PowerShell Core - Bring the PowerShell magic to every platform

Jaap Brasser

Experts Live Netherlands

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A

Open-Source 'Great Satan' No More, Microsoft Wins Over Skeptics

Microsoft is relying on GitHub and experts in rival programming tools to win back developers

By Dina Bass

June 3, 2019, 11:00 AM GM

Updated on June 4, 2019,

The company is joi

By Chaim Gartenberg | @cga

Microsoft open-sources its Windows calculator on GitHub

Windows developers can help build the calculator now

By Tom Warren | @tomwarren | Mar 6, 2019, 1:44pm EST

SHARE

Microsoft: The open source company

The times, they are a-changin'—even bits of Windows will be open source.

PETER BRIGHT - 5/10/2019, 11:51 PM

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Microsoft

Microsoft
Open Source

DEVOPS & AUTOMATION

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Works	Developer Relations Advocate
Does	Blogger, Speaker
Likes	Cloud Automation, Scripting & Security

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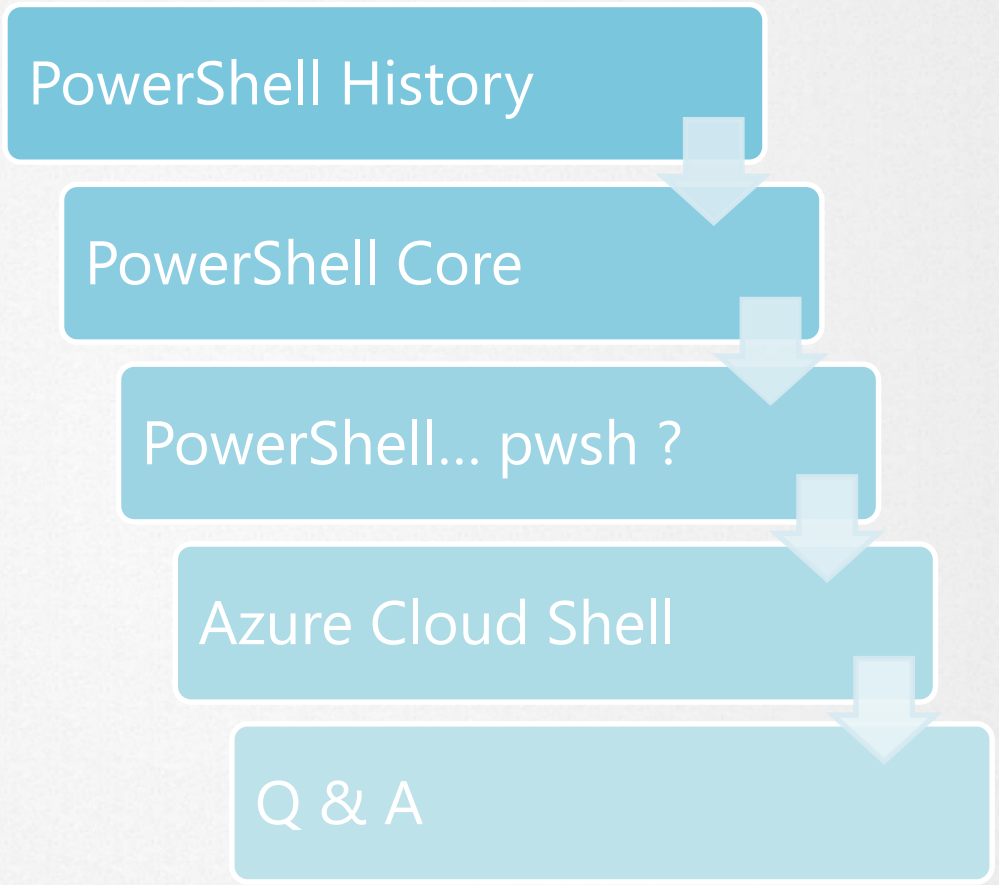
Agenda



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PowerShell History

Windows PowerShell (Monad) Has Arrived

April 25th, 2006

I just got out of Bob Muglia's keynote speech where he formally announced Windows PowerShell (previously known as Monad). The key things he announced are:

It's a Wrap! Windows PowerShell 1.0 Released!

