
Arrow ECS Training

Get-KnowHow | Select-Object -property 'Essential'

Windows PowerShell v5: Die Neuerungen im Überblick

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Agenda

- Upgrade PS 5
- (Einige) Neue Cmdlets
- PackageManagent
- [class]

= 1 h, 2 Demos, 20 Folien



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... deutschlandweite Abdeckung

- > München
- > Frankfurt
- > Bochum
- > Berlin
- > Hamburg

...Qualität

- > Supportprofis als Trainer
- > Lerngarantie
- > Garantierte Kursdurchführung
- > Zertifiziertes Testcenter

... Modernste Lernumgebung

- > Highend Laborumgebung
- > Digitale Kursunterlagen
- > Klimatisierte Kursräume

... Einmaliges Kursportfolio

- > Citrix
- > VMware
- > Microsoft
- > Check Point
- > Uvm.

... innovative und zeitgemäße Lernmethoden

- > Klassenraumtraining
- > Virtual Classroom
- > Elearning
- > Videolearning

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Empfohlene Microsoft Kurse:

- Mastering Windows 2012 R2 & Windows 10 // Praxis.Workshop (5 Tage)
- Automating Administration with Windows PowerShell MOC-10961 (5 Tage)
- Installing and Configuring Windows 10 MOC-20697-1 (5 Tage)

Microsoft Partner
Silver Learning

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about_me

```
$speaker = @{  
    name = 'Thorsten Butz'  
    certification = 'MC*/LIPC-2'  
    focus = 'Scripting', 'ServerManagement'  
     = '@thorstenbutz'  
     = 'http://www.thorsten-butz.de'  
}
```

Windows 10 & PowerShell v5

RTM ? →

JULY 15, 2015 11:37 AM

Build 10240 now available for Windows Insiders in Fast and Slow rings

By [Gabe Aul](#) / Corporate Vice President, Engineering Systems Team

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Hi everyone, today we are releasing a new build to both the Fast and Slow rings. We're just about two weeks away from beginning to offer Windows 10 to the world, [as Terry detailed here](#).

Erste Fassung einer "finalen" PowerShell 5:

Windows 10 Build 10240: Treshold 1

Windows PowerShell Blog

Automating the world one-liner at a time...

Windows Management Framework (WMF) 5.0 RTM is now available

PowerShell Team 16 Dec 2015 4:07 PM 30

RATE THIS
★★★★★

[Edit 12/18/2015 – Added additional detail describing support for Windows 7 and Windows 8]

Continuing with the ongoing tradition of holiday gifts to the PowerShell community, we are excited to announce the release of Windows Management Framework 5.0 RTM.

WMF 5.0 RTM brings new management technologies such as Just Enough Admin (JEA), PowerShell Classes, PackageManagement, PowerShellGet, etc. and improvement to existing technologies such as Desired State Configuration (DSC), PowerShell Script Debugging, Software Inventory Logging (SIL) etc. to downlevel systems.

WMF 5.0 RTM replaces WMF 5.0 Production Preview, and is the fully-supported version many of you have been waiting for. You can now deploy the latest features of PowerShell in your production environments.

WMF 5.0 RTM is now available for download via the [Microsoft Download Center](#). You can [read](#) (and [contribute to](#)) more about these new functionalities and improvements in WMF 5.0 RTM release notes.

Currently, WMF 5.0 RTM is supported on **Windows Server 2012 R2**, **Windows Server 2012**, **Windows 2008 R2 SP1**, **Windows 8.1** and **Windows 7 SP1**. You'll need .NET Framework 4.5 installed to run WMF 5.0, which can also be downloaded from the [Microsoft Download Center](#), as needed.

<http://blogs.msdn.com/b/powershell/archive/2015/12/16/windows-management-framework-wmf-5-0-rtm-is-now-available.aspx>

Windows Management Framework 5.0

If your download does not start after 30 seconds, [Click here](#)

⊖ Install Instructions

To prepare for installation of Windows Management Framework 5.0 RTM:

1. Download the correct package for your operating system and architecture. The following architectures are supported.

- Windows 7 SP1

→ • x64: W2K8R2-KB3094176-x64.msu

→ • x86: Win7-KB3094176-x86.msu



Dr. H. Schwichtenberg @DOTNETDOKTOR · Dec 18

PowerShell 5.0 nur noch für Windows Server und #Windows10!? Will Microsoft jetzt alle zum Umstieg auf W10 zwingen? blogs.msdn.com/b/powershell/a...



