



**RAYPACK® STUDIO**

# Enterprise Software Packaging

**Release Notes RayPack Studio 7.2**

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## Release Notes RayPack Studio

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# Introduction

RayPack Studio 7.2 is the next iteration of Raynet's framework for the creation and management of software packages. RayPack Studio 7.2 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 PackLayering.

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 7.2.

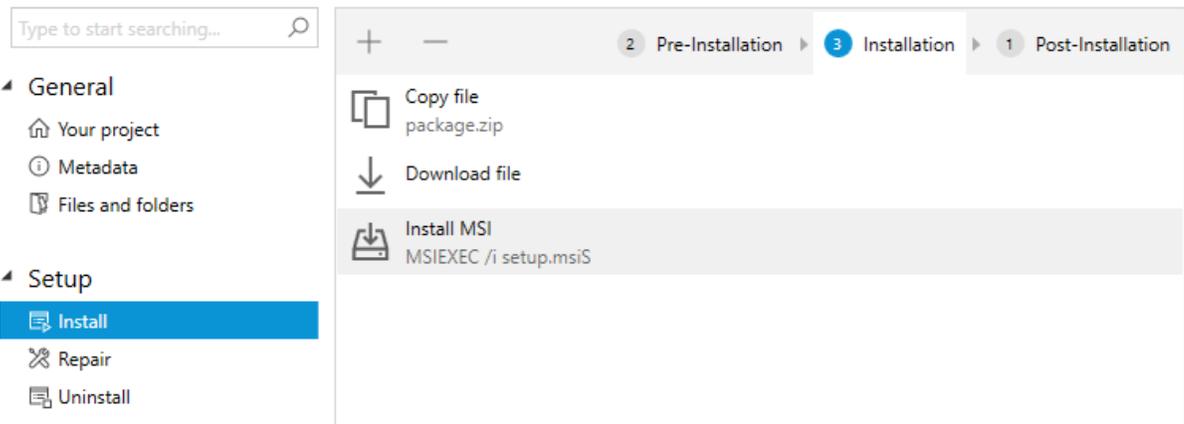
## RayPack

### New Options and Features for PSADT Authoring (PackWrapper) RPK-

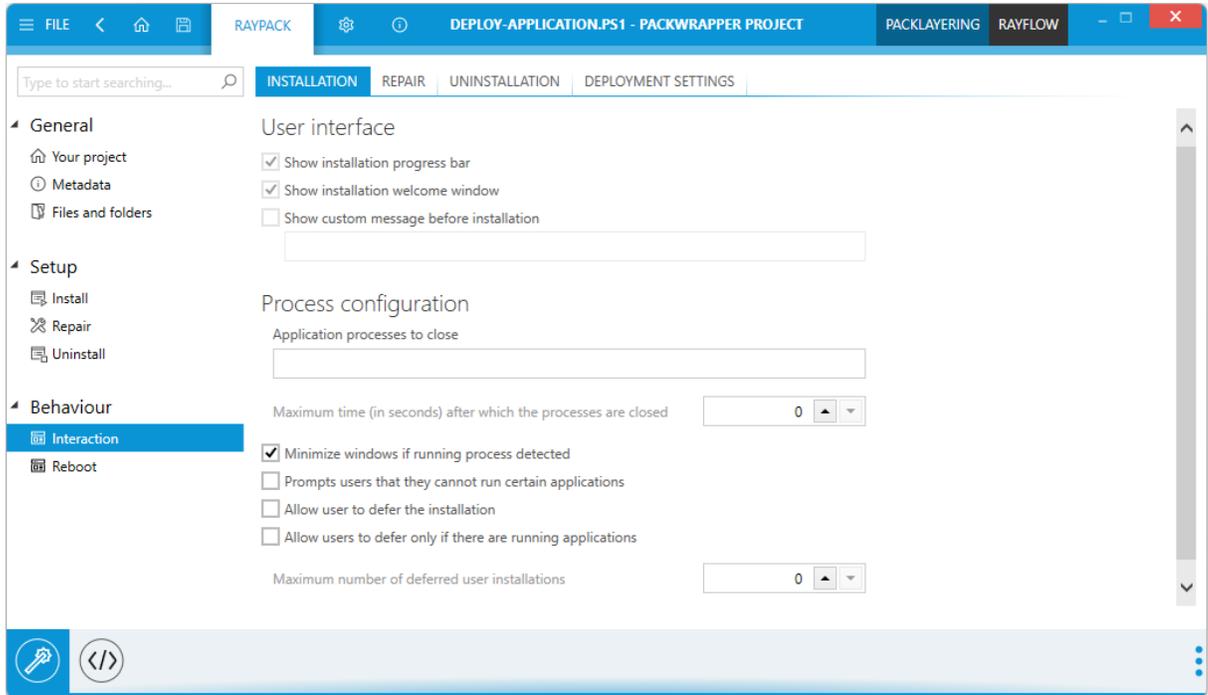
4247 RPK-4360 RPK-4399 RPK-4365

In this release, we implemented several features and improvements, aimed at making the PSADT editor even more easier and intuitive.

