ceterion Packaging Framework

Admin Guide

Overview

The ceterion Packaging Framework has been developed to package Applications-Setups and deploying with several Deployment Systems.
The cmPF is based on the "PowerShell App Deployment Toolkit 3.7.0" http://psappdeploytoolkit.com/.
It contains parts of the original toolkit and provides a number of extensions and changes.The modification includes for example a conversion from a simple included script into a PowerShell module and is extended with some additional functions and variables we missed in the original implementation.

New Features

- Framework has been changed into a “Module” and therefore now provides all the benefits, that go with this. For Example
  - IntelliSense for commands and variables Context-sensitive Online help (using F1 button)
  - Using “commands register” in PowerShell ISE and integrated command help
- Basic simplification, streamlining and updating
- Concept for abstraction of metadata and parameterization
- Simple parameter handling based on JSON-files
- Including encryption for passwords, license keys etc.
- Flexible, configurable naming scheme
- Package validation based on a configurable set of rules
- Advanced error handling and logging
- Renaming variables and functions
- Expansion of variables (already available during packaging)
- New commands and extensions in known commands
- Install multiple packages including reboots etc. without any deployment system for such as testing
- Support Citrix environments with automatic publishing, NTFS-Security and Start Menu population
- Support Deployment Systems like SCCM, ASG Cloud Shaper and many more
- Expandable with your own modules
- Small and clean installation scripts
- Package Folders and Installation scripts can be generated by command

Optionally available

- SCCM/MECM Package Importer
- VMware Workspace ONE UEM Package Importer
- Create Task sequences based on templates
- Hundreds of templates for applications and operating system components (Adobe Reader, MS Office etc.)
- Packaging-Training for beginners and advanced users
- Citrix installation scripts with automated publishing

System Requirements

Requirements on target systems:

- Windows PowerShell 5.1
- local admin rights on target system
- PowerShell execution policy (packaging)

System Requirements:

- like target system
- Editor with PowerShell support (e.g. Microsoft PowerShell ISE and/or Microsoft VS-Code)

Licensing

The ceterion modular Packaging Framework is based on PowerShell App Deployment Toolkit and provided under the Microsoft Public License: https://msdn.microsoft.com/en-us/library/ff648068.aspx

New Functions, added by ceterion

- Add-Font
- Add-AppLockerRule
- Add-AppLockerRuleFromJson
- Add-Path
- Add-FirewallRule
- Add-FirewallRuleFromJSON
- Add-PermissionFromJson
- Convert-Base64
- ConvertFrom-AAPINI
- ConvertFrom-Ini
- ConvertFrom-IniFiletoObjectCollection
- ConvertTo-Ini
- Expand-Variable
- Get-EnvironmentVariable
- Get-FileVerb
- Get-Parameter
- Get-Path
- Import-RegFile

- Initialize-Script
- Install-DeployPackageService
- Invoke-Encryption
- Invoke-FileVerb
- Invoke-InstallOrRemoveAssembly
- New-File
- New-LayoutmodificationXML
- New-Package
- Remove-AppLockerRule
- Remove-AppLockerRuleFromJson
- Remove-EnvironmentVariable
- Remove-Font
- Remove-Path
- Remove-FirewallRule
- Remove-FirewallRuleFromJSON
- Remove-PermissionFromJson
- Set-AutoAdminLogon
- Set-DisableLogging
- Set-EnvironmentVariable
- Set-InstallPhase
- Start-NSISWrapper
- Test-IsGroupMember
- Test-Package
- Test-Package
- Test-PackageName
- Update-FilePermission
- Update-FolderPermission
- Update-FrameworkInPackages
- Update-Ownership
- Update-PrinterPermission
- Update-RegistryPermission
- Update-SessionEnvironmentVariables

Existing or changed functions

- Close-InstallationProgress
- Copy-File
- Disable-TerminalServerInstallMode
- Enable-TerminalServerInstallMode
- Exit-Script
- Get-FileVersion

