



PowerShell 101

The No-Nonsense Beginner's Guide to PowerShell

mikefrobbins.com



Get-Help -Name 'about_Presenter'

- Mike F Robbins
- Microsoft MVP on Windows PowerShell
- SAPIEN Technologies MVP
- Leader & Co-Founder of Mississippi PowerShell User Group
- Co-Author of Windows PowerShell TFM 4th Edition
- Author of Chapter 6 in the PowerShell Deep Dives book
- Winner of the Advanced Category in the 2013 Scripting Games
- Learn more about me @ mikefrobbins.com



Write-Output 'Questions for Audience'

- IT Pro's
- Developers
- PowerShell
- One-Liners
- Scripts
- Functions
- Modules
- .NET Framework
- Source Control
- Unit Testing



Set-Content 'Information to Cover'

- Basics
 - Discoverability
 - Objects
 - Methods
 - Properties
- Pipeline
- Extending PowerShell
- Remoting
- Best Practices
- SQL Server



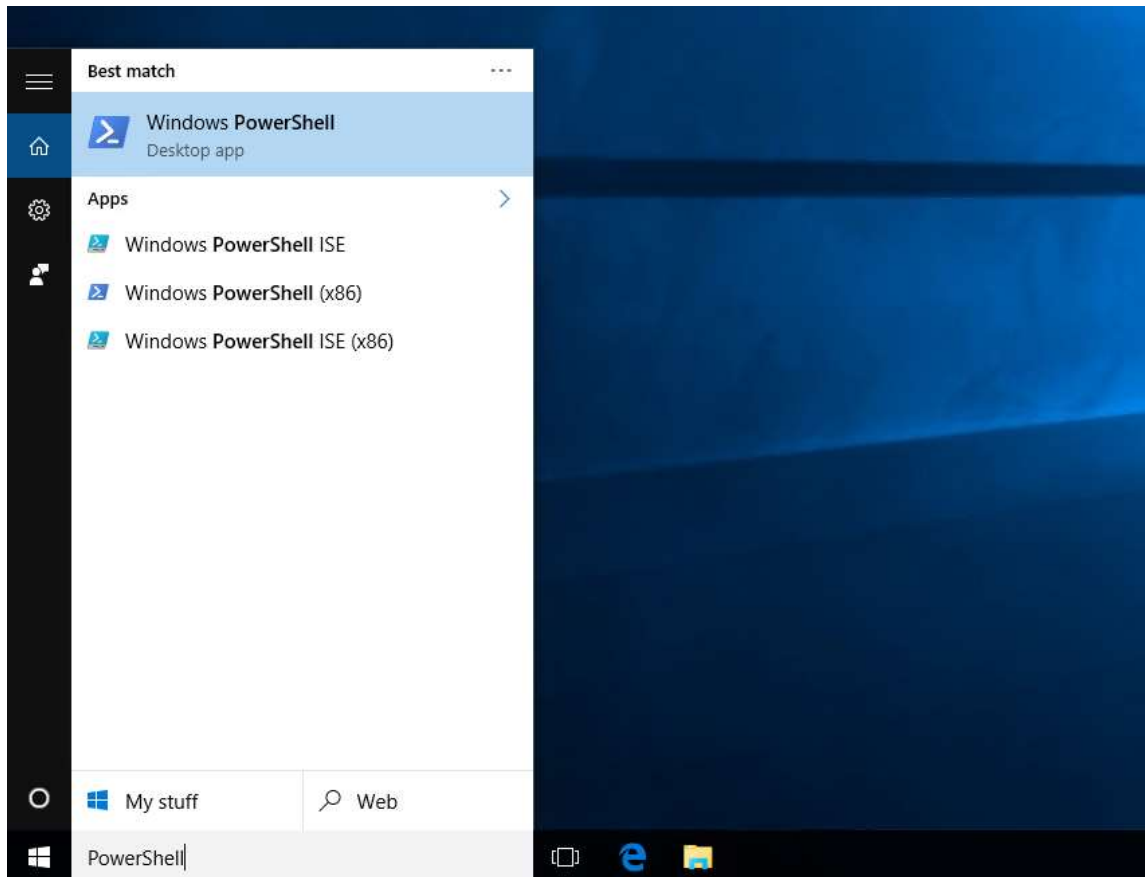
Supported PowerShell Versions by OS

Windows Operating System	Default PowerShell Version	Supported PowerShell Version
Server 2008	1.0*	1.0, 2.0, 3.0
Windows 7	2.0	2.0, 3.0, 4.0, 5.0, 5.1
Server 2008 R2	2.0	2.0, 3.0, 4.0, 5.0, 5.1
Windows 8	3.0	3.0
Server 2012	3.0	3.0, 4.0, 5.0, 5.1
Windows 8.1	4.0	4.0, 5.0, 5.1
Server 2012 R2	4.0	4.0, 5.0, 5.1
Windows 10	5.0	5.0
Windows 10 (Anniversary Edition)	5.1	5.1
Server 2016	5.1	5.1



