PSScriptTools Manual v2.47.0

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Introduction

This manual is a PDF version of several module-related reference files as well as all of the command help. The goal is to provide a single source for all module documentation. Take note that many of the source files contain internal cross-references. Best efforts have been made to port those links to this document. External links should work as expected.

The PDF has been optimized for the screen, not printing. The images of the screenshots may be less than ideal. View the online README file for a better experience.

If you need to ask a question or report a problem, please visit the module's Github repository.

PSScriptTools Overview

Abstract

This module contains a collection of functions, variables, and format files that you can use to enhance your PowerShell scripting work or get more done from a PowerShell prompt with less typing. Most of the commands are designed to work cross-platform. Please post any questions, problems, or feedback in the Issues section of this module's GitHub repository. Feedback is greatly appreciated.

The contents of this file and other documentation can be viewed using the `Open-PSScriptToolsHelp` command. You can also use `Get-PSScriptTools` to see a summary of module commands.

Please note that code samples have been formatted to *fit an **80-character** width.* Some example code breaks lines without using line continuation characters. I'm trusting that you can figure out how to run the example.

Installation

You can get the current release from this repository or install this from the PowerShell Gallery:

```
Install-Module PSScriptTools
```

or in PowerShell 7:

```
Install-Module PSScriptTools [-scope CurrentUser] [-force]
```

Starting in v2.2.0, the module was restructured to better support `Desktop` and `Core` editions. However, starting with v2.13.0, the module design has reverted. All module commands will be exported. Anything that is platform-specific should be handled on a per-command basis. It is assumed you will be running this module in Windows PowerShell 5.1 or PowerShell 7.

It is recommended to install this module from the PowerShell Gallery and not GitHub.

To remove the module from your system, you can easily uninstall it with common PowerShell commands.

```
Get-Module PSScriptTools | Remove-Module
Uninstall-Module PSScriptTools -AllVersions
```

General Tools

Get-MyCounter

`Get-MyCounter` is an enhanced version of the legacy `Get-Counter` cmdlet, which is available on Windows platforms to retrieve performance counter data. One of the challenges with using `Get-Counter` is how it formats results. The information may be easy to read on the screen, but it is cumbersome to use in a pipelined expression.

`Get-MyCounter` takes the same information and writes a custom object to the pipeline that is easier to work with. You can pipe counters from `Get-Counter` to `Get-MyCounter`.

```
PS C:\> Get-Counter -list IPV4 | Get-MyCounter


   Computername: PROSPERO

Timestamp                 Category Counter                                 Value
---------                 -------- -------                                 -----
11/4/2020 10:59:43 AM ipv4     datagrams/sec                           42.3661
11/4/2020 10:59:43 AM ipv4     datagrams received/sec                  29.5577
11/4/2020 10:59:43 AM ipv4     datagrams received header errors              0
11/4/2020 10:59:43 AM ipv4     datagrams received address errors         11815
11/4/2020 10:59:43 AM ipv4     datagrams forwarded/sec                       0
11/4/2020 10:59:43 AM ipv4     datagrams received unknown protocol           0
11/4/2020 10:59:43 AM ipv4     datagrams received discarded              10283
11/4/2020 10:59:43 AM ipv4     datagrams received delivered/sec        14.7789
11/4/2020 10:59:43 AM ipv4     datagrams sent/sec                      12.8083
11/4/2020 10:59:43 AM ipv4     datagrams outbound discarded                 41
11/4/2020 10:59:43 AM ipv4     datagrams outbound no route                  26
11/4/2020 10:59:43 AM ipv4     fragments received/sec                        0
11/4/2020 10:59:43 AM ipv4     fragments re-assembled/sec                    0
11/4/2020 10:59:43 AM ipv4     fragment re-assembly failures                 0
11/4/2020 10:59:43 AM ipv4     fragmented datagrams/sec                      0
11/4/2020 10:59:43 AM ipv4     fragmentation failures                        0
11/4/2020 10:59:43 AM ipv4     fragments created/sec                         0

PS C:\>
```

```
PS C:\> Get-MyCounter -computername thinkp1.prospero | Sort Object -Property Computername

   Computername: PROSPERO

Timestamp                 Category                                        Counter                                 Value
---------                 --------                                        -------                                 -----
11/4/2020 11:17:42 AM network interface(intel[r] ethernet connection [11] i219-lm) bytes total/sec                34005.154
                                                                                                                        5
11/4/2020 11:17:42 AM network interface(intel[r] wi-fi 6 ax201 160mhz)          bytes total/sec                         0
11/4/2020 11:17:42 AM processor(_total)                                         % processor time                 1.2969
11/4/2020 11:17:42 AM memory                                                    % committed bytes in use        40.3811
11/4/2020 11:17:42 AM memory                                                    cache faults/sec                        0
11/4/2020 11:17:42 AM physicaldisk(_total)                                      % disk time                      0.1027
11/4/2020 11:17:42 AM physicaldisk(_total)                                      current disk queue length               0

   Computername: THINKP1

Timestamp                 Category                                        Counter                                 Value
---------                 --------                                        -------                                 -----
11/4/2020 11:17:44 AM network interface(intel[r] ethernet connection [7] i219-v) bytes total/sec                        0
11/4/2020 11:17:42 AM network interface(npcap loopback adapter)                 bytes total/sec                         0
11/4/2020 11:17:44 AM network interface(intel[r] wireless-ac 9560 160mhz)       bytes total/sec                 32650.3085
11/4/2020 11:17:42 AM processor(_total)                                         % processor time                 0.5377
11/4/2020 11:17:44 AM memory                                                    % committed bytes in use        13.2772
11/4/2020 11:17:42 AM memory                                                    cache faults/sec                        0
11/4/2020 11:17:44 AM physicaldisk(_total)                                      % disk time                             0
11/4/2020 11:17:42 AM physicaldisk(_total)                                      current disk queue length               0
```

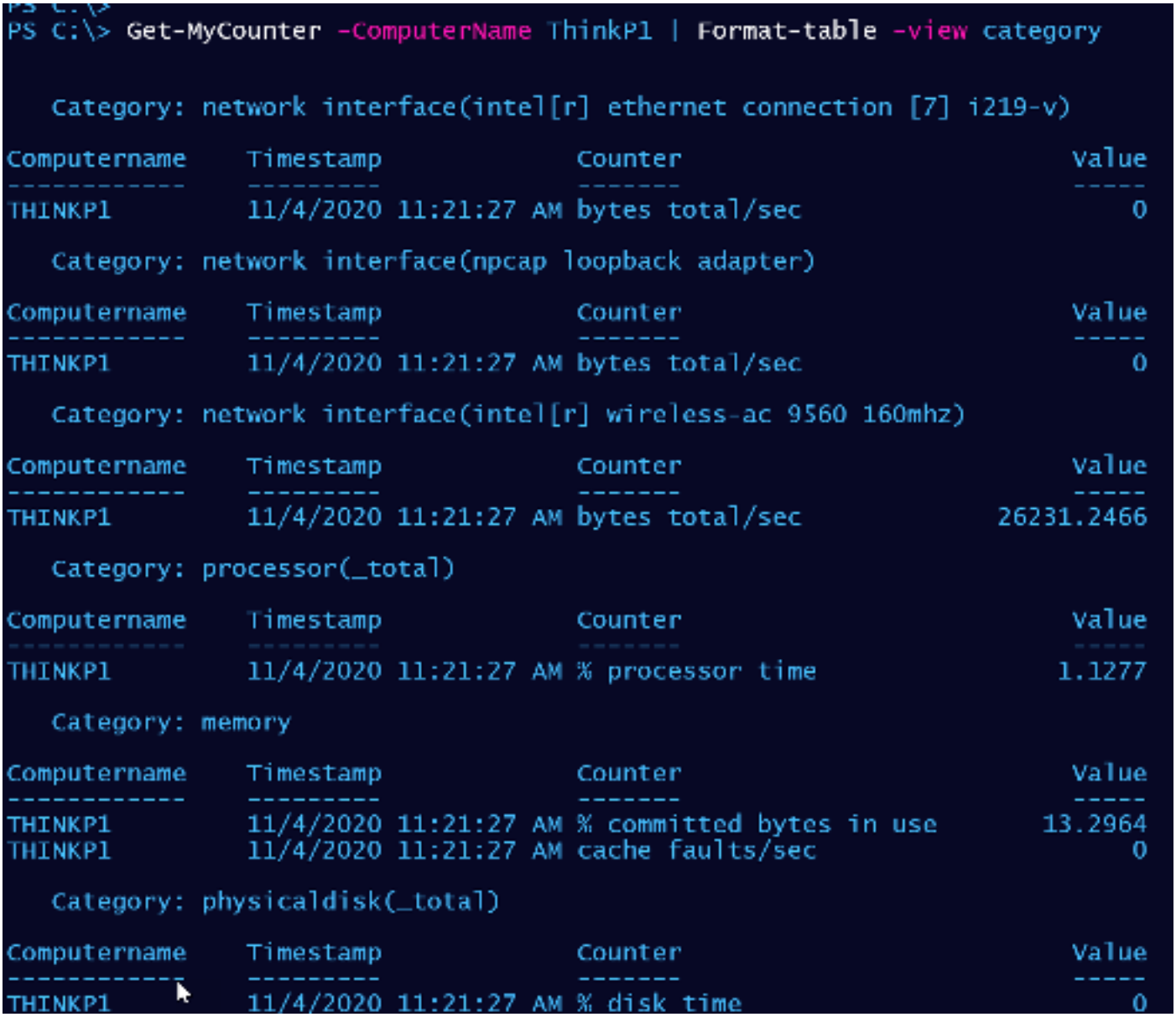
One advantage of `Get-MyCounter` over `Get-Counter` is that the performance data is easier to work with.

```
Get-MyCounter '\IPv4\datagrams/sec' -MaxSamples 60 -SampleInterval 5 -computer SRV1 | Export-CSV
c:\work\srv1_ipperf.csv -NoTypeInformation
```

In this example, the performance counter is sampled 60 times every 5 seconds and the data is exported to a CSV file which could easily be opened in Microsoft Excel. Here's a sample of the output object.

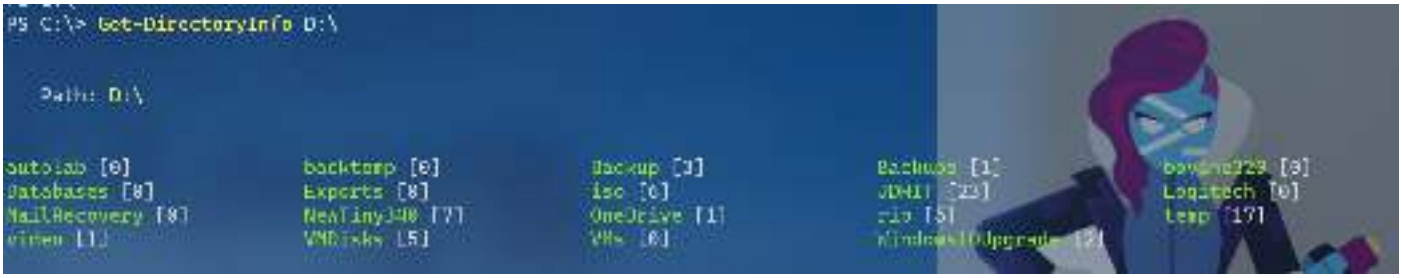
```
Computername : SRV1
Category     : ipv4
Counter      : datagrams/sec
Instance     :
Value        : 66.0818918347238
Timestamp    : 11/4/2022 11:31:29 AM
```

`Get-MyCounter` writes a custom object to the pipeline which has an associated formatting file with custom views.

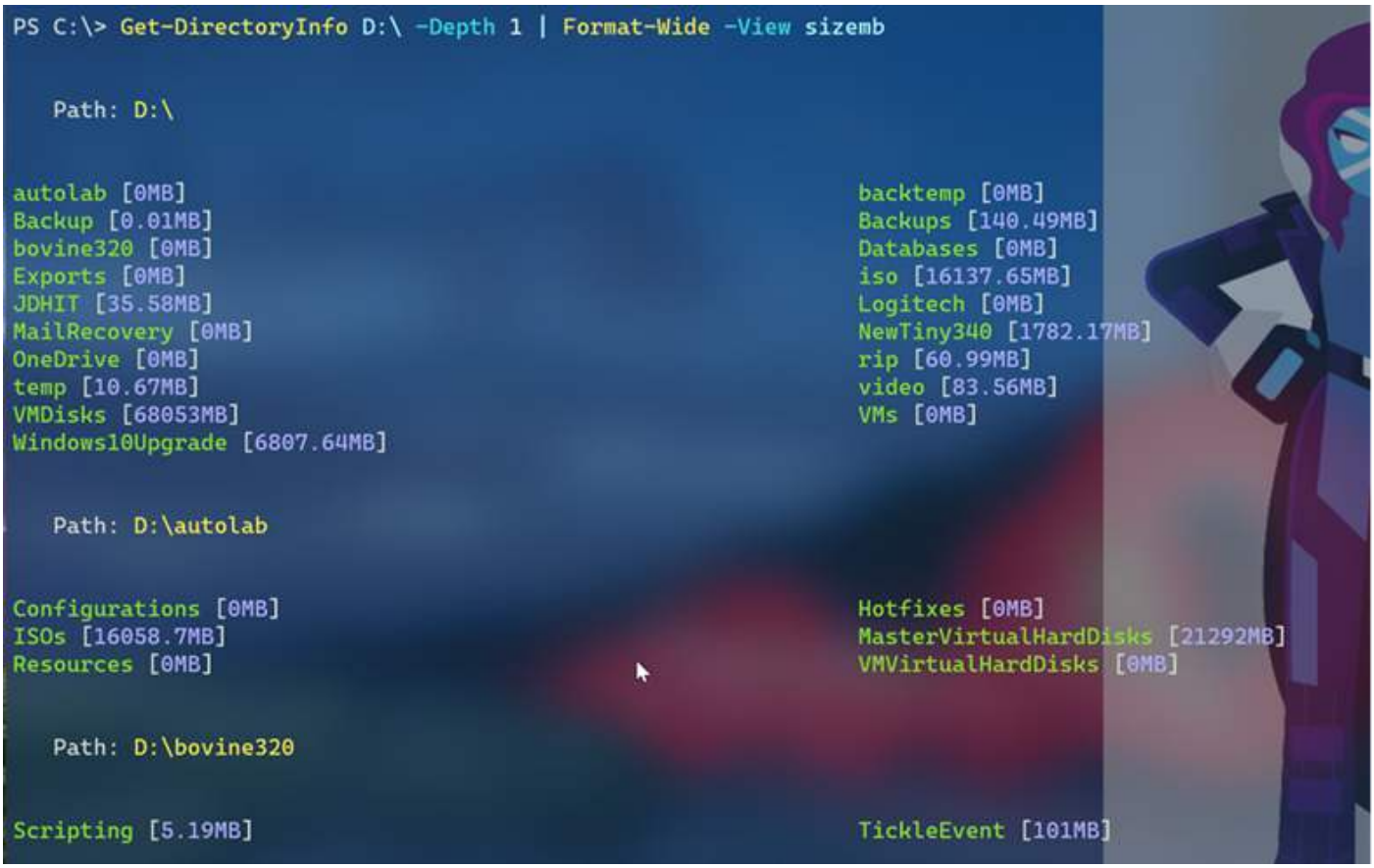


Get-DirectoryInfo

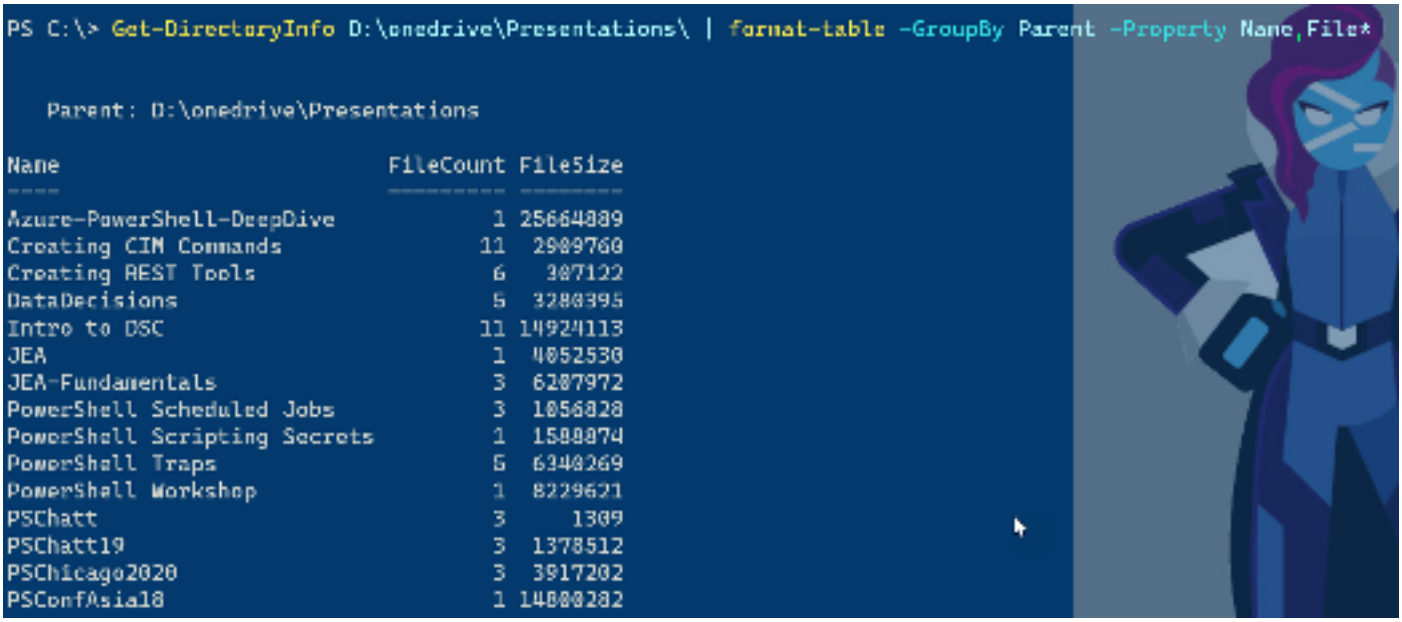
This command, which has an alias of *dw*, is designed to provide quick access to top-level directory information. The default behavior is to show the total number of files in the immediate directory. Although the command will also capture the total file size in the immediate directory. You can use the Depth parameter to recurse through a specified number of levels. The default displays use ANSI escape sequences.



The command output will use a wide format by default. However, other wide views are available.

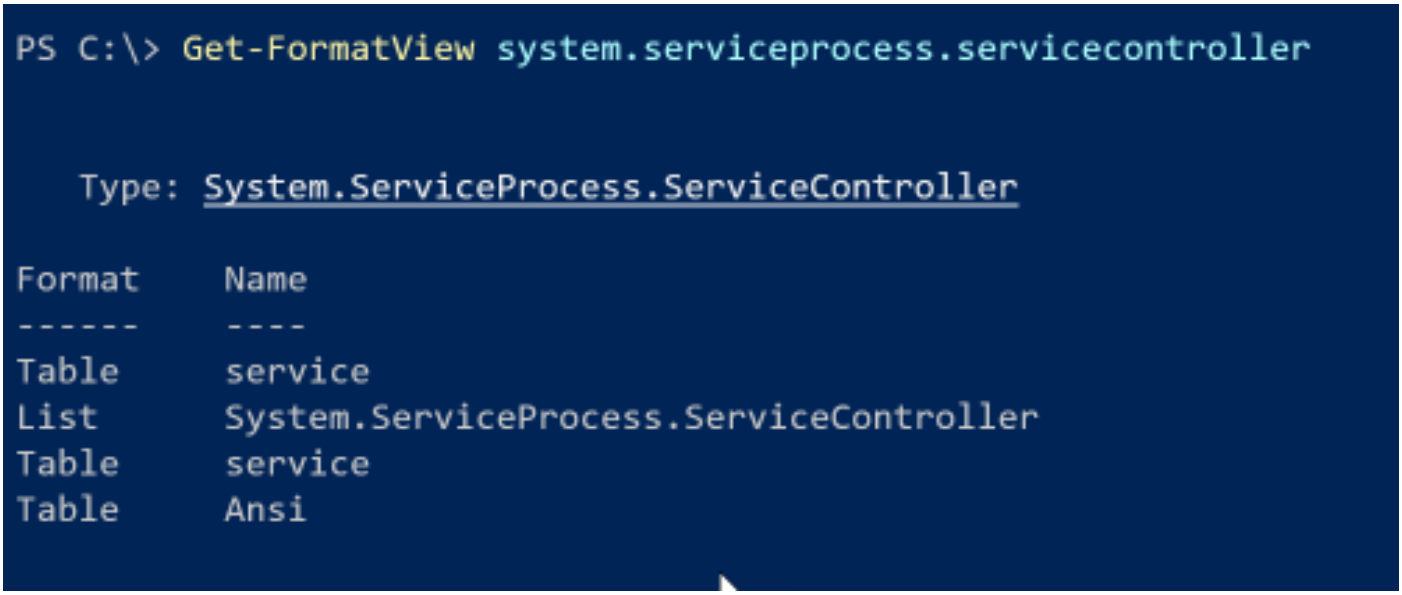


You can use the object in other ways.



Get-FormatView

PowerShell's formatting system includes several custom views that display objects in different ways. Unfortunately, this information is not readily available to a typical PowerShell user. This command displays the available views for a given object type.



This command has an alias of `gfv`.

Copy-PSFunction

This command is designed to solve the problem when you want to run a function loaded locally on a remote computer. `Copy-PSFunction` will copy a PowerShell function that is loaded in your current PowerShell session to a remote PowerShell session. The remote session must already be created. The copied function only exists remotely for the duration of the remote PowerShell session.

```
$s = New-PSSession -ComputerName win10 -cred $art
Copy-PSFunction Get-Status -Session $s
```

Once copied, you might use `Invoke-Command` to run it.

```
Invoke-Command { Get-Status -AsString } -session $s
```

If the function relies on external or additional files, you will have to copy them to the remote session separately.

