



**RAYPACK® STUDIO**

# Enterprise Software Packaging

**Release Notes RayPack Studio 6.5**

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## Release Notes RayPack Studio

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# Introduction

RayPack Studio 6.5 is the next iteration of Raynet's framework for the creation and management of software packages. RayPack Studio 6.5 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](http://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](mailto:sales@raynet.de) to add your ideas or requirements to the RayPack Studio development road map!

# What's New?

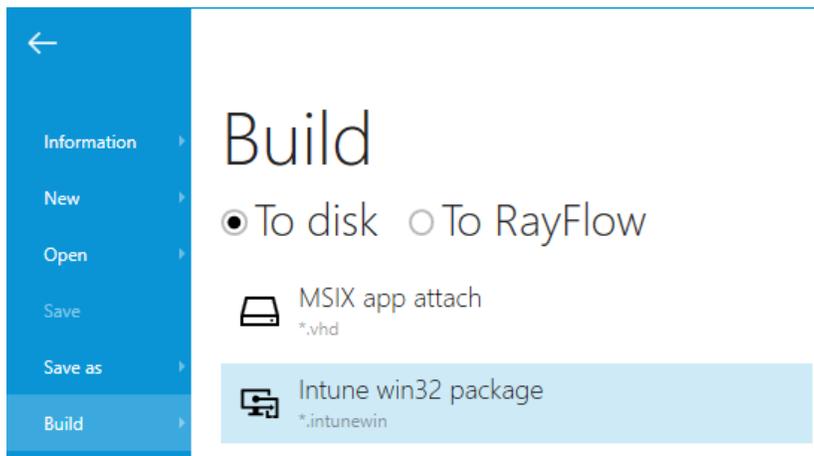
The following chapters contain an overview of the improvements, resolved issues, and the new features that are part of the new release of RayPack Studio 6.5.

## RayPack

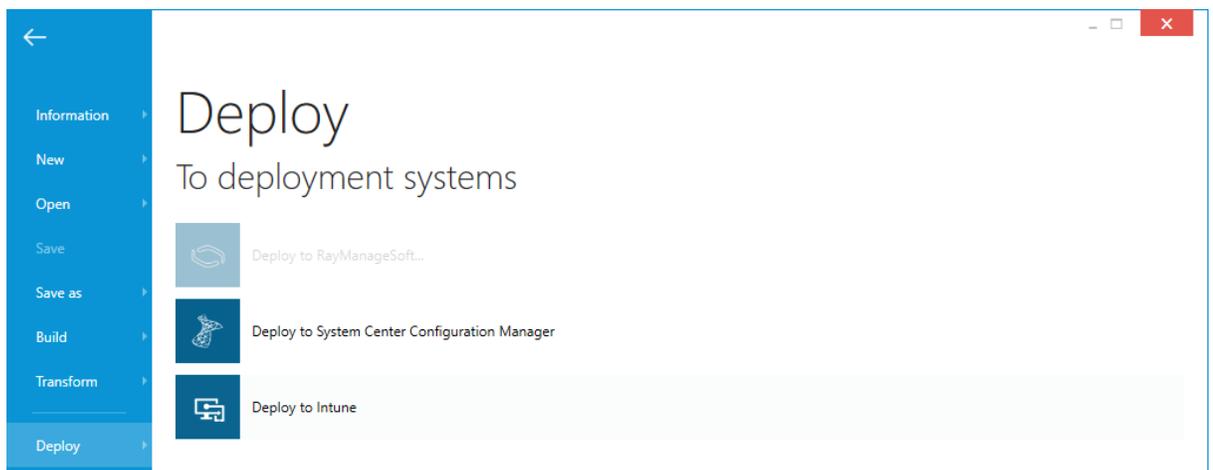
### Publishing in Intune format RPK-3787

This version has several new features for IT Professionals working with Intune:

- Intune win32 package is available as a new target format and can be invoked from FILE > Build menu for RCP, RPP, MSI and MST projects