- Get-FreeDiskSpace
- Get-HardwarePlatform
- Get-IniValue
- Get-InstalledApplication
- Get-LoggedOnUser
- Get-PendingReboot
- Get-RegistryKey
- Get-ServiceStartMode
- Install-MSUpdates
- Install-SCCMSoftwareUpdates
- Invoke-RegisterOrUnregisterDLL
- Invoke-SCCMTask
- New-Folder
- New-MsiTransform
- New-Shortcut
- Remove-File
- Remove-Folder
- Remove-MSIApplications
- Remove-RegistryKey
- Resolve-Error
- Set-ActiveSetup
- Set-IniValue
- Set-PinnedApplication
- Set-RegistryKey
- Set-ServiceStartMode
- Show-BalloonTip
- Show-DialogBox
- Show-InstallationProgress
- Show-InstallationPrompt
- Show-InstallationRestartPrompt
- Show-InstallationWelcome
- Start-MSI
- Start-Program
- Start-ServiceAndDependencies
- Stop-ServiceAndDependencies
- Test-MSUpdates
- Test-Ping
- Test-RegistryKey
- Test-ServiceExists
- Update-Desktop
- Write-FunctionHeaderOrFooter

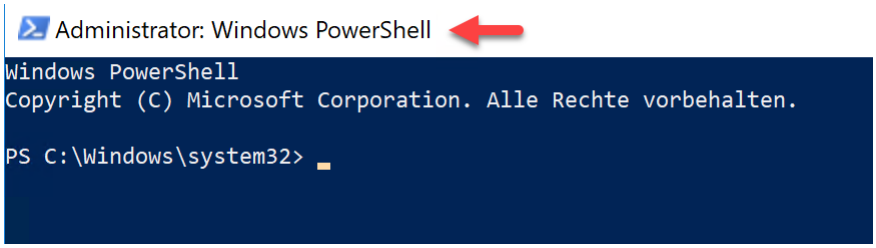
- Write-Log

Removed functions:

- Execute-ProcessAsUser
- Invoke-HKCURegistrySettingsForAllUsers
- Test-Battery
- Test-NetworkConnection

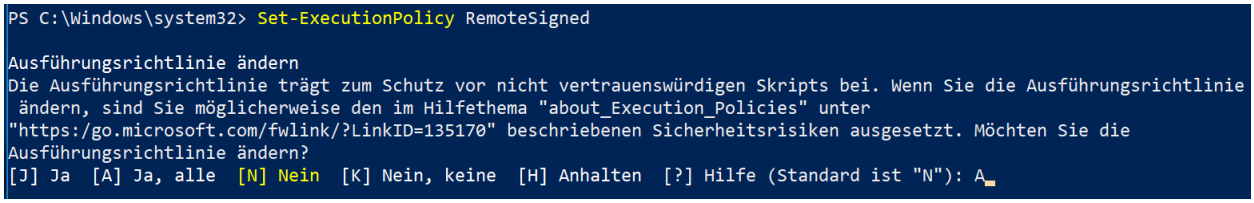
Getting started guide

First make sure, you start your PowerShell session with local admin permissions. When UAC is enabled, make sure to start you PowerShell session in elevated mode.



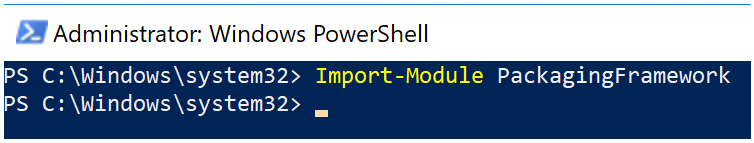
Also make sure your PowerShell execution policy is configured to run scripts, i.e. you can configure it with this PowerShell command:

1. Set-ExecutionPolicy RemoteSigned (depending on your scenario)



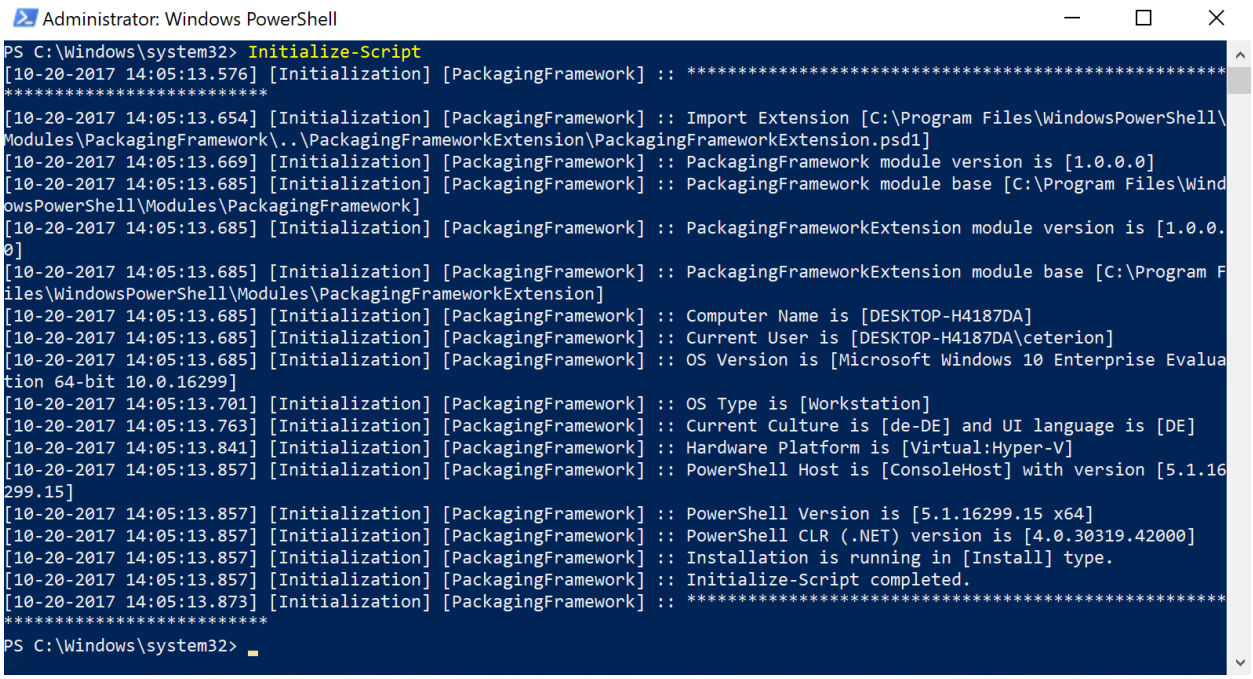
To import the module, use the following PowerShell command:

2. Import-Module PackagingFramework


Administrator: Windows PowerShell
PS C:\Windows\system32> Import-Module PackagingFramework
PS C:\Windows\system32> _

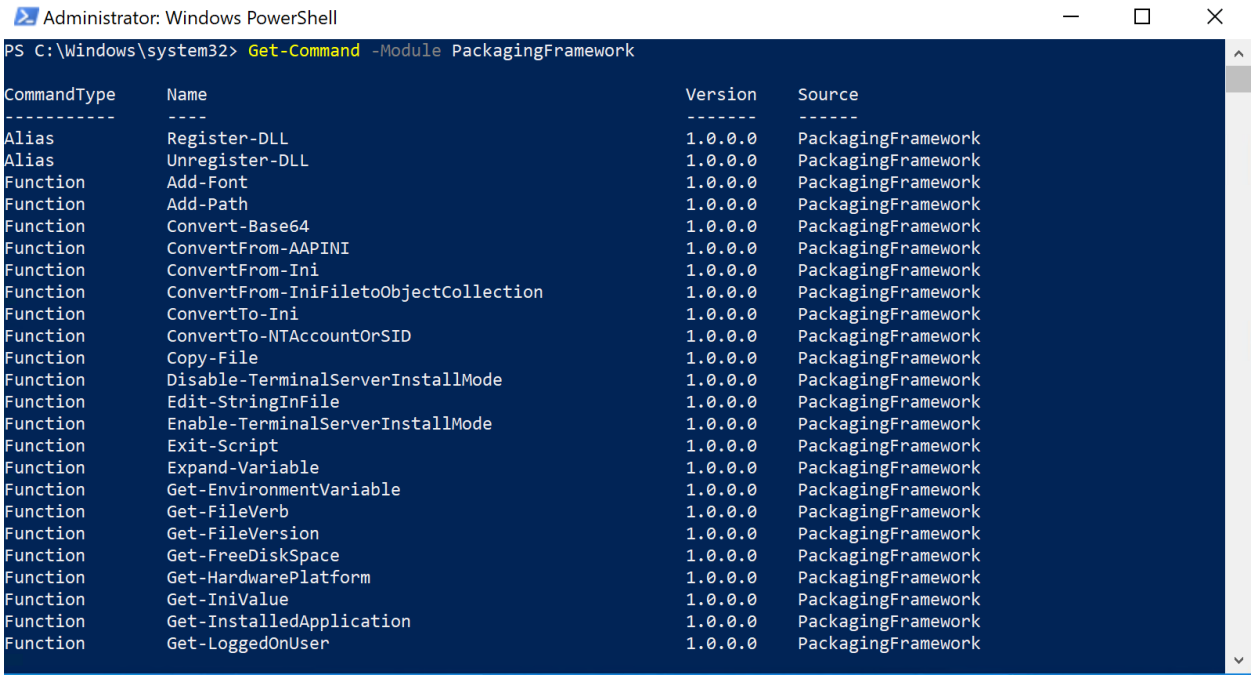
To Initialize the runtime variables, use the following PowerShell command:

3. Initialize-Script



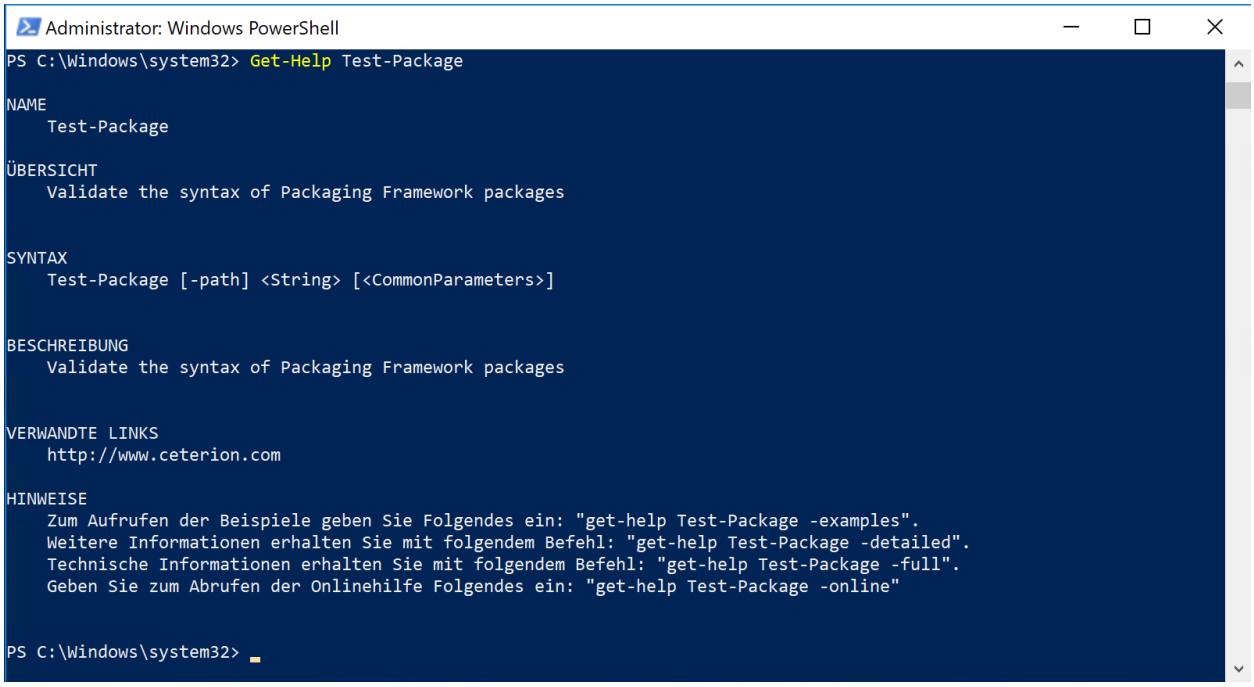
The get a list of all included commands use the following PowerShell command:

Get-Command -Module PackagingFramework



To get help for the individual PowerShell commands of the module use the following PowerShell command:

Get-Help <Command>

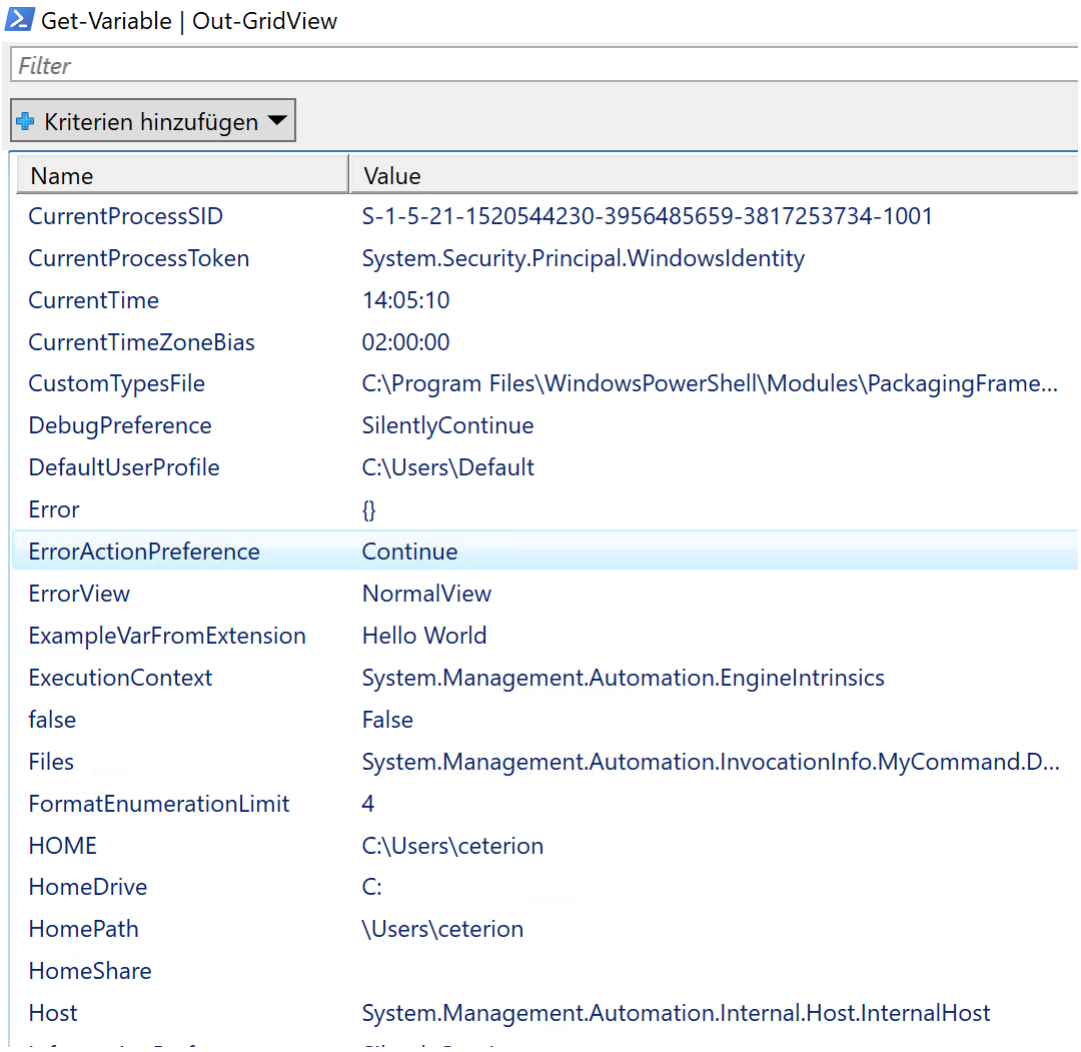


To get a full help of all included command use the following PowerShell command:

```
Get-Command -Module PackagingFramework | Get-Help
```

To get a list of all runtime variables use the following PowerShell command:

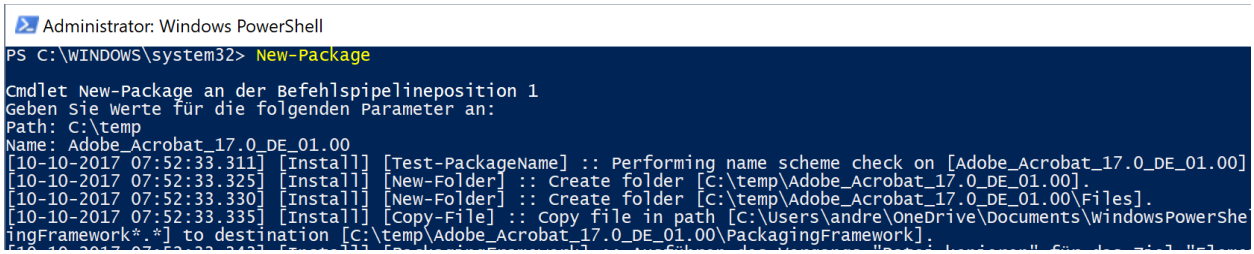
```
Get-Variable | Out-GridView
```

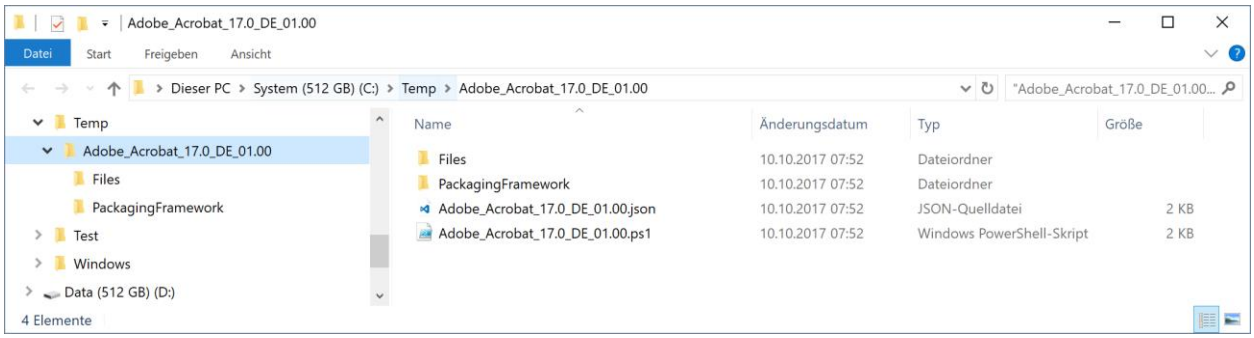


How to create a package

To create your first own package with cmPF, use the following PowerShell command:

New-Package -Path C:\Temp -Name 'Adobe_Acrobat_17.0_DE_01.00'
(Specify the desired package path and the package name
According to the name schema (customizable, in the delivery state
from AppVendor, AppName, AppVersion, AppLanguage and package Version)





Open your Adobe_Acrobat_17.0_DE_01.00.ps1-file and edit:

```
[CmdletBinding()] Param ([Parameter(Mandatory=$false)] [ValidateSet('Install','Uninstall')]
[string]$DeploymentType='Install', [Parameter(Mandatory=$false)]
[ValidateSet('Interactive','Silent','NonInteractive')] [string]$DeployMode='Interactive')
Try {
   # Import Packaging Framework Module
   Import-Module PackagingFramework ; Initialize-Script
   # Install
   If ($deploymentType -ieq 'Install') {
      # <PLACE YOUR CODE HERE>
   }
   # Uninstall
   If ($deploymentType -ieq 'Uninstall') {
      # <PLACE YOUR CODE HERE>
   }
   # Call the exit-Script
   Exit-Script -ExitCode $mainExitCode
}
Catch { [int32]$mainExitCode = 60001; [string]$mainErrorMessage = "$(Resolve-Error)" ; Write-Log -
Message $mainErrorMessage -Severity 3 -Source $PackagingFrameworkName ; Show-DialogBox -Text
$mainErrorMessage -Icon 'Stop' ; Exit-Script -ExitCode $mainExitCode}
```

```
[CmdletBinding()] Param ([Parameter(Mandatory=$false)] [ValidateSet('Install','Uninstall')]
[string]$DeploymentType='Install', [Parameter(Mandatory=$false)]
[ValidateSet('Interactive','Silent','NonInteractive')] [string]$DeployMode='Interactive')
Try {
    # Import Packaging Framework Module
    Import-Module PackagingFramework ; Initialize-Script
    # Install
    If ($deploymentType -ieq 'Install') {
          Start-MSI -Action 'Install' -Path "$Files\AcroRead.msi" -Parameters "AUTOUPDATE=NO"
    }
    # Uninstall
    If ($deploymentType -ieq 'Uninstall') {
         Start-MSI -Action 'Uninstall' -Path "$Files\AcroRead.msi"
    }
    # Call the exit-Script
    Exit-Script -ExitCode $mainExitCode
}
Catch { [int32]$mainExitCode = 60001; [string]$mainErrorMessage = "$(Resolve-Error)" ; Write-Log -
Message $mainErrorMessage -Severity 3 -Source $PackagingFrameworkName ; Show-DialogBox -Text
$mainErrorMessage -Icon 'Stop' ; Exit-Script -ExitCode $mainExitCode}
```