Get-PSProfile

This command is designed for Windows systems and makes it easy to identify all possible PowerShell profile scripts. Including those for hosts such as VSCode or the PowerShell ISE. The command writes a custom object to the pipeline which has defined formatting. The default view is a table.

```
PS C:\> Get-PSProfile


   Name: PowerShell

Scope                 Path                                                        Exists
-----                 ----                                                        ------
AllUsersCurrentHost   C:\Program Files\PowerShell\7\Microsoft.PowerShell_profile.ps1 False
AllUsersAllHosts      C:\Program Files\PowerShell\7\profile.ps1                    False
CurrentUserAllHosts   C:\Users\Jeff\Documents\PowerShell\profile.ps1               True
CurrentUserCurrentHost C:\Users\Jeff\Documents\PowerShell\Microsoft.PowerShell_profile.ps1 True


   Name: Windows PowerShell

Scope                 Path                                                                Exists
-----                 ----                                                                ------
AllUsersCurrentHost   C:\WINDOWS\System32\WindowsPowerShell\v1.0\Microsoft.PowerShell_profile.ps1 True
AllUsersAllHosts      C:\WINDOWS\System32\WindowsPowerShell\v1.0\profile.ps1               True
CurrentUserAllHosts   C:\Users\Jeff\Documents\WindowsPowerShell\profile.ps1               True
CurrentUserCurrentHost C:\Users\Jeff\Documents\WindowsPowerShell\Microsoft.PowerShell_profile.ps1 True
```

There is also a list view.

```
PS C:\> get-psprofile | Where-Object {$_.name -eq 'powershell'} | Format-List


   Name: PowerShell


Scope        : AllUsersCurrentHost
Path         : C:\Program Files\PowerShell\7\Microsoft.PowerShell_profile.ps1
Exists       : False
LastModified :

Scope        : AllUsersAllHosts
Path         : C:\Program Files\PowerShell\7\profile.ps1
Exists       : False
LastModified :

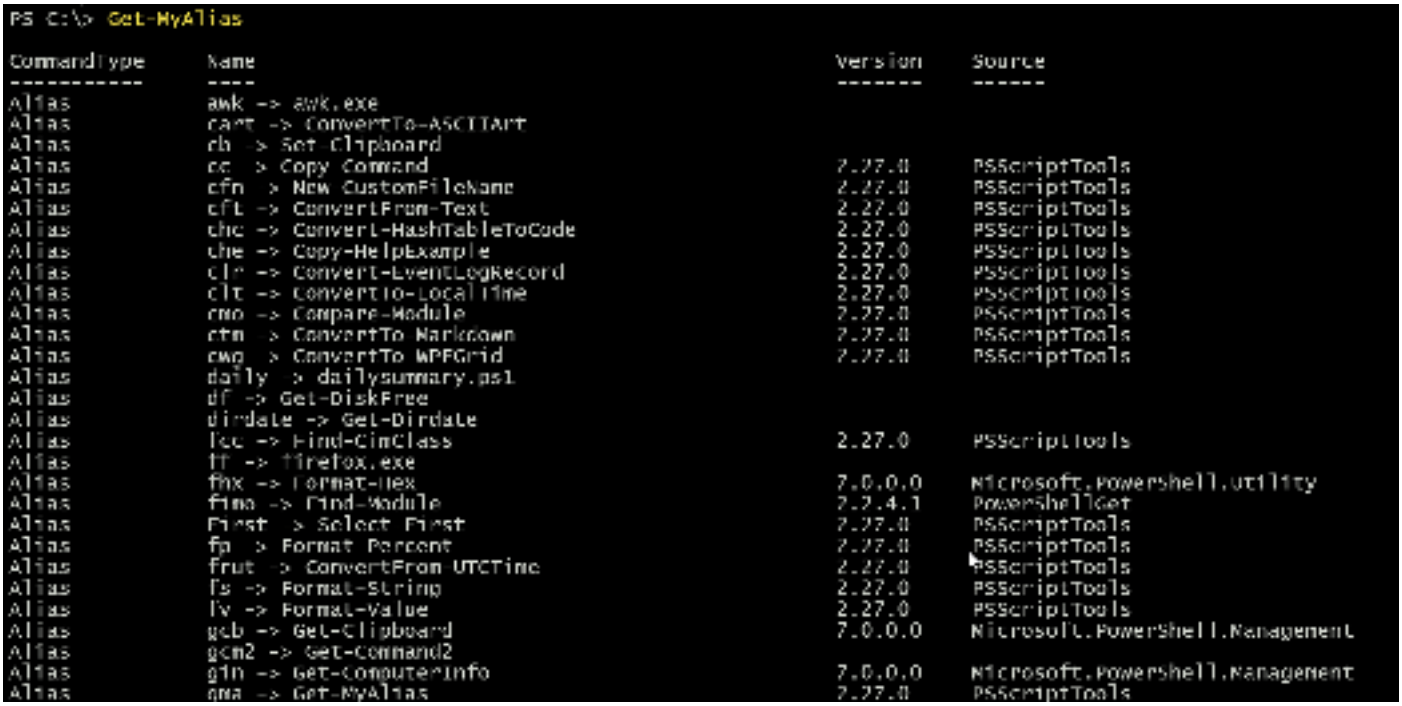
Scope        : CurrentUserAllHosts
Path         : C:\Users\Jeff\Documents\PowerShell\profile.ps1
Exists       : True
```

```
LastModified : 9/9/2020 2:35:45 PM

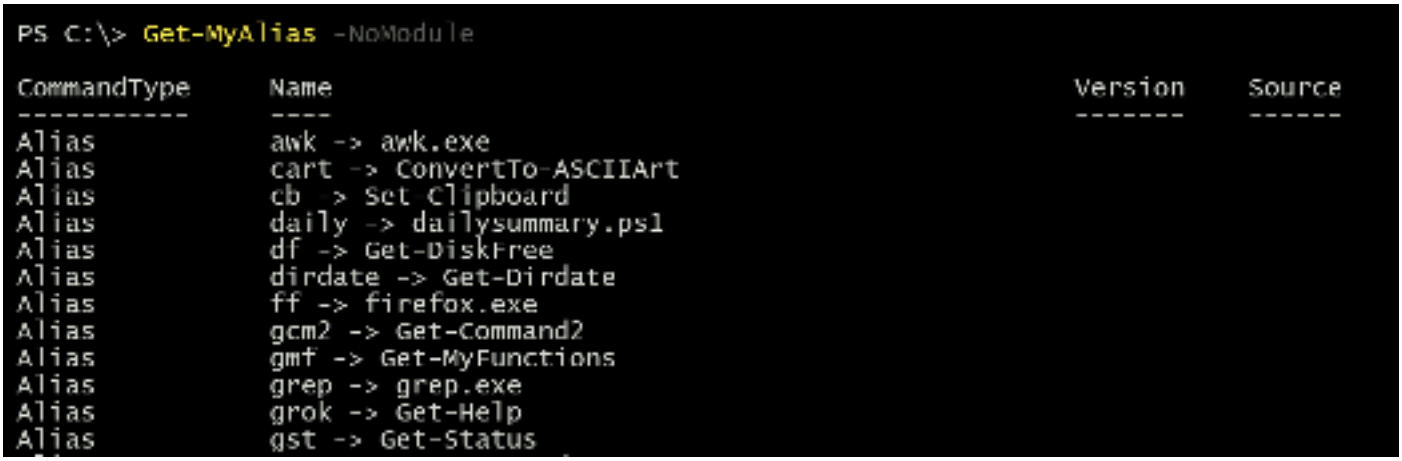
Scope        : CurrentUserCurrentHost
Path         : C:\Users\Jeff\Documents\PowerShell\Microsoft.PowerShell_profile.ps1
Exists       : True
LastModified : 9/9/2020 2:03:44 PM
```

Get-MyAlias

Often you might define aliases for functions and scripts you use all of the time. It may be difficult sometimes to remember them all or to find them in the default `Get-Alias` output. This command will list all currently defined aliases that are not part of the initial PowerShell state.

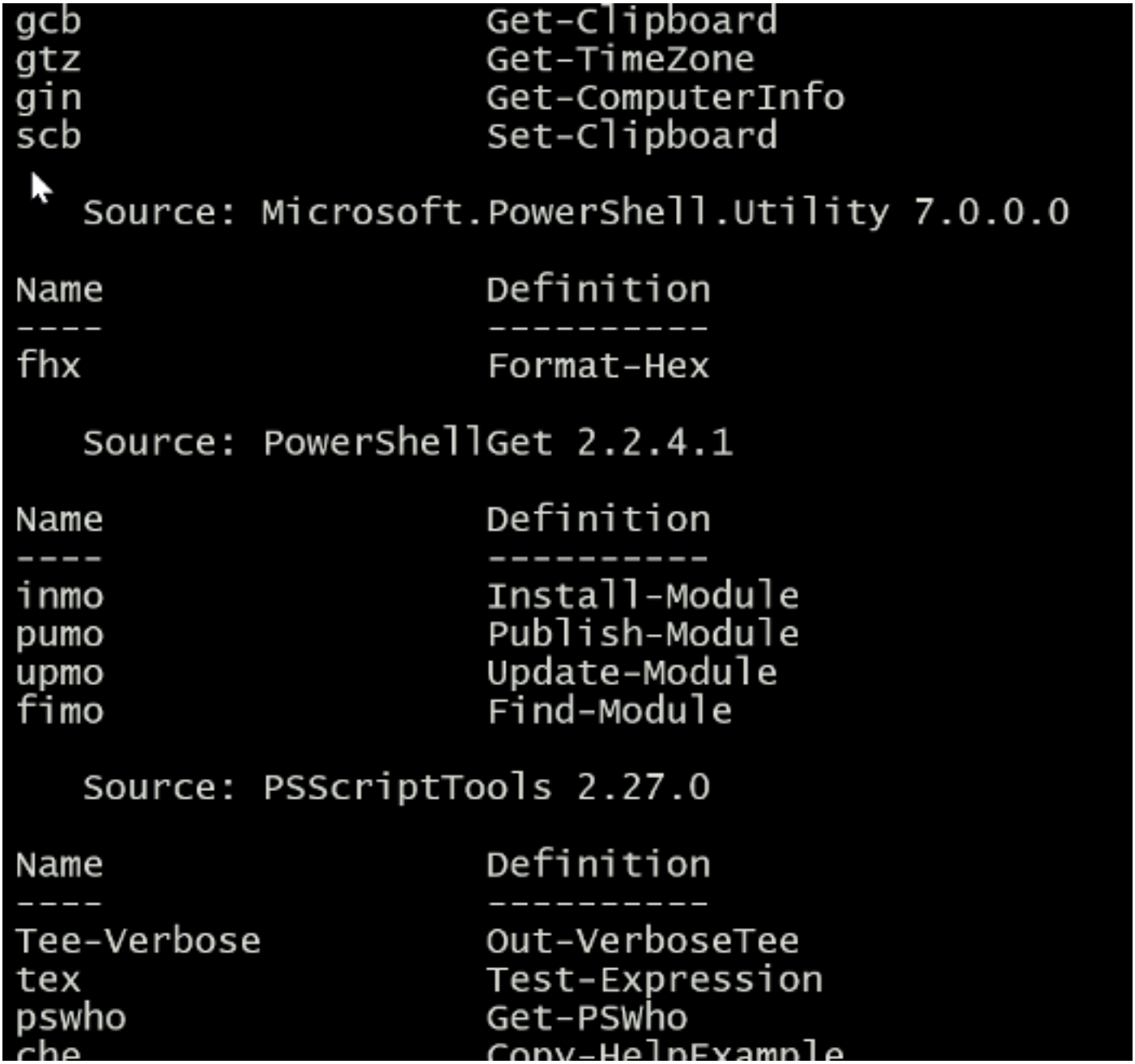


These are all aliases defined in the current session that aren't part of the initial session state. You can filter aliases to make it easier to find those that aren't defined in a module. These aliases should be ones created in your stand-alone scripts or PowerShell profile.



The PSScriptTools module also includes a custom formatting file for alias objects which you can use with `Get-Alias` or `Get-MyAlias`.

```
Get-Alias | Sort-Object Source | Format-Table -View source
```



This command has an alias of `gma`.

Get-ModuleCommand

This is an alternative to `Get-Command` to make it easier to see at a glance what commands are contained within a module and what they can do. By default, `Get-ModuleCommand` looks for loaded modules. Use `-ListAvailable` to see commands in the module not currently loaded. Note that if the help file is malformed or missing, you might get oddly formatted results.

```
PS C:\> Get-ModuleCommand PSCalendar


      Verb: Get
```

```
  Name                           Alias           Type      Synopsis
  ----                           -----           ----      --------
  Get-Calendar                   cal             Function  Displays a visua...


      Verb: Show

  Name                           Alias           Type      Synopsis
  ----                           -----           ----      --------
  Show-Calendar                  scal            Function  Display a color...
  Show-GuiCalendar               gcal            Function  Display a WPF-b...
```

Get module commands using the default formatted view. There is also a default view for `Format-List`.

Get-PSScriptTools

You can use this command to get a summary list of functions in this module.

```
PS C:\> Get-PSScriptTools


   Verb: Add

Name              Alias                Synopsis
----              -----                --------
Add-Border                             Create a text border around a string.


   Verb: Compare

Name             Alias                Synopsis
----             -----                --------
Compare-Module   cmo                  Compare PowerShell module versions.

...
```

Here's another way you could use this command to list functions with defined aliases in the PSScriptTools module.

```
PS C:\> Get-PSScriptTools | Where-Object alias |
Select-Object Name,alias,Synopsis

Name                    Alias Synopsis
----                    ----- --------
Compare-Module          cmo   Compare PowerShell module versions.
Convert-EventLogRecord  clr   Convert EventLogRecords to structured objects
ConvertFrom-Text        cft   Convert structured text to objects.
ConvertFrom-UTCTime     frut  Convert a datetime value from universal
ConvertTo-LocalTime     clt   Convert a foreign time to local
...
```

Convert-EventLogRecord

When you use Get-WinEvent, the results are objects you can work with in PowerShell. However, often, there is additional information that is part of the event log record, such as replacement strings, that are used to construct a message. This additional information is not readily exposed. You can use this command to convert the results of a `Get-WinEvent` command into a PowerShell custom object with additional information.

```
PS C:\> Get-WinEvent -FilterHashtable @{Logname='System';ID=7045} -MaxEvents 1|
Convert-EventLogRecord


LogName      : System
RecordType   : Information
TimeCreated  : 1/21/2020 3:49:46 PM
ID           : 7045
ServiceName  : Netwrix Account Lockout Examiner
ImagePath    : "C:\Program Files (x86)\Netwrix\Account Lockout Examiner
               \ALEService.exe"
ServiceType  : user mode service
StartType    : auto start
AccountName  : bovine320\jeff
Message      : A service was installed in the system.

                 Service Name:  Netwrix Account Lockout Examiner
                 Service File Name:  "C:\Program Files (x86)\Netwrix\Account
                 Lockout Examiner\ALEService.exe"
                 Service Type:  user mode service
                 Service Start Type:  auto start
                 Service Account:  bovine320\jeff
Keywords     : {Classic}
Source       : Service Control Manager
Computername : Bovine320
```

Get-WhoIs

This command will retrieve WhoIs information from the ARIN database for a given IPv4 address.

```
PS C:\> Get-WhoIs 208.67.222.222 | Select-Object -Property *

IP                     : 208.67.222.222
Name                   : OPENDNS-NET-1
RegisteredOrganization : Cisco OpenDNS, LLC
City                   : San Francisco
StartAddress           : 208.67.216.0
EndAddress             : 208.67.223.255
NetBlocks              : 208.67.216.0/21
Updated                : 3/2/2012 8:03:18 AM

PS C:\> '1.1.1.1','8.8.8.8','208.67.222.222'| Get-WhoIs | Format-List

IP                     : 1.1.1.1
Name                   : APNIC-1
RegisteredOrganization : Asia Pacific Network Information Centre
City                   : South Brisbane
StartAddress           : 1.0.0.0
EndAddress             : 1.255.255.255
```

```
NetBlocks             : 1.0.0.0/8
Updated               : 7/30/2010 9:23:43 AM

IP                    : 8.8.8.8
Name                  : LVLT-GOGL-8-8-8
RegisteredOrganization : Google LLC
City                  : Mountain View
StartAddress          : 8.8.8.0
EndAddress            : 8.8.8.255
NetBlocks             : 8.8.8.0/24
Updated               : 3/14/2014 4:52:05 PM

IP                    : 208.67.222.222
Name                  : OPENDNS-NET-1
RegisteredOrganization : Cisco OpenDNS, LLC
City                  : San Francisco
StartAddress          : 208.67.216.0
EndAddress            : 208.67.223.255
NetBlocks             : 208.67.216.0/21
Updated               : 3/2/2012 8:03:18 AM
```

This module includes a custom format file for these results.

Compare-Module

Use this command to compare module versions between what is installed against an online repository like the PSGallery

```
PS C:\> Compare-Module Platyps


Name             : platyPS
OnlineVersion    : 0.14.0
InstalledVersion : 0.14.0,0.12.0,0.11.1,0.10.2,0.9.0
PublishedDate    : 4/3/2019 12:46:30 AM
UpdateNeeded     : False
```

Or you can compare and manage multiple modules.

```
Compare-Module | Where UpdateNeeded |
Out-GridView -title "Select modules to update" -outputMode multiple |
Foreach { Update-Module $_.name }
```

This example compares modules and sends the results to `Out-GridView`. Use `Out-GridView` as an object picker to decide what modules to update.

Get-WindowsVersion

This is a PowerShell version of the `winver.exe` utility. This command uses PowerShell remoting to query the registry on a remote machine to retrieve Windows version information.

```
Get-WindowsVersion -Computername win10,srv1,srv2 -Credential company\artd
```

The output has a default table view but there are other properties you might want to use.

```
PS C:\> Get-WindowsVersion | Select-Object *


ProductName    : Microsoft Windows 11 Pro
ReleaseVersion : 22H2
EditionID      : Professional
ReleaseID      : 2009
Build          : 22622.598
Branch         : ni_release
InstalledUTC   : 5/12/2022 1:01:53 PM
Computername   : WINDESK11
```

Beginning with version 2.45.0, `Get-WindowsVersion` will use the command-line tool `systeminfo.exe` to retrieve the operating system name. If this fails, then the registry value will be used. Windows 11 systems don't yet reflect with Windows 11 name in the registry.

Get-WindowsVersionString

This command is a variation of `Get-WindowsVersion` that returns a formatted string with version information.

```
PS C:\> Get-WindowsVersionString
PROSPERO Windows 10 Pro Version Professional (OS Build 19042.906)
```

New-PSDriveHere

This function will create a new PSDrive at the specified location. The default is the current location, but you can specify any PSPath. by default, the function will take the last word of the path and use it as the name of the new PSDrive.

```
PS C:\users\jeff\documents\Enterprise Mgmt Webinar> new-psdrivehere -setlocation
PS Webinar:\>
```

You can use the first word in the leaf location or specify something completely different.

```
New-PSDrivehere \\ds416\backup\ Backup
```

Get-MyVariable

This function will return all variables not defined by PowerShell or by this function itself. The default is to return all user-created variables from the global scope, but you can also specify a scope such as `script`, `local`, or a number 0 through 5.

```
PS C:\> Get-MyVariable

NName Value                 Type
---- -----                 ----
a    bits                  ServiceController
dt   10/22/2020 10:49:38 AM DateTime
foo  123                   Int32
r    {1, 2, 3, 4...}       Object[]
...
```

Depending on the value and how PowerShell chooses to display it, you may not see the type.

ConvertFrom-Text

This command can be used to convert text from a file or a command-line tool into objects. It uses a regular expression pattern with named captures and turns the result into a custom object. You have the option of specifying a type name in case you are using custom format files.

```
PS C:\> $arp = '(?<IPAddress>(\d{1,3}\.){3}\d{1,3})\s+(?<MAC>(\w{2}-){5}\w{2})\s+(?<Type>\w+$)'
PS C:\> arp -g -N 172.16.10.22 | Select-Object -skip 3 |
foreach {$_.Trim()} | ConvertFrom-Text $arp -TypeName arpData -NoProgress

IPAddress          MAC                   Type
---------          ---                   ----
172.16.10.1        b6-fb-e4-16-41-be     dynamic
172.16.10.100      00-11-32-58-7b-10     dynamic
172.16.10.115      5c-aa-fd-0c-bf-fa     dynamic
172.16.10.120      5c-1d-d9-58-81-51     dynamic
172.16.10.159      3c-e1-a1-17-6d-0a     dynamic
172.16.10.162      00-0e-58-ce-8b-b6     dynamic
172.16.10.178      00-0e-58-8c-13-ac     dynamic
172.16.10.185      d0-04-01-26-b5-61     dynamic
172.16.10.186      e8-b2-ac-95-92-98     dynamic
172.16.10.197      fc-77-74-9f-f4-2f     dynamic
172.16.10.211      14-20-5e-93-42-fb     dynamic
172.16.10.222      28-39-5e-3b-04-33     dynamic
172.16.10.226      00-0e-58-e9-49-c0     dynamic
172.16.10.227      48-88-ca-e1-a6-00     dynamic
```

```
172.16.10.239      5c-aa-fd-83-f1-a4       dynamic
172.16.255.255     ff-ff-ff-ff-ff-ff        static
224.0.0.2          01-00-5e-00-00-02        static
224.0.0.7          01-00-5e-00-00-07        static
224.0.0.22         01-00-5e-00-00-16        static
224.0.0.251        01-00-5e-00-00-fb        static
224.0.0.252        01-00-5e-00-00-fc        static
239.255.255.250    01-00-5e-7f-ff-fa        static
```

This example uses a previously created and imported format.ps1xml file for the custom type name.

