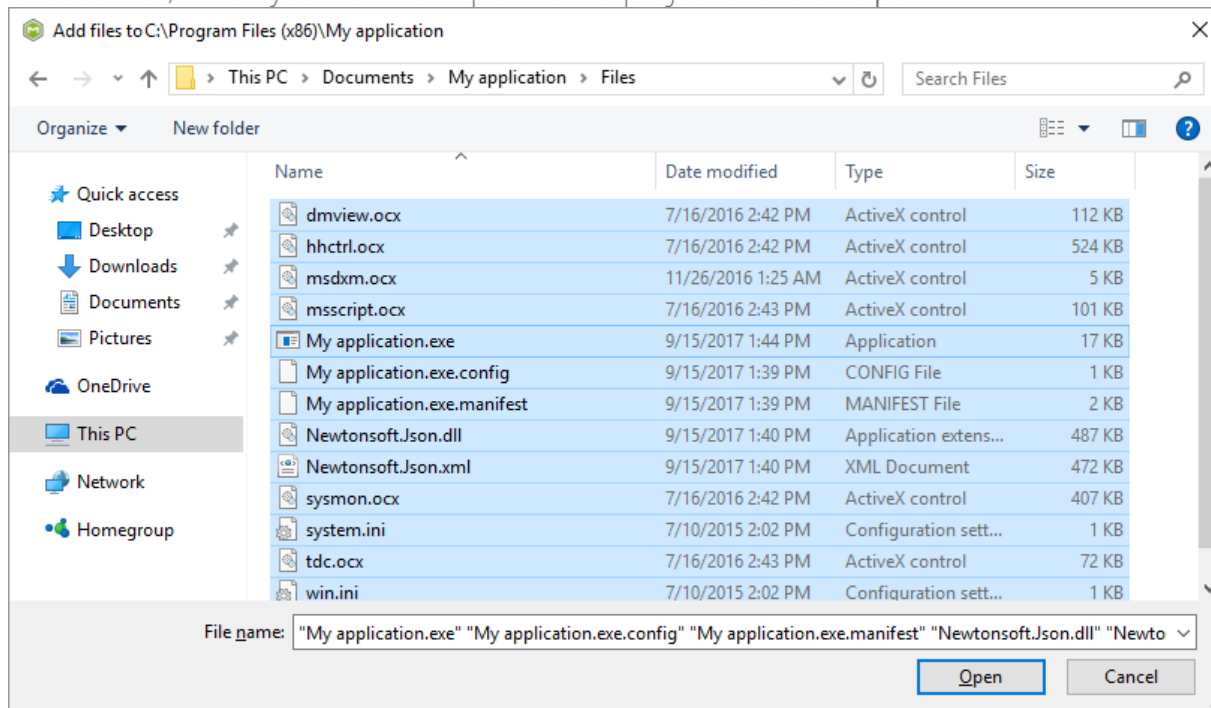
- [8]. Enter a folder name and click Create.



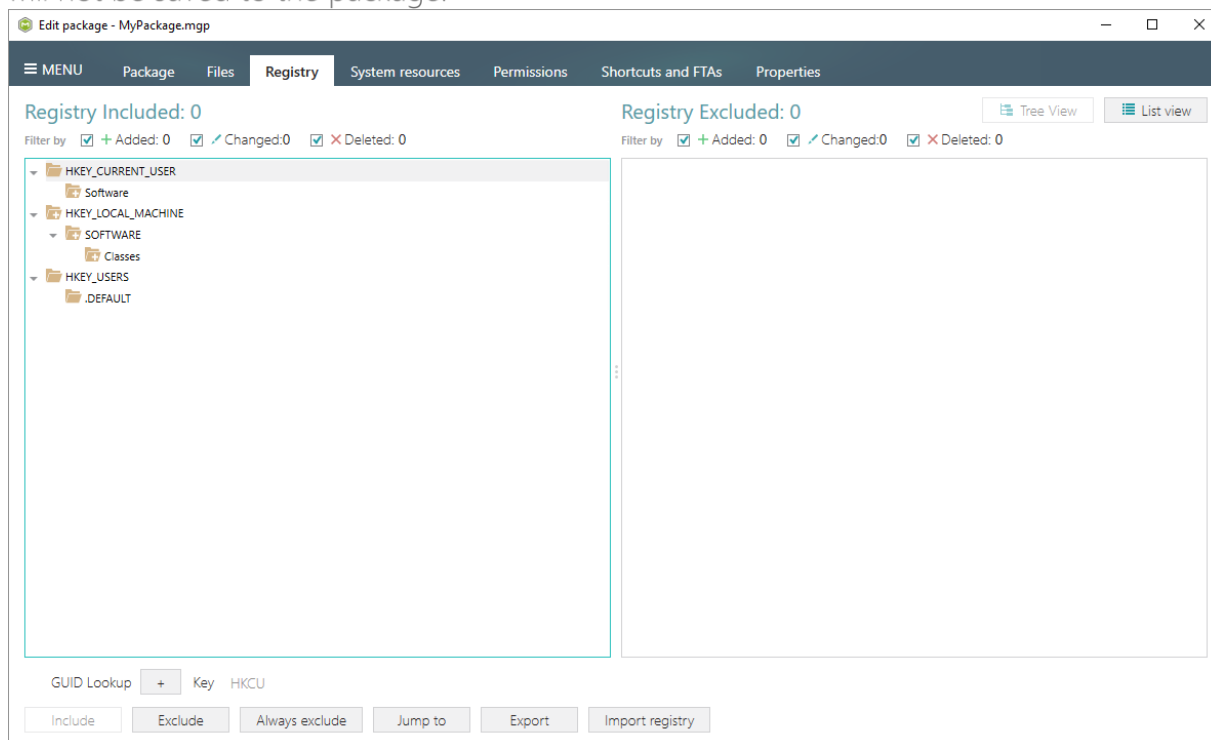
- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



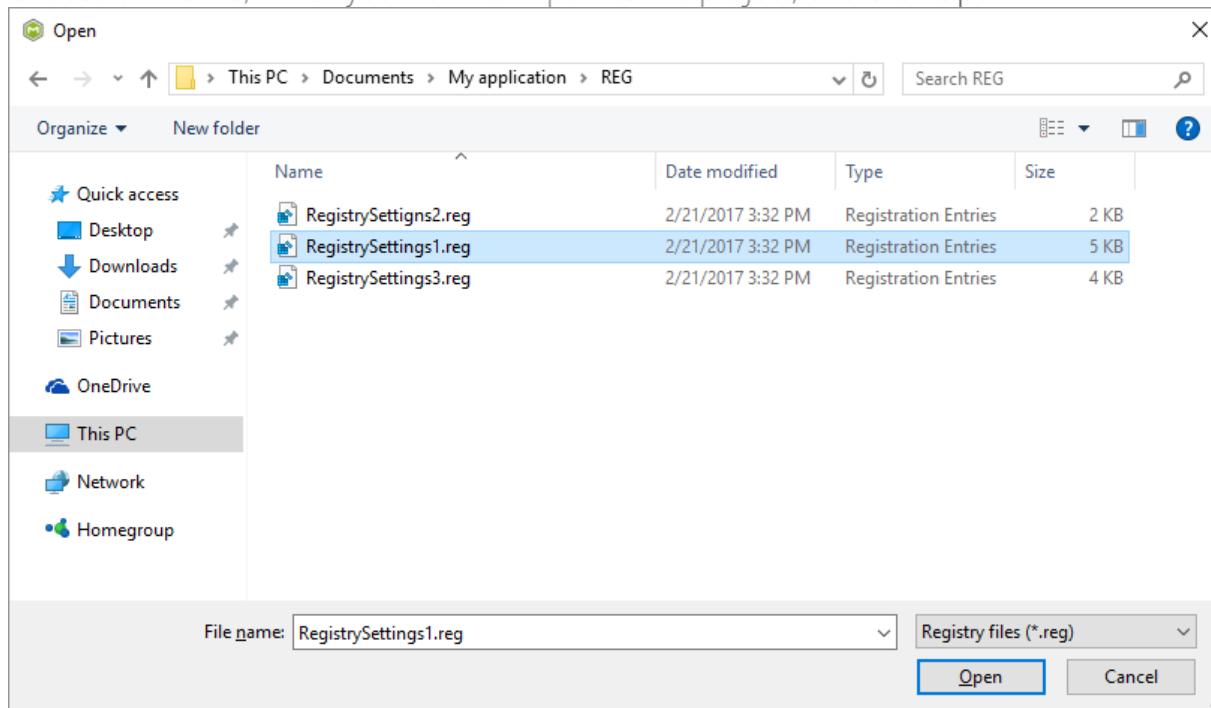
[10]. Choose files, which you want to import to the project and click **Open**.



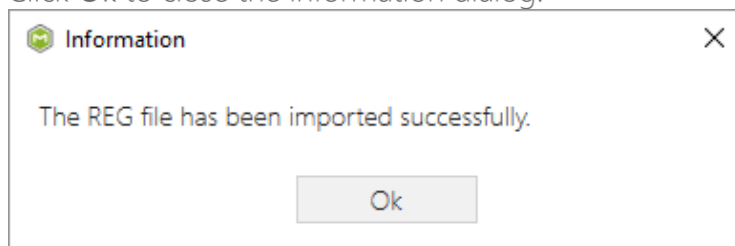
[11]. In order to import registry entries from the REG file, go to the **Registry** tab and click the **Import registry** button, located in the bottom part of the window. Note that the left 'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



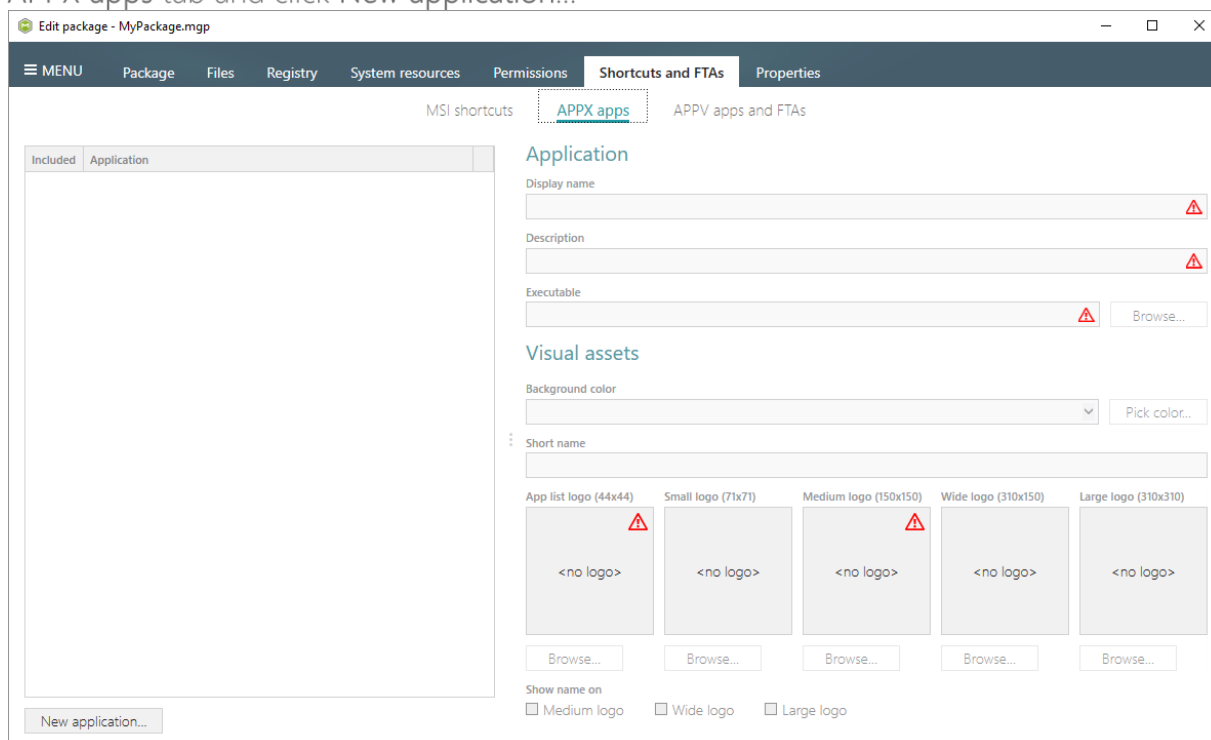
[12]. Choose a REG file, which you want to import to the project, and click Open.



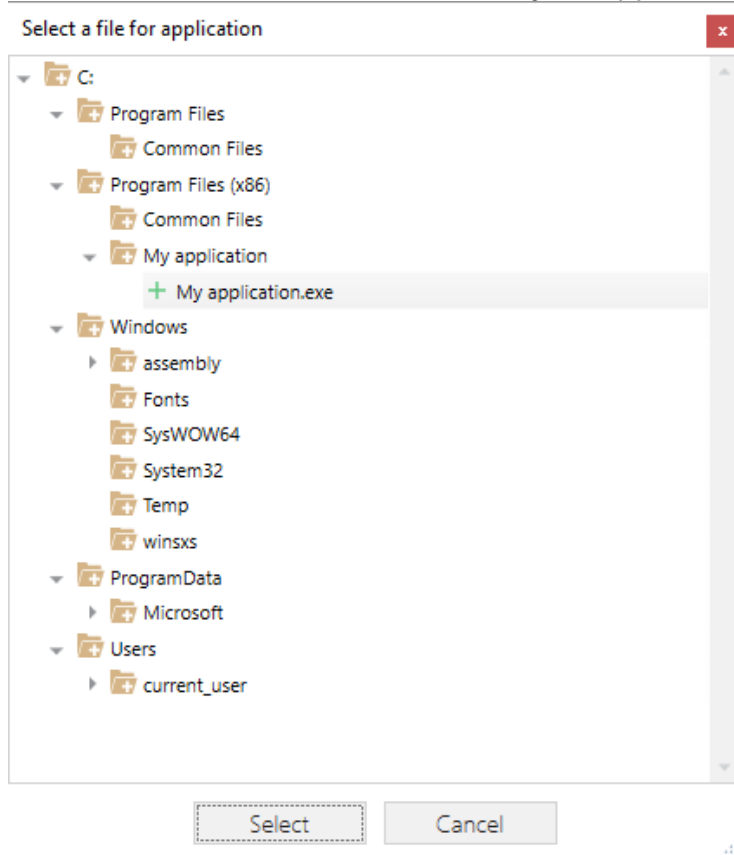
[13]. Click Ok to close the information dialog.



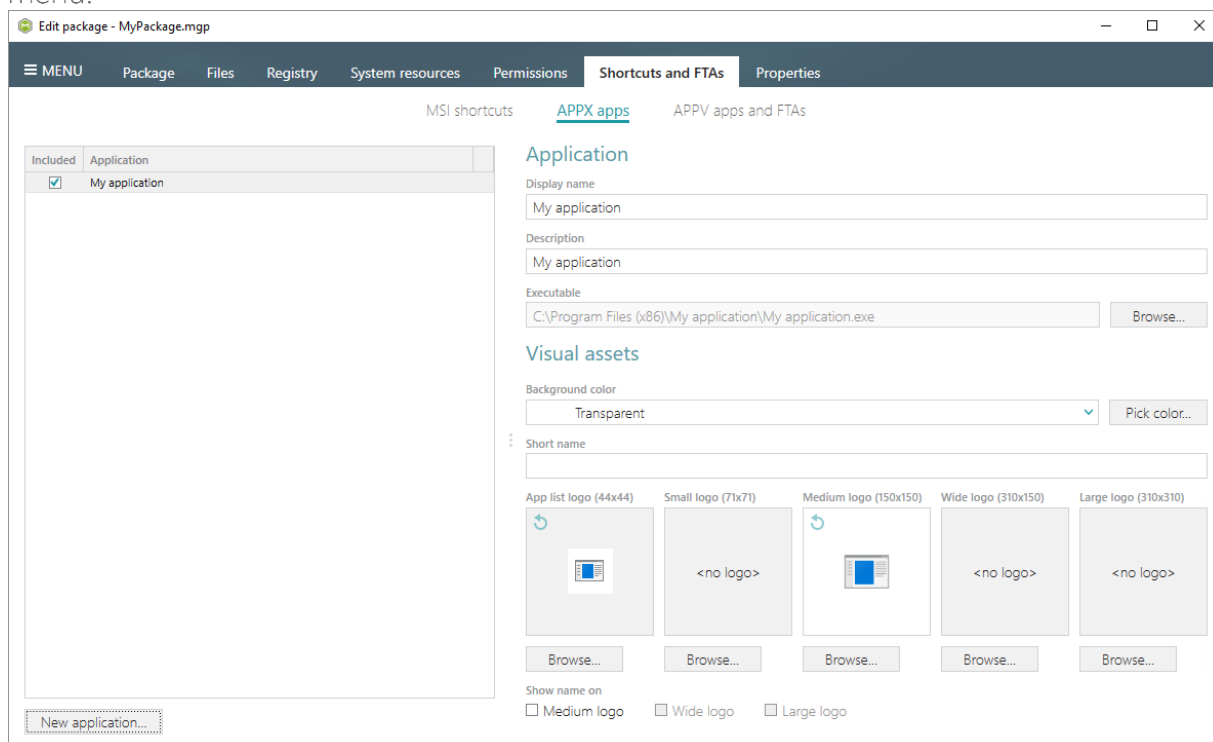
[14]. If you need to add an APPX app (shortcut) and its logos, go to the Shortcuts and FTAs -> APPX apps tab and click New application...



- [15]. Select the main executable file (EXE) of your application from the tree and click Select.



- [16]. Using the details pane, you can update the APPX app display name, description, and visual assets such as background color and logos, which will be displayed in the Start menu.



- [17]. In order to build APPX package from your project, navigate to the Package -> APPX tab, fill-in all the required fields, select the digital signing option and click Build APPX. Find

description of the APPX settings below in the table.

Application details

Display name	A friendly name of the package that can be displayed to users.
Publisher display name	A friendly name for the publisher of the package that can be displayed to users.
Description	A friendly description that can be displayed to users.
Application root folder	A location of the main application folder. Content of the selected folder will be placed to the package root, instead of VFS.
Logo (50x50)	A logo image of the package that can be displayed to users.

Signature

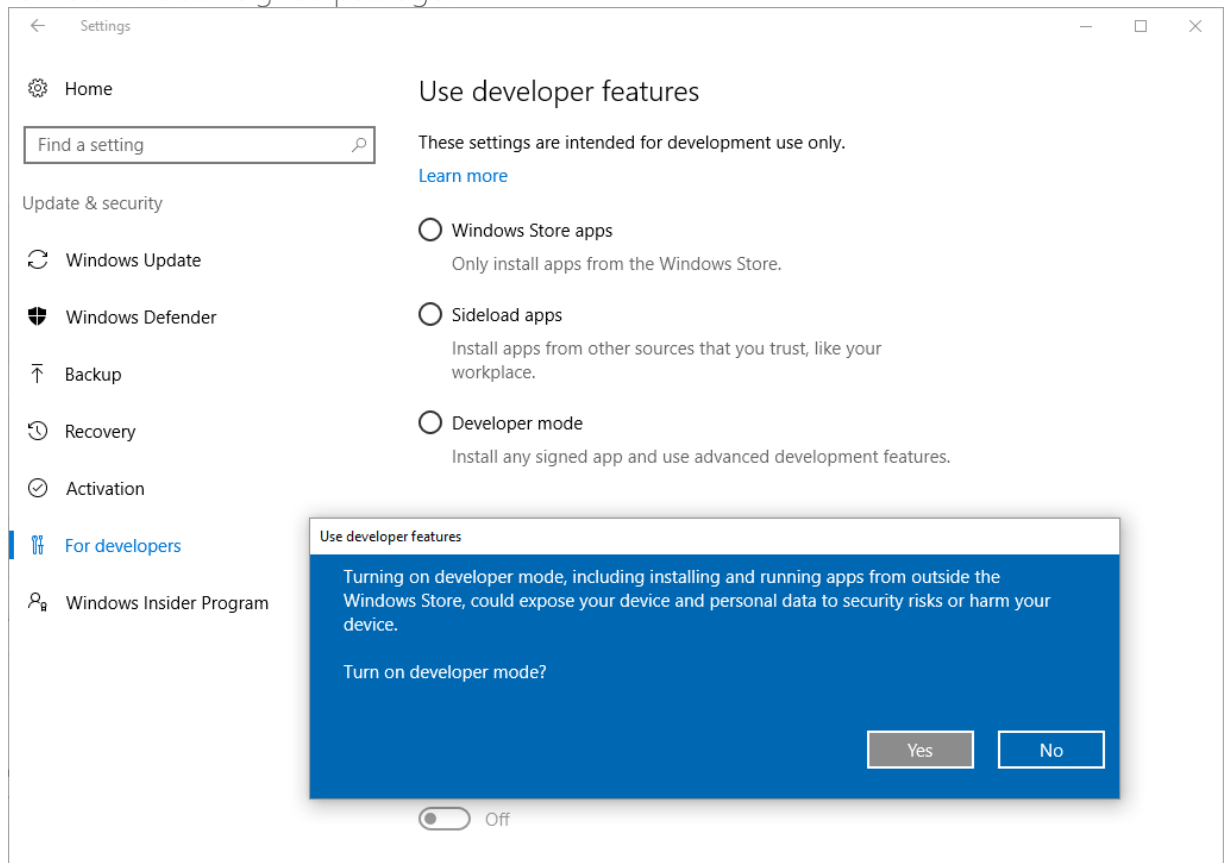
Do not sign the package	Use this option if you are planning to submit the package to Windows Store or sign it manually.
Sign the package with my certificate	Use this option to sign the generated package with the valid certificate that you already have.
Sign the package with auto-generated self-signed certificate	Use this option to generate the self-signed certificate and sign the package with this certificate. NOTE In order to deploy your package, install the generated certificate before (double-click the auto-generated.pfx file, and in the Certificate Import Wizard, install the certificate onto the Local Machine , and place the certificate into the Trusted People certificate store) and enable the Developer mode in Windows settings, as described in the next step.

Identity information

Name	Describes the contents of the package.
Version	The version number of the package.

Publisher	Describes the publisher information. The Publisher attribute must match the publisher subject information of the certificate used to sign a package.
Processor architecture	Describes the architecture of the code contained in the package.

- [18]. If you have built the package with the Sign the package with the auto-generated self-signed certificate option selected, do not forget to install that generated certificate to the Trusted People certificate store and enable the Developer mode in the Windows settings to install the self-signed package.



- [19]. Click **Go to...**, located next to the **Project folder** field, to open the package containing folder in Windows Explorer.

Edit package - MyPackage.mgp

Package | Files | Registry | System resources | Permissions | Shortcuts and FTAs | Properties

MSI | MST | **APPX** | APPV | THINAPP

Application details

Display name: My application

Publisher display name: My publisher

Description: Application description

Application root folder: Place all files to VFS

Logo (50x50): Browse...

Signature

☐ Do not sign the package

☐ Sign the package with my certificate

Certificate file (.pfx): Browse...

Certificate password:

☒ Sign the package with auto-generated self-signed certificate

Certificate password:

[How to install the auto-generated self-signed certificate...](#)

Identity information

Name: MyApp

Version: 1.0.0.0

Publisher: CN=My publisher

Processor architecture: x64

Project folder: C:\Users\pace\Documents\MSI Generator\Packages\MyPackage\ Browse... Go to...

☐ Interrupt building the package for manual editing the manifest

Build log [Open log](#)

Type	Elapsed	Step
	00:00:05	Operation was completed successfully
	00:00:02	Signing C:\Users\pace\Documents\MSI Generator\Packages\MyPackage\A
	00:00:01	Creating C:\Users\pace\Documents\MSI Generator\Packages\MyPackage\U
	00:00:00	HKEY_USERS Registry root ignored.
	00:00:00	HKEY_CURRENT_USER Registry root ignored.
	00:00:00	Processing files
	00:00:00	Processing directories

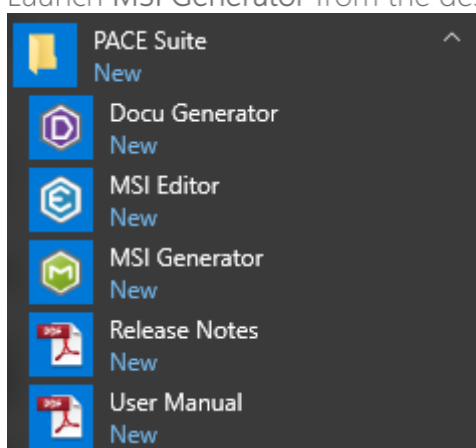
Elapsed time: 00:00:05

[Review the UWP application limitations...](#) [Build APPX](#)

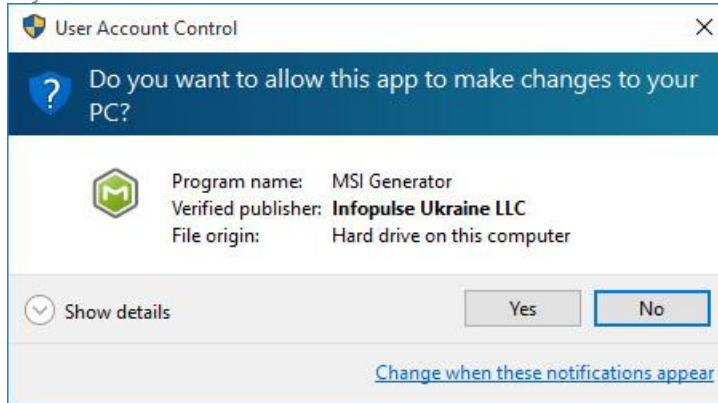
3.4.2 Convert (Repackage) EXE, MSI to APPX

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into Universal Windows Platform app package (APPX) using MSI Generator.

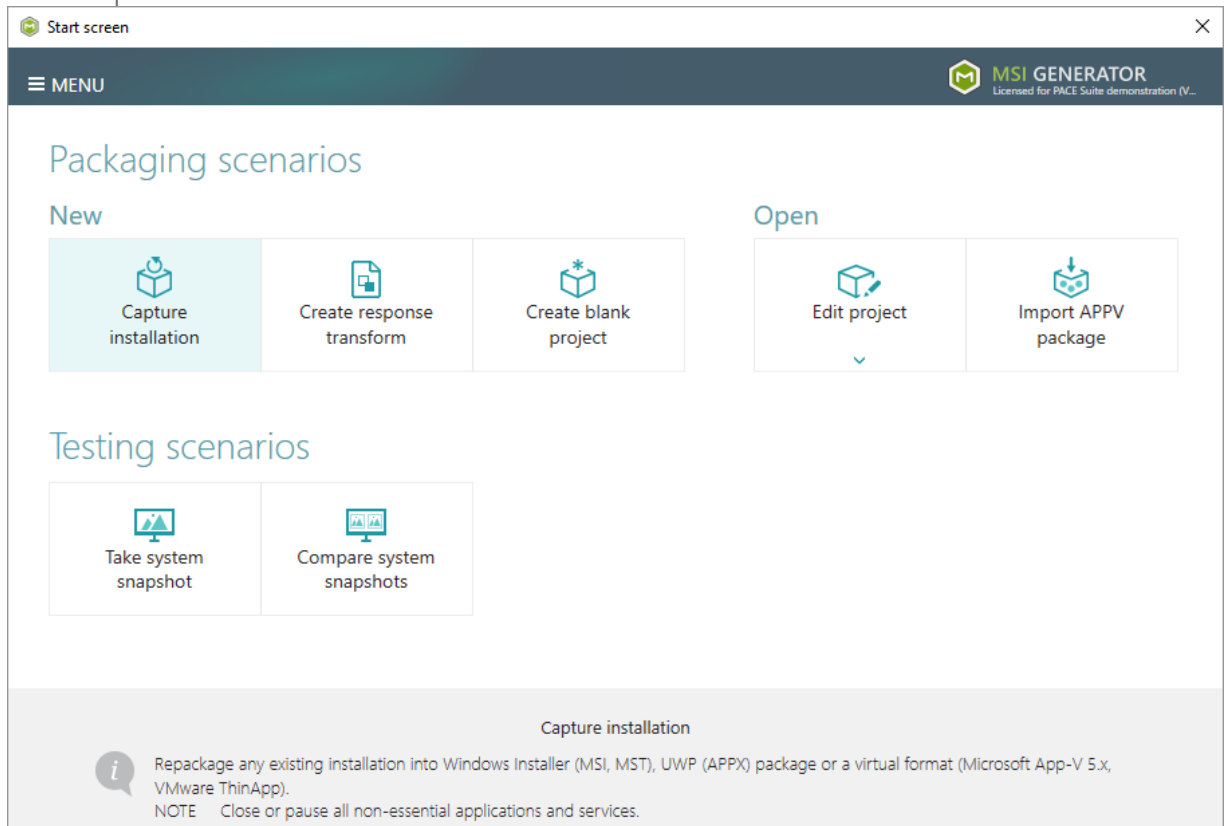
- Launch MSI Generator from the desktop or the start menu shortcut.



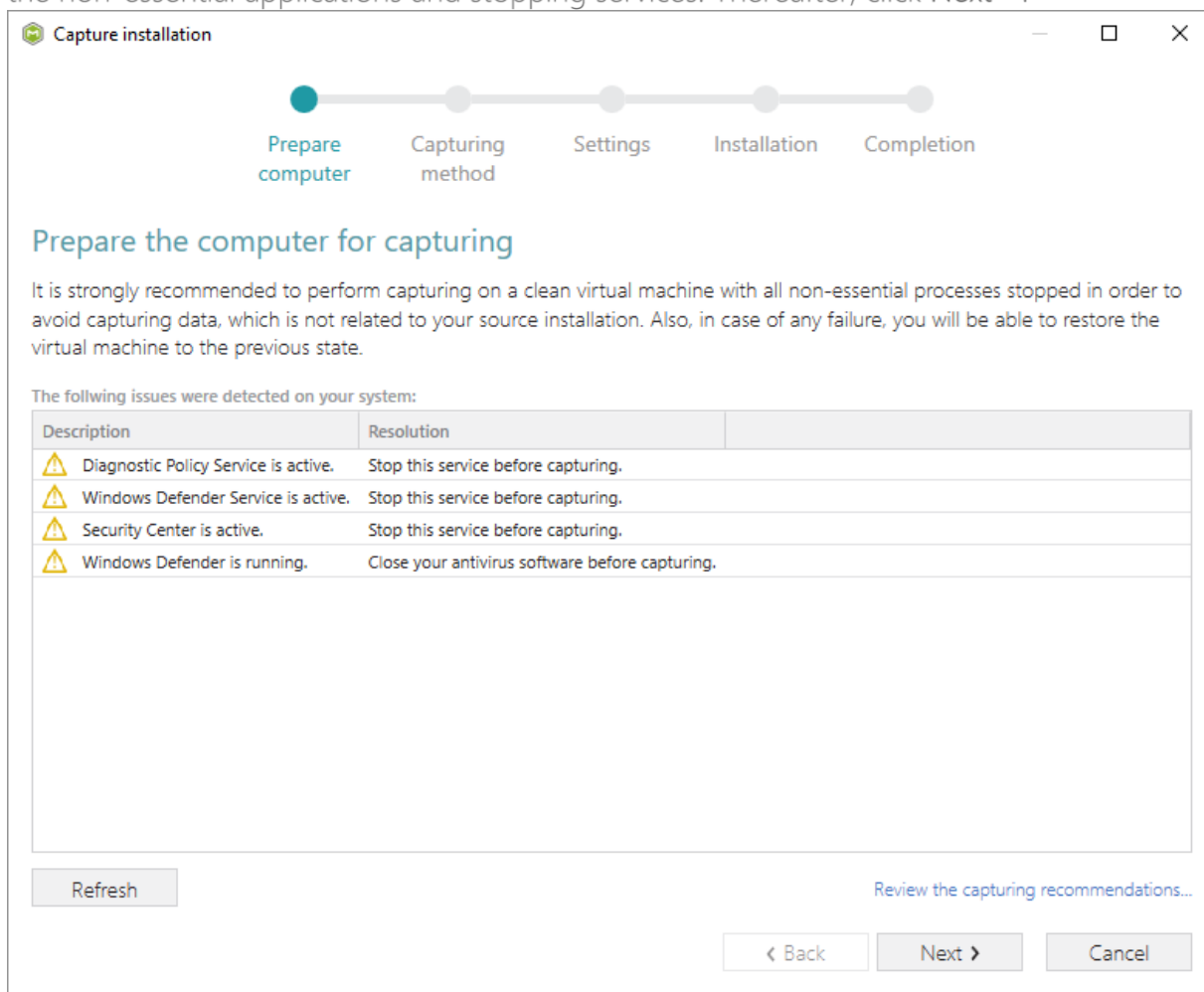
- If you have User Account Control enabled, click Yes in the opened window.



- Click Capture installation.



- Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click Next >.



- Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.

Capture installation

Prepare computer **Capturing method** Settings Installation Completion

Select a capturing method

☒ **Monitoring (quick)**
This method watches the installation and records system changes to a package.

☐ **Snapshotting (configurable)**
This method creates two system snapshots (before and after the installation) and builds a package, based on difference between snapshots. Use this option if your source installation requires the system restart.

< Back **Next >** Cancel

- Review and update package name. If needed, disable unnecessary exclusion filters and scanning areas. Click Next > to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

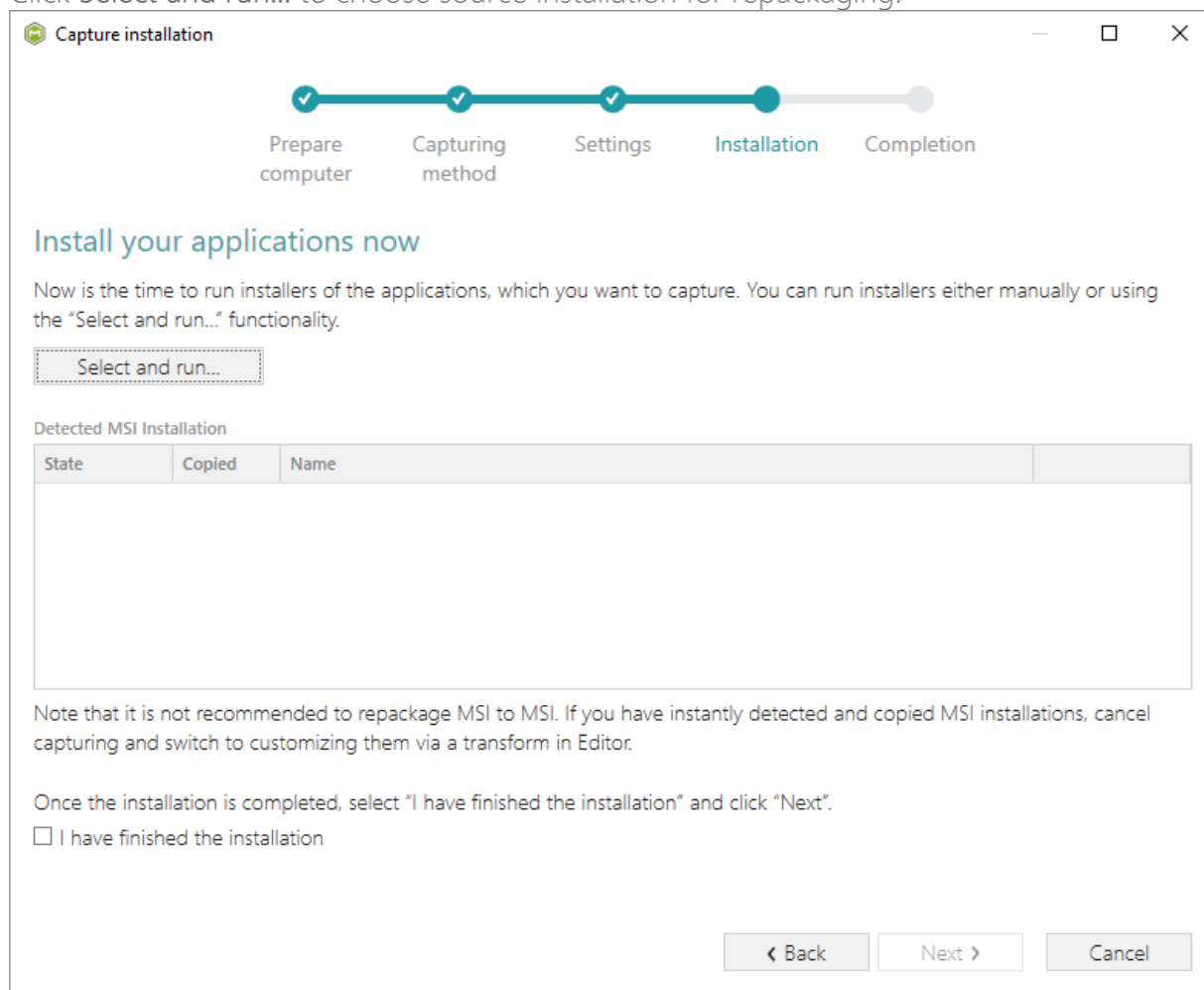
Scanning areas

Application objects:

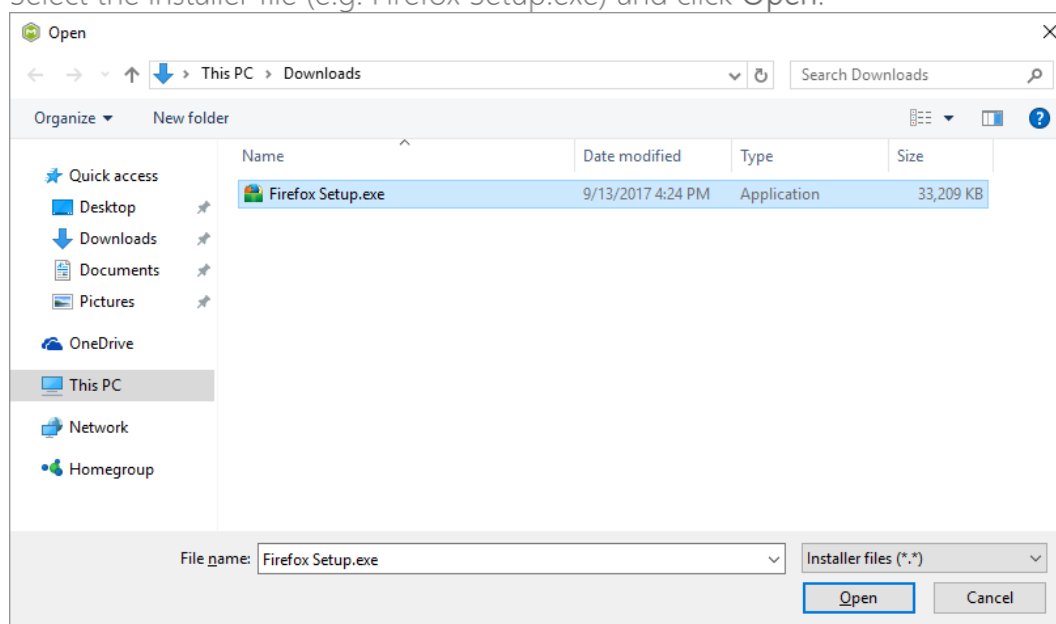
- ☒ Permissions
- ☒ Services
- ☒ Printers

< Back **Next >** Cancel

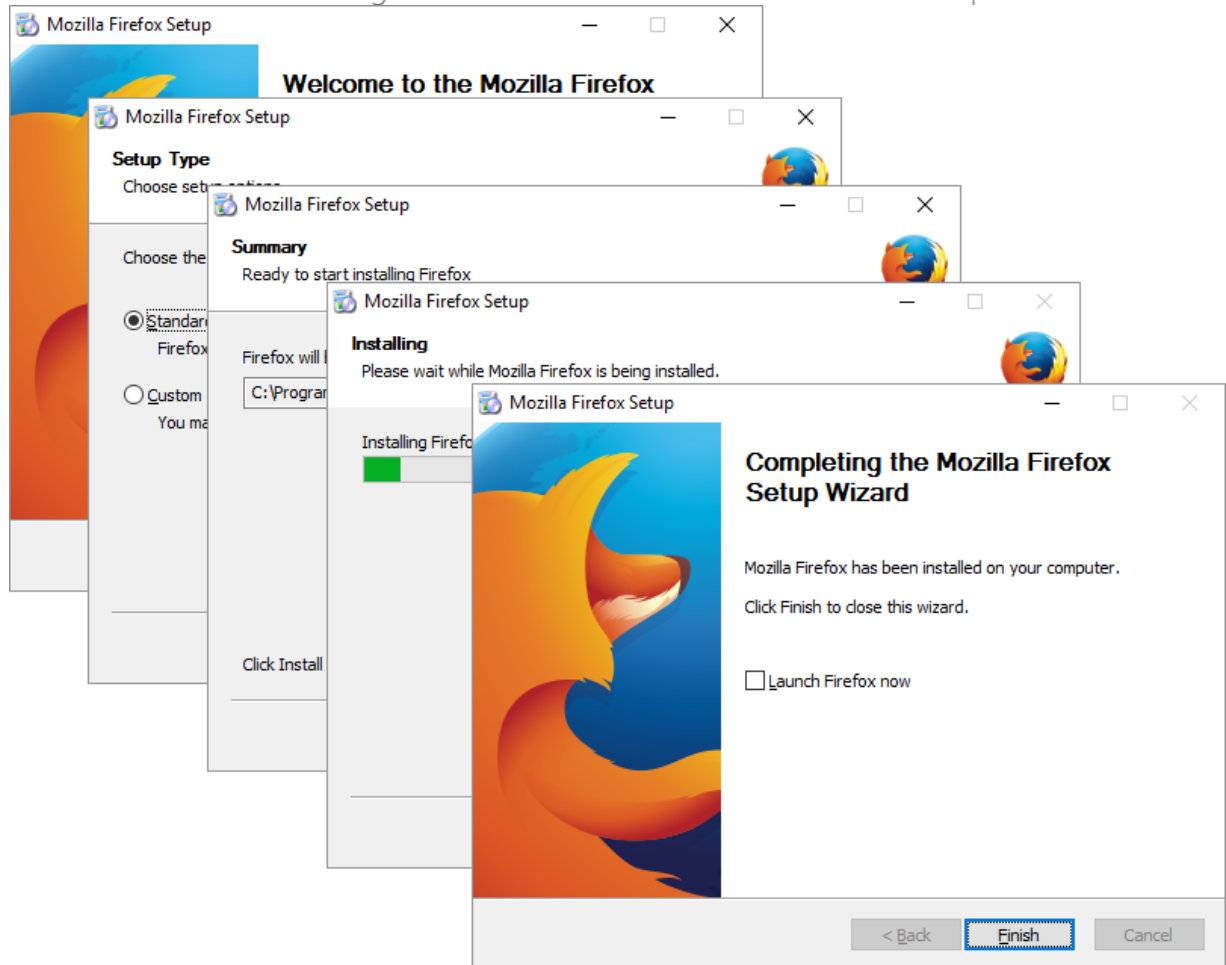
- Click **Select and run...** to choose source installation for repackaging.



- Select the installer file (e.g. Firefox Setup.exe) and click **Open**.

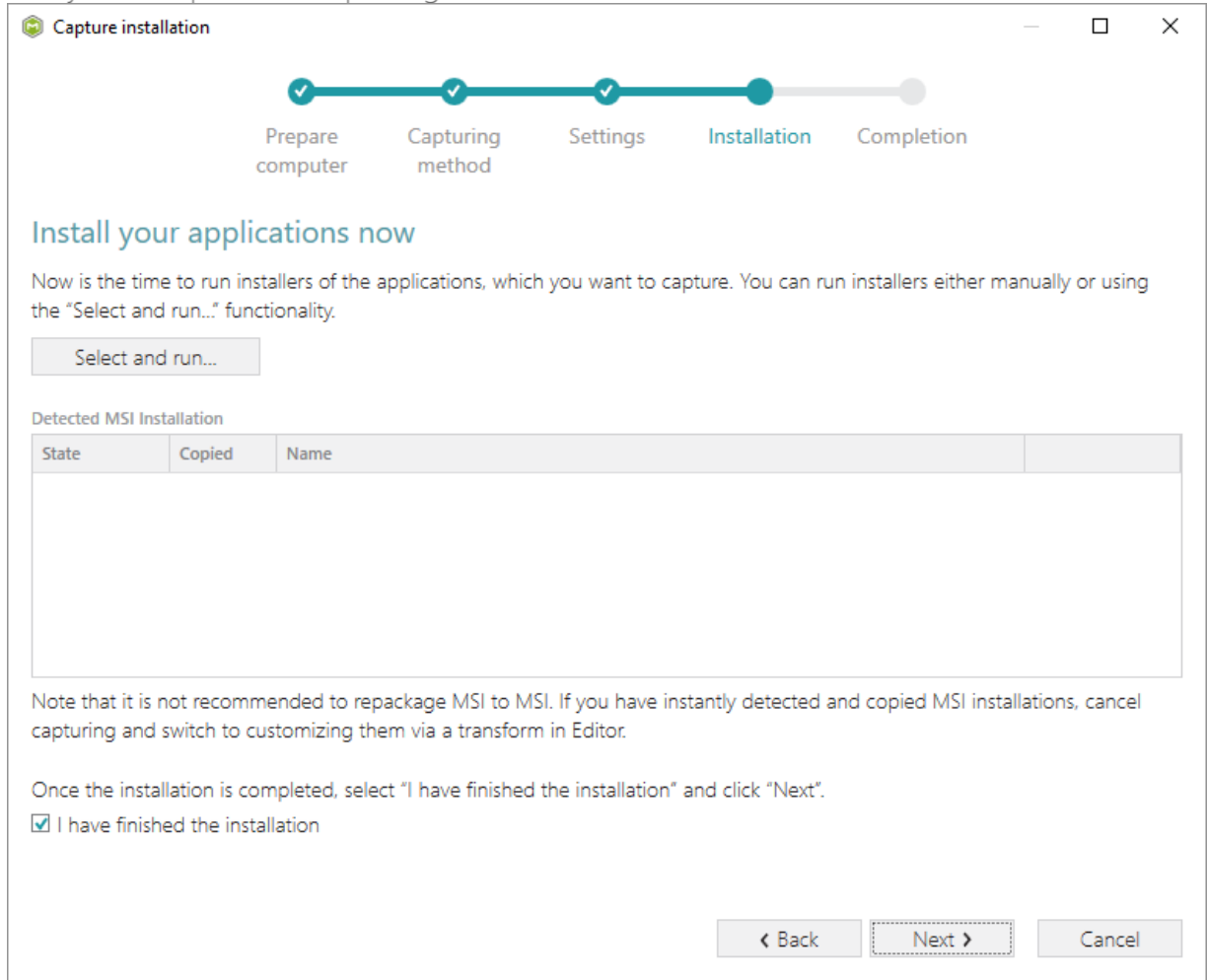


- Follow the installation dialogs of the launched source installation to complete it.



- Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.

- Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

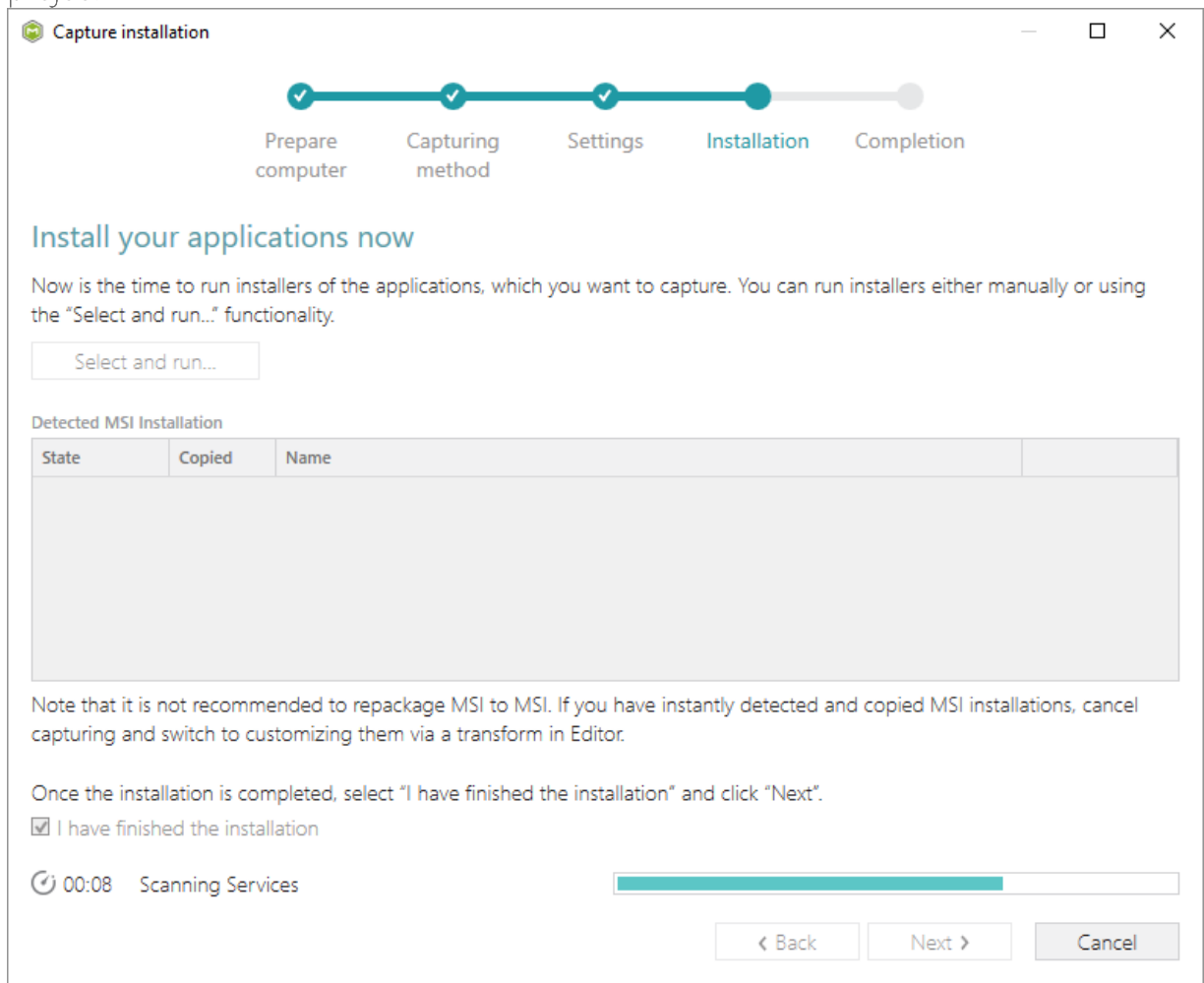
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

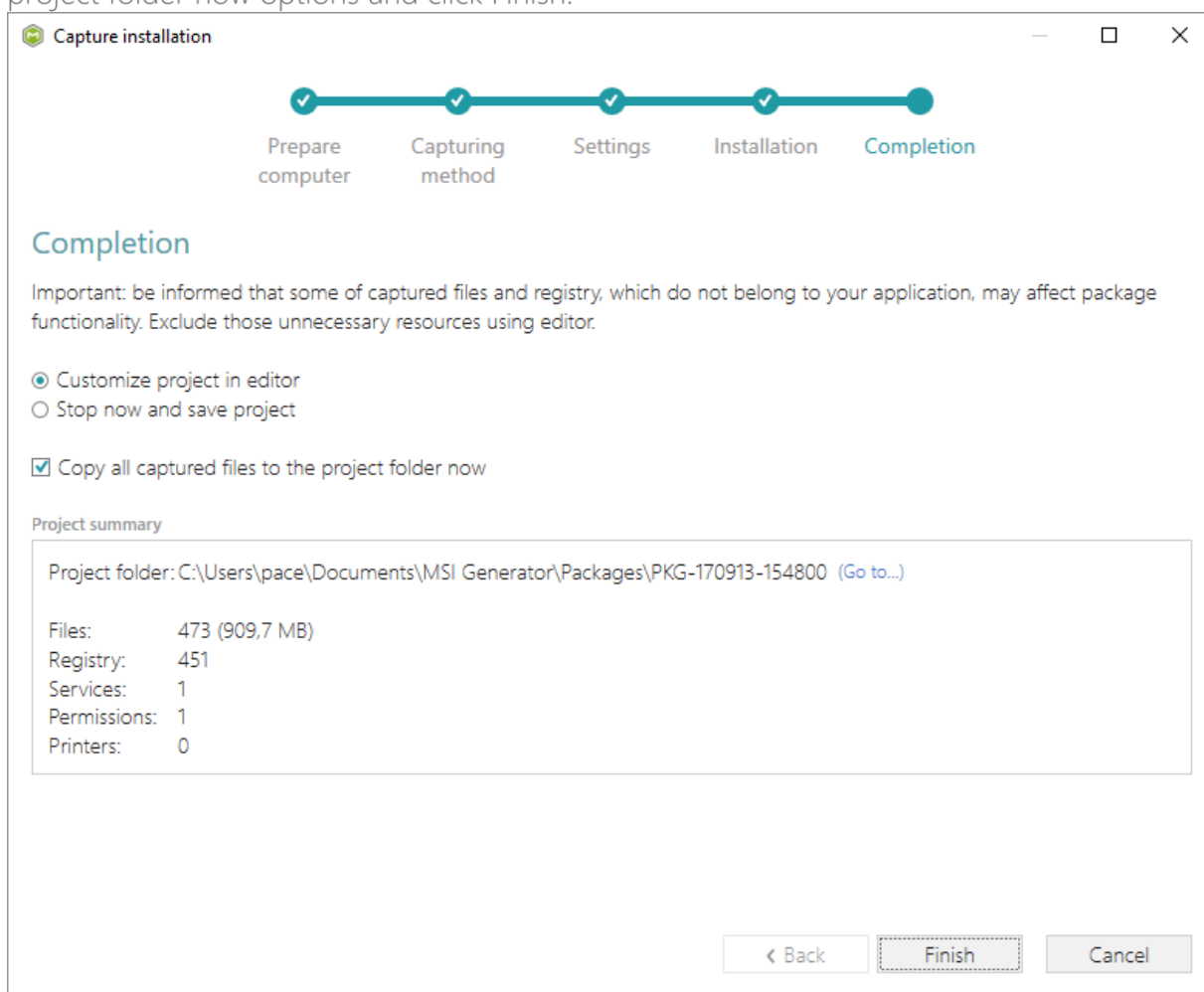
☒ I have finished the installation

< Back **Next >** Cancel

- Wait a little, while the capturing process is finishing, filtering captured data and creating the project.



- Leave selected both the Customize project in editor and Copy all captured files to the project folder now options and click Finish.



Capture installation

Prepare computer Capturing method Settings Installation **Completion**

Completion

Important: be informed that some of captured files and registry, which do not belong to your application, may affect package functionality. Exclude those unnecessary resources using editor.

☒ Customize project in editor
☐ Stop now and save project

☒ Copy all captured files to the project folder now

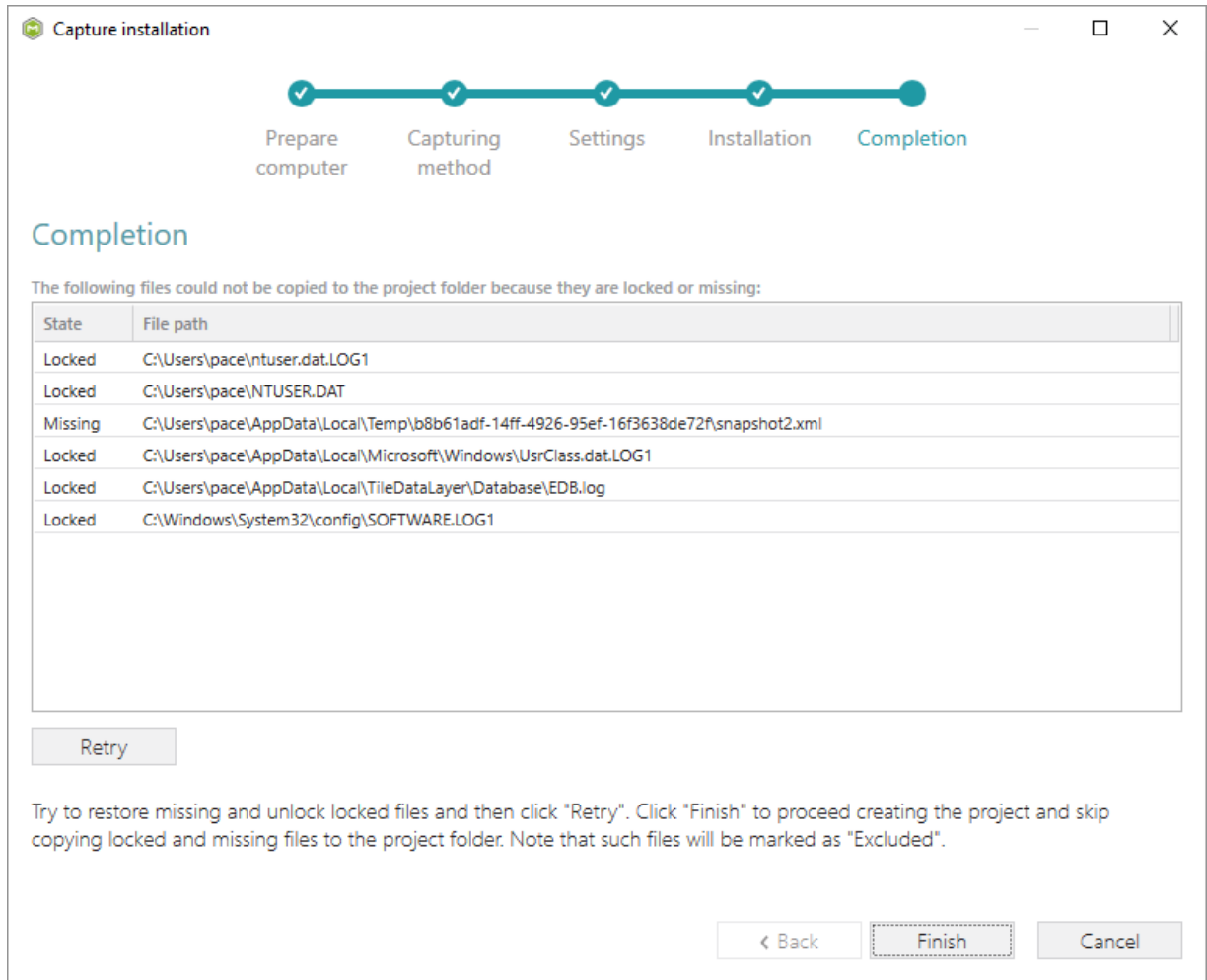
Project summary

Project folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-170913-154800 ([Go to...](#))

Files:	473 (909,7 MB)
Registry:	451
Services:	1
Permissions:	1
Printers:	0

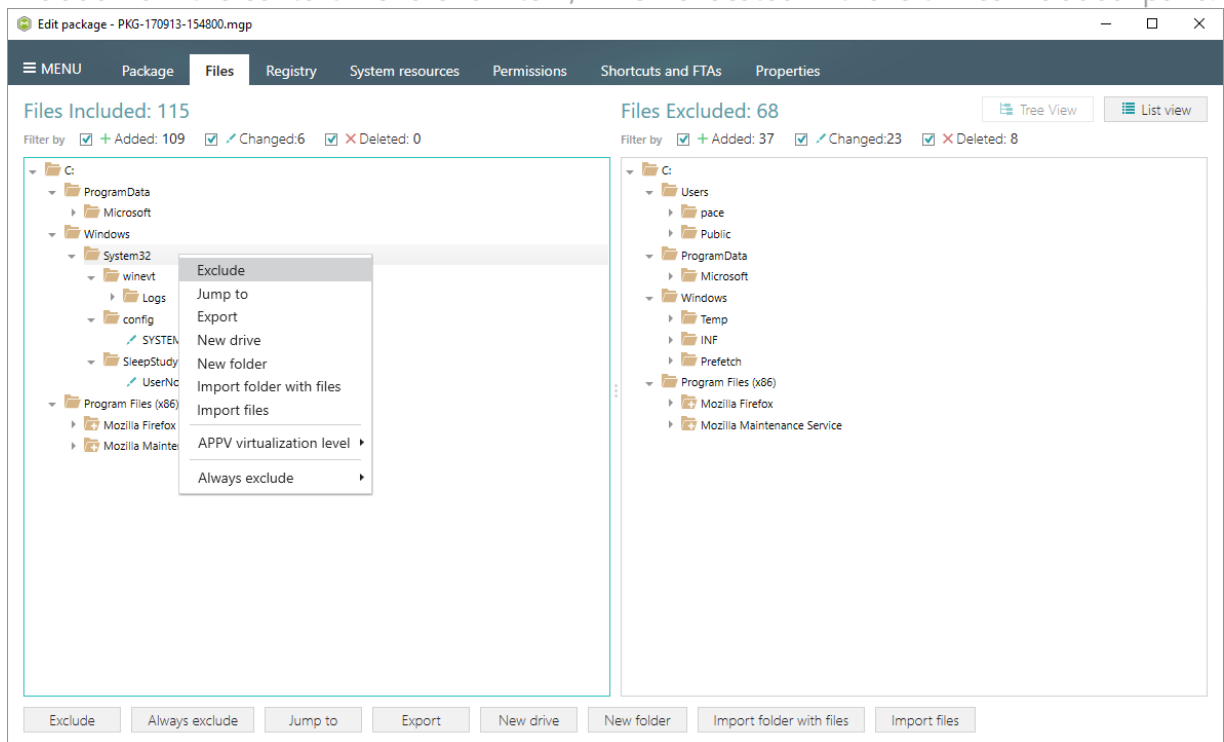
- The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing and locked

files and mark them as Excluded resources.

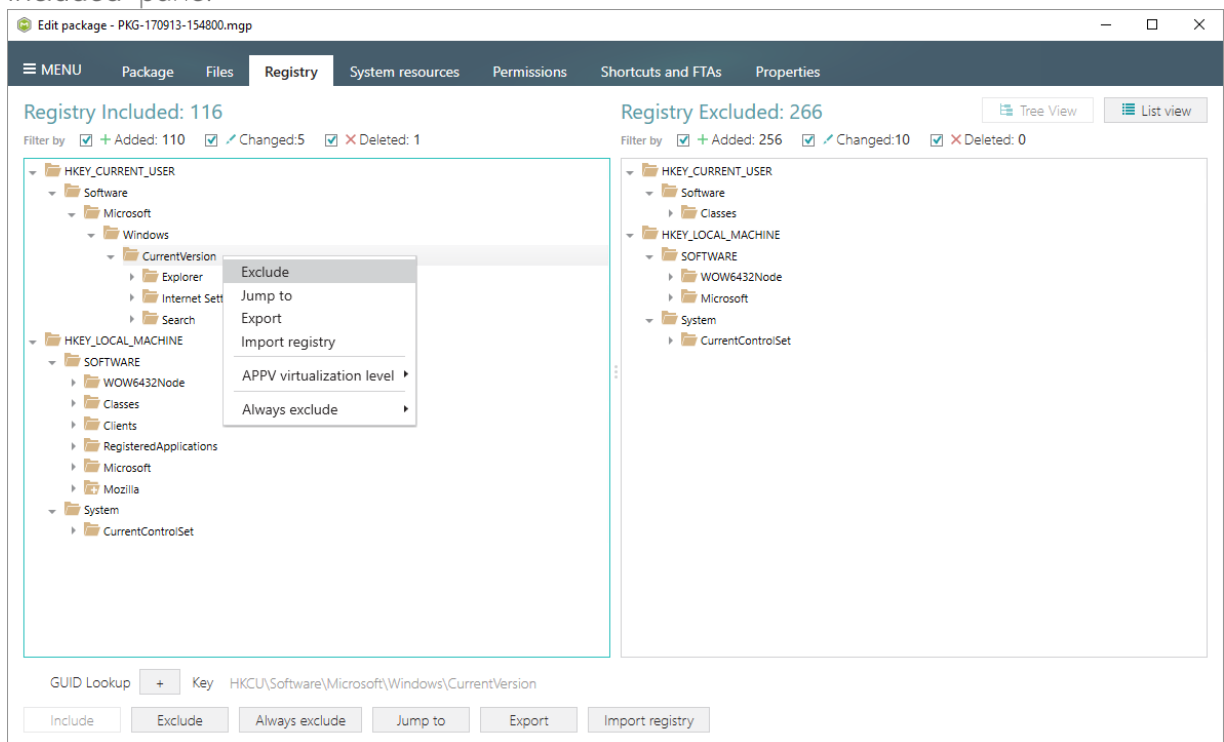


- Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).

- In order to review and exclude unnecessary files or folders, go to the **Files** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included' pane.



- In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.



- In order to review and exlude unnecessary APPX apps (shortcuts), go to the **Shortcuts and FTAs** -> **APPX apps** tab and uncheck the checkbox, located before the app name in the list, for those apps, which you want to exclude. Using the details pane, you can update the app

display name, logos and so on.

- Finally, to build APPX package from the project, navigate to the Package -> APPX tab, review and update (if necessary) Application details, Identity information, choose the digital signing option and click Build APPX. Find description of the APPX settings below in the table.

Application details

Display name A friendly name of the package that can be displayed to users.

Publisher display name	A friendly name for the publisher of the package that can be displayed to users.
Description	A friendly description that can be displayed to users.
Application root folder	A location of the main application folder. Content of the selected folder will be placed to the package root, instead of VFS.
Logo (50x50)	A logo image of the package that can be displayed to users.

Signature

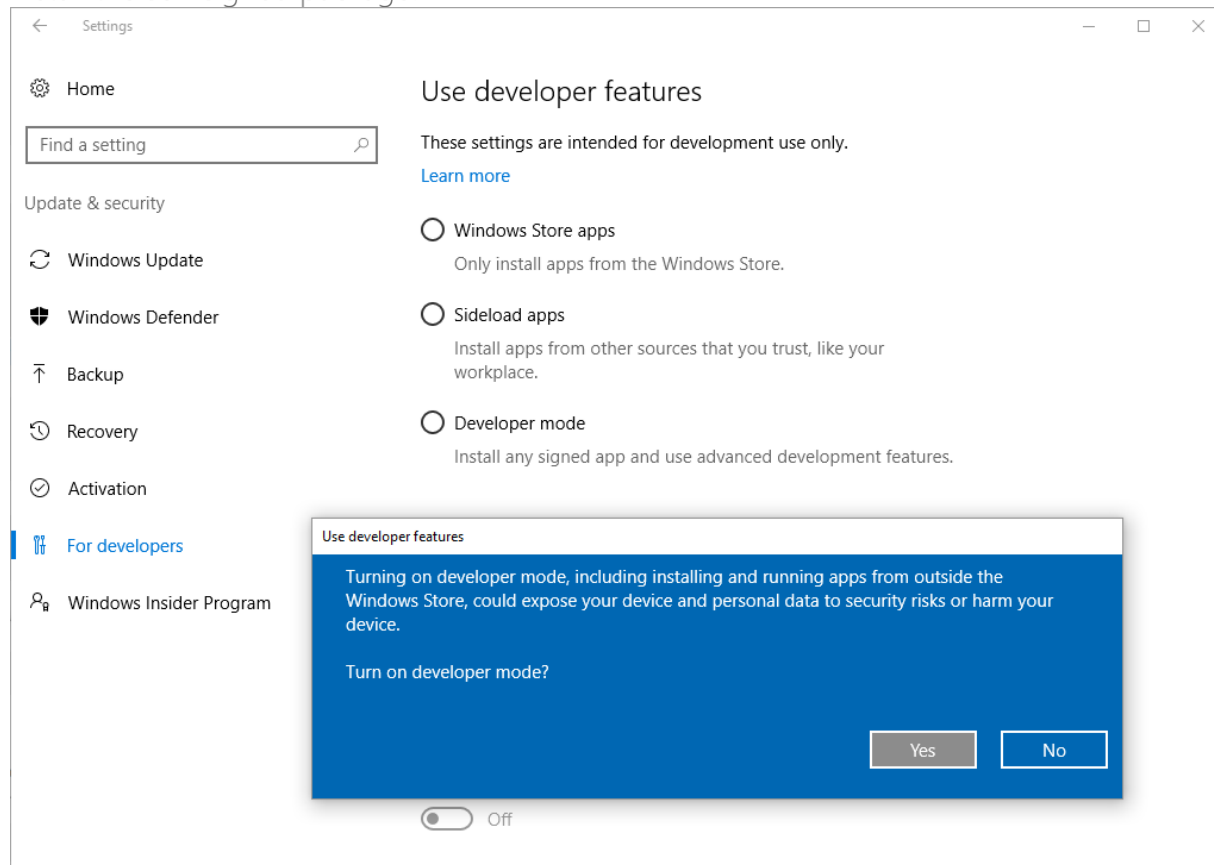
Do not sign the package	Use this option if you are planning to submit the package to Windows Store or sign it manually.
Sign the package with my certificate	Use this option to sign the generated package with the valid certificate that you already have.
Sign the package with auto-generated self-signed certificate	Use this option to generate the self-signed certificate and sign the package with this certificate. NOTE In order to deploy your package, install the generated certificate before (double-click the auto-generated.pfx file, and in the Certificate Import Wizard, install the certificate onto the Local Machine , and place the certificate into the Trusted People certificate store) and enable the Developer mode in Windows settings, as described in the next step.

Identity information

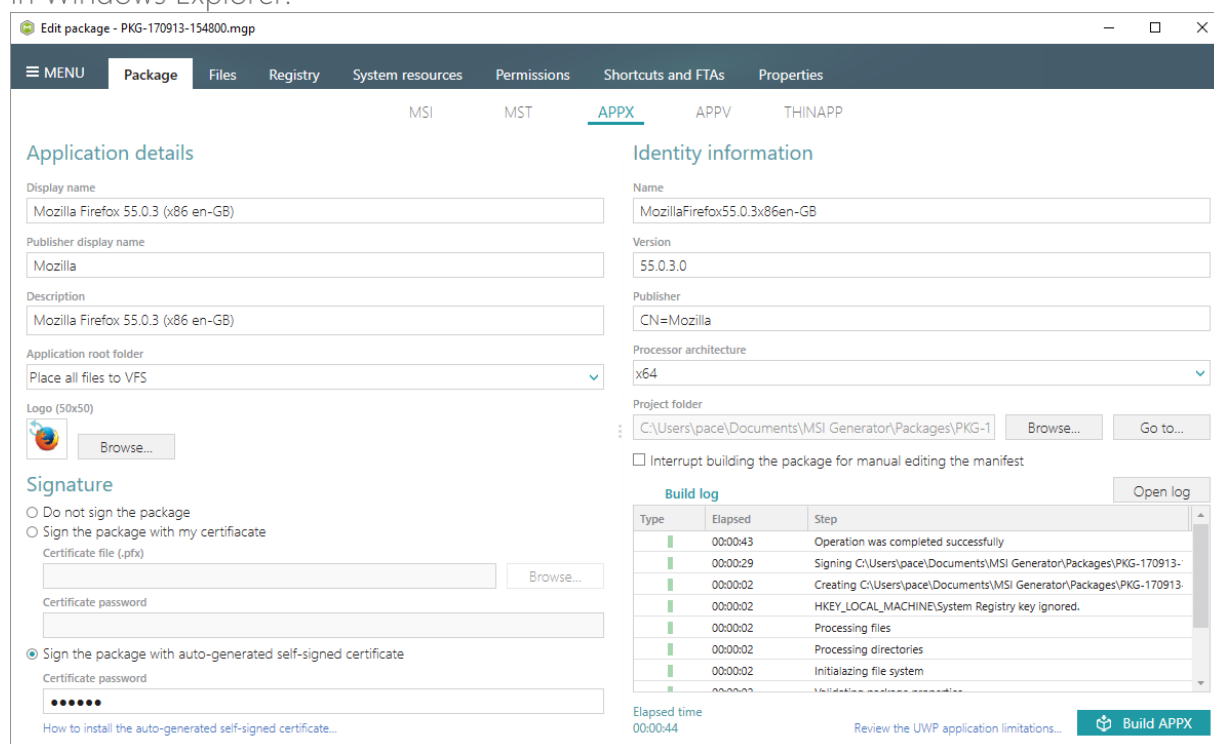
Name	Describes the contents of the package.
Version	The version number of the package.
Publisher	Describes the publisher information. The Publisher attribute must match the publisher subject information of the certificate used to sign a package.
Processor architecture	Describes the architecture of the code contained in the package.

- If you have built the package with the **Sign the package with the auto-generated self-signed certificate** option selected, do not forget to install that generated certificate to the Trusted People certificate store and enable the **Developer mode** in the Windows settings to

install the self-signed package.



- Click Go to..., located next to the Project folder field, to open the package containing folder in Windows Explorer.



3.5 Create APPV

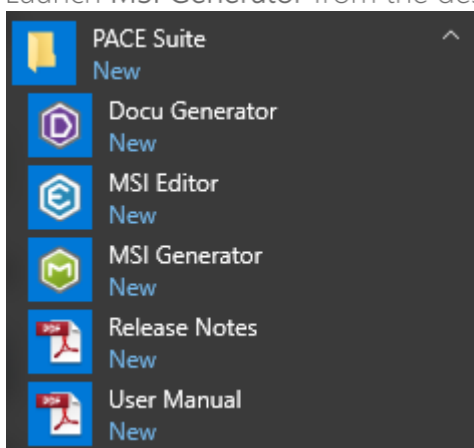
Choose a scenario that better suits your needs:

- **Create APPV from Scratch**, described in section 3.5.1
Create a new empty project in MSI Generator, add folders, files, registry entries and APPV apps, shortcuts and FTAs to this project and then generate the APPV 5.0/5.1/1607 (5.2) package from this project.
- **Convert (Repackage) EXE, MSI to APPV 5.x**, described in section 3.5.2
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into APPV 5.0/5.1/1607 (5.2) package using MSI Generator.

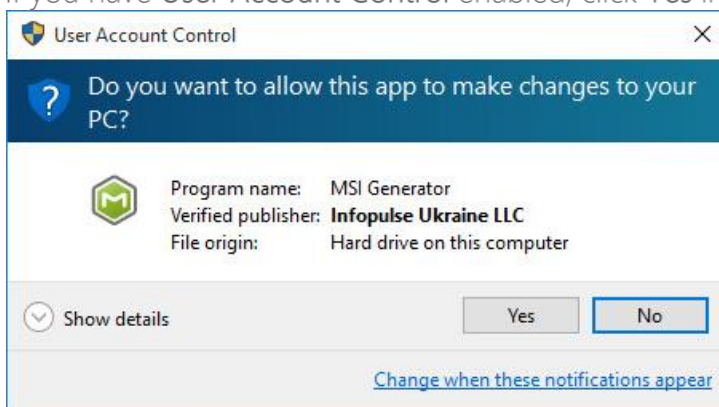
3.5.1 Create APPV from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries and APPV apps, shortcuts and FTAs to this project and then generate the APPV 5.0/5.1/1607 (5.2) package from this project.

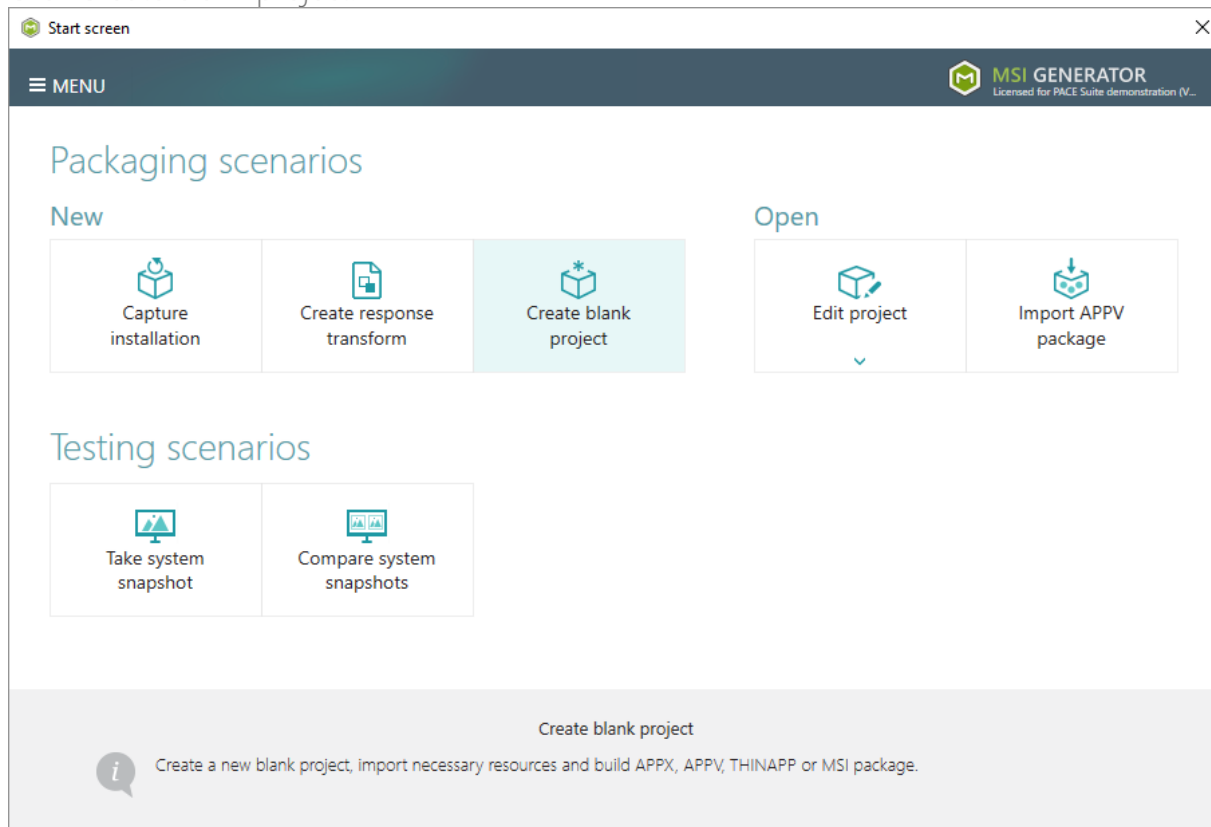
- [1]. Launch MSI Generator from the desktop or the start menu shortcut.



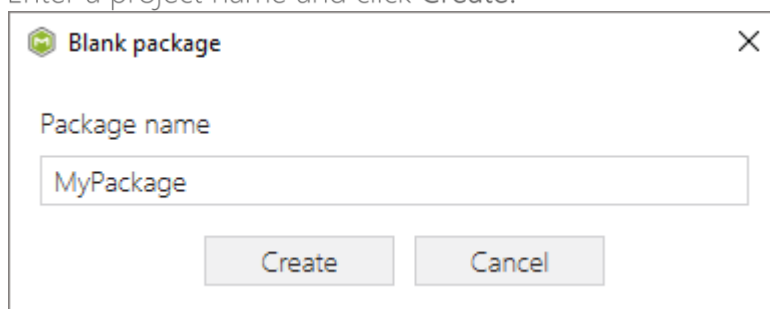
- [2]. If you have User Account Control enabled, click Yes in the opened window.



- [3]. Click Create blank project.

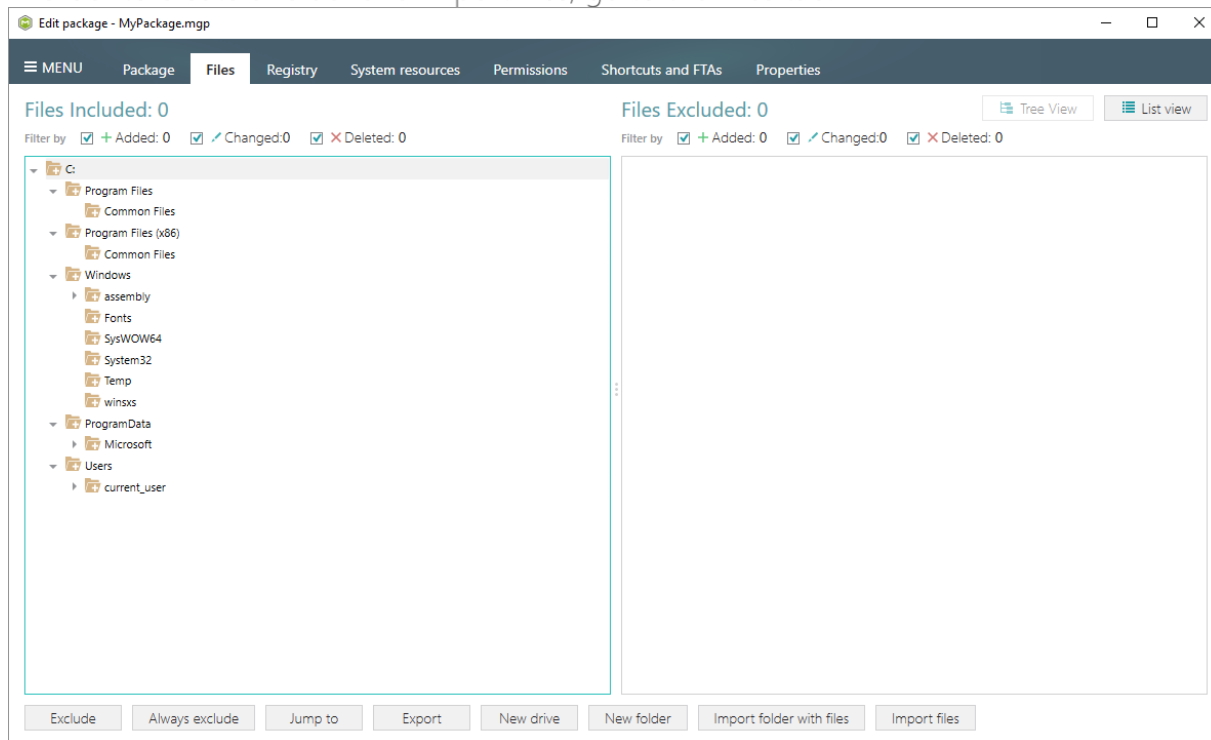


- [4]. Enter a project name and click Create.

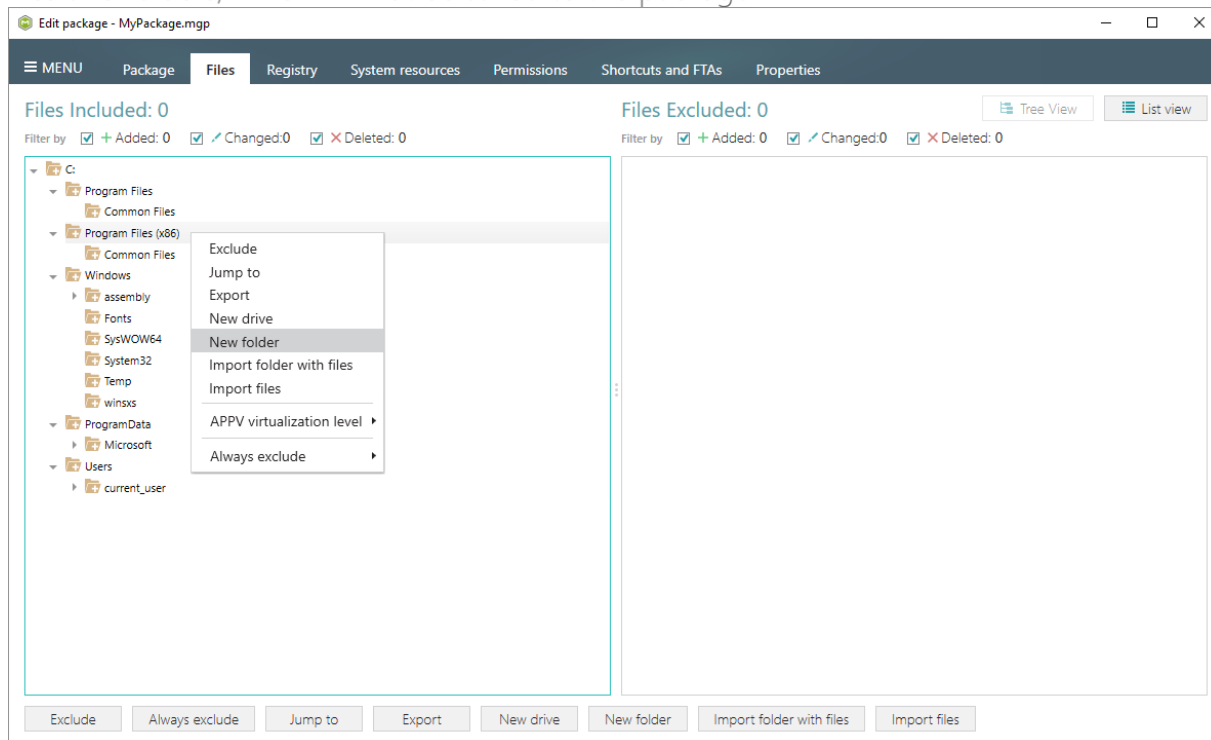


- [5]. Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [11] describe how to create a new folder, import files to this folder and change the default APPV virtualization level of a folder; the steps from [12] to [15] describe how to import registry entries from the REG file and change the default APPV virtualization level of a registry key; the steps from [16] to [21] describe how create a new APPV application, its shortcuts and associate file extensions with the application; and two last steps [22] and [23] describe how to build APPV package from the prepared project.

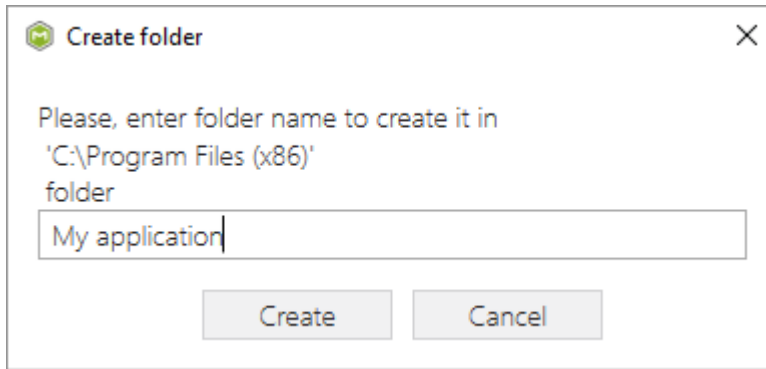
- [6]. In order to create a folder and import files, go to the Files tab.



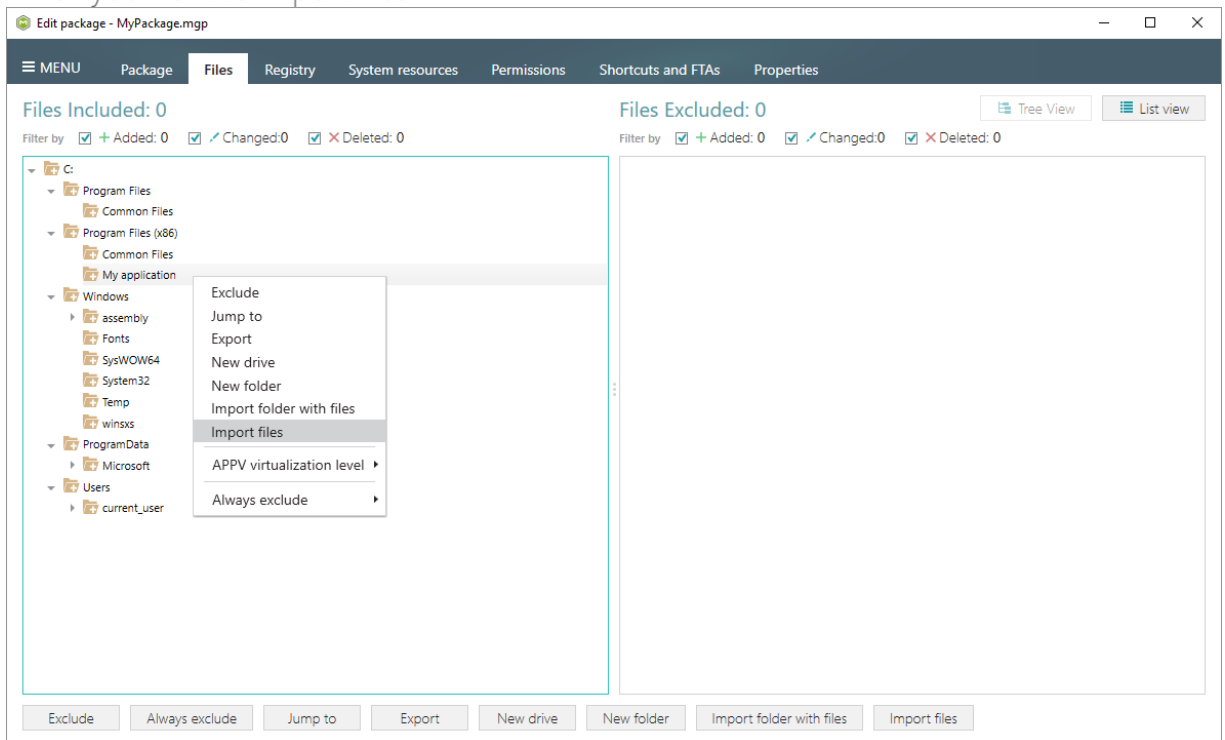
- [7]. In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



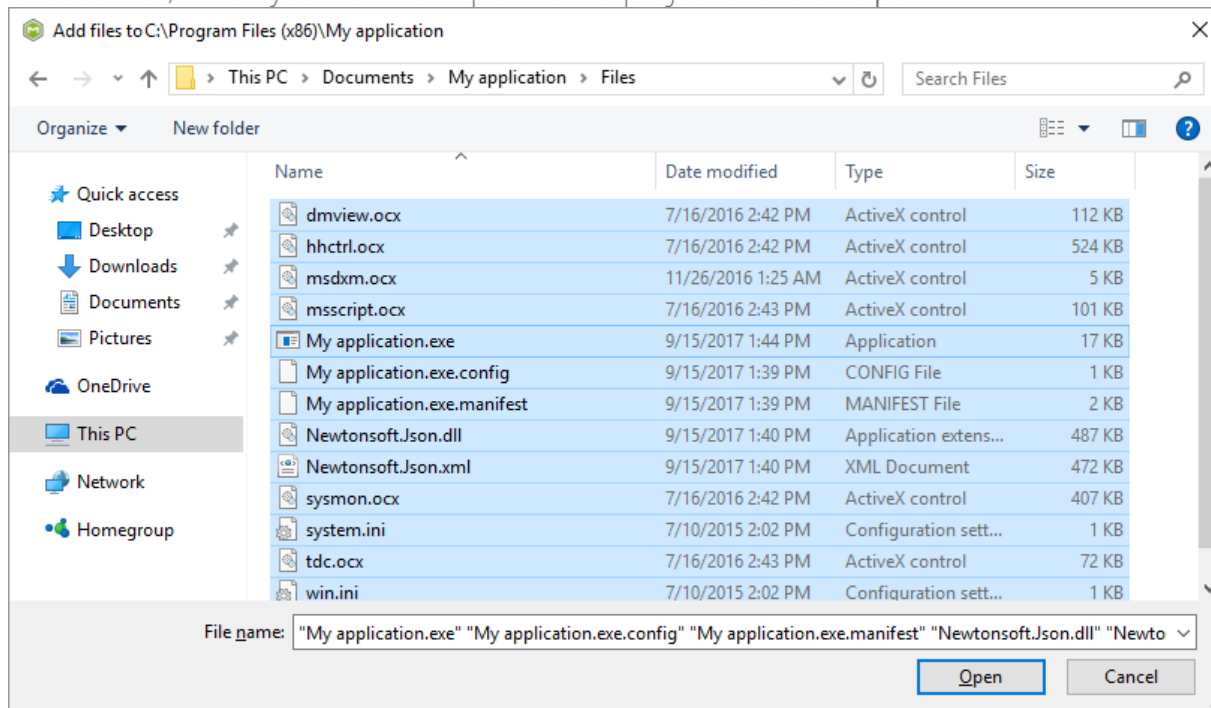
- [8]. Enter a folder name and click Create.



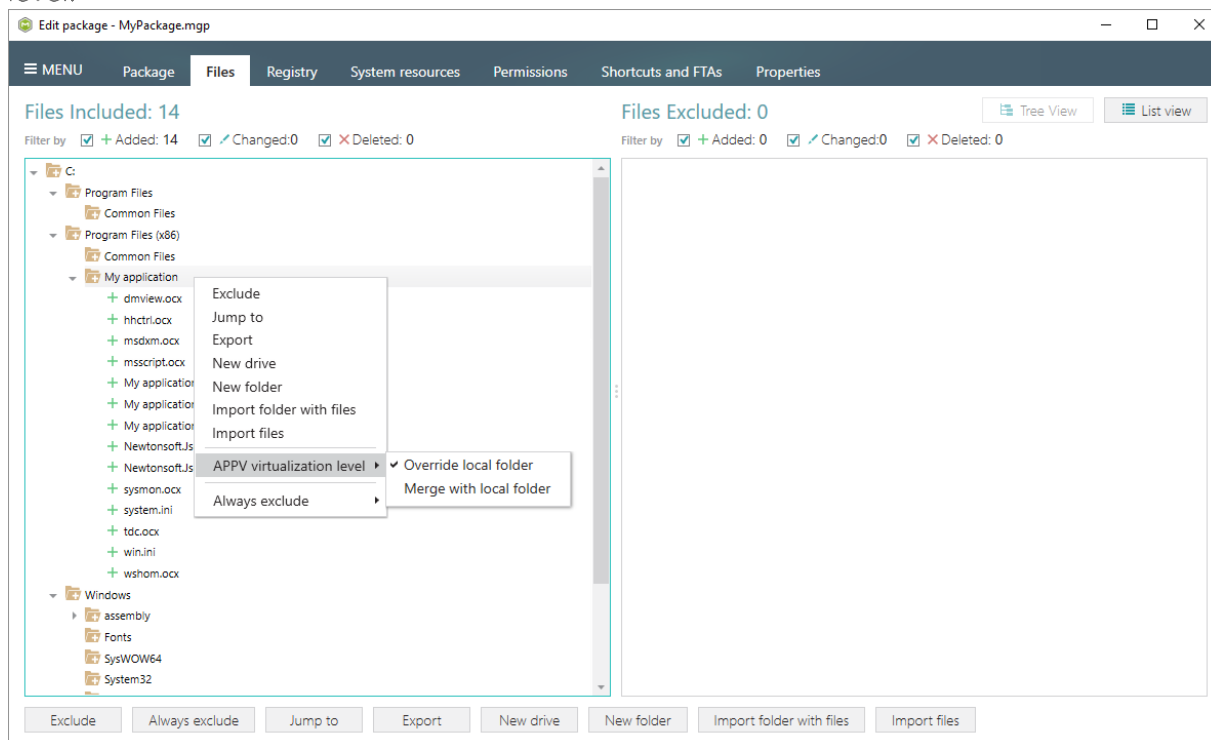
- [9]. For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



[10]. Choose files, which you want to import to the project and click **Open**.

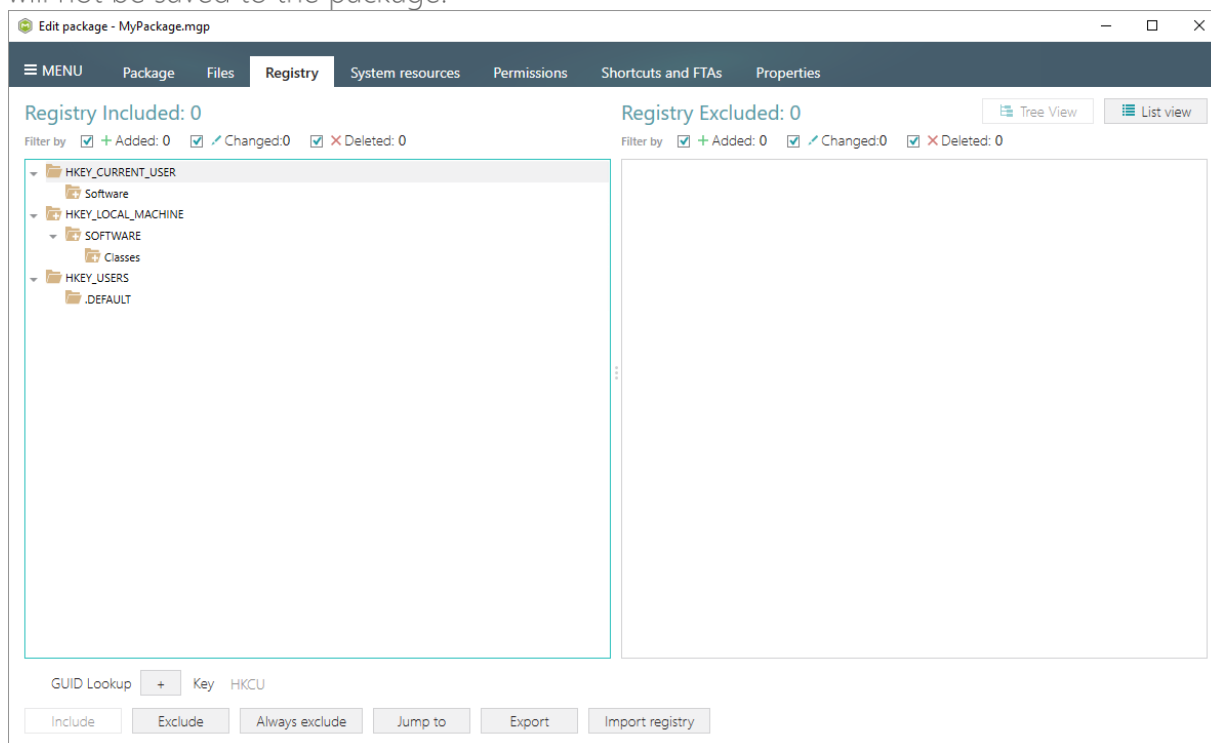


[11]. In order to change the default virtualization (isolation) level of a folder, open the folder context menu, and select either **Override local folder** or **Merge with local folder** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local folder** option selected, it means that this option is inherited from the parent folder. Child folder could not have the **Merge with local folder** virtualization level, if parent one has the **Override local folder** virtualization level.

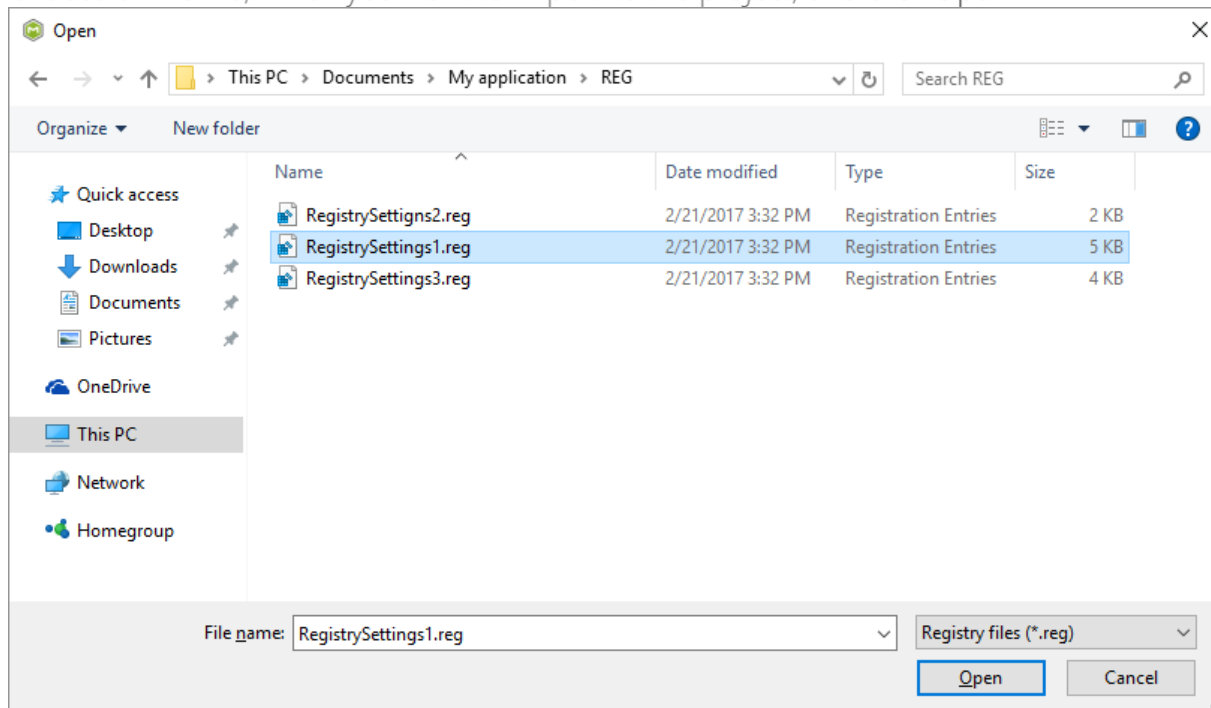


[12]. In order to import registry entries from the REG file, go to the **Registry** tab and click the **Import registry** button, located in the bottom part of the window. Note that the left

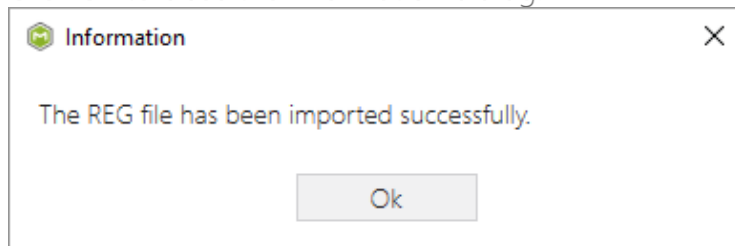
'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



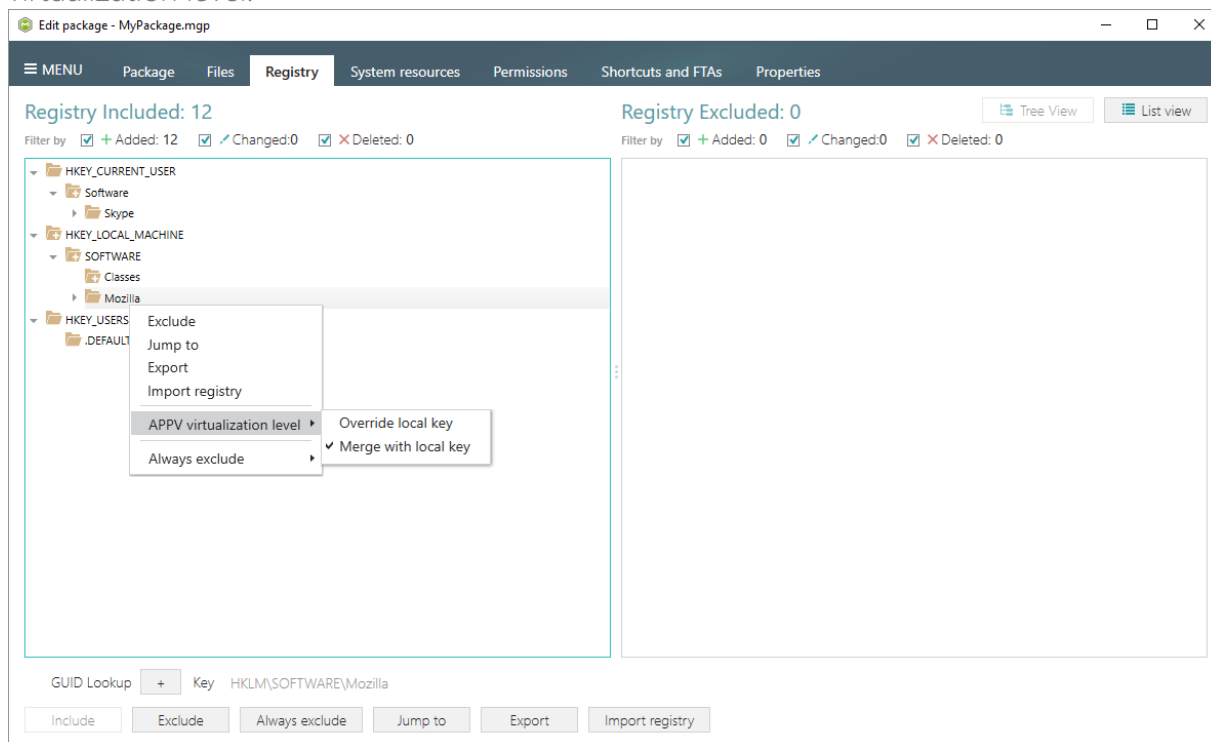
[13]. Choose a REG file, which you want to import to the project, and click Open.



[14]. Click Ok to close the information dialog.

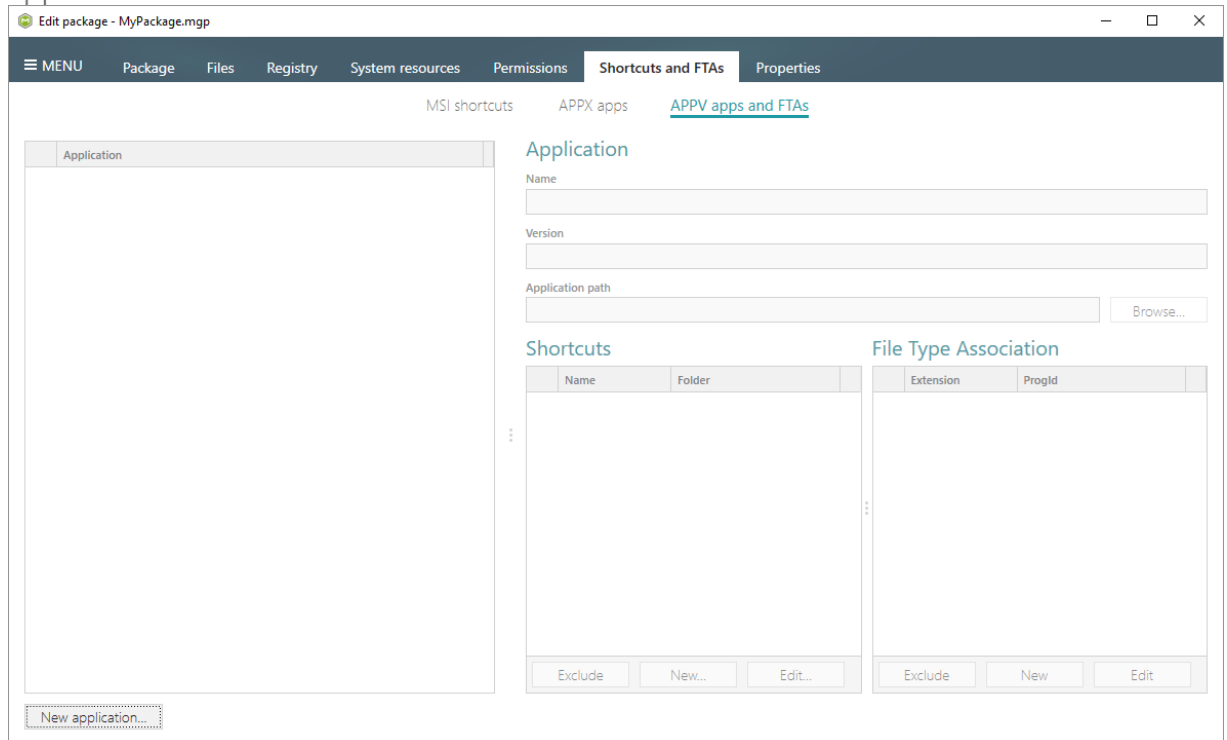


[15]. In order to change the default virtualization (isolation) level of a registry key, open the registry key context menu, and select either **Override local key** or **Merge with local key** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local key** option selected, it means that this option is inherited from the parent registry key. A child registry key could not have the **Merge with local key** virtualization level, if the parent one has the **Override local key** virtualization level.

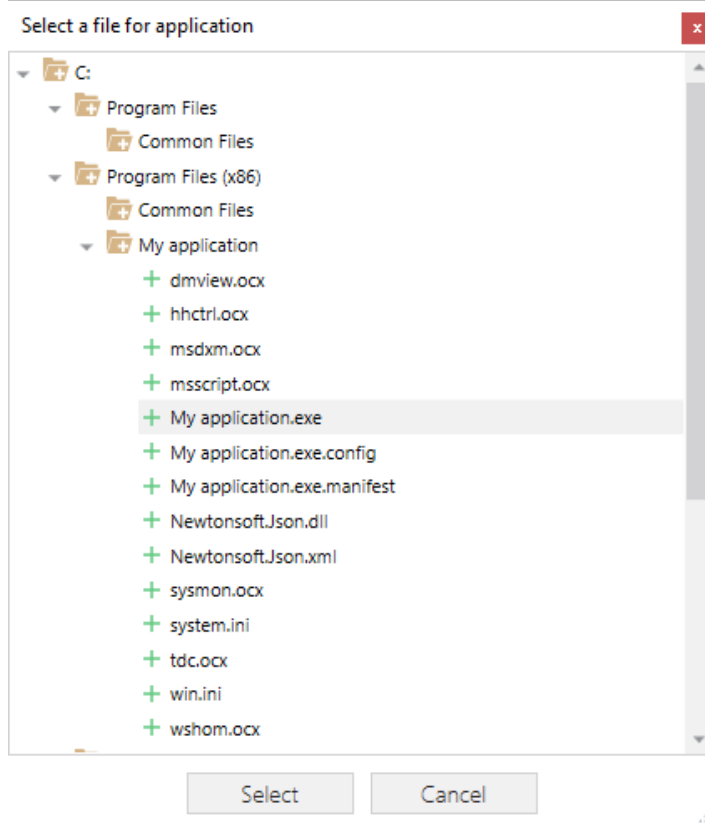


[16]. If you need to create an APPV application, its shortcuts and associate file extensions with this application, go to the **Shortcuts and FTAs** -> **APPV apps and FTAs** tab and click **New**

application...



[17]. Select the main executable file (EXE) of your application from the tree and click Select.



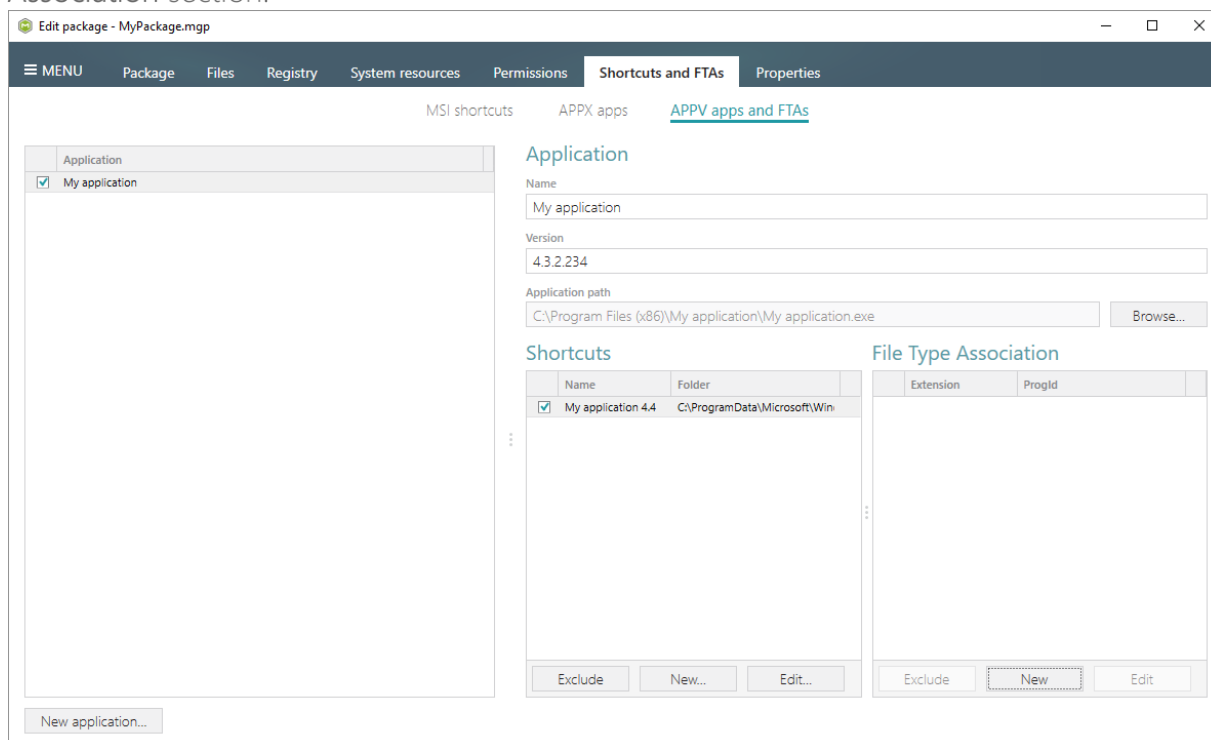
[18]. To create a shortcut for the application, click **New...** in the **Shortcuts** section.

The screenshot shows the 'Edit package - MyPackage.mgp' window with the 'Shortcuts and FTAs' tab selected. The window has a menu bar with 'MENU', 'Package', 'Files', 'Registry', 'System resources', 'Permissions', 'Shortcuts and FTAs', and 'Properties'. Below the menu bar are tabs for 'MSI shortcuts', 'APPX apps', and 'APPV apps and FTAs'. The 'APPV apps and FTAs' tab is active, showing an 'Application' section on the left with a list containing 'My application' (checked) and a 'New application...' button at the bottom. The right side of the window is divided into two sections: 'Application' and 'Shortcuts'. The 'Application' section has fields for 'Name' (My application), 'Version' (4.3.2.234), and 'Application path' (C:\Program Files (x86)\My application\My application.exe) with a 'Browse...' button. The 'Shortcuts' section has a table with columns 'Name' and 'Folder', and buttons 'Exclude', 'New...', and 'Edit...'. The 'File Type Association' section has a table with columns 'Extension' and 'ProgId', and buttons 'Exclude', 'New', and 'Edit'.

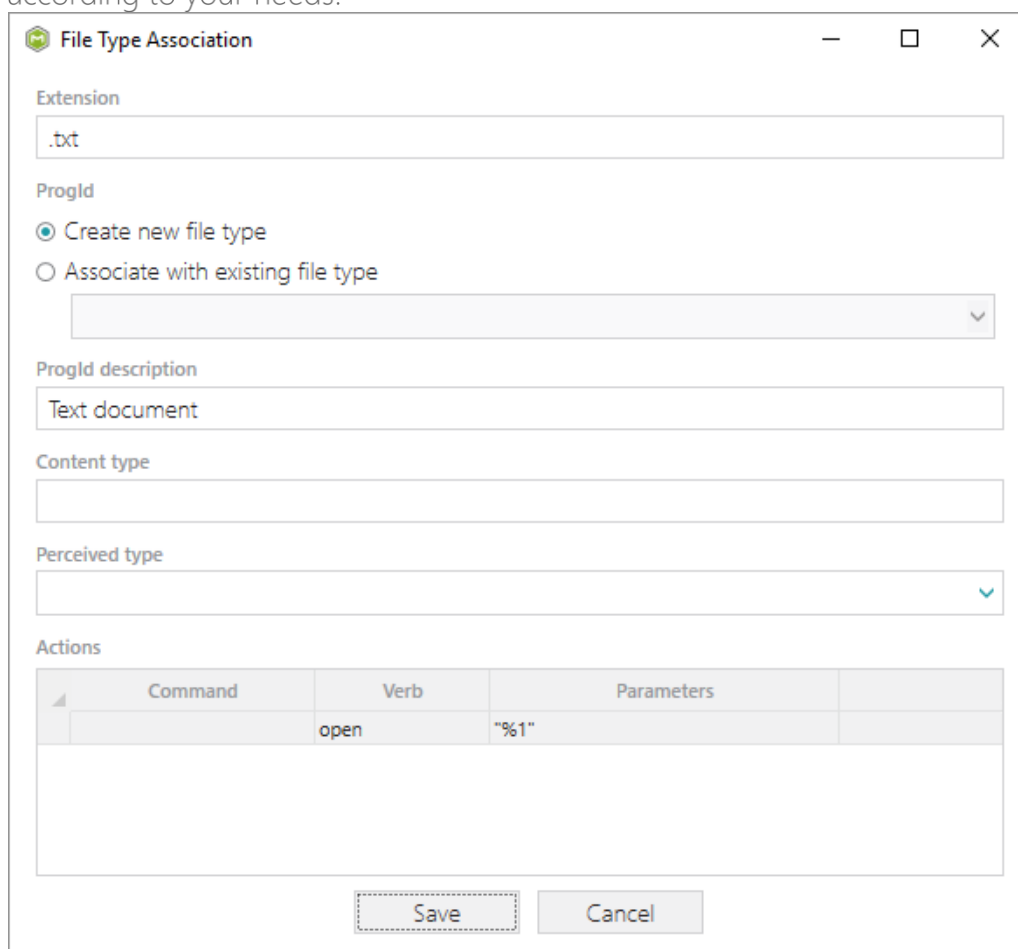
[19]. Enter a shortcut name, select a destination location ("Folder" field), icon and click **Save**.

The screenshot shows the 'Shortcut' dialog box with the following fields and options: 'Name' (My application 4.4), 'Folder' (C:\ProgramData\Microsoft\Windows\Start Menu\Programs), 'Arguments' (empty), 'Start in' (C:\Program Files (x86)\My application), 'Run' (Normal), and 'Icon' (Change icon button). At the bottom are 'Save' and 'Cancel' buttons.

[20]. To associate some file extension with your application, click **New...** in the File Type Association section.



[21]. Enter a file extension and click **Save**. Optionally you can modify other FTA settings according to your needs.



- [22]. In order to build APPV package from your project, navigate to the Package -> APPV tab, update Application Details, select the necessary App-V Settings, App-V package format version, and then click Build APPV.

Edit package - MyPackage.mgp

Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: My application

Version: 1.0.0

Publisher: My publisher

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

- ☐ Force application to be fully downloaded before launching.

Target OS:

- ☒ Allow this package to be run on any operating system
- ☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

- ☐ Allow all named objects to interact with the local system
- ☐ Allow all COM objects to interact with the local system
- ☐ Allow virtual application full write permissions to the virtual file system
- ☐ Enable Browser Helper Objects

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: MyPackage

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\MyPai Browse... Go to...

Description:

Build log Open log

Type	Elapsed	Step

Elapsed time: 00:00 Build APPV

- [23]. Click Go to..., located next to the Project folder field, to open the package containing folder in Windows Explorer.

Edit package - MyPackage.mgp

Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: My application

Version: 1.0.0

Publisher: My publisher

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

- ☐ Force application to be fully downloaded before launching.

Target OS:

- ☒ Allow this package to be run on any operating system
- ☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

- ☐ Allow all named objects to interact with the local system
- ☐ Allow all COM objects to interact with the local system
- ☐ Allow virtual application full write permissions to the virtual file system
- ☐ Enable Browser Helper Objects

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: MyPackage

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\MyPai Browse... Go to...

Description:

Build log Open log

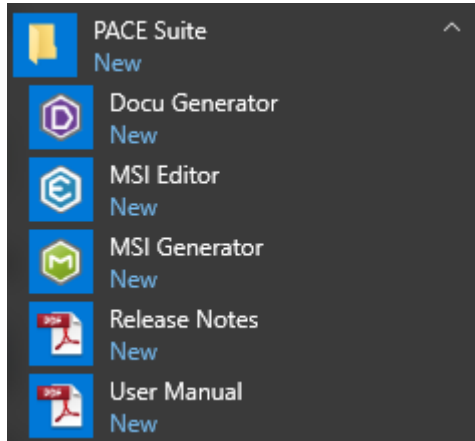
Type	Elapsed	Step
	00:00:04	Operation was completed successfully
	00:00:01	Saving package
	00:00:01	Processing software clients
	00:00:01	Processing environment variables
	00:00:01	Processing URL protocols
	00:00:01	Processing application capabilities
	00:00:01	Processing FTAs
	00:00:01	Processing browser plugins
	00:00:01	Processing COM objects
	00:00:01	Processing services
	00:00:01	Processing registry

Elapsed time: 00:00:05 Build APPV

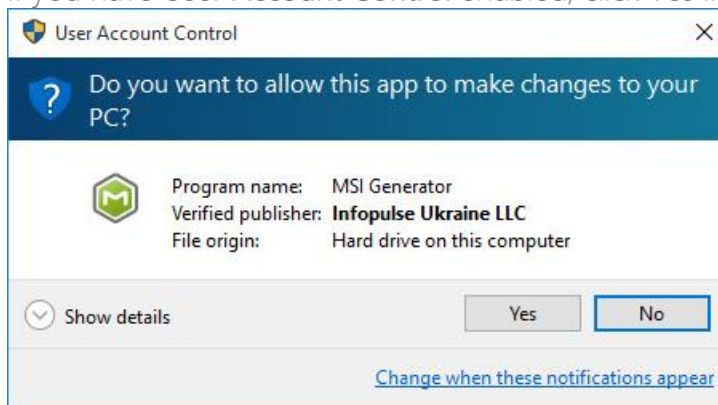
3.5.2 Convert (Repackage) EXE, MSI to APPV 5.x

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into APPV 5.0/5.1/1607 (5.2) package using MSI Generator.

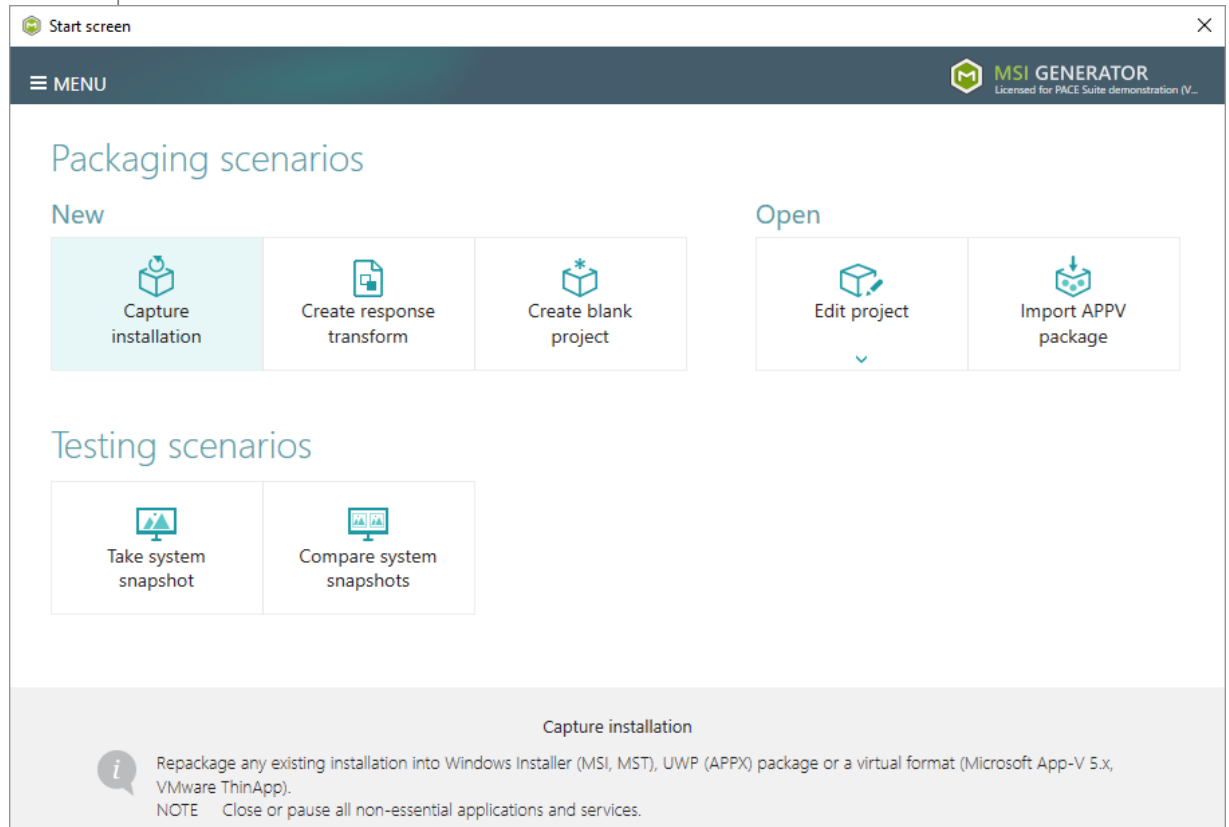
- Launch MSI Generator from the desktop or the start menu shortcut.



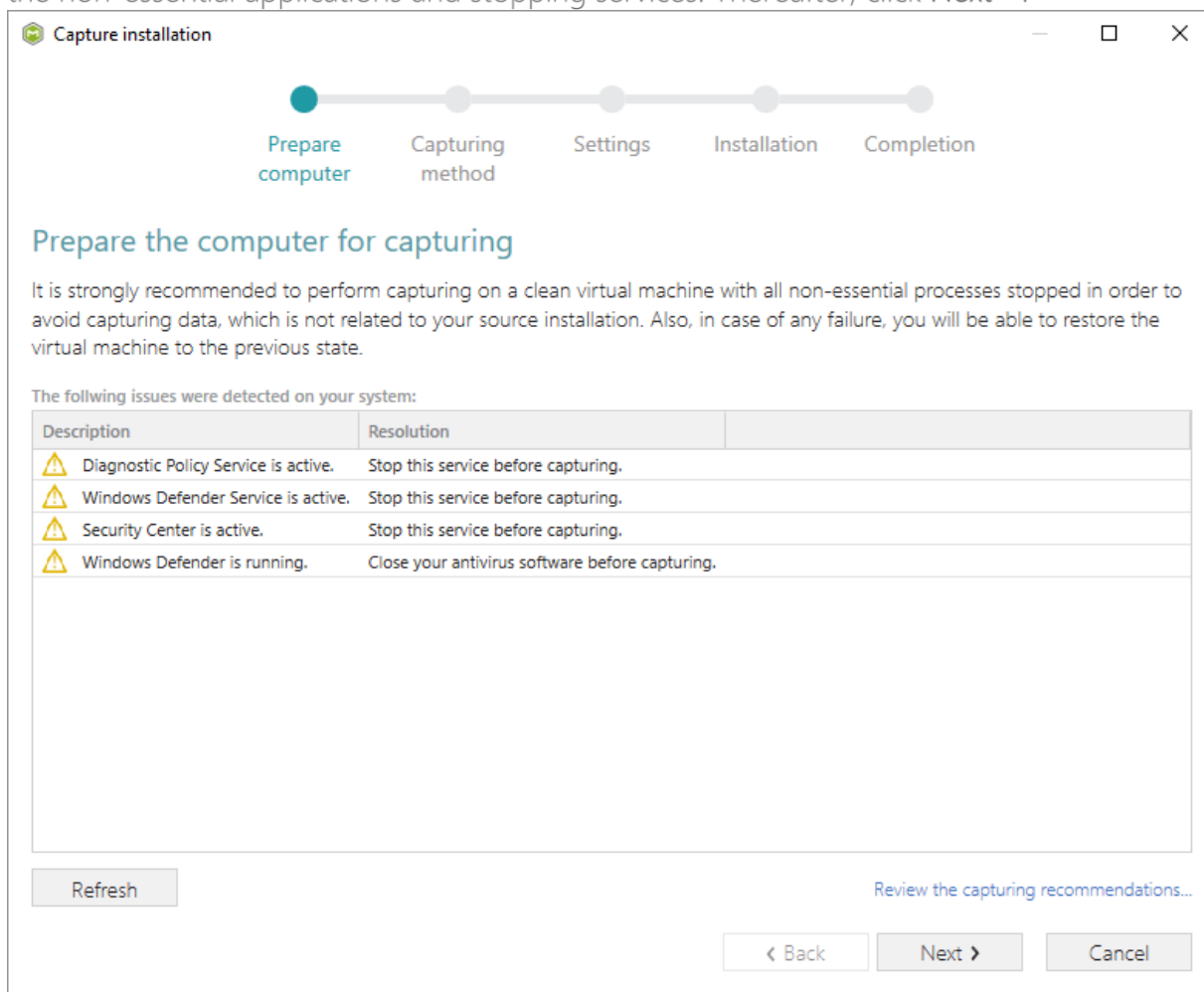
- If you have User Account Control enabled, click Yes in the opened window.



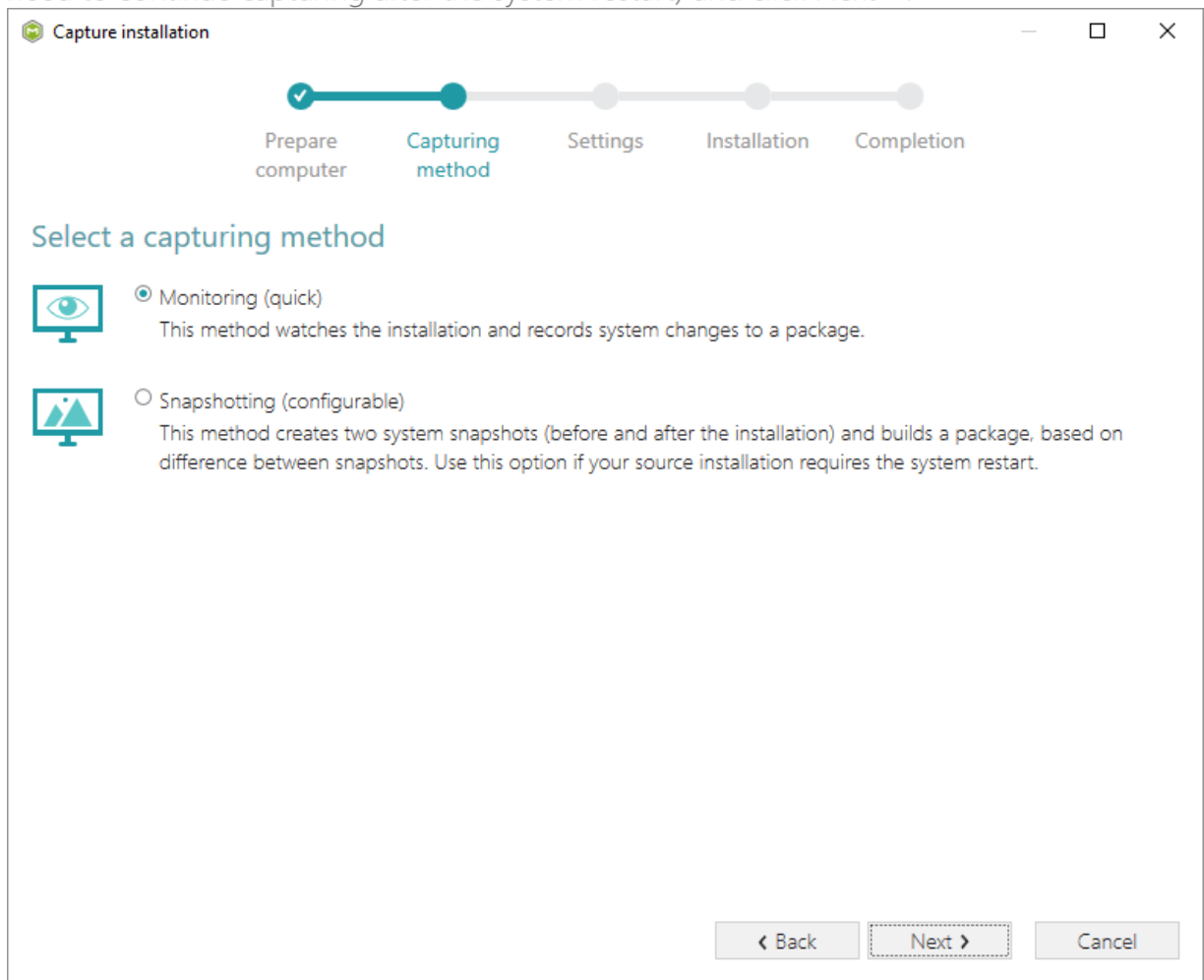
- Click Capture installation.



- Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click Next >.



- Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- Review and update package name. If needed, disable unnecessary exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

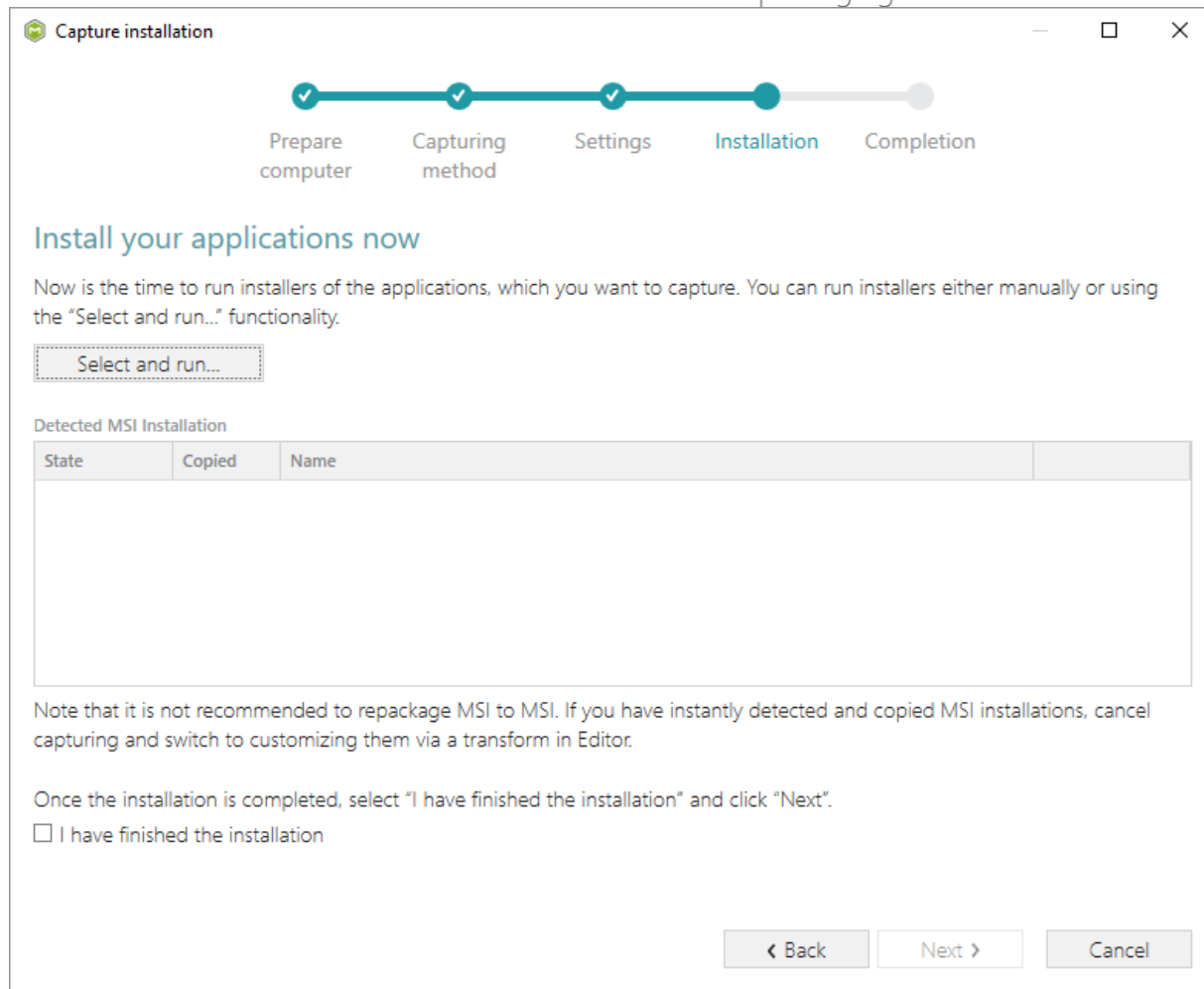
Scanning areas

Application objects:

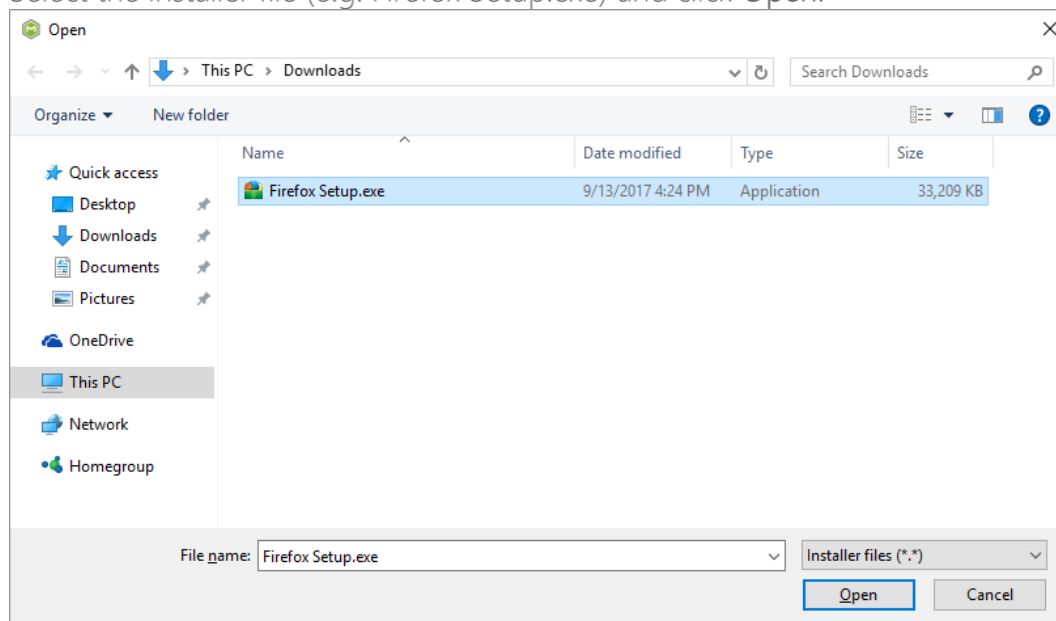
- ☒ Permissions
- ☒ Services
- ☒ Printers

< Back **Next >** Cancel

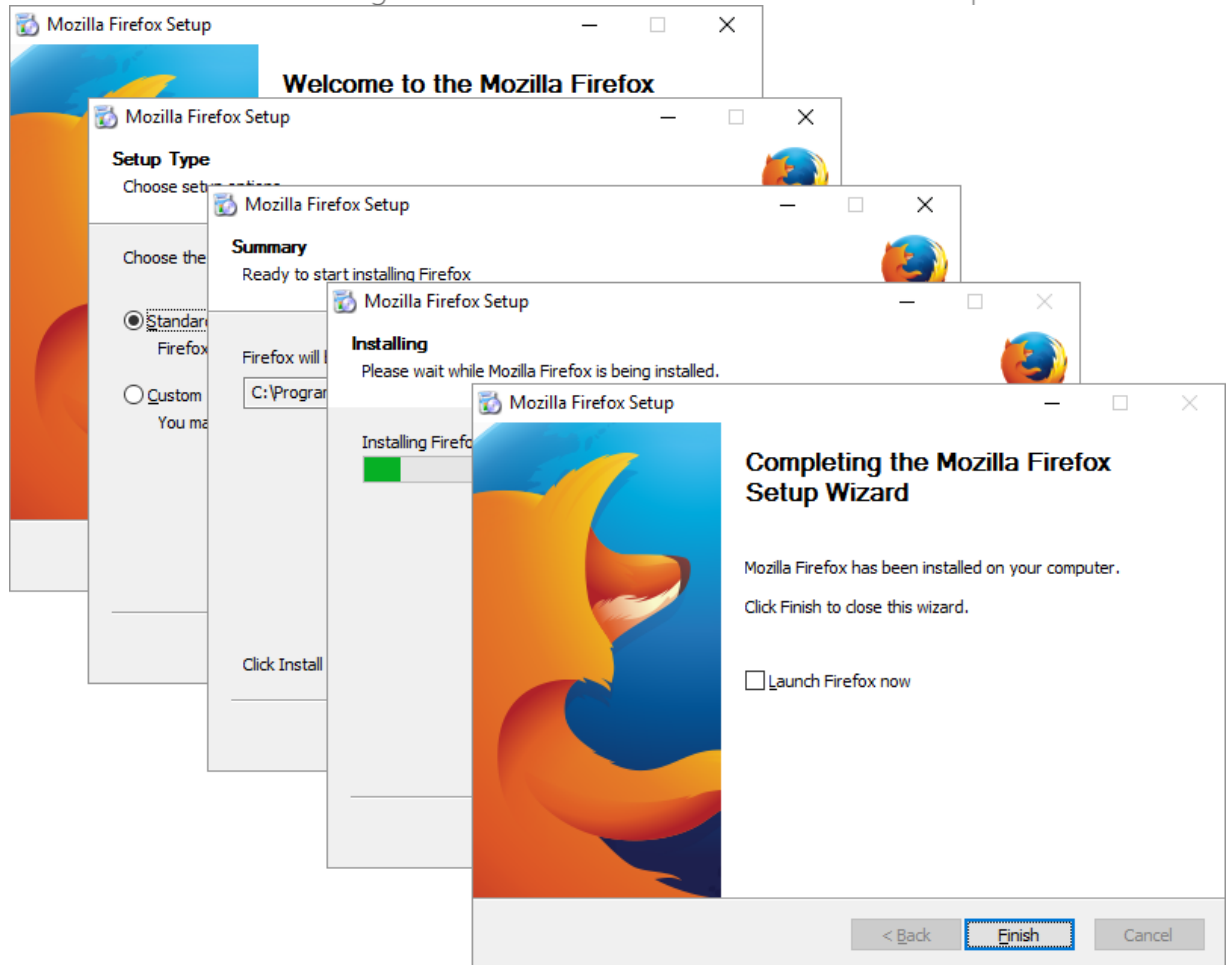
- Click Select and run... to choose source installation for repackaging.