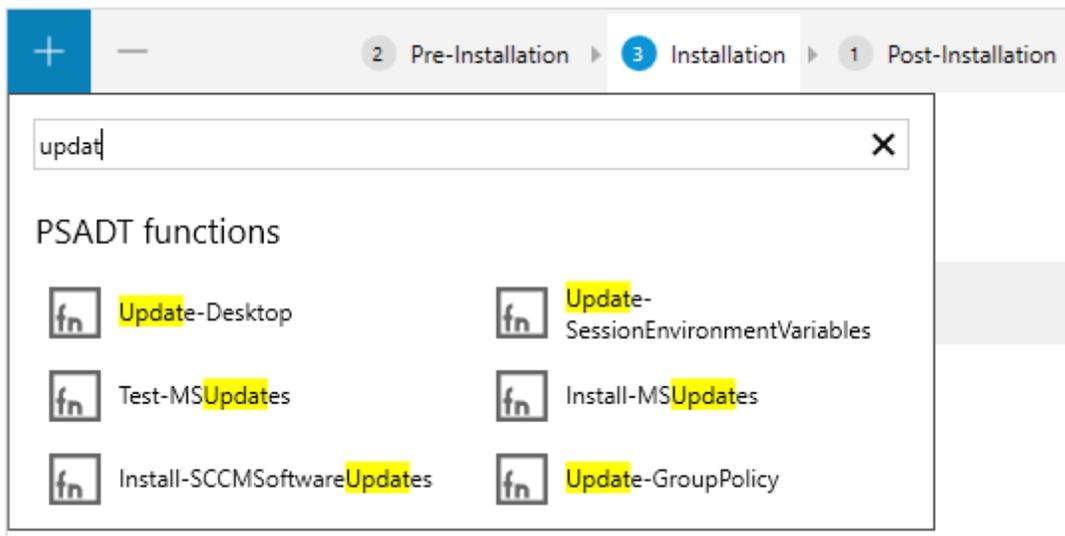
- Selection of the package installation/uninstallation/repair phases is now much more intuitive and provides better feedback about their content. The new tab-like display shows counters, indicating the number of actions contained within the specific phase. Tabs replaced the previously available dropdown fields.



- Two new dedicated pages are now available for PSADT projects: **Behavior > Reboot** and **Behavior > Interaction**. They can be used to control various aspects of PSADT projects, including visuals, reboot actions, deferring of installations, deployment settings, etc.



- When searching for a PSADT action, after typing three or more letters the standard and custom PS1 functions will be included in the search results. Previously, to add a PS1 function it was necessary to insert an **Execute function** block.



- The standard and custom PSADT functions now display a contextual help about their usage.

**SELECTED STEP**

Execute function

Function name

Set result to

**i** Check to see if a service exists (using WMI method because Get-Service will generate ErrorRecord if service doesn't exist).

**^** Show examples...

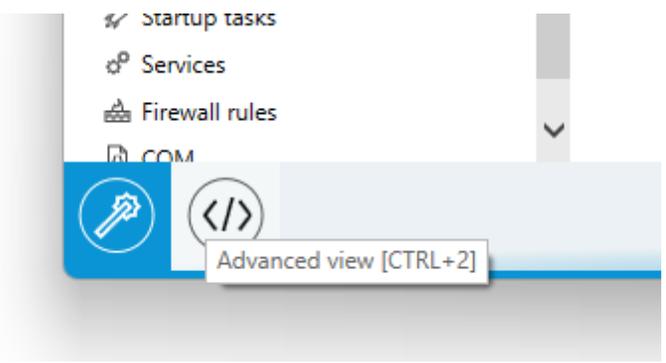
```
Test-ServiceExists -Name 'wuaserv'
```

```
Test-ServiceExists -Name 'testservice' -PassThru | Where-Object { $_ } | ForEach-Object { $_.Delete() }
```

