RAYPACK® STUDIO

Enterprise Software Packaging

Release Notes RayPack Studio 6.3

RayPack Studio is part of RaySuite.

•rayNET

Release Notes RayPack Studio

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See our website for locations.

www.raynet.de

Contents

Introduction

RayPack Studio 6.3 is the next iteration of Raynet's framework for the creation and management of software packages. RayPack Studio 6.3 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.

This release contains new features, enhancements, and bug fixes for all 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 6.3.

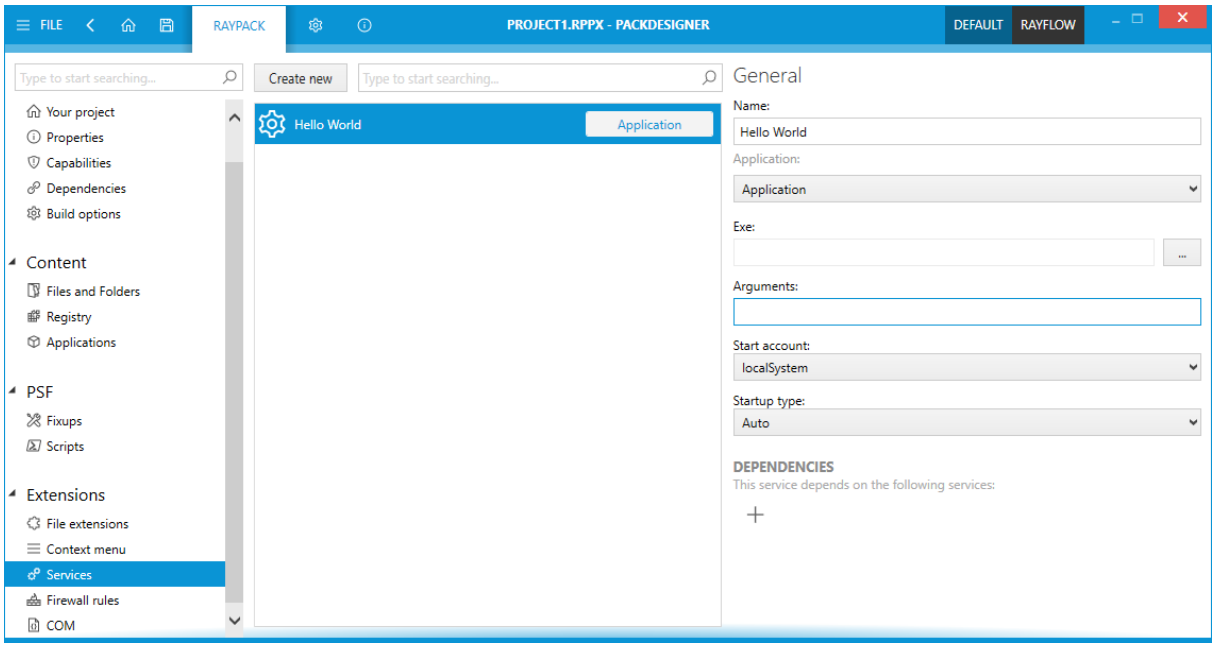
RayPack

MSIX

Support for latest MSIX features: Services, scripts, fix-ups `RPK-3646` `RPK-3560` `RPK-3571`

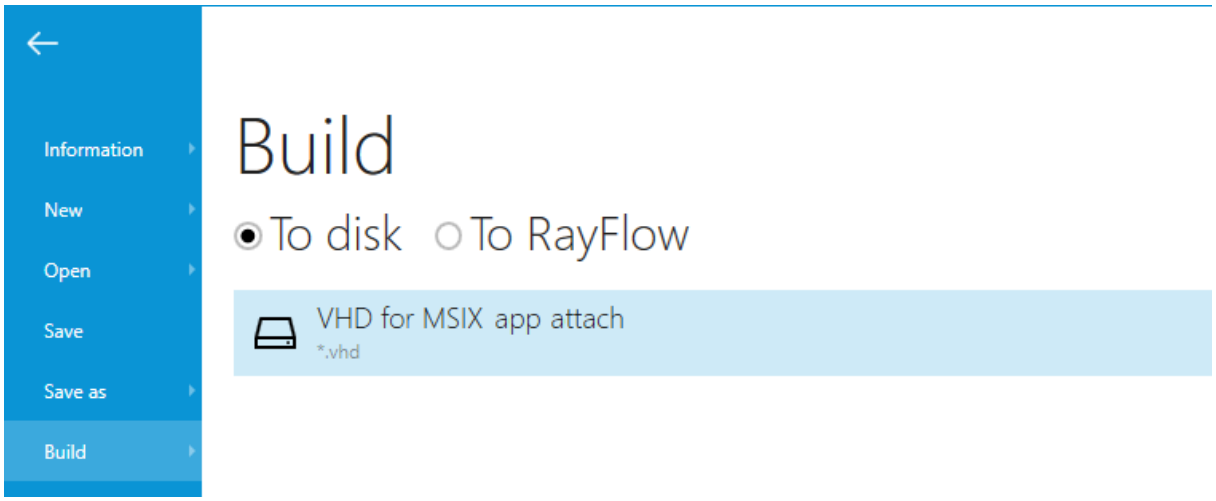
In this release we have updated several components and added new features and enhancements of MSIX, Package Support Framework and MSIX Core.

- There are many changes in the Package Support Framework (PSF). A new fixup (`DynamicLibraryFixup.dll`) is now supported.
- PowerShell scripts are now supported and can be configured to run before the package starts, or after it finishes. This feature of Package Support Framework makes it possible to work around some packaging-specific issues, which used to be impossible or complex to solve, for example initial set-up of data, configuring user profile etc.
- Services are now supported. Starting from Windows 10 May 2020 Update, it is possible to create packages containing packaged services. Such packages require administrative privileges for first-time installation. With RayPack 6.3, you can set them up in the Visual Designer mode, and also have them converted from your MSI packages or repackaged projects.



Build VHD for MSIX app attach RPK-3593

RayPack has been supporting MSIX as a target format since its official announcement. With this new release, we added a next step of integration, which is the ability to build directly to an expanded VHD image, used by the new concept called MSIX app attach. With MSIX app attach, the application is completely detached from the OS it runs on, and can be dynamically attached and detached without any noticeable delay. This means a clean deployment, no need to prepare golden images and all benefits of MSIX technology.



Other improvements

- RPK-3436 We added details and a button to jump to MSIX build settings from the FILE

backstage menu.

- RPK-3562 We improved error reporting in case of invalid or expired certificate for MSIX building.
- RPK-3588 We updated MSIX Core to the latest version.
- RPK-3568 We restored MSIX editing capabilities for users of professional licenses.
- RPK-3580 Several icons in PackDesigner for MSIX have been refreshed.
- RPK-3584 When adding Package Support Framework, we now detect the exact bitness of the file and use the right version of PSF launcher.
- RPK-3587 It is now possible to see and change source paths of files in PackDesigner for MSIX.
- RPK-3632 An extra validation check has been added when renaming a file name in MSIX project. This extra step ensures that the names are unique.
- RPK-3666 Improved validation of input in the dependency editor (MSIX).
- RPK-3668 Improved memory usage of some actions in MSIX editor.
- RSC-643 Manifests (`AppxManifest.xml`) created by RayPack are now easier to read, with duplicated namespaces being removed and other improvements.