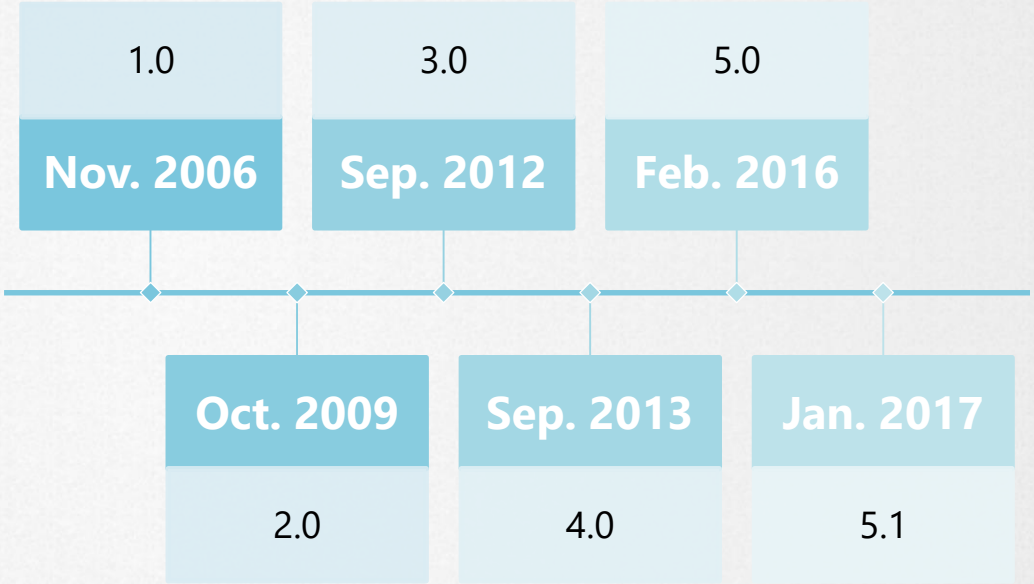
PowerShell Team

November 14th, 2006

Today at the keynote at ITForum in Barcelona, we announced the official release of Windows PowerShell 1.0!

For those of you unfamiliar with Windows PowerShell, it is a best of breed next-generation commandline shell designed from the ground up to be flexible and

PowerShell Versions



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PowerShell on Linux and Open Source!

August 18, 2016 by PowerShell Team // 32 Comments

Share 570 0 0

Since its inception in 2002 PowerShell has been deeply influenced and improved by the passion ar
80 contributors filed bugs and issues on the "alpha" release. Since that time we, together, have bui
supports each other, provides Summits and Conferences and gives great feedback to the product

Satya's new leadership and customer-focused mindset has encouraged and empowered us to do e
started a number of successful community initiatives, such as the PowerShell Home Page, the Pow
projects.

PowerShell Core 6.0: Generally Available (GA) and Supported!

January 10, 2018 by Joey Aiello [MSFT] // 5 Comments

Share 534 0 0

PowerShell Core 6.0 is a new edition of PowerShell that is cross-platform (Windows, macOS, and Linu
built for heterogeneous environments and the hybrid cloud.

First and foremost, thank you to all of our amazing community, especially our open-source contributors
which you can find on our community dashboard at https://aka.ms/PSGitHubBI) for donating your time a
PowerShell Core. Whether you contributed code, tests, documentation, issues, or even just your feedba
are extremely grateful for the sweat and tears that you've invested in PowerShell. (For those interested
and over to our Contribution Guide on GitHub. You don't have to be a guru to help out!)

Announcing PowerShell Core 6.1

September 13, 2018 by Joey Aiello [MSFT] // 4 Comments

Share 38 0 0

We're proud to announce that the latest version of PowerShell has been released! This marks our sec
of PowerShell Core, the open-source edition of PowerShell that works on Linux, macOS, and Window

