RAYPACK® STUDIO

Enterprise Software Packaging

Release Notes RayPack Studio 6.0

RayPack Studio is part of RaySuite.

raynet

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Release Notes RayPack Studio

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Introduction

RayPack Studio 6.0 is the next iteration of Raynet's framework for the creation and management of software packages. RayPack Studio 6.0 includes powerful tools with new features that automate and accelerate holistic packaging projects.

RayPack Studio covers all the steps: From compatibility checks of software applications and packages to the evaluation to the packaging and the subsequent quality control as well as to the clearly structured workflow management. The perfectly matched software products allow to efficiently pass through the individual phases of a packaging process. At the same time, they enormously accelerate the workflow: the integration of all products into RayFlow enables an extremely comfortable exchange of data and information.

Enterprise Application Lifecycle Management

This release contains new features, enhancements and bug fixes for all of these applications: RayPack (PackDesigner, PackRecorder, PackTailor, PackWrapper, PackBot), PackBench, RayQC, RayQC Advanced, RayEval and PackManager for App-V.

Visit www.raynet.de for further information regarding the product and current community incentives.

Raynet is looking forward to receiving your feedback from your RayPack Studio experience. Please contact your Raynet service partner or write an e-mail to sales@raynet.de to add your ideas or requirements to the RayPack Studio development road map!

What's New?

The following chapters contain an overview of the improvements, resolved issues, and the new features that are part of the new release of RayPack Studio 6.0.

RayPack

MSIX

Introduction

Microsoft® Operating Systems have a deep history with Windows application installers. Availability of different techniques spanning from legacy installers through Windows Installer, Click-Once, and App-V created several challenges for developers packaging their apps for legacy and modern environments. Due to the fast growth of mobile and other non-PC like tablets, phones, game consoles, and HoloLens it has become critically important to unify the installation frameworks and come with a solution that is cross-platform and supports wide range of apps and technologies.

The answer to these challenges has been announced. The new format – named MSIX – is internally based on the APPX technology stack which provides a solid containerization foundation, yet expanding on previously unavailable enterprise oriented features. This is also symbolized by its name where APPX and MSI are combined to MSIX. The technology is natively implemented by Windows 10 (starting from builds 1809 October Update) and is combining the best of MSI, App-V, and Click-Once. Specific goals of the MSIX are:

- Multiplatform format (not limited to Windows OS).
- Security, containerization, and isolation of running apps.
- Fast install and clean uninstall routines made easy, preventing any kind of Windows Rot.
- The ability to publish apps in the Microsoft Store / Microsoft Store for Business and Education.
- Built-in licensing and monetization features and tons of other APIs including the integration with Cortana, Sets, Timeline, etc.
- Expanded enterprise features, including easy customization of existing vendor packages (Modification Packages), extended compatibility features, and fixes (Package Support Framework).

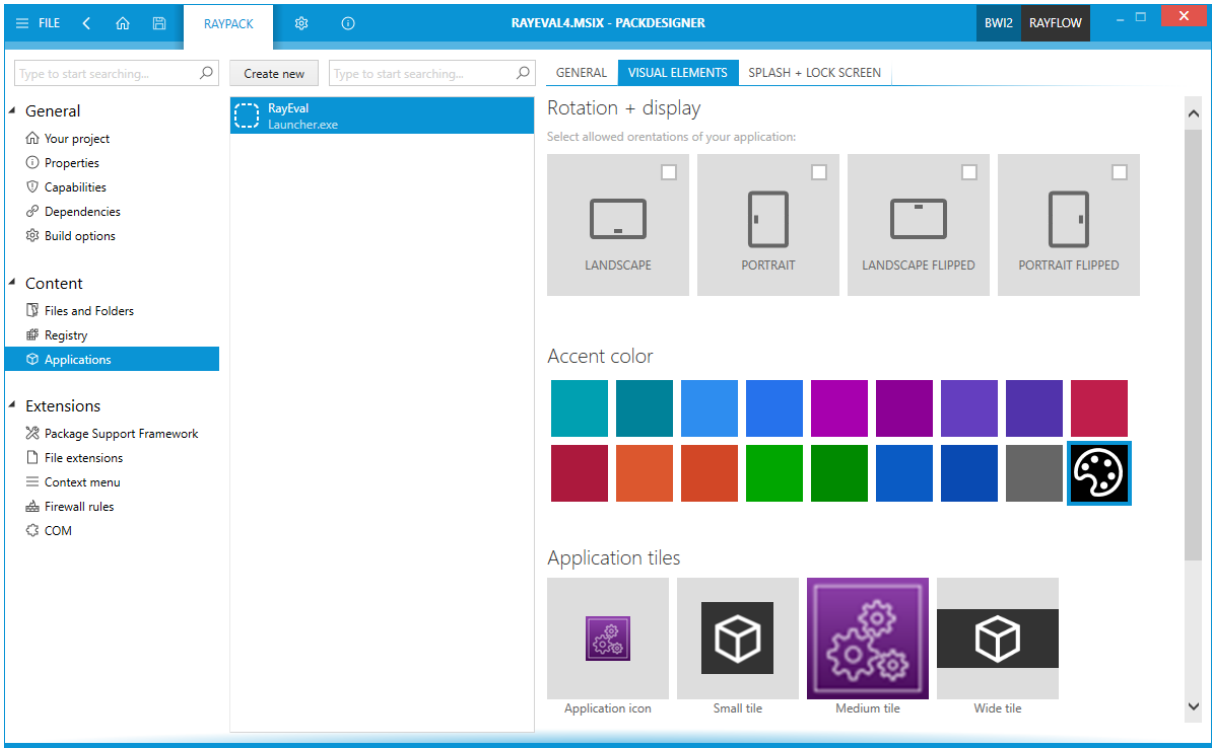
Where migration to the Universal Windows Platform (UWP) is not possible (especially for apps which are no longer maintained and for certain Line-Of-Business products) Windows 10 implements a bridge to the UWP world, which allows running old Win32 apps on the new platform, with the new MSIX installer and all benefits of it, yet requiring no changes to the code. As the adoption of Windows 10 grows, more and more apps are expected to be packaged in the new format, and slowly modernized to use the UWP benefits. This should finally join the development and packaging world in a coherent world, using same tools and principles.

What is New in This Release?

RayPack Studio 6.0 brings a native support for the MSIX packaging. Specifically, the following use cases are

covered:

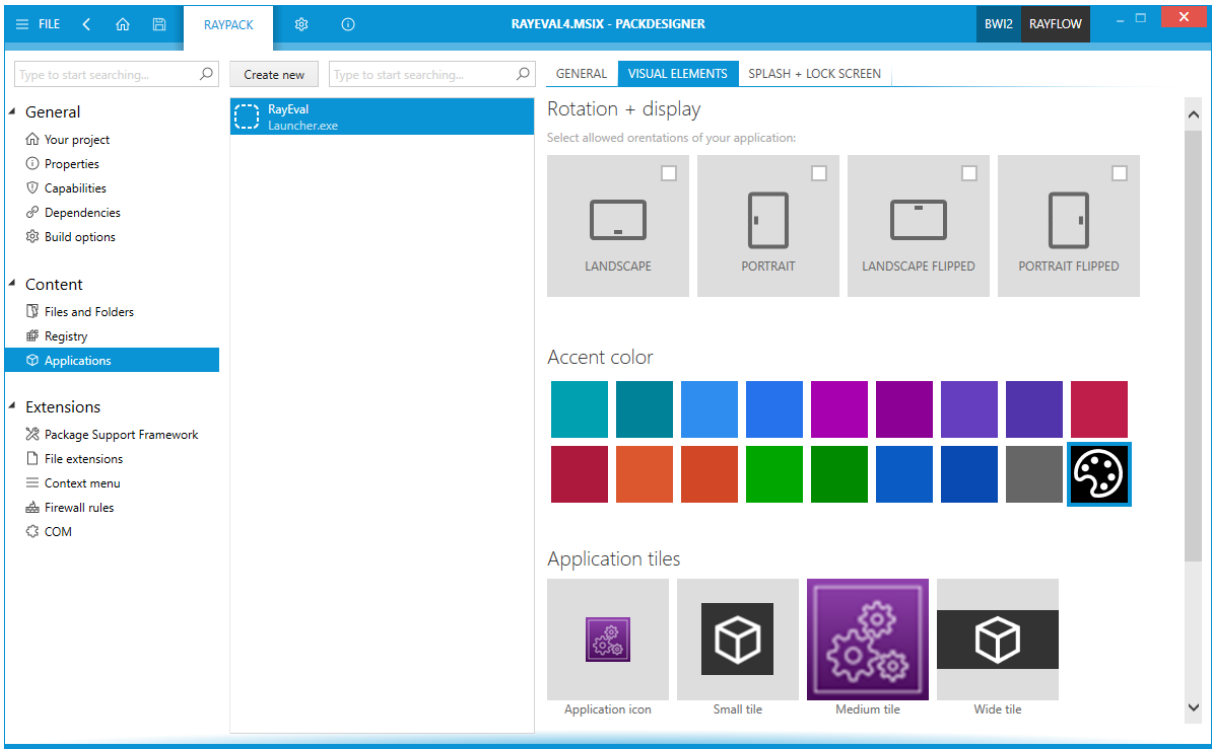
- Creating MSIX packages from the scratch (the new RPPX project has been introduced as an intermediary format).
- Opening existing MSIX / APPX / RPPX packages with full editing capabilities.
- Conversion of legacy software (legacy setups, Windows Installer, RayPack projects) to MSIX packages.
- Bulk conversion of packages to the MSIX format (via PackBot).
- Testing for compatibility with the MSIX format (via RayQC Advanced).



Supported Features

The following features of MSIX are supported:

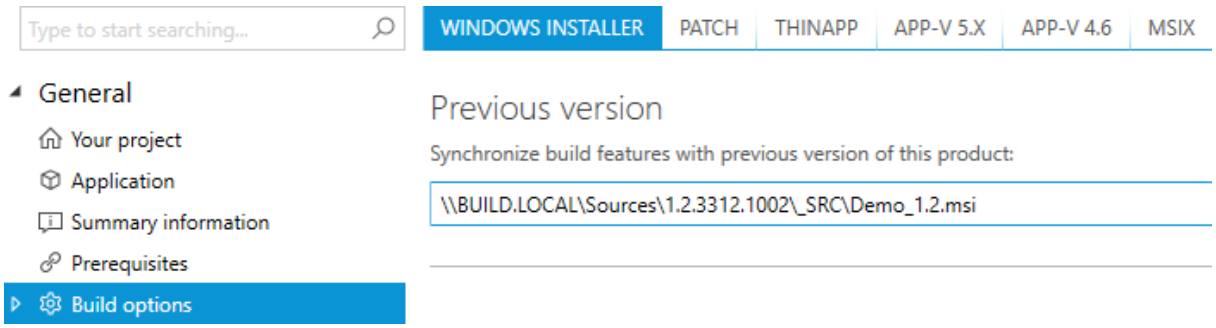
- Standard editors for files and folders, registry, and applications
- Extensions: COM, context menu integration, firewall rules, and file extensions
- The Package Support Framework
- Modification of packages, dependencies, and capabilities
- Resource editing



PackDesigner

Improved Build of Linked Folders `RPK-2710` `RPK-2803`

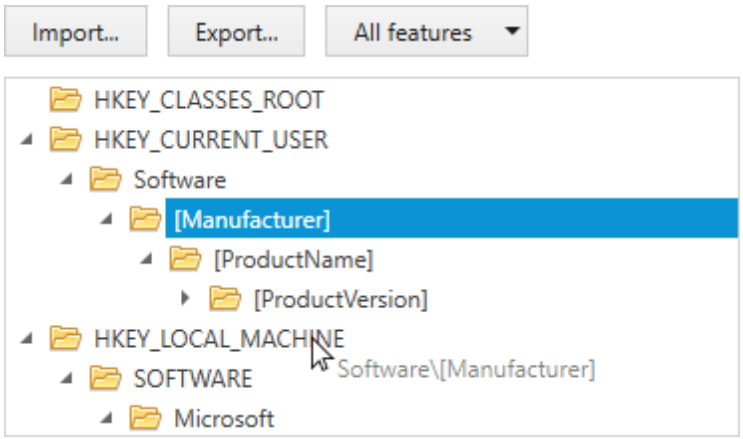
When building an MSI / RPP with linked folders, the previous database is used to synchronize the component names and file sequences. For this to work, the user must configure the path to the previous MSI file. This new option is found in the **General** > **Build options** > **WINDOWS INSTALLER** tab.



