



MCT SUMMIT 2015

LISBON

How to not (teach | use) Powershell

by Thorsten Butz

#b9



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about_me

```
$speaker = @{  
  name='Thorsten Butz'  
  mctCreationYear = '2000'  
  citizenship =   
   = @thorstenbutz  
   = gplus.to/thorstenbutz  
   = thorsten-butz.de  
   = slidingwindows.de  
}
```



**KEEP
CALM
FOR
YOUR
MILEAGE
MAY VARY**

"Windows PowerShell has pipelines of objects instead of pipelines of text

Being an object based shell is the difference between a lightning and a lightning bug

It sounds the same but they're completely different."

Jeffrey Snover, Nov 2007

Firefly

The Lampyridae are a family of insects in the beetle order Coleoptera. They are winged beetles, and commonly called fireflies or lightning bugs for their conspicuous use of bioluminescence during twilight to attract mates or prey. Fireflies produce a "cold light", with no infrared or ultraviolet frequencies. This chemically produced light from the lower abdomen may be yellow, green, or pale red, with wavelengths from 510 to 670 nanometers.^[2]

About 2,000 species of fireflies are found in temperate and tropical environments. Many are in marshes or in wet, wooded areas where their larvae have abundant sources of food. Their larvae emit light and often are called "glowworms", in particular, in Eurasia. In the Americas, "glow worm" also refers to the related Phengodidae. In many species, both male and female fireflies have the ability to fly, but in some species, the females are flightless.^[3]



<https://en.wikipedia.org/wiki/Firefly>

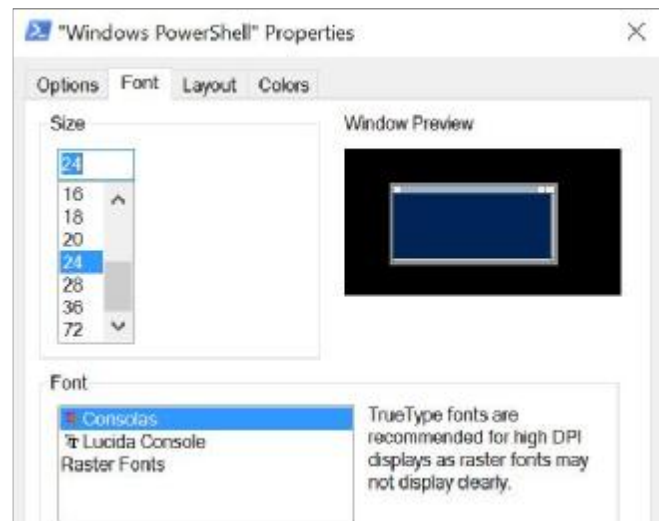
Change-Water -into Wine

Error : The term "Change-Water" ist not yet implemented.



Basic tasks: Make it readable!

↪ `$Host.PrivateData.ErrorBackgroundColor = 'white'`
↪ `$PSHOME\profile.ps1`



What's a PowerShell command ?

```
[System.DateTime]::Now
```

```
Get-Date
```

```
date
```



The DNA of PoSh: Objects

```
# Integer
```

```
1
```

```
# String
```

```
'Donald'
```

```
# Boolean
```

```
$false
```

```
# Multiple items / Array
```

```
'Huey', 'Dewey', 'Louie'
```

```
# Object
```

```
Import-Csv -Path .\ducktown.csv
```

A screenshot of a PowerShell console window showing the output of the 'Import-Csv' command. The window title is '015'. The output is a table with 7 rows and 7 columns. The columns are labeled A through G, corresponding to the headers: GivenName, SurName, City, Description, Computername, ComputerVendor, and ComputerModell. The rows contain data for characters like Scrooge, Donald, Daisy, Huey, Dewey, and Louie.

	A	B	C	D	E	F	G
1	GivenName	SurName	City	Description	Computername	ComputerVendor	ComputerModell
2	Scrooge	MrDuck	Ducktown	Moneybags	dl-c11	Compaq	Presario V7000
3	Donald	Duck	Ducktown	Uncle	dl-c12	Dell	Inspiron 15 II
4	Daisy	Duck	Ducktown	Tiaraée	dl-c13	Apple	MacBook
5	Huey	Duck	Ducktown	Nephew	dl-c14	Lenovo	1440
6	Dewey	Duck	Ducktown	Nephew	dl-c15	Lenovo	1440
7	Louie	Duck	Ducktown	Nephew	dl-c16	Lenovo	1440