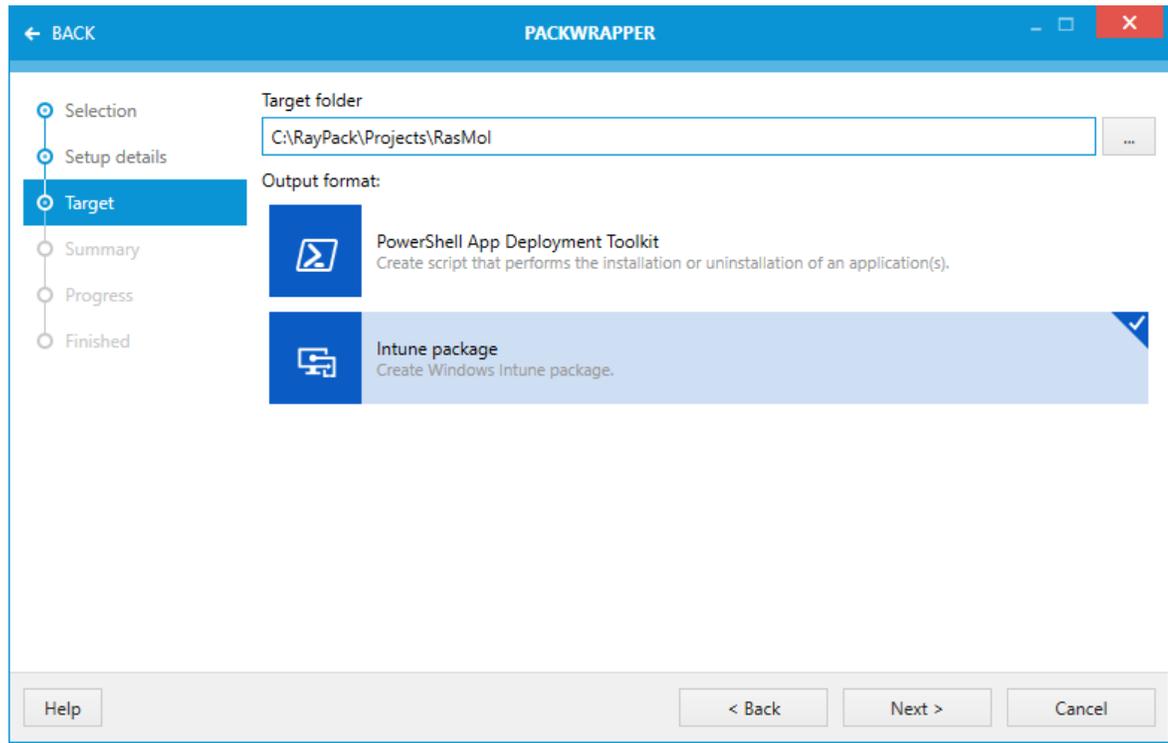


- MSI, MST and RPP projects can be deployed to Intune using a new wizard



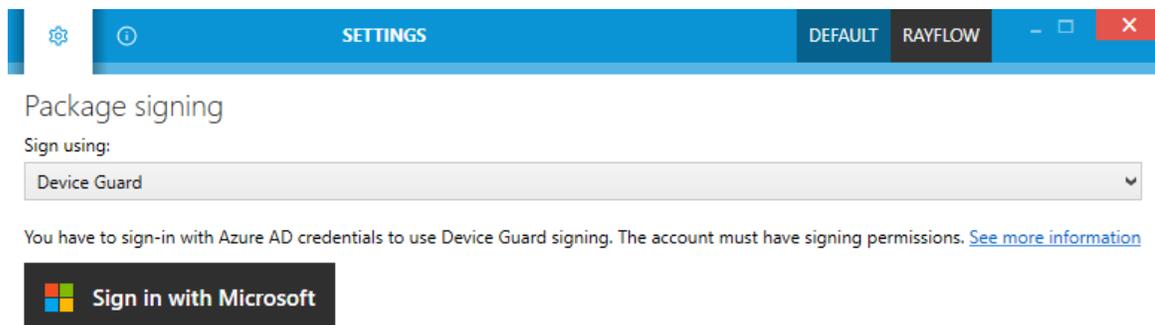
- Finally, PackWrapper has a new setting which wraps the content in a self-contained Intune