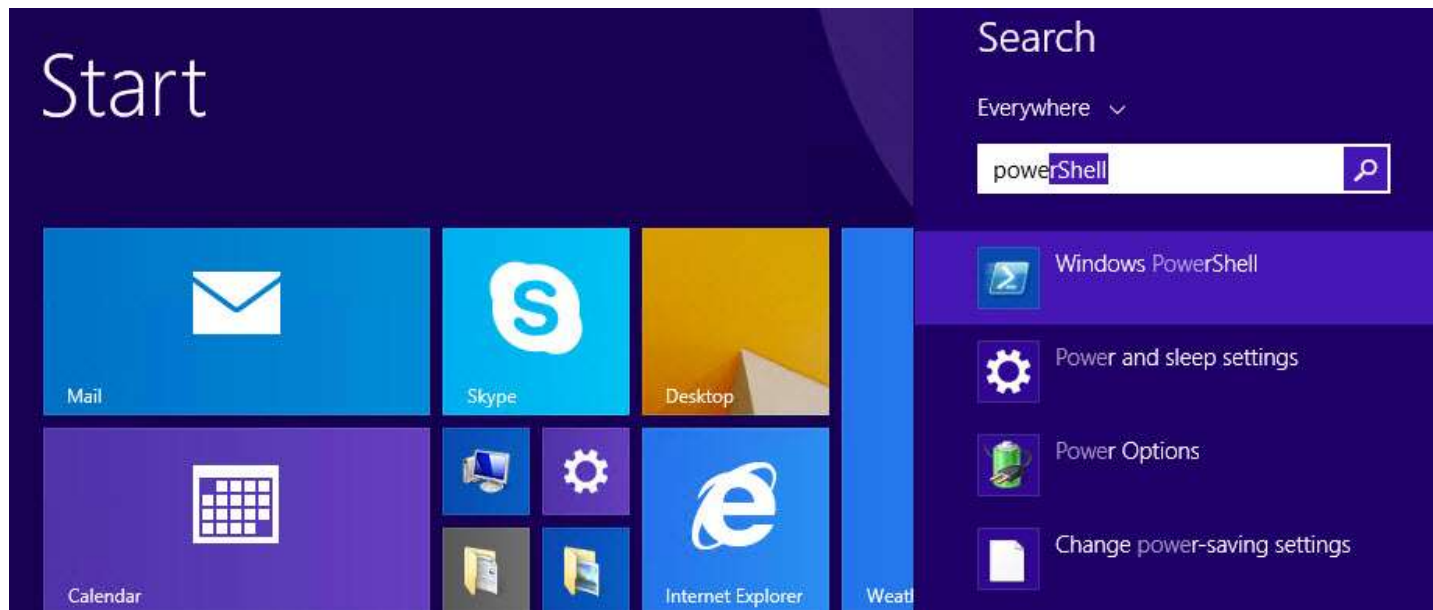
Where do I find PowerShell?

■ Windows 10



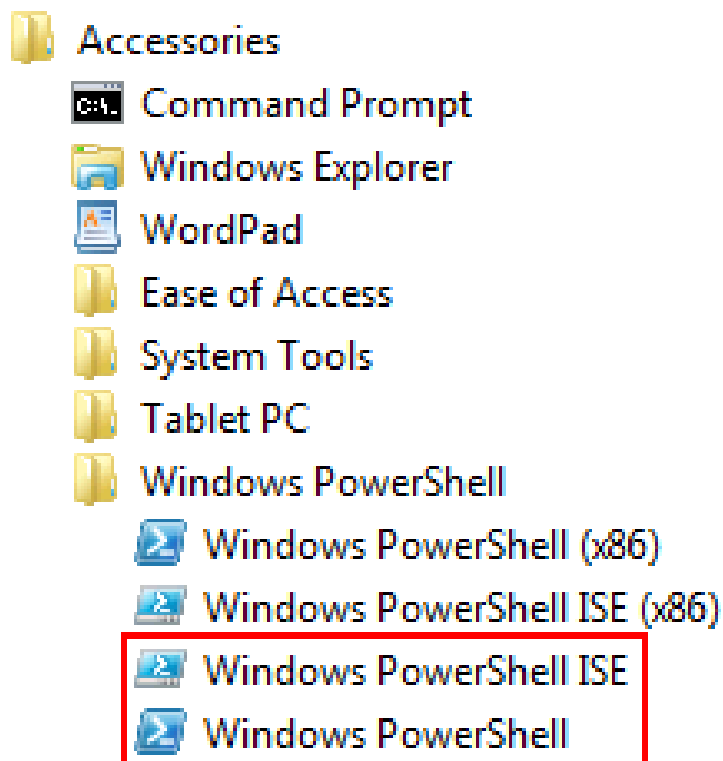
Where do I find PowerShell?

- Windows 8, Windows 8.1, Server 2012, & Server 2012 R2
 - Accessed from the Start screen:

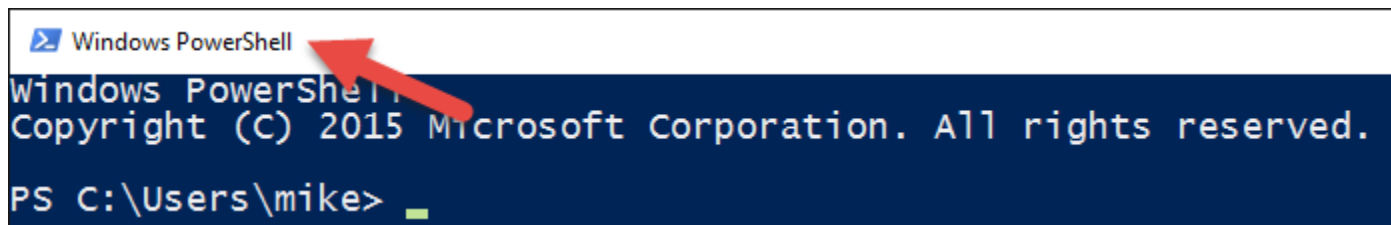


Where do I find PowerShell?

- Windows 7 / Server 2008 R2 and Prior OS's
 - Start > All Programs > Accessories > Windows PowerShell



How do I start PowerShell?