- Select the installer file (e.g. Firefox Setup.exe) and click Open.

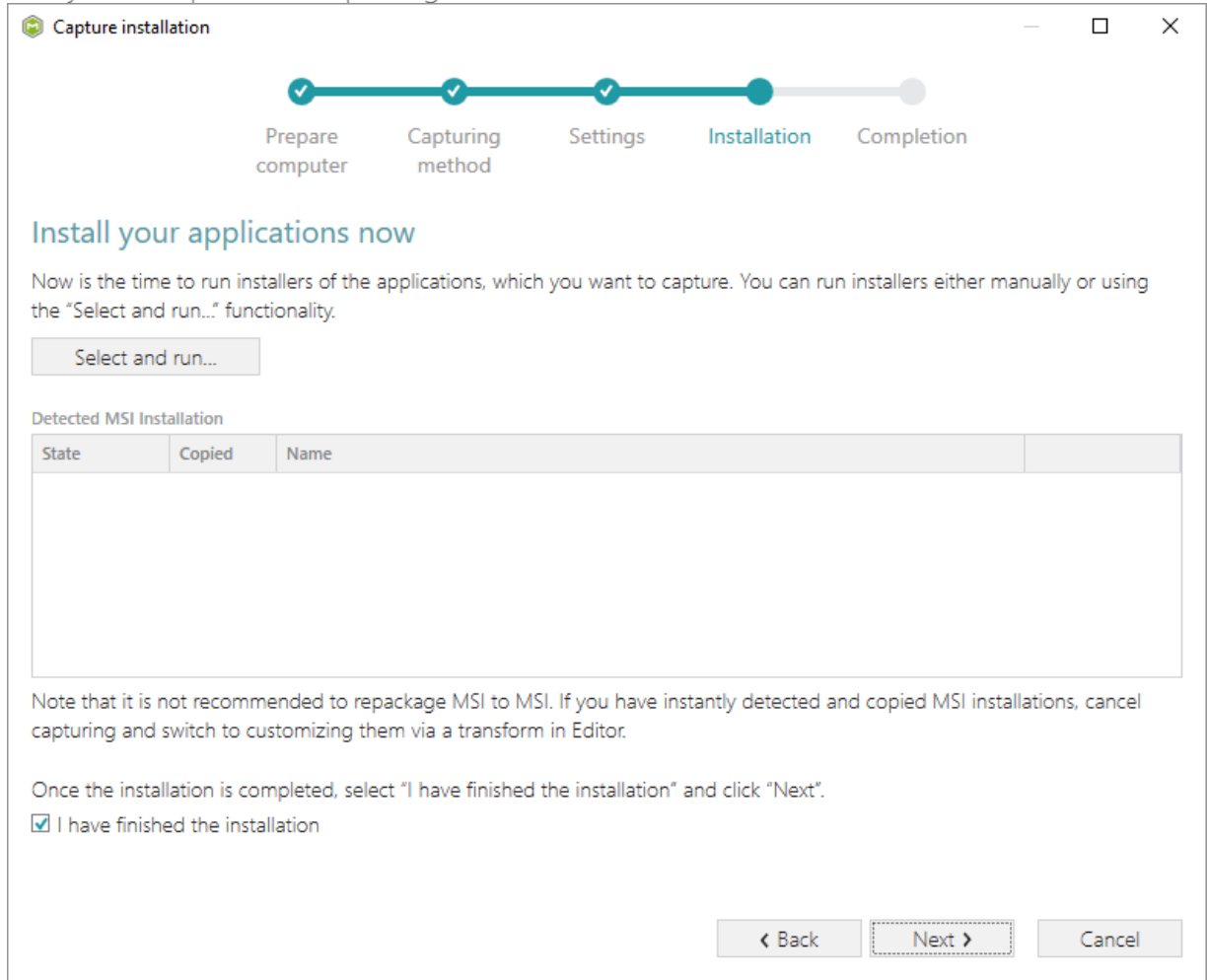


- Follow the installation dialogs of the launched source installation to complete it.



- Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.

- Finally, to complete the capturing, select I have finished the installation and click Next >.



Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

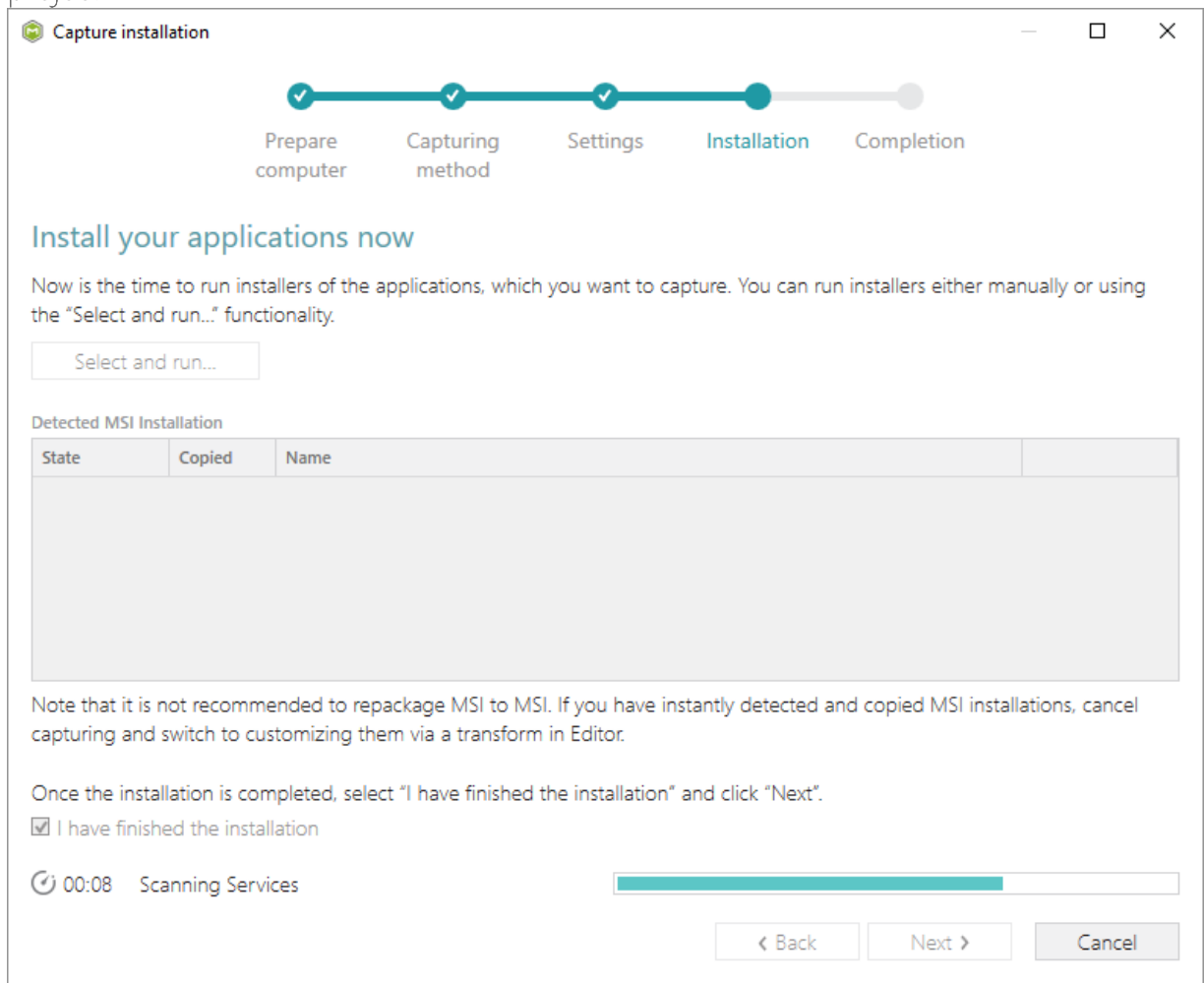
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

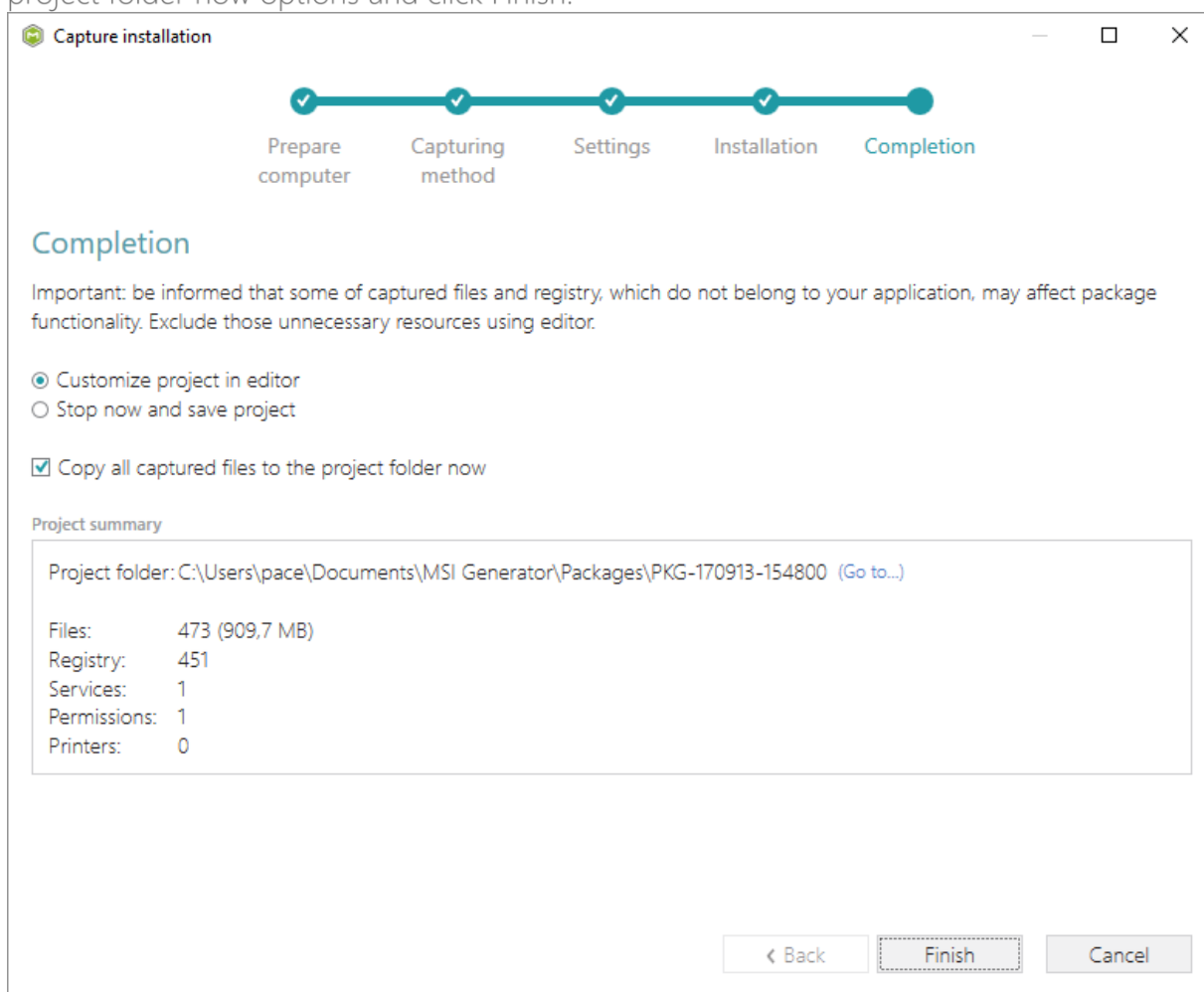
☒ I have finished the installation

< Back **Next >** Cancel

- Wait a little, while the capturing process is finishing, filtering captured data and creating the project.

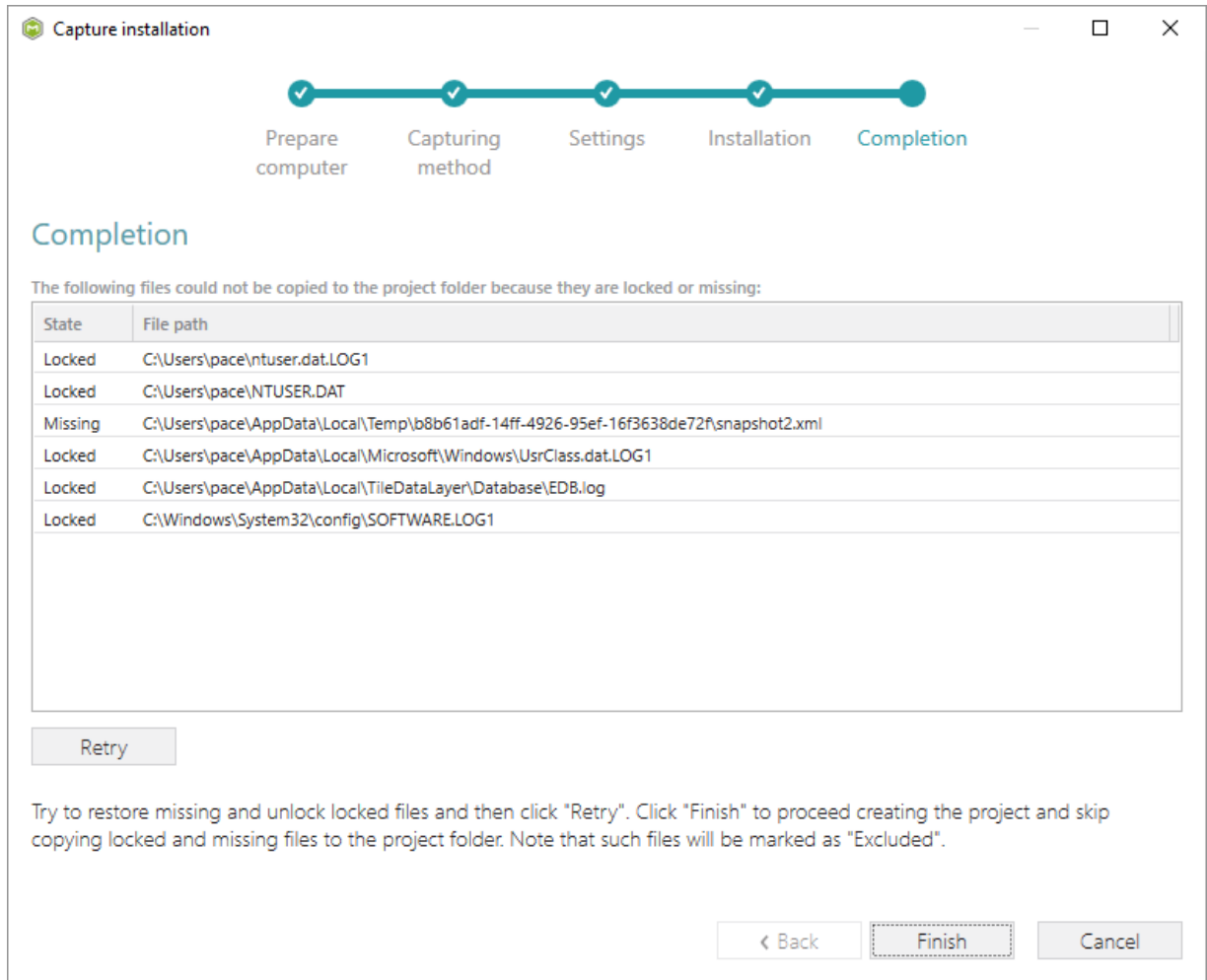


- Leave selected both the Customize project in editor and Copy all captured files to the project folder now options and click Finish.



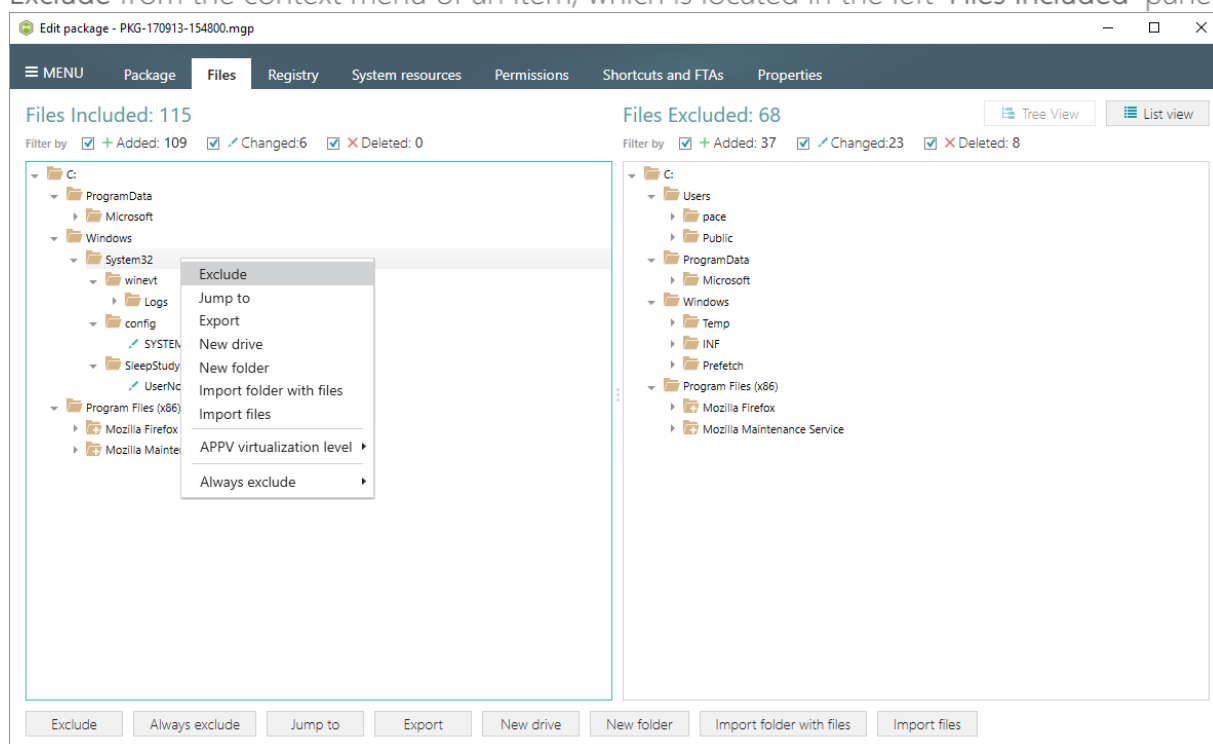
- The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing and locked

files and mark them as Excluded resources.

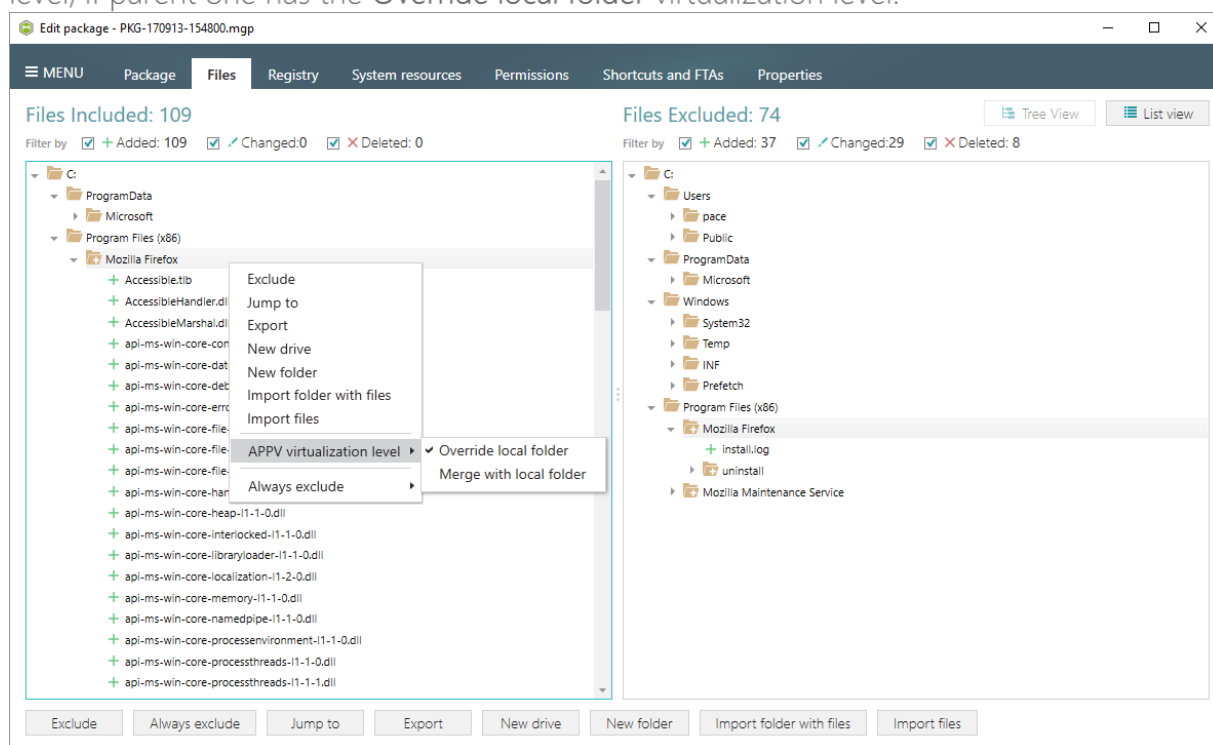


- Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).

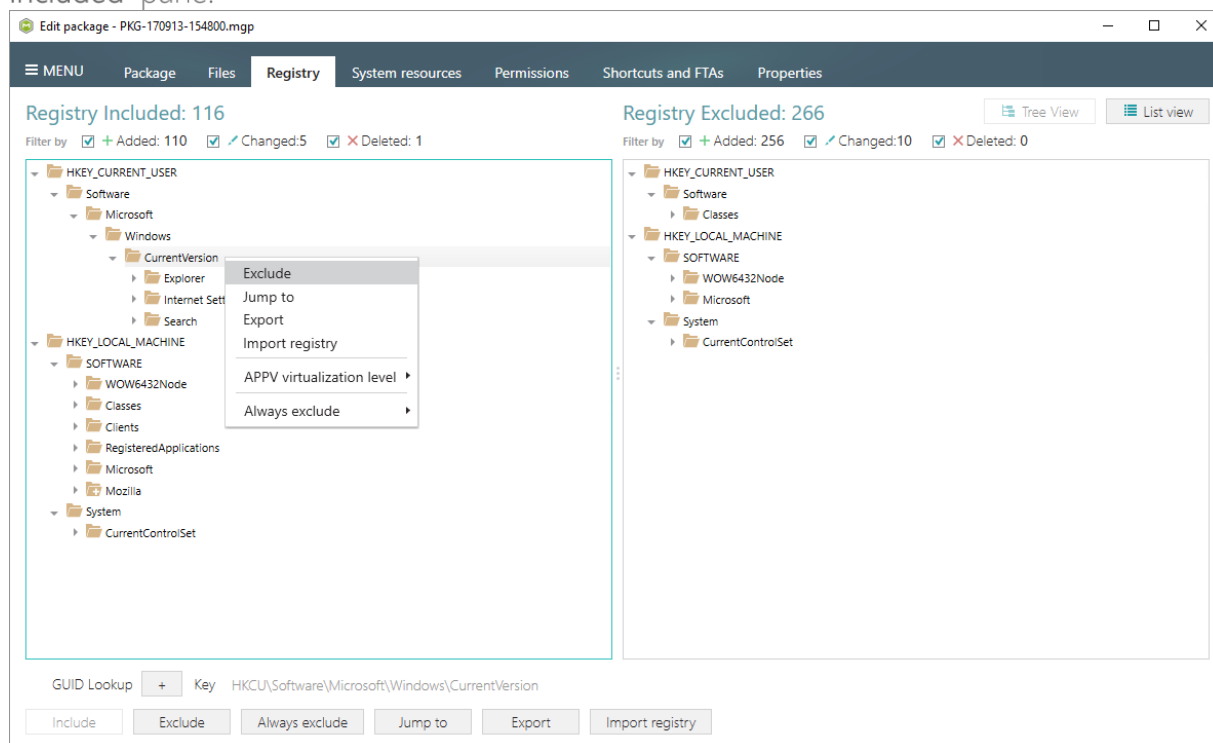
- In order to review and exclude unnecessary files or folders, go to the Files tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included' pane.



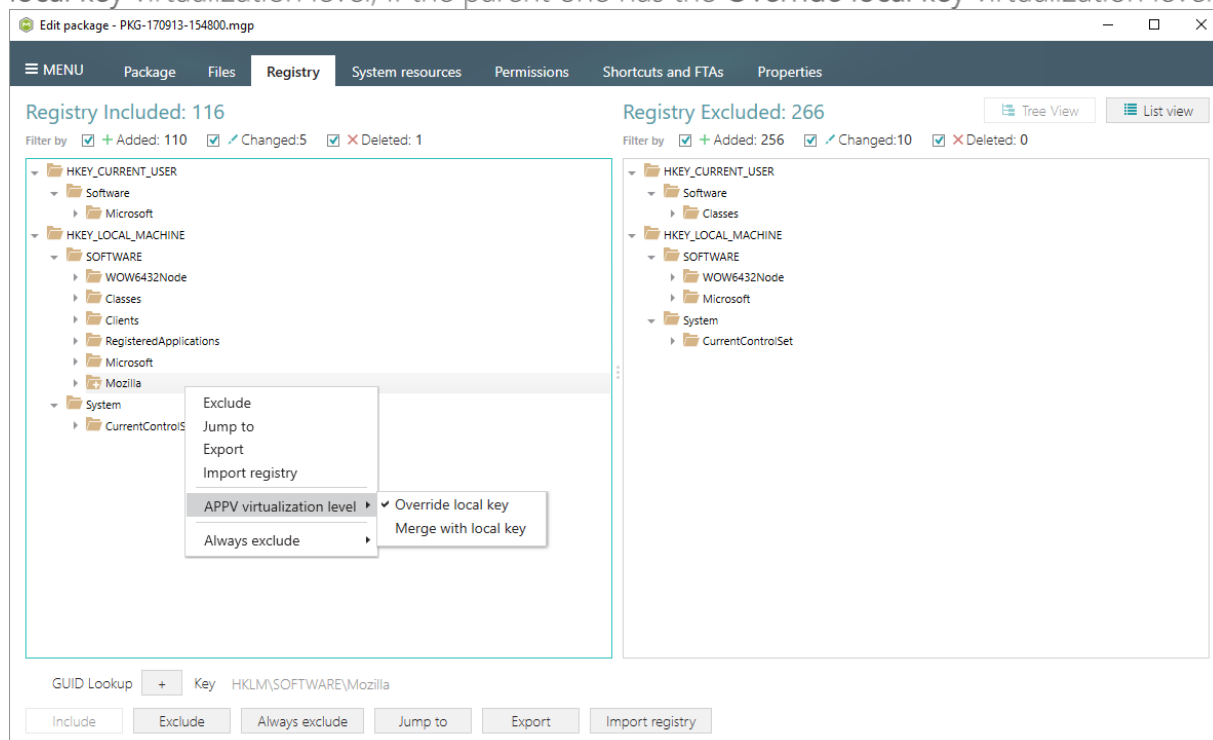
- In order to change the default virtualization (isolation) level of a folder, open the folder context menu, and select either **Override local folder** or **Merge with local folder** option from the APPV virtualization level submenu. Note that if the APPV virtualization level submenu is disabled with the **Override local folder** option selected, it means that this option is inherited from the parent folder. Child folder could not have the **Merge with local folder** virtualization level, if parent one has the **Override local folder** virtualization level.



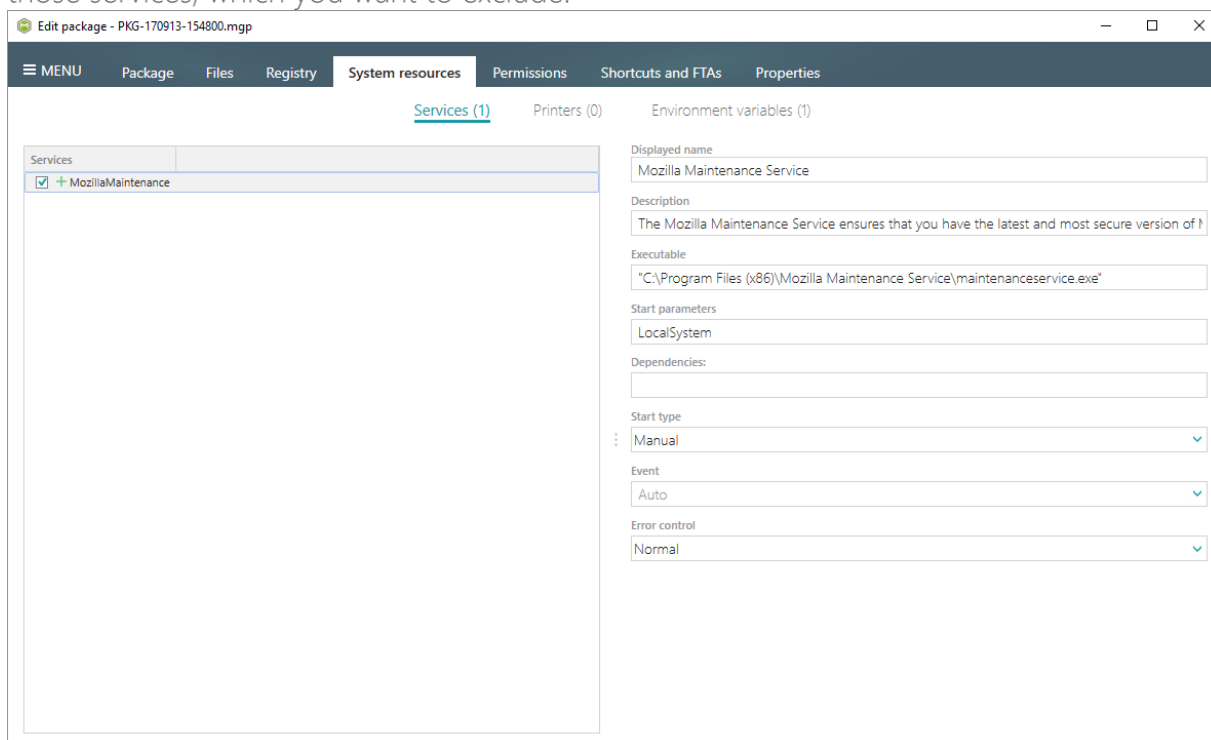
- In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.



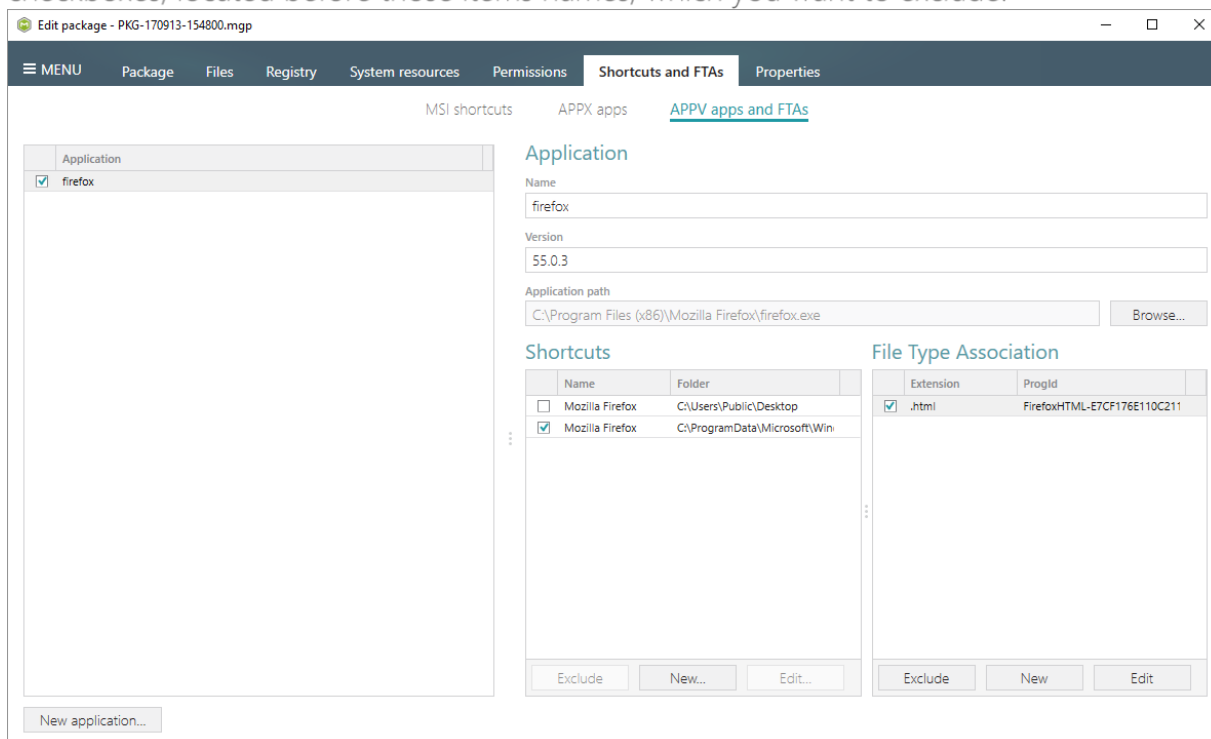
- In order to change the default virtualization (isolation) level of a registry key, open the registry key context menu, and select either **Override local key** or **Merge with local key** option from the **APPV virtualization level** submenu. Note that if the **APPV virtualization level** submenu is disabled with the **Override local key** option selected, it means that this option is inherited from the parent registry key. A child registry key could not have the **Merge with local key** virtualization level, if the parent one has the **Override local key** virtualization level.



- In order to review and exclude unnecessary services, go to the **System resources** -> **Services** tab, and uncheck the checkbox, located before the service name in the list, for those services, which you want to exclude.



- In order to review and exclude unnecessary APPV applications, shortcuts and their file type associations, go to the **Shortcuts and FTAs** -> **APPV apps and FTAs** tab, and uncheck checkboxes, located before those items names, which you want to exclude.



- If you need to add a new APPV application, its shortcuts and associate file extensions with this application, click **New application...** on the **Shortcuts and FTAs** -> **APPV apps and FTAs**

tab.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions **Shortcuts and FTAs** Properties

MSI shortcuts APPX apps APPV apps and FTAs

Application

Name: firefox

Version: 55.0.3

Application path: C:\Program Files (x86)\Mozilla Firefox\firefox.exe Browse...

Shortcuts

Name	Folder
<input type="checkbox"/> Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/> Mozilla Firefox	C:\ProgramData\Microsoft\Win

Exclude New... Edit...

File Type Association

Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

New application...

- Select the executable file (EXE) from the tree and click Select.

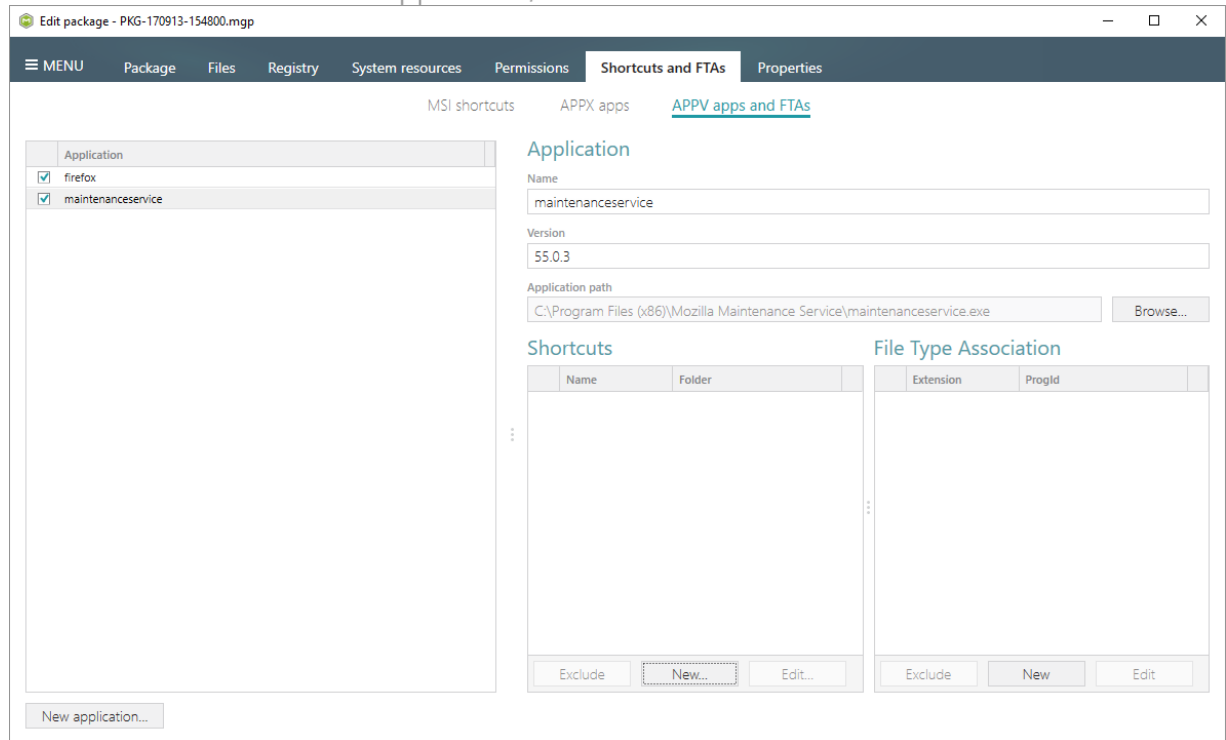
Select a file for application

C:\

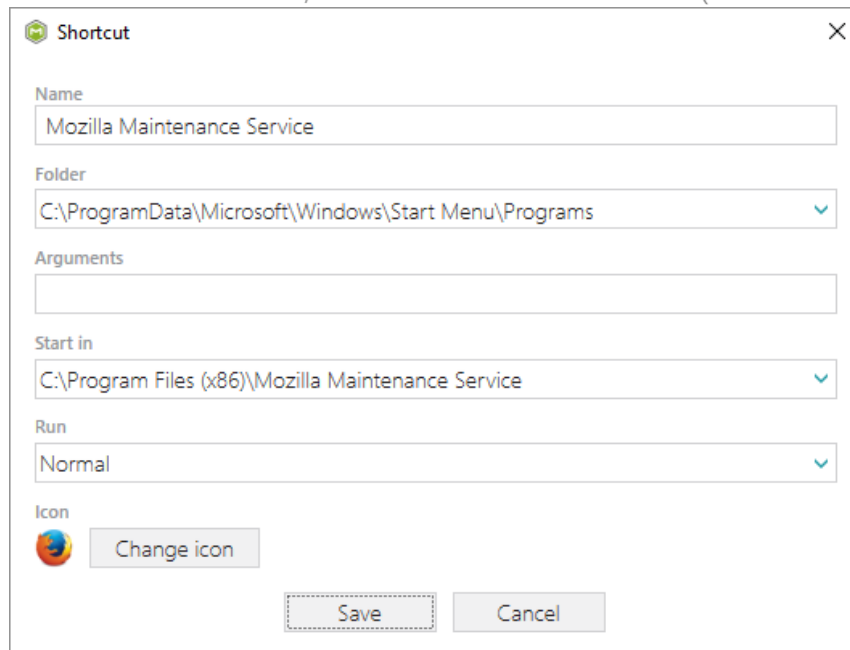
- ProgramData
 - Microsoft
- Program Files (x86)
 - Mozilla Firefox
 - Mozilla Maintenance Service
 - + maintenanceservice.exe
 - + updater.ini

Select Cancel

- To create a shortcut for the application, click **New...** in the **Shortcuts** section.



- Enter a shortcut name, select a destination location ("Folder" field), icon and click **Save**.



- To associate some file extension with your application, click **New...** in the File Type Association section.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions **Shortcuts and FTAs** Properties

MSI shortcuts APPX apps [APPV apps and FTAs](#)

Application

Application
<input checked="" type="checkbox"/> firefox
<input checked="" type="checkbox"/> maintenanceservice

Application

Name: maintenanceservice

Version: 55.0.3

Application path: C:\Program Files (x86)\Mozilla Maintenance Service\maintenanceservice.exe Browse...

Shortcuts

Name	Folder
<input checked="" type="checkbox"/> Mozilla Maintenance	C:\ProgramData\Microsoft\Win...

File Type Association

Extension	ProgId
-----------	--------

Exclude New... Edit...

New application...

- Enter a file extension and click **Save**. Optionally you can modify other FTA settings according to your needs.

File Type Association

Extension: .txt

ProgId:

☒ Create new file type

☐ Associate with existing file type

ProgId description: Text document

Content type:

Perceived type:

Actions

Command	Verb	Parameters
	open	%1

Save Cancel

- Finally, to build APPV package from the project, navigate to the Package -> APPV tab, review and update (if necessary) Application Details, select the necessary App-V Settings, App-V package format version, and then click Build APPV.

Edit package - PKG-170913-154800.mgp

Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Version: 55.0.3

Publisher: Mozilla

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: PKG-170913-154800

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 **Browse...** **Go to...**

Description:

Build log **Open log**

Type	Elapsed	Step

Elapsed time: 00:00

Build APPV

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

☐ Force application to be fully downloaded before launching.

Target OS:

☒ Allow this package to be run on any operating system

☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

☐ Allow all named objects to interact with the local system

☐ Allow all COM objects to interact with the local system

☐ Allow virtual application full write permissions to the virtual file system

☐ Enable Browser Helper Objects

- Click Go to..., located next to the Project folder field, to open the package containing folder in Windows Explorer.

Edit package - PKG-170913-154800.mgp

Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Version: 55.0.3

Publisher: Mozilla

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: PKG-170913-154800

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 **Browse...** **Go to...**

Description:

Build log **Open log**

Type	Elapsed	Step
	00:00:37	Operation was completed successfully
	00:00:18	Saving package
	00:00:18	Processing software clients
	00:00:18	Processing environment variables
	00:00:18	Processing URL protocols
	00:00:18	Processing application capabilities
	00:00:18	Processing FTAs
	00:00:18	Processing browser plugins
	00:00:18	Processing COM objects
	00:00:18	Processing services
	00:00:18	Processing registry

Elapsed time: 00:00:38

Build APPV

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

☐ Force application to be fully downloaded before launching.

Target OS:

☒ Allow this package to be run on any operating system

☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

☐ Allow all named objects to interact with the local system

☐ Allow all COM objects to interact with the local system

☐ Allow virtual application full write permissions to the virtual file system

☐ Enable Browser Helper Objects

3.6 Create THINAPP

NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed.

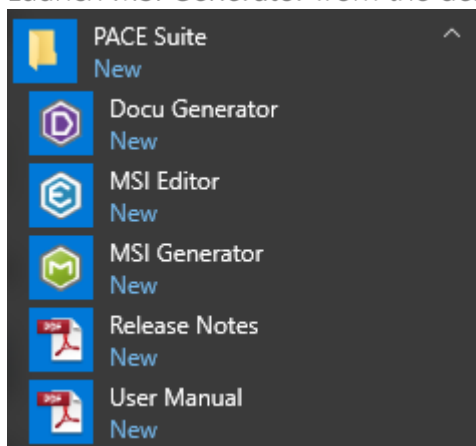
Choose a scenario that better suits your needs:

- **Create THINAPP from Scratch**, described in section 3.6.1
Create a new empty project in MSI Generator, add folders, files, registry entries, select entry points and then generate the THINAPP package from this project.
- **Convert (Repackage) EXE, MSI to THINAPP**, described in section 3.6.2
Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into THINAPP package using MSI Generator.

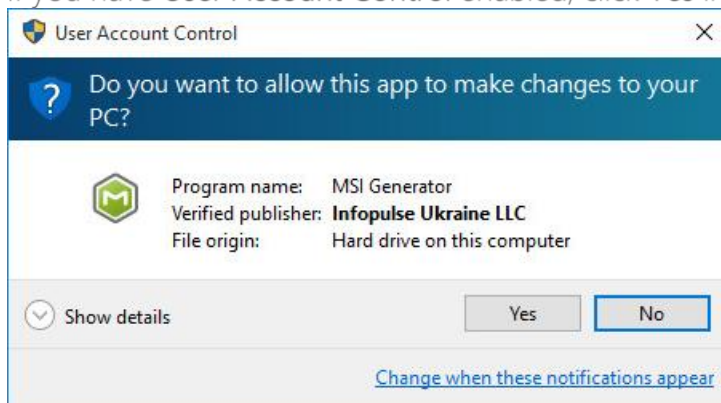
3.6.1 Create THINAPP from Scratch

Create a new empty project in MSI Generator, add folders, files, registry entries, select entry points and then generate the THINAPP package from this project.

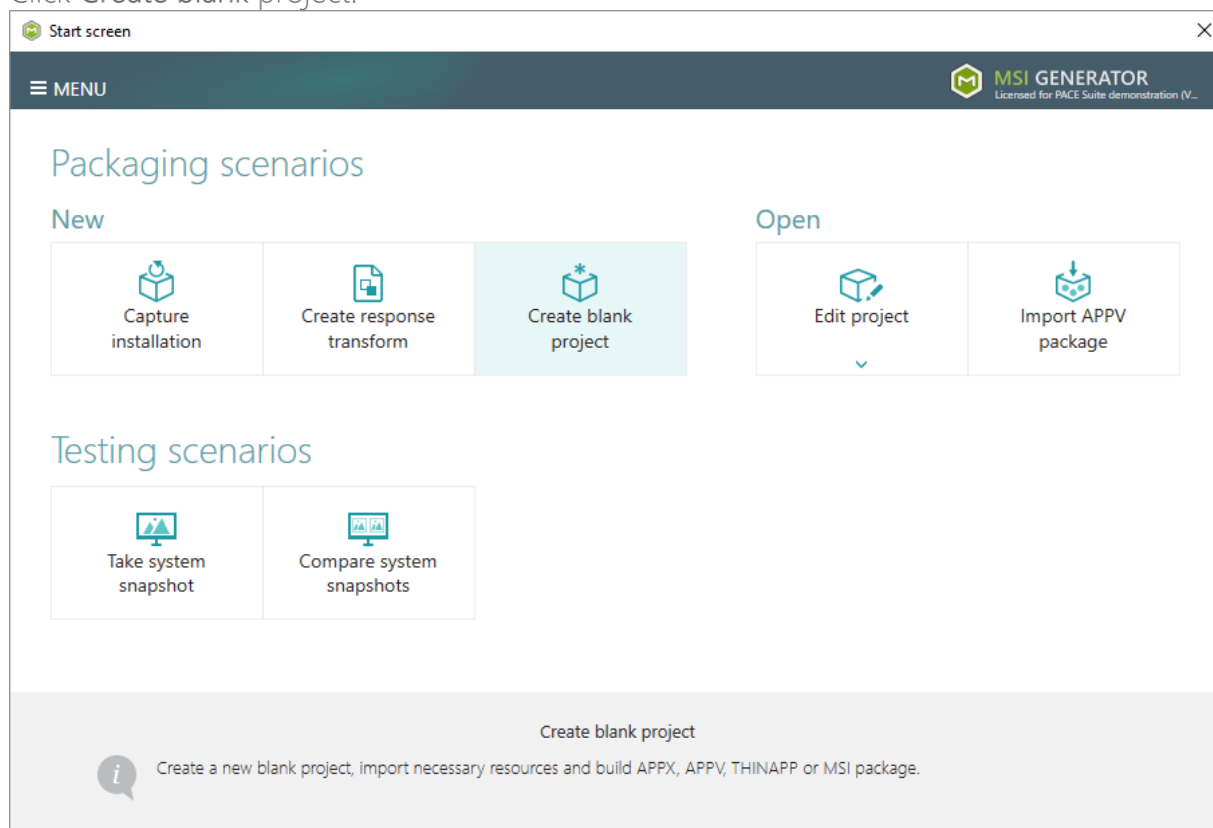
- Launch MSI Generator from the desktop or the start menu shortcut.



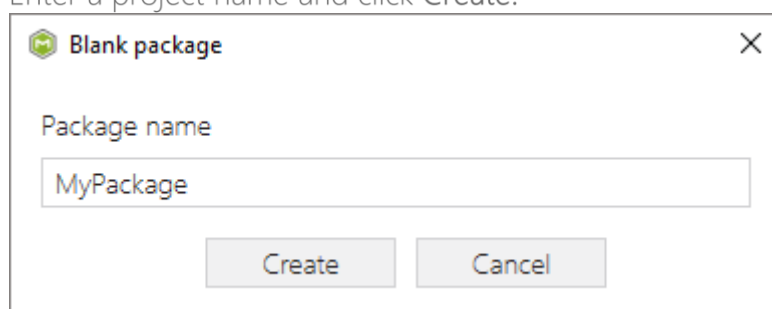
- If you have User Account Control enabled, click Yes in the opened window.



- Click Create blank project.

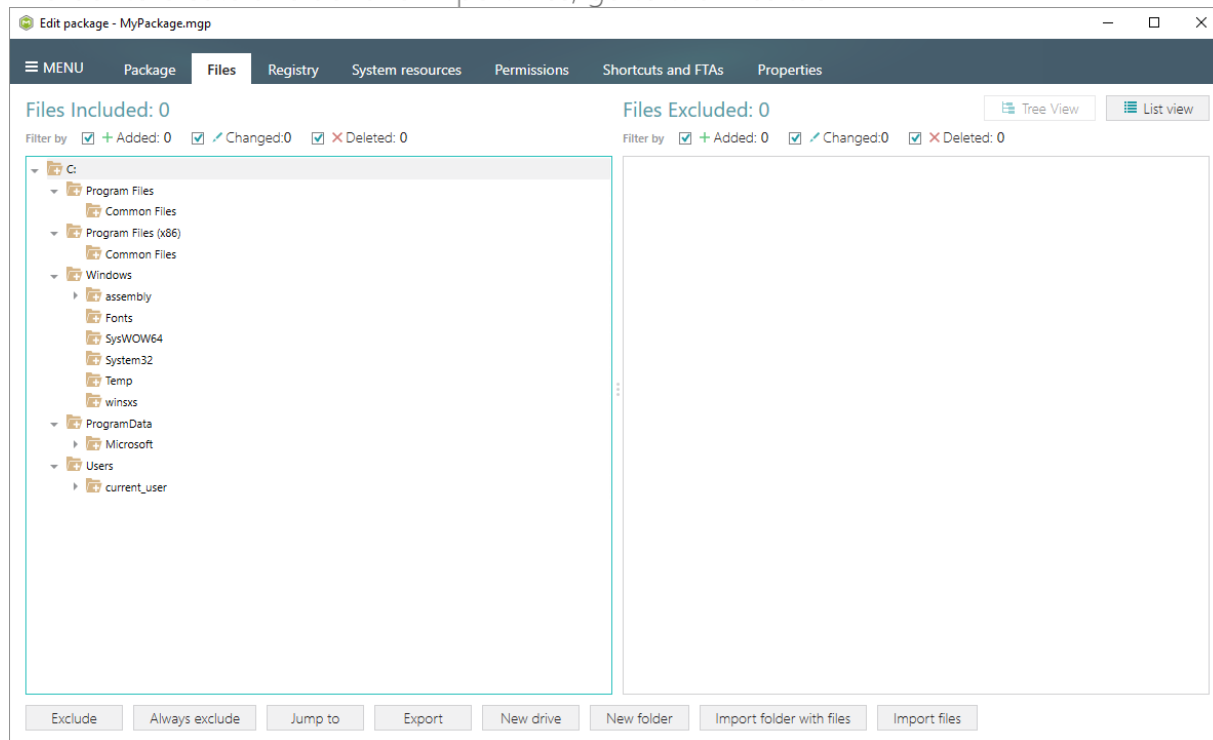


- Enter a project name and click Create.

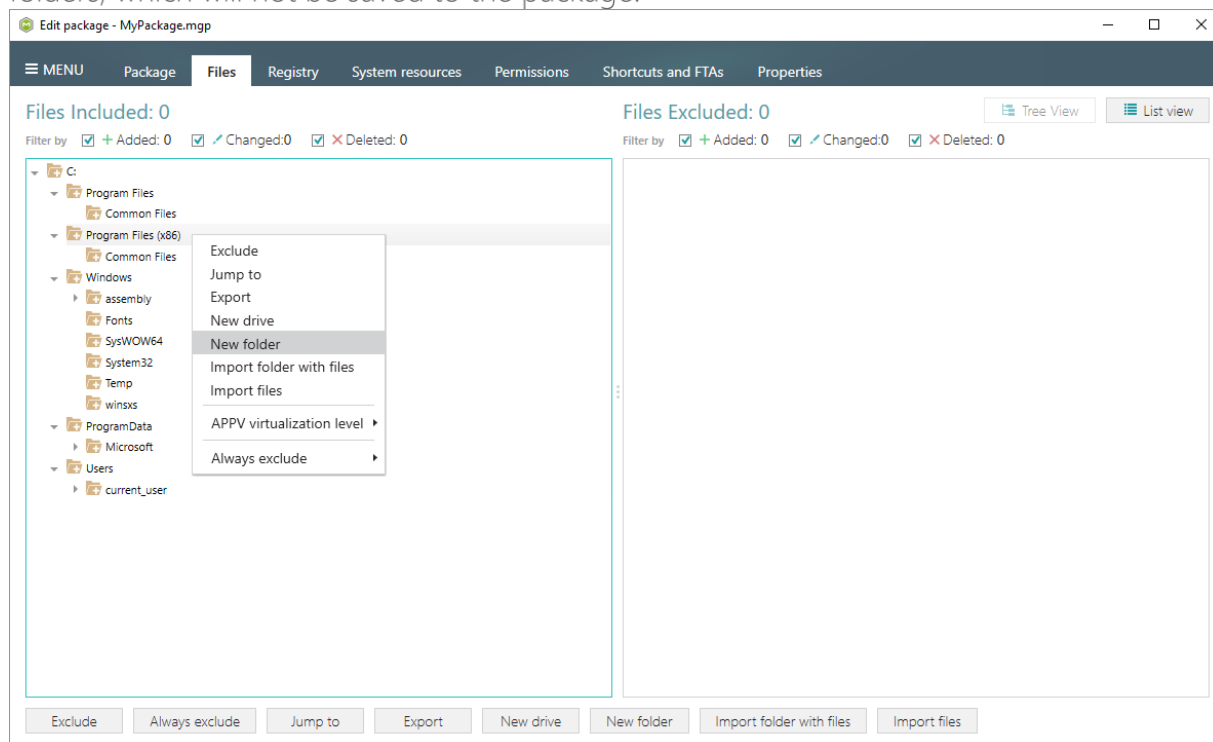


- Once the newly created project is opened automatically, you can start adding the necessary resources using MSI Generator. The steps from [6] to [10] describe how to create a new folder and import files to this folder; the steps from [11] to [13] describe how to import registry entries from the REG file; and the steps [14] and [15] describe how to select entry points and build THINAPP package from the prepared project.

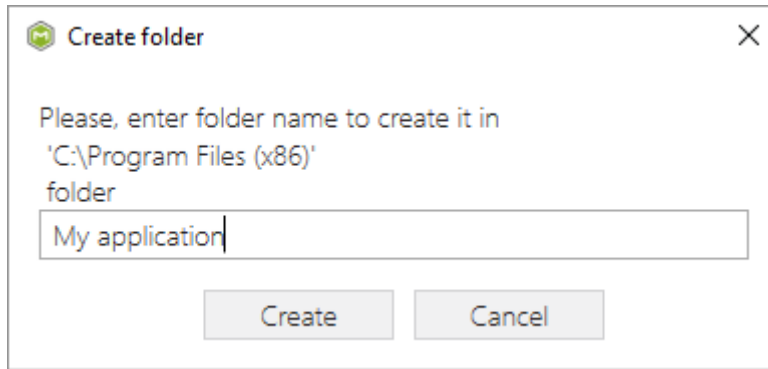
- In order to create a folder and import files, go to the Files tab.



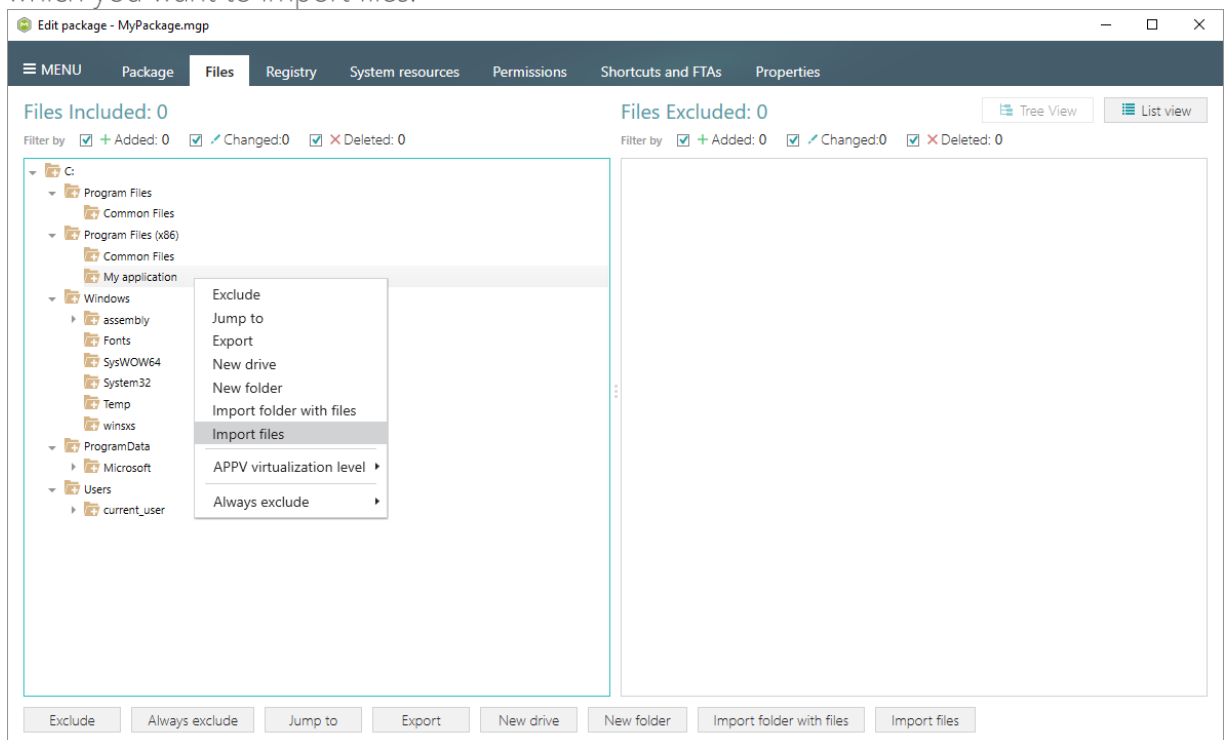
- In the left pane, select **New folder** from the context menu of a folder, where you want to create a new empty folder. Note that the left 'Files Included' pane displays files and folders, which will be a part of your package, and the right 'Files Excluded' pane displays files and folders, which will not be saved to the package.



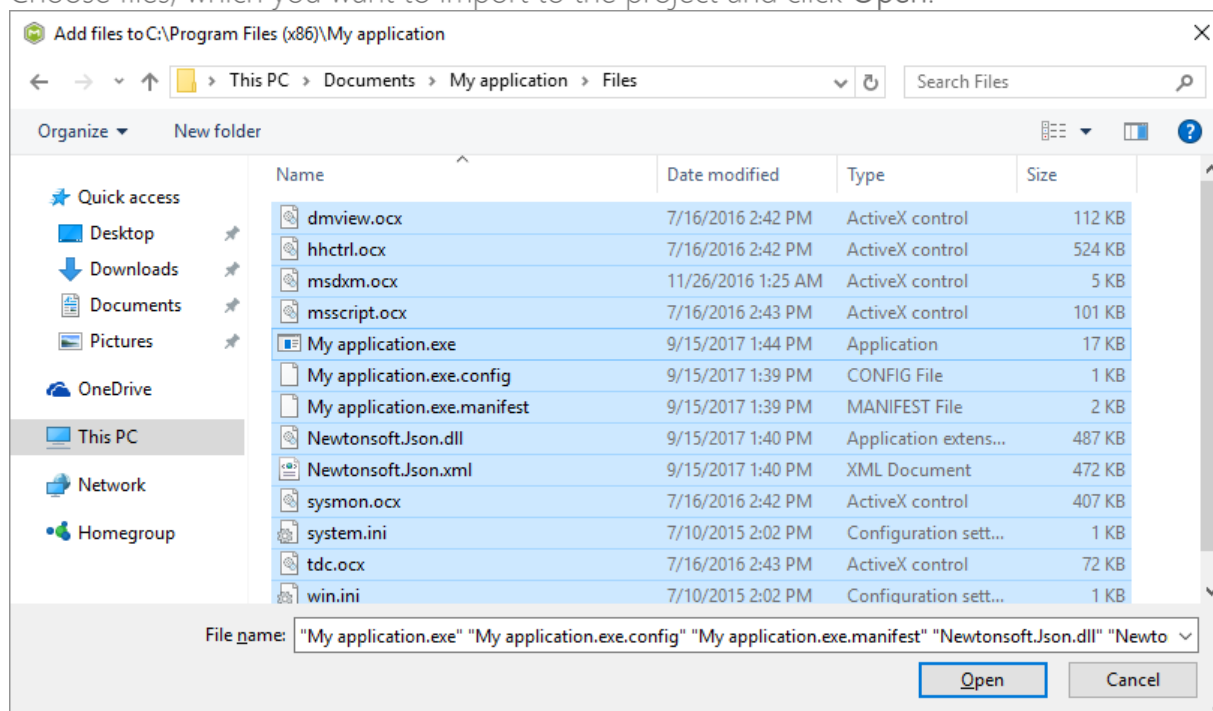
- Enter a folder name and click Create.



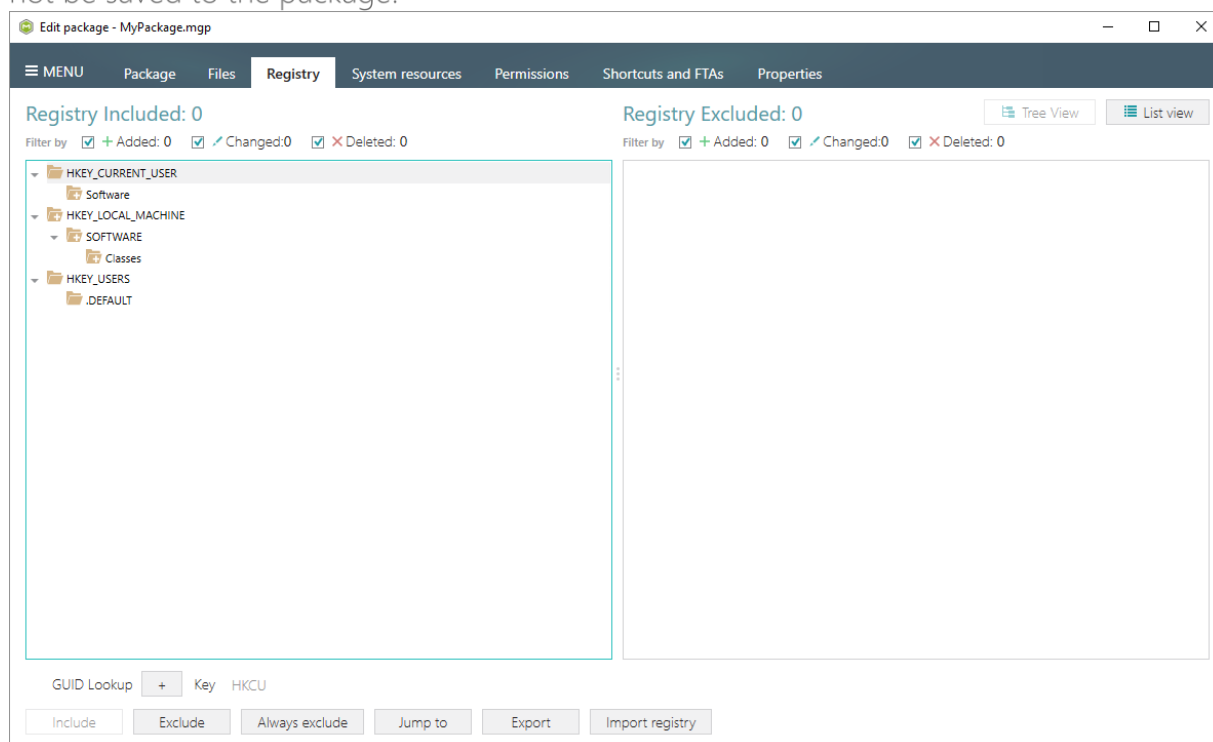
- For adding files to your project, select **Import files** from the context menu of a folder, to which you want to import files.



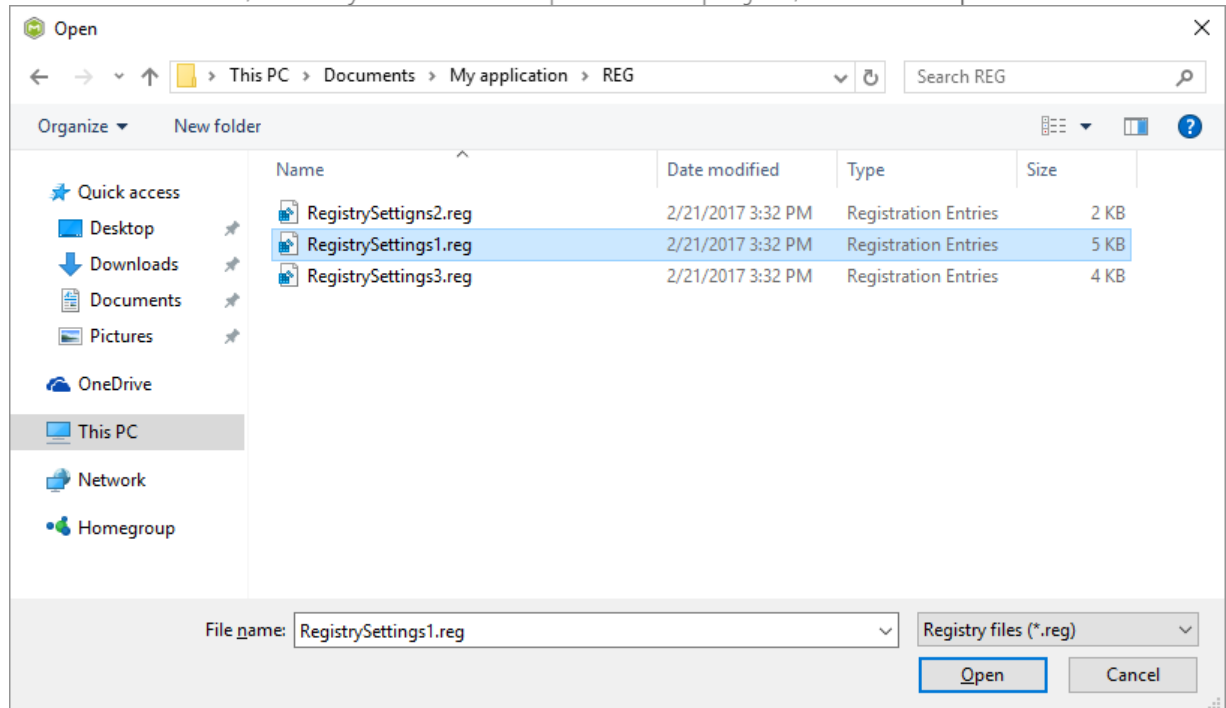
- Choose files, which you want to import to the project and click Open.



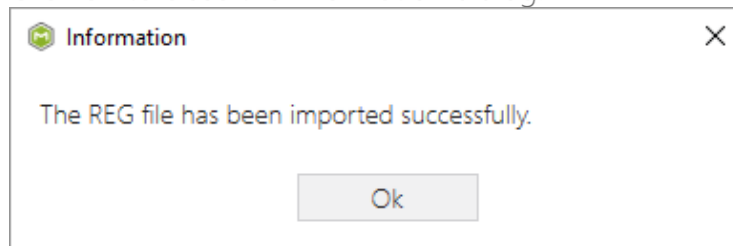
- In order to import registry entries from the REG file, go to the Registry tab and click the Import registry button, located in the bottom part of the window. Note that the left 'Registry Included' pane displays registry keys and values, which will be a part of your package, and the right 'Registry Excluded' pane displays registry keys and values, which will not be saved to the package.



- Choose a REG file, which you want to import to the project, and click Open.



- Click Ok to close the information dialog.



- In order to build THINAPP package from your project, navigate to the Package -> THINAPP tab, select Entry points (shortcuts), primary data container location and other package options, and then click Build THINAPP.

Edit package - MyPackage.mgp

Package | Files | Registry | System resources | Permissions | Shortcuts and FTAs | Properties

MSI | MST | APPX | APPV | **THINAPP**

ThinApp Settings

Entry points

Name	Description
<input checked="" type="checkbox"/> my application.exe	C:\Program Files (x86)\My application\My application.exe
<input type="checkbox"/> cmd.exe	Debug entry point
<input type="checkbox"/> regedit.exe	Debug entry point

Primary data container

☒ Use one of the entry points
my application.exe

☐ Use separate .DAT file
my application.dat

Compression

☐ Compress virtual package

File system isolation mode

Full write access to non-system directories (Merged)

Sandbox location

☒ User profile (%AppData%\Thinstall)
☐ Custom location

ThinApp Package Options

Inventory name
MyPackage

☐ Generate MSI package:
MyPackage.msi

Project location
C:\Users\pace\Documents\MSI Generator\Packages\MyPa **Browse...** **Go to...**

Build Details

☐ Wow64=0
☒ AltArchitectureShortcut=1
☐ LoadDotNetFromSystem=Win7
☐ Only prepare ThinApp package structure
☒ Prepare ThinApp package structure and build the package

Build log **Open log**

Type	Elapsed	Step

Elapsed time
00:00

Build THINAPP

NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed. If you have installed this tool to the custom location, go to the MENU -> Settings, select the Custom ThinApp install location option and then click Browse... to choose the installation location of the VMware ThinApp tools.

- Click Go to..., located next to the Project location field, to open the package containing folder in Windows Explorer.

Edit package - MyPackage.mgp

Package | Files | Registry | System resources | Permissions | Shortcuts and FTAs | Properties

MSI | MST | APPX | APPV | **THINAPP**

ThinApp Settings

Entry points

Name	Description
<input checked="" type="checkbox"/> my application.exe	C:\Program Files (x86)\My application\My application.exe
<input type="checkbox"/> cmd.exe	Debug entry point
<input type="checkbox"/> regedit.exe	Debug entry point

Primary data container

☒ Use one of the entry points
my application.exe

☐ Use separate .DAT file
my application.dat

Compression

☐ Compress virtual package

File system isolation mode

Full write access to non-system directories (Merged)

Sandbox location

☒ User profile (%AppData%\Thinstall)
☐ Custom location

ThinApp Package Options

Inventory name
MyPackage

☐ Generate MSI package:
MyPackage.msi

Project location
C:\Users\pace\Documents\MSI Generator\Packages\MyPa **Browse...** **Go to...**

Build Details

☐ Wow64=0
☒ AltArchitectureShortcut=1
☐ LoadDotNetFromSystem=Win7
☐ Only prepare ThinApp package structure
☒ Prepare ThinApp package structure and build the package

Build log **Open log**

Type	Elapsed	Step
	00:02:50	Operation was completed successfully
	00:02:50	SUCCESS: my application.exe, size=588k
	00:02:50	my application.exe
	00:02:49	Enterprise Edition, licensed to demo
	00:02:49	Copyright 1998-2016, VMware, Inc. All rights reserved.
	00:02:49	VMware ThinApp Runtime Linker Version 5.2.2-4435715. Built Sep 26 2016

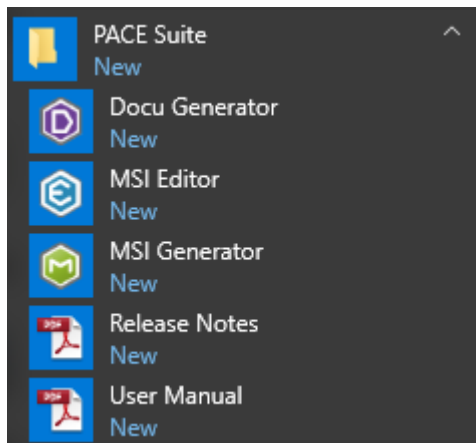
Elapsed time
00:02:50

Build THINAPP

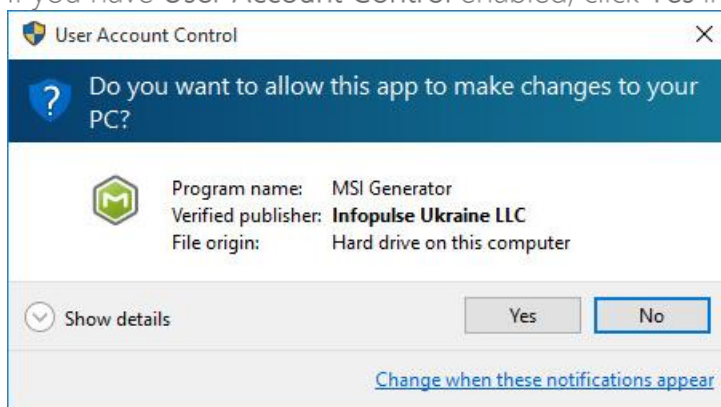
3.6.2 Convert (Repackage) EXE, MSI to THINAPP

Repackage your source installation (EXE, MSI, VBS, CMD, etc.) into THINAPP package using MSI Generator.

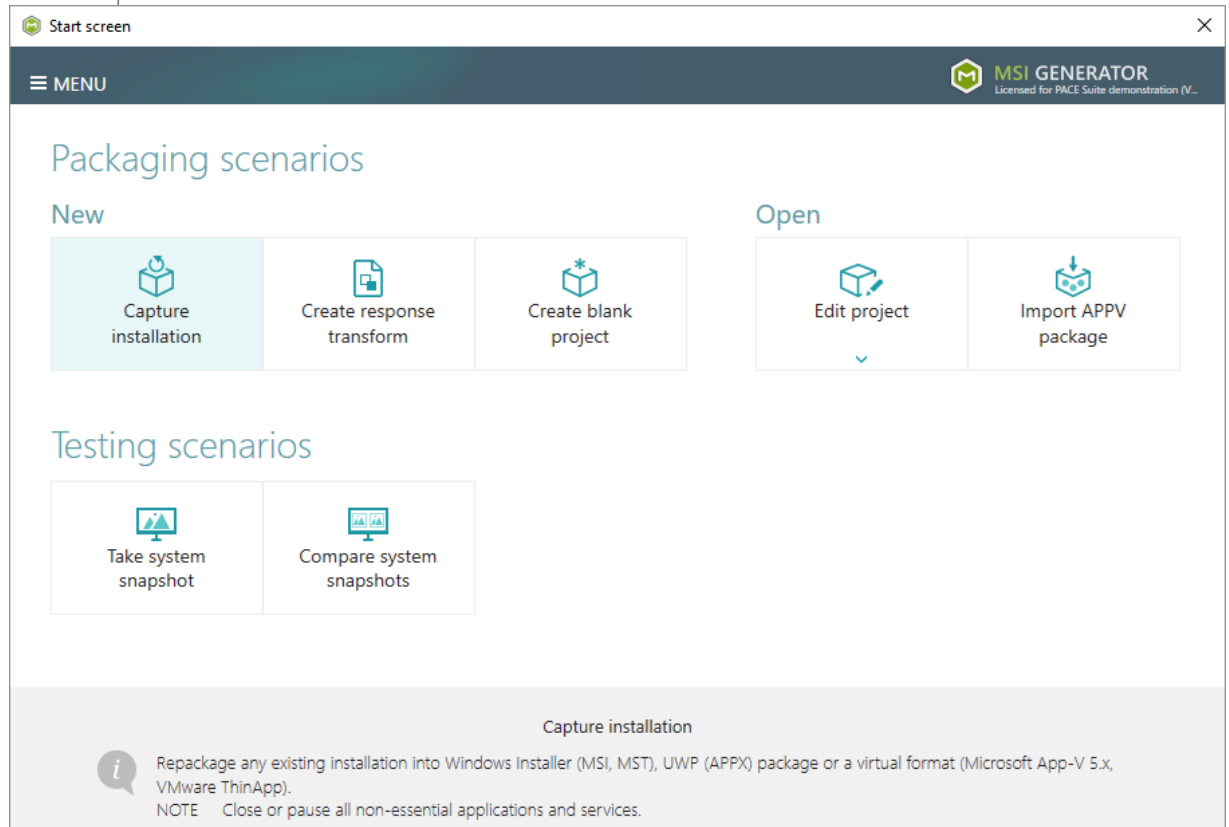
- Launch MSI Generator from the desktop or the start menu shortcut.



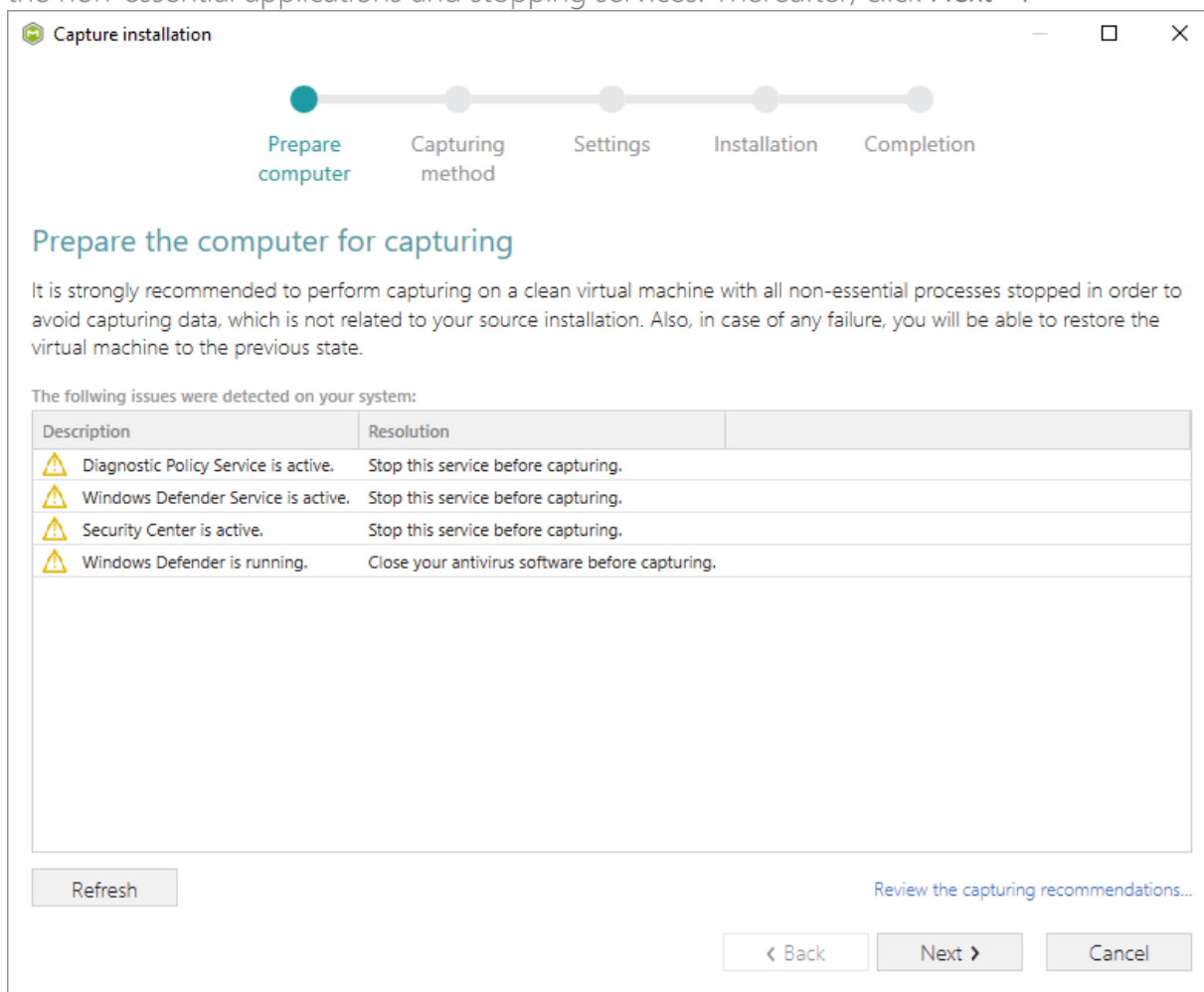
- If you have User Account Control enabled, click Yes in the opened window.



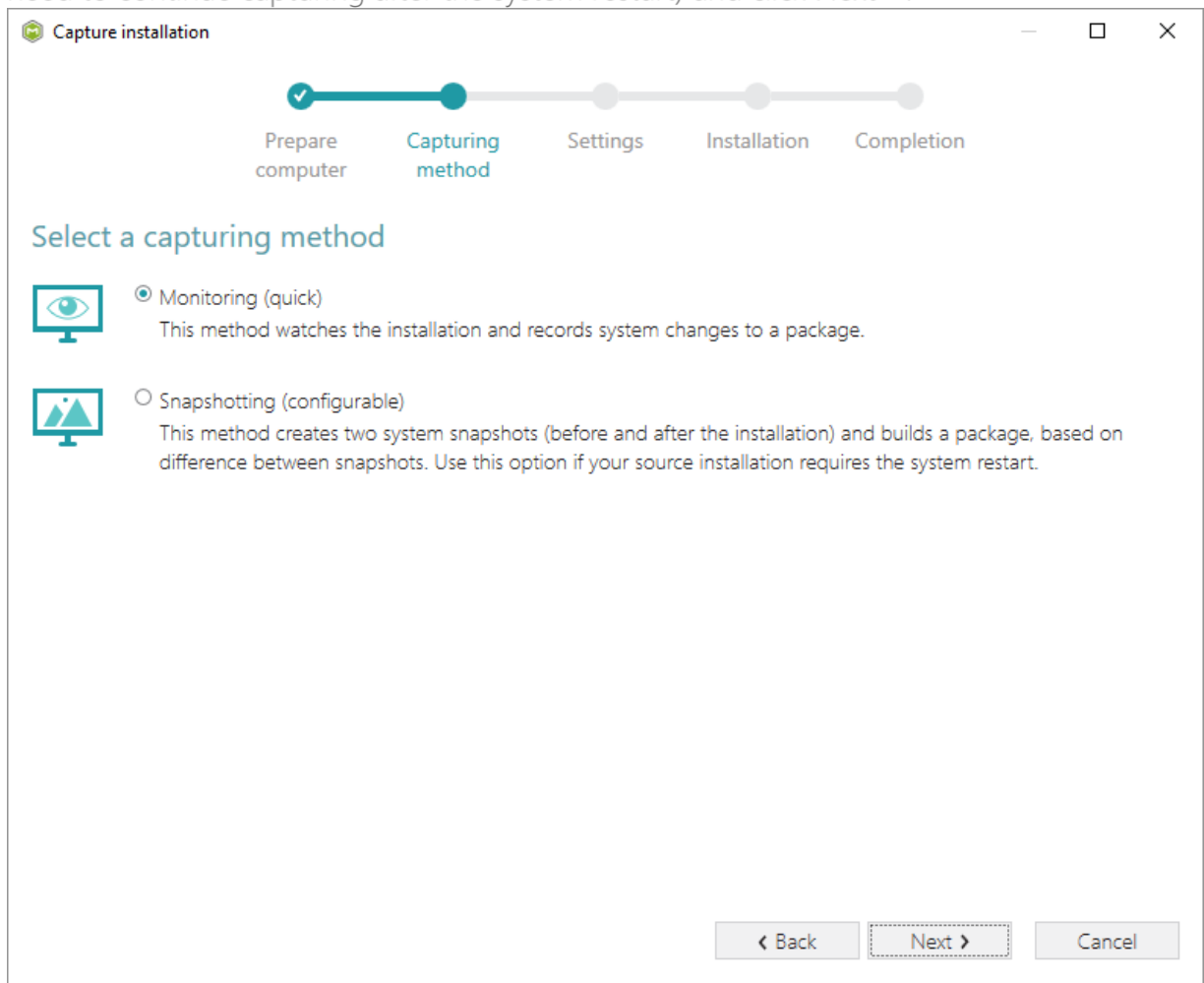
- Click Capture installation.



- Review the issues, which were detected on your system, and try to resolve them by closing the non-essential applications and stopping services. Thereafter, click Next >.



- Select the **Monitoring** method for the quicker capturing (or use the **Snapshotting** one if you need to continue capturing after the system restart) and click **Next >**.



- Review and update package name. If needed, disable unnecessary exclusion filters and scanning areas. Click **Next >** to start the capturing.

Capture installation

Prepare computer Capturing method **Settings** Installation Completion

Settings

Package name
PKG-170912-154800

Exclusion filters

Apply the following filters to the captured resources:

- ☒ AllWindowsOS
- ☒ Win7
- ☒ Win8-10

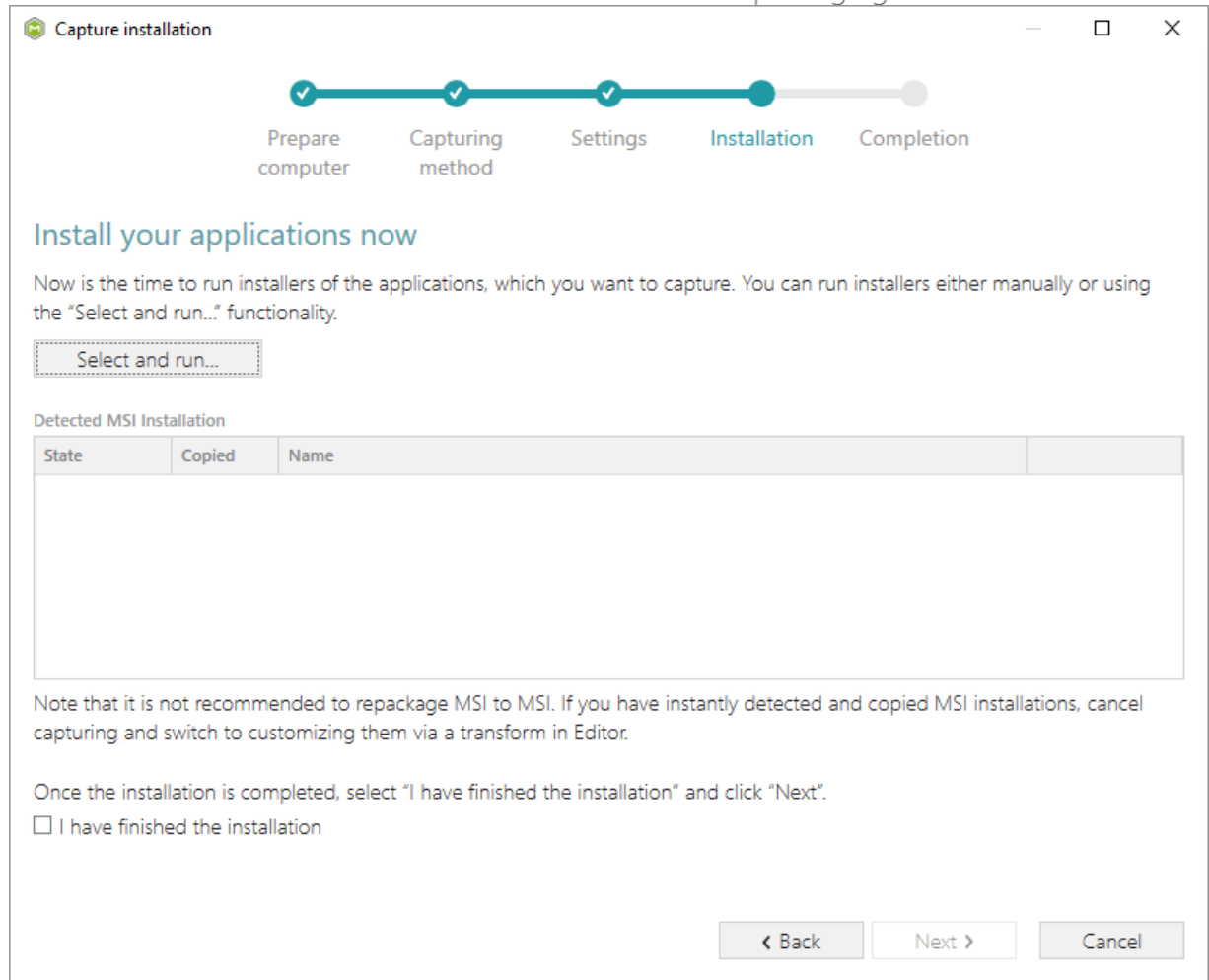
Scanning areas

Application objects:

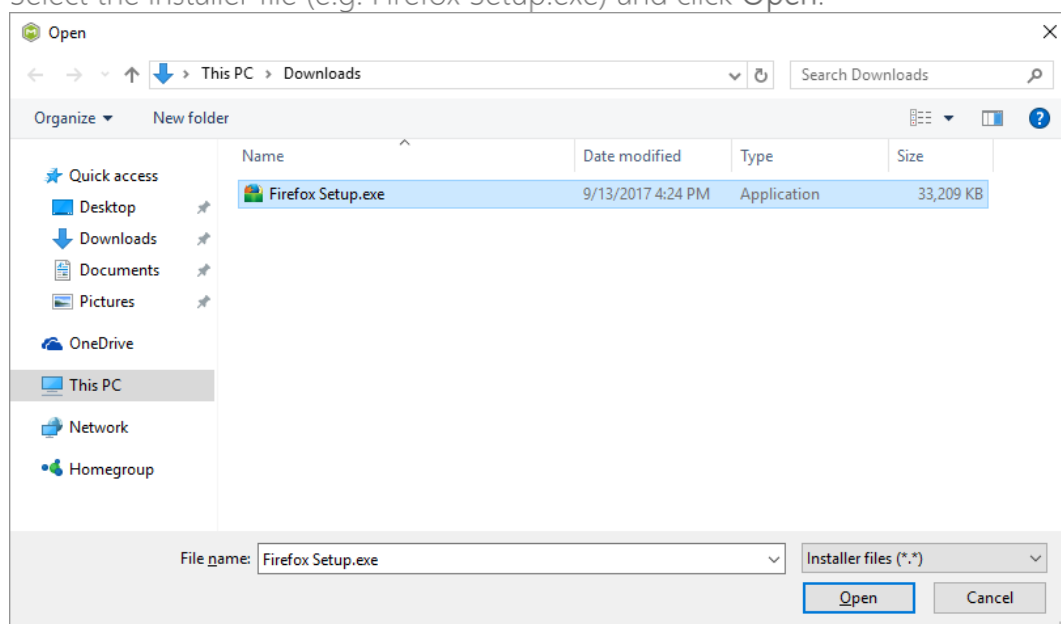
- ☒ Permissions
- ☒ Services
- ☒ Printers

< Back **Next >** Cancel

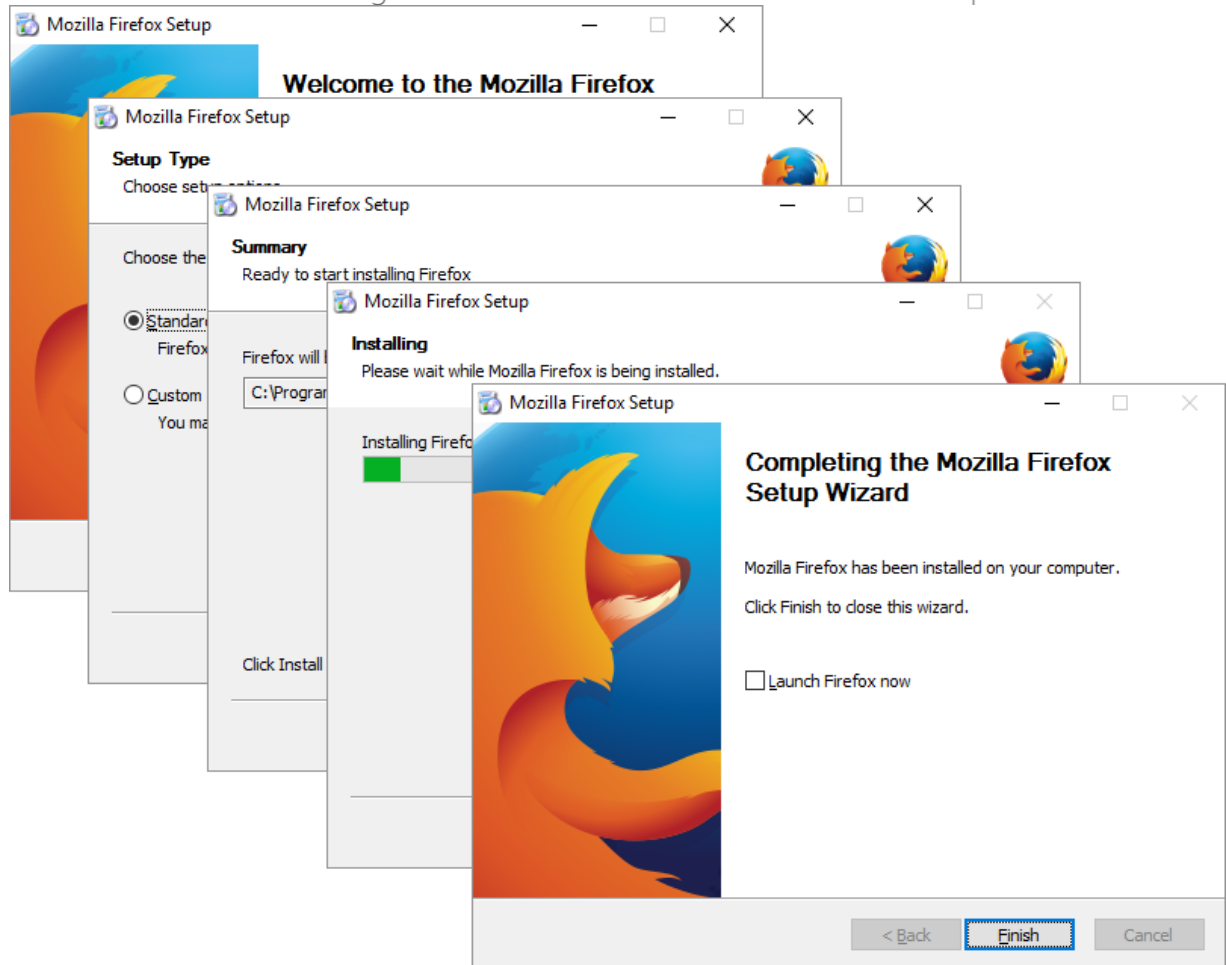
- Click **Select and run...** to choose source installation for repackaging.



- Select the installer file (e.g. Firefox Setup.exe) and click **Open**.



- Follow the installation dialogs of the launched source installation to complete it.



- Now you can make any changes to the file system and registry, which you want to capture and include to the package. For instance, you can create new or copy-paste existing files, import REG file to the system registry, changes permission settings, or launch the installed application in order to capture the necessary application configurations, like disabling updates and so on.

- Finally, to complete the capturing, select I have finished the installation and click Next >.

Capture installation

Prepare computer Capturing method Settings **Installation** Completion

Install your applications now

Now is the time to run installers of the applications, which you want to capture. You can run installers either manually or using the "Select and run..." functionality.

Select and run...

Detected MSI Installation

State	Copied	Name
-------	--------	------

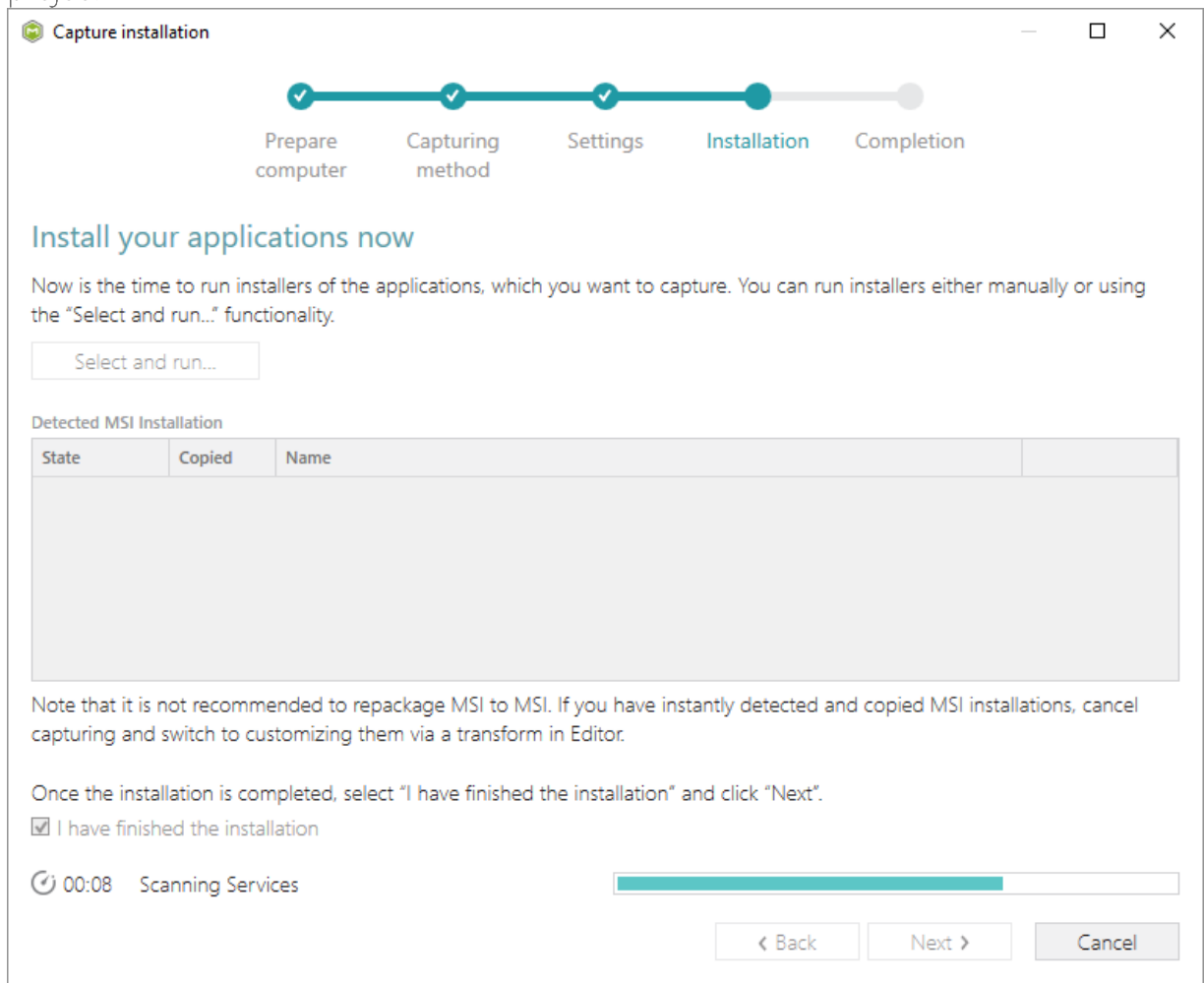
Note that it is not recommended to repackage MSI to MSI. If you have instantly detected and copied MSI installations, cancel capturing and switch to customizing them via a transform in Editor.

Once the installation is completed, select "I have finished the installation" and click "Next".

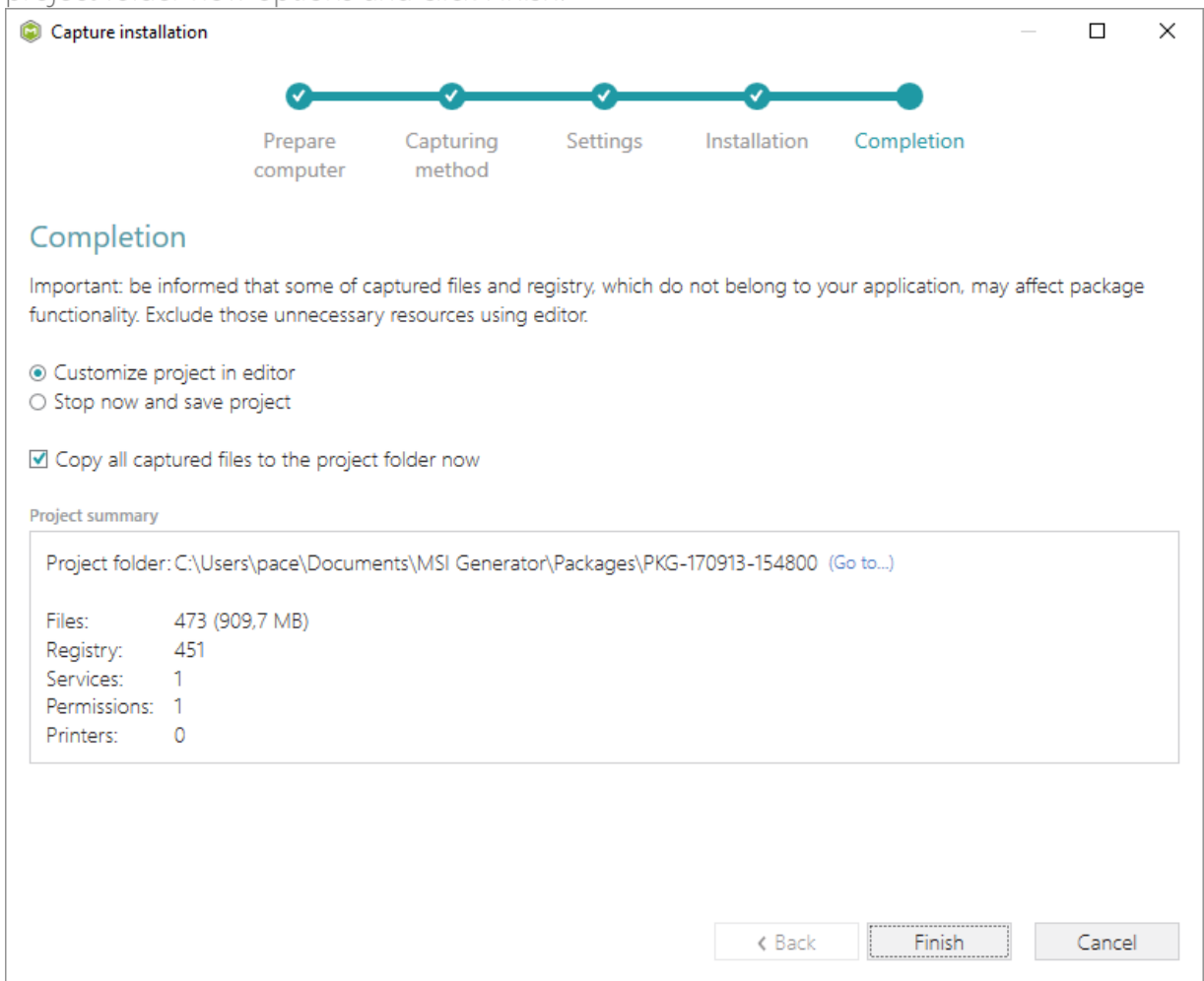
☒ I have finished the installation

< Back Next > Cancel

- Wait a little, while the capturing process is finishing, filtering captured data and creating the project.



- Leave selected both the Customize project in editor and Copy all captured files to the project folder now options and click Finish.



Capture installation

Prepare computer Capturing method Settings Installation **Completion**

Completion

Important: be informed that some of captured files and registry, which do not belong to your application, may affect package functionality. Exclude those unnecessary resources using editor.

☒ Customize project in editor
☐ Stop now and save project

☒ Copy all captured files to the project folder now

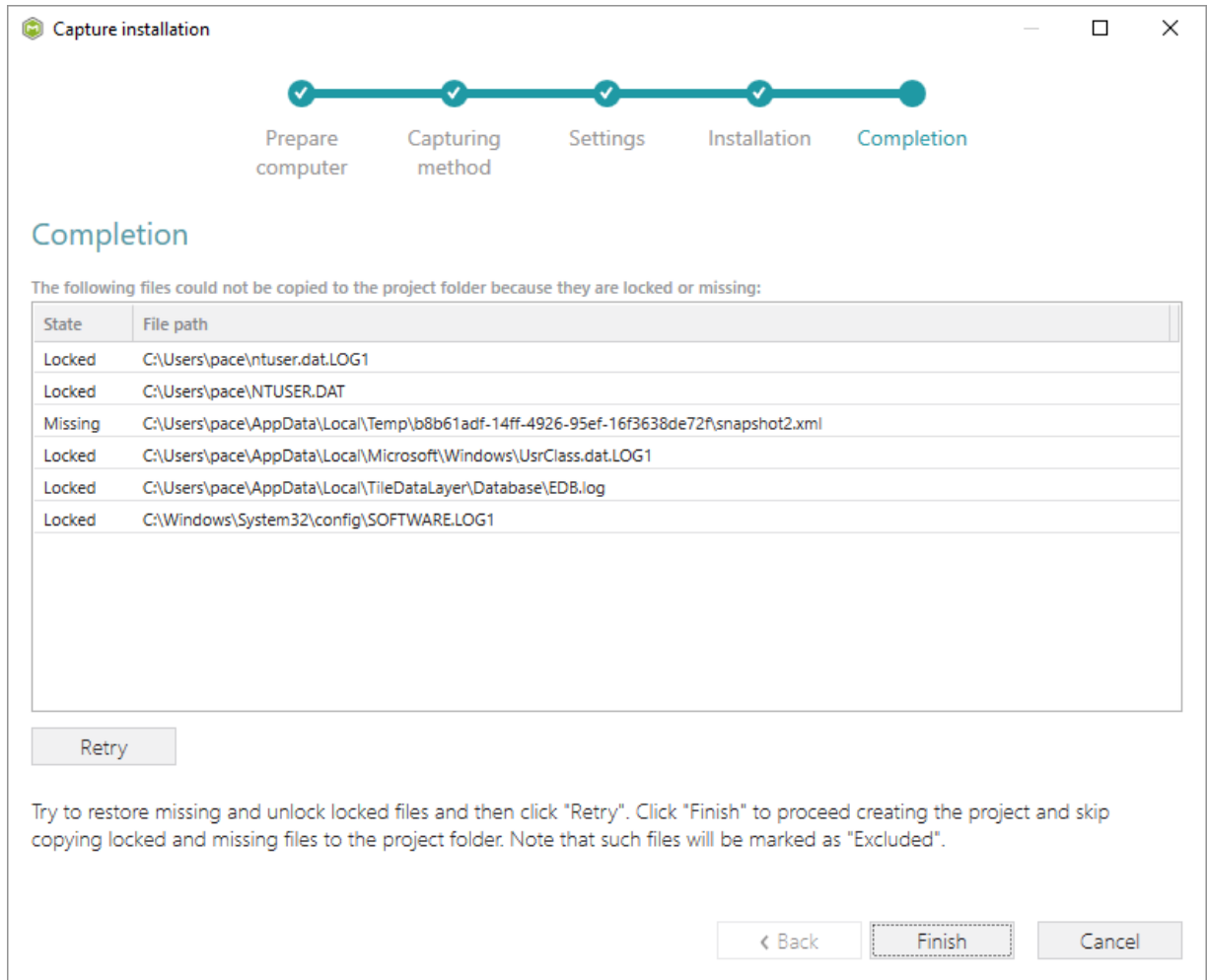
Project summary

Project folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-170913-154800 ([Go to...](#))

Files:	473 (909,7 MB)
Registry:	451
Services:	1
Permissions:	1
Printers:	0

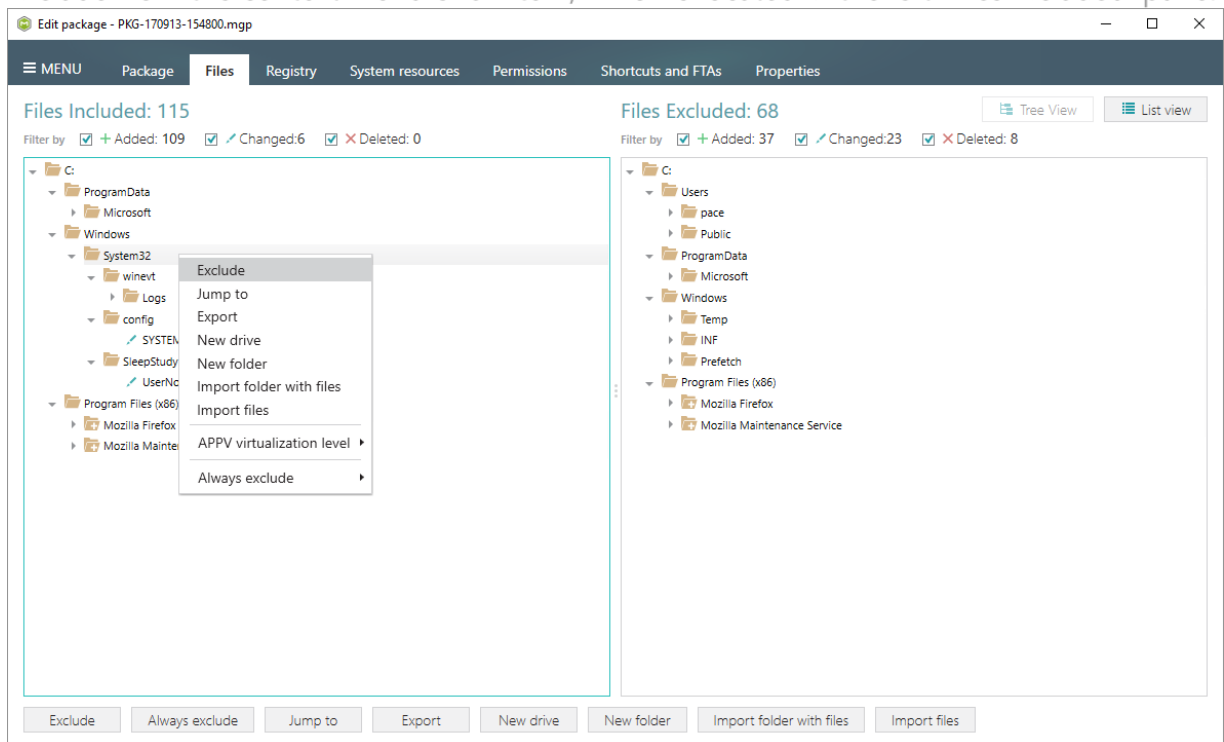
- The following dialog displays captured files, which could not be copied to the project folder because they do not exist anymore or locked by the system or by an application. Try to resolve these issues and then click **Retry**. Click **Finish** to skip copying the missing and locked

files and mark them as Excluded resources.

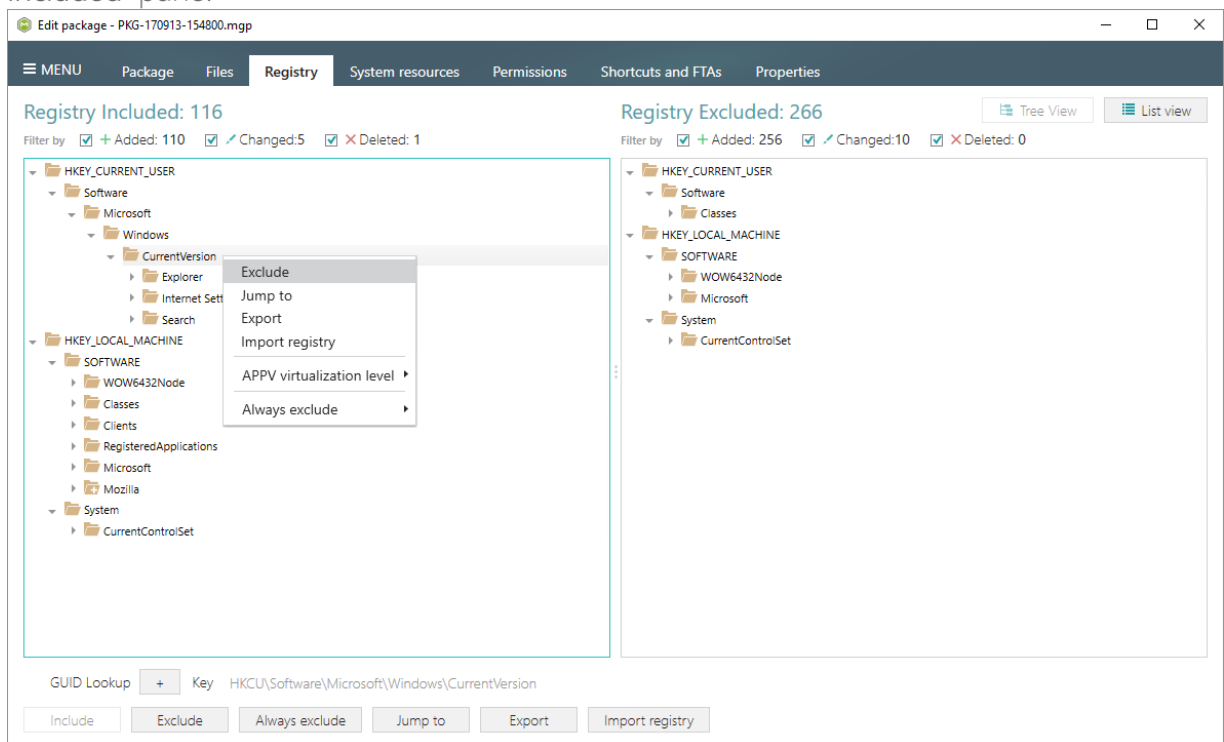


- Once the project is opened in the project editor, review the captured resources at the Files, Registry, System resources, Permissions, and Shortcuts and FTAs tabs and exclude unnecessary ones from the project. Unnecessary resources are files, registry entries, which are usually created or modified in the result of operating system work, and such resources could not be a part of your captured application. Unfortunately, there is no universal rule to discover which of captured files or registry entries should be excluded, so exclude only those ones, which almost 100% do not refer to your captured application (e.g. NOD32 antivirus files couldn't be a part of Firefox application).

- In order to review and exclude unnecessary files or folders, go to the **Files** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Files Included' pane.



- In order to review and exclude unnecessary registry keys or values, go to the **Registry** tab, and select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane.



- Finally, to build THINAPP package from the project, navigate to the **Package** -> **THINAPP** tab, review **Entry points** (shortcuts), primary data container location and other package options, and then click **Build THINAPP**.

ThinApp Settings

Entry points

Name	Description
<input checked="" type="checkbox"/> Mozilla Firefox.exe	C:\Program Files (x86)\Mozilla Firefox\firefox.exe
<input type="checkbox"/> crashreporter.exe	C:\Program Files (x86)\Mozilla Firefox\crashreporter.exe
<input type="checkbox"/> firefox.exe	C:\Program Files (x86)\Mozilla Firefox\firefox.exe
<input type="checkbox"/> maintenanceservic	C:\Program Files (x86)\Mozilla Firefox\maintenanceservic
<input type="checkbox"/> maintenanceservic	C:\Program Files (x86)\Mozilla Firefox\maintenanceservic
<input type="checkbox"/> minidump-analyze	C:\Program Files (x86)\Mozilla Firefox\minidump-analyze
<input type="checkbox"/> pingsender.exe	C:\Program Files (x86)\Mozilla Firefox\pingsender.exe
<input type="checkbox"/> plugin-container.e	C:\Program Files (x86)\Mozilla Firefox\plugin-container.e
<input type="checkbox"/> plugin-container.e	C:\Program Files (x86)\Mozilla Firefox\plugin-container.e

Primary data container

☒ Use one of the entry points
Mozilla Firefox.exe

☐ Use separate .DAT file
Mozilla Firefox.dat

Compression

☐ Compress virtual package

File system isolation mode

Full write access to non-system directories (Merged)

Sandbox location

☒ User profile (%AppData%\Thinstall)
☐ Custom location

ThinApp Package Options

Inventory name
Mozilla Firefox 55.0.3 (x86 en-GB)

☐ Generate MSI package:
Mozilla Firefox 55.0.3 (x86 en-GB).msi

Project location
C:\Users\pace\Documents\MSI Generator\Packages\PKG-1

Build Details

☐ Wow64=0
☒ AltArchitectureShortcut=1
☐ LoadDotNetFromSystem=Win7
☐ Only prepare ThinApp package structure
☒ Prepare ThinApp package structure and build the package

Build log

Type	Elapsed	Step
------	---------	------

Elapsed time
00:00

Build THINAPP

NOTE For building THINAPP packages, ensure that your system contains VMware ThinApp (5.0.0/5.0.1/5.1.0/5.1.1/5.2.0) installed. If you have installed this tool to the custom location, go to the MENU -> Settings, select the Custom ThinApp install location option and then click Browse... to choose the installation location of the VMware ThinApp tools

- Click Go to..., located next to the Project location field, to open the package containing folder in Windows Explorer.

ThinApp Settings

Entry points

Name	Description
<input checked="" type="checkbox"/> Mozilla Firefox.exe	C:\Program Files (x86)\Mozilla Firefox\firefox.exe
<input type="checkbox"/> crashreporter.exe	C:\Program Files (x86)\Mozilla Firefox\crashreporter.exe
<input type="checkbox"/> firefox.exe	C:\Program Files (x86)\Mozilla Firefox\firefox.exe
<input type="checkbox"/> maintenanceservic	C:\Program Files (x86)\Mozilla Firefox\maintenanceservic
<input type="checkbox"/> maintenanceservic	C:\Program Files (x86)\Mozilla Firefox\maintenanceservic
<input type="checkbox"/> minidump-analyze	C:\Program Files (x86)\Mozilla Firefox\minidump-analyze
<input type="checkbox"/> pingsender.exe	C:\Program Files (x86)\Mozilla Firefox\pingsender.exe
<input type="checkbox"/> plugin-container.e	C:\Program Files (x86)\Mozilla Firefox\plugin-container.e
<input type="checkbox"/> plugin-container.e	C:\Program Files (x86)\Mozilla Firefox\plugin-container.e

Primary data container

☒ Use one of the entry points
Mozilla Firefox.exe

☐ Use separate .DAT file
Mozilla Firefox.dat

Compression

☐ Compress virtual package

File system isolation mode

Full write access to non-system directories (Merged)

Sandbox location

☒ User profile (%AppData%\Thinstall)
☐ Custom location

ThinApp Package Options

Inventory name
Mozilla Firefox 55.0.3 (x86 en-GB)

☐ Generate MSI package:
Mozilla Firefox 55.0.3 (x86 en-GB).msi

Project location
C:\Users\pace\Documents\MSI Generator\Packages\PKG-1

Build Details

☐ Wow64=0
☒ AltArchitectureShortcut=1
☐ LoadDotNetFromSystem=Win7
☐ Only prepare ThinApp package structure
☒ Prepare ThinApp package structure and build the package

Build log

Type	Elapsed	Step
	00:03:00	Operation was completed successfully
	00:03:00	SUCCESS: Mozilla Firefox.exe, size=133898k
	00:02:59	Copying file data.. 73% 97344k/131555k
	00:02:58	Copying file data.. 46% 63296k/131555k
	00:02:57	Copying file data.. 17% 23104k/131555k
	00:02:56	Mozilla Firefox.exe:

Elapsed time
00:03:00

Build THINAPP

3.7 Edit MSI/MST

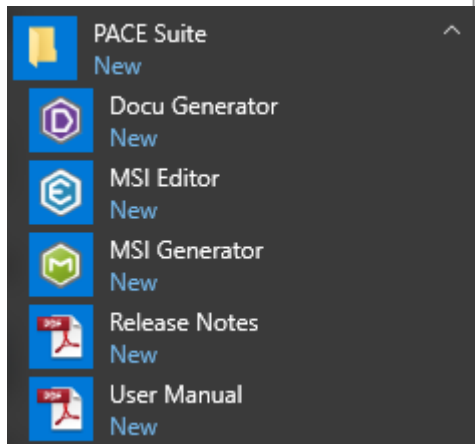
Choose a scenario that better suits your needs:

- **Manage Files and Folders**, described in section 3.7.2
Review files and folders of the package, add new system and user-defined folders (named subfolders), set permission settings, import files, extract COM information and .NET assemblies from the imported files to register them. Move files and folders to another folders, set the INSTALLDIR folder, and edit file and folder properties.
- **Manage Shortcuts**, described in section 3.7.3
Review shortcuts of the package, add new shortcuts to files, folders, URLs or import them from the file system. Move shortcuts to another folder, manage shortcut details.
- **Manage Registry**, described in section 3.7.4
Review registry of the package, add new registry keys and values, import registry from the REG file, and export registry to the REG file. Integrate ActiveSetup, manage registry key permissions, move keys and values to another keys, edit key and value details.
- **Manage Custom Actions**, described in section 3.7.5
Review custom and standard actions of the package, edit and add new actions to any sequences of all installation modes. Run PowerShell scripts and so on.
- **Manage Device Drivers**, described in section 3.7.6
Review device drivers of the package, edit and add new drivers.
- **Manage Features and Components**, described in section 3.7.7
Review the feature-component structure of the package, component resources, add new features and components, manage their properties.
- **Manage Properties**, described in section 3.7.8
Review properties of the package, their initial values and values, which will be defined in runtime via the CustomAction, AppSearch, Control, ComboBox, CheckBox, RadioButton tables. Add new and modify existing properties.
- **Edit Summary Information**, described in section 3.7.9
Edit the Summary Information properties of the opened MSI package or applied MST file.
- **Import Upgrades**, described in section 3.7.10
Integrate the automatic upgrade of packages of the previous versions.
- **Add and Drop Tables**, described in section 3.7.11
Add standard, import standard and custom tables with or without content to the opened package. Drop tables from the package controlling which of linked resources also will be removed
- **Import Merge Modules**, described in section 3.7.12
Import Merge Modules (MSM) to the package to deliver the shared resources properly.

3.7.1 Pre-Condition

Open an MSI package following the instructions below:

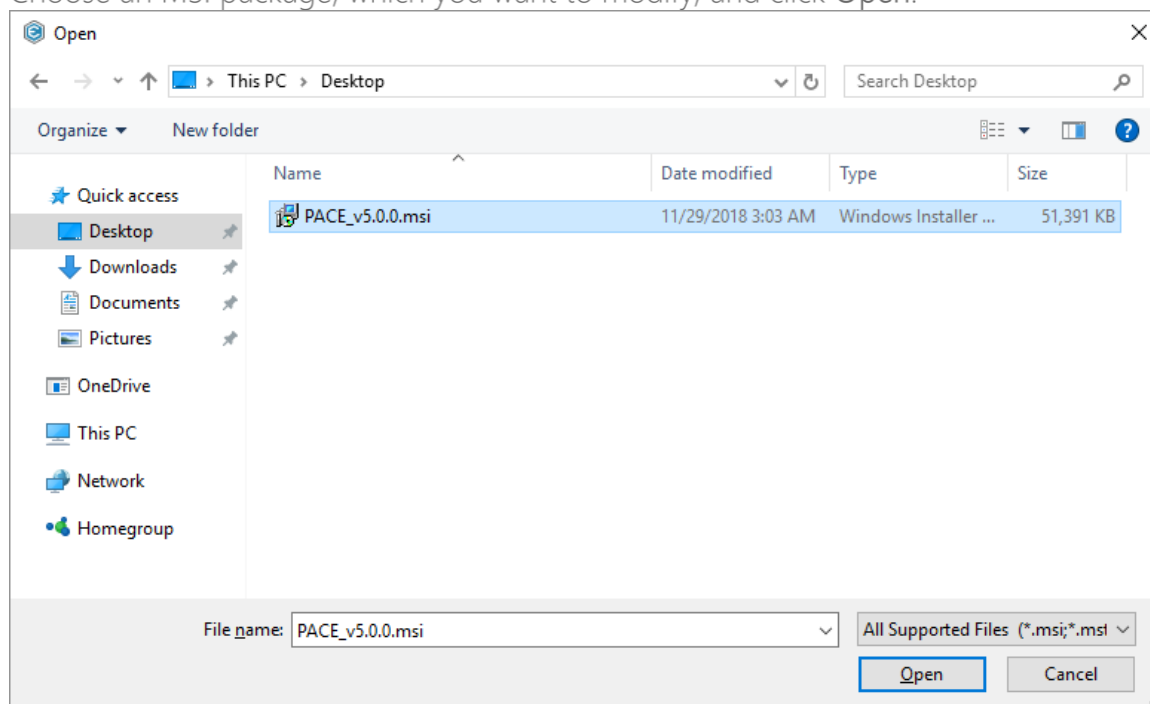
- Launch MSI Editor from the desktop or the start menu shortcut.



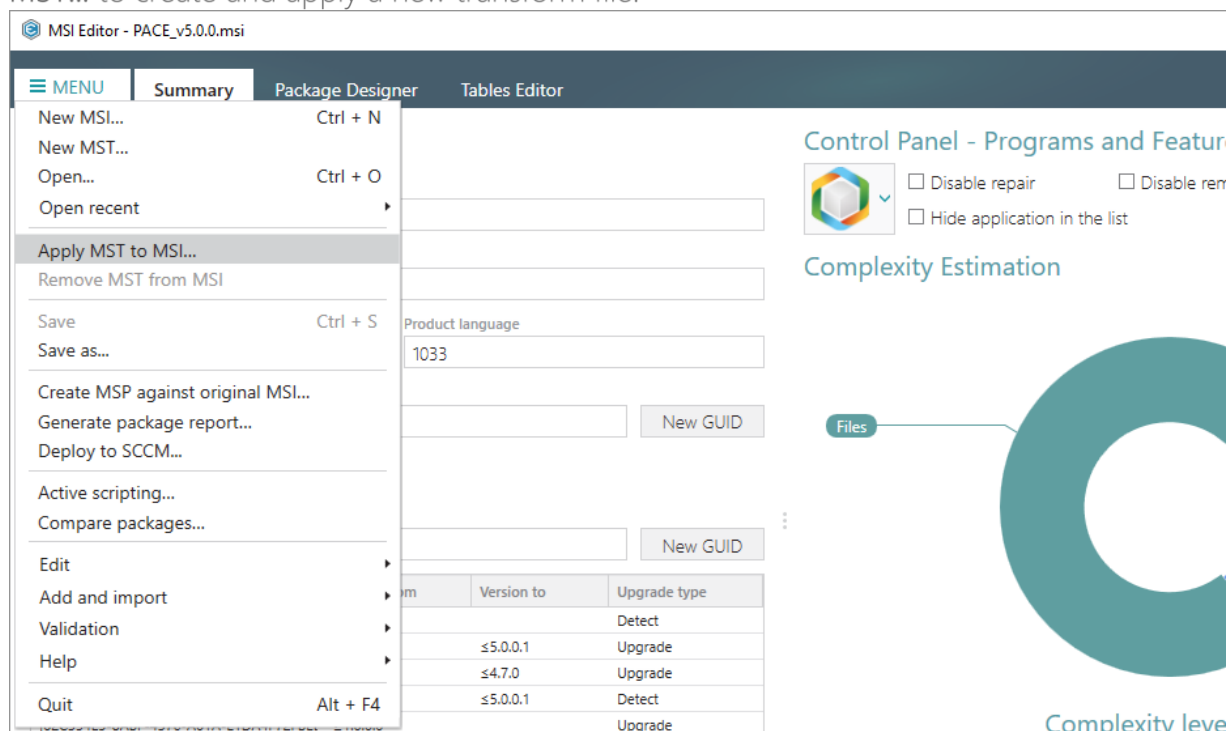
- Select Open... from MENU.



- Choose an MSI package, which you want to modify, and click Open.



- If you want to modify MSI package via Transform (MST), you can either apply the existing MST by selecting **Apply MST to MSI...** from **MENU** and choosing an MST file or select **New MST...** to create and apply a new transform file.



3.7.2 Files and Folders

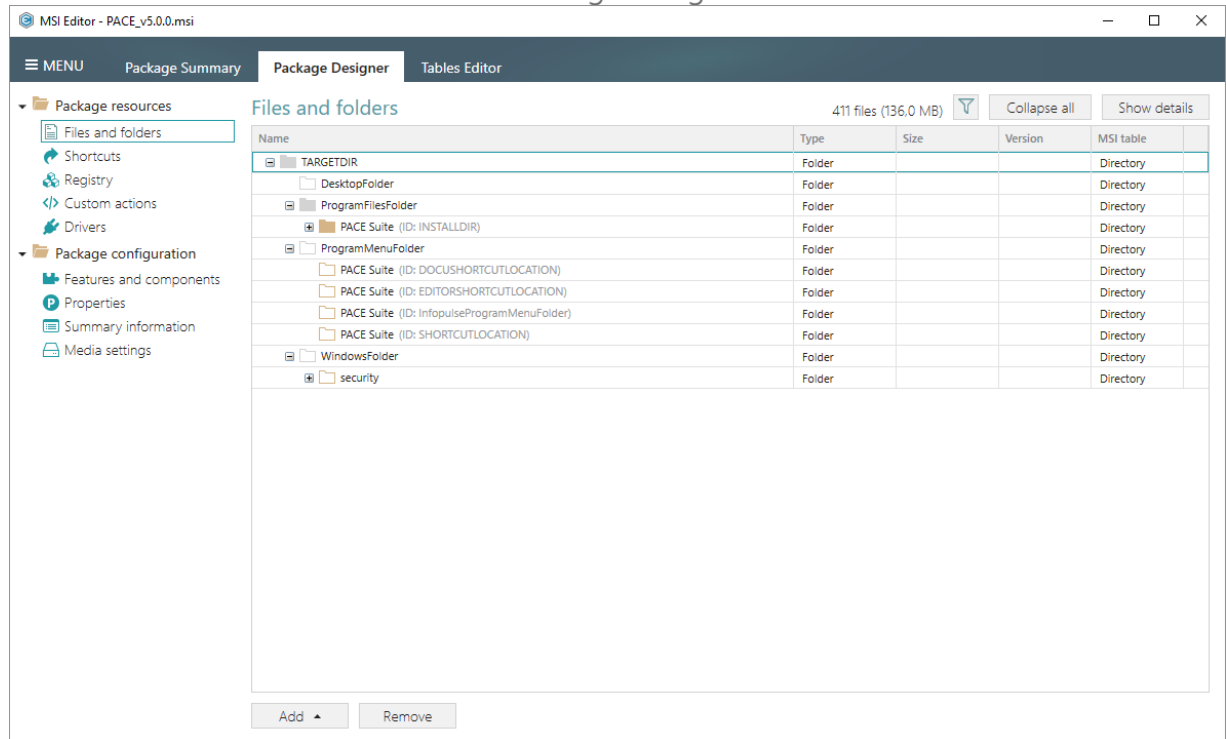
Choose a scenario that better suits your needs:

- **Add System Folder**, described in section 3.7.2.1
Add a system (standard) folder from the list into the package.
- **Add Subfolder**, described in section 3.7.2.2
Add a subfolder (user-defined folder) to the package.
- **Import Files and COM**, described in section 3.7.2.3
Import files with the extracted on-the-fly COM information.
- **Change Compression Type**, described in section 3.7.2.4
Rebuild the whole package with the selected compression type.
- **Set Permissions**, described in section 3.7.2.5
Set custom permissions for the file or the folder.
- **Remove Permissions**, described in section 3.7.2.6
Locate files and folders with custom permissions and remove the unnecessary permissions.
- **Move Files, Folders**, described in section 3.7.2.7
Move a file or a folder from one folder to another.
- **Set INSTALLDIR**, described in section 3.7.2.8
Set a subfolder (user-defined folder) of the package as the INSTALLDIR.
- **Edit INI File**, described in section 3.7.2.9
Edit a name, a destination location and a content of the INI file, which has been read from the IniFile table.
- **Edit File Properties**, described in section 3.7.2.10
Edit a file name, an identifier, a destination location, a component and many other attributes of the binary file, which has been read from the File table.
- **Edit Folder Properties**, described in section 3.7.2.11
Edit a folder target and source name, an identifier, a parent folder.

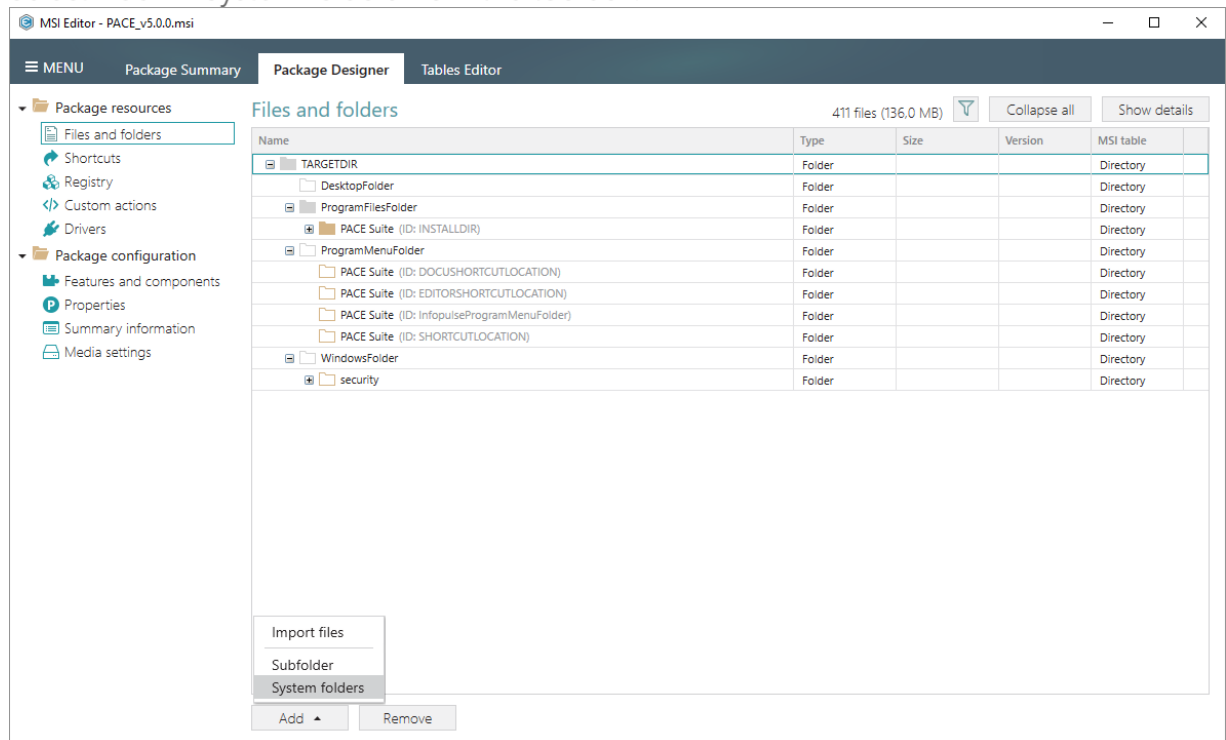
3.7.2.1 Add System Folder

Add a system (standard) folder from the list into the package.

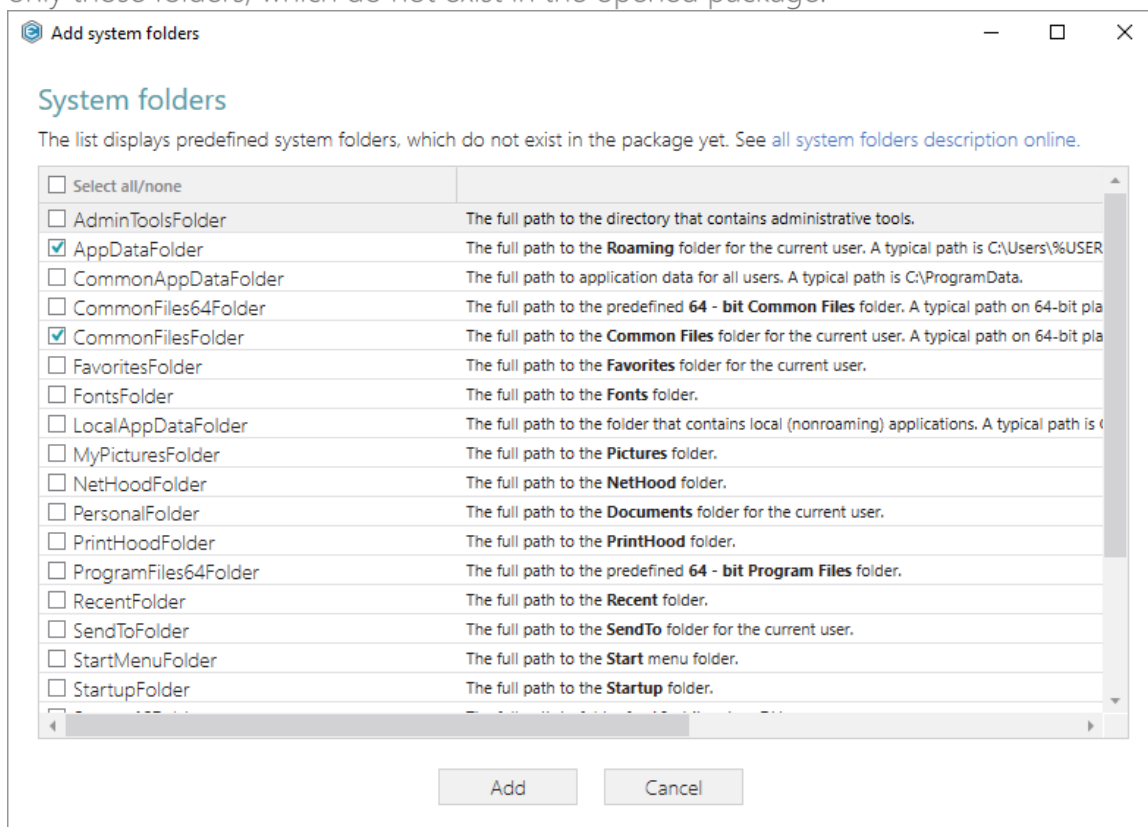
- Go to the Files and folders tab of the Package Designer.



