

# Side-by-Side : PowerShell 5.1 and PowerShell 7

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 @pewa2303



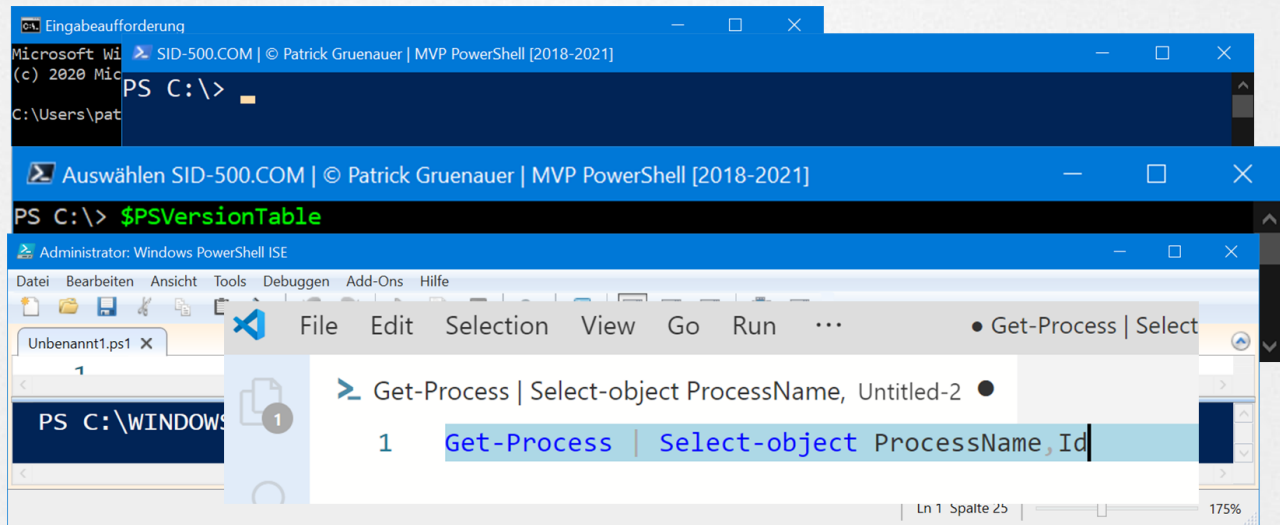
# Topics

- How many PowerShells do we need ?
- Module compatibility
- Remoting compatibility
- VS Code or ISE ?
- Windows Terminal
- Where should we go ? 5.1 or 7 ?



# How many PowerShells do we need ?

- Why PowerShell 7 ?
  - Hopefully PowerShell 7 cleans up the shell chaos on Windows OS and becomes the default shell



# How many PowerShells do we need ?

- PowerShell Support Lifecycle

## Release history

The following table contains a timeline of the major releases of PowerShell. This table is provided for historical reference. It is not intended for use to determine the support lifecycle.

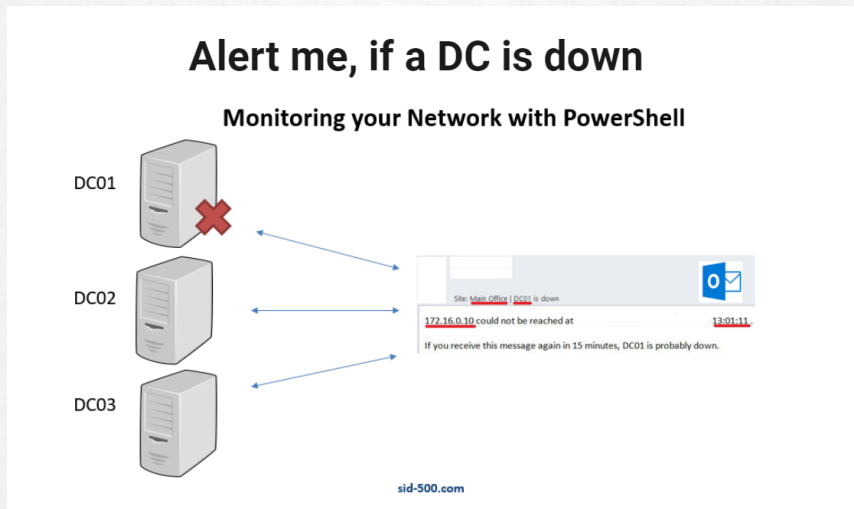
Version	Release Date	Note
PowerShell 7.1 (current)	Nov-2020	Built on .NET Core 5.0 (current)
PowerShell 7.0 (LTS)	Mar-2020	Built on .NET Core 3.1 (LTS)
PowerShell 6.0	Jan-2018	First release, built on .NET Core 2.1. Installable on Windows, Linux, and macOS.
PowerShell 5.1	Aug-2016	Released in Windows 10 Anniversary Update and Windows Server 2016
PowerShell 5.0	Feb-2016	Released in Windows Management Framework (WMF) 5.0
PowerShell 4.0	Oct-2013	Integrated in Windows 8.1 and with Windows Server 2012 R2. Installable on Windows 7 SP1, Windows Server 2008 R2 SP1, and Windows Server 2012.
PowerShell 3.0	Oct-2012	Integrated in Windows 8 and with Windows Server 2012. Installable on Windows 7 SP1, Windows Server 2008 SP1, and Windows Server 2008 R2 SP1.
PowerShell 2.0	Jul-2009	Integrated in Windows 7 and Windows Server 2008 R2. Installable on Windows XP SP3, Windows Server 2003 SP2, and Windows Vista SP1.
PowerShell 1.0	Nov-2006	Installable on Windows XP SP2, Windows Server 2003 SP1 and Windows Vista. Optional component of Windows Server 2008.