Once configured, certain aspects of MSI builds will change. Especially affected are the rules how components are created / reused, component name and ID conventions, feature and components layout, etc. This change ensures that more packages can benefit from small and minor patches which on the other hand means faster and more reliable upgrades.

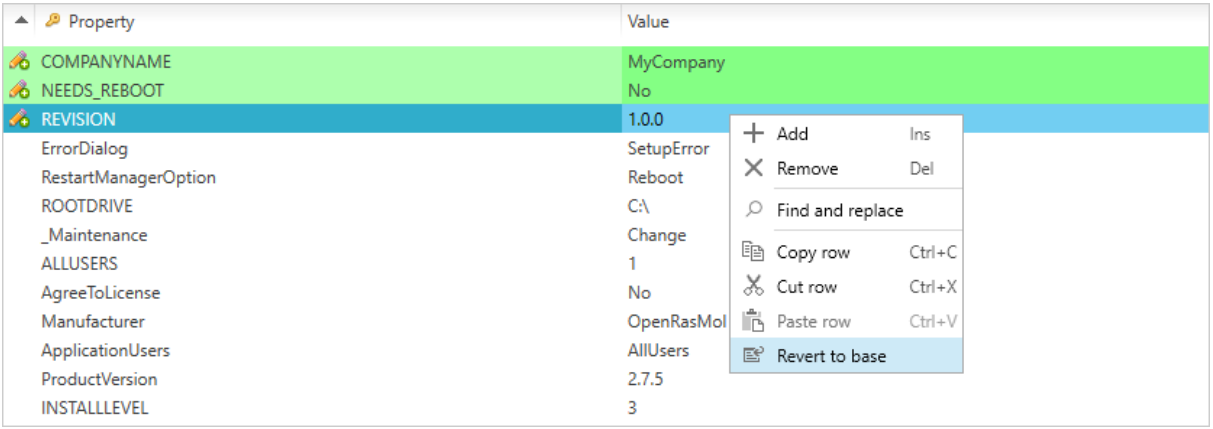
Management of Registry Entries via Drag and Drop Technique `RPK-2803`

This long awaited feature is finally here. You can use your mouse to reorganize entries in the **Registry** view, just like in the **Files and Folders** view.



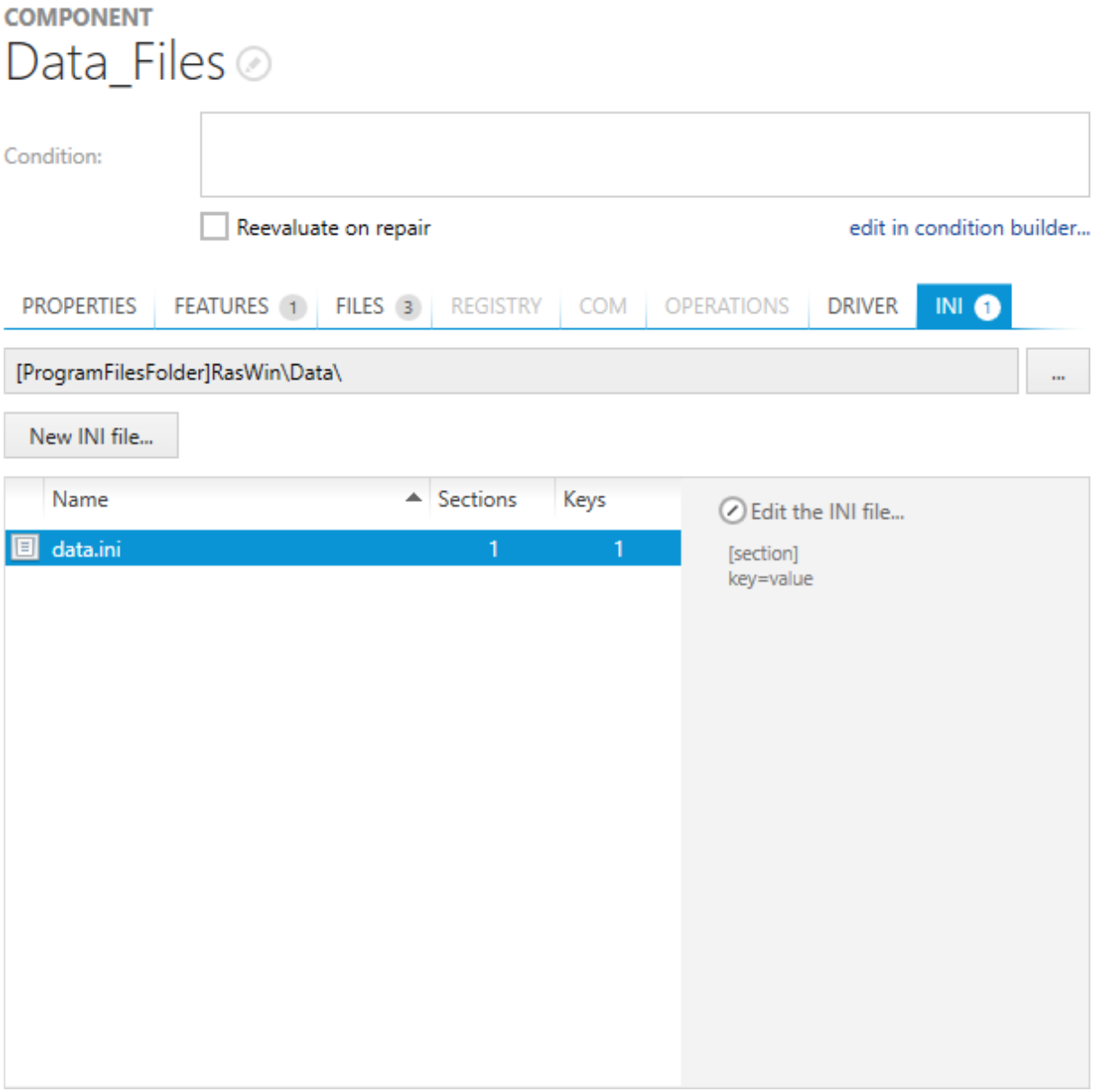
When Clicking on a Changed Cell, Row, or Table with the Right Mouse Button, a New Option Is Available That Reverts the Changes to the Base Value RPK-248

This functionality simplifies working with transforms (vendor or custom) and changes in any RPP or MSI file, by making it possible to quickly revert a cell, row, or table. In previous versions of RayPack, the original values were visible, but the user needed to revert them on his own.



Component Tab Has Been Extended and Can Now Show INI Files Belonging to It RPK-2812

We added a new tab in the Component view for MSI / RPP /MST projects. This works similarly to previous tabs for files, registry, COM, and offers a precise control on which entries are installed by which component.



Scanning / Rescanning of COM Information on a Component and Feature Level `RPK-2898`

We added the option to scan for COM registration on both feature and component level - in previous versions only the per-file operation was possible. This saves time on bulk operations.

Improved Search and Replace Behavior `RPK-2900` `RPK-2798` `RPK-2851`

We improved the behavior of the Search Window, so that it does not automatically select tables / columns when triggered globally. The search icon is now available on the table level, and in the context menu of a row / cell. As always, a keyboard shortcut **CTRL**+**F** is available. Additionally, the 6.0 release adds a **Find previous** button to change the search direction.

Refreshed Icons and Buttons in the Advanced View > Tables `RPK-2905`

We made a clean-up and refinements of buttons and toggles inside the **Tables** view. The icons are now bigger, more representative, and look better on higher DPI screens.

Other Improvements

- `RPK-2171` It is now possible to configure the description used for signing (see **Build options** settings).
- `RPK-2767` We added tooltips to the buttons responsible for conditions and operators inside of the Condition Builder.
- `RPK-2787` We added tooltips to the button responsible for GUID generation in response to the feedback that it was hard to guess what the ellipsis (*{...}*) means.
- `RPK-2851` Several improvements in the Registry view, for example expanding by double click, automatic highlight of new entries, etc.
- `RPK-3011` It is now possible to remove a driver with all of its supporting files.

Resolved Issues

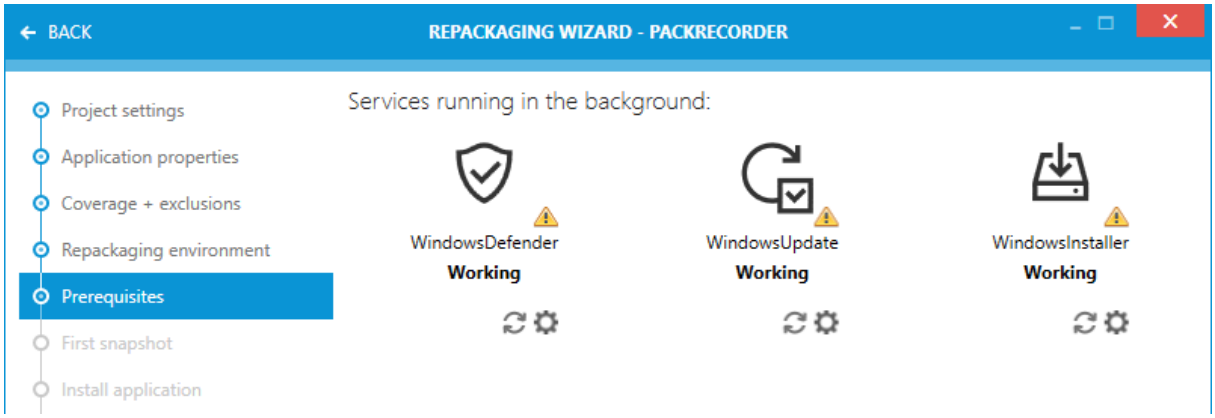
- `RPK-2826` An MSI with changes in `RPPermissions` could not be installed.
- `RPK-2836` Wrong project names when creating a new project with "**.**" in its name.
- `RPK-2868` Some registry files (`.reg`) could not be imported into PackDesigner.
- `RPK-2732` Newly added prerequisites were not automatically selected.
- `RPK-2738` There was an incorrect Polish translation in the **Scheduled Task** wizard.
- `RPK-2745` In some cases, separators in the backstage menu were duplicated.
- `RPK-2776` When creating new `ProgId` via the wizard, the required empty tables were not created.
- `RPK-2788` There was a typo ("Allgemeine") in the main sidebar for opened projects in the German UI.
- `RPK-2782` Occasionally, file import could not be finished due to an unhandled exception.
- `RPK-2804` Build options were not scrollable.
- `RPK-2825` Conversion from RPP to App-V was failing for certain Registry combinations.
- `RPK-2897` Text replacements were not working in certain scenarios.
- `RPK-2916` Some files could not be built when building a project from UNC path with LFN.
- `RPK-2931` The ITNinja plugin was not working correctly due to a TLS upgrade ("Please wait..." message did not vanish).
- `RPK-2989` The local browser grid was not behaving correctly while hitting keyboard keys in order to jump between entries.
- `RPK-2941` In the default template for the German Language, the button **Installieren** was incorrectly labelled as **Ignorieren**.