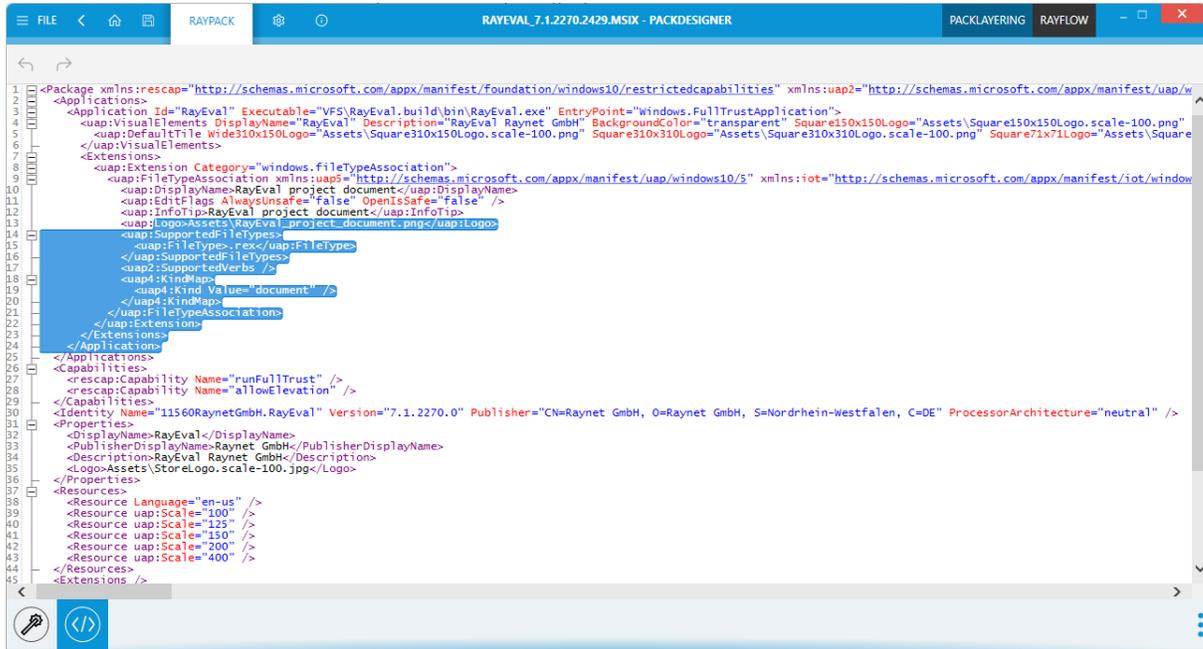
Check if a service exists and then delete it by using the -PassThru parameter.

## Advanced Manifest Editor for MSIX Projects RPK-4130

In this version we added the division of the MSIX project editor into two spaces: the visual designer and the advanced designer. Both of these were previously available in MSI and PSADT projects and share similar characteristics. The advanced MSIX designer is an XML editor of the manifest file, which enables MSIX package authors to edit and create the content even for features which are not directly available in the UI or features that are not publicly available in MSIX SDK.

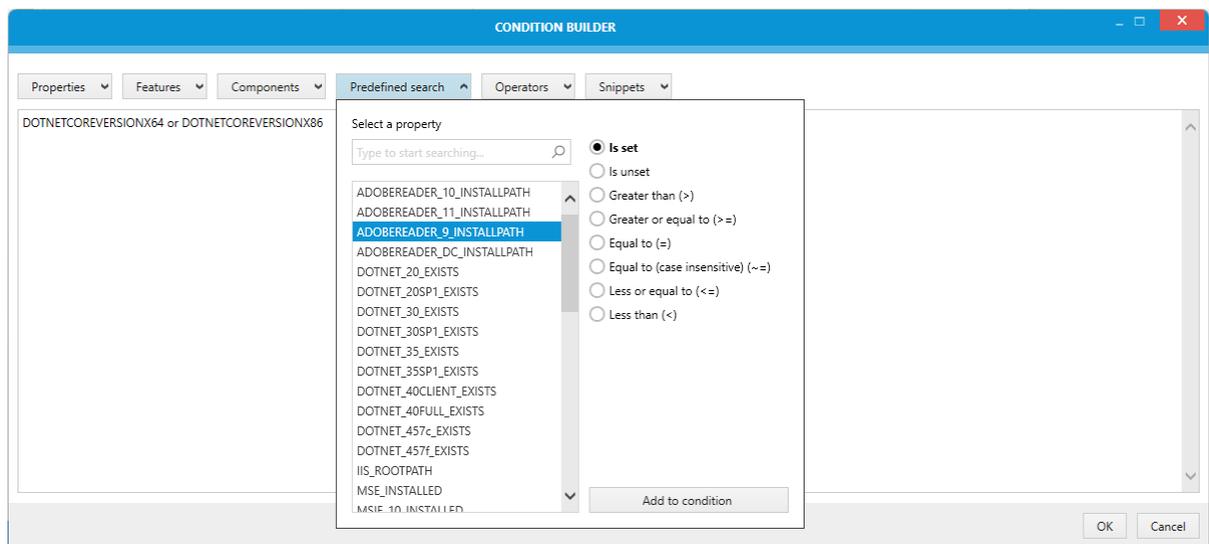


The advanced designer is also a great choice for packagers preferring a quick access to features like Search and Replace or copy and paste, which are usually faster to execute with raw editing than the UI-driven approach. Finally, the real-time replication of UI changes in the code view (and vice-versa) is a great and fun way of learning how things work under-the-hood and to learn the MSIX technology and the manifest concept.