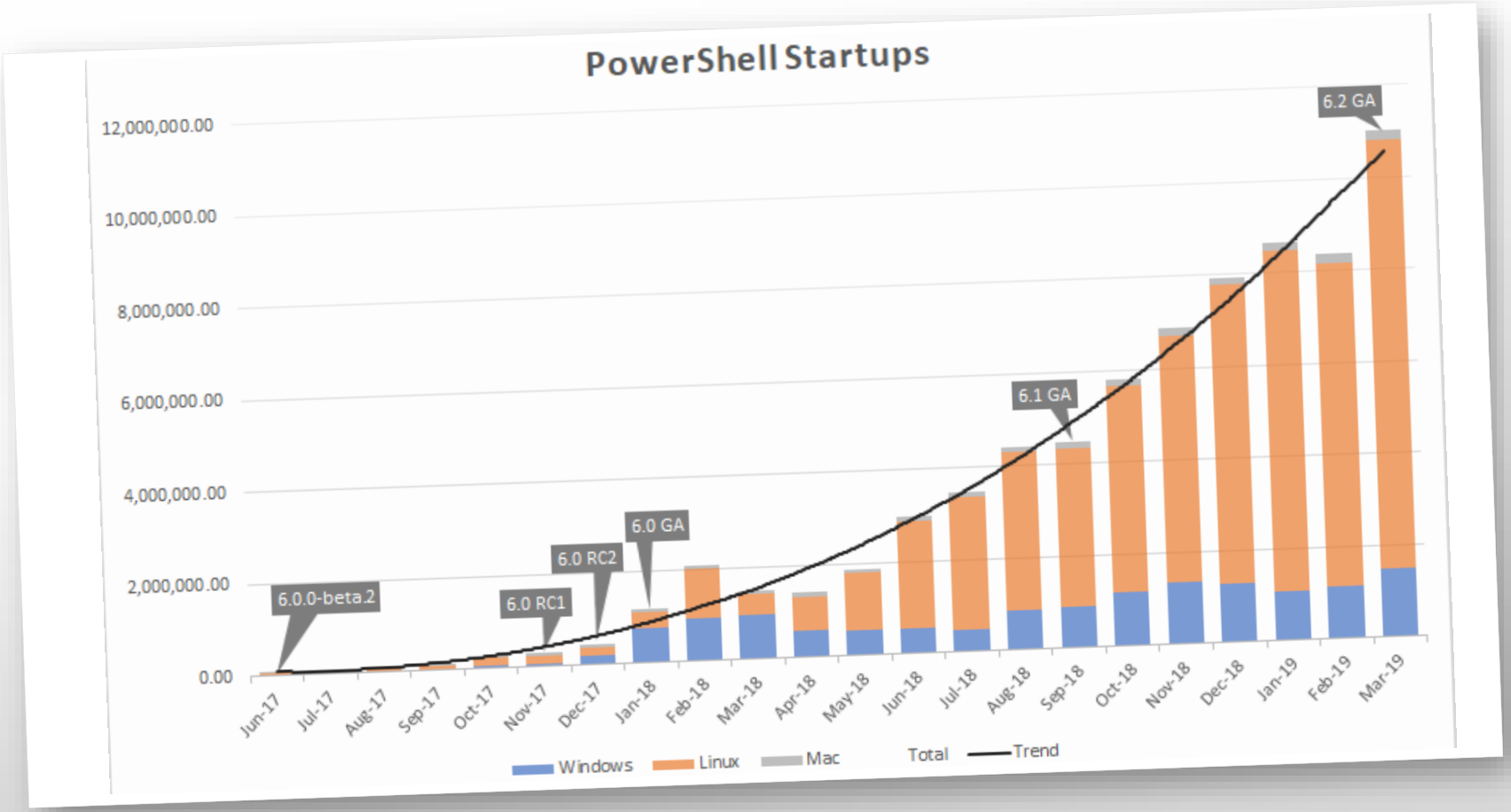
By far, the biggest feature of this release is compatibility of built-in Windows modules with PowerShell
you can natively run those modules/cmdlets with PowerShell Core and easily transition from Windows

Thanks to everyone that made this release possible, including our contributors, users, and anyone wh
submitted feedback.

General Availability of PowerShell Core 6.2

Steve

March 28th, 2019


PowerShell Startups
12,000,000.00
10,000,000.00
8,000,000.00
6,000,000.00
4,000,000.00
2,000,000.00
0.00
6.0.0-beta.2
6.0 RC1
6.0 RC2
6.0 GA
6.1 GA
6.2 GA
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
Jul-18
Aug-18
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Windows
Linux
Mac
Total
Trend

The Register®
Biting the hand that feeds IT

Microsoft doles out PowerShell 7 preview. It works. People like it. We can't find a reason to be sarcastic about it

Popular admin tool shifts to .Net Core 3.0 amid talk of future features

PowerShell 7

~~Core~~

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Installing PowerShell Core

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Install PowerShell

Get PowerShell

You can download and install a PowerShell package for any of the following platforms.