- RPK-3044 In projects having thousands of Registries, adding a shortcut was freezing the UI for a second.
- RPK-3039 Extension display name for App-V 5.x build was incorrectly labeled as app-v.
- RPK-3041 Environment variables were not resolved when converted from RPP to App-V or other virtual formats
- RPK-3042 Default blank.msi did not have all necessary entries in the `_Validation` table.
- RPK-3044 Adding a shortcut to projects having thousands of registry entries was slow.

PackRecorder

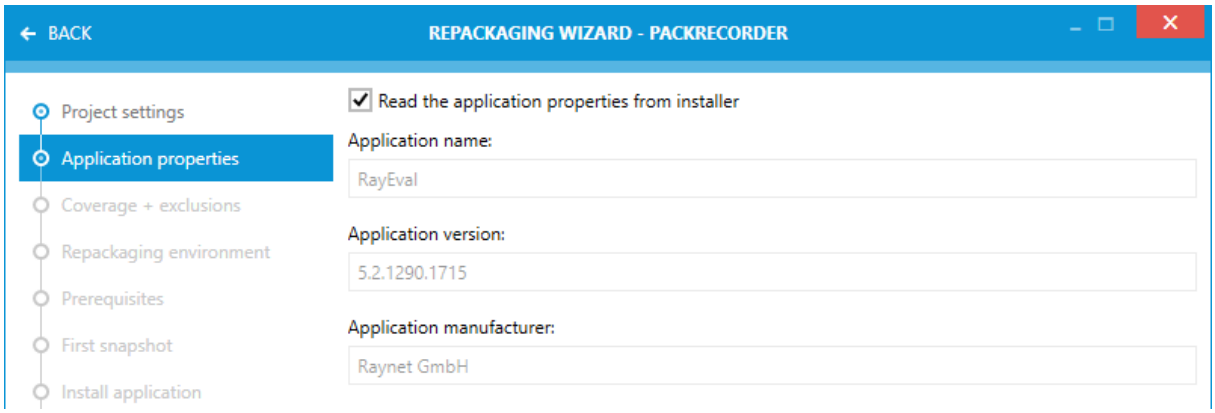
Prerequisites and Recommendations Display Before the Main Repackaging RPK-2780

We added a new wizard page which informs users about some important operations which are pending and may delay or cause problems with repackaging. It can also suggest workarounds and let users fix the problems on their own, for example by disabling the firewall, Windows Defender, Windows Installer, etc.



Ability to Provide Custom Project Details (Name, Version, Manufacturer) RPK-921

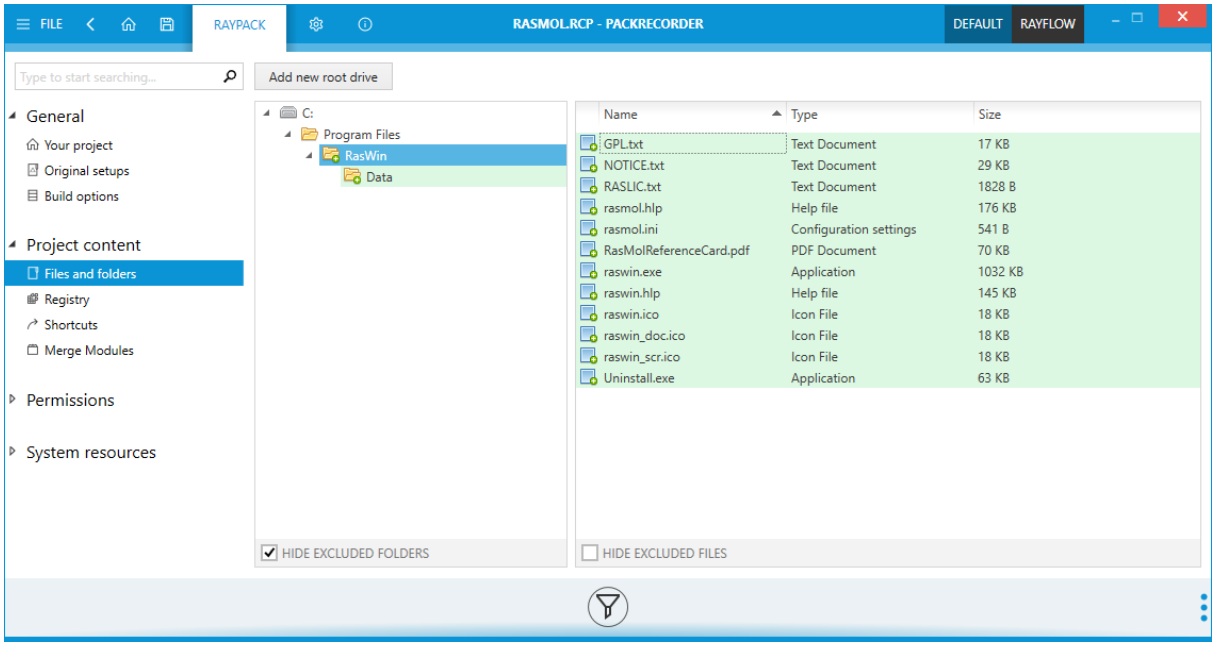
We added a new wizard page which can be used to configure the application details or leave it to be filled automatically by RayPack based on what has been found to be installed between two snapshots.



We have also changed wording in several places to reflect this change and distinguish between **Project name** (merely file name) and **Application name** (`ProductName`).

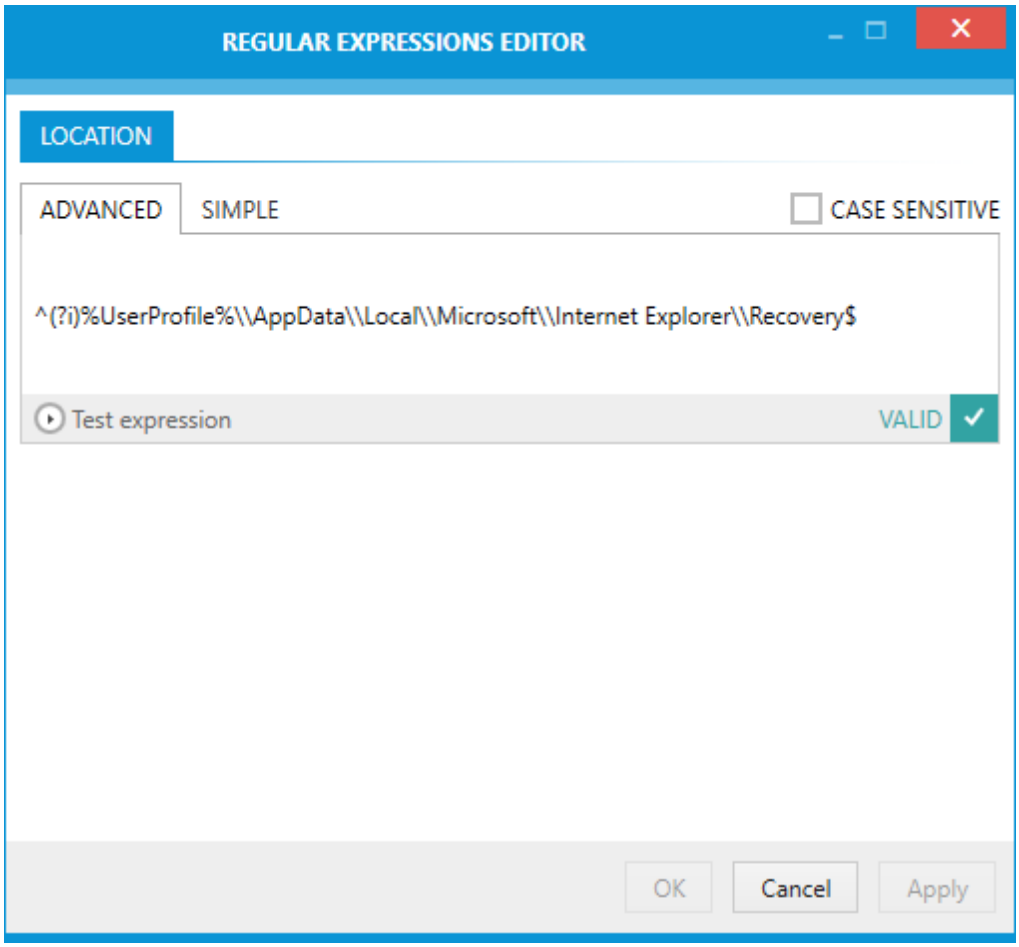
Refreshed UI of RCP Editor RPK-2821

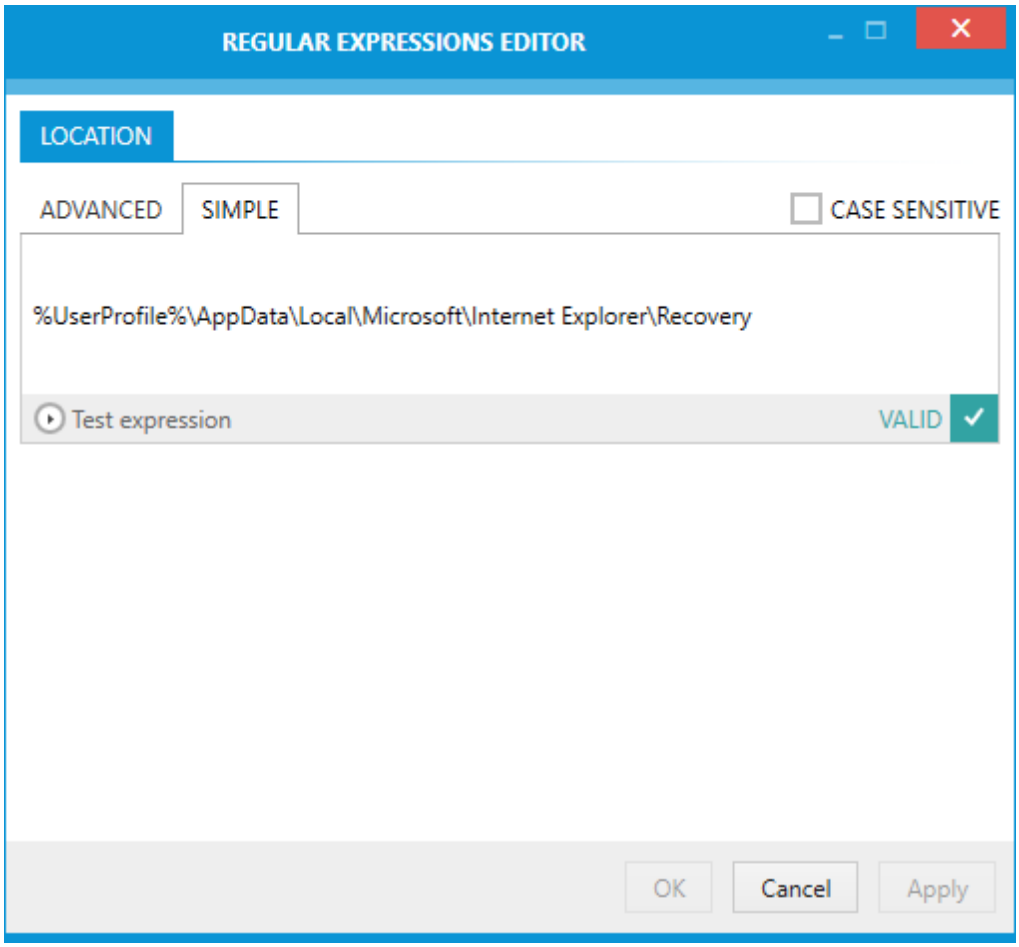
We redesigned a few screens of the PackRecorder RCP Editor which results in a cleaner look-and-feel and an easier identification of resources and their states. For example, new items have a green color, removed items have red backgrounds, and the excluded items are grayed out (as opposed to a red color from previous release).