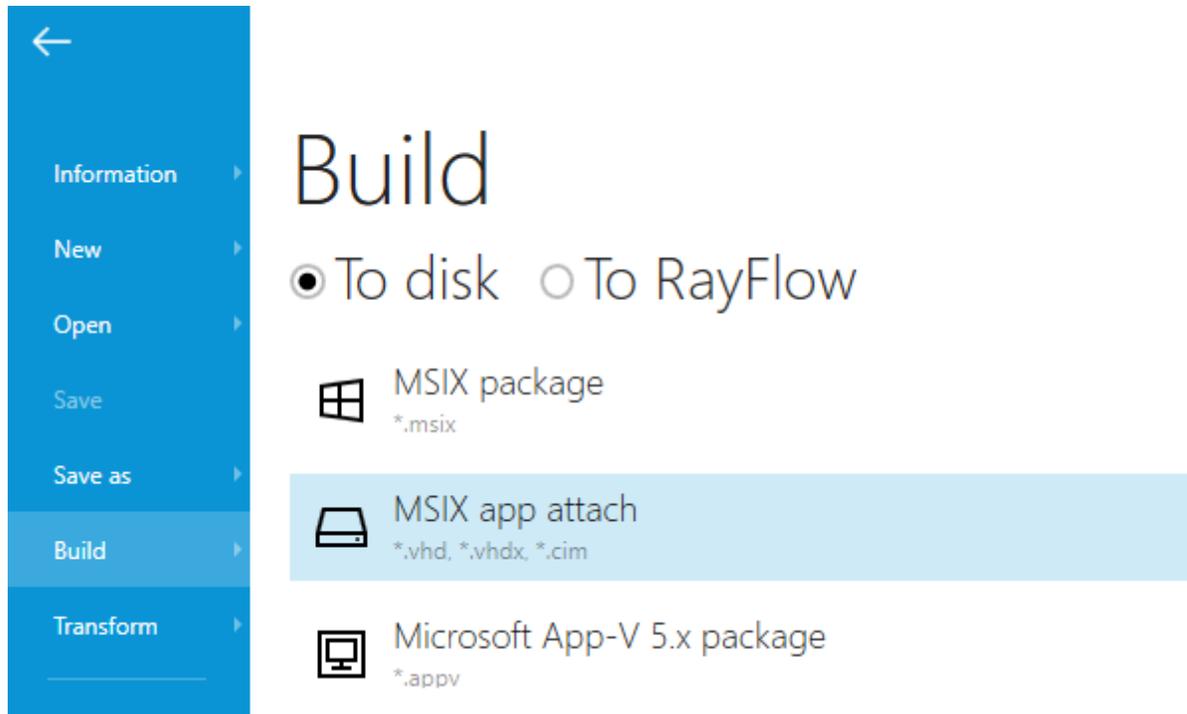
## Improved Condition Builder with Support for Windows 11 and Other Popular Software RSC-690

- We added support for Windows 11 in many different places involving conditions and system dependencies.
- We improved the condition builder where inserting a condition for predefined searches would automatically bootstrap necessary entities to perform the search.



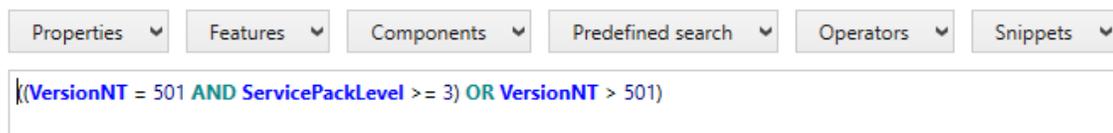
## Support for VHDX File Format for MSIX App Attach RPK-4417 RPK-4422

Building VHDX (app attach) files is now possible directly from a repackaged and converted projects (RCP, RPP, MSI).



## Support for Syntax Highlighting in MSI Conditions RPK-3693

We added syntax highlighting for MSI condition syntax in various dialogs.



## Other Improvements

- Log configuration has been unified across all products. In addition, we updated `log4net` to version **2.0.14** to close the security vulnerability described in CVE-2018-1285. RSC-701 RSC-711
- When importing an INI file, RayPack checks if the file is a correct INI. If not, the file will be imported as a normal file. this may be important in case of INI-like files, where certain rules are not followed, the order is important, etc. RPK-1007
- Updated out-of-the-box system search conditions for Microsoft Office, .NET Framework, and Adobe Reader. RPK-3694

- When creating a new PSADT wrapper, the icon is now automatically extracted from the selected installer. [RPK-4273](#)
- The PSADT action **Check if item exists** now supports intellisense for variables. [RPK-4331](#)
- The package code field in PackDesigner now has extra validation for supported characters. [RPK-4336](#)
- PackWrapper (PSADT editor) now supports the in-app help by pressing the **F1** button. [RPK-4337](#)
- When editing a built-in or a custom PSADT function containing a parameter with a fixed set of values, the visual editor now displays a dropdown with available values instead of a previously available text box. [RPK-4363](#)
- Mandatory PSADT action parameters are now clearly marked. [RPK-4364](#)
- Added the ability to add missing sections (for example **Repair**) if the original script does not contain them. [RPK-4368](#)
- The files and folders view for PSADT projects now updates automatically after background changes (for example adding a file in the explorer). [RPK-4370](#)
- Recent PSADT projects now display the actual project names instead of the generic file names. [RPK-4374](#)
- The PSADT action **Install MSI** now has a browse button for MST files. [RPK-4378](#)
- Paths selected from various open file dialogs in the PSADT editor are now by default written using variables and - whenever possible - relative paths. [RPK-4380](#)
- Fix-up names in MSIX editor are now human-friendly. [RPK-4384](#)
- Improved the performance and stability of registry operations in various places. [RPK-4385](#)
- Updated set of merge modules. [RPK-4388](#)
- In MSI/RPP projects, empty components are now removed when the last resource is deleted. [RPK-4390](#)
- The ODBC counter in the Your Project overview for MSI/RPP projects now includes both drivers and data sources. [RPK-4391](#)
- Updated the list of MSIX dependencies. [RPK-4397](#)
- Improved the quality of icons extracted from third-party setups when creating a PSADT project. [RPK-4411](#)
- Better and more detailed messages are now displayed in case of a failed signing (for example due to an incorrect timestamp server). [RPK-4418](#)
- Improved the methods of scanning for vendor MSIs run in the background during the repackaging process. This change should help by repackaging of complex projects (like Adobe Reader) which are internally deployed in the MSI format. [RPK-4431](#)
- Added extra exclusion lists for repackaging, which would exclude various cache files and