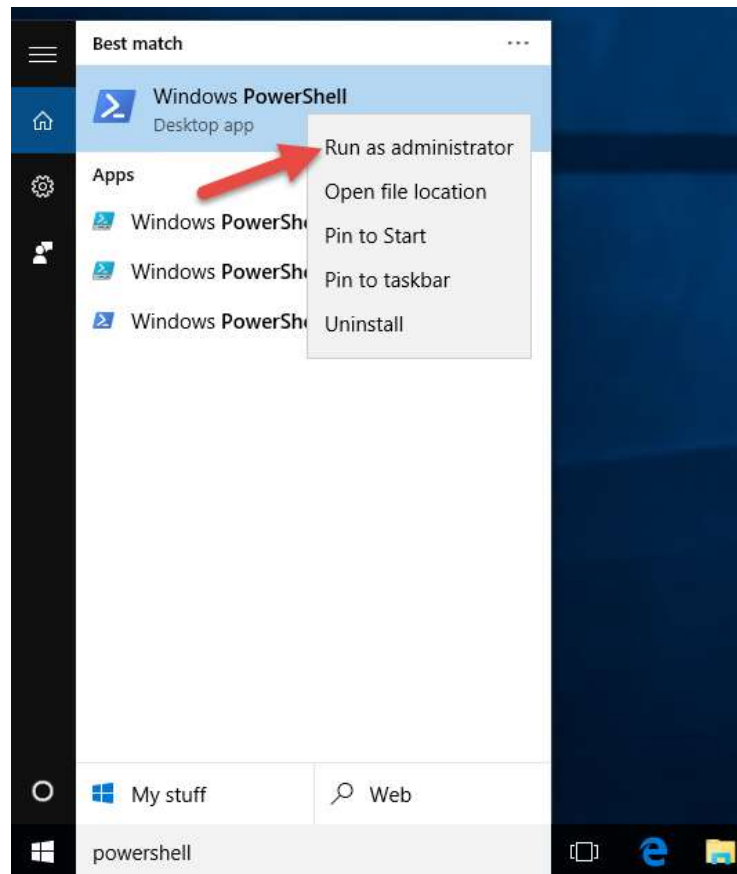


```
Windows PowerShell
Copyright (C) 2015 Microsoft Corporation. All rights reserved.

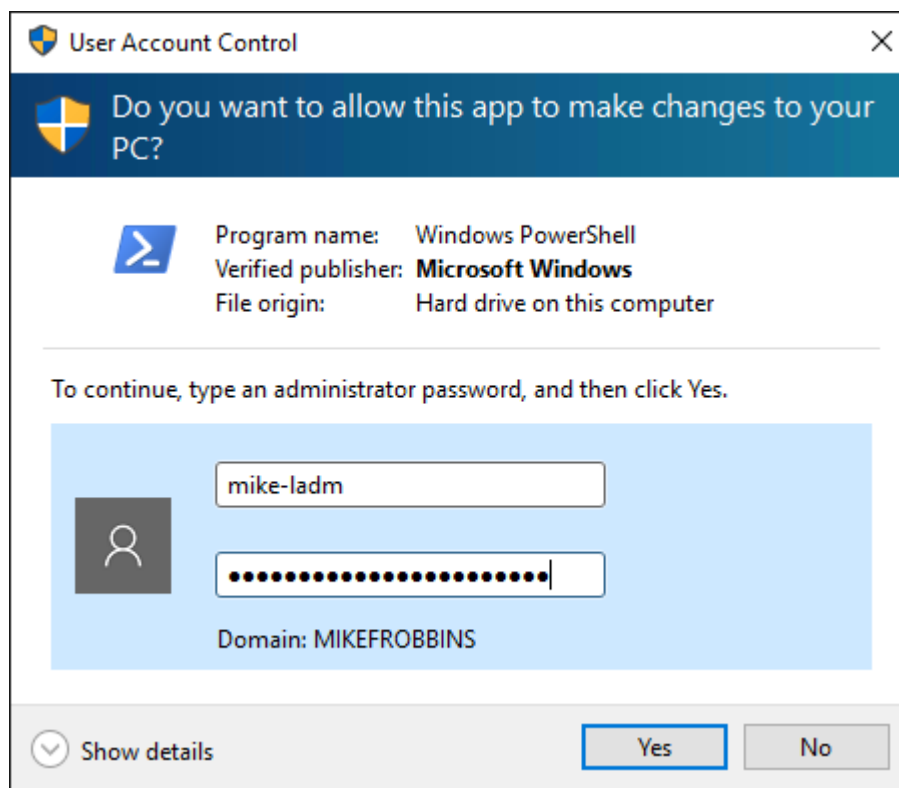
PS C:\Users\mike> _
```



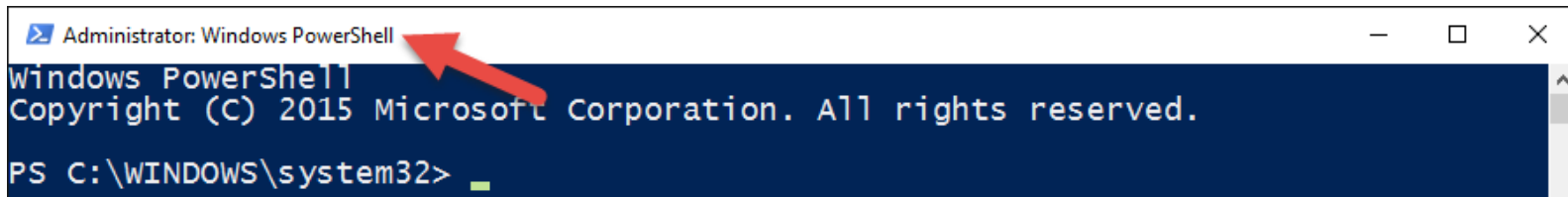
How do I start PowerShell?



How do I start PowerShell?