package, containing PSADT package content



## Digital signing with Device Guard Signing Service RPK-798

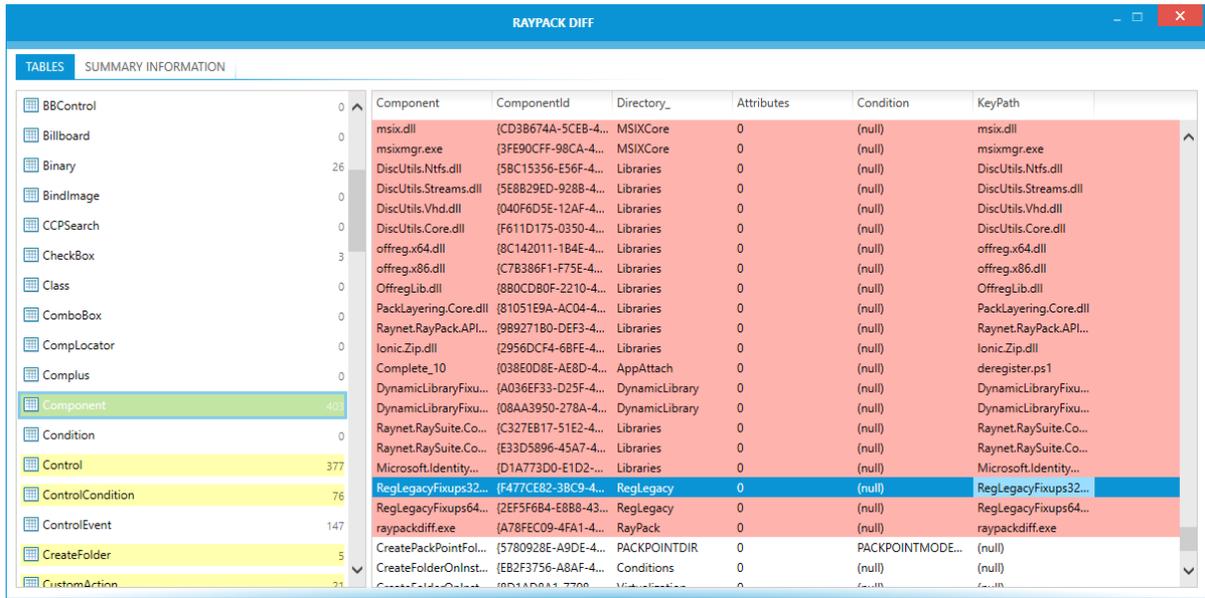
Infrastructure-less signing with Device Guard Signing Service (DGSS) has been added in this release. In order to get started, visit the updated **Signing + tagging** tab, and perform a one-time sign-in with AzureAD credentials with a user that has necessary signing permissions configured in the Microsoft Store for Business Portal. After that, the packages can be signed with a certificate, for which the root certificate can be downloaded from Microsoft Store for Business.



## Compare two MSI or RPP projects RPK-798

It is now possible to compare two different files - MSI/MST or RPP and their combinations. The

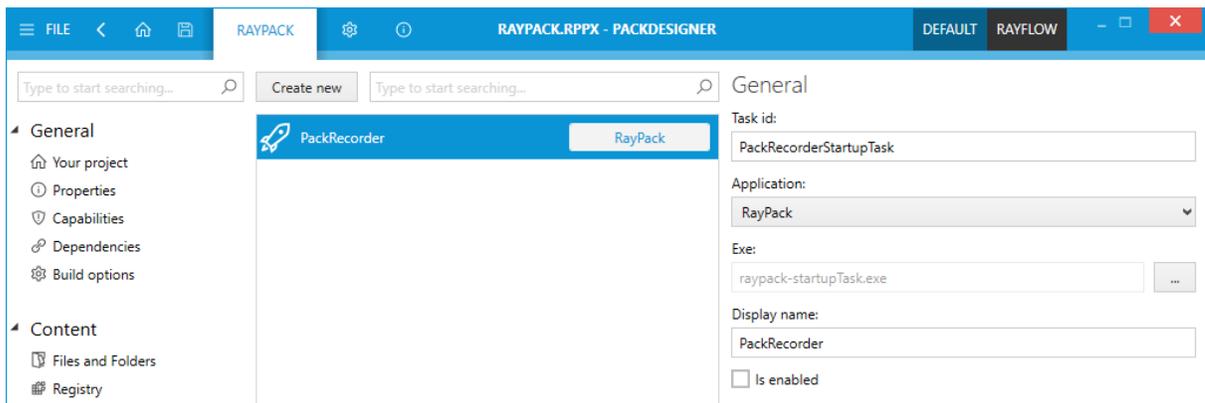
comparison includes differences in tables and in the Summary Information Stream and can be also invoked from a single-purpose tool `raypack-diff.exe`.