# How many PowerShells do we need ?

- Demo: Case Study
  - When your PowerShell 5 script stops working ...



DC\_Alert.ps1

PowerShell 5.1 vs PowerShell 7\_ping.ps1





# PowerShell 7 vs. PowerShell 5

- PowerShell 7 is
  - faster than PowerShell 5

```
Measure-Command {  
  
    $port = '443','80','53','88'  
  
    $port |  
  
    ForEach-Object -Parallel {Test-NetConnection -ComputerName 192.0.78.24 -Port $_ -WarningAction Ignore}  
  
} | Select-Object Minutes,Seconds
```

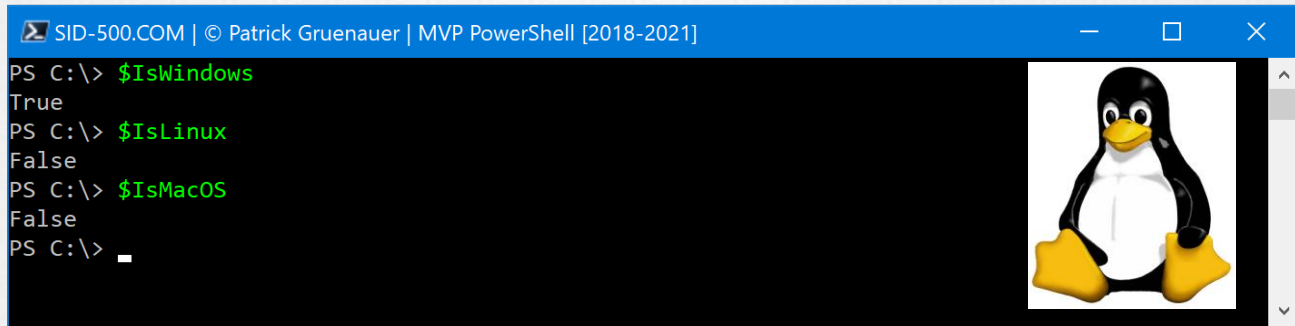
[PowerShell 7: Foreach-Object -Parallel – SID-500.COM \(sid-500.com\)](https://www.sid-500.com/PowerShell-7-Foreach-Object-Parallel)





# PowerShell 7 vs. PowerShell 5

- PowerShell 7 is
  - faster than PowerShell 5
  - cross-platform (Win, MacOS, Linux)



```
SID-500.COM | © Patrick Gruenauer | MVP PowerShell [2018-2021]
PS C:\> $IsWindows
True
PS C:\> $IsLinux
False
PS C:\> $IsMacOS
False
PS C:\> _
```

The screenshot shows a PowerShell terminal window with a blue title bar. The title bar text is "SID-500.COM | © Patrick Gruenauer | MVP PowerShell [2018-2021]". The terminal content shows three commands being executed: `$IsWindows` returns `True`, `$IsLinux` returns `False`, and `$IsMacOS` returns `False`. On the right side of the terminal window, there is a small icon of a Linux penguin (Tux) holding two yellow blocks. The terminal has a black background and green text for commands.