Easier Editing of Exclusion Rules RPK-2256

There is now a way to toggle between the **ADVANCED** (Regular Expressions) and the **SIMPLE** (basic wildcards) variants of the editor. In the simple editor, there is a basic support for wildcards ***** and **?** (for zero or more characters and exactly one character respectively), and if possible, the input is converted to the other mode by switching to the corresponding tab.


REGULAR EXPRESSIONS EDITOR
LOCATION
ADVANCED
SIMPLE
CASE SENSITIVE
^(?i)%UserProfile%\\AppData\\Local\\Microsoft\\Internet Explorer\\Recovery$
Test expression
VALID
OK
Cancel
Apply



It is Possible to Reapply Exclusion Lists on a Current Project RPK-94

With this release, reapplying the current set of exclusion lists is a straightforward task which can be triggered directly from the RCP view. Simply open a file, hit the button **Reapply filters**, and the currently active exclusion lists will be used to update the status of the project items.

Detect User Names and Replace Them with Placeholders in Automatically Generated Exclusions RPK-1622

We made it easier to create automatic exclusion rules. In RayPack 6.0, the paths are not hardcoded anymore, instead environment variables are used before creating a rule. This means, that automatic exclusion lists created in `AppData` and similar locations are valid for all users, and not only for the current user.

After Closing the Regular Expression Wizard Triggered from a Context Menu, Items Are Automatically Updated to Reflect the Newly Added Rule RPK-1623

Whether a new inclusion or exclusion rule has been created, any changes users do in the **Exclusion Rule** wizard are automatically reflected once the wizard is closed.

Information about Missing Resources When Converting from RCP File RPK-2884

When generating packages (MSI, RPP, etc.) from RCP and with some files missing, RayPack shows now a warning and informs the user which files are missing. Previously the error was silently ignored.

Other Improvements

- RPK-399 There are several performance and stability improvements in the repackaging and comparison (delta) functions.
- RPK-3009 Updated the exclusion list which now work better on machines with Windows 10 and Office 2016 installed.

Resolved Issues

- RPK-64 PackRecorder was not completely removing registry entries for converted environment variables.
- RPK-481 Several rare issues were present in certain conditions during conversion from RCP to APPX.
- RSC-483 Command line arguments were not supported for APPX conversion.
- RPK-1134 Some items were not converted correctly from RCP to RPP (information about x64 flag could be lost).
- RPK-1697 For versioned PE files that were identified as such if no `language` was identifiable, the language `0` was not set.
- RPK-2001 After editing (adding exclusions) to a filter from the RCP editor in RayPack the rules the count was not updated until RayPack had been restarted.
- RPK-2296 Sometime the repackaging could finish with the error `0xC0000005` during one of snapshots.
- RPK-2577 Multiple fonts were packed into a single component during repackaging.
- RPK-2745 In some cases, separators in the backstage menu were duplicated.
- RPK-2765 RayPack was not opening the RCP project after repackaging if a reboot had been started in-between.
- RPK-2774 Product name, publisher, and version were not always correctly detected during repackaging.
- RPK-2796 `INSTALLDIR` was sometimes not taken over correctly from the RCP file to the MSI / RPP.
- RPK-2810 The default build location for MSI files was wrong when triggered from an RCP file.
- RPK-2811 In the repackaged MSI, conditions of components containing bitwise flag `256` in their attributes but not equal to `256` were not set to `VersionNT64`.
- RPK-2814 Some INI entries in certain conditions were not written to the `IniFile` table but to `File` table instead.
- RPK-2815 Sometimes a message about a locked CAB file was shown during MSI creation.
- RPK-2888 In the Regular Expression tester, tabs were not always drawn correctly.
- RPK-2956 Some projects failed at registry conversion for unsupported values with the exception **Unable to**

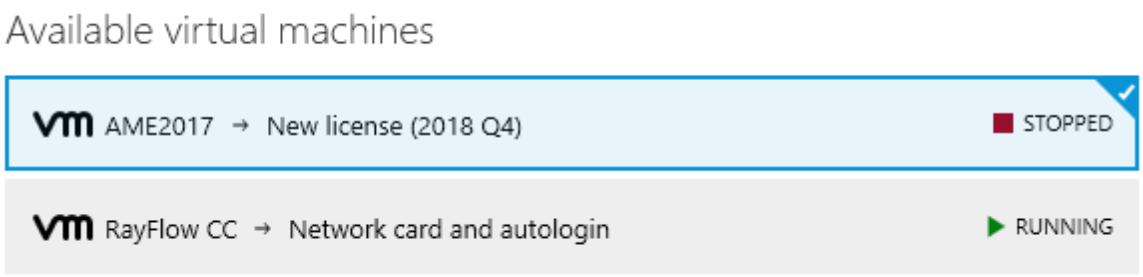
cast object of type `'System.Byte[]'` **to type** `'System.String'`.

- `RPK-2970` In case of failures during the RCP to MSI conversion, the feedback provided to the user was not sufficient to determine the true cause of the problem.

PackTailor

Improved Virtual Machines State Indicator `RSC-500`

We improved the way the machine status is shown in the Virtual Machines view (for example, if the machine is running it has a green triangle and the label **Running**).



Control over Execution Level on Virtual Machines `RSC-528`

We added an option to determine whether the tasks on the virtual machine should be started as an Administrator (default) or as the invoker (current user with his non-elevated permissions).

Performance and General Improvements of Working with Hyper-V Machines `RSC-498`

We improved the management of Hyper-V sessions which should result in better performance and correct disposal of unused PowerShell sessions which were cluttering the pool.

Resolved Issues

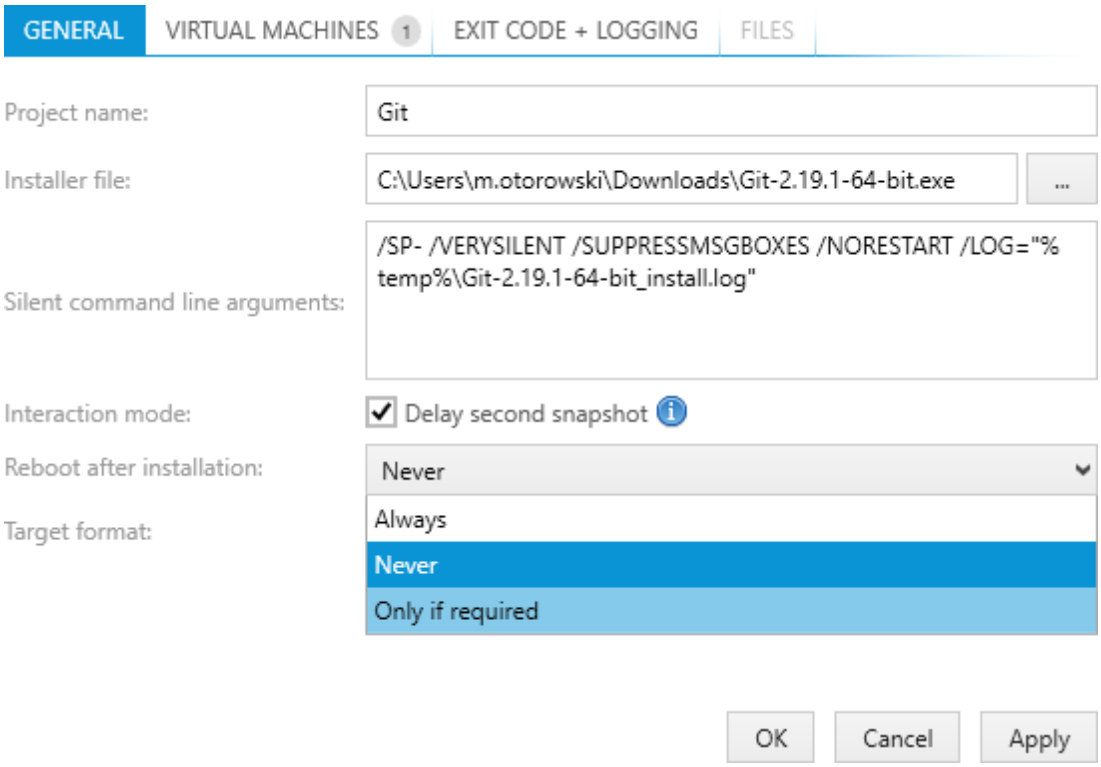
- `RPK-2830` The warnings and other messages were not clear for machines without snapshots
- `RPK-2932` RayPack was crashing when illegal characters were specified in the **PackTailor** wizard.
- `RPK-2867` A `(null)` folder was created in the main folder of `raypack.exe`.
- `RPK-2978` Could not apply transforms that add the same tables / rows.
- `RPK-2895` The connection to Hyper-V could not be canceled if the machine was not reachable.

PackBot

Auto-Reboot Detection `RPK-2724`

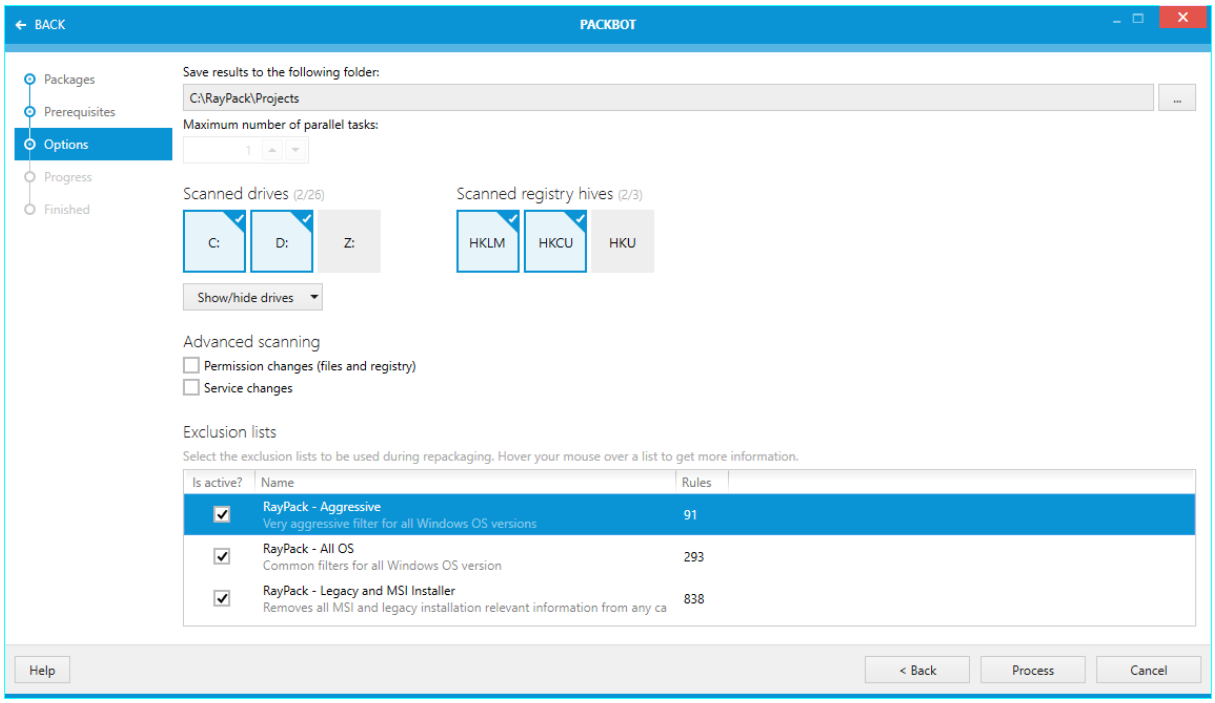
PackBot can detect whether a reboot is pending and act accordingly. In its job editor there was a boolean setting (see settings page) which either activated or deactivated the reboots. In this release, it has been turned into a

three-state switch (**Yes** / **No** / **Auto**) which defines whether the reboot should be forced (**Yes**), disabled (**No**), or performed only when needed (**Auto**).