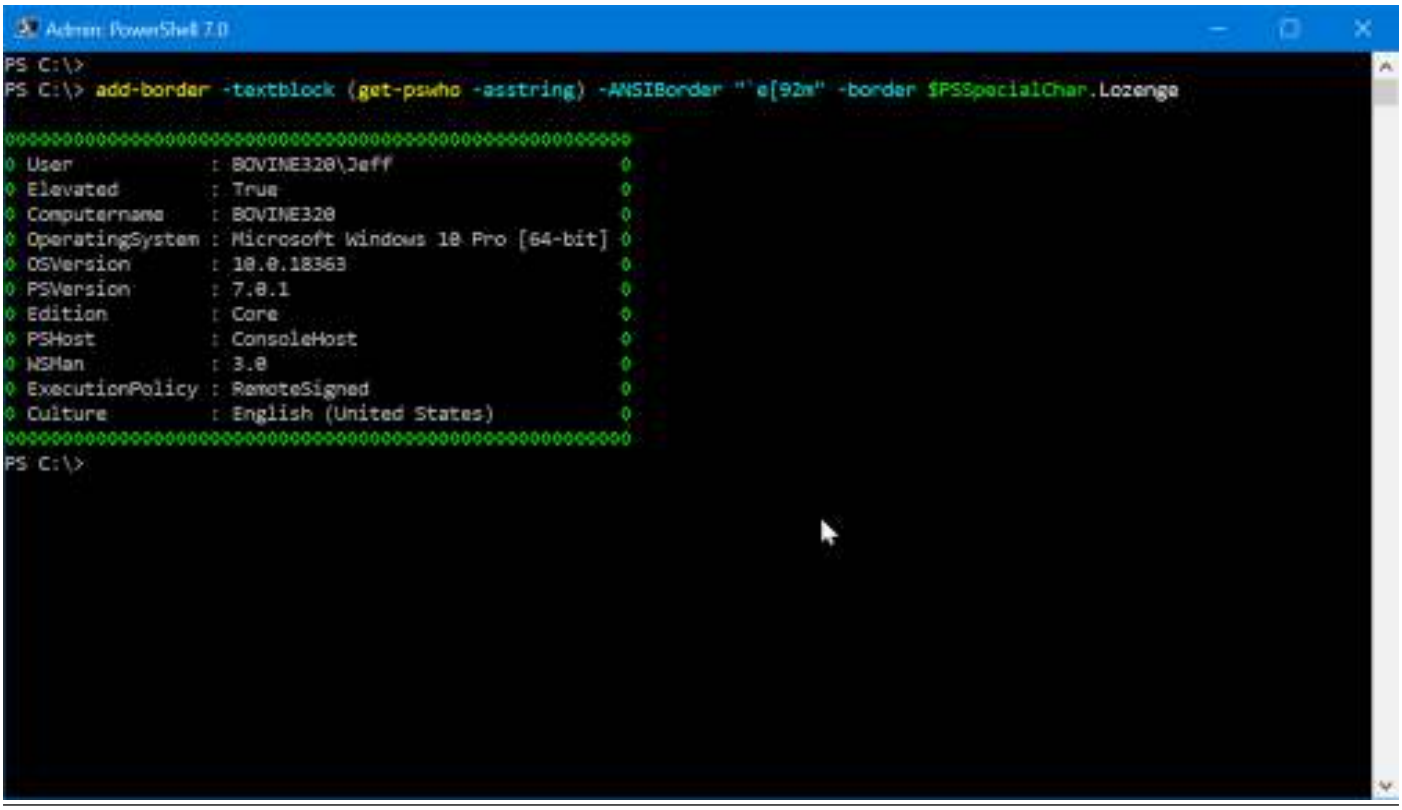
Get-PSWho

This command will provide a summary of relevant information for the current user in a PowerShell Session. You might use this to troubleshoot an end-user problem running a script or command.

```
PS C:\> Get-PSWho

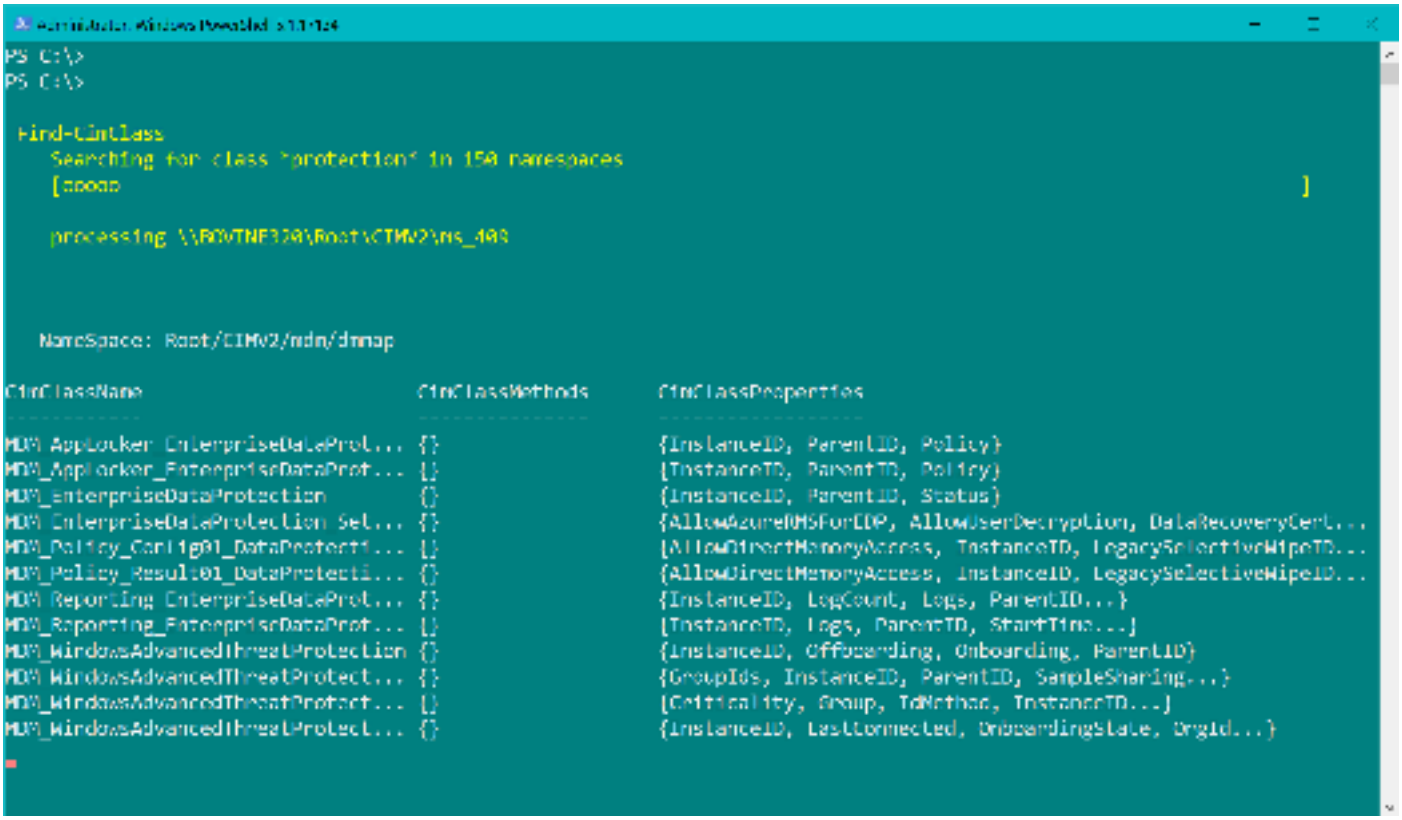
User            : WINDESK11\Art
Elevated        : True
Computername    : WINDESK11
OperatingSystem : Microsoft Windows 11 Pro [64-bit]
OSVersion       : 10.0.22622
PSVersion       : 5.1.22621.436
Edition         : Desktop
PSHost          : ConsoleHost
WSMan           : 3.0
ExecutionPolicy : RemoteSigned
Culture         : English (United States)
```

You can also turn this into a text block using the `AsString` parameter. This is helpful when you want to include the output in some type of report.



Find-CimClass

This function is designed to search an entire CIM repository for a class name. Sometimes, you may have a guess about a class name but not know the full name or even the correct namespace. `Find-CimClass` will recursively search for a given class name. You can use wildcards and search remote computers.



Out-VerboseTee

This command is intended to let you see your verbose output and write the verbose messages to a log file. It will only work if the verbose pipeline is enabled, usually when your command is run with -Verbose. This function is designed to be used within your scripts and functions. You either have to hard-code a file name or find some other way to define it in your function or control script. You could pass a value as a parameter or set it as a `PSDefaultParameterValue`.

This command has aliases of `Tee-Verbose` and `tv`.

```
Begin {
    $log = New-RandomFilename -useTemp -extension log
    Write-Detail "Starting $($MyInvocation.MyCommand)" -Prefix begin |
    Tee-Verbose $log
    Write-Detail "Logging verbose output to $log" -prefix begin |
    Tee-Verbose -append
    Write-Detail "Initializing data array" -Prefix begin |
    Tee-Verbose $log -append
    $data = @()
} #begin
```

When the command is run with -Verbose you will see the verbose output **and** it will be saved to the specified log file.

Remove-Runspace

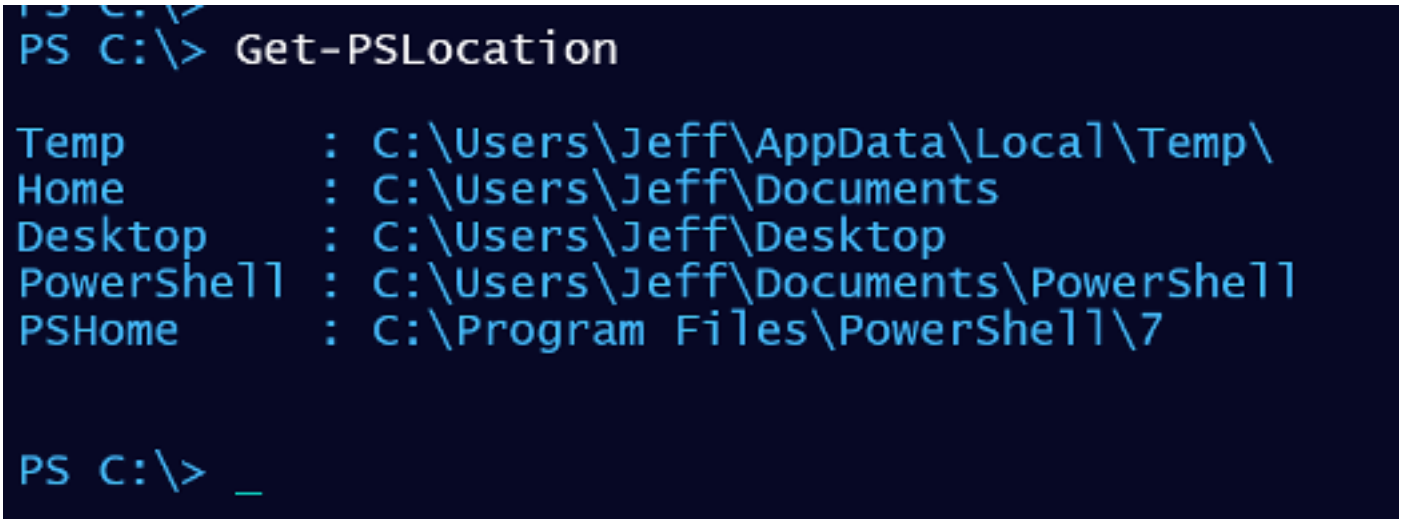
Over the course of your PowerShell work, you may discover that some commands and scripts can leave behind runspaces such as `ConvertTo-WPFGrid`. You may even deliberately be creating additional runspaces. These runspaces will remain until you exit your PowerShell session. Or use this command to cleanly close and dispose of runspaces.

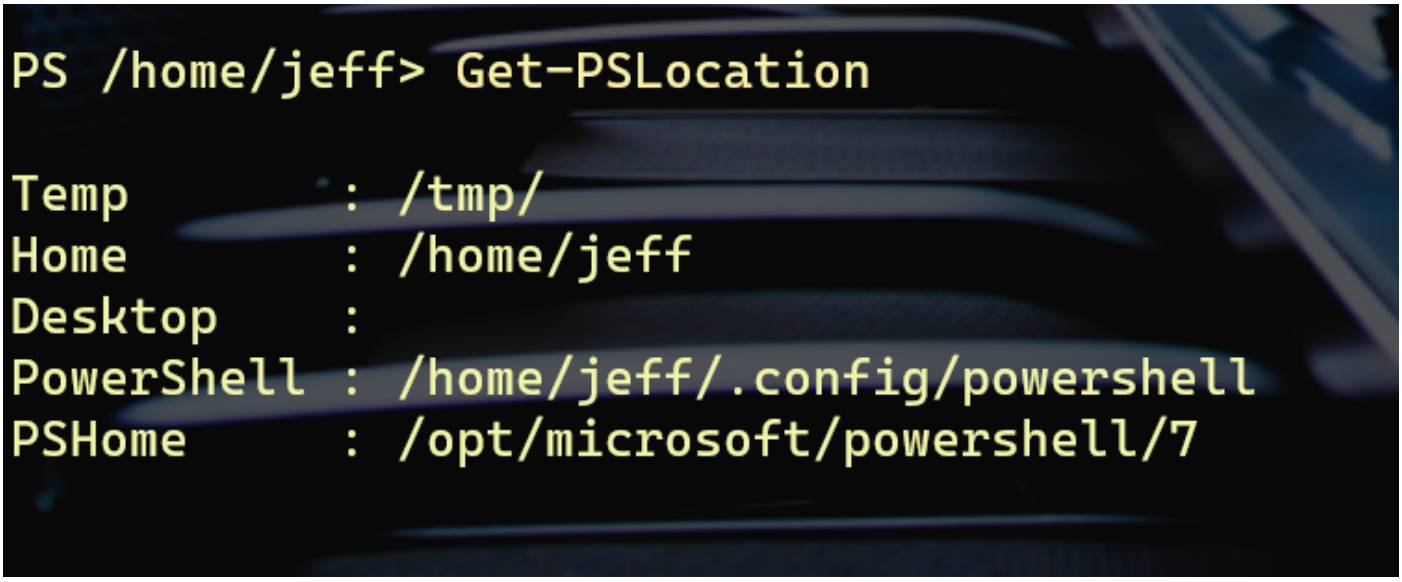
```
Get-RunSpace | where ID -gt 1 | Remove-RunSpace
```

Get all runspaces with an ID greater than 1, which is typically your current session, and remove the runspace.

Get-PSLocation

A simple function to get common locations. This can be useful with cross-platform scripting.





Get-PowerShellEngine

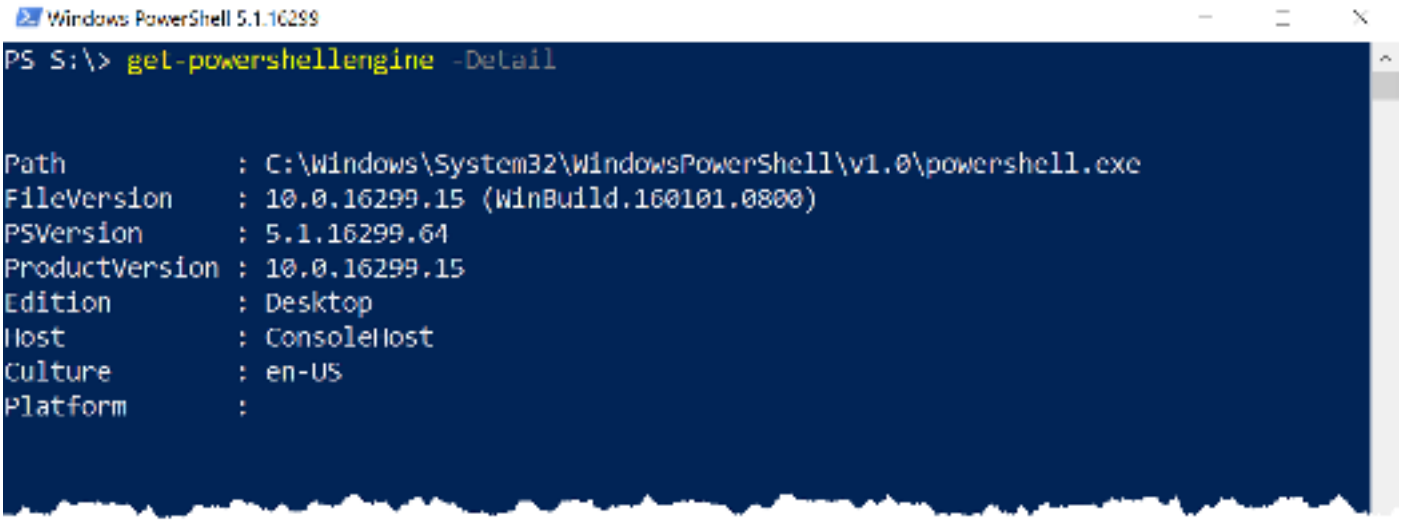
Use this command to quickly get the path to the PowerShell executable. In Windows, you should get a result like this:

```
PS C:\> Get-PowerShellEngine
C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe
```

But PowerShell on non-Windows platforms is a bit different:

```
PS /home/jhicks> Get-PowerShellEngine
/opt/microsoft/powershell/7/pwsh
```

You can also get detailed information.



Results will vary depending on whether you are running PowerShell on Windows nor non-Windows systems.

Get-PathVariable

Over time, as you add and remove programs, your `%PATH%` might change. An application may add a location but not remove it when you uninstall the application. This command makes it easier to identify locations and whether they are still good.

```
PS C:\> Get-PathVariable

Scope   UserName Path                                                  Exists
-----   -------- ----                                                  ------
User    Jeff     C:\Program Files\kdiff3                                 True
User    Jeff     C:\Program Files (x86)\Bitvise SSH Client               True
User    Jeff     C:\Program Files\OpenSSH                                True
User    Jeff     C:\Program Files\Intel\WiFi\bin\                        True
User    Jeff     C:\Program Files\Common Files\Intel\WirelessCommon\      True
User    Jeff     C:\Users\Jeff\AppData\Local\Programs\Microsoft VS Co...  True
User    Jeff     C:\Program Files (x86)\Vale\                            True
...
```

File Tools

Get-LastModifiedFile

Get files last modified within a certain interval. The default is 24 hours.

```
PS C:\> Get-LastModifiedFile -Path c:\work

    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          11/30/2021  1:52 PM           2010 a.txt
-a---          11/30/2021  1:52 PM           5640 b.txt
```

But you can specify other ranges.

```
PS C:\> Get-LastModifiedFile -Path c:\scripts -filter *.xml -Interval Months -IntervalCount 6

    Directory: C:\Scripts

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           8/31/2021  7:12 PM          17580 DefaultDomainPolicy.xml
-a---           8/31/2021  7:12 PM          17290 PKIAutoEnroll.xml
-a---           8/31/2021  8:43 PM           9786 sample-gpo.xml
-a---           8/31/2021  7:24 PM          50062 TestUser.xml
-a---           6/22/2021  7:47 PM           4628 vaults.xml
```

You might use this command with other PowerShell commands to get usage statistics.

```
PS C:\> Get-LastModifiedFile -Path c:\scripts -Recurse -Interval Years -IntervalCount 1 |
>> Group-Object {$_.LastWriteTime.month} |
>> Select-Object @{Name="Month";Expression = {"{0:MMM}" -f (Get-Date -Month $_.Name)}},
>> Count

Month Count
----- -----
Jan     152
Feb     200
Mar     228
Apr     169
May     106
Jun      92
Jul      86
Aug     112
Sep     109
Oct     136
Nov     225
Dec     216
```

Get-FileExtensionInfo

This command will search a given directory and produce a report of all files based on their file extension. This command is only available in PowerShell 7. The extension with the largest total size will be highlighted in color.

```
PS C:\> Get-FileExtensionInfo -Path c:\scripts -Recurse | Sort-object Count -descending |
>> Select-Object -first 20

   Path: C:\scripts [PROSPERO]

Extension Count TotalSize Smallest    Average  Largest
--------- ----- --------- --------    -------  -------
.ps1       4890  21366917        0    4369.51   502858
.md         820   3346884        0    4081.57    92654
.txt        697  24704216        0   35443.64  5329533
.json       367   1062612       24     2895.4   356232
.png        302  43042979     1270  142526.42  1565971
.psm1       294   3237702       24   11012.59   227866
.ps1xml     218    876749      137    4021.78    17454
.psd1       211   1047045       50     4962.3    23530
.xml        137  88782742      166  648049.21 83457712
.zip        130  40525187       24  311732.21 18559167
.mof        100    188981      214    1889.81    51120
.csv         86   3399223       67   39525.85  1164546
.pdf         66  66870599    23922 1013190.89 13627600
.pptx        57  72096503   333902 1264850.93  3592374
.wsf         33    531104     3444   16094.06   254328
             29   1547000        0   53344.83  1519288
.vbs         28  10766405       30  384514.46  6238714
.exe         28  60332664     2938    2154738 51891200
.docx        28    994142    12944   35505.07   124806
.jpg         26   1601735      807   61605.19   201244
```

Test-EmptyFolder

This command will test if a given folder path is empty of all files anywhere in the path. This includes hidden files. The command will return True even if there are empty sub-folders. The default output is True or False but you can use -PassThru to get more information.

```
PS C:\> Get-ChildItem c:\work -Directory | Test-EmptyFolder -PassThru |
Where-Object {$_.IsEmpty} |
Foreach-Object { Remove-Item -LiteralPath $_.path -Recurse -force -whatif}

What if: Performing the operation "Remove Directory" on target "C:\work\demo3".
What if: Performing the operation "Remove Directory" on target "C:\work\installers".
What if: Performing the operation "Remove Directory" on target "C:\work\new".
What if: Performing the operation "Remove Directory" on target "C:\work\sqlback".
What if: Performing the operation "Remove Directory" on target "C:\work\todd".
What if: Performing the operation "Remove Directory" on target "C:\work\[data]".
```

Find all empty sub-folders under C:\Work and pipe them to `Remove-Item`. This is one way to remove empty folders. The example is piping objects to `ForEach-Object` so that `Remove-Item` can use the -LiteralPath parameter because `C:\work\[data]` is a non-standard path.

Get-FolderSizeInfo

Use this command to quickly get the size of a folder. You also have the option to include hidden files. The command will measure all files in all subdirectories.

```
PS C:\> Get-FolderSizeInfo c:\work

Computername    Path                        TotalFiles     TotalSize
------------    ----                        ----------     ---------
BOVINE320       C:\work                            931     137311146


PS C:\> Get-FolderSizeInfo c:\work -Hidden

Computername    Path                         TotalFiles     TotalSize
------------    ----                         ----------     ---------
BOVINE320       C:\work                             1375     137516856
```

The command includes a format file with an additional view to display the total size in KB, MB, GB, or TB.

```
PS C:\> Get-ChildItem D:\ -Directory | Get-FolderSizeInfo -Hidden |
Where-Object TotalSize -gt 1gb | Sort-Object TotalSize -Descending |
Format-Table -View gb

Computername    Path                                TotalFiles   TotalSizeGB
------------    ----                               ----------   -----------
BOVINE320       D:\Autolab                                159      137.7192
BOVINE320       D:\VMDisks                                 18      112.1814
BOVINE320       D:\ISO                                     17       41.5301
BOVINE320       D:\FileHistory                         104541       36.9938
BOVINE320       D:\Vagrant                                 13       19.5664
BOVINE320       D:\Vms                                     83        5.1007
BOVINE320       D:\2016                                  1130        4.9531
BOVINE320       D:\video                                  125         2.592
BOVINE320       D:\blog                                 21804        1.1347
BOVINE320       D:\pstranscripts                       122092        1.0914
```

Or you can use the `name` view.

```
PS C:\> Get-ChildItem c:\work -Directory | Get-FolderSizeInfo -Hidden |
Where-Object {$_.totalsize -ge 2mb} | Format-Table -view name


   Path: C:\work

Name                    TotalFiles      TotalKB
----                    ----------      -------
A                               20    5843.9951
keepass                         15     5839.084
PowerShellBooks                 26    4240.3779
sunday                          47   24540.6523
```

Optimize-Text

Use this command to clean and optimize content from text files. Sometimes text files have blank lines, or the content has trailing spaces. These sorts of issues can cause problems when passing the content to other commands.

This command will strip out any lines that are blank or have nothing by white space, and trim leading and trailing spaces. The optimized text is then written back to the pipeline. Optionally, you can specify a property name. This can be useful when your text file is a list of computer names and you want to take advantage of pipeline binding.

Get-FileItem

A PowerShell version of the CLI `where.exe` command. You can search with a simple or regex pattern.

```
PS C:\> pswhere winword.exe -Path c:\ -Recurse -first

C:\Program Files\Microsoft Office\root\Office16\WINWORD.EXE
```

Note that you might see errors for directories where you don't have access permission. This is normal.

New-CustomFileName

This command will generate a custom file name based on a template string that you provide.

```
PS C:\> New-CustomFileName %computername_%day%monthname%yr-%time.log
COWPC_28Nov19-142138.log

PS C:\> New-CustomFileName %dayofweek-%####.dat
Tuesday-3128.dat
```

You can create a template string using any of these variables. Most of these should be self-explanatory.