temporary Edge resources. [RPK-4432](#)

- Improved the performance of opening of PSADT projects. [RPK-4475](#)

## Resolved Issues

- Fixed an issue where `ProgID` values containing a dot (.) were not properly converted from MSI/RPP to MSIX. [RPK-3914](#)
- Fixed an issue where canceling repackaging and navigating back to the hive and exclusion selector in PackRecorder would not render the list of drives and registry keys. [RPK-4290](#)
- Fixed an issue where non-English translations for RayPack Express edition were not used in the activation dialog. [RPK-4295](#)
- Fixed an issue where it was possible to use restricted file and folder names in PackWrapper. [RPK-4297](#)
- Added missing text-wrapping in the editor of product name in repackaged projects (RCP). [RPK-4303](#)
- Fixed an issue where PackTailor would return an error when connecting to a virtual machine. [RPK-4310](#)
- Fixed an issue where tooltips for cell validation would contain a clipped text. [RPK-4322](#)
- Fixed minor visual glitches in the PackWrapper action **Check if item exists**. [RPK-4330](#)
- Fixed an issue where supporting CAB files were not saved to RayFlow. [RPK-4333](#)
- Fixed the detection on the App-V sequencer by PackBot. [RPK-4338](#) [RPK-4347](#)
- Fixed an issue where the Visual Basic script PSADT action was not properly refreshed after making changes in the Advanced View. [RPK-4340](#)
- Fixed the wrong value of the parameter `Description` in the PSADT action **Set active setup**. [RPK-4341](#)
- Fixed an issue where adding a PSADT action **Install MSIX** could freeze the Advanced view. [RPK-4342](#)
- Fixed various issues in the German and the Polish translation. [RPK-4343](#) [RPK-4352](#) [RPK-4375](#)
- Fixed the wrong selection of the non-default profile when using PackBot. [RPK-4344](#)
- Fixed an issue where a wrong registry key was focused after adding a new key in PackDesigner. [RPK-4345](#)
- Added missing vertical scrollbars in the PackBot settings. [RPK-4348](#)
- Improved the handling of the user profile when running MSIX and MSI-based RayPack instances on the same machine. [RPK-4349](#) [RPK-4353](#) [RPK-4361](#)
- Fixed a wrong parameter selection for the PSADT action **Install MSI**. [RPK-4354](#)

- Fixed a rare issue where RayPack could not be started when installed from Microsoft Store. [RPK-4357](#)
- Fixed an issue where wrapped `Ray-` functions were shown on the list, even if using a standard PSADT template. [RPK-4366](#)
- Fixed the loading of PSADT projects that did not contain the **Repair** section. [RPK-4368](#)
- In non-English localized UI, the `.ps1` extension is now available on the list of supported extensions. [RPK-4372](#)
- Added dropdowns with variables in the text editor for PSADT actions. [RPK-4379](#)
- Added missing extension name in open file dialogs. [RPK-4381](#)
- Fixed a `NullReferenceException` when adding items to an MSI project in case of an invalid profile. [RPK-4382](#)
- Fixed the PSADT action `Get-InstalledApplication`. [RPK-4383](#)
- Fixed an issue with an invalid reference to a directory when the `TypeLib` table needed to be created. [RPK-4386](#)
- Fixed a manifest validation error in case of blank characters in the MSIX product name. [RPK-4389](#)
- Fixed an issue where the content of PSADT Advanced view could not be synchronized with the current project. [RPK-4393](#)
- Fixed the capturing of unnecessary resources by PackBot. [RPK-4394](#)
- Added a missing text field to select the target variable for the PSADT action **Get Registry value**. [RPK-4395](#)
- Fixed a `NullReferenceException` when saving an MSIX project. [RPK-4396](#)
- Fixed the generation of PSADT action parameters containing spaces. [RPK-4398](#)
- Fixed the block buttons in the PSADT editor. [RPK-4400](#)
- Fixed a warning when the MSIX description text field was empty. [RPK-4402](#)
- Fixed an issue where removing a registry key would return an error when the PSADT option **Only if empty** was used. [RPK-4405](#)
- Fixed an issue where it was not possible to call external scripts with whitespaces in the path of the PSADT project. [RPK-4406](#)
- Fixed the PSADT action `SetActiveSetup`. [RPK-4407](#)
- Fixed various issues with MSIX Core launcher UI. [RPK-4408](#)
- Fixed an error shown when removing a non-empty `else` statement. [RPK-4409](#)
- Fixed various issues after renaming a root MSI feature with children features. [RPK-4410](#)
- Fixed wrong data in `AdminInstallationSequence` in the **New Custom Action** wizard. [RPK-](#)