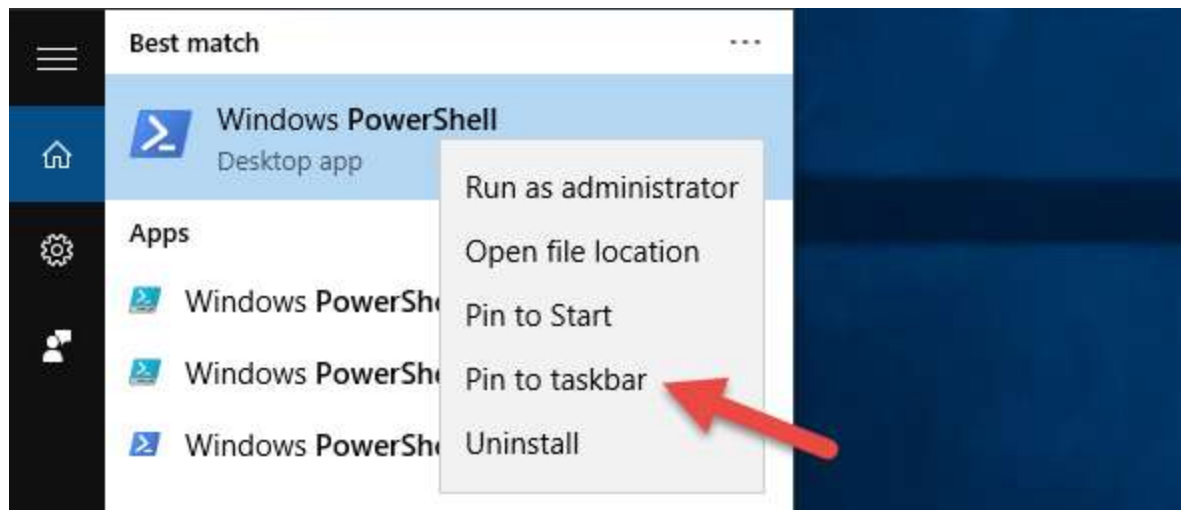
How do I start PowerShell?



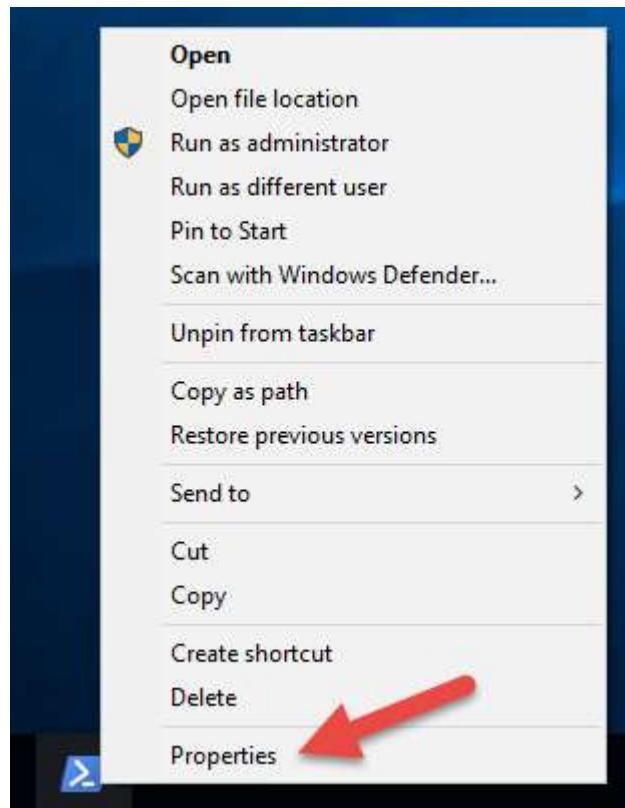
```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2015 Microsoft Corporation. All rights reserved.
PS C:\WINDOWS\system32>
```