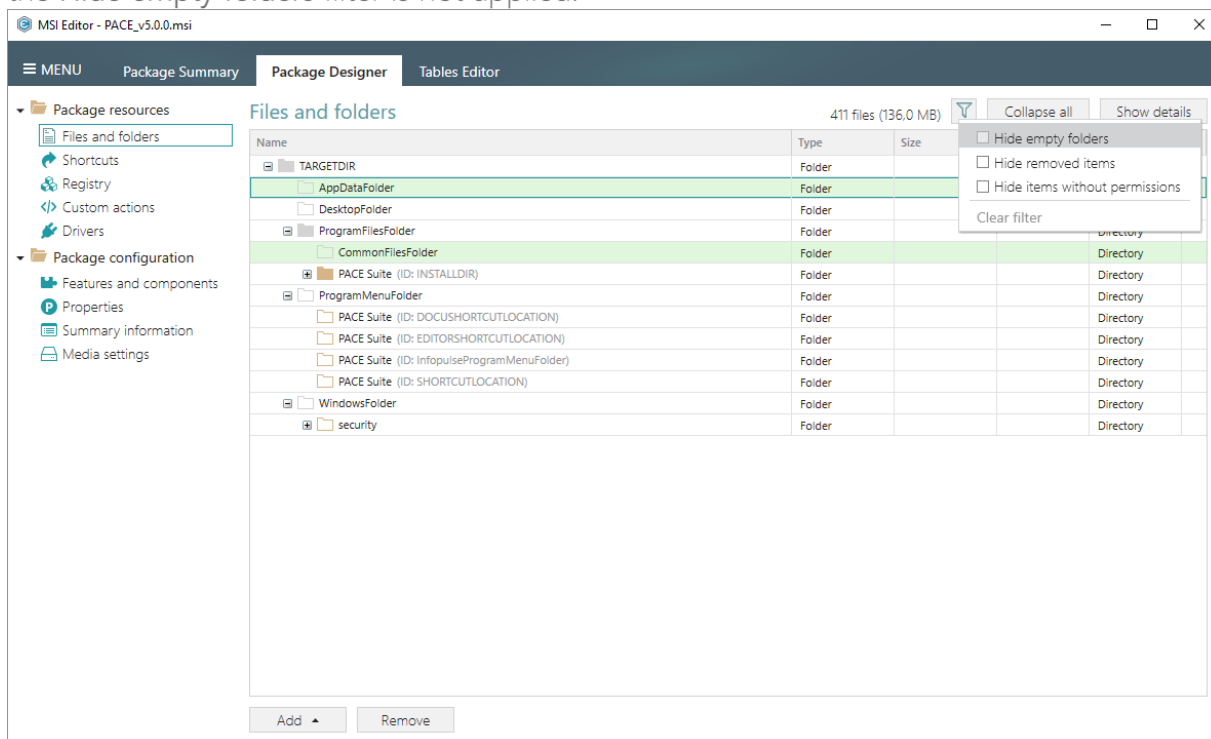
- Select Add -> System folders from the toolbox.



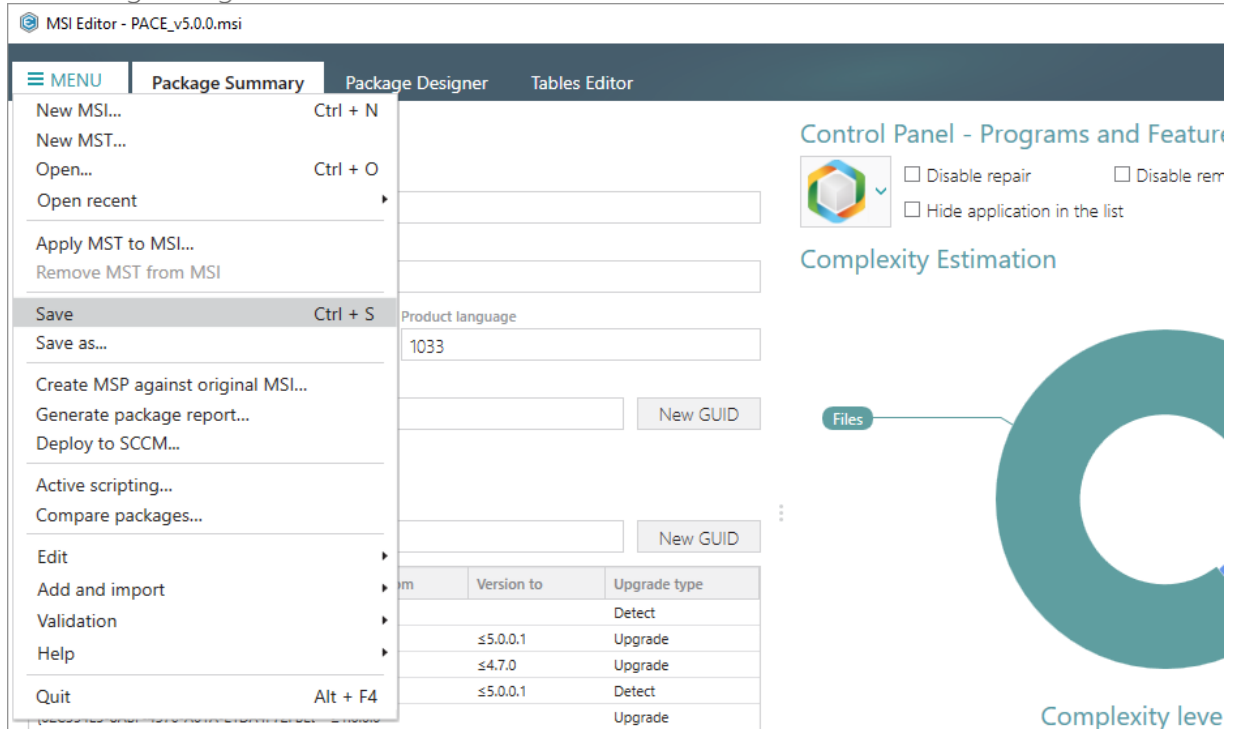
- Choose the necessary system folders from the list and click **Add**. Note that this list displays only those folders, which do not exist in the opened package.



- If you cannot find the specific folder in the list and on the Files and folders tab, ensure that the Hide empty folders filter is not applied.



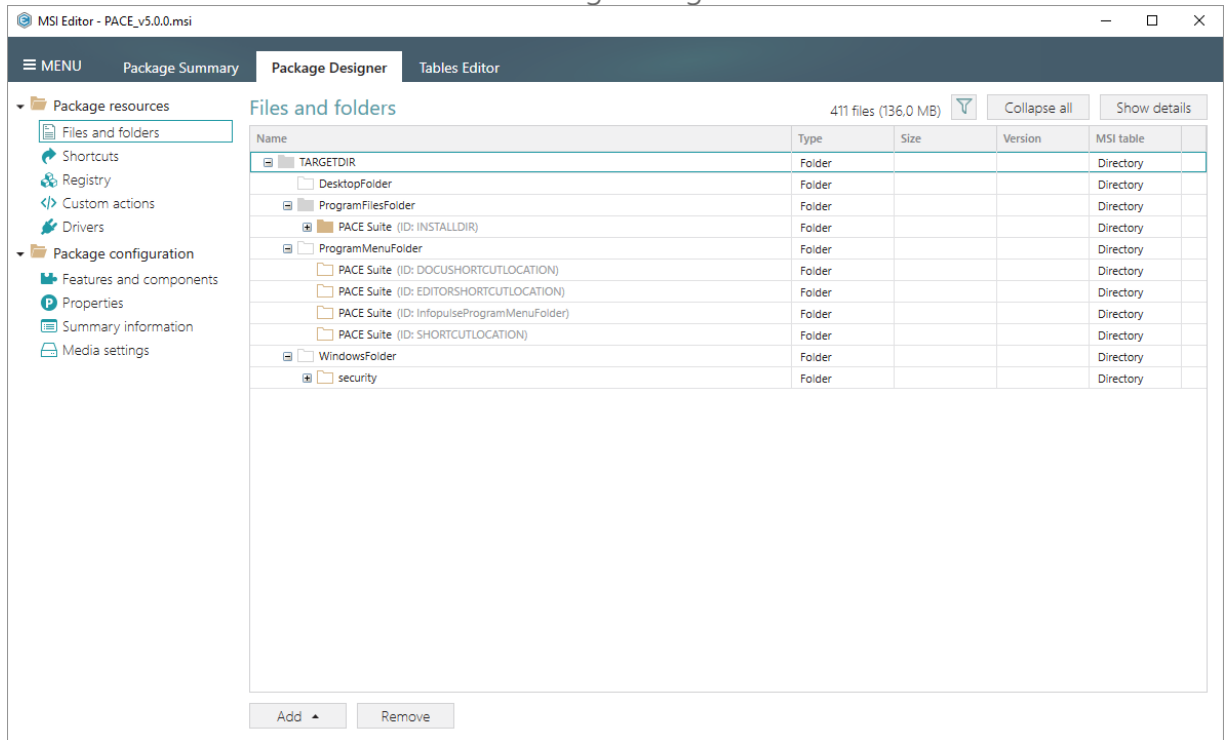
- For saving changes, select Save from MENU.



3.7.2.2 Add Subfolder

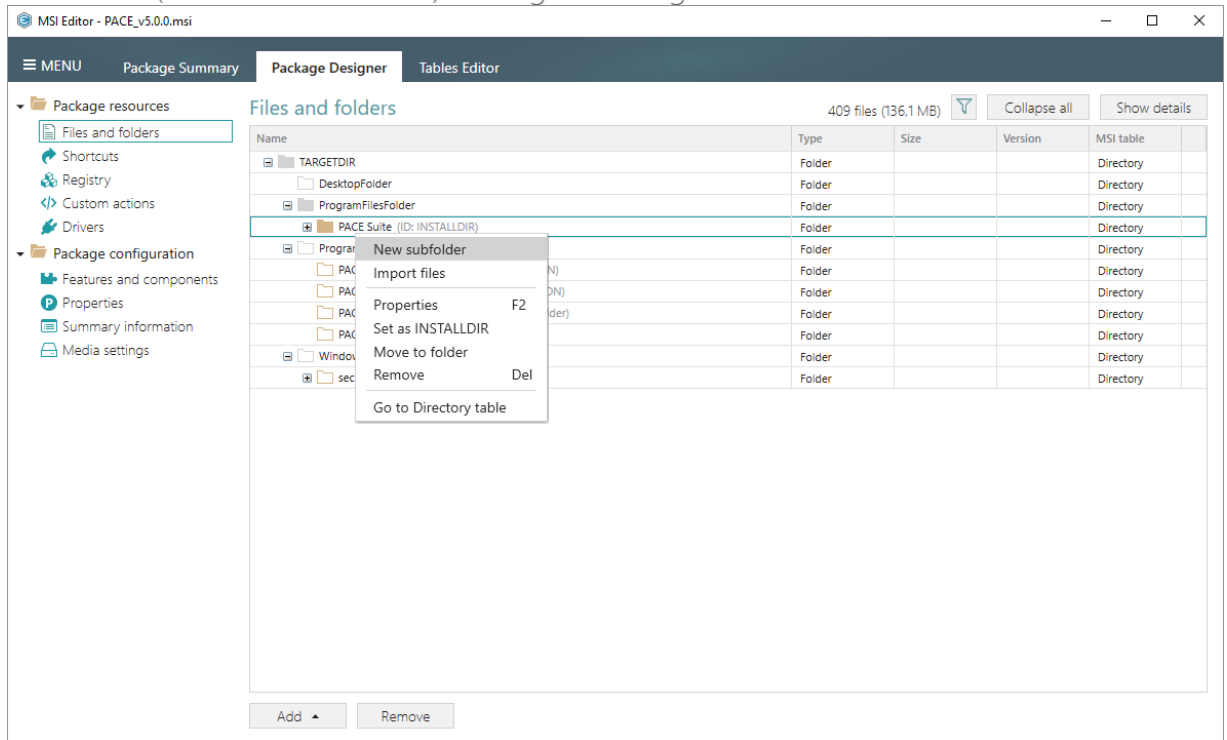
Add a subfolder (user-defined folder) to the package.

- Go to the Files and folders tab of the Package Designer.

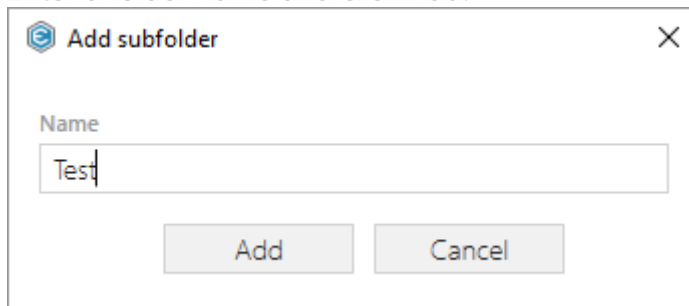


- Select New subfolder from the context menu of a folder, where you want to create a new subfolder. Note that system folders are displayed using the grey folder icon and the

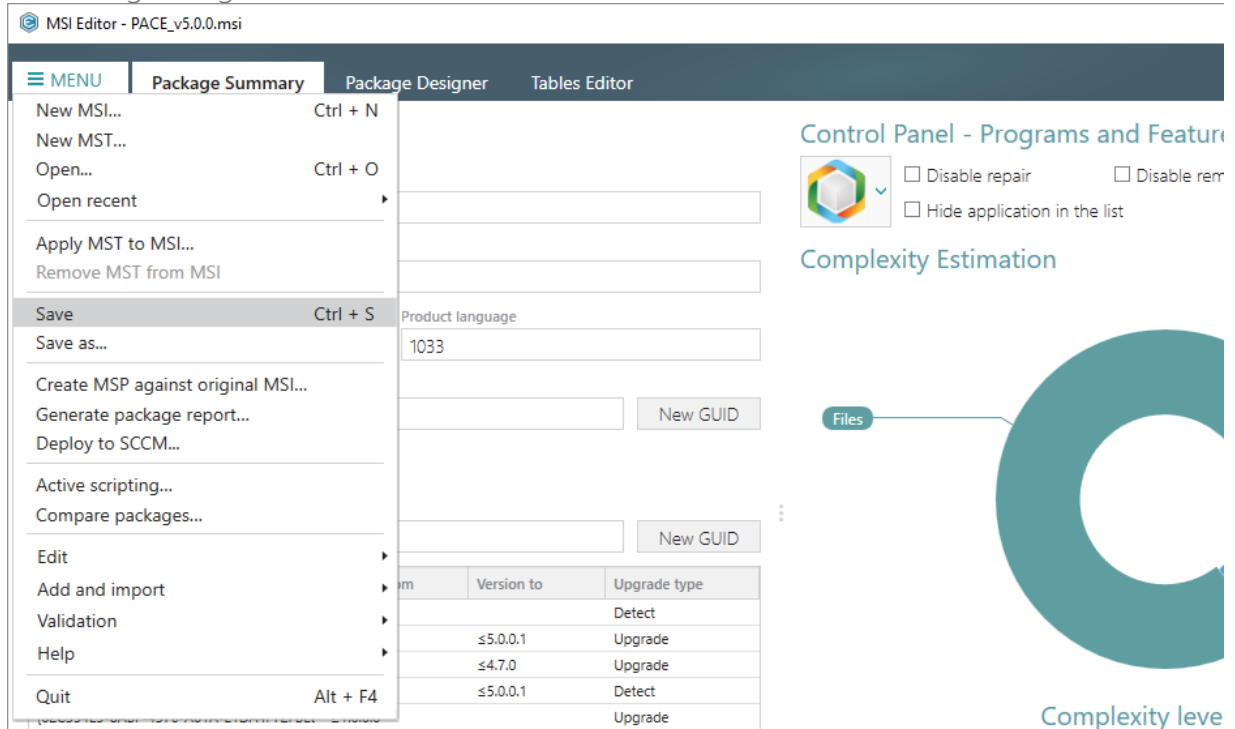
subfolders (user-defined folders) – using the orange folder icon.



- Enter a folder name and click Add.



- For saving changes, select Save from MENU.

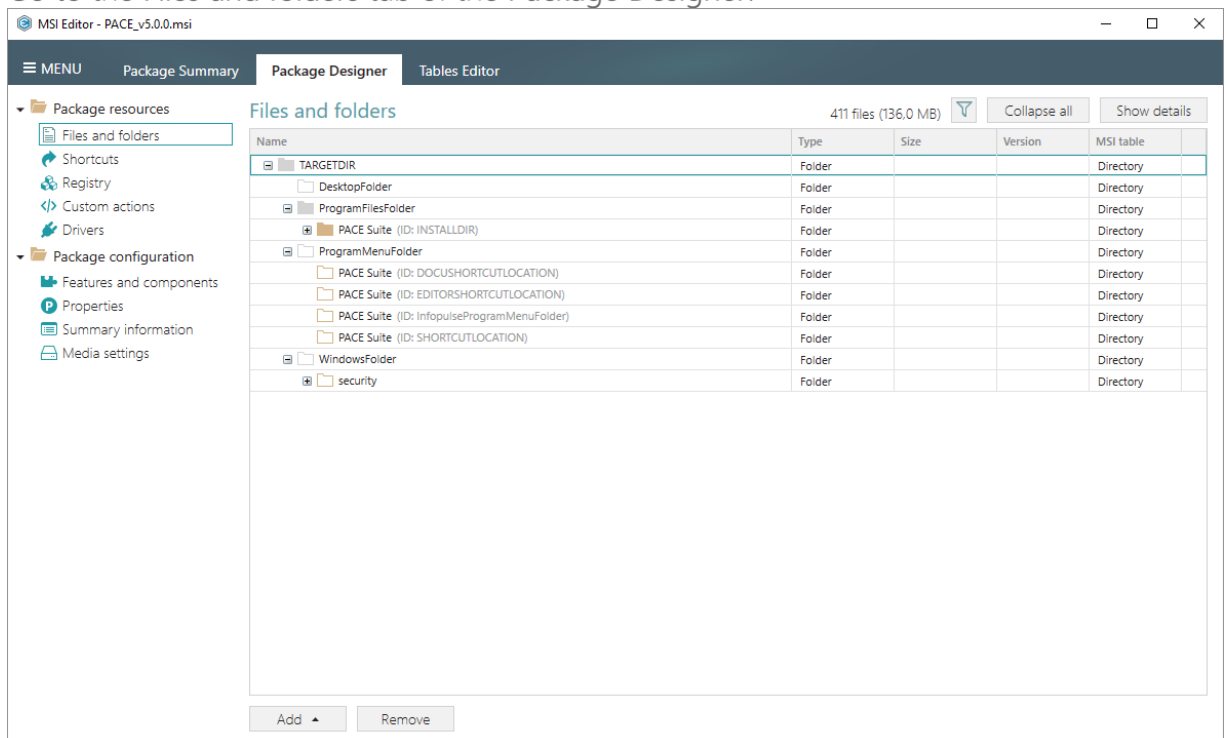


3.7.2.3 Import Files and COM

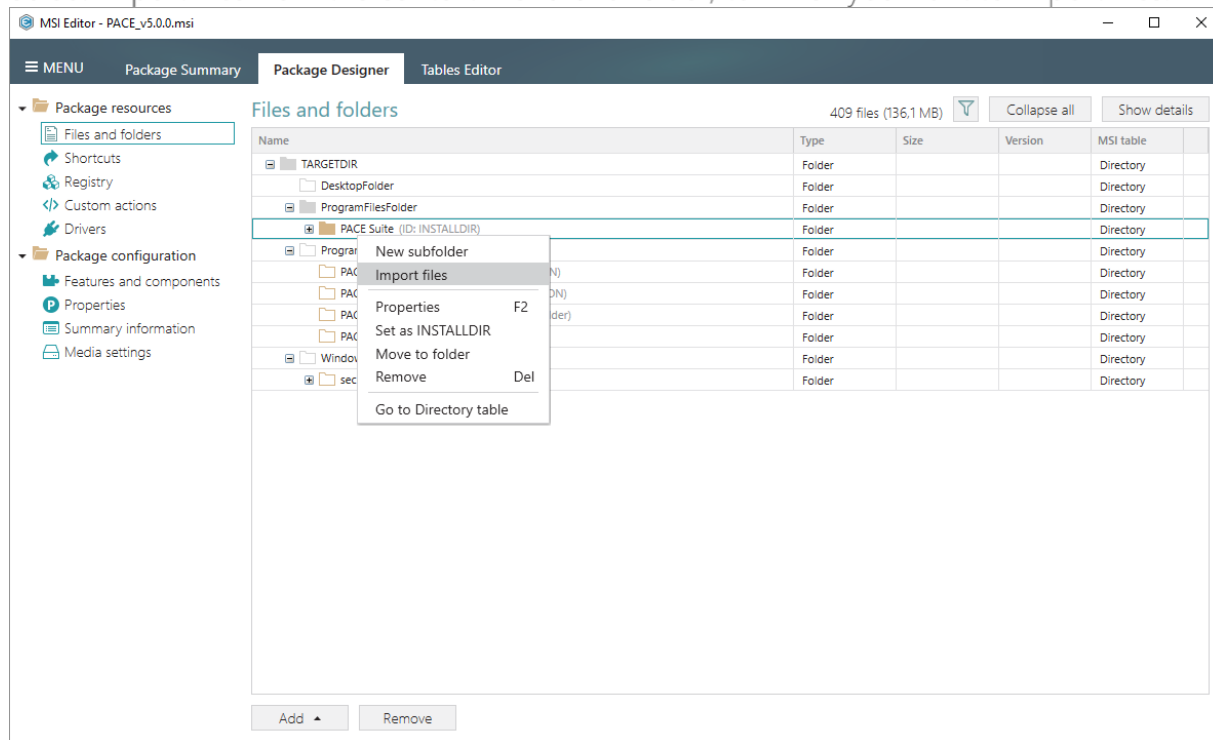
Import files with the extracted on-the-fly COM information.

NOTE MSI Editor allows extracting and importing to the package both 32-bit and 64-bit COM information and .NET assemblies from the selected (*.DLL, *.OCX, *.LTB) files.

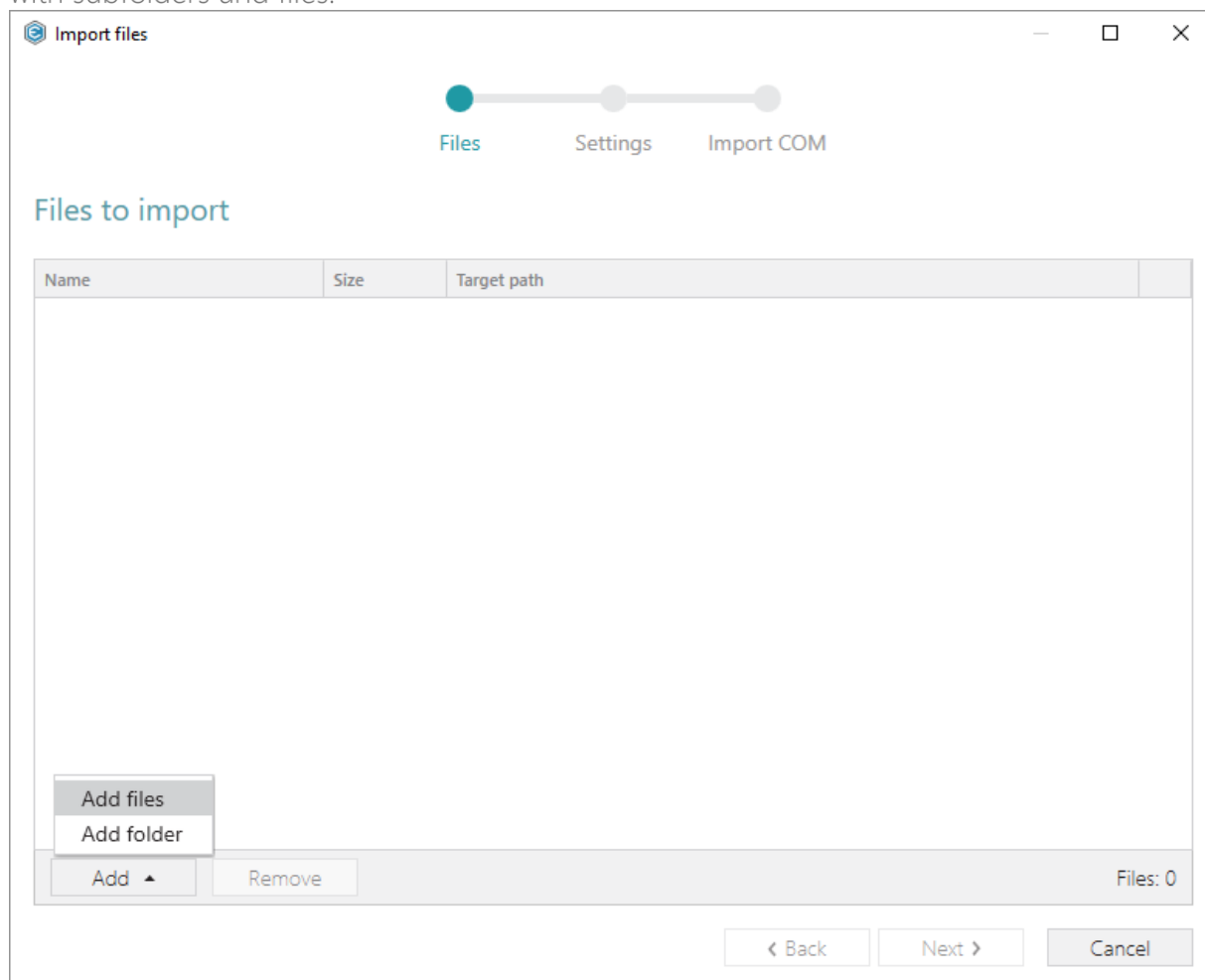
- Go to the Files and folders tab of the Package Designer.



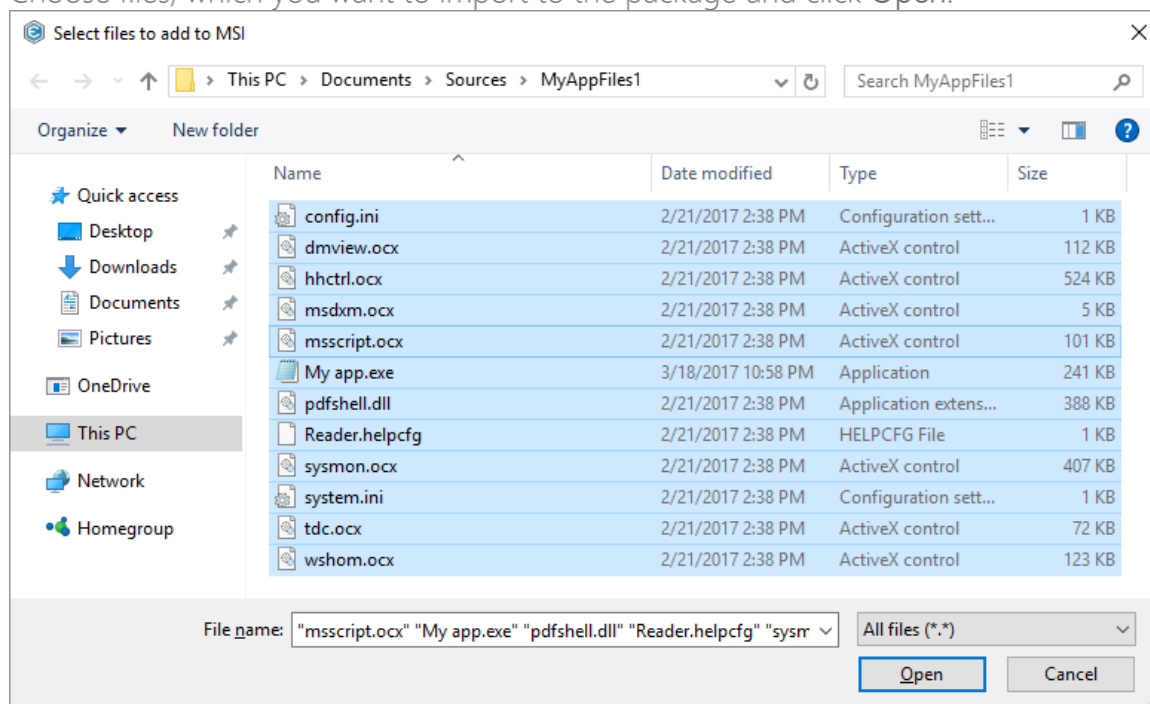
- Select Import files from the context menu of a folder, to which you want to import files.



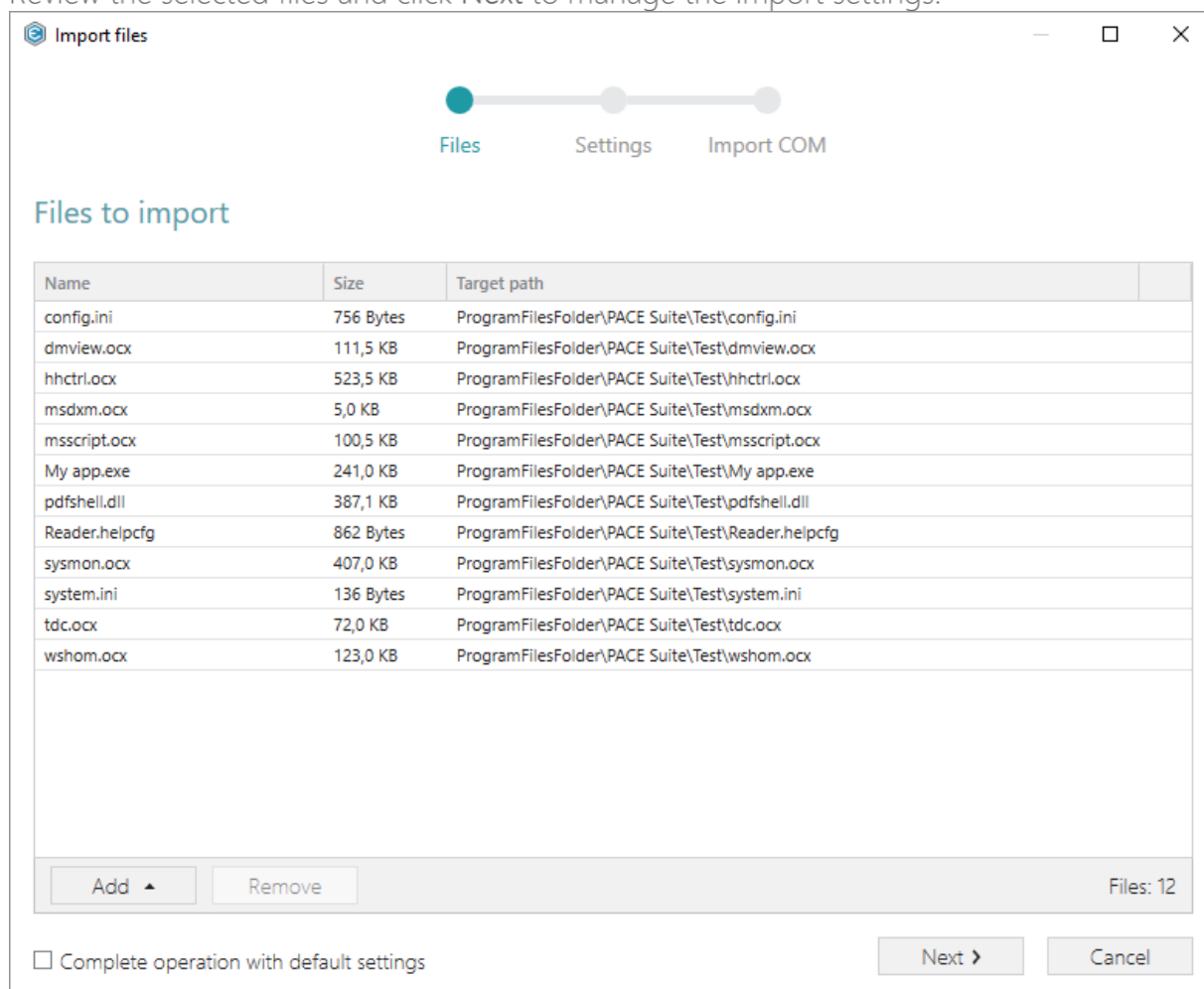
- Click Add -> Add files to choose files in a folder or Add -> Add folder to choose a folder with subfolders and files.



- Choose files, which you want to import to the package and click **Open**.



- Review the selected files and click **Next** to manage the import settings.



- At this step, you can manage how to save INI files, select an MSI Feature, to which components with files will be assigned. Below, in the tables, you will find the detailed

description of these settings. Note that files compression types and other Media settings are represented on the separate Media settings tab of the Package Designer. Choose the desired settings and click Next to continue.

Import files

Files

Settings

Import COM

Settings

INI handling

☒ Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

☐ Save all INI files to the 'File' table

☐ Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

[See invalid INI files](#)

Target feature

<PACE feature>

New feature

☒ Manage features automatically

☐ Complete now with default settings

< Back

Next >

Cancel

INI handling

Save valid INI files to the 'IniFile' table; invalid ones to the 'File' table (recommended)

INI files, which comply with the INI file format, will be saved to the 'IniFile' table.
All other INI files, which contain unsupported data, will be saved to the 'File' table as binary files.

Save all INI files to the 'File' table

All INI files will be saved only to the 'File' table as binary files.

Save only valid content of all INI files to the 'IniFile' table and then duplicate all INI files to the 'File' table

A valid content of all INI files will be saved to the 'IniFile' table, and then all INI files will be saved to the 'File' table as binary files.
This allows installing INI files to the target system keeping their original structure with unsupported data, and update the necessary INI file values.

Target feature

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported files. Feature structure is based on the packaging best practices and depends on the destination location of files.

<a feature, selected from the list>

Components with files will be assigned to a feature, selected from the list.

- On the last step you can review COM information, extracted from the selected files. For importing this COM information along with files, select the **Import COM information** option. Click Finish to complete the import.

Import files

✓

✓

Files

Settings

Import COM

Extracted COM information

File	Root	Key	Value name	Value
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		C:\Users\pace\DOCUME~1\Source
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}	ThreadingModel	Apartment
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		131473
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		C:\Users\pace\DOCUME~1\Source
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		{AEB84C80-95DC-11D0-B7FC-B61140119C4A}
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		1.0
dmview.ocx	HKCR	CLSID\{AEB84C83-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.Control
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A}		C:\Users\pace\DOCUME~1\Source
dmview.ocx	HKCR	CLSID\{AEB84C84-95DC-11D0-B7FC-B61140119C4A}		DiskManagement.PropertyPage
dmview.ocx	HKCR	DiskManagement.Control\CLSID		{AEB84C83-95DC-11D0-B7FC-B61140119C4A}

☐ Import COM information

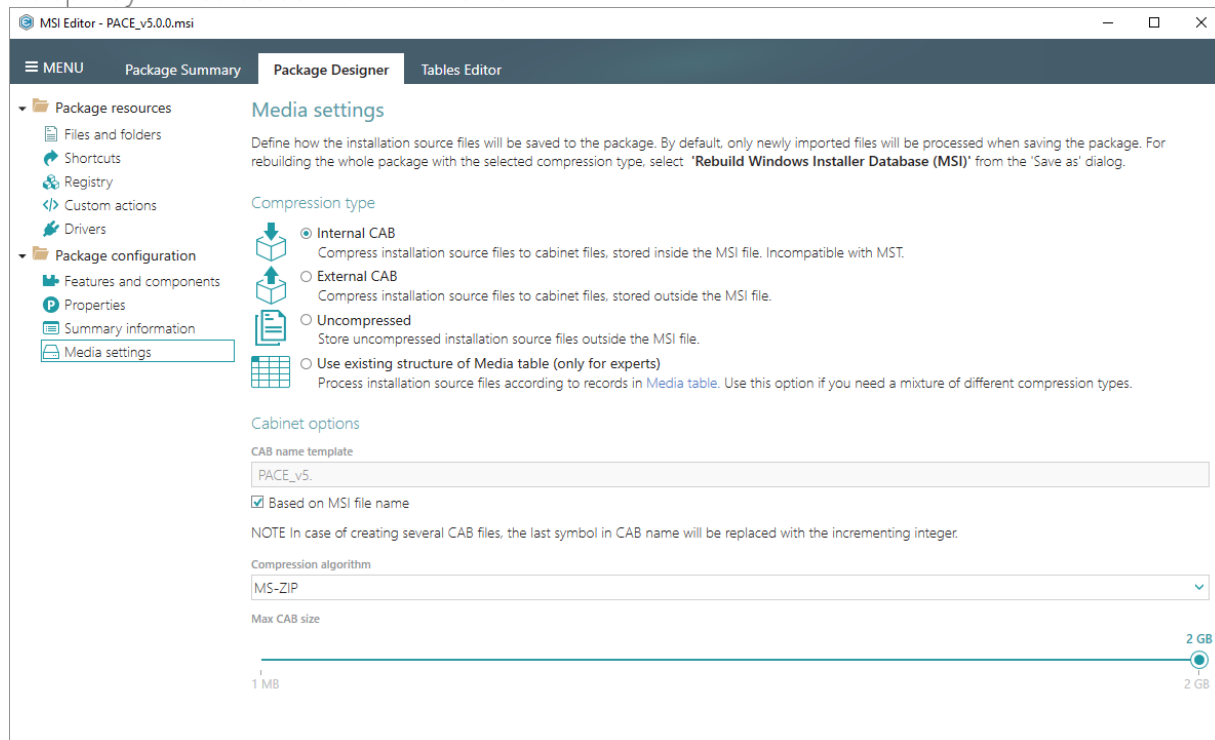
Back

Finish

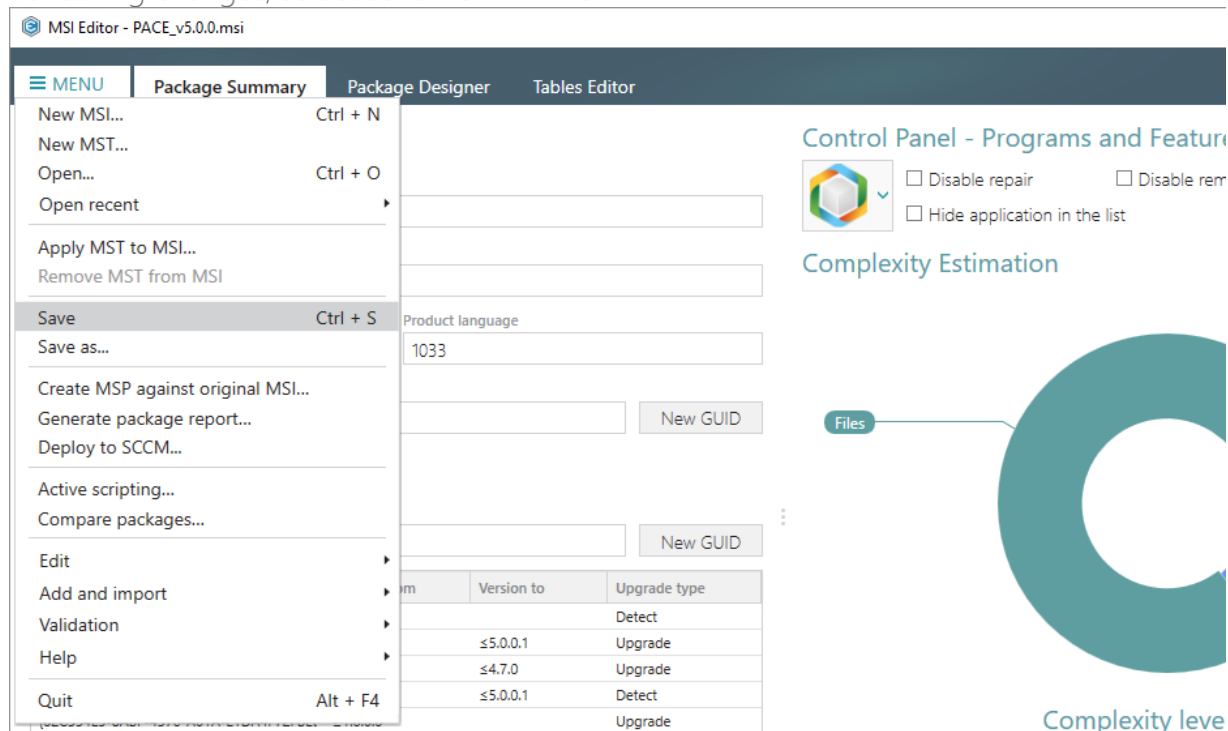
Cancel

- Go to the Media settings tab of the Package Designer and choose the necessary compression type for the imported files. For the compressed files you can manage cabinet options such as CAB name, compression algorithm and maximum CAB size. Cabinets will

be spit by the selected maximum size.



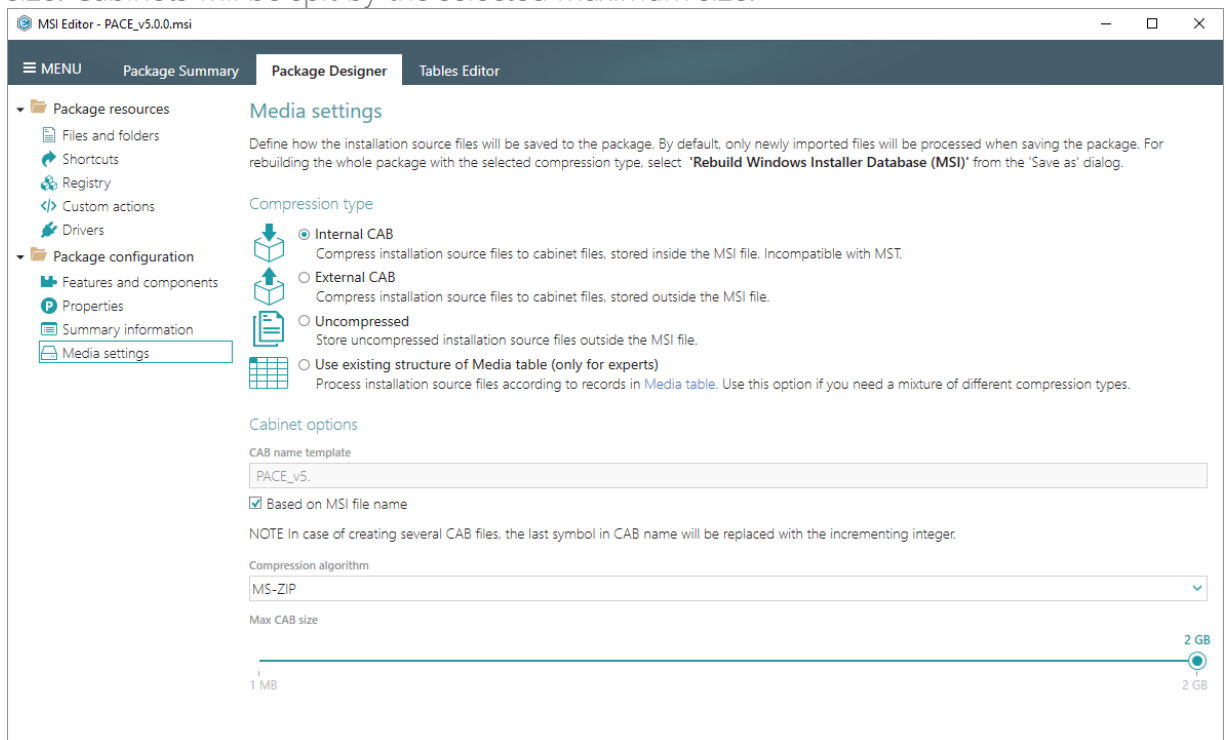
- For saving changes, select **Save** from **MENU**.



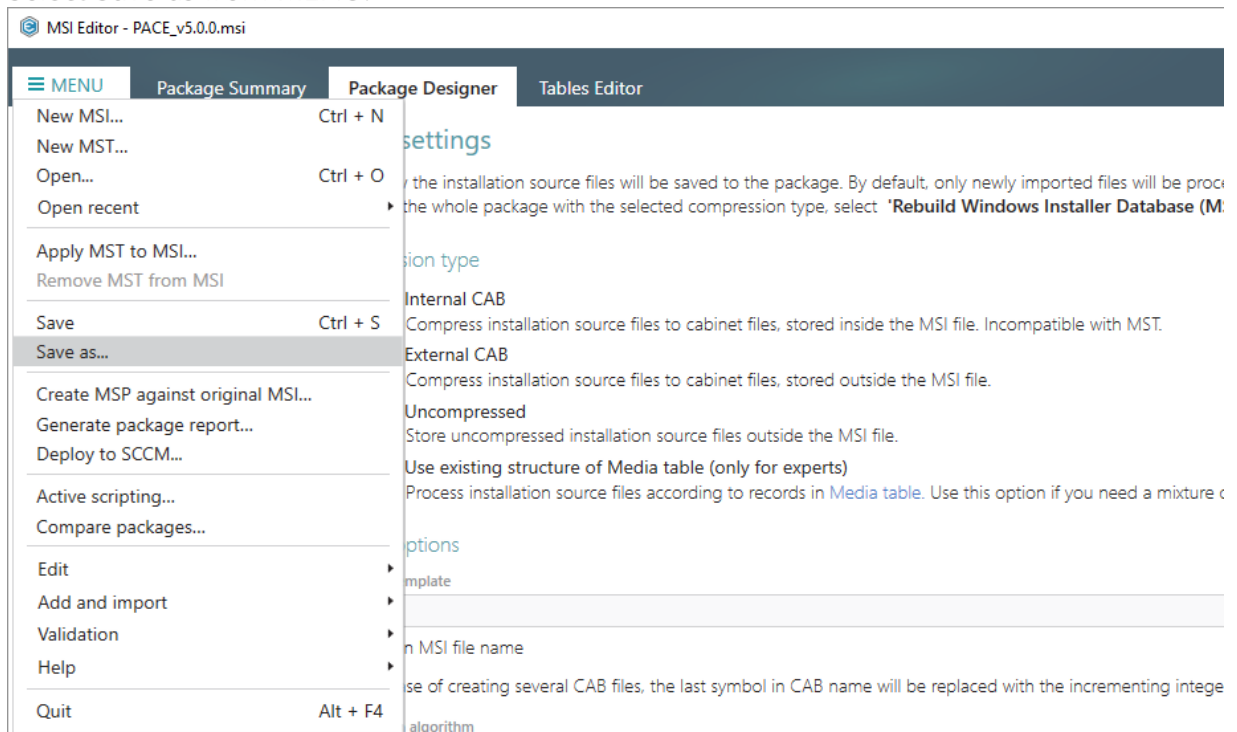
3.7.2.4 Change Compression Type

Rebuild the whole package with the selected compression type. For this, all your changes will be merged with MSI and saved as a new MSI package in the location, which you select. Then, all files of this MSI package will be extracted and then saved again using the selected compression type and cabinet options.

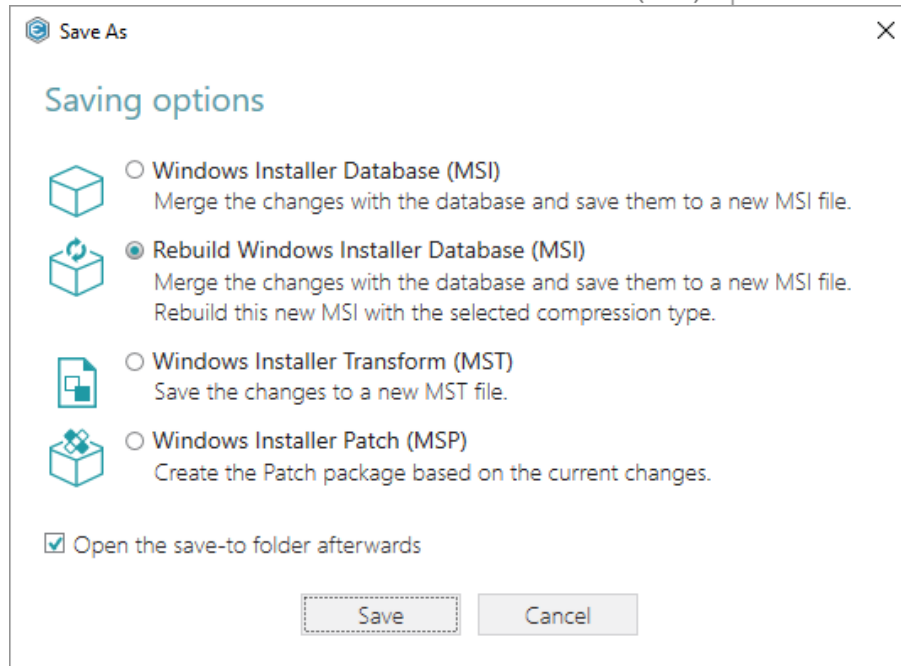
- Go to the **Media settings** tab of the **Package Designer** and select the desired compression type that will be applied to all package files. For the first two compression types you can manage cabinet options such as CAB name, compression algorithm and maximum CAB size. Cabinets will be split by the selected maximum size.



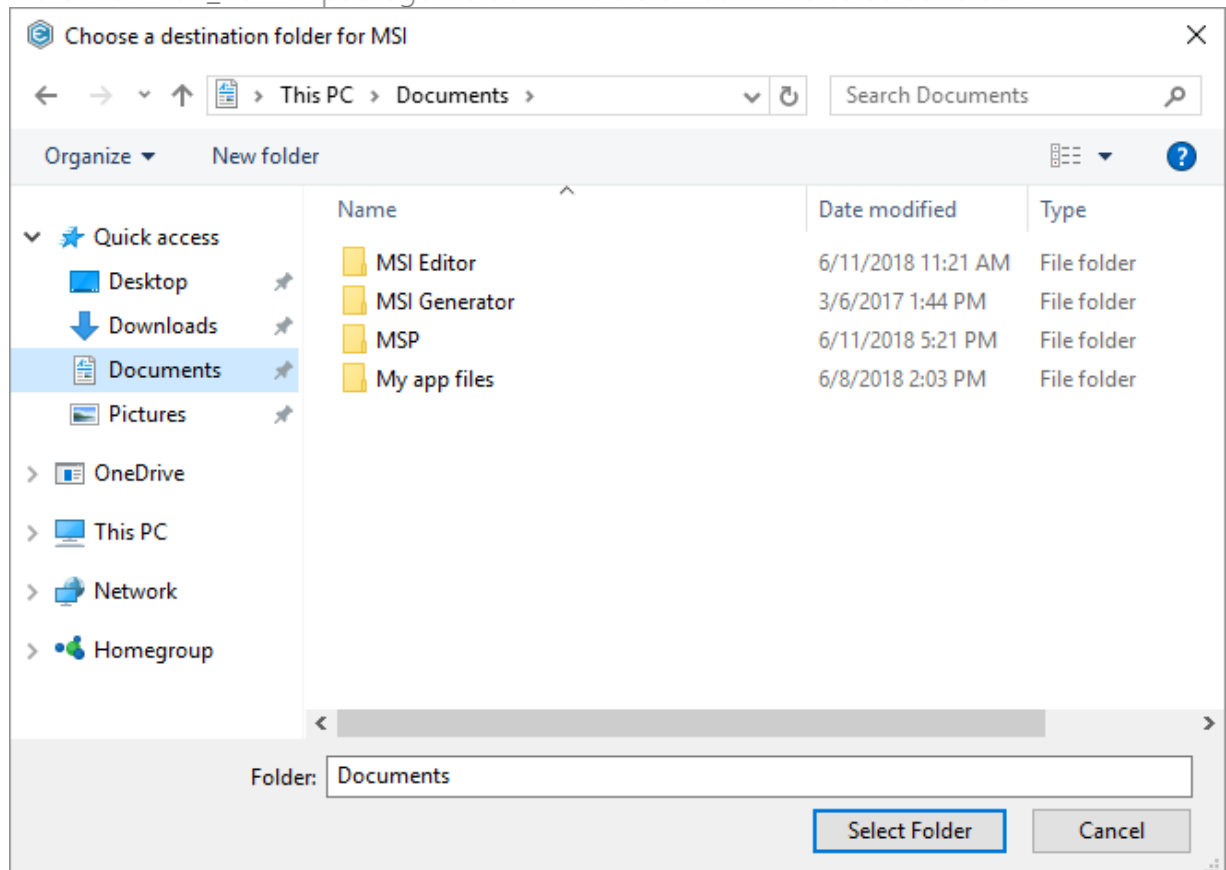
- Select **Save as** from **MENU**.



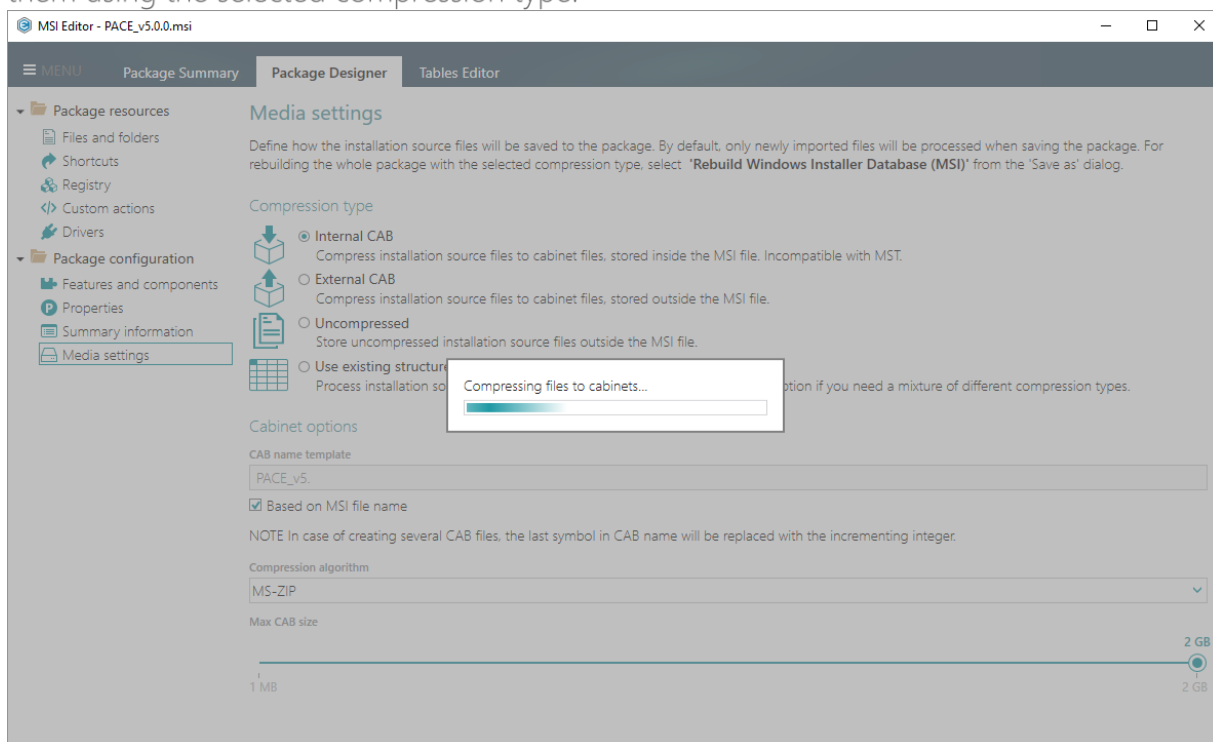
- Select the Rebuild Windows Installer Database (MSI) option and click Save.



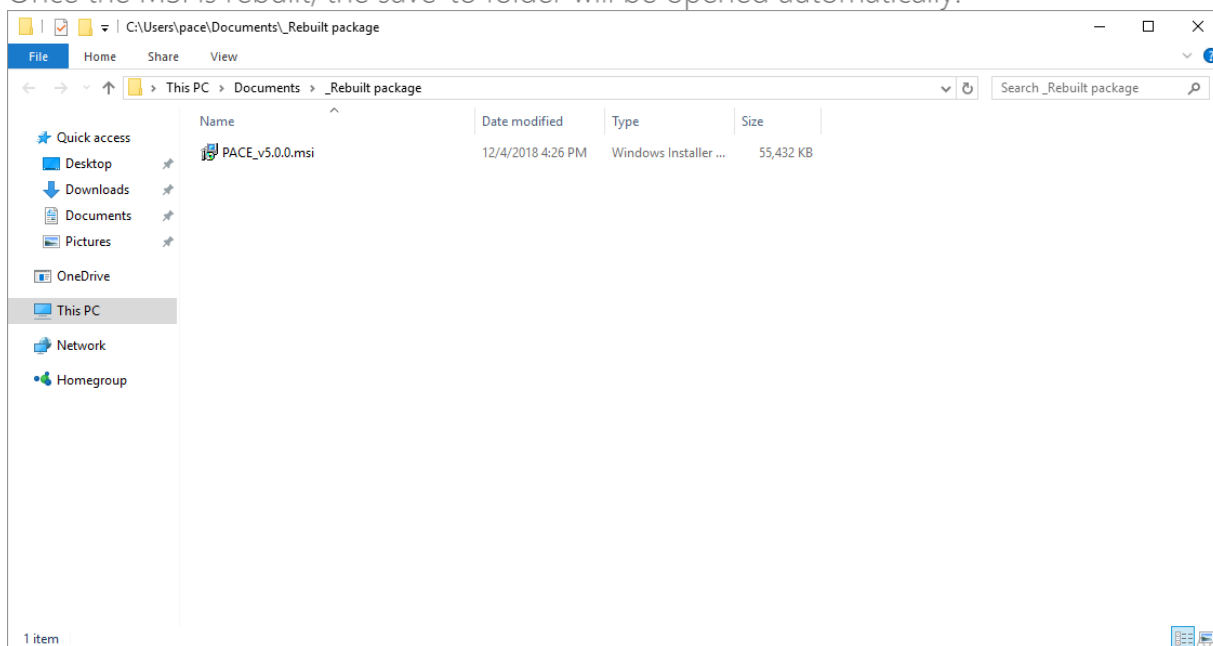
- Choose a destination folder, where the rebuilt MSI will be saved and click Select Folder. Note that the "_Rebuilt package" folder will be created in the selected folder.



- Wait a little, while the MSI Editor is extracting all files from the package and processing them using the selected compression type.



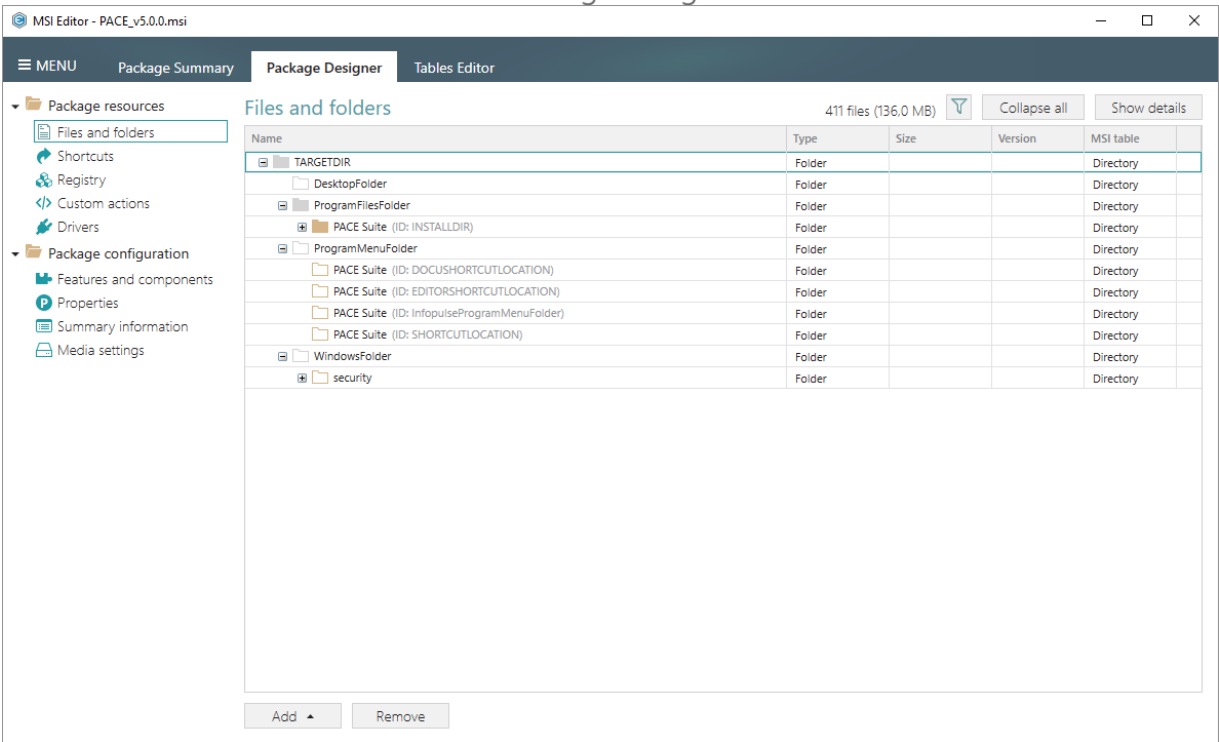
- Once the MSI is rebuilt, the save-to folder will be opened automatically.



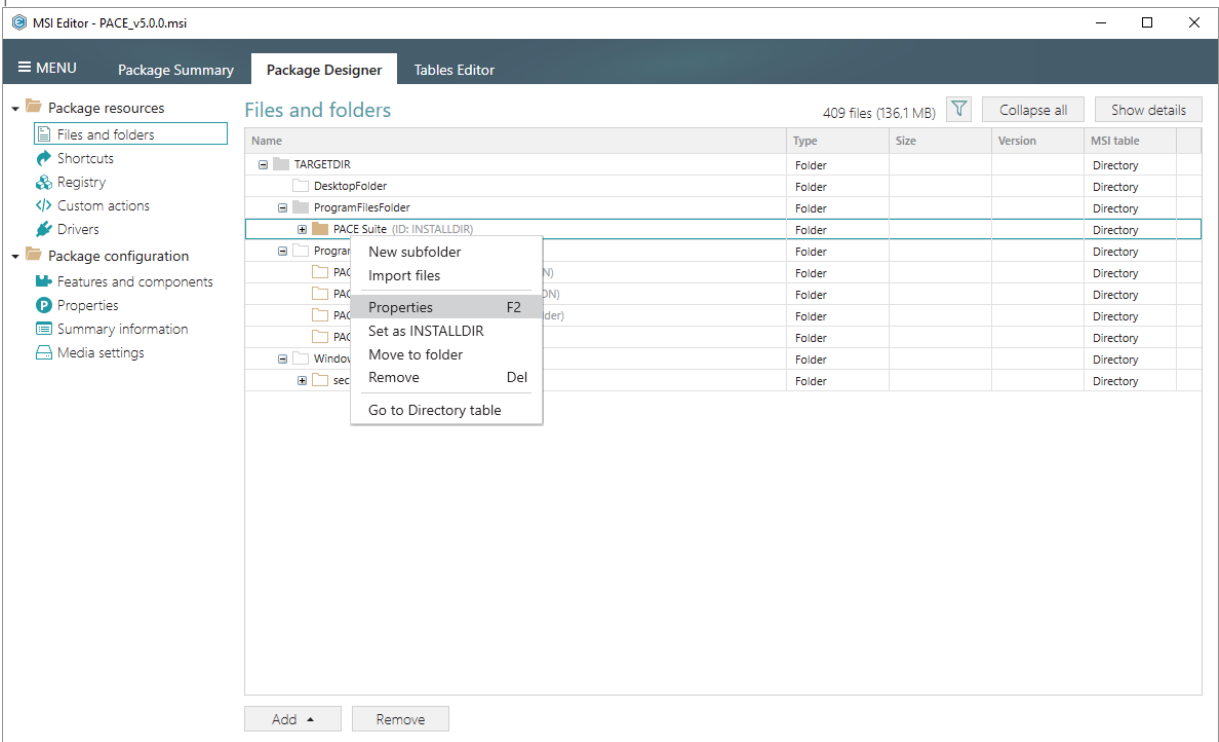
3.7.2.5 Set Permissions

Change permissions for the file or the folder.

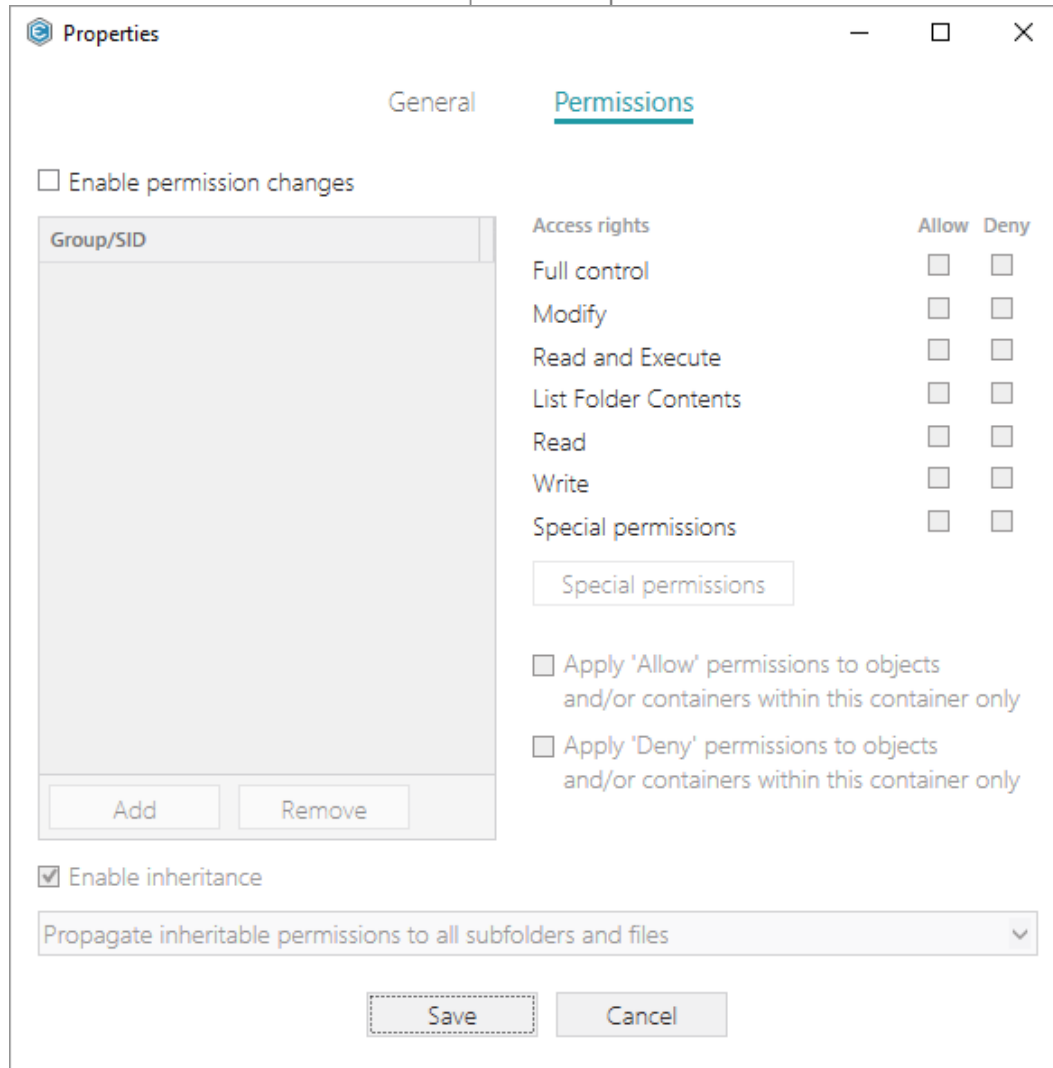
- Go to the Files and folders tab of the Package Designer.



- Select Properties from the context menu of a folder or a file, for which you want to set permissions.



- Go to the Permissions tab of the opened Properties window.



- Tick the Enable permission changes checkbox and click Add.

Properties

General Permissions

☒ Enable permission changes

Group/SID	Access rights	Allow	Deny
	Full control	<input type="checkbox"/>	<input type="checkbox"/>
	Modify	<input type="checkbox"/>	<input type="checkbox"/>
	Read and Execute	<input type="checkbox"/>	<input type="checkbox"/>
	List Folder Contents	<input type="checkbox"/>	<input type="checkbox"/>
	Read	<input type="checkbox"/>	<input type="checkbox"/>
	Write	<input type="checkbox"/>	<input type="checkbox"/>
	Special permissions	<input type="checkbox"/>	<input type="checkbox"/>

Special permissions

☐ Apply 'Allow' permissions to objects and/or containers within this container only

☐ Apply 'Deny' permissions to objects and/or containers within this container only

☒ Enable inheritance

Propagate inheritable permissions to all subfolders and files

Add Remove Save Cancel

- Select a group from the list or enter SID manually, for which you want to set permissions, and click Add. Note that you can add as many groups and SID as you need. Each group and SID could have individual access rights.

Add Group or SID

☒ Group

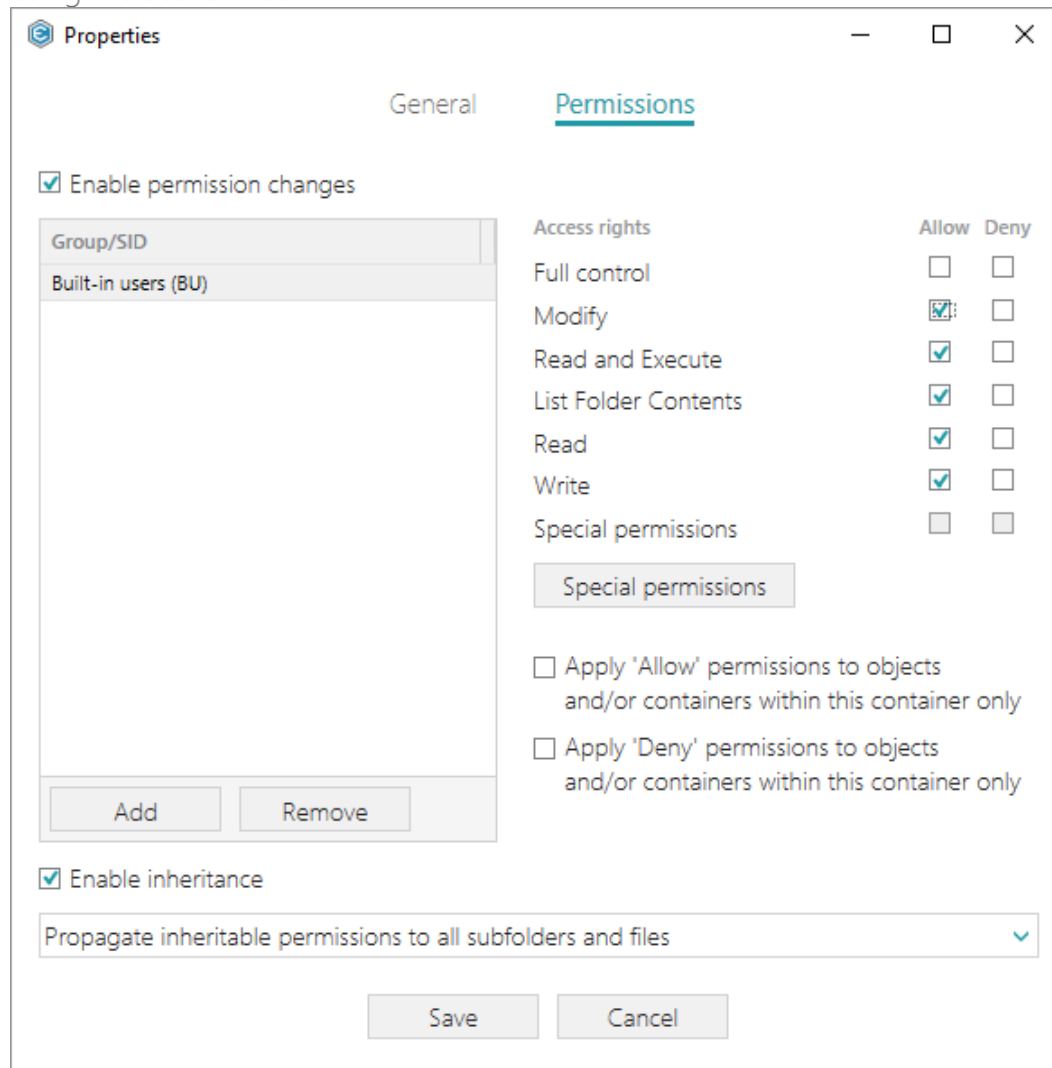
Built-in users (BU)

☐ SID

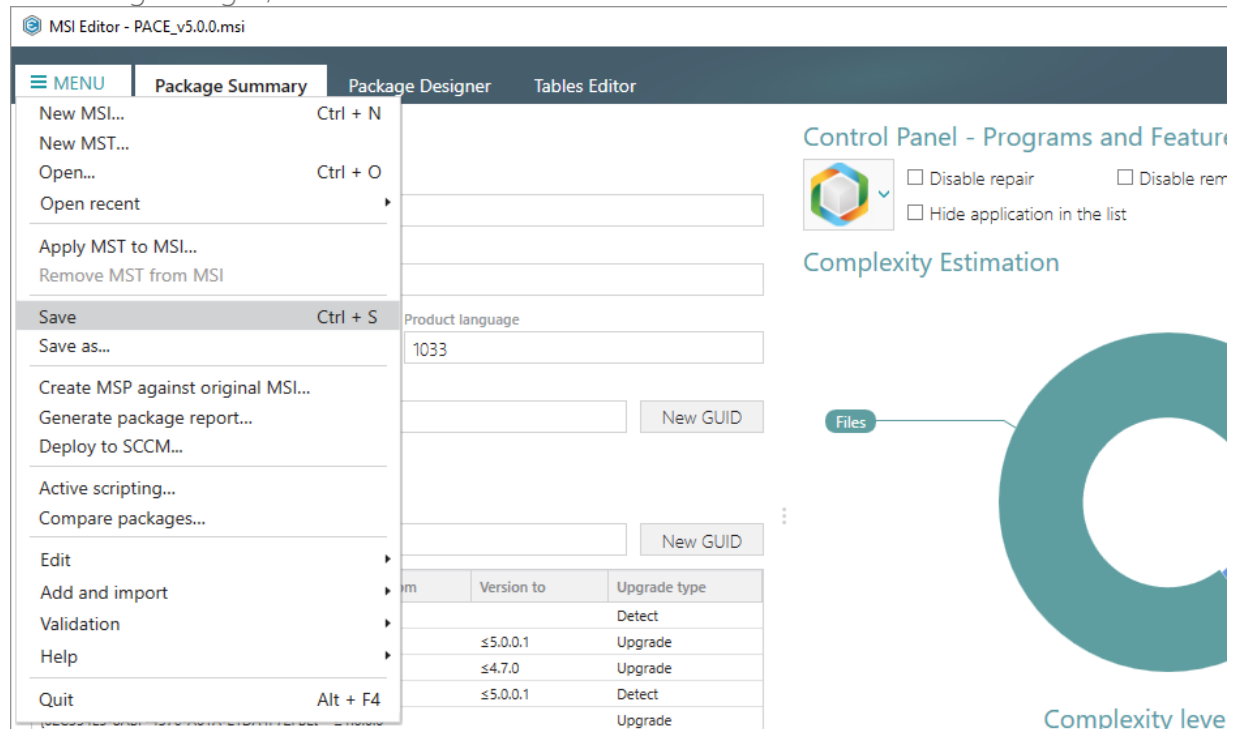
Add Cancel

- Tick the necessary access rights for the selected group or SID, change (if needed) special permissions, inheritance options and behavior of applying the permissions. Click Save to save the changed permission settings to MSI. Note that permissions will be propagated

using the SecEdit tool.



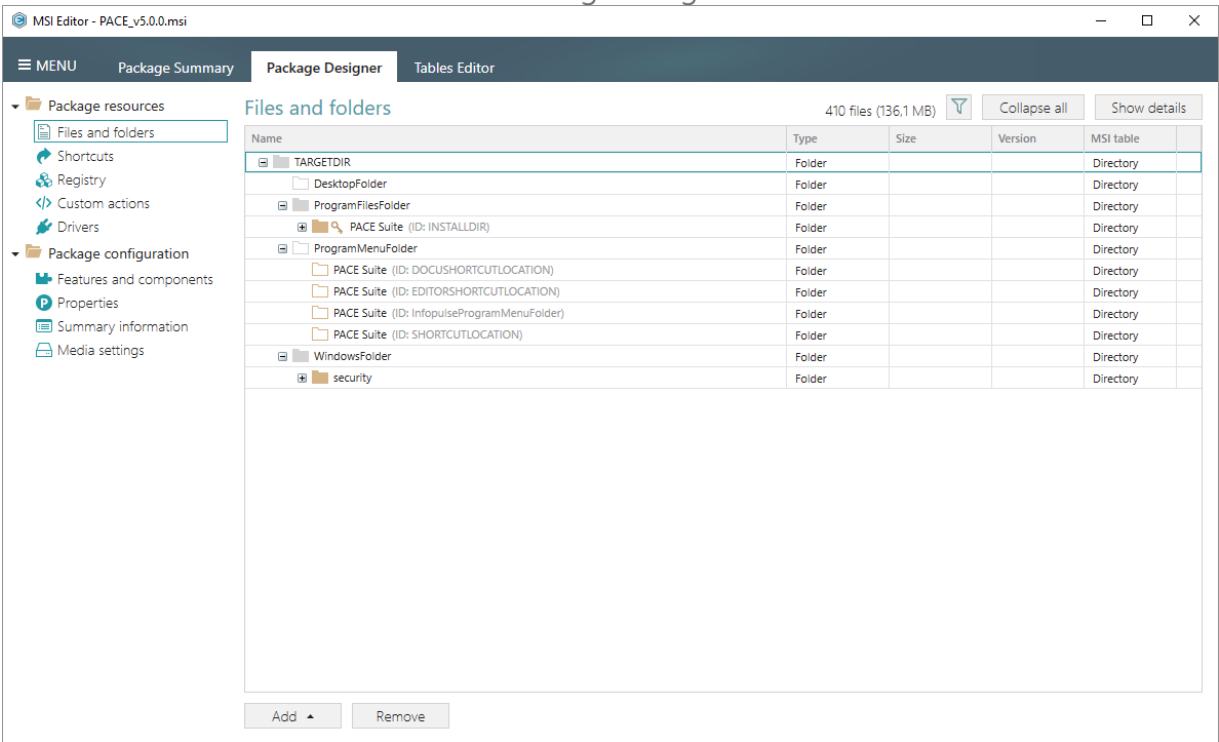
- For saving changes, select Save from MENU.



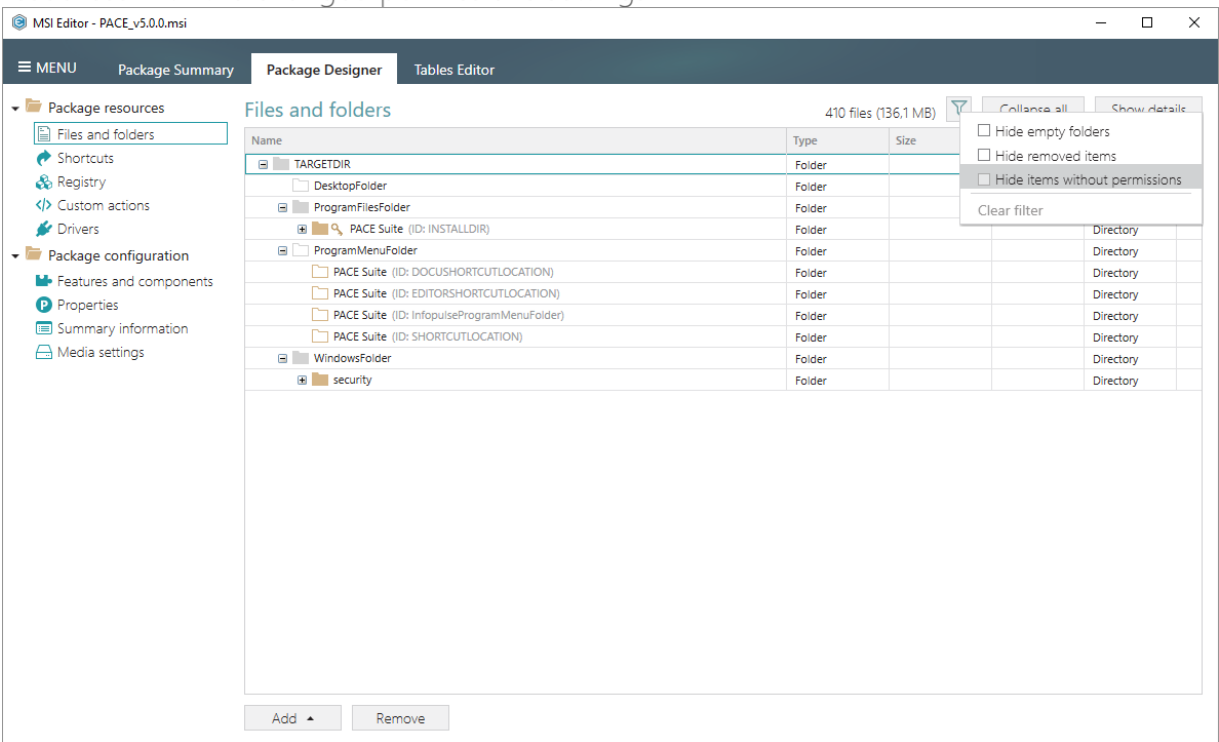
3.7.2.6 Remove Permissions

Locate files and folders with custom permissions and remove the unnecessary permissions.

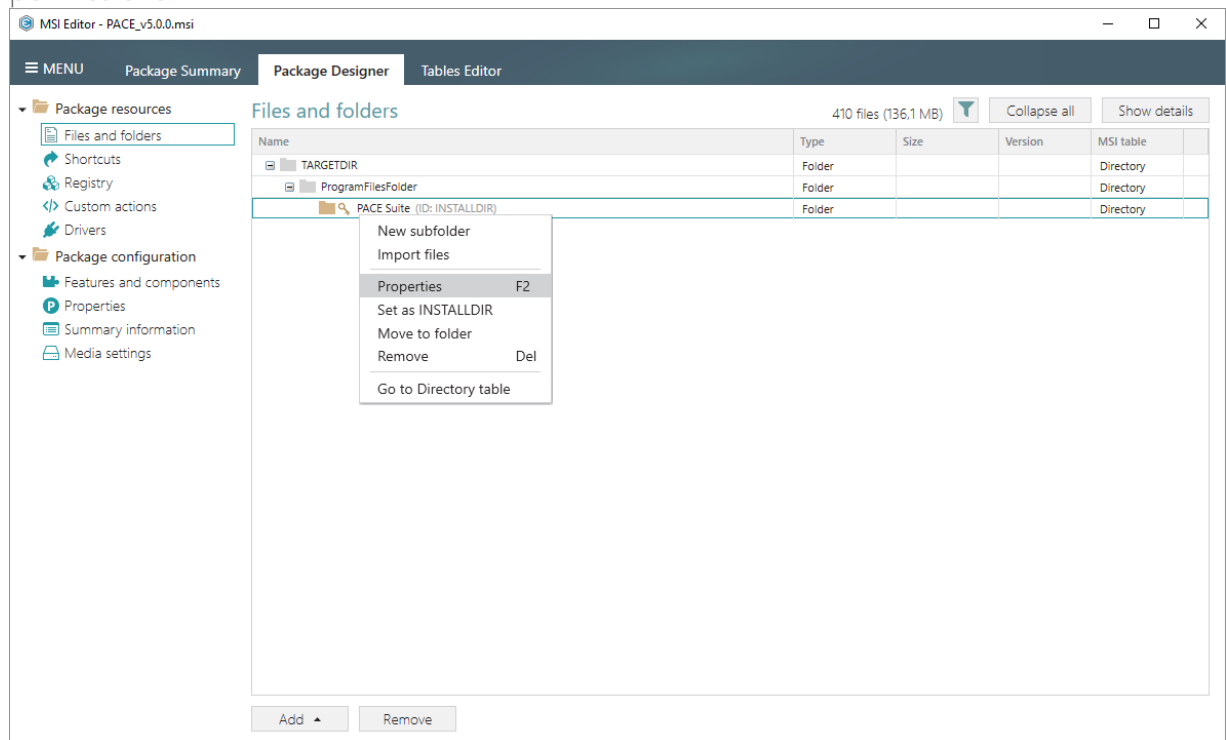
- Go to the Files and folders tab of the Package Designer.



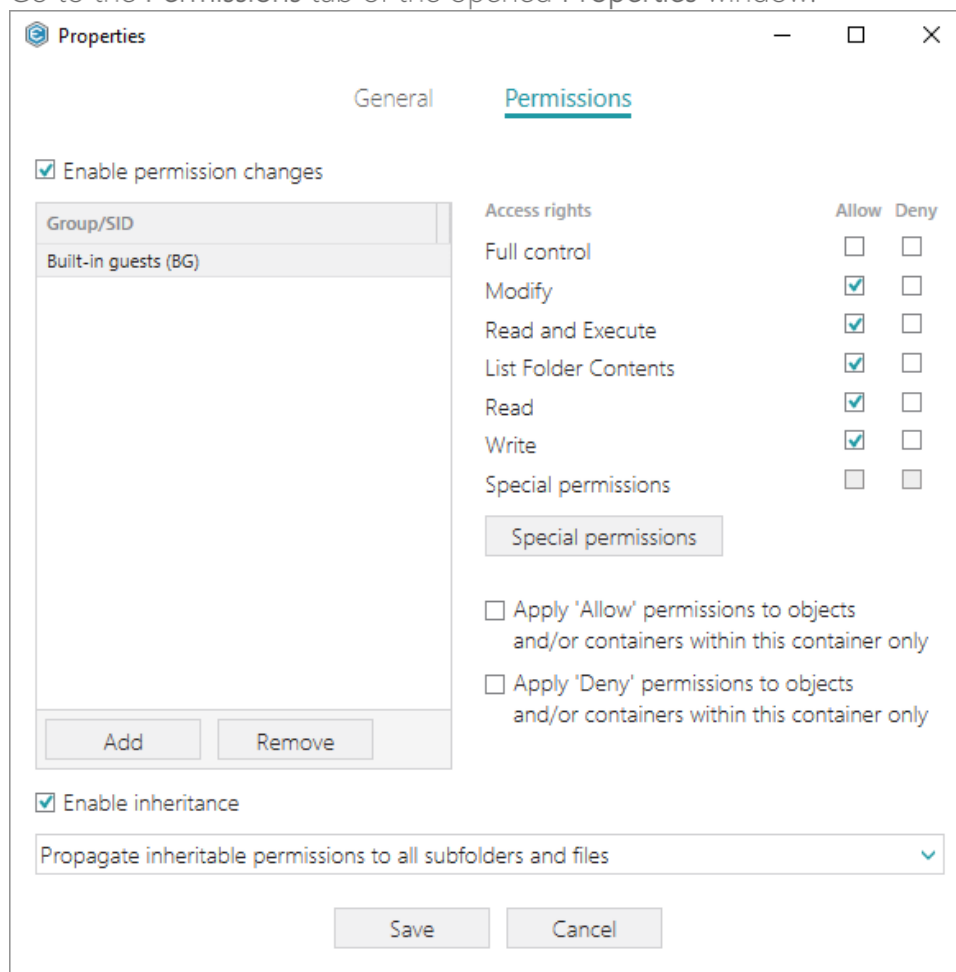
- (Optional) Click on the Filter and apply the Hide items without permissions filter to locate resources with the changed permissions settings.



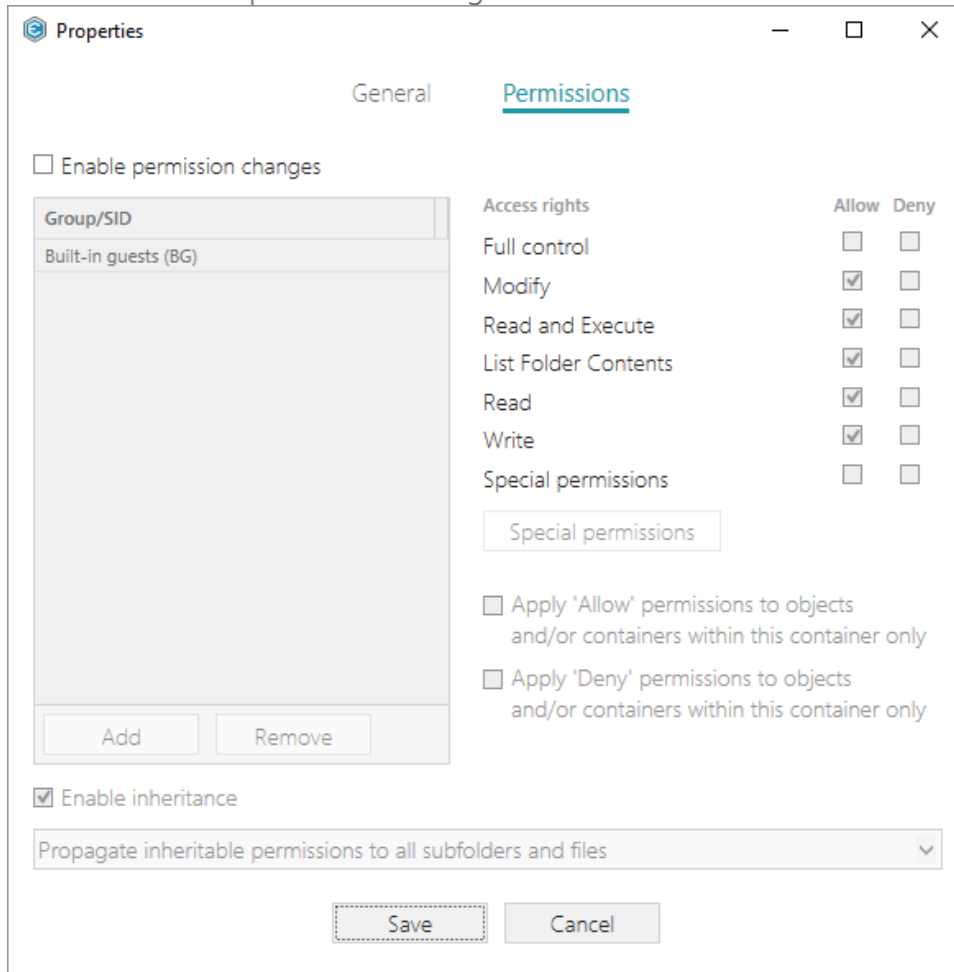
- Select Properties from the context menu of a folder or a file, for which you want to remove permissions.



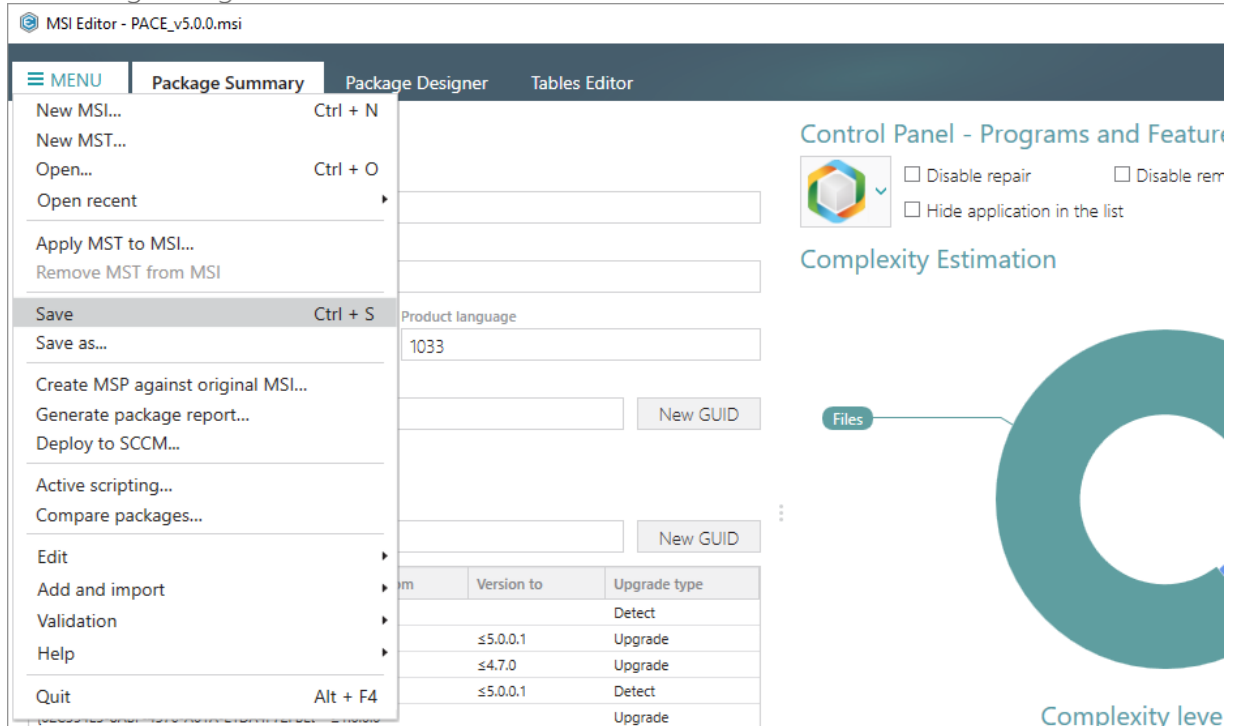
- Go to the Permissions tab of the opened Properties window.



- Untick the Enable permission changes checkbox and click Save.



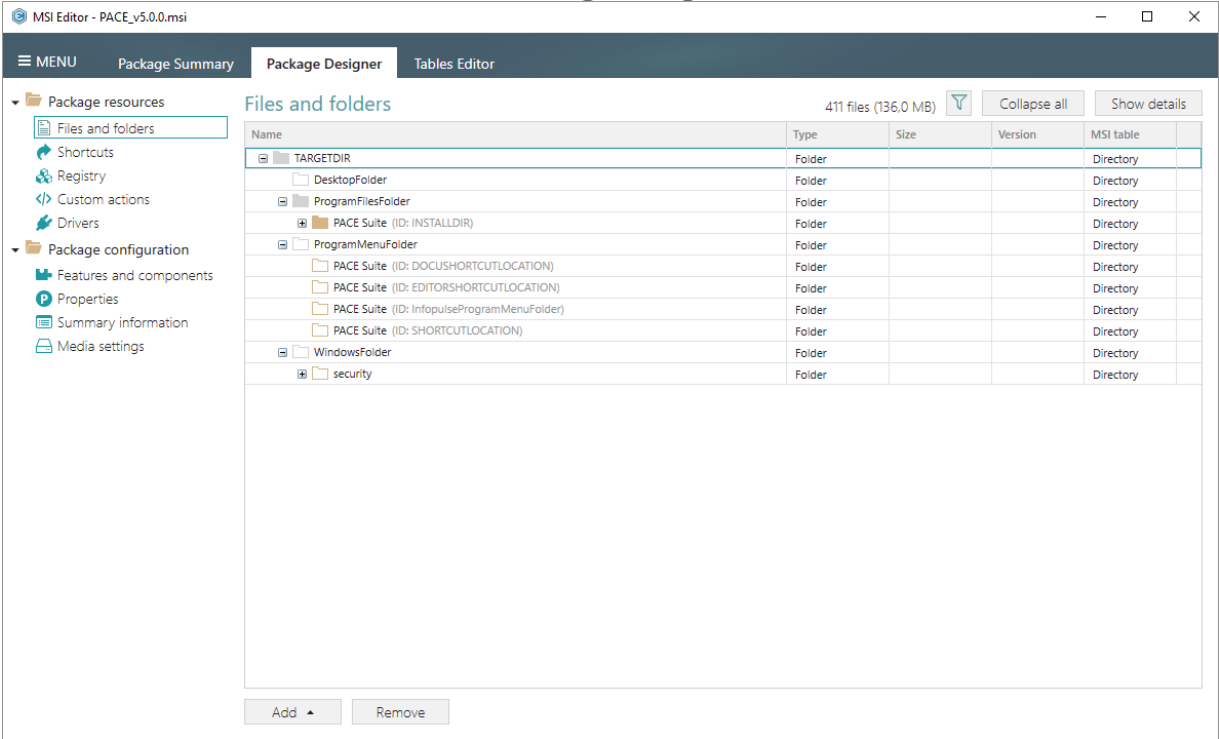
- For saving changes, select Save from MENU.



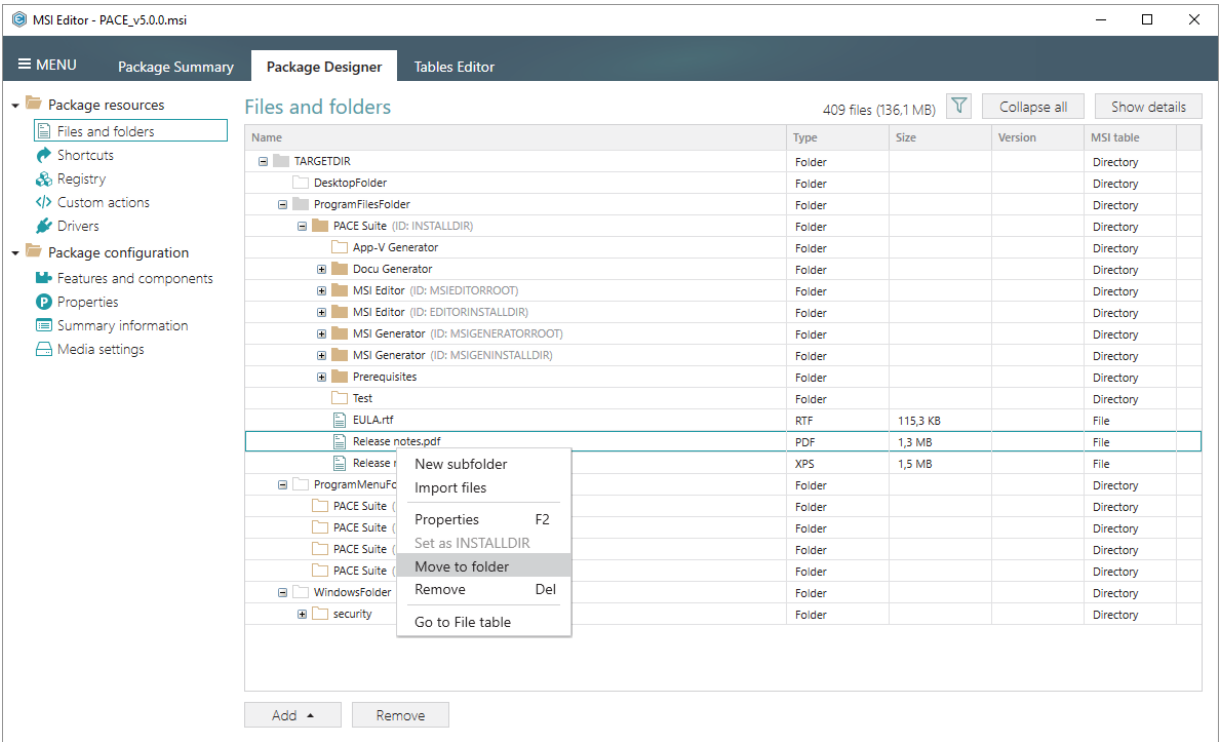
3.7.2.7 Move Files, Folders

Move a file or a folder from one folder to another. Note that moving few files of the multi-file component will result in adding new component and/or changing component details.

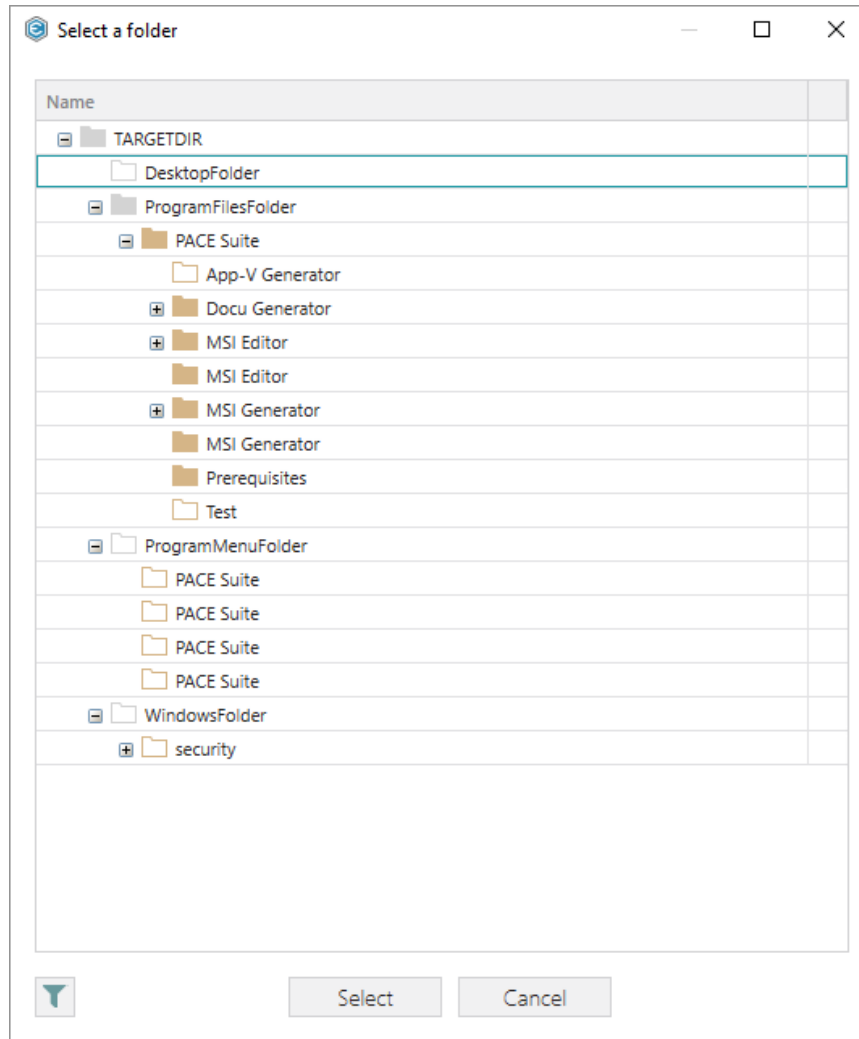
- Go to the Files and folders tab of the Package Designer.



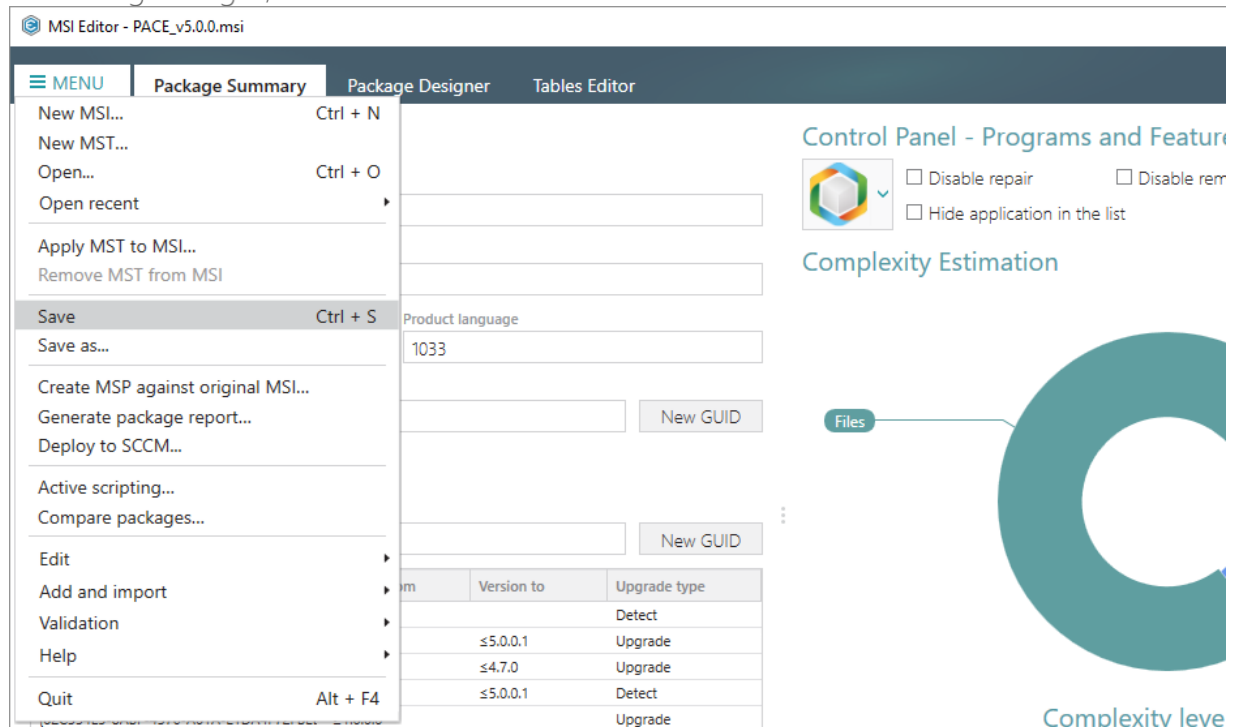
- Select Move to folder from the context menu of a file or a folder, which you want to move to another folder.



- Select a new destination folder from the folders tree and click Select.



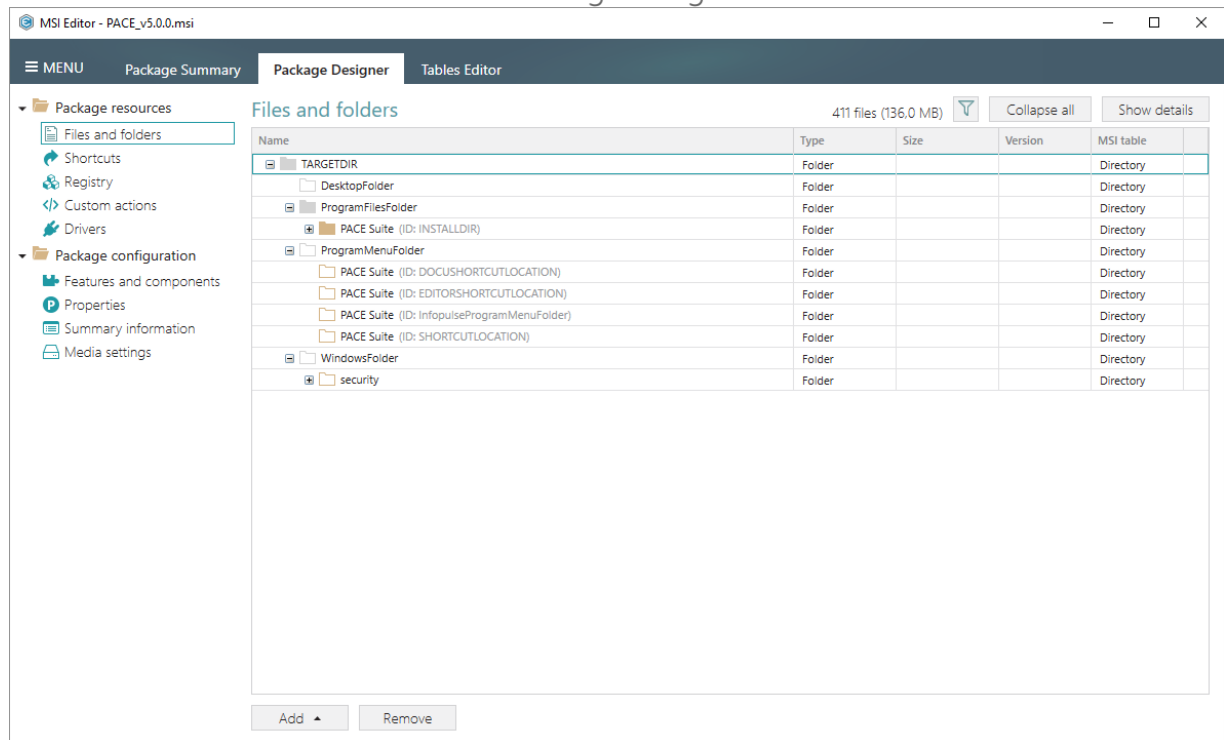
- For saving changes, select Save from MENU.



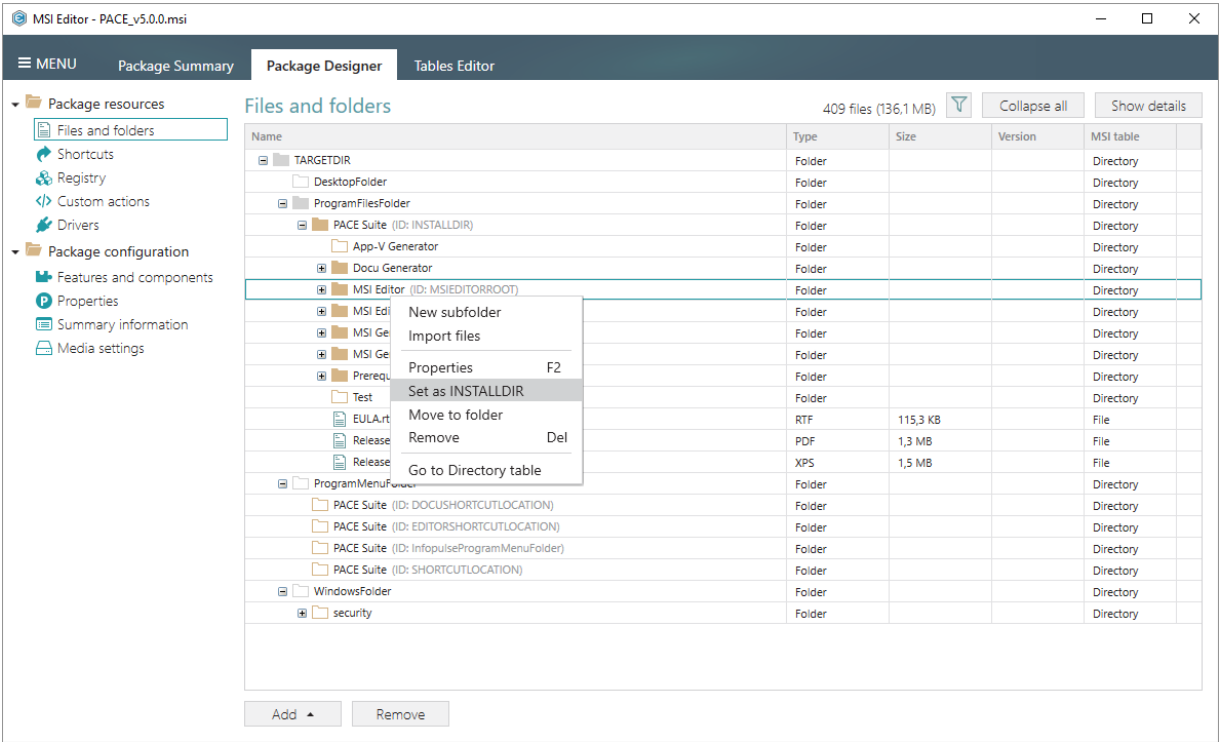
3.7.2.8 Set INSTALLDIR

Set a subfolder (user-defined folder) of the package as the INSTALLDIR. This means that an identifier of the selected folder will be changed to the 'INSTALLDIR' value. Note that identifier of a folder is used as the folder property. Usually, the INSTALLDIR property represents the main product installation folder, and you can re-define this path via the command line or a Custom Action.

- Go to the Files and folders tab of the Package Designer.

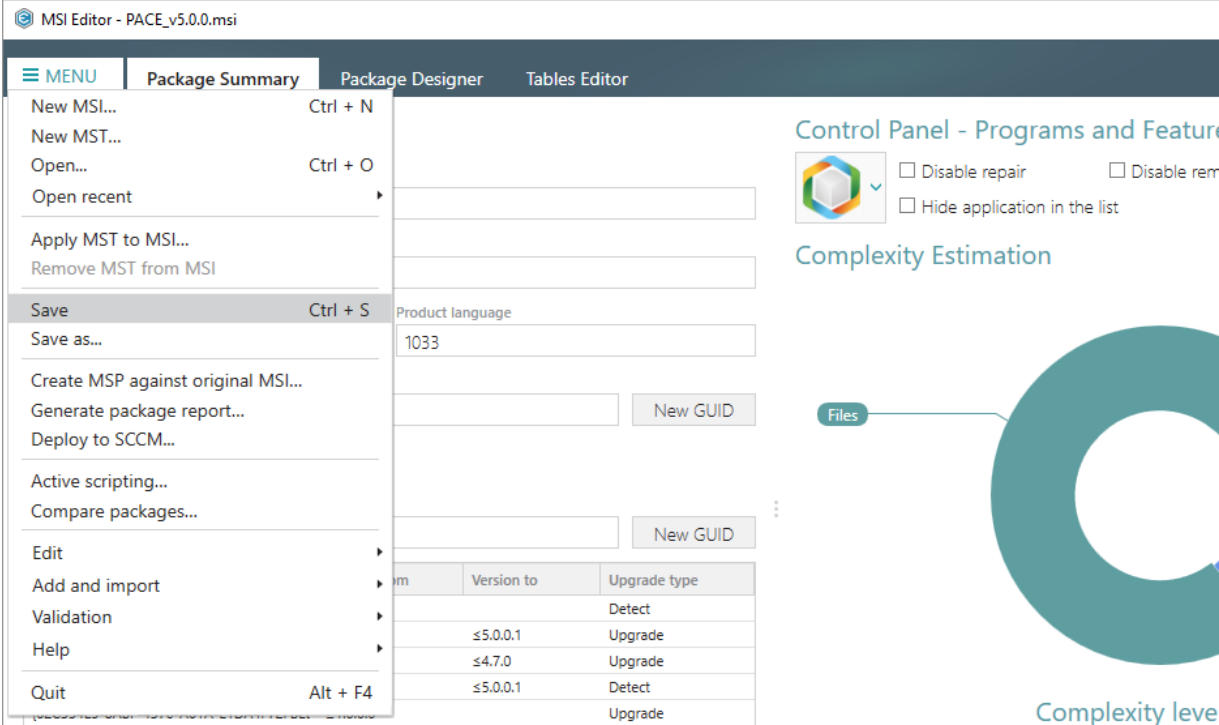


- Select Set as INSTALLDIR from the context menu of a subfolder (user-defined folder), which you want to set as the INSTALLDIR property. Note that system folders, displayed using the grey folder icon, could not be set as INSTALLDIR.



The INSTALLDIR identifier is displayed in the parentheses.

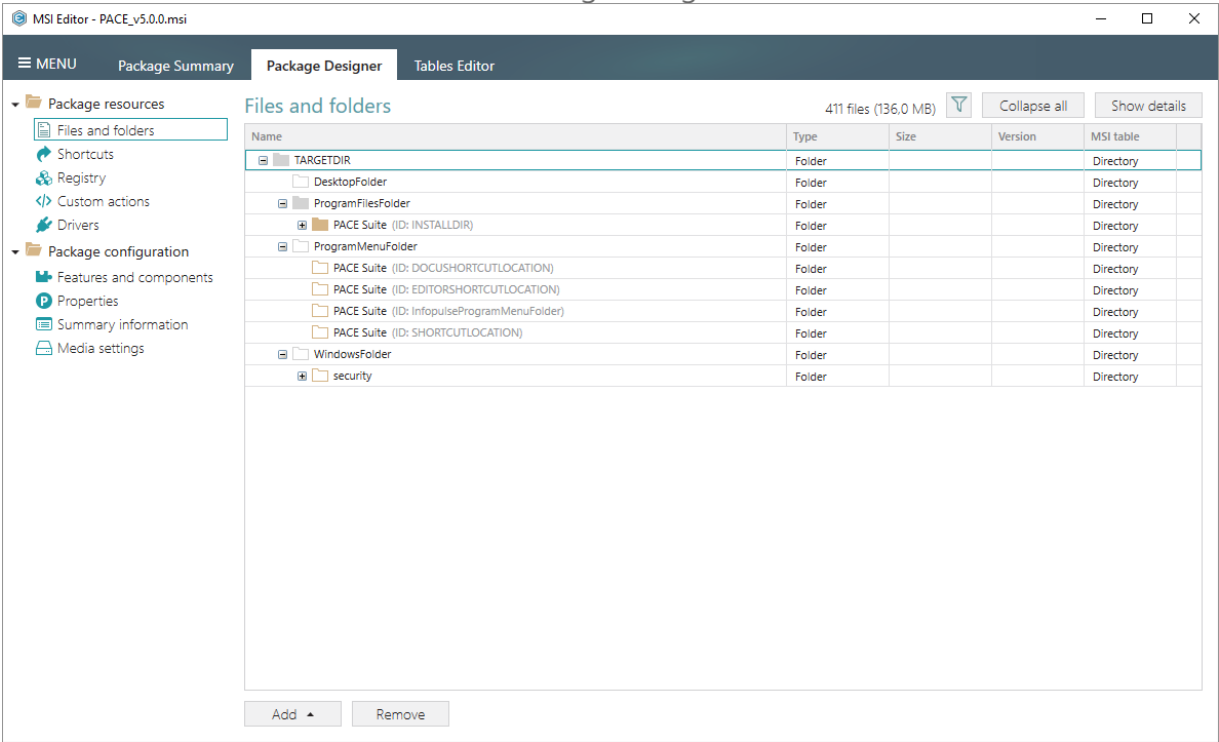
- For saving changes, select Save from MENU.



3.7.2.9 Edit INI File

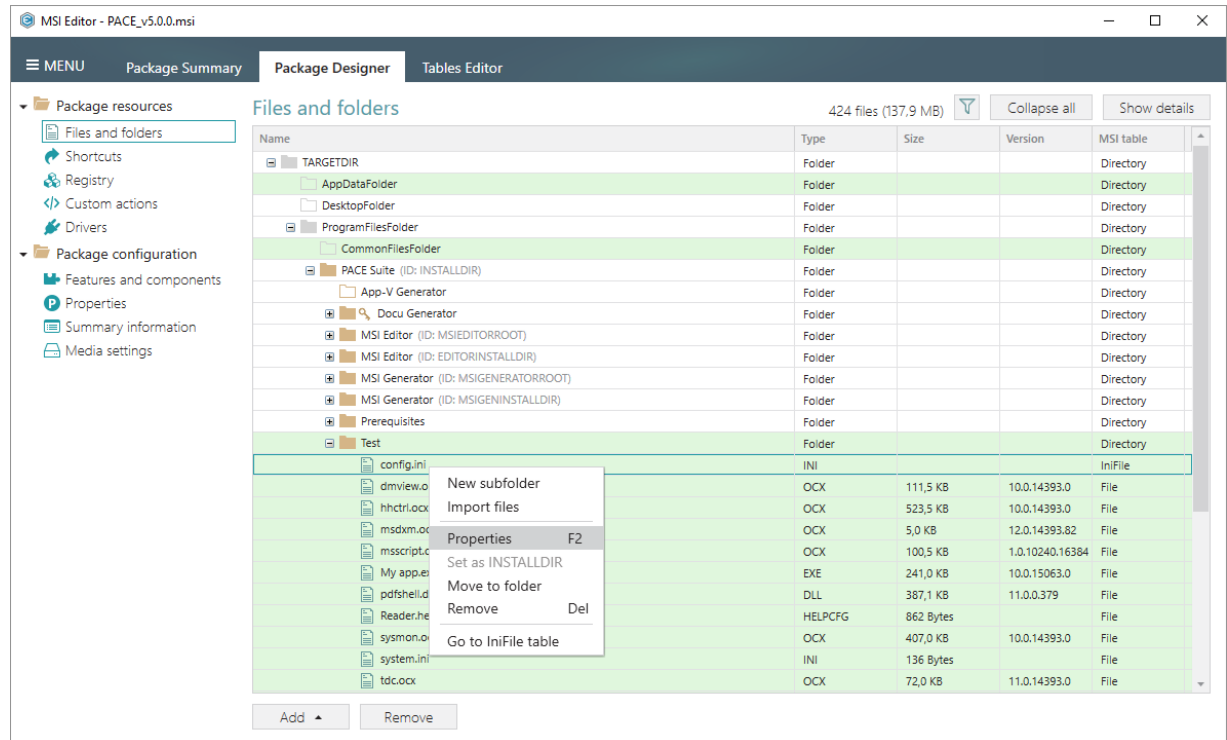
Edit a name, a destination location and a content of the INI file, which has been read from the IniFile table. Note that content of the binary files, which has been read from the File table, could not be modified using the approach, described below.

- Go to the Files and folders tab of the Package Designer.

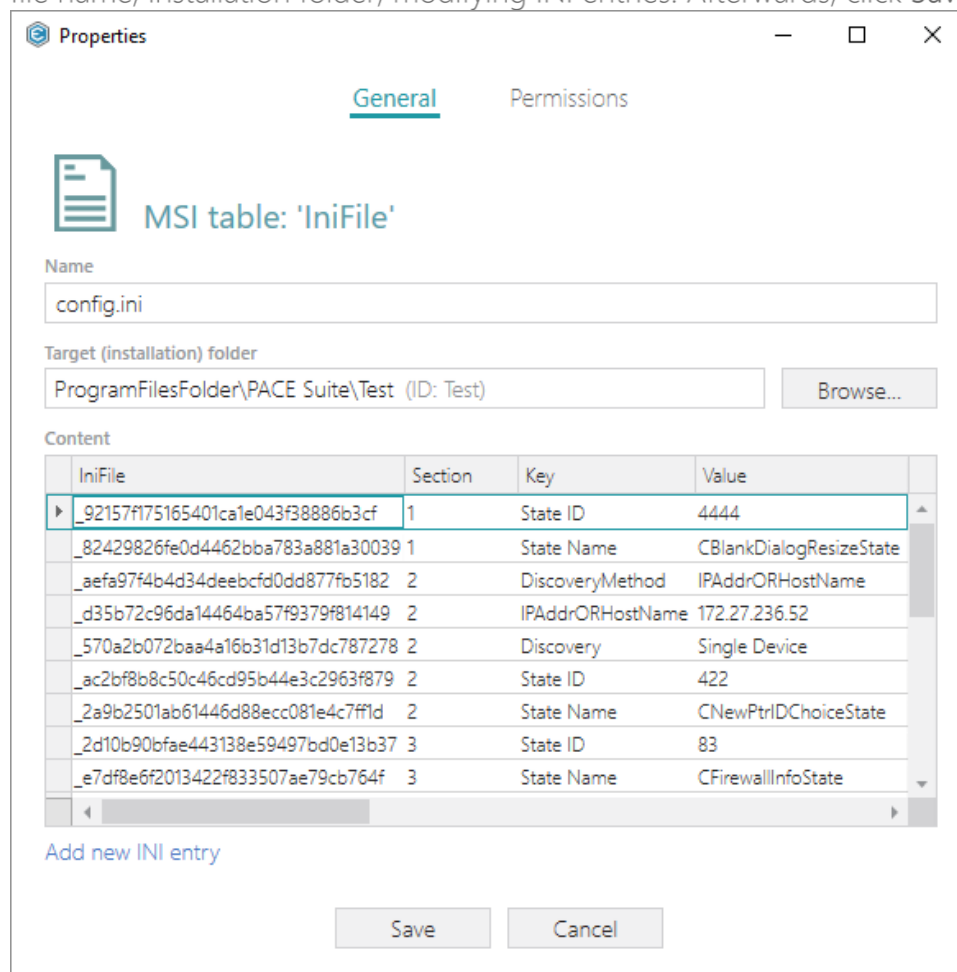


- Locate INI file, which you want to edit, and ensure that this file is located in the IniFile table. Note that only files from IniFile table could be reviewed and modifier because their content is stored in MSI database. Files from the File table are binary files and their content could not be reviewed on the fly. Select **Properties** from the context menu of the INI file you want

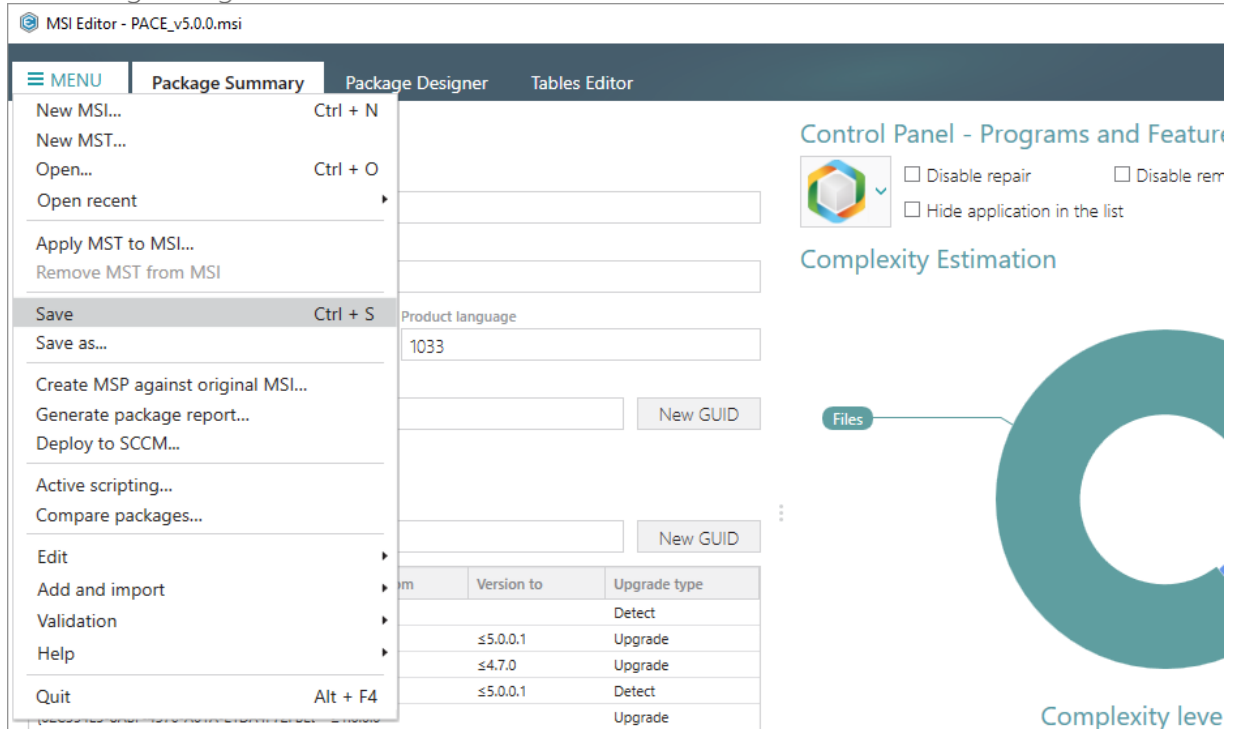
to edit.



- Using the Properties window make the necessary changes to the INI file, such as changing file name, installation folder, modifying INI entries. Afterwards, click Save.



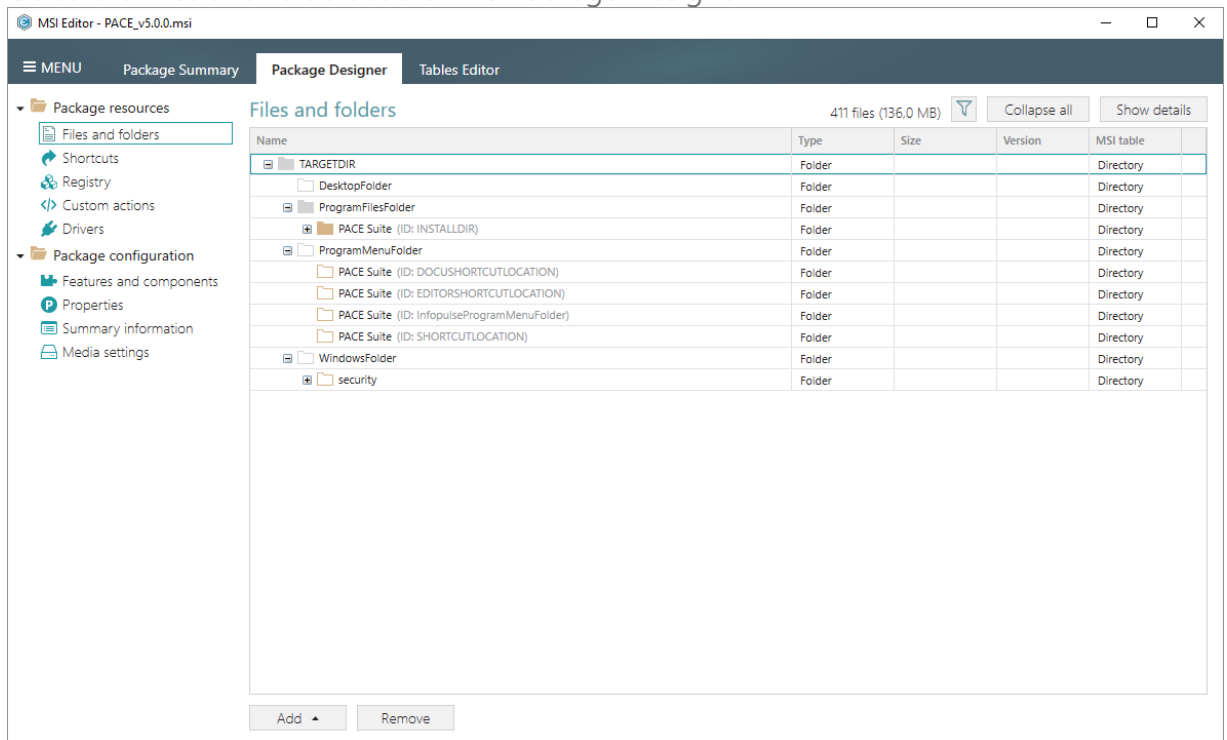
- For saving changes, select Save from MENU.



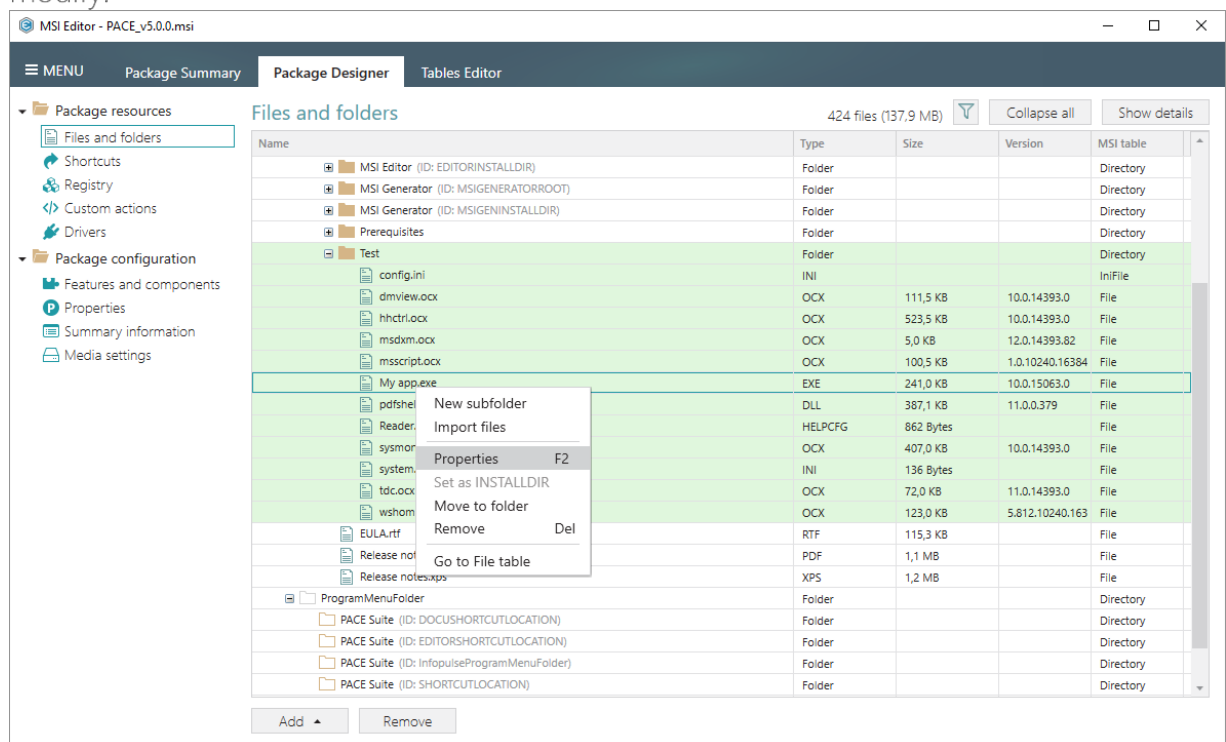
3.7.2.10 Edit File Properties

Edit a file name, an identifier, a destination location, a component and many other attributes of the binary file, which has been read from the File table.

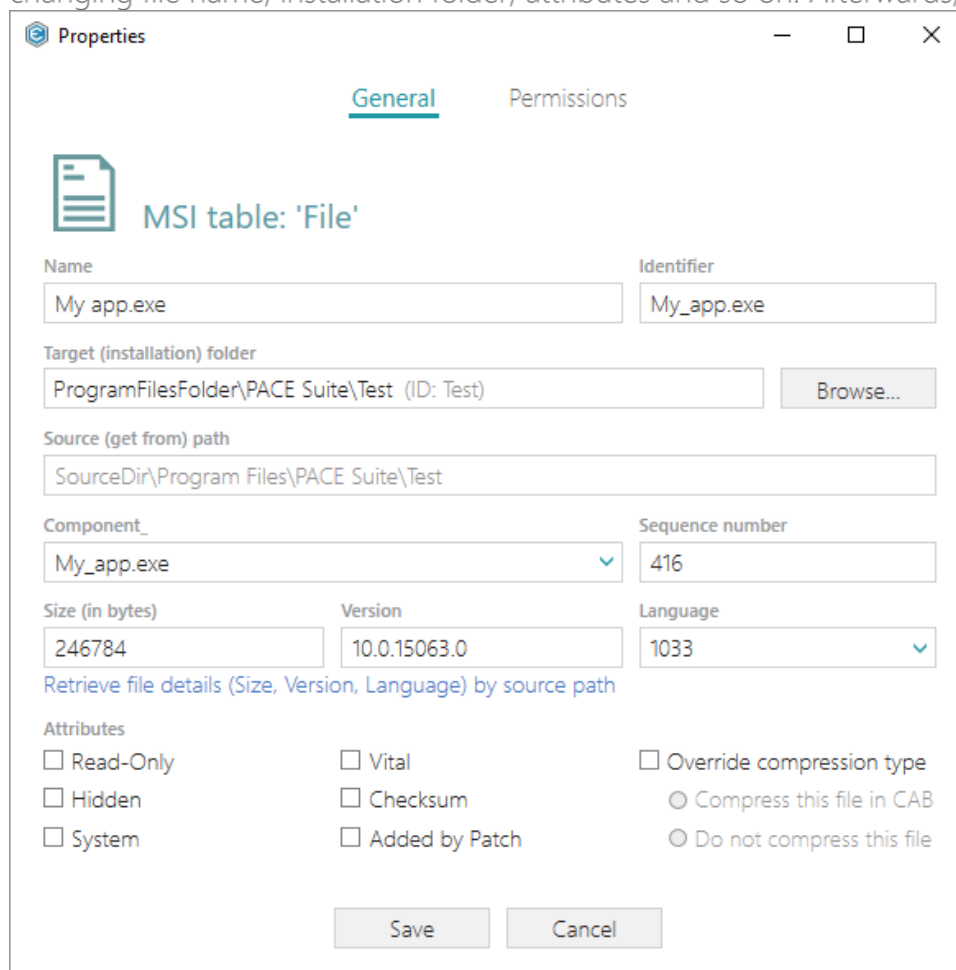
- Go to the Files and folders tab of the Package Designer.



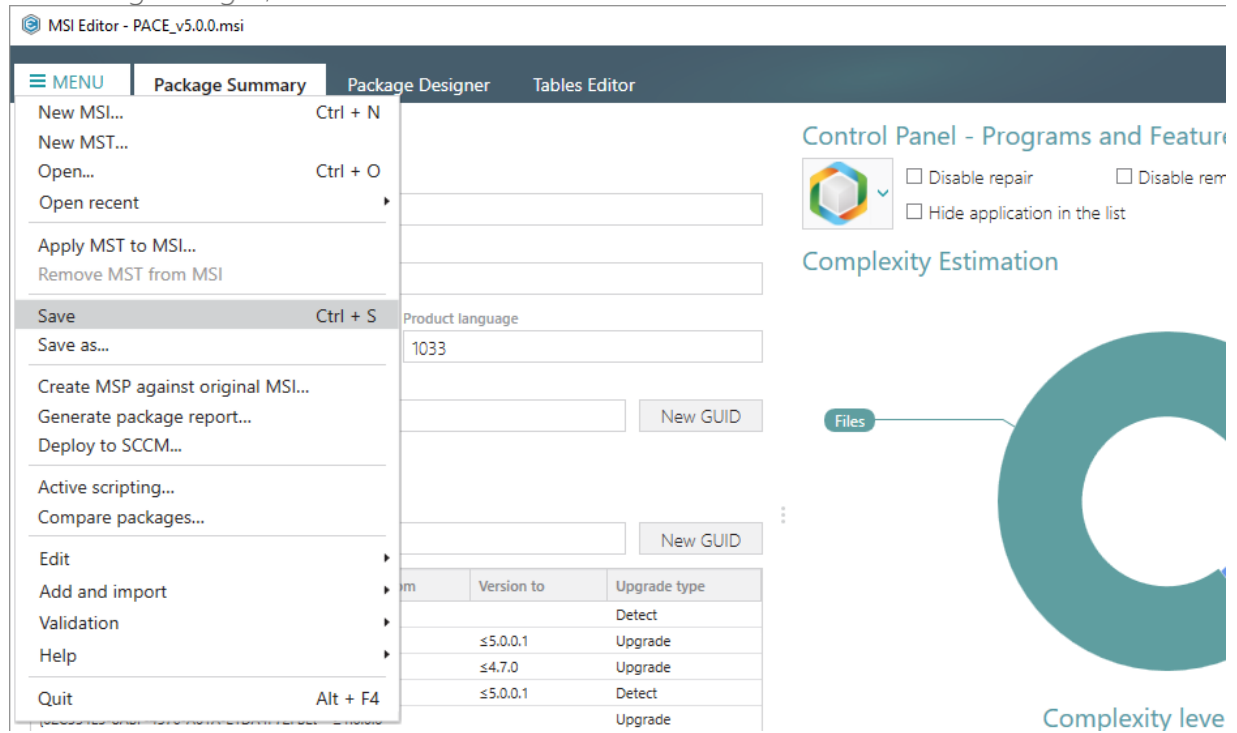
- Select Properties from the context menu of a file, details of which you want to review and modify.