Supported Platform	Downloads (stable)	Downloads (preview)	How to Install
Windows (x64)	.msi	.msi	Instructions
Windows (x86)	.msi	.msi	Instructions
Ubuntu 18.04	.deb	.deb	Instructions
Ubuntu 16.04	.deb	.deb	Instructions
Debian 9	.deb	.deb	Instructions
CentOS 7	.rpm	.rpm	Instructions
Red Hat Enterprise Linux 7	.rpm	.rpm	Instructions
openSUSE 42.3	.rpm	.rpm	Instructions
Fedora 28	.rpm	.rpm	Instructions
macOS 10.12+	.pkg	.pkg	Instructions
Docker			Instructions

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Install Options

PowerShell 7-preview-x64 Setup

Optional Actions

Initialization and Customization

- [x] Add PowerShell to Path Environment Variable
- [ ] Register Windows Event Logging Manifest
- [ ] Enable PowerShell remoting
- [ ] Add 'Open here' context menus to Explorer

The application is distributed under the MIT license.

Please review the ThirdPartyNotices.txt

Back | Next | Cancel

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Scripted Windows Install

```
iex "& { $(irm https://aka.ms/install-powershell.ps1) } -UseMSI"
```

DAILY

PREVIEW

USEMSI

QUIET

DONOTOVERWRITE

ADDTOPATH

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MacOS Installation

```
brew cask install powershell
```

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Linux (Ubuntu) Installation

```
sudo apt-get install -y powershell
```

Demo: Installation PowerShell Core

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Cross-Platform PowerShell

How to determine which PowerShell we are in?