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- Fixed app freezes when adding multiple **Set Registry key** PSADT actions. RPK-4413
- Improved the performance and stability of the SCCM deployment wizard. RPK-4414
- Fixed sporadic issues with refreshing of PowerShell code after making a change in the Visual Designer. RPK-4415
- Fixed an issue with the saving of MST files with CAB archives in RayFlow. RPK-4416
- Fixed errors shown when opening or creating projects from PowerShell commandlet. RPK-4419 RPK-4434 RPK-4439
- Fixed an issue with the creation of folder `ico_files` in the installation directory. RPK-4420
- The path to PSADT templates now support variable PackPoint directory. RPK-4421
- Removed library `Iconic.Zip` to close discovered vulnerabilities ([CVE-2018-12003305](#)). RPK-4428
- Fixed a faulty behavior of `Show-InstallationRestartPrompt` in vanilla PSADT (bundled with RayPack), where the pop-up would not show after using the `-NoCountdown` switch. This will only affect new projects. Existing PSADT projects have to be retrofitted with the fix. RPK-4430
- Fixed an exception when using the `Remove-Row` commandlet on some packages. RPK-4435
- Fixed an exception when connecting to RayFlow. RPK-4438
- Fixed an issue with missing files in Thin-App packages. RPK-4444
- Fixed an exception when deploying to RMS UEM from RPP/MSI projects. RPK-4451
- Fixed issues with refreshing of the Original setups screen in repackaged projects. RPK-4453
- Fixed issues when opening a PSADT project containing no **Repair** section. RPK-4458
- Fixed an issue where PackBot would ignore the output directory setting. RPK-4459
- Improved stability and performance of the command-line repackaging tool RPCMD. RTS-2434

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# RayEval

## Improvements

- Log configuration has been unified across all products. In addition, we updated `log4net` to version **2.0.14** to close the security vulnerability described in CVE-2018-1285. [RSC-701](#) [RSC-711](#)
- It is now possible to run RayFlow functions on systems where MD5 is disabled by FIPS policy. [RSC-678](#)