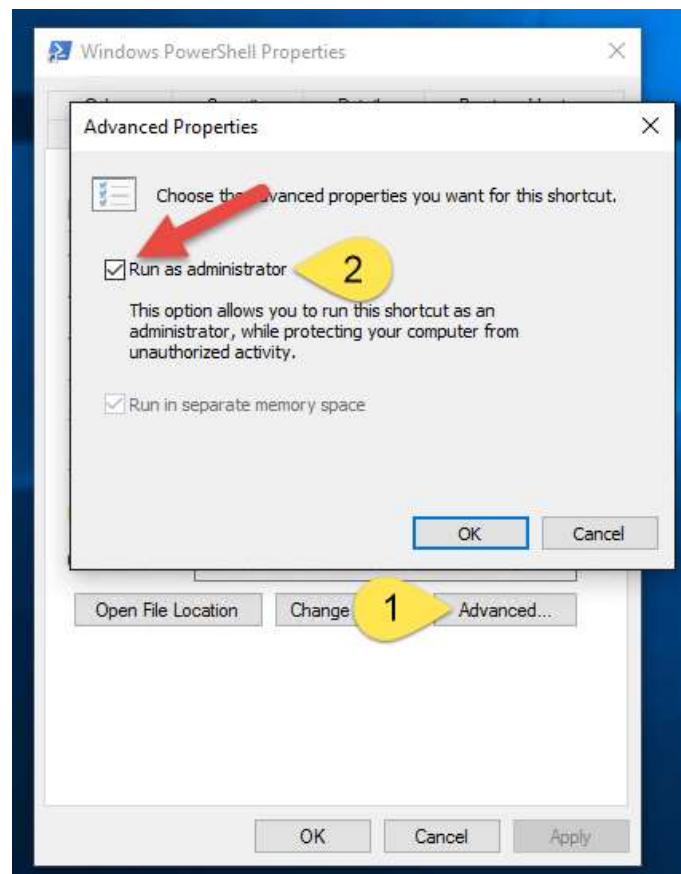
Pin PowerShell to the Taskbar



Modify the Taskbar Shortcut



Set to always run as Administrator

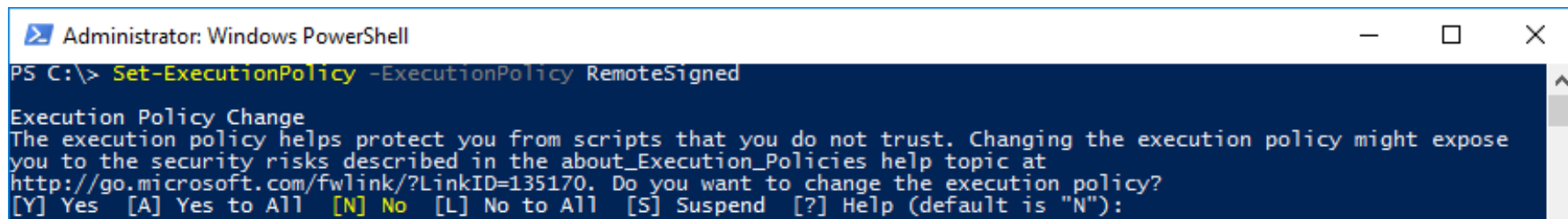


Execution Policy

Windows Operating System Version	Default Execution Policy
Server 2008	Restricted
Windows 7	Restricted
Server 2008 R2	Restricted
Windows 8	Restricted
Server 2012	Restricted
Windows 8.1	Restricted
Server 2012 R2	Remote Signed
Windows 10	Restricted
Windows 10 (Anniversary Edition)	Restricted
Server 2016	Remote Signed



Set the Execution Policy



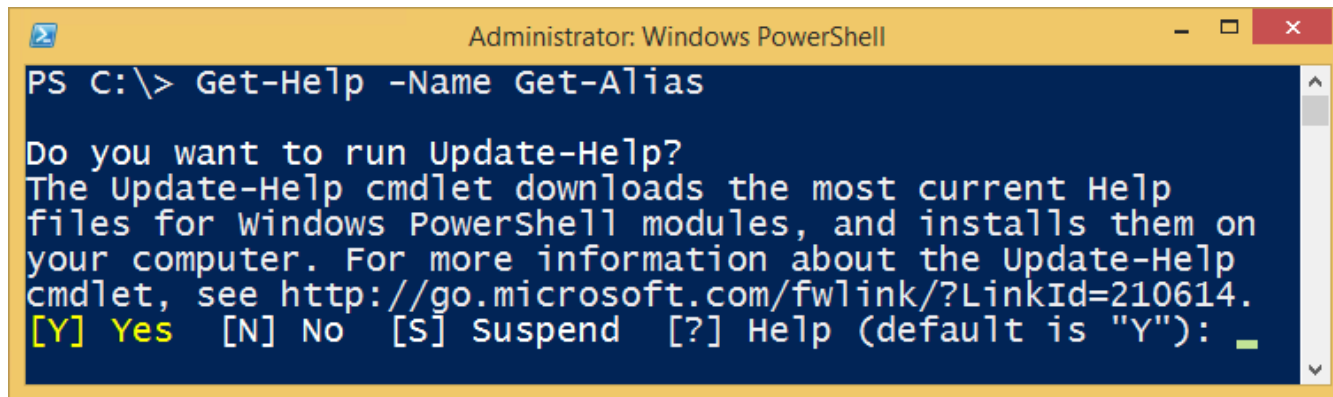
```
Administrator: Windows PowerShell
PS C:\> Set-ExecutionPolicy -ExecutionPolicy RemoteSigned

Execution Policy Change
The execution policy helps protect you from scripts that you do not trust. Changing the execution policy might expose
you to the security risks described in the about_Execution_Policies help topic at
http://go.microsoft.com/fwlink/?LinkID=135170. Do you want to change the execution policy?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"):
```



Background Information

- PowerShell Commands are called Cmdlets
- Cmdlet is pronounced command-let (not CMD-let)
- Cmdlets are in the form of singular Verb-Noun commands
- Select “Run as Administrator” when opening PowerShell
 - PowerShell is unable to participate in User Access Control (UAC)
- Updatable Help



```
Administrator: Windows PowerShell
PS C:\> Get-Help -Name Get-Alias

Do you want to run Update-Help?
The Update-Help cmdlet downloads the most current Help
files for Windows PowerShell modules, and installs them on
your computer. For more information about the Update-Help
cmdlet, see http://go.microsoft.com/fwlink/?LinkId=210614.
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): _
```