- %username
- %computername
- %year - 4-digit year
- %yr - 2-digit year
- %monthname - The abbreviated month name
- %month - The month number
- %dayofweek - The full name of the week day
- %day
- %hour
- %minute
- %time

- %string - A random string
- %guid

You can also insert a random number using % followed by a # character for each digit you want.

```
22 = %##
654321 = %######
```

New-RandomFilename

Create a new random file name. The default is a completely random name, including the extension.

```
PS C:\> New-RandomFilename
fykxecvh.ipw
```

But you can specify an extension.

```
PS C:\> New-RandomFilename -extension dat
emevgq3r.dat
```

Optionally you can create a random file name using the TEMP folder or your HOME folder. On Windows platforms, this will default to your Documents folder.

```
PS C:\> New-RandomFilename -extension log -UseHomeFolder
C:\Users\Jeff\Documents\kbyw4fda.log
```

On Linux machines, it will be the home folder.

```
PS /mnt/c/scripts> New-RandomFilename -home -Extension tmp
/home/jhicks/oces0epq.tmp
```

ConvertTo-Markdown

This command is designed to accept pipelined output and create a markdown document. The pipeline output will be formatted as a text block or a table You can optionally define a title, content to appear before the output, and content to appear after the output. You can run a command like this:

```
Get-Service Bits,Winrm |
Convertto-Markdown -title "Service Check" -precontent "## $($env:computername)"
-postcontent "_report $(Get-Date)_"
```

which generates this markdown:

```
    # Service Check
```

```
   ## THINKX1

   ```dos

   Status   Name               DisplayName
   ------   ----               -----------
   Running  Bits               Background Intelligent Transfer Ser...
   Running  Winrm              Windows Remote Management (WS-Manag...
   ```

   report 09/25/2021 09:57:12
```

You also have the option to format the output as a markdown table.

```
ConvertTo-Markdown -title "OS Summary" -PreContent "## $($env:computername)" -postcontent
"_Confidential_" -AsTable
```

Which creates this markdown output.

```
# OS Summary

## THINKX1-JH

| ProductName | EditionID | ReleaseID | Build | Branch | InstalledUTC | Computername |
| ----------- | --------- | --------- | ----- | ------ | ------------ | ------------ |
| Windows 10 Pro | Professional | 2009 | 22000.376 | co_release | 08/10/2021 00:17:07 | THINKX1-JH |

_Confidential_
```

THINKX1-JH

ProductName	EditionID	ReleaseID	Build	Branch	InstalledUTC	Computername
Windows 10 Pro	Professional	2009	22000.376	co_release	08/10/2021 00:17:07	THINKX1-JH

Confidential

Or you can create a list table with the property name in one columen and the value in the second column.

```
Get-WindowsVersion | ConvertTo-Markdown -title "OS Summary" -PreContent "## $($env:computername)"
-postcontent "_Confidential_" -AsList
```

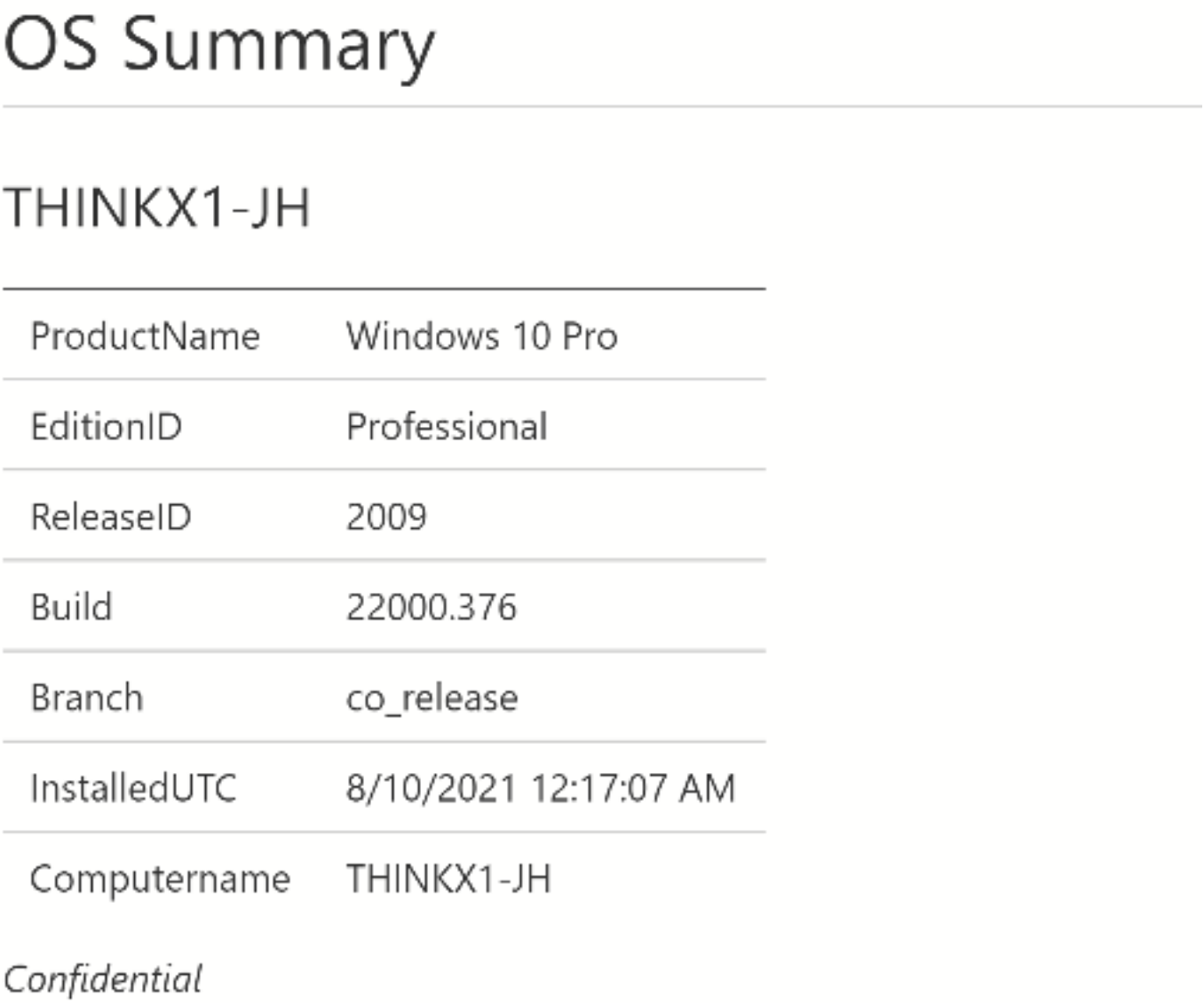
```
# OS Summary

## THINKX1-JH

|    |    |
|----|----|
|ProductName|Windows 10 Pro|
|EditionID|Professional|
|ReleaseID|2009|
|Build|22000.376|
```

```
|Branch|co_release|
|InstalledUTC|8/10/2021 12:17:07 AM|
|Computername|THINKX1-JH|

_Confidential_
```



Because the function writes markdown to the pipeline you will need to pipe it to a command `Out-File` to create a file.

Editor Integrations

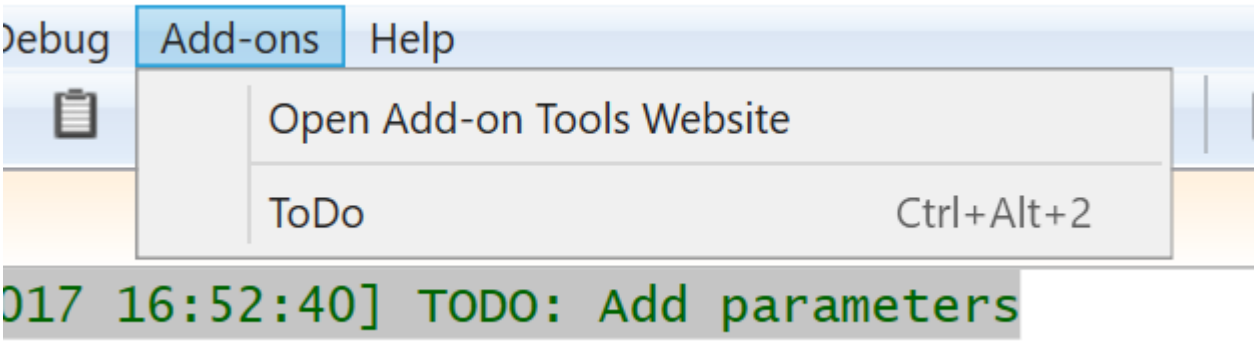
Because this module is intended to make scripting easier for you, it adds a few editor-specific features if you import this module in either the PowerShell ISE or Visual Studio Code. The VS Code features assume you are using the integrated PowerShell terminal.

Insert ToDo

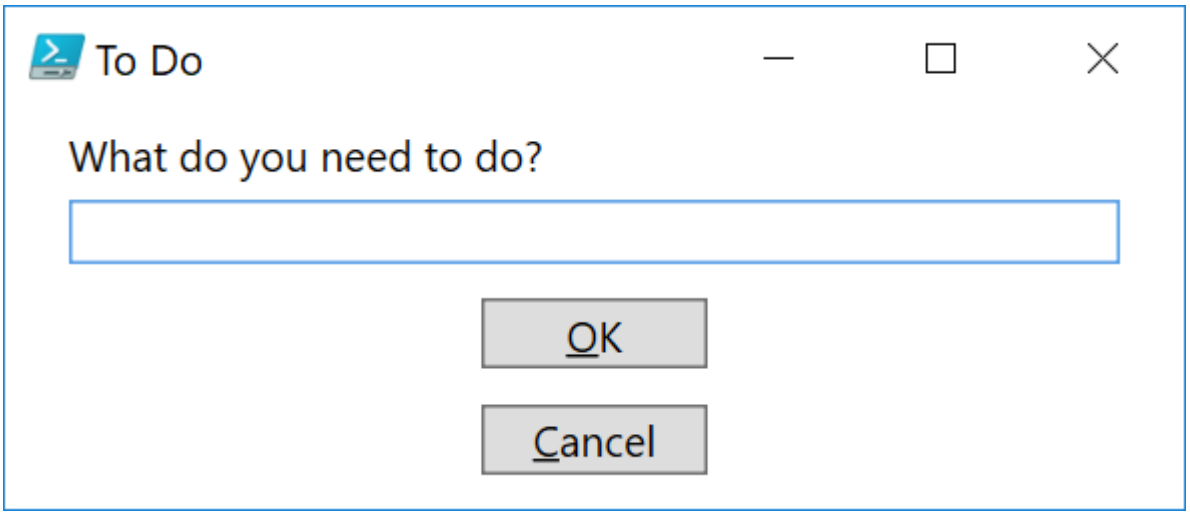
One such feature is the ability to insert ToDo statements into PowerShell files. If you are using the PowerShell ISE or VS Code and import this module, it will add the capability to insert a line like this:

```
# [12/13/2020 16:52:40] TODO: Add parameters
```

In the PowerShell ISE, you will get a new menu under Add-Ons.



You can use the menu or keyboard shortcut which will launch an input box.



The comment will be inserted at the current cursor location.

In VS Code, access the command palette (Ctrl+Shift+P) and then `PowerShell: Show Additional Commands from PowerShell Modules`. Select `Insert ToDo` from the list, and you'll get the same input box. Note that this will only work for PowerShell files.

Set Terminal Location

Another feature is the ability to set your terminal location to match that of the currently active file. For example, if the current file is located in C:\Scripts\Foo and your terminal location is D:\Temp\ABC, you can quickly jump to the file location.

```
PS D:\Temp\ABC\> sd
PS C:\Scripts\Foo\>
```

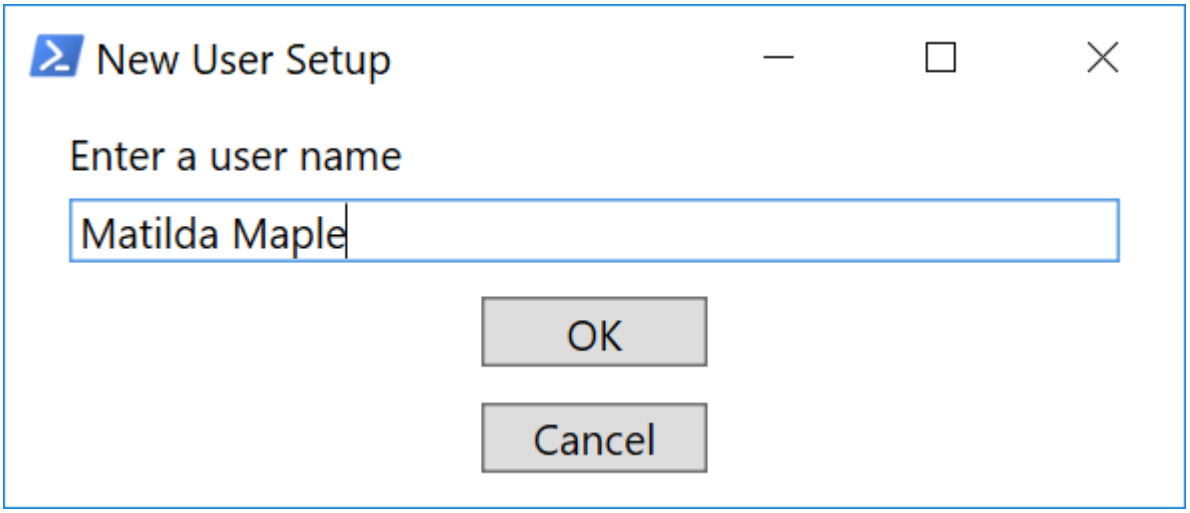
The full command name is `Set-LocationToFile` but you'll find it easier to use the `sd` or `jmp` aliases. This command will also clear the host.

Graphical Tools

Invoke-InputBox

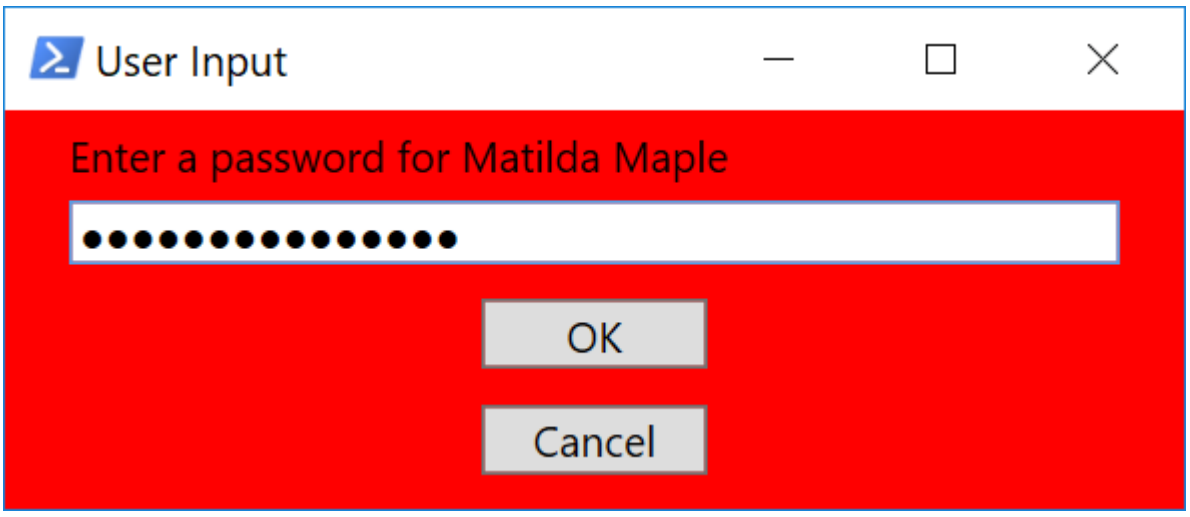
This function is a graphical replacement for `Read-Host`. It creates a simple WPF form that you can use to get user input. The value of the text box will be written to the pipeline.

```
$name = Invoke-InputBox -Prompt "Enter a user name" -Title "New User Setup"
```



You can also capture a secure string.

```
Invoke-Inputbox -Prompt "Enter a password for $Name" -AsSecureString
 -BackgroundColor red
```



This example also demonstrates that you can change the form's background color. This function will **not** work in PowerShell Core.

New-WPFMessageBox

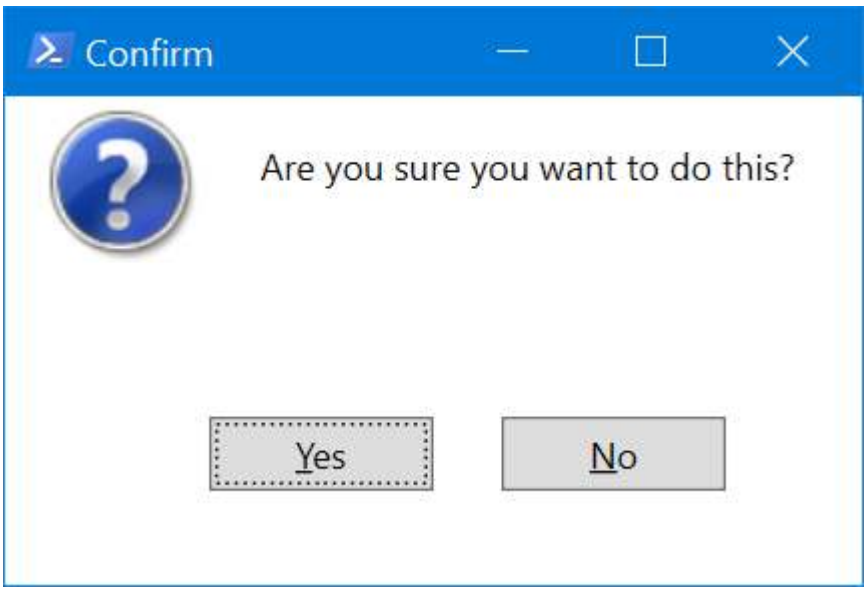
This function creates a Windows Presentation Foundation (WPF) based message box. This is intended to

replace the legacy MsgBox function from VBScript and the Windows Forms library. The command uses a set of predefined button sets, each of which will close the form and write a value to the pipeline.

- OK = 1
- Cancel = 0
- Yes = $True
- No = $False

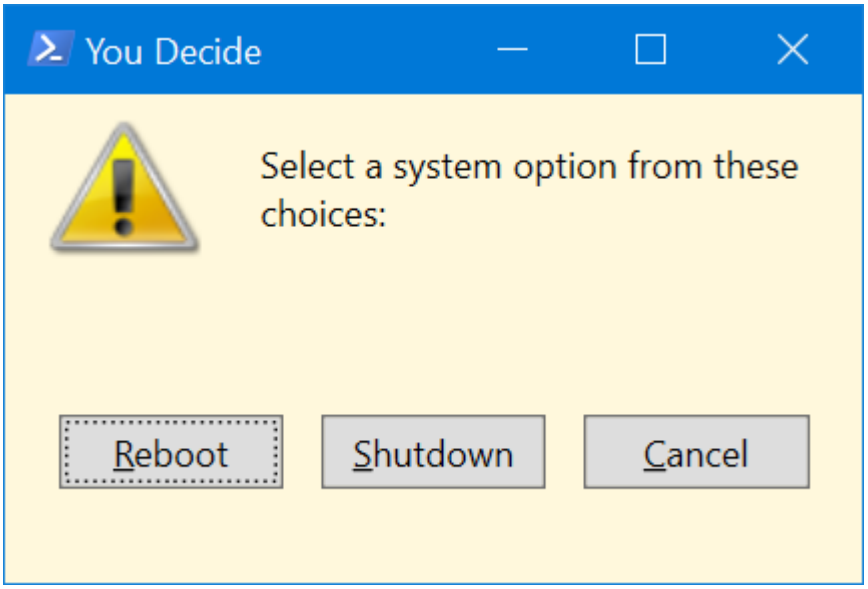
You can also create an ordered hashtable of your own buttons and values. It is assumed you will typically use this function in a script where you can capture the output and take some action based on the value.

```
New-WPFMessageBox -Message "Are you sure you want to do this?"
-Title Confirm -Icon Question -ButtonSet YesNo
```



You can also create your own custom button set as well as modify the background color.

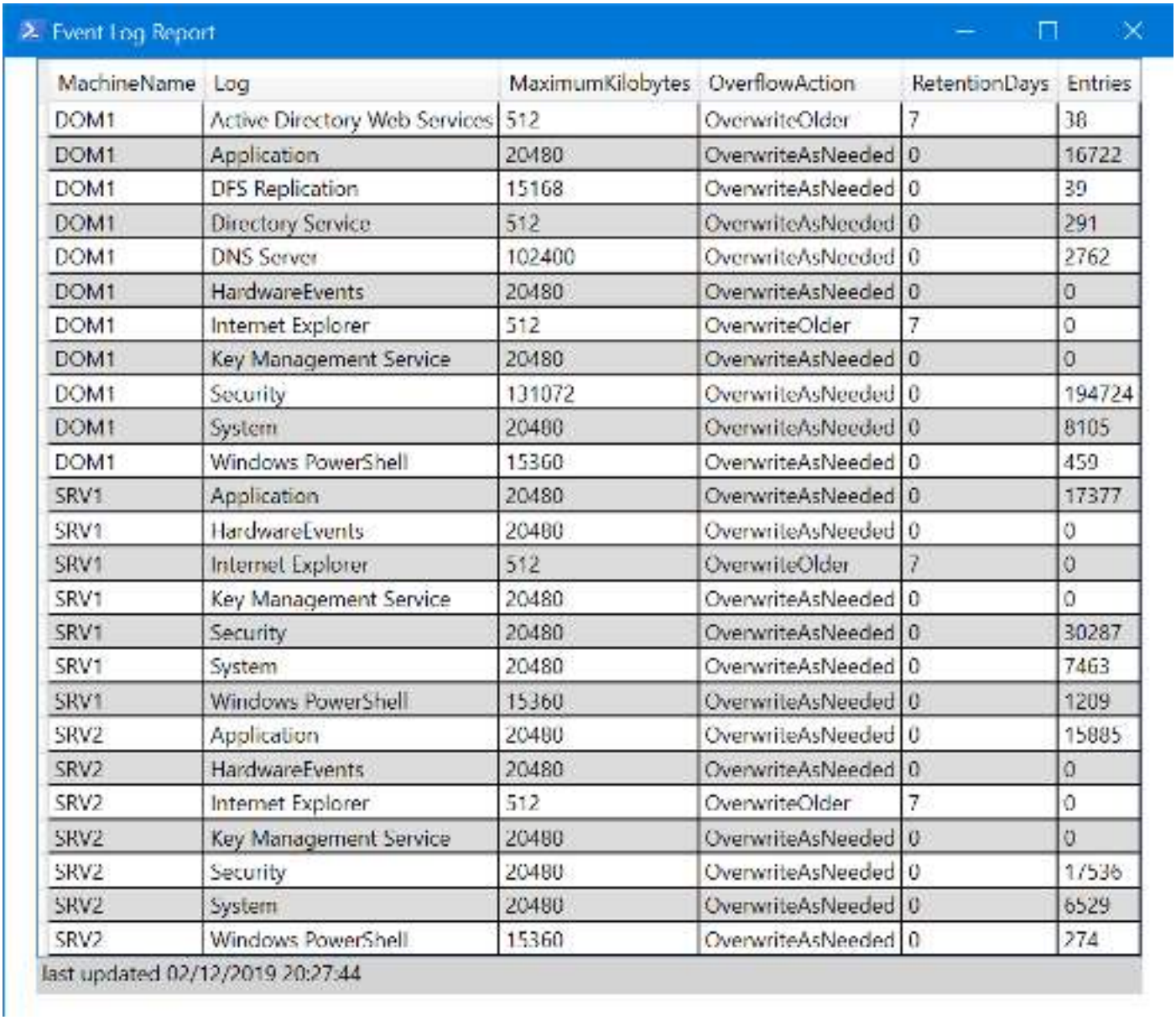
```
New-WPFMessageBox -Message "Select a system option from these choices:"
-Title "You Decide" -Background cornsilk -Icon Warning
-CustomButtonSet ([ordered]@{"Reboot"=1;"Shutdown"=2;"Cancel"=3})
```



ConvertTo-WPFGrid

This command is an alternative to `Out-GridView`. It works much the same way. Run a PowerShell command and pipe it to this command. The output will be displayed in an auto-sized data grid. You can click on column headings to sort. You can resize columns and you can re-order columns.

```
Get-Eventlog -list -ComputerName DOM1,SRV1,SRV2 |
Select Machinename,Log,MaximumKilobytes,Overflowaction,
@{Name="RetentionDays";Expression={$_.MinimumRetentionDays}},
@{Name="Entries";Expression = {$_.entries.count}} |
ConvertTo-WPFGrid -Title "Event Log Report"
```