Component	ComponentId	Directory_	Attributes	Condition	KeyPath
msix.dll	{CD38674A-5CE8-4...	MSIXCore	0	(null)	msix.dll
msixmgr.exe	{3FE90CFE-98CA-4...	MSIXCore	0	(null)	msixmgr.exe
DiscUtils.Ntfs.dll	{5BC15356-E56F-4...	Libraries	0	(null)	DiscUtils.Ntfs.dll
DiscUtils.Streams.dll	{5E8B29ED-928B-4...	Libraries	0	(null)	DiscUtils.Streams.dll
DiscUtils.Vhd.dll	{040F6D5E-12AF-4...	Libraries	0	(null)	DiscUtils.Vhd.dll
DiscUtils.Core.dll	{F611D175-0350-4...	Libraries	0	(null)	DiscUtils.Core.dll
offreg.x64.dll	{8C142011-1B4E-4...	Libraries	0	(null)	offreg.x64.dll
offreg.x86.dll	{C78386F1-F75E-4...	Libraries	0	(null)	offreg.x86.dll
OffregLib.dll	{880CD80F-2210-4...	Libraries	0	(null)	OffregLib.dll
PackLayering.Core.dll	{81051E9A-AC04-4...	Libraries	0	(null)	PackLayering.Core.dll
Raynet.RayPack.API...	{98927180-DEF3-4...	Libraries	0	(null)	Raynet.RayPack.API...
Ionic.Zip.dll	{2956DCF4-68FE-4...	Libraries	0	(null)	Ionic.Zip.dll
Complete_10	{038E0D8E-AE8D-4...	AppAttach	0	(null)	deregister.ps1
DynamicLibraryFixu...	{A036EF33-D25F-4...	DynamicLibrary	0	(null)	DynamicLibraryFixu...
DynamicLibraryFixu...	{08AA3950-278A-4...	DynamicLibrary	0	(null)	DynamicLibraryFixu...
Raynet.RaySuite.Co...	{C327EB17-51E2-4...	Libraries	0	(null)	Raynet.RaySuite.Co...
Raynet.RaySuite.Co...	{E33D5896-45A7-4...	Libraries	0	(null)	Raynet.RaySuite.Co...
Microsoft.Identity...	{D1A773D0-E1D2-4...	Libraries	0	(null)	Microsoft.Identity...
RegLegacyFixups32...	{F477CE82-38C9-4...	RegLegacy	0	(null)	RegLegacyFixups32...
RegLegacyFixups64...	{2EF5F6B4-E8B8-43...	RegLegacy	0	(null)	RegLegacyFixups64...
raypackdiff.exe	{A78FEC09-4FA1-4...	RayPack	0	(null)	raypackdiff.exe
CreatePackPointFol...	{5780928E-A9DE-4...	PACKPOINTDIR	0	PACKPOINTMODE...	(null)
CreateFolderOnInst...	{EB2F3756-A8AF-4...	Conditions	0	(null)	(null)
CreateFolderOnInst...	{0D31A081-770...	Conditions	0	(null)	(null)