# PowerShell 7 vs. PowerShell 5

- PowerShell 7 is
  - faster than PowerShell 5
  - cross-platform (Win, MacOS, Linux)
  - new operators

First command succeeds, so the second command is not executed

PowerShell

Copy

```
Write-Output 'First' || Write-Output 'Second'
```

Output

Copy

First

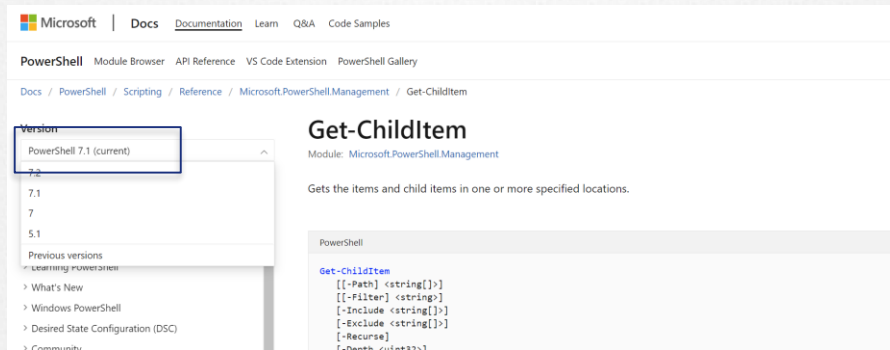






# PowerShell 7 vs. PowerShell 5

- PowerShell 7 is
  - faster than PowerShell 5
  - cross-platform (Win, MacOS, Linux)
  - new operators
  - the future



The screenshot shows the Microsoft PowerShell documentation page for the `Get-ChildItem` cmdlet. On the left, a 'Version' dropdown menu is open, showing 'PowerShell 7.1 (current)' selected, with other versions like 7.2, 7.1, 7, and 5.1 listed below. The main content area is titled 'Get-ChildItem' and includes the module 'Microsoft.PowerShell.Management'. It describes the cmdlet as 'Gets the items and child items in one or more specified locations.' Below this, a PowerShell console snippet shows the command `Get-ChildItem` with various parameters like `[-Path]`, `[-Filter]`, `[-Include]`, `[-Exclude]`, `[-Recurse]`, and `[-Depth]`.





# PowerShell 7 vs. PowerShell 5

- Demo
  - Speed Comparison
  - PowerShell 7 on Ubuntu
  - New Chain Operators in PowerShell 7





# Module compatibility

- PowerShell 7

## PowerShell 7 module compatibility

02/03/2020 • 6 minutes to read • ●●●●

This article contains a list of PowerShell modules published by Microsoft. These modules provide management and support for various Microsoft products and services. These modules have been updated to work natively with PowerShell 7 or tested for compatibility with PowerShell 7. This list will be updated with new information as more modules are identified and tested.

If you have information to share or issues with specific modules, please file an issue in the [WindowsCompatibility repo](#).

<https://docs.microsoft.com/en-us/powershell/scripting/whats-new/module-compatibility?view=powershell-7>





# Module compatibility

- PowerShell 7 and Exchange ...

## PowerShell Core support in the EXO V2 module

### ⓘ Note

The version of the EXO V2 module that's required for PowerShell Core support is currently in Preview.

The `2.0.4-Preview2` version supports PowerShell 7 in Linux and Windows environments. This Preview version of the module enables admins to use Linux computers for day-to-day management of their Exchange Online organizations.

### Notes:

- PowerShell 7 in MacOS is not supported.
- The Preview version of the module works with Windows PowerShell 5.1.

To install the `2.0.4-Preview2` version of the module, see the [Install and maintain the EXO V2 module](#) section in this topic.

For more information about PowerShell 7, see [Announcing PowerShell 7.0](#).





# Module compatibility

- Demo
  - Connect to Exchange Online with PowerShell 5.1 and PowerShell 7





# Remoting compatibility

- What if one host is running PowerShell 7 and the other is running 5 ? No problem at all.

```
SID-500.COM | Patrick Gruenauer | MVP PowerShell [2018-2020]
PS C:\> $host.Version

Major  Minor  Build  Revision
-----
7      0      2      -1

PS C:\> Enter-PSSession sid-500-core01
[sid-500-core01]: PS C:\Users\patrick.SID-500\Documents> $PSVersionTable

Name                           Value
----                           -
PSVersion                      5.1.17763.1490
PSEdition                      Desktop
PSCompatibleVersions           {1.0, 2.0, 3.0, 4.0...}
BuildVersion                   10.0.17763.1490
CLRVersion                     4.0.30319.42000
WSManStackVersion              3.0
PSRemotingProtocolVersion      2.3
SerializationVersion           1.1.0.1

[sid-500-core01]: PS C:\Users\patrick.SID-500\Documents> _
```