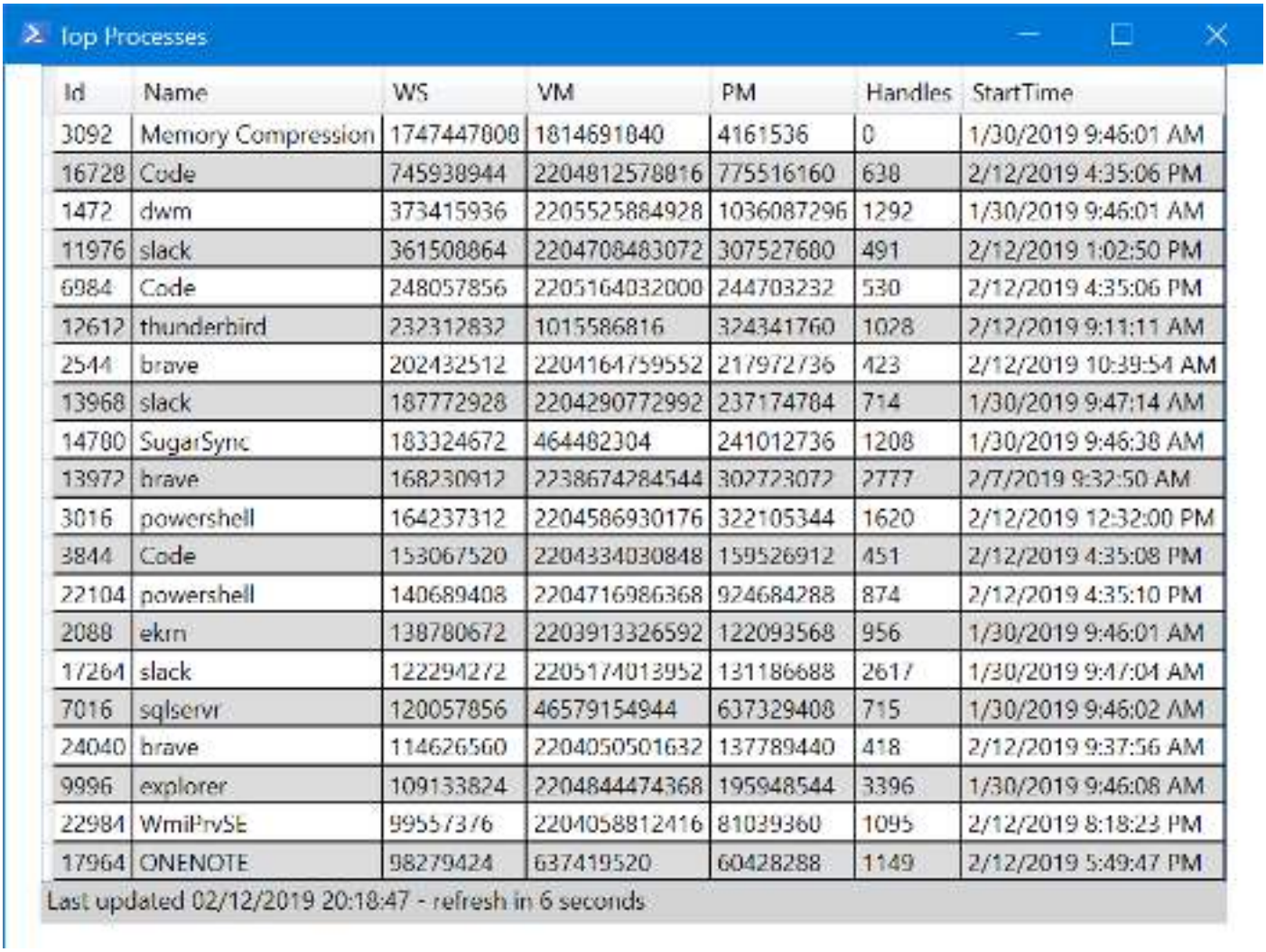


MachineName	Log	MaximumKilobytes	OverflowAction	RetentionDays	Entries
DOM1	Active Directory Web Services	512	OverwriteOlder	7	38
DOM1	Application	20480	OverwriteAsNeeded	0	16722
DOM1	DFS Replication	15168	OverwriteAsNeeded	0	39
DOM1	Directory Service	512	OverwriteAsNeeded	0	291
DOM1	DNS Server	102400	OverwriteAsNeeded	0	2762
DOM1	HardwareEvents	20480	OverwriteAsNeeded	0	0
DOM1	Internet Explorer	512	OverwriteOlder	7	0
DOM1	Key Management Service	20480	OverwriteAsNeeded	0	0
DOM1	Security	131072	OverwriteAsNeeded	0	194724
DOM1	System	20480	OverwriteAsNeeded	0	8105
DOM1	Windows PowerShell	15360	OverwriteAsNeeded	0	459
SRV1	Application	20480	OverwriteAsNeeded	0	17377
SRV1	HardwareEvents	20480	OverwriteAsNeeded	0	0
SRV1	Internet Explorer	512	OverwriteOlder	7	0
SRV1	Key Management Service	20480	OverwriteAsNeeded	0	0
SRV1	Security	20480	OverwriteAsNeeded	0	30287
SRV1	System	20480	OverwriteAsNeeded	0	7463
SRV1	Windows PowerShell	15360	OverwriteAsNeeded	0	1209
SRV2	Application	20480	OverwriteAsNeeded	0	15885
SRV2	HardwareEvents	20480	OverwriteAsNeeded	0	0
SRV2	Internet Explorer	512	OverwriteOlder	7	0
SRV2	Key Management Service	20480	OverwriteAsNeeded	0	0
SRV2	Security	20480	OverwriteAsNeeded	0	17536
SRV2	System	20480	OverwriteAsNeeded	0	6529
SRV2	Windows PowerShell	15360	OverwriteAsNeeded	0	274

last updated 02/12/2019 20:27:44

You can also automatically refresh the data.

```
Get-Process | Sort-Object WS -Descending |
Select-Object -first 20 ID,Name,WS,VM,PM,Handles,StartTime |
ConvertTo-WPFGrid -Refresh -timeout 20 -Title "Top Processes"
```



Note that in v2.4.0 the form layout was modified and may not be reflected in these screenshots.

Hashtable Tools

Convert-CommandToHashtable

This command is intended to convert a long PowerShell expression with named parameters into a splatting alternative.

```
PS C:\> Convert-CommandToHashtable -Text "get-eventlog -listlog
-computername a,b,c,d -erroraction stop"

$paramHash = @{
  listlog = $True
   computername = "a","b","c","d"
   erroraction = "stop"
}

Get-EventLog @paramHash
```

The idea is that you can copy the output of the command into a script file.

Convert-HashtableString

This function is similar to `Import-PowerShellDataFile`. But where that command can only process a file, this command will take any hashtable-formatted string and convert it into an actual hashtable.

```
PS C:\> Get-Content c:\work\test.psd1 | Unprotect-CMSMessage |
Convert-HashtableString

Name                           Value
----                           -----
CreatedBy                      BOVINE320\Jeff
CreatedAt                      10/02/2020 21:28:47 UTC
Computername                   Think51
Error
Completed                      True
Date                           10/02/2020 21:29:35 UTC
Scriptblock                    restart-service spooler -force
CreatedOn                      BOVINE320
```

The test.psd1 file is protected as a CMS Message. In this example, the contents are decoded as a string which is then in turn converted into an actual hashtable.

Convert-HashtableToCode

Use this command to convert a hashtable into its text or string equivalent.

```
PS C:\> $h = @{Name="SRV1";Asset=123454;Location="Omaha"}
PS C:\> Convert-HashtableToCode $h
@{
        Name = 'SRV1'
        Asset = 123454
```

```
        Location = 'Omaha'
}
```

Convert a hashtable object to a string equivalent that you can copy into your script.

ConvertTo-Hashtable

This command will take an object and create a hashtable based on its properties. You can have the hashtable exclude some properties as well as properties that have no value.

```
PS C:\> Get-Process -id $pid | Select-Object name,id,handles,workingset |
ConvertTo-Hashtable

Name                           Value
----                           -----
WorkingSet                     418377728
Name                           powershell_ise
Id                             3456
Handles                        958
```

Join-Hashtable

This command will combine two hash tables into a single hash table. `Join-Hashtable` will test for duplicate keys. If any of the keys from the first, or primary hashtable are found in the secondary hashtable, you will be prompted for which to keep. Or you can use `-Force` which will always keep the conflicting key from the first hashtable.

```
PS C:\> $a=@{Name="Jeff";Count=3;Color="Green"}
PS C:\> $b=@{Computer="HAL";Enabled=$True;Year=2020;Color="Red"}
PS C:\> Join-Hashtable $a $b
Duplicate key Color
A Green
B Red
Which key do you want to KEEP \[AB\]?: A

Name                           Value
----                           -----
Year                           2020
Name                           Jeff
Enabled                        True
Color                          Green
Computer                       HAL
Count                          3
```

Rename-Hashtable

This command allows you to rename a key in an existing hashtable or ordered dictionary object.

```
PS C:\> $h = Get-Service Spooler | ConvertTo-Hashtable
```

The hashtable in $h has a Machinename property which can be renamed.

```
PS C:\> Rename-Hashtable -Name h -Key Machinename -NewKey Computername
-PassThru

Name                           Value
----                           -----
ServiceType                    Win32OwnProcess, InteractiveProcess
ServiceName                    Spooler
Container
CanPauseAndContinue            False
RequiredServices               {RPCSS, http}
ServicesDependedOn             {RPCSS, http}
Computername                   .
CanStop                        True
StartType                      Automatic
Site
ServiceHandle                  SafeServiceHandle
DisplayName                    Print Spooler
CanShutdown                    False
Status                         Running
Name                           Spooler
DependentServices              {Fax}
```

Select Functions

The module contains several functions that simplify the use of `Select-Object` or `Select-Object` in conjunction with `Where-Object`. The commands are intended to make it easier to select objects in a pipelined expression. The commands include features so that you can sort the incoming objects on a given property first.

Select-First

Normally, you might run a command with `Select-Object` like this:

```
Get-Process | Select-Object -first 5 -Property WS -Descending

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)      Id  SI ProcessName
-------  ------    -----      -----     ------      --  -- -----------
    696      89   615944     426852     391.97    7352   0 sqlservr
    541      78   262532     274576     278.41    6208   8 Code
   1015      70   227824     269504     137.39   16484   8 powershell_ise
   1578     111   204852     254640      98.58   21332   8 firefox
    884      44   221872     245712     249.23   12456   8 googledrivesync
```

To streamline the process a bit, you can use `Select-First`.

```
Get-Process | Select-First 5 -Property WS -Descending

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)      Id  SI ProcessName
-------  ------    -----      -----     ------      --  -- -----------
    696      89   615944     426852     391.97    7352   0 sqlservr
    541      78   262532     274576     278.41    6208   8 Code
   1015      70   227824     269504     137.39   16484   8 powershell_ise
   1578     111   204852     254640      98.58   21332   8 firefox
    884      44   221872     245712     249.23   12456   8 googledrivesync
```

Even better, use the command alias *first*.

```
Get-Process | Sort-Object ws -Descending | first 5
```

Select-Last

You can perform a similar operation using `Select-Last` or its alias *last*.

```
Get-ChildItem -Path c:\scripts\*.ps1 | Sort-Object lastwritetime | last 10
```

Select-After

`Select-After` is a simplified version of `Select-Object`. The premise is that you can pipe a collection of objects to this command and select objects after a given datetime, based on a property, like LastWriteTime, which is the default. This command has an alias of *after*.

```
Get-ChildItem -Path c:\scripts\ -file | after 11/1/2020


    Directory: C:\Scripts

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           11/2/2020 11:08 AM           3522 Get-ServiceWPFRunspace.ps1
-a---           11/1/2020 11:05 AM           5321 Trace.ps1
-a---           11/2/2020 11:39 AM           2321 WinFormDemo2.ps1
```

Or you can specify property depending on the object.

```
Get-Process | after (Get-Date).Addminutes(-1) -Property StartTime

 NPM(K)    PM(M)      WS(M)     CPU(s)      Id  SI ProcessName
 ------    -----      -----     ------      --  -- -----------
     13     3.14      13.73       0.05   19156   2 notepad
```

This is selecting all processes that started within the last minute.

Select-Before

`Select-Before` is the opposite of `Select-After`.

```
Get-ChildItem -Path c:\scripts -file | before 1/1/2008


    Directory: C:\Scripts

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           12/5/2007  2:19 PM          29618 1000MaleNames.txt
-a---            4/8/2006 10:27 AM           3779 530215.ps1
-a---            8/7/2005  1:00 AM           4286 ADUser.wsc
-a---           9/18/2006  9:27 PM           1601 allserviceinfo.ps1
...
```

As with `Select-After`, you can specify a property to use.

```
Get-AdUser -filter * -Properties WhenCreated |
Before 11/1/2020 -Property WhenCreated | Select-Object Name,WhenCreated


Name           WhenCreated
----           -----------
Administrator  10/26/2020 6:47:39 PM
Guest          10/26/2020 6:47:39 PM
DefaultAccount 10/26/2020 6:47:39 PM
krbtgt         10/26/2020 6:50:47 PM
MaryL          10/26/2020 6:56:24 PM
ArtD           10/26/2020 6:56:24 PM
AprilS         10/26/2020 6:56:25 PM
```

```
MikeS          10/26/2020 6:56:25 PM
...
```

Select-Newest

`Select-Newest` is designed to make it easier to select X number of objects based on a datetime property. The default property value is LastWriteTime.

```
Get-ChildItem -Path d:\temp -file | newest 10


    Directory: D:\temp

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---         11/4/2020  5:12 PM        5149954 watcherlog.txt
-a---         11/3/2020 10:00 PM           3215 DailyIncremental_202011031000.txt
-a---         11/2/2020 10:00 PM          11152 DailyIncremental_202011021000.txt
-a---         11/2/2020  3:40 PM            852 t.ps1
-a---         11/1/2020 10:00 PM           2376 DailyIncremental_202011011000.txt
-a---        10/31/2020 10:00 PM           3150 DailyIncremental_202010311000.txt
-a---        10/30/2020 10:07 PM          17844 WeeklyFull_202010301000.txt
-a---        10/30/2020  1:00 PM         208699 datatfile-5.png
-a---        10/30/2020 12:57 PM        1264567 datatfile-4.png
-a---        10/30/2020 12:27 PM         421341 datatfile-3.png
```

Or specify a property.

```
Get-ADUser -filter * -Properties WhenCreated |
 Select-Newest 5 -Property WhenCreated |
 Select-object DistinguishedName,WhenCreated

DistinguishedName                                 WhenCreated
-----------------                                 -----------
CN=Marcia Brady,OU=Employees,DC=Company,DC=Pri    11/4/2020 3:15:27 PM
CN=Gladys Kravitz,OU=Employees,DC=Company,DC=Pri 11/4/2020 3:14:45 PM
CN=S.Talone,OU=Employees,DC=Company,DC=Pri        10/26/2020 3:56:31 PM
CN=A.Fieldhouse,OU=Employees,DC=Company,DC=Pri    10/26/2020 3:56:31 PM
CN=K.Moshos,OU=Employees,DC=Company,DC=Pri        10/26/2020 3:56:31 PM
```

Select-Oldest

`Select-Oldest` is the opposite of `Select-Newest` and works the same way.

```
Get-Process | newest 5 -Property StartTime

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)      Id  SI ProcessName
-------  ------    -----      -----     ------      --  -- -----------
    145       8     1692       7396       0.02   9676   0 SearchFilterHost
    344      13     2604      13340       0.02  33668   0 SearchProtocolHost
    114       7     1340       6116       0.02  35028   0 svchost
    140       8     2684       8796       0.03  32552   0 svchost
```

```
   118       8     1580       7476       0.02  35668   0 svchost
```

These custom Select commands are not necessarily designed for performance and there may be better ways to achieve the same results from these examples.

Time Functions

The module has a couple of date and time-related commands.

ConvertTo-UTCTime

Convert a local datetime value to universal time. The default is to convert the current time, but you can specify a datetime value.

```
PS C:\> ConvertTo-UTCTime

Monday, March 4, 2019 5:51:26 PM
```

Convert a datetime that is UTC-5 to universal time.

ConvertFrom-UTCTime

```
PS C:\> ConvertFrom-UTCTime "3/4/2019 6:00PM"

Monday, March 4, 2019 1:00:00 PM
```

Convert a universal datetime to the local time.

Get-MyTimeInfo

Display a group of time settings for a collection of locations. This command is a PowerShell equivalent of a world clock. It will display a datetime value against a collection of locations. You can specify an ordered hashtable of locations and time zones. You can run a command like:

```
[System.TimeZoneinfo]::GetSystemTimeZones() | Out-GridView
```

or

```
Get-TimeZone -ListAvailable
```

To discover time zone names. Note that the ID is case-sensitive. You can then use the command like this:

```
PS C:\> Get-MyTimeInfo -Locations ([ordered]@{Seattle="Pacific Standard time";
"New Zealand" = "New Zealand Standard Time"}) -HomeTimeZone
"central standard time" | Select Now,Home,Seattle,'New Zealand'

Now                 Home                Seattle             New Zealand
---                 ----                -------             -----------
3/4/2019 1:18:36 PM 3/4/2019 12:18:36 PM 3/4/2019 10:18:36 AM 3/5/2019 7:18:36 AM
```

This is a handy command when traveling and your laptop is using a locally derived time and you want to see the time in other locations. It is recommended that you set a PSDefaultParameter value for the HomeTimeZone parameter in your PowerShell profile.

ConvertTo-LocalTime

It can be tricky sometimes to see a time in a foreign location and try to figure out the local time. This command attempts to simplify this process. In addition to the remote time, you need the base UTC offset for the remote location.

```
PS C:\> Get-TimeZone -ListAvailable | Where-Object id -match Hawaii


Id                         : Hawaiian Standard Time
DisplayName                : (UTC-10:00) Hawaii
StandardName               : Hawaiian Standard Time
DaylightName               : Hawaiian Daylight Time
BaseUtcOffset              : -10:00:00
SupportsDaylightSavingTime : False

PS C:\> ConvertTo-LocalTime "10:00AM" -10:00:00

Thursday, March 14, 2019 4:00:00 PM
```

In this example, the user is first determining the UTC offset for Hawaii. Then 10:00 AM, in say Honolulu, is converted to local time, which in this example is in the Eastern Time zone.

Get-TZList

This command uses a free and publicly available REST API offered by http://worldtimeapi.org to get a list of time zone areas. You can get a list of all areas or by geographic location. Use `Get-TZData` to then retrieve details.

```
PS C:\> Get-TZList Australia
Australia/Adelaide
Australia/Brisbane
Australia/Broken_Hill
Australia/Currie
Australia/Darwin
Australia/Eucla
Australia/Hobart
Australia/Lindeman
Australia/Lord_Howe
Australia/Melbourne
Australia/Perth
Australia/Sydney
```

Get-TZData

This command also uses the API from worldtimeapi.org to retrieve details about a given time zone area.

```
PS C:\> Get-TZData Australia/Hobart

Timezone                    Label        Offset     DST                  Time
--------                    -----        ------     ---                  ----
Australia/Hobart            AEDT       11:00:00    True  3/16/2019 3:43:14 AM
```

The Time value is the current time at the remote location. The command presents a formatted object but you can also get the raw data.

```
PS C:\> Get-TZData Australia/Hobart -Raw


week_number  : 11
utc_offset   : +11:00
unixtime     : 1552668285
timezone     : Australia/Hobart
dst_until    : 2019-04-06T16:00:00+00:00
dst_from     : 2020-10-06T16:00:00+00:00
dst          : True
day_of_year  : 75
day_of_week  : 6
datetime     : 2019-03-16T03:44:45.689655+11:00
abbreviation : AEDT
```

ConvertTo-LexicalTime

When working with timespans or durations in XML files, such as those from scheduled tasks, the format is a little different than what you might expect. The specification is described at https://www.w3.org/TR/xmlschema-2/#duration. Use this command to convert a timespan into a lexical format you can use in an XML file where you need to specify a duration.

```
PS C:\> ConvertTo-LexicalTimespan (New-TimeSpan -Days 7 -hours 12)

P7DT12H
```

ConvertFrom-LexicalTime

Likewise, you might need to convert a lexical value back into a timespan.

```
PS C:\> ConvertFrom-LexicalTimeSpan P7DT12H


Days              : 7
Hours             : 12
Minutes           : 0
Seconds           : 0
Milliseconds      : 0
Ticks             : 6480000000000
TotalDays         : 7.5
TotalHours        : 180
TotalMinutes      : 10800
```

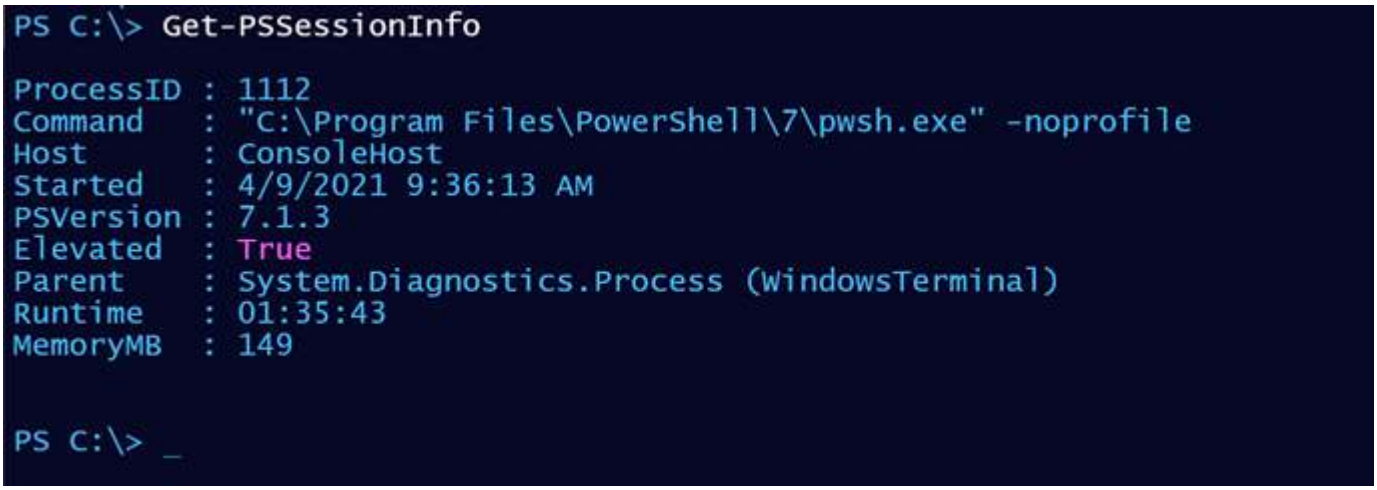
```
TotalSeconds      : 648000
TotalMilliseconds : 648000000
```

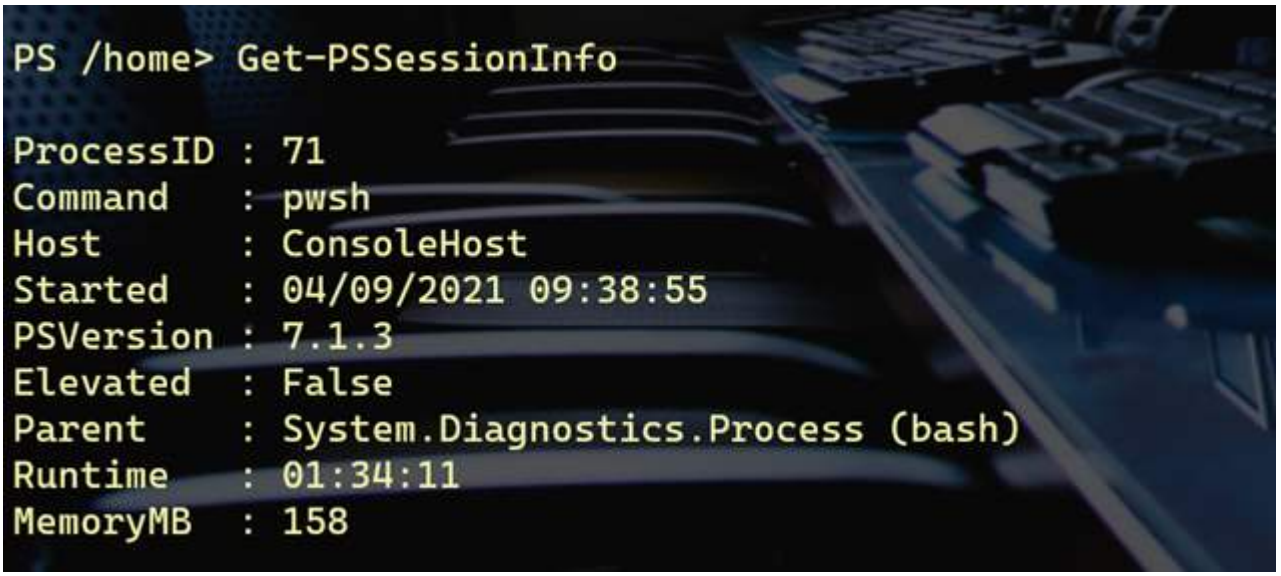
These functions were first described at https://jdhitsolutions.com/blog/powershell/7101/converting-lexical-timespans-with-powershell/

Console Utilities

Get-PSSessionInfo

`Get-PSSessionInfo` will display a summary of your current PowerShell session. It should work on all platforms.