Resolved issues

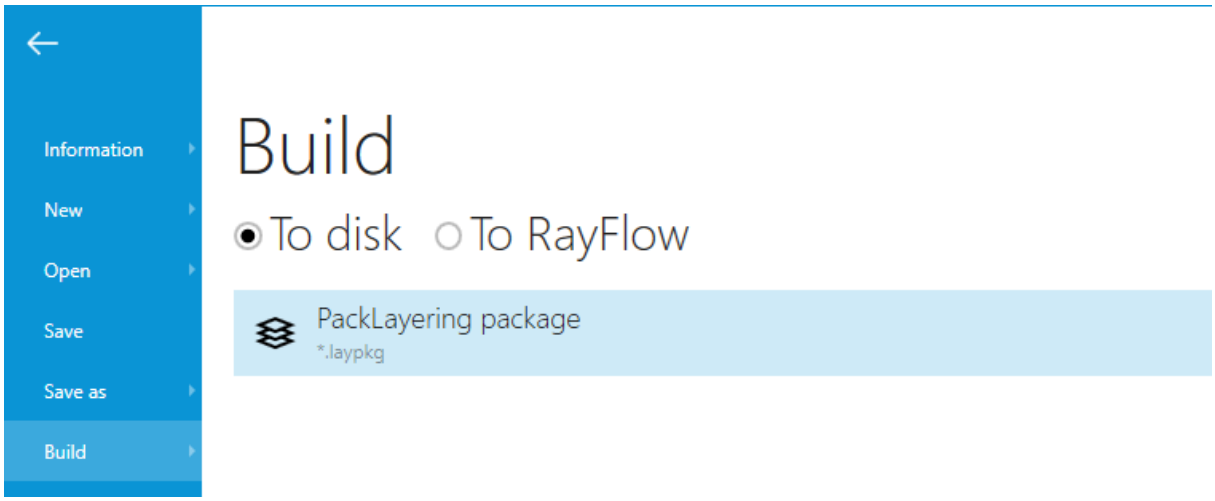
- RPK-3092 Some actions in MSIX designer were not activating the SAVE button. This issue has been fixed in this release.
- RPK-3462 There was no validation of context menu definitions in PackDesigner for MSIX. In this release, an extra validation has been added.
- RPK-3552 In some places, wrong Windows 10 version (a “spoofed” one) could be reported. In this version, always the actual Windows 10 version is reported.
- RPK-3556 It was possible to rename registry values in the MSIX Designer to duplicated values. In this version, RayPack checks for it and prevents the user from renaming to an already existing name.
- RPK-3561 Building of MSIX Core could not enter the required dependency information to the manifest file. In this version, a correct entry is added each time a package is built with MSIX Core support.
- RPK-3562 The error message, displayed when the required certificate file for MSIX signature was invalid or expired, has been improved. In this version, the message clearly states about the true cause of the issue.
- RPK-3565 Some MSI could not be built into MSIX and reported an error "*The system cannot find the file specified*.". This issue has been fixed in this version.

- `RPK-3566` Some registry files could not be imported, as they crashed RayPack with error `NullReferenceException` (PackDesigner for MSIX). This issue has been fixed in this release.
- `RPK-3591` It was not possible to import registry values with the same name. This issue has been fixed in this release.
- `RPK-3620` Longer application descriptions could be clipped in the Content->Application screen. The layout has been fixed to trim them and assign more screen espace to show as much content as possible.
- `RPK-3633` Some version combinations were incorrectly converted to MSIX package identity. The issue has been fixed in this version.
- `RPK-3635` Context menu in files and registry view was executing its action on the first item only in case of multi-selection. In this version, menu items that are only relevant for single items (for example renaming) are disabled if more than one element is selected.
- `RPK-3759` Moving nested structures of registry keys between keys was improperly moving their subnodes. The issue has been fixed in this version.
- `RPK-3763` Menu item for registry keys and values was sometimes not refreshing the buttons correctly. The issue has been fixed in this version.

PackRecorder

Repackage to Citrix AppLayering LAYPKG format `CIT-183`

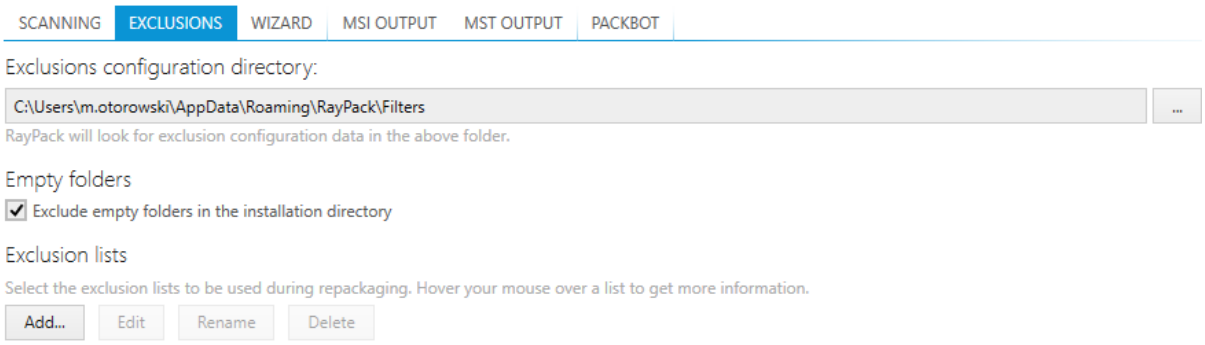
We added a new target format for building RCP projects. You can now target Citrix AppLayering layers to create `*.LAYPKG` archives, which can be imported in your console. Layers created with RayPack are much smaller and compacter than the ones produced during capturing with vendor tools, because the capturing, clean-up and removal of unrelated resources is powered by the same PackRecorder engine which has been now proven for years.



In version 6.3, it is also possible to open and edit LAYPKG layers. For more information refer to the chapter What's new -> PackLayering.

Capture empty folders during repackaging `RPK-3230`

This popular feature request has been finally implemented in RayPack 6.3. Just go to the settings > Repackaging > Exclusions and use the new checkbox control to decide whether the empty folders are to be included or excluded in RCP files. Whilst being an improvement, the change is fundamental for users who worked for years with RayPack and got use to automatic exclusion of such resources. Thus, for packages who prefer the old behavior we recommend setting the option "Exclude empty folders in the installation directory" to active to get the same behavior as in previous RayPack versions.



Other improvements

- `RPK-3537` Improved capturing of INI file changes in PackRecorder Repackager module.
- `RPK-3562` The error message and feedback reported to the user has been improved for cases, when the required certificate file for MSIX signature is invalid or expired. In this version, the message clearly states about the true cause of the issue.
- `RPK-3575` We improved reading of properties from app installers by PackRecorder, so that the default values are not shown as invalid.
- `RPK-3634` Repackaging and handling of win32 assemblies has been improved.
- `RPK-3651` Better default size for properties dialog of files, folders, and registry entries in PackRecorder editor.
- `RPK-3673` Improved messages in case of out-of-memory errors when creating a snapshot.
- `RPK-3710` Folder `%systemroot%/appcompat` is now present in the default exclusion lists for repackaging.
- `RPK-3711` Recognition of 64-bit apps during repackaging has been improved.
- `RTS-2352` Snapshots have now an extra bit of meta information, containing `VersionNT` string and build number.