- Using the Properties window make the necessary changes to the file details, such as changing file name, installation folder, attributes and so on. Afterwards, click Save.



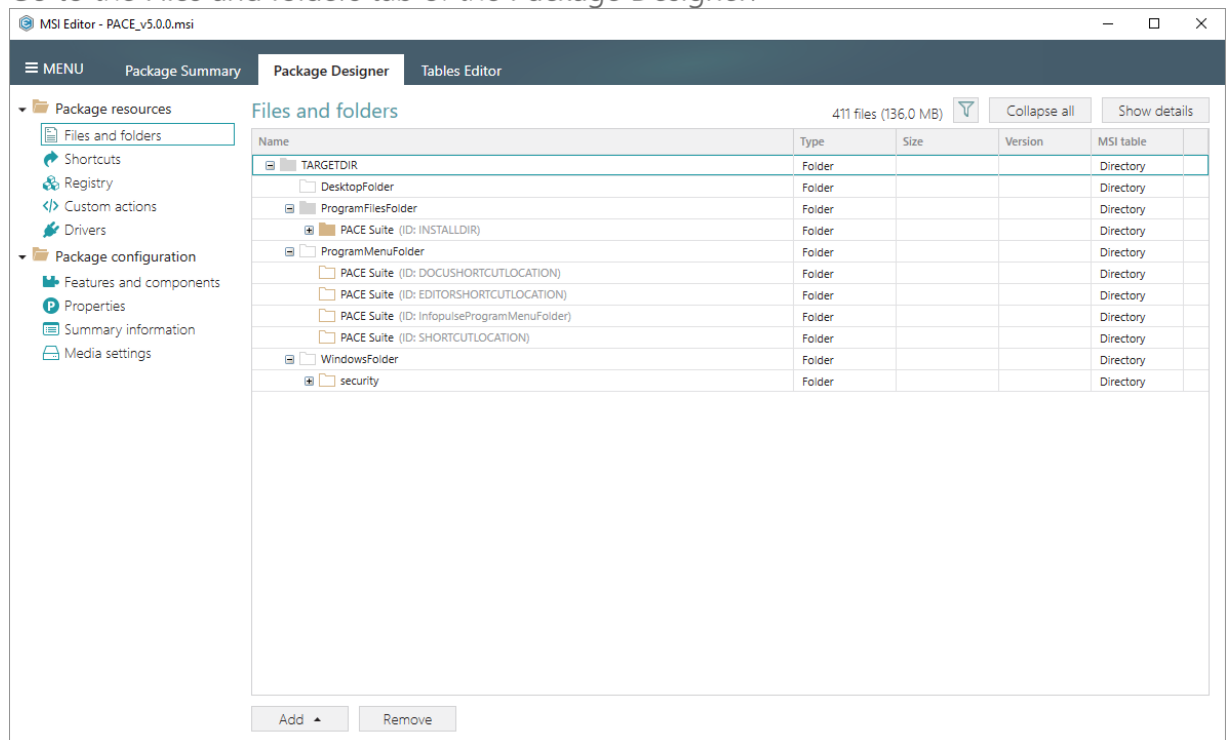
- For saving changes, select Save from MENU.



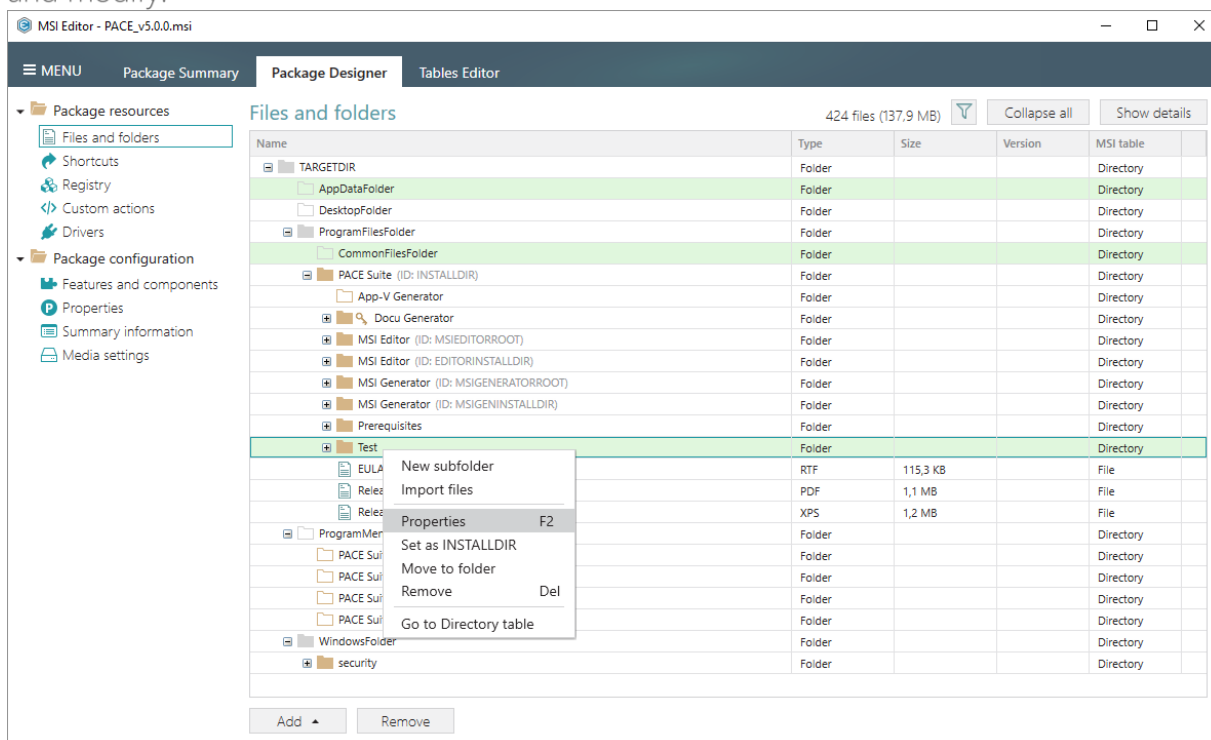
3.7.2.11 Edit Folder Properties

Edit a folder target and source name, an identifier, a parent folder.

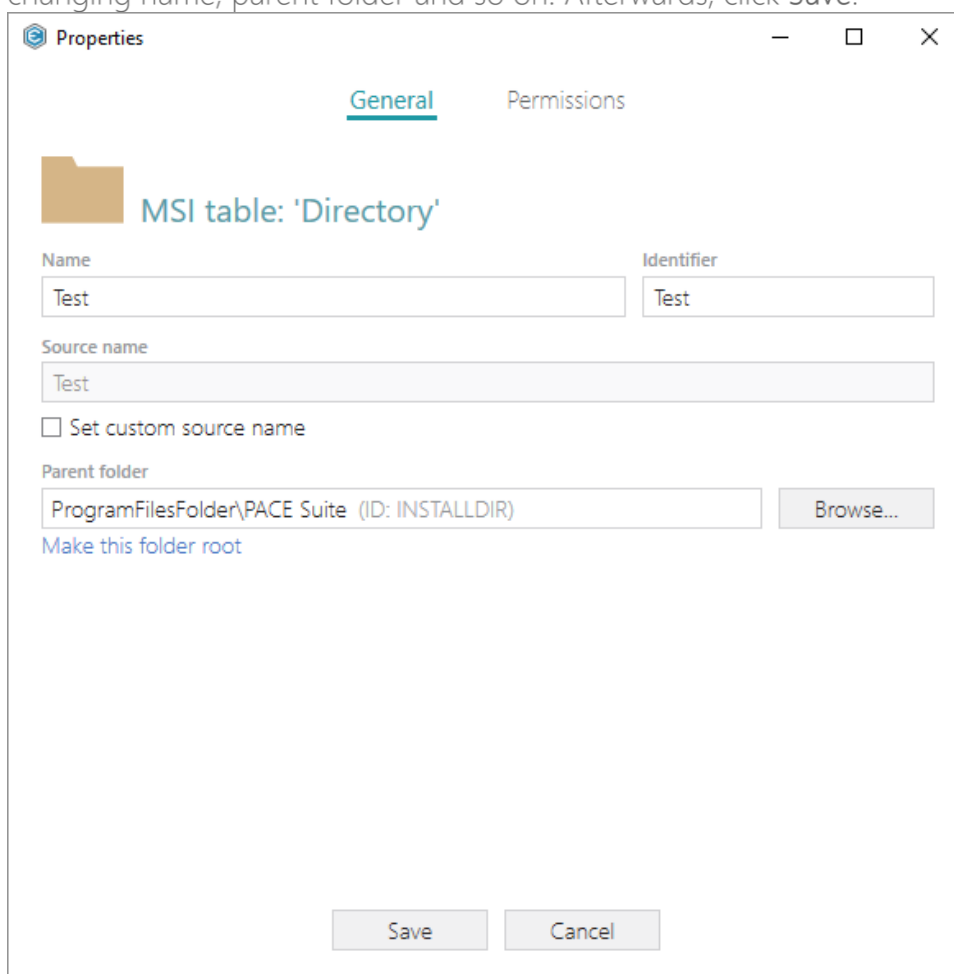
- Go to the Files and folders tab of the Package Designer.



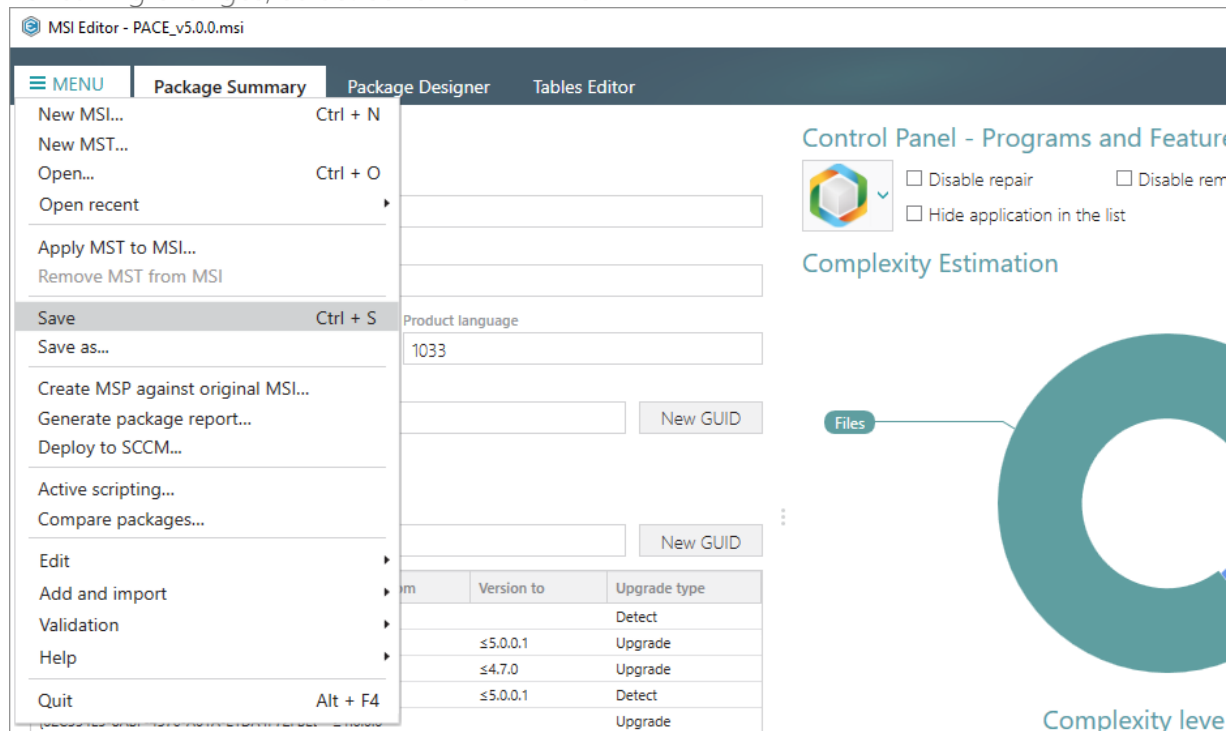
- Select Properties from the context menu of a folder, details of which you want to review and modify.



- Using the Properties window, make the necessary changes to the folder details, such as changing name, parent folder and so on. Afterwards, click Save.



- For saving changes, select **Save** from MENU.



3.7.3 Shortcuts

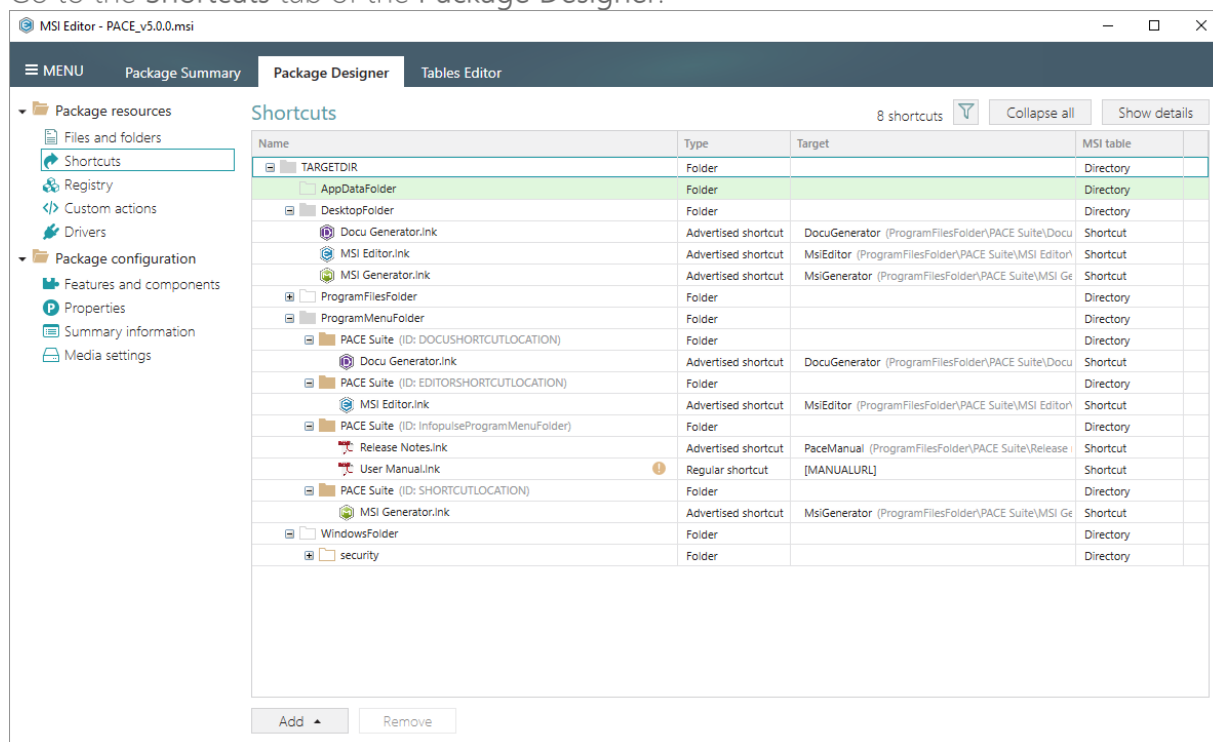
Choose a scenario that better suits your needs:

- Add Shortcut**, described in section 3.7.3.1
Add a regular or an advertised shortcut that points to a file, folder or URL.
- Import Shortcuts**, described in section 3.7.3.2
Import shortcuts from the file system to the package.
- Move Shortcut**, described in section 3.7.3.3
Move a shortcut to another folder.
- Edit Shortcut Properties**, described in section 3.7.3.4
Edit shortcut details such as icon, name, installation folder, shortcut type, arguments, description and so on.

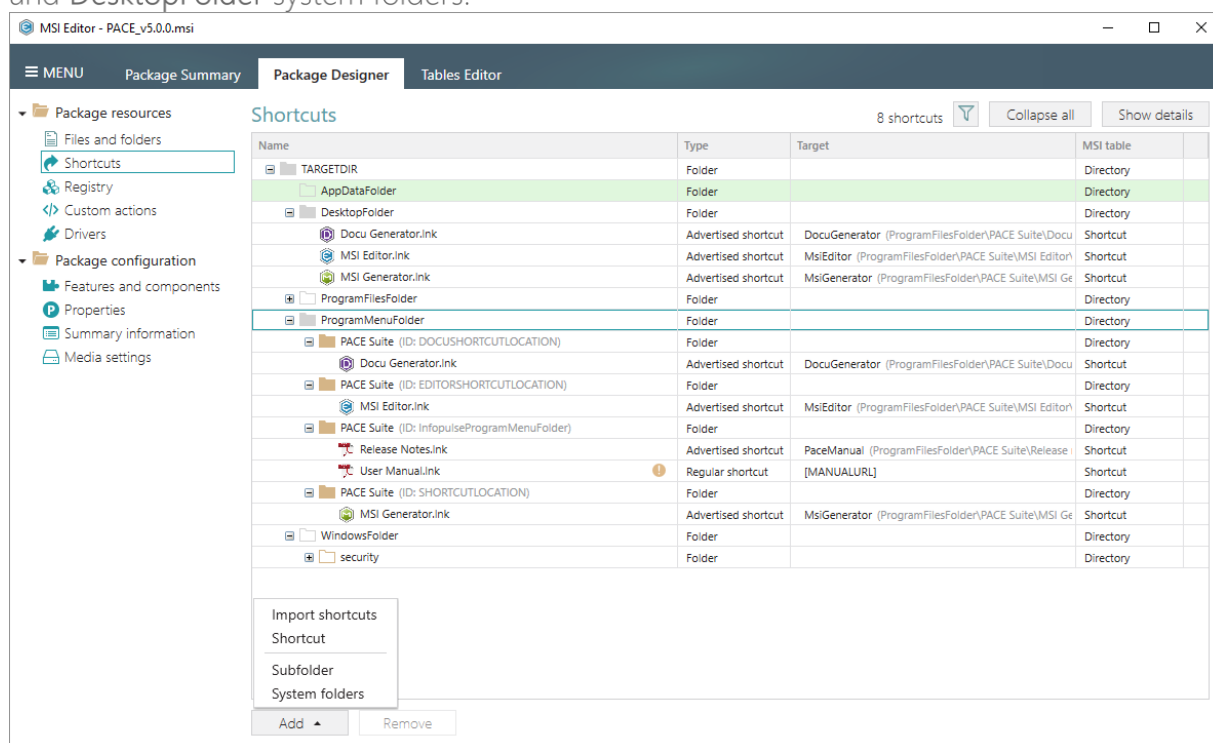
3.7.3.1 Add Shortcut

Add a regular or an advertised shortcut that points to a file, folder or URL.

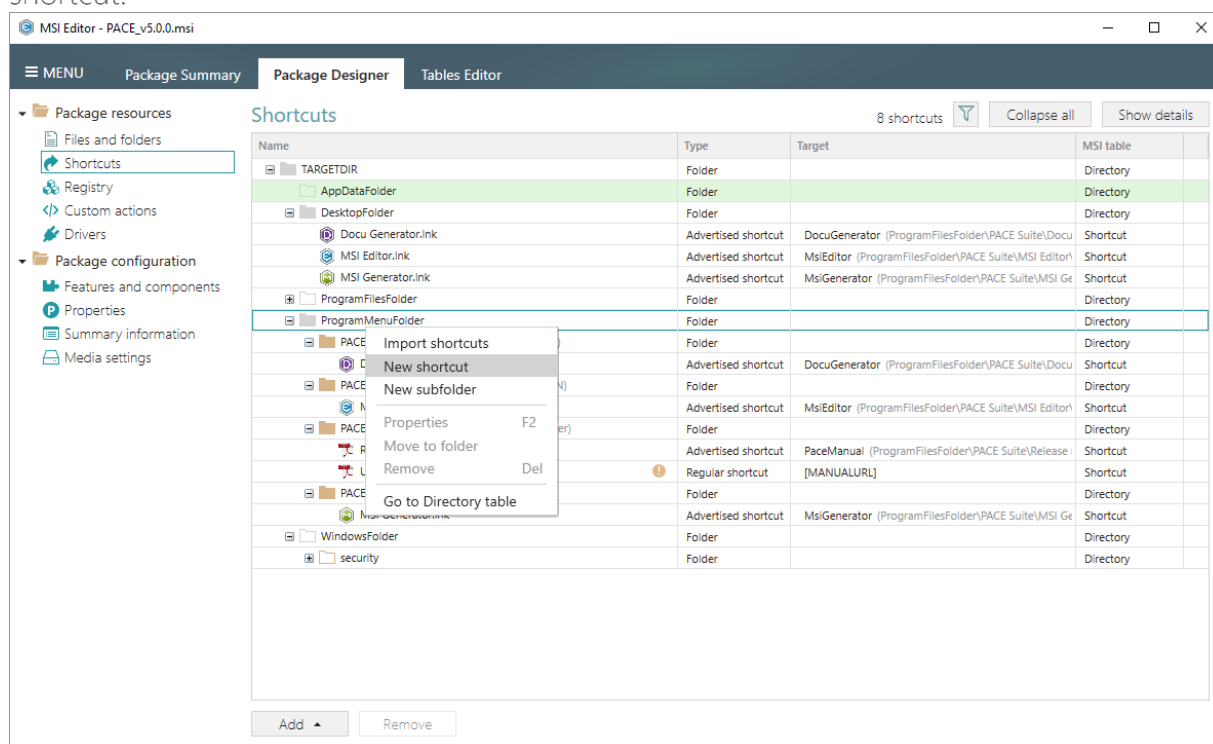
- Go to the Shortcuts tab of the Package Designer.



- Check that the folders tree contains a folder, where you want to create this shortcut. If needed, add the missing system folders or subfolders clicking Add -> System folders or Add -> Subfolder. Usually, application shortcuts are installed to the ProgramMenuFolder and DesktopFolder system folders.

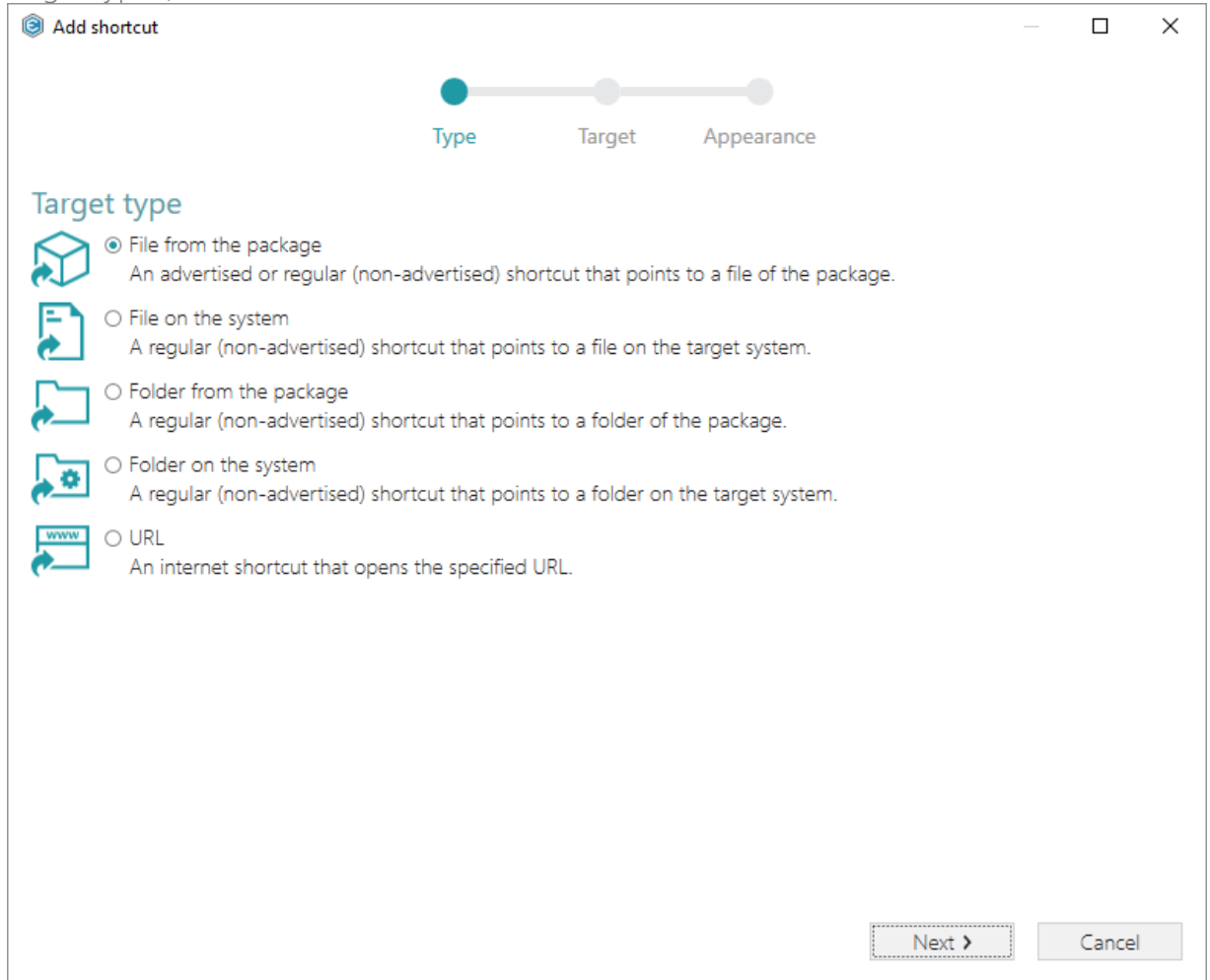


- Select New shortcut from the context menu of a folder, where you want to create a shortcut.



- Select a type of the shortcut target and click Next.
(The following instructions describe creation of the shortcut of the 'File from the package')

target type.)



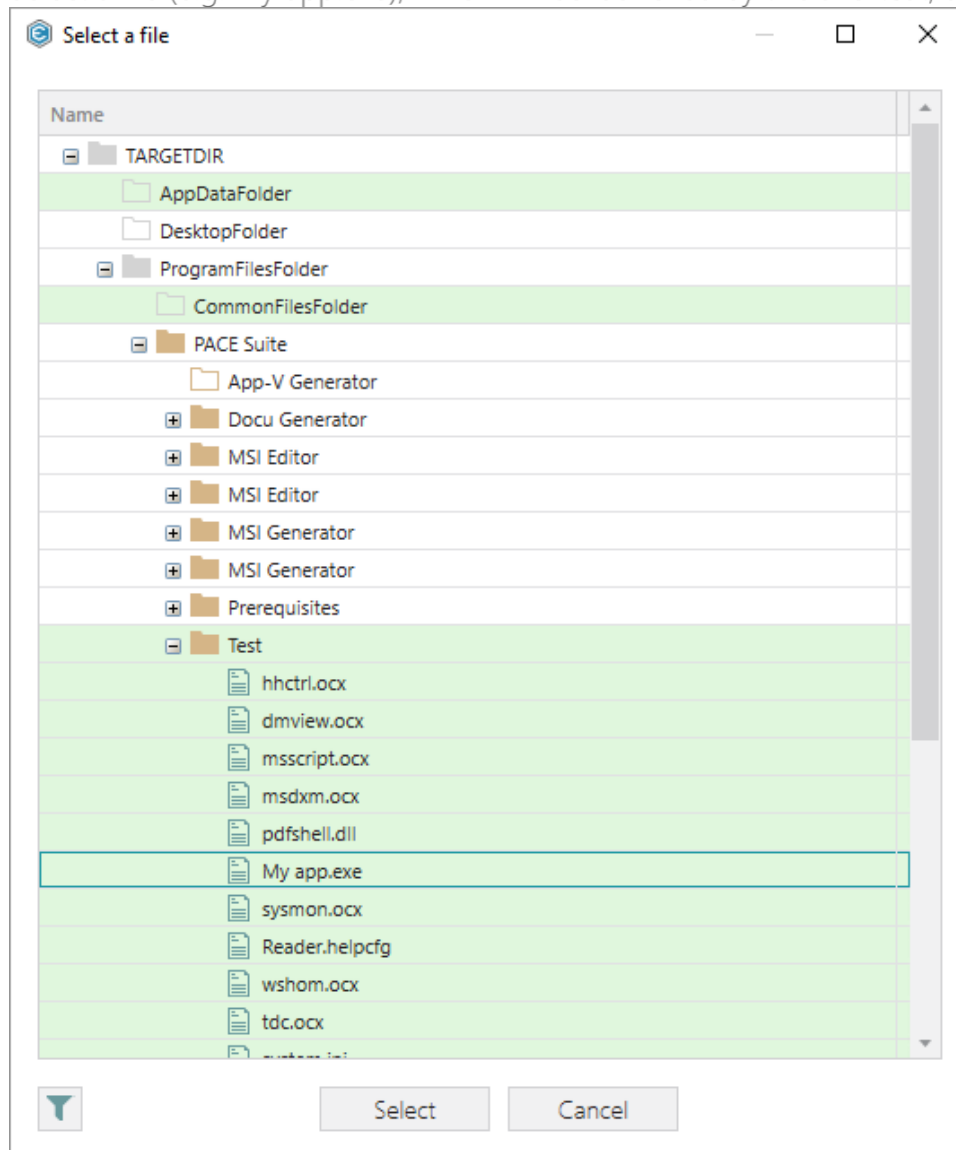
- On the second step, click **Browse**, located next to the Shortcut target field, to set a target of the shortcut.

The screenshot shows the 'Add shortcut' dialog box with the 'Target' step selected. The progress bar at the top indicates three steps: 'Type' (completed with a checkmark), 'Target' (current step), and 'Appearance' (pending). The 'Target' section contains the following fields and controls:

- Shortcut target:** A text input field with a red exclamation mark icon and a 'Browse...' button.
- Arguments:** A text input field.
- Start in (WkDir):** A dropdown menu showing 'Folder' with a downward arrow, and a text input field below it with a red exclamation mark icon and a 'Browse...' button.
- Shortcut type:** Two radio button options: 'Advertised shortcut' (selected) and 'Regular (non-advertised) shortcut'.

At the bottom right, there are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

- Select a file (e.g. My app.exe), which will be launched by this shortcut, and click Select.



- If needed, enter a shortcut Arguments, change the Start in path (select a folder or a property), and select a Shortcut type. Note that only the Advertised shortcut supports advertisement and repair. This means that if the executable to which the shortcut is pointing is not there then windows installer will repair the application and replace the missing files.

Then, click Next.

Add shortcut

✓

TypeTargetAppearance

Target

Shortcut target

ProgramFilesFolder\PACE Suite\Test\My app.exe (ID: My_app.exe)

Browse...

Arguments

Start in (WkDir)

Folder

ProgramFilesFolder\PACE Suite\Test (ID: Test)

Browse...

Shortcut type

☒ Advertised shortcut

☐ Regular (non-advertised) shortcut

< Back

Next >

Cancel

- On the last step, enter a **Shortcut name**, choose a shortcut icon and, if needed, specify the shortcut **Description**, **Hot key** and **Run** options. Click **Finish** to add the shortcut.

Add shortcut

Progress: Type ✓ Target ✓ Appearance

Appearance

Shortcut icon: [Icon]

Shortcut name:

Description:

Hot key:

Run:

Buttons: < Back, Finish, Cancel

- For saving changes, select **Save** from **MENU**.

MSI Editor - PACE_v5.0.0.msi

MENU | Package Summary | Package Designer | Tables Editor

MENU options:

- New MSI... (Ctrl + N)
- New MST...
- Open... (Ctrl + O)
- Open recent
- Apply MST to MSI...
- Remove MST from MSI
- Save (Ctrl + S)**
- Save as...
- Create MSP against original MSI...
- Generate package report...
- Deploy to SCCM...
- Active scripting...
- Compare packages...
- Edit
- Add and import
- Validation
- Help
- Quit (Alt + F4)

Control Panel - Programs and Features

Complexity Estimation

Files

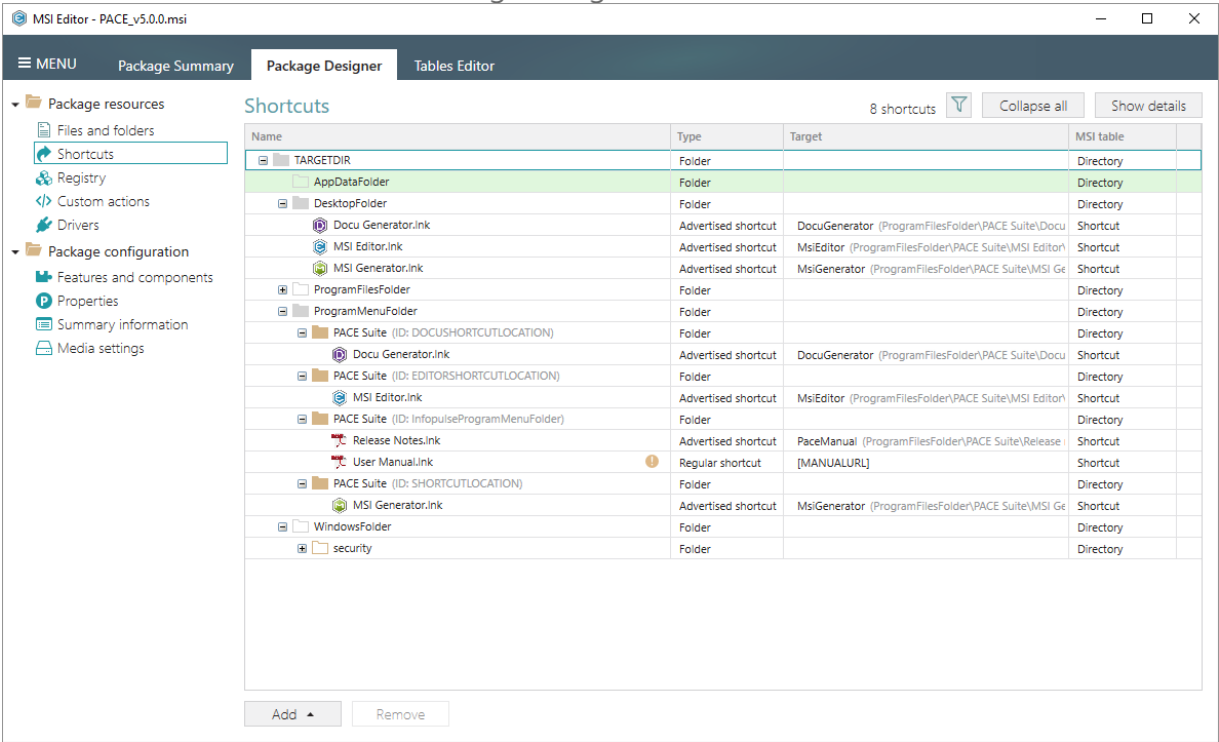
Complexity level

Product language	Version to	Upgrade type
1033		Detect
	≤5.0.0.1	Upgrade
	≤4.7.0	Upgrade
	≤5.0.0.1	Detect
		Upgrade

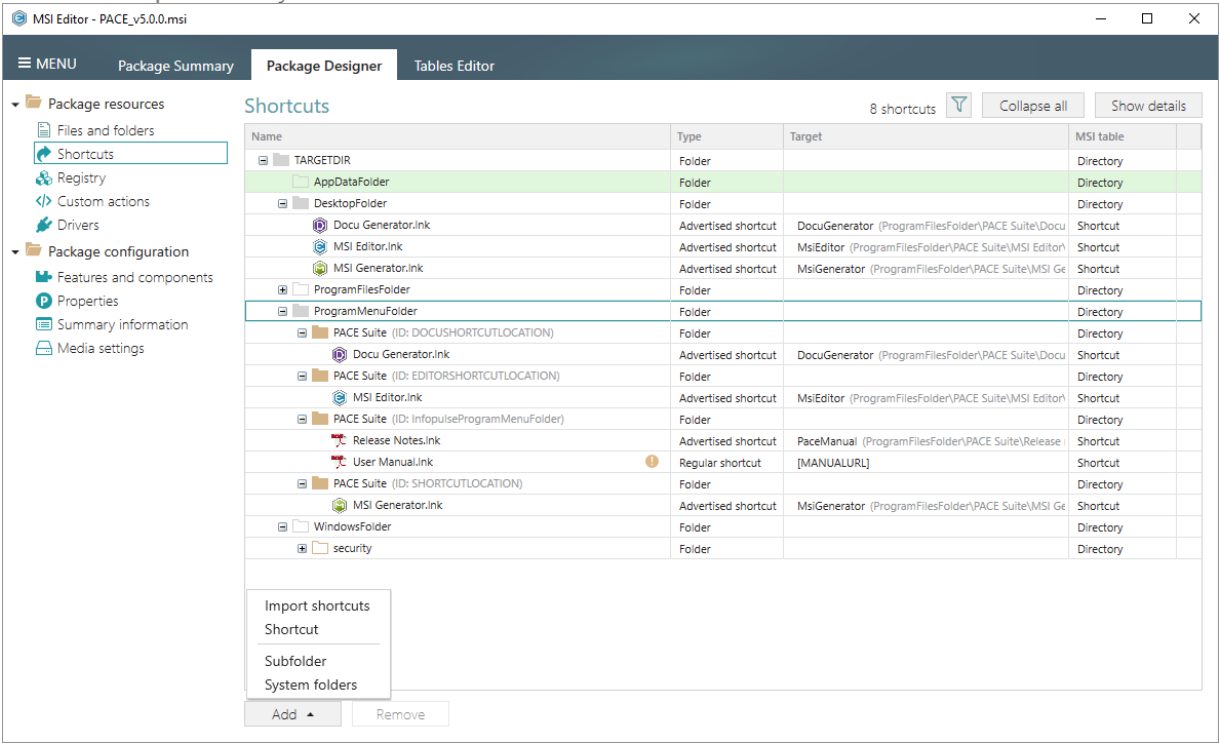
3.7.3.2 Import Shortcuts

Import shortcuts from the file system to the package.

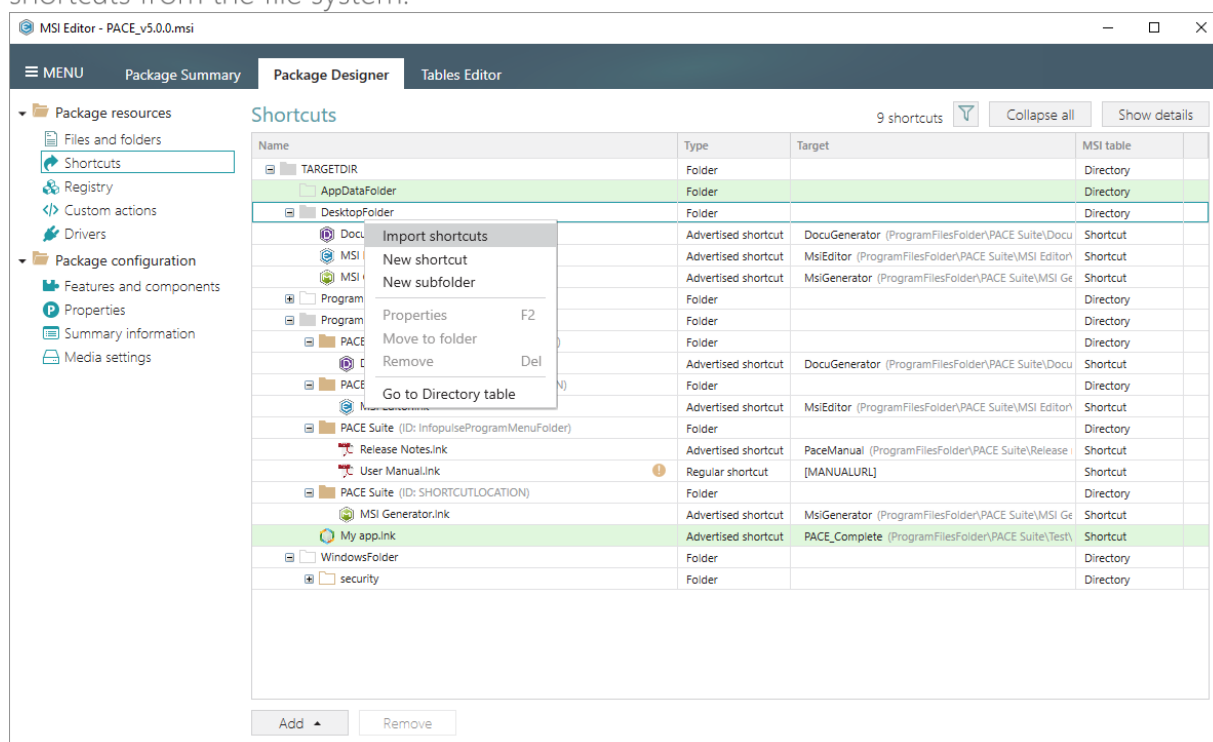
- Go to the Shortcuts tab of the Package Designer.



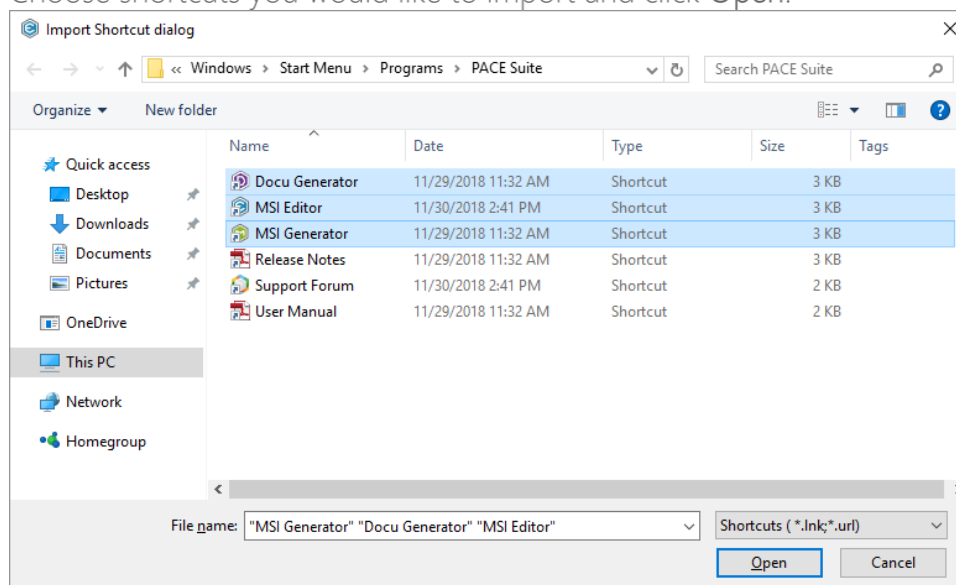
- Check that the folders tree contains a folder, to which you want to import shortcuts. If needed, add the missing system folders or subfolders clicking Add -> System folders or Add -> Subfolder. Usually, application shortcuts are installed to the ProgramMenuFolder and DesktopFolder system folders.



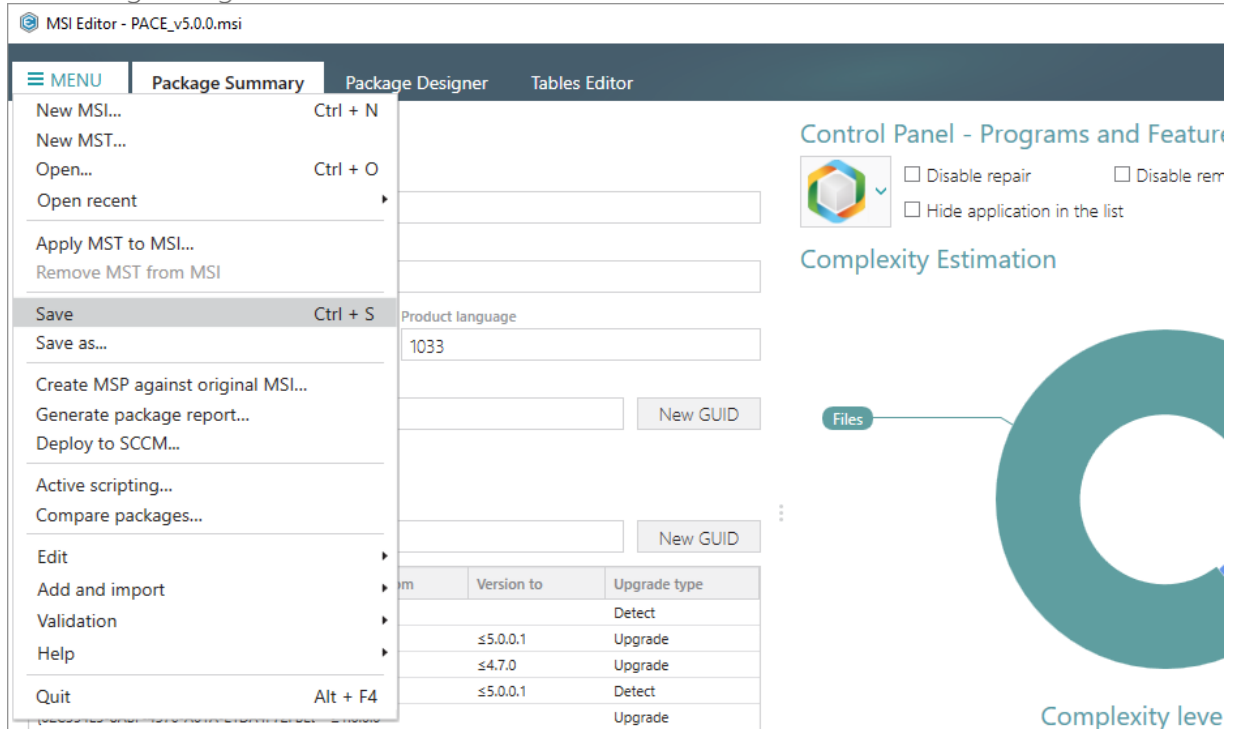
- Select Import shortcuts from the context menu of a folder, to which you want to import shortcuts from the file system.



- Choose shortcuts you would like to import and click Open.



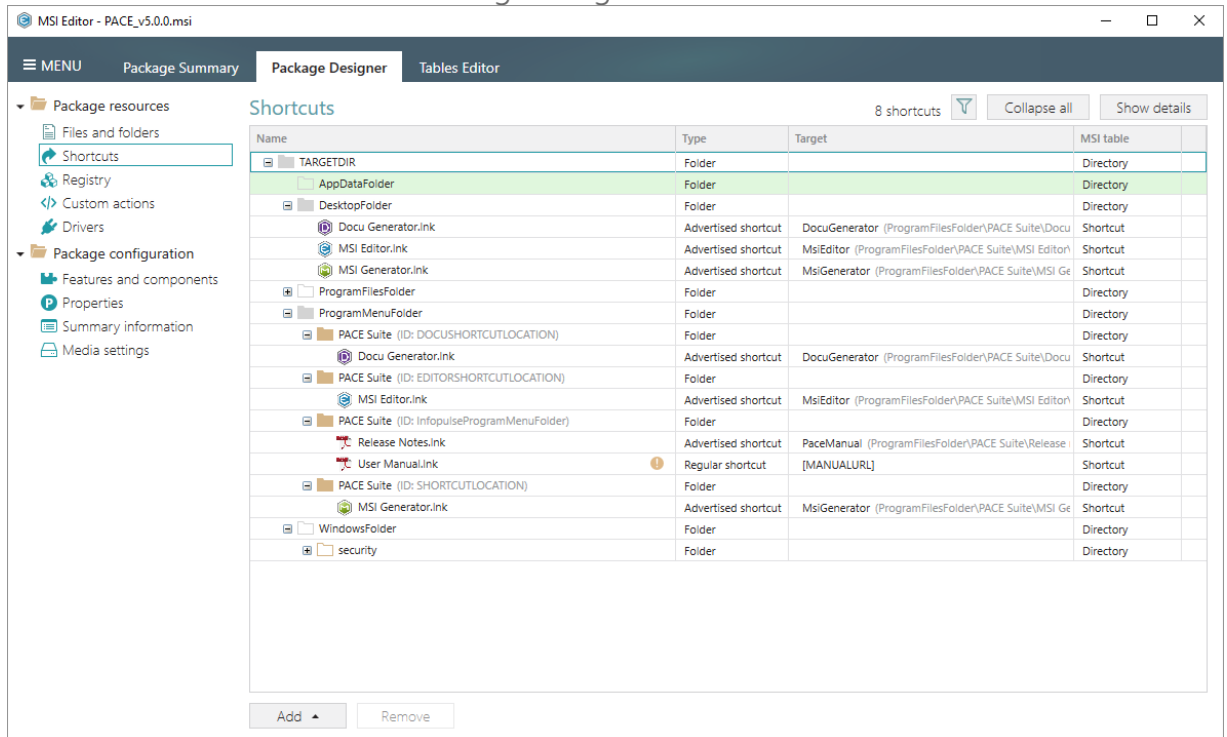
- For saving changes, select Save from MENU.



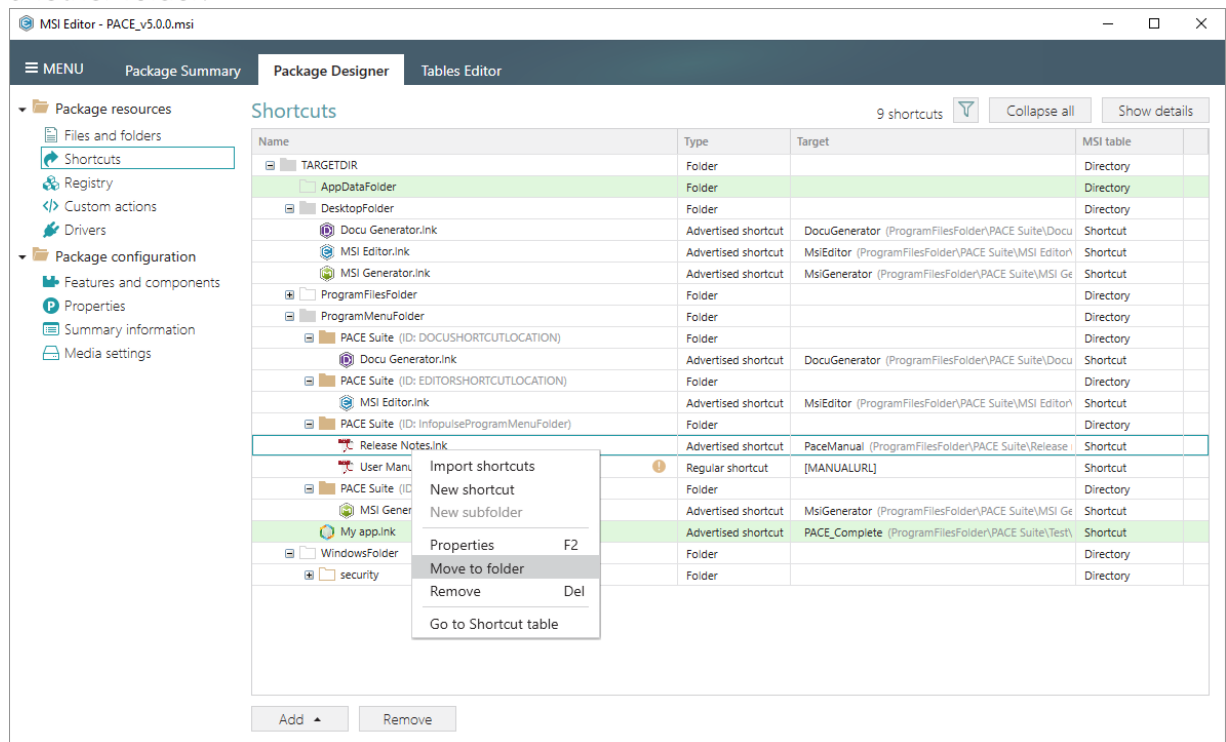
3.7.3.3 Move Shortcut

Move a shortcut to another folder.

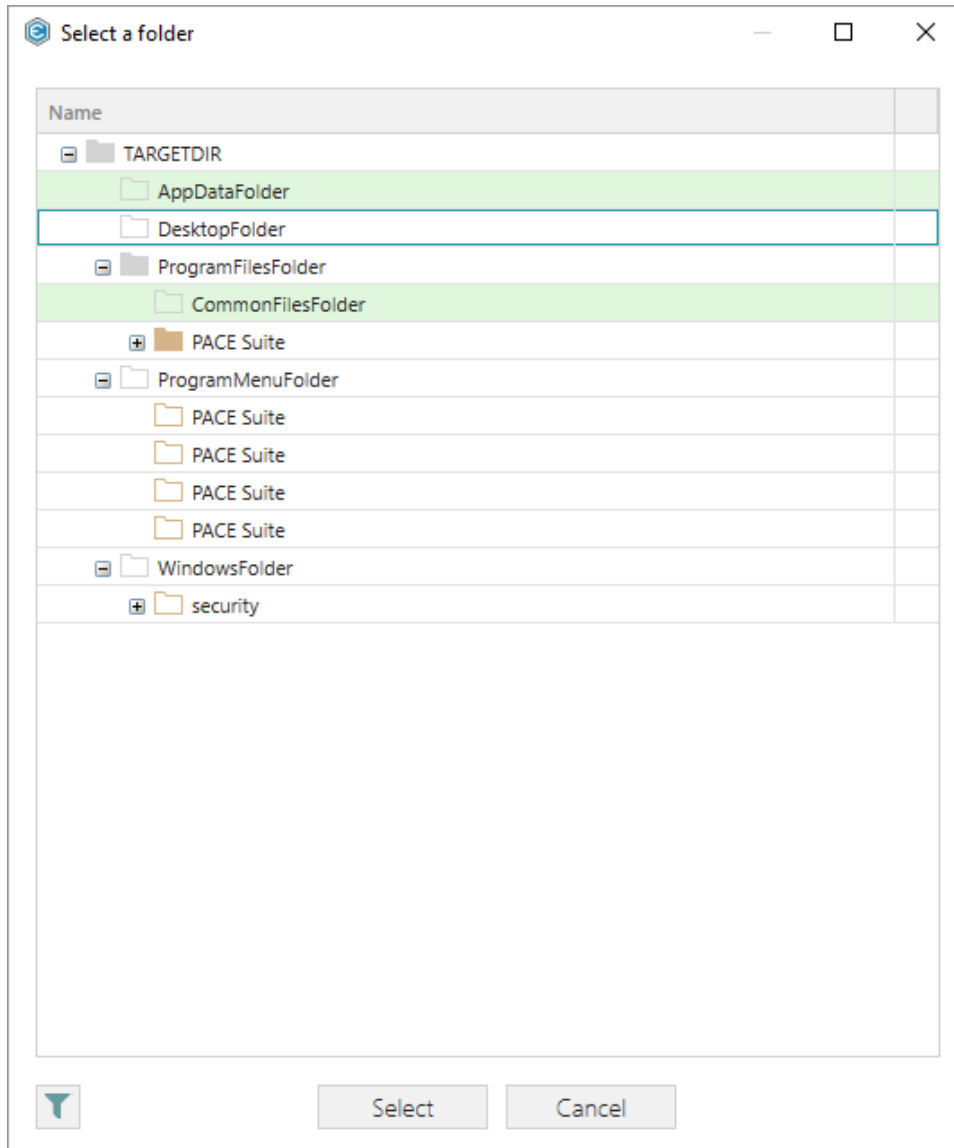
- Go to the Shortcuts tab of the Package Designer.



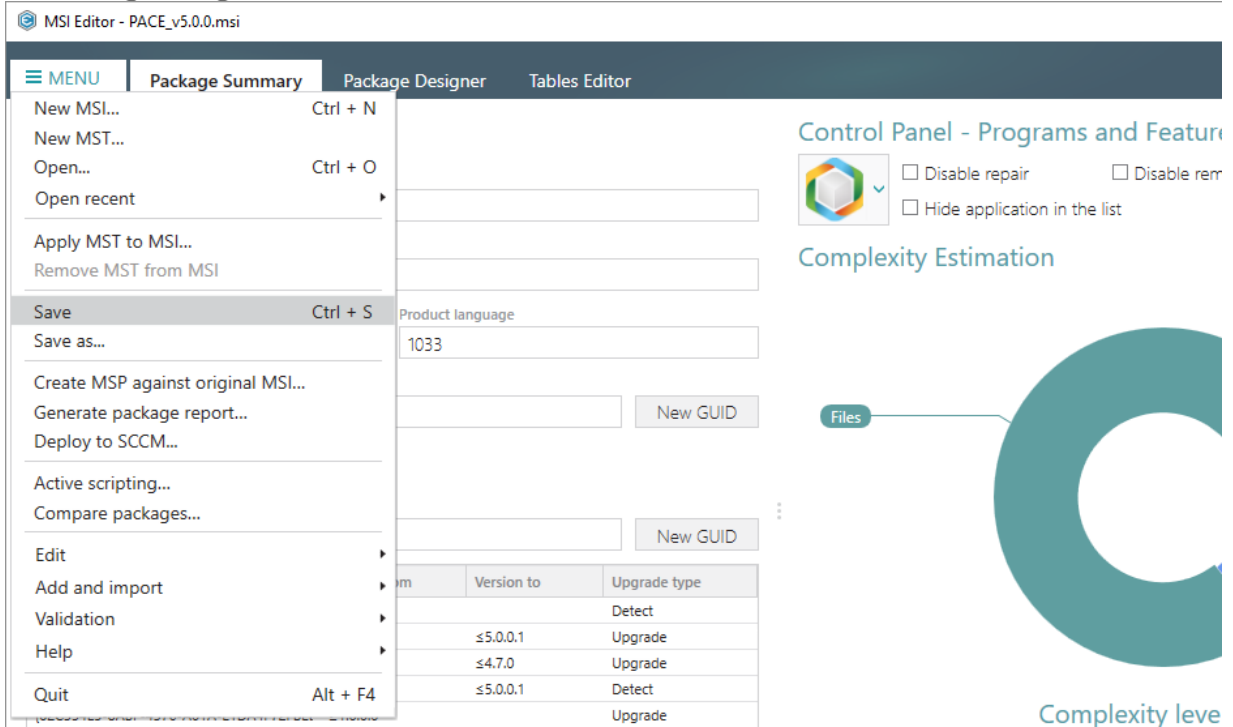
- Select Move to folder from the context menu of a shortcut, which you want to move to another folder.



- Select a new destination folder from the tree and click Select.



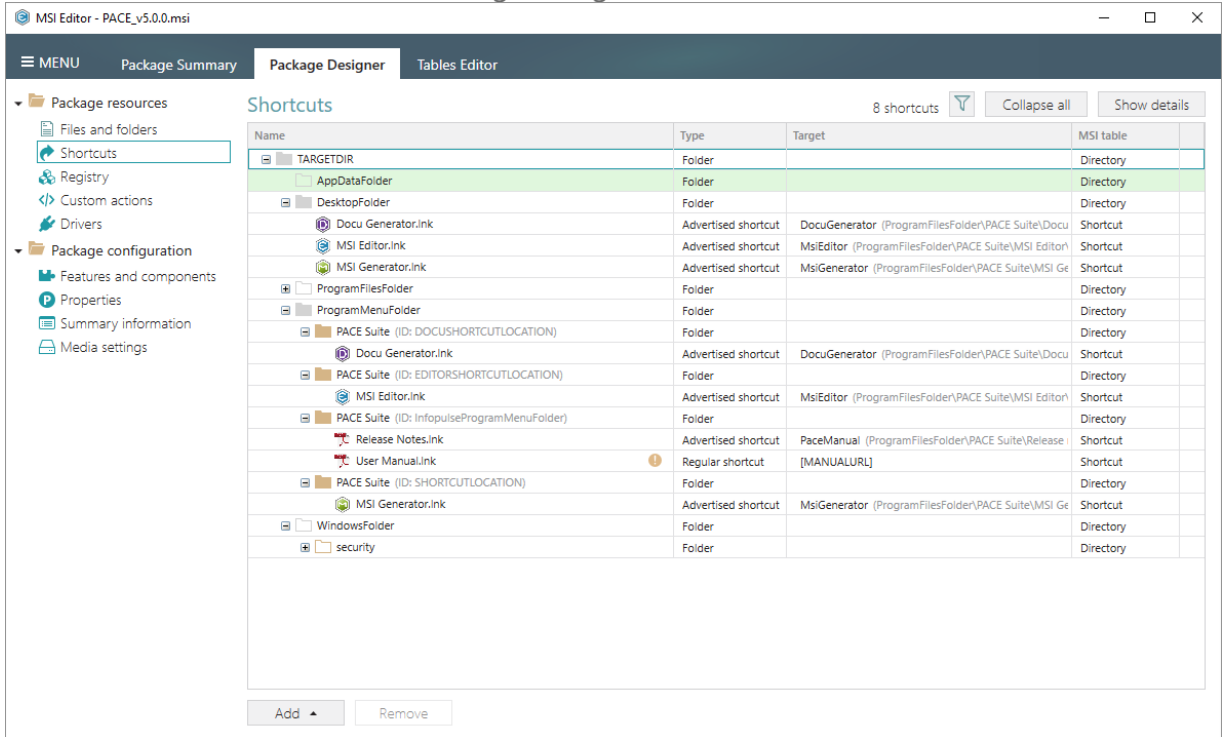
- For saving changes, select Save from MENU.



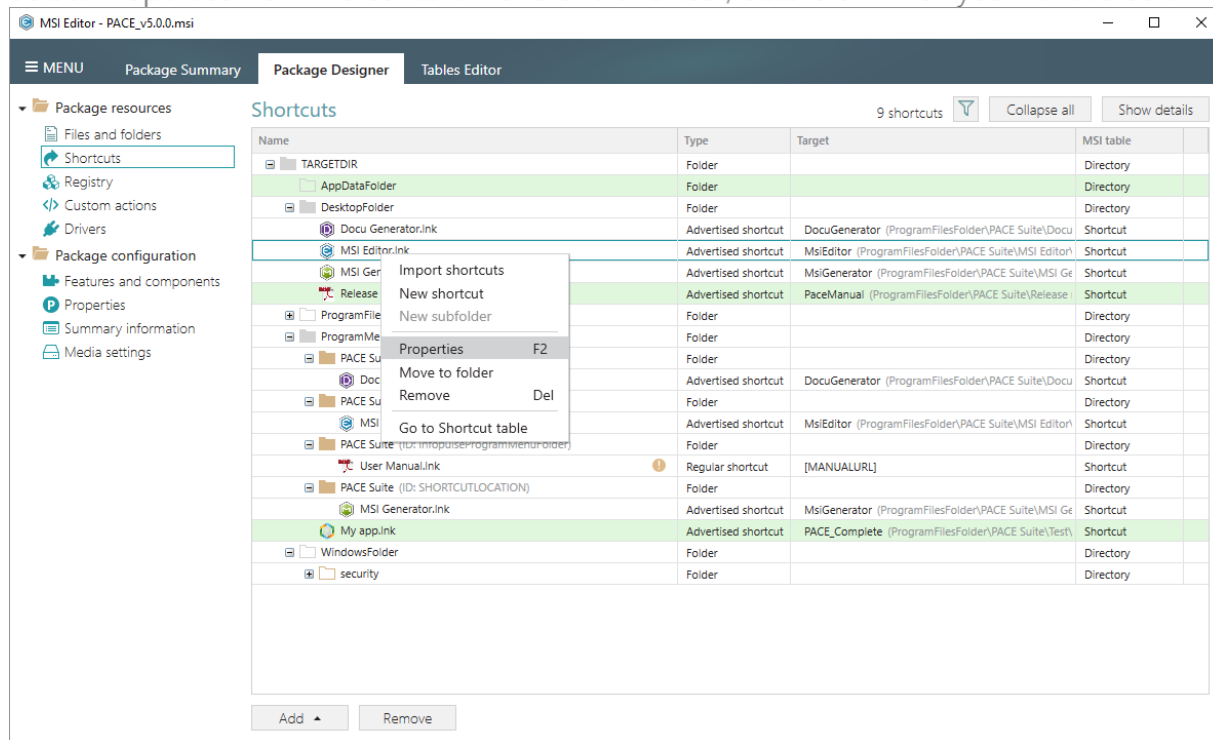
3.7.3.4 Edit Shortcut Properties

Edit shortcut details such as icon, name, installation folder, shortcut type, arguments, description and so on.

- Go to the Shortcuts tab of the Package Designer.



- Select Properties from the context menu of a shortcut, details of which you want to edit.



- Using the Properties window make the necessary changes to the shortcut details, such as changing icon, name, installation folder, shortcut type, arguments, description, hot key and

so on. Afterwards, click Save.

Properties

MSI table: 'Shortcut'

Name: MSI Editor Identifier: MsiEditor.exe_shortcut_desktop

Target (installation) folder: DesktopFolder (ID: DesktopFolder) [Browse...](#)

General

Shortcut type:
☒ Advertised shortcut
☐ Regular (non-advertised) shortcut

Shortcut target: MsiEditor (ProgramFilesFolder\PACE Suite\MSI Editor\MsiEditor.exe) [Browse...](#)

Arguments:

Start in (WkDir): Folder [Browse...](#)

ProgramFilesFolder\PACE Suite\MSI Editor (ID: EDITORINSTALLDIR)

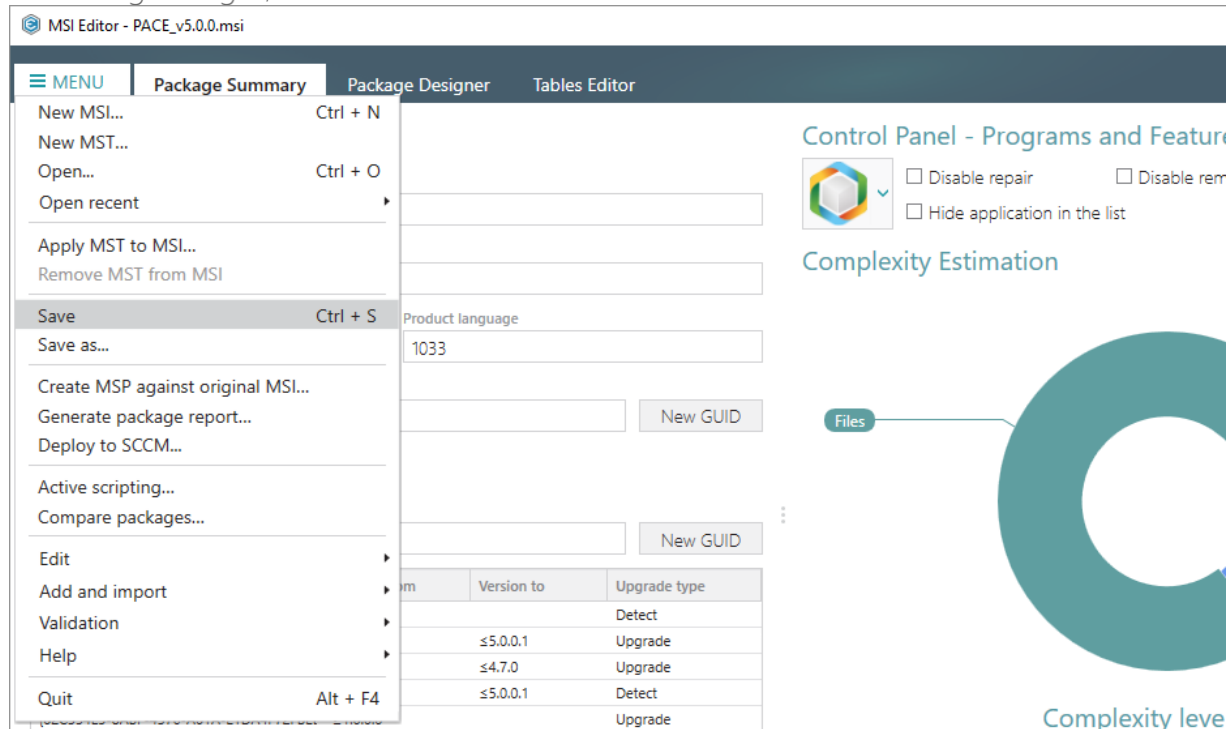
Details

Component_: MsiEditor.exe Run: Normal window

Description: MSI Editor.exe Hot key:

[Save](#) [Cancel](#)

- For saving changes, select **Save** from MENU.

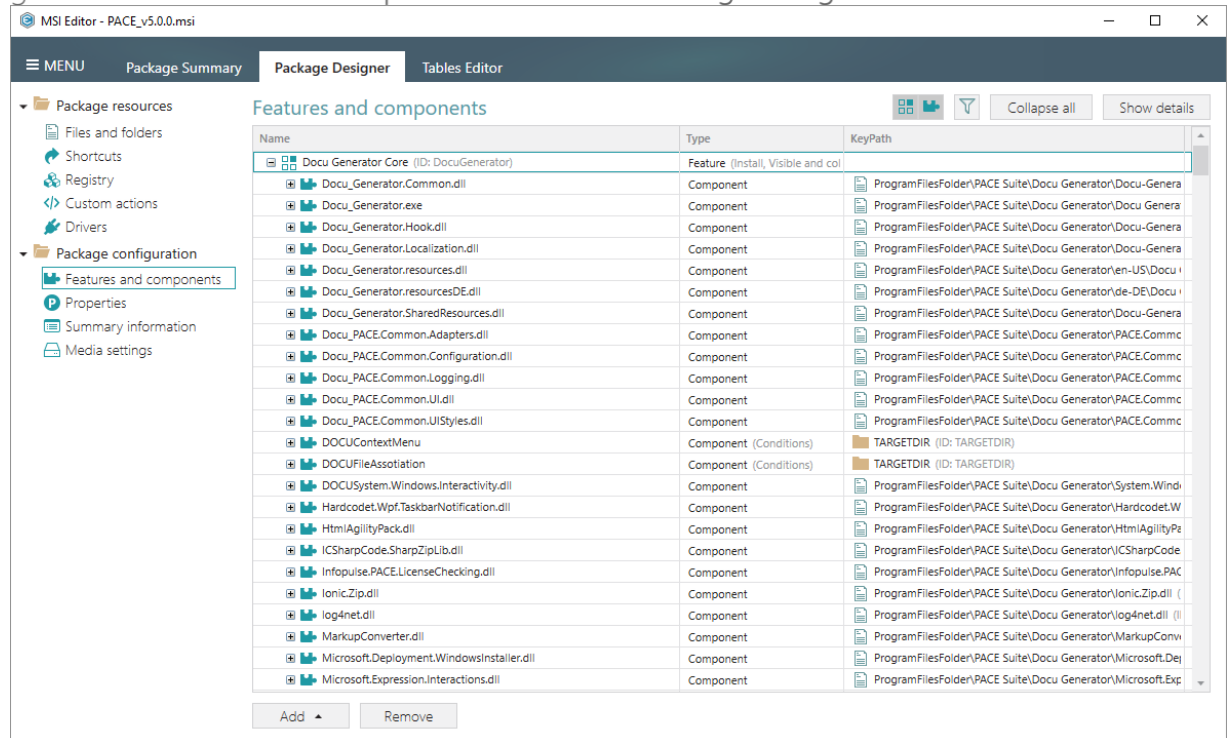


3.7.4 Registry

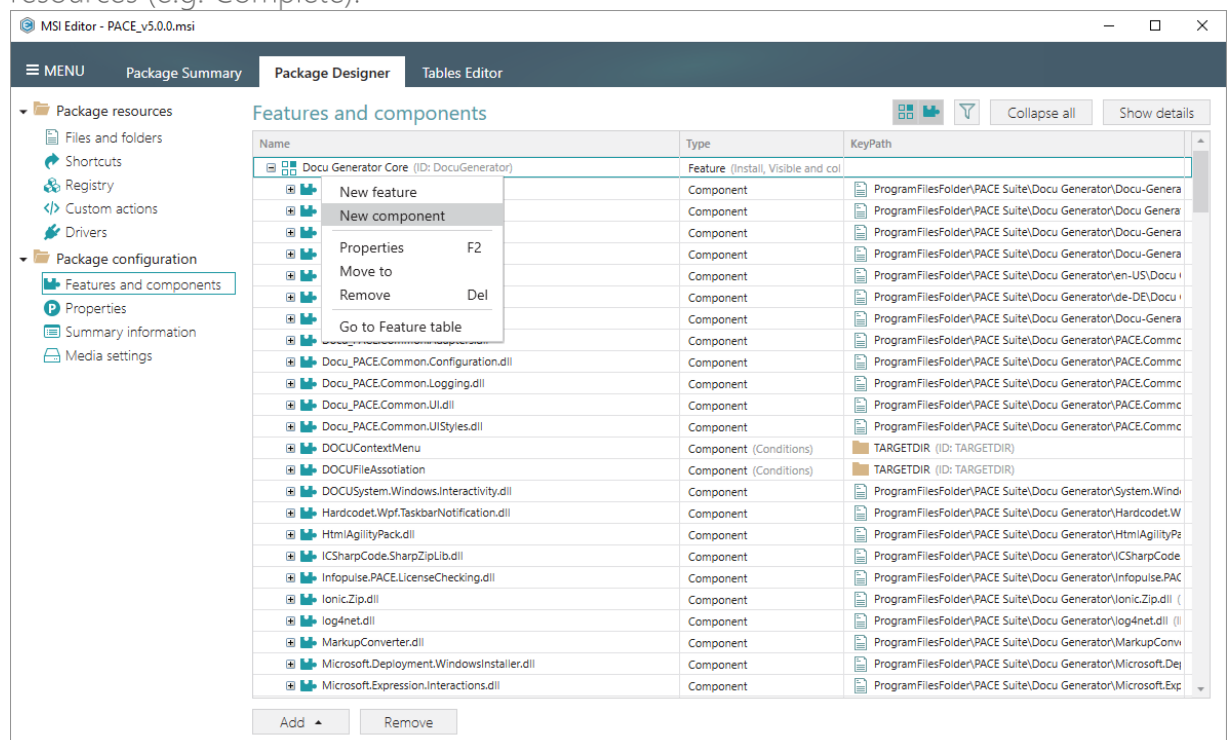
Choose a scenario that better suits your needs:

- **Add Registry Key**, described in section 3.7.4.1
Add a new registry key or sub-key manually.
- **Add Registry Value**, described in section 3.7.4.2
Add a new registry value manually.
 - **Add ActiveSetup**, described in section 3.7.4.2.1
Intergrate ActiveSetup into your package to propagate the per-user resources for every logged-in user of the system.
- **Add ActiveSetup**
- **Intergrate ActiveSetup** into your package to propagate the per-user resources for every logged-in user of the system. The ActiveSetup is represented as the registry value that triggers the repair function of the Windows Installer during the next user log-in in order to restore the missing resources.
- (Optional) First, create a new component for the ActiveSetup registry key. Alternatively, you can use the existing component with the per-machine resources. To create a component,

go to the Features and components tab of the Package Designer.



- (Optional) Select New component from the context menu of any feature. It is recommended to use feature that always will be installed and contains per-machine resources (e.g. Complete).



- (Optional) Enter component Name (e.g. ActiveSetup) and click Save.

Properties

General Attributes Relationships

MSI table: 'Component'

Name
ActiveSetup

Component ID (GUID)
{A67C8455-D55F-42F3-A292-FEE55933C234} New

Conditions

Folder and KeyPath

Files destination folder
TARGETDIR (ID: TARGETDIR) Browse...

NOTE Changing this folder leads to changing the Target folder for all the component files.

KeyPath type
Folder ("Files destination folder" is used as the KeyPath) ▼

KeyPath
TARGETDIR (ID: TARGETDIR) Browse...

Save Cancel

- Go to the Registry tab of the Package Designer.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary **Package Designer** Tables Editor

Package resources

- Files and folders
- Shortcuts
- Registry**
- Custom actions
- Drivers

Package configuration

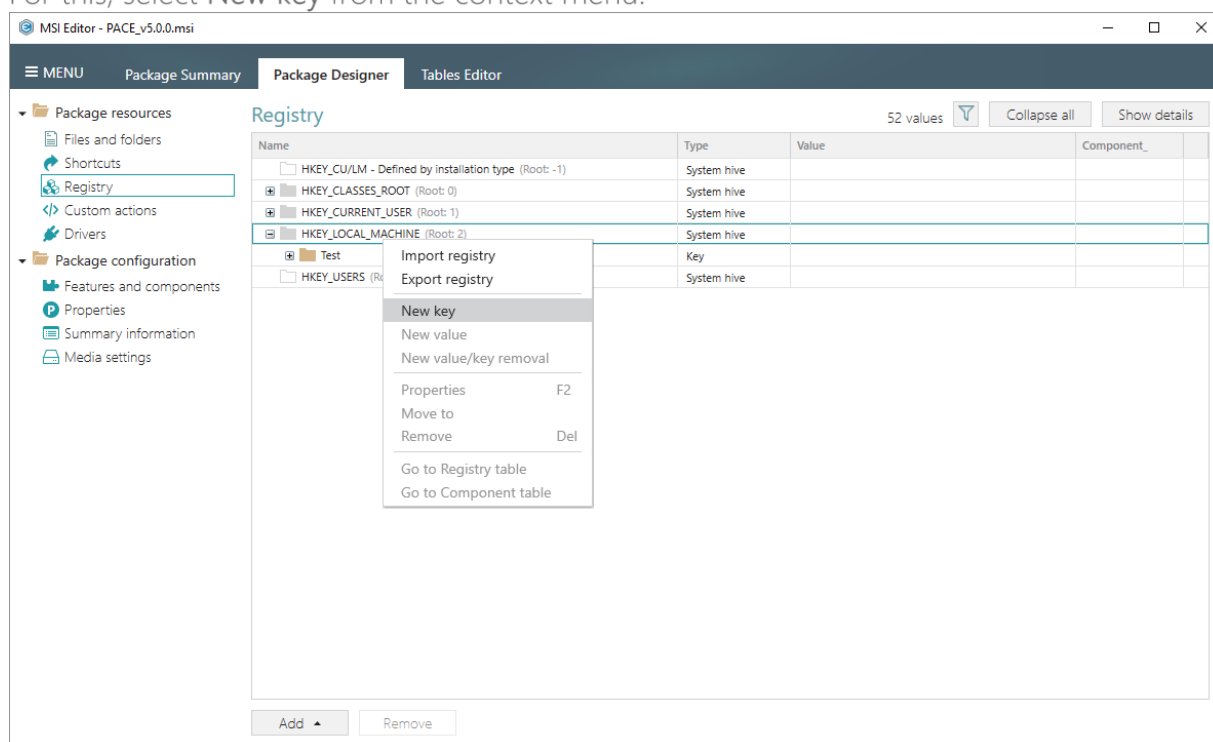
- Features and components
- Properties
- Summary information
- Media settings

Registry 52 values ▼ Collapse all Show details

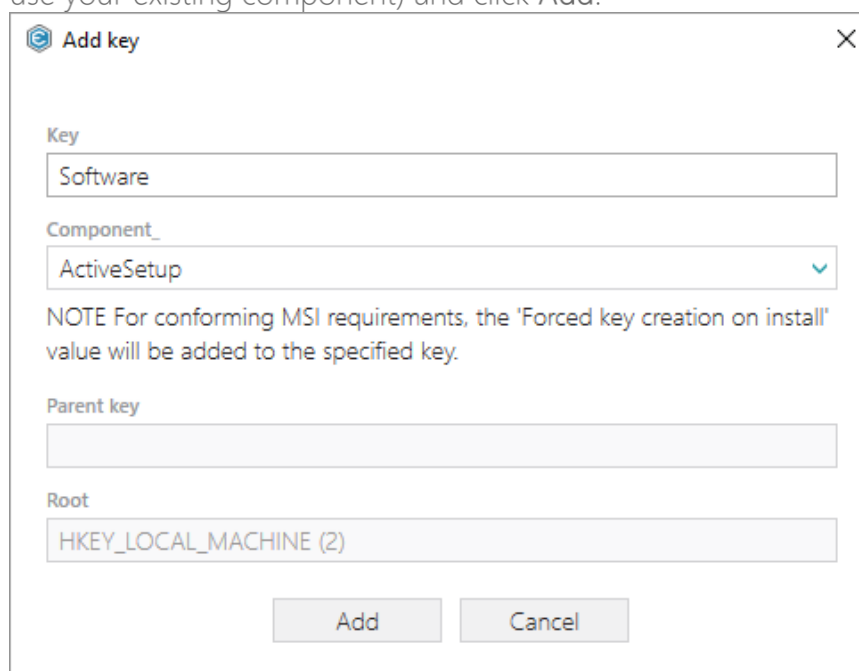
Name	Type	Value	Component_
HKEY_CU/LM - Defined by installation type (Root: -1)	System hive		
HKEY_CLASSES_ROOT (Root: 0)	System hive		
.appv	Key		
.dscn	Key		
.mgs	Key		
.msm	Key		
.mst	Key		
.wsi	Key		
AppV	Key		
Infopulse.DscnFile	Key		
Msi.MergeModule	Key		
Msi.Package	Key		
Msi.Patch	Key		
Msi.Transform	Key		
MSIGeneratorProject	Key		
WisePackageStudioProject	Key		
HKEY_CURRENT_USER (Root: 1)	System hive		
Software	Key		
HKEY_LOCAL_MACHINE (Root: 2)	System hive		
Test	Key		
HKEY_USERS (Root: 3)	System hive		

Add Remove

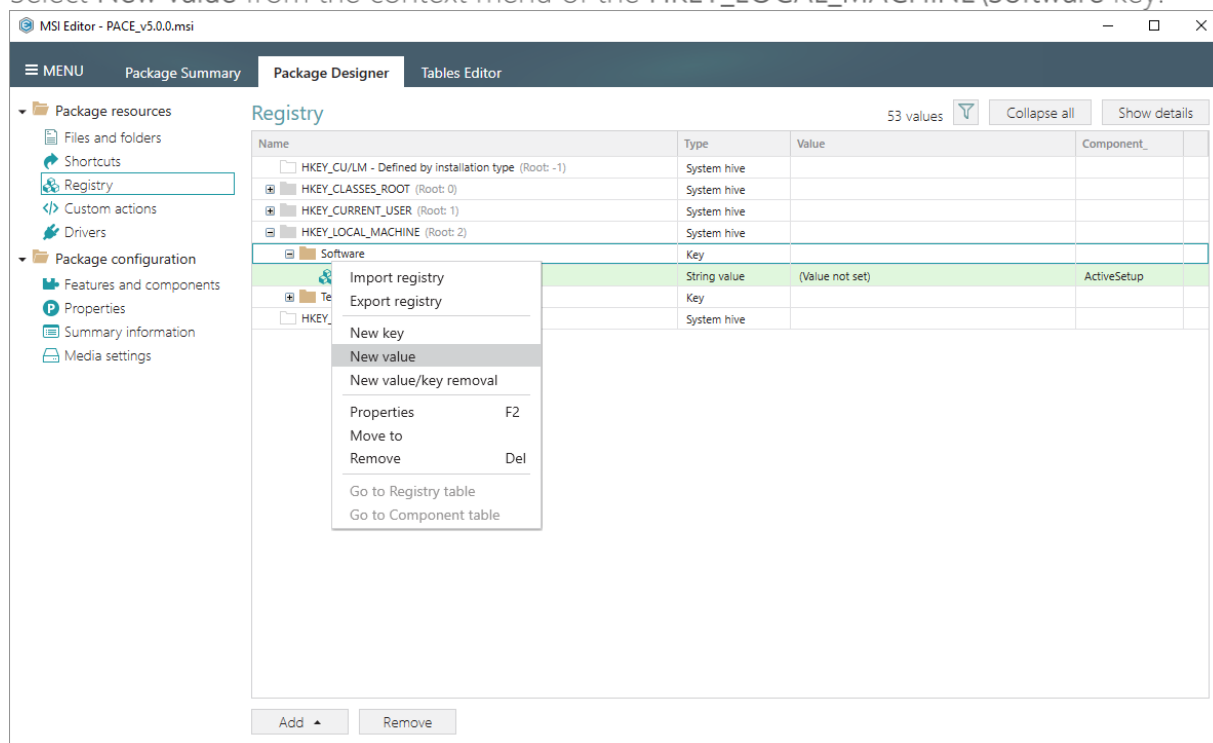
- Create the "Software" key under the HKEY_LOCAL_MACHINE hive, if the key does not exist. For this, select **New key** from the context menu.



- Enter the key name "Software", select the previously created ActiveSetup component (or use your existing component) and click Add.



- Select **New value** from the context menu of the HKEY_LOCAL_MACHINE\Software key.



- Enter the *"StubPath"* to Name, the *"msiexec /fups [ProductCode] /qb"* to Value, replace value of the Key field with the *"Software\Microsoft\Active Setup\Installed Components\[ProductCode]"* and select the previously created ActiveSetup component (or

use your existing component) from the Component_ field. Afterwards, click Save.

The 'Properties' dialog box for the 'Registry' MSI table is shown. It contains the following fields and options:

- Value processing method:** 1. Set both name and value
- Name:** StubPath
- Identifier:** reg_2e0ff5e8
- Value:**
 - ☒ **Parsed value**
 - Type:** String value (REG_SZ)
 - Value:** msiexec /fups [ProductCode] /qb
 - ☐ **Raw MSI value**
 - Value: msiexec /fups [ProductCode] /qb
- Key:** Software\Microsoft\Active Setup\Installed Components\[ProductCode] (with a 'Browse...' button)
- Root:** HKEY_LOCAL_MACHINE (2)
- Component_:** ActiveSetup
- Buttons:** Save, Cancel

- For saving changes, select Save from the MENU.

The MSI Editor - PACE_v5.0.0.msi interface is shown with the 'MENU' and 'Tables Editor' tabs active.

MENU:

- New MSI... (Ctrl + N)
- New MST...
- Open... (Ctrl + O)
- Open recent
- Apply MST to MSI...
- Remove MST from MSI
- Save (Ctrl + S)**
- Save as...
- Create MSP against original MSI...
- Generate package report...
- Deploy to SCCM...
- Active scripting...
- Compare packages...
- Edit
- Add and import
- Validation
- Help
- Quit (Alt + F4)

Tables Editor:

	Type	Value	Component_
EY_CU/LM - Defined by installation type (Root: -1)	System hive		
EY_CLASSES_ROOT (Root: 0)	System hive		
EY_CURRENT_USER (Root: 1)	System hive		
EY_LOCAL_MACHINE (Root: 2)	System hive		
Software	Key		
Microsoft	Key		
Active Setup	Key		
Installed Components	Key		
[ProductCode]	Key		
StubPath	String value	msiexec /fups [ProductCode] /qb	ActiveSetup
(FORCED key creation on install)	String value	(Value not set)	ActiveSetup
Test	Key		
EY_USERS (Root: 3)	System hive		

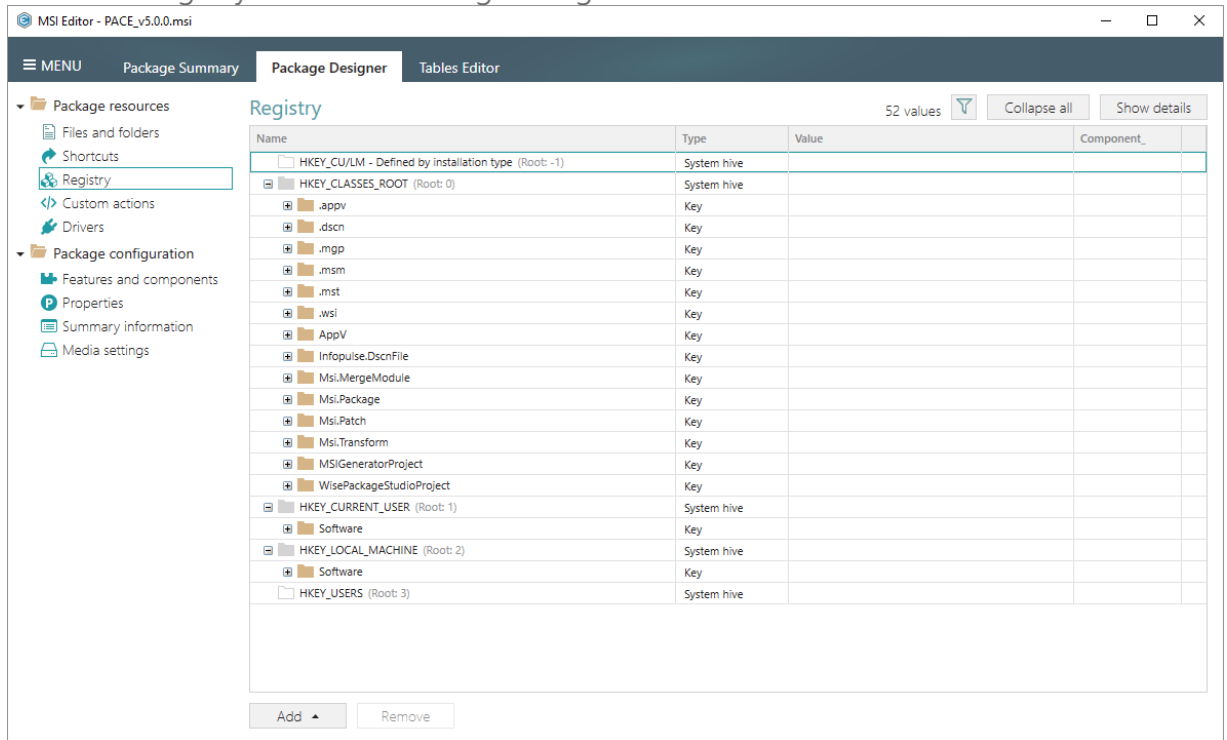
Buttons at the bottom: Add, Remove

- **Add Value/Key Removal**, described in section 3.7.4.2.1
Add a new RemoveRegistry value manually for securing a value or a key removal during the package installation.
- **Import Registry**, described in section 3.7.4.4
Import registry from the REG file.
- **Export Registry**, described in section 3.7.4.5
Export the selected registry to the REG file.
- **Set Permissions**, described in section 3.7.4.6
Set custom permissions for the registry key.
- **Remove Permissions**, described in section 3.7.4.7
Locate registry key with custom permissions and remove the unnecessary permissions.
- **Move Value, Key**, described in section 3.7.4.8
Move a registry value or a key from one parent key to another one.
- **Edit Registry Key**, described in section 3.7.4.9
Modify details and options of the selected registry key.
- **Edit Registry Value**, described in section 3.7.4.10
Modify details of the selected registry value.
- **Edit Value/Key Removal**, described in section 3.7.4.11
Modify details of the selected value/key removal item (RemoveRegistry) to secure a value or a key removal during the package installation.

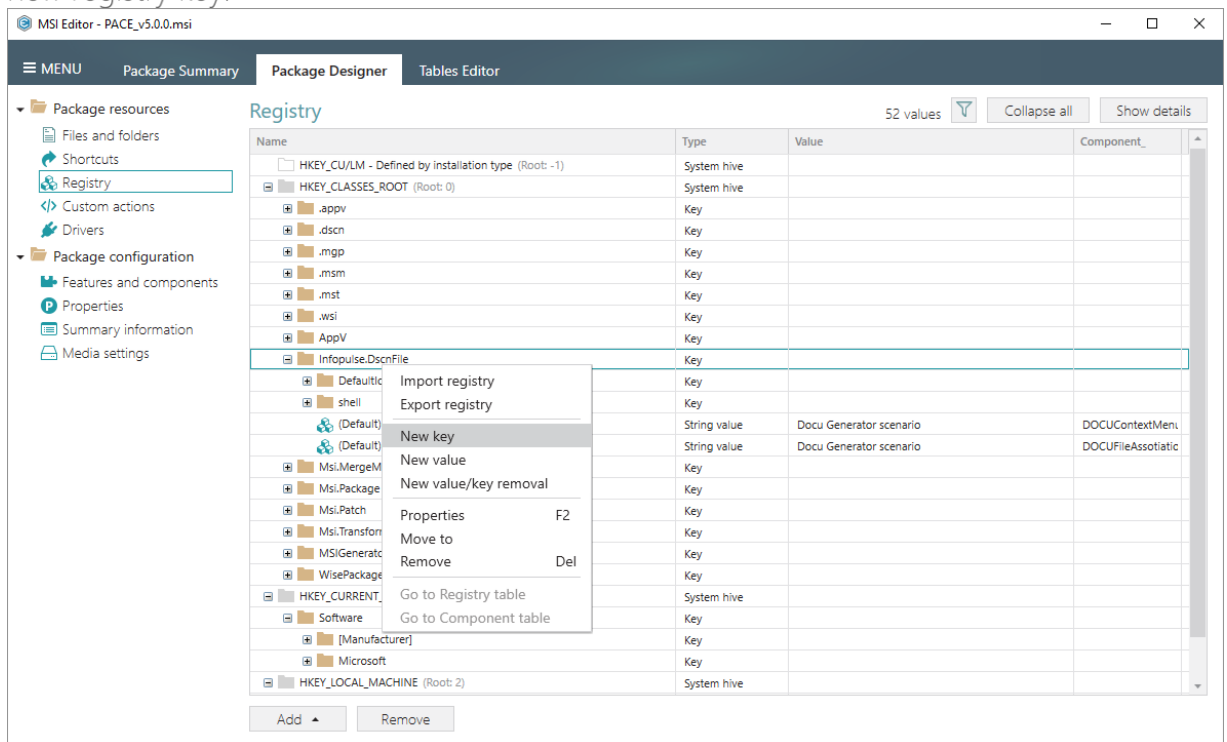
3.7.4.1 Add Registry Key

Add a new registry key or sub-key manually.

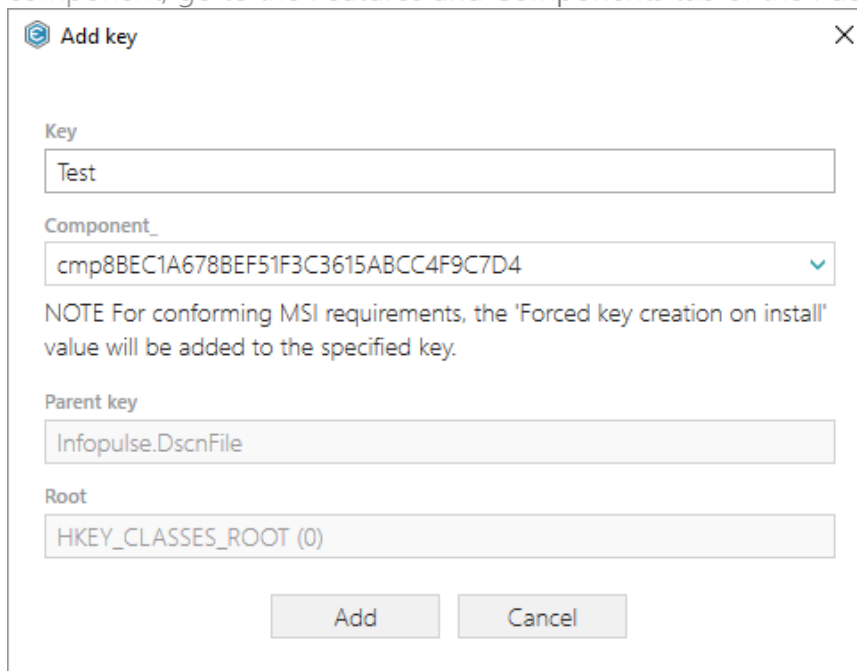
- Go to the Registry tab of the Package Designer.



- Select New key from the context menu of a root hive or a key, where you want to create a new registry key.



- Enter a key name, select a component from the list, then click **Add**. For creating a new component, go to the Features and Components tab of the Package Designer.



Add key

Key
Test

Component_
cmp8BEC1A678BEF51F3C3615ABCC4F9C7D4

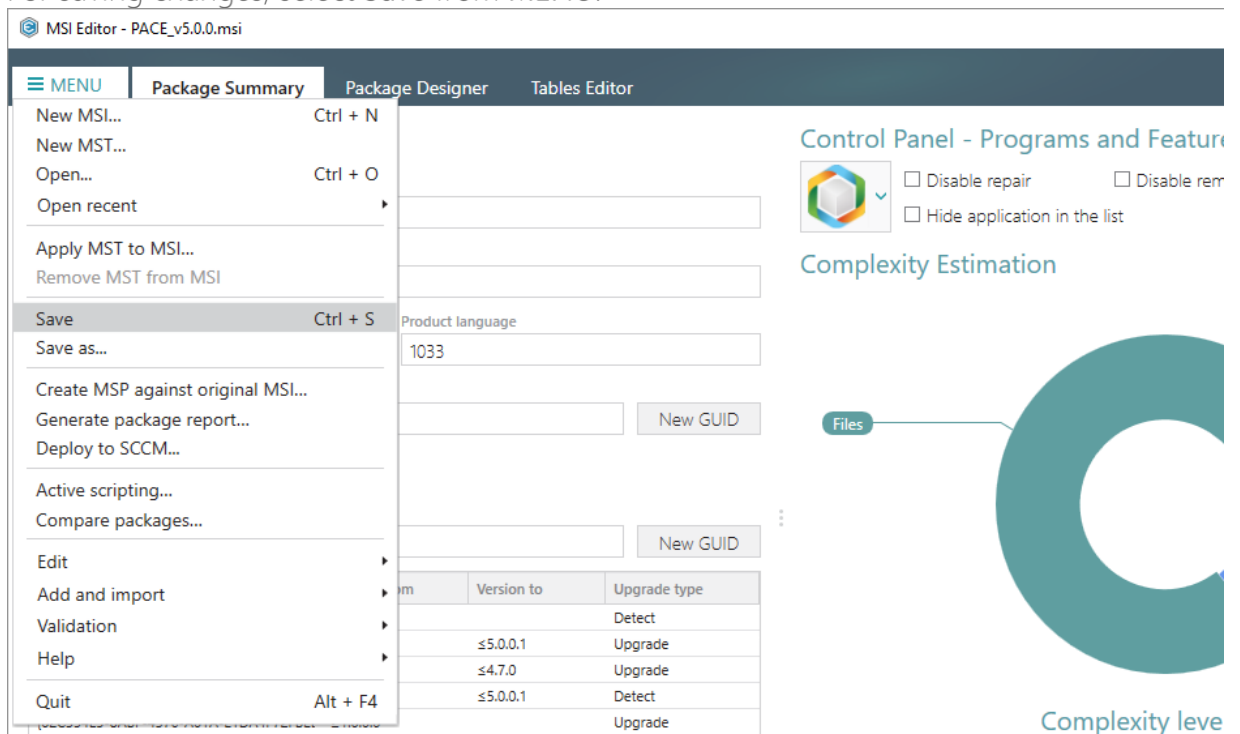
NOTE For conforming MSI requirements, the 'Forced key creation on install' value will be added to the specified key.

Parent key
Infopulse.DscnFile

Root
HKEY_CLASSES_ROOT (0)

Add Cancel

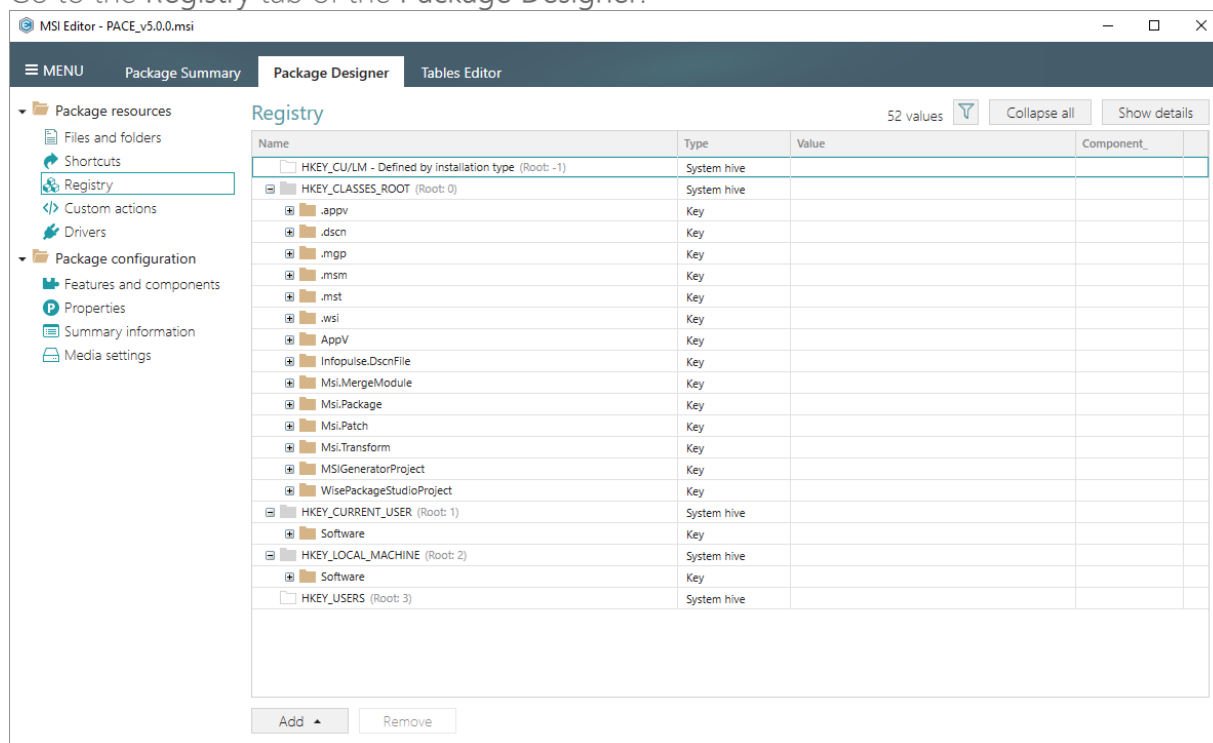
- For saving changes, select **Save** from MENU.



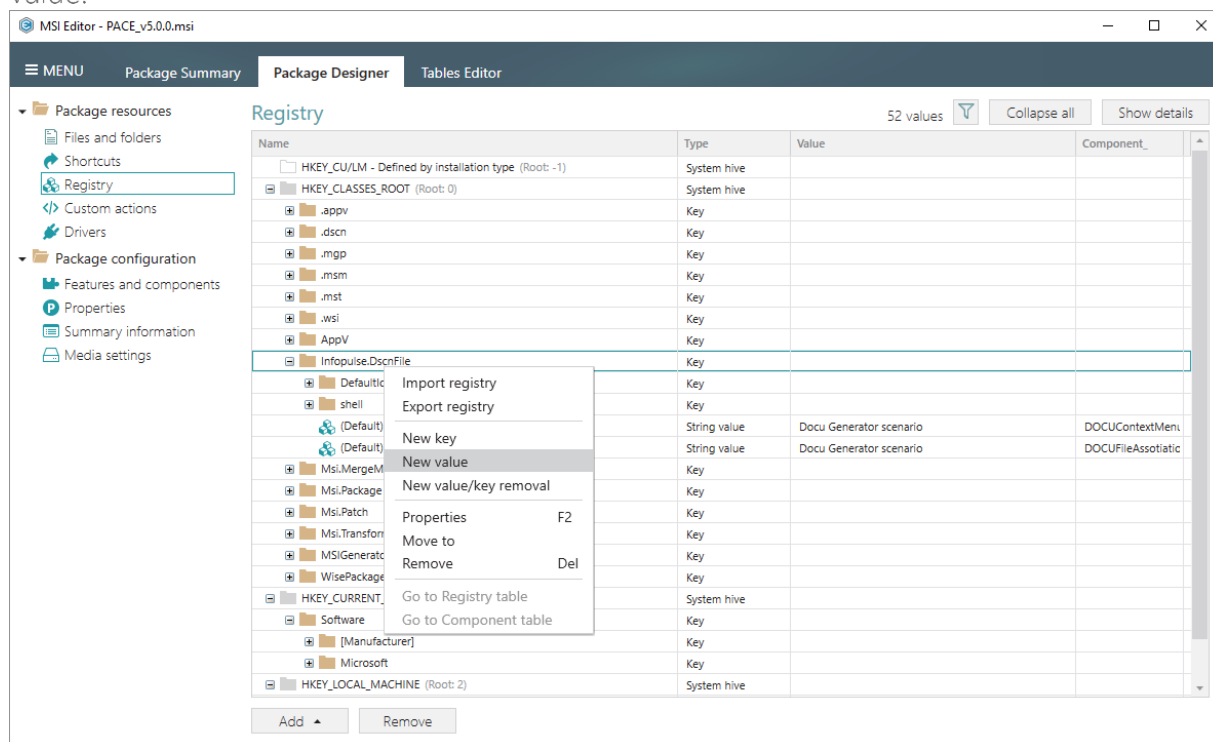
3.7.4.2 Add Registry Value

Add a new registry value manually.

- Go to the Registry tab of the Package Designer.



- Select New value from the context menu of a key, where you want to create a new registry value.



- For creating an ordinary registry value, just specify a Name, Value itself, select a Component from the list, to which this value will be assigned, and then click Save.

For creating a Default key value, or securing an empty key creation on install and/or its removal on uninstall, select a respective option from the Value processing method field.

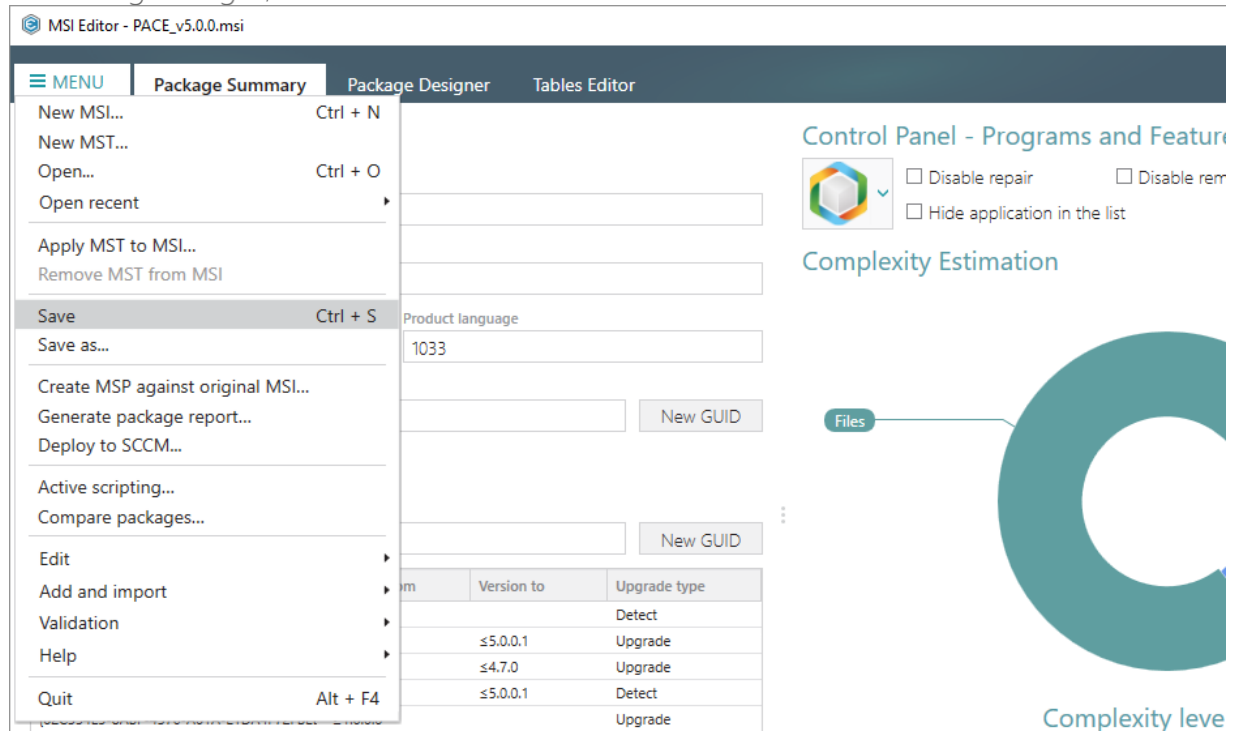
The Parsed value option serves easier creation of a registry value of the proper value type. However, the Raw MSI value option gives ability to manage what exactly will be saved to the opened MSI database.

The screenshot shows a 'Properties' dialog box for an MSI table named 'Registry'. The dialog has a title bar with a gear icon and the text 'Properties'. Below the title bar is a header section with a cube icon and the text 'MSI table: 'Registry''. The main area contains several fields and options:

- Value processing method:** A dropdown menu with the option '1. Set both name and value' selected.
- Name:** A text field containing 'Test'.
- Identifier:** A text field containing 'reg_08a3c81a'.
- Value:** A section with two radio buttons: 'Parsed value' (selected) and 'Raw MSI value'.
- Type:** A dropdown menu with the option 'String value (REG_SZ)' selected.
- Value:** A text field containing 'Test'.
- Key:** A text field containing 'Infopulse.DscnFile' and a 'Browse...' button.
- Root:** A dropdown menu with the option 'HKEY_CLASSES_ROOT (0)' selected.
- Component_:** A dropdown menu with the option 'cmp8BEC1A678BEF51F3C3615ABCC4F9C7D4' selected.

At the bottom of the dialog are two buttons: 'Save' and 'Cancel'.

- For saving changes, select **Save** from **MENU**.

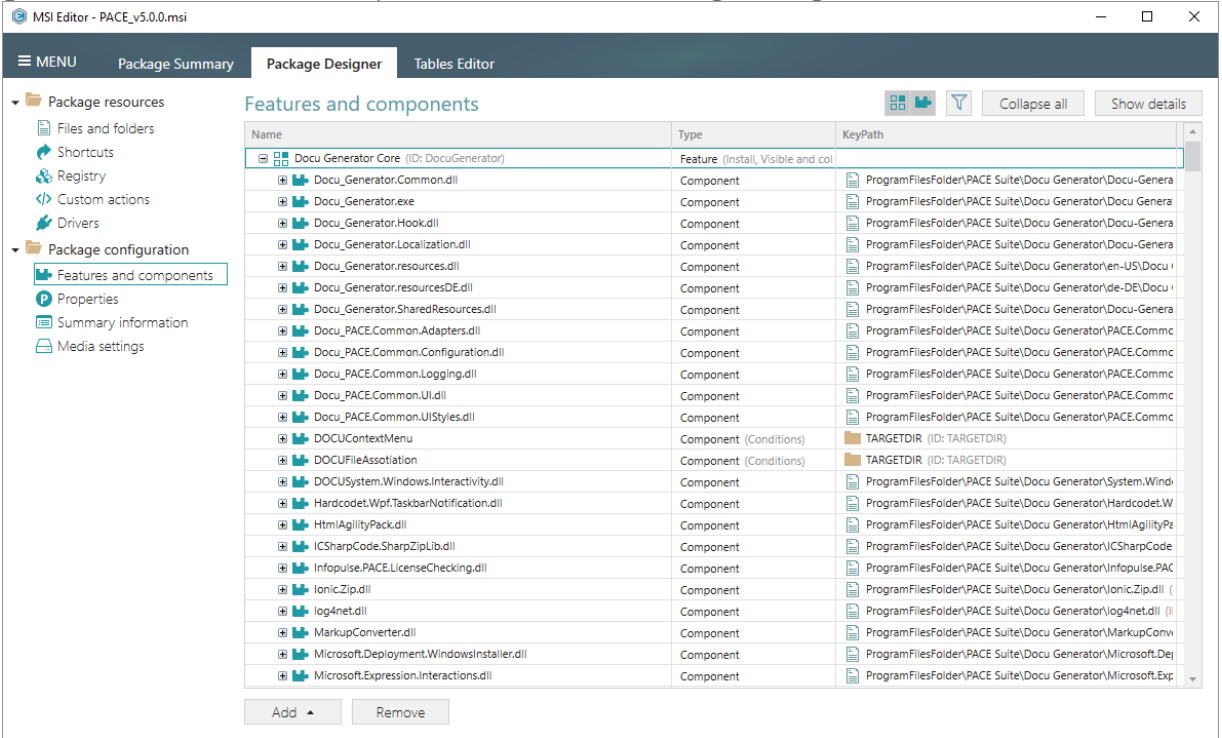


3.7.4.2.1 Add ActiveSetup

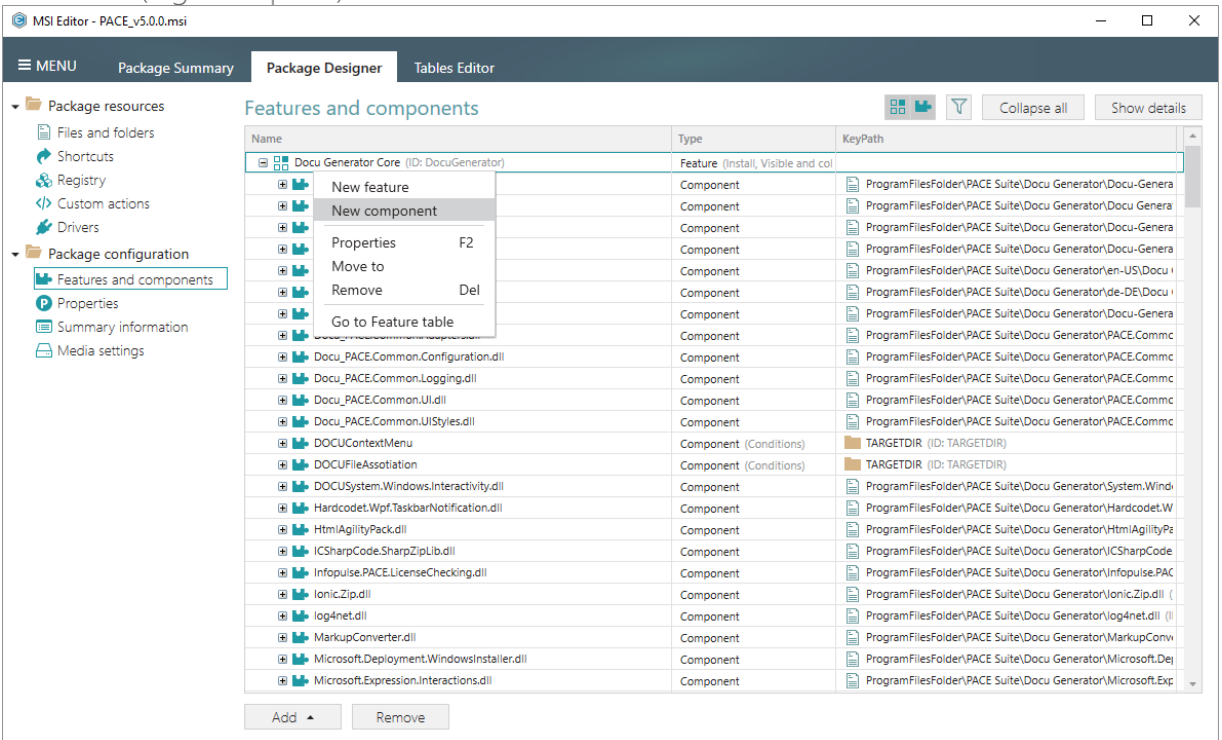
Intergrate ActiveSetup into your package to propagate the per-user resources for every logged-in user of the system. The ActiveSetup is represented as the registry value that triggers the repair function of the Windows Installer during the next user log-in in order to restore the missing resources.

- (Optional) First, create a new component for the ActiveSetup registry key. Alternatively, you can use the existing component with the per-machine resources. To create a component,

go to the Features and components tab of the Package Designer.



- (Optional) Select New component from the context menu of any feature. It is recommended to use feature that always will be installed and contains per-machine resources (e.g. Complete).



- (Optional) Enter component Name (e.g. ActiveSetup) and click Save.

Properties

General Attributes Relationships

MSI table: 'Component'

Name
ActiveSetup

Component ID (GUID)
{A67C8455-D55F-42F3-A292-FEE55933C234} New

Conditions

Folder and KeyPath

Files destination folder
TARGETDIR (ID: TARGETDIR) Browse...

NOTE Changing this folder leads to changing the Target folder for all the component files.

KeyPath type
Folder ("Files destination folder" is used as the KeyPath) ▼

KeyPath
TARGETDIR (ID: TARGETDIR) Browse...

Save Cancel

- Go to the Registry tab of the Package Designer.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary **Package Designer** Tables Editor

Package resources

- Files and folders
- Shortcuts
- Registry**
- Custom actions
- Drivers

Package configuration

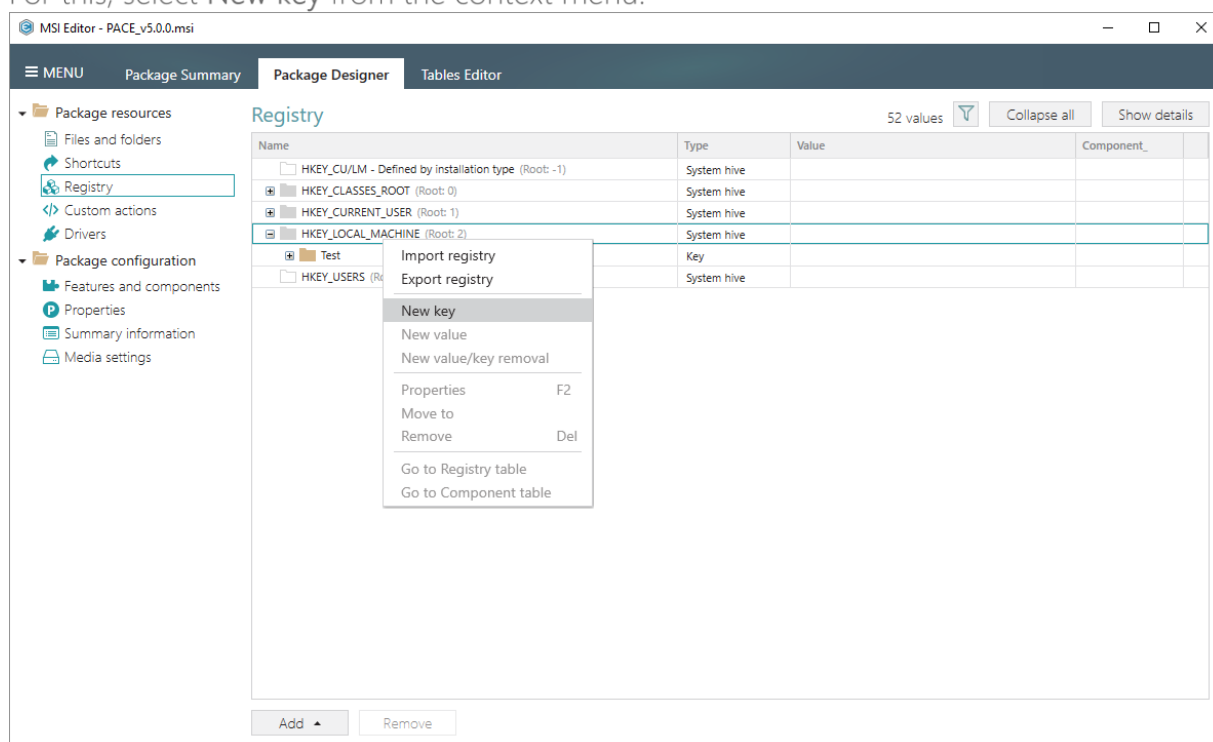
- Features and components
- Properties
- Summary information
- Media settings

Registry 52 values Filter Collapse all Show details

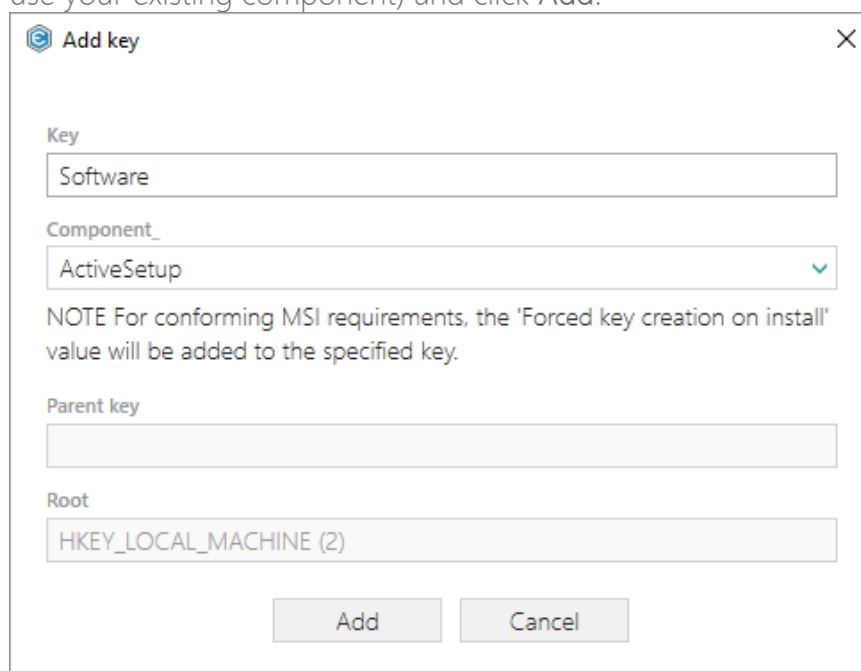
Name	Type	Value	Component_
<input type="checkbox"/> HKEY_CU/LM - Defined by installation type (Root: -1)	System hive		
<input checked="" type="checkbox"/> HKEY_CLASSES_ROOT (Root: 0)	System hive		
<input checked="" type="checkbox"/> .appv	Key		
<input checked="" type="checkbox"/> .dscn	Key		
<input checked="" type="checkbox"/> .mgs	Key		
<input checked="" type="checkbox"/> .msm	Key		
<input checked="" type="checkbox"/> .mst	Key		
<input checked="" type="checkbox"/> .wsi	Key		
<input checked="" type="checkbox"/> AppV	Key		
<input checked="" type="checkbox"/> Infopulse.DscnFile	Key		
<input checked="" type="checkbox"/> Msi.MergeModule	Key		
<input checked="" type="checkbox"/> Msi.Package	Key		
<input checked="" type="checkbox"/> Msi.Patch	Key		
<input checked="" type="checkbox"/> Msi.Transform	Key		
<input checked="" type="checkbox"/> MSIGeneratorProject	Key		
<input checked="" type="checkbox"/> WisePackageStudioProject	Key		
<input checked="" type="checkbox"/> HKEY_CURRENT_USER (Root: 1)	System hive		
<input checked="" type="checkbox"/> Software	Key		
<input checked="" type="checkbox"/> HKEY_LOCAL_MACHINE (Root: 2)	System hive		
<input checked="" type="checkbox"/> Test	Key		
<input type="checkbox"/> HKEY_USERS (Root: 3)	System hive		

Add Remove

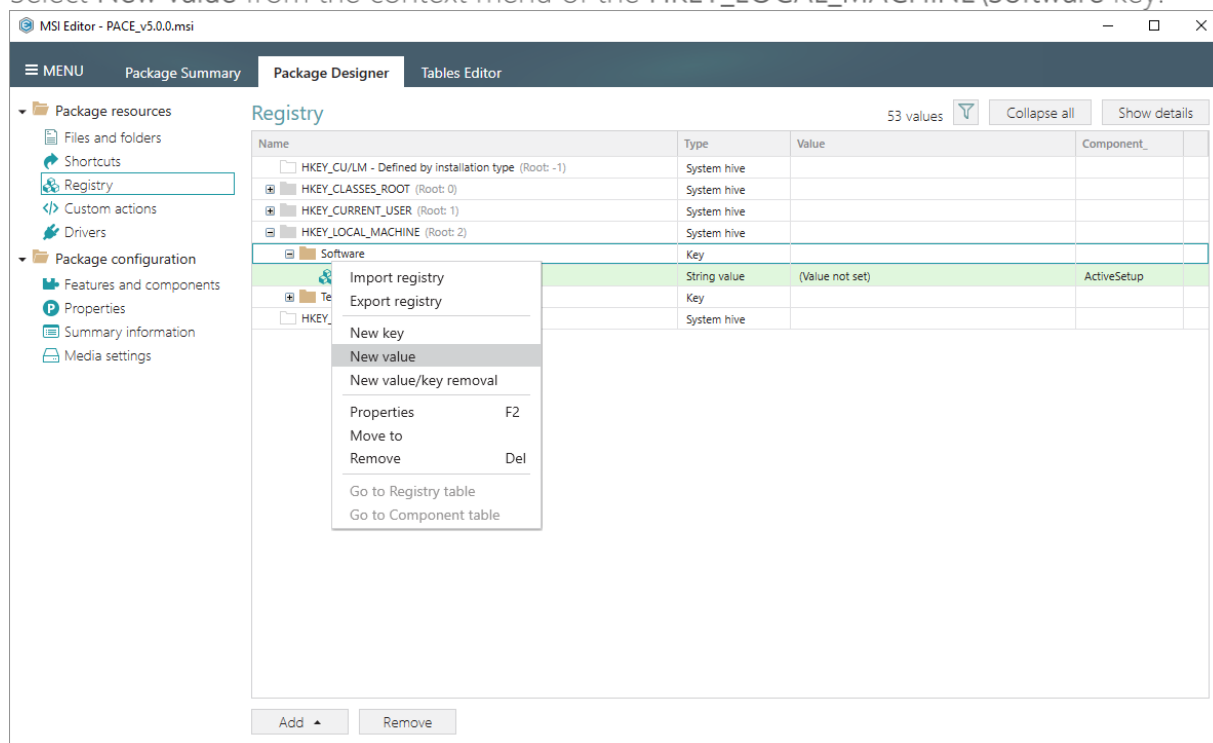
- Create the "Software" key under the HKEY_LOCAL_MACHINE hive, if the key does not exist. For this, select **New key** from the context menu.



- Enter the key name "Software", select the previously created ActiveSetup component (or use your existing component) and click Add.




- Select **New value** from the context menu of the HKEY_LOCAL_MACHINE\Software key.



- Enter the *"StubPath"* to Name, the *"msiexec /fups [ProductCode] /qb"* to Value, replace value of the Key field with the *"Software\Microsoft\Active Setup\Installed Components\[ProductCode]"* and select the previously created ActiveSetup component (or

use your existing component) from the Component_ field. Afterwards, click Save.

Properties

 MSI table: 'Registry'

Value processing method
1. Set both name and value

Name
StubPath

Identifier
reg_2e0ff5e8

Value
☒ Parsed value
Type
String value (REG_SZ)
Value
msiexec /fups [ProductCode] /qb

☐ Raw MSI value
msiexec /fups [ProductCode] /qb

Key
Software\Microsoft\Active Setup\Installed Components\[ProductCode] Browse...

Root
HKEY_LOCAL_MACHINE (2)

Component_
ActiveSetup

Save

Cancel

- For saving changes, select Save from the MENU.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer Tables Editor

New MSI... Ctrl + N
New MST...
Open... Ctrl + O
Open recent
Apply MST to MSI...
Remove MST from MSI
Save Ctrl + S
Save as...
Create MSP against original MSI...
Generate package report...
Deploy to SCCM...
Active scripting...
Compare packages...
Edit
Add and import
Validation
Help
Quit Alt + F4

54 values Collapse all Show details

	Type	Value	Component_
Software	System hive		
Microsoft	System hive		
Active Setup	System hive		
Installed Components	System hive		
[ProductCode]	Key		
StubPath	String value	msiexec /fups [ProductCode] /qb	ActiveSetup
(FORCED key creation on install)	String value	(Value not set)	ActiveSetup
Test	Key		
EY_USERS (Root: 3)	System hive		

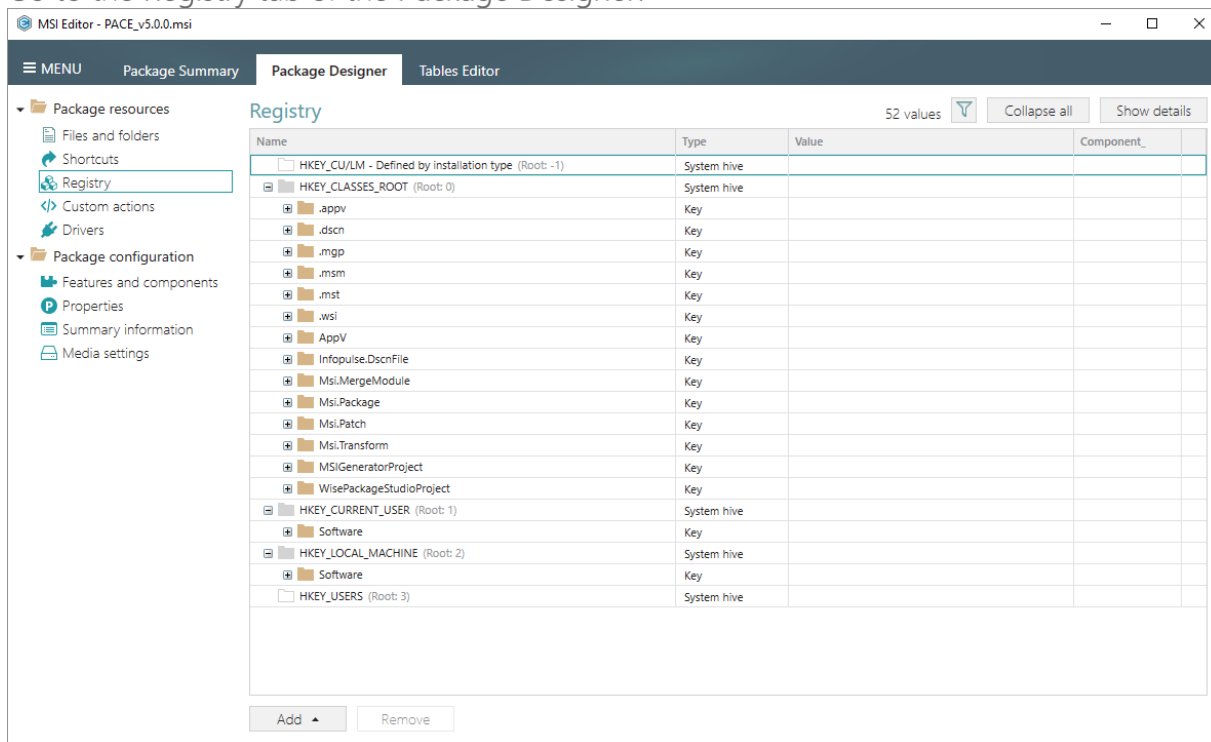
Add

Remove

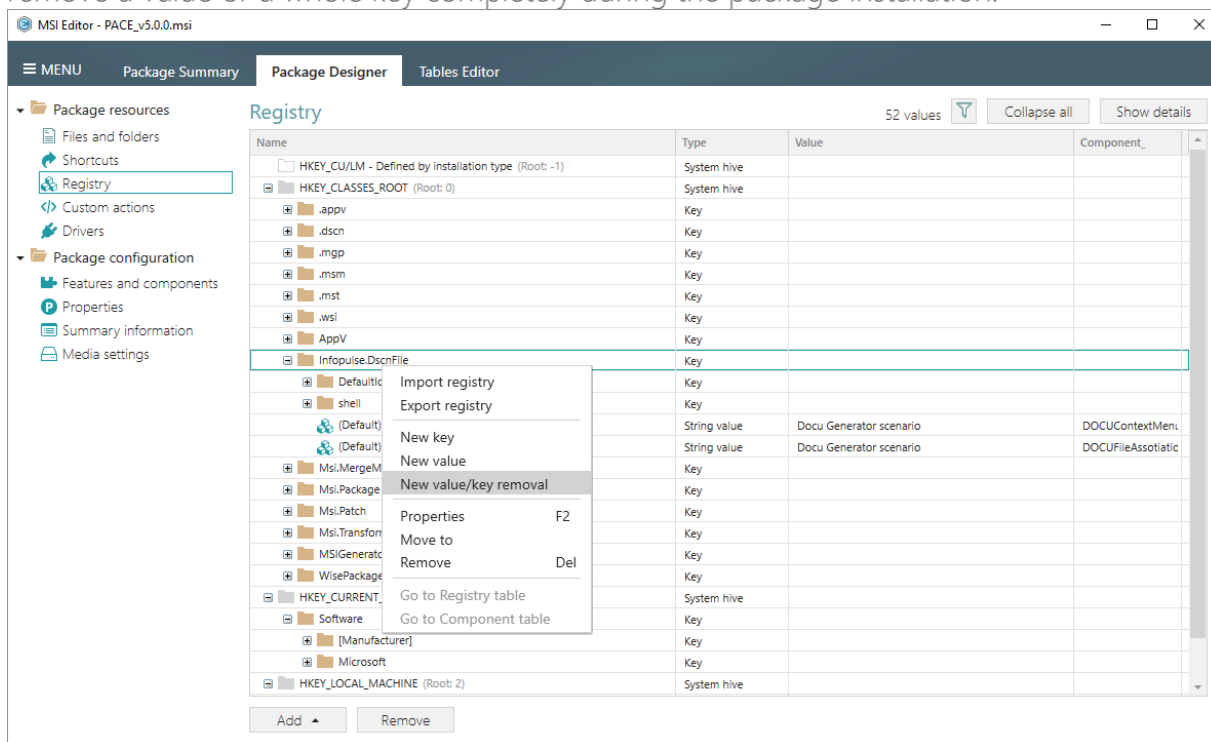
3.7.4.3 Add Value/Key Removal

Add a new RemoveRegistry value manually for securing a value or a key removal during the package installation.

- Go to the Registry tab of the Package Designer.





- Select New value/key removal from the context menu of a key, from which you want to remove a value or a whole key completely during the package installation.



- For removing a registry value, specify its Name, select a Component from the list, which will controls the deletion of thee specified registry value, and then click Save.

For cleaning-up a Default key value, or removing a whole key with all of its values and subkeys on install, select a respective option from the Value processing method field.

 Properties

 MSI table: 'RemoveRegistry'

Value processing method

Remove value on install

Name

Identifier

reg_0446f538

Key

Infopulse.DscnFile

Browse...

Root

HKEY_CLASSES_ROOT (0)

Component_

cmp8BEC1A678BEF51F3C3615ABCC4F9C7D4

Save

Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU

Package Summary

Package Designer

Tables Editor

New MSI...
Ctrl + N

New MST...

Open...
Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save
Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit
Alt + F4

Product language

1033

New GUID

New GUID

im	Version to	Upgrade type
		Detect
	≤5.0.0.1	Upgrade
	≤4.7.0	Upgrade
	≤5.0.0.1	Detect
		Upgrade

Control Panel - Programs and Features

Disable repair

Disable rem

Hide application in the list

Complexity Estimation

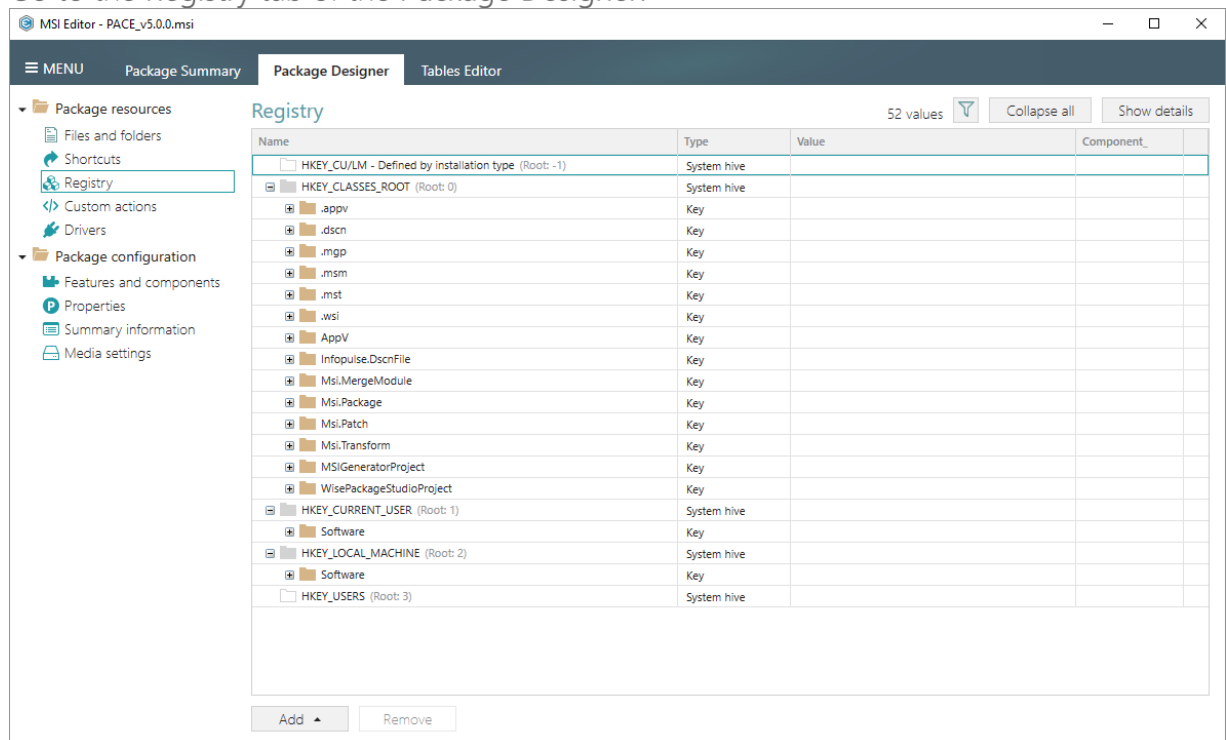
Files

Complexity level

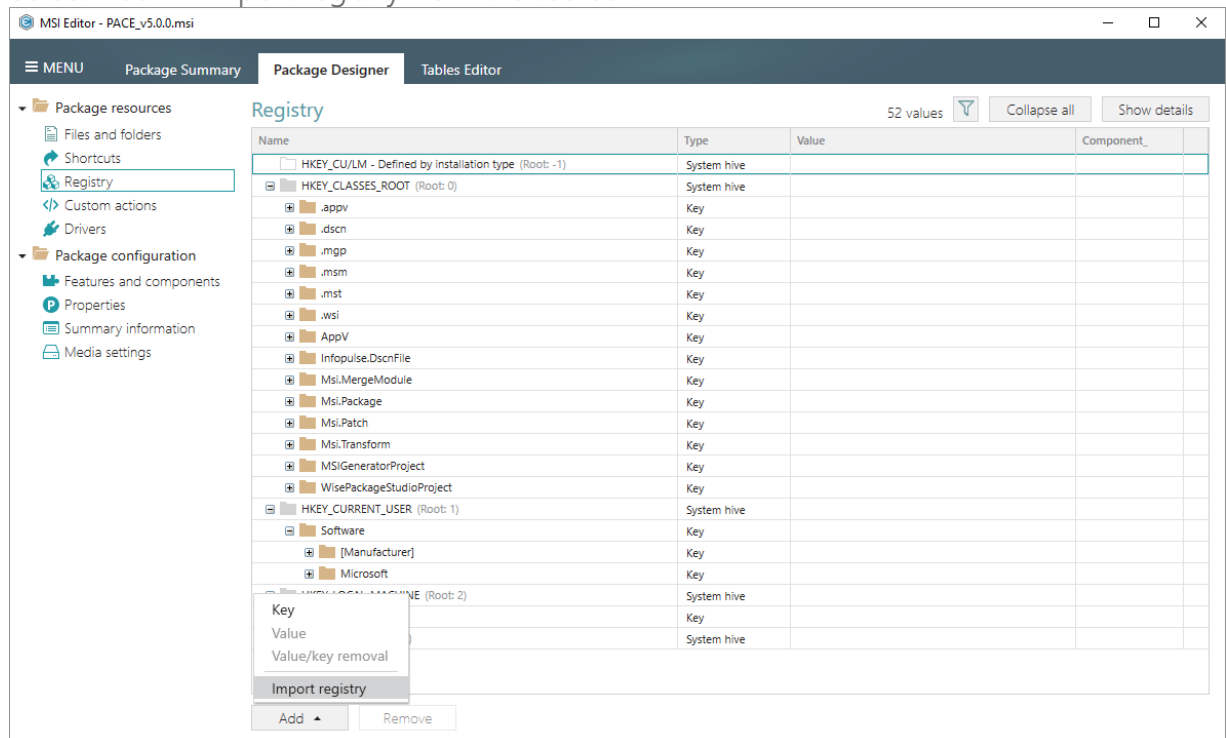
3.7.4.4 Import Registry

Import registry from the REG file.