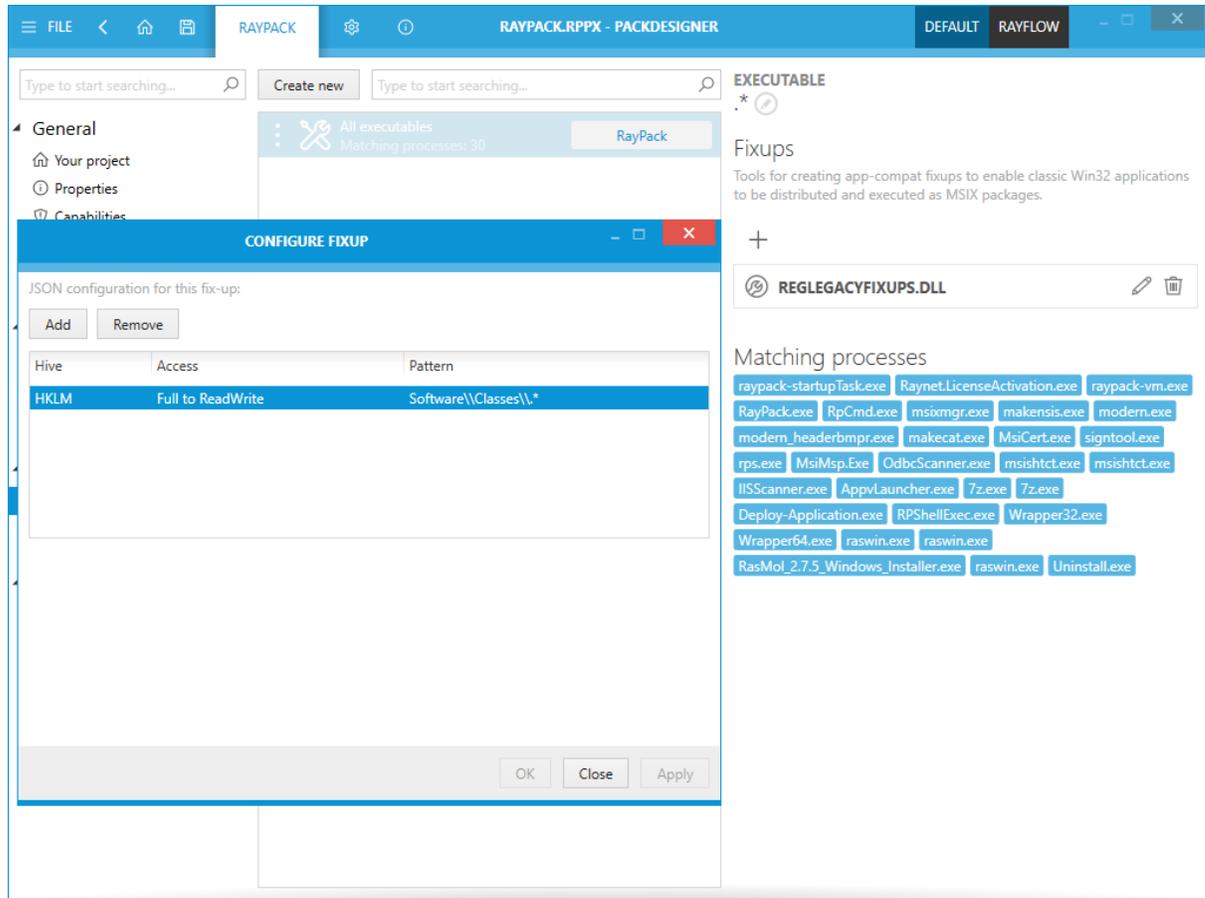
## Support for startup tasks in PackDesigner for MSIX [RPK-3831](#)

A new editor for startup tasks (apps that must be started after the user logs-in) has been added in the MSIX editor:



## Support for registry legacy fixups [RPK-3810](#)

MSIX PSF Editor has now a GUI-based editor for configuring Registry Legacy Fixup. This community fixup aims at modification of certain registry calls that do not work due to the MSIX container restrictions. It modifies the call parameters to a form that would be allowed.



You can read more about PSF and Registry Legacy Fixup under the following address:

<https://github.com/microsoft/MSIX-PackageSupportFramework/tree/master/fixups/RegLegacyFixups>

## Improved automation RPK-2163 RPK-3812 RPK-3837

The PowerShell automation library has received three new command lets: `New-Wrapper`, `ConvertTo-Msix` and `ConvertTo-Intune`, that generate PSADT, MSIX and Intune packages respectively

## PowerShell AppDeployment Toolkit (PSADT) updated to version 3.8.3 RPK-3841

Bundled PSADT resources have been updated to version 3.8.3. We also improved the update process for a smoother transition of these new PackPoint resources

## Improved conversion to Citrix App Layering format RPK-3830

In this release we improved the converter to LAYPKG format. These changes ensure that even more packages can be converted without any need of post-conversion work, and the conversion process is much faster and more robust

## Other improvements

- **RPK-3501** Parameters and switch names of command line repackager `rps.exe` are now case insensitive
- **RPK-3528** After building `.msix` form `.rcp` pop up RayPack now shows a prompt to open the new file, similarly to what the MSI builder does
- **RPK-3668** Improved performance and CPU usage in MSIX editor
- **RPK-3692** Improved support for capturing reboots of VM controlled by PackRecorder
- **RPK-3722** It is possible to cancel building of `.laypkg` files, and canceling of other formats is now much faster
- **RPK-3782** Improved conversion of MSI/RPP files with colliding resources differentiated only by different MSI conditions
- **RPK-3790** Conversion to MSIX format now correctly handles empty folders
- **RPK-3797** Added `F2` hotkey for editing of file names in MSIX editor
- **RPK-3819** Improved MSP patch generation when one of source MSI files had embedded cabs
- **RPK-3820** Improved conversion of binary registry values between RCP and RPP/MSI projects
- **RPK-3822** If no credentials for Hyper-V machines are set, Windows authentication in the context of current user will be used. Previously, the credentials were always mandatory
- **RPK-3834** Update of many internal MSI, MSIX, SDK and PSF runtimes to the newest version available (at the time of the release)
- **RPK-3842** Improved default language selection on French OS
- **RPK-3843** Cancelling of running builds should be now much faster
- **RPK-3860** Improved conversion of icons from MSI to MSIX
- **RPK-3869** Windows 10 20H2 October 2020 Update and macOS 11.0 Big Sur have been added in MSIX and macOS project editors