Resolved issues

- RPK-3537 In some cases, regular expression for INI files could be ignored. The issue has been fixed in this release.
- RPK-3540 The default profile options for App-V Launcher and MSI were not respected when building from RCP format. This issue has been fixed in this release.
- RPK-3541 During building of RCP projects, environment variable changes were incorrectly interpreted as “appended” instead of “set”. This issue has been fixed in this release.
- RPK-3543 There was an issue with building of packages from RCP format containing the same environment variable set once per machine and once per user. This issue has been fixed in this release.
- RPK-3545 Link parameters could be lost when converting from RCP to MSI/RPP. This issue has been fixed in this release.
- RPK-3553 Certain combination of shortcut parameters could crash RayPack when converting RCP to MSI/RPP projects. This issue has been fixed in this release.
- RPK-3573 The display of binary registry values was showing wrong data for certain values (PackDesigner for MSIX). This issue has been fixed in this release.
- RPK-3565 Some MSI could not be built into MSIX or App-V and reported an error "*The system cannot find the file specified*.". This issue has been fixed in this version.
- RPK-3598 Repackaging on VM with PackRecorder with certain set of options could cause an unnecessary reboot loop. This issue has been fixed in this release.
- RPK-3606 In case of complex, multi-setup installations, PackRecorder could capture wrong ARP entries for product name, manufacturer and version. This behavior has been improved in this version, so that the right entry is respected.
- RPK-3609 Reading application properties in PackRecorder wizard was not trimming the installer meta-data (for example whitespaces at the beginning and at the end of the string). The trimming has been fixed in this version.
- RPK-3613 QWORD values could be incorrectly converted to MSI package. This issue has been fixed in this release, since QWORD is not supported by MSI the values are written in binary format.
- RPK-3615 In some rare cases handling of registry CLSID entries could lead to duplicated entries, rendering the package uninstallable. This issue has been fixed in this release.
- RPK-3616 Conversion of RCP to MSI/RPP in some edge cases was setting improper bitness parameter for components containing 64-bit ODBC entites. This issue has been fixed in this release.
- RPK-3622 Open registry entries were ignored from MSI when converting registry to advertised tables. In this version, the leftovers (not supported by advertised tables) are left in the registry.
- RPK-3633 Some version combinations were incorrectly converted to MSIX package identity.

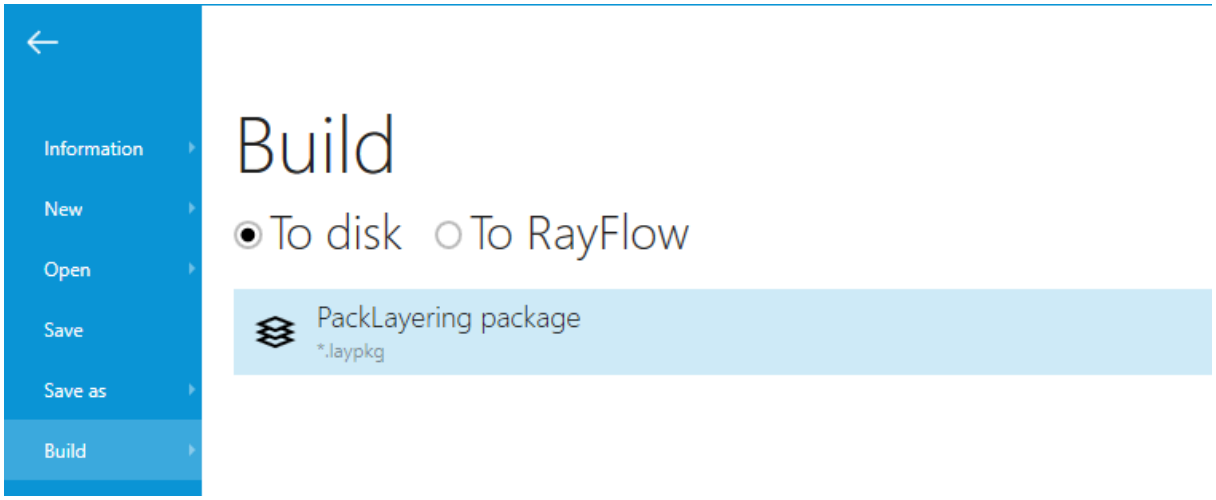
The issue has been fixed in this version.

- `RPK-3639` Certain background MSI activity could not be properly captured by the Original Setup functionality. The issue has been fixed in this version.
- `RPK-3641` Command line of the original setup in PackRecorder > General > Original Setups section could be wrongly displayed on smaller resolutions. The issue has been fixed in this version.
- `RPK-3643` Import of registry files in PackRecorder has been fixed.
- `RPK-3706` In some cases, depending on MSI conditions and other factors, it was not possible to generate MST file from RCP project, based on an existing MSI file. The issue has been fixed in this version.
- `RPK-3750` Importing and exporting of .reg files was improperly handling some escape sequences. The issue has been fixed in this version.
- `RPK-3754` Repackaging compressed files from RayFlow was producing a warning about disposed instance. The issue has been fixed in this version.
- `RQC-966` Pressing "Cancel" in the prompt whether the machine should be powered off does was not preventing from disconnecting. In this version, when the users presses "Cancel", the machine won't be disconnected.

PackDesigner

Convert packages to Citrix AppLayering LAYPKG format `CIT-183`

We added a new target format for building RPP projects and MSI/MST formats. You can now convert existing MSI-based installations to Citrix AppLayering layers (`*.LAYPKG`), which can be imported in your console. Layers created with RayPack are much smaller and compacter than the ones produced during capturing with vendor tools, because the conversion does not require repackaging, and only considers the files and resources present in the existing Windows Installer database.



In version 6.3, it is also possible to open and edit LAYPKG layers. For more information refer to the chapter What's new -> PackLayering.

Updated library of prerequisites `RPK-3601`

The default collection of prerequisites has been updated. New additions include .NET Core (various versions), JDK13, .NET Framework 4.7, Visual C++ Redistributables (various versions), SQL Server Express (various versions), Adobe AIR etc. Some older or not relevant software have been removed.

Other improvements

- `RPK-3657` Better error messages shown in case of locked MSI files when creating MST files.
- `RPK-3652` Names of custom actions are sorted alphabetically in the New Custom Action wizard.
- `RPK-3703` The UI for permission management in the Services section (MSI/RPP) has been slightly adjusted.

Resolved issues

- `RPK-3507` In some configurations, a `NullReferenceException` could be thrown when adding a file to a folder just after setting it as an `INSTALLDIR` (PackDesigner for macOS). The issue has been fixed in this release.
- `RPK-3517` For some values, text replacement Custom Action using Regular Expressions was not finding the text to be replaced. The custom action has been fixed in this release.
- `RPK-3542` PowerShell Custom Actions were always executed in 32-bit context even if set to run in 64-bit context. This issue has been fixed in this release.
- `RPK-3547` Importing of registry files (`.reg`) containing square brackets was improperly escaping them. This issue has been fixed in this release.
- `RPK-3562` The error message and feedback reported to the user has been improved for cases, when the required certificate file for MSIX signature is invalid or expired. In this version, the message clearly states about the true cause of the issue.
- `RPK-3579` In some cases, there was a rare exception thrown when copying row values from some tables. This issue has been fixed in this release.
- `RPK-3595` In some rare cases, paths using RPP variables were incorrectly resolving root drive placeholders. This issue has been fixed in this release.
- `RPK-3600` Restoring of deleted rows in the Table view could scroll the view to a non-relevant row. This issue has been fixed in this release.