If you are running in a PowerShell console session, and the Elevated value is True, it will be displayed in color. The Memory and Runtime values are calculated ScriptProperties.

Out-Copy

This command is intended for writers and those who need to document with PowerShell. You can pipe any command to this function, and you will get the regular output in your PowerShell session. Simultaneously, a copy of the output will be sent to the Windows clipboard. The copied output will include a prompt constructed from the current location unless you use the `CommandOnly` parameter.

You can run a command like this:

```
Get-Process | Sort WS -Descending | Select -first 5 | Out-Copy
```

And this text will be copied to the clipboard.

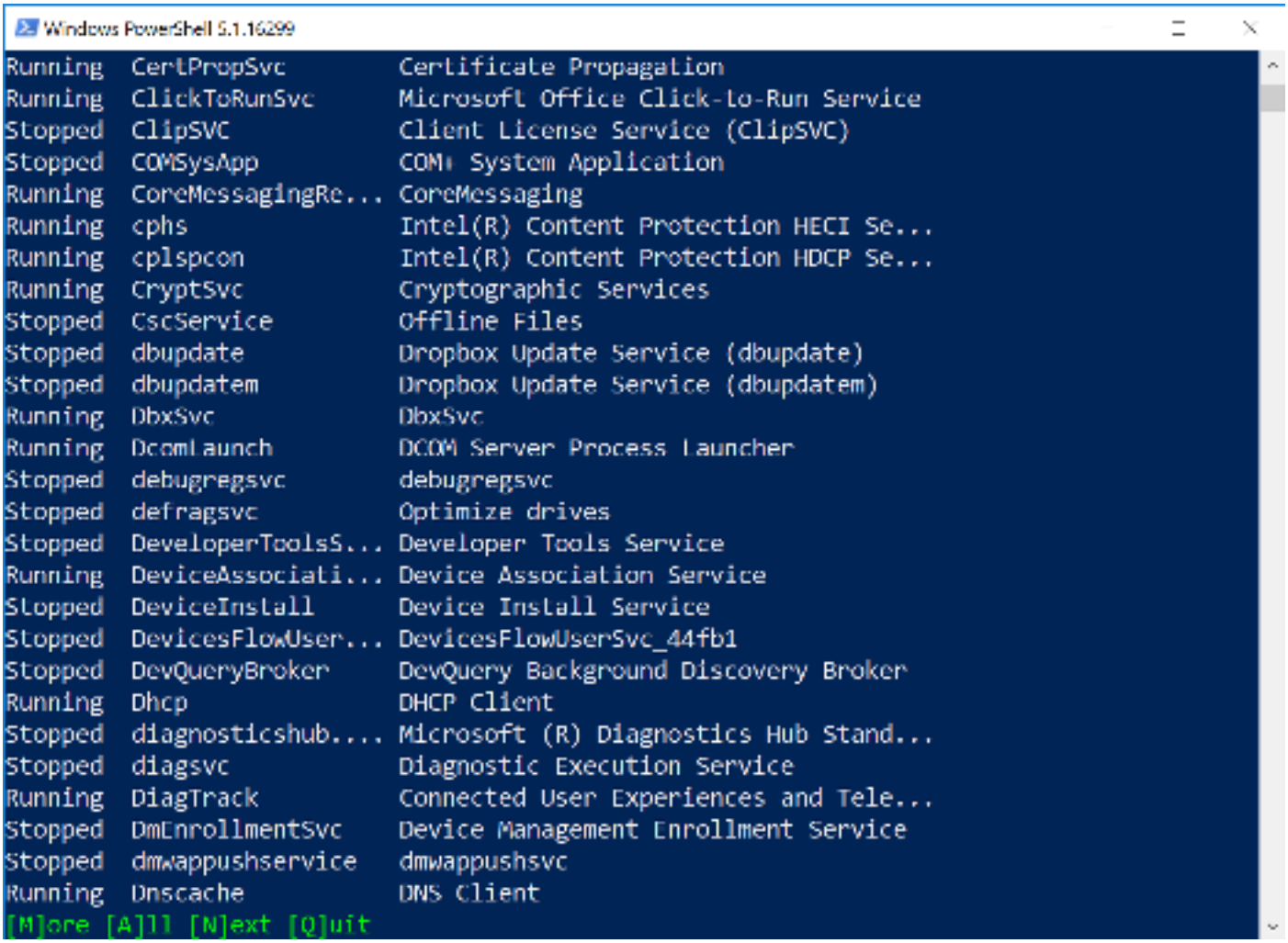
```
PS C:\> Get-Process | Sort WS -Descending | Select -first 5

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)      Id  SI ProcessName
-------  ------    -----      -----     ------      --  -- -----------
   1849     253   810320     820112     445.38   17860   1 firefox
    765      61   949028     758200      23.36    6052   0 sqlservr
    446     115   441860     471032      28.59   18204   1 Teams
   2307     192   313204     459616     325.23   15748   1 firefox
   2050     163   451744     433772      94.63   19780   1 thunderbird
```

Out-More

This command provides a PowerShell alternative to the cmd.exe **MORE** command, which doesn't work in the PowerShell ISE. When you have screens of information, you can page it with this function.

```
Get-Service | Out-More
```

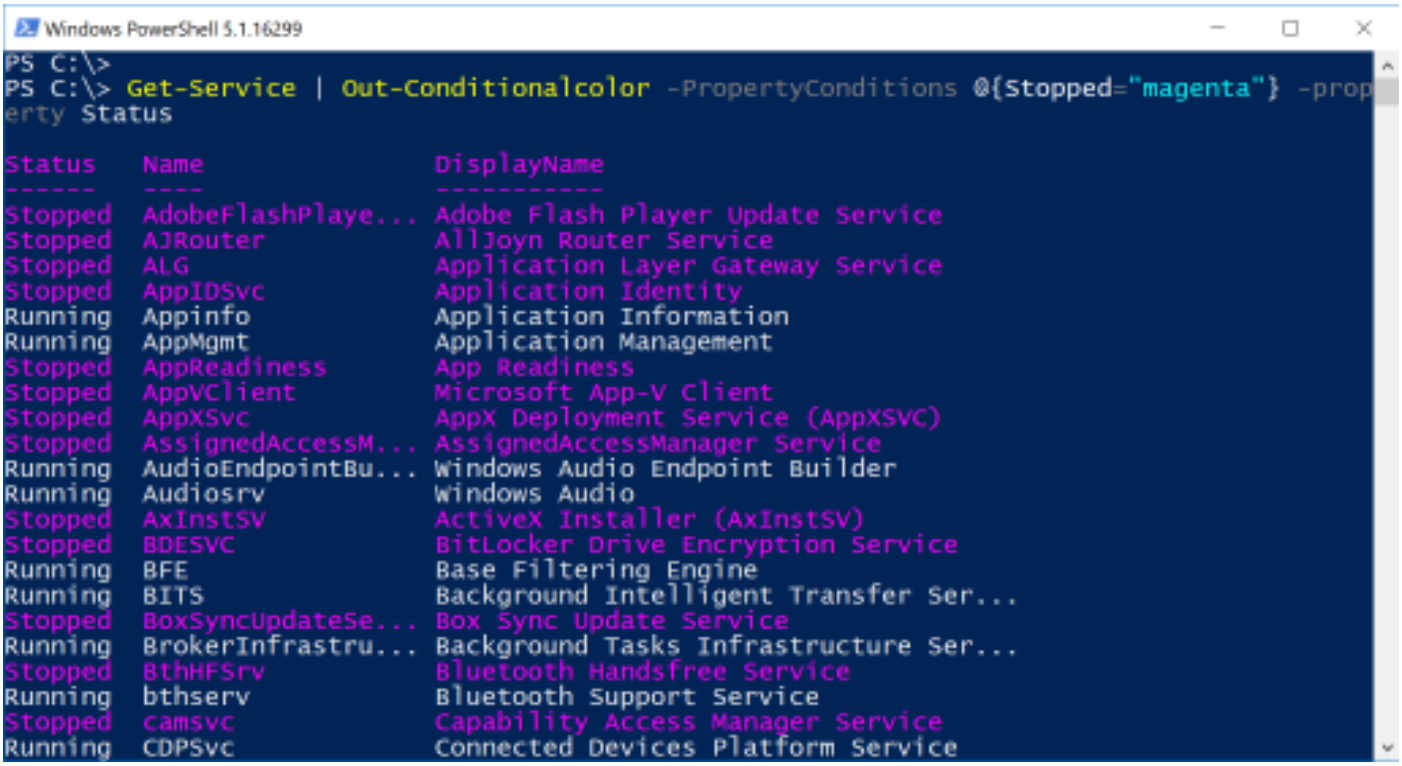


This also works in PowerShell 7.

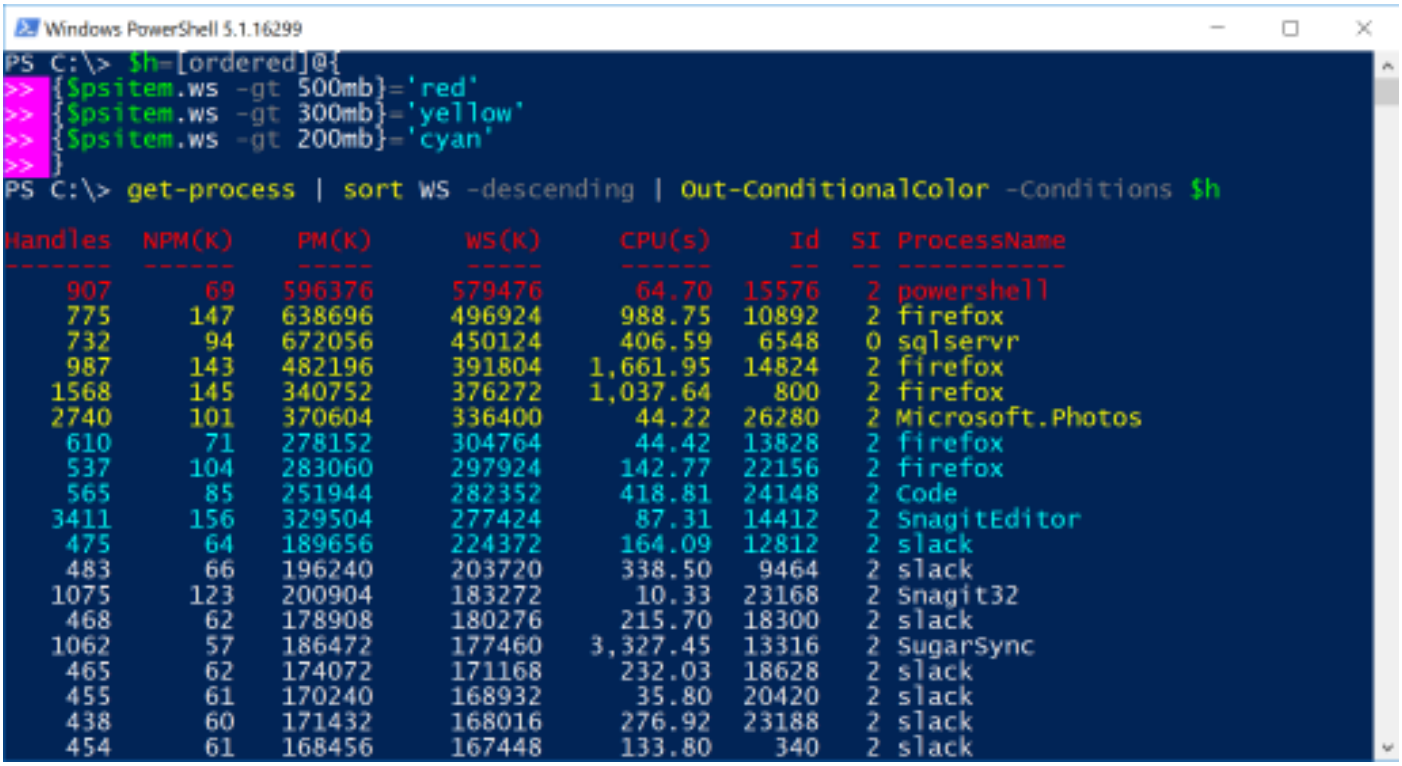
Out-ConditionalColor

This command is marked as deprecated and will be removed in a future release.

This command is designed to take pipeline input and display it in a colorized format, based on a set of conditions. Unlike `Write-Host`, which doesn't write to the pipeline, this command will write output to the pipeline. You can use a simple hashtable to define a color if the given property matches the hashtable key.



Or you can specify an ordered hashtable for more complex processing.



This command doesn't always work depending on the type of object you pipe to it. The problem appears to be related to the formatting system. Development and testing are ongoing.

Set-ConsoleTitle

Set the title bar of the current PowerShell console window.

```
if (Test-IsAdministrator) {
  Set-ConsoleTitle "Administrator:  $($PSVersionTable.PSVersion)"
  }
```

Set-ConsoleColor

This command is marked as deprecated and will be removed in a future release.

Configure the foreground or background color of the current PowerShell console window. Note that if you are running the PSReadline module, this command won't work. You should use `Set-PSReadlineOption` or similar command to configure your session settings.

```
Set-ConsoleColor -background DarkGray -foreground Yellow
```

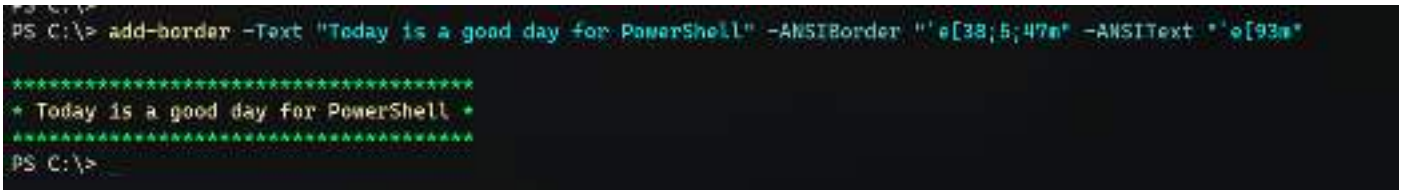
Add-Border

This command will create a character or text-based border around a line of text. You might use this to create a formatted text report or to improve the display of information on the screen.

```
PS C:\> Add-Border $env:computername

*************
*   COWPC   *
*************
```

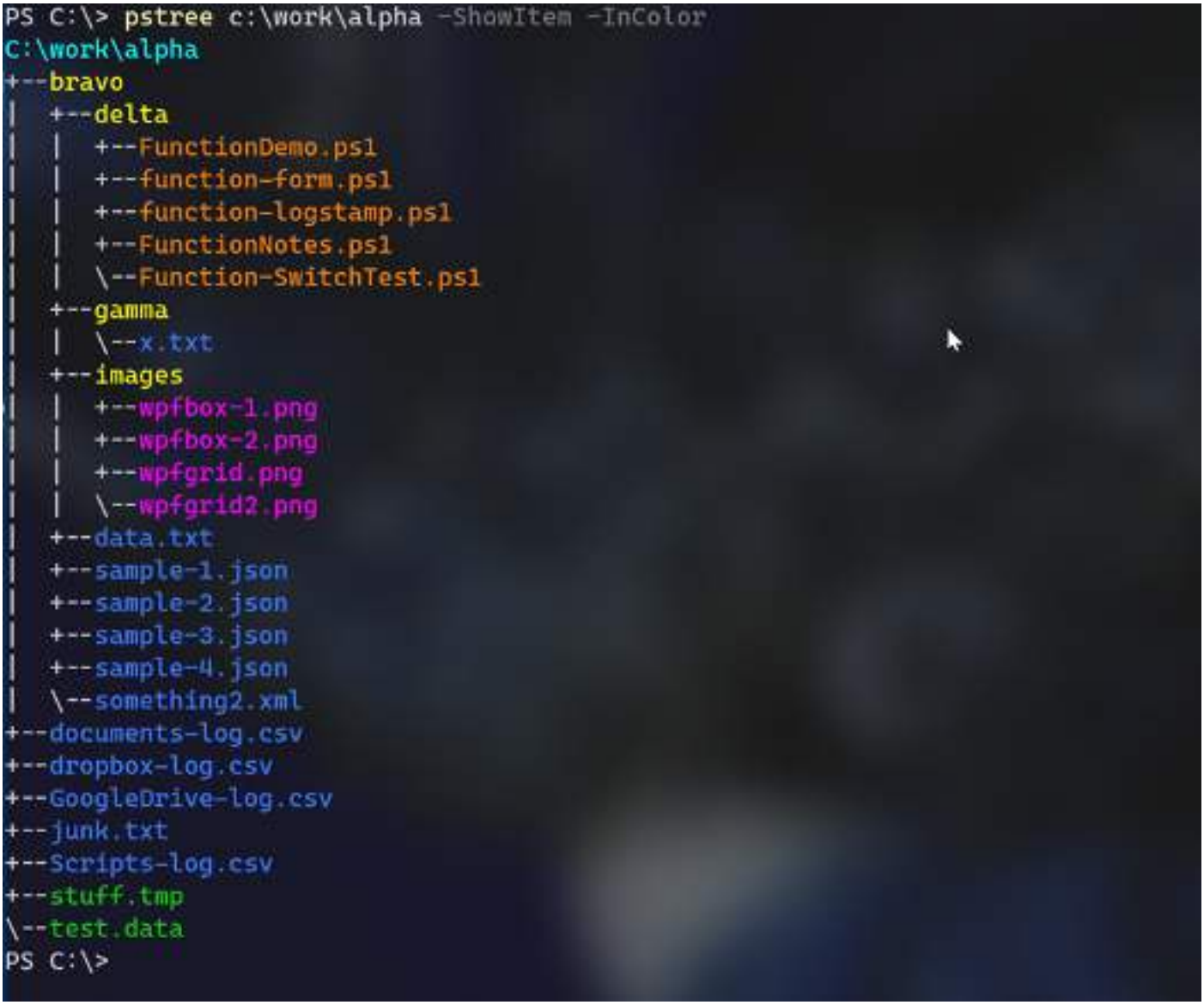
Starting in v2.23.0 you can also use ANSI escape sequences to color the text and/or the border.




```
$params =@{
  textblock = (Get-PSWho -AsString ).trim()
  ANSIBorder = "`e[38;5;214m"
  Character = ([char]0x25CA)
  ANSIText = "`e[38;5;225m"
}
Add-Border @params
```

```
PS C:\> Add-Border @params

◇◇◇
```



Beginning with module version 2.21.0, this command uses ANSI Color schemes from a JSON file. You can customize the file if you wish. See the PSAnsiMap section of this README.

This command has an alias of `pstree`.

```
PS C:\> pstree c:\work\alpha -files -properties LastWriteTime,Length

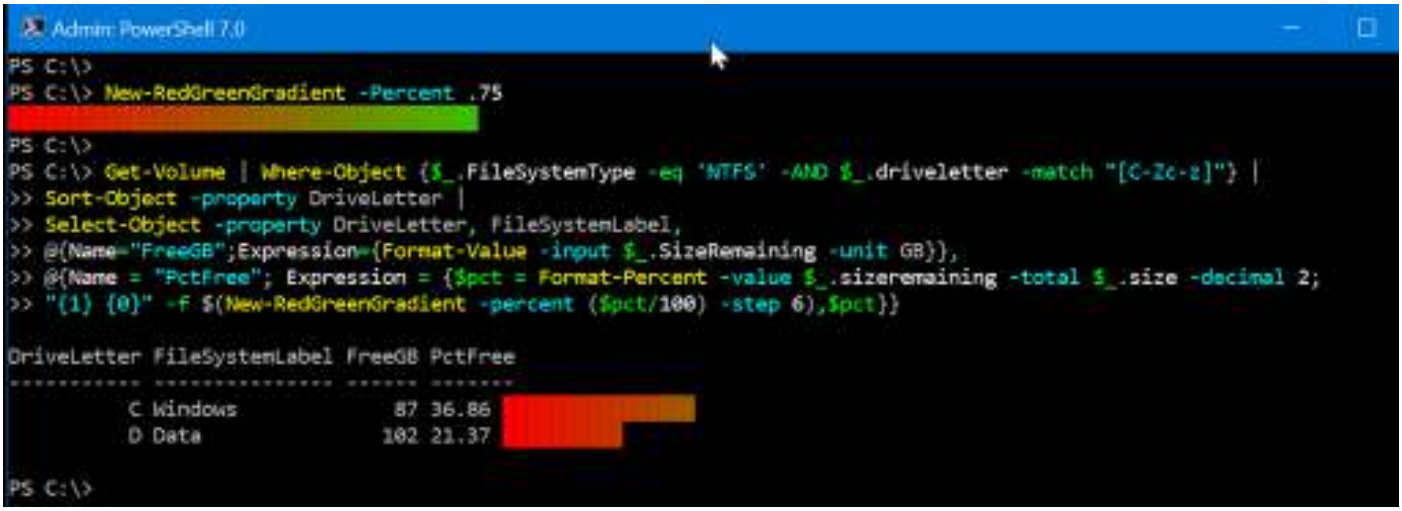
C:\work\Alpha\
+-- LastWriteTime = 02/28/2020 11:19:32
+--bravo
|  +-- LastWriteTime = 02/28/2020 11:20:30
|  +--delta
|  |  +-- LastWriteTime = 02/28/2020 11:17:35
|  |  +--FunctionDemo.ps1
|  |  |  +-- Length = 888
|  |  |  \-- LastWriteTime = 06/01/2009 15:50:47
|  |  +--function-form.ps1
|  |  |  +-- Length = 1117
|  |  |  \-- LastWriteTime = 04/17/2019 17:18:28
|  |  +--function-logstamp.ps1
|  |  |  +-- Length = 598
|  |  |  \-- LastWriteTime = 05/23/2007 11:39:55
|  |  +--FunctionNotes.ps1
|  |  |  +-- Length = 617
```

```
|  |  |  \-- LastWriteTime = 02/24/2016 08:59:03
|  |  \--Function-SwitchTest.ps1
|  |     +-- Length = 242
|  |     \-- LastWriteTime = 06/09/2008 15:55:44
|  +--gamma
...
```

This example is using parameter and command aliases. You can display a tree listing with files including user-specified properties. Use a value of * to show all properties.