Dr. H. Schwichtenberg @DOTNETDOKTOR · Dec 19

Microsoft hat Entscheidung letzte Nacht revidiert. #powershell 5 unterstützt nun doch Windows 7 und 8! heise.de/forum/heise-De...

"Download the correct package for your operating system and architecture.
The following architectures are supported.

Windows Server 2012 R2

x64: W2K12R2-KB3094174-x64.msu

Windows Server 2012

x64: W2K12-KB3094175-x64.msu

Windows Server 2008 R2 SP1

x64: W2K8R2-KB3094176-x64.msu

Windows 8.1

x64: W2K12R2-KB3094174-x64.msu

x86: Win8.1-KB3094174-x86.msu

Windows 7 SP1

x64: W2K8R2-KB3094176-x64.msu

x86: Win7-KB3094176-x86.msu"

Quelle

- <https://www.microsoft.com/en-us/download/confirmation.aspx?id=50395>
- <http://www.heise.de/developer/meldung/PowerShell-5-fuer-Windows-Server-aber-nicht-fuer-aeltere-Clients-3046825.html>
- <http://twitter.com/dotnetdoktor>

(Wesentliche) Neuerungen in Windows PowerShell 5.0

- Klassen (Neue Schlüsselworte: Class, Enum)
- Neuer Stream: Information
- Neue Cmdlets
 - ConvertFrom-String, Convert-String
 - Compress-Archive, Expand-Archive
 - Format-Hex
 - Get-Clipboard, Set-Clipboard
 - New-Guid
 - Export-ODataEndpointProxy
 - ...
- PackageManagement, PowerShellGet (basierend auf NuGet)

https://technet.microsoft.com/en-us/library/hh857339.aspx#BKMK_new50

(Wesentliche) Verbesserungen in Windows PowerShell 5.0

- Start-Transcript in der ISE nutzbar
- Cmdlets
 - Symlink Support in Get-Item, Get-ChildItem
 - Get-ChildItem: neuer "depth" Parameter:
`Get-ChildItem -recurse -depth 2`
 - Copy-Item kopiert Dateien in eine andere Session (via WinRM)
 - Get-Command zeigt eine neue Eigenschaft "Version"
- DSC-Erweiterungen: Klassen, Intellisense/Debugging-Verbesserungen

Windows 7 (SP1) PoSh v2

```
Administrator: Windows PowerShell
PS C:\> $PSVersionTable

Name                           Value
----                           -
CLRVersion                     2.0.50727.5420
BuildVersion                   6.1.7601.17514
PSVersion                      2.0
WSManStackVersion              2.0
PSCompatibleVersions           {1.0, 2.0}
SerializationVersion           1.1.0.1
PSRemotingProtocolVersion      2.1

PS C:\> (Get-Command).count
410
PS C:\> (Get-Command -CommandType cmdlet).count
236
```

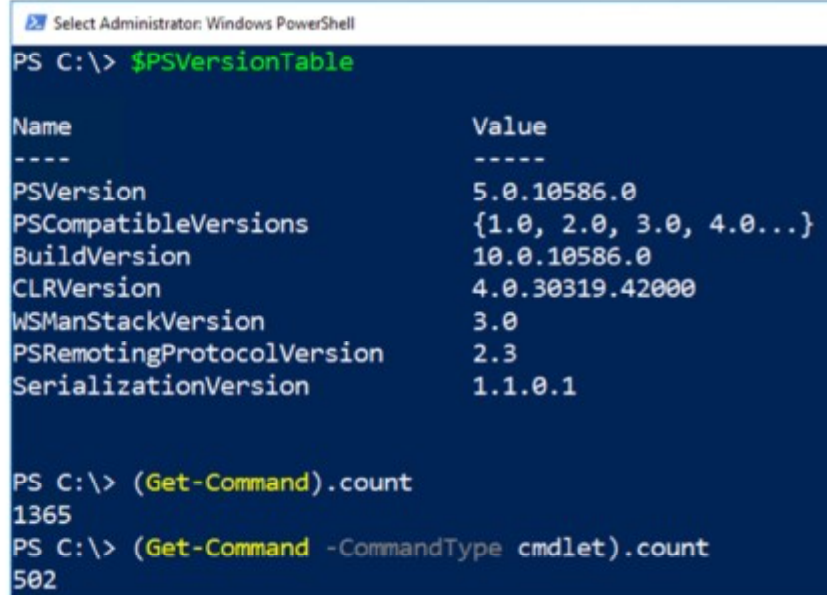
Windows 7 (SP1) PoSh v5

```
Administrator: Windows PowerShell
PS C:\> $PSVersionTable

Name                           Value
----                           -
PSVersion                      5.0.10586.51
PSCompatibleVersions           {1.0, 2.0, 3.0, 4.0...}
BuildVersion                   10.0.10586.51
CLRVersion                     4.0.30319.17929
WSManStackVersion              3.0
PSRemotingProtocolVersion      2.3
SerializationVersion           1.1.0.1

PS C:\> (Get-Command).count
462
PS C:\> (Get-Command -cmdtype cmdlet).count
363
```