Copy the Adobe-Installation Files into the folder:
"C:\Temp\Adobe_Acrobat_17.0_DE_01.00\Files"

Edit the Adobe_Acrobat_17.0_DE_01.00.json with Notepad or Visual Studio Code like this:

```
{
  "Package": {
  "PackageDate": „10.10.2017",
  "PackageAuthor": „Your Name",
  "PackageDescription": "Adobe Acrobat Reader 17.0"
  },
  "Applications": [
    {
      "AppName": "Acrobat Reader",
      "AppFolder": "Utilities",
      "AppCommandLineExecutable": "%ProgramFiles%\\AcrobatReader\\AcrobatReader.exe",
      "AppCommandLineArguments": "",
      "AppWorkingDirectory": "",
      "AppAccounts": []
    }
  ],
  "DetectionMethods": [
],
  "Dependencies": [],
  "Parameters": {},
  "Notes": [],
  "ChangeLog": [
    "Version 1.0 initial release"
  ]
}
```

JSON File

- Each package has its own individual JSON file which is gets the same name as the package folder and script
- The JSON file is being read and processed during package execution.
- Start menu links or Citrix published apps are automatically created or prepared using publishing settings from json file
- information such as license keys, Groups, host names, as parameter related and uses
- The JSON file can also be centralized on a network share Centrally placed configuration files override default configurations within packages. This makes it possible, to use the same package for different customers/clients with different configurations

Sections in JSON Files:

- **Package** includes general metadata about the package such as description, author, date
- **Applications** is always to be filled when Start menu links (on client OS) or published Applications (Server OS/Citrix) have to be created. The creation of the Citrix Publ. Apps takes place further through the CitrixPublishing package (not included by default)
- **DetectionMethods** is for SCCM with the path to a uniquely identifiable file of the package to populate "dependencies". It's optional and contains information about prerequisites in form of a free text
- **Changelog** contains information about what changes have been made to the package in which version.
- **Parameters** is an optional section if the package is to be controlled flexibly by parameters at runtime
- **Notes** is optional and contains information similar to a readme.txt file in form of free text
- **PackageDate** Date of package creation or last modification
- **PackageAuthor** Name of the package creator
- **PackageDescription** Description,
- **PackageInstallName** Display name is used for example in dialogs (optional)
- **PackageInstallTitle** Display title is used for example in dialogs (optional)
- **AppName** Application name, e.g. Google Chrome
- **AppCommandLineExecutable** Path to the program file, e.g.%ProgramFiles%\Google\Chrome\chrome.exe

- **AppWorkingDirectory** working directory. e.g.%ProgramFiles%\Google\Chrome
- **AppFolder** Application Folder for Start menu or Citrix console, e.g. "Google"
- **AppCommandLineArguments** e.g. www.ceterion.de
- **AppIconSource** Icon file (if it does not come from the. exe file, e.g.%ProgramFiles%\Google\Chrome\ Chrome.ico)
- **AppIconIndex** Indexnumer of the icon if there are multiple icons in a file, e.g. 5
- **AppAccounts** User group, also several possible, e.g. Domain\Domain users