The DNA of PoSh: Parameter binding

Drive-Car Lisboa

Drive-Car -destination Lisboa

Drive-Car -destination Lisboa -fast 60mph

Lisboa | Drive-Car



Parameter binding: byValue

```
Get Help Drive-Car parameter destination
-destination <Destination>
  Specifies a destination. Accepts common city names or GeoCoordinate.

Required?           false
Position?           1
Default value
Accept pipeline input? True (ByValue, ByPropertyName)
Accept wildcard characters? false
```

Drive-Car -destination Lisboa



Lisboa | Drive-Car



Parameter binding: byPropertyName

```
-ComputerName <String[]>  
  Specifies the computers to ping. Type the computer names or type IP addresses in IPv4 or IPv6 format. Wildcard characters are not permitted. This parameter is required.  
  
  This parameter does not rely on Windows PowerShell remoting. You can use the ComputerName parameter even if your computer is not configured to run remote commands.  
  
  Required?                true  
  Position?                1  
  Default value              
  Accept pipeline input?   True (ByPropertyName)  
  Accept wildcard characters? false
```

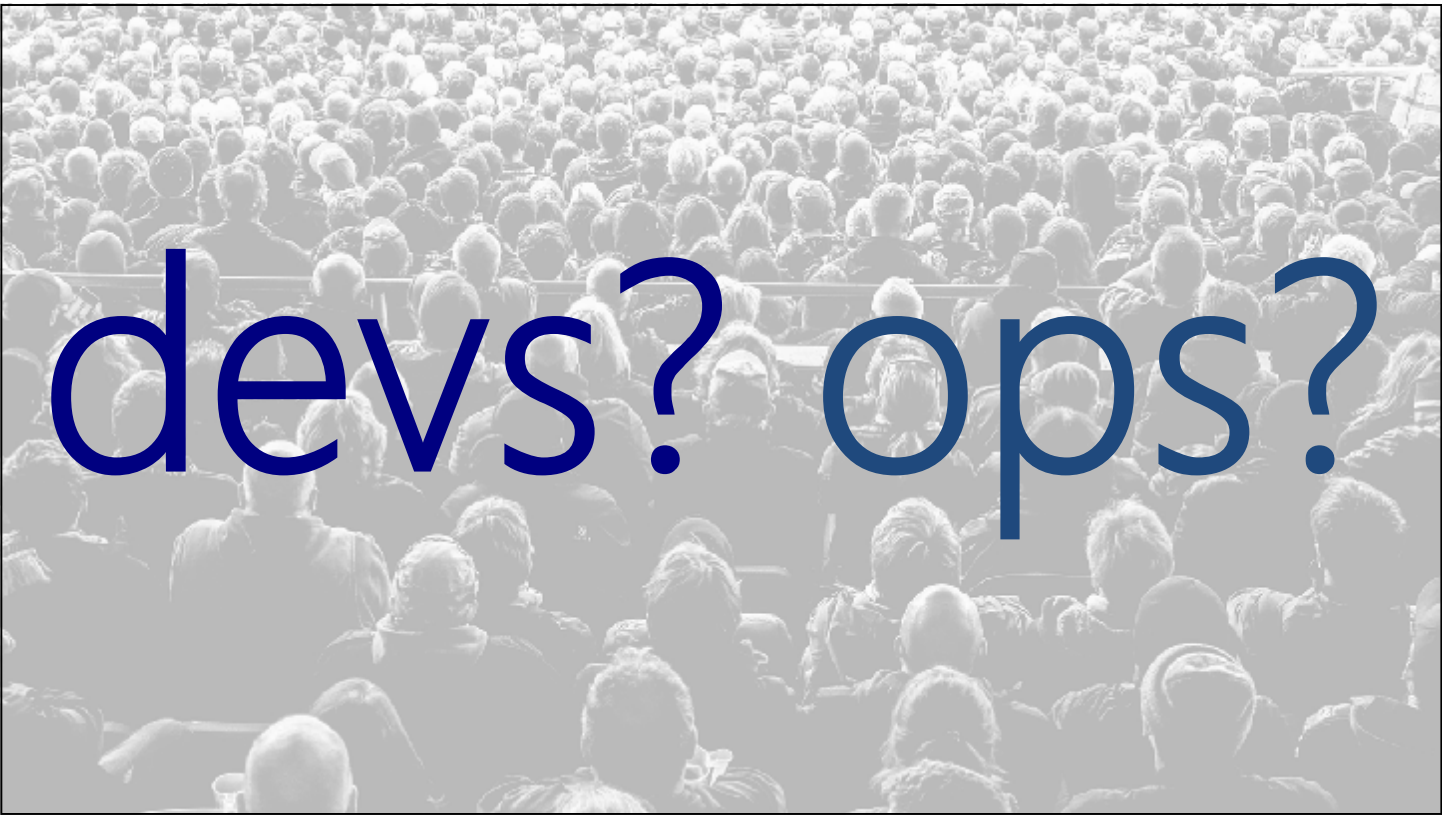
~~'sea-dc1' | Test-Connection~~



Basics

Demo 1



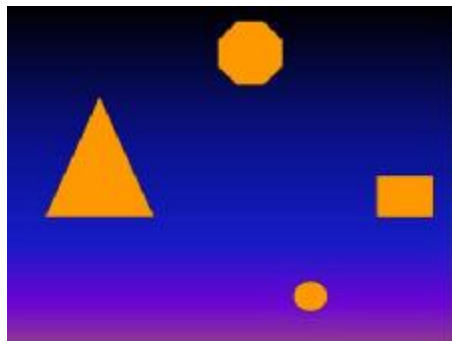


What's your target audience, MOC?

```
Get-Process |  
Select-Object Name,  
ID,  
@{n='VirtualMemory(MB)';e='{0:N2}' -f ($PSItem.VM / 1MB) },  
@{n='PagedMemory(MB)';e='{0:N2}' -f ($PSItem.PM / 1MB) }
```



```
Get-Shapes |  
Where-Object {$_.Color -eq "Orange"} |  
Sort-Object Size
```



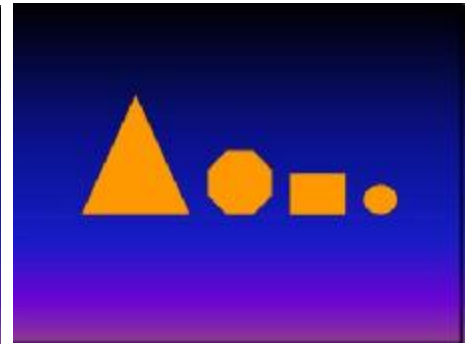
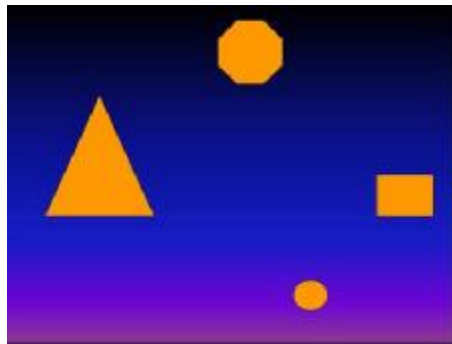