- `RPK-3603` Reordering of sequence conditions when moving MSI actions could produce not optimal sequence values. This issue has been fixed in this release.
- `RPK-3612` Some operations could cause sequence values for custom actions to be duplicated. This issue has been fixed in this release.
- `RPK-3633` Some version combinations were incorrectly converted to MSIX package identity. The issue has been fixed in this version.
- `RPK-3648` Curly braces were incorrectly escaped when importing `.reg` file in PackDesigner. In this version, curly braces are treated literally.
- `RPK-3679` It was not possible to apply some specific Merge Modules. The issue has been fixed in this version.
- `RPK-3682` Pasting a GUID into the Product code field in General > Application was clipping the last brace. The issue has been fixed in this version.
- `RPK-3685` In the Sequencing dialog, repeated activaiting and deactivating of `AdvtExecuteSequence` could show an error. The issue has been fixed in this version.
- `RPK-3687` On small resolution, part of the content of the Registry Key Properties > Permissions dialog for MSI/RPP projects was clipped. The issue has been fixed in this version.
- `RPK-3695` In non-English UI, an exception could be thrown when selecting a custom search in the System Search wizard. The issue has been fixed in this version.
- `RPK-3696` When adding a new System Search for registry key from the wizard, the preference about 32- or 64-bit path was not remembered. The issue has been fixed in this version.
- `RPK-3703` Some labels in the Permission dialog used inconsistent casing. This has been fixed in this version.
- `RPK-3707` Batch (CMD) wrapper for MSI installations were not properly quoting the path to the MSI. The issue has been fixed in this version.
- `RPK-3709` Jumping to Signature configuration from Build Options page was sometimes not working. A fix has been added in this version.
- `RPK-3712` Renaming a component in the Components view was not validating the input and checking for invalid characters. A missing validation has been added in this version.
- `RPK-3734` The "Next" button on "Programs" page required one extra click to be enabled. The issue has been fixed in this version.
- `RPK-3736` In some cases, a `NullReferenceException` could be thrown by the folder browser in the Deployment Wizard Tab page. The issue has been fixed in this version.
- `RPK-3765` The button to open default PowerShell editor in a PS Custom Action editor was not working. The issue has been fixed in this version.

PackBot

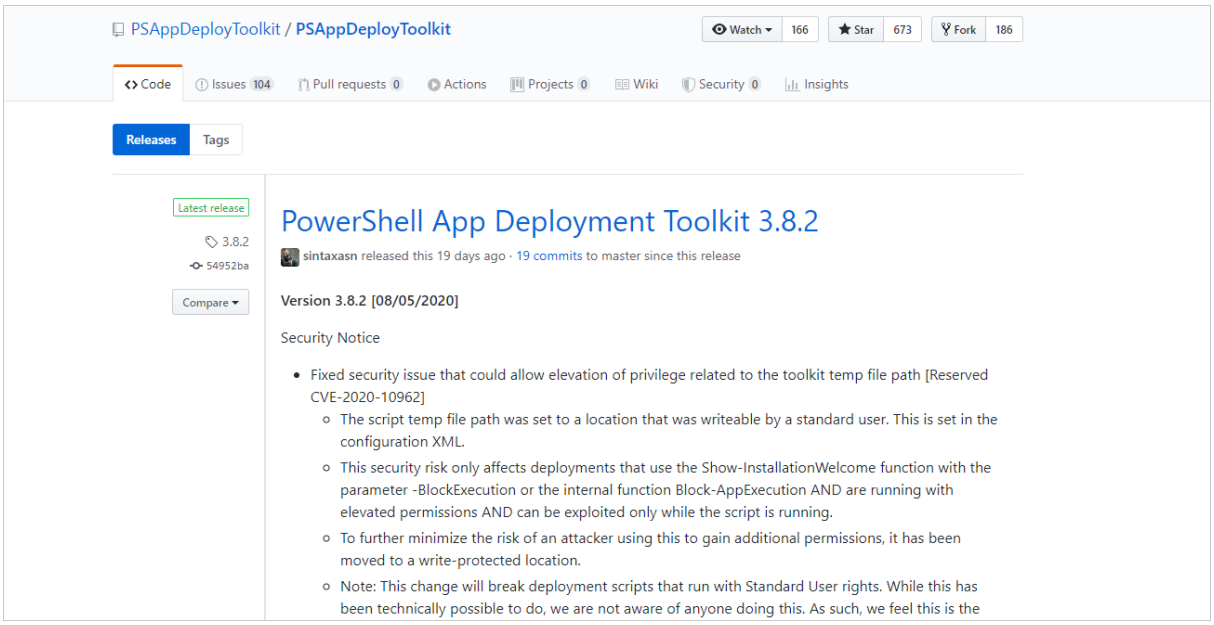
Resolved issues

- RPK-3567 Some strings were not translated in non-English systems. This issue has been fixed in this release.
- RPK-3625 In some rare cases, PackBot could return exception `KeyNotFoundException`. This issue has been fixed in this release.
- RPK-3681 In some rare cases, PackBot could fail when executing post-conversion tasks. The issues have been fixed in this version.
- RPK-3683 Cancelling a connection with Hyper-V which was force-closed in the background was never ending. The issue has been fixed in this version.

PackWrapper

PowerShell App Deployment Toolkit updated to version 3.8.2 RPK-3655

PackWrapper and PackDesigner use the newest version of PSADT. Refer to https://github.com/PSAppDeployToolkit/PSAppDeployToolkit/releases for more information about this release.



Resolved issues

- RPK-3662 The Selection page in the PackWrapper wizard was clipped on smaller resolutions. In this version, a scrollbar is shown when necessary.

PackTailor

New features and improvements

- RPK-3701 PackTailor now warns the user if the package to be transformed contains no dialogs.

Resolved issues

- RPK-3671 Tailoring of some specific MSI files could crash depending on MSI conditions and other factors. The issues have been fixed in this build.

Virtualization Pack

New features and improvements

- RPK-3676 We improved catching of App-V sequencer reports to better inform the user about issues, reported by external module when performing a sequencing on a VM.
- RPK-3699 Building App-V packages from command line (`rpcmd.exe`) is now reporting better human-friendly errors in case of missing source files.

Resolved issues

- RPK-3540 The default profile options for App-V Launcher and MSI were not respected when building from RCP format. This issue has been fixed in this release.
- RPK-3565 Some MSI could not be built into MSIX or App-V and reported an error "*The system cannot find the file specified*.". This issue has been fixed in this version.
- RPK-3688 Sometimes, clean-up routine after repackaging to Thin-App on a VM could fail when removing temporary icons. The issues with clean-up have been fixed in this version.

Automation

New features and improvements

- RPK-2163 An option has been added to command line tool `RPCMD.EXE` allowing the user to create a transform (MST) file based on a given RayPack template / transform definition (RPMST).

Resolved issues

- RPK-3559 When building projects with `rpcmd.exe`, invalid set of options and formats were not properly reported to the user. In this version, the user receives a precise information about

invalid combination of options.

- `RPK-3697` An exception of type `FormatException` could be thrown when converting third-party projects (`.ism`, `.wsi`) to RayPack format (.rpp) from command line `rpcmd.exe`. The issue is now fixed.