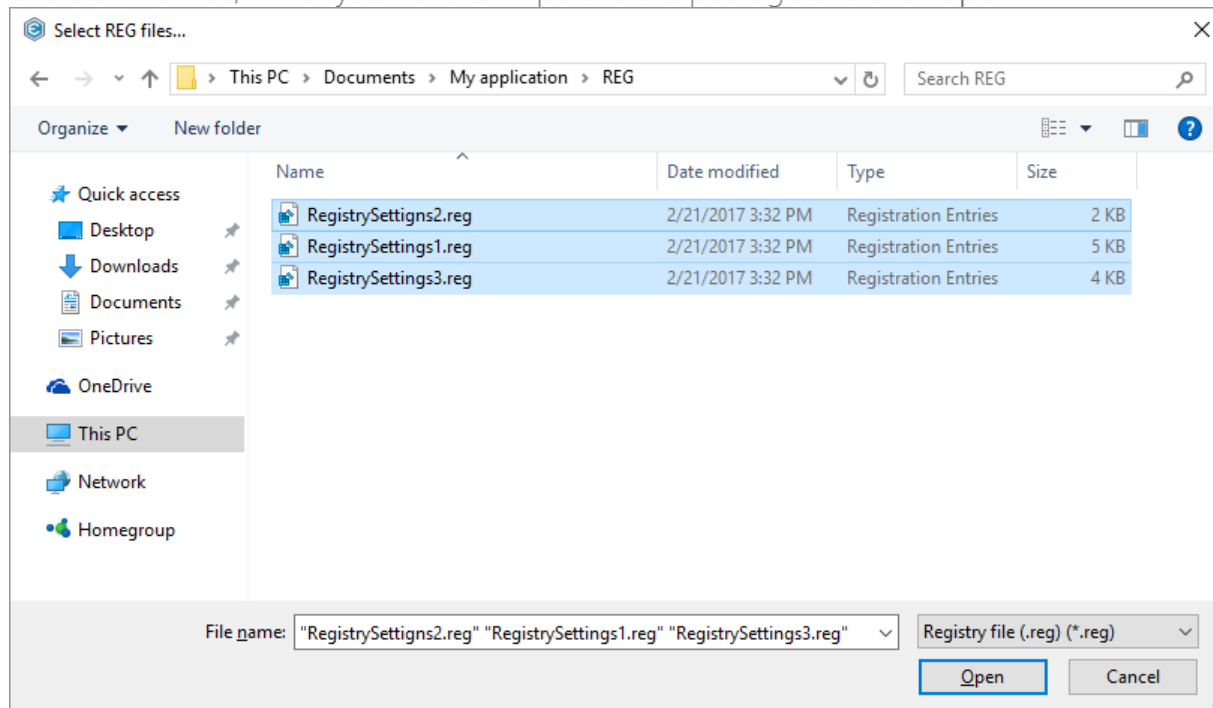
- Go to the Registry tab of the Package Designer.



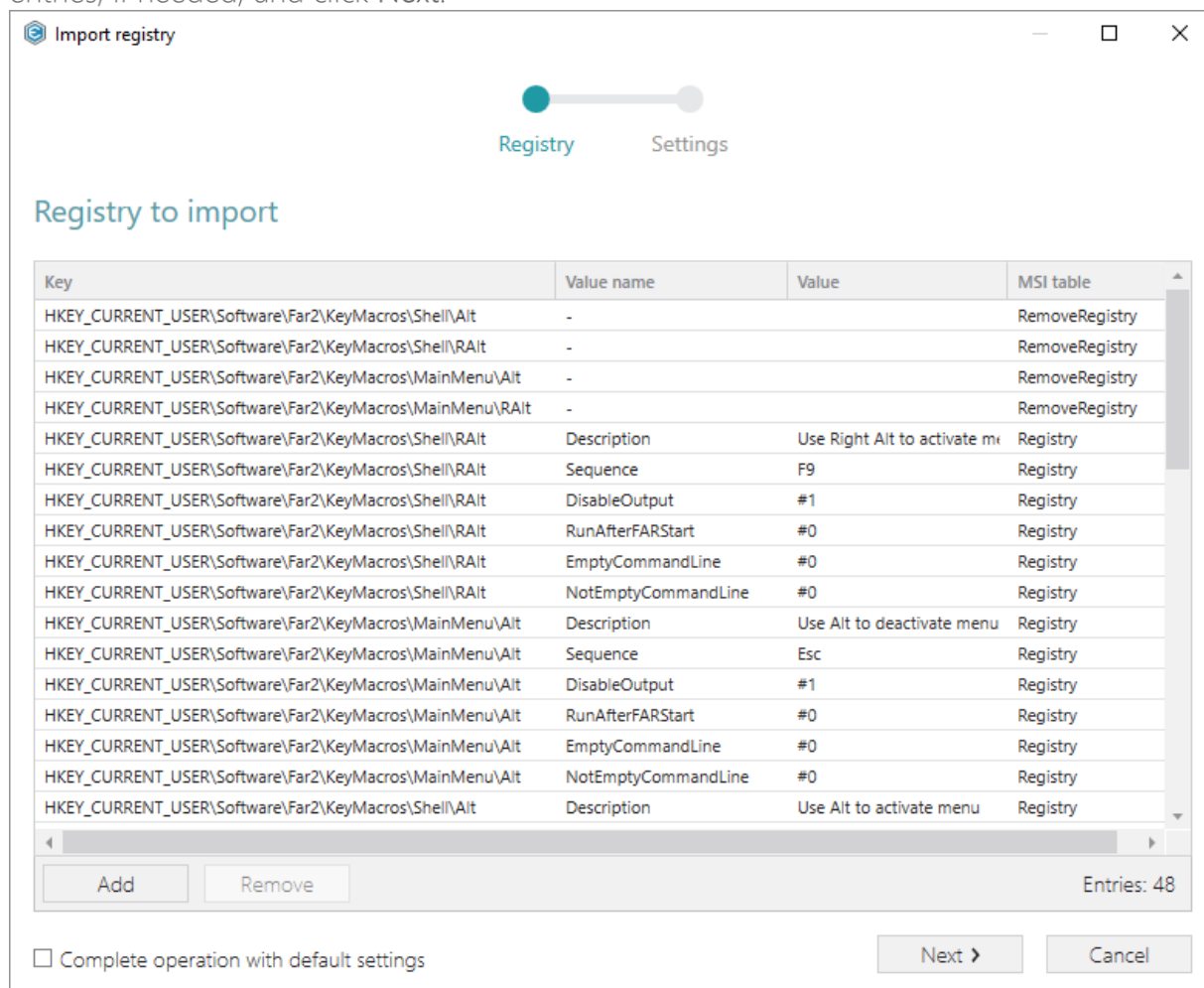
- Select Add -> Import registry from the toolbox.



- Choose REG files, which you want to import to the package and click Open.



- Review the registry entries, parsed from the selected REG files, remove the unnecessary entries, if needed, and click Next.



- At the **Settings** step, you can select an MSI Feature, to which components with the registry entries will be assigned. If the registry entries, which have been read, contain values in square brackets, you can select how these values will be processed – as MSI properties or as ordinary registry values. Below, in the tables, you will find the detailed description of these settings. Click **Finish** to complete the import.

Import registry

Registry

Settings

Settings

Target feature

<PACE feature>

New feature

☒ Manage features automatically

Values with special symbols

Key	Value name	Value	MSI table
HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\MaintenanceService	Test	[ProductCode]	Registry

☒ Escape square bracket characters to deliver original values (e.g. [String[]])

☐ Process values in square bracket as MSI properties (e.g. [String])

< Back

Finish

Cancel

Feature settings

Manage features automatically

The specific PACE features will be created (or used if they exist) for the components, containing the imported registry. Feature structure is based on the packaging best practices and depends on the registry key location.

<a feature, selected from the list>

Components with registry will be assigned to a feature, selected from the list.

Values with special symbols

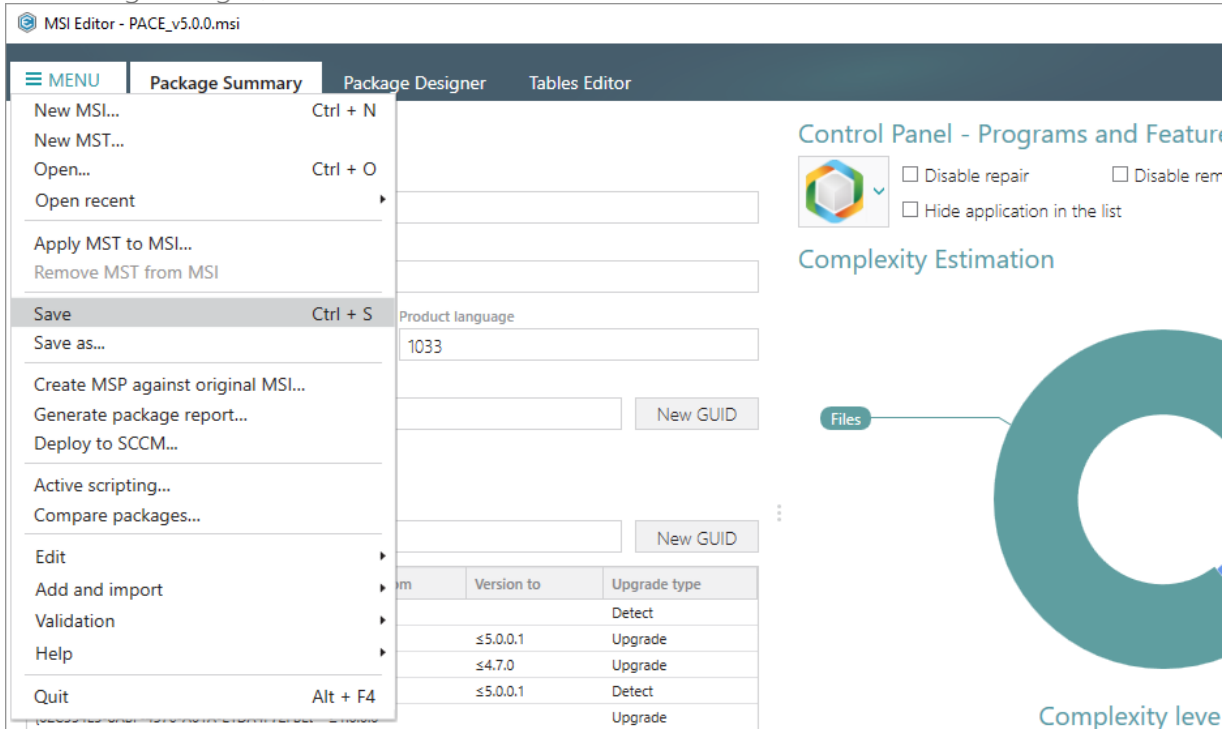
Escape square bracket characters to deliver original values

Values in square brackets, displayed in the list, will be saved to MSI as ordinary strings using the general rules for escaping the special characters. This approach guarantees the delivery of the imported registry entries to the target system with their original values.

Process values in square brackets as MSI properties

Values in square brackets, displayed in the list, will be saved to MSI as MSI properties. Thus, each MSI property will be replaced with its value during the MSI installation. If a property does not exist in MSI during the installation, it will be replaced with the blank value.

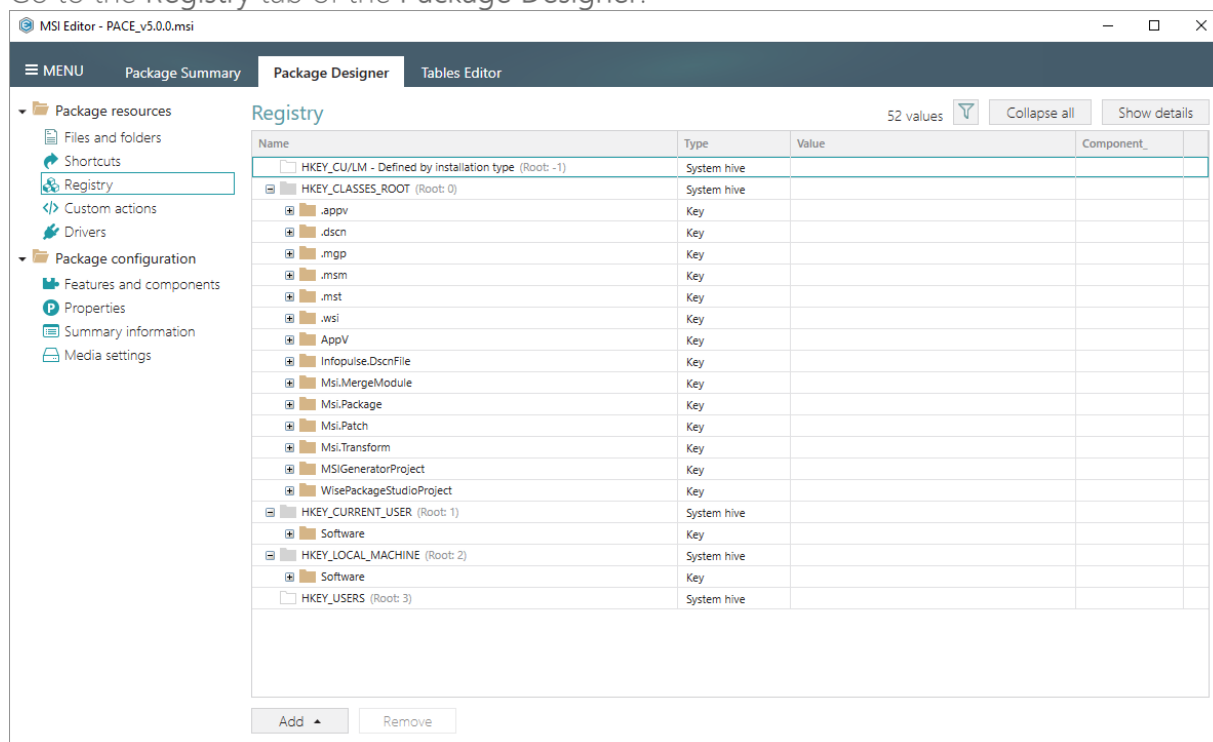
- For saving changes, select Save from MENU.



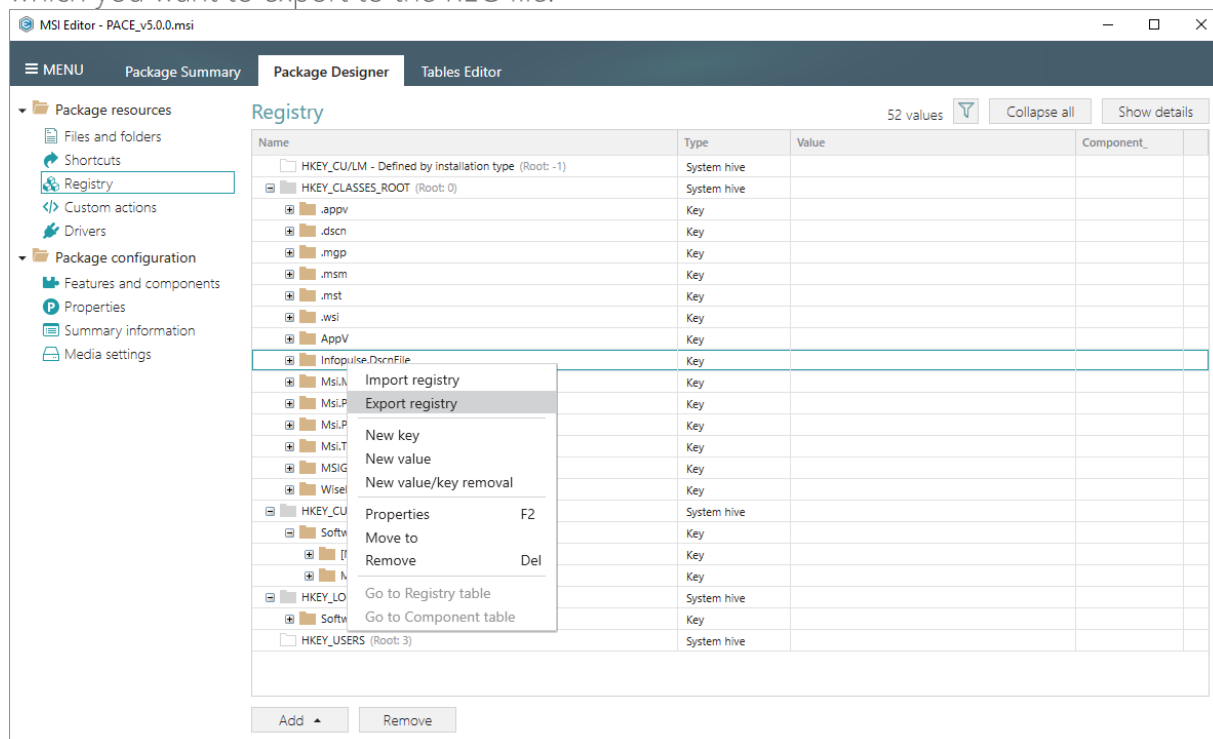
3.7.4.5 Export Registry

Export the selected registry to the REG file.

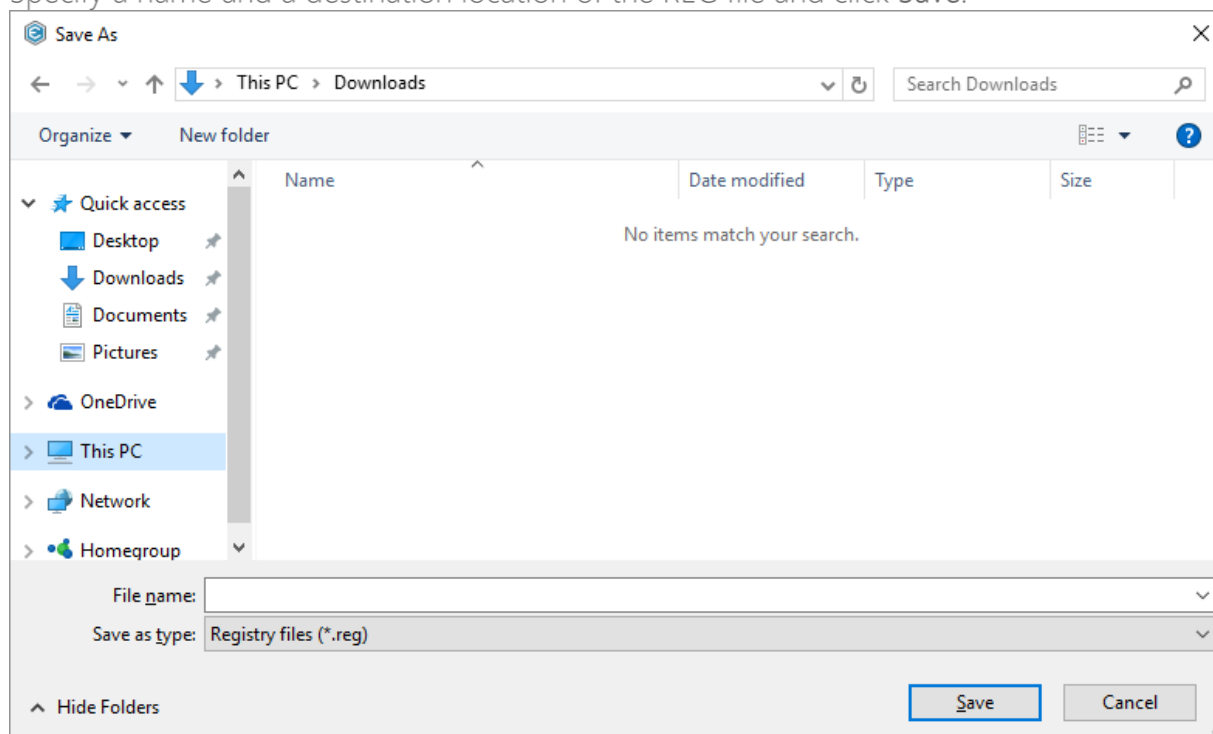
- Go to the Registry tab of the Package Designer.



- Select Export registry from the context menu of a registry item (root hive, key, or value), which you want to export to the REG file.



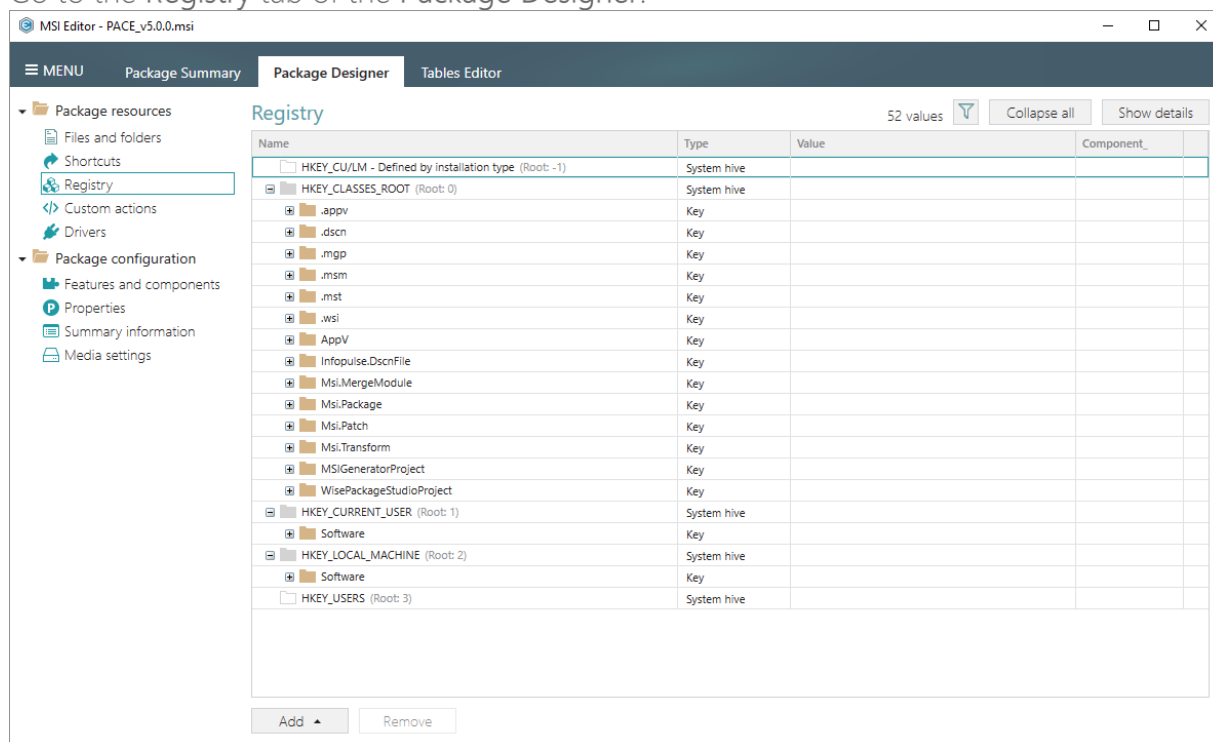
- Specify a name and a destination location of the REG file and click **Save**.



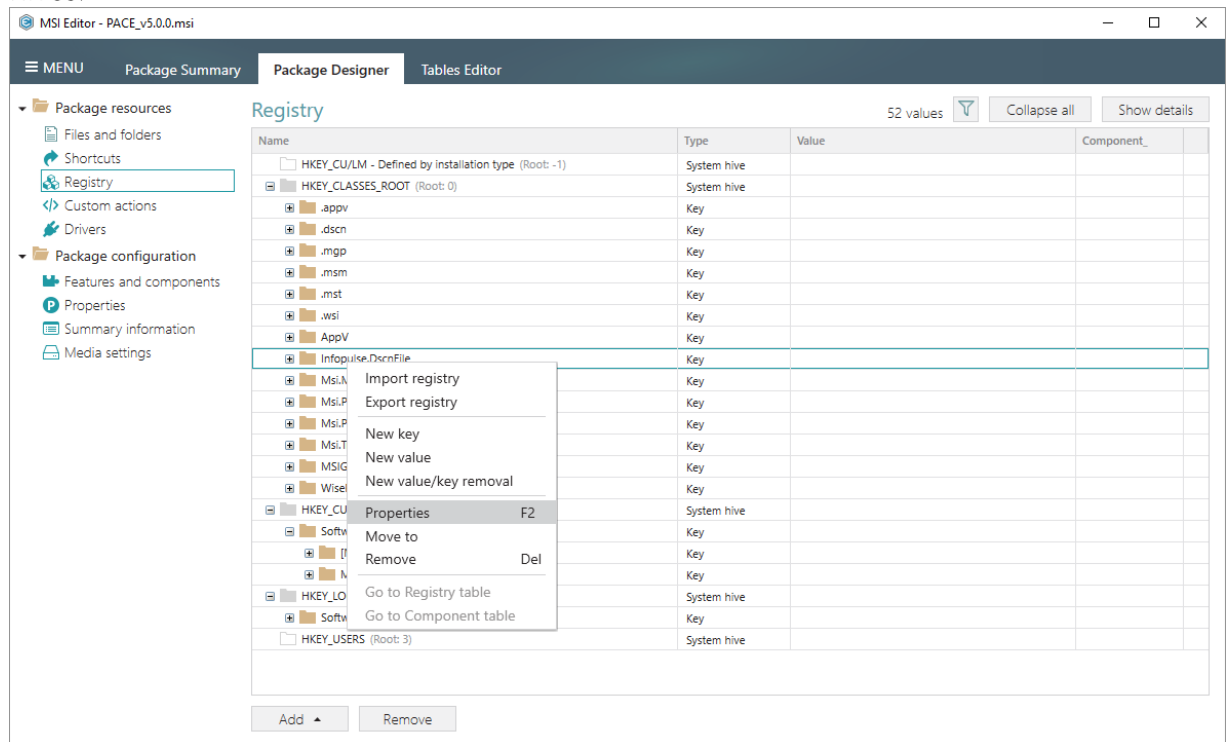
3.7.4.6 Set Permissions

Set custom permissions for the registry key.

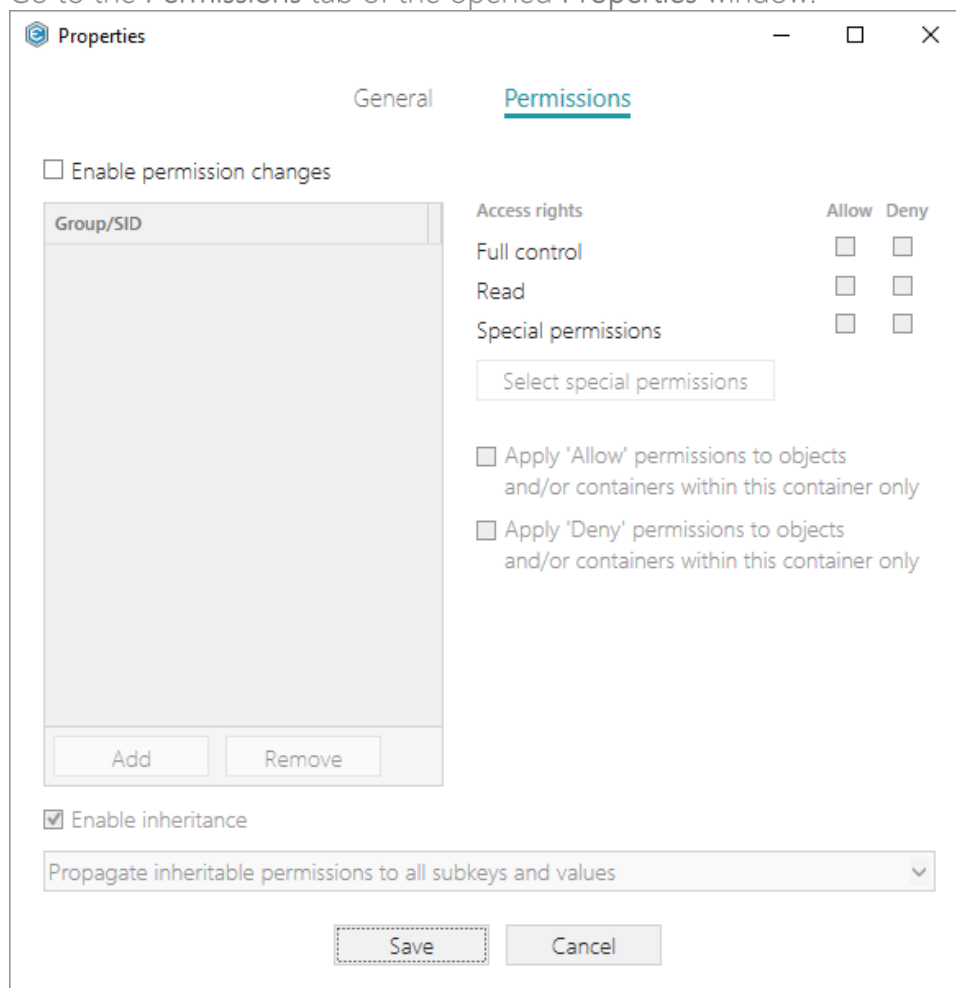
- Go to the **Registry** tab of the Package Designer.



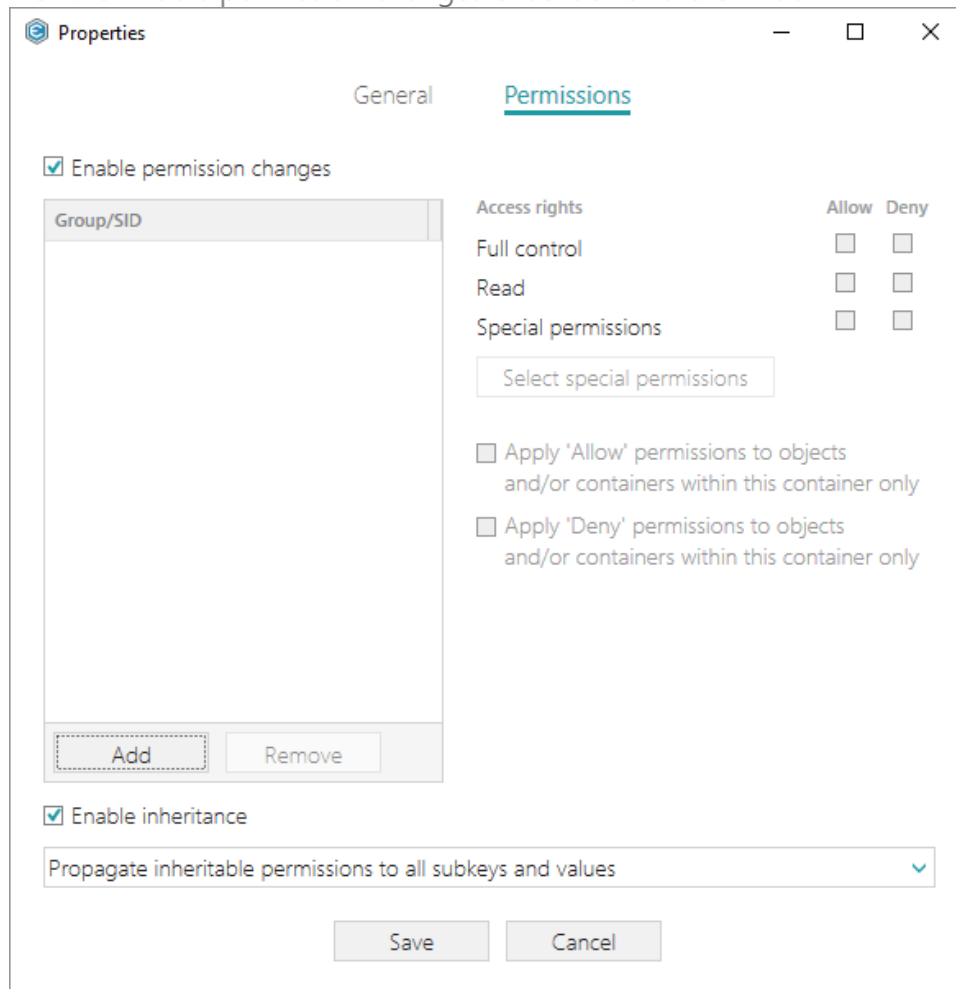
- Select Properties from the context menu of a registry key, for which you want to set permissions. Note that permissions could not be changed for the registry values and root hives.



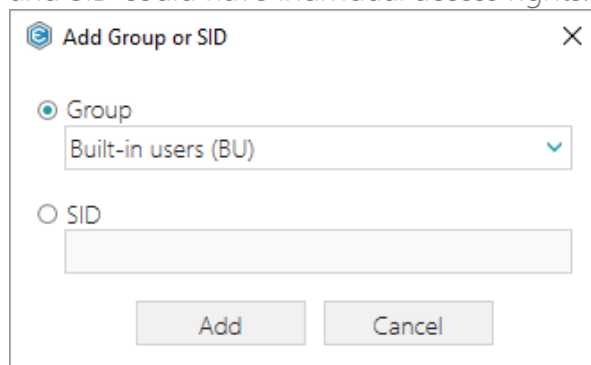
- Go to the Permissions tab of the opened Properties window.



- Tick the Enable permission changes checkbox and click Add.

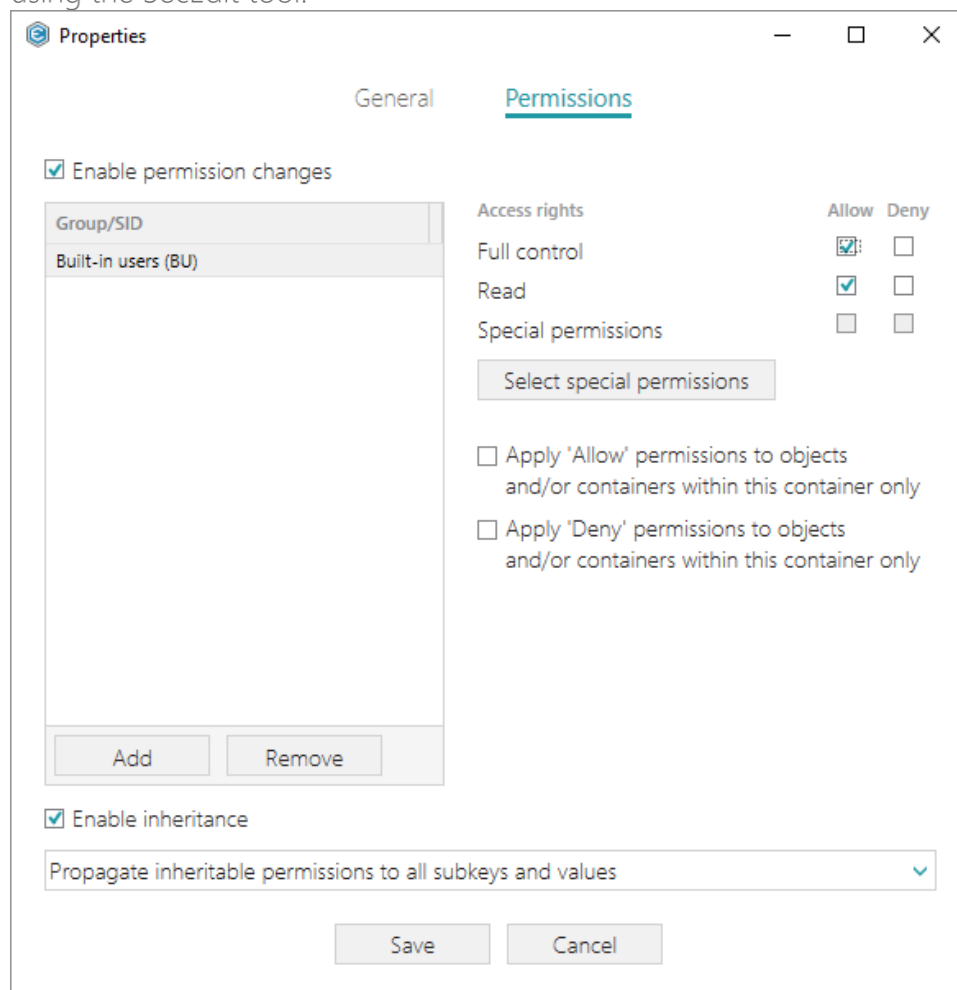


- Select a group from the list or enter SID manually, for which you want to set permissions, and click Add. Note that you can add as many groups and SID as you need. Each group and SID could have individual access rights.

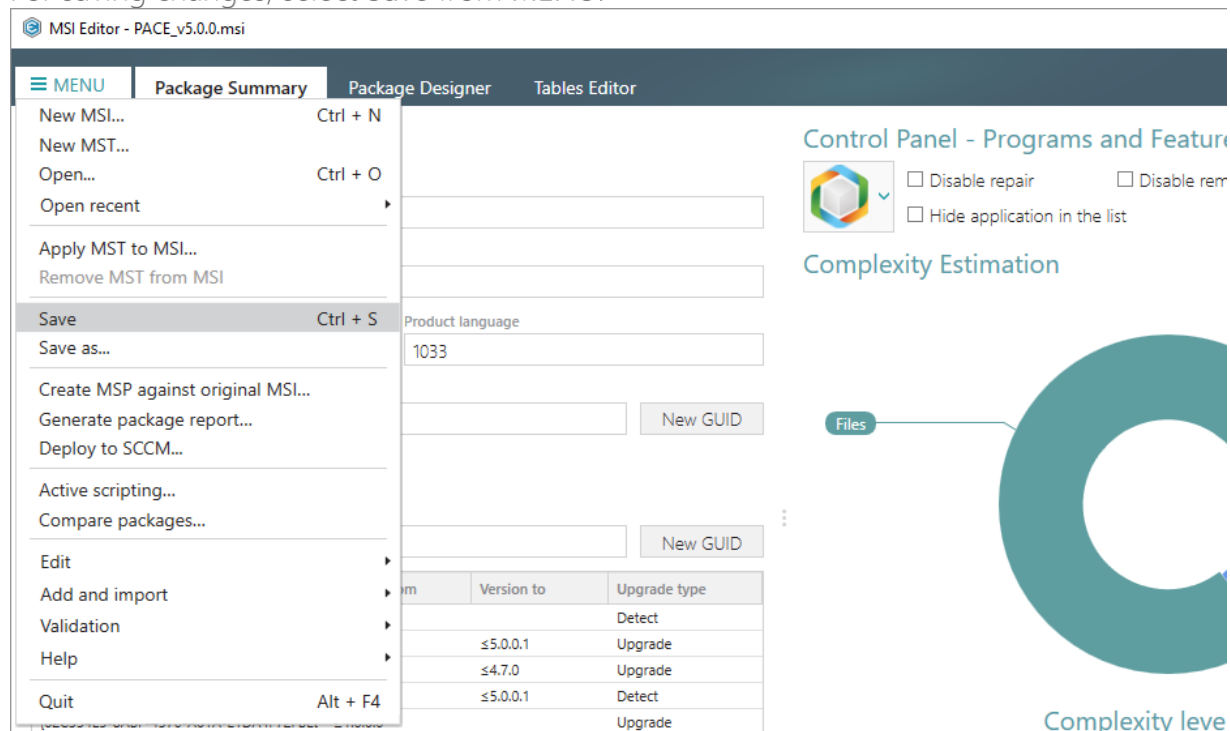


- Tick the necessary access rights for the selected group or SID, change (if needed) special permissions, inheritance options and behavior of applying the permissions. Click Save to save the changed permission settings to MSI. Note that permissions will be propagated

using the SecEdit tool.



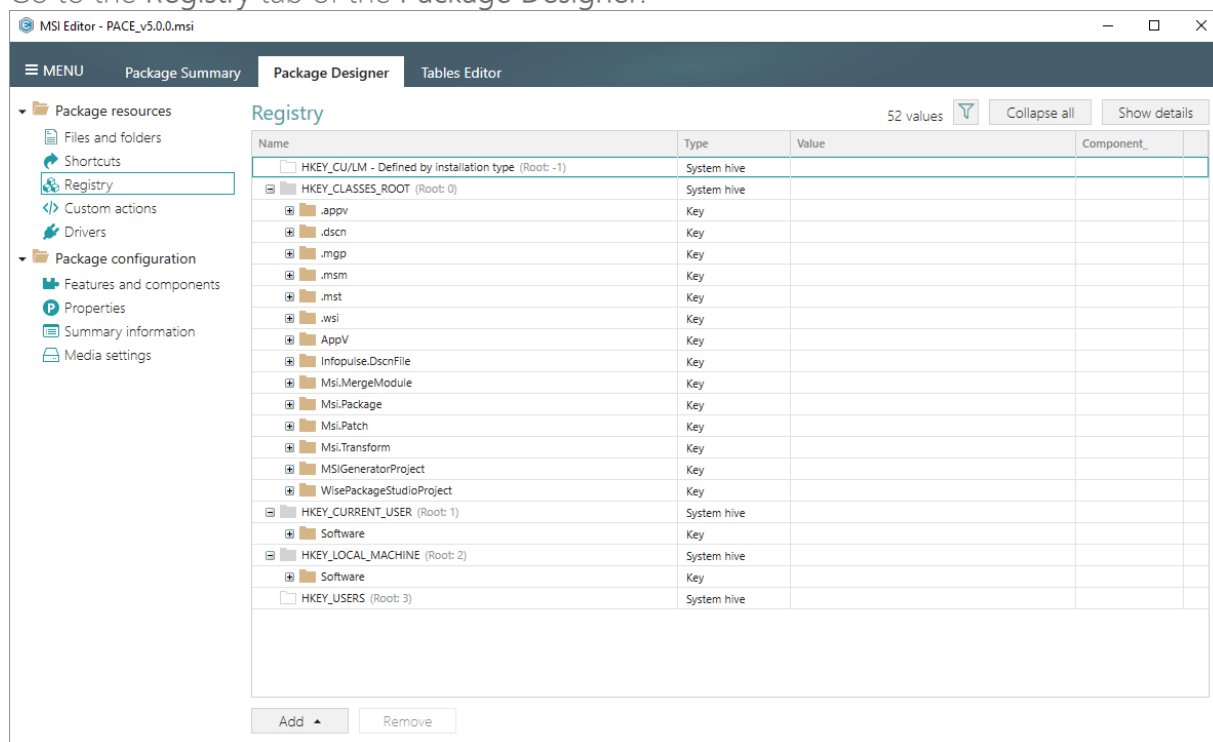
- For saving changes, select Save from MENU.



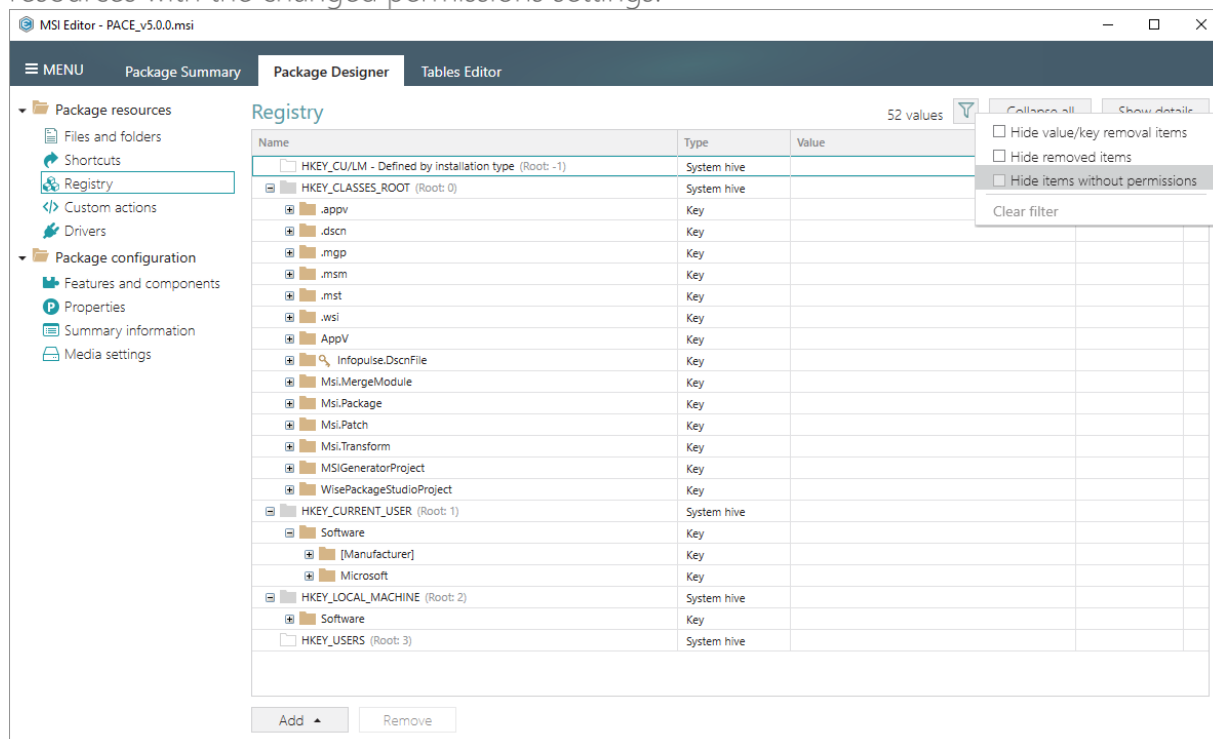
3.7.4.7 Remove Permissions

Locate registry key with custom permissions and remove the unnecessary permissions.

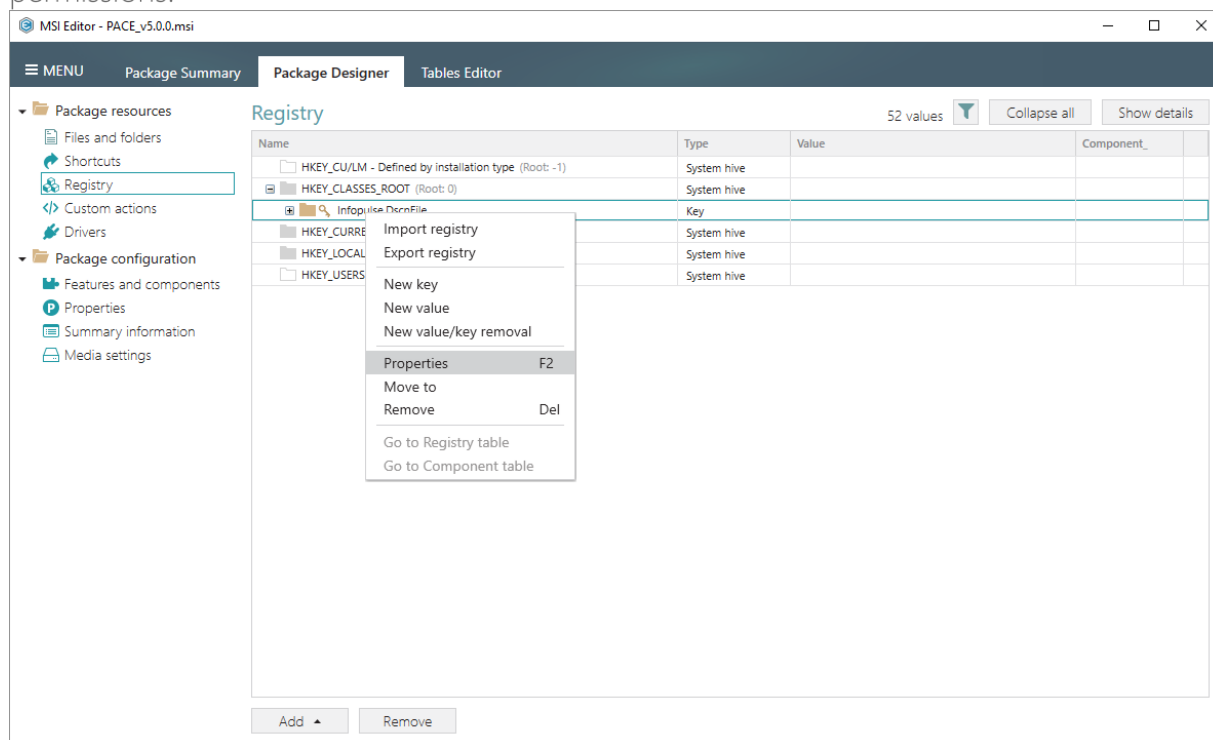
- Go to the Registry tab of the Package Designer.



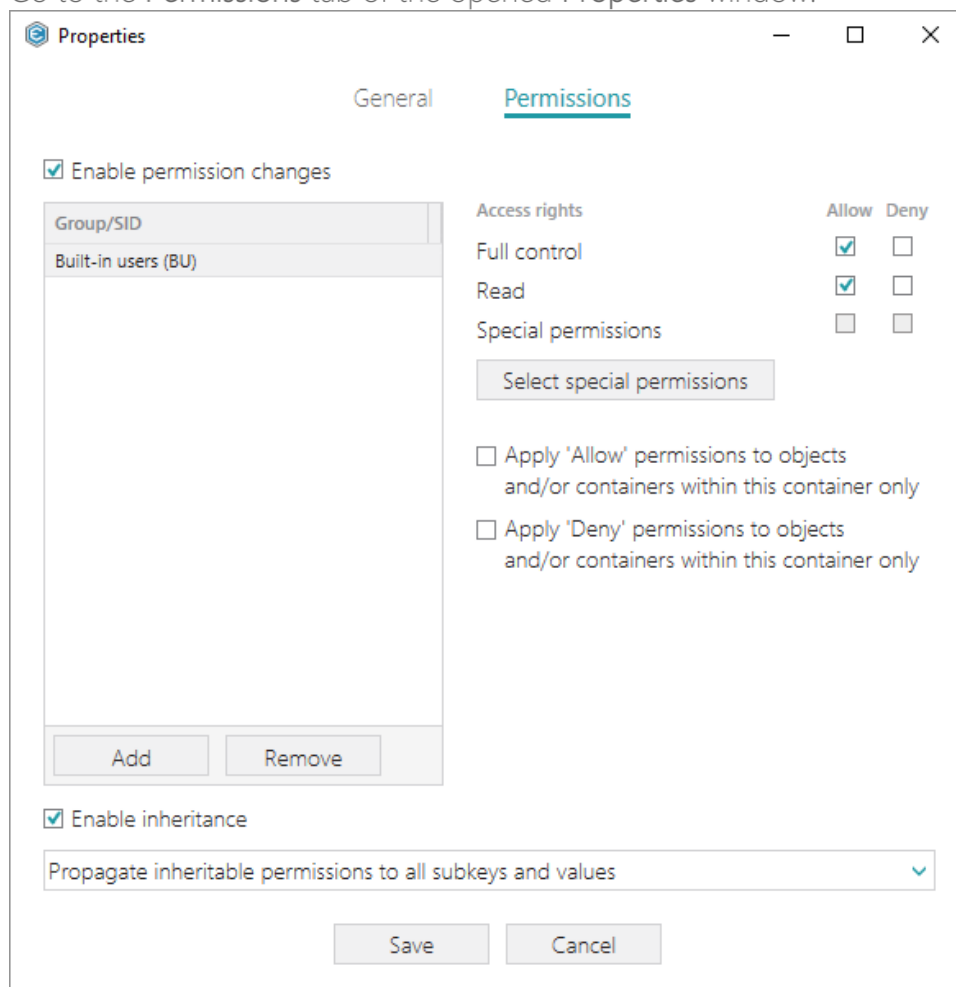
- (Optional) Click on the Filter and apply the Hide items without permissions filter to locate resources with the changed permissions settings.



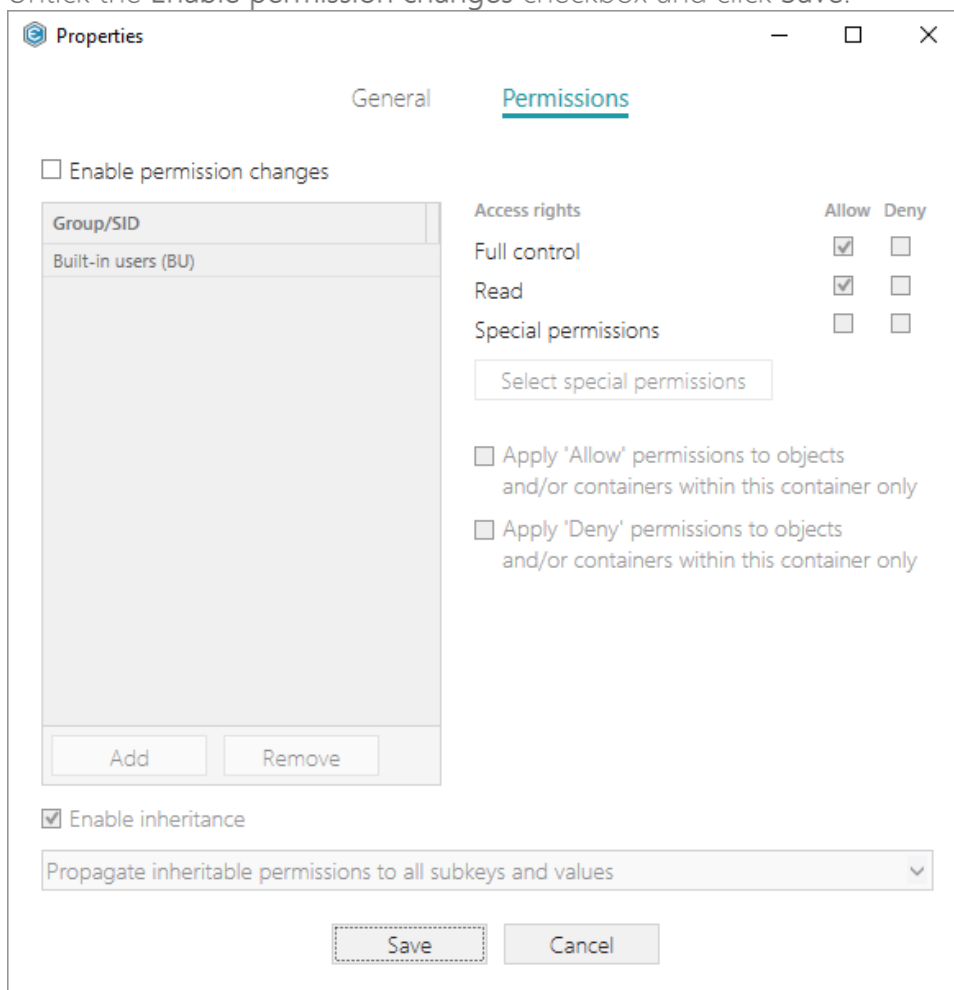
- Select Properties from the context menu of a registry key, for which you want to remove permissions.



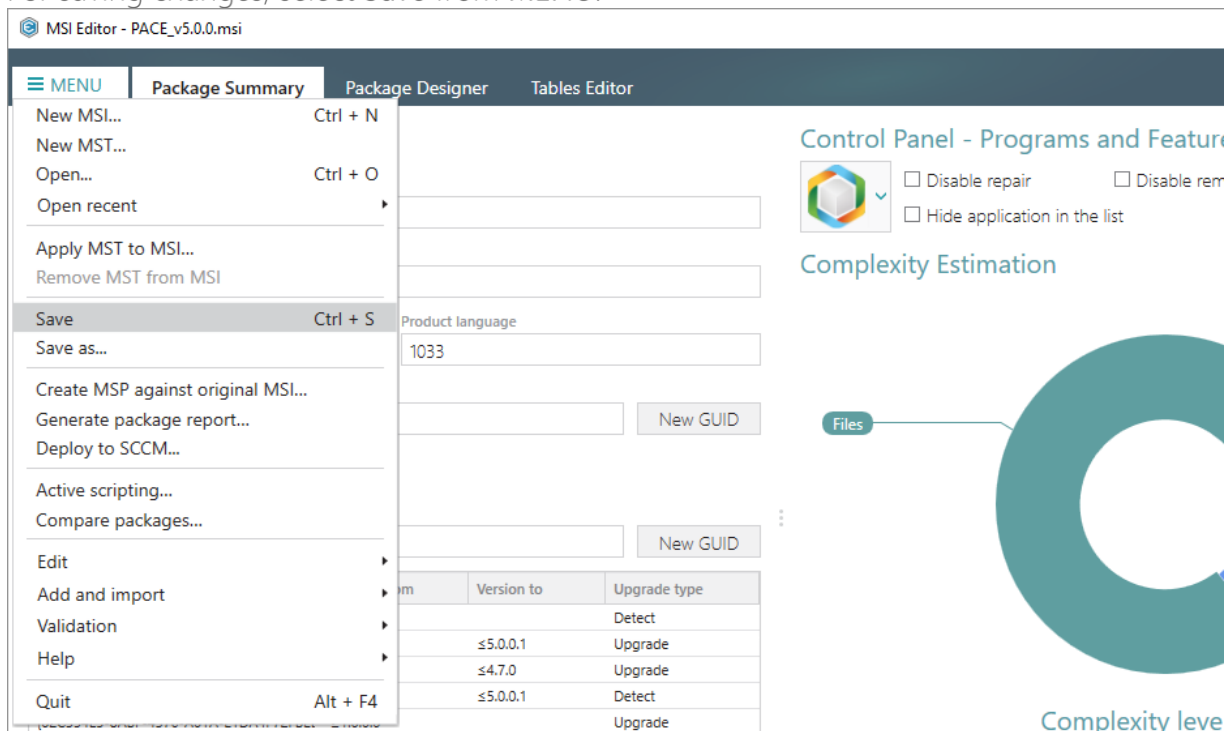
- Go to the Permissions tab of the opened Properties window.



- Untick the Enable permission changes checkbox and click Save.



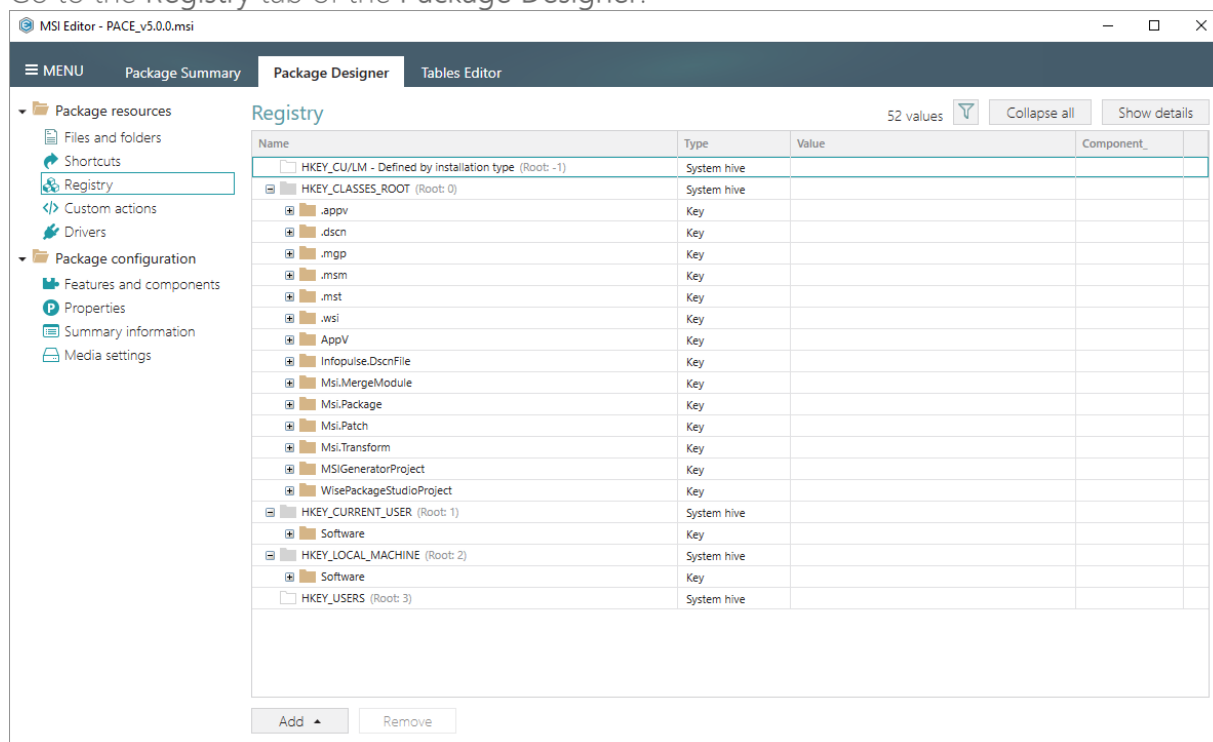
- For saving changes, select Save from MENU.



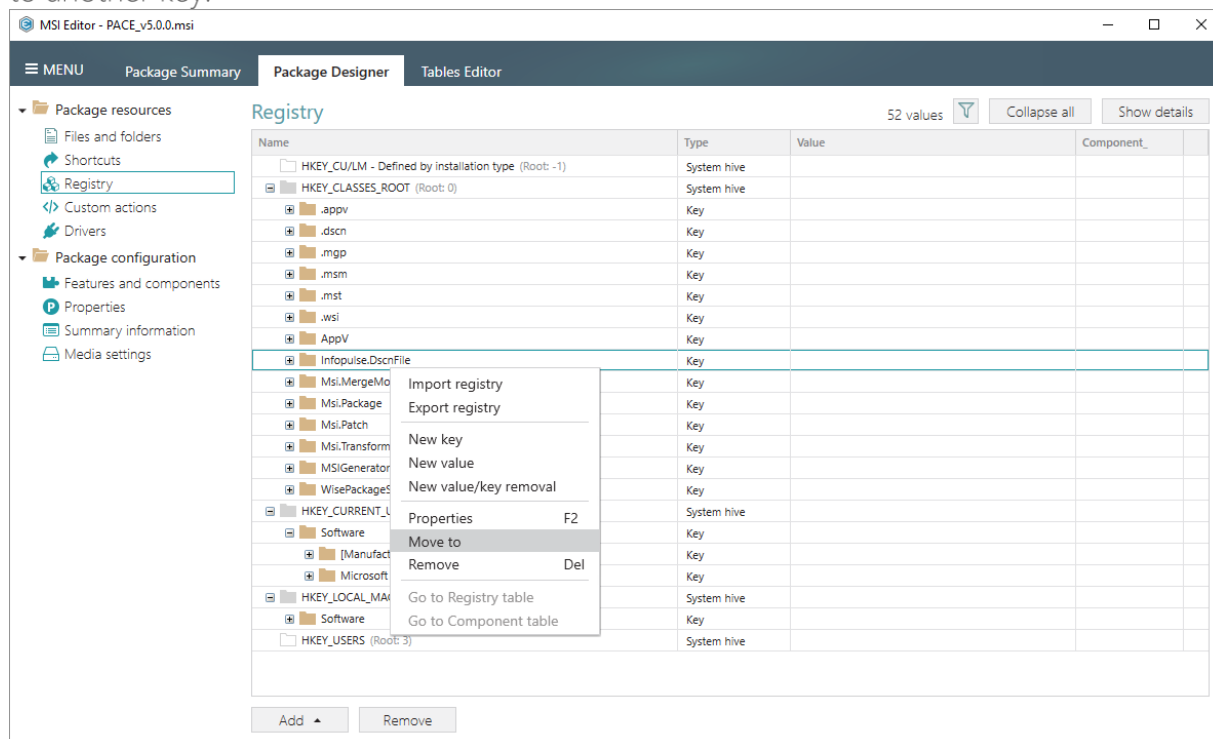
3.7.4.8 Move Value, Key

Move a registry value or a key from one parent key to another one.

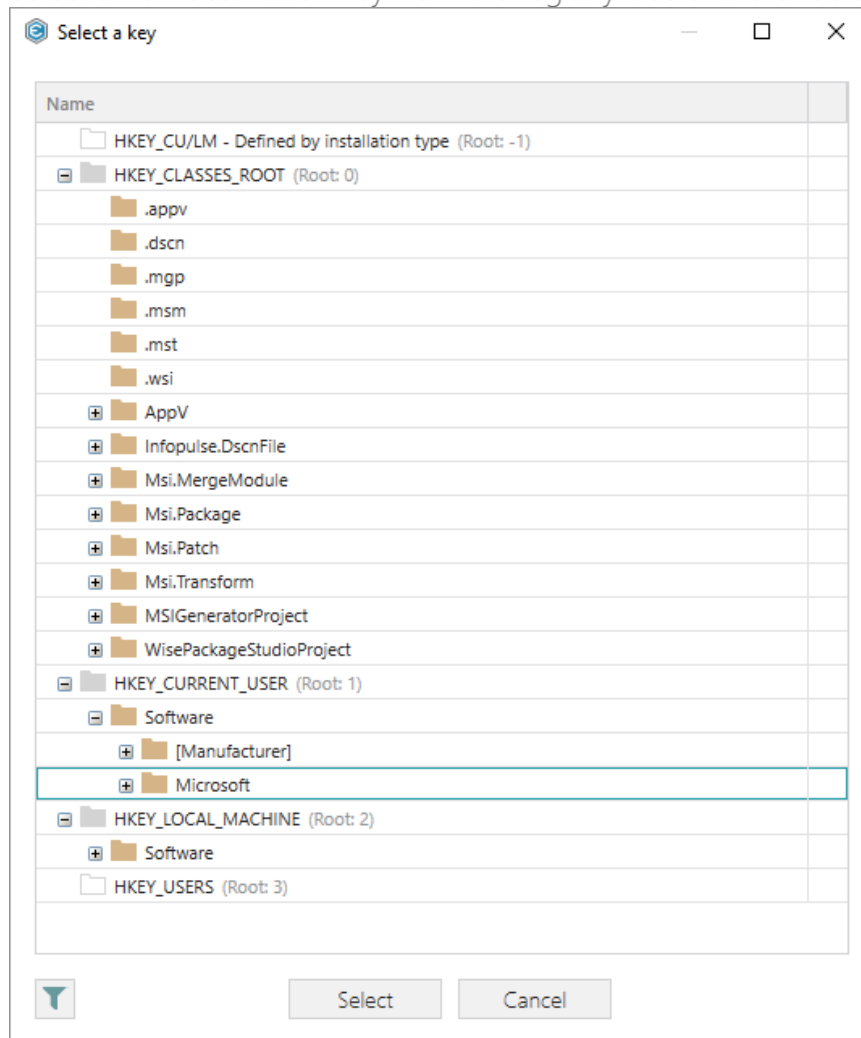
- Go to the Registry tab of the Package Designer.



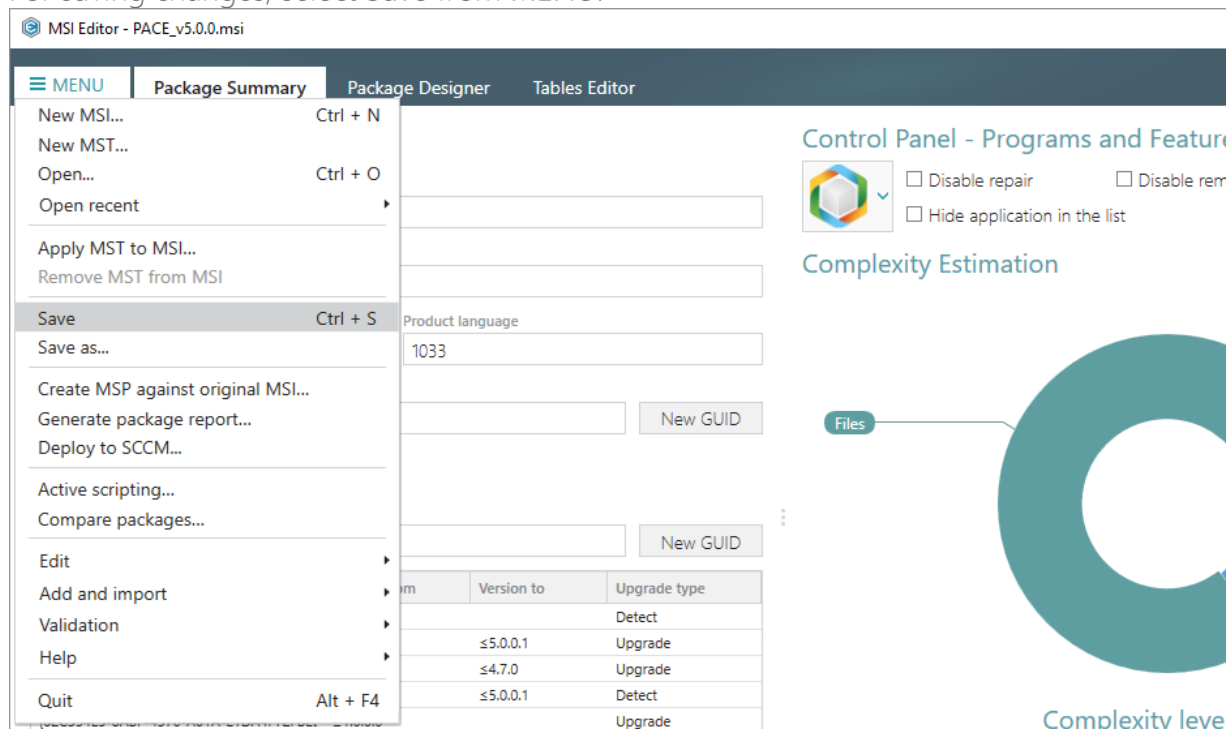
- Select Move to from the context menu of a registry key or a value, which you want to move to another key.



- Select a new destination key from the registry tree and click Select.



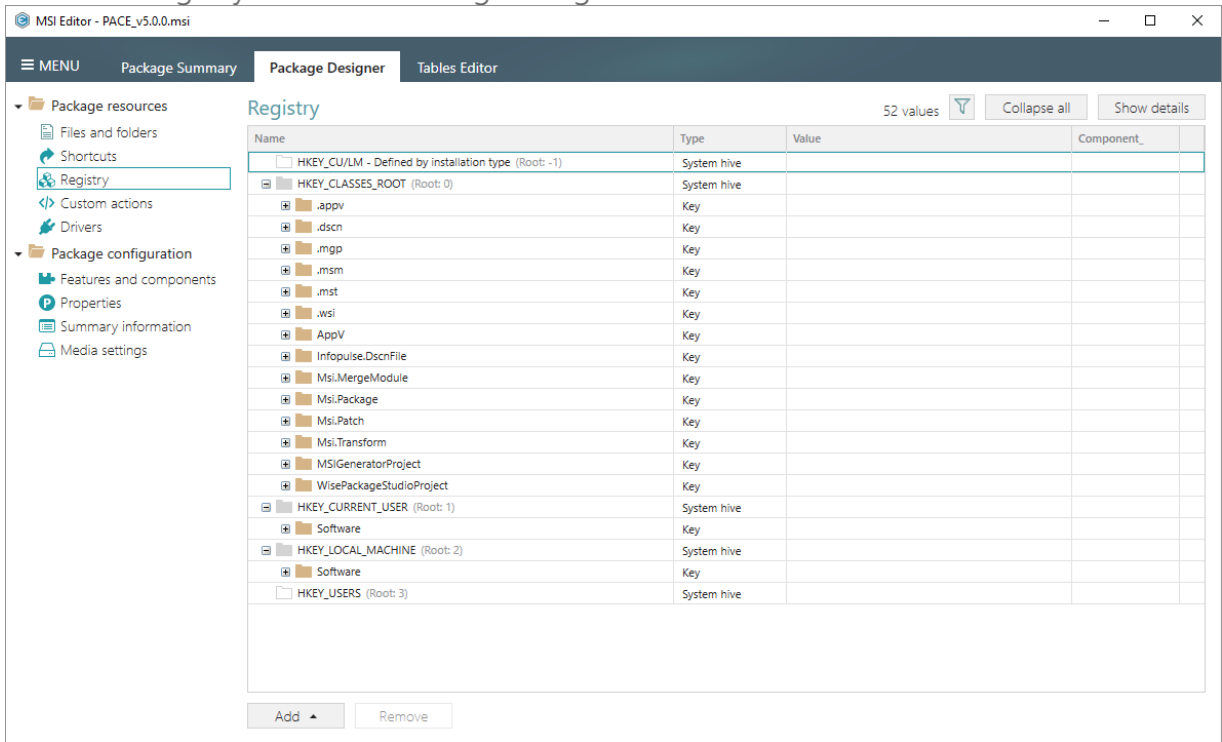
- For saving changes, select Save from MENU.



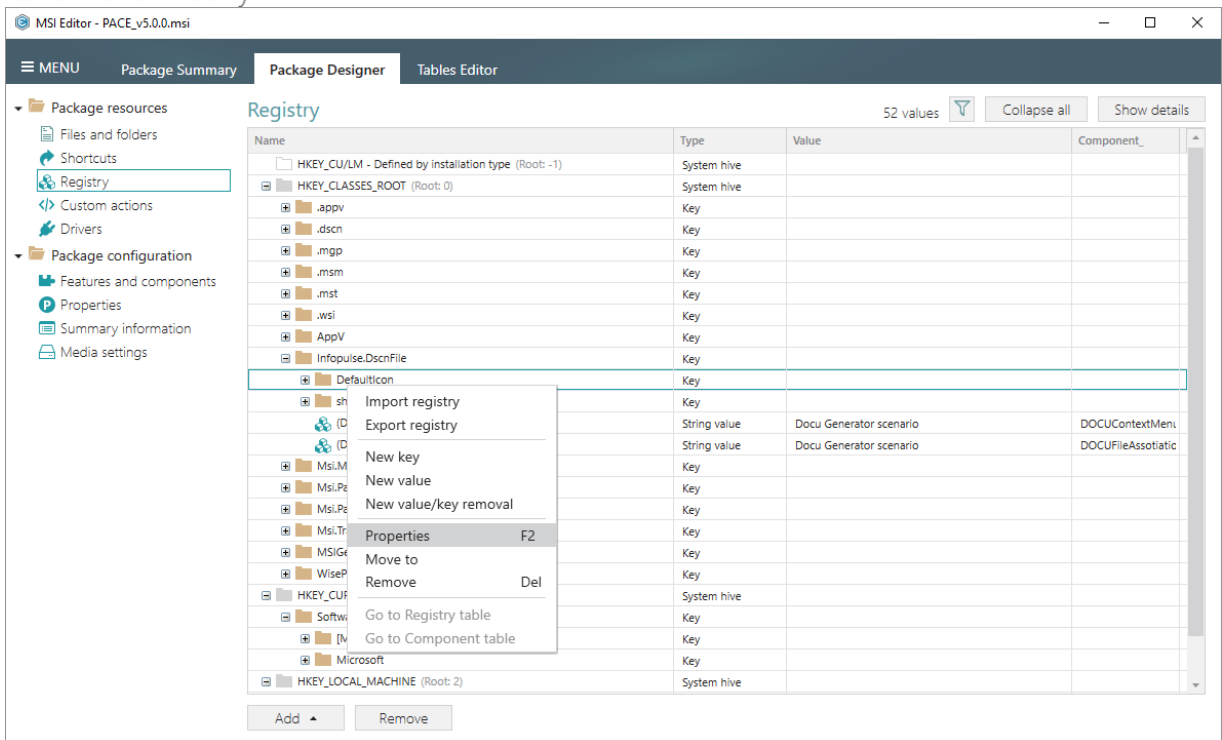
3.7.4.9 Edit Registry Key

Modify details and options of the selected registry key.

- Go to the Registry tab of the Package Designer.



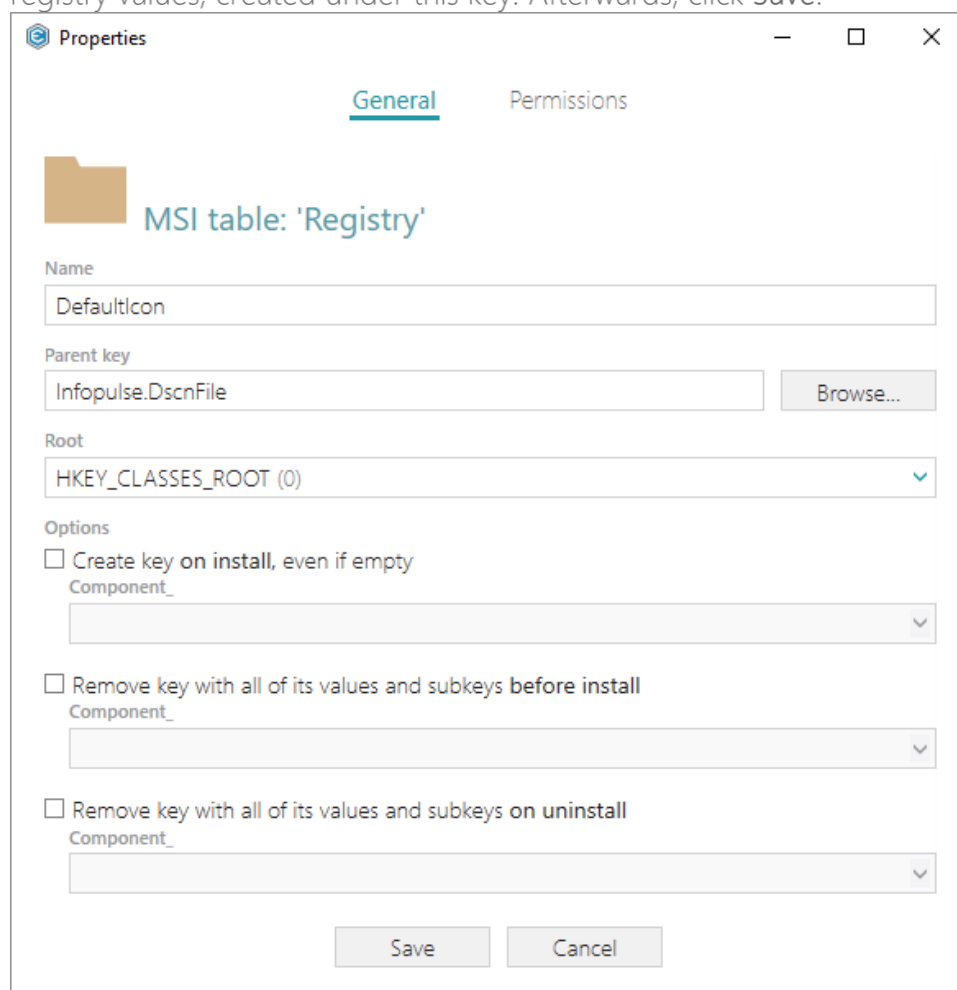
- Select Properties from the context menu of a registry key, details of which you want to review and modify.



- Using the Properties window make the necessary changes to the key Name, its Parent key and Root hive. You can modify the Parent key directly in the text field or use Browse to choose a new key from the registry tree. Note that changing the Parent key and/or the

Root hive will result in moving the selected key to a new location.

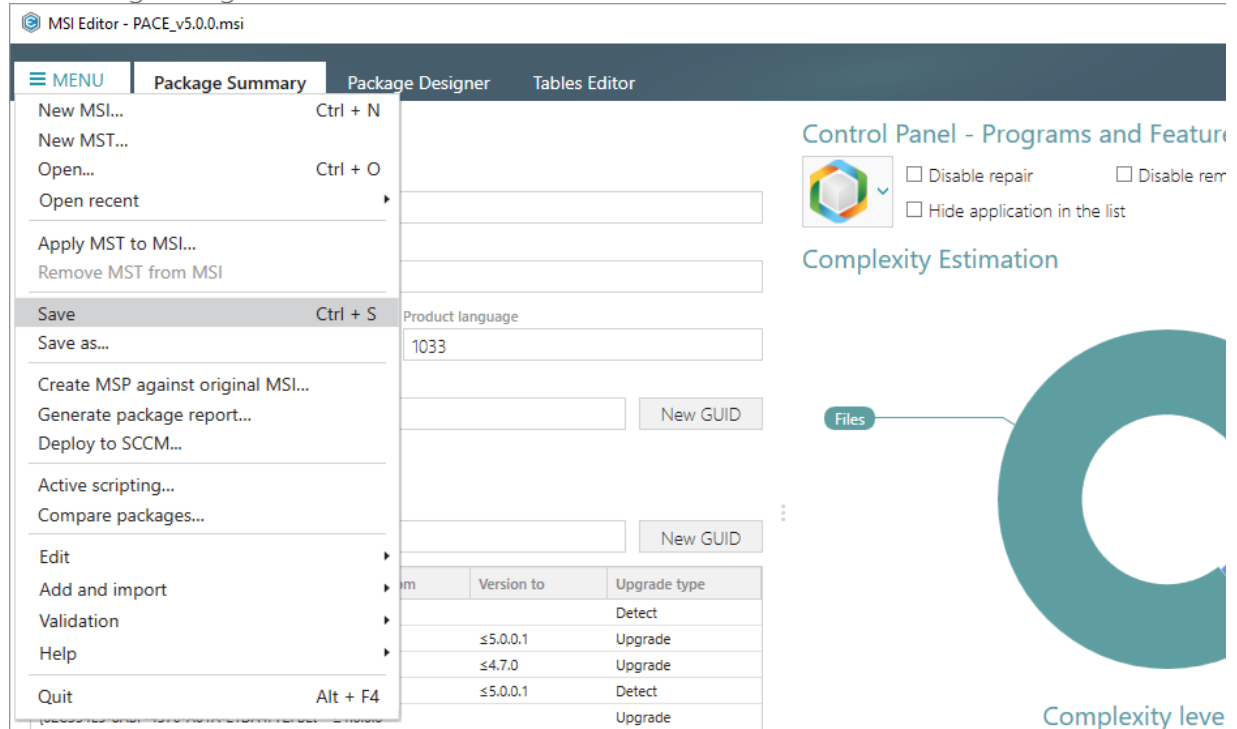
Select the necessary key **Options** (e.g. 'Create key on install, even if empty') to secure the key creation and/or removal. The selected key **Options** will be represented as special registry values, created under this key. Afterwards, click **Save**.



The screenshot shows a 'Properties' dialog box with two tabs: 'General' (selected) and 'Permissions'. The dialog is titled 'MSI table: 'Registry''. It contains the following fields and options:

- Name:** A text box containing 'DefaultIcon'.
- Parent key:** A text box containing 'Infopulse.DscrnFile' and a 'Browse...' button.
- Root:** A dropdown menu showing 'HKEY_CLASSES_ROOT (0)' with a green checkmark.
- Options:**
 - ☐ **Create key on install, even if empty**
Component_: A dropdown menu.
 - ☐ **Remove key with all of its values and subkeys before install**
Component_: A dropdown menu.
 - ☐ **Remove key with all of its values and subkeys on uninstall**
Component_: A dropdown menu.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom.

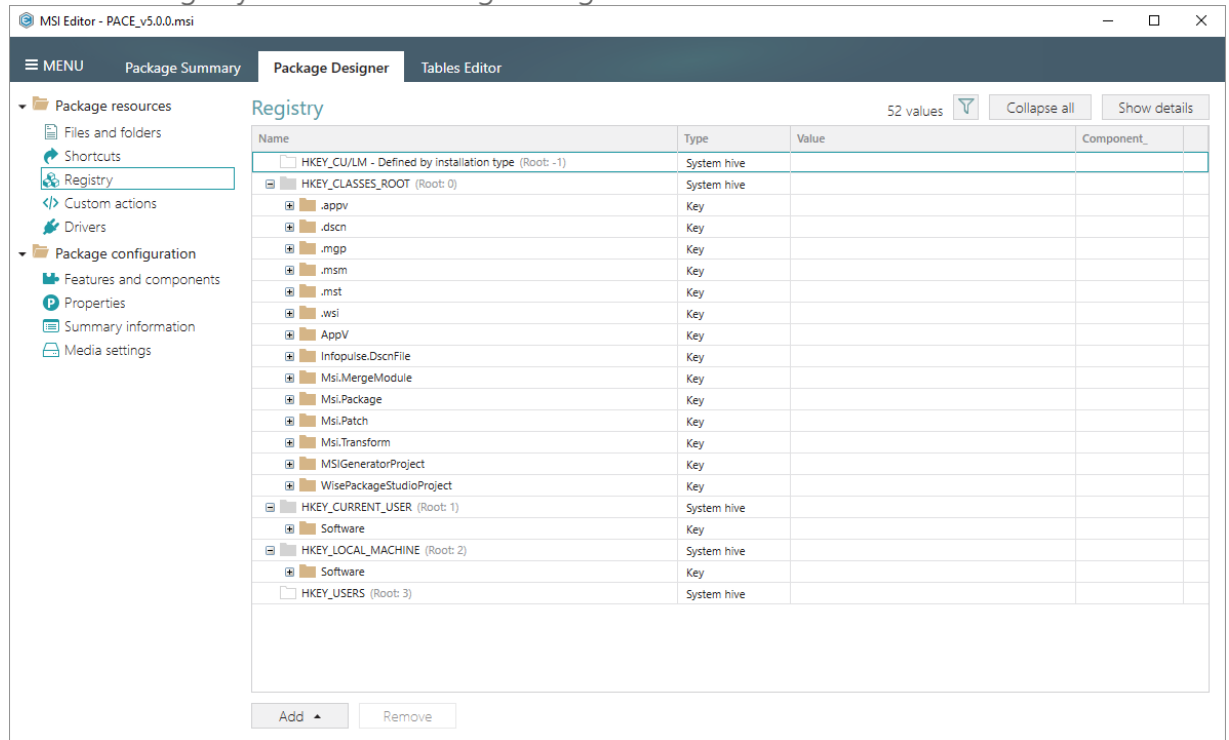
- For saving changes, select Save from MENU.



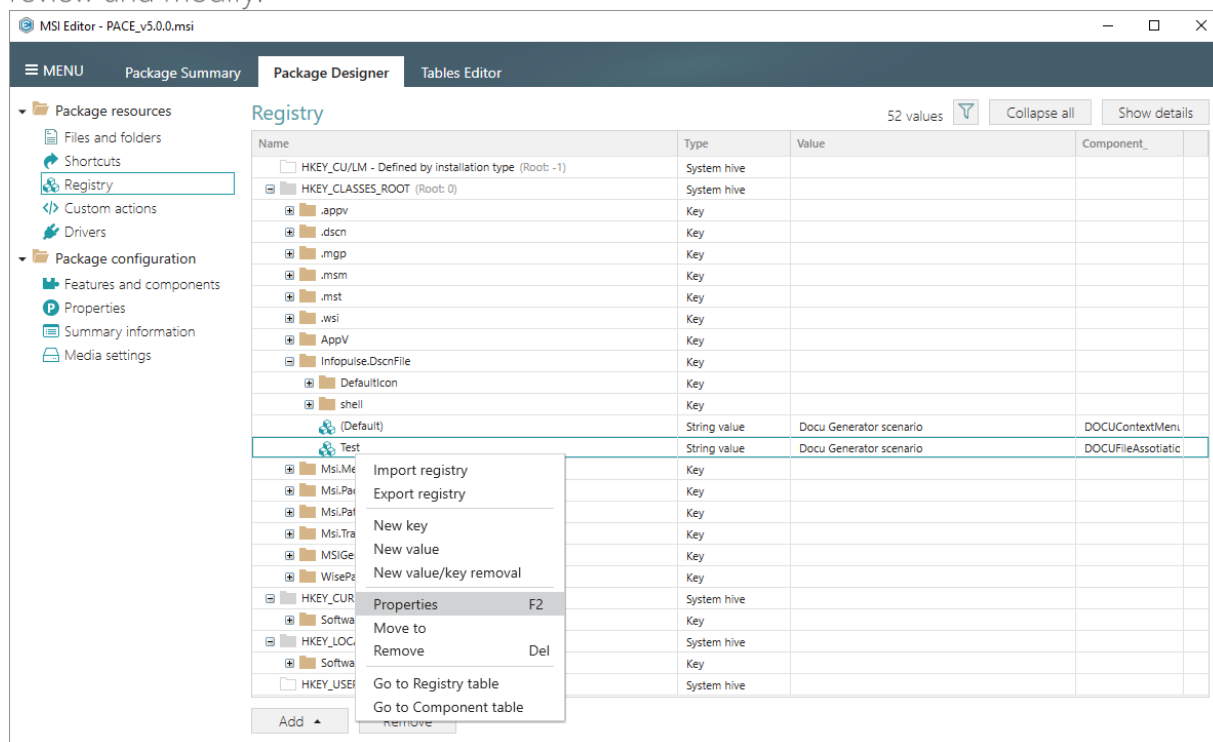
3.7.4.10 Edit Registry Value

Modify details of the selected registry value.

- Go to the Registry tab of the Package Designer.



- Select **Properties** from the context menu of a registry value, details of which you want to review and modify.



- Using the **Properties** window make the necessary changes to the value **Name**, **Value** itself, and **Component** that controls the installation of this registry value.


The **Parsed** value option serves easier editing of a registry value of the selected value type. The **Raw MSI** value option displays and gives ability to manage what exactly will be saved to the opened MSI database.

Note that changing a **Key** and a **Root** hive will result in moving this registry value to a new location. You can modify the **Key** directly in the text field or use **Browse** to choose a new key from the registry tree.

The **Value processing method** options defines whether this value will be an ordinary registry value with the specified **Name** and **Value** or will secure a key creation and/or removal. Below, in the tables, you will find the detailed description of these options.

Afterwards, click **Save**.

Properties

 MSI table: 'Registry'

Value processing method
1. Set both name and value

Name
Test

Identifier
reg970846B290F2E59F13E0B69

Value
☒ Parsed value

Type
String value (REG_SZ)

Value
Docu Generator scenario

☐ Raw MSI value

Docu Generator scenario

Key
Infopulse.DscnFile

Browse...

Root
HKEY_CLASSES_ROOT (0)

Component_
DOCUFileAssotiation

Save

Cancel

Value processing method

1. Set both name and value

On install, the package creates an ordinary registry value with the specified name and value itself in the system registry at the selected root and key.

On uninstall, the package removes this registry value from the system registry. The containing registry key will be automatically removed only if it is empty.

2. Set <Default> key value

On install, the package creates the Default key value with the specified value in the system registry at the selected root and key. In the system registry, this value is represented as "(Default)":

Name	Type	Data
 (Default)	REG_SZ	Test

On uninstall, the package cleans-up the Default key registry value in the system registry. The containing registry key will be automatically removed only if it is empty.



3. Create the key on install, even if empty

On install, the package creates the specified key in the system registry at the selected root, even if this key is empty. By default, empty keys are not created.

On uninstall, no additional actions take place.

4. Remove the key with all of its values and subkeys on uninstall

On install, no additional actions take place.

On uninstall, the package removes this key completely along with all of its values and subkeys.

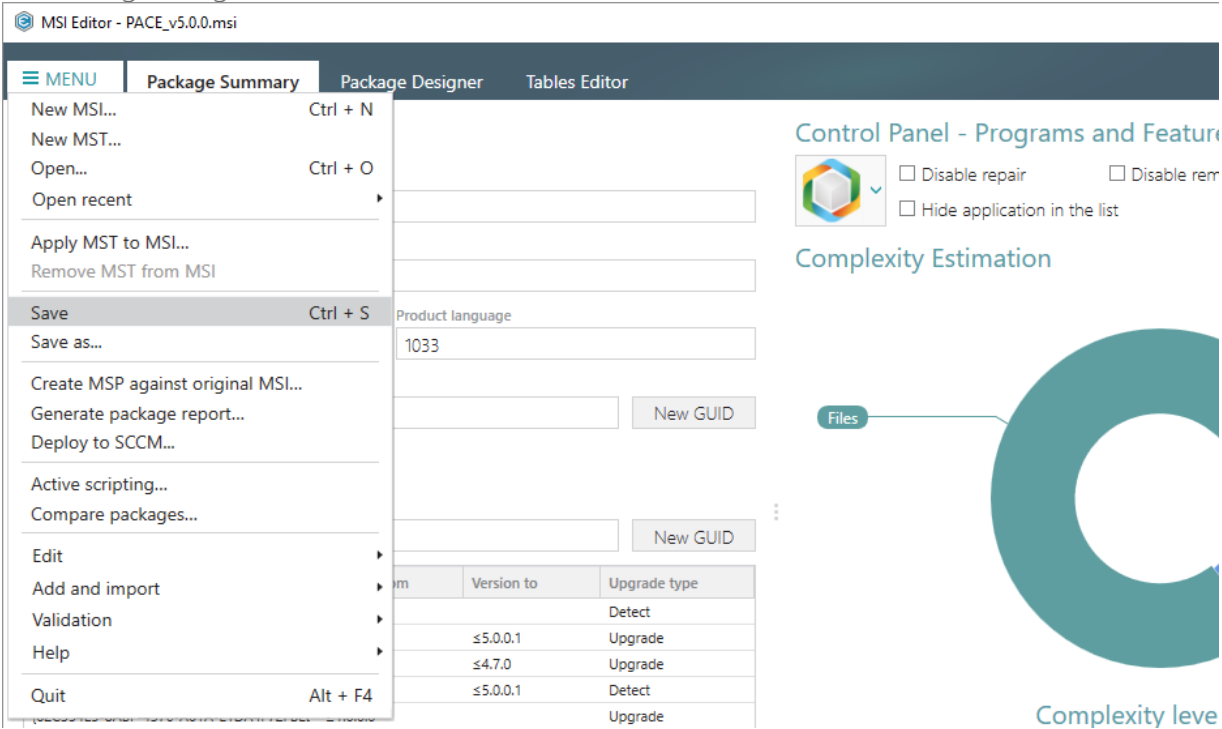
5. Both 3 and 4

On install, the package creates the specified key in the system registry at the selected root, even if this key is empty. By default, empty keys are not created.

On uninstall, the package removes this key completely along with all of its values and subkeys.

NOTE For removing registry values or keys from the system registry before install, add the **Value/key removal** item, described in section 3.7.4.3

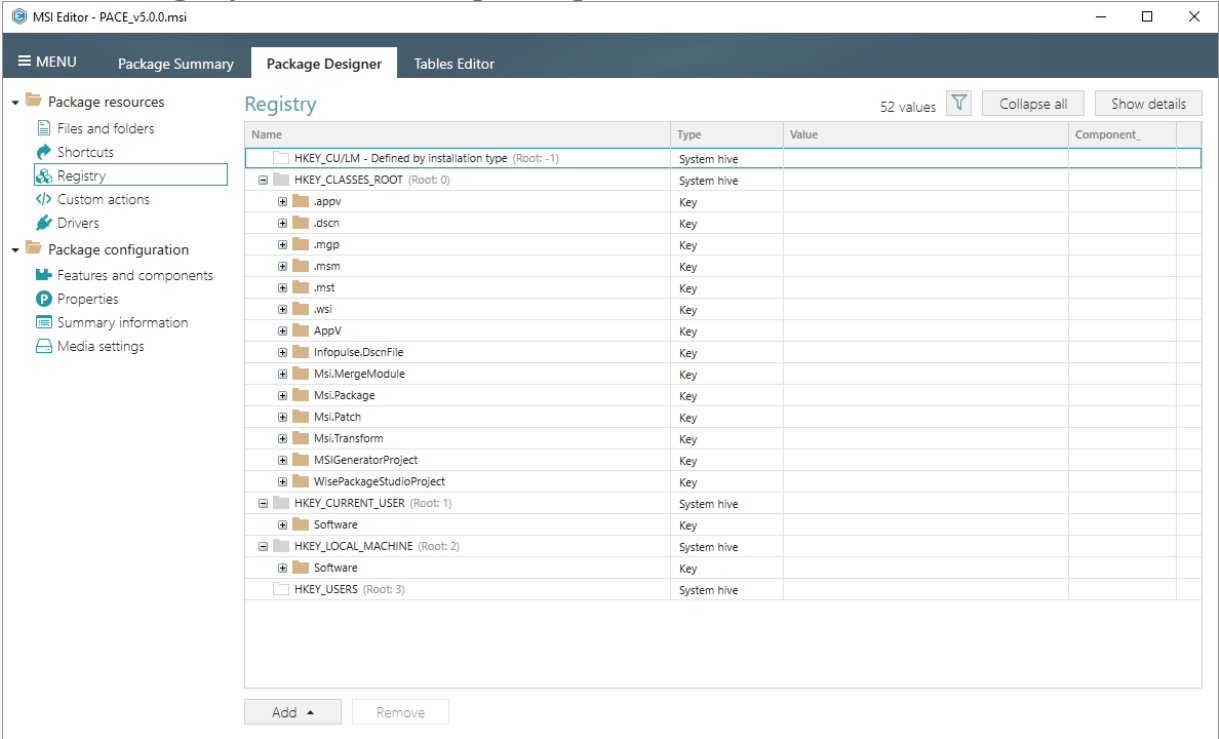
- For saving changes, select **Save** from **MENU**.



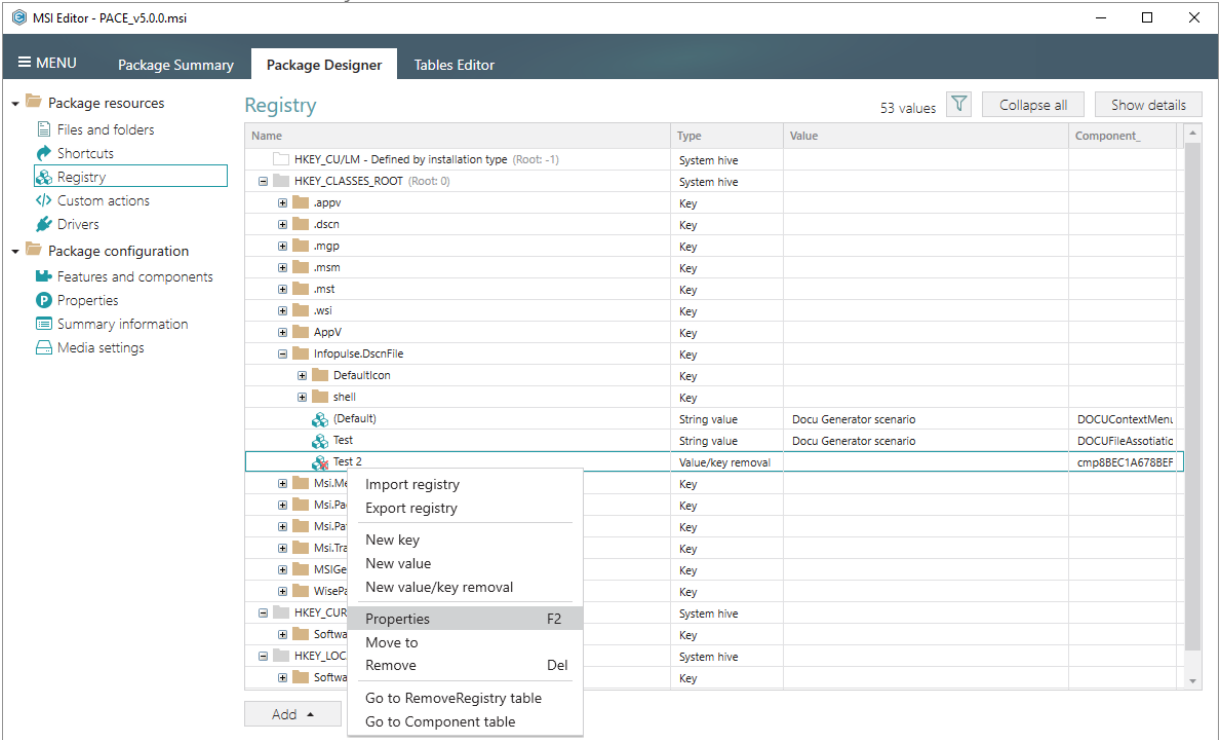
3.7.4.11 Edit Value/Key Removal

Modify details of the selected value/key removal item (RemoveRegistry) to secure a value or a key removal during the package installation.

- Go to the Registry tab of the Package Designer.



- Select Properties from the context menu of a 'Value/key removal' item, details of which you want to review and modify.




- Using the Properties window make the necessary changes to a value Name, its Key, Root hive, and Component that controls the deletion of this registry value. Note that the

specified registry value will be removed from the system registry at the selected root and key during the package installation, right before new registry values are created.

The **Value processing method** options defines what will be removed: an ordinary value, a Default key value, or whole key. Below, in the tables, you will find the detailed description of these options.

Afterwards, click **Save**.



MSI table: 'RemoveRegistry'

Value processing method

Remove value on install

Name

Test 2

Identifier

reg_52c85992

Key

Infopulse.DscnFile

Browse...

Root

HKEY_CLASSES_ROOT (0)

Component_

cmp8BEC1A678BEF51F3C3615ABCC4F9C7D4

Save

Cancel

Value processing method

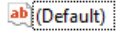
Remove value on install

On install, right before new registry values are created, the package removes an ordinary registry value of the specified name from the system registry at the selected root and key.

On uninstall, no additional actions take place.

Clean-up <Default> key value on install

On install, right before new registry values are created, the package cleans-up the Default key value with the specified value in the system registry at the selected root and key. In the system registry, this value is represented as "(Default)":

Name	Type	Data
 (Default)	REG_SZ	(value not set)

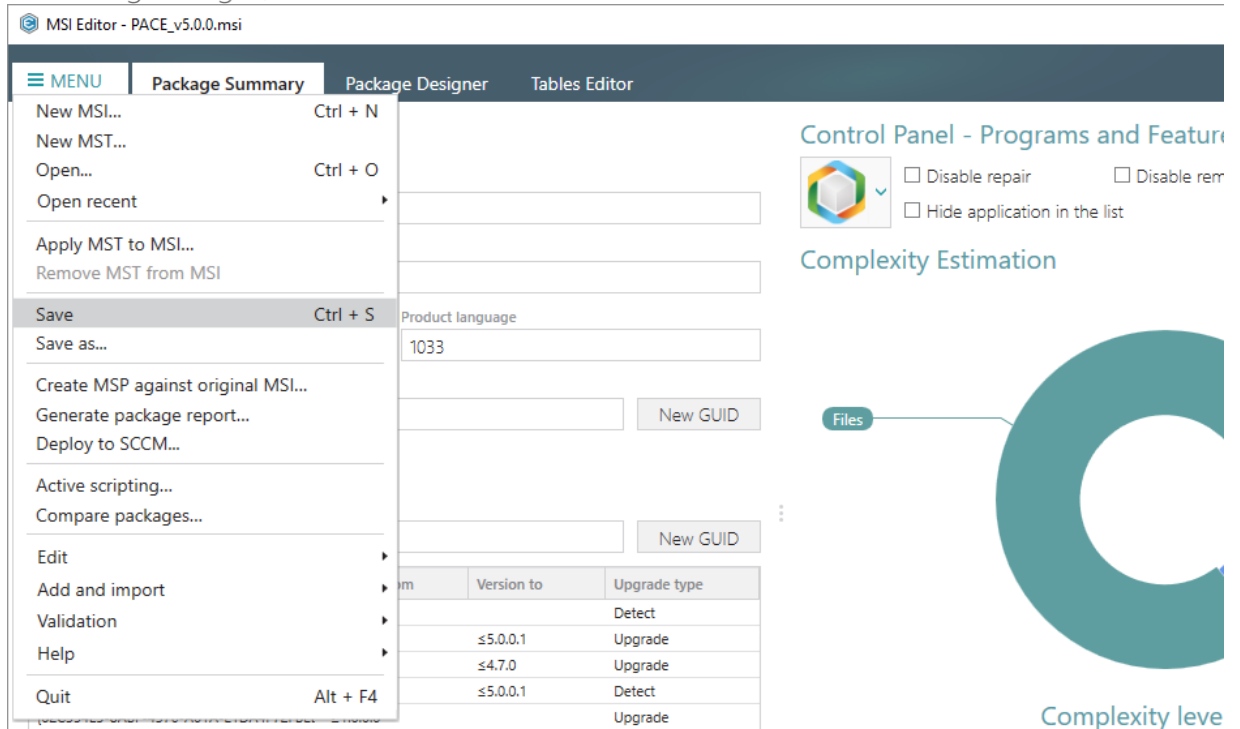
On uninstall, no additional actions take place.

Remove the key with all of its values and subkeys on install

On install, right before new registry values are created, the package removes this key completely along with all of its values and subkeys.

On uninstall, no additional actions take place.

- For saving changes, select **Save** from MENU.



3.7.5 Custom Actions

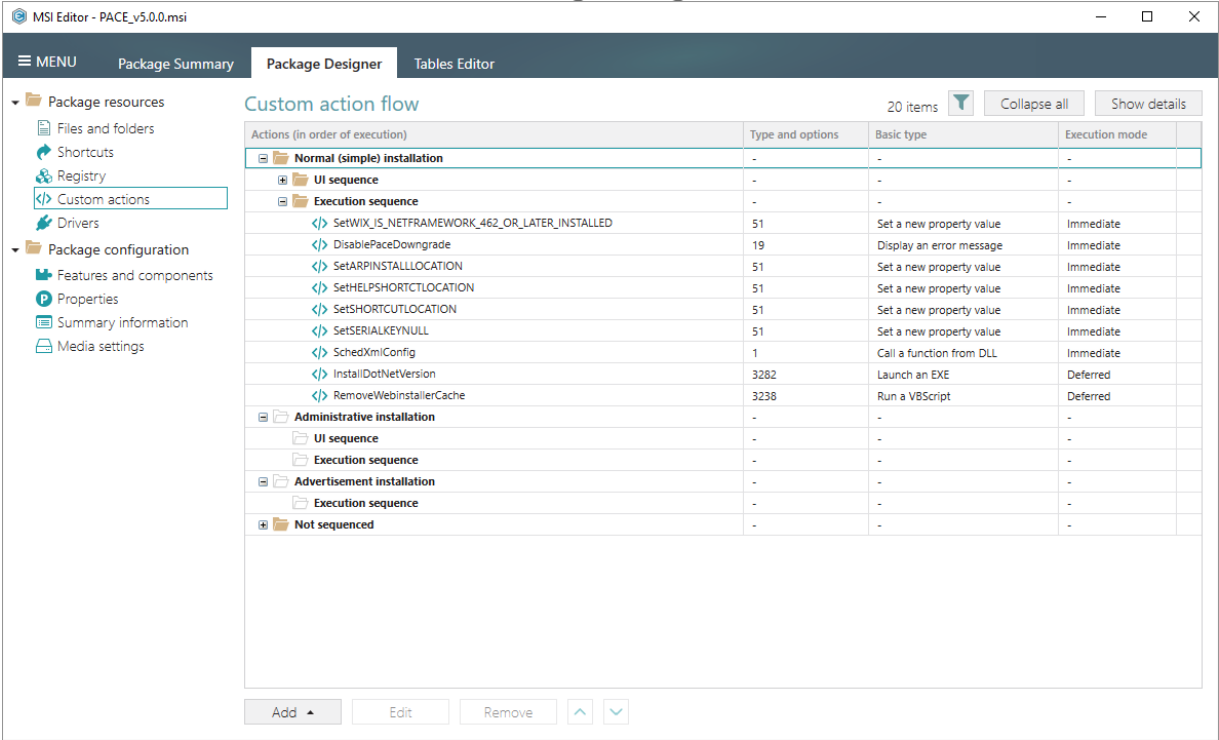
Choose a scenario that better suits your needs:


- **Add Standard Actions**, described in section 3.7.5.1
Add new standard actions to the necessary sequences.
- **Add Custom Action**, described in section 3.7.5.2
Add a new custom action with the aim of launching EXE, calling functions from DLL, running VBScript, Jscript, setting a new property value, folder path, and showing an error message.
- **Edit Custom Action**, described in section 3.7.5.3
Edit basic type, resources, sequence and other settings of the existing custom action.

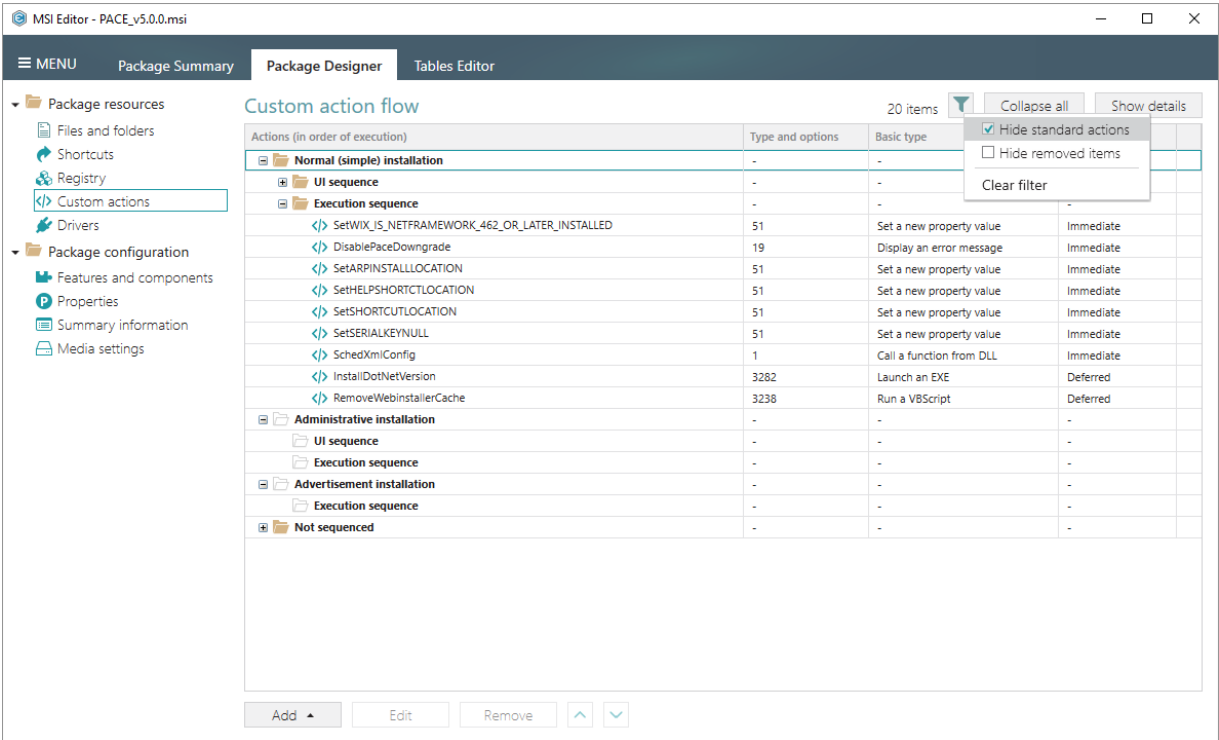
3.7.5.1 Add Standard Actions

Add new standard actions to the necessary sequences of the opened package.

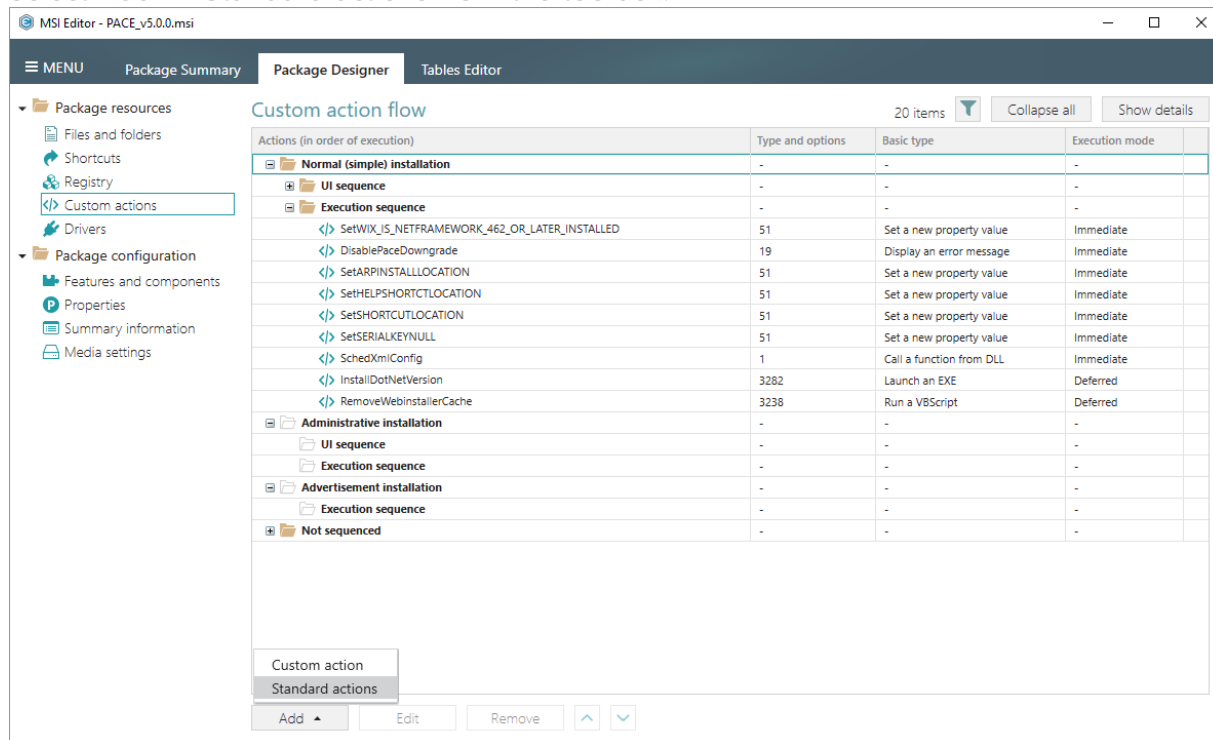
- Go to the Custom actions tab of the Package Designer.



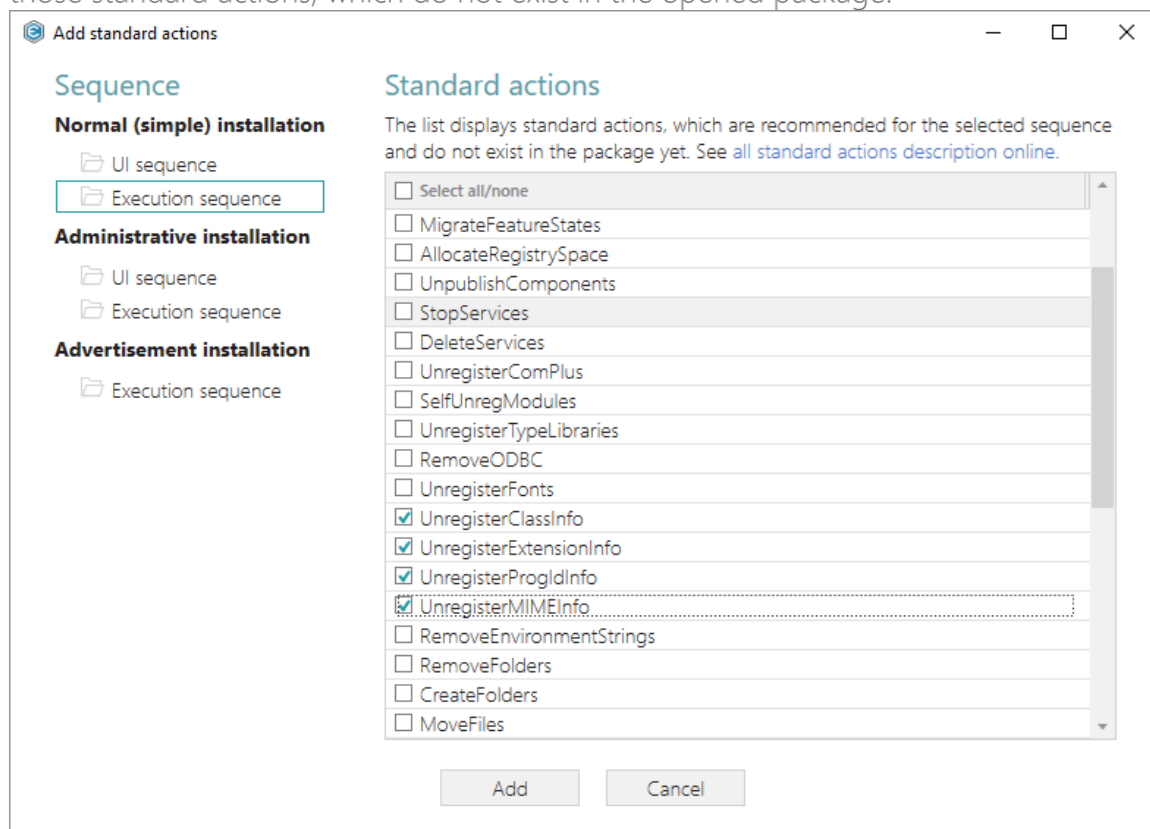
- (Optional) To review the existing standard actions, hidden by default, click on the  and untick the 'Hide standard actions' filter.



- Select Add -> Standard actions from the toolbox.

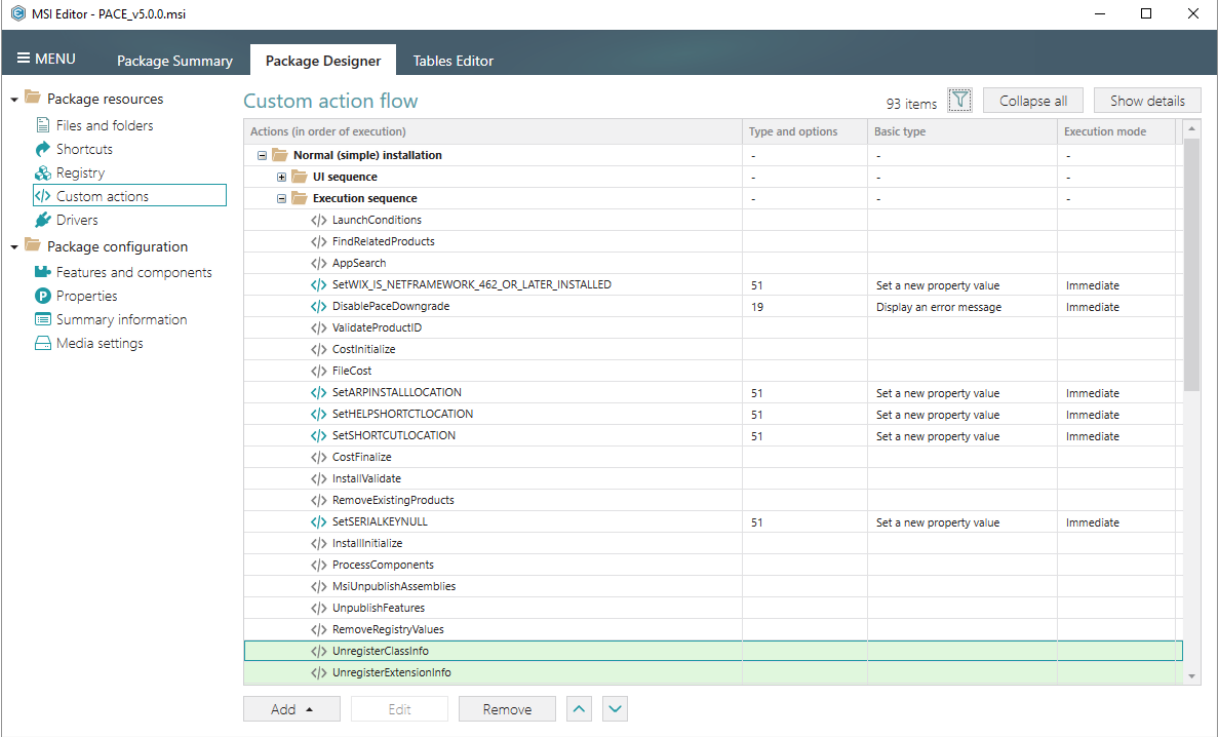


- Tick standard actions you want to add and click Add. Note that you can add many actions to the different installation sequences, displayed on the left, at once. The list displays only those standard actions, which do not exist in the opened package.

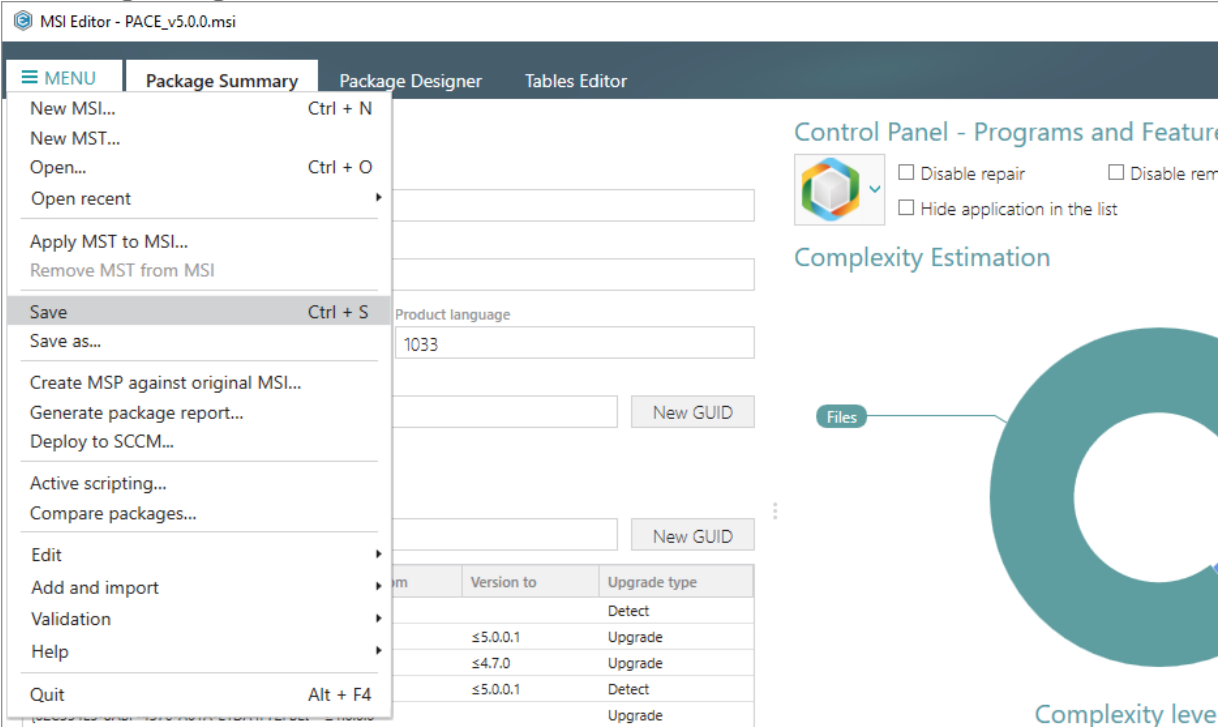


- Find the standard actions of the package by expanding the installation sequences. The standard actions are displayed using the grey color icon.

NOTE All added and modified actions are highlighted with the green color.



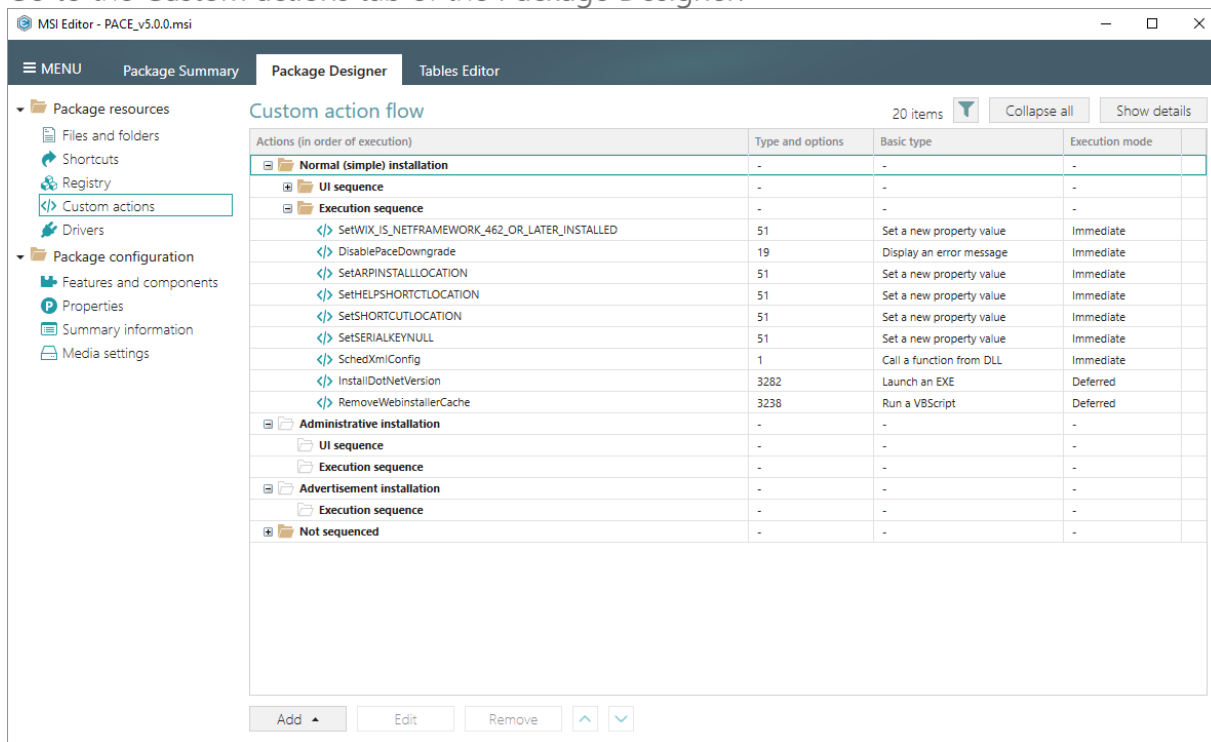
- For saving changes, select Save from MENU.



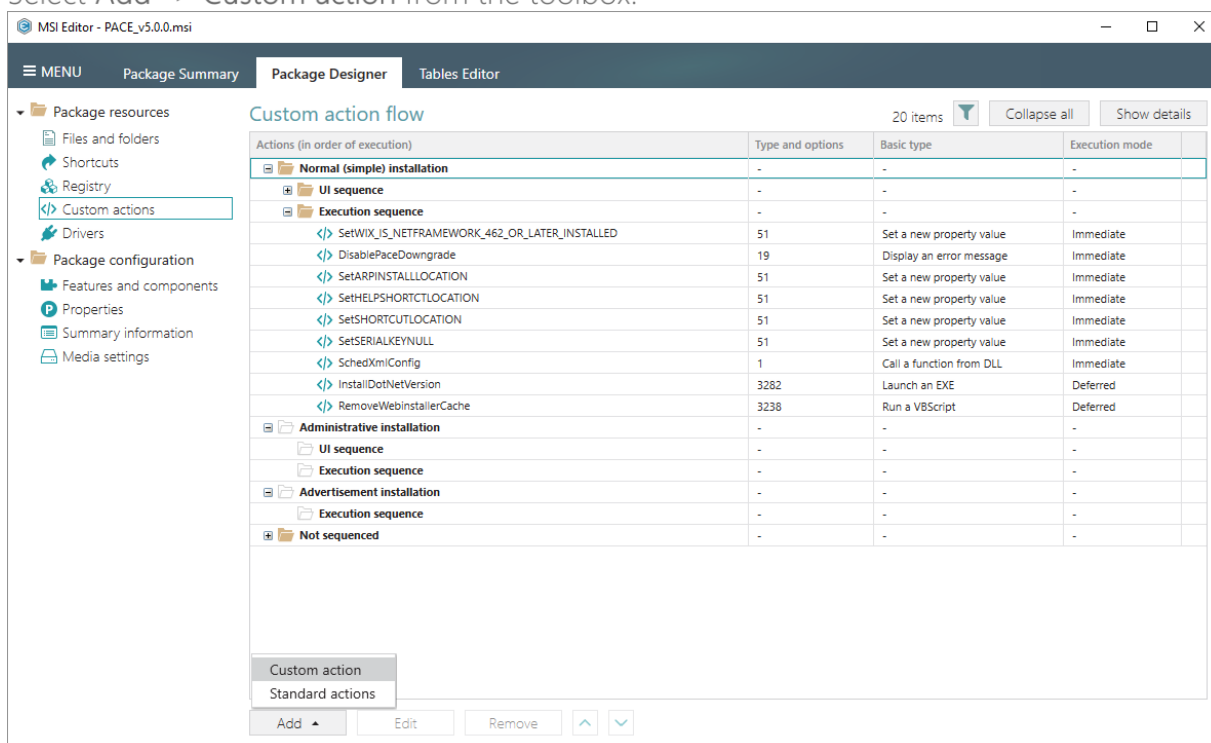
3.7.5.2 Add Custom Action

Add a new custom action with the aim of launching EXE, calling functions from DLL, running VBScript, Jscript, setting a new property value, folder path, and showing an error message.

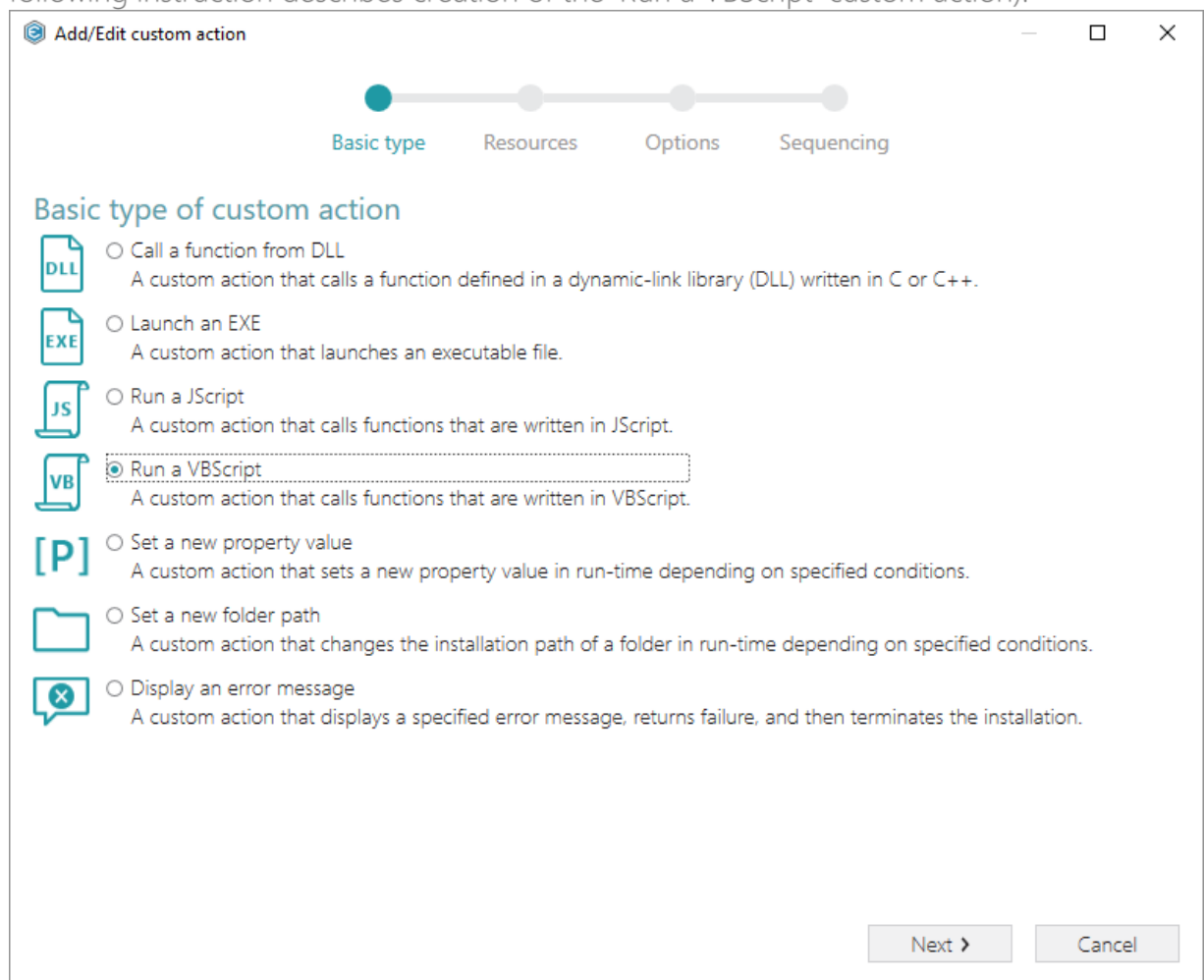
- Go to the Custom actions tab of the Package Designer.



- Select Add -> Custom action from the toolbox.



- Select a basic type of your custom action (e.g. Run a VBScript), and click **Next**. (The following instruction describes creation of the 'Run a VBScript' custom action).



- Specify where the VBScript file is located or embed a script body directly into the custom action. Then, click Next.

The screenshot shows the 'Add/Edit custom action' dialog box with the 'Resources' tab selected. The progress bar at the top indicates the sequence: Basic type (checked), Resources (active), Options, and Sequencing. Under the 'Run a VBScript' section, the 'Code of which is specified directly in the custom action' option is selected. The 'Script code' text area contains the following VBScript code:

```
Function Show_Message(msgType, msgText)
    if msgType <= msimaxMessageType then
        Set record = Session.Installer.CreateRecord(0)
        record.StringData(0) = msgText
    end if
End Function
```

Below the script code is the 'Optional function that can be called' section, which includes a 'Function name' text box. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- At the Options step you can set an Action name, select Execution mode (Immediate, Deferred, Rollback and Commit), execution context, scheduling, return processing and other options. Then, click Next.

NOTE All options that are incompatible with the previously selected settings are disabled.

Add/Edit custom action

Basic type Resources **Options** Sequencing

Identification

Action name
CA_VBScript_1

Execution and processing settings

Execution mode
Deferred (Execute the action while the system is being modified)

☐ Run in logged-on user's context
☒ Run in system context
☐ Run with user impersonation during per-machine installs on a terminal server

Scheduling option
Always execute (default)

Return processing option
A synchronous execution that fails if the exit code is not 0

☒ Write the custom action details to the log file
☐ Run JScript or VBScript in 64-bit environment

< Back Next > Cancel

- The last step allows selecting sequences, where your custom action will be runned. The sequence drop-down list allows you to select only compatible positions, taking into account your previously selected options. Also, you are free to specify execution conditions either by entering them manually or choosing from the drop-down list. Click **Finish** to add your custom action.

NOTE Incompatible sequences are disabled.

Add/Edit custom action

Basic type Resources Options Sequencing

Normal (simple) installation

UI sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence (recommended): Run after InstallInitialize

Execution sequence conditions:

Administrative installation

UI sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence: Do not run in this sequence

Execution sequence conditions:

NOTE The UI sequences, which typically contain standard actions related to collecting system information, are only processed if the user interface level is set to Reduced or Full; and, respectively are skipped if level is set to basic UI or no UI.

An administrative installation is typically initiated by a network administrator to assign and install applications for individual users and groups of users.

The advertisement installation sequence is not present on this step because it cannot be used for custom actions.

For information on the sequence conditions, see [Conditional Statement Syntax online](#).

< Back Finish Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer Tables Editor

New MSI... Ctrl + N

New MST...

Open... Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit Alt + F4

Product language: 1033

Product name: 1033

New GUID

Upgrade type

Control Panel - Programs and Features

Disability repair Disability repair

Hide application in the list

Complexity Estimation

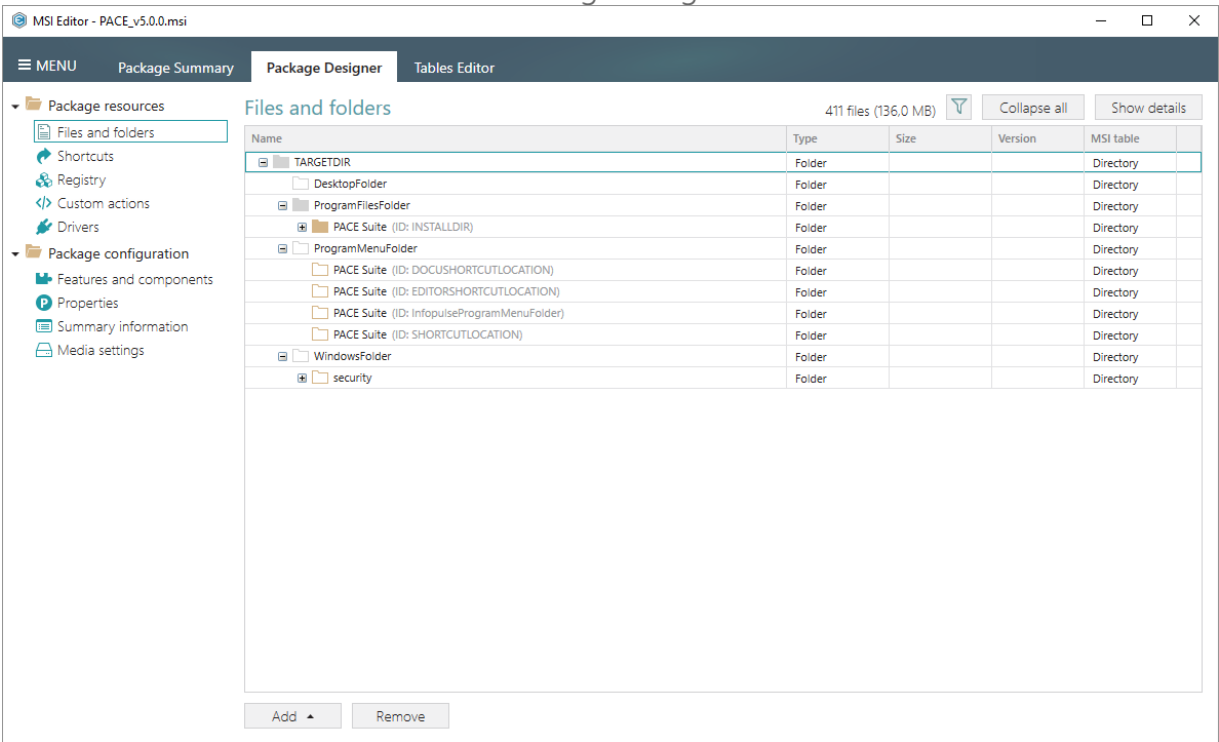
Files

Complexity level

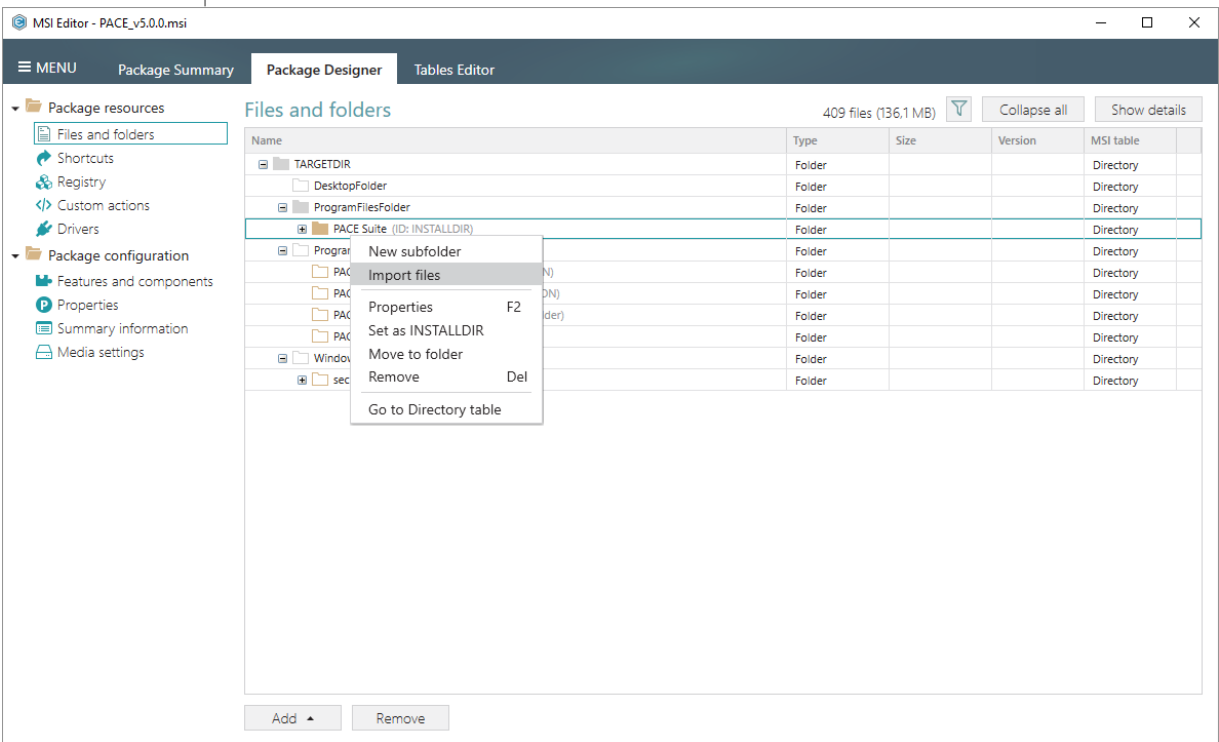
3.7.5.2.1 Run PowerShell script

Run a PowerShell script from MSI during the installation or de-installation process. This solution consists of two parts: (1) importing PowerShell script to the package; (2) adding a Custom action for running this script.