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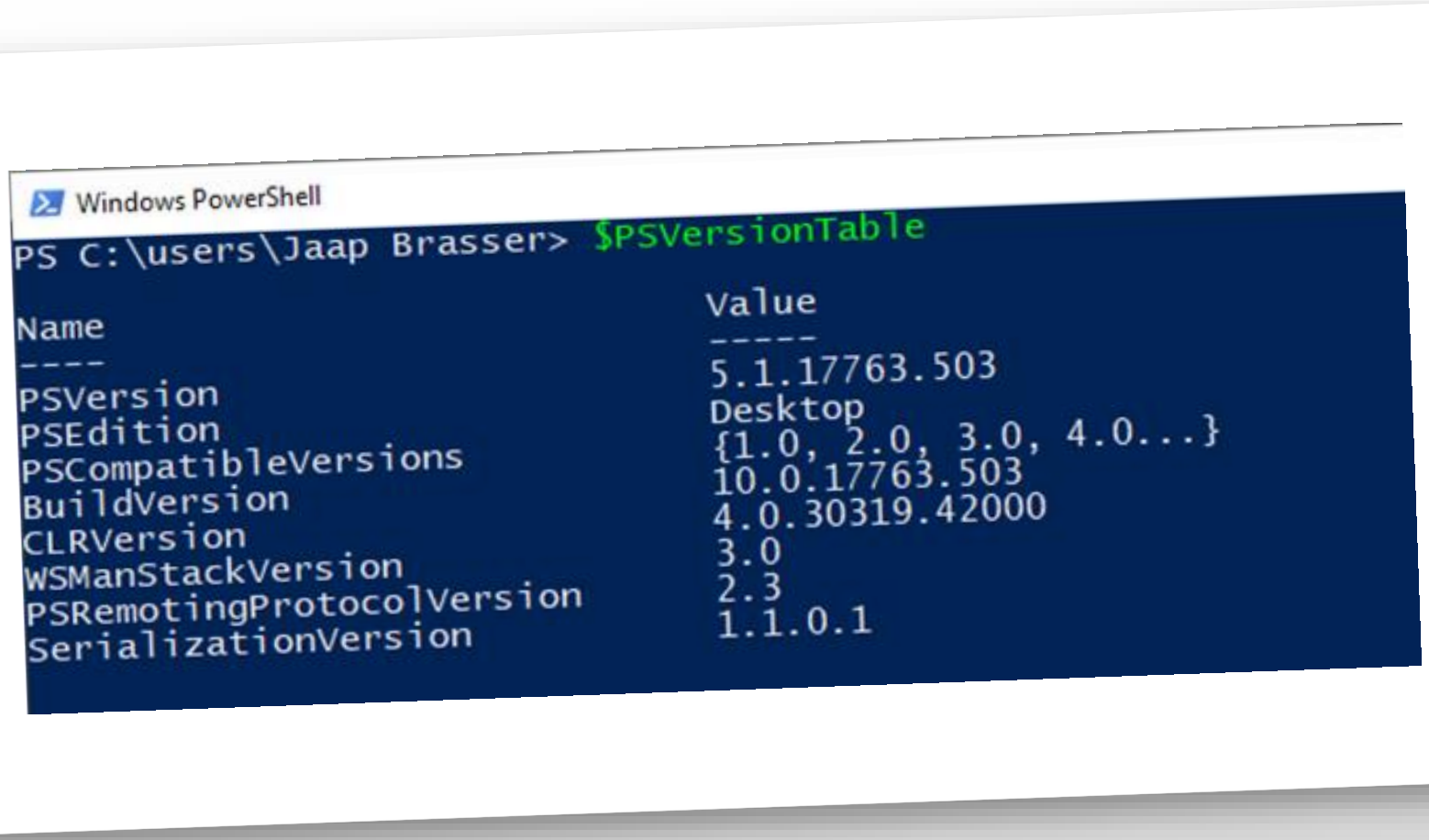
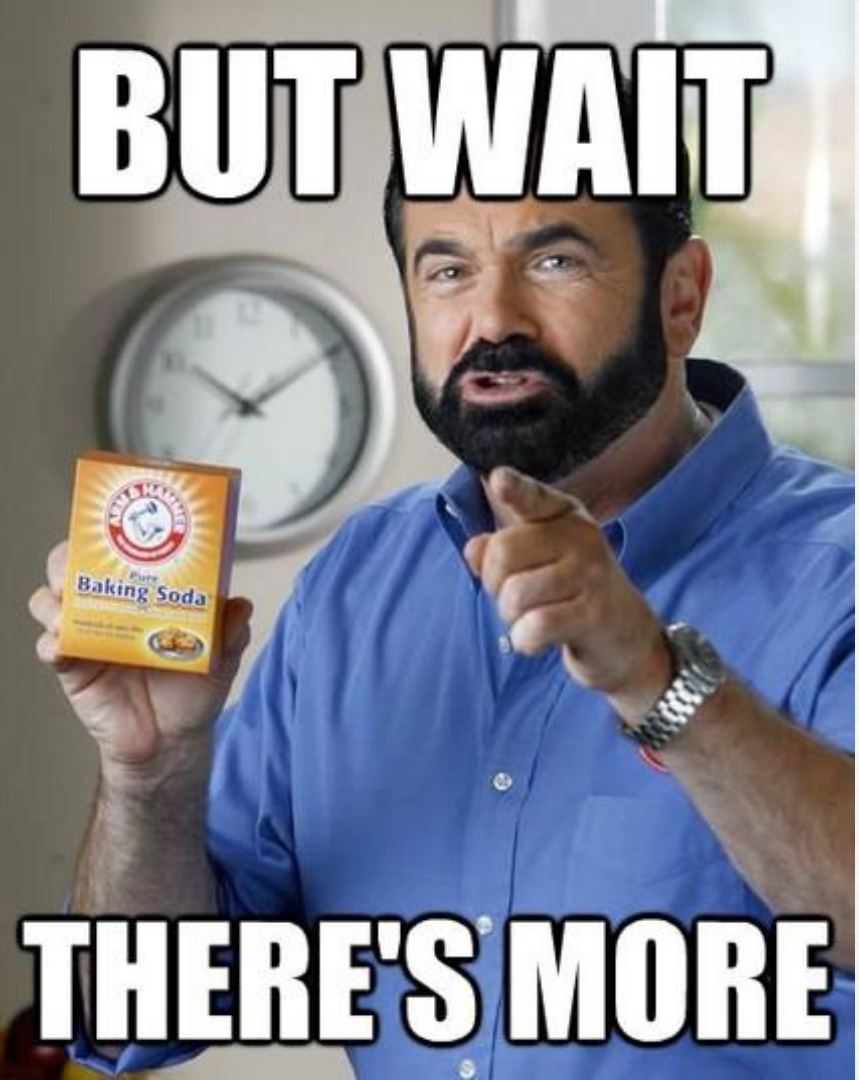

Windows PowerShell
PS C:\users\Jaap Brasser> $PSVersionTable
Name
Value
PSVersion
5.1.17763.503
PSEdition
Desktop
PSCompatibleVersions
{1.0, 2.0, 3.0, 4.0...}
BuildVersion
10.0.17763.503
CLRVersion
4.0.30319.42000
WSManStackVersion
3.0
PSRemotingProtocolVersion
2.3
SerializationVersion
1.1.0.1