New-RedGreenGradient

`New-RedGreenGradient`, which displays a bar going from red to green. This might be handy when you want to present a visual indicator.



Format Functions

The module contains a set of simple commands to make it easier to format values.

Format-Percent

Treat a value as a percentage. This will write a [double] and not include the % sign.

```
PS C:\> Format-Percent -Value 123.5646MB -total 1GB -Decimal 4
12.0669
```

Format-String

Use this command to perform one of several string manipulation "tricks".

```
PS C:\> Format-String "powershell" -Reverse -Case Proper
Llehsrewop
PS C:\> Format-String PowerShell -Randomize
wSlhoeePlr
PS C:\> Format-String "!MySecretPWord" -Randomize
-Replace @{S="$";e=&{Get-Random -min 1 -max 9};o="^"} -Reverse
yr7!^7WcMtr$Pd
```

Format-Value

This command will format a given numeric value. By default, it will treat the number as an integer. Or you can specify a certain number of decimal places. The command will also allow you to format the value in KB, MB, etc.

```
PS C:\> Format-Value 1235465676 -Unit kb
1206509
PS C:\> Format-Value 123.45 -AsCurrency
$123.45
PS C:\> (Get-Process | Measure-Object ws -sum).sum |
Format-Value -Unit mb | Format-Value -AsNumber
9,437
```

Or pull it all together:

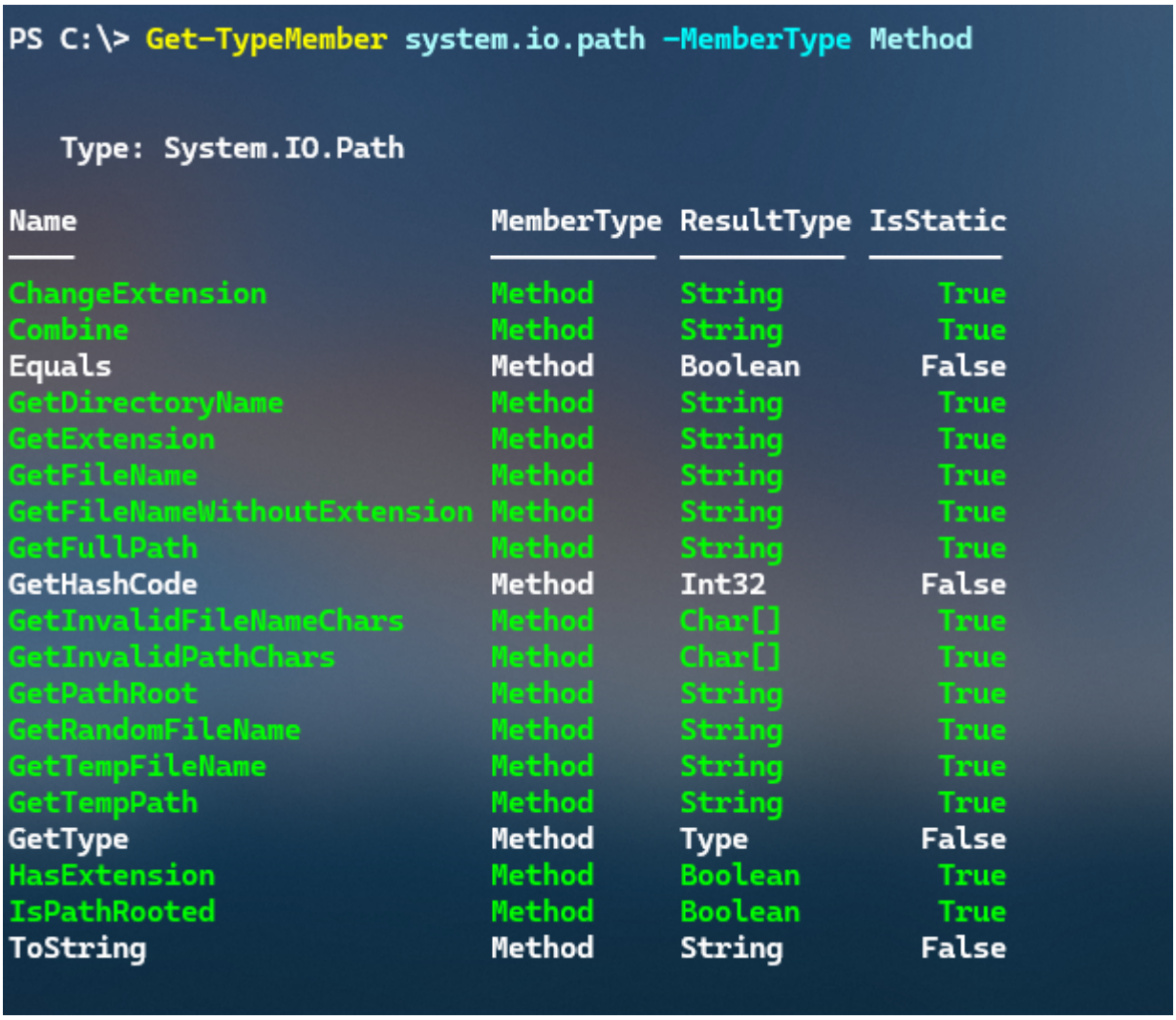
```
Get-CimInstance Win32_OperatingSystem |
Select-Object @{Name = "TotalMemGB";
Expression={Format-Value $_.TotalVisibleMemorySize -Unit mb}},
@{Name="FreeMemGB";
Expression={Format-Value $_.FreePhysicalMemory -unit mb -Decimal 2}},
@{Name="PctFree";
Expression={Format-Percent -Value $_.FreePhysicalMemory `
-Total $_.totalVisibleMemorySize -Decimal 2}}
```

```
TotalMemGB FreeMemGB PctFree
---------- --------- -------
        32     14.05   44.06
```

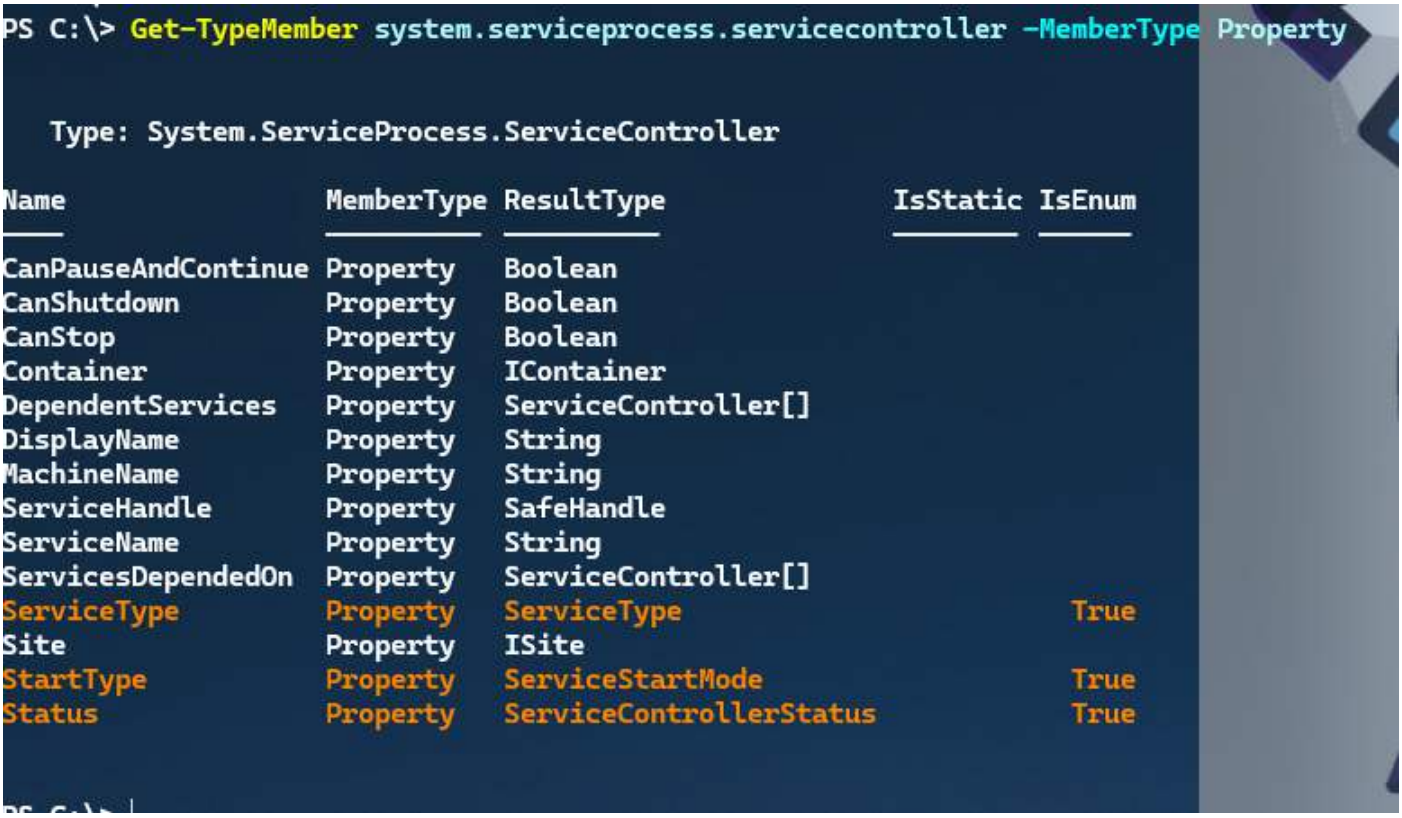
Scripting Tools

Get-TypeMember

This command is an alternative to using `Get-Member`. Specify a type name to see a simple view of an object's members. The output will only show native members, including static methods, but not those added by PowerShell such as ScriptProperties.



The command will highlight properties that are enumerations.



The hightlighting only works in the console and VSCode.

The output includes a property set type extension.

```
PS C:\> Get-TypeMember datetime -MemberType method | Select MethodSyntax

Name                 ReturnType      IsStatic Syntax
----                 ----------      -------- ------
Add                  System.DateTime    False $obj.Add([TimeSpan]value)
AddDays              System.DateTime    False $obj.AddDays([Double]value)
AddHours             System.DateTime    False $obj.AddHours([Double]value)
AddMilliseconds      System.DateTime    False $obj.AddMilliseconds([Double]value)
AddMinutes           System.DateTime    False $obj.AddMinutes([Double]value)
...
```

Or you can use the custom view.

```
PS C:\> Get-TypeMember datetime -MemberType method | Format-Table -View Syntax


   Type: System.DateTime

Name                 ReturnType Syntax
----                 ---------- ------
Add                  DateTime   $obj.Add([TimeSpan]value)
AddDays              DateTime   $obj.AddDays([Double]value)
AddHours             DateTime   $obj.AddHours([Double]value)
AddMilliseconds      DateTime   $obj.AddMilliseconds([Double]value)
AddMinutes           DateTime   $obj.AddMinutes([Double]value)
AddMonths            DateTime   $obj.AddMonths([Int32]months)
AddSeconds           DateTime   $obj.AddSeconds([Double]value)
AddTicks             DateTime   $obj.AddTicks([Int64]value)
AddYears             DateTime   $obj.AddYears([Int32]value)
```

```
...
```

New-PSDynamicParameter

This command will create the code for a dynamic parameter that you can insert into your PowerShell script file. You need to specify a parameter name and a condition. The condition value is code that would run inside an If statement. Use a value like $True if you want to add it later in your scripting editor.

```
PS C:\> New-PSDynamicParameter -Condition "$PSEdition -eq 'Core'" -ParameterName ANSI -Alias color
-Comment "Create a parameter to use ANSI if running PowerShell 7" -ParameterType switch

    DynamicParam {
    # Create a parameter to use ANSI if running PowerShell 7
        If (Core -eq 'Core') {

        $paramDictionary = New-Object -Type
System.Management.Automation.RuntimeDefinedParameterDictionary

        # Defining parameter attributes
        $attributeCollection = New-Object -Type
System.Collections.ObjectModel.Collection[System.Attribute]
        $attributes = New-Object System.Management.Automation.ParameterAttribute
        $attributes.ParameterSetName = '__AllParameterSets'
        $attributeCollection.Add($attributes)

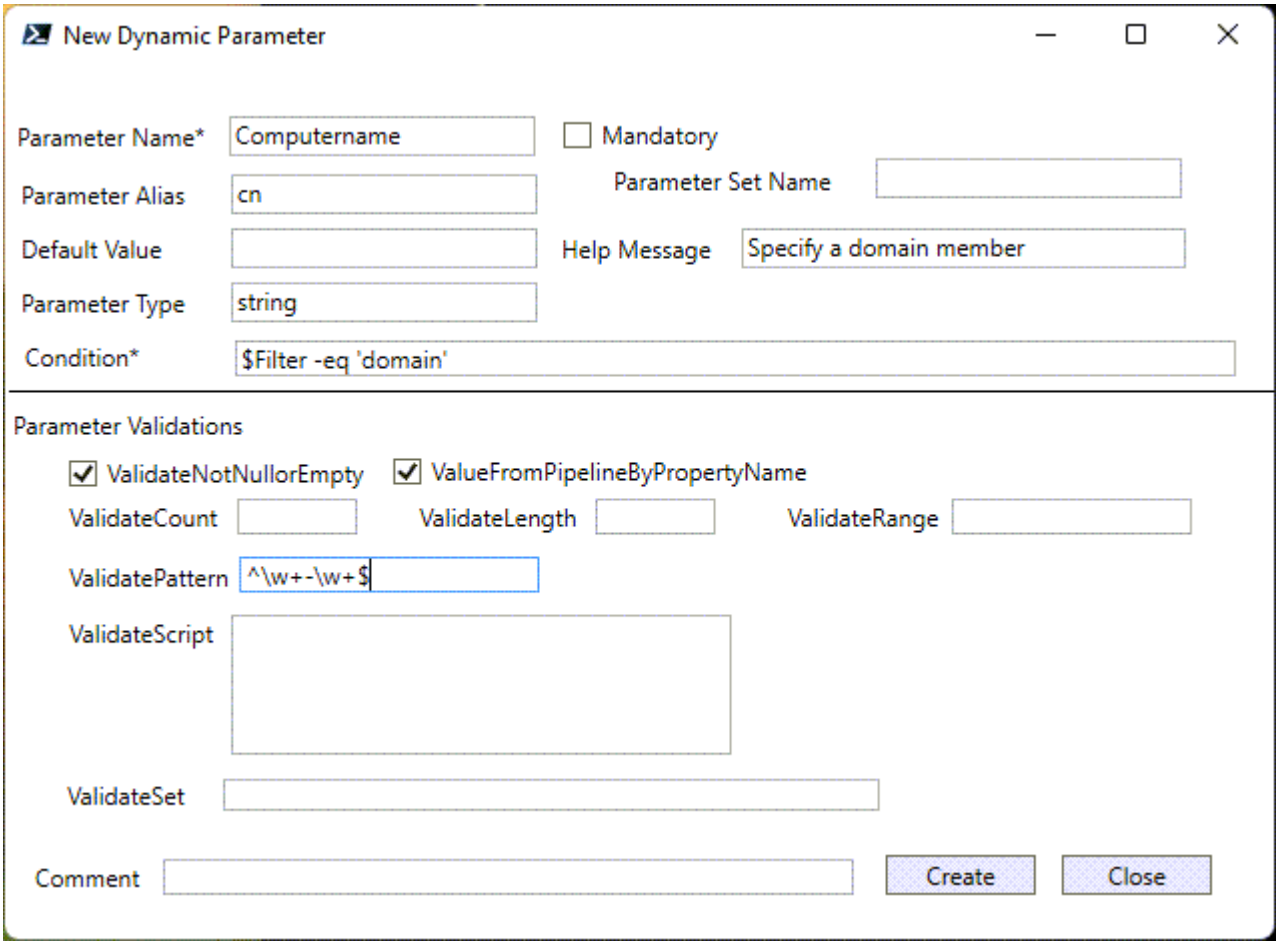
        # Adding a parameter alias
        $dynalias = New-Object System.Management.Automation.AliasAttribute -ArgumentList 'color'
        $attributeCollection.Add($dynalias)

        # Defining the runtime parameter
        $dynParam1 = New-Object -Type System.Management.Automation.RuntimeDefinedParameter('ANSI',
[Switch], $attributeCollection)
        $paramDictionary.Add('ANSI', $dynParam1)

        return $paramDictionary
    } # end if
} #end DynamicParam
```

This creates dynamic parameter code that you can use in a PowerShell function. Normally you would save this output to a file or copy it to the clipboard so that you can paste it into your scripting editor.

You can also use a WPF-based front-end command, New-PSDynamicParameterForm. You can enter the values in the form. Required values are indicated by an asterisk.



Clicking `Create` will generate the dynamic parameter code and copy it to the Windows clipboard. You can then paste it into your scripting editor.

```
DynamicParam {

    If ($Filter -eq 'domain') {

    $paramDictionary = New-Object -Type System.Management.Automation.RuntimeDefinedParameterDictionary

    # Defining parameter attributes
    $attributeCollection = New-Object -Type System.Collections.ObjectModel.Collection[System.Attribute]
    $attributes = New-Object System.Management.Automation.ParameterAttribute
    $attributes.ParameterSetName = '__AllParameterSets'
    $attributes.ValueFromPipelineByPropertyName = $True

    # Adding ValidatePattern parameter validation
    $value = '^\w+-\w+$'
    $v = New-Object System.Management.Automation.ValidatePatternAttribute($value)
    $AttributeCollection.Add($v)

    # Adding ValidateNotNullOrEmpty parameter validation
    $v = New-Object System.Management.Automation.ValidateNotNullOrEmptyAttribute
    $AttributeCollection.Add($v)
    $attributeCollection.Add($attributes)

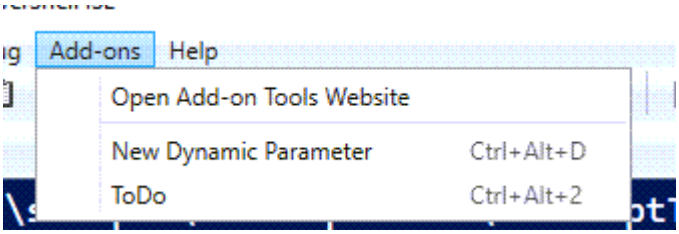
    # Adding a parameter alias
    $dynalias = New-Object System.Management.Automation.AliasAttribute -ArgumentList 'cn'
    $attributeCollection.Add($dynalias)

    # Defining the runtime parameter
    $dynParam1 = New-Object -Type System.Management.Automation.RuntimeDefinedParameter('Computername',
```

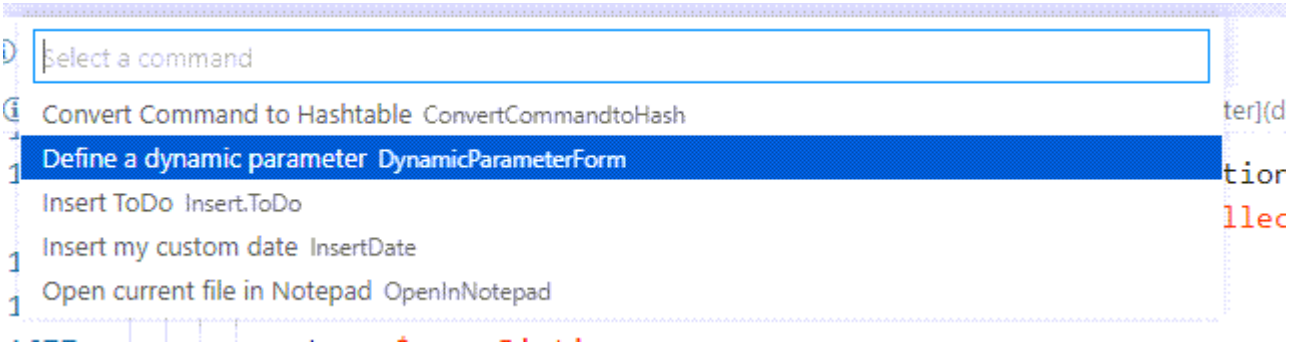
```
[String], $attributeCollection)
    $paramDictionary.Add('Computername', $dynParam1)

    return $paramDictionary
} # end if
} #end DynamicParam
```

If you import the PSScriptTools module in the PowerShell ISE, you will get a menu shortcut under Add-Ins.



If you import the module in VS Code using the integrated PowerShell terminal, it will a new command. In the command palette, use `PowerShell: Show Additional Commands from PowerShell Modules".



Get-PSUnique

For the most part, objects you work with in PowerShell are guaranteed to be unique. But you might import data where there is the possibility of duplicate items. Consider this CSV sample.

```
$Obj = "Animal,Snack,Color
Horse,Quiche,Chartreuse
Cat,Doritos,Red
Cat,Pringles,Yellow
Dog,Doritos,Yellow
Dog,Doritos,Yellow
Rabbit,Pretzels,Green
Rabbit,Popcorn,Green
Marmoset,Cheeseburgers,Black
Dog,Doritos,White
Dog,Doritos,White
Dog,Doritos,White
" | ConvertFrom-Csv
```

There are duplicate objects you might want to filter out. For that task, you can use `Get-PSUnique`.

```
PS C:\> $obj | Get-PSUnique | Sort-Object animal

Animal   Snack         Color
------   -----         -----
```

```
Cat      Pringles      Yellow
Cat      Doritos       Red
Dog      Doritos       White
Dog      Doritos       Yellow
Horse    Quiche        Chartreuse
Marmoset Cheeseburgers Black
Rabbit   Popcorn       Green
Rabbit   Pretzels      Green
```

The duplicate items have been removed. This command works best with simple objects. If your objects have nested object properties, you will need to test if this command can properly filter for unique items.

Test-IsElevated

This simple command will test if the current PowerShell session is running elevated, or as Administrator. On Windows platforms, the function uses the .NET Framework to test. On non-Windows platforms, the command tests the user's UID value.

```
PS C:\> Test-IsElevated
False
```

You can also use the `Get-PSWho` command to get more information.

New-FunctionItem

```
{Get-Date -format g | Set-Clipboard} | New-FunctionItem -name Copy-Date
```

The script block has been converted into a function.

```
PS C:\> get-command copy-date

CommandType     Name                           Version    Source
-----------     ----                           -------    ------
Function        Copy-Date
```

You can use this function to create a quick function definition directly from the console. This lets you quickly prototype a function. If you are happy with it, you can "export" to a file with `Show-FunctionItem`.

Show-FunctionItem

This command will display a loaded function as it might look in a code editor. You could use this command to export a loaded function to a file.

```
Show-FunctionItem Copy-Date | Out-File c:\scripts\Copy-Date.ps1
```

ConvertTo-TitleCase

This is a simple command that uses `[System.Globalization.CultureInfo]` to convert a string to title case.

```
PS C:\> ConvertTo-TitleCase "disk usage report"
Disk Usage Report
```

Trace-Message

`Trace-Message` is designed to be used with your script or function on a Windows platform. Its purpose is to create a graphical trace window using Windows Presentation Foundation (WPF). Inside the function or script, you can use this command to send messages to the window. When finished, you have the option to save the output to a text file.

There are three steps to using this function. First, in your code, you need to create a boolean global variable called TraceEnabled. When the value is $True, the Trace-Message command will run. When set to false, the command will be ignored. Second, you need to initialize a form, specifying the title and dimensions. Finally, you can send trace messages to the window. All messages are prepended with a timestamp.