General

Resolved issues

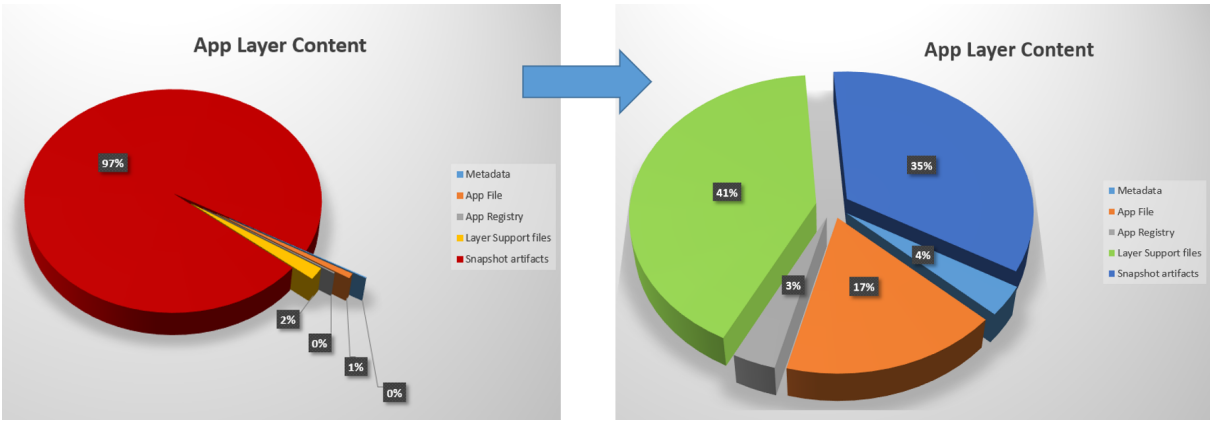
- `RPK-3671` It was not possible to start RayPack 6.2 without admin rights. This issue has been fixed in this release..
- `RPK-3671` Jumping from profile selector to the corresponding page in settings was opening the Settings screen on the first tab (General). In this version, the Interface screen is shown instead.

PackLayering

PackLayering is a new addition to the RayPack Studio family.

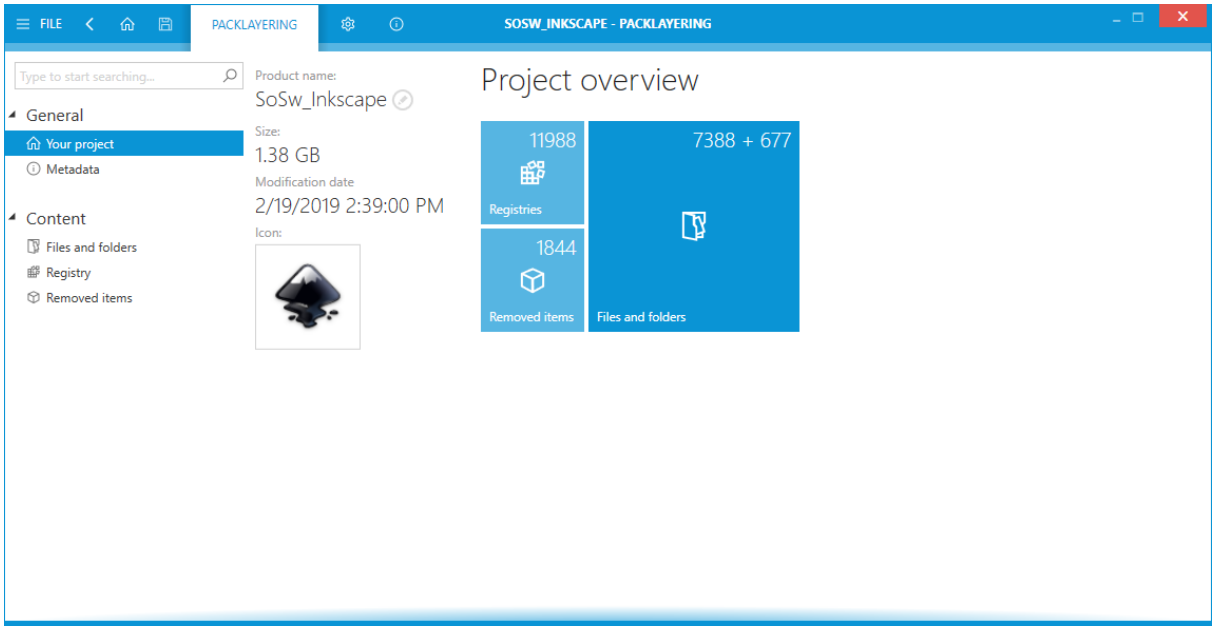
This product is meant to fill the functional gaps for users of layering and VDI, realized with Citrix App Layering technology. The tooling available for App Layering users has been on a sub-par level so far. A typical issue were big layers (several hundred MB or even a few GBs) for even small apps. This has ever been a tradeoff and a price paid for a relative unproblematic packaging (without any prior experience or formal trainings), but suffering later from many issues, most importantly decreased performance, large network traffic and storage quota, and conflicts between resources in layers.

Comparison of original state (LAYPKG created with vendor tooling) with the same layer edited by RayPack



A popular feature request that we implemented in RayPack Studio 6.3 allows users to edit existing, exported layers (in `*.laypkg` format), browse and modify them. Our proven exclusion lists can be used to perform auto-filtering, which gets rid of unnecessary or unrelated resources, letting the layers be much slimmer and faster in deployment. And since the user interface has been largely taken from our other components, jumping in the new layering works is not only

productive but also an exciting experience.



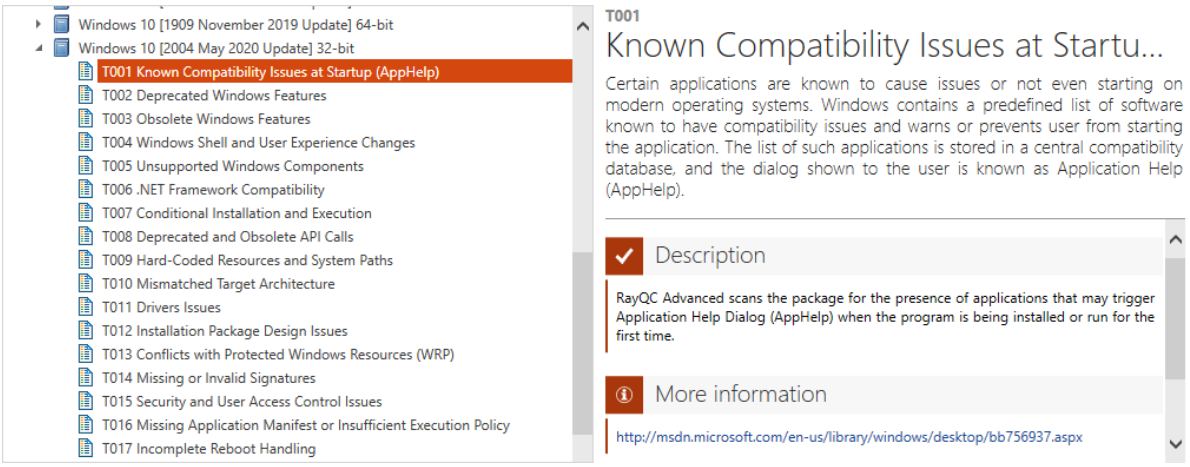
The new component is standalone (just like PackBench or PackManager for App-V), which means that the suite can be tailored, making sure only the components relevant for each packaging team are installed.