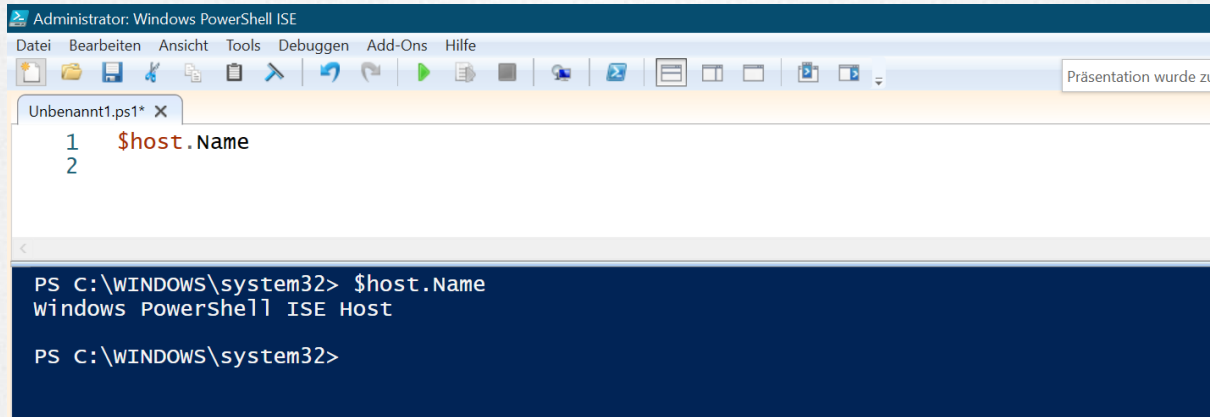




# ISE or VS Code

- Microsoft says ISE will no longer be developed

...

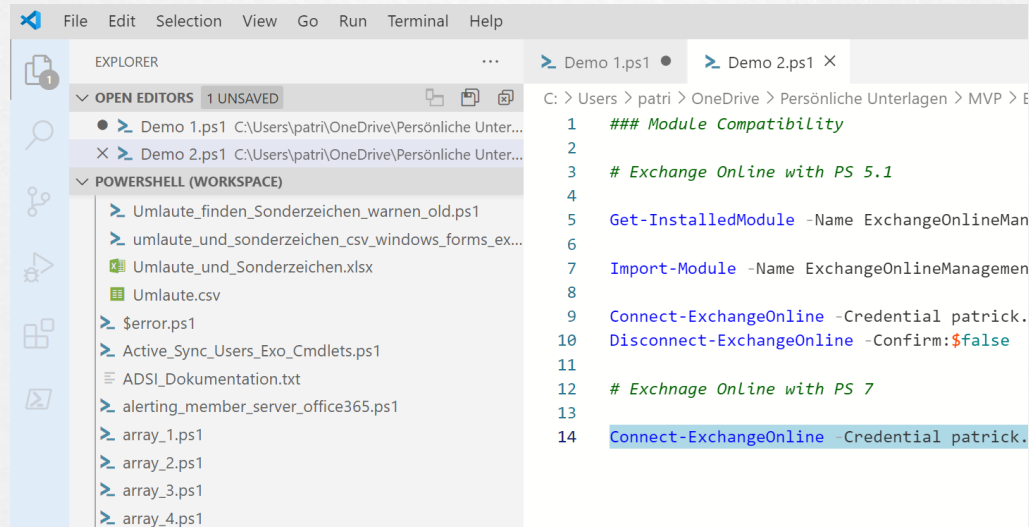


```
Administrator: Windows PowerShell ISE
Datei Bearbeiten Ansicht Tools Debuggen Add-Ons Hilfe
Unbenannt1.ps1*
1 $host.Name
2
PS C:\WINDOWS\system32> $host.Name
Windows PowerShell ISE Host
PS C:\WINDOWS\system32>
```