Windows 10 (1511)
PoSh v5



Select Administrator: Windows PowerShell

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

Name	Value
PSVersion	5.0.10586.0
PSCompatibleVersions	{1.0, 2.0, 3.0, 4.0...}
BuildVersion	10.0.10586.0
CLRVersion	4.0.30319.42000
WSManStackVersion	3.0
PSRemotingProtocolVersion	2.3
SerializationVersion	1.1.0.1

```
PS C:\> (Get-Command).count
1365
PS C:\> (Get-Command -CommandType cmdlet).count
502
```

PoSh v5 @Windows 7

```
PS C:\> Get-Process -Name power* | Where-Object { $_.VM -gt 20MB }
```

Handles	NPM(K)	PM(K)	WS(K)	VM(M)	CPU(s)	Id	SI	ProcessName
807	35	157072	136148	657	3,67	2452	2	powershell
600	58	181192	99372	891	14,59	2988	2	powershell_ise

PoSh v5 @Windows 10

```
PS C:\> Get-Process -Name power* | Where-Object { $_.VM -gt 20MB }
```

Handles	NPM(K)	PM(K)	WS(K)	VM(M)	CPU(s)	Id	SI	ProcessName
1148	38	120056	94044	...08	10,66	4892	1	powershell
1058	72	137104	162904	901	43,89	4628	1	powershell_ise

Demo 1

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Neue Cmdlets: Zipping

```
# PS < v5
$src = 'C:\logs\'
$dst = 'C:\backup\log.zip'
Add-Type -assembly 'System.IO.Compression.FileSystem'
[System.IO.Compression.ZipFile]::CreateFromDirectory($src, $dst)

# Simple
Compress-Archive -Path 'C:\logs\log1.txt' -DestinationPath
'C:\backup\log1.zip'

# Pipelining
Get-ChildItem -Path $HOME -Recurse -File -Include *.txt,*.png |
    Compress-Archive -DestinationPath 'c:\backup\files.zip' # -Force
```

<http://www.heise.de/developer/artikel/Zippen-mit-PowerShell-5-0-2803617.html>

Neues Cmdlet: Convert-String

```
# PowerShell v5
$nationalspieler = 'Manuel Neuer', 'Mats Hummels'
$nationalspieler | Convert-String -Example 'Manuel Neuer=NeuerM'

# Previously
$name = 'Manuel Neuer'
$name.Split()[1] + $name.Split()[0].Substring(0,1)
```