## Resolved issues

- **RPK-3533** There was a missing translation key displayed when trying to add a fix-up for unspecified executable. The issue has been fixed in this build

- **RPK-3534** If the original file version had more than 4 units, PackRecorder displayed it as an error in the Application properties page. The issue has been fixed in this build
- **RPK-3685** It was not possible to deactivate a Custom Action from the AdvtExecuteSequence. The issue has been fixed in this build
- **RPK-3741** Some MSIX packages converted from RCP were showing a manifest validation error when the user tried to build them. The issue has been fixed in this build
- **RPK-3744** Some strings in MSIX wizards were not properly translated in non-English languages. The issue has been fixed in this build
- **RPK-3746** Some systems were throwing a sporadic NullReferenceException when opening the File menu. The issue has been fixed in this build
- **RPK-3747** Some messages in the MSI maintenance dialog were overlapping. The issue has been fixed in this build
- **RPK-3752** There was a visible lag when typing a value in the Upgrade Code / Product Code field in the Your Project screen (PackDesigner for MSI). In this build, an asynchronous behavior has been added to improve the perceived performance
- **RPK-3760** It was not possible to add a Merge Module to a project imported from .ism or .wsi format. The issue has been fixed in this build
- **RPK-3769** File `C:\Windows\tracing` was not present in the default exclusion lists. The issue has been fixed in this build
- **RPK-3770** Pressing Delete in MSIX Editor was deleting the whole key, instead of the name. The issue has been fixed in this release
- **RPK-3778** Canceling testing of MSI packages was showing an error dialog. The issue has been fixed in this build
- **RPK-3779** The setting to change exit code behavior of PowerShell Custom Actions was not working. The issue has been fixed in this build
- **RPK-3780** In MSIX package dependencies editor, the button OK was always enabled, even if the value was invalid. The issue has been fixed in this build
- **RPK-3783** Converting from MSIX to RPPX and back could have lost the assets. The issue has been fixed in this build
- **RPK-3784** It was possible to start the Add Script wizard for MSIX packages having no applications. The issue has been fixed in this build
- **RPK-3785** RayPack installed from MSIX was not handling reboots during the repackaging. The issue has been fixed in this build
- **RPK-3786** RayPack installed from Microsoft Store could not recognize classic desktop licenses. The issue has been fixed in this build
- **RPK-3788** On some computers, snapshotting could have end with error about reading from `c :`

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\WINDOWS\TEMP. The issue has been fixed in this build