Default variables

```
PS C:\users\Jaap Brasser> dir variable:PS* | select -Skip 2 -F 6

Name                           Value
----                           -----
PSSessionOption                System.Management.Automation.Remoting.PSSessionOption
PSSessionConfigurationName     http://schemas.microsoft.com/powershell/Microsoft.PowerShell
PSSessionApplicationName       wsman
PSVersionTable                 {PSVersion, PSEdition, GitCommitId, OS…}
PSEdition                      Core
PSCulture                      en-US
```

```
PS C:\Users\Jaap Brasser> dir variable:\Is*

Name                                   Value
----                                   -----
IsLinux                                False
IsMacOS                                False
IsWindows                              True
IsCoreCLR                              True
```

Install Compatibility Module

```
Install-Module WindowsCompatibility -Scope CurrentUser
```

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Module Availability

Windows PowerShell Modules

Scope CurrentUser

WindowsCompatibility

Module Paths

- Path for Windows PowerShell
- Path for PowerShell Core
- Different Paths on MacOS, Linux
- User profile paths

PowerShell Help

Updated per version of PowerShell

Update-Help cmdlet

Different help for different versions

- New Parameters
- Old parameters moved / deleted

ConvertFrom-StringData

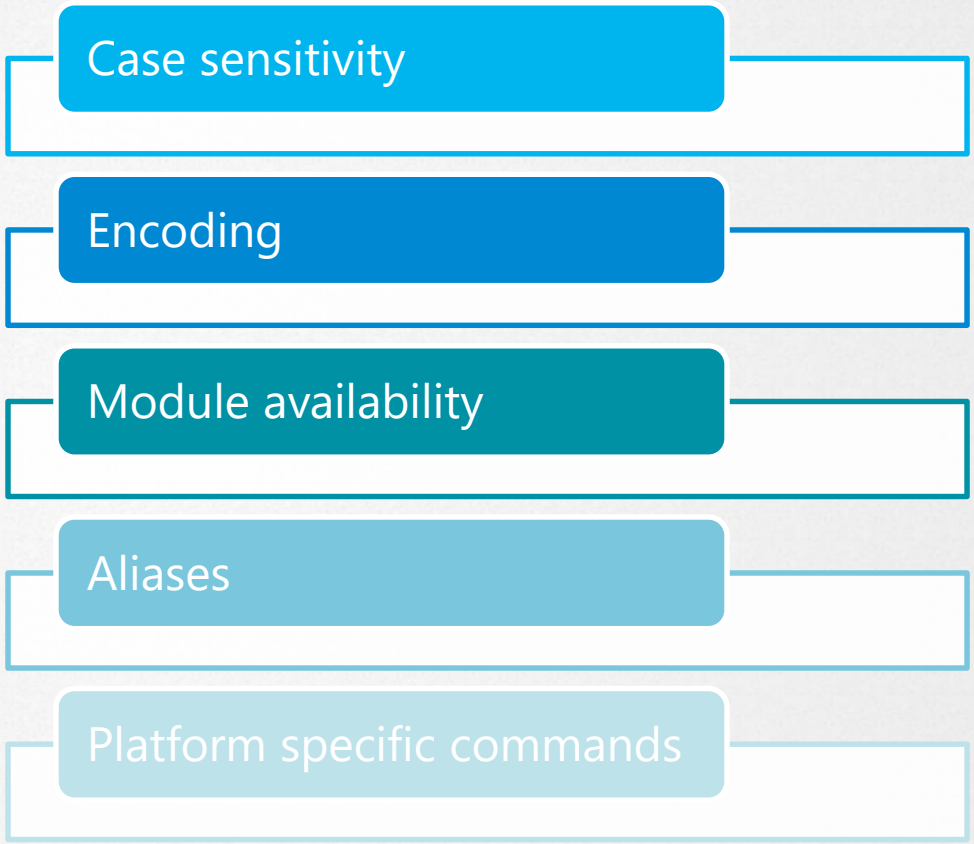
PowerShell 7-preview (x64)

```
$Here = @'
Msg1 = The string parameter is required.
Msg2 = Credentials are required for this command.
Msg3 = The specified variable does not exist.
'@
ConvertFrom-StringData -StringData $Here

Name Value
---- -----
Msg3 The specified variable does not exist.
Msg2 Credentials are required for this command.
Msg1 The string parameter is required.
```

Cross-Platform

Cross Platform Development



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PowerShell in the Cloud

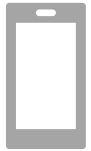
Welcome to Azure Cloud Shell

Select Bash or PowerShell. You can change shells any time via the environment selector in the Cloud Shell toolbar. The most recently used environment will be the default for your next session.