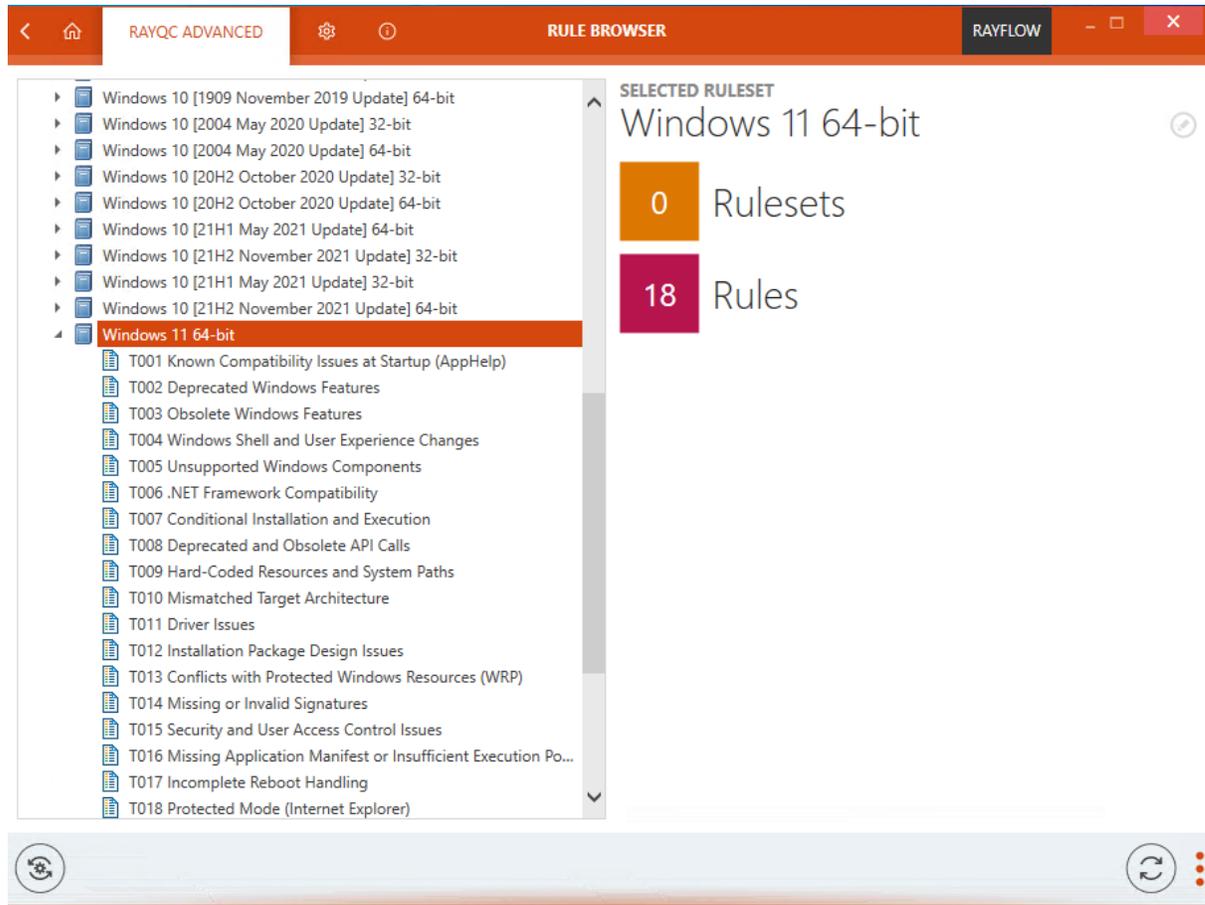
## Resolved Issues

- Fixed a rare issue where background work indication could steal focus from the message box, rendering it unclickable.
- Fixed an issue where it was possible to select an inactive depot when uploading files to RayFlow. [RQC-1009](#)
- Fixed an issue where providing both, the installer path and metadata properties via the command line could overwrite the metadata properties with values read from the installer. In this version, explicit values always overwrite any data, that can otherwise be inferred from the installer. [RVL-687](#)
- Fixed an issue where the canceling of the crop dialog could crash. [RVL-688](#)

# RayQC Advanced

## Compatibility Tests for Windows 10 and Windows 11 RTS-2434

In this version, Windows 10 21H2 (November 2021 Update) can be selected as a target for OS compatibility. This extends the range of supported operating systems for the compatibility checker, which now includes a wide selection of systems including Windows 11, all public released versions of Windows 10, and goes down to Windows 7/8/8.1.



## Other Improvements

- It is now possible to run RayFlow functions on systems where MD5 is disabled by FIPS policy. RSC-678
- Log configuration has been unified across all products. In addition, we updated `log4net` to version **2.0.14** to close the security vulnerability described in CVE-2018-1285. RSC-701 RSC-711
- Improved performance and stability of the SCCM Deployment wizard. RPK-4414
- Added support for the full German localization. RTS-2435

## Resolved Issues

- Fixed a rare issue where background work indication could steal focus from the message box, rendering it unclickable. [RPK-4424](#)
- Fixed an issue with a failing export of PDF files in RayFlow. [RTS-2418](#)
- Eliminated verbose logging from the command line when exporting a report to XML format. [RTS-2431](#)
- Fixed an issue where it was not possible to import a legacy installer. [RTS-2434](#)

# RayQC

## Improvements

- Clicking on the Passed badge now scrolls to the last item in the checklist. [RQC-1031](#)
- It is now possible to run RayFlow functions on systems where MD5 is disabled by FIPS policy. [RSC-678](#)
- Log configuration has been unified across all products. In addition, we updated `log4net` to version **2.0.14** to close the security vulnerability described in CVE-2018-1285. [RSC-701](#) [RSC-711](#)

## Resolved Issues

- Fixed an issue with saving an error invoked when leaving the checklist and accepting the prompt to save changes. [RPK-4355](#) [RQC-1028](#)
- Fixed some minor localization issues. [RPK-4358](#) [RQC-1029](#)
- Fixed a rare issue where the background work indication could steal the focus from the message box, rendering it unclickable. [RPK-4424](#)
- Fixed an issue where it was not possible to send a PDF file from RayQC to RayFlow from command line. [RPK-4457](#)
- Improved prompts when trying to execute the checklist with not fully configured post-processing steps. This behavior was correct, but the message was not clear about the reason of the failing execution. [RPK-4460](#)
- Fixed an issue with a jumping screen when right-clicking checklist items. [RQC-999](#)
- Fixed an issue where it was possible to select an inactive depot when uploading files to RayFlow. [RQC-1009](#)
- Fixed an issue where the checklist name was not properly refreshed. [RQC-1018](#)
- Fixed an issue with moving indented elements. [RQC-1019](#)
- Added a missing warning about unsaved checklist changes when navigating to the settings screen. [RQC-1020](#)
- Fixed an issue with the element `DeleteFile` not properly supporting the option to delete files after a system reboot. [RQC-1021](#)
- Removed the unnecessary setting `CaseSensitive` for the plugin `IniFile` method `GetSection`. [RQC-1023](#)
- Fixed issues with opening the checklist with custom PowerShell plugins when invoked from a PowerShell commandlet. [RQC-1026](#)
- Fixed an issue with an empty result of the execution of the Start-Checklist command. [RQC-1027](#)

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- Fixed an issue where the template could randomly be reset while processing the checklist.  
[RQC-1032](#)

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# PackBench

## Improvements

- It is now possible to start tools supporting the RayFlow Client-like command line interface. A set of properties was added to accommodate the necessary settings, so that it is possible to pass them with the respective command line. [BEN-364](#)
- It is now possible to run RayFlow functions on systems where MD5 is disabled by FIPS policy. [RSC-678](#)
- Log configuration has been unified across all products. In addition, we updated `log4net` to version **2.0.14** to close the security vulnerability described in CVE-2018-1285. [RSC-701](#) [RSC-711](#)