# ISE or VS Code

- VS Code is the new standard editor for PowerShell codes





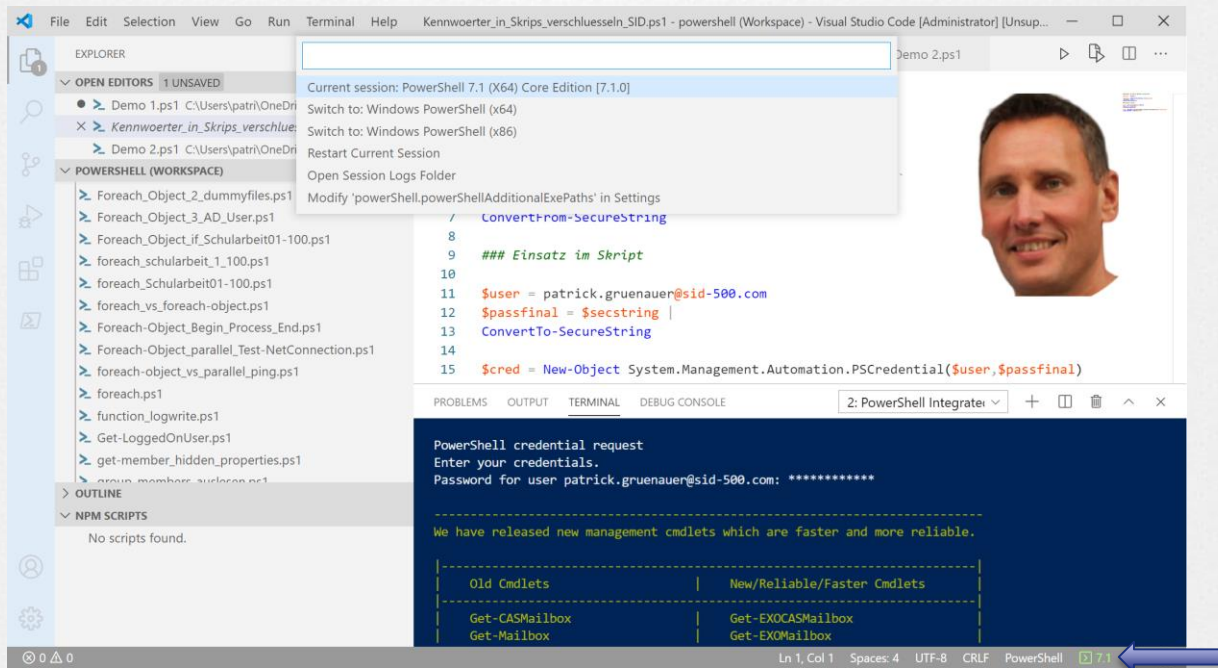
# ISE or VS Code

- ISE vs VS Code
  - ISE ships with every Windows Operating system
  - ISE does not support PowerShell 7
  - VS Code supports PS 5.1 and 7 fast-switch
  - VS Code needs to be installed and configured
  - VS Code features a file explorer
  - VS Code is still susceptible to errors when using IntelliSense



# VS Code

- Fast-switch in VS Code

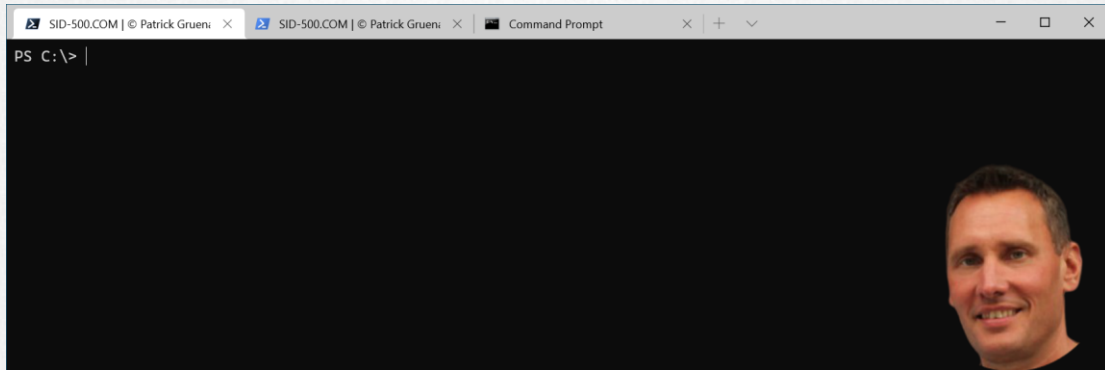






# Windows Terminal

- Windows Terminal is a new terminal application for running PowerShell 5.1 and 7 side-by-side
- Drawbacks
  - No editor, just command line experience
  - Only available on Client OS