There are also additional features for repackaging and converting to LAYPKG format, from existing projects and packages. These are available in both PackRecorder and PackDesigner (see respective chapters for more details). Using a single source-of-truth (RayPack project) with many target formats available, when a single resource changes it can be quickly reflected in respective packages, depending on priorities (MSIX for modern deployment, LAYPKG for layering scenarios and MSI for classic deployment). Due to attractiveness and flexibility of layering (in comparison to a classic deployment or golden-image approach) we believe that this concept be getting more attention and gain market usage.

RayQC Advanced

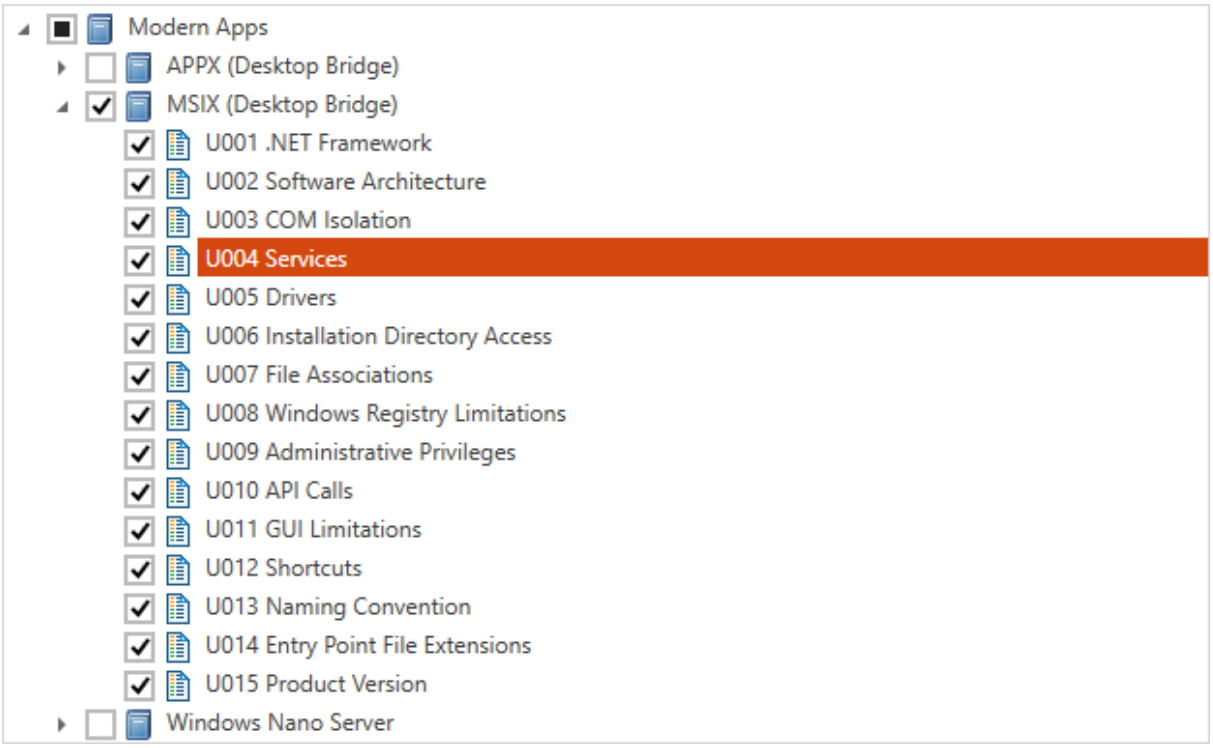
Windows 10 May 2020 Update compatibility tests RTS-3585

The newest version of Windows 10 (2004 aka May 2020 Update) is now available as a new ruleset. It follows the same principles as the rulesets for previous versions of Windows 10, adapting locally to new findings and adjustments.



Improved MSIX compatibility tests RTS-3586

We improved and adjusted our test engine for MSIX package compatibility to reflect the current state-of-art of MSIX/APPX state, including newly added features and capabilities from recent Windows 10 versions.



PowerShell automation RTS-2373

It is now possible to include RayQC Advanced logic into automation and workflows utilizing PowerShell. A brand new PowerShell module is available for script authors and IT Pros, providing

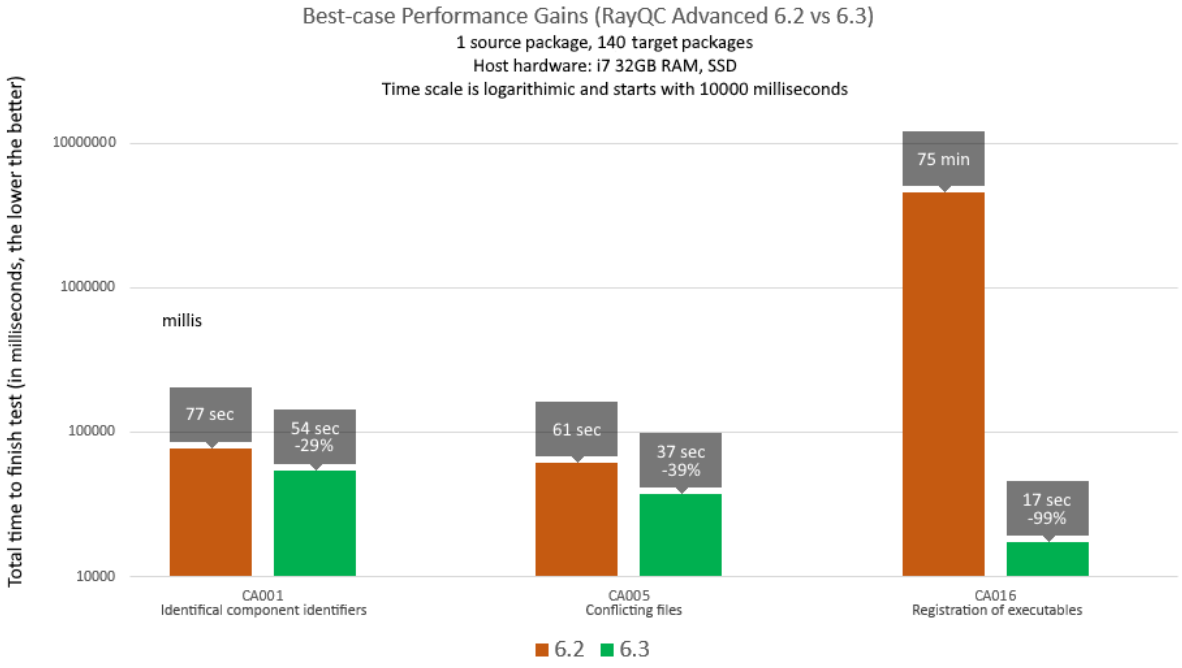
access to common operations, including but not limited to:

- Reading packages and snapshots
- Executing tests
- Performing autoremediation
- Reports managements
- and much more.

More details about usage and getting started with PowerShell automation can be found in Product User Guide.

Performance optimization `RTS-2371`

We reworked some core components of the test engine and plugins to improve performance and memory footprint in complex test scenarios. As a result of these changes, the total installation size is ca. 25% smaller (in comparison to 6.2) thanks to consolidated test assemblies (number of files decreased by ca. 75%). These changes improve performance of several rules, where most of benefits can be seen in the collision tests. The mileage may vary, but in our test lab we were able to speed up several rules by 50%, and some of them are now up to 200 times faster.