Exclusion List and Scanning Configuration UI RPK-2725

We have extended the options of the PackBot scan. Previously, the current profile was used, but from the release 6.0 the user has a possibility to override the default settings directly in the **PackBot** wizard.



Performance and General Improvements of Working with Hyper-V Machines `RSC-498`

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Control over Execution Level on Virtual Machines `RSC-528`

We added an option to determine whether the tasks on the virtual machine should be started as an Administrator (default) or as the invoker (current user with his non-elevated permissions).

Resolved Issues

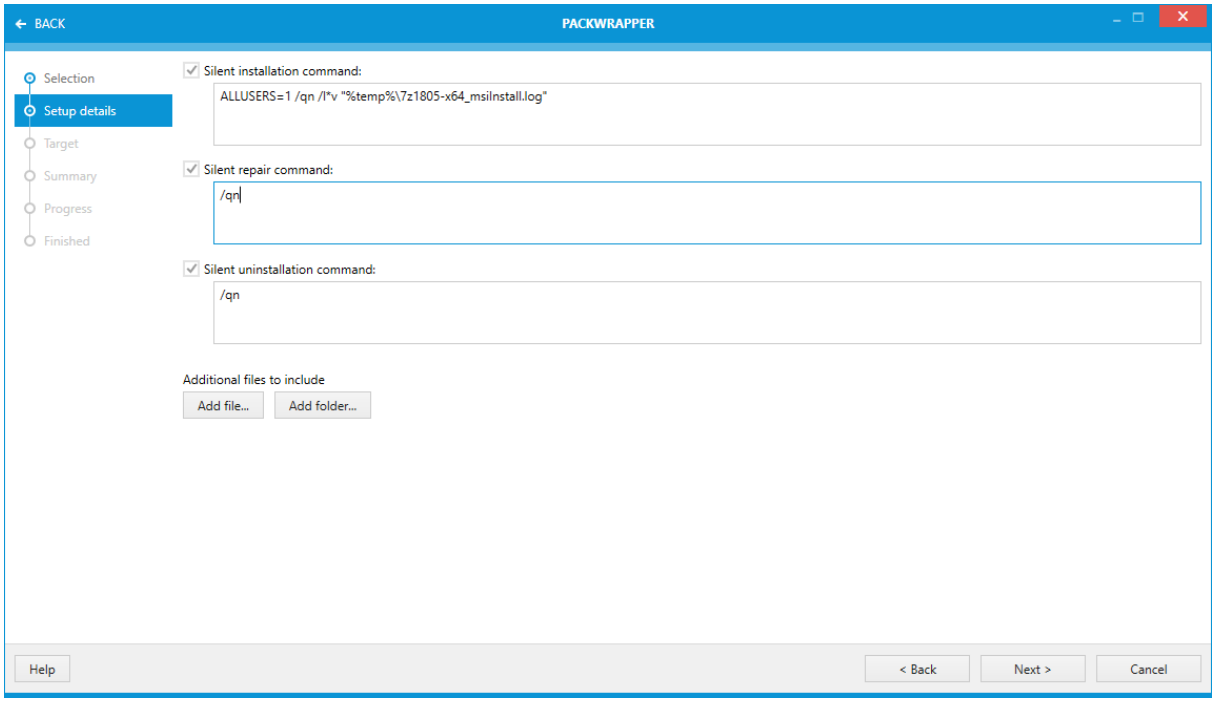
- `RSC-524` In some scenarios, connecting to Hyper-V machines resulted in a `NullReferenceException`.
- `RPK-2734` Depending on the input conditions, the progress bar during conversion could go slightly backwards for a few seconds.
- `RPK-2759` In some cases, repackaging on Hyper-V machines worked only for the first package.
- `RPK-2781` The default command line for MSI installations had the `ALLUSERS` property set to `2`.
- `RPK-2789` There was an incorrect caption for editing an item in the German UI.
- `RPK-2819` PackBot could report an error during the removal of temporary files.
- `RPK-2830` The warnings and other messages were not clear for machines having no snapshots.
- `RPK-2862` MSIs with changes in the `RPPermissions` could not be installed.

- RPK-2867 A `(null)` folder was created in the main folder of `raypack.exe`.
- RPK-2894 The option to disable exit code checking was not persisted between sessions.
- RPK-2895 The connection to Hyper-V could not be canceled if the machine was not reachable.
- RPK-2926 It was not possible to ignore certificate issues by pressing the **CONTINUE WITHOUT SIGNING** button.

PackWrapper

Repair Command and Arguments Are Not Configurable RPKG-356

We added a new section where users can configure the desired commands and arguments for the repair routine. They are later converted to a PowerShell script and included in the PowerShell AppDeploymentToolkit wrapper.



Upgraded PowerShell AppDeploymentToolkit RPK-2887

The toolkit has been upgraded to the most recent version (at the time of the 6.0 release) which is 3.7.0.

Resolved Issues

- RPK-2783 PackWrapper was not including `*.cab` files along with the selected MSI file.

Automation

RayPack 6.0 comes with a set of PowerShell commandlets that perform the following functions:

- Opening an RPP / MSI file.
- Applying transforms (MST) and transform templates (RPMST).
- Changing cell values.
- Importing files.
- Setting and removing MSI properties.
- Updating files.
- Removing rows.
- Signing MSI files.
- Building MSI files.
- Saving RPP / MSI files

Using PowerShell is a great choice for automating tasks and ensuring that projects are edited, branded, and created in consistent and silent way.

Sample Script

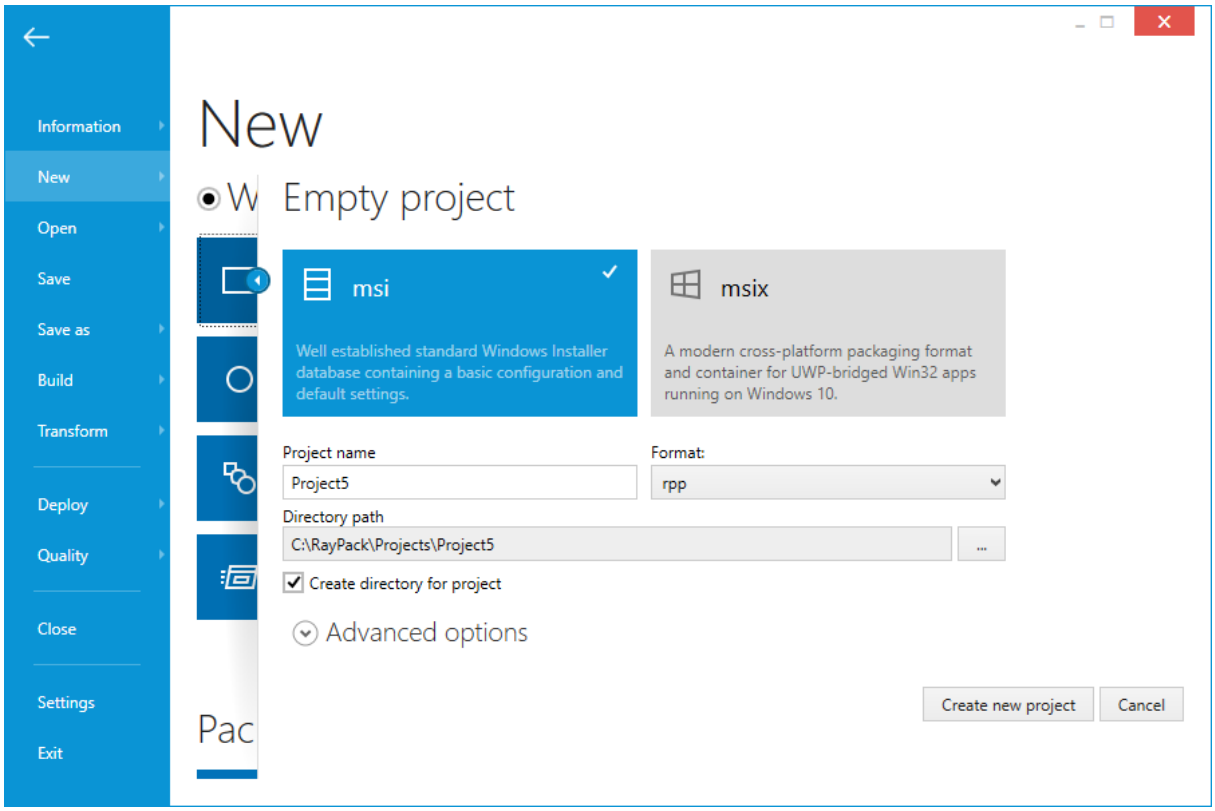
The following sample shows a production code which opens a file, sets a value of a property, builds the project to an MSI file, and signs it.

```
$project = Open-Project -File $RppFilePath;
try
{
    Set-Property $project -Name ProductVersion -Value $ProductVersion;
    [string]$msiPath = Join-Path $OutputDirectory ($ProductName + "_" + $brandingName
    Export-Msi -Project $project -Target $msiPath -UpdateProductCode $true -UpdateFile
    Set-MsiSignature -File $msiPath | Out-Null;
}
finally
{
    Close-Project -Project $project;
}
```

Common

Simplified the New Project Menu `RPK-2918`

We merged the MSI and the RPP button in the New Project menu, replacing them with one generic control **msi** that enables a user select the actual format. The default option is always RPP as we feel that creating empty MSI project is a rather rare case.



Portable Snapshot and Repackager `RSC-539`

RayPack comes with a bundled tool that can be used to create snapshots and compare them. For more information, start the executable `Tools/Repackaging/rps.exe` with the command line switch `-?`.

Other Improvements

- `RPK-2893` Several inproduct icons have been changed to vector images to support higher DPI.
- `RPK-2733` The RayFlow URL is now validated in the MSI Wizard.
- `RPK-2830` Improved handling of virtual machines with no snapshots.
- `RPK-2711` The Recent panel in the Dashboard is now hidden if there is nothing to show.
- `RPK-2760` RayManageSoft settings have been added in the Settings screen.