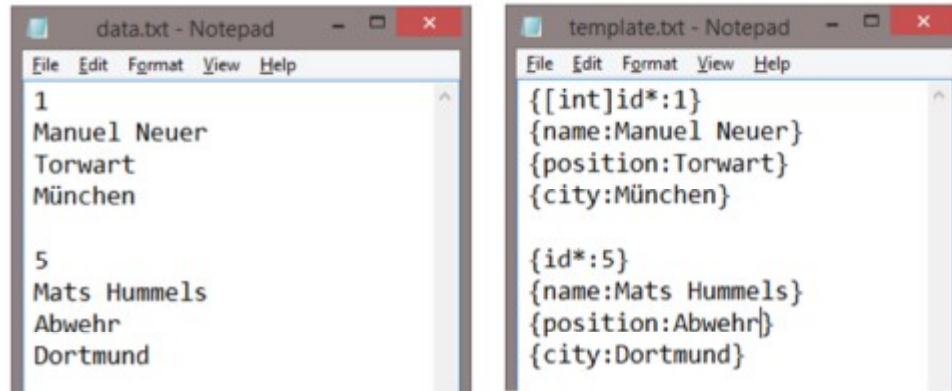
```
$nationalspieler = 'Manuel Neuer', 'Mats Hummels'
```

```
# a: Just a string
$name = 'Manuel Neuer'
$name.Split()[1] + $name.Split()[0].Substring(0,1)
```

```
# b: Array
foreach ($name in $nationalspieler) {
    $name.Split()[1] + $name.Split()[0].Substring(0,1)
}
```

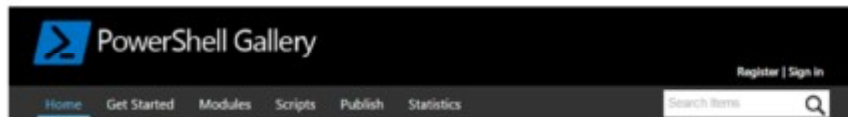
```
$nationalspieler | ForEach-Object {
    $_.Split()[1] + $_.Split()[0].Substring(0,1)
}
```

Neues Cmdlet: Convert-FromString



```
Get-Content -Path $datafile |
    ConvertFrom-String -TemplateFile $template
```

Package Management: PowerShell Gallery



Welcome to the PowerShell Gallery

The PowerShell Gallery is the central repository for PowerShell content. You can find new PowerShell commands or Desired State Configuration (DSC) resources in the Gallery.

Getting Started with the Gallery

Installing items from the Gallery requires the latest version of the PowerShellGet module, which is available in Windows 10, in Windows Management Framework (WMF) 5.0, or in the MSI-based installer (for PowerShell 3 and 4).



Package Management
basiert auf NUGet

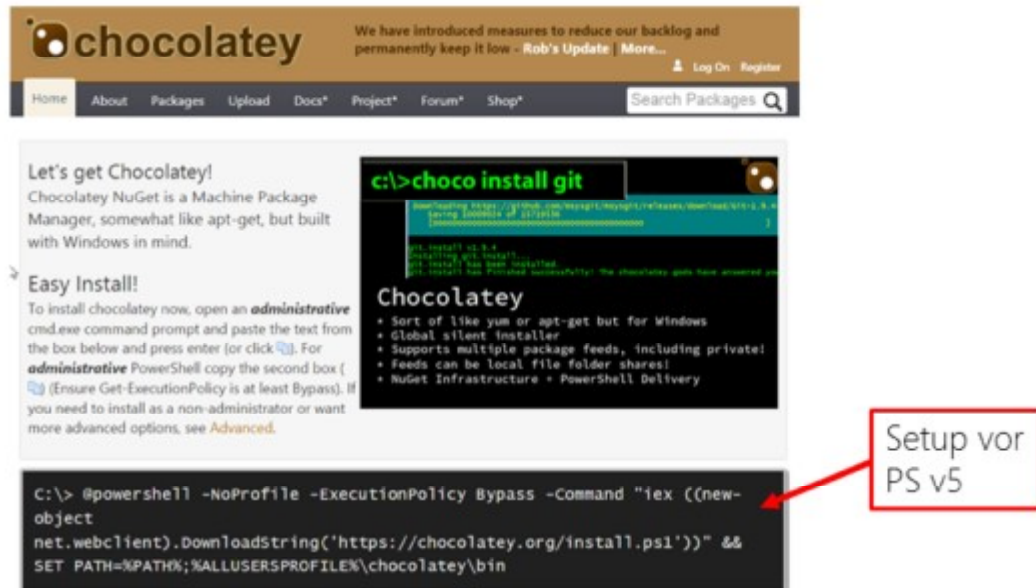
With the latest PowerShellGet module, you can:

- Search through items in the Gallery with **Find-Module** and **Find-Script**
- Save items to your system from the Gallery with **Save-Module** and **Save-Script**
- Install items from the Gallery with **Install-Module** and **Install-Script**
- Upload items to the Gallery with **Publish-Module** and **Publish-Script**
- Add your own custom repository with **Register-PSRepository**