Bash PowerShell

Requirements

Azure Subscription



Browser, Extension, App

Storage Account

Shell skills

Browser Support

Chrome

Edge

Firefox

Safari

IE

Language Support

Language	Version
.NET Core	2.0.0
Go	1.9
Java	1.8
Node.js	8.9.4
PowerShell	6.2.0
Python	2.7 and 3.5 (default)

Tooling Support

Linux tools	bash
	zsh
	sh
	tmux
	dig
Azure tools	Azure CLI and Azure classic CLI
	AzCopy
	Service Fabric CLI
	Batch Shipyard
	blobxfer
Text editors	vim
	nano
	emacs
	code
Source control	git
Build tools	make
	maven
	npm
	pip

Containers	Docker Machine
	Kubectl
	Helm
	DC/OS CLI
Databases	MySQL client
	PostgreSql client
	sqlcmd Utility
	mssql-scripter
Other	iPython Client
	Cloud Foundry CLI
	Terraform
	Ansible
	Chef InSpec

How much does it cost?

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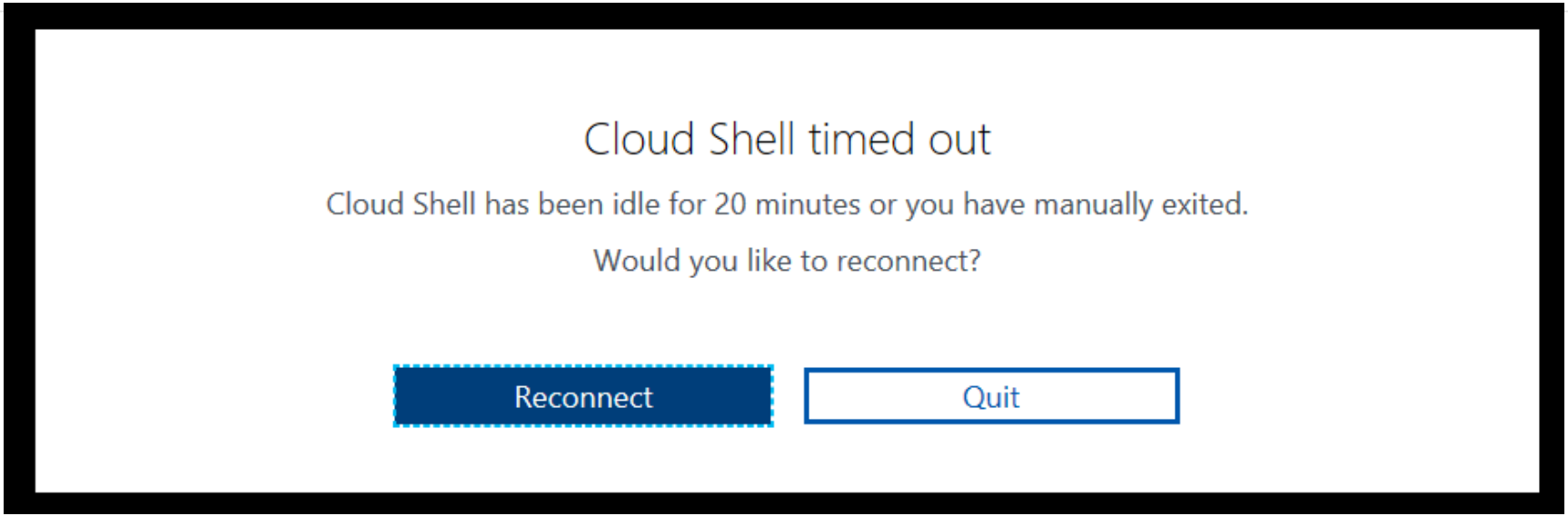
Cloud Shell pricing

- **No** upfront cost
- **No** termination fees
- Pay only for what you need



Cloud Shell is interactive

Demo:
Azure Cloud Shell

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11:30 – 12:30

Driving Power BI automation through monitoring

Jan Mulkens

Experts Live Netherlands