## Resolved Issues

- Fixed rare issues with the command line tool `pbcmd.exe`. [BEN-363](#)
- Resolved some inconsistencies in the German translation. [BEN-366](#)
- Fixed a rare issue where the background work indication could steal the focus from the message box rendering it unclickable. [RPK-4424](#)
- Fixed an issue where it was possible to select an inactive depot when uploading files to RayFlow. [RQC-1009](#)

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# PackLayering

## Improvements

- Improved the performance and stability of the file and folder import. [CIT-267](#)
- Log configuration has been unified across all products. In addition, we updated `log4net` to version **2.0.14** to close the security vulnerability described in CVE-2018-1285. [RSC-701](#) [RSC-711](#)

## Resolved Issues

- It is not possible to open an OS layer anymore, in the previous version it failed with an unhandled error. [CIT-206](#)
- Fixed clipped texts in German localization and missing translations. [CIT-255](#) [CIT-266](#)
- Fixed inconsistent names of newly created registry keys. [CIT-260](#)
- Fixed a problem with a lack of focus on newly created folders. [CIT-263](#)
- Fixed an issue where it was possible to select an inactive depot when uploading files to RayFlow. [RQC-1009](#)
- Fixed a rare issue where background work indication could steal focus from the message box, rendering it unclickable. [RPK-4424](#)

# RayFlow PowerShell API

## Resolved Issues

- Fixed the invalid or incomplete validation of multi-value data fields. [RSC-703](#)
- Fixed the behavior of boolean properties when publishing the orders. [RSC-704](#)
- Fixed null reference errors when publishing RayFlow orders without providing a date type field. [RSC-706](#)

# Migration and Breaking Changes

In this release, all products and components have been migrated to .NET Framework 4.7.2, which is now a prerequisite for RayPack Studio.

## RayPack

### Upgrading RayPack

#### General Upgrade Preparations

RayPack 7.2 is delivered as part of the RayPack Studio Installer. To install it safely execute the following steps:

1. Download the RayPack Studio Installer 7.2 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 7.2 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*

## Migration from RayPack 7.1

### 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)

## 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 7.2. 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 7.2.
- 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.

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# PackBench

## Upgrading PackBench

### General Upgrade Preparations

PackBench 7.2 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 7.2 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 7.2 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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## Migration from PackBench 7.1

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 7.2. 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 7.2.
- 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 7.2 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 7.2 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 7.2 using the RayPack Studio Installer is described in the *RayPack Studio Installer User Guide*.

## Migration from RayQC 7.1

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.

# RayQC Advanced

## Upgrading RayQC Advanced

### General Upgrade Preparations

RayQC Advanced 7.2 is delivered as part of the RayPack Studio Installer. In order to install it safely:

1. Download the RayPack Studio Installer 7.2 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 7.2 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 RayQC Advanced 7.1

There are no breaking changes.

## Migration from Older Versions

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

# RayEval

## Upgrading RayEval

### General Upgrade Preparations

RayEval 7.2 is delivered as an MSI software package. In order to install it safely:

1. Download the MSI package for RayEval 7.2 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 7.2 MSI package and work yourself through the setup routine. The installation of RayEval 7.2 is described in the *RayEval 7.2 User Guide*.
4. After the installation has been finished, copy the files that have been backed-up to their previous locations.

## Migration from RayEval 7.1

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.

## Known issues

- It is not recommended to install RayPack from both MSIX and MSI on the same machine. In some cases, this configuration may cause issues with handling of RayPack user profile. We recommend to stick to either an MSI or MSIX installation.

# 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 8.1
- Windows 10
- Windows 11
- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016
- Windows Server 2019
- Windows Server 2022



**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

- Microsoft .NET Framework 4.7.2

## 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.

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## 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.

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### 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
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 or higher
- PowerShell Execution Policy set to Unrestricted or RemoteSigned

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- PowerCLI module ([www.powershellgallery.com/packages/VMware.PowerCLI](http://www.powershellgallery.com/packages/VMware.PowerCLI))
  - VMware Tools installed on the VM
  - **Guest operations** and **System** permissions granted to the user executing the product.
  - The following privileges should be assigned to the role:
    - System.Anonymous
    - System.Read
    - System.View
    - VirtualMachine.GuestOperations.Execute
    - VirtualMachine.GuestOperations.Modify
    - VirtualMachine.GuestOperations.Query
    - VirtualMachine.Interact.CreateScreenshot
    - VirtualMachine.Interact.GuestControl
    - VirtualMachine.Interact.PowerOff
    - VirtualMachine.Interact.PowerOn
    - VirtualMachine.State.CreateSnapshot
    - VirtualMachine.State.RevertToSnapshot

**Be aware:**

The **System roles** in vCenter are permanent and it is not possible to edit the privileges associated with these roles.

**Note:**

If the full path to the `.vmx` file is specified, it is necessary that the user also has `Datastore.Browse` privileges. If only the VM name (without datastore, folder, and `.vmx` extension) is specified, `Datastore.Browse` privileges are not needed.

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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