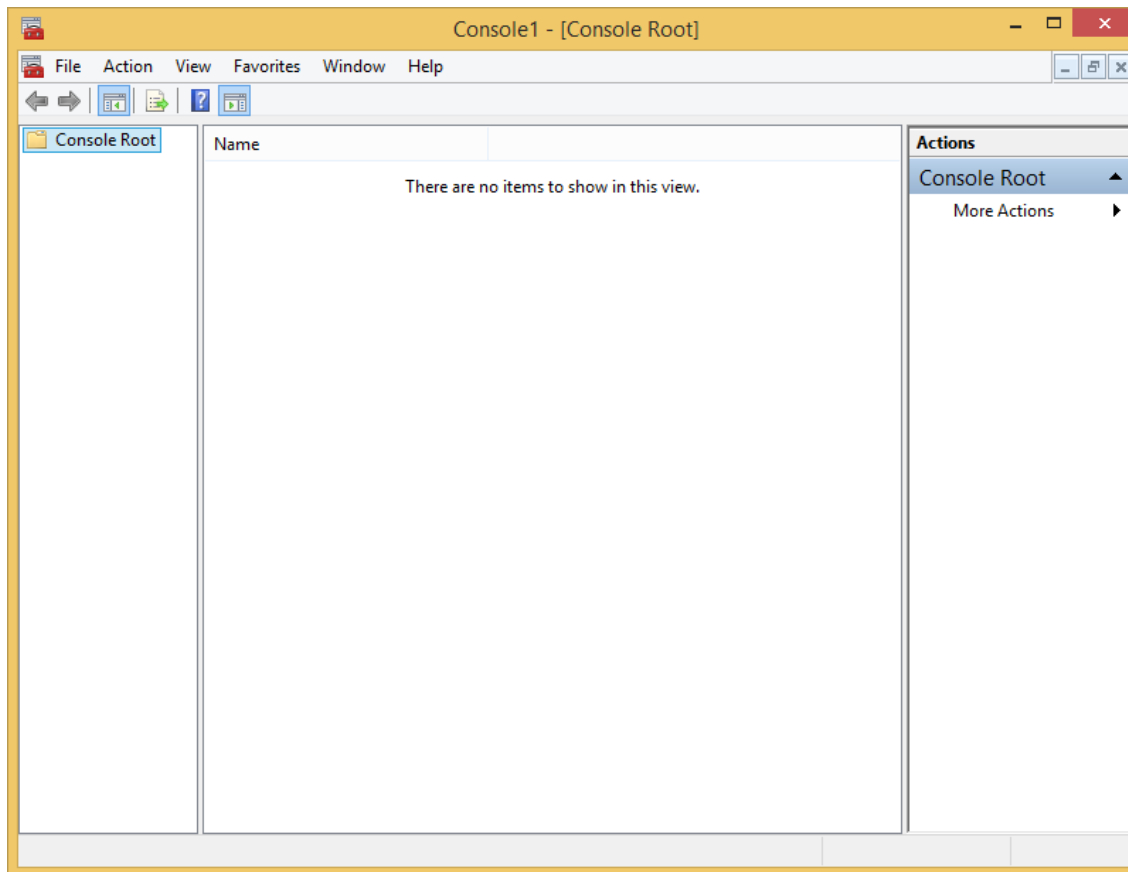


How Do I Figure Out What the Commands Are?

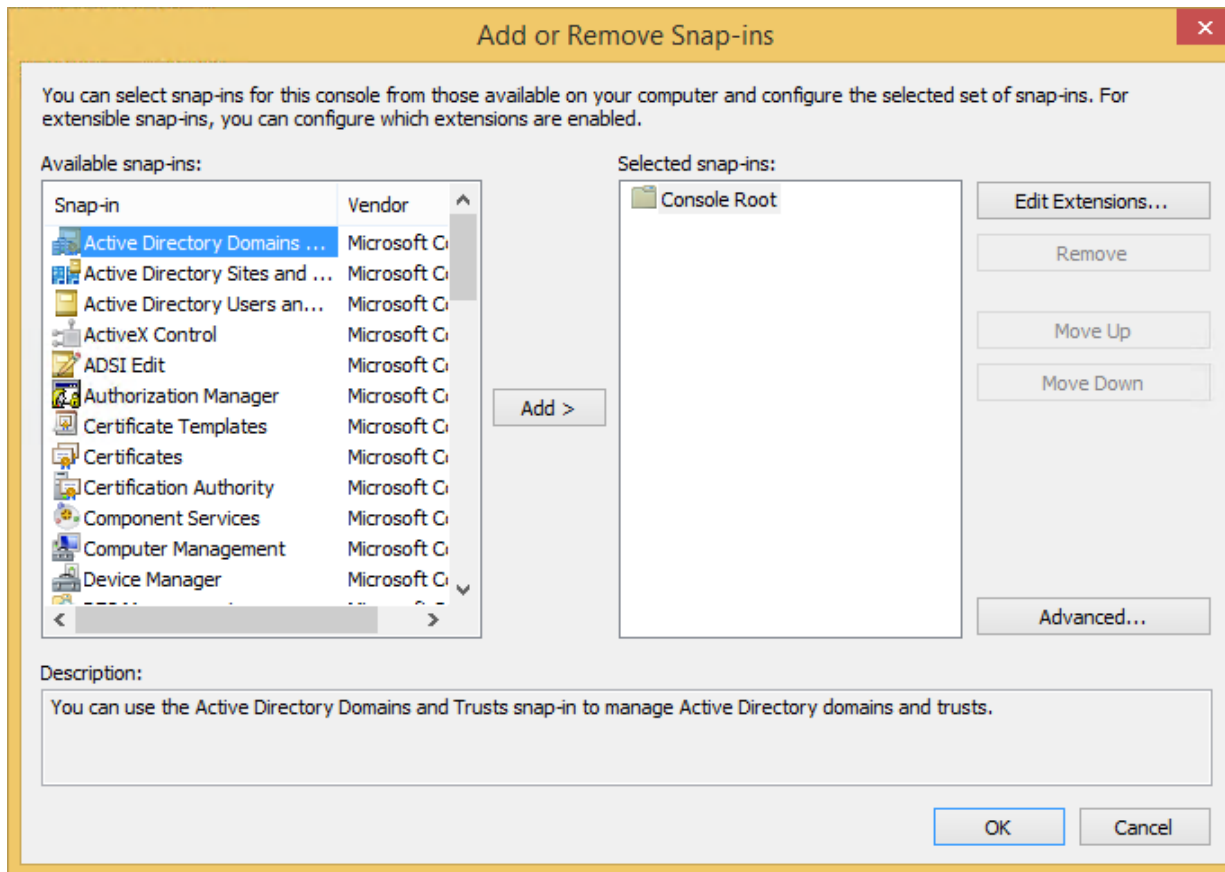
- Core Commands for Discovering How to Use PowerShell
 - **Get-Command**
 - Find what commands are available
 - **Get-Help**
 - Figure out how to use commands
 - **Get-Member**
 - Discover Objects, Properties, and Methods