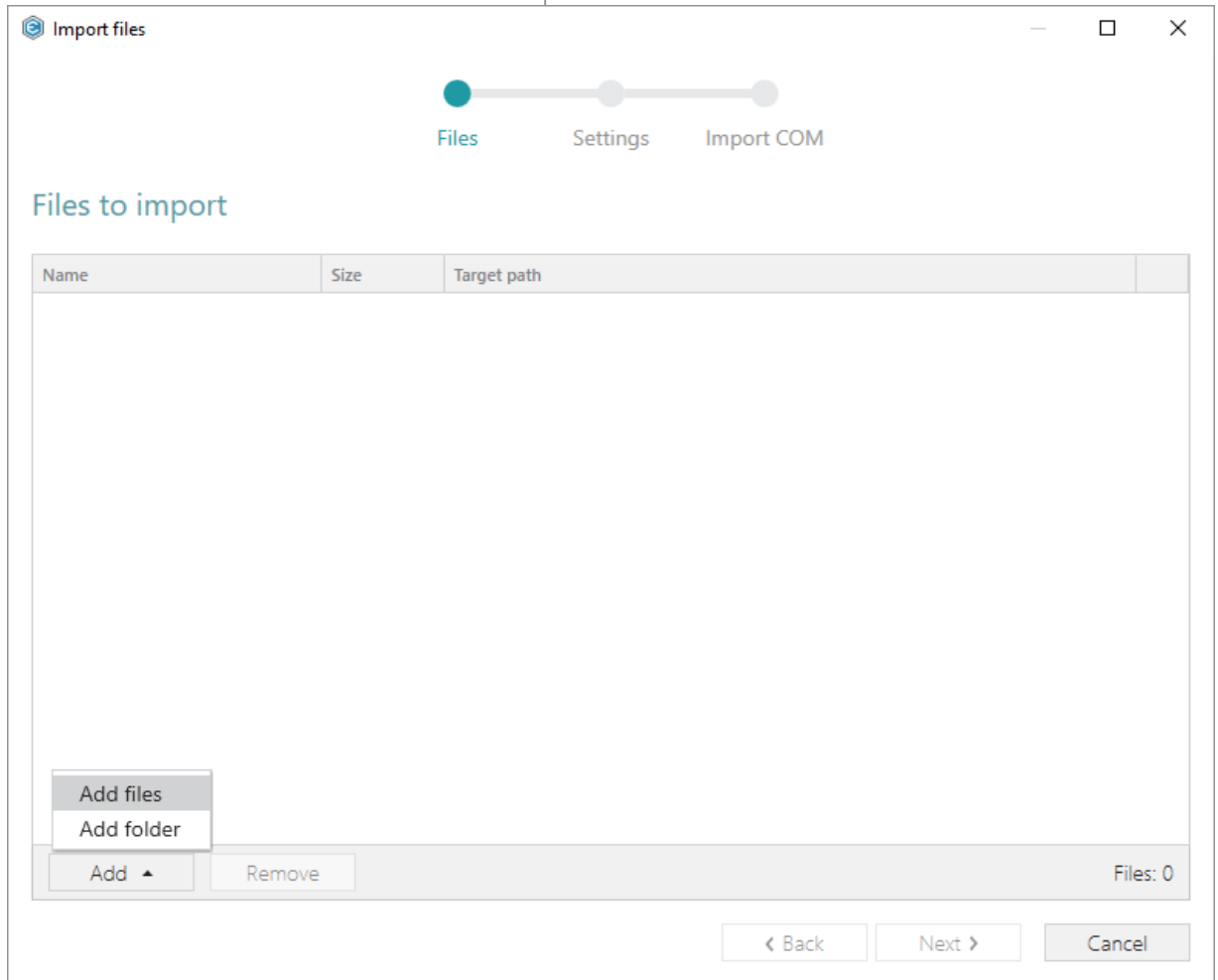
- Go to the Files and folders tab of the Package Designer.



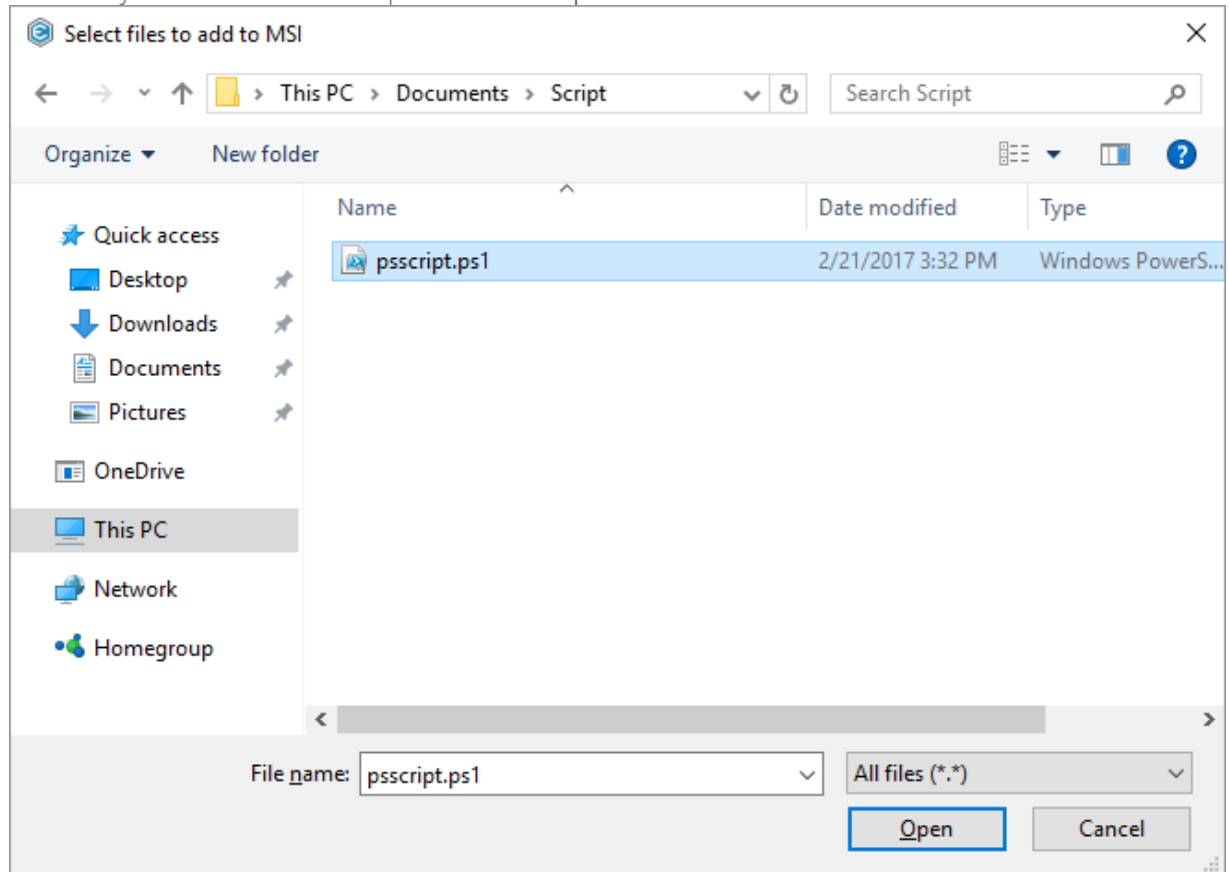
- Select Import files from the context menu of a folder, to which you want to import the PowerShell script.



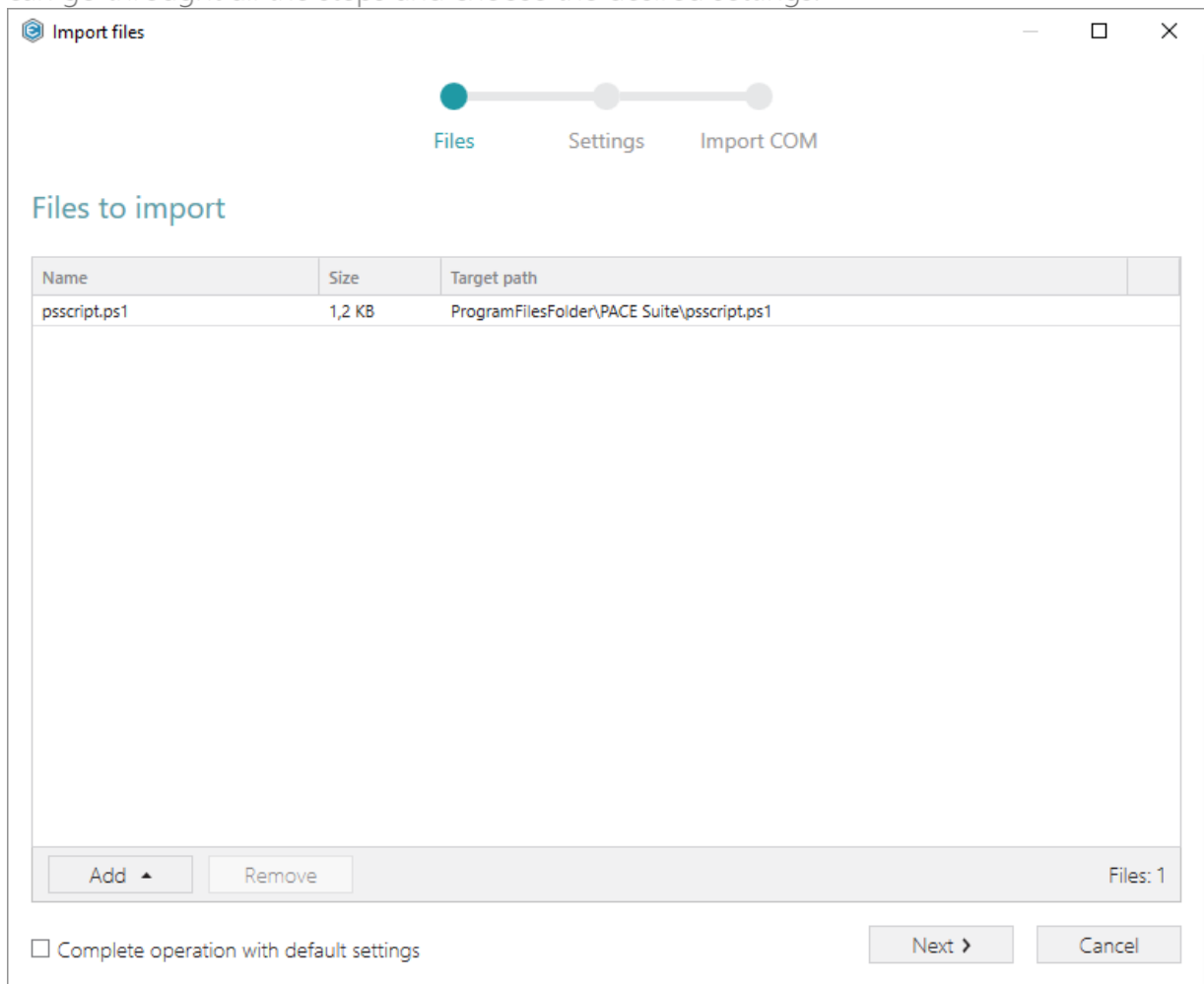
- Click Add -> Add files to choose the script.



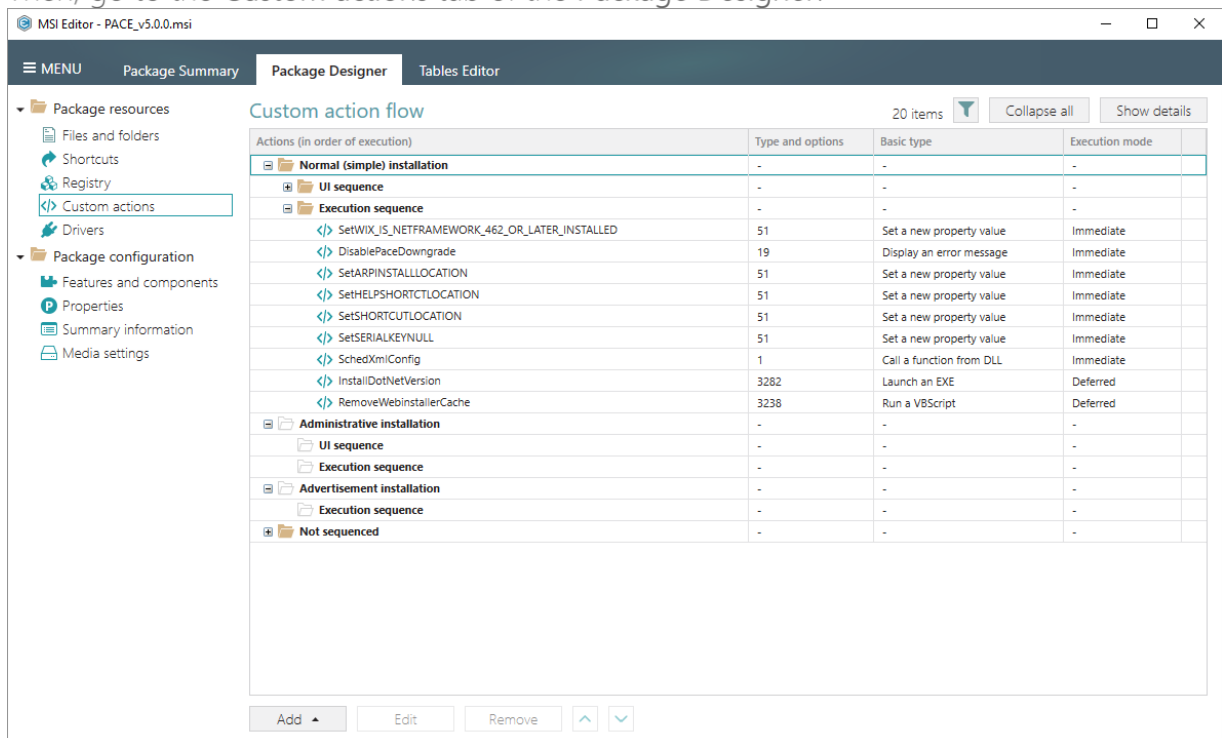
- Choose your PowerShell script and click Open.



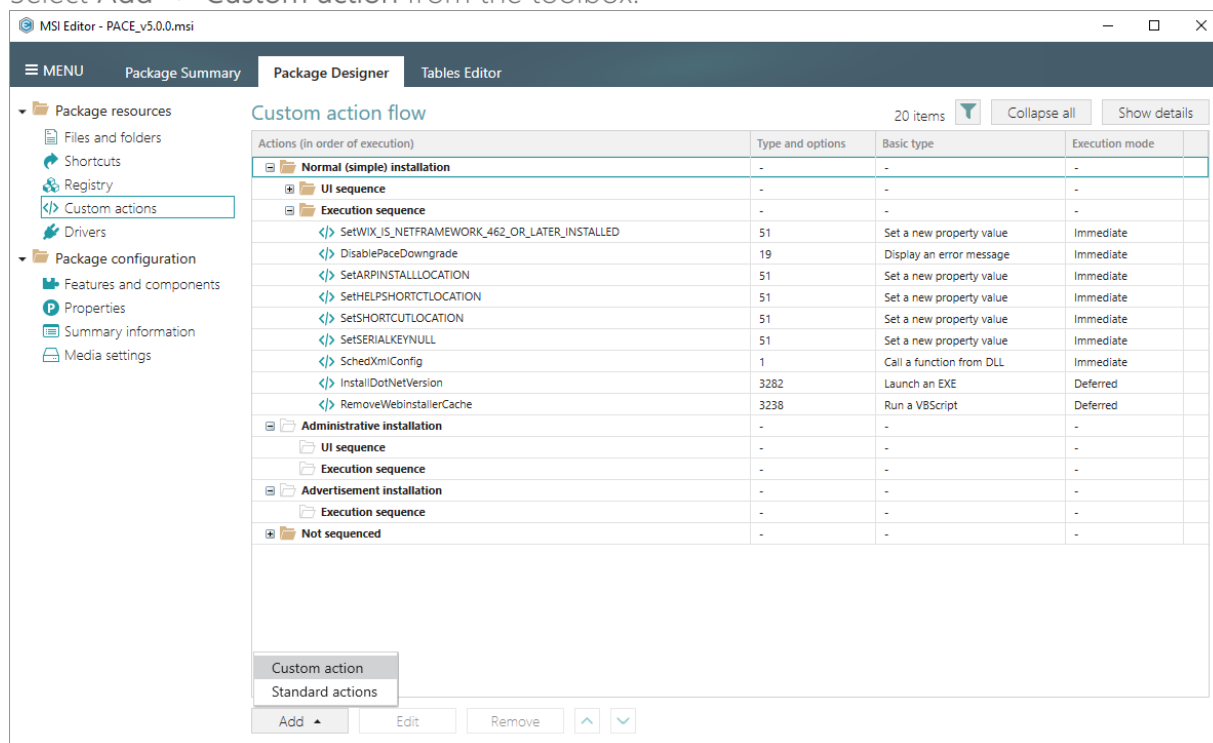
- Tick the Complete operation with default settings option and click Finish. Alternatively, you can go through all the steps and choose the desired settings.



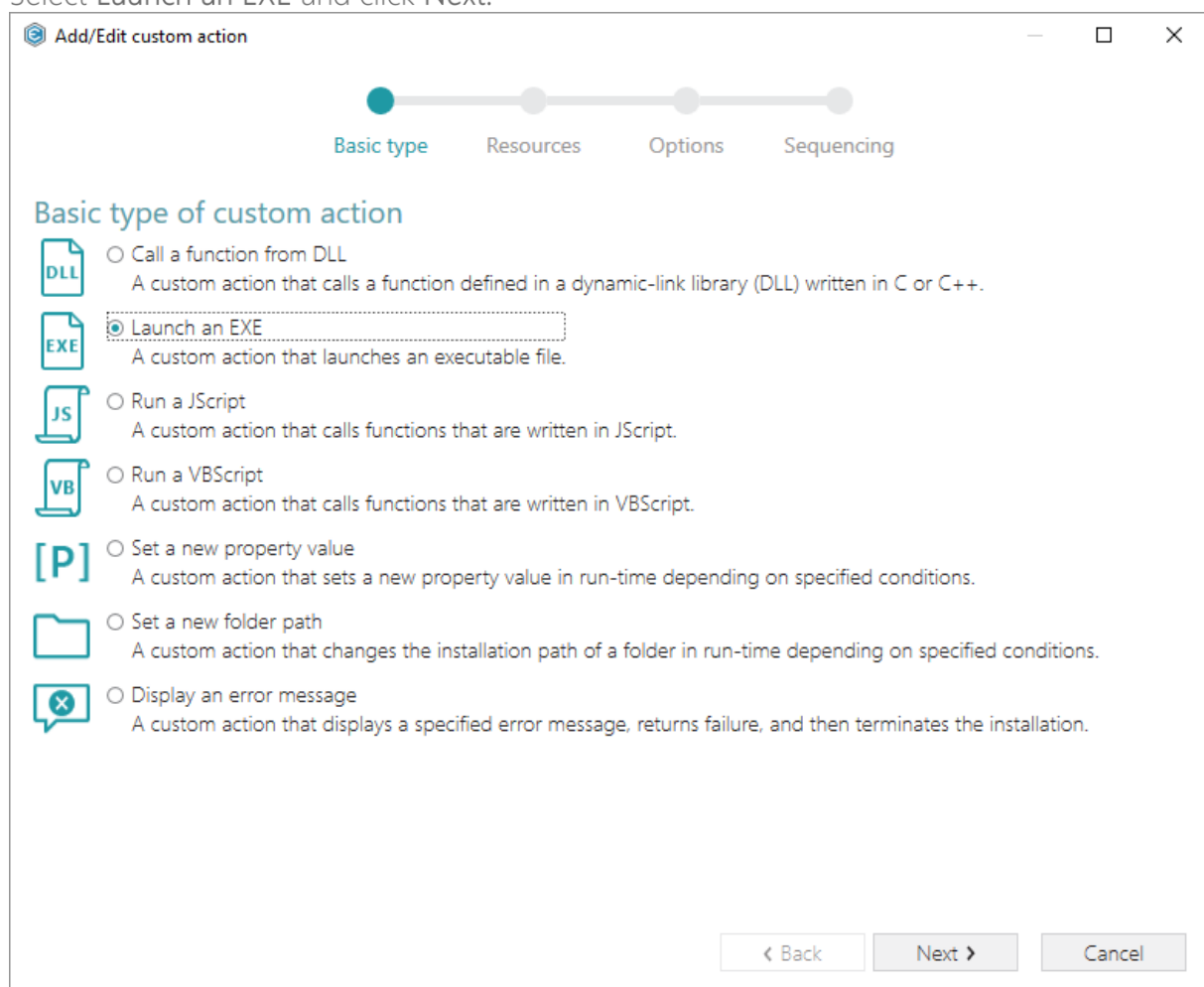
- Then, go to the Custom actions tab of the Package Designer.



- Select Add -> Custom action from the toolbox.



- Select Launch an EXE and click Next.



- Select the Located on the system at the path, which is specified in the Command line field, in the selected working folder and click Browse...

Add/Edit custom action

Basic type **Resources** Options Sequencing

Launch an EXE

☐ Stored in the temporary binary stream
Binary
[Text field] [New binary]

☐ Installed by this package along with this application
File
[Text field] [Browse...]

☐ Located on the system at the path, which is specified in the property
Property
[Text field] [New property]

☒ Located on the system at the path, which is specified in the Command line field, in the selected working folder
Working folder
[Text field] [Browse...]

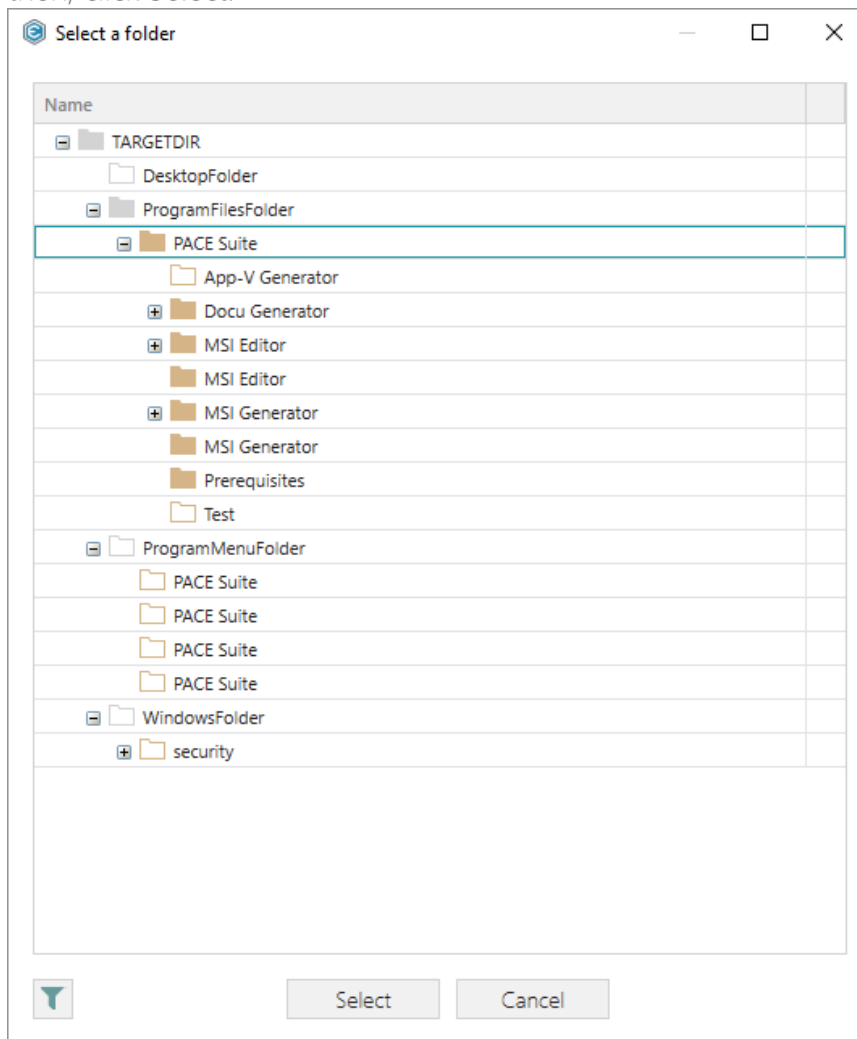
Command line string for executable

Command line
[Text field]

NOTE Quotation marks must be used around long file names or paths. The value is treated as formatted text and may contain references to properties, files, folders, environment variables or other formatted text attributes. See [formatted text description online](#).

< Back Next > Cancel

- Select a script-containing folder, to which you have imported the PowerShell script and then, click Select.



- Enter the `powershell.exe -ExecutionPolicy Bypass -File "<script file name>.ps1"` to the Command line field, where `<script file name>` is replaced with a name of your PowerShell script (e.g. `psscript.ps1`). Then, click Next.

The screenshot shows the 'Add/Edit custom action' dialog box with the 'Resources' tab selected. The progress bar at the top indicates the current step. Under the 'Launch an EXE' section, the fourth option is selected: 'Located on the system at the path, which is specified in the Command line field, in the selected working folder'. The 'Working folder' is set to 'ProgramFilesFolder\PACE Suite (ID: INSTALLDIR)'. The 'Command line string for executable' field contains 'powershell.exe -ExecutionPolicy Bypass -File "psscript.ps1"'. A note below explains that quotation marks must be used around long file names or paths. At the bottom, there are 'Back', 'Next', and 'Cancel' buttons.

Add/Edit custom action

Basic type Resources Options Sequencing

Launch an EXE

☐ Stored in the temporary binary stream
Binary
[Dropdown] New binary

☐ Installed by this package along with this application
File
[Text Box] Browse...

☐ Located on the system at the path, which is specified in the property
Property
[Dropdown] New property

☒ Located on the system at the path, which is specified in the Command line field, in the selected working folder
Working folder
ProgramFilesFolder\PACE Suite (ID: INSTALLDIR) Browse...

Command line string for executable

Command line
powershell.exe -ExecutionPolicy Bypass -File "psscript.ps1"

NOTE Quotation marks must be used around long file names or paths. The value is treated as formatted text and may contain references to properties, files, folders, environment variables or other formatted text attributes. See [formatted text description online](#).

< Back Next > Cancel

NOTE -ExecutionPolicy Bypass parameter was added to make sure the custom action will always execute regardless of the current execution policy on the system.

- Select the Deferred execution mode, and the Run in system context option. From the Return processing options list, choose An asynchronous execution that waits for exit code at

the end of the sequence, and click Next.

Add/Edit custom action

Basic type Resources **Options** Sequencing

Identification

Action name
CA_Run_PowerShell

Execution and processing settings

Execution mode
Deferred (Execute the action while the system is being modified)

☐ Run in logged-on user's context
☒ Run in system context
☐ Run with user impersonation during per-machine installs on a terminal server

Scheduling option
Always execute (default)

Return processing option
An asynchronous execution that waits for exit code at the end of the sequence

☒ Write the custom action details to the log file
☐ Run JScript or VBScript in 64-bit environment

< Back Next > Cancel

- From the Execution sequence (recommended) list, select Run after InstallFiles (or any other position, located below). If needed, specify the execution conditions - enter them manually or choose from the dropped list. Click Finish to add your custom action for running

PowerShell script.

Add/Edit custom action

Basic type Resources Options Sequencing

Normal (simple) installation

UI sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence (recommended): Run after InstallFiles

Execution sequence conditions:

Administrative installation

UI sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence: Do not run in this sequence

Execution sequence conditions:

NOTE The UI sequences, which typically contain standard actions related to collecting system information, are only processed if the user interface level is set to Reduced or Full; and, respectively are skipped if level is set to basic UI or no UI.

An administrative installation is typically initiated by a network administrator to assign and install applications for individual users and groups of users.

The advertisement installation sequence is not present on this step because it cannot be used for custom actions.

For information on the sequence conditions, see [Conditional Statement Syntax online](#).

< Back Finish Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer Tables Editor

New MSI... Ctrl + N

New MST...

Open... Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit Alt + F4

Product language: 1033

Product name: PACE_v5.0.0.msi

New GUID

Upgrade type

Version to	Upgrade type
≤5.0.0.1	Detect
≤4.7.0	Upgrade
≤5.0.0.1	Detect
	Upgrade

Control Panel - Programs and Features

Disability repair Disability repair

Hide application in the list

Complexity Estimation

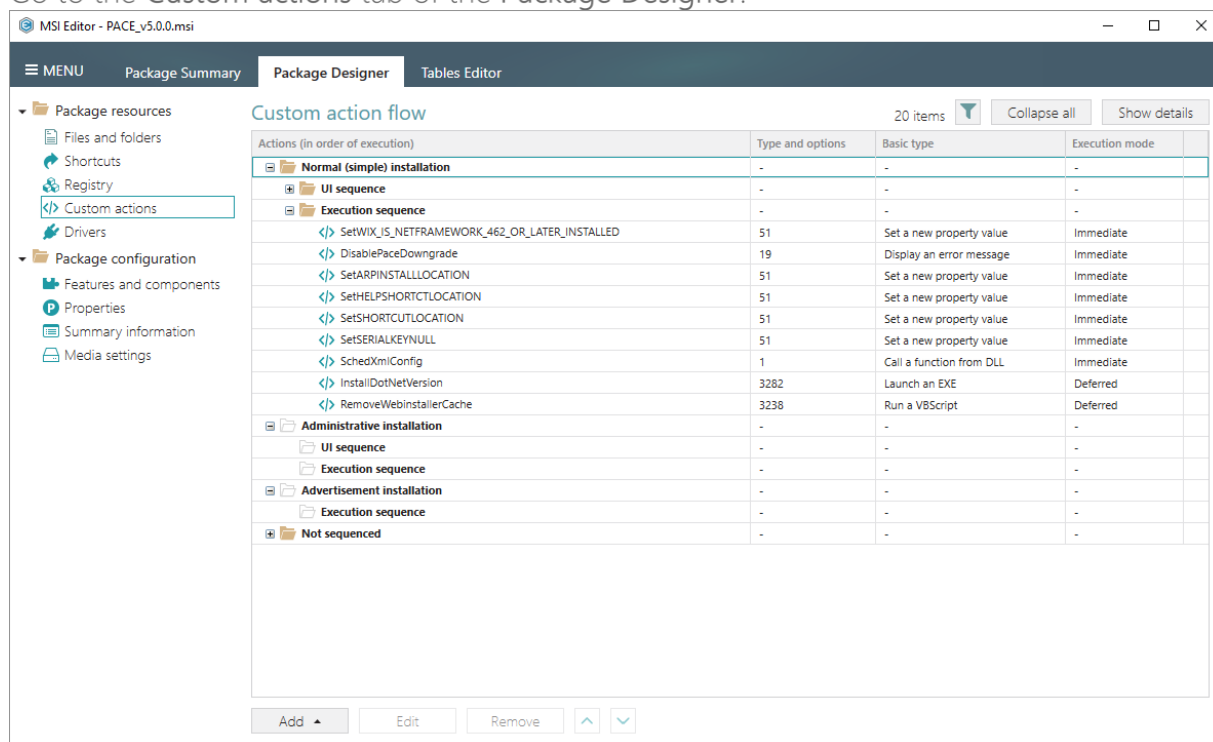
Files

Complexity level

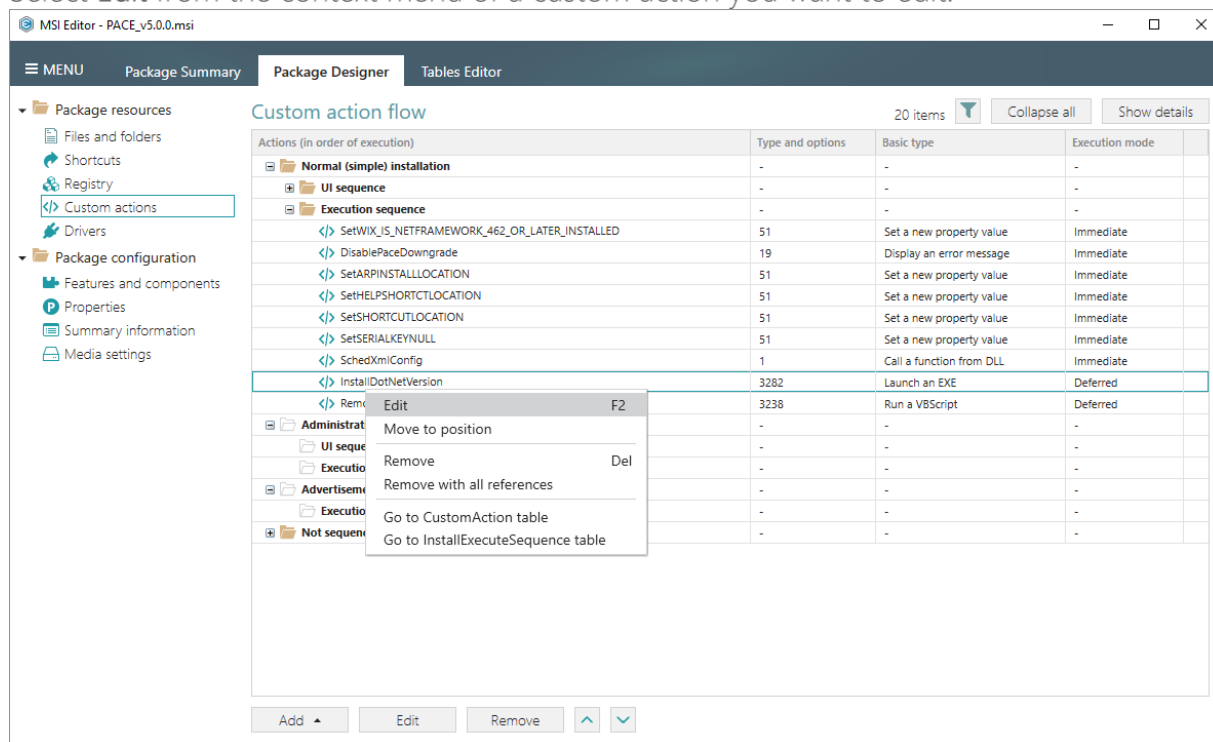
3.7.5.3 Edit Custom Action

Edit basic type, resources, sequence and other settings of the existing custom action.

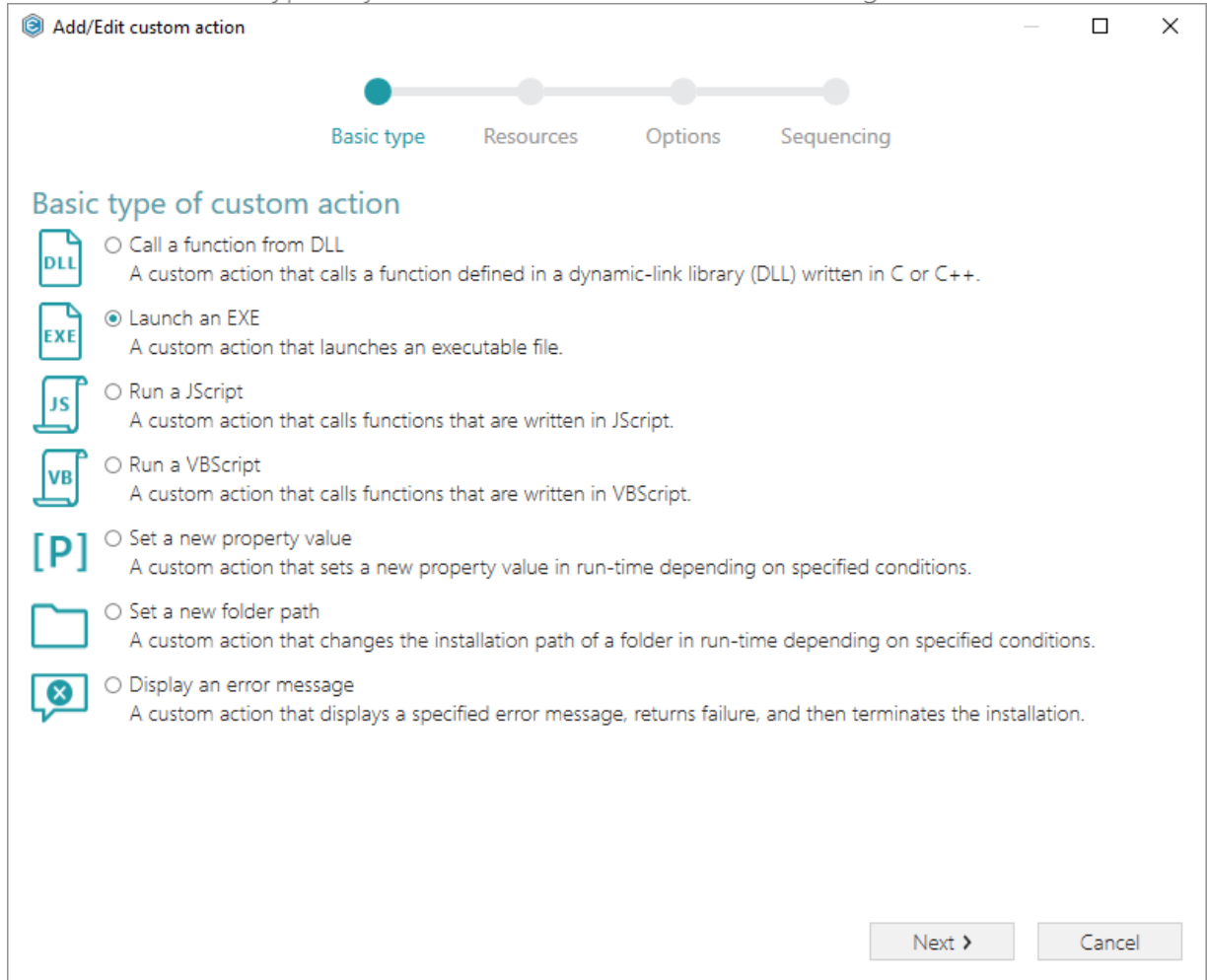
- Go to the Custom actions tab of the Package Designer.



- Select Edit from the context menu of a custom action you want to edit.



- Define a new basic type of your custom action or leave the existing one and click Next.



- On the second step you can specify a new file, launched by the custom action. Click Next to continue.

NOTE The wizard displays only compatible fields and options for the previously selected

custom action basic type.

The screenshot shows the 'Add/Edit custom action' dialog box with the 'Resources' tab selected. The progress bar at the top indicates the current step. The 'Launch an EXE' section has four radio button options. The second option, 'Installed by this package along with this application', is selected. Below it, the 'File' field contains the path 'ProgramFilesFolder\PACE Suite\Prerequisites\NDP462-KB3151802-Web.exe (ID: NDP462KB3151802Web' and a 'Browse...' button. The 'Command line string for executable' section has a 'Command line' text box. A note at the bottom explains that quotation marks must be used around long file names or paths. At the bottom right are 'Back', 'Next >', and 'Cancel' buttons.

Add/Edit custom action

Basic type Resources Options Sequencing

Launch an EXE

☐ Stored in the temporary binary stream

Binary

☐ **Installed by this package along with this application**

File

ProgramFilesFolder\PACE Suite\Prerequisites\NDP462-KB3151802-Web.exe (ID: NDP462KB3151802Web

Browse...

☐ Located on the system at the path, which is specified in the property

Property

☐ Located on the system at the path, which is specified in the Command line field, in the selected working folder

Working folder

Command line string for executable

Command line

NOTE Quotation marks must be used around long file names or paths. The value is treated as formatted text and may contain references to properties, files, folders, environment variables or other formatted text attributes. See [formatted text description online](#).

< Back Next > Cancel

- At the Options step you can set an Action name, select Execution mode (Immediate, Deferred, Rollback and Commit), execution context, scheduling, return processing and other options. Then, click Next.

NOTE All options that are incompatible with the previously selected settings are disabled.

Add/Edit custom action

Basic type Resources **Options** Sequencing

Identification

Action name
InstallDotNetVersion

Execution and processing settings

Execution mode
Deferred (Execute the action while the system is being modified)

☐ Run in logged-on user's context
☒ Run in system context
☐ Run with user impersonation during per-machine installs on a terminal server

Scheduling option
Always execute (default)

Return processing option
An asynchronous execution that does not wait for completion

☒ Write the custom action details to the log file
☐ Run JScript or VBScript in 64-bit environment

< Back Next > Cancel

- At the last step, you can change a position, where you would like to run your custom action. The sequence drop-down list allows you to select only compatible positions, taking into account your previously selected options. Also, you free to update the execution conditions either by entering them manually or choosing from the drop-down list. Click Finish to update your custom action.

NOTE Incompatible sequences are disabled.

Add/Edit custom action

Basic type Resources Options Sequencing

Normal (simple) installation

UI sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence (recommended): Run after PublishProduct

Execution sequence conditions: (NOT Installed) AND (NOT WIX_IS_NETFRAMEWORK_462_OR_

Administrative installation

UI sequence: Do not run in this sequence

UI sequence conditions:

Execution sequence: Do not run in this sequence

Execution sequence conditions:

NOTE The UI sequences, which typically contain standard actions related to collecting system information, are only processed if the user interface level is set to Reduced or Full; and, respectively are skipped if level is set to basic UI or no UI.

An administrative installation is typically initiated by a network administrator to assign and install applications for individual users and groups of users.

The advertisement installation sequence is not present on this step because it cannot be used for custom actions.

For information on the sequence conditions, see [Conditional Statement Syntax online](#).

< Back Finish Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer Tables Editor

New MSI... Ctrl + N

New MST...

Open... Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit Alt + F4

Product language: 1033

Product name: 1033

New GUID

Upgrade type

Control Panel - Programs and Features

Disability repair Disability repair

Hide application in the list

Complexity Estimation

Files

Complexity level

3.7.6 Drivers

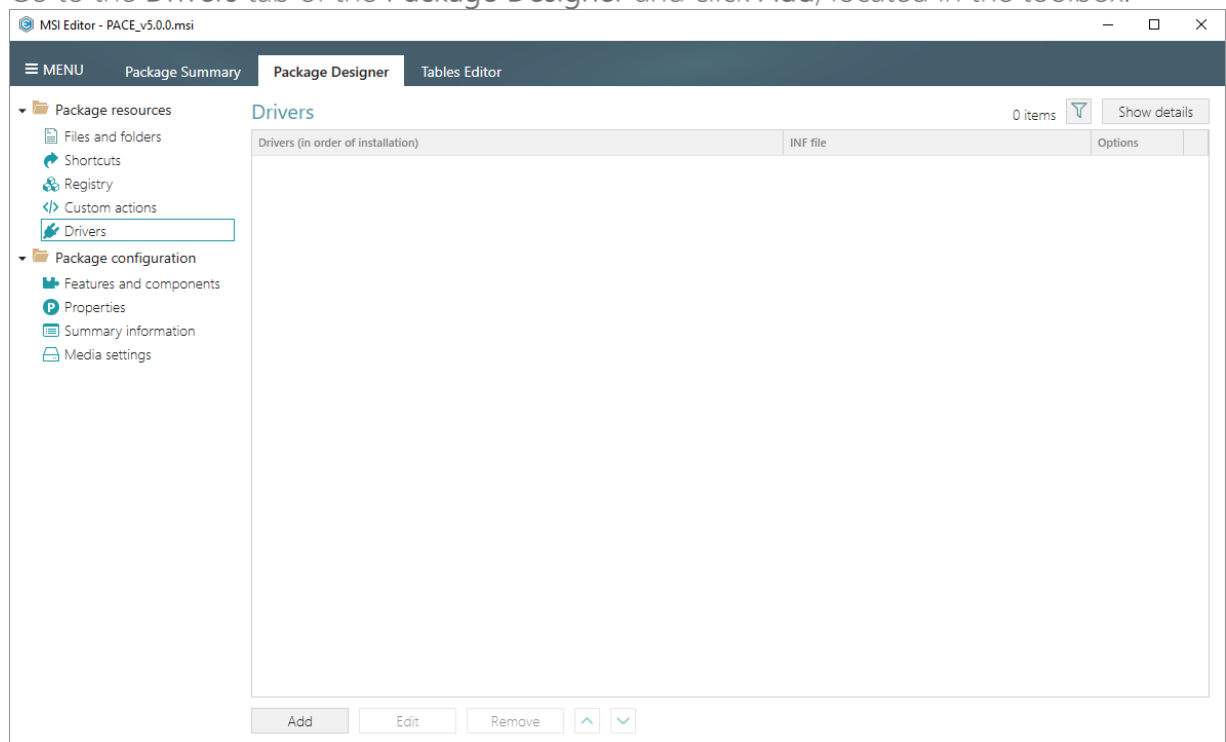
Choose a scenario that better suits your needs:

- **Add Driver**, described in section 3.7.6.1
Add a new device driver with the help of Driver Install Frameworks (DIFx) tools, a standard solution recommended by Microsoft.
- **Edit Driver**, described in section 3.7.6.2
Edit installation options, conditions and target architecture of the existing device driver.

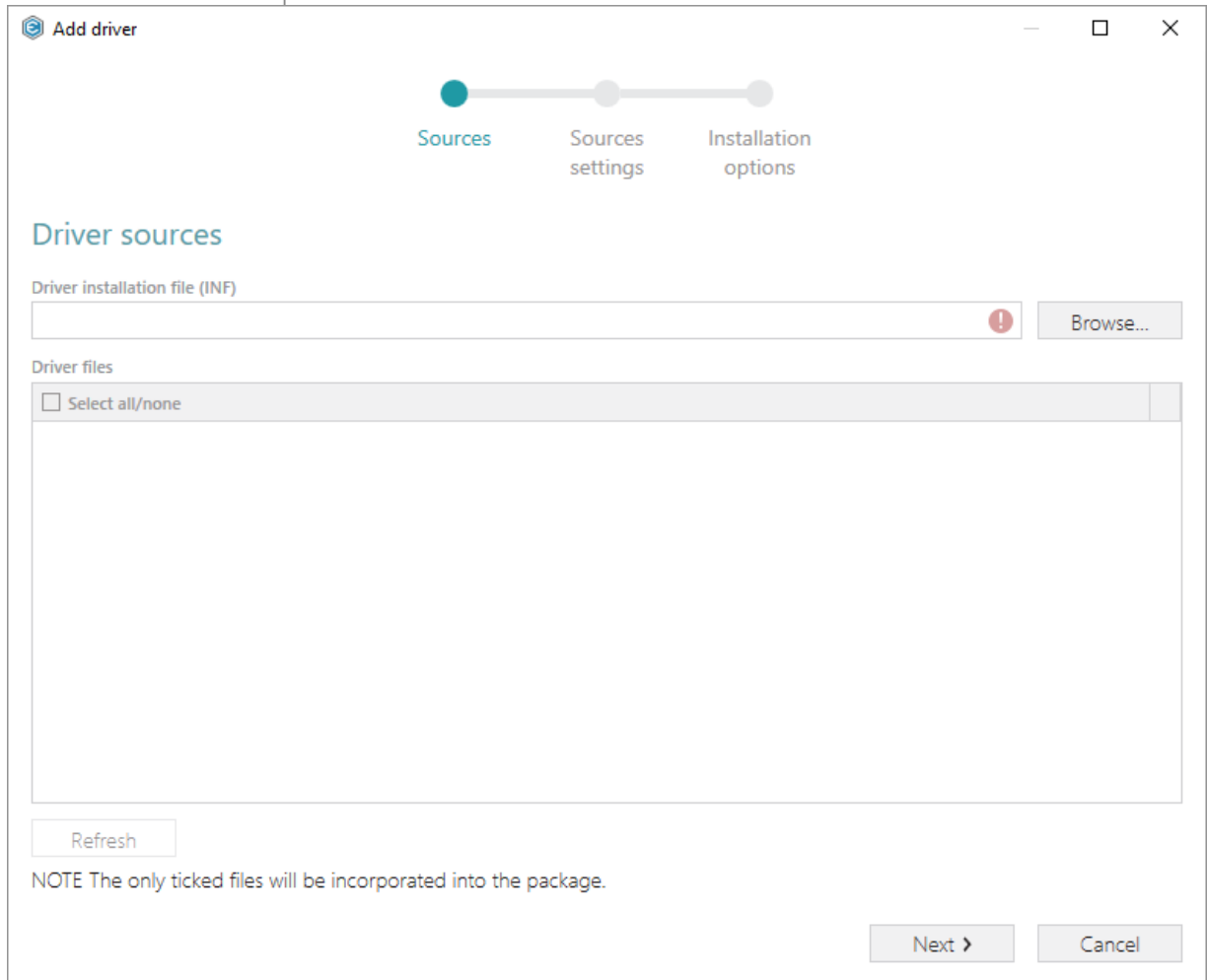
3.7.6.1 Add Driver

Add a new device driver with the help of Driver Install Frameworks (DIFx) tools, a standard solution recommended by Microsoft.

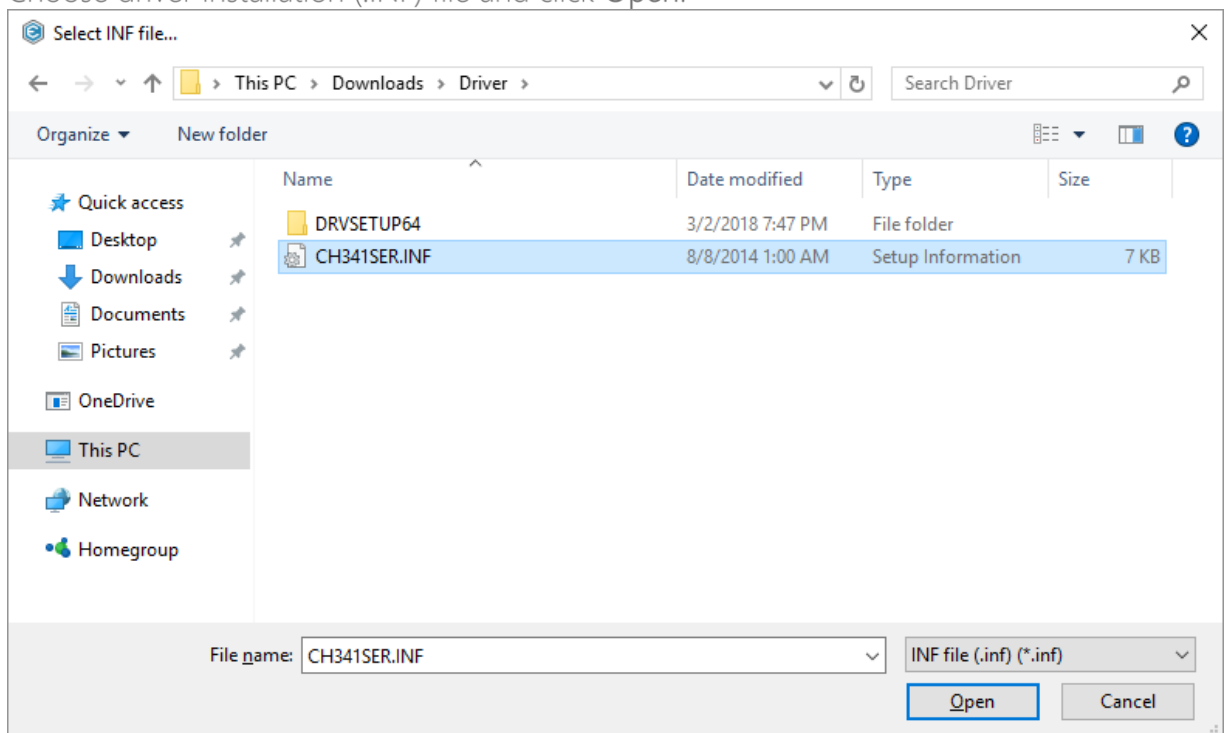
- Go to the **Drivers** tab of the **Package Designer** and click **Add**, located in the toolbox.



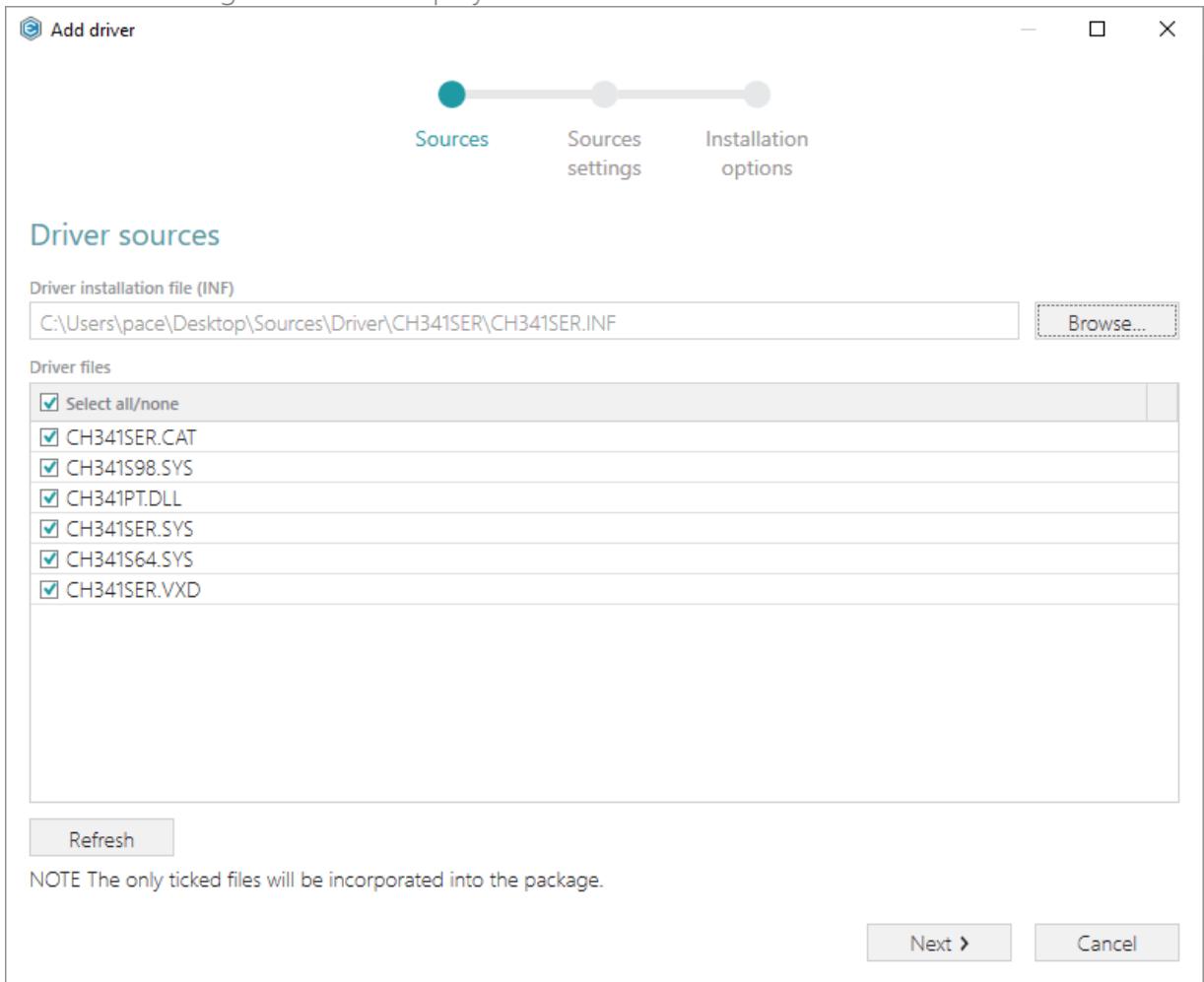
- Click Browse in the opened wizard.



- Choose driver installation (.INF) file and click Open.



- Ensure that all files, required by driver, exist on the file system, and click **Next**.
Note that missing files will be displayed with the validation error.



Add driver

Progress: Sources (active), Sources settings, Installation options

Driver sources

Driver installation file (INF)

C:\Users\pace\Desktop\Sources\Driver\CH341SER\CH341SER.INF Browse...

Driver files

<input checked="" type="checkbox"/>	Select all/none
<input checked="" type="checkbox"/>	CH341SER.CAT
<input checked="" type="checkbox"/>	CH341S98.SYS
<input checked="" type="checkbox"/>	CH341PT.DLL
<input checked="" type="checkbox"/>	CH341SER.SYS
<input checked="" type="checkbox"/>	CH341S64.SYS
<input checked="" type="checkbox"/>	CH341SER.VXD

Refresh

NOTE The only ticked files will be incorporated into the package.

Next > Cancel

- Select a **Destination folder** for the driver files (the wizard additionally creates a subfolder in the selected folder). Also, you can manually specify a **Target feature**, to which the created

driver components will be assigned. Then, click Next.

The screenshot shows the 'Add driver' dialog box with the 'Sources settings' step selected in a progress bar. The progress bar has three steps: 'Sources' (completed), 'Sources settings' (current), and 'Installation options' (pending). The 'Sources settings' section includes a text box for 'Destination folder for driver files' with the value 'ProgramFilesFolder\PACE Suite (ID: INSTALLDIR)' and a 'Browse...' button. Below this is a 'Target feature' dropdown menu set to '<New Feature>' with a 'New feature' button. A checkbox labeled 'Manage features automatically' is checked. The 'Prefix for components names' text box contains 'Driver_'. A note at the bottom states: 'NOTE Prefix in components names is used to make it easier for you to find all driver components, created according to the Microsoft packaging best practices.' At the bottom right are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

Add driver

Sources Sources settings Installation options

Sources settings

Destination folder for driver files
ProgramFilesFolder\PACE Suite (ID: INSTALLDIR) Browse...

Target feature
<New Feature> New feature

☒ Manage features automatically

Prefix for components names
Driver_

NOTE Prefix in components names is used to make it easier for you to find all driver components, created according to the Microsoft packaging best practices.

< Back Next > Cancel

- At the last step, you can select **driver installation options**, used by Driver Install Frameworks (DIFx) tool, specify **installation conditions**, which will be used for the main driver component (see [Conditional Statement Syntax](#)), and select a **target architecture**, which defines whether a 32-bit or 64-bit DIFx tool will be used. Click **Finish** to add the driver.
NOTE One package can not contain both 32-bit and 64-bit DIFx tool, and as a result, one package can not install driver on both platforms. Use separate packages if you need to

install driver on both 32-bit and 64-bit platforms.

Add driver

Sources Sources settings **Installation options**

Driver installation options

☐ Overwrite the existing driver
Force the installation of a new driver, even if the driver that is currently installed on a device is a better match than the new one.

☒ Prompt the user to connect the device to the computer
Display this prompt only if a device that matches the driver is not connected to the computer.

☒ Add a separate entry to Programs and Features in Control Panel

☐ Install unsigned driver and driver that have missing files
For more information about this type of installation, see [Installing Unsigned Driver Packages in Legacy Mode online](#).

☐ Remove driver files from the system driver store on uninstallation
This option should be used with caution and should be used only if the caller can verify that a binary file in the system is not required by any other driver package or application. Starting with Windows 7, this flag setting is ignored by the operating system.

Installation conditions

Target architecture
Install drivers only on 64-bit platforms

NOTE Driver Install Frameworks (DIFx) tools do not support installation of drivers on both 64-bit and 32-bit platforms using a single package. Use separate packages for each of the platforms.

< Back Finish Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer Tables Editor

New MSI... Ctrl + N

New MST...

Open... Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit Alt + F4

Product language
1033

New GUID

Control Panel - Programs and Features

Disable repair

Hide application in the list

Complexity Estimation

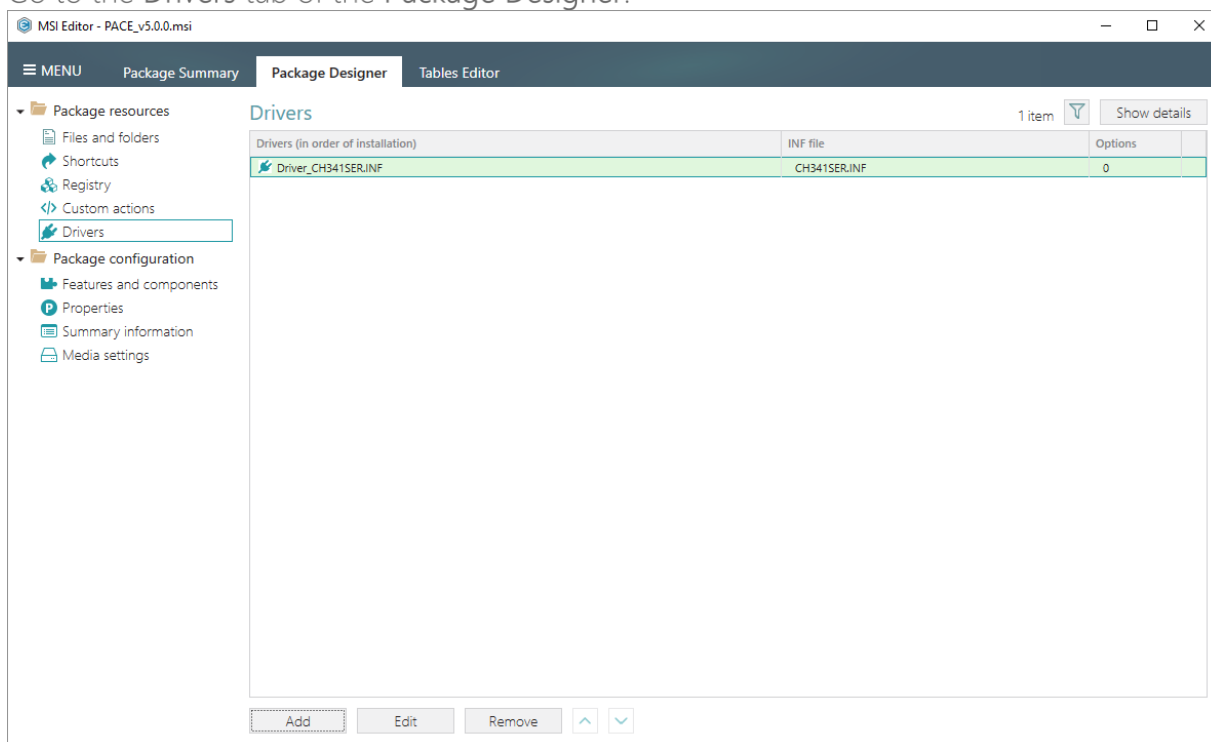
Files

Complexity level

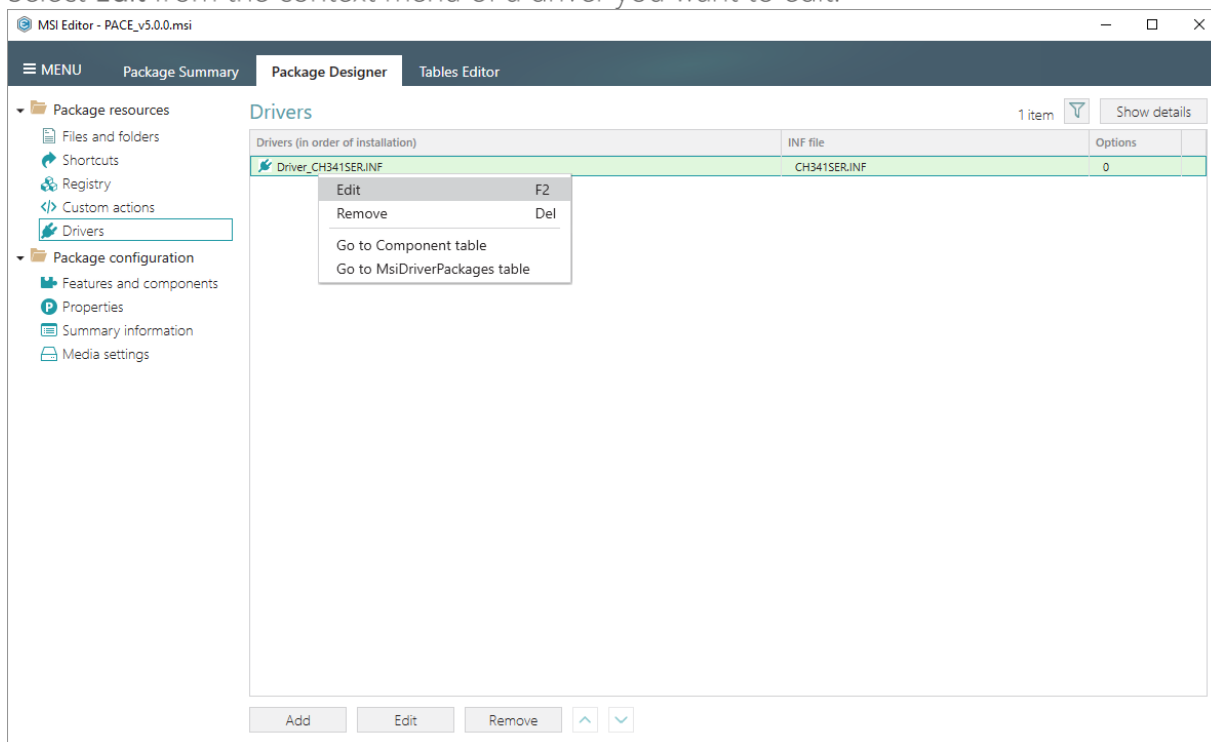
3.7.6.2 Edit Driver

Edit installation options, conditions and target architecture of the existing device driver.

- Go to the Drivers tab of the Package Designer.



- Select Edit from the context menu of a driver you want to edit.



- In the opened window you can change driver installation options, used by Driver Install Frameworks (DIFx) tool, specify **installation conditions**, which will be used for the main driver component (see [Conditional Statement Syntax](#)), and change a **target architecture**, which defines whether a 32-bit or 64-bit DIFx tool will be used. Click **Save** to update the driver

NOTE One package can not contain both 32-bit and 64-bit DIFx tool, and as a result, one package can not install driver on both platforms. Use separate packages if you need to install driver on both 32-bit and 64-bit platforms..

For saving changes, select **Save** from **MENU**.

pg. 362

3.7.7 Features and Components

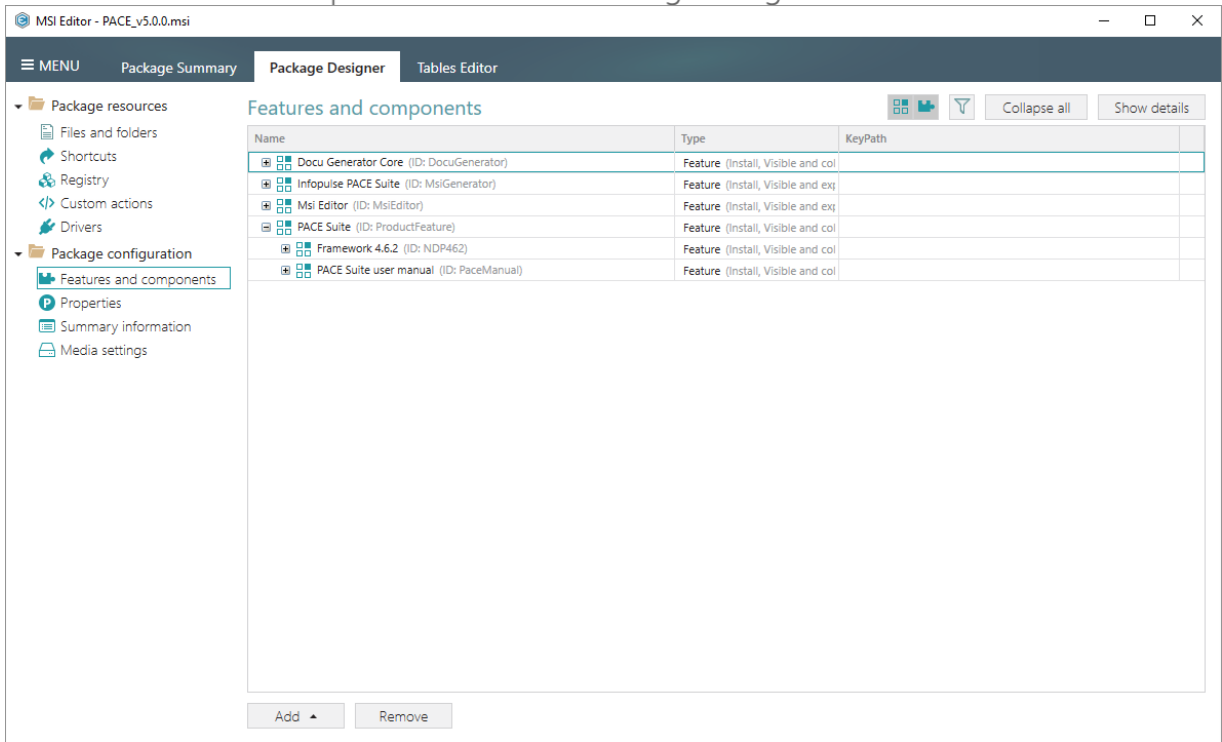
Choose a scenario that better suits your needs:

- **Add Feature**, described in section 3.7.7.1
Add a new root feature or subfeature to the package.
- **Add Component**, described in section 3.7.7.2
Add a new component to one or many features and set the component properties.
- **Move Feature, Component**, described in section 3.7.7.3
Move a feature or a component to another feature.
- **Edit Feature Properties**, described in section 3.7.7.4
Edit feature properties such as ID, title, folder, installation state, type, display options and advertisement.
- **Edit Component Properties**, described in section 3.7.7.5
Edit component properties such as name, GUID, conditions, key path, attributes and relationship with features.
- **Find Empty Components**, described in section 3.7.7.6
Find empty components with no linked resources in order to remove them.
- **Review Component Resources**, described in section 3.7.7.7
Review what resources (files, registry, shortcuts, etc.) are linked with the component.

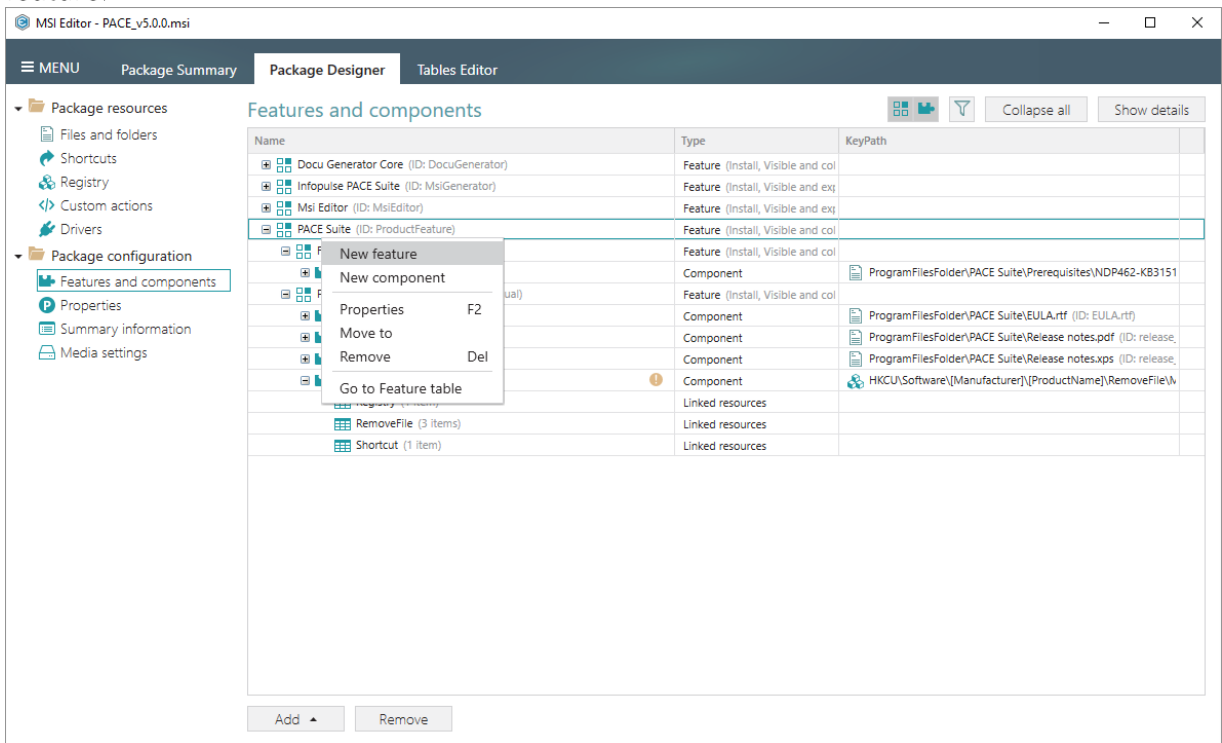
3.7.7.1 Add Feature

Add a new root feature or subfeature to the package.

- Go to Features and components tab of the Package Designer.



- Select New feature from the context menu of a feture, where you want to create a new feature. For creating a root feature, use any feature and later you can clean-up its parent feature.



- Using the Properties window, update a feature title, identifier and select the necessary behavior and appearance settings. For creating a root feature, click on the Make this

feature root link, located below the Parent feature field. Afterwards, click Save.

Properties

MSI table: 'Feature'

Title

Identifier

Newfeature

Newfeature

Parent feature

PACE Suite (ID: ProductFeature)

Browse...

Make this feature root

Description

Destination folder

Browse...

Reset

Behaviour and appearance

Initial Installation state

Installation type

Install

Install feature components locally

Display option

Advertise

Visible and collapsed

Allow advertise

☐ Disallow user to change feature state to Absent

Save

Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU

Package Summary

Package Designer

Tables Editor

New MSI...
Ctrl + N

New MST...

Open...
Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save
Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit
Alt + F4

Product language

1033

New GUID

New GUID

m	Version to	Upgrade type
		Detect
	≤5.0.0.1	Upgrade
	≤4.7.0	Upgrade
	≤5.0.0.1	Detect
		Upgrade

Control Panel - Programs and Features

☐ Disable repair

☐ Disable removal

☐ Hide application in the list

Complexity Estimation

Files

Complexity level

Add a new component to one or many features and set the component properties.

-
- MSI Editor - PACE_v5.0.0.msi
- MENU Package Summary Package Designer Tables Editor
- Package resources
- Files and folders
 - Shortcuts
 - Registry
 - Custom actions
 - Drivers
- Package configuration
- Features and components
 - Properties
 - Summary information
 - Media settings
- ### Features and components
- | Name | Type | KeyPath |
|---|----------------------------------|---------|
| Docu Generator Core (ID: DocuGenerator) | Feature (install, Visible and co | |
| Infopulse PACE Suite (ID: MsiGenerator) | Feature (install, Visible and ex | |
| Msi Editor (ID: MsiEditor) | Feature (install, Visible and ex | |
| PACE Suite (ID: ProductFeature) | Feature (install, Visible and co | |
| Framework 4.6.2 (ID: NDP462) | Feature (install, Visible and co | |
| PACE Suite user manual (ID: PaceManual) | Feature (install, Visible and co | |
- Add Remove

-
- MSI Editor - PACE_v5.0.0.msi
- MENU Package Summary Package Designer Tables Editor
- Package resources
- Files and folders
 - Shortcuts
 - Registry
 - Custom actions
 - Drivers
- Package configuration
- Features and components
 - Properties
 - Summary information
 - Media settings
- Features and components
- | Name | Type | KeyPath |
|---|-----------------------------------|---|
| Docu Generator Core (ID: DocuGenerator) | Feature (install, Visible and co | |
| Infopulse PACE Suite (ID: MsiGenerator) | Feature (install, Visible and ex | |
| Msi Editor (ID: MsiEditor) | Feature (install, Visible and ex | |
| PACE Suite (ID: ProductFeature) | Feature (install, Visible and coi | |
| Fra | Feature (install, Visible and coi | |
| PAC | Component | ProgramFilesFolder\PACE Suite\Prerequisites\NDP462-KB3151 |
| EULA | Feature (install, Visible and coi | |
| EULA.rtf | Component | ProgramFilesFolder\PACE Suite\EULA.rtf (ID: EULA.rtf) |
| Release notes.pdf | Component | ProgramFilesFolder\PACE Suite\Release notes.pdf (ID: release, |
| Release notes.xml | Component | ProgramFilesFolder\PACE Suite\Release notes.xml (ID: release, |
| RemoveFile | Component | HKCU\Software\{Manufacturer}\{ProductName}\RemoveFile\ |
- Context menu options:
- New feature
 - New component
 - Properties F2
 - Move to
 - Remove Del
 - Go to Feature table
- Buttons: Add Remove

- pg. 366


component attributes and define new or change existing relationships between this component and features on the Relationships tab. Afterwards, click Save.

Properties

General

Attributes

Relationships

 MSI table: 'Component'

Name

NewComponent

Component ID (GUID)

{DB0FDAB0-CCE4-4C97-9B21-19638EF0E366}

New

Conditions

Folder and KeyPath

Files destination folder

TARGETDIR (ID: TARGETDIR)

Browse...

NOTE Changing this folder leads to changing the Target folder for all the component files.

KeyPath type

Folder ('Files destination folder' is used as the KeyPath)

KeyPath

TARGETDIR (ID: TARGETDIR)

Browse...

Save

Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU

Package Summary

Package Designer

Tables Editor

New MSI...
Ctrl + N

New MST...

Open...
Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save
Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit
Alt + F4

Product language


1033

New GUID

New GUID

Item	Version to	Upgrade type
		Detect
	≤5.0.0.1	Upgrade
	≤4.7.0	Upgrade
	≤5.0.0.1	Detect
		Upgrade

Control Panel - Programs and Features




☐ Disable repair

☐ Disable removal

☐ Hide application in the list

Complexity Estimation

Files



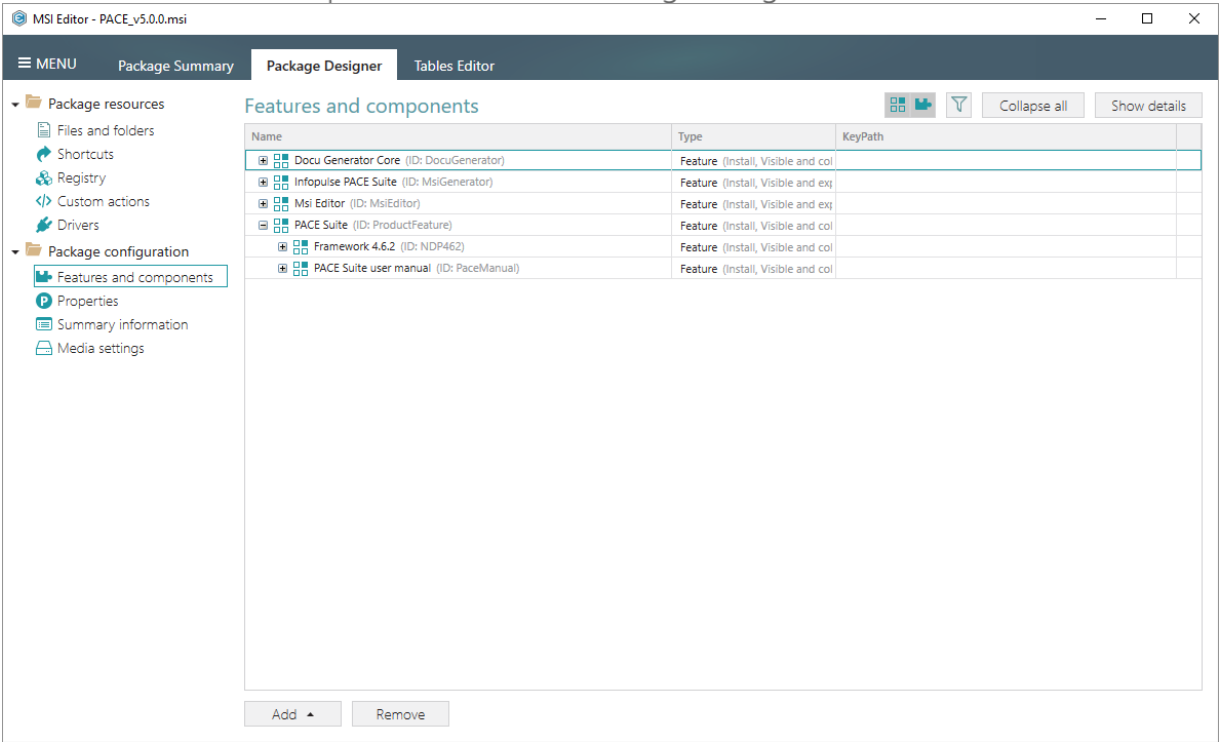
Complexity level

pg. 367

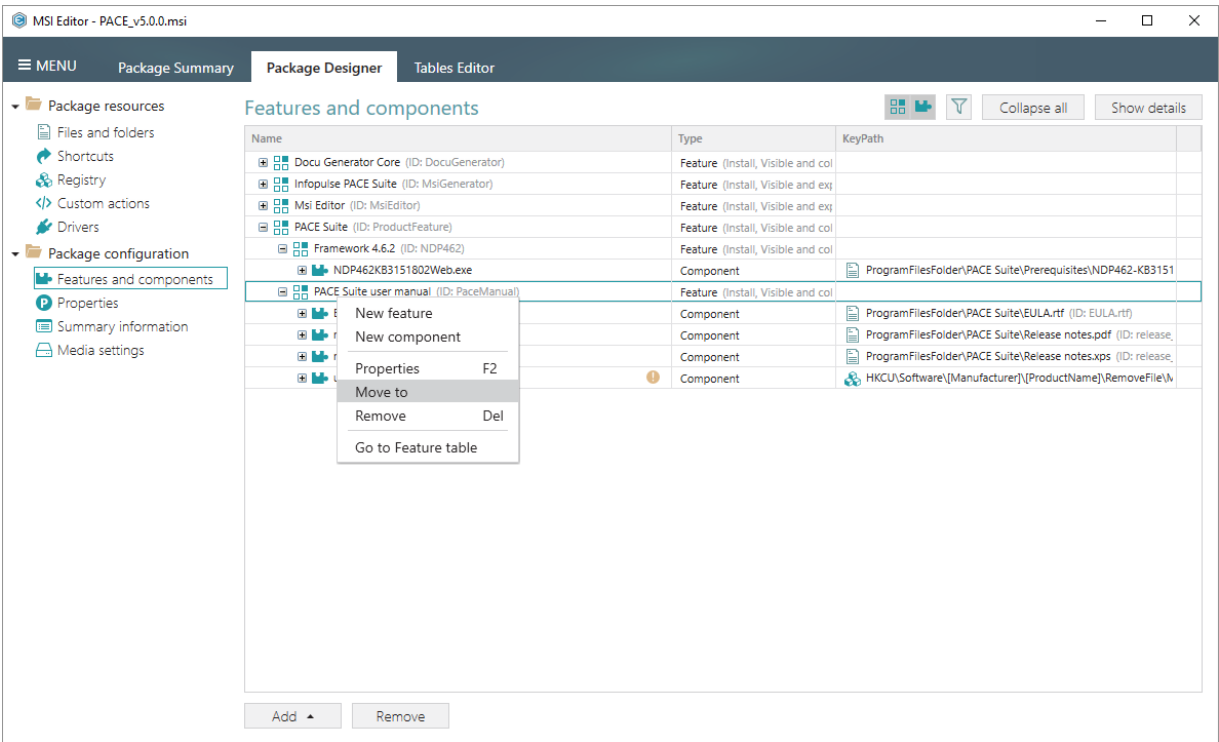
3.7.7.3 Move Feature, Component

Move a feature or a component to another feature.

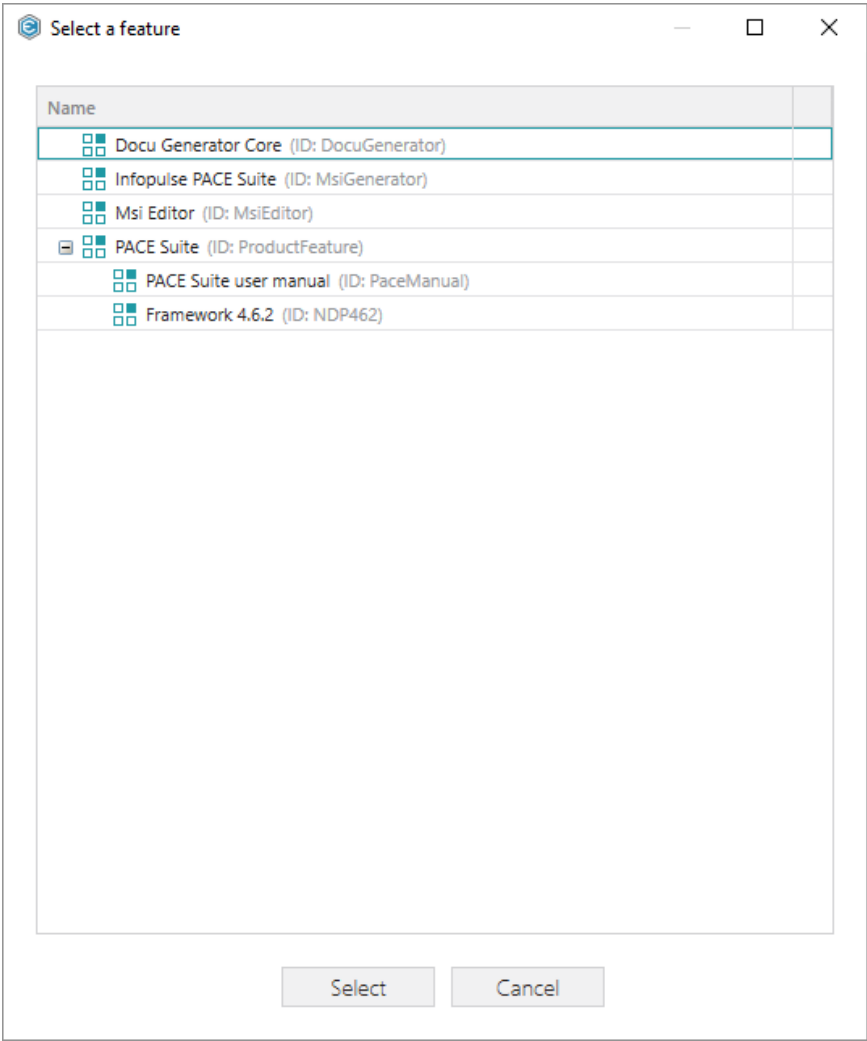
- Go to Features and components tab of the Package Designer.



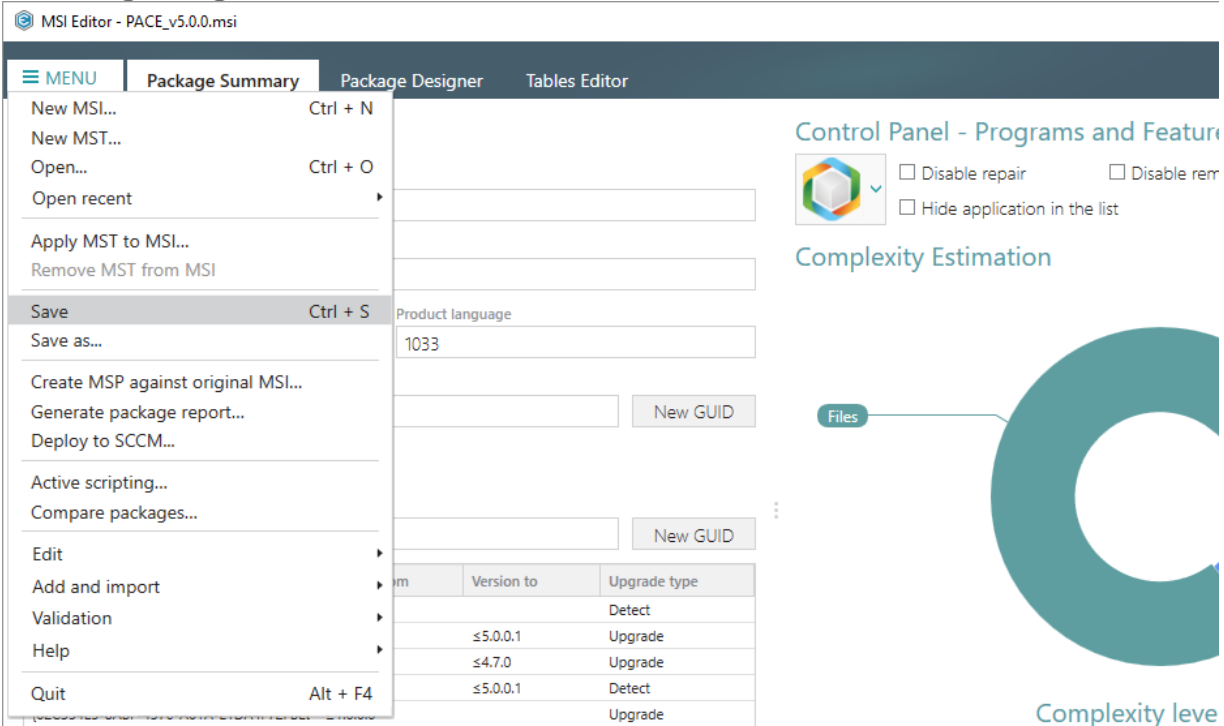
- Select Move to from the context menu of a feature or component, which you want to move to another feature.



- Choose a destination feature from the tree and click Select.



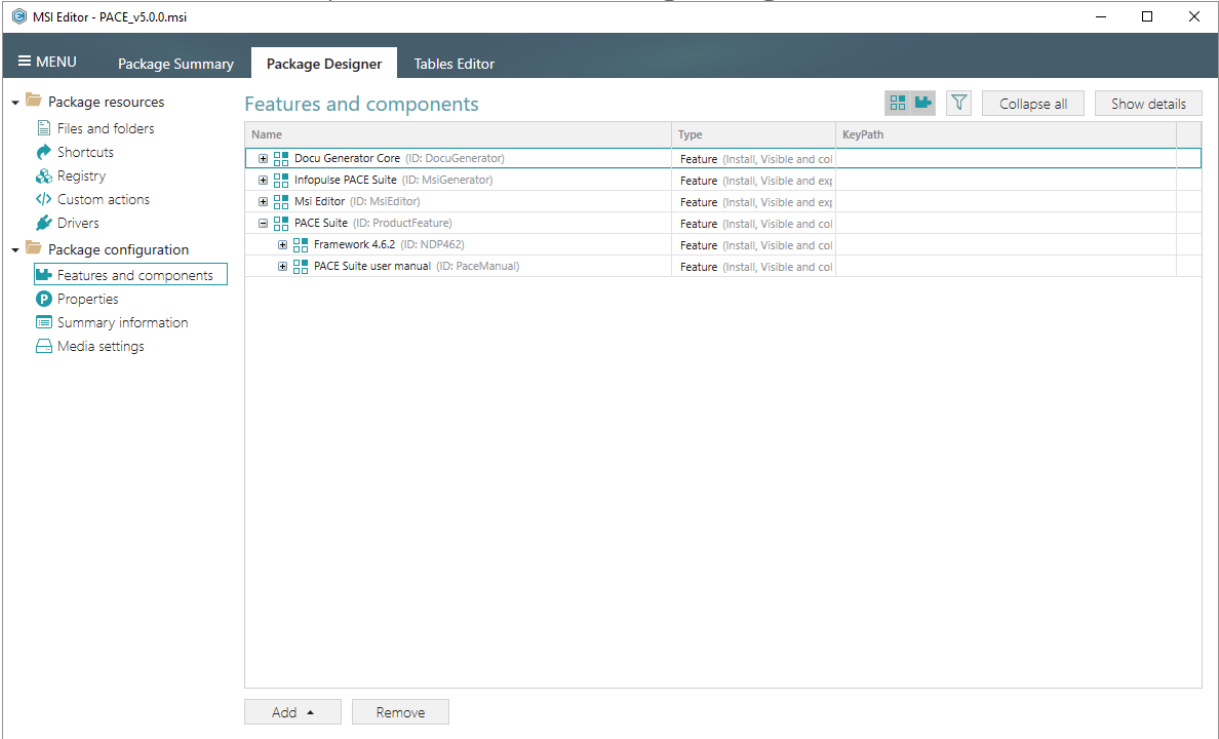
- For saving changes, select Save from MENU.



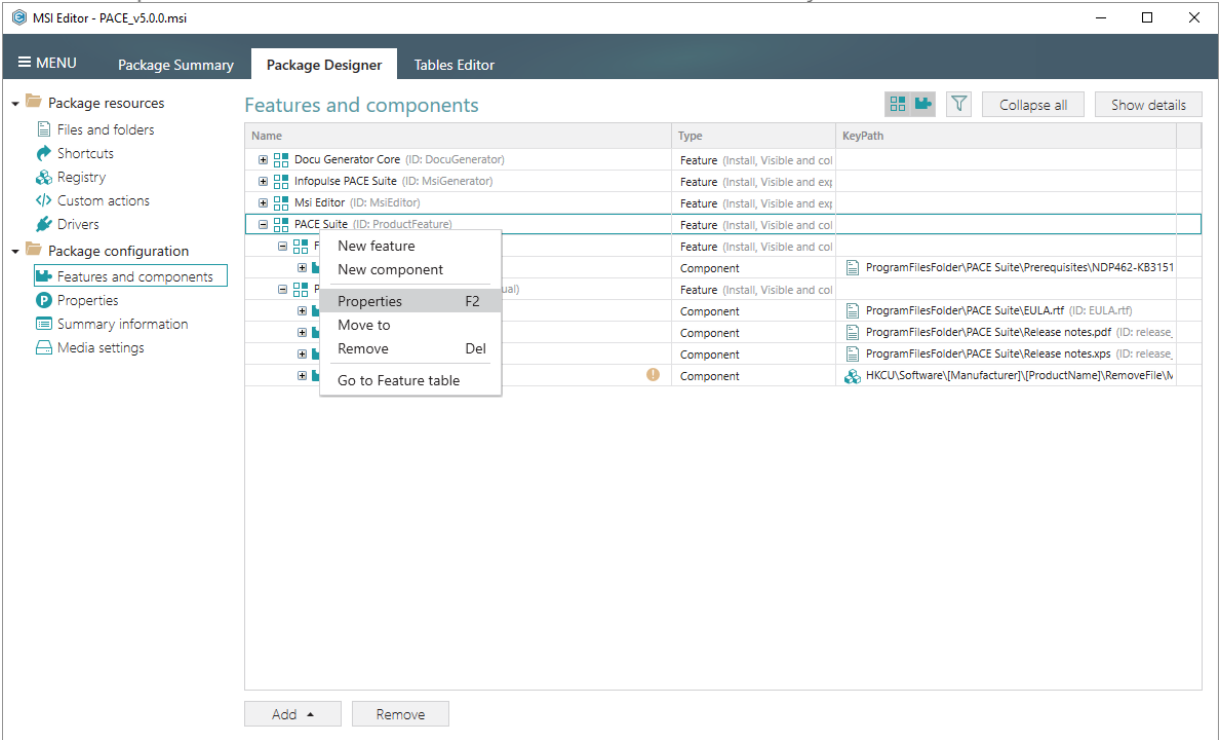
3.7.7.4 Edit Feature Properties

Edit feature properties such as ID, title, folder, installation state, type, display options and advertisement.

- Go to Features and components tab of the Package Designer.



- Select Properties from the context menu of a feature, which you want to edit.



- Using the Properties window, update the necessary feature properties, such as a feature title, identifier, parent feature, installation state and type, display option and advertisement.

Afterwards, click Save.

MSI table: 'Feature'

Title

PACE Suite

Identifier

ProductFeature

Parent feature

Browse...

Make this feature root

Description

Destination folder

Browse...

Reset

Behaviour and appearance

Initial Installation state

Install

Installation type

Install feature components locally

Display option

Visible and collapsed

Advertise

Allow advertise

☐ Disallow user to change feature state to Absent

Save

Cancel

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU

Package Summary

Package Designer

Tables Editor

New MSI...
Ctrl + N

New MST...

Open...
Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save
Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit
Alt + F4

Product language

1033

New GUID

New GUID

m	Version to	Upgrade type
		Detect
	≤5.0.0.1	Upgrade
	≤4.7.0	Upgrade
	≤5.0.0.1	Detect
		Upgrade

Control Panel - Programs and Features

☐ Disable repair
☐ Hide application in the list

Complexity Estimation

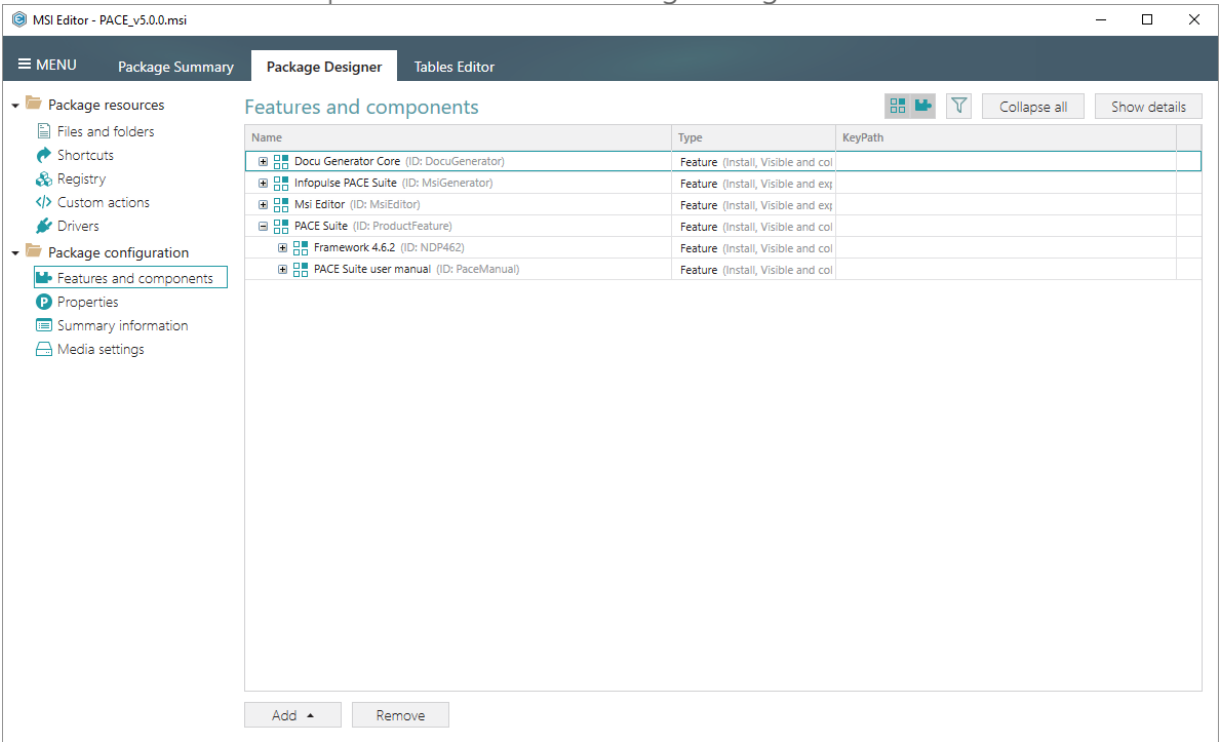
Files

Complexity level

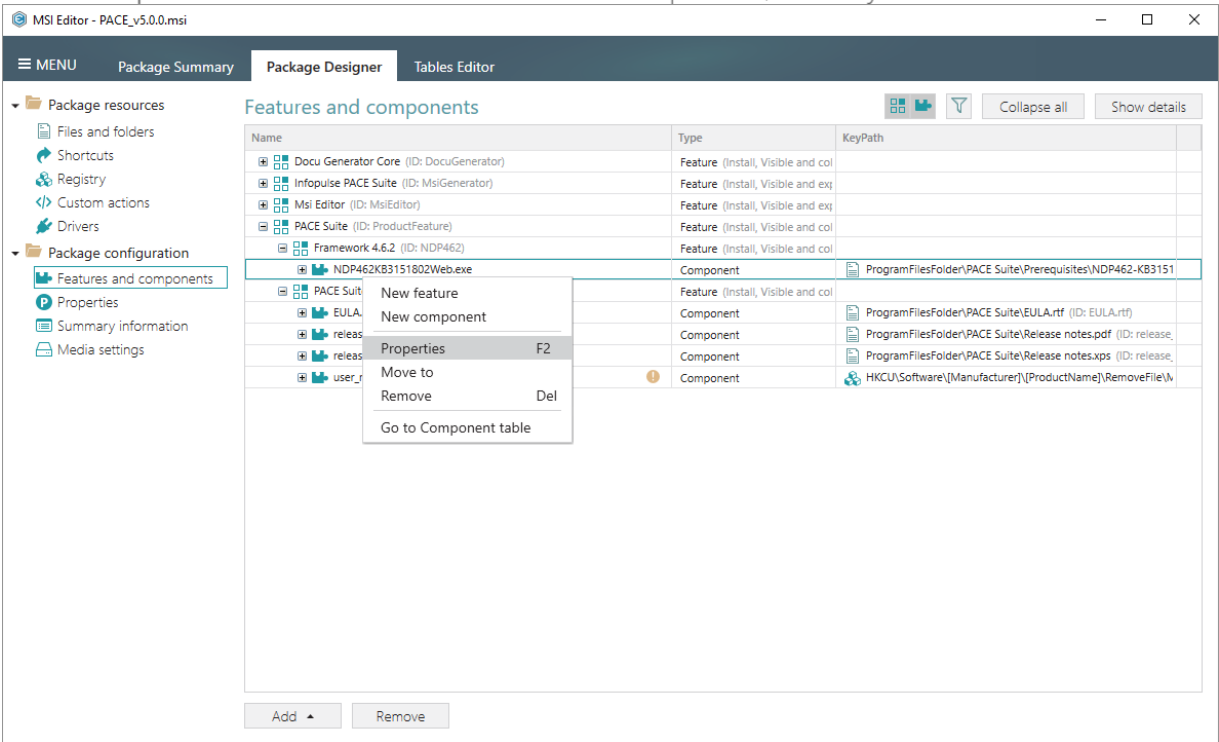
3.7.7.5 Edit Component Properties

Edit component properties such as name, GUID, conditions, key path, attributes and relationship with features.

- Go to Features and components tab of the Package Designer.



- Select Properties from the context menu of a component, which you want to edit.



- On the **General** tab of the **Properties** window, update the necessary component properties, such as a name, GUID, installation conditions, target folder and key path.

Properties

General Attributes Relationships

MSI table: 'Component'

Name
NDP462KB3151802Web.exe

Component ID (GUID)
{FBDF391A-FDAF-5A95-9204-B2E107ABA817} **New**

Conditions

Folder and KeyPath

Files destination folder
ProgramFilesFolder\PACE Suite\Prerequisites (ID: PREREQUISITES) **Browse...**

NOTE Changing this folder leads to changing the **Target folder** for all the component files.

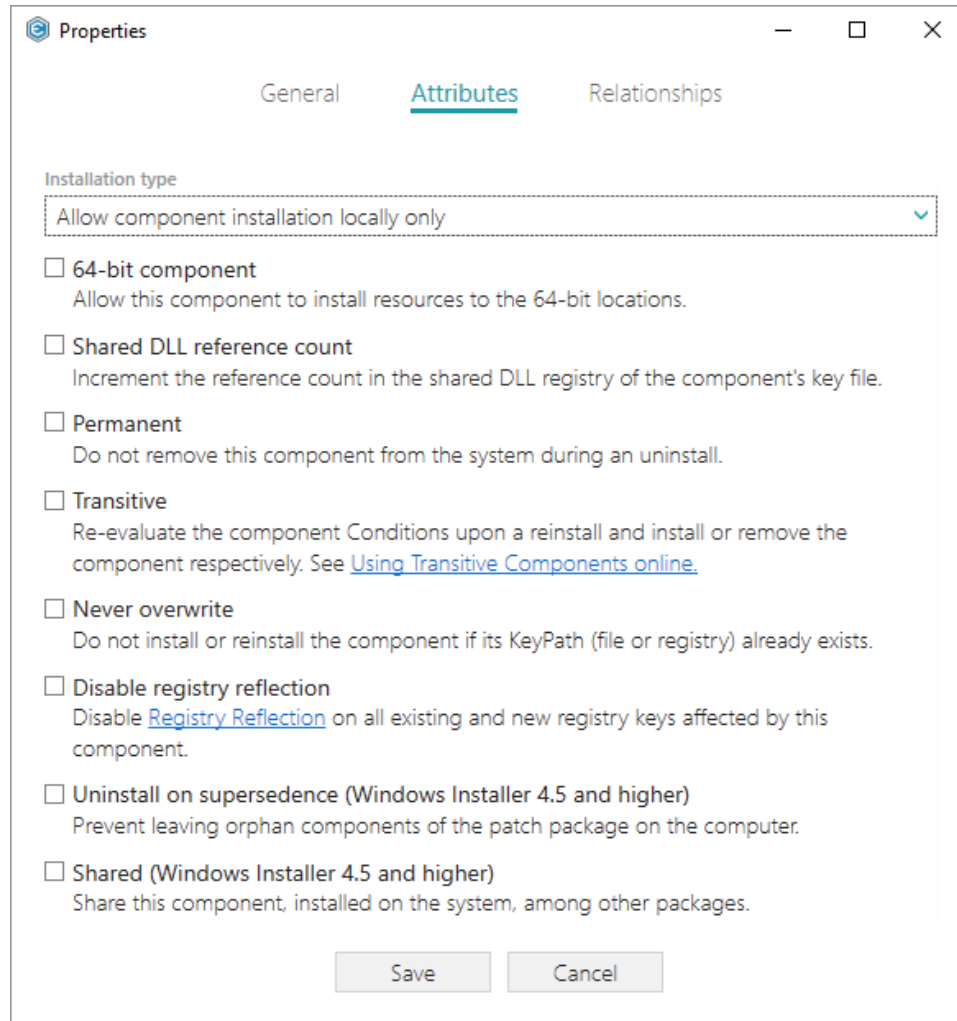
KeyPath type
File ▼

KeyPath
ProgramFilesFolder\PACE Suite\Prerequisites\NDP462-KB3151802-Web.exe **Browse...**

Save **Cancel**

- On the **Attributes** tab of the **Properties** window you can manage component attributes such as component installation type, bitness (set the **64-bit component** attribute if your component installs resources to the 64-bit locations), management of the shared resources

and so on.



The screenshot shows a Windows-style 'Properties' dialog box with three tabs: 'General', 'Attributes' (which is selected and underlined), and 'Relationships'. The 'Attributes' tab contains a list of checkboxes for component installation settings. At the top, there is a dropdown menu for 'Installation type' with the option 'Allow component installation locally only' selected. Below this are several checkboxes, each with a description. At the bottom of the dialog are 'Save' and 'Cancel' buttons.

Properties

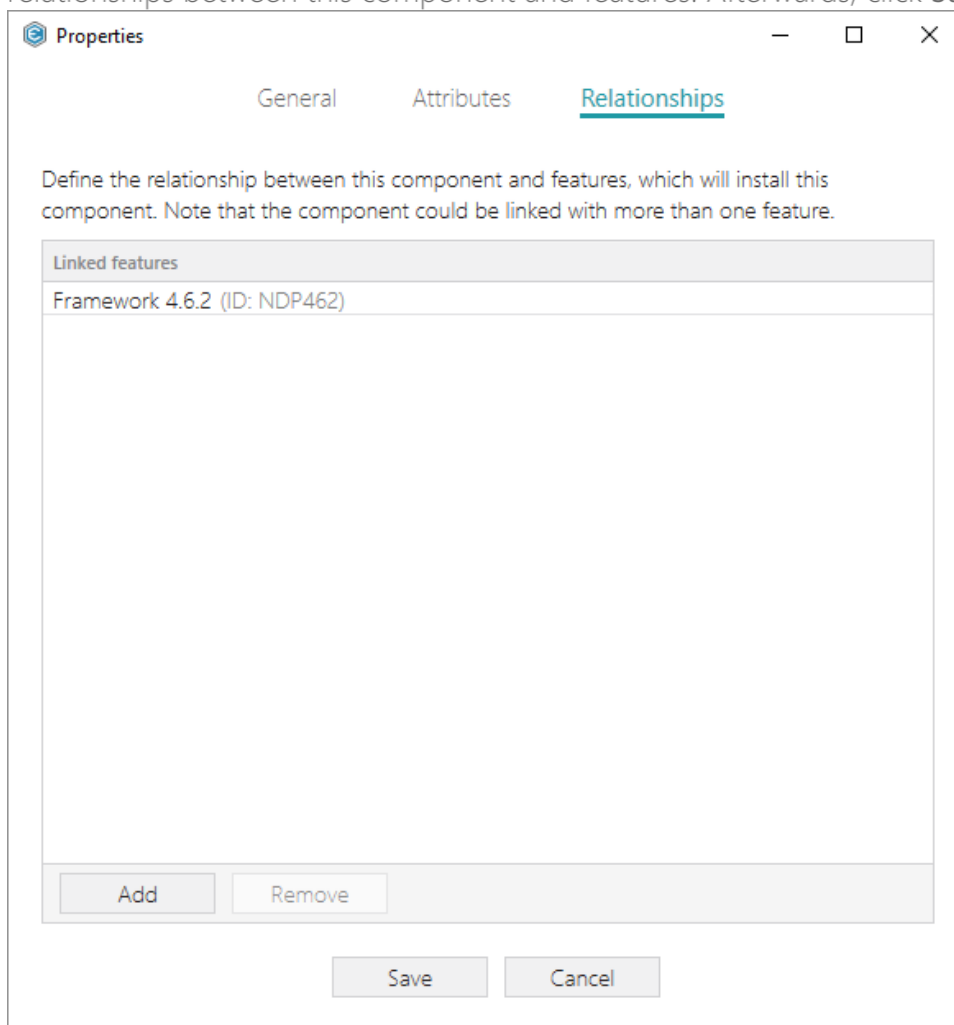
General Attributes Relationships

Installation type
Allow component installation locally only

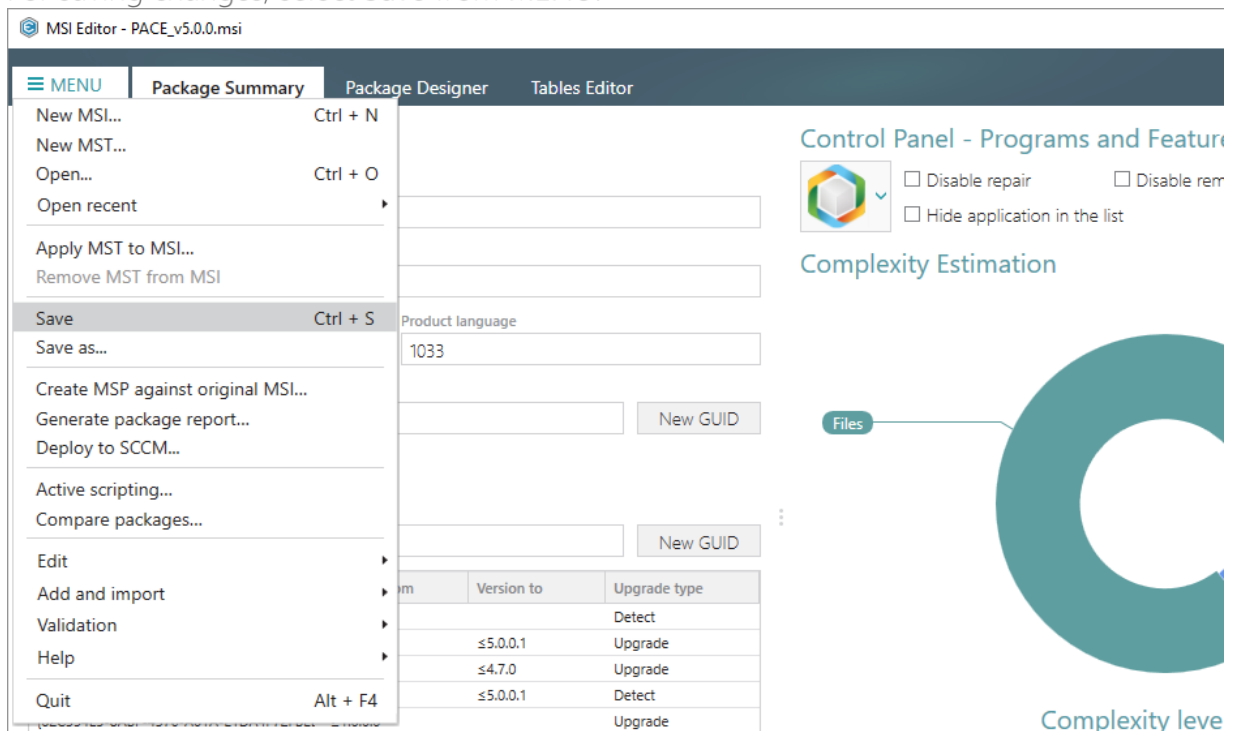
- ☐ **64-bit component**
Allow this component to install resources to the 64-bit locations.
- ☐ **Shared DLL reference count**
Increment the reference count in the shared DLL registry of the component's key file.
- ☐ **Permanent**
Do not remove this component from the system during an uninstall.
- ☐ **Transitive**
Re-evaluate the component Conditions upon a reinstall and install or remove the component respectively. See [Using Transitive Components online](#).
- ☐ **Never overwrite**
Do not install or reinstall the component if its KeyPath (file or registry) already exists.
- ☐ **Disable registry reflection**
Disable [Registry Reflection](#) on all existing and new registry keys affected by this component.
- ☐ **Uninstall on supersedence (Windows Installer 4.5 and higher)**
Prevent leaving orphan components of the patch package on the computer.
- ☐ **Shared (Windows Installer 4.5 and higher)**
Share this component, installed on the system, among other packages.

Save Cancel

- The Relationships tab of the Properties window allows changing existing and adding new relationships between this component and features. Afterwards, click Save.



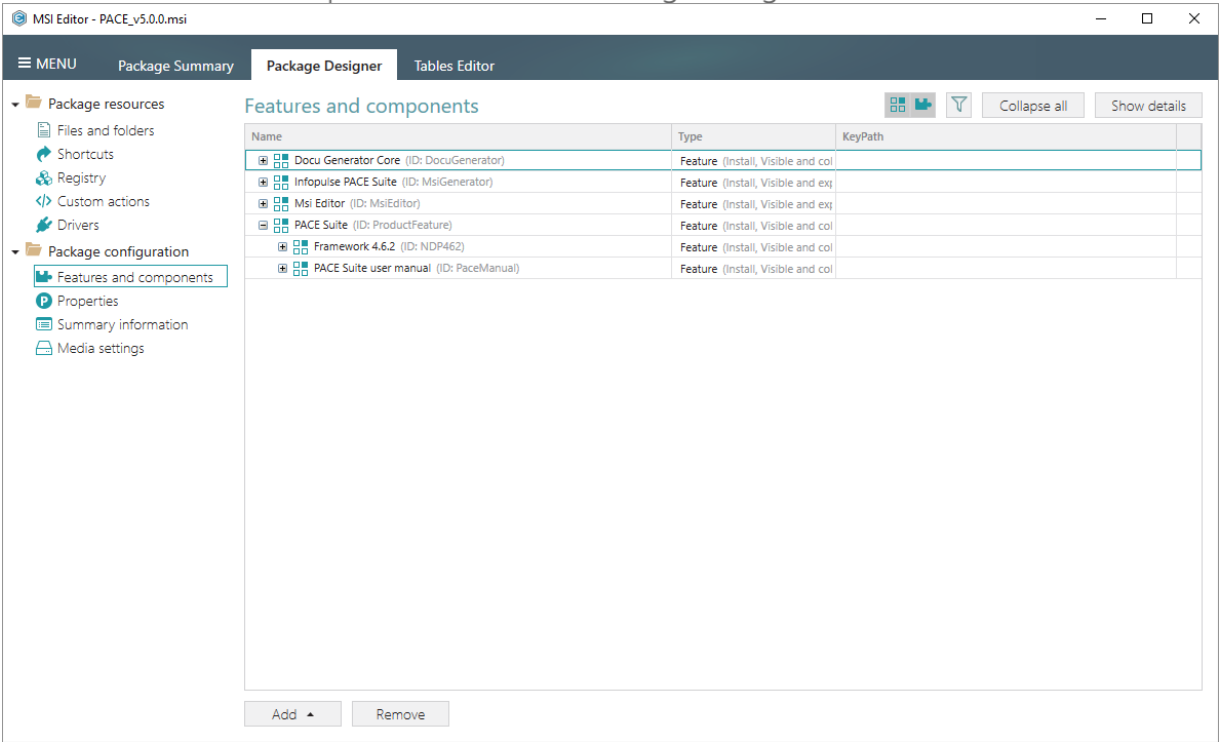
- For saving changes, select Save from MENU.




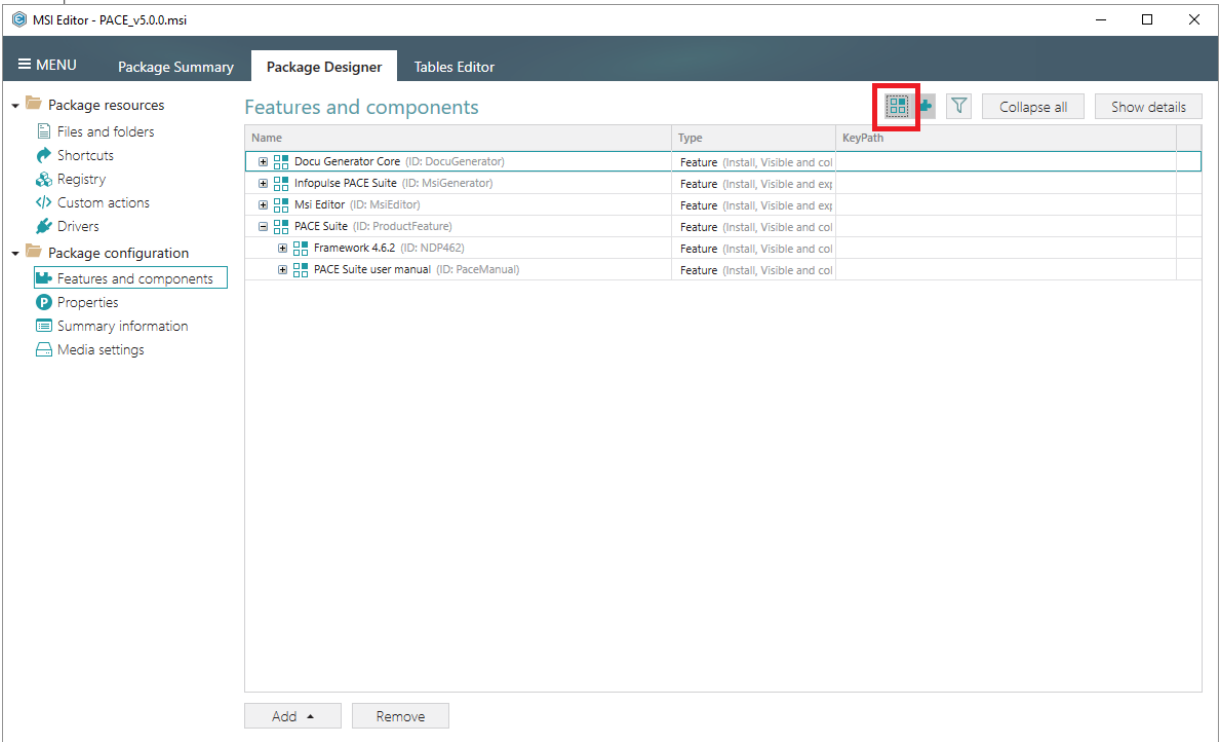
3.7.7.6 Find Empty Components

Find empty components with no linked resources in order to remove them.

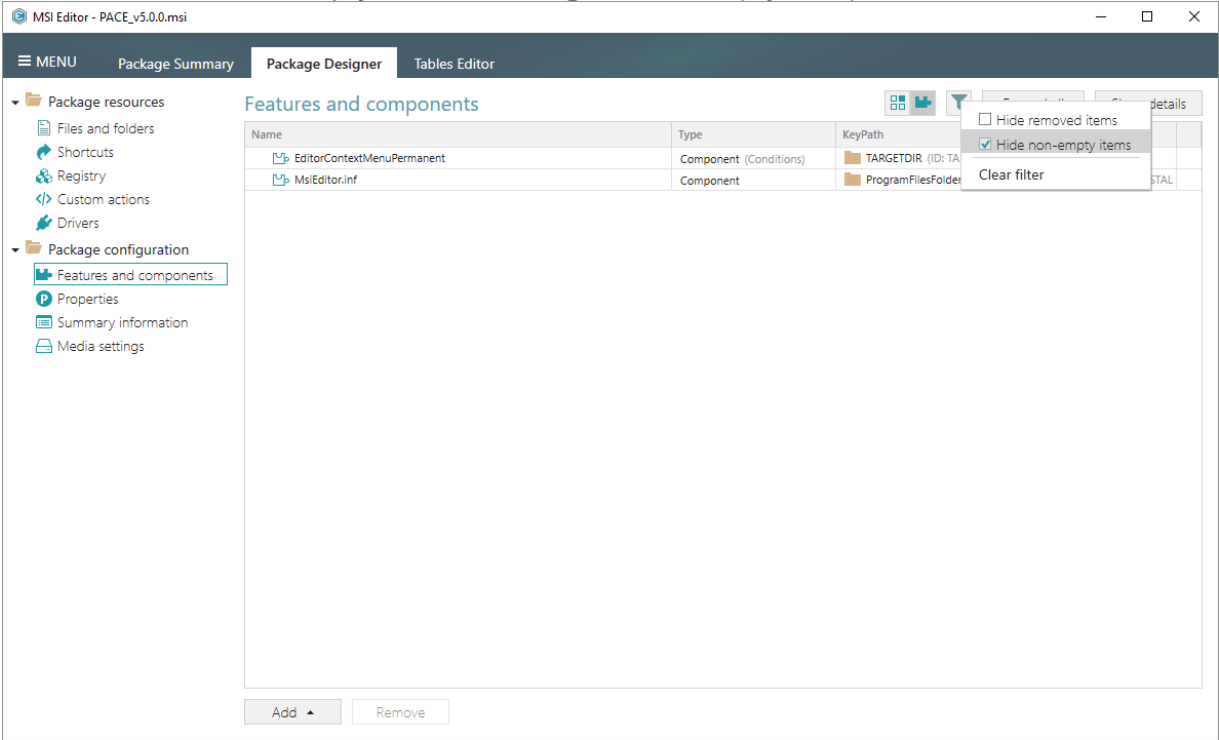
- Go to Features and components tab of the Package Designer.



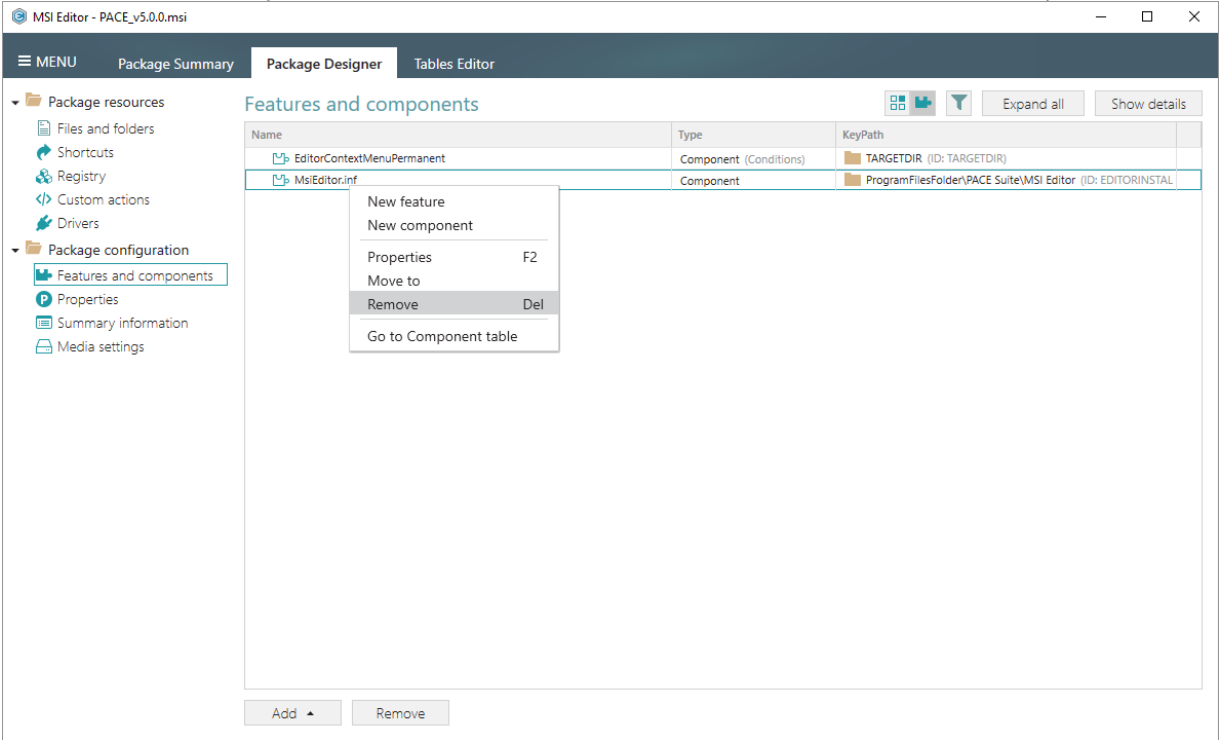
- Click on the 'feature' icon , located near the Filters, to change view for displaying only components.



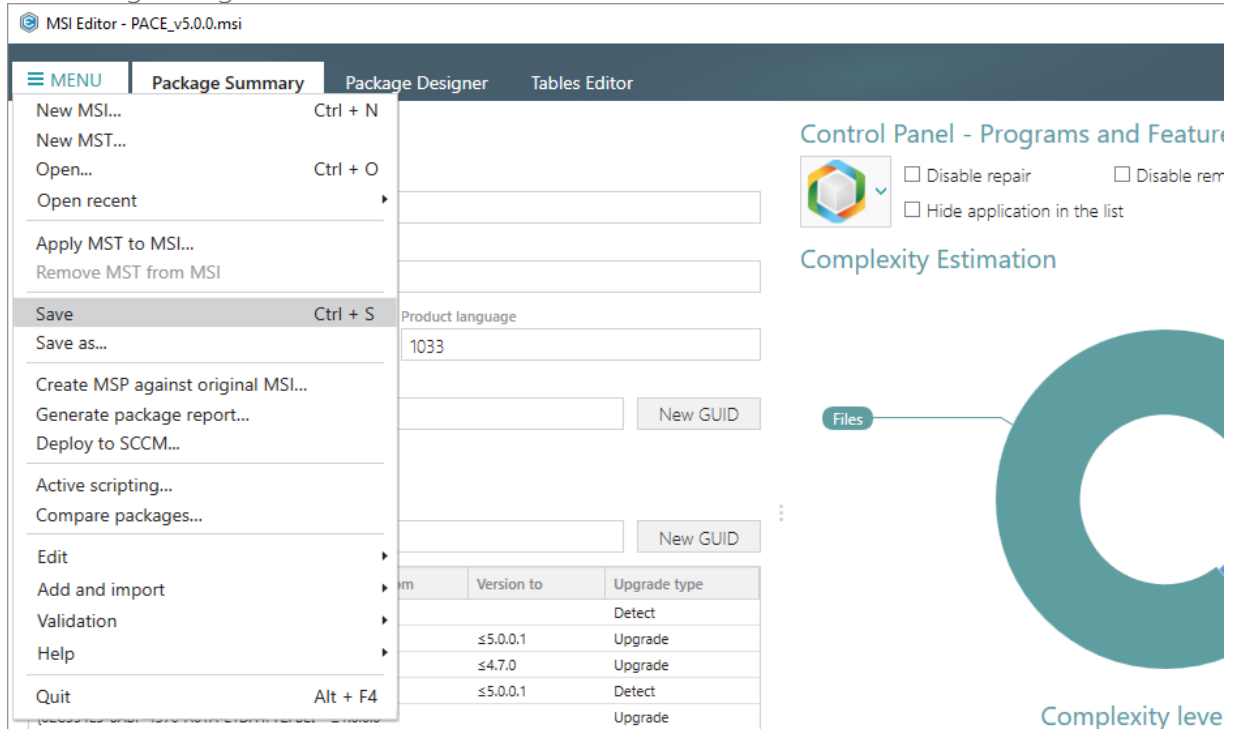
- Enable the Hide non-empty items filter to get list of empty components.



- To remove the component, select Remove from the context menu of this component.



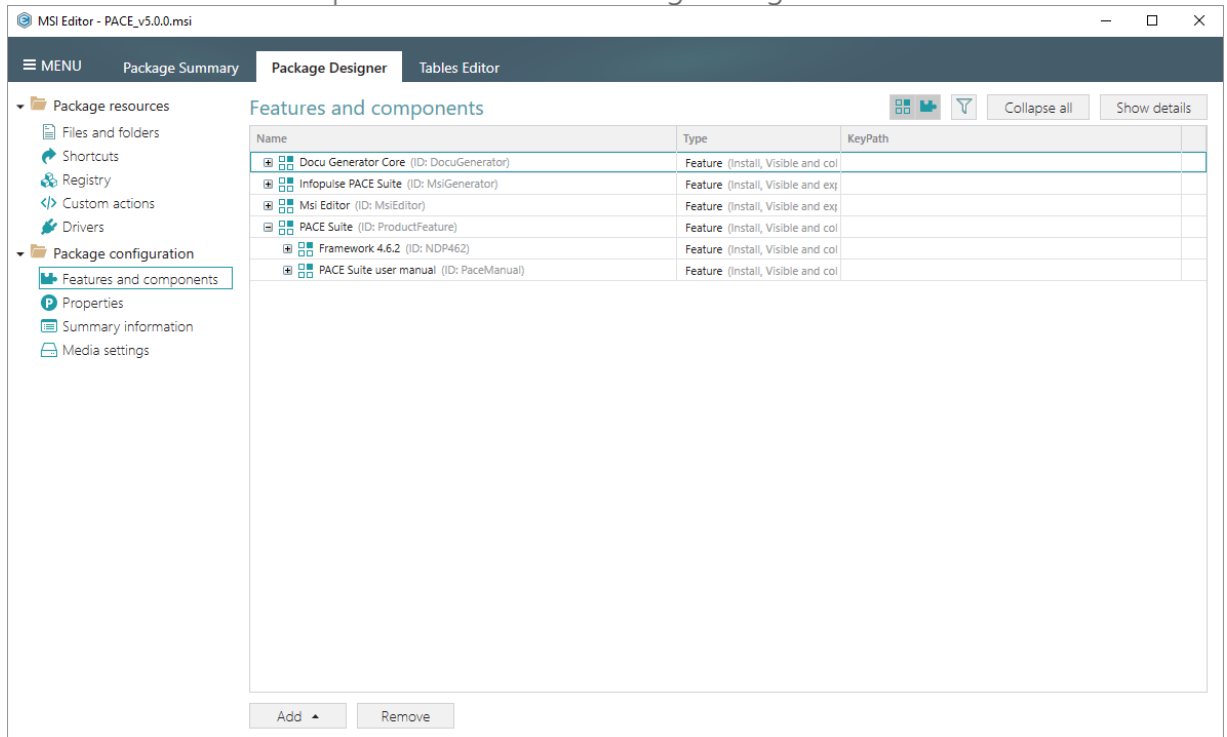
- For saving changes, select Save from MENU.




3.7.7.7 Review Component Resources

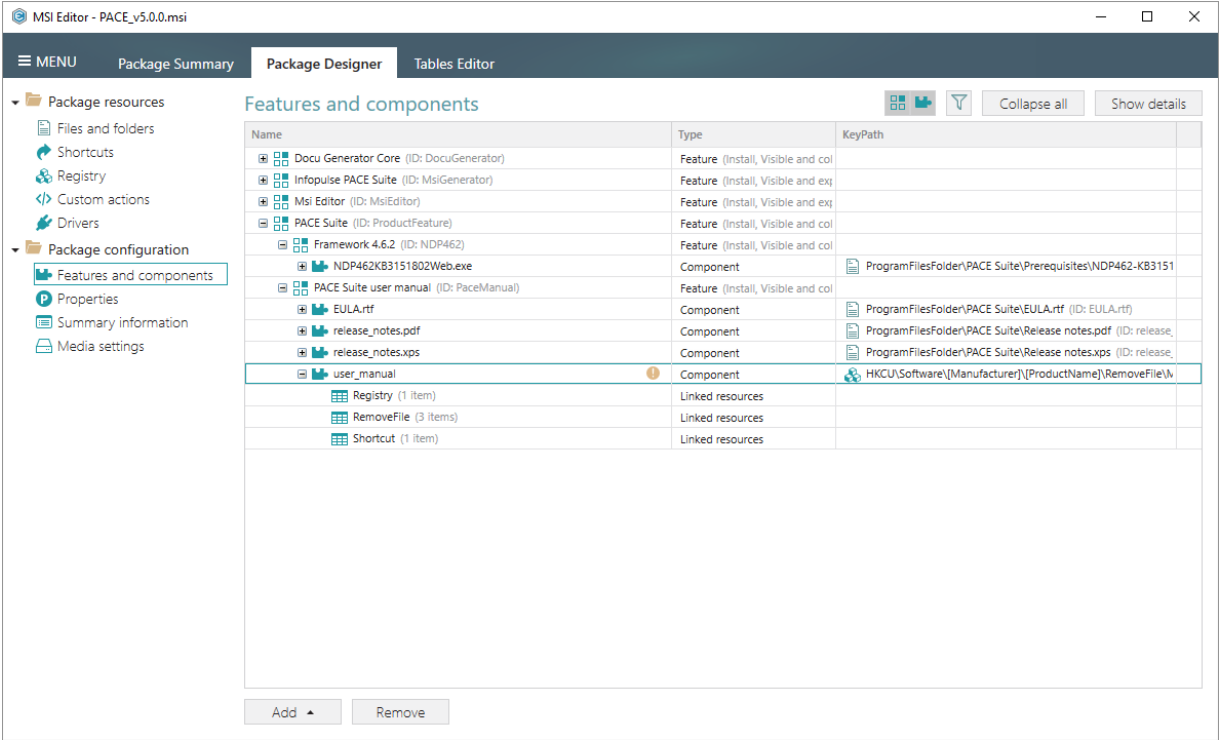
Review what resources (files, registry, shortcuts, etc.) are linked with the component.

- Go to Features and components tab of the Package Designer.