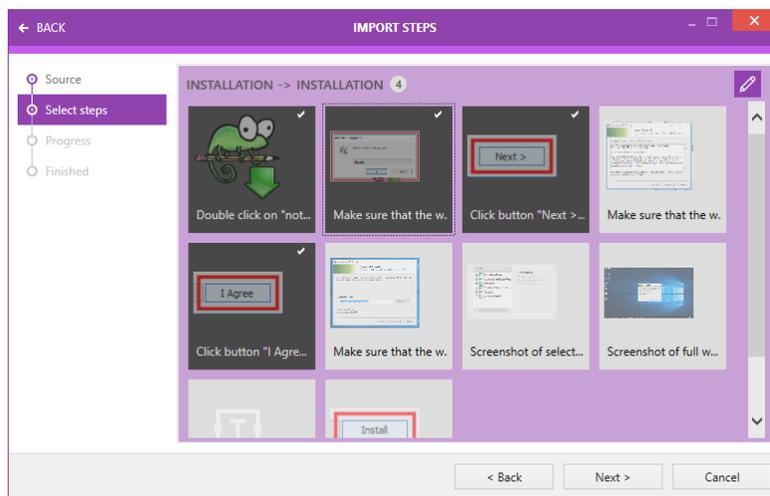
- **RPK-3789** Several issues and sub-optimal scripts for app attach have been improved in this build
- **RPK-3791** Canceling VHD build (app attach) was showing an error dialog. The issue has been fixed in this build
- **RPK-3792** ODBC drivers were not detected for uppercase file names. The issue has been fixed in this build
- **RPK-3796** There were some language issues (missing strings) in PackDesigner for MSIX. The issues have been fixed in this build
- **RPK-3799** Build options and settings screen could crash when changing the parent OS layer. The issue has been fixed in this build
- **RPK-3801** It was not possible to convert a package to LAYPKG file in case of missing icon resources. The issue has been fixed in this build
- **RPK-3803** Several minor issues in the Context Menu and Services screen have been fixed in this build
- **RPK-3808** In LAYPKG converted from RCP, application shortcuts could be missing. The issue has been fixed in this build
- **RPK-3809** In LAYPKG converted from MSI, application icons could be missing. The issue has been fixed in this build
- **RPK-3814** Closing unsaved MSIX project was not prompting for saving changes. The issue has been fixed in this release
- **RPK-3815** Buttons > and >= were writing incorrect operators. The issue has been fixed in this release
- **RPK-3816** Could not convert `Calibre.msi` from MSI to MSIX. The issue has been fixed in this release
- **RPK-3817** Changing only the source path for an MSIX file was not refreshing the OK/Apply button. The issue has been fixed in this release
- **RPK-3818** It was not possible to build MSI from RCP project, when the RCP file was read-only. The issue has been fixed in this release
- **RPK-3821** RCP to MSIX conversion was not converting files from Windows folder. The issue has been fixed in this build
- **RPK-3823** Some special characters were not accepted as password for PFX signing. The issue has been fixed in this build
- **RPK-3824** Some superfluous registry entries were present in converted App-V packages built from RPP projects. The issue has been fixed in this build

- **RPK-3825** Build to `.laypkg` was visible in the File > Build menu with Standalone RayPack installation for repackaging. The issue has been fixed in this build
- **RPK-3826** For some packages, file extensions could have been lost between RCP and MSI build. The issue has been fixed in this build
- **RPK-3856** Built and signed MSI files with embedded cabs could report ICE81 and ICE03 during ICE validation. The issue has been fixed in this release
- **RPK-3864** A typo in the label shown during initial PackBot verification has been fixed in this release
- **RPK-3875** Converting to MSIX could fail with Professional license. The issue has been fixed in this build
- **RPK-3879** After canceling RCP to MSI build, a prompt to open the file was shown anyway. The issue has been fixed in this build
- **RPK-3882** Command-line repackages (`rps.exe`) was showing warning about unrecognized parameter `-snap`. The issue has been fixed in this build.

## RayEval

### Importing image files and steps from other projects **RVL-550**

We added a new wizard, which let the user select any external image files (PNG/JPG) and import them to the current project. Additionally, the importer supports other RayEval projects, which makes it easier to reuse already documented parts and even import a content from templates.



### Other improvements

- **RVL-511** A confirmation message is now displayed before removing snapshot data

- **RVL-511** In the Snapshot Comparison view, icons of shortcuts are now displayed
- **RVL-518** The window captured by Middle Mouse Button is now automatically moved to the foreground
- **RVL-640** Standard property @SHORTCUTS now captures the information about working directory and shortcut arguments after selecting an MSI file
- **RVL-650** Internal log files have now consistent naming with other RayPack Studio products
- **RPK-3822** If no credentials for Hyper-V machines are set, Windows authentication in the context of current user will be used. Previously, the credentials were always mandatory

## Resolved issues

- **RVL-511** Snapshot Comparison view was not properly refreshing after opening another project. The issue has been fixed in this release
- **RVL-511** When a project was saved under another name (*File > Save as...*) the new name was not added to the recent list. The issue has been fixed in this release
- **RVL-600** After discarding changes in the Settings screen, the program was still asking whether the user wanted to save them upon closing the screen. The issue has been fixed in this release
- **RVL-639** Activation via floating license server was not working for classic desktop app if there were no static license files in the license folder. The issue has been fixed in this release
- **RVL-641** RayEval could go to the suspended state upon launching. The issue has been fixed in this release
- **RVL-642** An unnecessary registry key was being written by the MSI installer in the HKCU part. The key has been removed from this release
- **RVL-643** RayEval could crash when removing the last image from the project. The issue has been fixed in this release
- **RVL-648** Some temporary files were left in the temp folder when the project was not closed with *File > Close menu*. The issue has been fixed in this release

## RayQC Advanced

### Support for Windows 10 20H2 and Windows Server 2019 **RTS-2400**

New rulesets for two new iterations of Windows client and server OS families have been added in this release. The new rulesets for Windows 10 (20H2 aka October 2020 Update) and Windows Server 2019 follow the same principles as the rulesets for previous versions of Windows 10, adapting locally to new findings and adjustments.