Other improvements

- `RTS-2362` Command line testing tool has now more verbose XML output, which contains additional properties, including `ProductCode`, `ProductName`, `ProductVersion`,

`Manufacturer` and `Language`. Additionally, the output contains information about the architecture and executed rules.

- `RTS-2361` It is now possible to opt-out from displaying all source packages in favor of a compact count of packages on the title page of PDF reports. By enabling this setting for exported PDF files, it is possible to export large document containing dozens and hundreds of packages without cluttering the title page with too much information.

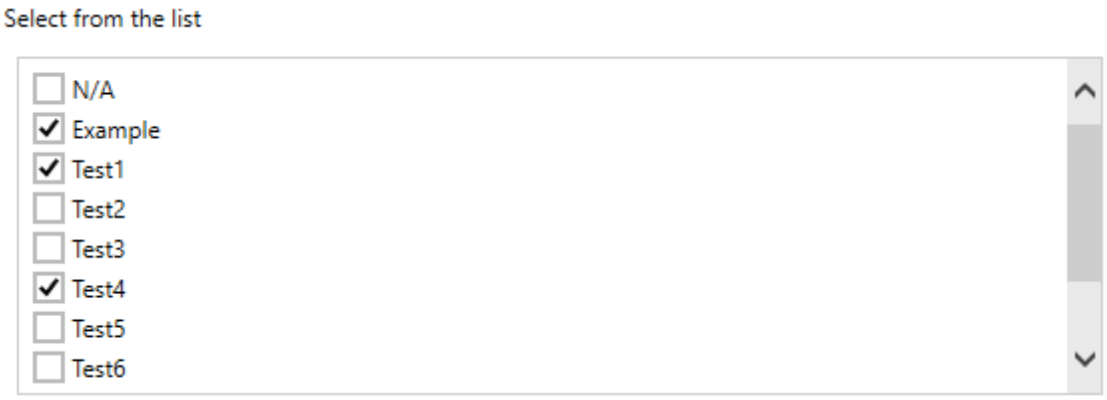
Resolved issues

- `RTS-2352` In the Test Wizard, the button to proceed was incorrectly disabled for certain selection of conflict tests and a system snapshot. The issue has been fixed in this version.
- `RTS-2350` An exception `NullReferenceException` was thrown after pressing on "View crawled links" if there were no crawled links. The issue has been fixed in this version.
- `RTS-2355` An error was shown when trying to test SCCM settings of a not existing server. The issue has been fixed in this version.
- `RTS-2358` In the log file, some entries were erroneously reported as errors after a successful App-V import. The issue has been fixed in this version.
- `RTS-2368` Some language strings were not translated properly in various places. These mistakes have been fixes in this version.
- `RTS-2379` It was not possible to convert a legacy setup and import it from a virtual machine. The issue has been fixed in this version.
- `RPK-3734` The "Next" button on "Programs" page required one extra click to be enabled. The issue has been fixed in this version.
- `RPK-3736` In some cases, a `NullReferenceException` could be thrown by the folder browser in the Deployment Wizard Tab page. The issue has been fixed in this version.

RayEval

New data field type: the multi-selection list `RVL-170`

Based on popular feedback, we extended our list of supported data field types by allowing the user to define a control where several values are displayed, together with checkboxes that control multi-selection. Thanks to this improvement it is not only easier to model some application and process relevant data, but also bind parameters from RayFlow (multi-dropdown data field).



Other improvements

- `RVL-624` Templates can be now assigned to configurations via the new `TemplatesFilterPattern` XML attribute.
- `RVL-293` When a new text-only step is added, the focus is now set immediately to the textbox, allowing immediate editing.
- `RVL-579` Key bindings for Undo (`CTRL+Z`) and Redo (`Ctrl+Y`) have been added in the Picture Editor.
- `RVL-588` It is now possible to unassign hotkeys for screen and control capturing.

Resolved issues

- `RVL-548` Arrow navigation in the list of steps was switching between items based on their visual, not logical position. In this version, pressing arrows cycles through steps in their actual logical order.
- `RVL-576` After deleting a step, the first step in the current sequence was automatically selected which triggered scrolling of the list to the top. In this version, the nearest neighbor is selected instead.
- `RVL-577` In German UI, the header for recent items panel was incorrectly translated as “Letzte”. In this version the string says "Zuletzt verwendet".
- `RVL-599` RayEval was not re-using RayPack scan settings if both were installed on the same machine. In this version, correct scan settings are respected.
- `RVL-601` After canceling settings changes, the snapshots settings were not reverted. The issue has been fixed in this version.
- `RVL-606` The button for editing pictures was sometimes not being enabled after removal of steps. The issue has been fixed in this version.

- RVL-608 The installer was showing an error during the installation with floating licensing enabled. The issue has been fixed in this version.
- RVL-609 For some projects, opening `*.rex` files by double-click was not working. The issue has been fixed in this version.
- RVL-613 Exception was thrown when exporting RayEval document using command line. The issue has been fixed in this version.
- RVL-617 The `.rex` extension was lost when the `DefaultSaveFileName` ends with a extension. The issue has been fixed in this version.
- RVL-618 Multiple projects configurations were selected if RayEval was started with a pre-selected config using the command line. The issue has been fixed in this version.
- RVL-620 It was not possible to start RayEval without admin permissions. The issue has been fixed in this version.
- RVL-622 The caption of a button in top configuration selection used confusing wording. This has been resolved in this version by differentiating between "configuration" and "settings".
- RVL-623 The title of the main incorrectly set to "Evaluation" even when working with documentation projects. In this version, the title correctly reflects the current mode.
- RVL-630 It was not possible to use blank default value for text field, a placeholder N/A was always used instead. In this version, RayPack Studio takes the input from the user literally.
- RVL-631 Bulk deleting of steps in TestRail projects was only removing the first step. In this version, all selected steps are being removed.
- RPK-3683 Cancelling a connection with Hyper-V which was force-closed in the background was never ending. The issue has been fixed in this version.
- RQC-966 Pressing "Cancel" in the prompt whether the machine should be powered off does was not preventing from disconnecting. In this version, when the users presses "Cancel", the machine won't be disconnected.

RayQC

Automate extraction and packing of RayQC checklist files RQC-954

Due to an internal implementation, RayQC checklist files are browsable like ZIP files, but not fully compatible with its format. To help automate actions and workflows (for example building checklists from source controlled XML files) we added new command lets to the PowerShell Automation API, which can be used for extraction and compression of `.rqct` and `.rqcp` files.

Resolved issues

- RQC-948 Command line tool `RayQC.exe` was waiting for a return key upon finishing. In this

version, the tool returns directly to the caller.

- `RQC-949` It was possible to go to a checklist view when opening a non-existing checklist from the recent item or shell. In this version it is not possible anymore.
- `RQC-950` There was a typo in the name of generated document in German language. The issue has been fixed in this version.
- `RQC-953` Intelligence syntax was incorrectly closing nested tags. The issue has been fixed in this version.
- `RQC-955` Errors from plug-ins were not correctly shown in the debug dialog. In this version, errors are included.
- `RQC-956` The content of the search box was remembered between projects. In this version, opening or creating a new project resets the value of the search box.
- `RQC-957` In large checklists, the roman numbers were not always fitting into their placeholders. In this version, long strings are scaled to fit.
- `RQC-959` Several typos have been fixed in this version.
- `RQC-963` The connection to the VM could not be established when using command line tool with -vm switch. The issue has been fixed in this version.
- `RQC-965` PowerShell command `Set-ChecklistValue` was not working properly with string representation of logical values. The issue has been fixes in this version.
- `RQC-966` Pressing "Cancel" in the prompt whether the machine should be powered off does was not preventing from disconnecting. In this version, when the users presses "Cancel", the machine won't be disconnected.
- `RPK-3683` Cancelling a connection with Hyper-V which was force-closed in the background was never ending. The issue has been fixed in this version.