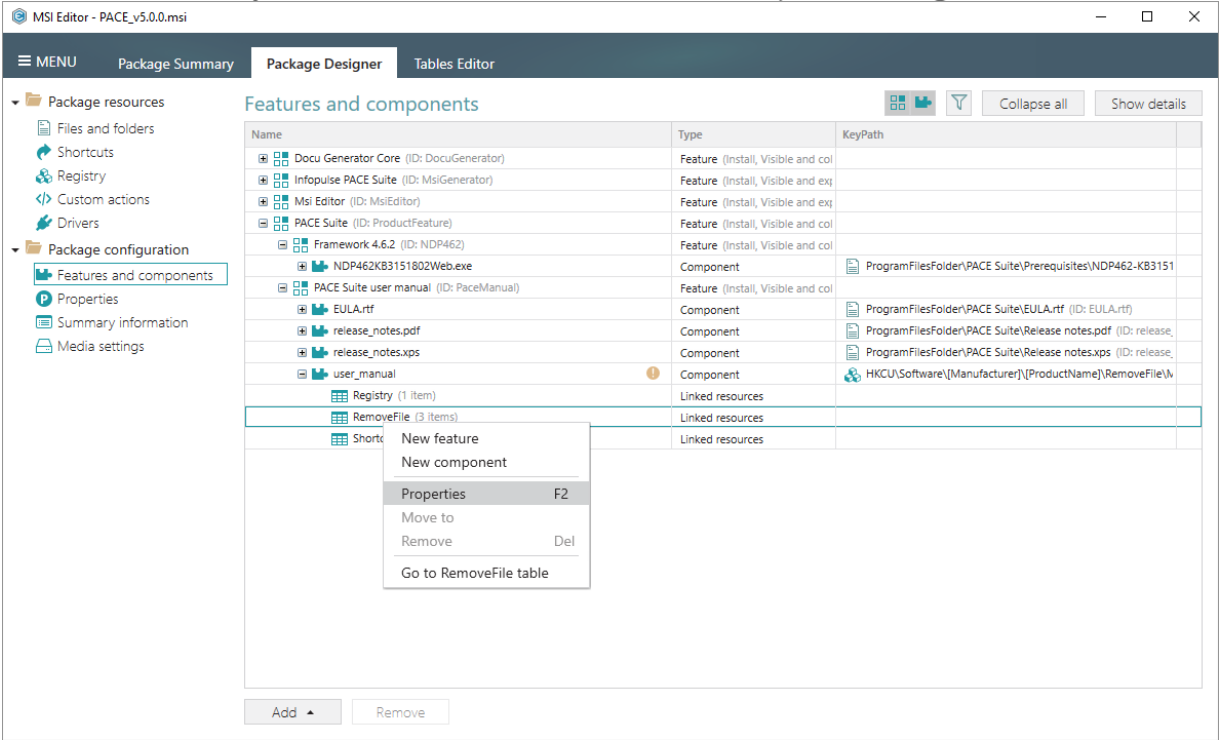


- Find the necessary component and click  to expand the component node and to see resources, linked with this component. Note that all resources are grouped by tables, from

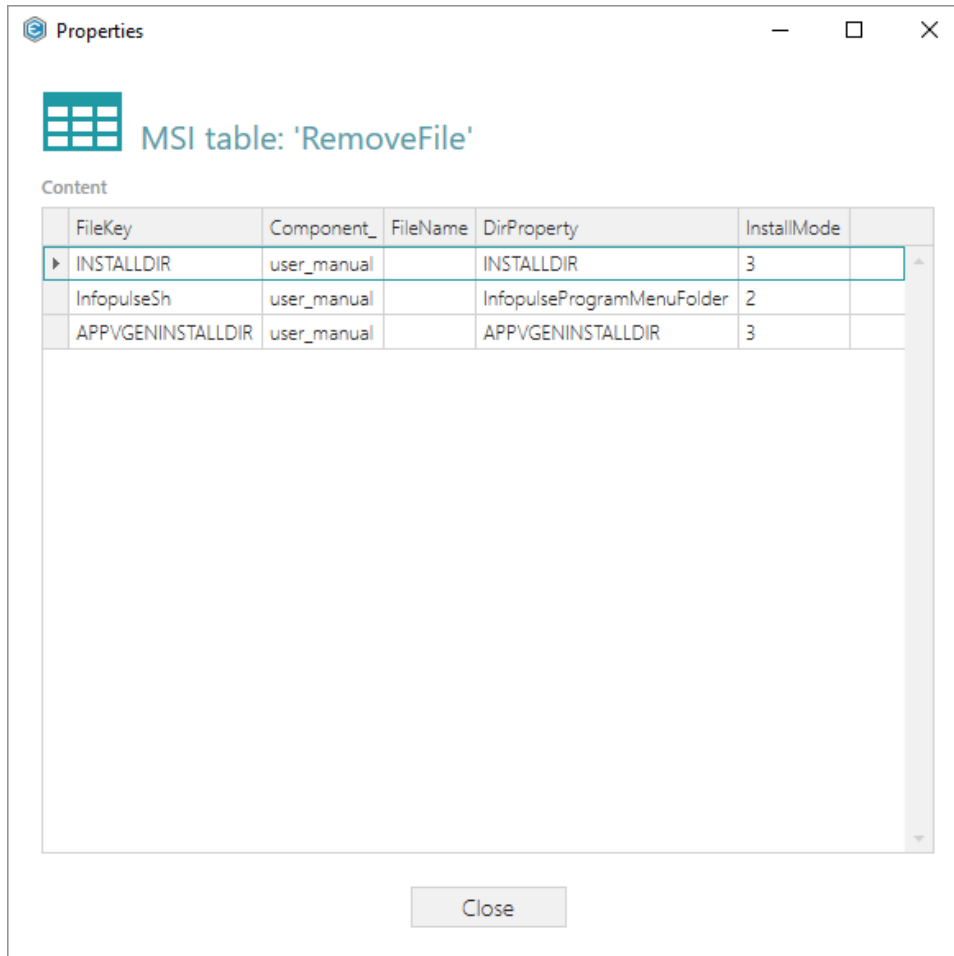
which these resources were read.



- Select Properties from the context menu of a group of component resources you want to review. Alternatively, review these resources in the Details pane clicking Show details.



- Find the detailed information about the linked resources from one table in the grid view.



3.7.8 Properties

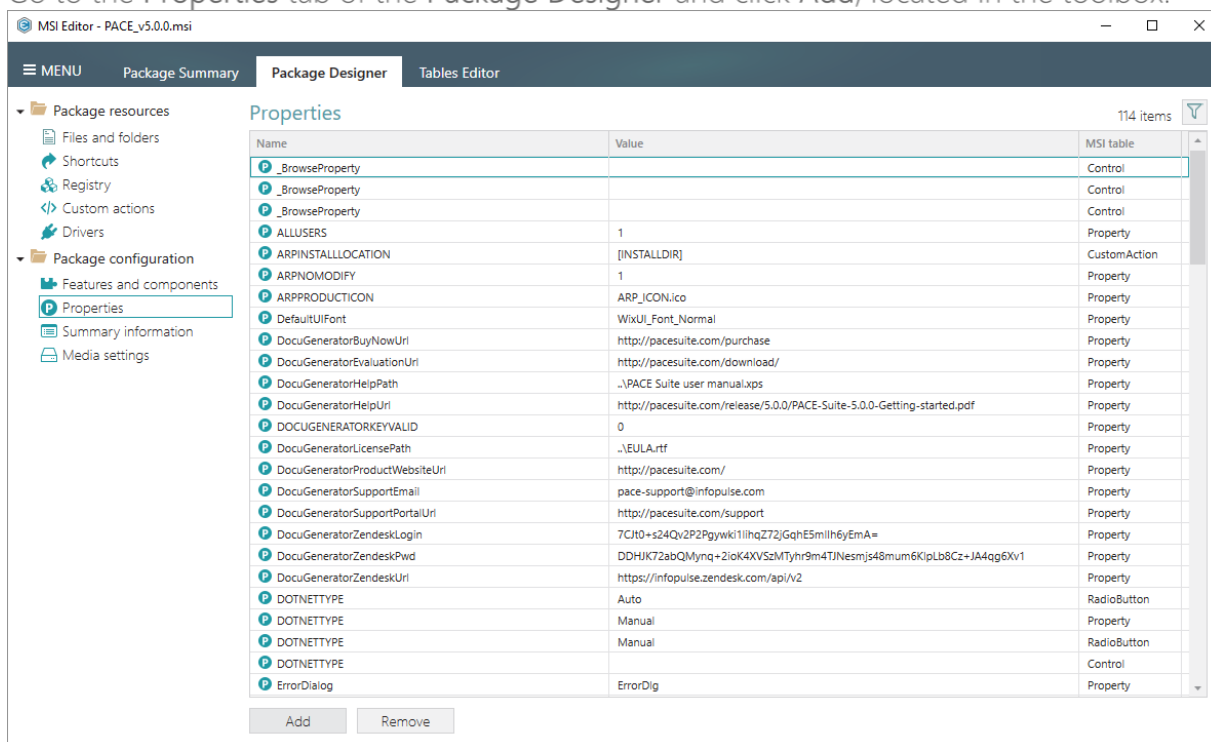
Choose a scenario that better suits your needs:

- Add Property, described in section 3.7.8.1
Add a new property to the package.
- Edit Property, described in section 3.7.8.2
Edit a name and a value of the existing property.

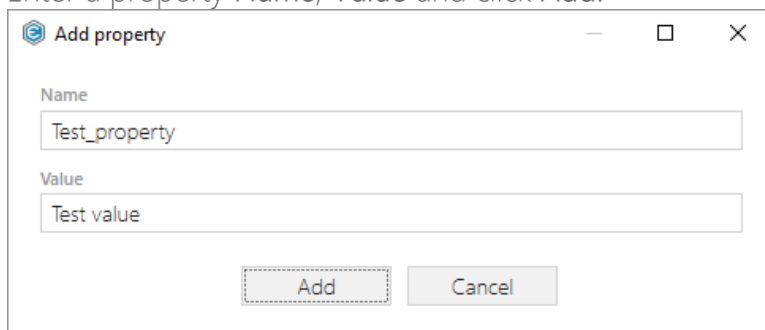
3.7.8.1 Add Property

Add a new property to the package.

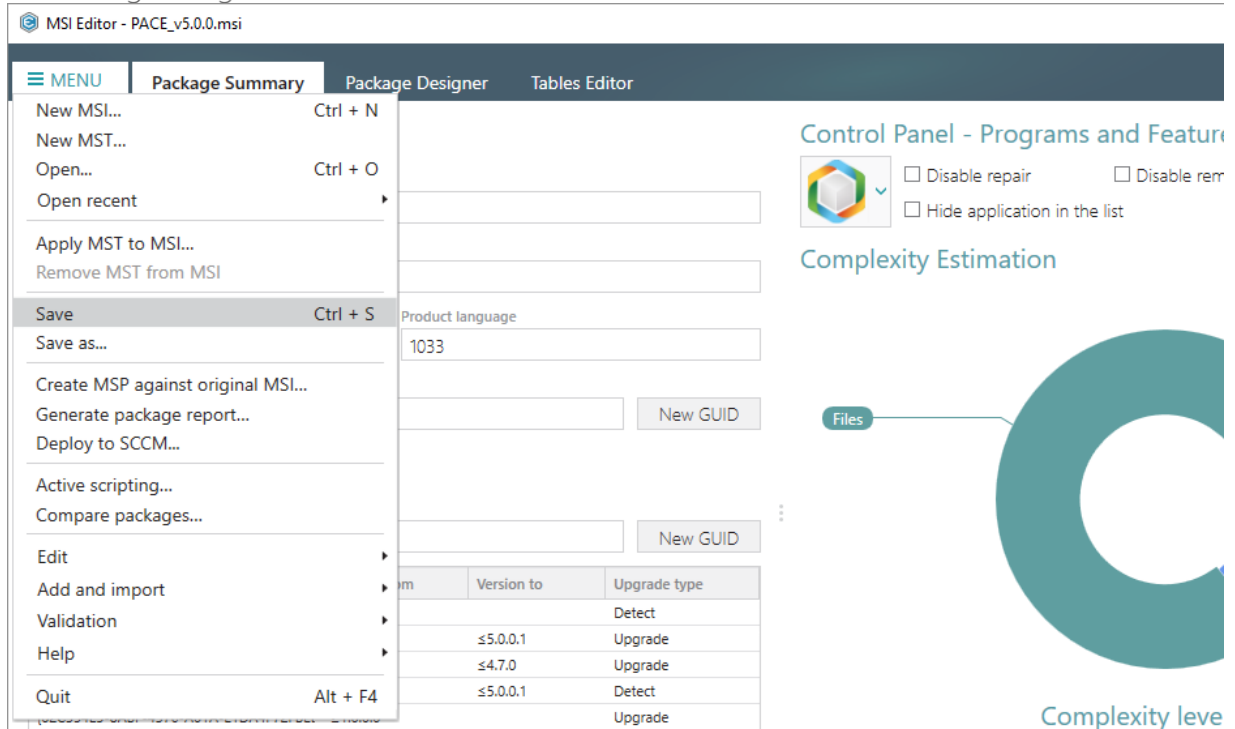
- Go to the Properties tab of the Package Designer and click Add, located in the toolbox.



- Enter a property Name, Value and click Add.



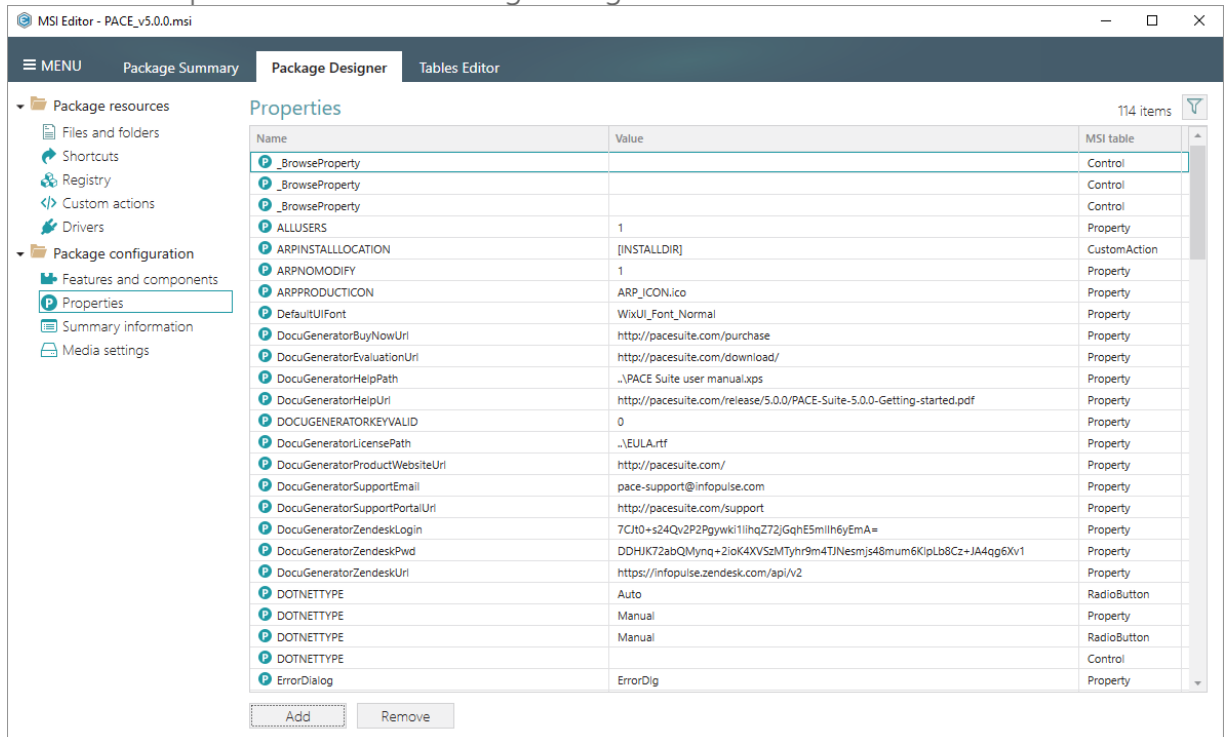
- For saving changes, select Save from MENU.



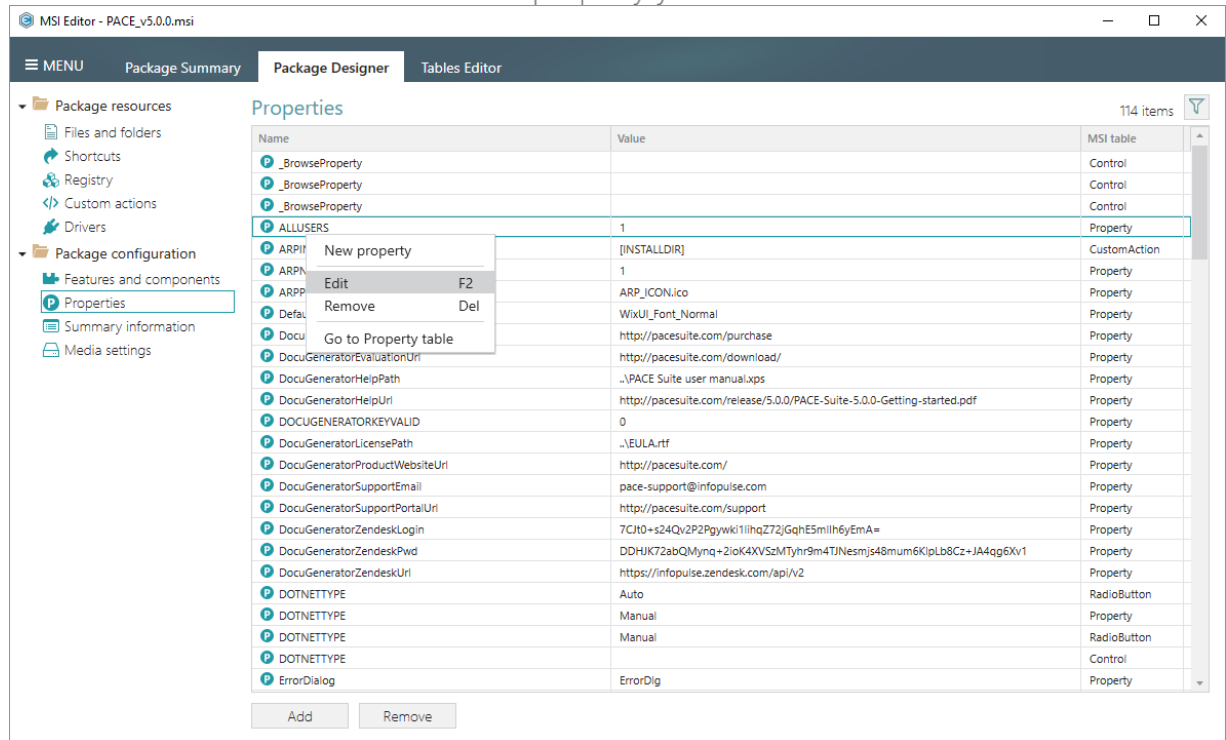
3.7.8.2 Edit Property

Edit a name and a value of the existing property.

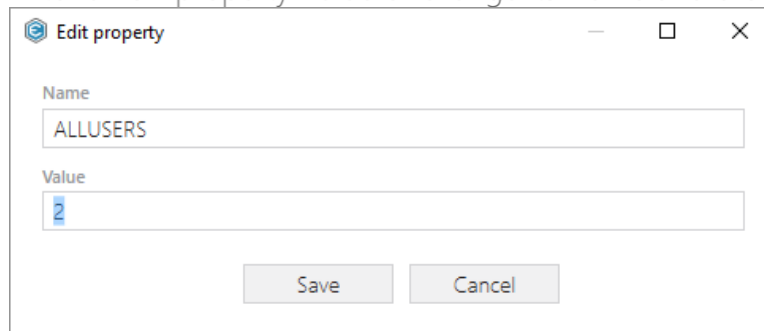
- Go to the Properties tab of the Package Designer.



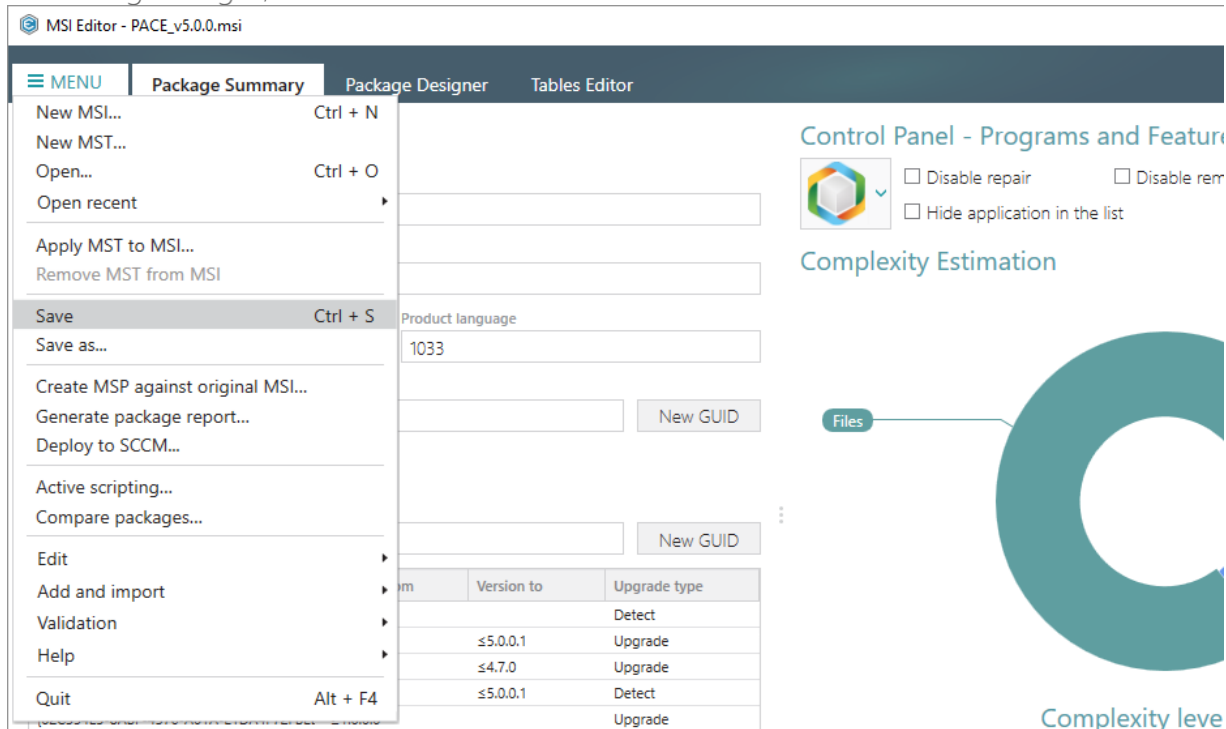
- Select Edit from the context menu of a property you want to edit.



- Enter a new property Value or change its Name and click Save.



- For saving changes, select Save from MENU.

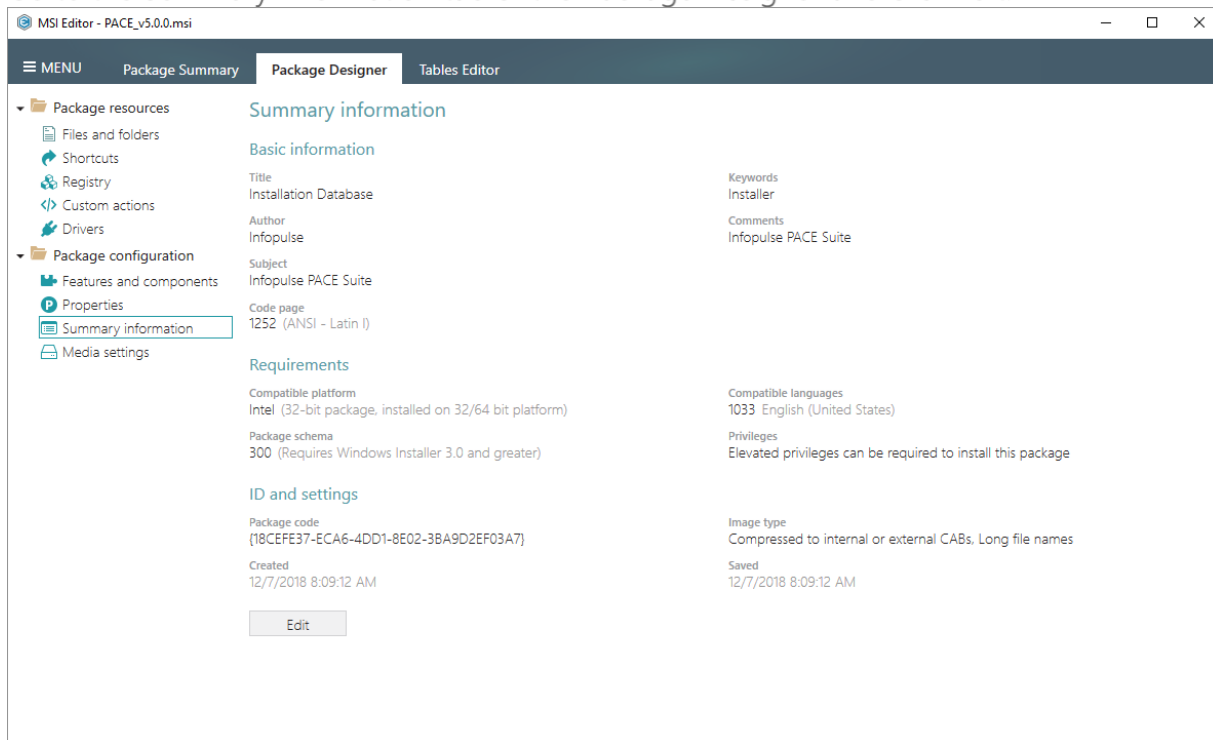


3.7.9 Summary Information

3.7.9.1 Edit MSI/MST Summary Information

Edit the Summary Information properties of the opened MSI package or applied MST file.

- Go to the Summary Information tab of the Package Designer and click Edit.



- Make the necessary changes to the Summary Information properties and click **Save**. Note that in order to change the files compression type, go to the **Media settings** tab of the Package Designer, as described in section 3.7.2.4, instead of changing Image type of the Summary Information.

Summary information [X]

Basic information

Title: Installation Database

Keywords: Installer

Author: Infopulse

Comments: Infopulse PACE Suite

Subject: Infopulse PACE Suite

Code page: 1252 (ANSI - Latin I) [v]

Requirements

Compatible platform: Intel (32-bit package, installed on 32/64) [v]

Compatible languages: 1033 [v]

Package schema: 300 (Requires Windows Installer 3.0 and c) [v]

Privileges: Elevated privileges can be required to in: [v]

ID and settings

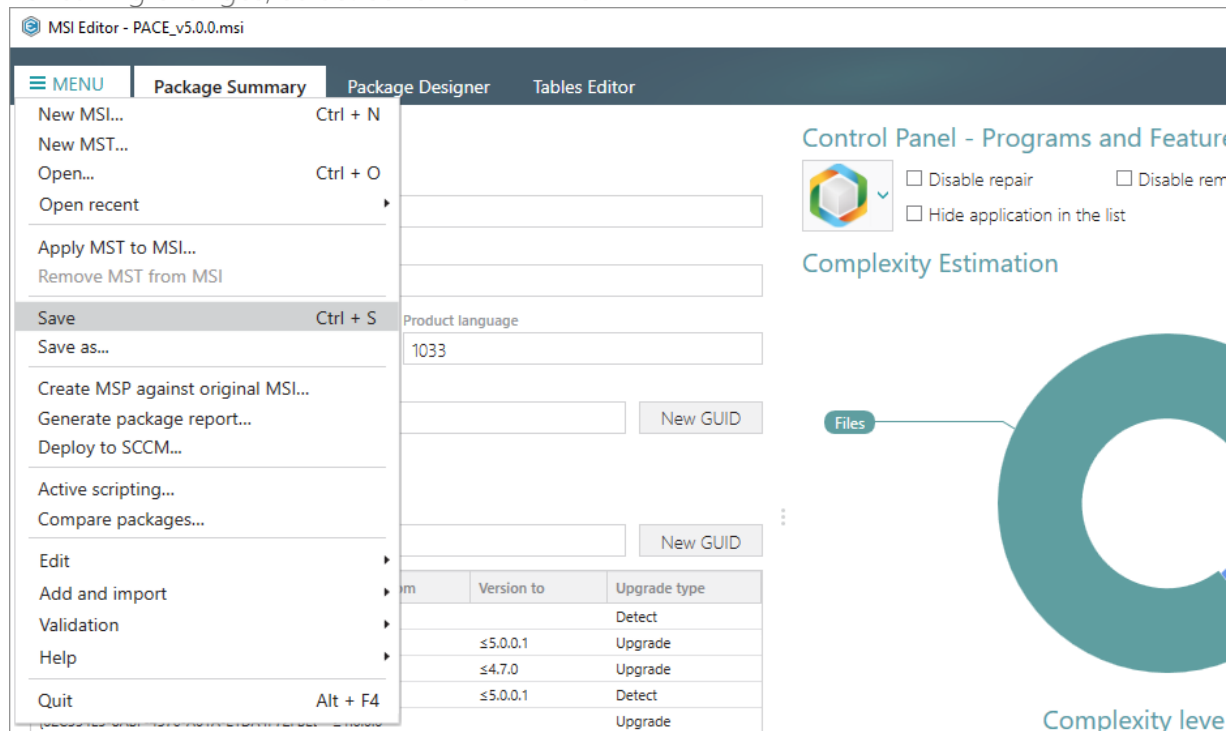
Package code: {18CEFE37-ECA6-4DD1-8E02-3BA9D2EF03A7} [New]

Image type: Compressed to internal or external CABs, Long file names [v]

NOTE Image type indicates where package files are located. For changing actual compression type for files, go to the Media settings tab.

[Save] [Cancel]

- For saving changes, select Save from MENU.

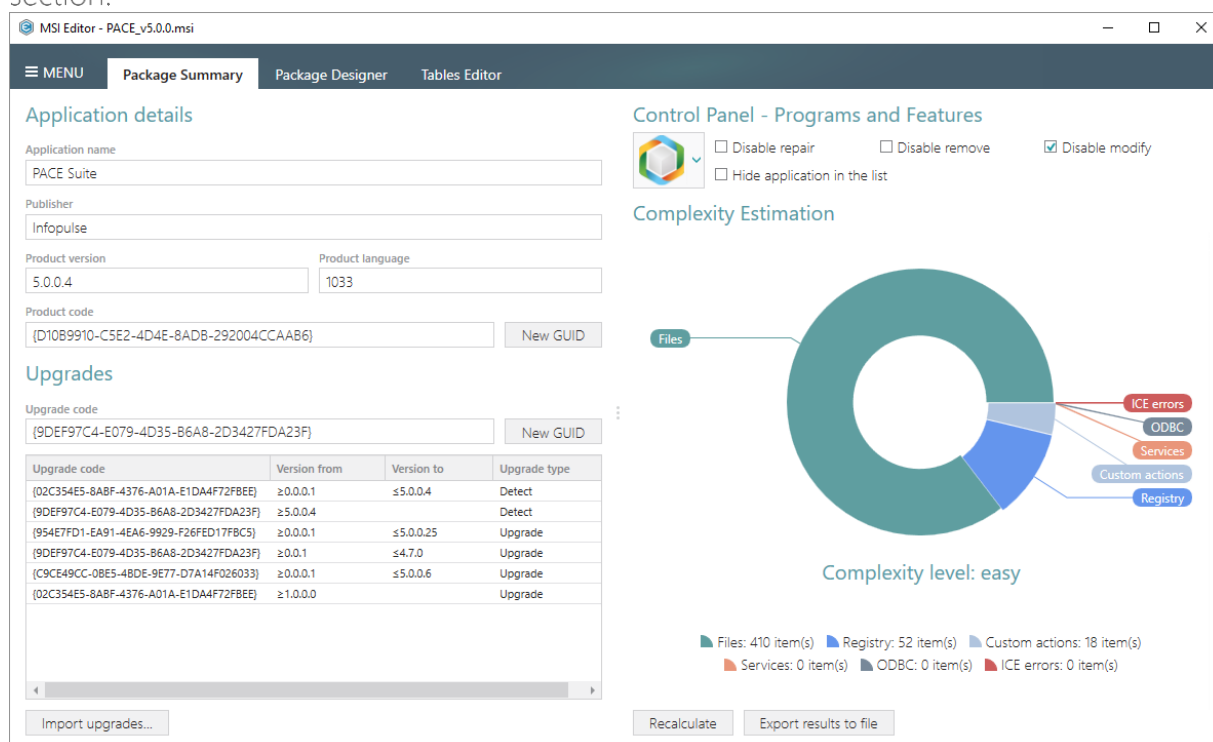


3.7.10 Upgrades

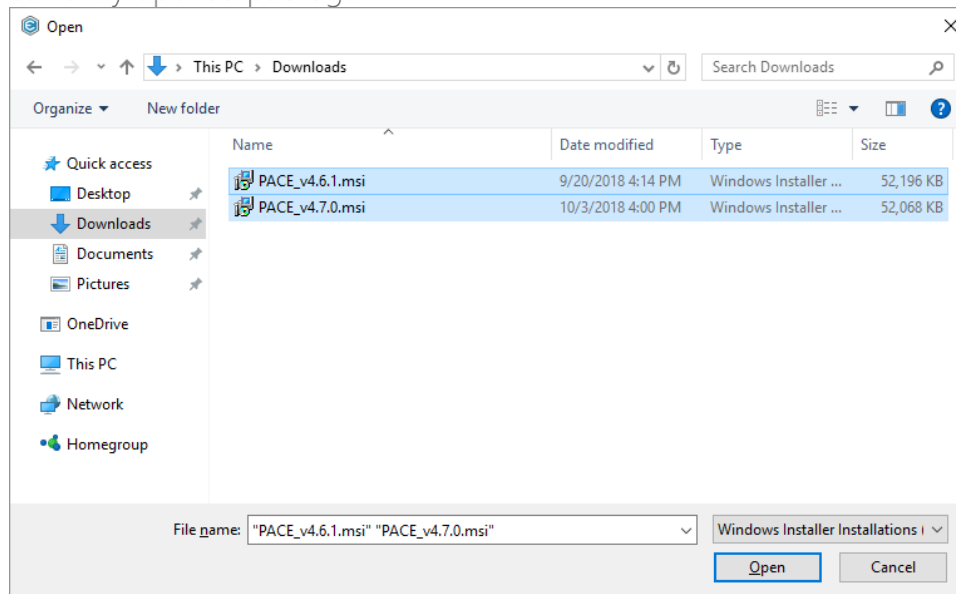
3.7.10.1 Integrate Upgrades

Integrate the automatic upgrade of packages of the previous versions.

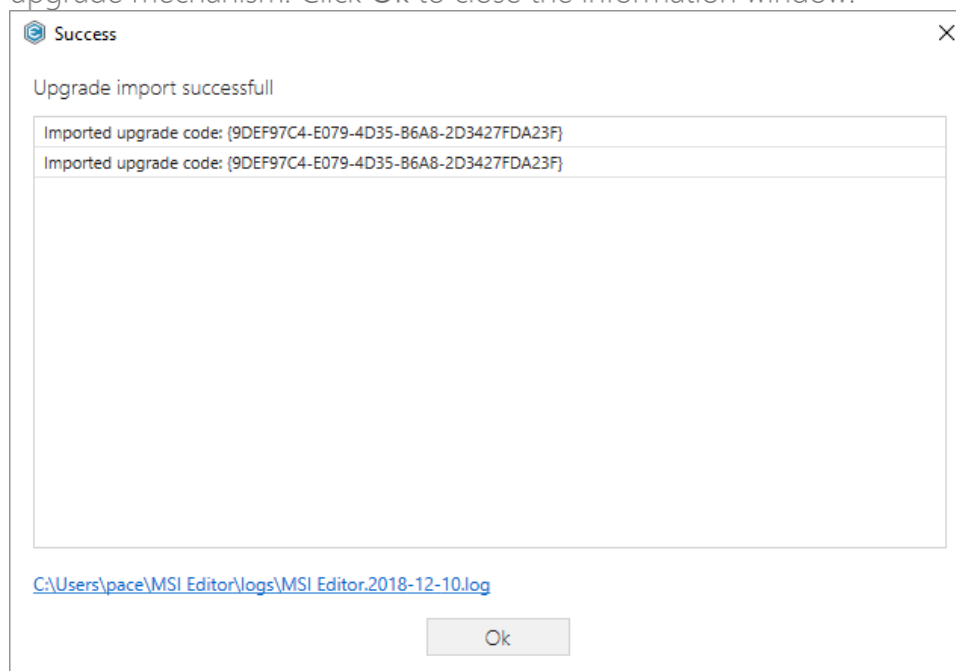
- Go to the Package Summary tab and click Import upgrades, located under the Upgrades section.



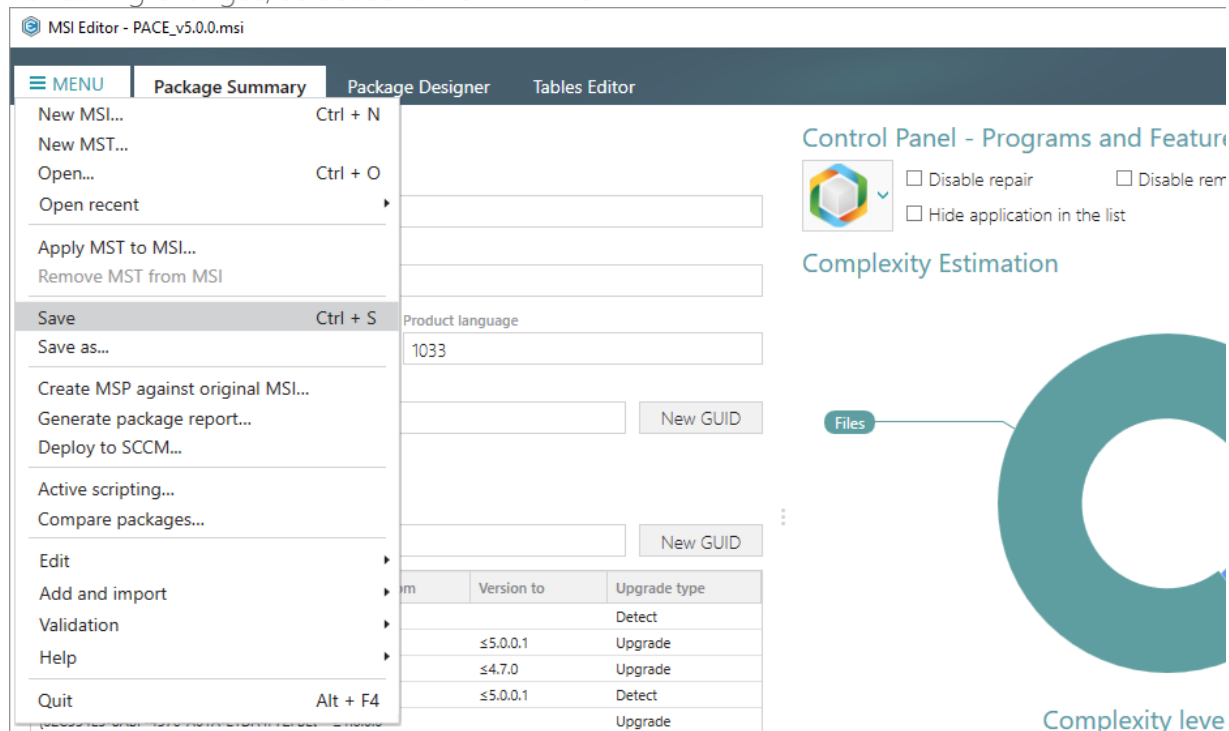
- Select MSI packages, which you want to upgrade and click **Open**. The upgraded packages will be automatically removed from the target system, if exist, during the installation of the currently opened package.



- The displayed window shows what upgrade codes were imported to the package. Also, MSI Editor imports product version values from the selected packages, adds the standard actions and the necessary informations to the opened package in order to integrate the upgrade mechanism. Click **Ok** to close the information window.



- For saving changes, select **Save** from MENU.



3.7.11 Tables

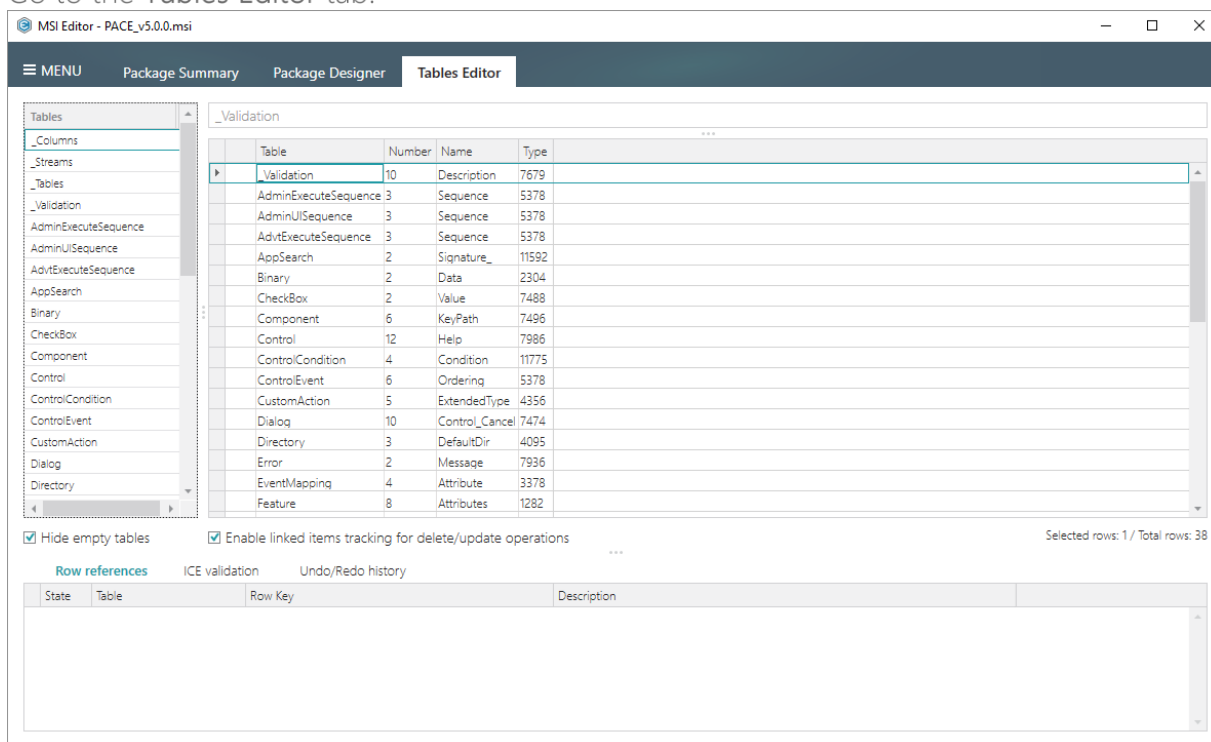
Choose a scenario that better suits your needs:

- Add Tables, described in section 3.7.11.1
Add the standard MSI tables to the package.
- Drop Tables, described in section 3.7.11.2
Drop tables from the package controlling which of linked resources also will be removed.
- Import Tables (IDT), described in section 3.7.11.3
Import standard or custom tables with or without content from the IDT files.

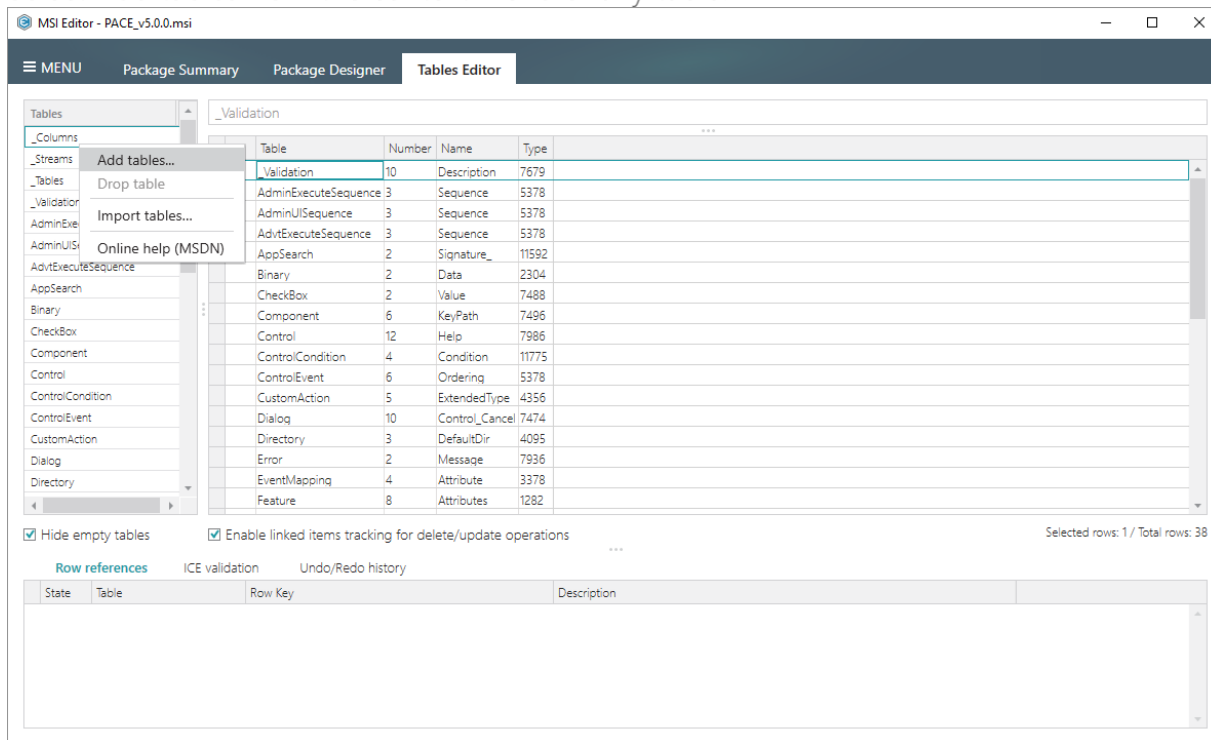
3.7.11.1 Add Tables

Add the standard MSI tables to the package.

- Go to the Tables Editor tab.

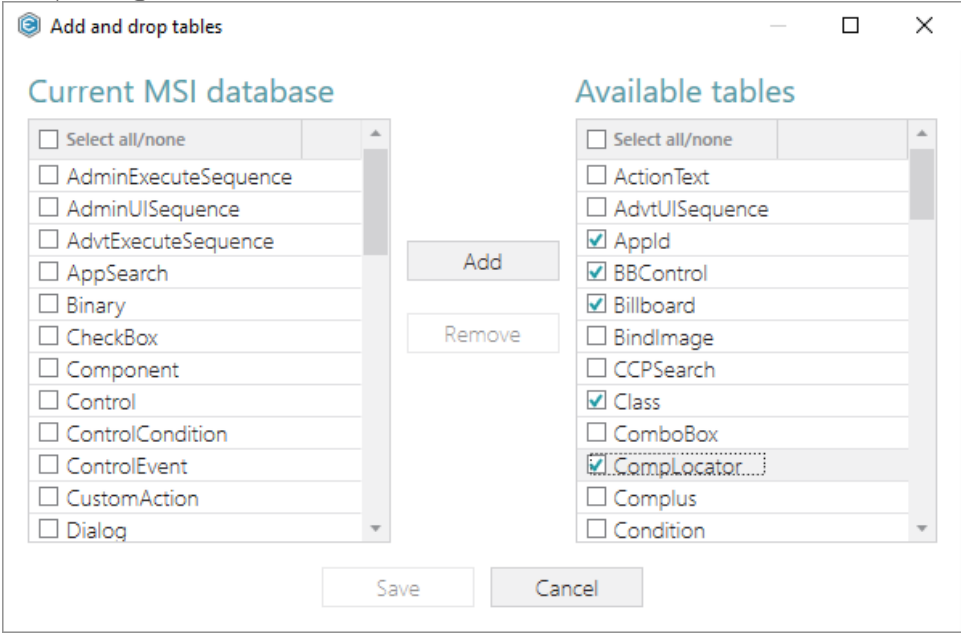


- Select Add tables from the context menu of any table.

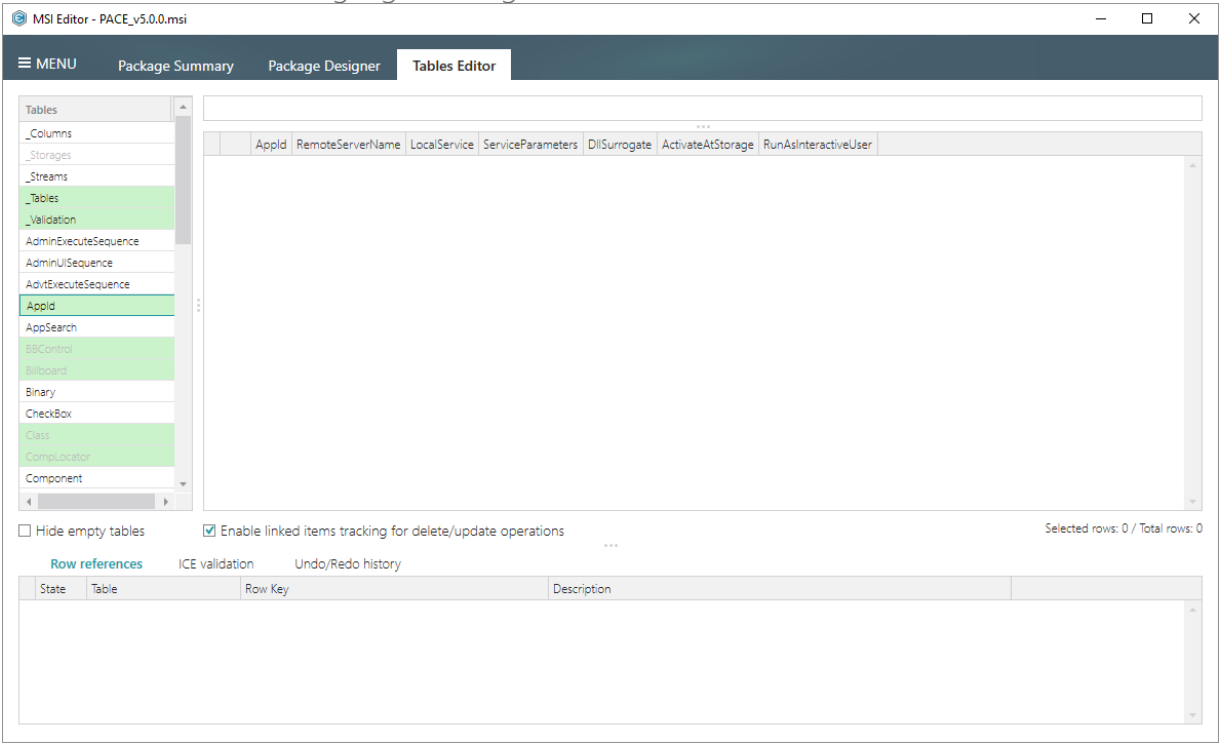


- Tick tables from the Available tables list, which you want to add to the package, then click Add and Save. Note that the list displays only those standard tables, which do not exist in

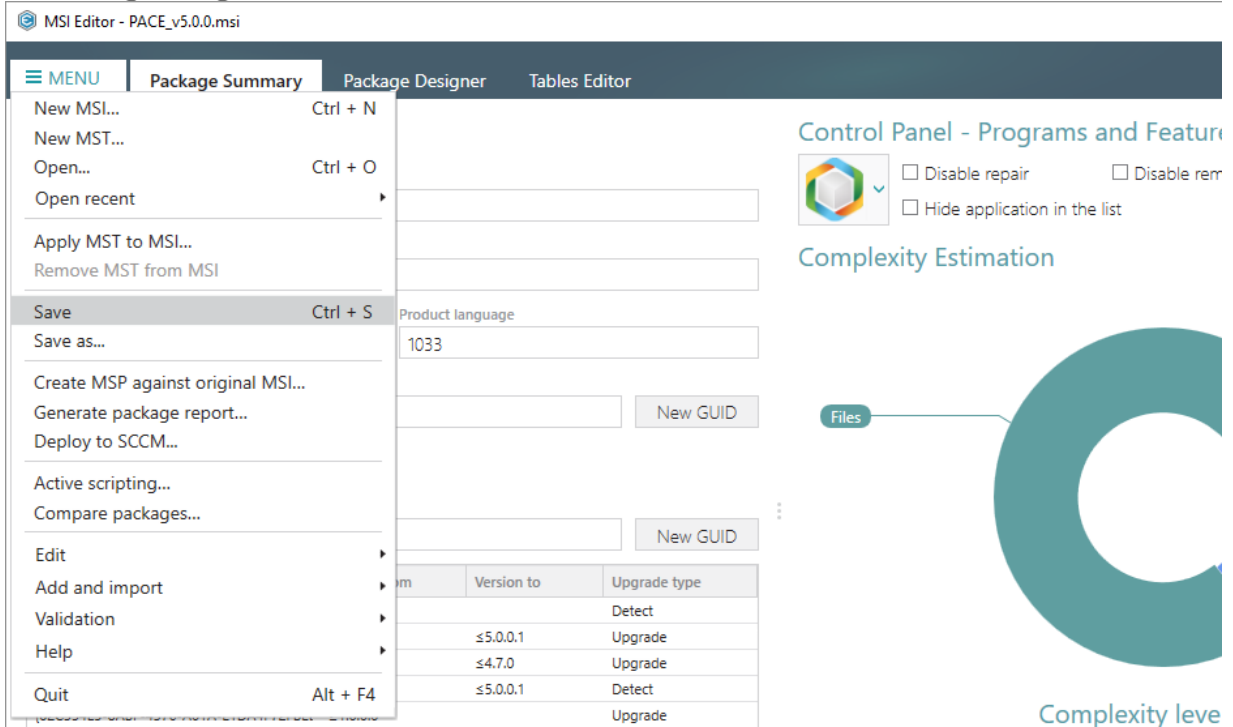
the package.



- Find the added tables, highlighted in green.



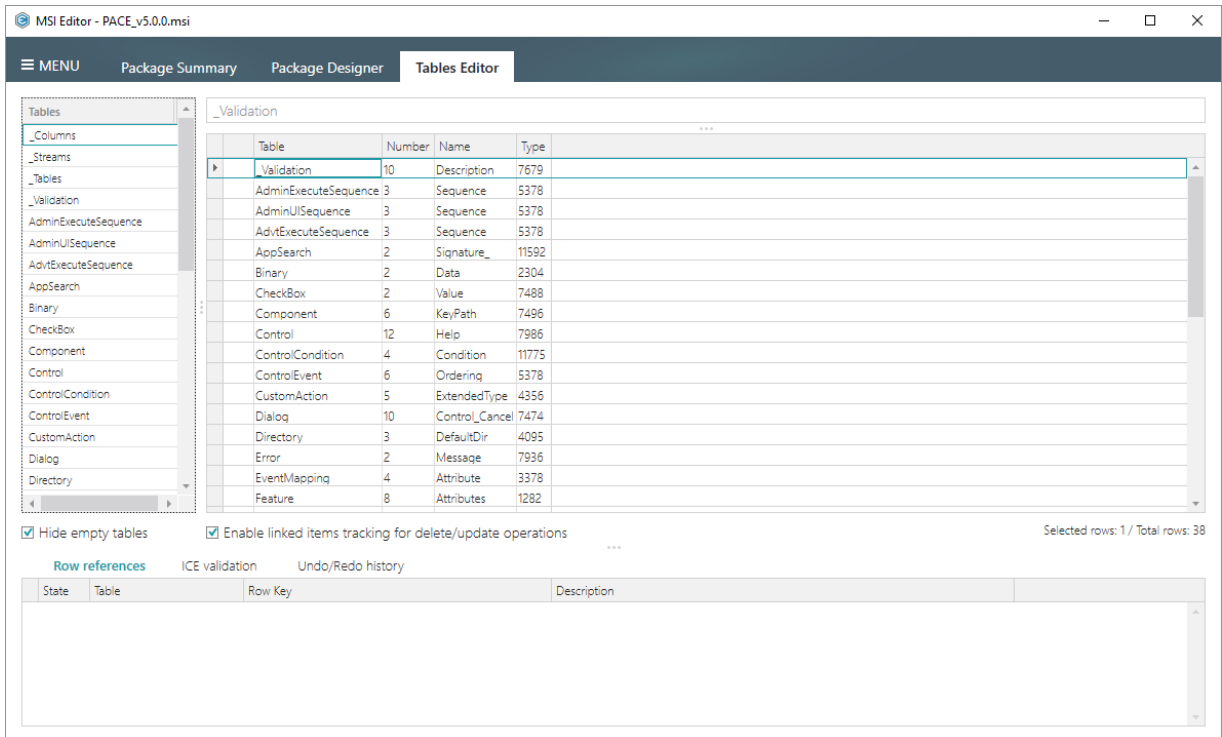
- For saving changes, select Save from MENU.



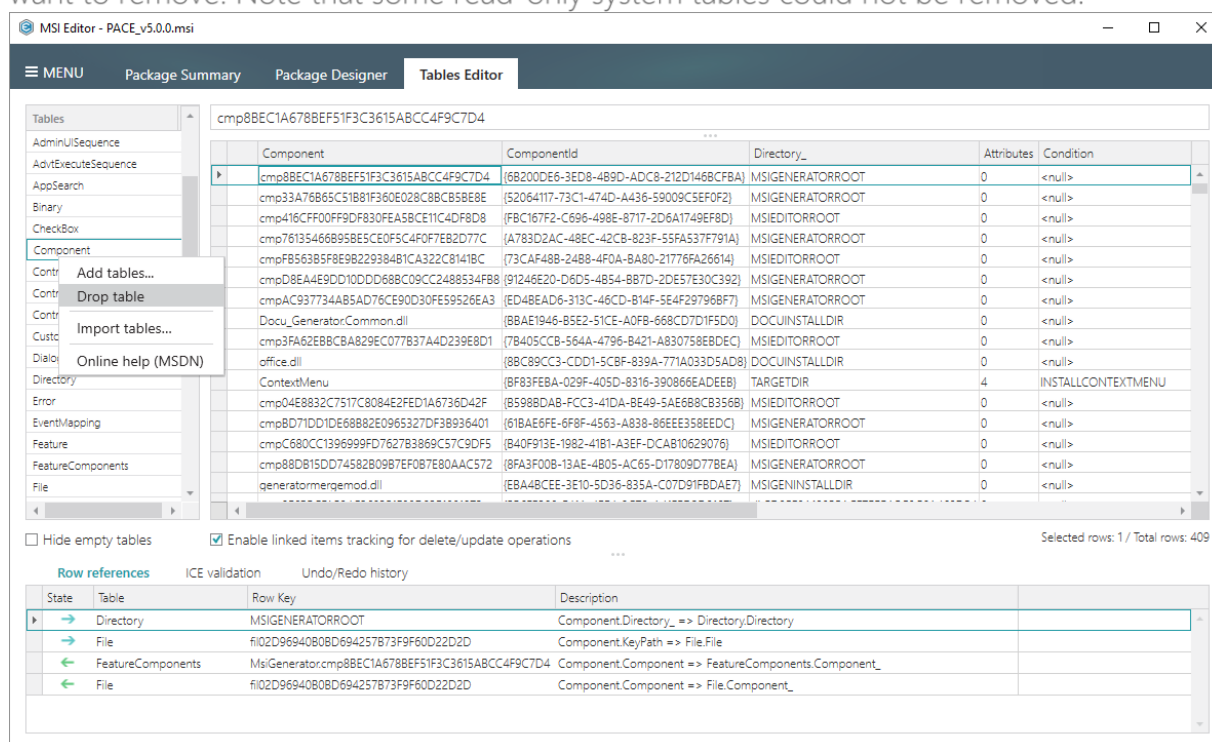
3.7.11.2 Drop Tables

Drop tables from the package controlling which of linked resources also will be removed.

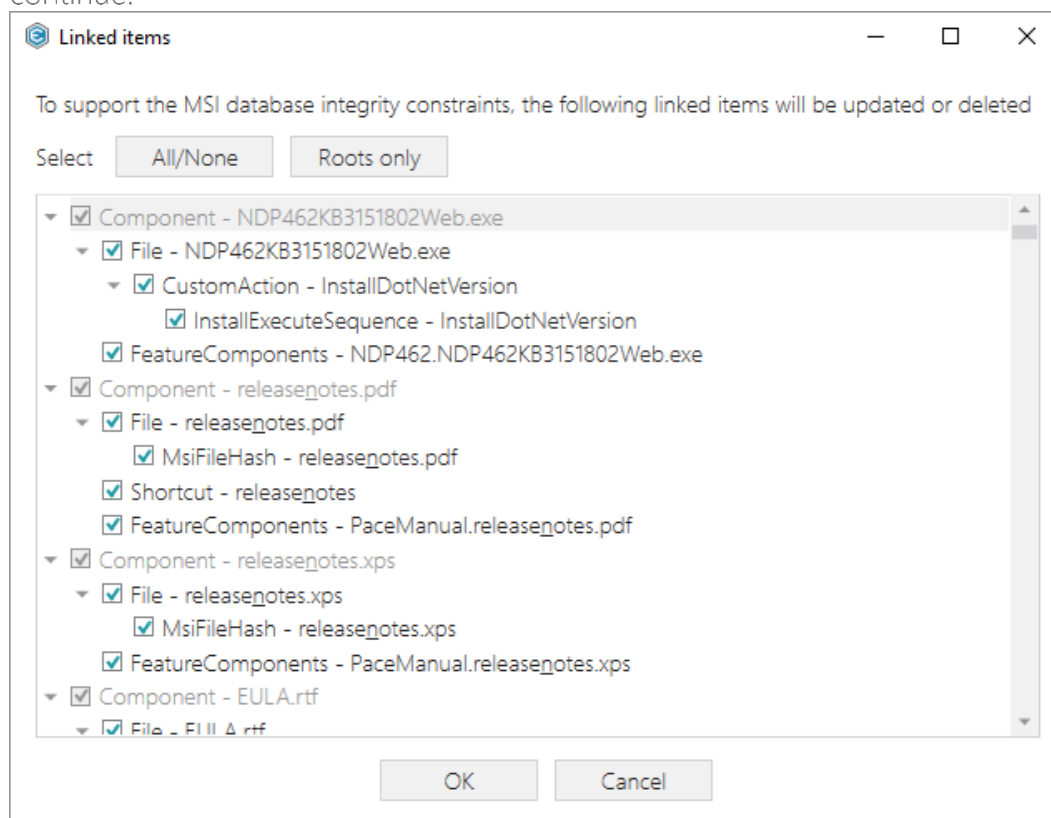
- Go to the Tables Editor tab.



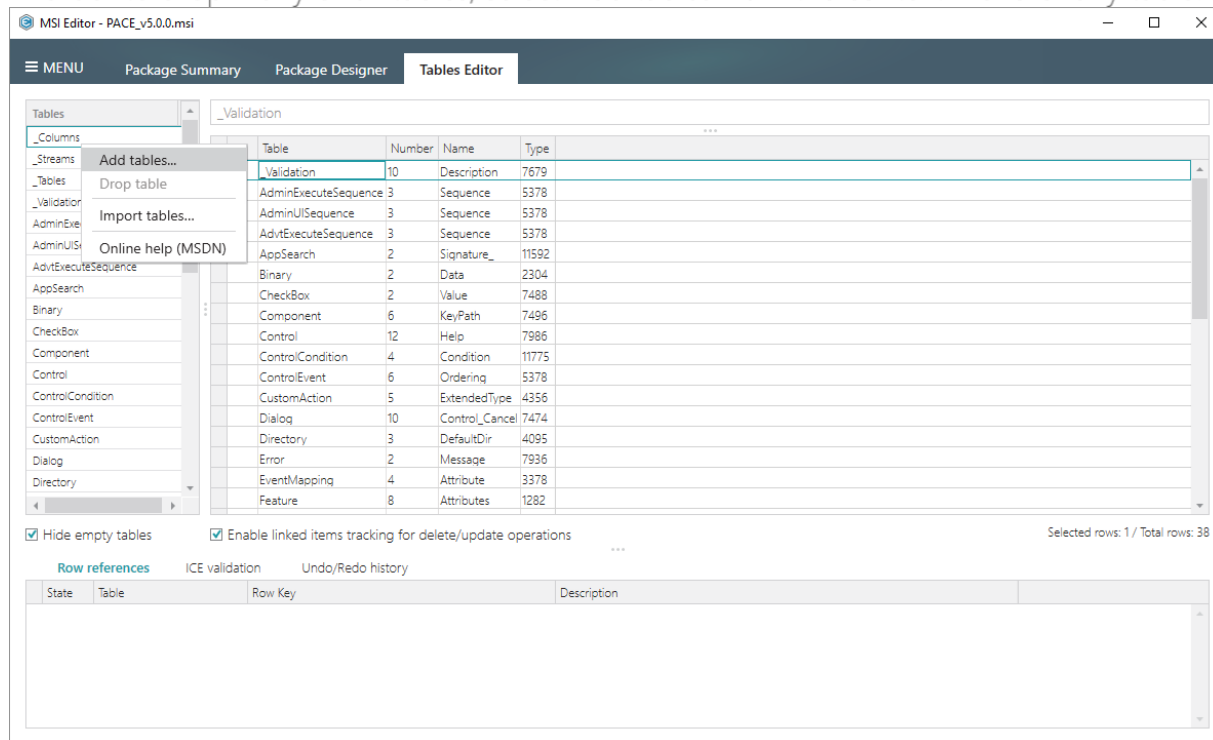
- In order to drop one or few tables, select **Drop table** from the context menu of tables you want to remove. Note that some read-only system tables could not be removed.



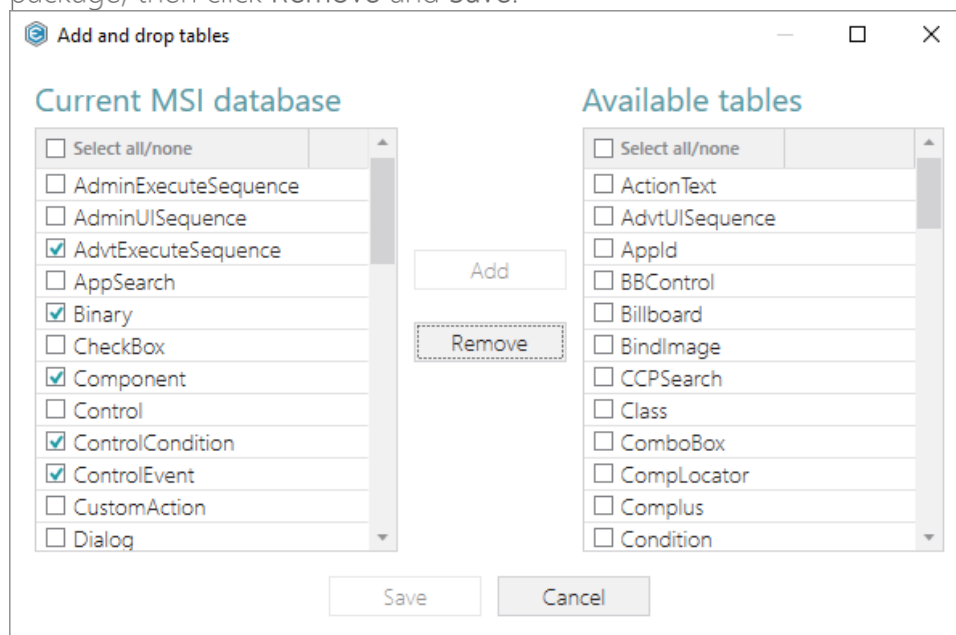
- If another MSI tables have row references to content of the dropping table, the **Linked items** window will display these references. The ticked items will be automatically removed from the package along with the dropping table in order to support the MSI database integrity constraints. You can untick those items, which do not want to remove. Click OK to continue.



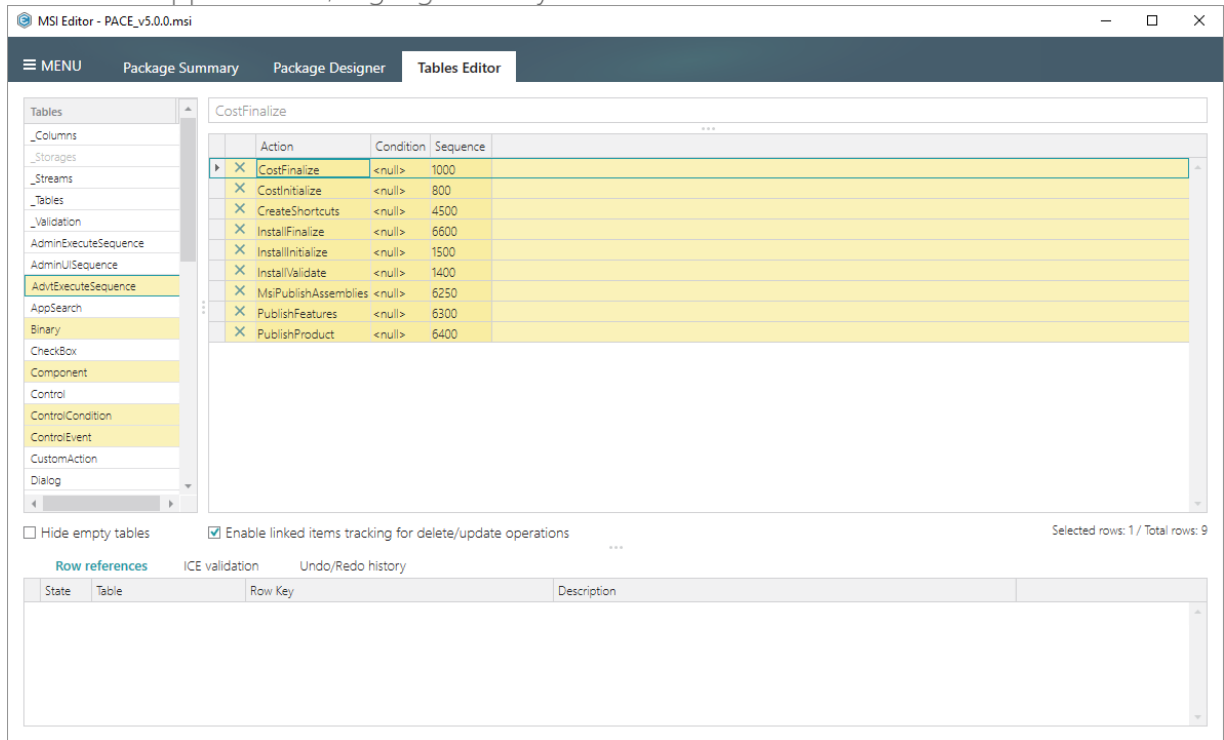
- In order to drop many or all tables, select **Add tables** from the context menu of any table.



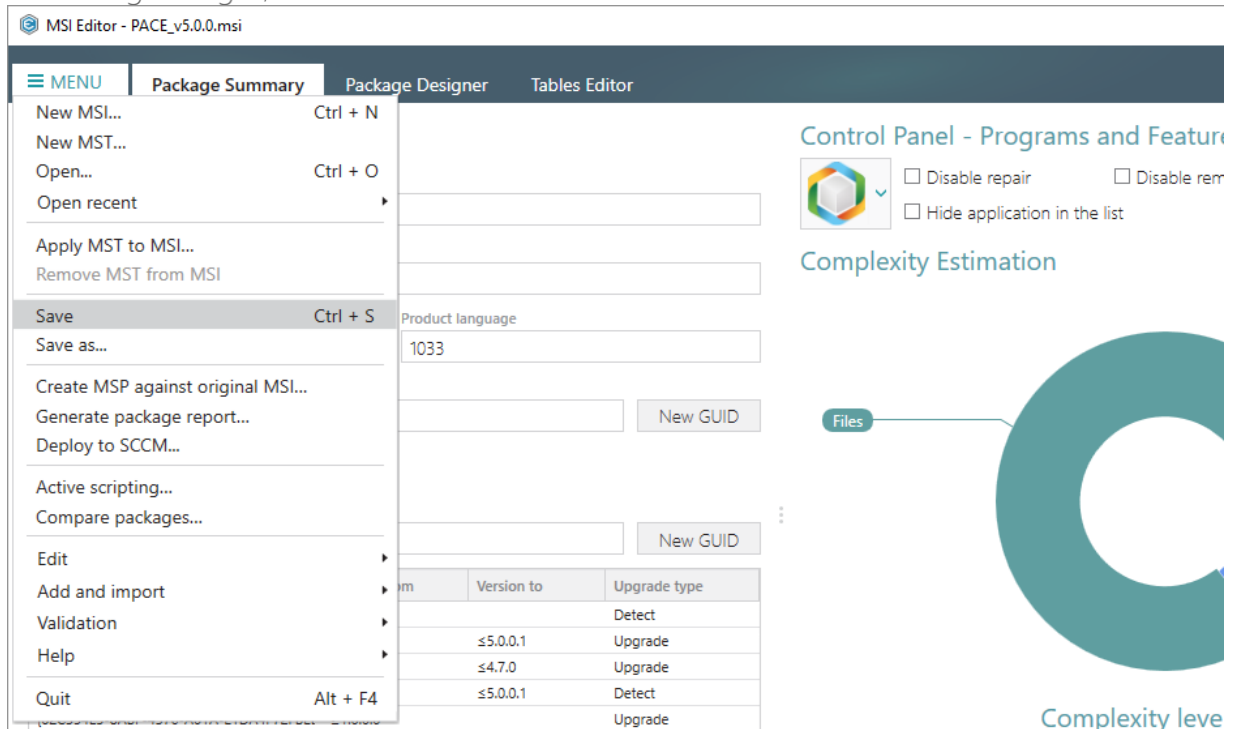
- Tick tables from the **Current MSI database** list, which you want to remove from the package, then click **Remove** and **Save**.



- Find the dropped tables, highlighted in yellow.



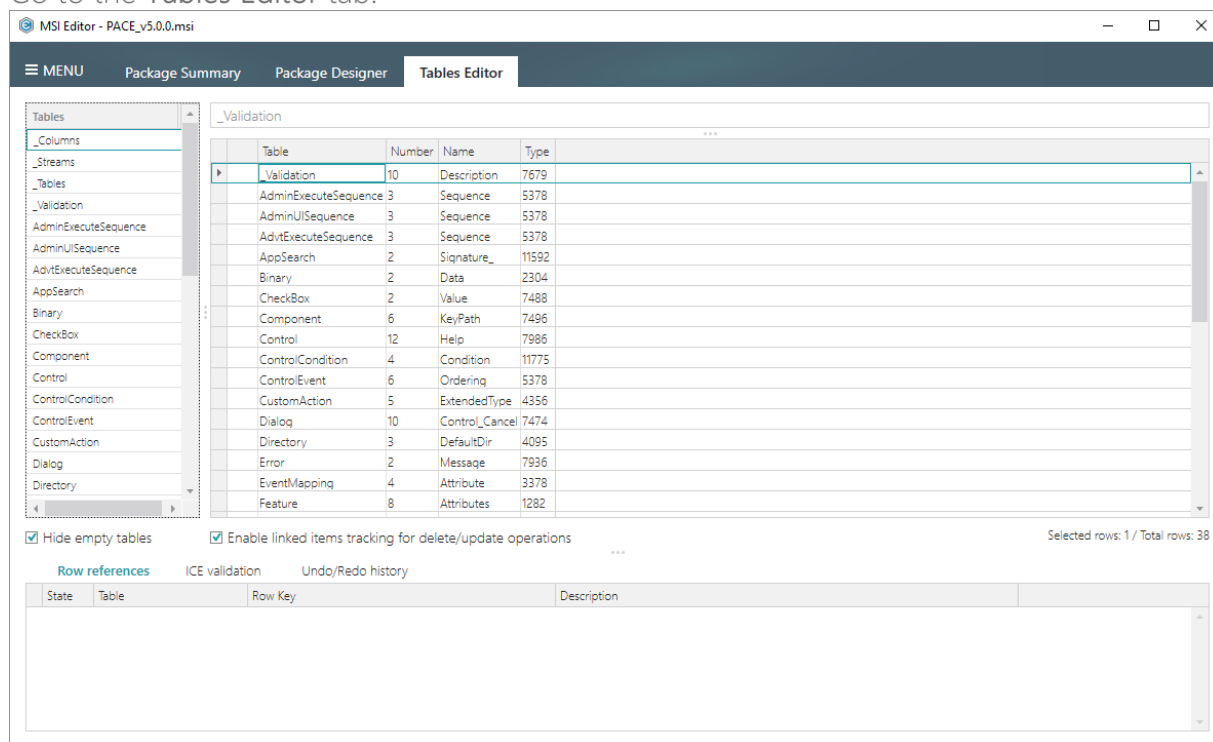
- For saving changes, select Save from MENU.



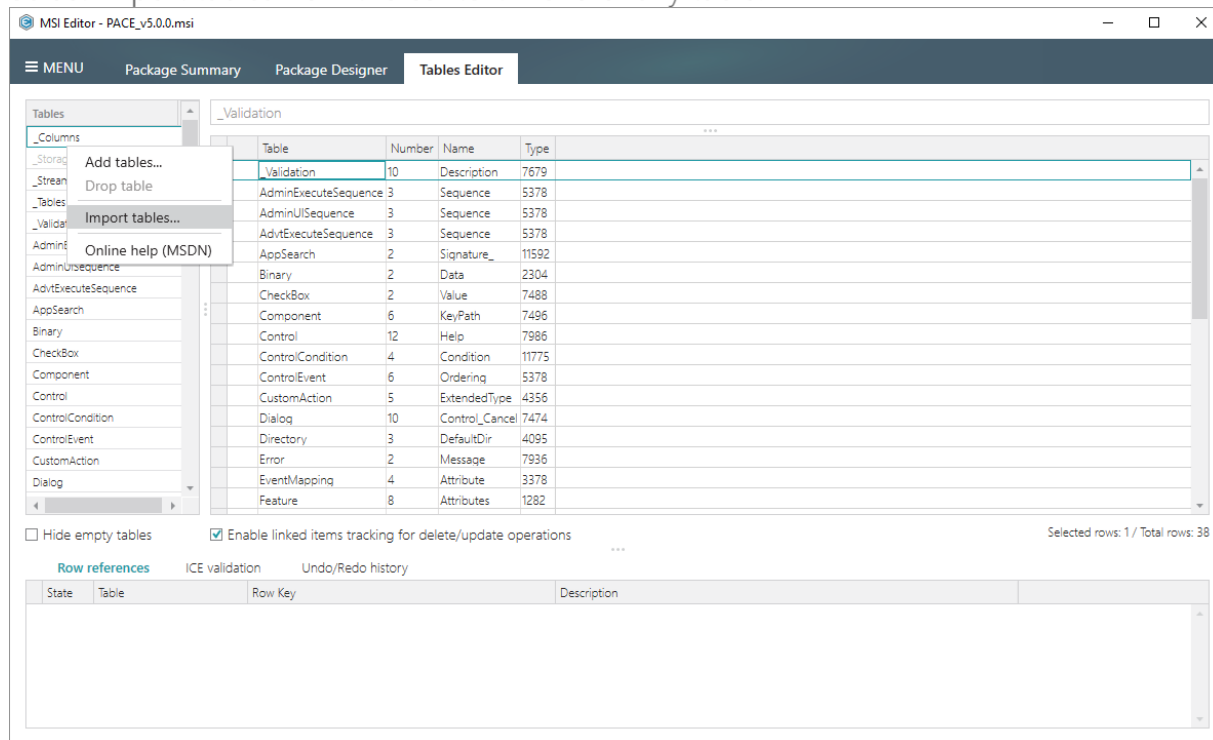
3.7.11.3 Import Tables (IDT)

Import standard or custom tables with or without content from the IDT files.

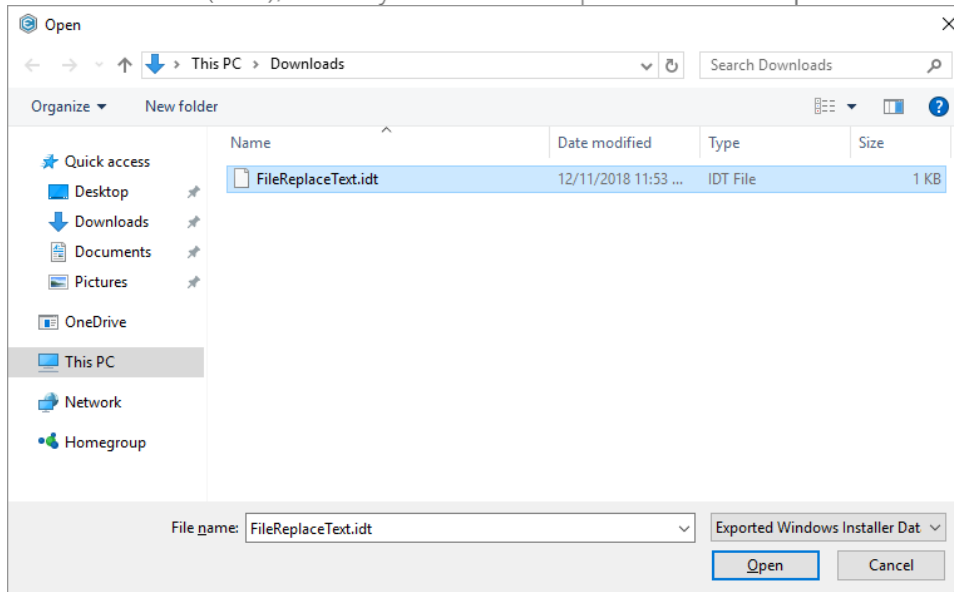
- Go to the Tables Editor tab.



- Select Import tables from the context menu of any table.



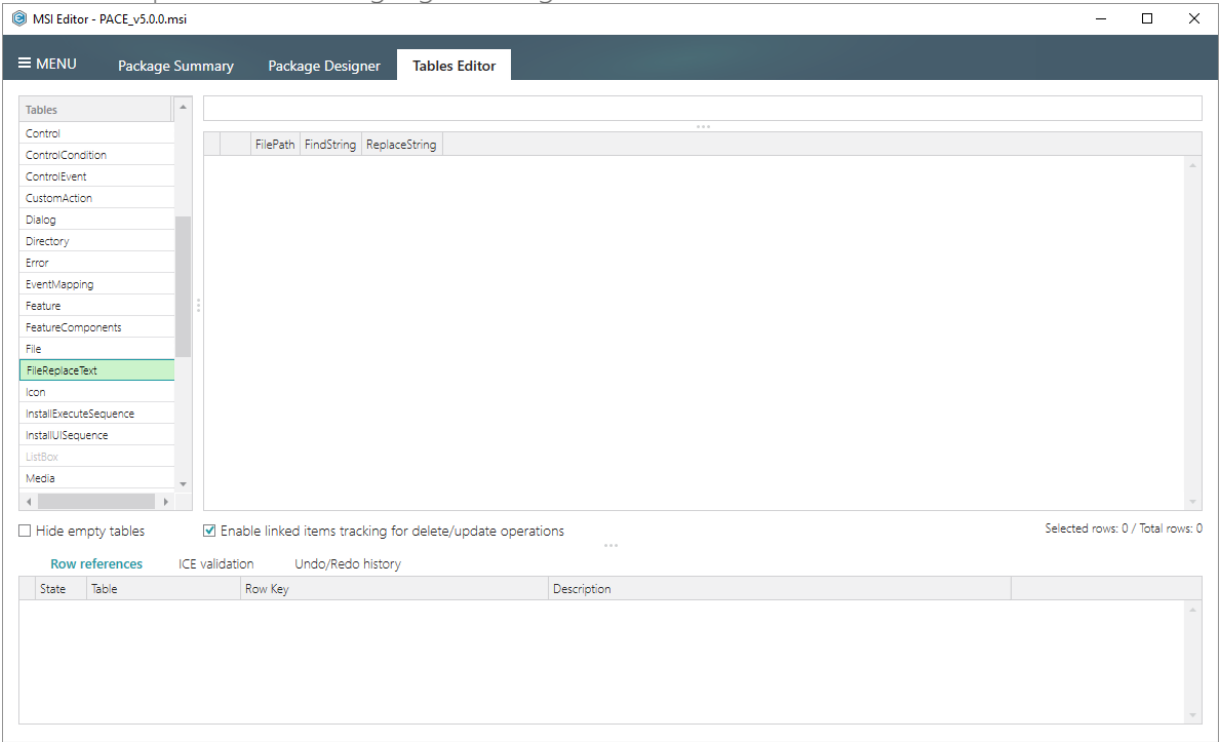
- Choose tables (*.idt), which you want to import and click **Open**.



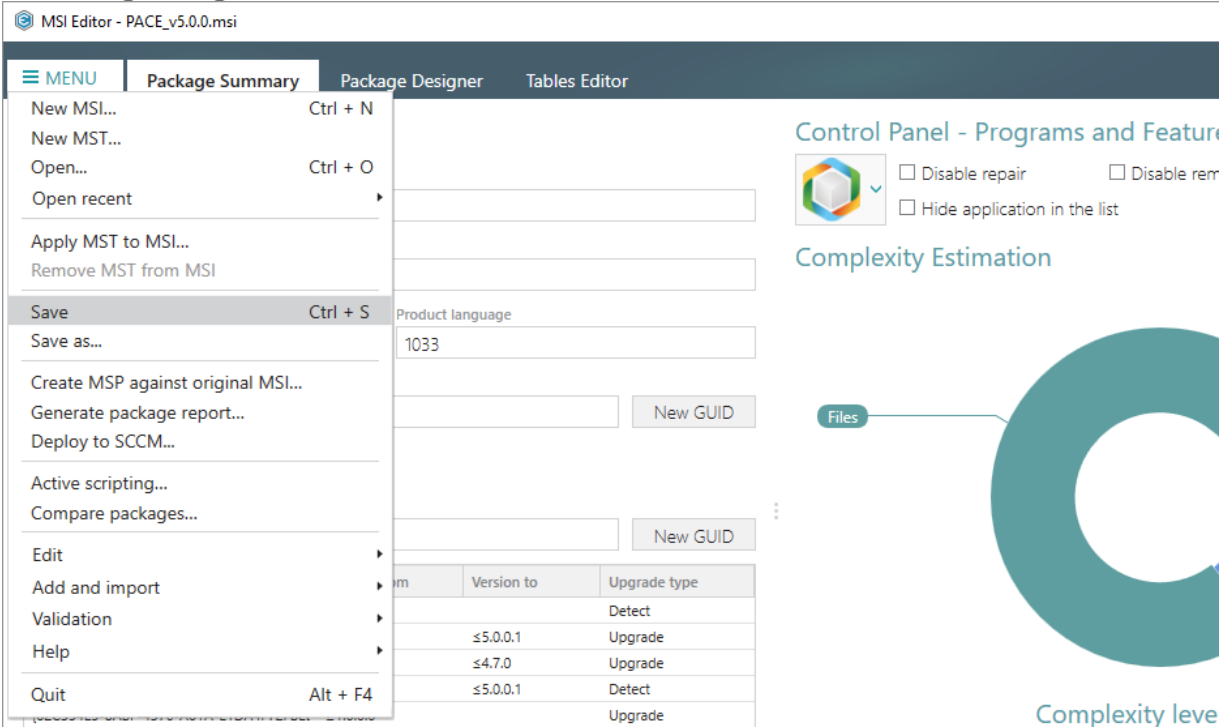
- If the package already contains a table with the same name, you will be informed about this by the **Import tables** window. To replace the existing tables, tick tables from the list you want to replace and click **Replace selected**.



- Find the imported tables, highlighted in green.



- For saving changes, select Save from MENU.

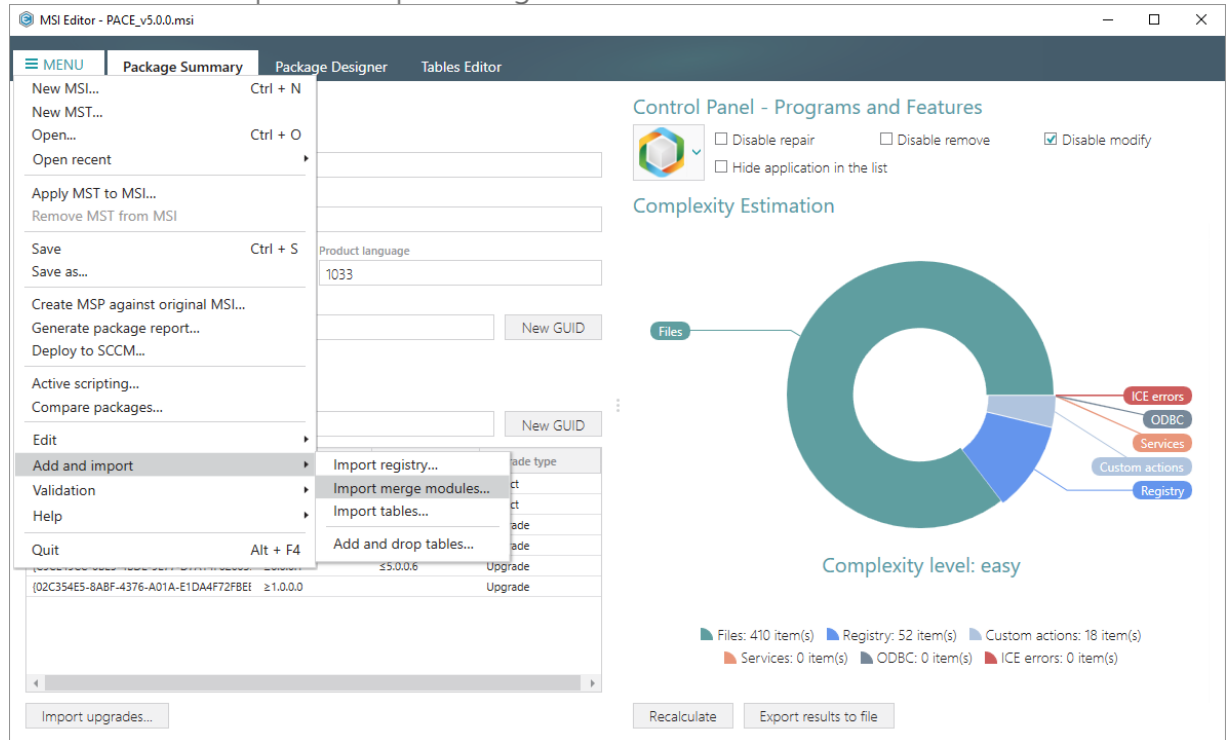


3.7.12 Merge Modules

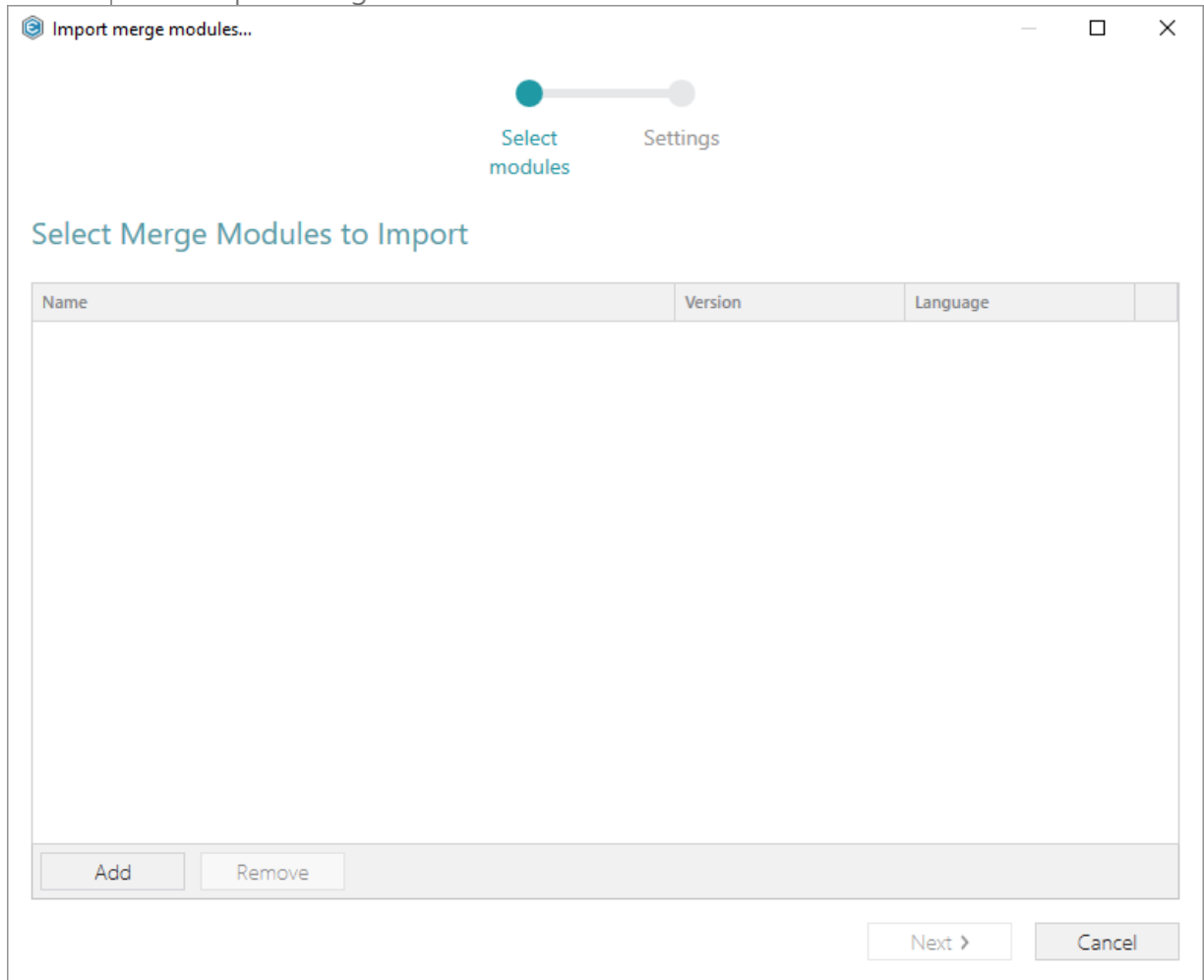
3.7.12.1 Import Merge Modules (MSM)

Import Merge Modules (MSM) to the package to deliver the shared resources properly.

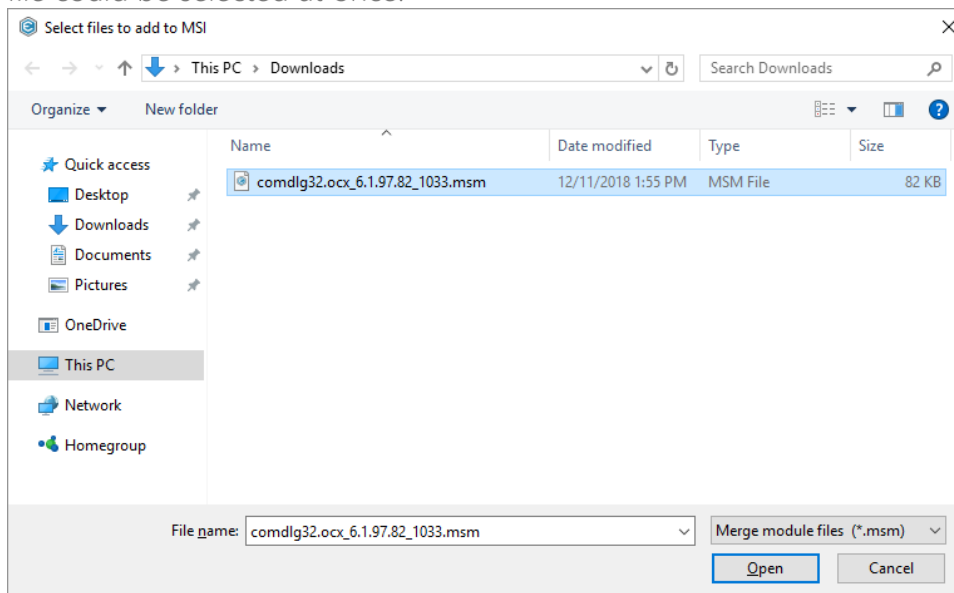
- Select Add and import -> Import merge modules from the MENU.



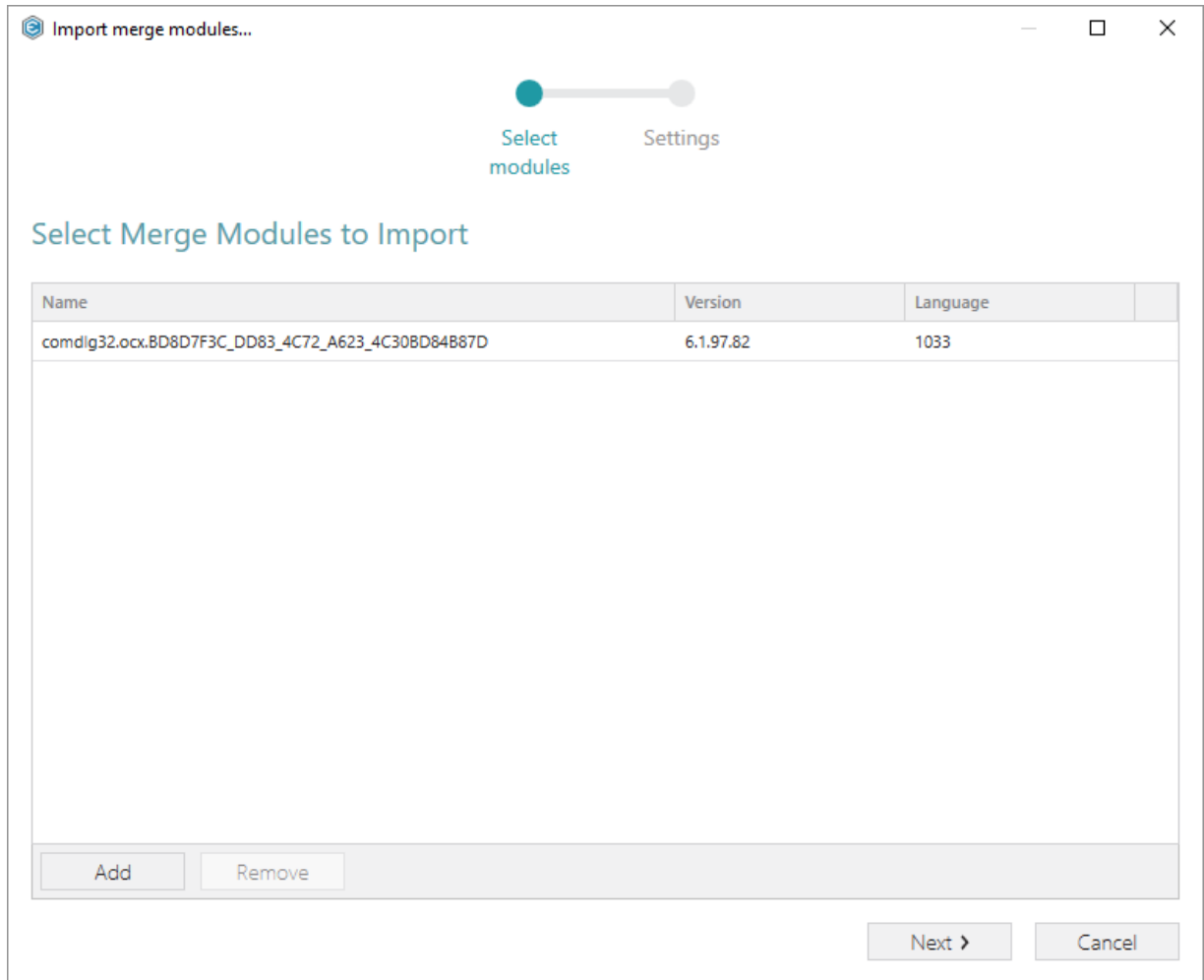
- In the opened Import merge modules wizard click Add.



- Choose merge modules (*.msm), which you want to import and click Open. More than one file could be selected at once.



- Click Next.



- Select the import settings and click Finish. The **Root directory** is used as a parent folder for the folder from the merge modules. In most cases, a path to the folder from the merge module is re-defined via the Custom action. The component from the merge module is linked to the selected **Primary feature**. The **Media type** option defines how the merge modules files will be saved to the files system: as external cabinet (CAB) or as

uncompressed files.

The screenshot shows the 'Import merge modules...' dialog box with the 'Settings' tab selected. A progress bar at the top indicates the current step. The dialog contains three main sections for configuration: 'Root directory' with a dropdown menu showing 'TARGETDIR (TARGETDIR)' and a 'New folder...' button; 'Primary feature' with a dropdown menu showing 'ProductFeature' and a 'New feature' button; and 'Media type' with a dropdown menu showing 'External CAB'. At the bottom, there are three buttons: '< Back', 'Finish' (which is highlighted with a dashed border), and 'Cancel'.

Import merge modules...

Select modules Settings

Settings

Specify a directory where to add merge module resources

Root directory

TARGETDIR (TARGETDIR) New folder...

Select a feature to assign new merge module to

Primary feature

ProductFeature New feature

Select a module media destination

Media type

External CAB

< Back Finish Cancel

- If you have the unsaved changes and as far as the **Import merge modules** operation could not be reverted and resets the undo/redo history, you have to choose one of options of managing unsaved changes and click **Apply**. If unsure, use the default one.

The screenshot shows the 'Unsaved changes...' dialog box. It contains a warning message about the irreversible nature of the operation and its effect on the UNDO history. Below the message, there are two radio button options for the user to choose from. At the bottom, there are 'Apply' and 'Cancel' buttons.

Unsaved changes...

The Import Merge Module is an irreversible operation that resets the UNDO history

Choose an option that suits your needs better

☒ Merge your unsaved changes with the changes, which will be made by the Import Merge Module function

☐ Save your unsaved changes to the MSI and then perform the Import Merge Module function

Apply Cancel

- Find the resources of the imported merge modules in the Tables Editor tab. Tables and rows with changes are highlighted in green.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer **Tables Editor**

Tables

cmdlg32.ocx.BD8D7F3C_DD83_4C72_A623_4C308D84887D

Component	ComponentId	Directory	Attributes	Condition
cmdlg32.ocx.BD8D7F3C_DD83_4C72_A623_4C308D84887D	{BD8D7F3C-DD83-4C72-A623-4C308D84887D}	SystemFolder:BD8D7F3C_DD83_4C72_A6...	24	<null>
AppvAssotiation	{0DBF1C87-52CF-44E0-B1B4-2677418B8BE9}	TARGETDIR	0	INSTALLAPPVASSOTIATION
cmp0190D5B67C7DC2C5FD0170FEE49C528A	{2E9850F9-D8ED-45DB-AC78-CBE04EE60789}	MSIGENERATORROOT	0	<null>
cmp0194E3097F77CAB8A1909D06CAB9C445	{A8583182-E1E5-4F99-8D80-FD9671B4908E}	MSIEDITORROOT	0	<null>
cmp01E6309A9129F5568E87AC1E2C863933	{2BD5385D-F209-43B5-8C48-9F4DB8A0CE9}	dirEFA2C0FFA64DFE12D8CE212B95E005C8	0	<null>
cmp021709B91F51CEA8D966EA361CBAC605	{7D553E36-5D78-4752-8733-FD81612541B5}	MSIEDITORROOT	0	<null>
cmp02C53EC8E88056356E8BC7B7E0A6804	{4F923899-9866-4DF6-8C1D-B1FD5D50DF5E}	MSIEDITORROOT	0	<null>
cmp03C135474D5E45B896E8A80A71487D0	{DED70ACA-8CF7-4E28-B1C2-656984E98056}	MSIEDITORROOT	0	<null>
cmp03CF47FBCA227E610AE74C151C10DC3	{7D6375D2-8AE4-4231-937C-181645E02EA7}	MSIEDITORROOT	0	<null>
cmp048AC21FB63D4133A445EA42DC20B0D9	{DCEB72F7-89FF-44C1-9F7D-267CB3F6A485}	MSIEDITORROOT	0	<null>
cmp04CA7A4785488887AD013D729887A1D	{6FA8F1FC-5E4A-4EEA-B1E9-2D347555820D}	dir3F15391917AF44495354A875488F33E	0	<null>
cmp04E8832C7517C8084E2FED1A6736D42F	{B5988DAB-FCC3-41DA-BE49-5AE688CB356B}	MSIEDITORROOT	0	<null>
cmp06688A5A7452DE33957A30532F659823	{A4A8500A-3166-4F2A-8BAF-94EFD33EF2F4}	MSIGENERATORROOT	0	<null>
cmp09F7AC2A22FF723969F8012AC52E69B03	{220148B5-F81B-435C-9EA6-D19AED58020A}	MSIEDITORROOT	0	<null>
cmp0AD5B58486F0407826081628DC86768A	{75F81F51-EDF-4D4D-A414-B1FF4D4458D3}	dirC09160898BF98880BADF683C5CCF0B62	0	<null>
cmp0B7757366D7F60888F5DB57F5190E030	{0768953F-4154-48CD-BFC8-01C9CDAF6B51}	dirD0D367A0F19DB85E0F041F02F2E2977E5	0	<null>

Hide empty tables Enable linked items tracking for delete/update operations Selected rows: 1 / Total rows: 410

Row references ICE validation Undo/Redo history

State	Table	Row Key	Description
→	Directory	SystemFolder:BD8D7F3C_DD83_4C72_A623_4C308D84887D	Component:Directory => Directory:Directory
→	File	cmdlg32.ocx.BD8D7F3C_DD83_4C72_A623_4C308D84887D	Component:KeyPath => File:File
←	Class	{3C4F3BE3-47EB-101B-A3C9-08002B2F49FB}.InprocServer3	Component:Component => Class:Component_
←	Class	{3C4F3BE5-47EB-101B-A3C9-08002B2F49FB}.InprocServer3	Component:Component => Class:Component_
←	Class	{3C4F3BE7-47EB-101B-A3C9-08002B2F49FB}.InprocServer3	Component:Component => Class:Component_
←	Class	{7629CFA2-3FES-101B-A3C9-08002B2F49FB}.InprocServer3	Component:Component => Class:Component

- For saving changes, select Save from MENU.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer Tables Editor

New MSI... Ctrl + N

New MST...

Open... Ctrl + O

Open recent

Apply MST to MSI...

Remove MST from MSI

Save Ctrl + S

Save as...

Create MSP against original MSI...

Generate package report...

Deploy to SCCM...

Active scripting...

Compare packages...

Edit

Add and import

Validation

Help

Quit Alt + F4

Control Panel - Programs and Features

Disable repair

Disable removal

Hide application in the list

Complexity Estimation

Files

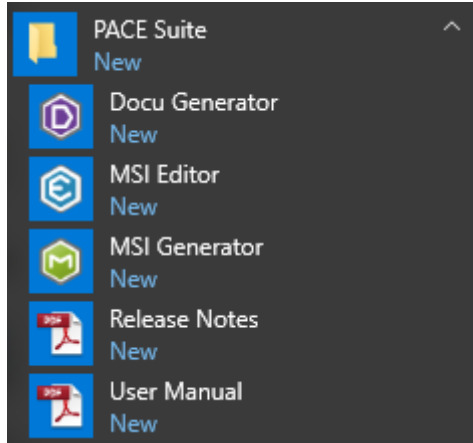
Complexity level

3.8 Edit Project

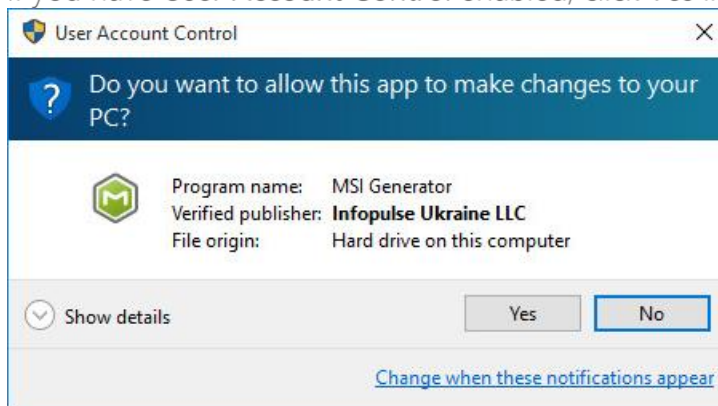
3.8.1 Pre-Condition

Open a project file following the instructions below:

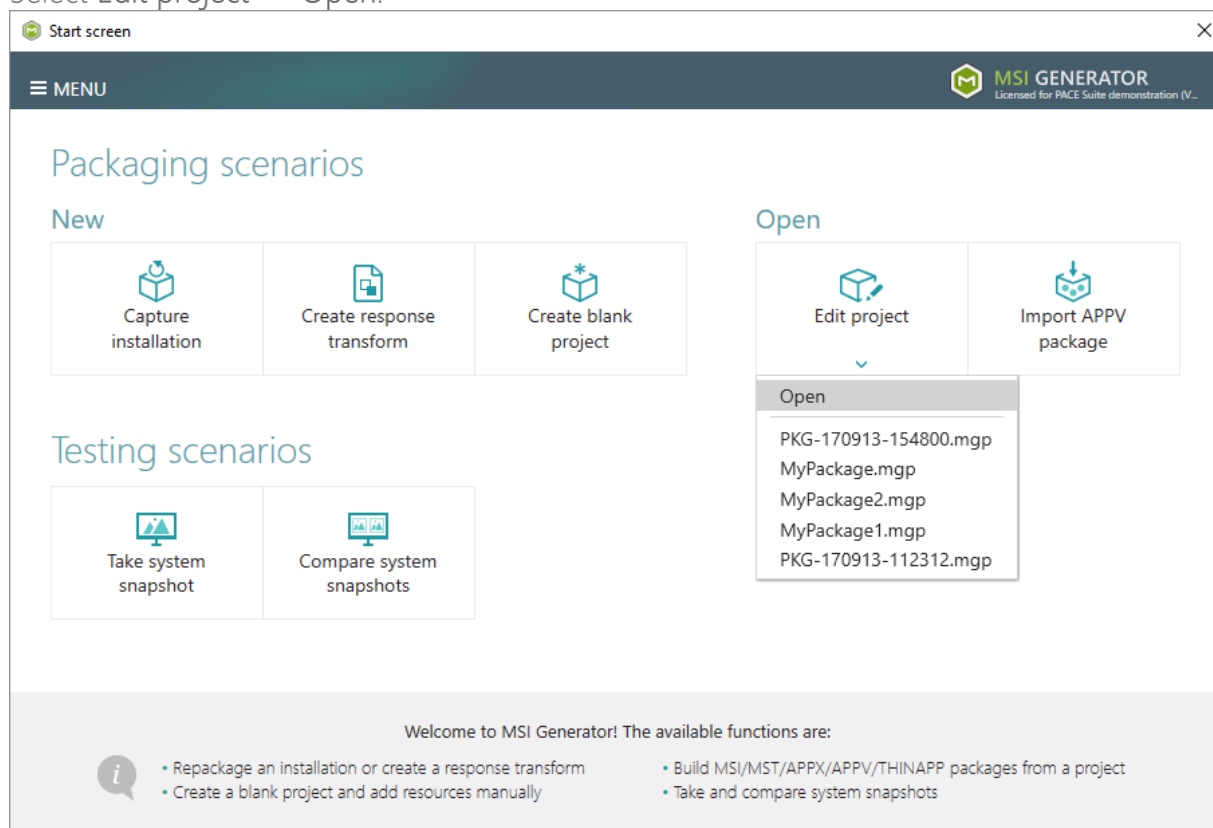
- Launch MSI Generator from the desktop or the start menu shortcut.



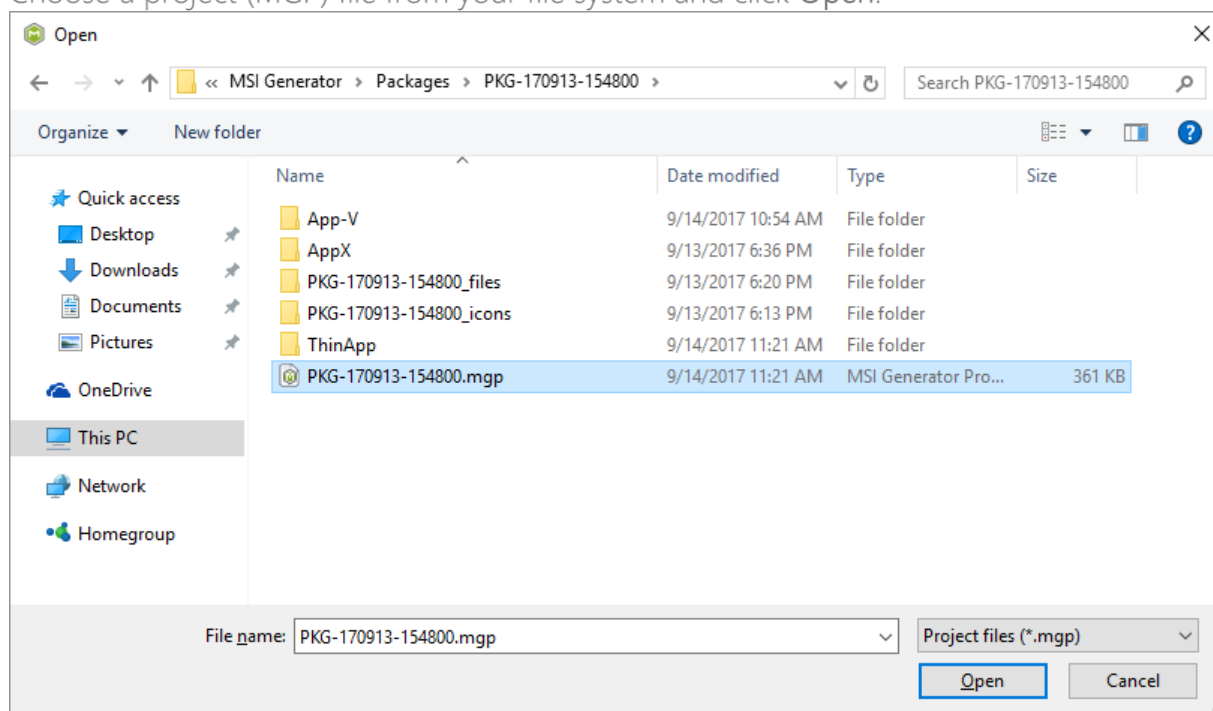
- If you have User Account Control enabled, click Yes in the opened window.



- Select Edit project -> Open.



- Choose a project (MGP) file from your file system and click Open.



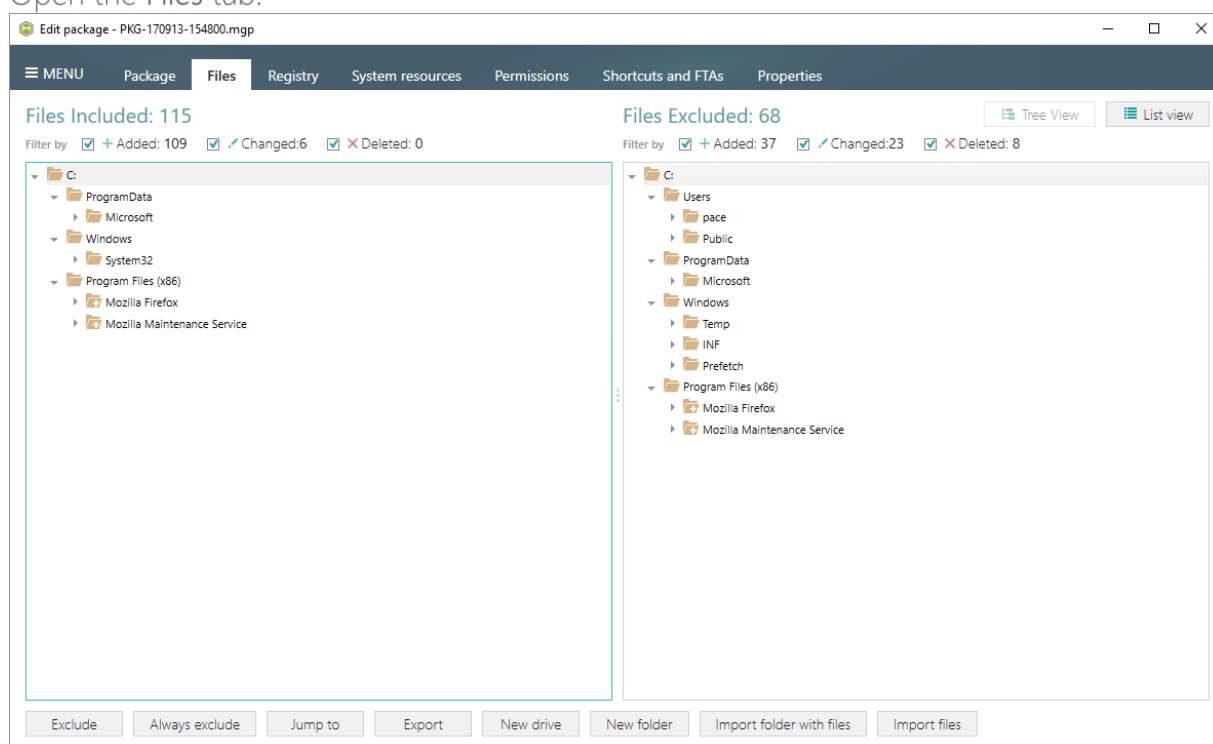
3.8.2 File and Folders

MSI Generator filters captured files and folders automatically and puts excluded (filtered) ones to the right pane, named 'Files Excluded', and the rest of resources – to the left pane, named 'Files Included'. Resources from the 'Files Included' pane will be saved to your package, and resources from the 'Files Excluded' will not be a part of the package, it will be kept as excluded ones only in the project. Note that you can include or exclude necessary resources at any time.

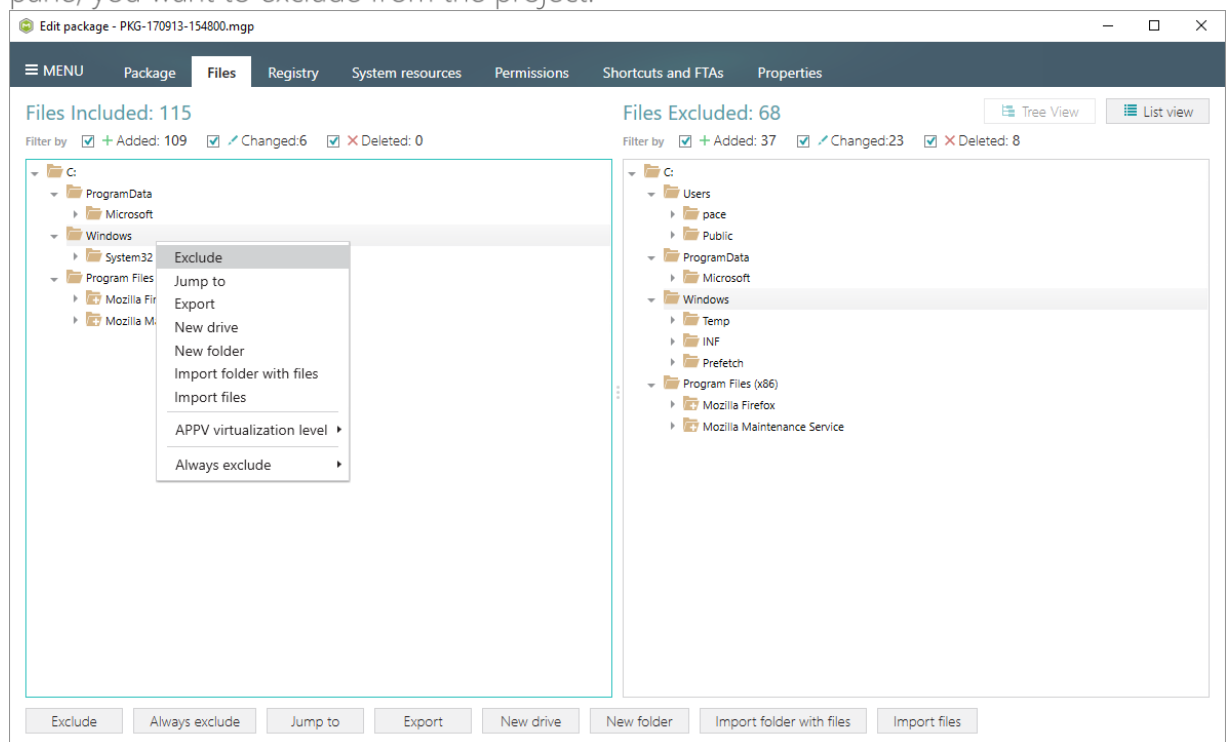
3.8.2.1 Exclude Files and Folders

Exclude unnecessary resources from the project.

- Open the Files tab.



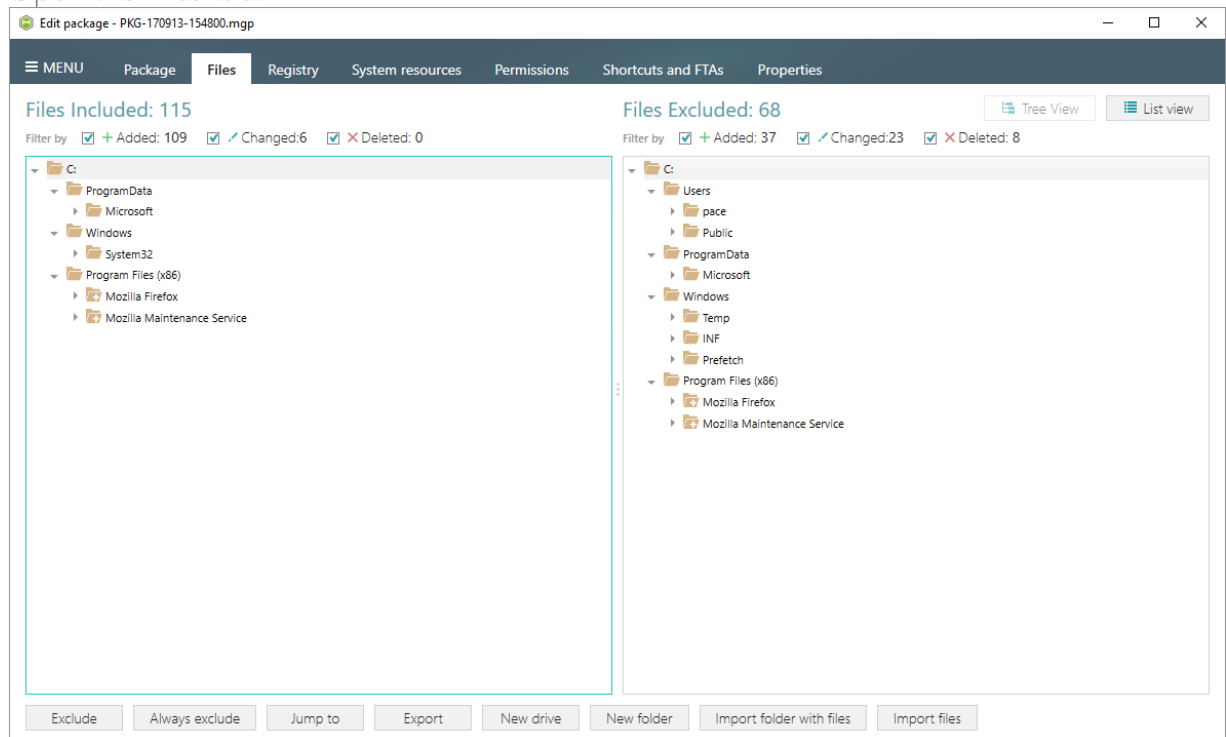
- Select Exclude from the context menu of an item, which is located in the left 'Files Included' pane, you want to exclude from the project.



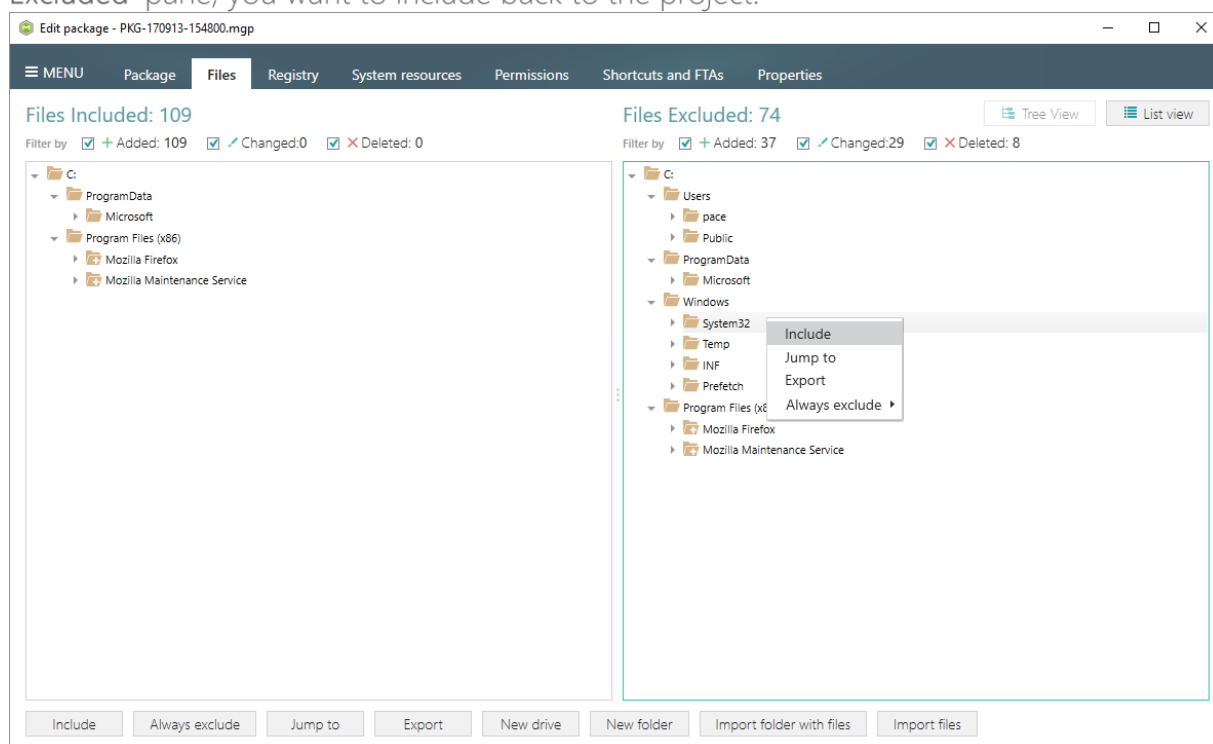
3.8.2.2 Include Files and Folders

Include necessary resources, previously excluded from the project.

- Open the Files tab.

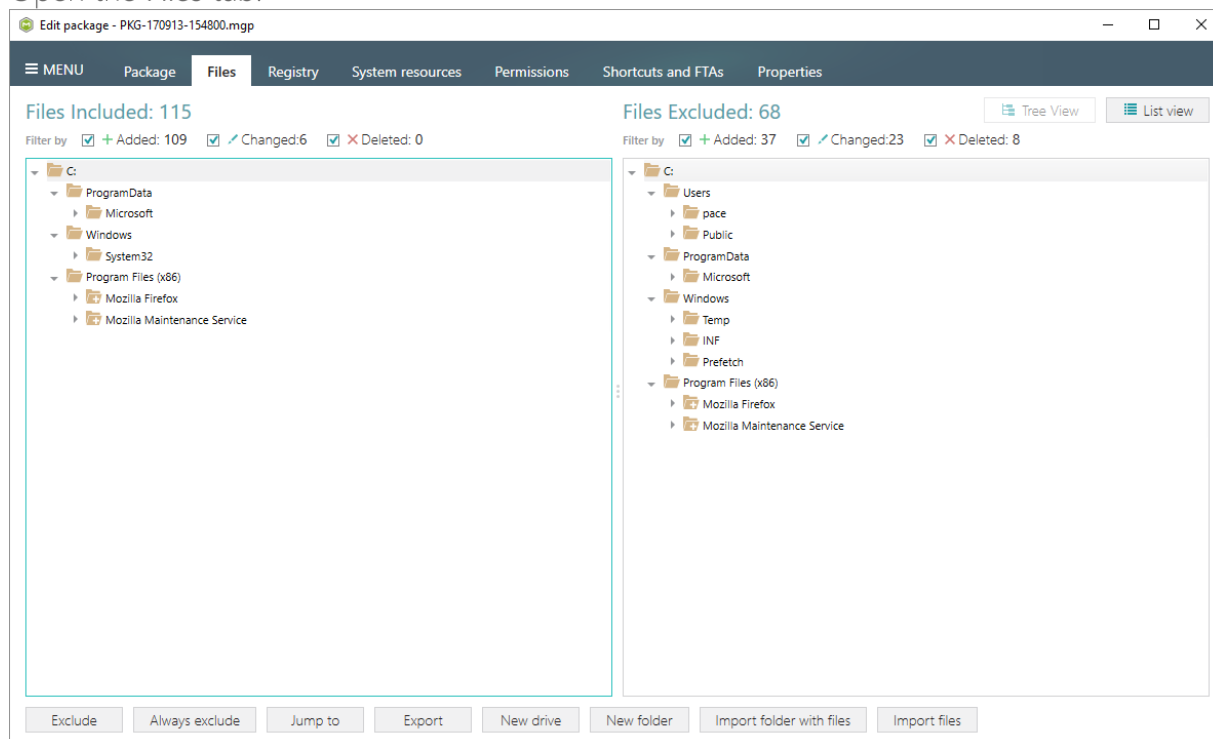


- Select Include from the context menu of an item, which is located in the right 'Files Excluded' pane, you want to include back to the project.

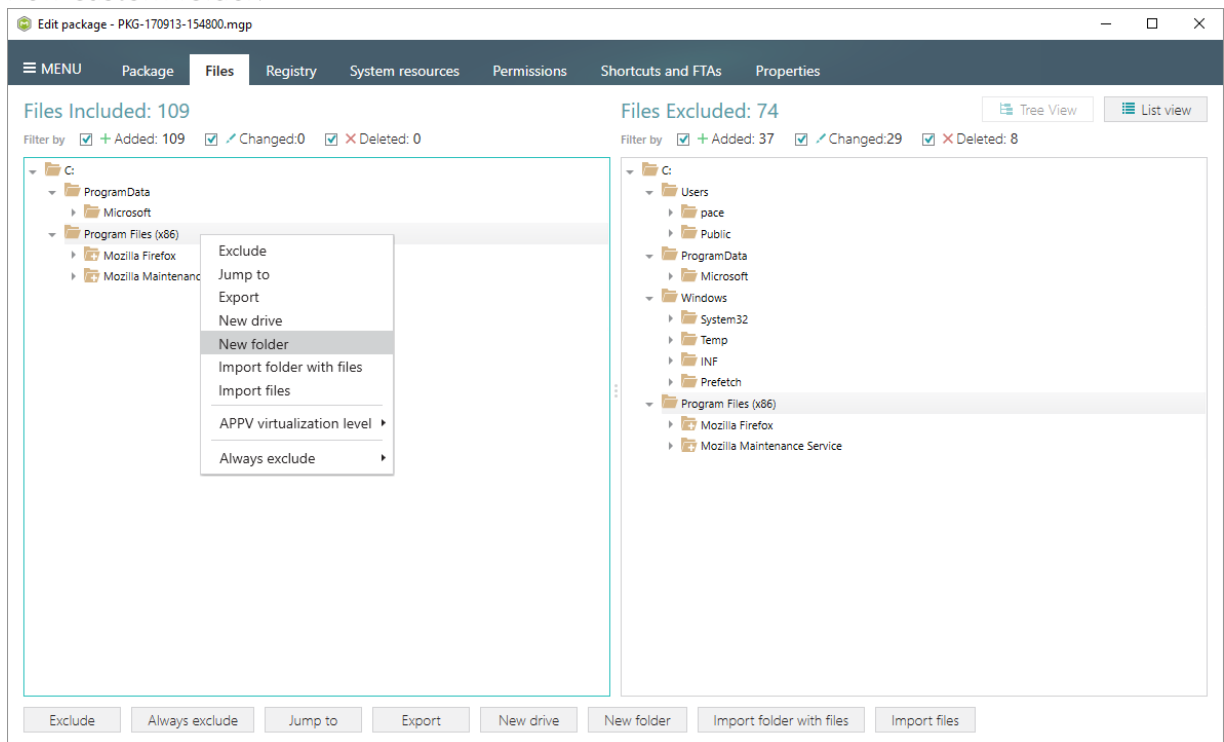


3.8.2.3 Add Custom Folder

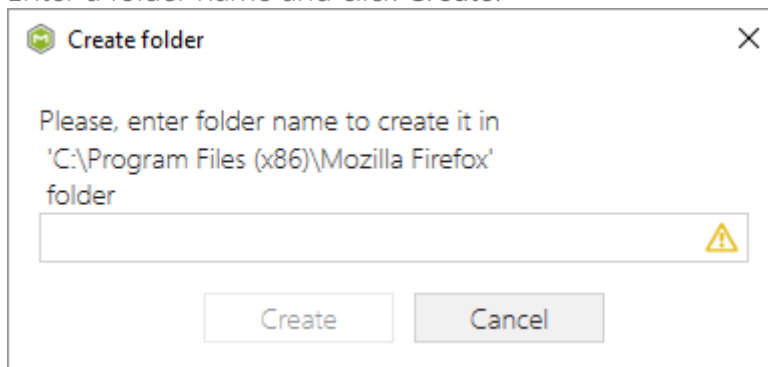
- Open the Files tab.



- Select **New folder** from the context menu of a parent folder, to which you want to add a new custom folder.

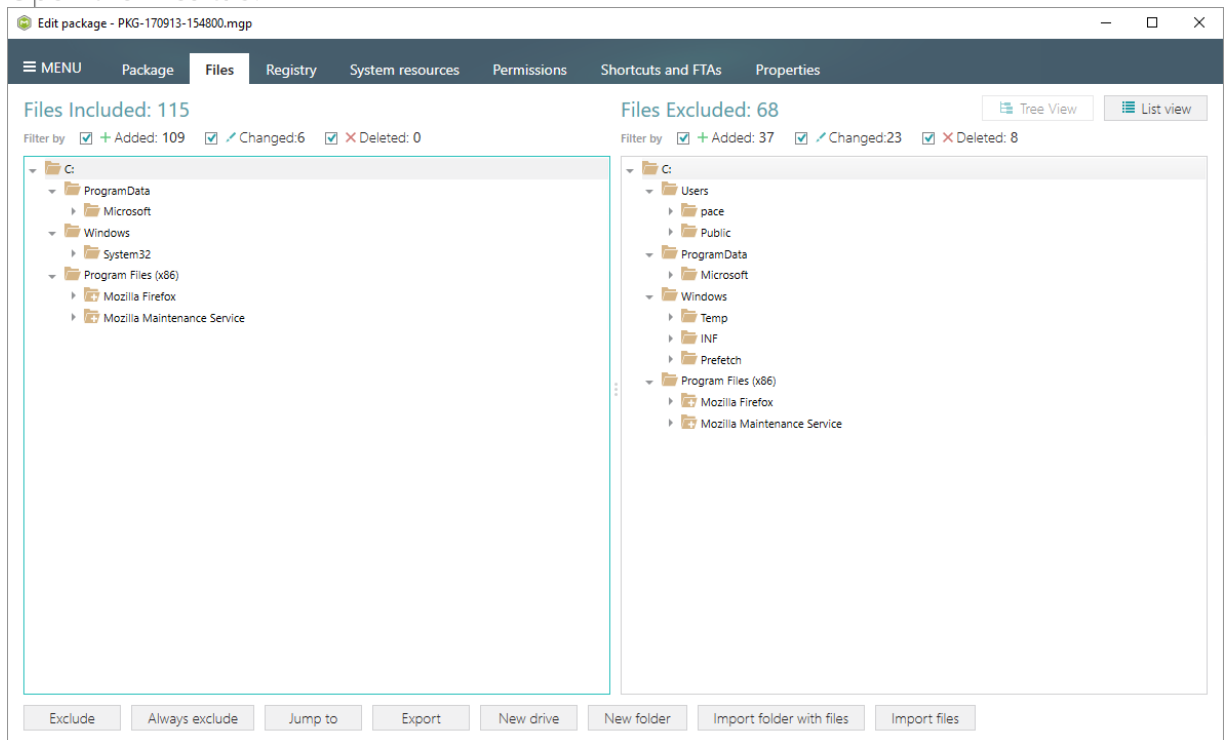


- Enter a folder name and click **Create**.

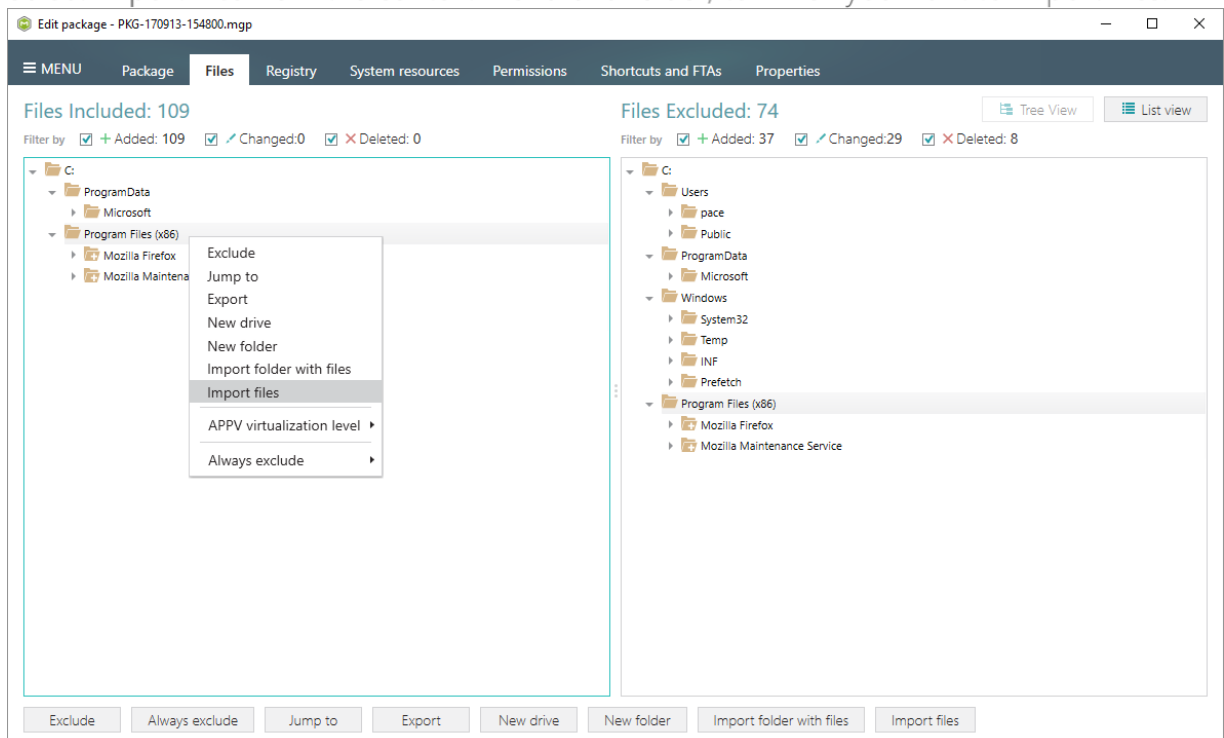


3.8.2.4 Import Files

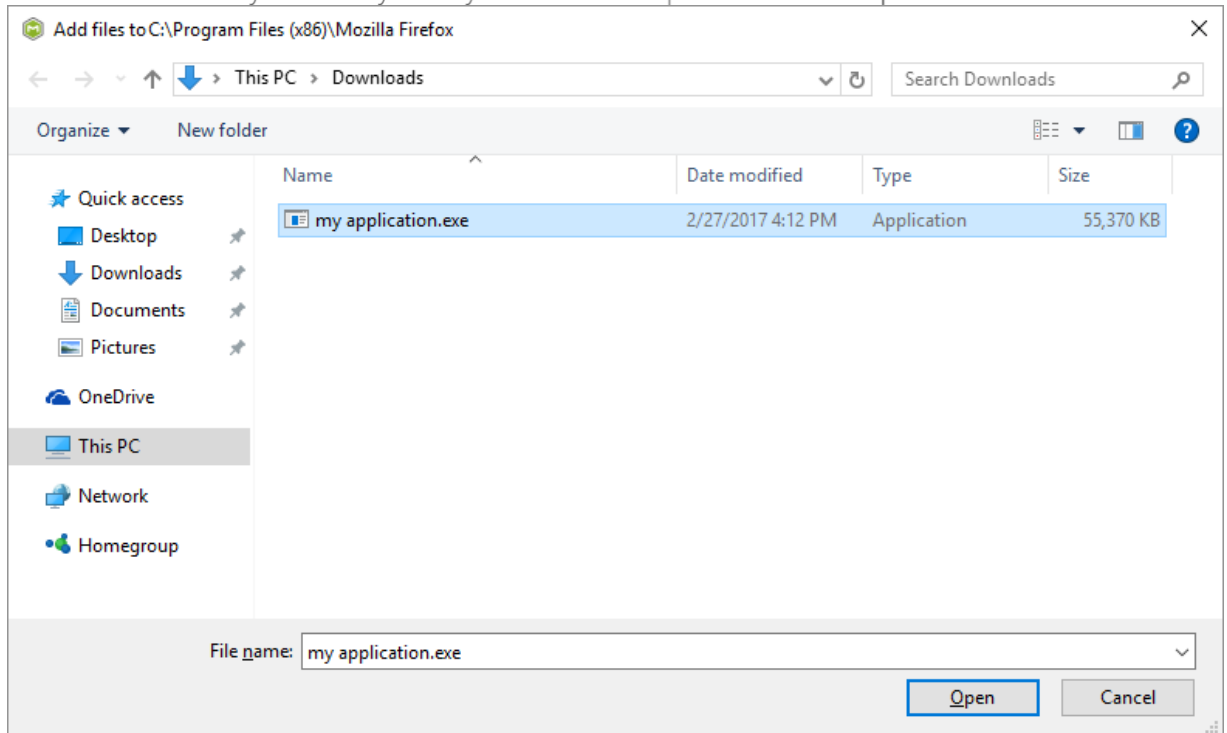
- Open the Files tab.