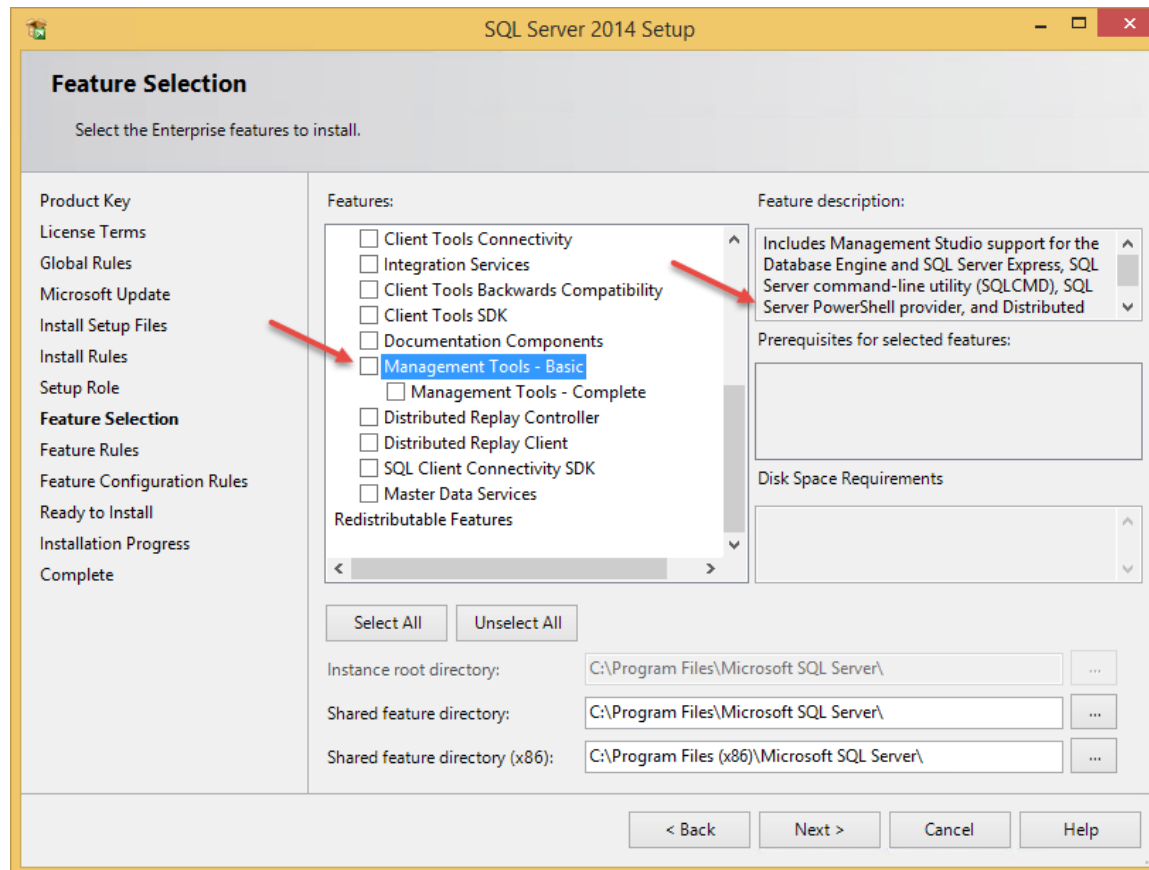
PowerShell is like the Microsoft Management Console (MMC)



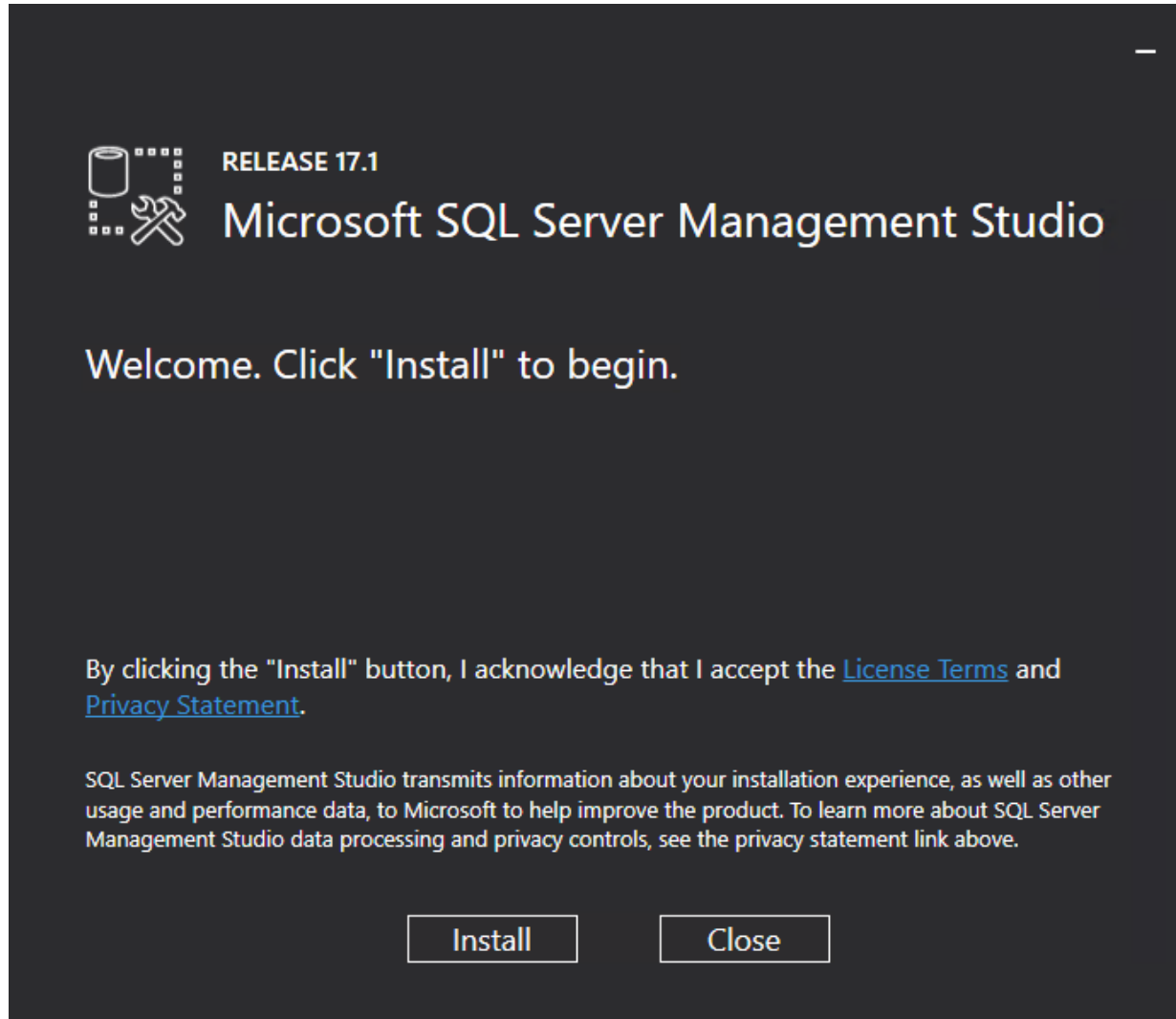
Snap-ins (and Modules) extend its functionality