<http://technet.microsoft.com/en-us/library/ee176927.aspx>



Get-Shape |

Where-Object {\$_.Color -eq 'Orange'} |

Sort-Object -property Size -descending



<http://technet.microsoft.com/en-us/library/ee176927.aspx>



[type] literals

```
$a = 1
```

```
$a = '1'
```

```
$a.GetType()
```

```
[int]$b = 1
```

```
$b = '1'
```

```
$b.GetType()
```

"PowerShell has no variable declaration statement.

In contrast to a language like Visual Basic, which uses Dim to declare a variable, in PowerShell a variable simply comes into existence on first assignment."

Bruce Payette: PowerShell in Action, 2011



PowerShell mysticism: case preserving

Scrooge 

Dagobert 

```
'Scrooge Duck' -replace 'scrooge','dagobert'
```

```
('Scrooge Duck').replace('scrooge','dagobert')
```



Falling in love with external commands

```
whoami.exe /groups /fo csv |
```

```
ConvertFrom-Csv |
```

```
Where-Object {$_. 'Group Name' -like 'contoso*'} }
```

```
$src = 'c:\sales\2015'
```

```
$dst = 'c:\backup\sales\2015'
```

```
robocopy.exe /mir $src $dst
```



Pipelining, reloaded

```
$computers | ForEach {
```

```
    Test-Connection -ComputerName $psitem}
```

```
ForEach ($computer in $computers) {
```

```
    Test-Connection -ComputerName $computer }
```

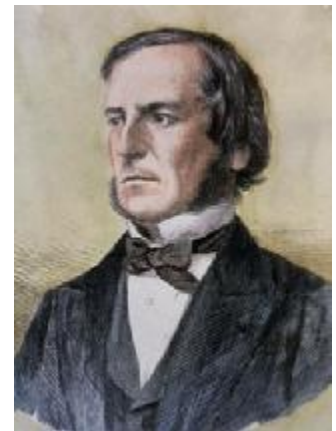


Mr. Bool and the evil [switch]

```
Get-NetFirewallRule -Enabled true
```

```
New-ADUser 'Donald' -Enabled $true
```

```
Remove-ADUser 'Donald' -Confirm:$false
```



Challenges

Demo 2



Survival Kit

1. Honor the DNA of PowerShell
2. Be precise
3. Keep it simple
4. Mind the gaps
4. Keep it small



Real **(wo)?men**
don't click.