Resolved Issues

- `RPK-2791` The password in the signing configuration was showing the password in clear text.
- `RPK-2836` The final project name when creating a new package was incorrect when the project title contained ".".
- `RPK-2941` In the default template for the German Language, the button **Installieren** was incorrectly labelled

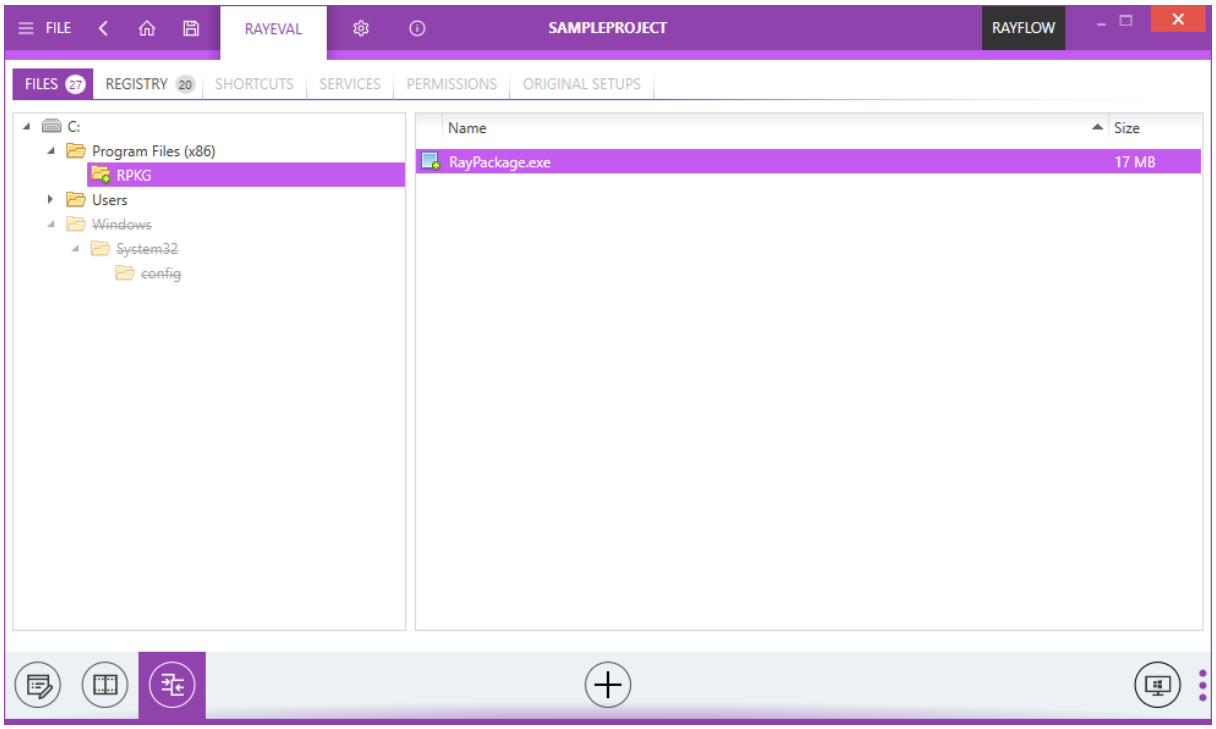
as **Ignorieren**.

- RVL-498: In the German version, the menu Close was duplicated (there was the same label **Schließen** for closing and exiting).

RayEval

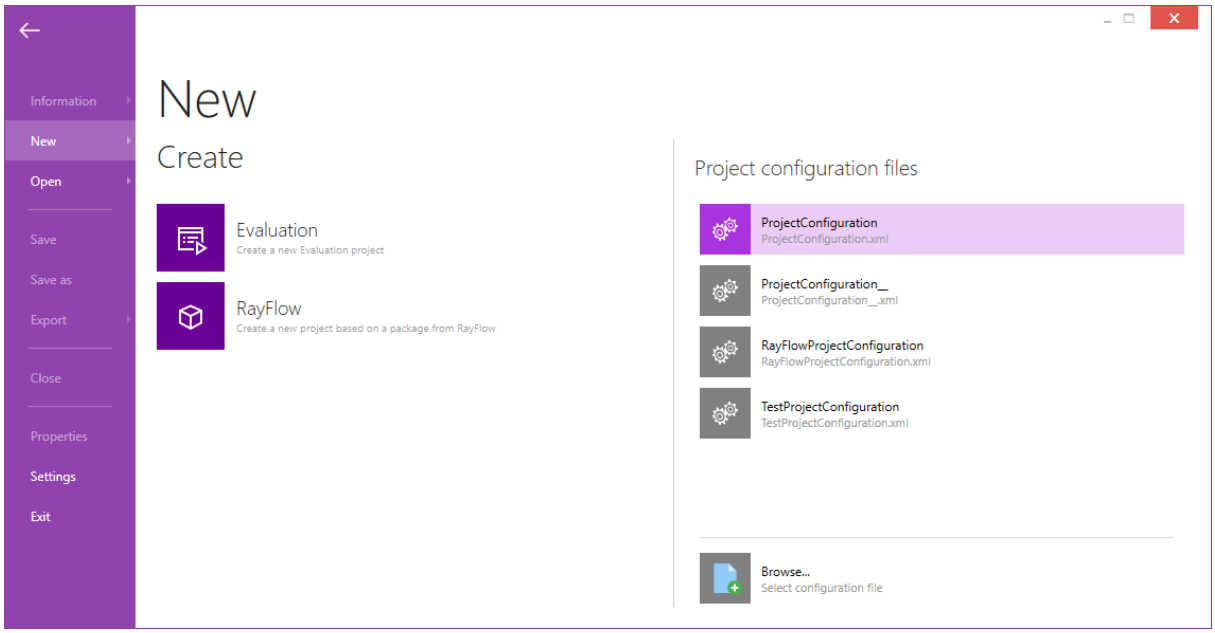
Taking Snapshots and Reporting Differences between Them RVL-126

RayEval now has an integrated snapshot mechanism. You can create two snapshots compare them at any time and have results of the comparison displayed in the newly designed tab inside of your project. Furthermore, the repackaging information (like which files are new, what has been installed, etc.) is now rendered in reports, so that the evaluation teams can easily prepare documentation for packagers containing not only discovery information, but also the lower level information about the actual content of the setup.



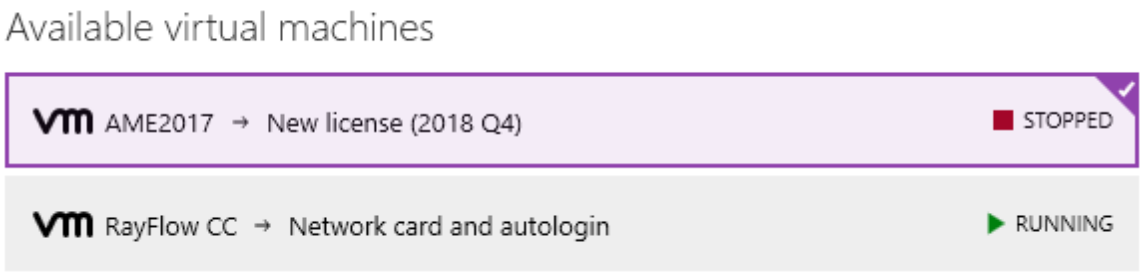
Management of Project Configurations RVL-65

To service many different projects different RayEval project configurations are required. In previous builds there was no easy way to select the active configuration. A command line switch had to be used. In this release, we have added a dedicated selector and management capabilities, so that the creation, the removal, and the selection of profiles can be done easily and directly from the **New Project** menu.



Improved Virtual Machines State Indicator RSC-500

We improved the way in which the machine status is shown in the **Virtual Machines** view (for example, if the machine is running it has a green triangle and the label **Running**).



Control over Execution Level on Virtual Machines RSC-528

We added an option to determine whether the tasks on the virtual machine should be started as an Administrator (default) or as the invoker (current user with his non-elevated permissions).

Performance and General Improvements of Working with Hyper-V Machines RSC-498

We improved the management of Hyper-V sessions, which should result in a better performance and the correct disposal of unused PowerShell sessions which were cluttering the pool.

Portable Snapshot and Repackager RSC-539

RayEval comes with a bundled tool that can be used to create snapshots and compare them. For more

information, start the executable `Tools/Repackaging/rps.exe` with command line switch `-?`.

Resolved Issues

- `RVL-404` The application logging for critical components like the capturing of screenshots was insufficient.
- `RVL-407` There was no feedback if the command-line switch for the selection of a configuration file was invalid.
- `RVL-414` The button to open RayFlow URL in the Setting screen was inconsistent with other products.
- `RVL-419` RayEval was crashing after manually adding a transform to an MSI file specified from RayFlow command line.
- `RVL-424` In the German version, there was a typo in the RayFlow importer.
- `RVL-428` In the German version, the menu **Close** was duplicated (the same label **Schließen** for closing and exiting).
- `RPK-2830` The warnings and other messages were not clear for machines without snapshots
- `RPK-2895` The connection to Hyper-V could not be canceled if the machine was not reachable.

RayQC

Improved Virtual Machines State Indicator `RQC-895`

RayQC provides a binary PowerShell module file that exports several commands to be used directly in the PowerShell console / scripts. You need to first import it, which can be done via the following single line command:

```
Import-Module "C:\Program Files (x86)\RayQC\Libs\RayQC.Automation.dll"
```


Note:

If you have RayQC installed elsewhere, simply adjust the path to reflect the correct root folder.

This will import the module. You can confirm this by invoking.

The following operations can be then automated / scripted from PowerShell:

- Opening a checklist.
- Iterating through and viewing the structure of the checklist (groups, elements, etc.).
- Executing a checklist, checklist group, group of checklist elements.
- Creating a new checklist.
- Setting checklist element values (**text**, **yes** / **no**).
- Exporting a checklist to PDF/DOCX format
- Saving a checklist.

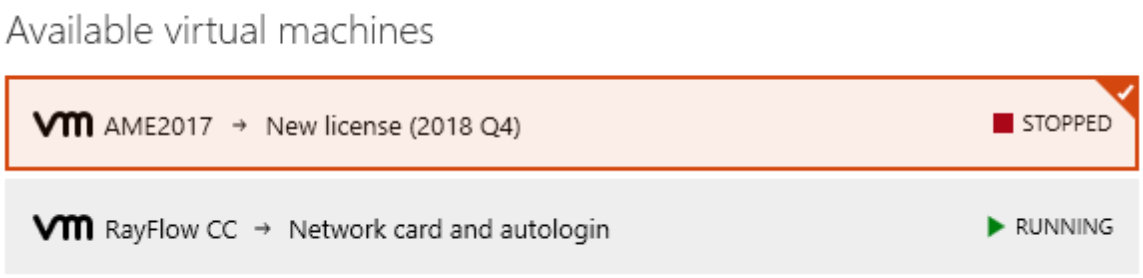
- Closing a checklist.

Here is a simple script that opens a checklist and exports it to a PDF file:

```
$checklist = Open-Checklist "C:\Temp\rqc60\ProgramFiles\RayQC\Samples\Sample Checklist
Write-Host ("Opening " + $checklist.Name);
Start-Checklist -Checklist $checklist
Export-Checklist -Checklist $checklist -File C:\temp\rqc60\report.pdf
Close-Checklist $checklist
```

Improved Virtual Machines State Indicator `RSC-500`

We improved the way the machine status is shown in the **Virtual Machines** view (for example, if the machine is running it has a green triangle and the label **Running**).



Control over Execution Level on Virtual Machines `RSC-528`

We added an option to determine whether the tasks on the virtual machine should be started as an Administrator (default) or as the invoker (current user with his non-elevated permissions).