PackBench

Resolved issues

- `BEN-342` When importing single- and multi-data field from RayFlow, the value of a variable was always in a GUID format, while the tools expected a name instead. In this version, the format is adjusted to feed the tools with the format they expect.
- `BEN-343` Parameter `-Bitness` was not interpreted correctly from command line. The issue has been fixed in this build.
- `BEN-344` When creating a new run from command line pbcmd.exe, custom variables were not created. The issue has been fixed in this build; custom variables are now correctly set.
- `RSC-640` Data mappings between RayFlow 6.0 (non-English) and custom data fields were not working correctly. The issue has been fixed in this version.

Migration and Breaking Changes

RayPack

Upgrading RayPack

General Upgrade Preparations

RayPack 6.3 is delivered as part of the RayPack Studio Installer. To install it safely execute the following steps:

1. Download the RayPack Studio Installer 6.3 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 6.3 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

Migration from RayPack 6.2

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).
- The new version of PSADT (PowerShell App Deployment Toolkit) introduces some changes which are incompatible with the old template. In order to preserve user customizations, RayPack does not override PSADT templates. When upgrading to the new version, make sure to update required templates manually, by merging changes from `<INSTALLDIR>`

`\Resources\Wrappers\PSAppDeploymentToolkit\` with the current template from (by default) `C:\RayPack\PackPoint\Wrappers\PSAppDeploymentToolkit`.

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 performing a clean installation of RayPack / PackBench 6.3. 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 6.3.

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.

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

1. Download the RayPack Studio Installer 6.3 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 6.3 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 6.2

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 performing a clean installation of PackBench 6.3. 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 6.3.

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

1. Download the RayPack Studio Installer 6.3 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 6.3 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

RayQC Advanced

Upgrading RayQC Advanced

General Upgrade Preparations

RayQC Advanced 6.3 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 6.3 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 6.3 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

Due to certain changes in rules (see RayQC Advanced section in What's New chapter), there may be some breaking changes in the database of rules. Existing 6.2 and older databases may require a migration (done automatically by the installer) or recaching of plugins (from the RayQC Advanced view). After the migration or recaching is performed, older instances will stop seeing the new rules.

RayEval

Upgrading RayEval

General Upgrade Preparations

RayEval 6.3 is delivered as an MSI software package. In order to install it safely:

1. Download the MSI package for RayEval 6.3 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 6.3 MSI package and work yourself through the setup routine. The installation of RayEval 6.3 is described in the *RayEval 6.3 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.

System Requirements

Hardware Requirements

Minimal

- CPU: Intel Core i5
- Screen resolution: 1024 x 768 pixels
- RAM: 4GB
- Disk space: 10GB

Recommended

- CPU: Intel Core i7
- Screen resolution: 1280 x 1024 pixels
- RAM: 16GB or higher
- Disk space: 100GB or more

Note:
The installation of the RayPack Studio framework itself requires about 600MB 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 SP2
- Windows 7 SP1
- Windows 8
- Windows 8.1

- Windows 10
- Windows Server 2008 R2
- Windows Server 2008 SP1
- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016
- Windows Server 2019

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

General

- .NET 4.5 Client & Full for Windows Vista up to Windows 8 systems (both 32-bit and 64-bit). Windows 10 already contains the required framework.

General Requirements

To use RayFlow functionality directly from RayPack Studio components, a running RayFlow server must be accessible.

To use *RayManageSoft* integration, *Management Console* must be installed on the machine on which RayPack is running.

RayPack

Virtualization

- To create SWV packages, the Symantec Workspace Virtualization Agent 7.5 must be installed on the packaging machine.
- To create Thin-App packages, the VMware ThinApp must be installed on the packaging machine.

Compatibility and Quality Control

To use Quality features (checklists, compatibility, virtualization, and conflict testing) RayQC and /

or RayQC Advanced must be installed on the local machine.

Generation of MSIX Files

If using Windows 8.1 or Windows Server 2012 R2 or an older version of Windows or Windows Server, an update for the CRT in Windows is needed to be able to generate MSIX files.

More information on the CRT update can be found here: https://support.microsoft.com/en-us/help/2999226/update-for-universal-c-runtime-in-windows.

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 2012 or higher. Express editions are also supported.

RayQC

To install and use the product, PowerShell 3.0 or newer must be installed.

RayQC Advanced

To install and use the product, SQL Server version 2012 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

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

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 Studio 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 / ESXi5.5 - 6.0

RayPack Studio supports the following products:

- VMware vSphere 5.5-6.0
- VMware Workstation 10 and newer
- VMware Workstation 7, 8, 9 and for VMware vSphere 4.x, 5 and 5.1 are experimentally supported.

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

- VMware Workstation
- VMware VIX API (https://my.vmware.com/web/vmware/details?productId=26&downloadGroup=VIX-API-162)
- vSphere

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

VIX API Version	VMware Platform Products	Library Location
1.15.0	Workstation 14 or earlier	Workstation-12.0.0 Workstation-14.0.0

ESXi 6.5 and newer

To make use of ESXi 6.5+ servers, the following prerequisites must be met:

- PowerShell 3.0
- PowerShell Execution Policy set to Unrestricted or RemoteSigned
- PowerCLI installer (https://www.powershellgallery.com/packages/VMware.PowerCLI/11.2.0.12483598)
- VMware Tools installed on the VM
- **Guest operations** and **System** permissions granted to the user executing the product.

Combination of supported versions is presented in the following table:

	VMware PowerCLI															
	12.0.0	11.5.0	11.4.0	11.3.0	11.2.0	11.1.0	11.0.0	10.2.0	10.1.1	10.1.0	10.0.0	6.5.4	6.5.3	6.5.2	6.5.1	6.5.0
VMware vSphere Hypervisor (ESXi)																
7.0	✓	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6.7 U3	✓	✓	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—
6.7 U2	✓	✓	✓	✓	✓	—	—	—	—	—	—	—	—	—	—	—
6.7 U1	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—	—	—	—	—
6.7.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—	—
6.5 U3	✓	✓	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—
6.5 U2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—	—
6.5 U1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—
6.5.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6.0 U3	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6.0.0 U2	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6.0.0 U1	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6.0.0	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.5 U3	—	—	—	—	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.5 U2	—	—	—	—	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.5 U1	—	—	—	—	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.5	—	—	—	—	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓

More information about PowerCLI:

- https://pubs.vmware.com/vsphere-51/index.jsp?topic=%2Fcom.vmware.powercli.cmdletref.doc%2FGet-VMGuest.html
- https://pubs.vmware.com/vsphere-51/topic/com.vmware.powercli.cmdletref.doc/Invoke-VMScript.html
- https://pubs.vmware.com/vsphere-50/index.jsp?topic=%2Fcom.vmware.wssdk.pg.doc_50%2FPG_ChD_Privileges_Reference.22.3.html

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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