- A single JSON file can contain several applications in the applications section (see e.g. office package like winword.exe, excel.exe, powerpoint.exe)
- There may also be multiple accounts in the accounts section of the applications to authorize multiple groups
- You can also use other Citrix Publ. App properties are specified (see Citrix New-BrokerApplication PowerShell command, optional available)
- The json-file can be used optionally to make packages more flexible, e.g. for:
    - Component selection (keyword ADDLOCAL)
    - flexible target directory (keyword INSTDIR)
    - different license keys for different users/customers
    - different Backend systems for different environments (e.g. Dev, pilot, prod)
    - switching on and off of Div. installation options or optimization parameters
    - can be encrypted if required (e.g. passwords)
    - within the package convenient access to the parameters via get parameter
- Several clients, one package
    - you are able to use one and the same package multiple times for different customers/clients, by combining the installation logic (. PS1 file) with different JSON files containing specific configuration data for each installation
    - by default, the local $PackageName. JSON that is contained in the package is used at runtime of the package.

- Optionally, this $PackageName.JSON can also be used from different network shares to apply distinct configurations to any user/customer/client
- On the network share, there must be a folder which is named as the package itself. It must contain the JSON file with the file name $PackageName.JSON
- This folder can optionally be used to store other customer-specific things such as license files, other configuration files or. MST files
- The path to the network share is defined by the registry key HKLM\Software\PackagingFramework\ConfigRepositoryShare
- Optionally, a user account and password (encrypted) can also be specified for access to the network share the package
- Ceterion_ Packagingframeworkconfig_ 1.0 _ml_ 1.00 contains the appropriate logic to set it up on the target system

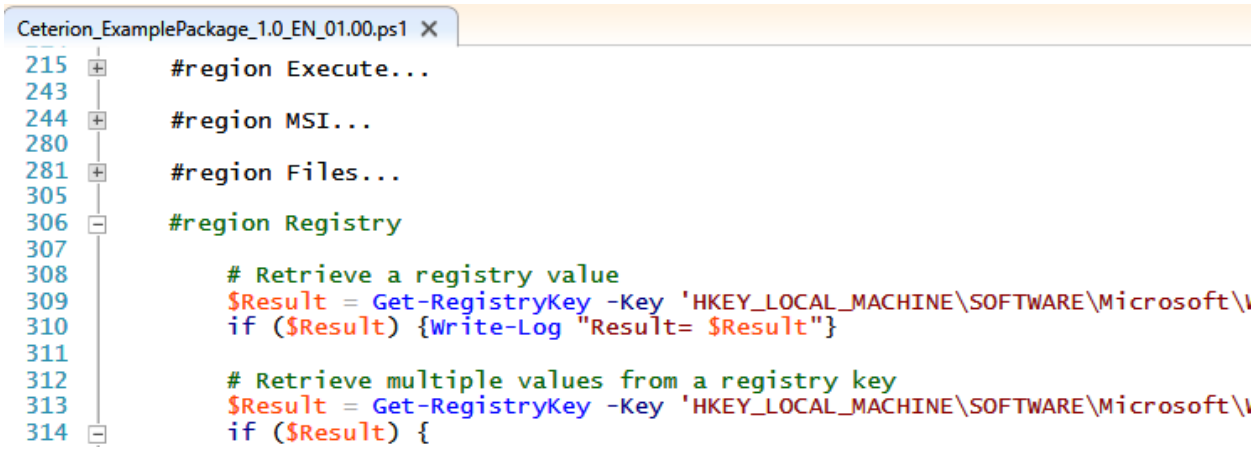
To customize the packaging framework to your needs please have a look at the module configuration file at:

'%ProgramFiles%\WindowsPowerShell\Modules\PackagingFramework\PackagingFramework.json'

When the "Example Package" option was selected while installing the setup, you will find the examples at:

'%MyDocuments%\Packaging Framework Examples'

It also contains a template (Ceterion_examplepackage_ 1.0 _en_ 01.00) with instructions for the contained commands and functions.



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