Faster Operations on VMware Workstation / ESX / vSphere `RQC-894`

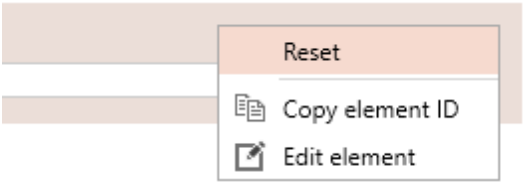
We have refined our algorithm that was responsible for copying files between machines. As a result we decreased the intervals between invoking a checklist and getting the results back. This fix affects certain environments.

Performance and General Improvements of Working with Hyper-V Machines `RSC-498`

We improved the management of Hyper-V sessions, which should result in better performance and correct disposal of unused PowerShell sessions which were cluttering the pool.

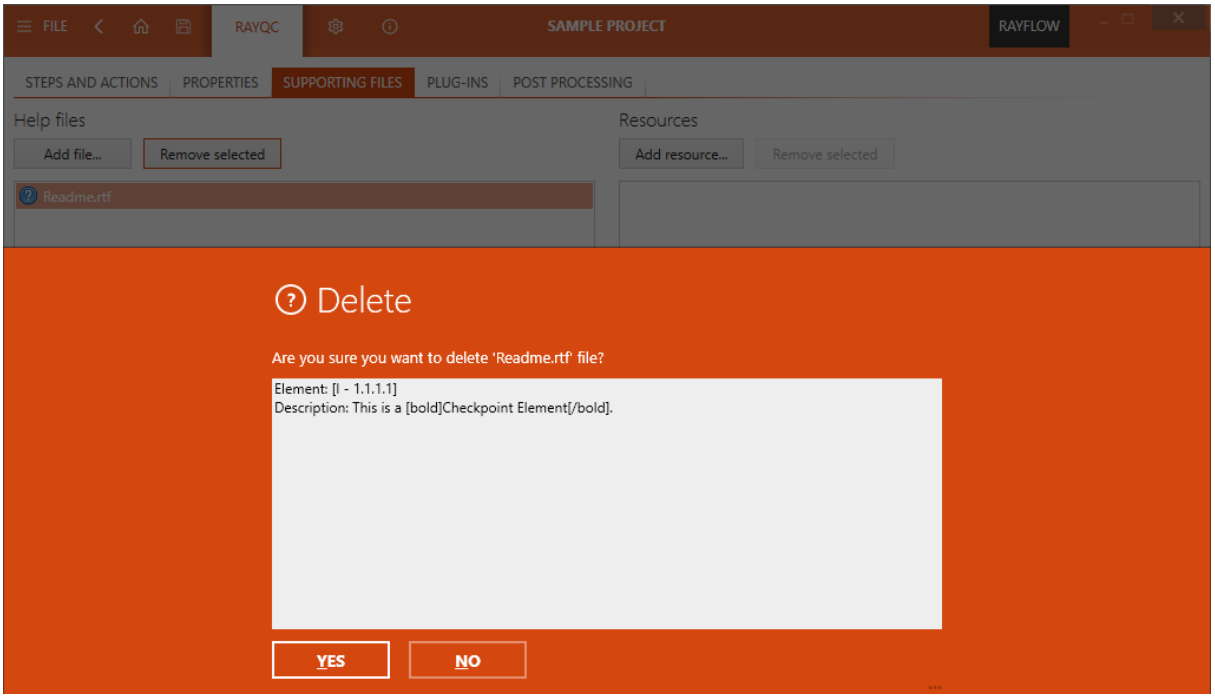
Resetting Single Elements `RQC-868`

It is possible to reset a single element using the new context menu control element.



Easier Removal of Images and Help Files RQC-889

In previous builds, it was not possible to remove resources that were in use. In RayQC 6.0 the removal is possible and the user simply has to confirm that existing links will be removed.



Portable Snapshot and Repackager RSC-539

RayEval comes with a bundled tool that can be used to create snapshots and compare them. For more information, start the executable `Tools/Repackaging/rps.exe` with the command line switch `-?`.

Resolved issues

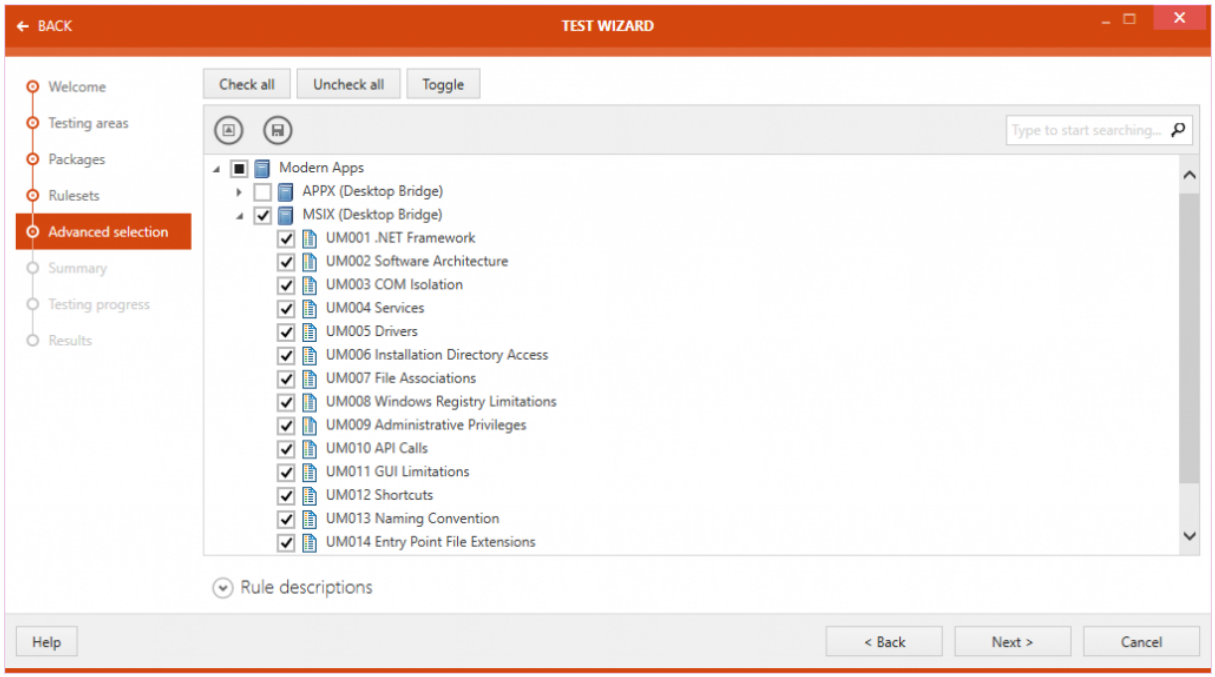
- RQC-805 There was no splash screen shown when opening a checklist from the explorer (double click etc.).
- RQC-869 Non-leading plugin warning did not have enough information about related plugins.
- RQC-871 Unpinned toolbox was not closed together with the RayQC window.
- RQC-880 Plugin `GetConnectionInfo` was reporting an error when running a checklist on a virtual machine.

- RQC-871 The unpinned toolbox was not closed together with the RayQC window.
- RQC-885 The exception for **Access Denied** was not informative and precise.
- RQC-888 The RayFlow `PackageID` value was not passed to the virtual machine.
- RQC-890 The `CopyFile` plugin reported errors when the destination and the source paths were the same.
- RQC-892 The command-line parameter description for `-d`, `-disk` was incorrect.
- RQC-893 Conditions on groups were not resolved when running all plugins on the VM.
- RQC-903 The path to the RayQC report was built incorrectly before exporting.
- RPK-2830 The warnings and other messages were not clear for machines without snapshots.

RayQC Advanced

Compatibility Tests for MSIX Desktop Bridge Conversion RTS-2275

RayQC Advanced can scan your packages and determine whether they can be converted to the new MSIX format. This is a complementary change to the recent additions to RayPack, which can create and edit these packages. You will find the new rules both in the **Rules** section and in the **Test Wizard**.



Command-Line Import of Legacy Packages Can Now Use the PackBot Component to Convert the Package on a Virtual Machine RTS-2245

It is now possible to do a command-line import of a legacy package where the conversion takes place on a virtual machine. Conversion is required for non-MSI and non-App-V packages, so that RayQC Advanced can understand the content and dependencies between packages.

Portable Snapshot and Repackager RSC-539

RayQC Advanced comes with a bundled tool that can be used to create snapshots and compare them. For more information, start the executable `Tools/Repackaging/rps.exe` with the command-line switch `-?`.

Other Improvements

- RTS-2232 The link to the RayQC website in the **About** menu was pointing to a non-existing resource.
- RTS-2258 The spacing around **Please wait** was wrong in several progress bar overlays.
- RTS-2272 Program was crashing to desktop when saving SCCM settings with an invalid UNC path.
- RTS-2277 The left grid in the **reports** overview was not properly styled.

General

VMware vSphere 6.5 and Newer Are Now Supported RSC-469

For components supporting interaction with Virtual Machines, we implemented support for the vSphere instances 6.5 and newer. The old API has been deprecated, but you can still use the new functionality to connect to machines running on older instances. This change affects the following components:

- RayPack
  - Bulk conversion and repackaging with PackBot
  - Tuning MSI transforms on VM with PackTailor
- RayEval - capturing screenshots on VM
- RayQC - executing checklists on VM

There are no changes in the configuration, except the requirements imposed by the PowerCLI from VMware (see https://code.vmware.com/web/dp/tool/vmware-powercli/11.0.0 for more details).

Other Improvements

- RSC-505 All product MSIs now have a Windows Installer Property `FLOATINGLICENSEURL` which can be used to install them silently with the floating license server enabled.

Migration and Breaking Changes

RayPack

Upgrading RayPack

General Upgrade Preparations

RayPack 6.0 is delivered as part of the RayPack Studio Installer. In order to install it safely execute the following steps:

1. Download the RayPack Studio Installer 6.0 from the Raynet resource repository.
   (If you have not already received the credentials, please contact the Raynet support team via the Raynet support portal to receive them using the ticket system).
2. Copy all files that need to be kept for later use or look-up (such as resources of global external plugins, logs, settings, config files, the `*.rsl` file, etc.) to a temporary transfer directory outside of the RayPack Studio application directory (where they usually reside).
3. Execute the RayPack Studio Installer and work through the setup routine. The installation of RayPack 6.0 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

Migration from RayPack 5.2

PackPoint and User Files Upgrade

- It is recommended to perform a PackPoint upgrade during the installation (MSI). The upgrade is done automatically when starting the RayPack Studio Installer. If no update could be performed, it can be done manually by using the command-line tools (see Product User Guide for details on the `rpcmd.exe`).
- Certain PackPoint resources (profiles, templates) are not automatically updated for users who worked with previous versions of RayPack. Increase the PackPoint version to force an update or have them started using the `rpcmd.exe` with command-line switches to perform the upgrade manually (see Product User Guide for more information).

Breaking Changes

- Several existing regular expressions have been revised and optimized in the 6.0 release. For users that have created their own customizing, it is recommended to compare the old and the new files to determine any conflicts between the old and the new rulesets.
- In this release, the template of the PowerShell AppDeployment Toolkit has changed - a new placeholder and logic has been added to support repair commands. Customized templates from the previous version may be missing this new section. In this case, review the script of the new file `Resources\Wrappers`

`\PSAppDeploymentToolkit\Deploy.ps1` and include the new section into your templates.