- Select Import files from the context menu of a folder, to which you want to import files.



- Choose files from your file system you want to import and click Open.



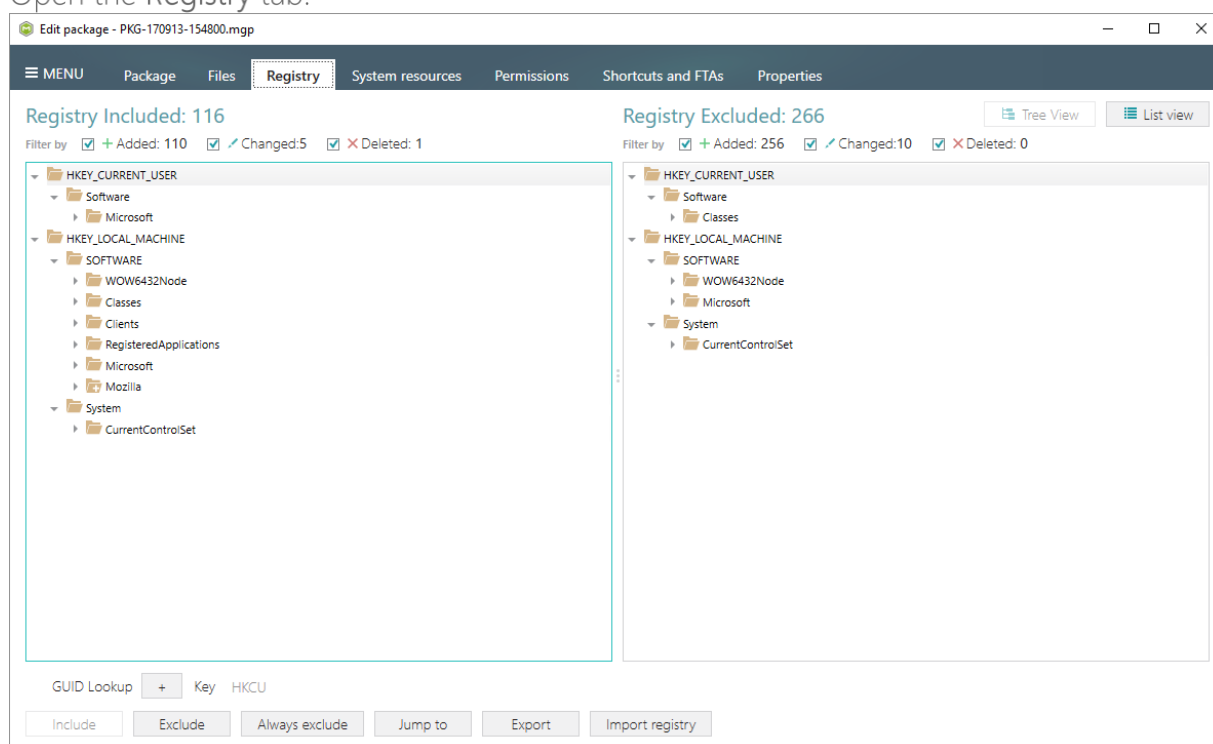
3.8.3 Registry

MSI Generator filters captured registry entries automatically and puts excluded (filtered) ones to the right pane, named 'Registry Excluded', and the rest of resources – to the left pane, named 'Registry Included'. Resources from the 'Registry Included' pane will be saved to your package, and resources from the 'Registry Excluded' will not be a part of the package, it will be kept as excluded ones only in the project. Note that you can include or exclude necessary resources at any time.

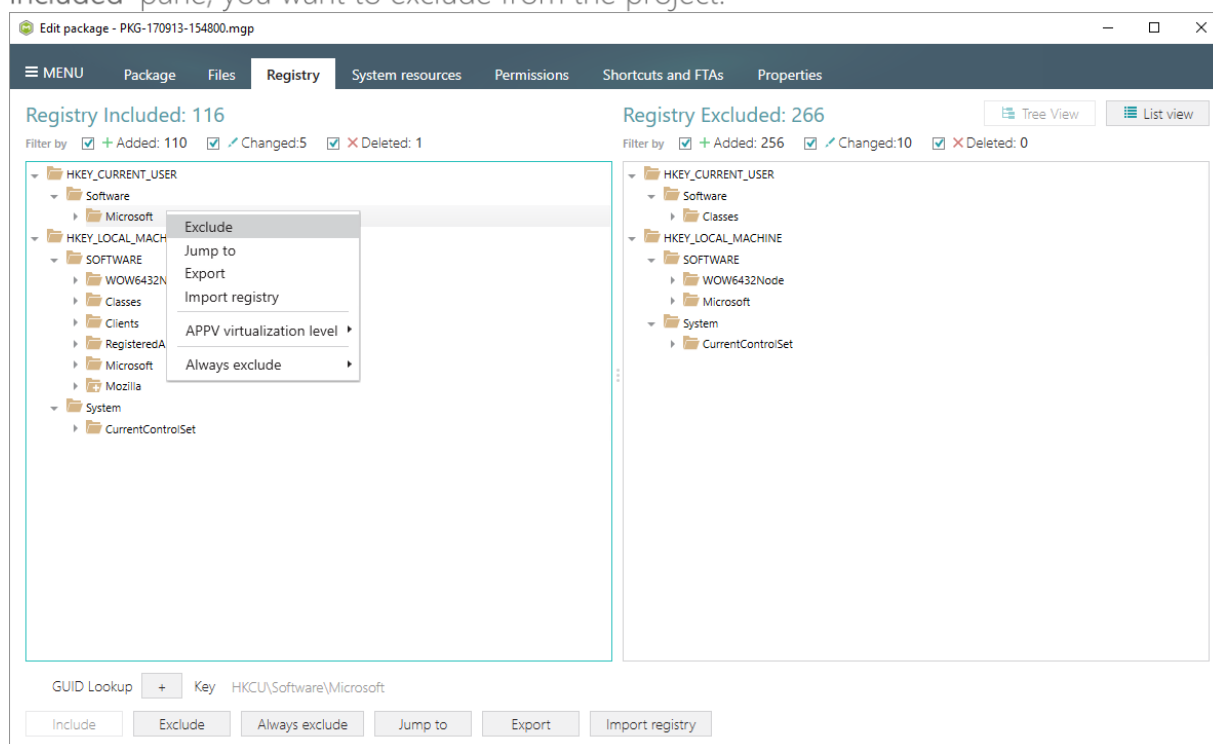
3.8.3.1 Exclude Registry Entries

Exclude unnecessary resources from the project.

- Open the Registry tab.



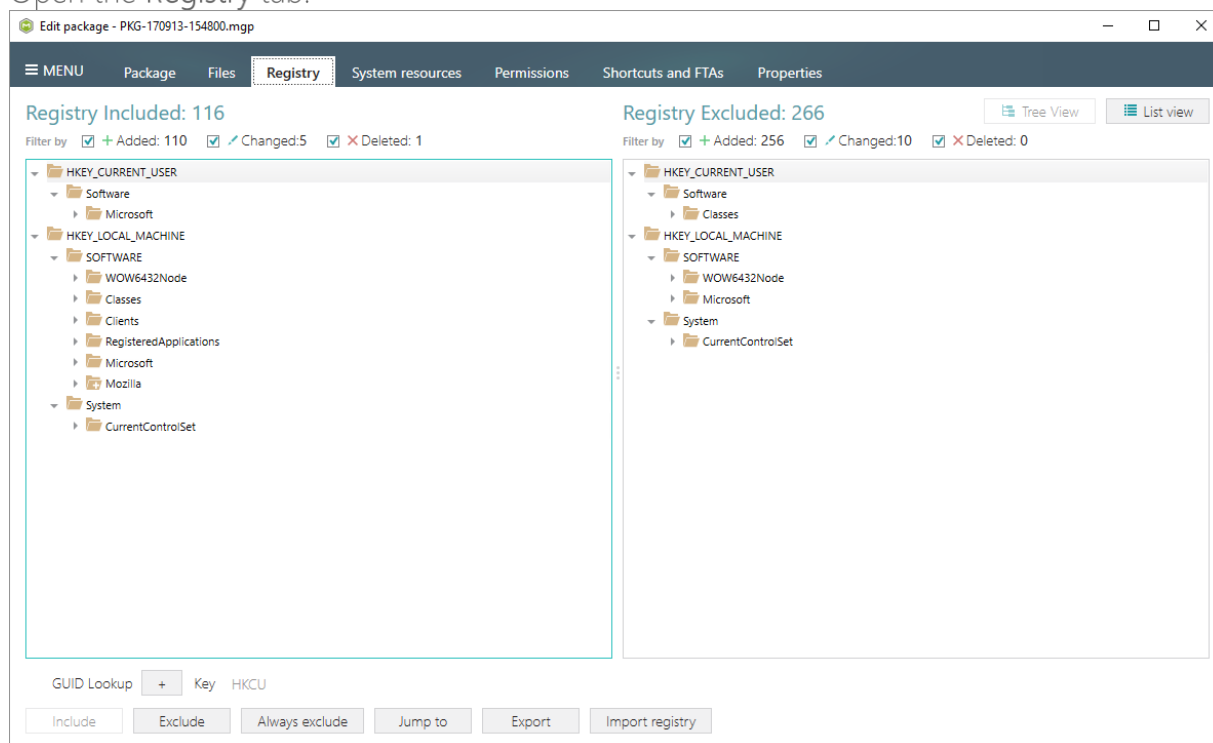
- Select **Exclude** from the context menu of an item, which is located in the left 'Registry Included' pane, you want to exclude from the project.



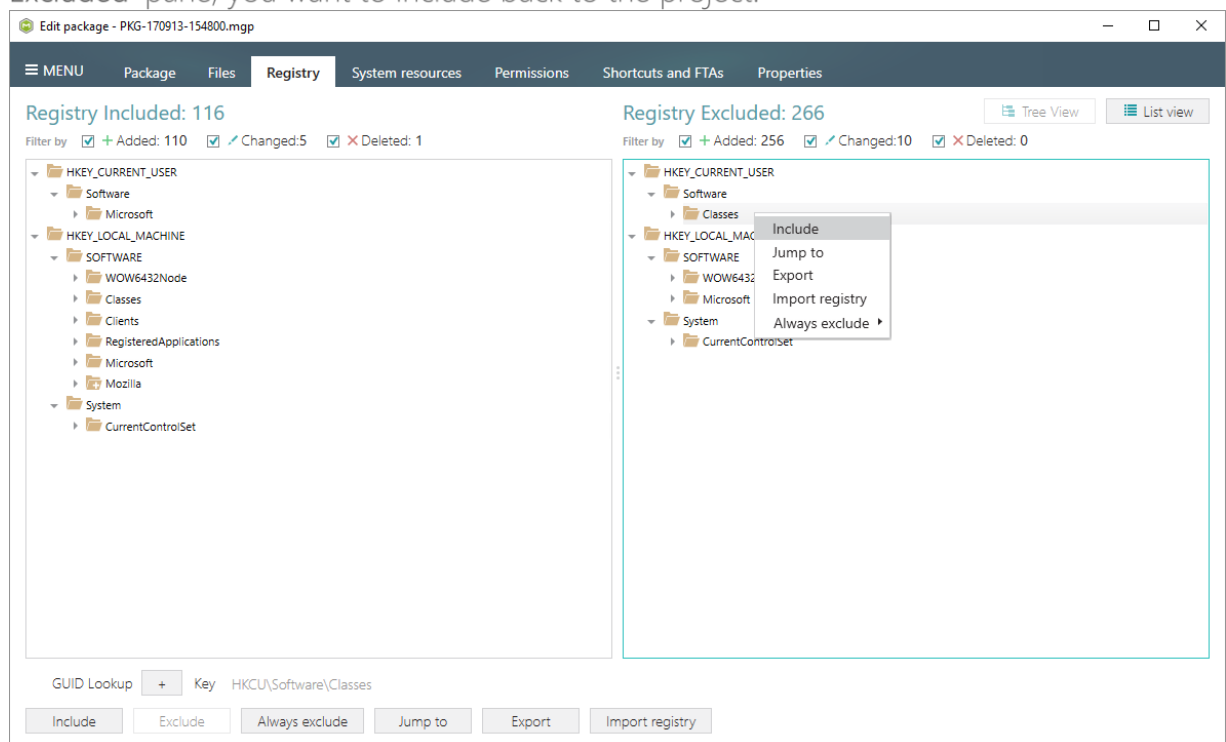
3.8.3.2 Include Registry Entries

Include necessary resources, previously excluded from the project.

- Open the Registry tab.

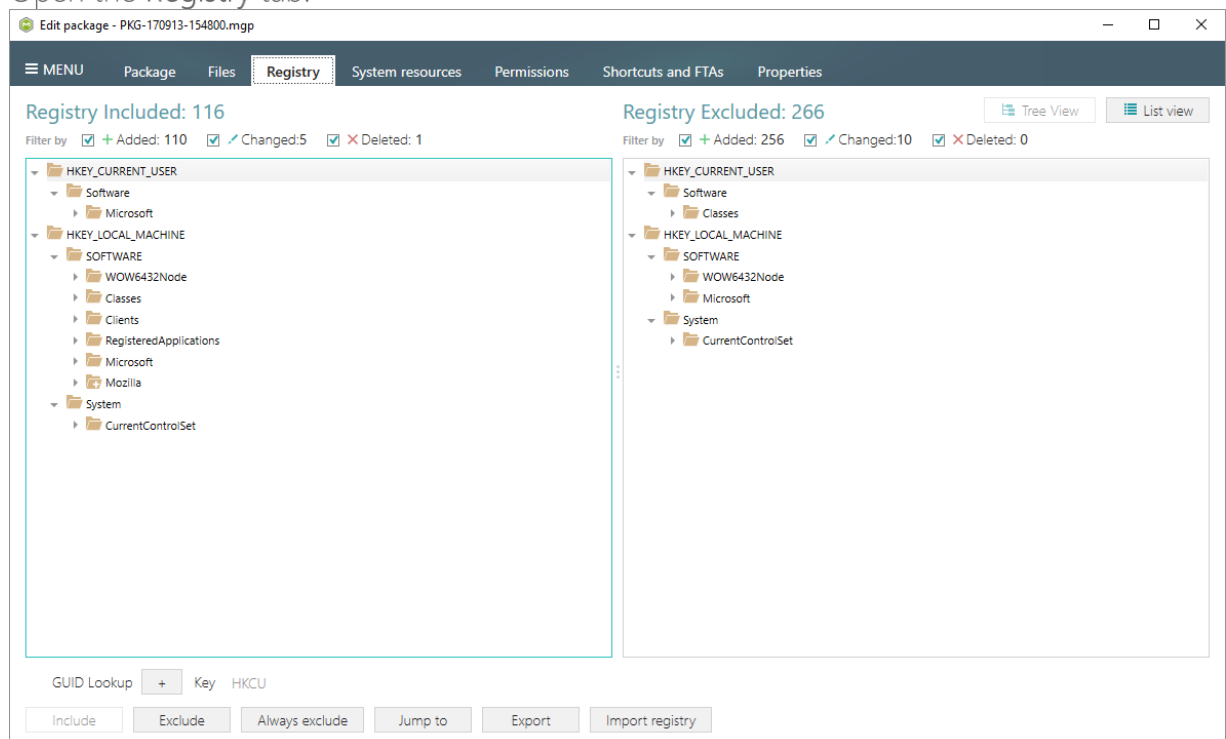


- Select Include from the context menu of an item, which is located in the right 'Registry Excluded' pane, you want to include back to the project.

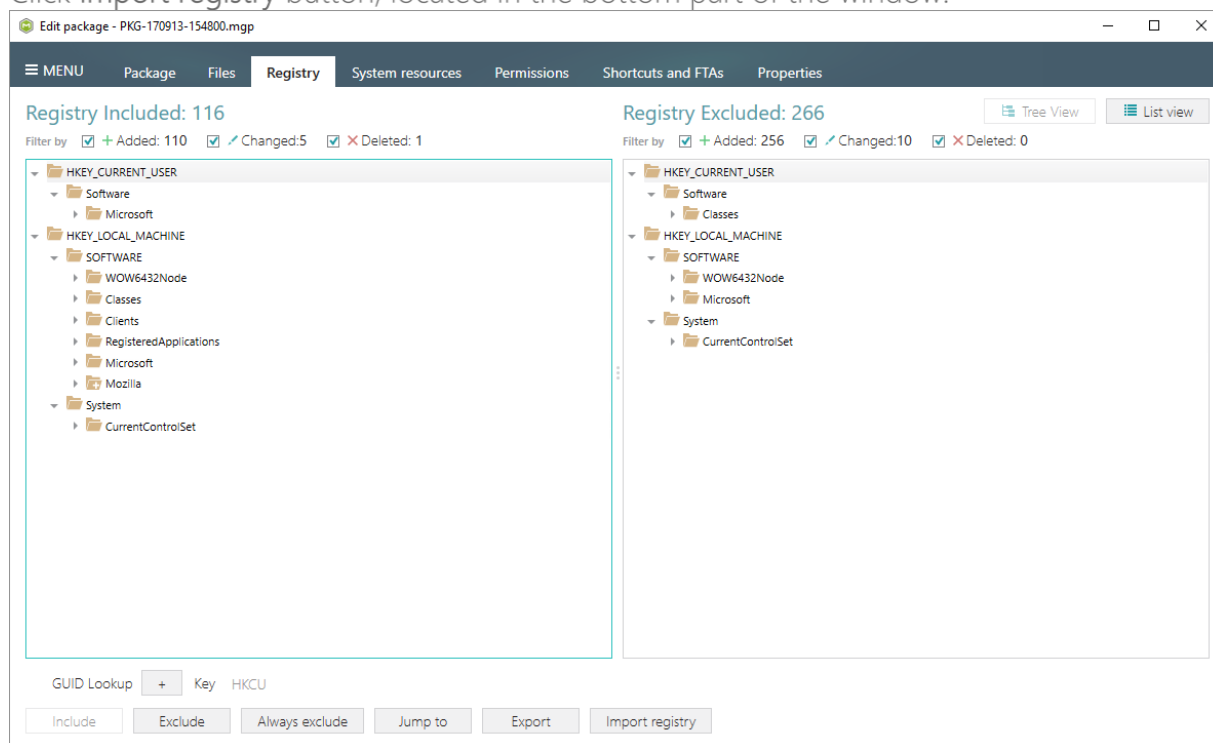


3.8.3.3 Import Registry

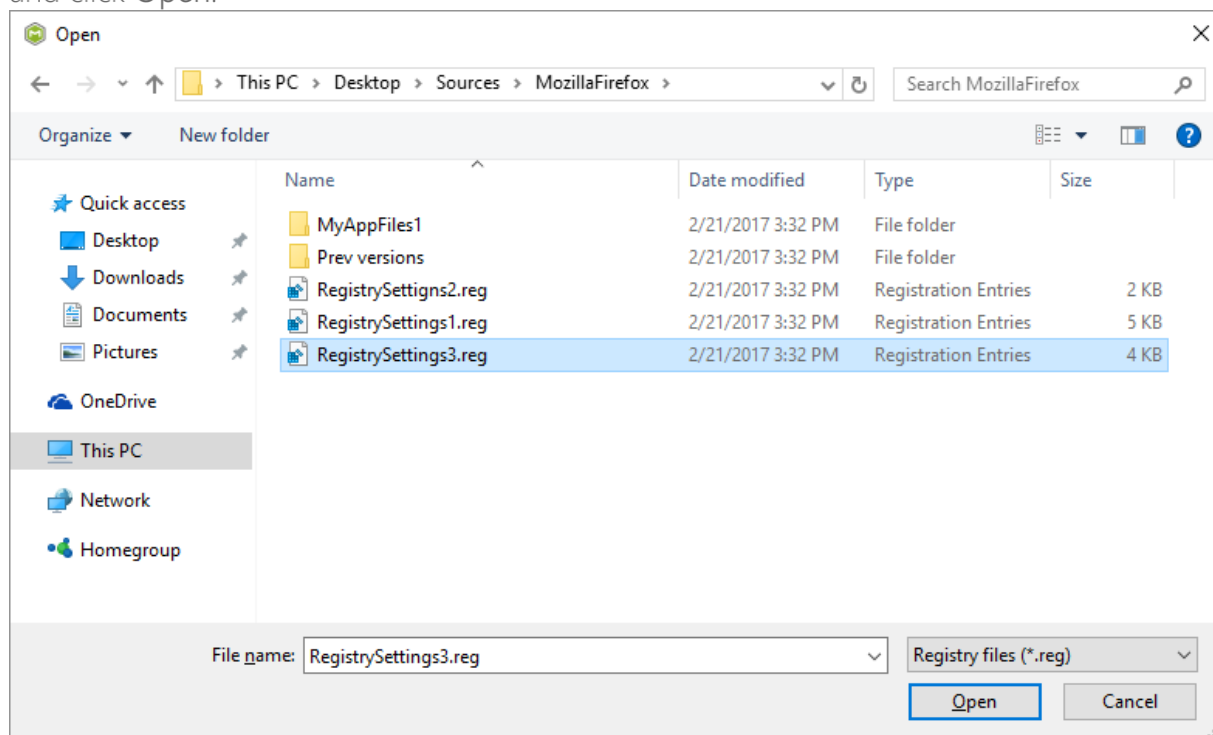
- Open the Registry tab.



- Click Import registry button, located in the bottom part of the window.

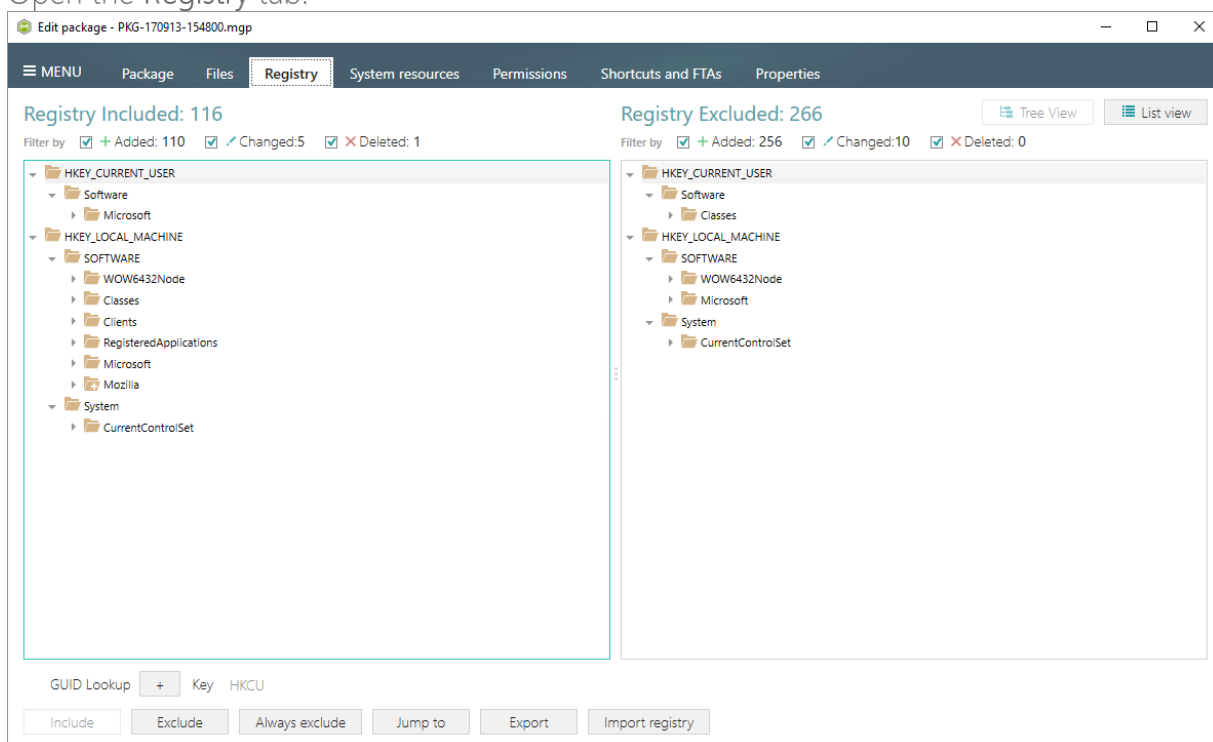


- Choose a REG file from your file system, content of which you want to import to the project and click Open.

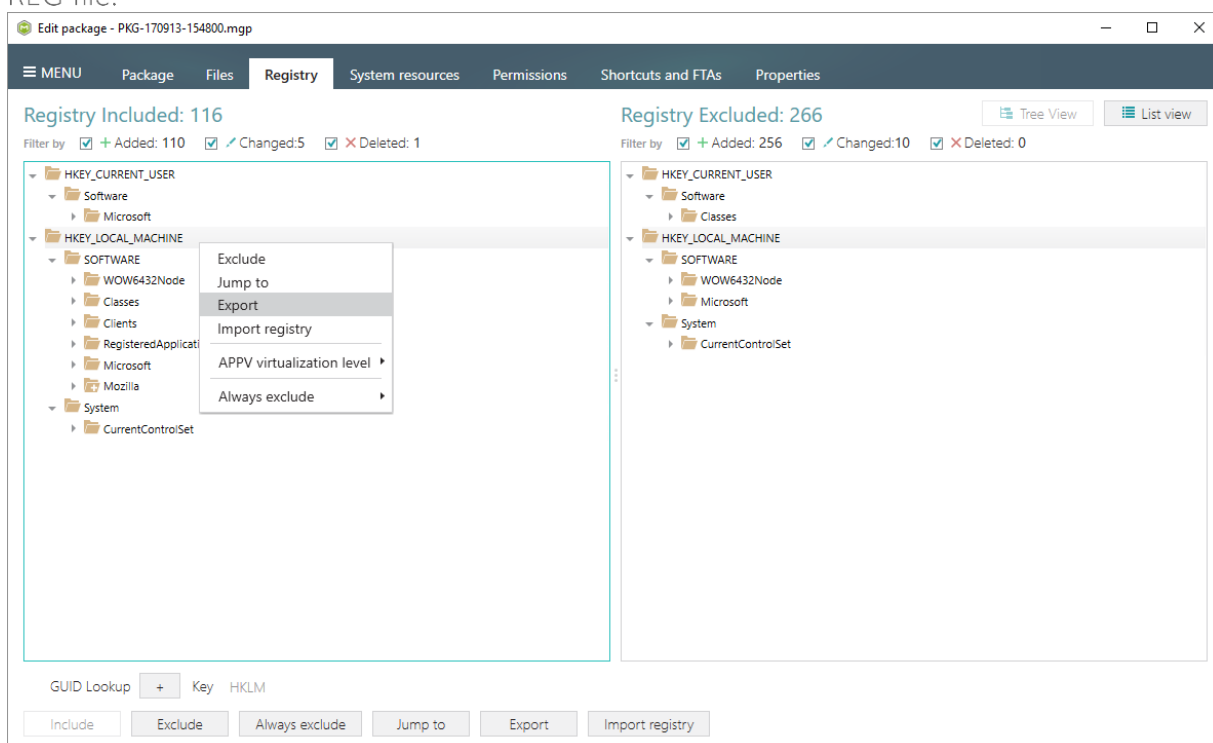


3.8.3.4 Export Registry

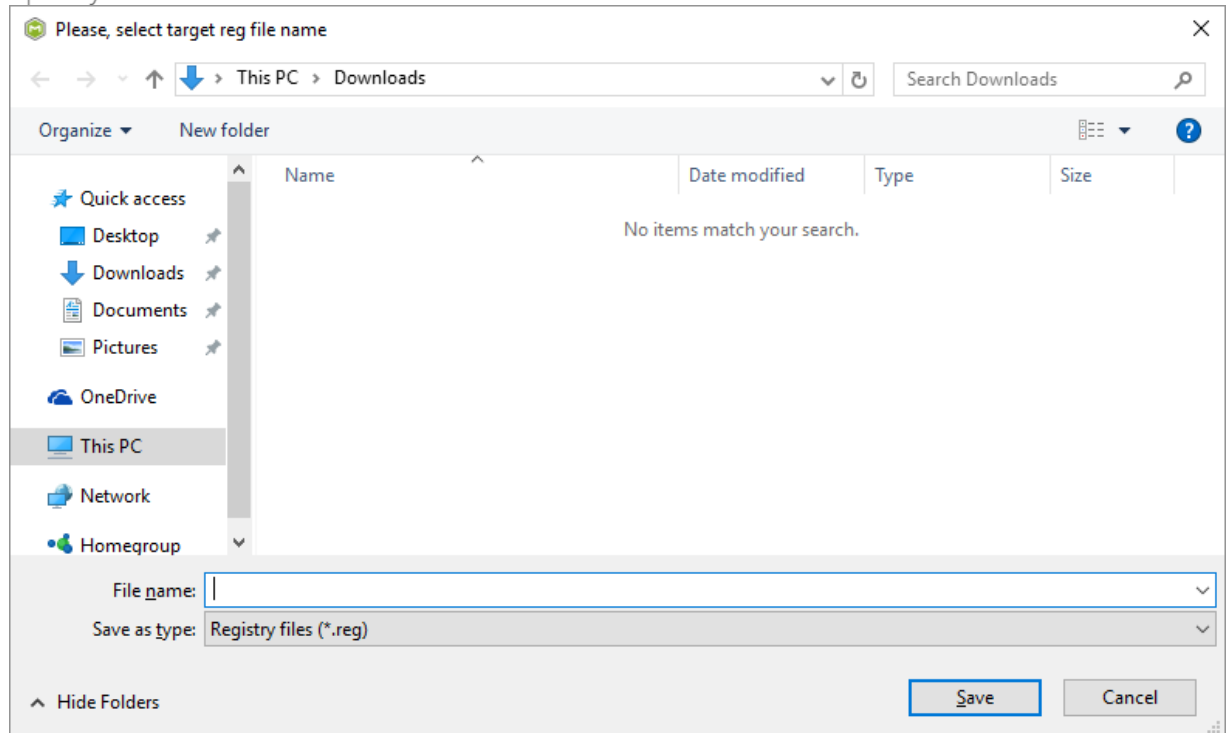
- Open the Registry tab.



- Select Export from the context menu of a registry entry, which you want to export to the REG file.



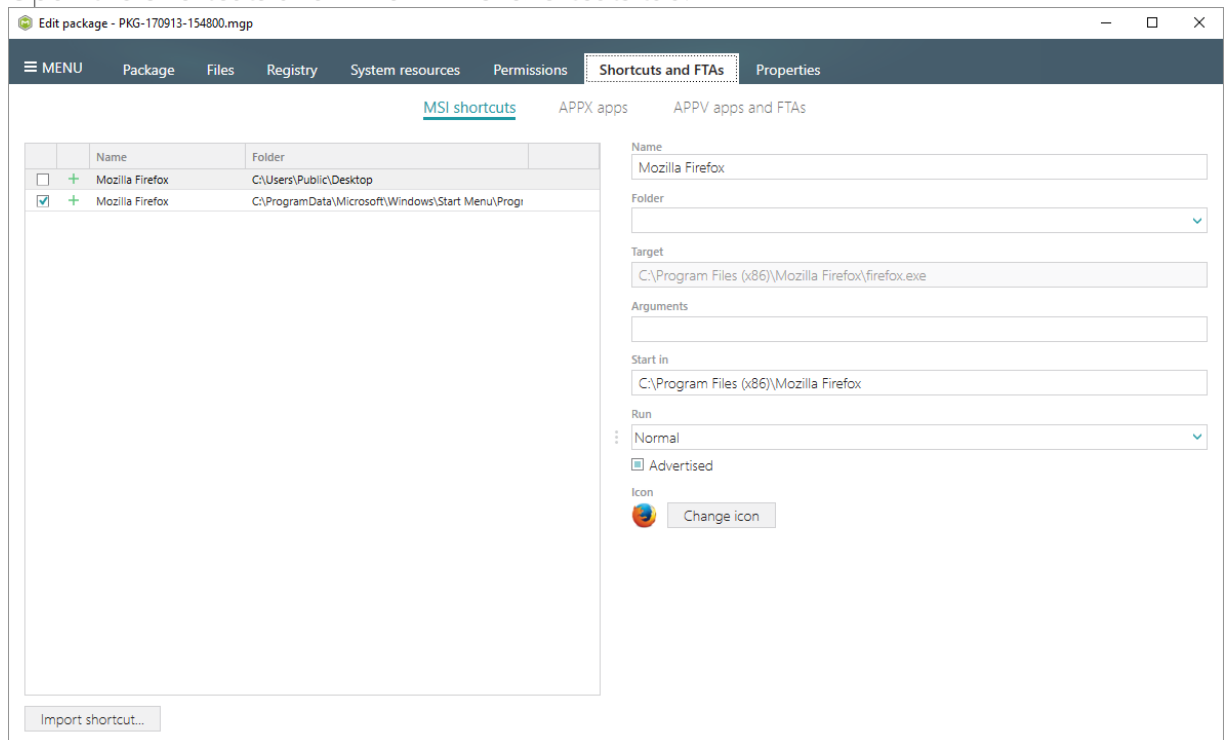
- Specify a name and a destination location of the REG file and click Save.



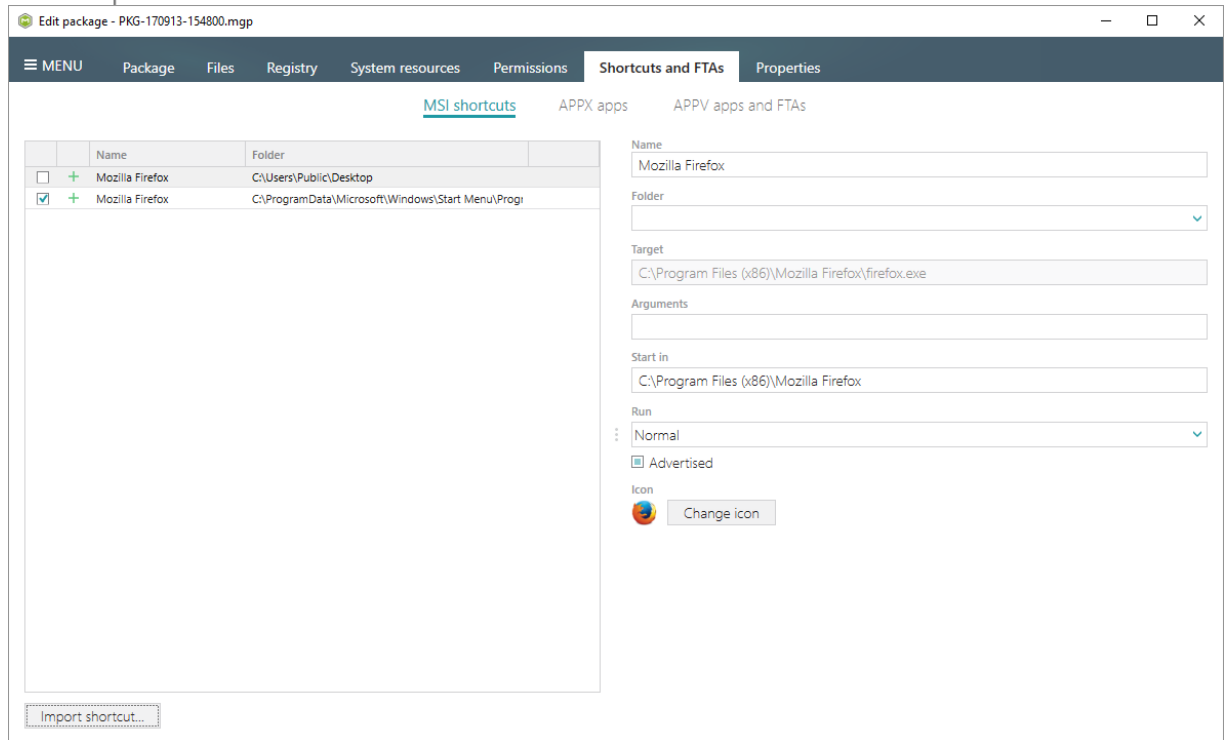
3.8.4 Shortcuts

3.8.4.1 Import Shortcut

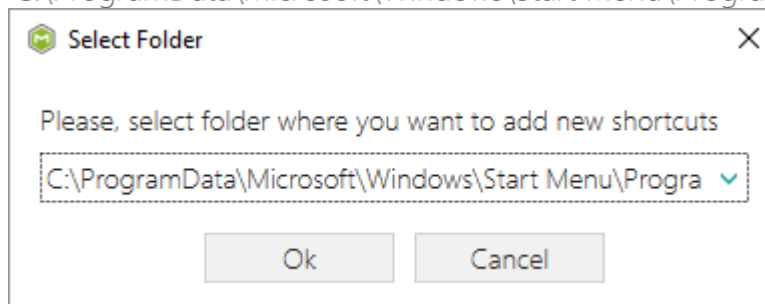
- Open the Shortcuts and FTAs -> MSI shortcuts tab.



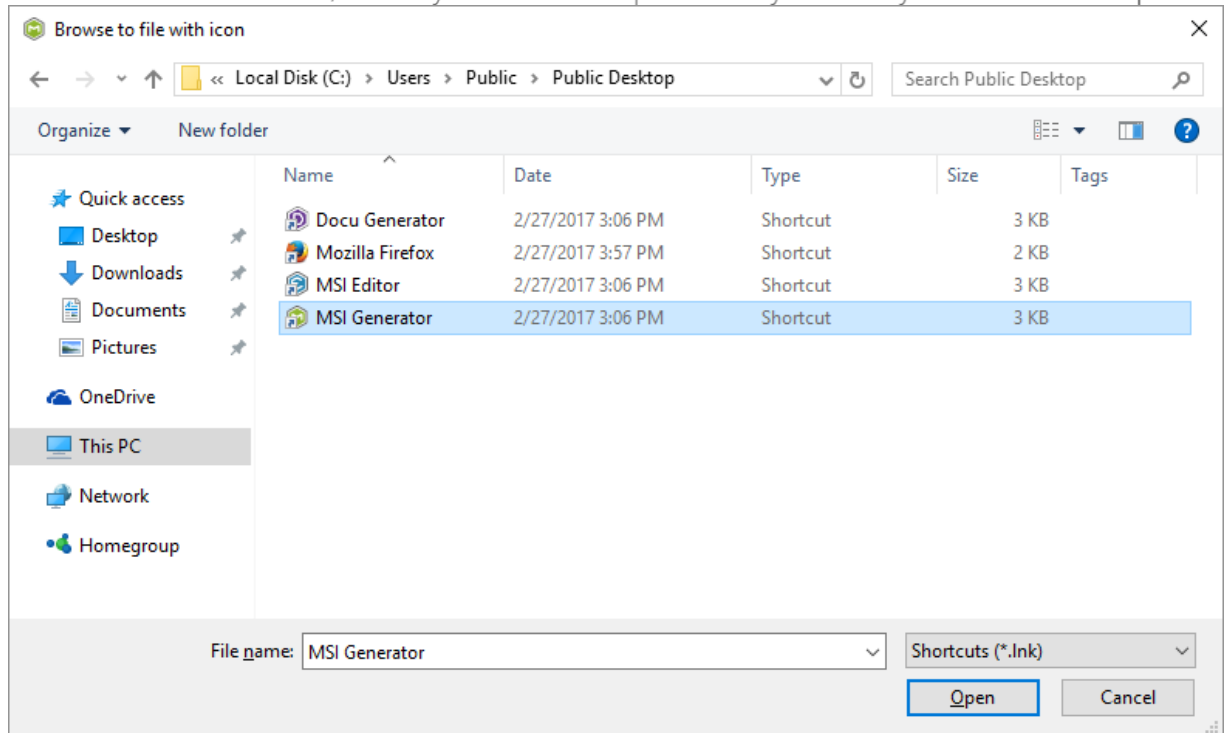
[2]. Click Import shortcut...



[3]. Select a folder, to which you want to import shortcuts (e.g. 'C:\ProgramData\Microsoft\Windows\Start Menu\Programs') and click Ok.

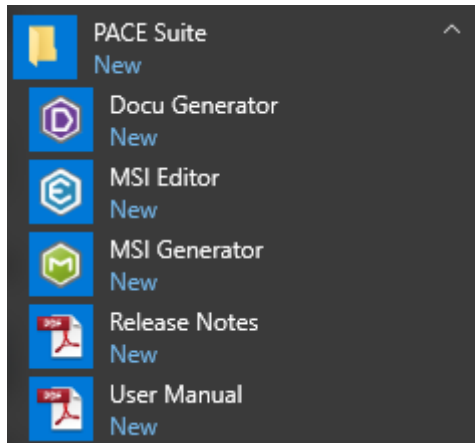


- [4]. Choose an LNK shortcut, which you want to import from your file system and click Open.

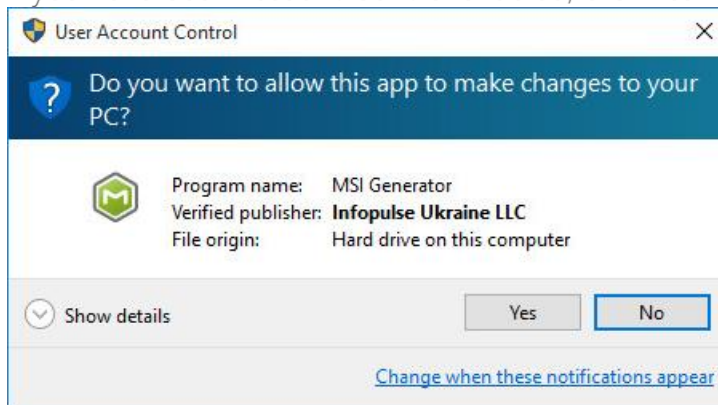


3.9 Edit APPV

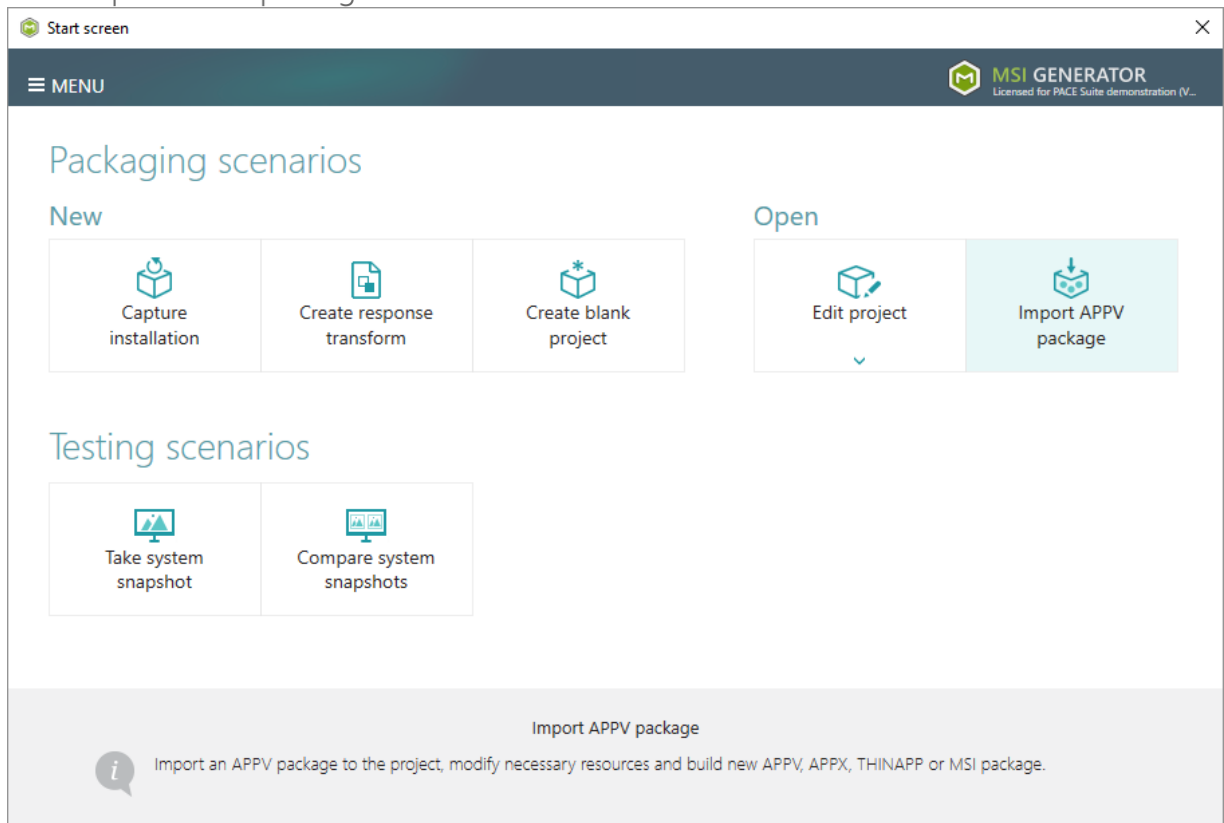
- Launch MSI Generator from the desktop or the start menu shortcut.



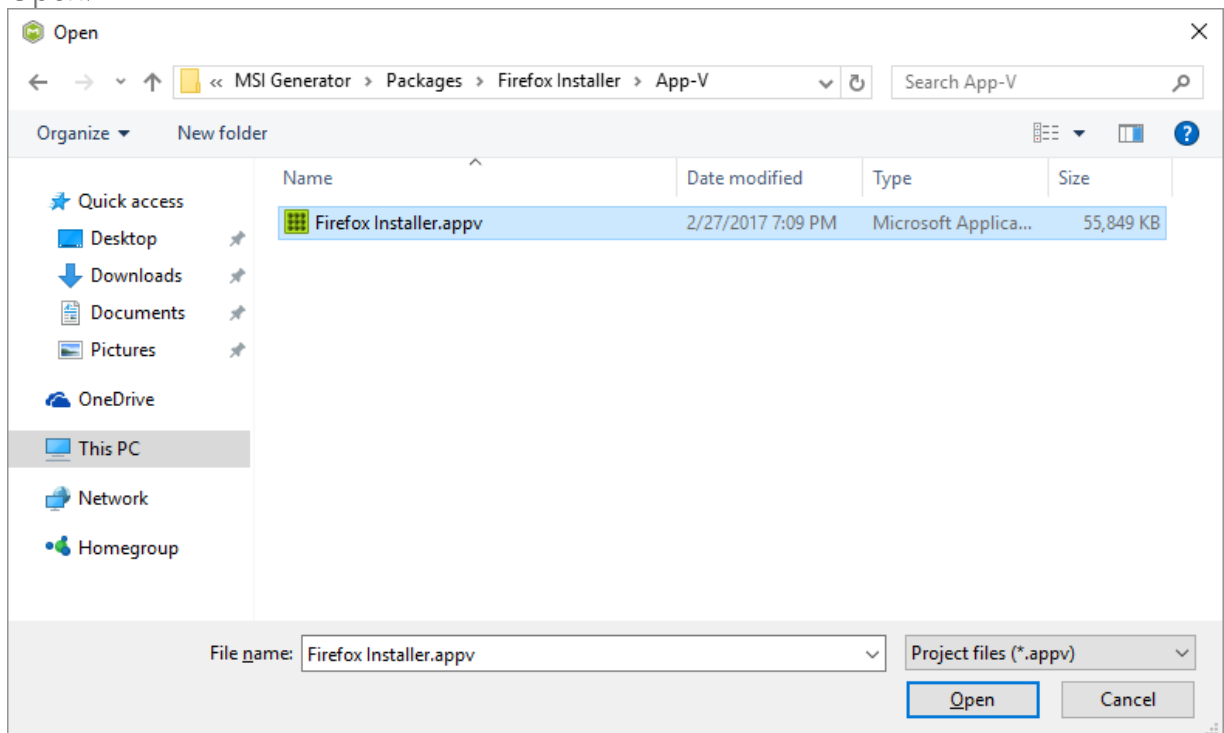
- If you have User Account Control enabled, click Yes in the opened window.



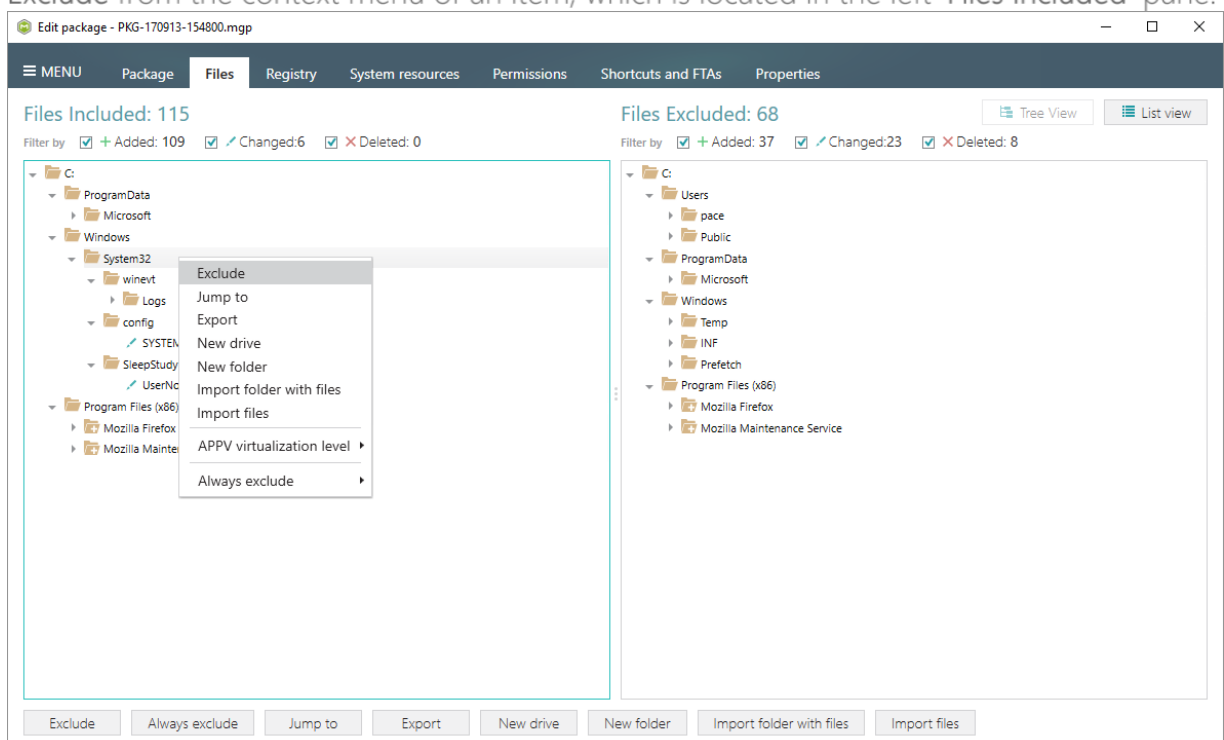
- Click Import APPV package.



- Choose an App-V package (APPV file), which you want to edit from your file system and Open.

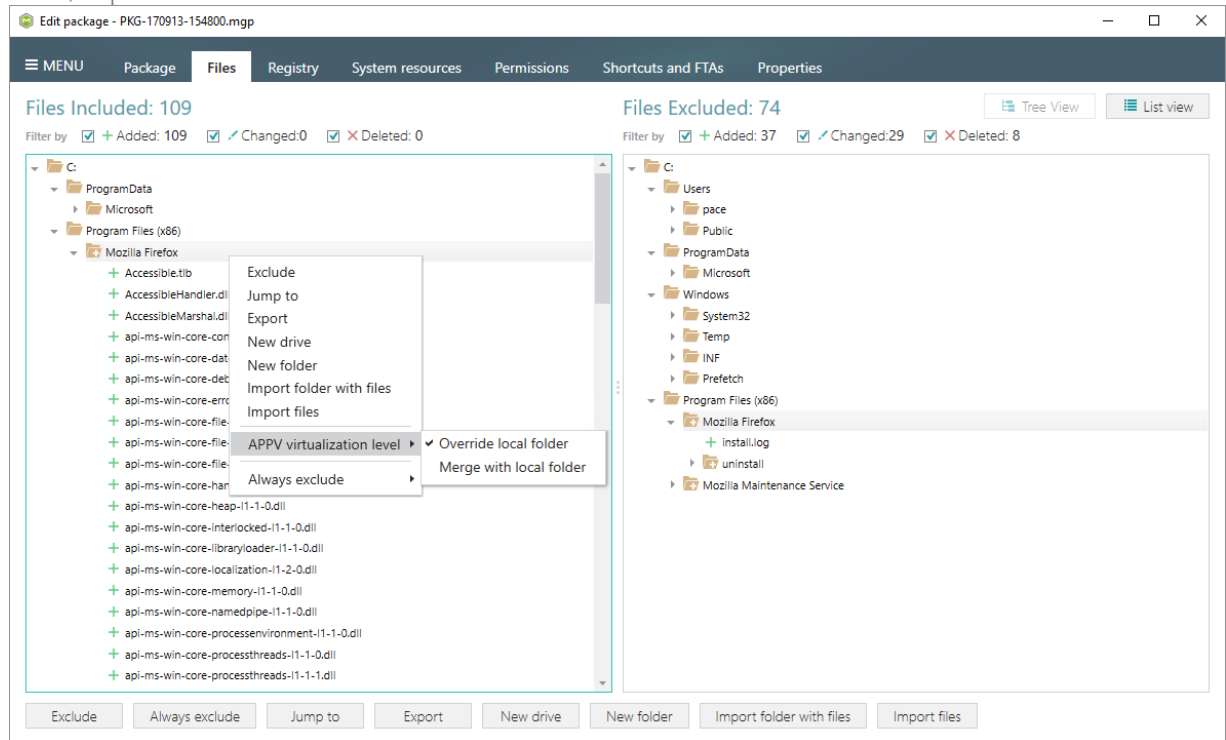


- In order to review and exclude unnecessary files or folders, go to the Files tab, and select Exclude from the context menu of an item, which is located in the left 'Files Included' pane.

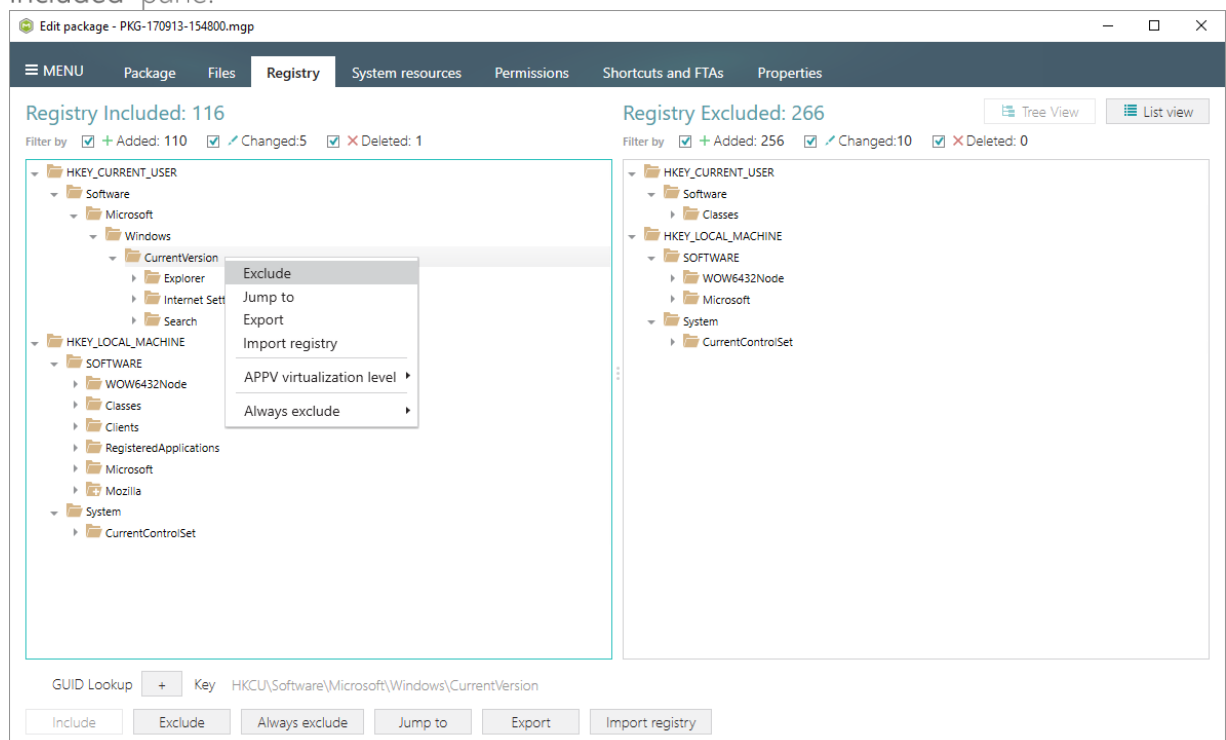


- In order to change the default virtualization (isolation) level of a folder, open the folder context menu, and select either Override local folder or Merge with local folder option from the APPV virtualization level submenu. Note that if the APPV virtualization level submenu is disabled with the Override local folder option selected, it means that this option is inherited from the parent folder. Child folder could not have the Merge with local folder virtualization

level, if parent one has the Override local folder virtualization level.

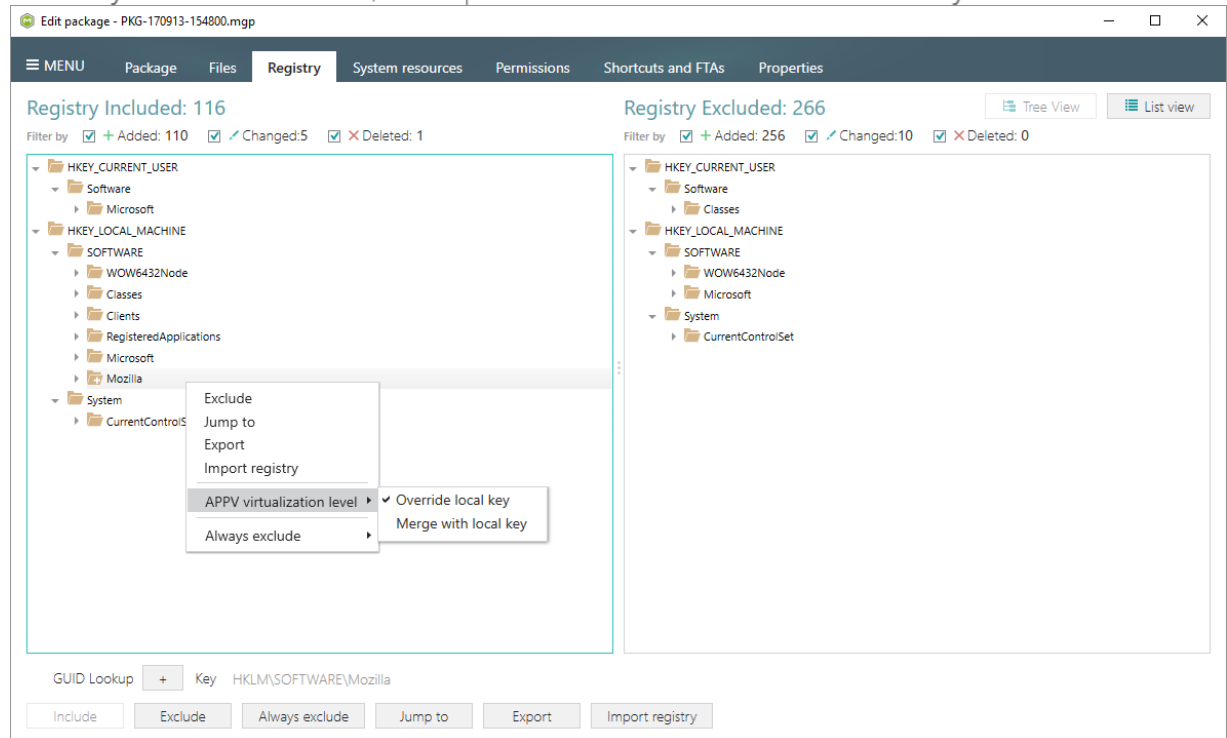


- In order to review and exclude unnecessary registry keys or values, go to the Registry tab, and select Exclude from the context menu of an item, which is located in the left 'Registry Included' pane.

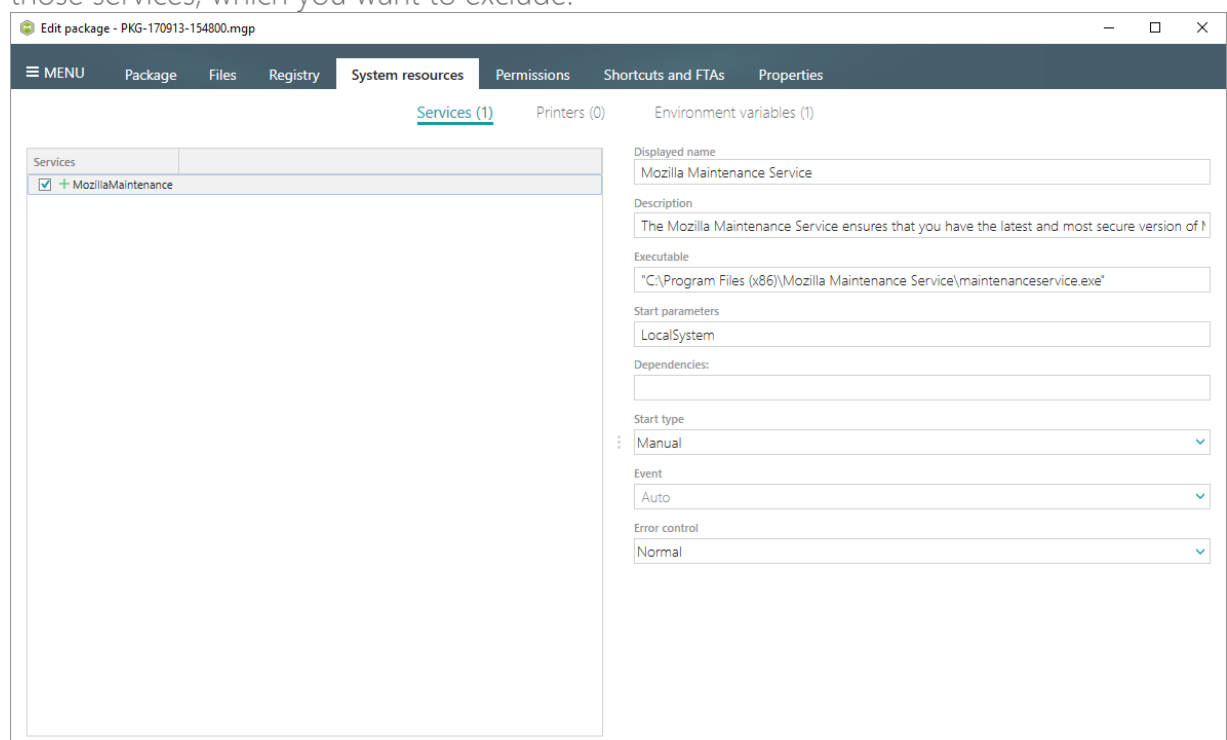


- In order to change the default virtualization (isolation) level of a registry key, open the registry key context menu, and select either Override local key or Merge with local key option from the APPV virtualization level submenu. Note that if the APPV virtualization level submenu is disabled with the Override local key option selected, it means that this option is inherited from the parent registry key. A child registry key could not have the Merge with

local key virtualization level, if the parent one has the Override local key virtualization level.



- In order to review and exclude unnecessary services, go to the System resources -> Services tab, and uncheck the checkbox, located before the service name in the list, for those services, which you want to exclude.



- In order to review and exclude unnecessary APPV applications, shortcuts and their file type associations, go to the Shortcuts and FTAs -> APPV apps and FTAs tab, and uncheck

checkboxes, located before those items names, which you want to exclude.

Application

Application
<input checked="" type="checkbox"/> firefox

New application...

Shortcuts

Name	Folder
<input type="checkbox"/> Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/> Mozilla Firefox	C:\ProgramData\Microsoft\Win

Exclude New... Edit...

File Type Association

Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

- If you need to add a new APPV application, its shortcuts and associate file extensions with this application, click New application... on the Shortcuts and FTAs -> APPV apps and FTAs tab.

Application

Application
<input checked="" type="checkbox"/> firefox

New application...

Shortcuts

Name	Folder
<input type="checkbox"/> Mozilla Firefox	C:\Users\Public\Desktop
<input checked="" type="checkbox"/> Mozilla Firefox	C:\ProgramData\Microsoft\Win

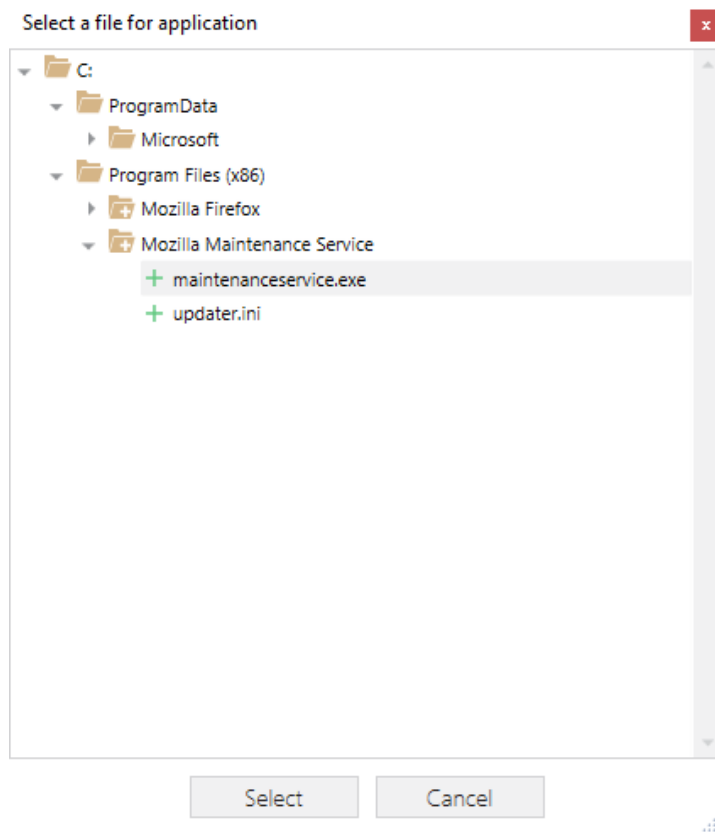
Exclude New... Edit...

File Type Association

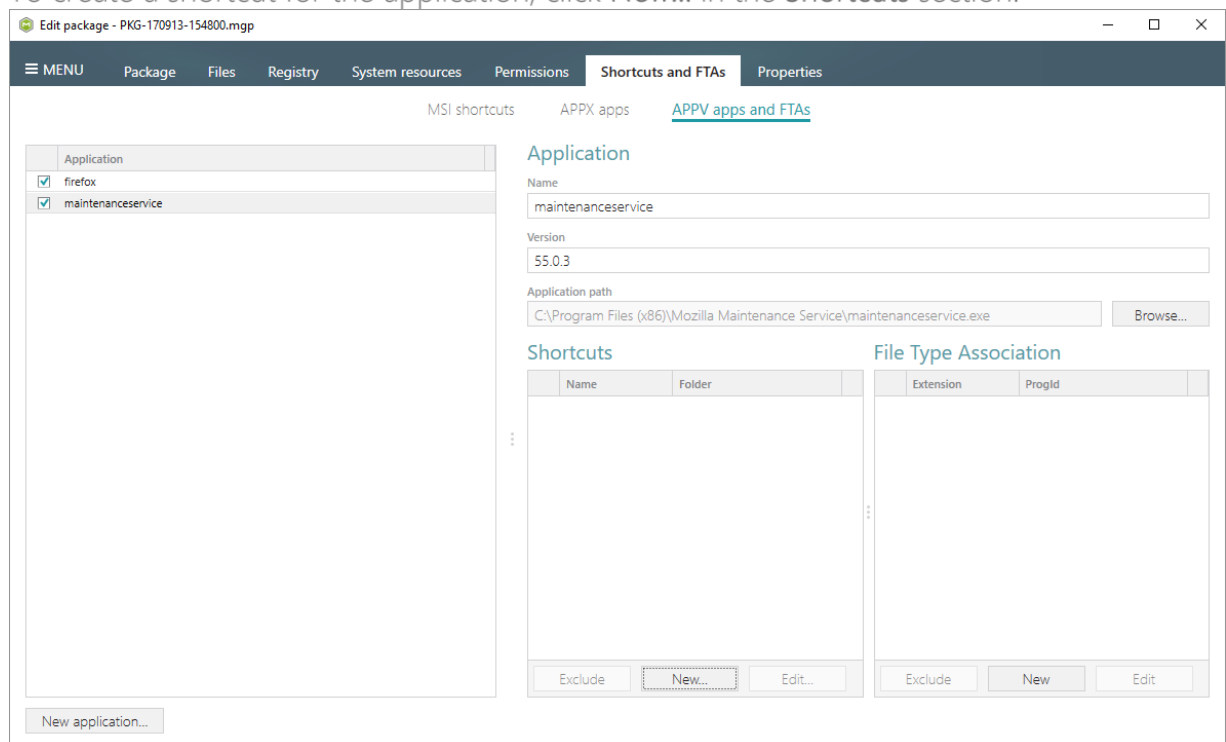
Extension	ProgId
<input checked="" type="checkbox"/> .html	FirefoxHTML-E7CF176E110C211

Exclude New Edit

- Select the executable file (EXE) from the tree and click Select.



- To create a shortcut for the application, click New... in the Shortcuts section.



- Enter a shortcut name, select a destination location ("Folder" field), icon and click Save.

Shortcut

Name
Mozilla Maintenance Service

Folder
C:\ProgramData\Microsoft\Windows\Start Menu\Programs

Arguments

Start in
C:\Program Files (x86)\Mozilla Maintenance Service

Run
Normal

Icon
Change icon

Save Cancel

- To associate some file extension with your application, click New... in the File Type Association section.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI shortcuts APPX apps APPV apps and FTAs

Application

Application
<input checked="" type="checkbox"/> firefox
<input checked="" type="checkbox"/> maintenanceservice

Name
maintenanceservice

Version
55.0.3

Application path
C:\Program Files (x86)\Mozilla Maintenance Service\maintenanceservice.exe Browse...

Shortcuts

Name	Folder
<input checked="" type="checkbox"/> Mozilla Maintenance	C:\ProgramData\Microsoft\Win...

File Type Association

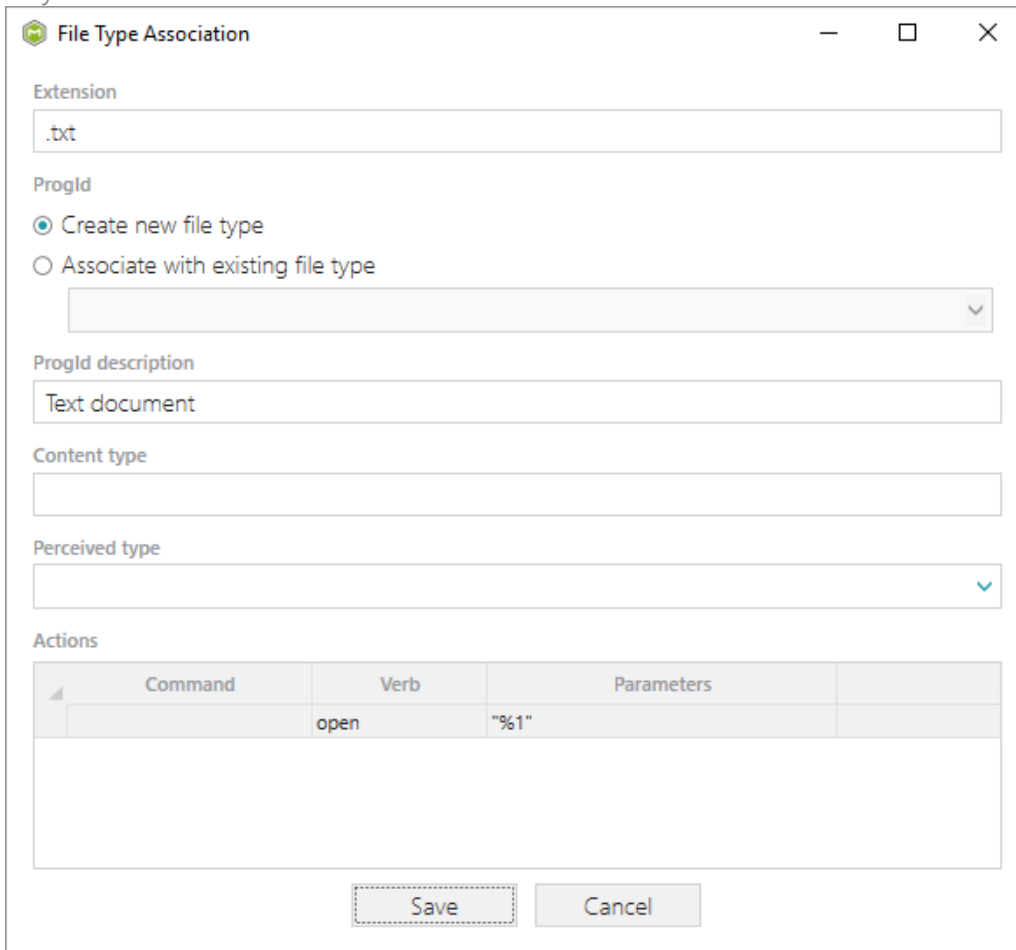
Extension	ProgId
-----------	--------

Exclude New... Edit...

Exclude New Edit

New application...

- Enter a file extension and click **Save**. Optionally you can modify other FTA settings according to your needs.



File Type Association

Extension

ProgId
☒ Create new file type
☐ Associate with existing file type

ProgId description

Content type

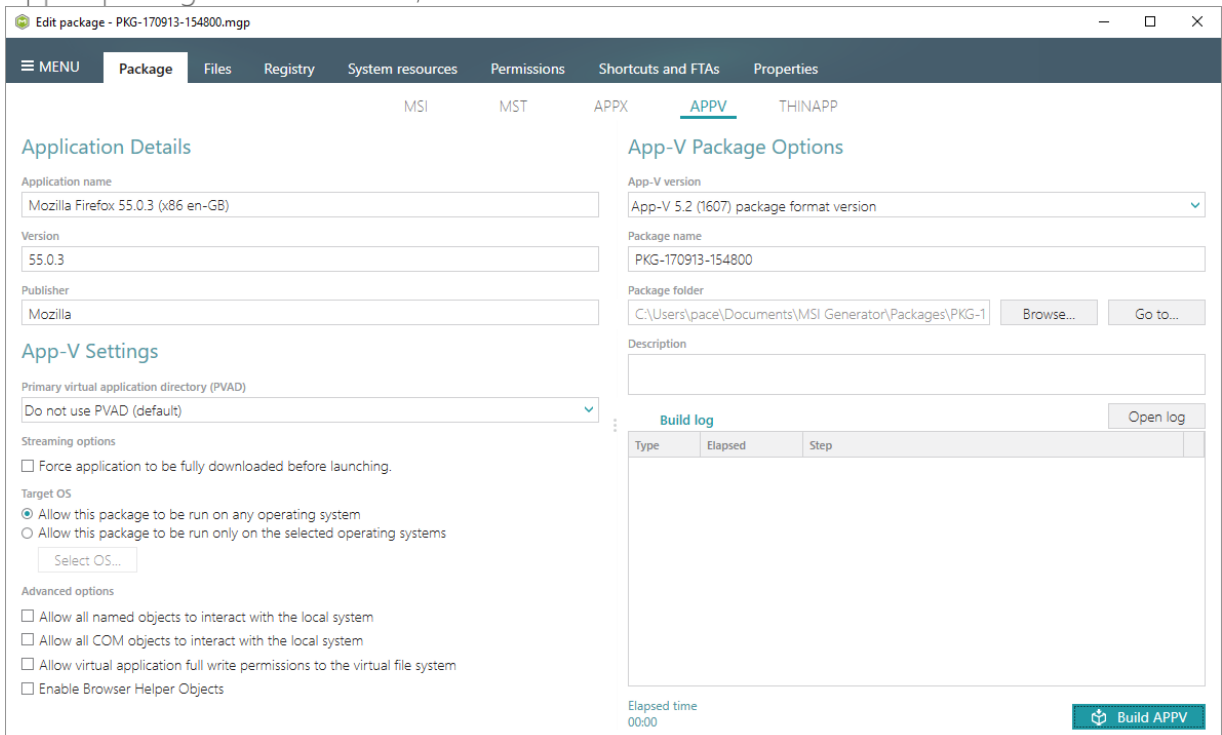
Perceived type

Actions

Command	Verb	Parameters
	open	"%1"

Save Cancel

- Finally, to build APPV package from the project, navigate to the **Package -> APPV** tab, review and update (if necessary) **Application Details**, select the necessary **App-V Settings**, App-V package format version, and then click **Build APPV**.



Edit package - PKG-170913-154800.mgp

MENU **Package** Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name

Version

Publisher

App-V Settings

Primary virtual application directory (PVAD)

Streaming options
☐ Force application to be fully downloaded before launching.

Target OS
☒ Allow this package to be run on any operating system
☐ Allow this package to be run only on the selected operating systems

Advanced options
☐ Allow all named objects to interact with the local system
☐ Allow all COM objects to interact with the local system
☐ Allow virtual application full write permissions to the virtual file system
☐ Enable Browser Helper Objects

App-V Package Options

App-V version

Package name

Package folder

Description

Build log

Type	Elapsed	Step
------	---------	------

Elapsed time
00:00

- Click **Go to...**, located next to the **Project folder** field, to open the package containing folder in Windows Explorer.

Edit package - PKG-170913-154800.mgp

MENU Package Files Registry System resources Permissions Shortcuts and FTAs Properties

MSI MST APPX **APPV** THINAPP

Application Details

Application name: Mozilla Firefox 55.0.3 (x86 en-GB)

Version: 55.0.3

Publisher: Mozilla

App-V Package Options

App-V version: App-V 5.2 (1607) package format version

Package name: PKG-170913-154800

Package folder: C:\Users\pace\Documents\MSI Generator\Packages\PKG-1 [Browse... Go to...]

Description:

App-V Settings

Primary virtual application directory (PVAD): Do not use PVAD (default)

Streaming options:

☐ Force application to be fully downloaded before launching.

Target OS:

☒ Allow this package to be run on any operating system

☐ Allow this package to be run only on the selected operating systems

Select OS...

Advanced options:

☐ Allow all named objects to interact with the local system

☐ Allow all COM objects to interact with the local system

☐ Allow virtual application full write permissions to the virtual file system

☐ Enable Browser Helper Objects

Build log

Open log

Type	Elapsed	Step
	00:00:37	Operation was completed successfully
	00:00:18	Saving package
	00:00:18	Processing software clients
	00:00:18	Processing environment variables
	00:00:18	Processing URL protocols
	00:00:18	Processing application capabilities
	00:00:18	Processing FTAs
	00:00:18	Processing browser plugins
	00:00:18	Processing COM objects
	00:00:18	Processing services
	00:00:18	Processing registry

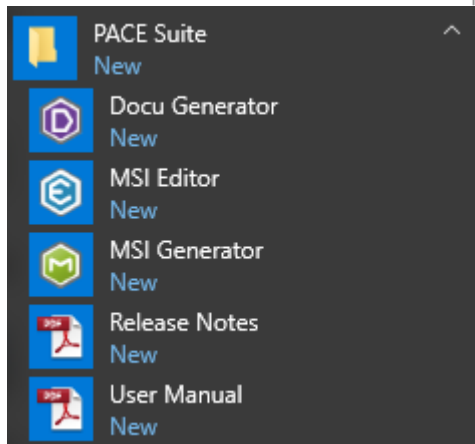
Elapsed time: 00:00:38

Build APPV

3.10 Deploy (Publish) to SCCM

NOTE For publishing MSI packages to Microsoft SCCM 2007 (SP1/SP2/R1/R2) or SCCM 2012 (SP1/SP2/R2/R2 SP1) server, ensure that your system contains Microsoft Management Framework 3.0 and Windows Remote Management (WinRM) service enabled.

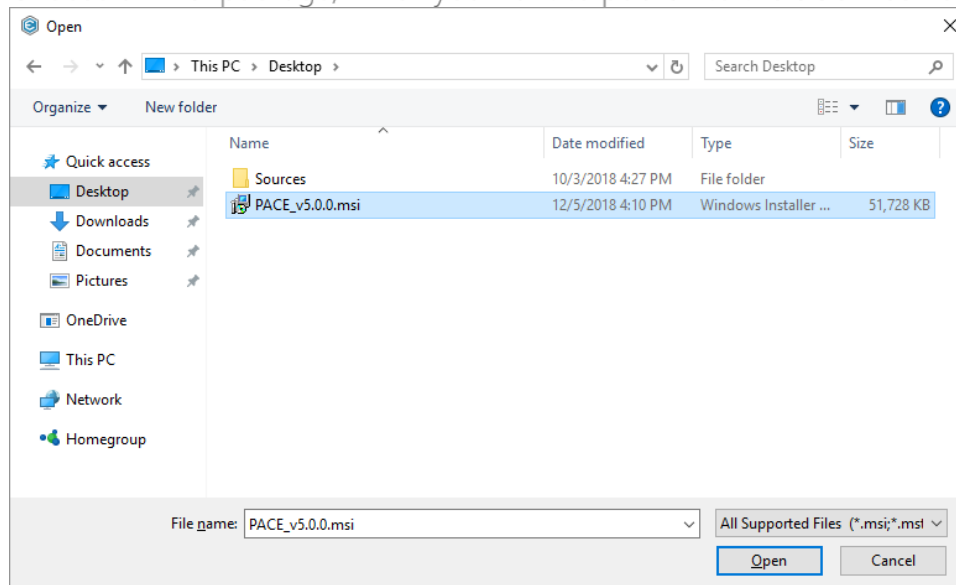
- Launch MSI Editor from the desktop or the start menu shortcut.



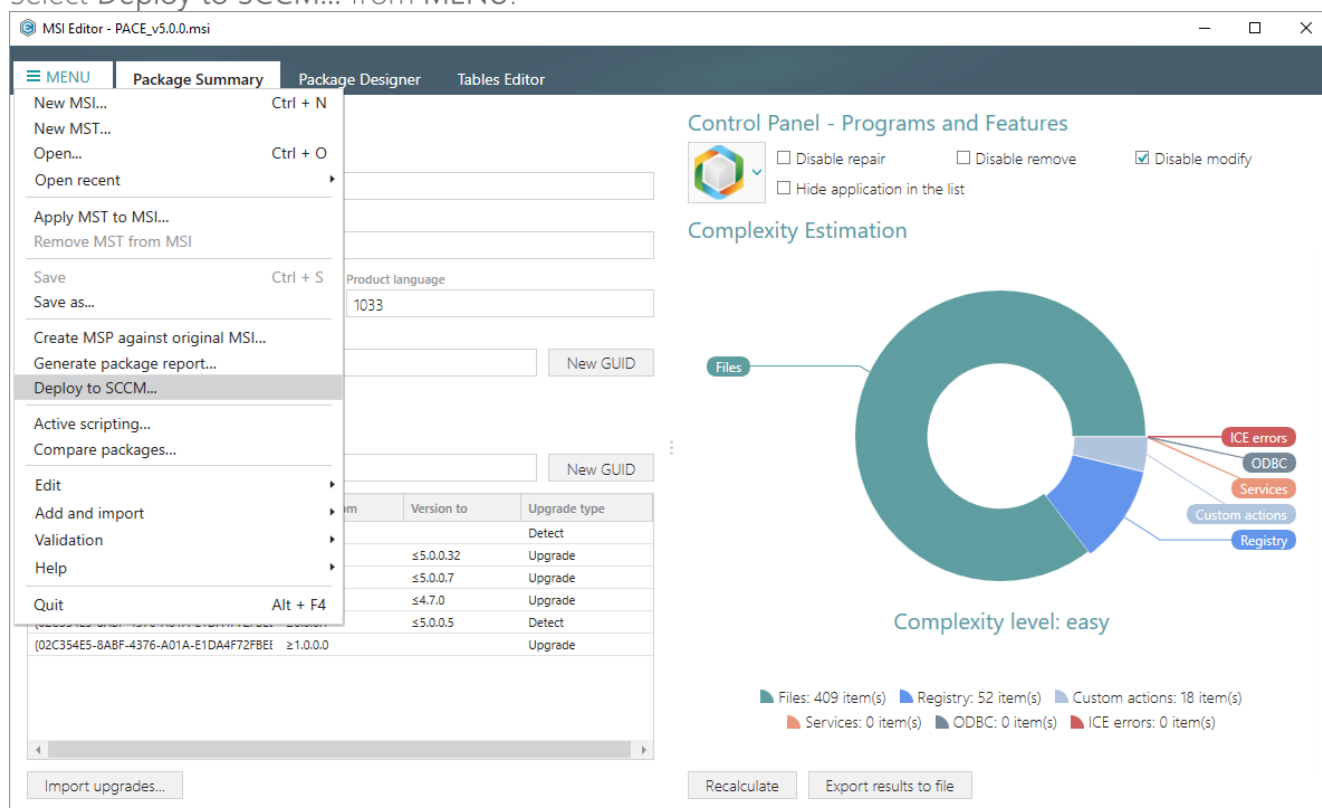
- Select Open... from MENU.



- Choose an MSI package, which you want to publish to the SCCM server and click Open.




- Select Deploy to SCCM... from MENU.



- Specify an IP address or a hostname of your SCCM server, user name and password for connecting to the SCCM. Enter a network share, where the package should be uploaded, and credentials for connecting to the network share. Click **Next** to choose a publishing model. Click **Test connections...** to check connections to the SCCM server and network

share.

 Publish package to SCCM

SCCM serverPackage definitionDisplay informationPublish optionsSelect filesPublishing

SCCM server and network share settings

Specify an IP address or hostname of SCCM server

SCCM server

User name

Password

☐ Use Windows session credentials

Specify a network share where packages will be uploaded

Network share for packages

User name

Password

☐ Use Windows session credentials

[Test connections...](#)

< Back

Next >

Cancel

- Select a suitable publishing model and click **Next**.

The screenshot shows a wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the current step is "Package definition", which is highlighted with a blue circle and a checkmark. The other steps in the sequence are "SCCM server", "Display information", "Publish options", "Select files", and "Publishing", each represented by a grey circle. Below the progress bar, the section "Package definition configuration" contains two radio button options: "Publish as a package" (selected) and "Publish as an application (recommended for SCCM 2012)". The "Publish as a package" option has a description: "The classic way SCCM has used in the past for deploying software to devices and is fully supported in SCCM 2007-2012". The "Publish as an application" option has a description: "This way is supported only by SCCM 2012. Applications are similar to packages, but contain more information to support smart deployment". Below these options is a warning message with a yellow triangle icon: "Warning! Version of the specified SCCM server could not be detected." At the bottom right of the window are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

Publish package to SCCM

SCCM server **Package definition** Display information Publish options Select files Publishing

Package definition configuration

☒ Publish as a package
The classic way SCCM has used in the past for deploying software to devices and is fully supported in SCCM 2007-2012

☐ Publish as an application (recommended for SCCM 2012)
This way is supported only by SCCM 2012. Applications are similar to packages, but contain more information to support smart deployment

Warning! Version of the specified SCCM server could not be detected.

< Back **Next >** Cancel

- Review and update package display information such as name, manufacturer, version and others. Click Next to choose publish options.

The screenshot shows a wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the current step is "Display information", which is highlighted with a blue circle and text. The other steps in the sequence are "SCCM server", "Package definition", "Publishing options", "Select files", and "Publishing", each marked with a grey circle. Below the progress bar, the "Display information" section contains several input fields: "Name" (filled with "PACE Suite"), "Manufacturer" (filled with "Infopulse"), "Version" (filled with "5.0.0.8"), "Language" (filled with "English"), and "Description" (filled with "Infopulse - PACE Suite - 5.0.0.8"). At the bottom right of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

Publish package to SCCM

SCCM server Package definition **Display information** Publishing options Select files Publishing

Display information

Name
PACE Suite

Manufacturer
Infopulse

Version
5.0.0.8

Language
English

Description
Infopulse - PACE Suite - 5.0.0.8

< Back **Next >** Cancel

- Select the necessary publish options and click Next.

The screenshot shows a wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the sequence of steps: "SCCM server", "Package definition", "Display information", "Publish options" (the current step, highlighted in blue), "Select files", and "Publishing". Below the progress bar, the "Publish options" section contains four configuration items, each with a dropdown menu:

- Installation behavior:** Set to "Install for system".
- Logon requirement:** Set to "Whether or not a user is logged on".
- Device restart:** Set to "Determine behavior based on return codes".
- Maximum allowed run time (minutes):** Set to "120".

At the bottom right of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

- Select which of files and folders, located in the package folder, should be copied to the network share and click **Next** to publish your package to the SCCM server.

The screenshot shows a Windows-style wizard window titled "Publish package to SCCM". At the top, a progress bar indicates the current step is "Select files", which is highlighted in blue. The other steps are "SCCM server", "Package definition", "Display information", "Publishing options", and "Publishing", each with a checkmark icon. Below the progress bar, the section "Select files" is displayed. It contains the instruction "Select files which also should be copied to network share within the package". Below this instruction is a list box with three items: "Select all/none", "Sources", and "desktop.ini". Each item has a checkbox to its left. At the bottom of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

Publish package to SCCM

SCCM server Package definition Display information Publishing options **Select files** Publishing

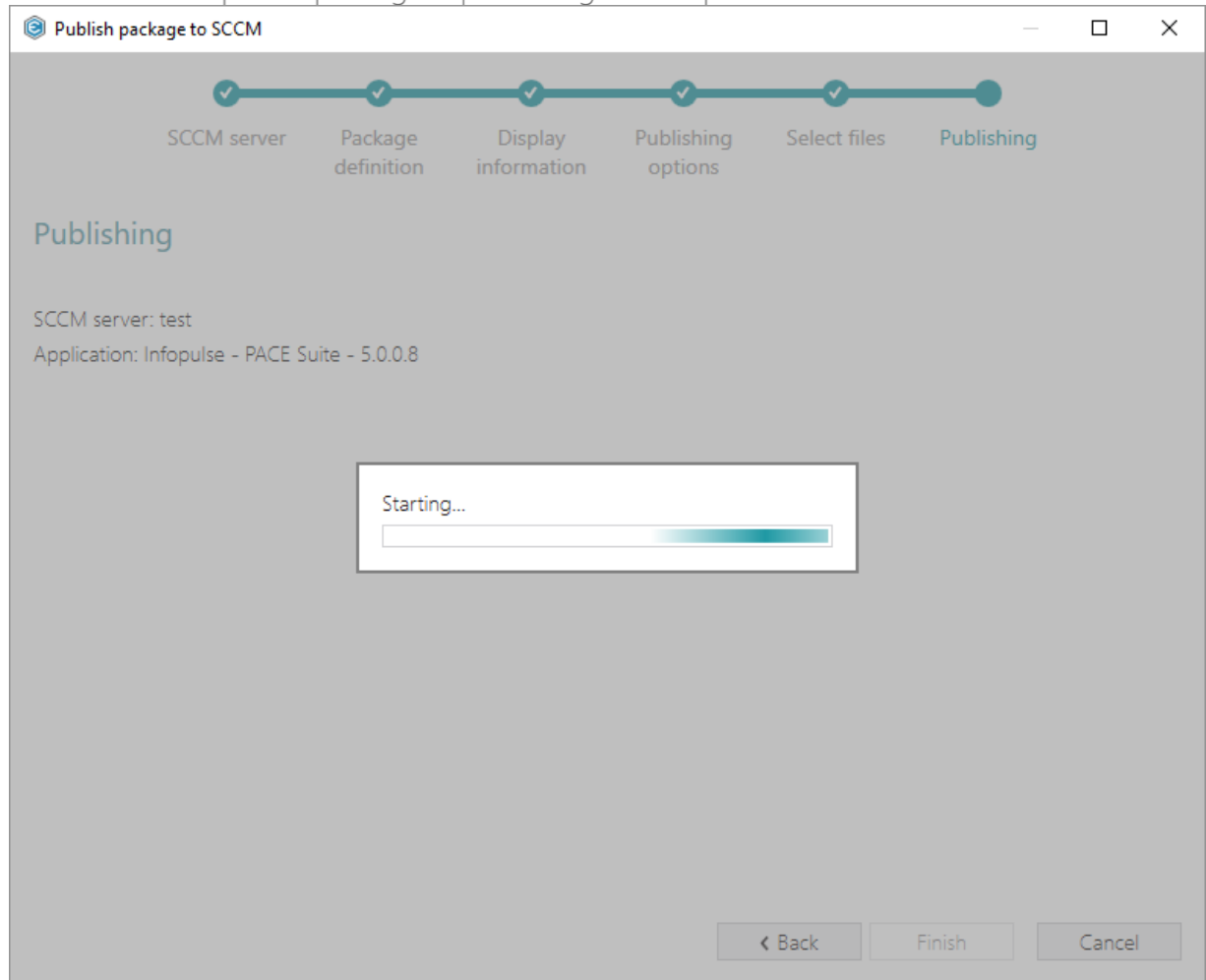
Select files

Select files which also should be copied to network share within the package

- ☐ Select all/none
- ☐ Sources
- ☐ desktop.ini

< Back **Next >** Cancel

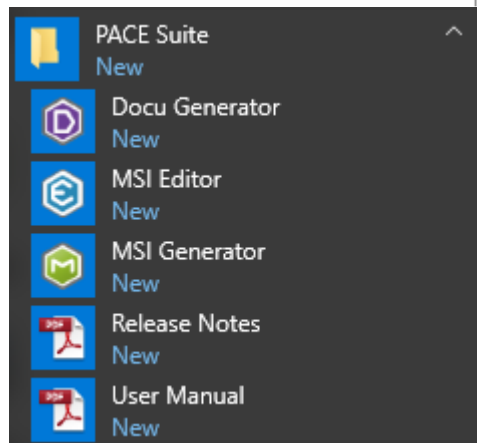
- Wait while the opened package is publishing to the specified SCCM server.



3.11 Generate Package Report

NOTE PACE Suite supports Word Document (.DOCX) and Excel Workbook (.XLSX) format types and allows generating a report with no Microsoft Office installed on the system.

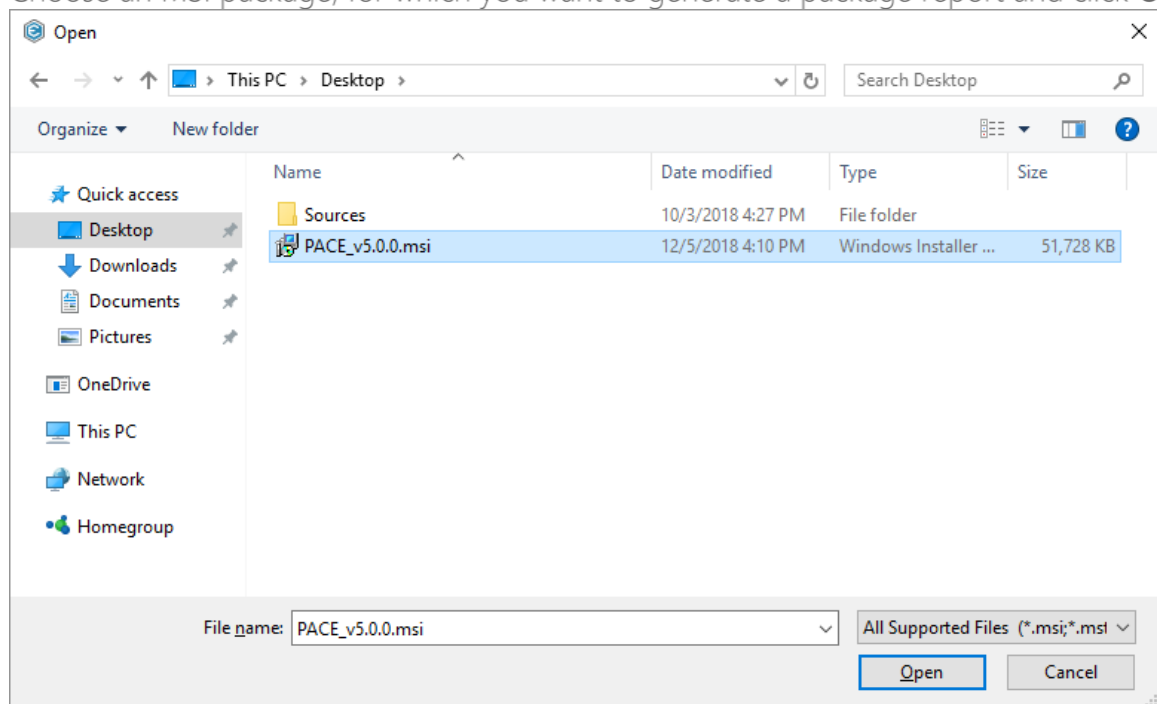
- Launch MSI Editor from the desktop or the start menu shortcut.



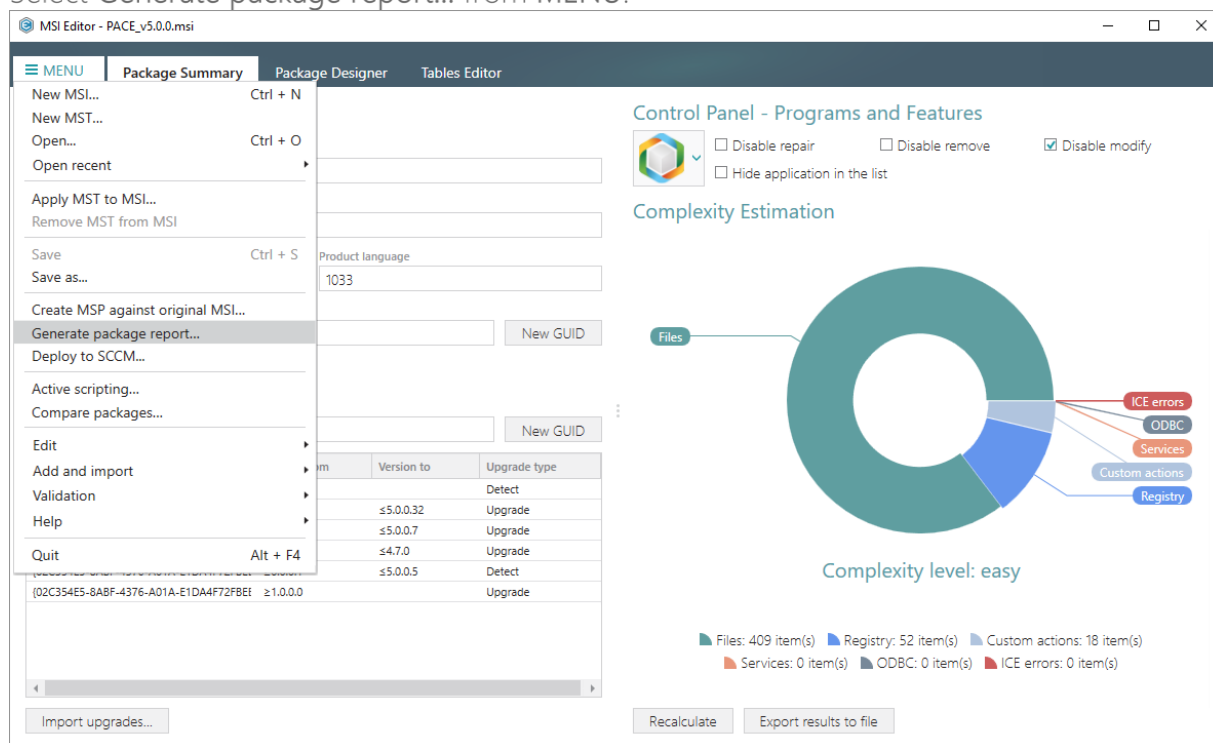
- Select Open... from MENU.



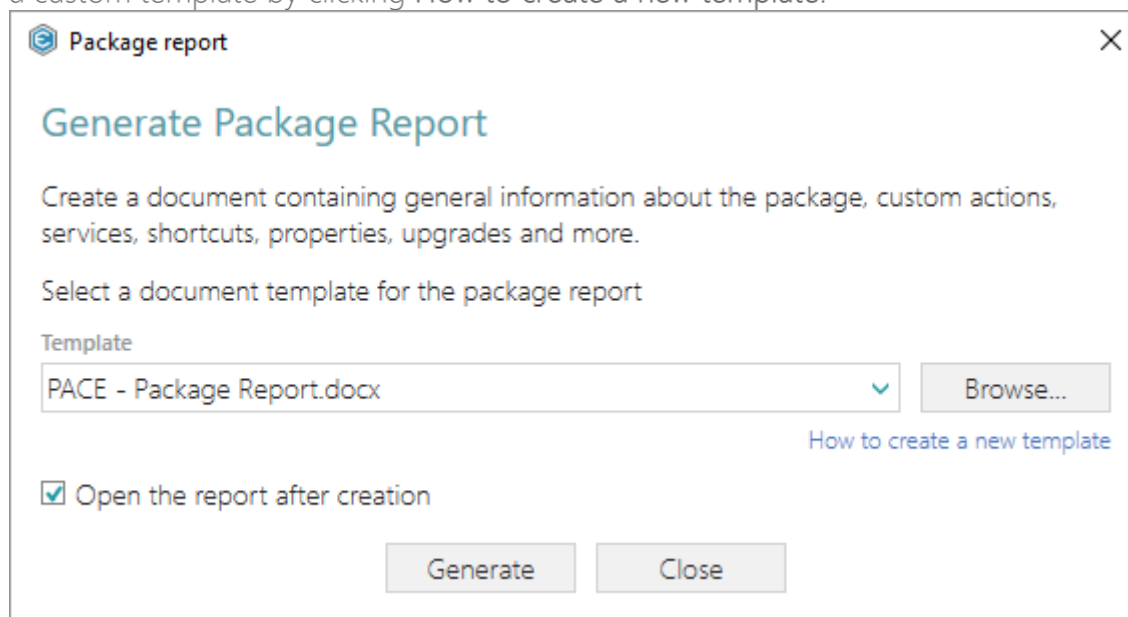
- Choose an MSI package, for which you want to generate a package report and click Open.



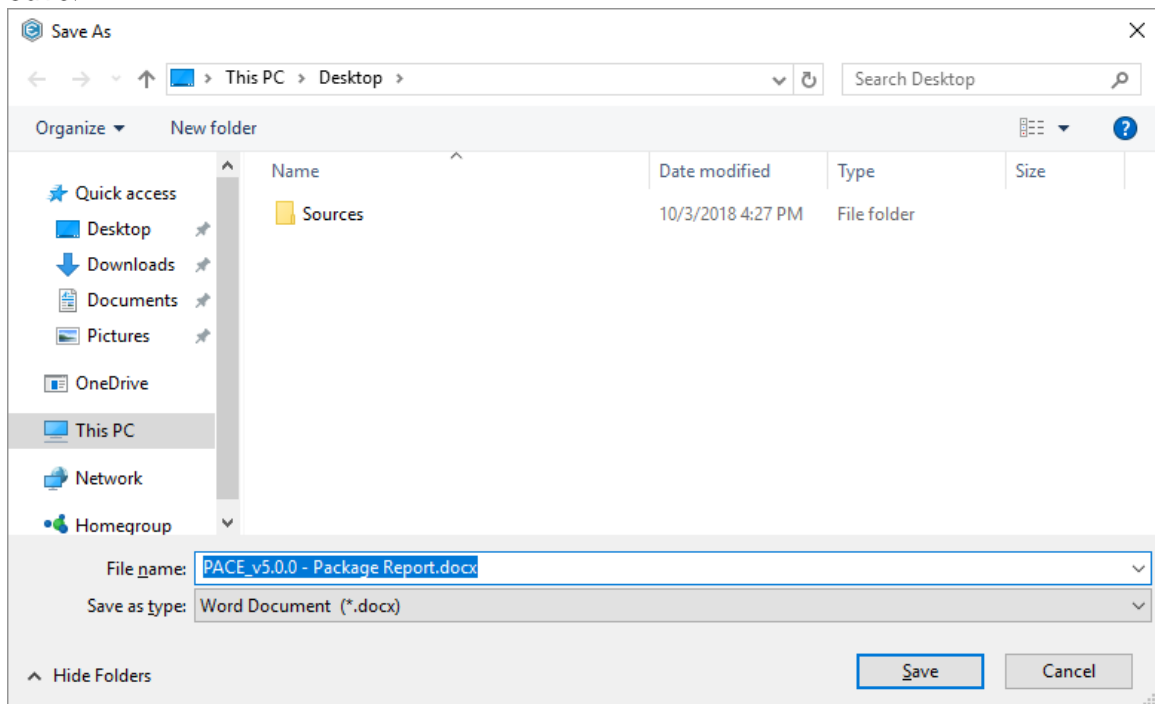
- Select **Generate package report...** from **MENU**.



- Select a template for your report and click **Generate**. Find more information about creating a custom template by clicking **How to create a new template**.

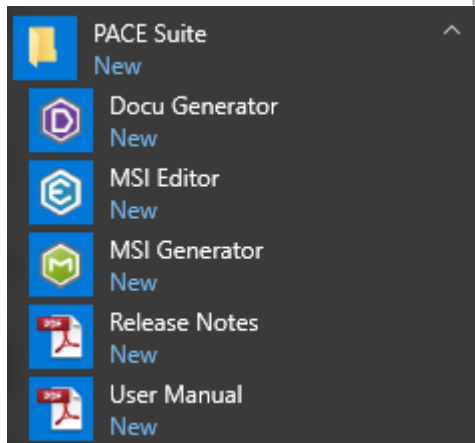


- Specify a file name and a destination location of the generated package report and click Save.



3.12 Validate Package

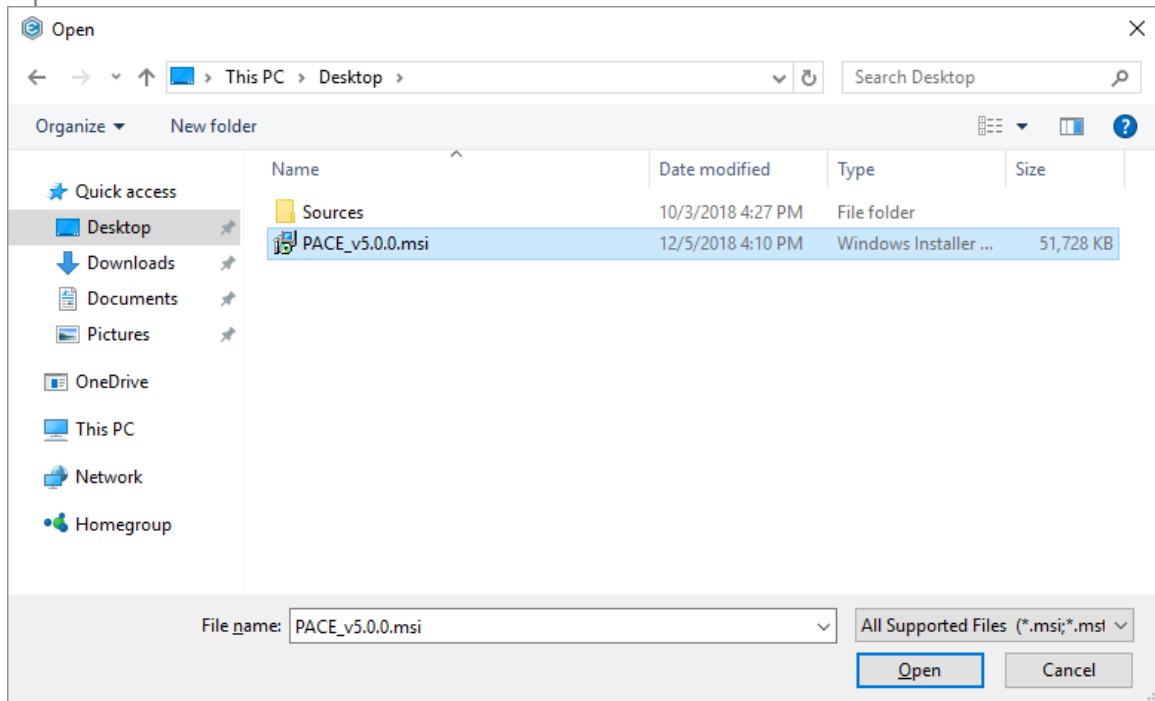
- Launch MSI Editor from the desktop or the start menu shortcut.



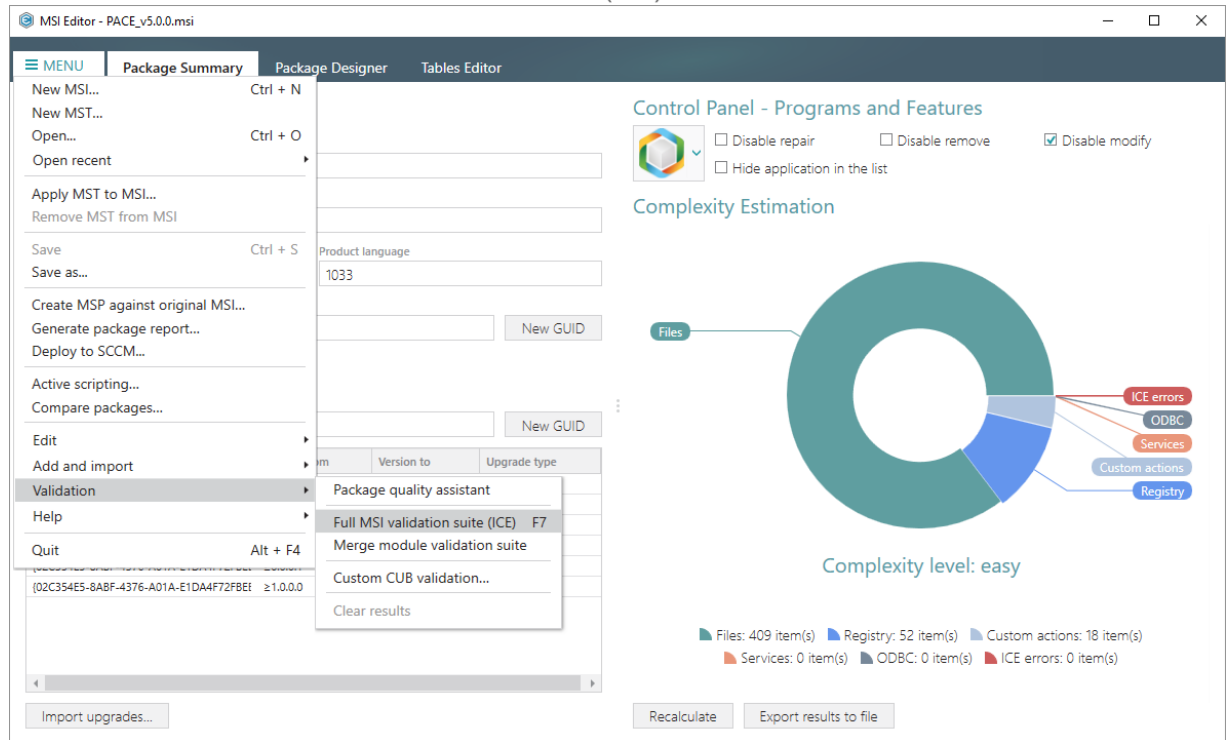
- Select Open... from MENU.



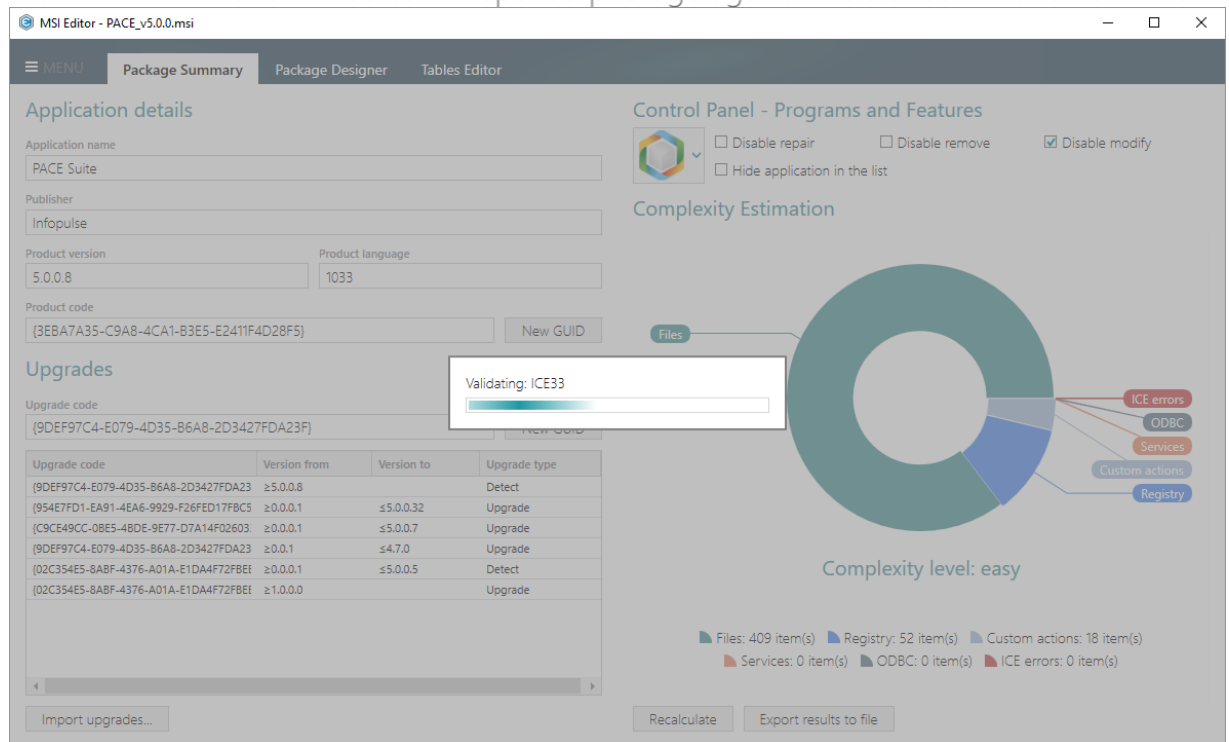
- Choose an MSI package, which you want to validate against the standard CUB files and click Open.



- Select Validation -> Full MSI validation suite (ICE) from MENU.



- Wait while MSI Editor validates the opened package against the standard Darice CUB file.



- The validation results will be displayed under the ICE validation section of the Tables Editor.

MSI Editor - PACE_v5.0.0.msi

MENU Package Summary Package Designer **Tables Editor**

Tables

Docu_Generator

Shortcut	Directory_	Name	Component_	Target	Arguments	Description	Hotkey	Icon_
Docu_Generator	DOCUSHORTCUTLOCATION	DOC-VG2\Docu Generator	Docu_Generator.exe	DocuGenerator	<null>	Docu Generator	0	Docu_Gene
Docu_Generator2	DesktopFolder	DOC-VG2\Docu Generator	Docu_Generator.exe	DocuGenerator	<null>	Docu Generator	0	Docu_Gene
MsEditor.exe_shortcut	EDITORSHORTCUTLOCATION	MSIEDIT\MSI Editor	MsEditor.exe	MsEditor	<null>	MSI Editorexe	0	MsEditorico
MsEditor.exe_shortcut_desktop	DesktopFolder	MSIEDIT\MSI Editor	MsEditor.exe	MsEditor	<null>	MSI Editorexe	0	MsEditorico
release_notes	InfopulseProgramMenuFolder	5fmo1s\Release Notes	release_notes.pdf	PaceManual	<null>	Release Notes	0	pdfico
ShortcutMG	SHORTCUTLOCATION	4bwjgnvfmsi\MSI Generator	MSIGenerator.exe	MSIGenerator	<null>	<null>	<null>	Main.ico
ShortcutMG2	DesktopFolder	vwdmu8qn.msi\MSI Generator	MSIGenerator.exe	MSIGenerator	<null>	<null>	<null>	Main.ico
user_manual	InfopulseProgramMenuFolder	USERMAN\User Manual	user_manual	[MANUALURL]	<null>	User Manual	0	pdfico

☒ Hide empty tables ☒ Enable linked items tracking for delete/update operations

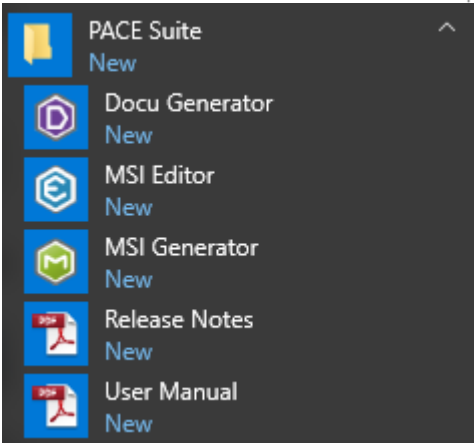
Selected rows: 1 / Total rows: 8

Row references ICE validation Undo/Redo history

ID	Type	Description	Table	Column	Key	F
ICE69	Warning	Mismatched component reference. Entry 'reg9CAF18686DD8B118206BAD2DE53FC7D' of the Registry table belongs...	Registry	Value	reg9CAF18686DD8B118206BAD...	C
ICE90	Warning	The shortcut 'Docu_Generator' has a directory that is a public property (ALL CAPS) and is under user profile director...	Shortcut	Directory_	Docu_Generator	C
ICE90	Warning	The shortcut 'MsEditorexe_shortcut' has a directory that is a public property (ALL CAPS) and is under user profile dir...	Shortcut	Directory_	MsEditorexe_shortcut	C
ICE90	Warning	The shortcut 'ShortcutMG' has a directory that is a public property (ALL CAPS) and is under user profile directory. Th...	Shortcut	Directory_	ShortcutMG	C

3.13 Get Package Complexity

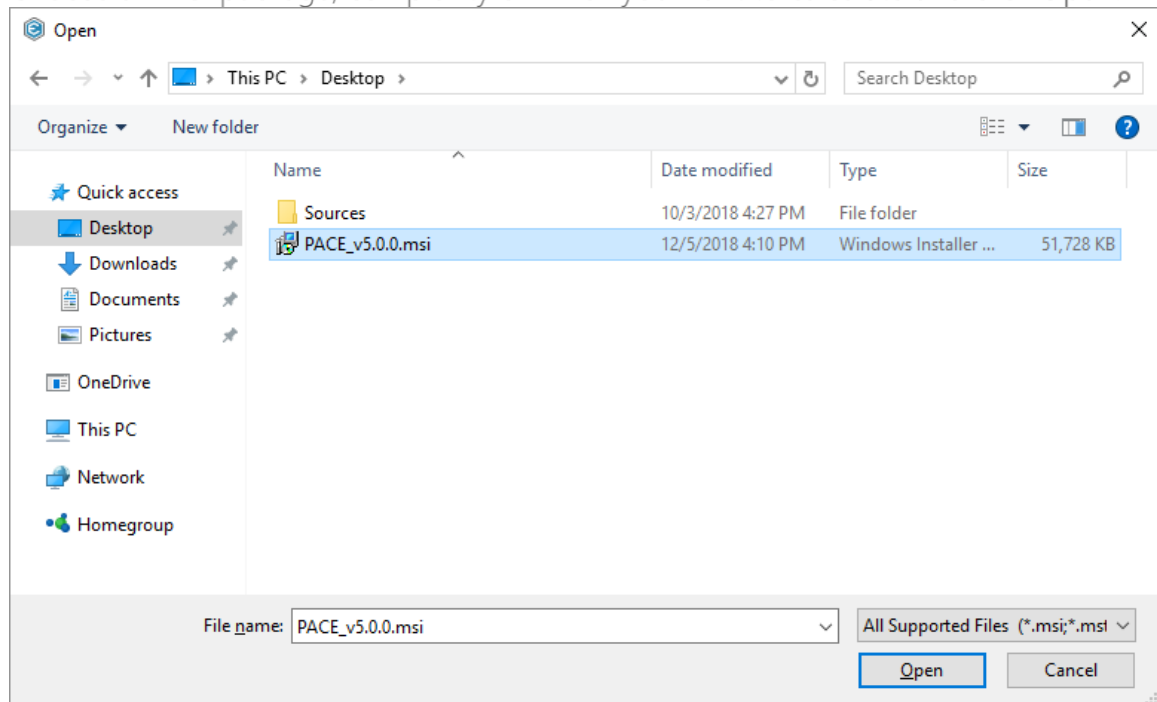
- Launch MSI Editor from the desktop or the start menu shortcut.



- Select Open... from MENU.



- Choose an MSI package, complexity of which you want to calculate and click Open.



Getting Started

PACE Suite 5.0

- Click **Recalculate**, located in the bottom, to re-calculate the complexity level including ICE validation errors.

Application details

Application name: PACE Suite

Publisher: Infopulse

Product version: 5.0.0.8

Product language: 1033

Product code: {3EBA7A35-C9A8-4CA1-B3E5-E241F4D28F5}

Upgrades

Upgrade code	Version from	Version to	Upgrade type
{9DEF97C4-E079-4D35-B6A8-2D3427FDA23}	≥5.0.0.8		Detect
{954E7FD1-EA91-4EA6-9929-F26FED17F8C5}	≥0.0.0.1	≤5.0.0.32	Upgrade
{C9CE49CC-0BE5-4BDE-9E77-D7A14F02603}	≥0.0.0.1	≤5.0.0.7	Upgrade
{9DEF97C4-E079-4D35-B6A8-2D3427FDA23}	≥0.0.1	≤4.7.0	Upgrade
{02C354E5-8ABF-4376-A01A-E1DA4F72FBE1}	≥0.0.0.1	≤5.0.0.5	Detect
{02C354E5-8ABF-4376-A01A-E1DA4F72FBE1}	≥1.0.0.0		Upgrade

Control Panel - Programs and Features

☐ Disable repair ☐ Disable remove ☒ Disable modify

☐ Hide application in the list

Complexity Estimation

Files: 409 item(s) Registry: 52 item(s) Custom actions: 18 item(s)

Services: 0 item(s) ODBC: 0 item(s) ICE errors: 0 item(s)

Complexity level: easy

Recalculate Export results to file

- Wait while MSI Editor calculates number of ICE errors in the opened MSI package.

Application details

Application name: PACE Suite

Publisher: Infopulse

Product version: 5.0.0.8

Product language: 1033

Product code: {3EBA7A35-C9A8-4CA1-B3E5-E241F4D28F5}

Upgrades

Upgrade code	Version from	Version to	Upgrade type
{9DEF97C4-E079-4D35-B6A8-2D3427FDA23}	≥5.0.0.8		Detect
{954E7FD1-EA91-4EA6-9929-F26FED17F8C5}	≥0.0.0.1	≤5.0.0.32	Upgrade
{C9CE49CC-0BE5-4BDE-9E77-D7A14F02603}	≥0.0.0.1	≤5.0.0.7	Upgrade
{9DEF97C4-E079-4D35-B6A8-2D3427FDA23}	≥0.0.1	≤4.7.0	Upgrade
{02C354E5-8ABF-4376-A01A-E1DA4F72FBE1}	≥0.0.0.1	≤5.0.0.5	Detect
{02C354E5-8ABF-4376-A01A-E1DA4F72FBE1}	≥1.0.0.0		Upgrade

Control Panel - Programs and Features

☐ Disable repair ☐ Disable remove ☒ Disable modify

☐ Hide application in the list

Complexity Estimation

Files: 409 item(s) Registry: 52 item(s) Custom actions: 18 item(s)

Services: 0 item(s) ODBC: 0 item(s) ICE errors: 0 item(s)

Complexity level: easy

Validating: ICE03

Recalculate Export results to file

- In order to export complexity estimation results to the XLSX file, click Export results to file.

Application details

Application name: PACE Suite

Publisher: Infopulse

Product version: 5.0.0.8 Product language: 1033

Product code: (3EBA7A35-C9A8-4CA1-B3E5-E2411F4D28F5) New GUID

Upgrades

Upgrade code: (9DEF97C4-E079-4D35-B6A8-2D3427FDA23F) New GUID

Upgrade code	Version from	Version to	Upgrade type
(9DEF97C4-E079-4D35-B6A8-2D3427FDA23)	≥5.0.0.8		Detect
(954E7FD1-EA91-4EA6-9929-F26FED17F8C5)	≥0.0.0.1	≤5.0.0.32	Upgrade
(C9CE49CC-0BE5-4BDE-9E77-D7A14F02603)	≥0.0.0.1	≤5.0.0.7	Upgrade
(9DEF97C4-E079-4D35-B6A8-2D3427FDA23)	≥0.0.0.1	≤4.7.0	Upgrade
(02C354E5-8ABF-4376-A01A-E1DA4F72FBE1)	≥0.0.0.1	≤5.0.0.5	Detect
(02C354E5-8ABF-4376-A01A-E1DA4F72FBE1)	≥1.0.0.0		Upgrade

Control Panel - Programs and Features

Complexity Estimation

Files

Complexity level: medium

Files: 409 item(s) Registry: 52 item(s) Custom actions: 18 item(s)
Services: 0 item(s) ODBC: 0 item(s) ICE errors: 70 item(s)

Recalculate Export results to file

- Specify a name and a destination location of the exported complexity estimation results and click Save.

Save As

Location: This PC > Desktop

File name: PACE_v5.0.0 - Complexity Estimation Report.xlsx

Save as type: Excel Document (*.xlsx)

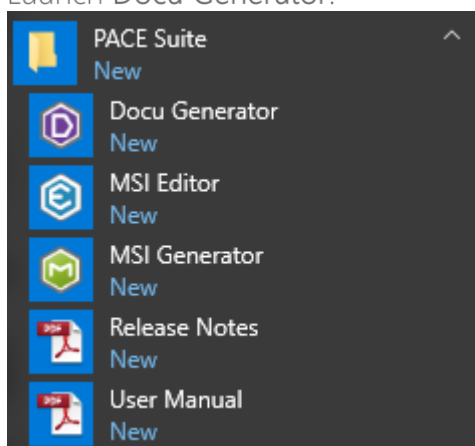
Save Cancel

3.14 Create Discovery Documentation

Record all your on-screen actions into a nice looking document with screenshots and annotations. Such document could contain installation and configuration instructions and the like.

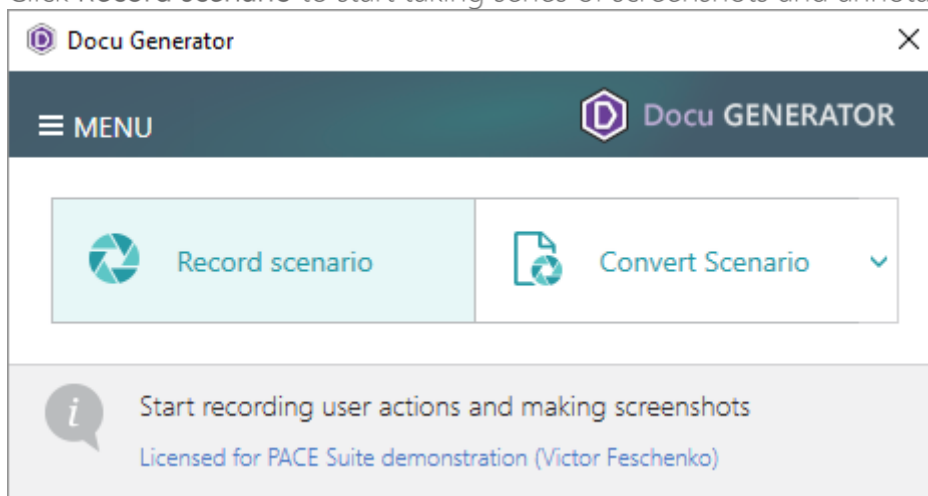
NOTE In order to take screenshots of application, which is launched with elevated permissions, launch Docu Generator with elevated permissions as well.

- Launch Docu Generator.



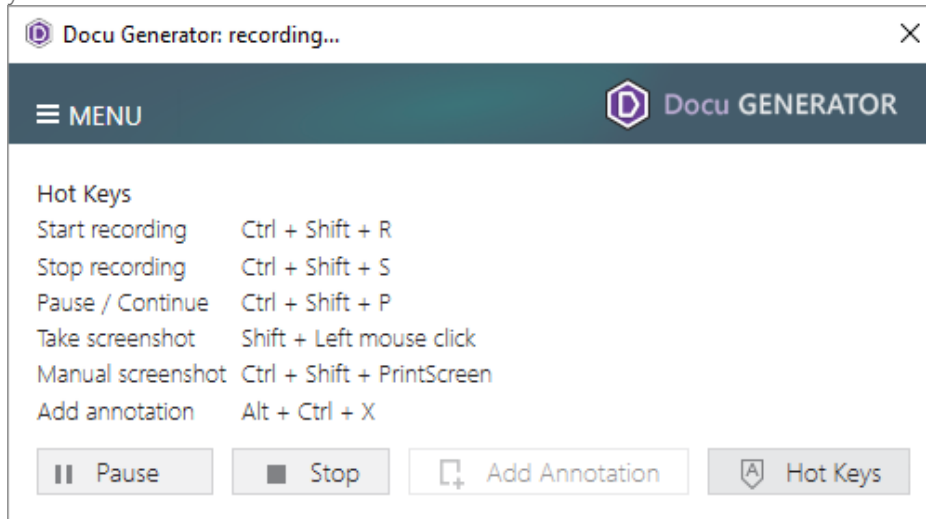
In order to launch Docu Generator with elevated permissions, press **Shift** and select **Run as administrator** from the context menu of the Docu Generator's shortcut.

- Click **Record scenario** to start taking series of screenshots and annotations.

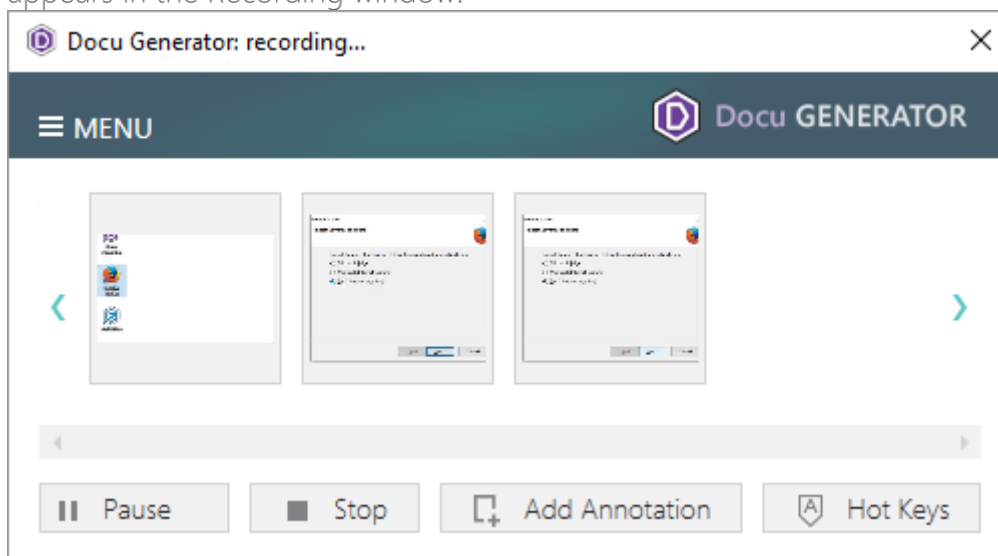


- Hover your mouse pointer on the **Hot Keys** button to check which of hot keys are used to take screenshots. Press the **Shift** key + **Left mouse click** to take a screenshot of an active window, dialog or screen area. Press **Ctrl + Shift + PrintScreen**, then click and drag the mouse pointer to select a rectangular area you want to grab. A screenshot is done when

you release the mouse button.

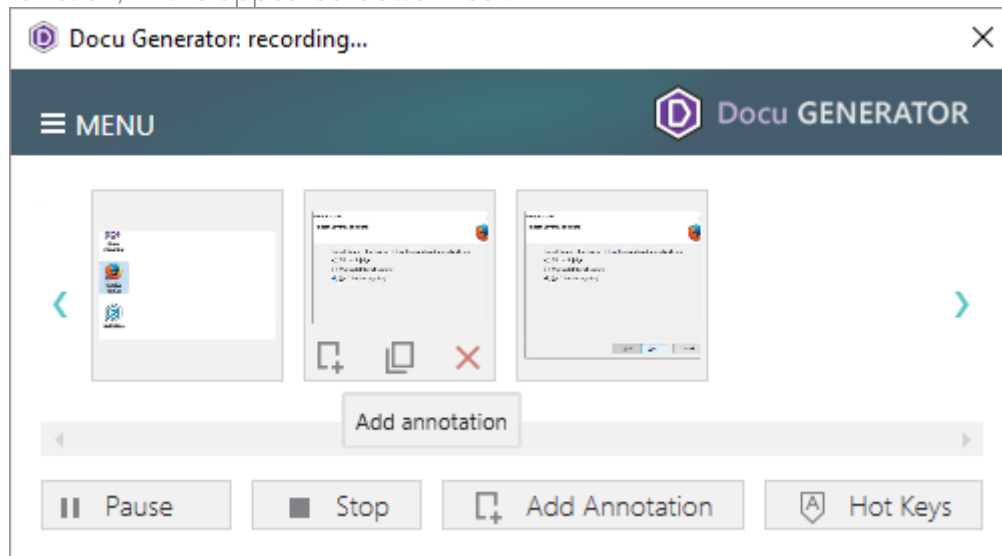


- Now, do the actions you want to record into the document. Launch executables, go through dialogs, select options and enter values just telling Docu Generator when to take another screenshot, as described above. A preview of each new screenshot immediately appears in the Recording window.

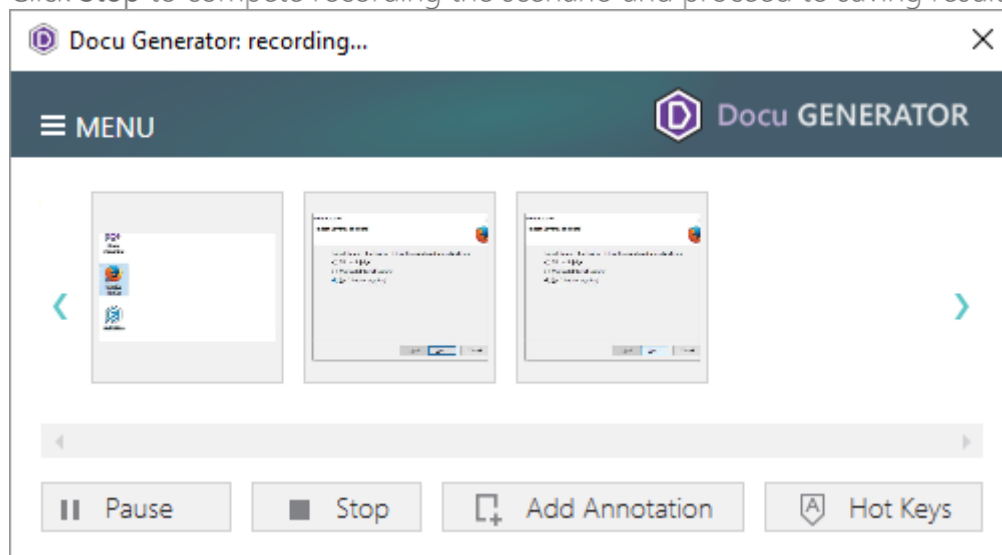


- In order to Add annotation, Copy to clipboard or Remove a screenshot, hover mouse pointer on a preview of the screenshot in the Recording window and select the respective

function, in the appeared bottom bar.



- Click Stop to complete recording the scenario and proceed to saving results.



- Select an output format of the document, saving options and click Save to create document. A Template is an optional field, described below.

Docu Generator: Save Results

Save as

☒ Word Document
☐ MHT/HTML File
☐ Docu Generator Scenario

Template
[Dropdown Menu] **Go to...**

Options

☒ Save user actions ?
☒ Show mouse position ?
☒ Show started application info ?
☒ Show content of edited fields ?

Save **Cancel**

Find options description below in table.

Option	Description
Save user actions	This option adds the information about names of controls (which were clicked on) and names of the captured windows and dialog boxes to the document.
Show mouse position	This option adds information about mouse pointer position and highlights it with a red circle on screenshots to the document.
Show started application info	This option adds information about paths and command line arguments of the launched application to the document.
Show contents of edited fields	This option adds contents of input fields of the captured windows and dialog boxes to the document.
Template	<p>Docu Generator supports Microsoft Word (DOT/DOTX) and HTML/MHT templates to be used for document creation. To use a template, specify its file path in the "Save Results" window.</p> <p>In order to mark a position where screenshots and comments are to be placed to, add the following textual placeholder into a template: [SCR]</p> <p>You can specify placeholder [SCR] in the existing table in a template. In this case, the placeholder points to a cell where screenshots should start, while a column to the right of it will be populated with comments.</p> <p>If the placeholder is located outside a table, then a new table for screenshots and comments will be created. A Docu Generator-default table style will be used.</p> <p>If a placeholder is not found, screenshots and comments will be appended to the end of the template. You will be warned about this in the Save Results window</p>

NOTE To let you return to your scenario later, Docu Generator always creates DSCN file along with the output file in an output folder.

NOTE If Microsoft Word is unavailable on the machine, the option of saving DOC file is inactive, but you still can save a DSCN file and convert it on a machine with MS Office installed later.

4 References

4.1 Contact

Product website | <http://pacesuite.com>

Support email | pace-support@infopulse.com

Support Portal | <http://pacesuite.com/support>

Educational videos | [YouTube channel](#)

4.2 Social Networks



| itninja.com/pace



| [@pacesuite](https://twitter.com/pacesuite)



| fb.com/pacesuite



| <https://www.linkedin.com/groups/PACE-Suite-APS-community-4765703>