## Other improvements

- **RTS-2380** It is now possible to archive and restore snapshot object
- **RTS-2384** When deleting a package from the library, the source folder is now also completely deleted
- **RPK-3501** Parameters and switch names of command line utility for snapshotting and repackaging `rps.exe` are now case insensitive
- **RPK-3822** If no credentials for Hyper-V machines are set, Windows authentication in the context of current user will be used. Previously, the credentials were always mandatory

## Resolved issues

- **RTS-1799** It was not possible to install RayQC and RayQC Advanced with older versions of RayPack (<4.0). The issue has been fixed in this release
- **RTS-2385** Testing packages on some machines ended with `InvalidOperationException`. The issue has been fixed in this release
- **RTS-2397** Some information were missing from report generated via PowerShell or CLI. The issue has been fixed in this release
- **RTS-2398** PowerShell Automation CLI was not working with the floating license server. The issue has been fixed in this release
- **RTS-2406** There was an issue with upgrade routine from older versions, which was not respecting the target extraction folder. The issue has been fixed in this release

# RayQC

## New features and improvements

- **RQC-970** PowerShell command let `Get-ChecklistContent` has been renamed to `Expand-Checklist`. The old name is still available as an alias for compatibility purposes
- **RPK-3501** Parameters and switch names of command line utility for snapshotting and repackaging `rps.exe` are now case insensitive
- **RPK-3822** If no credentials for Hyper-V machines are set, Windows authentication in the context of current user will be used. Previously, the credentials were always mandatory

## Resolved issues

- **RQC-969** It was not possible to run `.vbs` scripts having spaces in file paths. The issue has been fixed in this release

- **RQC-971** Replacing a resource only removed it, without pulling the new one. The issue has been fixed in this release.
- **RQC-1799** It was not possible to install RayQC and RayQC Advanced with older versions of RayPack (<4.0). The issue has been fixed in this release

## PackBench

### Resolved issues

- **BEN-345** PDF reports for some projects could not be generated. The issue has been fixed in this release
- **BEN-346** It was not possible to edit custom properties directly from the Start New Run wizard. The issue has been fixed in this release
- **BEN-348** Possible `ArgumentOutOfRangeException` exception during creation of exported documents containing custom datetime variables. The issue has been fixed in this release
- **RPK-3501** Parameters and switch names of command line utility for snapshotting and repackaging `rps.exe` are now case insensitive

## PackLayering

### Changes and improvements

- **CIT-210** It was possible to use white spaces in the product name. White spaces are not accepted anymore
- **CIT-216** Closing the app without saving changes now prompts the user about unsaved changes

### Resolved issues

- **RPK-3852** Sporadic error *Extracted directory does not exist* thrown when removing a folder. The issue has been fixed in this build

# Migration and Breaking Changes

## RayPack

### Upgrading RayPack

#### General Upgrade Preparations

RayPack 6.5 is delivered as part of the RayPack Studio Installer. To install it safely execute the following steps:

1. Download the RayPack Studio Installer 6.5 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 \*.rs1 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 6.5 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)

## Breaking change

- In version 6.5, we changed how PowerShell AppDeployment Toolkit update is handled. Previously, RayPack was not updating the files manually to preserve the customizations. Starting from this build, all bundled PSADT files present in the default location will be overwritten with the newer version. If you want to preserve your changes to PSADT files and templates, make a copy of the whole folder and configure RayPack to use it instead of the default location

## 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 6.5. 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 6.5
- 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%>`).

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

1. Download the RayPack Studio Installer 6.5 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 6.5 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.

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## 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 6.5. 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 6.5
- 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 6.5 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 6.5 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

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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 6.5 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

## RayQC Advanced

### Upgrading RayQC Advanced

#### General Upgrade Preparations

RayQC Advanced 6.5 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 6.5 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 \*.rs1 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 6.5 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.



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**Note:**

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

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### 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

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## General Upgrade Preparations

RayEval 6.5 is delivered as an MSI software package. In order to install it safely:

1. Download the MSI package for RayEval 6.5 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 6.5 MSI package and work yourself through the setup routine. The installation of RayEval 6.5 is described in the *RayEval 6.5 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.

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## 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.

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## 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 be 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](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](http://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](mailto: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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