Package Management basiert auf NUget:

<https://www.nuget.org/>

Package Management: Chocolatey



The screenshot shows the Chocolatey website. At the top, there's a navigation bar with links like Home, About, Packages, Upload, Docs*, Project*, Forum*, and Shop*. Below the navigation bar, there's a section titled "Let's get Chocolatey!" with a description of Chocolatey NuGet as a Machine Package Manager. To the right, there's a terminal window showing the command `c:\>choco install git` and its output. Below the terminal window, there's a list of features: "Sort of like yum or apt-get but for Windows", "Global silent installer", "Supports multiple package feeds, including private!", "Feeds can be local file folder shares!", "NuGet Infrastructure", and "PowerShell Delivery". At the bottom, there's a PowerShell command to install Chocolatey: `C:\> @powershell -NoProfile -ExecutionPolicy Bypass -Command "iex ((new-object net.webclient).DownloadString('https://chocolatey.org/install.ps1'))" && SET PATH=%PATH%;%ALLUSERSPROFILE%\chocolatey\bin`. A red arrow points from a box labeled "Setup vor PS v5" to the PowerShell command.

Let's get Chocolatey!
Chocolatey NuGet is a Machine Package Manager, somewhat like apt-get, but built with Windows in mind.

Easy Install!
To install chocolatey now, open an **administrative** cmd.exe command prompt and paste the text from the box below and press enter (or click [here](#)). For **administrative** PowerShell copy the second box ([Ensure Get-ExecutionPolicy is at least Bypass](#)). If you need to install as a non-administrator or want more advanced options, see [Advanced](#).

Chocolatey

- Sort of like yum or apt-get but for Windows
- Global silent installer
- Supports multiple package feeds, including private!
- Feeds can be local file folder shares!
- NuGet Infrastructure • PowerShell Delivery

C:\> @powershell -NoProfile -ExecutionPolicy Bypass -Command "iex ((new-object net.webclient).DownloadString('https://chocolatey.org/install.ps1'))" && SET PATH=%PATH%;%ALLUSERSPROFILE%\chocolatey\bin

Setup vor PS v5

Chocolatey ist ein "Community"-Projekt zur unbeaufsichtigten Installation von Software, vergleichbar mit den Linux-Tools "dpkg/apt".
<https://chocolatey.org/>

Basiert ebenfalls auf NUget:
<https://www.nuget.org/>

Alternative:
<https://ninite.com/>

Neues Schlüsselwort: [class]

"Classes are not objects, and objects are not classes. An object is an instance of a class." (Ed Wilson)



<http://blogs.technet.com/b/heyscriptingguy/archive/2015/08/31/introduction-to-powershell-5-classes.aspx>

Klassen und Objekte

```
New-Object -TypeName DateTime      # An object

Class Server                        # A "blueprint"
{
    [string]$Computername
    [vendor]$Vendor
    [string]$Model
}

New-Object -TypeName Server        # An object
```

Neues Schlüsselwort: [enum]

```
Enum Vendor
{
    HP = 1
    Dell = 2
    IBM = 3
    Lenovo = 4
    Ciso = 5
}
```

Worldwide: Server Vendor Revenue Estimates		
Company	4Q14	4Q14 Market Share (%)
	Revenue	
HP	3,897,668,666	27.9
Dell	2,425,147,102	17.3
IBM	1,788,907,117	12.8
Lenovo	1,103,620,000	7.9
Cisco	772,200,000	5.5
Others	3,992,675,197	28.6
Total	13,980,218,081	100.0

<http://www.gartner.com/newsroom/id/2997118>

Gartner Says Worldwide Server Market Grew 4.8 Percent in Shipments, While Revenue Increased 2.2 Percent in Fourth Quarter of 2014

<http://www.gartner.com/newsroom/id/2997118>

Demo 2

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Save the date:
28. Jan. 2016, 17:15 h

Windows Server 2016: Die Neuerungen im Überblick
Thorsten Butz

http://education.arrowecs.de/seminare/kurse/training_kurse.cfm?courseId=AAAAELM

http://education.arrowecs.de/seminare/kurse/training_kurse.cfm?courseId=AAAAELM
