PowerShell 7 What's new?

DI Thomas Schleich
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Evolution of PowerShell

V4.0 - 10/2013
integral part of Win 8.1 & Win 2012R2

V5.1 – 01/2017
integral part of Win 10 Anniversary & Win 2016

V6.1
- .NET Core 2.1 based
- Performance improvement

V7.0 12/2019

V5.0 – 02/2016
integral part of Win 10

V6.0 – 10/2018
- *cross platform*
- *open source*
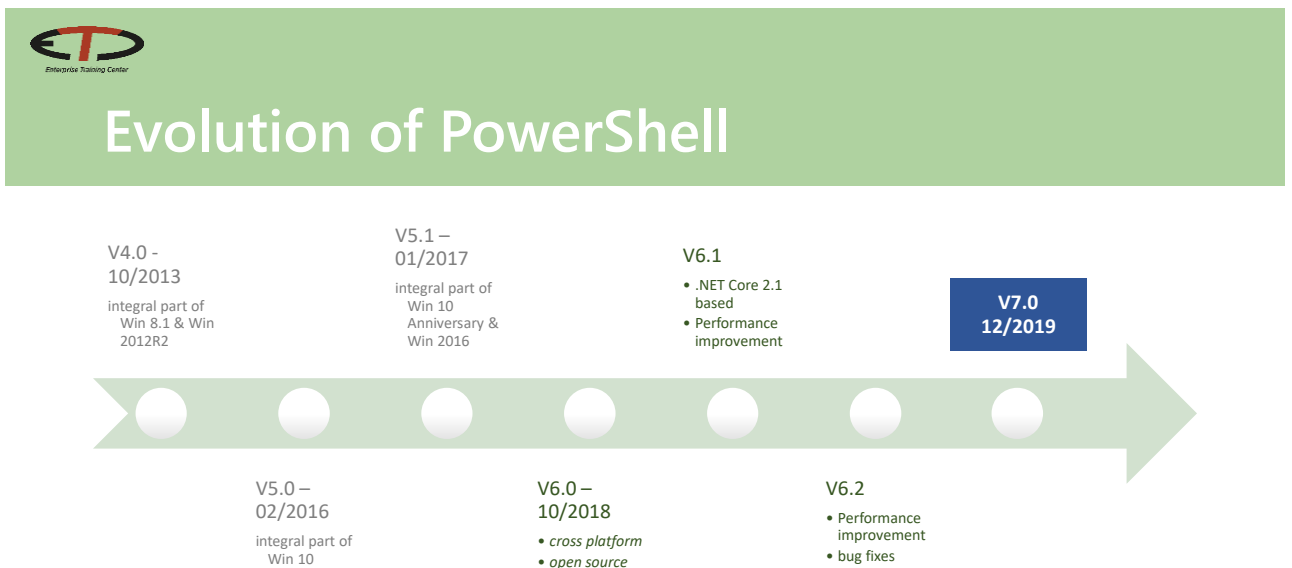
V6.2
- Performance improvement
- bug fixes

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Why PowerShell 7

- Design Goals

One of the main goals of PowerShell 7 is to have a viable replacement for Windows PowerShell 5.1 in production [...][1].

- also replacement of PowerShell 6.2
- cross platform
- open source

[1] https://devblogs.microsoft.com/powershell/powershell-7-preview-3/

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How to install PowerShell 7 (preview/RC)

- Github
  - https://github.com/PowerShell/PowerShell/releases
- Windows
  ```
  iex "& { $(irm https://aka.ms/install-powershell.ps1) } -UseMSI -Preview"
  ```
- Linux
  ```
  wget https://aka.ms/install-powershell.sh; sudo bash install-powershell.sh -preview;
  rm install-powershell.sh
  ```

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Language Elements

- Ternary Operators
  - condition ? true : false
- Chain Operator
  - && : next cmdlet is executed if previous terminated with no error
  - || : next cmdlet is executed even if previous terminated with error(s)
- Null Conditional Operators
  - ??
  - ??=
- Null Conditional Member Property and Method Access
  - ?
- Tab for variable assignment

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Language Features

- Foreach-Object
  - supports now –parallel parameter
  - without Workflow { }

- Split Operator supports negative numbers
  - "a b c d" –split " ",-2

- Invoke-DSCResource
  - cross platform compatible

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Cmdlets - Errors

- ConciseView for errors
  - Preference Variable $ErrorView
  - Parameters: NormalView, CategroyView, ConciseView

- Get-Error
  - same as $error[0]

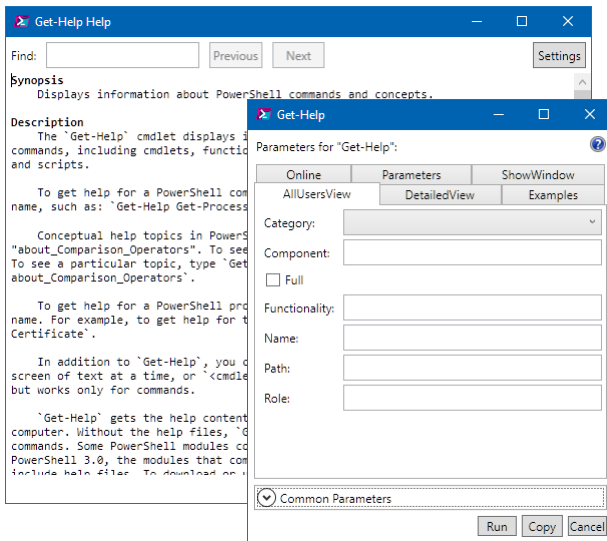- New Error Action: Break

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Windows PowerShell Compatibility

- Clipboard
  - Get-Clipboard; Set-Clipboard
  - cross platform compatible
  - only text
- Get-Counter
  - only supported on Windows
  - Import-Counter, Export-Counter not supported

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Windows PowerShell Compatibility

Graphical Tools
- Out-GridView
  - based on .Net Core 3.0; WPF Support
  - -PassThru supported
- Show-Command
- Get-Help -ShowWindow

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Windows PowerShell Compatibility

- Update-List
  - cross platform compatible
  - updates properties of an object which are lists
- Out-Printer
  - only supported on Windows
- Clear-RecycleBin
  - only supported on Windows
- Test-Connection
  - cross platform compatible
  - similar experience as the original cmdlet in Windows PowerShell

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Windows PowerShell Compatibility

- Import Windows PowerShell Modules in PS7
- Challenge: How to use Windows PS Modules in PowerShell 7?
- Solution
  - preview 6 introduced Windows Compatibility Module
  - allows importing modules leveraging WinRM and implicit remoting

  - preview 7 have this feature included in Import-Module directly
  - relays on Windows PowerShell 5.1 (must be installed)
  - does not use WinRM furthermore

- Example: PSScheduledJob

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What else ...


```
PS C:\Users\TS>
PS C:\Users\TS> pwsh-preview.cmd
PowerShell 7.0.0-preview.6
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https://aka.ms/powershell
Type 'help' to get help.

A new PowerShell preview release is available: v7.0.0-rc.1
Upgrade now, or check out the release page at:
  https://aka.ms/PowerShell-Release?tag=v7.0.0-rc.1

PS C:\Users\TS>
```

- PowerShell version notification
- Select-String
  - adds emphasis
- Extended Unix Filesystem Information
  - in Linux
  - ls

```
PS C:\temp>
PS C:\temp> cat .\anyText.txt | Select-String -Pattern Word

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can also type a keyword to search online for the video that best fits your document.
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reach the end, Word remembers where you left off - even on another device.

PS C:\temp>
```

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Danke & Viel Spaß!

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