- RayPack 6.0 supports MSIX packages natively. APPX packages are also supported as input, but the output after saving is always an MSIX format. If you still need to support APPX packages, install RayPack 5.2 and 6.0 side-by-side.
- We removed the following tools from this release: `rpMake.exe`, `rpCompare.exe`. It is recommended to migrate to `rps.exe` for the same functionality. Alternatively, you can copy them from the old release.

Migration from Older Versions

Refer to the *Release Notes* of previous version of RayPack Studio to determine which breaking changes are affecting your upgrade.

Troubleshooting

If you experience abnormal symptoms (like the program not starting, missing features, etc.) after the upgrade, we highly recommend to perform a clean installation of RayPack / PackBench 6.0. In order to do that, please perform the following steps:

1) Locate your product order number. If you cannot find it, contact our support.

2) Make a backup of your license file (by default installed to `<ProgramData>\Raynet\Licenses\*.rsl`).

3) Uninstall the previous version of RayPack.

4) Delete the content of the installation folder (by default `C:\Program Files (x86)\RayPackStudio\RayPack`).

5) Install RayPack 6.0.

6) Start the main application (`raypack.exe`) to reactivate RayPack.

If the issues are not resolved after performing the steps described above, the following steps will revert the profile to the original state:

7) Close RayPack / PackBench.

8) Backup and then remove the content of the following folder:

- `%AppData%\RayPack`
- Optionally, you can also revert the <%PACKPOINT%> to the default state by removing the <%PACKPOINT%> folder (standard installation path is `C:\RayPack\<%PACKPOINT%>`).

9) Start RayPack again.

If the procedures given above do not resolve the issue, please contact our support.

PackBench

Upgrading PackBench

General Upgrade Preparations

PackBench 6.0 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 6.0 from the Raynet resource repository.
   (If you have not already received the credentials, please contact the Raynet support team via the Raynet support portal to receive them using the ticket system).
2. Copy all files that need to be kept for later reuse or look-up (such as resources of global external plugins, logs, settings, config files, the `*.rsl` file, etc.) to a temporary transfer directory outside of the RayPack Studio application directory (where they usually reside).
3. Make a backup of the SQL Server database which is used by PackBench.
4. Execute the RayPack Studio Installer and work through the setup routine. The installation of PackBench 6.0 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

Note:
Ensure that a **running** SQL server is available before starting the migration / installation.

Migration from PackBench 5.2

There are no breaking changes.

Migration from Older Versions

Refer to *Release Notes* of previous version of RayPack Studio to determine which breaking changes are affecting your upgrade.

Troubleshooting

If you experience abnormal symptoms (like program not starting, missing features, etc.) after the upgrade, we highly recommend to perform a clean installation of PackBench 6.0. In order to do that, please perform the following steps:

1) Locate your product order number. If you cannot find it, contact our support.

2) Make a backup of your license file (by default installed to `<ProgramData>\Raynet\Licenses\*.rsl`).

3) Uninstall the previous version of PackBench.

4) Delete the content of the installation folder (by default `C:\Program Files (x86)\RayPackStudio\RayPack\PackBench`).

5) Install PackBench 6.0.

6) Start the main application (`packbench.exe`) to reactivate PackBench again.

If the issues are not resolved after performing the steps described above, the following steps will revert the profile to the original state:

7) Close PackBench.

8) Backup and then remove the content of the following folder:

- `%AppData%\RayBench` and `%ProgramData%\RayBench`
- You may try to install a new database with sample data to see if the problem persists.

9) Start PackBench again.

If the procedures given above did not resolve the issue, please contact our support.

RayQC

Upgrading RayQC

General Upgrade Preparations

RayQC 6.0 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 6.0 from the Raynet resource repository.
   (If you have not already received the credentials, please contact the Raynet support team via the Raynet support portal to receive them using the ticket system).
2. Copy all files that need to be kept for later reuse or look-up (such as resources of global external plugins, logs, settings, config files, the `*.rsl` file, etc.) to a temporary transfer directory outside of the RayPack Studio application directory (where they usually reside).
3. Execute the RayPack Studio Installer and work through the setup routine. The installation of RayQC 6.0 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

RayQC Advanced

Upgrading RayQC Advanced

General Upgrade Preparations

RayQC Advanced 6.0 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 6.0 from the Raynet resource repository.
   (If you have not already received the credentials, please contact the Raynet support team via the Raynet support portal to receive them using the ticket system).
2. Copy all files that need to be kept for later reuse or look-up (such as resources of global external plugins, logs, settings, config files, the `*.rsl` file, etc.) to a temporary transfer directory outside of the RayPack Studio application directory (where they usually reside).
3. Make a backup of the SQL Server database which is used by RayQC Advanced.
4. Execute the RayPack Studio Installer and work through the setup routine. The installation of RayQC Advanced 6.0 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

Note:
Ensure that a **running** SQL server is available before starting the migration / installation.

Breaking Changes and Backward Compatibility

- The product is fully backward compatible with its previous releases.
- When using a portable installation, a separate upgrade of the database / recaching of pluings has to be performed in order for MSIX rulesets to show up in the **Rules Browser**.

RayEval

Upgrading RayEval

General Upgrade Preparations

RayEval 6.0 is delivered as an MSI software package. In order to install it safely:

1. Download the MSI package for RayEval 6.0 from the Raynet resource repositories.
   (If you have not already received credentials, please contact the Raynet support team via our Support Panel).
2. Copy all files that need to be kept for later reuse or look-up to a temporary transfer directory outside of the RayEval application directory (where they usually reside). This is important for all files that have been customized like the project configuration file (`Projectconfiguration.xml`), the export plugins configuration file (`PluginTemplates.xml`), and the folder which contains all the template documents (`<INSTALLDIR>\Plugins\Templates\`).
3. Execute the RayEval 6.0 MSI package and work yourself through the setup routine. The installation of RayEval 6.0 is described in the *RayEval 6.0 User Guide*.
4. After the installation has been finished, copy the files that have been backed-up to their previous locations.

Breaking Changes and Backward Compatibility

- The product is fully backward compatible with its previous releases.
- Projects saved in previous versions are forward compatible. Projects saved in version 6.0 may loose some functions when opened in older versions of the product (for example snapshot and delta reports).

System Requirements

Hardware Requirements

This section lists the minimal hardware requirements for devices running RayPack Studio.

Minimal

- Screen resolution: 1024 x 768 pixels
- Color settings: 16 bit
- RAM: 2GB
- Disk space: 10GB

Recommended

- Screen resolution: 1280 x 1024 pixels
- Color settings: 32 bit
- RAM: 4GB or higher
- Disk space: 100GB or more

Note:
The installation of the RayPack Studio framework itself requires about 400MB of disk space. The amount of additional space needed depends on the volume of your packaging material and the location of the data store.

Supported OS

The following operating systems are supported for the installation and running of RayPack Studio at the time of release.

- Windows Vista
- Windows 7
- Windows 8
- Windows 8.1
- Windows 10
- Windows Server 2008 SP1-SP2
- Windows Server 2008 R2
- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016

Note:
Packages generated with RayPack Studio have their own, individual set of target OS. The list above is not designed to display which target OS are reachable by RayPack Studio packages.

Prerequisite Software

- .NET 4.5 Client & Full for Windows Vista up to Windows 8 systems (both 32-bit and 64-bit)

General Requirements

In order to use RayFlow functionality directly from RayPack Studio components, a running RayFlow server has to be accessible.

In order to use *RayManageSoft* integration, *Management Console* has to be installed on the machine on which RayPack is running.

RayPack

Virtualization

- In order to create SWV packages, the Symantec Workspace Virtualization Agent 7.5 has to be installed on the packaging machine.
- In order to create Thin-App packages, the VMware ThinApp has to be installed on the packaging machine.

Compatibility and Quality Control

In order to use Quality features (checklists, compatibility, virtualization, and conflict testing) RayQC and / or RayQC Advanced have to be installed on the local machine.

PackBench

Depending on the configuration of RayPack Studio, additional tools and/or components of RaySuite may be required. To get more information about the command line usage of these tools refer to the respective *User Guides* of these products.

For PackBench: SQL Server, version 2008 or higher. Express editions are also supported.

RayQC

In order to install and use the product, PowerShell 3.0 or newer must be installed.

RayQC Advanced

In order to install and use the product, SQL Server version 2008 or higher. Express editions are also supported.

Virtual Machines

Sequencing to App-V 4.6 / App-V 5.x using PackBot

In order to sequence legacy setups to Microsoft App-V 4.6 / 5.x format using a virtual machine, the virtual machine must have Microsoft App-V Sequencer installed. Additional requirements for specific Operating System version/platform may by required by Microsoft Sequencer tools.

Note: There is a difference between "Sequencing" and "Converting" as denoted in the PackBot configuration. The latter one uses a native converter and does not require Sequencer at all.

Converting to Thin-App using PackBot

In order to convert legacy setups to Thin-App, Thin-App converter must be installed either on host or on the virtual machine.

VMware vSphere Integration

PowerCLI has to be installed on the same machine where RayPack runs. See https://code.vmware.com/web/dp/tool/vmware-powercli/11.0.0 for downloads and additional prerequisites.

Hyper-V integration

- Both host and guest machine must have PowerShell 3.0 or newer installed.
- Windows Remote Management
- RayPack Studio Tools for Hyper-V need to be installed on the guest machine.

The tools can be installed from a Windows Installer package that is present in the RayPack subfolder `Tools\HyperVTools\Packaging Suite Tools for Hyper-V.msi`.

The installation of the tools is required, so that the user can see interactive prompts and windows on Hyper-V machines. It is recommended to install the tools as a part of the base snapshot.

VMware Workstation integration

RayPack Studio supports the following products:

- VMware Workstation 10 and newer
- VMware Workstation 7, 8, 9 are experimentally supported.

To use any of VMware Workstation machines, one of the following must be installed in an appropriate version:

- VMware Workstation
  - VMware Workstation 14 is supported only once VIX API is installed (see below). Additionally, VIX COM DLL must be registered on the host system. Information about registering the DLL can be found here: https://raynetgmbh.zendesk.com/hc/en-us/articles/360000277786-RSC200351-Executing-Virtual-Machine-Operations-on-VMware-Workstation-14
- VMware VIX API (https://my.vmware.com/web/vmware/details?productId=26&downloadGroup=VIX-API-162)

The required VIX API version depends on the systems that it needs to connect to. The below table presents the supported versions of VMware products depending on the installed VIX API version.

VIX API Version	VMware Platform Products	Library Location
1.11	Workstation 8 or earlier	Workstation-8.0.0-and-vSphere-5.0.0
1.12	Workstation 9 or earlier	Workstation-9.0.0-and-vSphere-5.1.0
1.13	Workstation 10 or earlier	Workstation-10.0.0-and-vSphere-5.5.0
1.14	Workstation 11 or earlier	Workstation-11.0.0
1.15.0	Workstation 14 or earlier	Workstation-12.0.0 Workstation-14.0.0

Additional Information

Visit *www.raynet.de* for further information regarding the product and current community incentives. It is also recommended to take a look at additional resources available at the Knowledge Base for Raynet products: *https://raynetgmbh.zendesk.com/hc/en-us*.

Raynet is looking forward to receiving your feedback from your RayPack Studio experience. Please contact your Raynet service partner or write an e-mail to *sales@raynet.de* to add your ideas or requirements to the RayPack Studio development roadmap!

Our Raynet support team gladly assists you on any question or issue you encounter regarding RayPack Studio. Feel free to sign in and open incidents via our Raynet Support Panel.

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