Install the SQL PowerShell Module (Old)

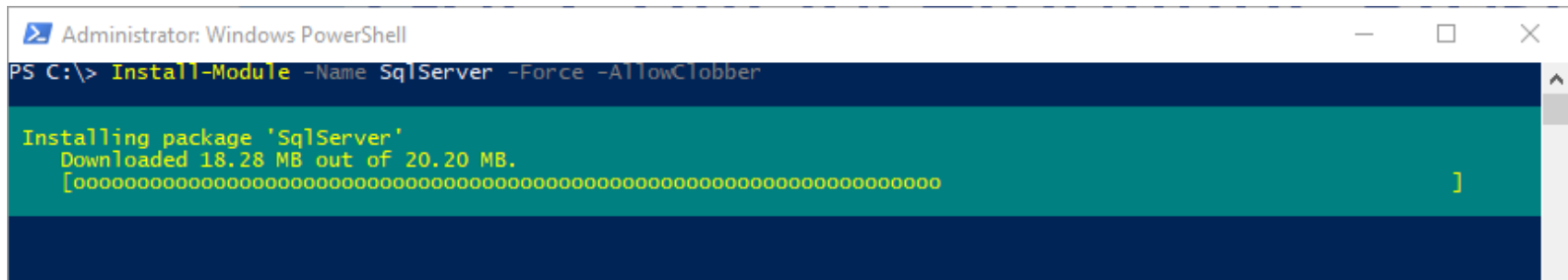


Install the SQL PowerShell Module (New)



The PowerShellGet Module

`Install-Module -Name SqlServer -Force -AllowClobber`



```
Administrator: Windows PowerShell
PS C:\> Install-Module -Name SqlServer -Force -AllowClobber

Installing package 'SqlServer'
Downloaded 18.28 MB out of 20.20 MB.
[ooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooo ]
```

[PowerShellGet: The BIG EASY was to discover, install, and update PowerShell modules](#)



Start-Process 'Demo'

Demo Code: github.com/mikefrobbins/Presentations



Words of Wisdom



Brandon Olin

@devblackops

Following



Replying to @ToreGroneng @TroyMartinNet and 2 others

I'll take verbose and explicit over clever and obtuse. Especially if I'm that "other guy" :)

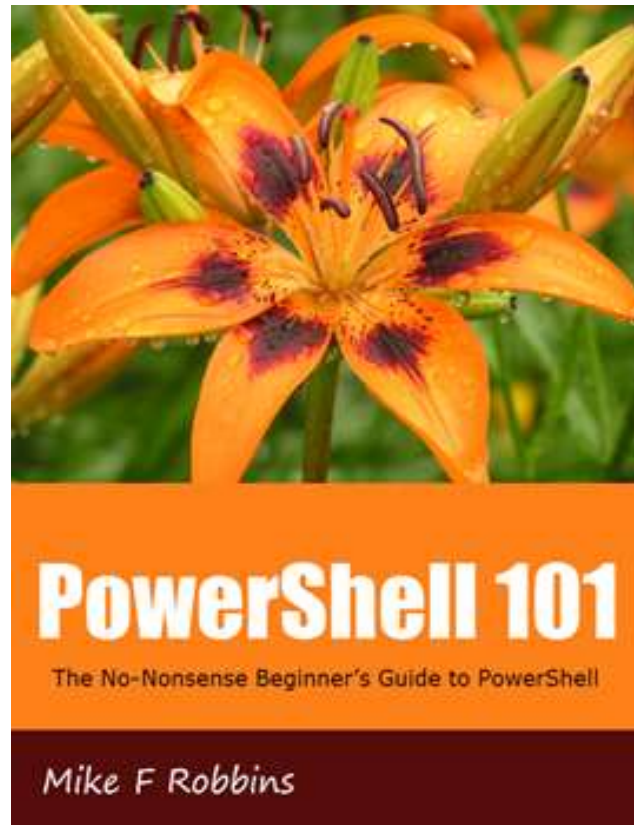


Select-Object –Property ‘Resources’

- [PowerShell Documentation](#)
- [PowerShell Best Practices and Style Guide](#)
- [Microsoft Virtual Academy](#)
- [PowerShell.org](#)
- [GitHub](#)
- [User Groups](#)
- [Blogs](#)
- [Twitter](#)
- [Slack](#)



New-Book –Name ‘PowerShell 101’



leanpub.com/powershell101

<http://mikefrobbins.com>



Get-Contact –Identity ‘Presenter’

- Blog: mikefrobbins.com (or MrPowerShell.com)



- Twitter: [@mikefrobbins](https://twitter.com/mikefrobbins)
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