# Windows Terminal

- Demo
  - Install Windows Terminal
  - Use Windows Terminal
  - Customize Windows Terminal





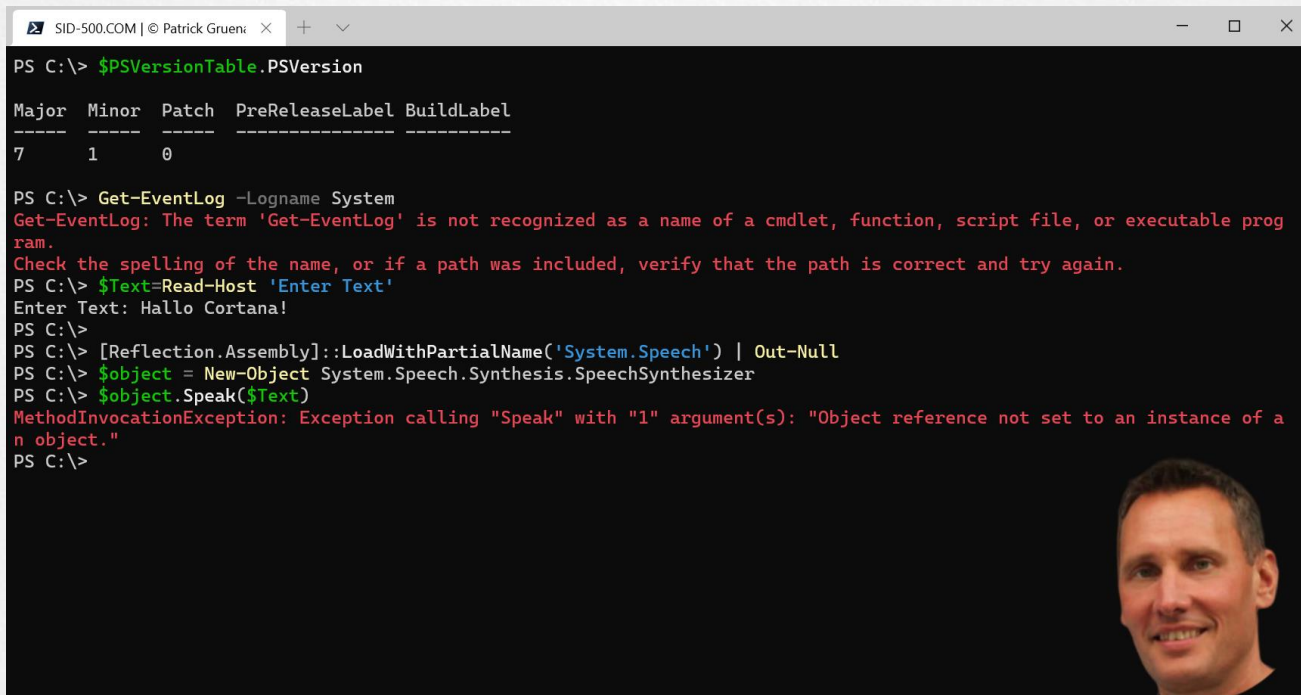
# Where should we go ? 5.1 or 7 ?

- PowerShell 7 is the future
- PowerShell 5.1 will no longer be developed
- PowerShell 7 can be installed and run side-by-side with PowerShell 5.1
- Get familiar with Visual Studio Code
- Check your scripts
- **My personal opinion on this topic:** You can still use PowerShell 5. But familiarize yourself with PowerShell 7.



# Where should we go ? 5.1 or 7 ?

- Know the limits



```
PS C:\> $PSVersionTable.PSVersion

Major Minor Patch PreReleaseLabel BuildLabel
-----
7      1      0

PS C:\> Get-EventLog -Logname System
Get-EventLog: The term 'Get-EventLog' is not recognized as a name of a cmdlet, function, script file, or executable program.
Check the spelling of the name, or if a path was included, verify that the path is correct and try again.
PS C:\> $Text=Read-Host 'Enter Text'
Enter Text: Hallo Cortana!
PS C:\>
PS C:\> [Reflection.Assembly]::LoadWithPartialName('System.Speech') | Out-Null
PS C:\> $object = New-Object System.Speech.Synthesis.SpeechSynthesizer
PS C:\> $object.Speak($Text)
MethodInvocationException: Exception calling "Speak" with "1" argument(s): "Object reference not set to an instance of a
n object."
PS C:\>
```





# Thank you ...

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  - Blog: <https://sid-500.com>
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