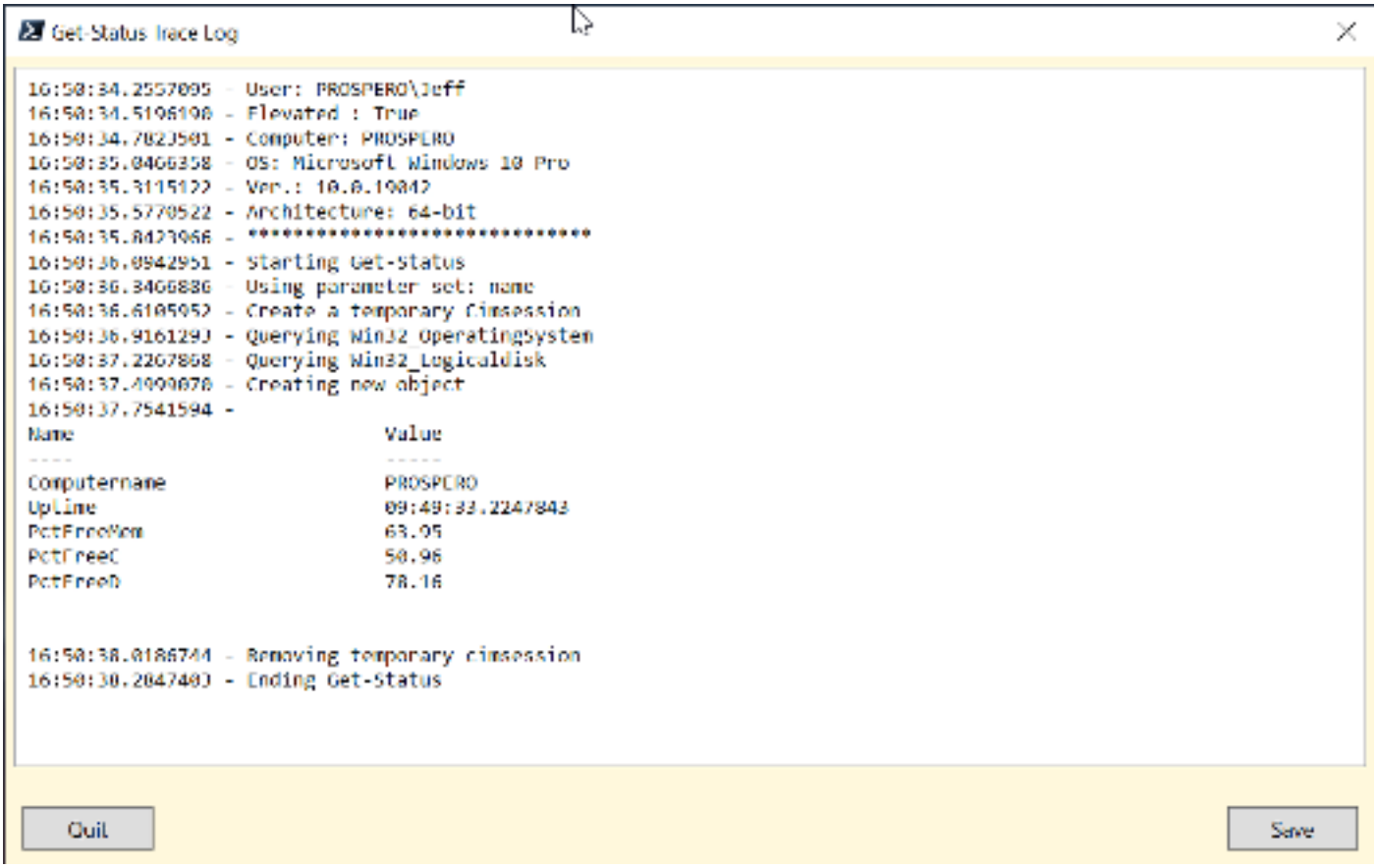
Here is a code excerpt from `$PSSamplePath\Get-Status.ps1`:

```
Function Get-Status {

    [cmdletbinding(DefaultParameterSetName = 'name')]
    [alias("gst")]
    Param(
        ...
        [Parameter(HelpMessage="Enable with grapical trace window")]
        [switch]$Trace
    )

    Begin {
        Write-Verbose "[$((Get-Date).TimeOfDay) BEGIN  ] Starting $($MyInvocation.MyCommand)"
        if ($trace) {
            $global:TraceEnabled = $True
            $traceTitle = "{0} Trace Log" -f $($MyInvocation.MyCommand)
            Trace-Message -title $traceTitle
            Trace "Starting $($MyInvocation.MyCommand)"
        }
    } #begin
      Process {
        Write-Verbose "[$((Get-Date).TimeOfDay) PROCESS] Using parameter set $($PSCmdlet.
ParameterSetName)"
        Trace-Message -message "Using parameter set: $($PSCmdlet.ParameterSetName)"
    ...
      } #close function
    $data = Get-Status -trace
```

The trace window starts with pre-defined metadata.



Your output might vary from this screenshot. You have the option to Save the text. The default location is `$env:temp`.

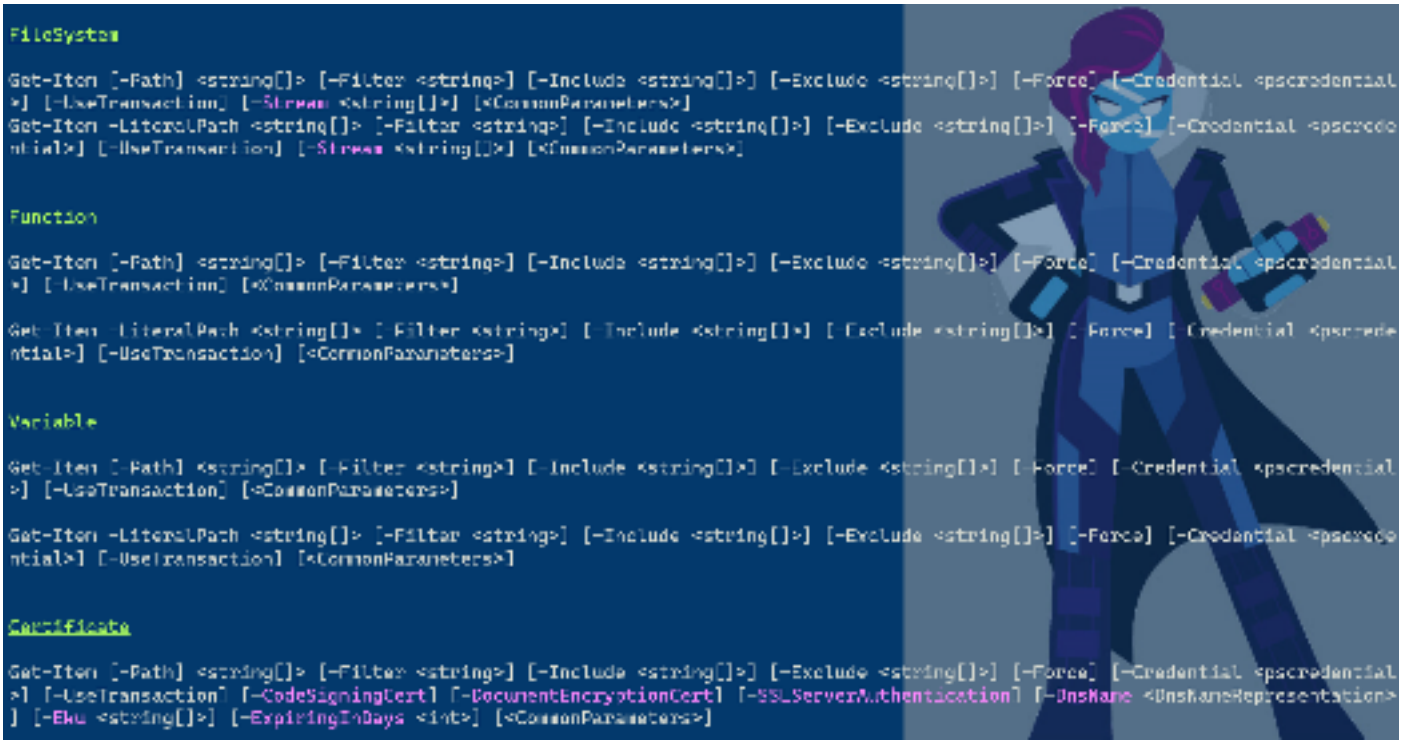
Get-CommandSyntax

Some PowerShell commands are provider-aware and may have special syntax or parameters depending on what PSDrive you are using when you run the command. In Windows PowerShell, the help system could show you syntax based on a given path. However, this no longer appears to work. `Get-CommandSyntax` is intended as an alternative and should work in both Windows PowerShell and PowerShell 7.

Specify a cmdlet or function name, and the output will display the syntax detected when using different providers.

```
Get-CommandSyntax -Name Get-Item
```

Dynamic parameters will be highlighted with an ANSI-escape sequence.



This command has an alias of *gsyn*.

Test-Expression

The primary command can be used to test a PowerShell expression or scriptblock for a specified number of times and calculate the average runtime, in milliseconds, over all the tests.

Why

When you run a single test with `Measure-Command` the result might be affected by any number of factors. Likewise, running multiple tests may also be influenced by things such as caching. The goal of this module is to provide a test framework where you can run a test repeatedly with either a static or random interval between each test. The results are aggregated and analyzed. Hopefully, this will provide a more meaningful or realistic result.

Examples

The output will also show the median and trimmed values, as well as some metadata about the current PowerShell session.

```
PS C:\> $cred = Get-credential globomantics\administrator
PS C:\> Test-Expression {
  param($cred)
  Get-WmiObject win32_logicaldisk -computer chi-dc01 -credential $cred
  } -argumentList $cred

Tests        : 1
TestInterval : 0.5
AverageMS    : 1990.6779
MinimumMS    : 1990.6779
MaximumMS    : 1990.6779
MedianMS     : 1990.6779
```

```
TrimmedMS    :
PSVersion    :5.1.17763.134
OS           : Microsoft Windows 10 Pro
```

You can also run multiple tests with random time intervals.

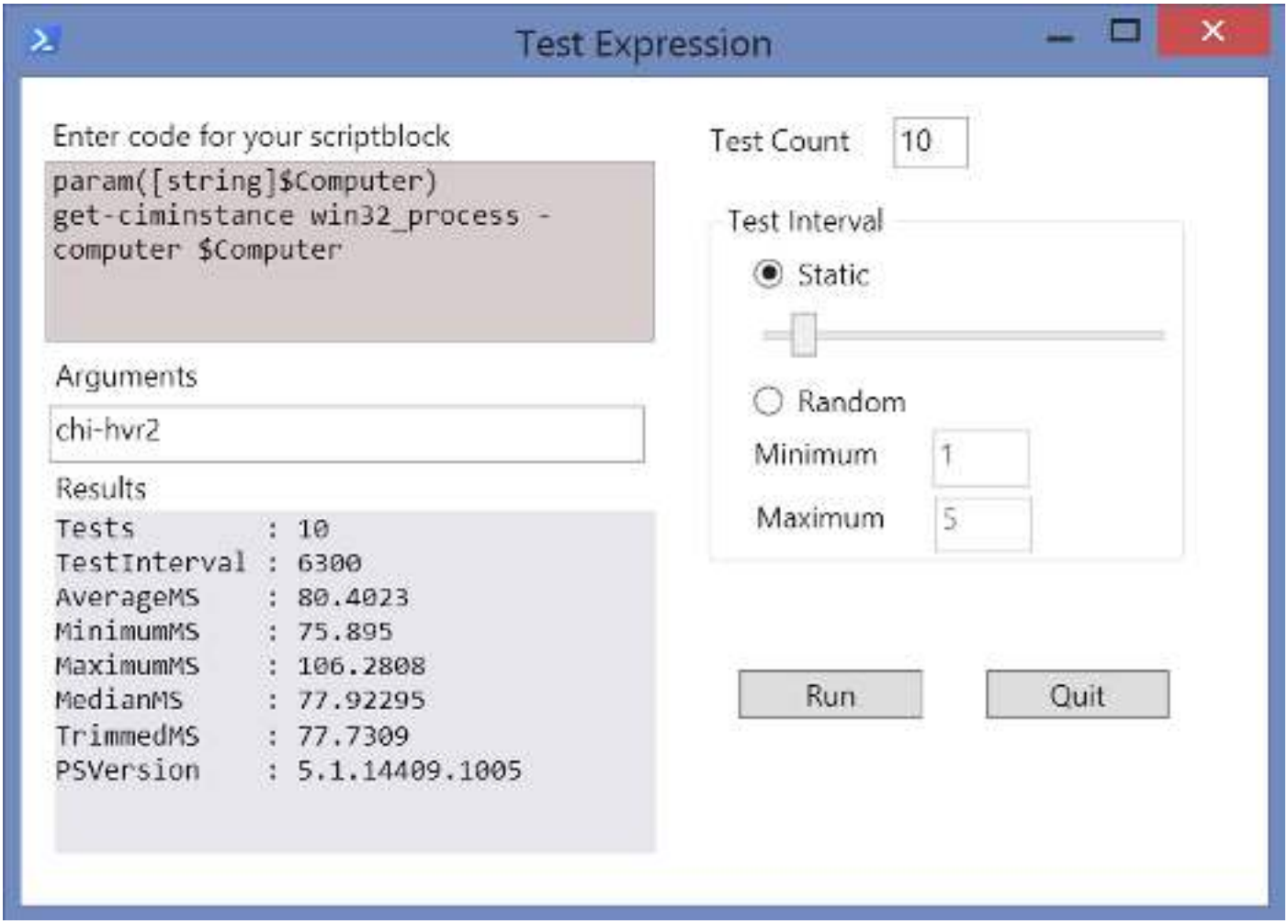
```
PS C:\>Test-Expression {
  param([string[]]$Names)
  Get-Service $names
  } -count 5 -IncludeExpression -argumentlist @('bits','wuauserv','winrm') `
  -RandomMinimum .5 -RandomMaximum 5.5

Tests        : 5
TestInterval : Random
AverageMS    : 1.91406
MinimumMS    : 0.4657
MaximumMS    : 7.5746
MedianMS     : 0.4806
TrimmedMS    : 0.51
PSVersion    : 5.1.17763.134
OS           : Microsoft Windows 10 Pro
Expression   : param([string[]]$Names) Get-Service $names
Arguments    : {bits, wuauserv, winrm}
```

For very long-running tests, you can run them as a background job.

Graphical Testing

The module also includes a graphical command called `Test-ExpressionForm`. This is intended to serve as both an entry and results form.

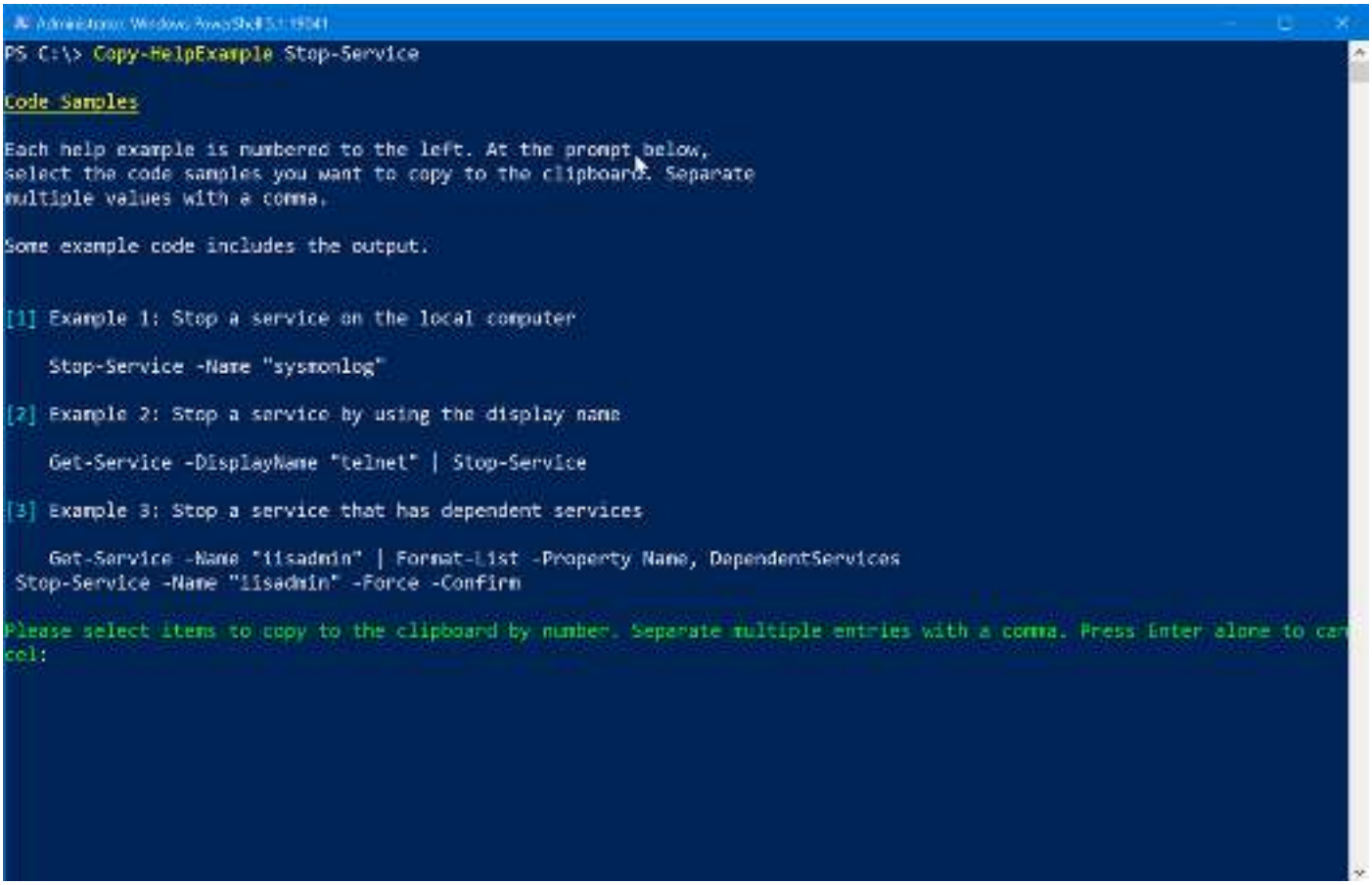


When you quit the form the last result will be written to the pipeline including all metadata, the scriptblock, and any arguments.

Copy-HelpExample

This command is designed to make it (slightly) easier to copy code snippets from help examples. Specify the name of a function or cmdlet, presumably one with documented help examples, and you will be offered a selection of code snippets to copy to the clipboard. Code snippets have been trimmed of blank lines, most prompts, and comments. Many examples include command output. You will have to manually remove what you don't want after pasting.

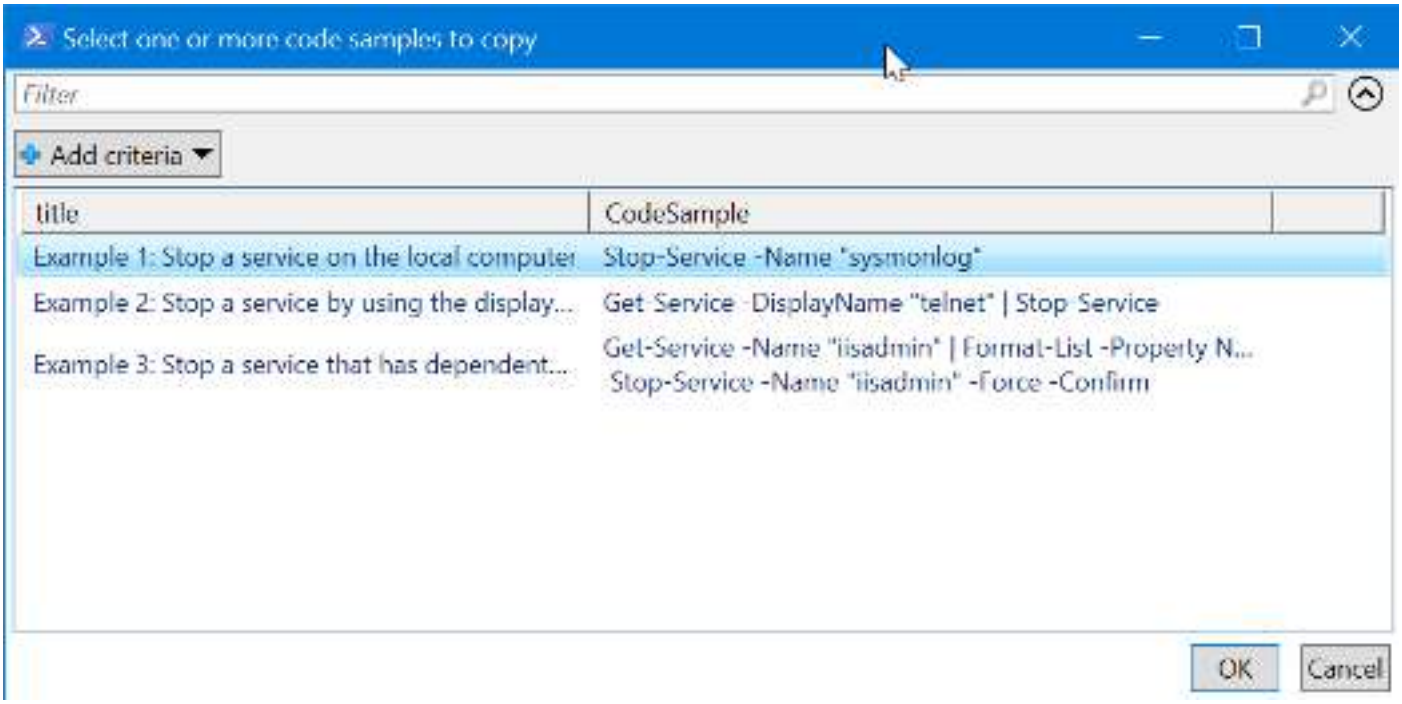
The default behavior is to use a console-based menu, which works cross-platform.



Enter the number of the code to copy to the clipboard. Enter multiple numbers separated by commas.

If you are running a Windows platform, there is a dynamic help parameter to use `Out-GridView`.

```
Copy-HelpExample Stop-Service -UseGridView
```



If you are running this in the PowerShell ISE this is the default behavior, even if you don't specify the parameter.

Get-GitSize

Use this command to determine how much space the hidden `.git` folder is consuming.

```
PS C:\scripts\PSScriptTools> Get-GitSize

Path                                        Files          SizeKB
----                                        -----          ------
C:\scripts\PSScriptTools                      751       6859.9834
```

This is the default formatted view. The object has other properties you can use.

```
Name         : PSScriptTools
Path         : C:\scripts\PSScriptTools
Files        : 751
Size         : 7024623
Date         : 3/5/2020 2:57:06 PM
Computername : BOVINE320
```

Remove-MergedBranch

When using `git` you may create some branches. Presumably, you merge these branches into the main or master branch. You can use this command to remove all merged branches other than `master` or `main`, and the current branch. You must be at the root of your project to run this command.

```
PS C:\MyProject> Remove-MergedBranch

Remove merged branch from MyProject?
2.1.1
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): n

Remove merged branch from MyProject?
dev1
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): y
Deleted branch dev1 (was 75f6ab8).

Remove merged branch from MyProject?
dev2
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): y
Deleted branch dev2 (was 75f6ab8).

Remove merged branch from MyProject?
patch-254
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): n

PS C:\MyProject>
```

By default, you will be prompted to remove each branch.

Test-WithCulture

When writing PowerShell commands, sometimes the culture you are running under becomes critical. For example, European countries use a different datetime format than North Americans, which might present a problem with your script or command. Unless you have a separate computer running under a foreign culture, it is difficult to test. This command will allow you to test a scriptblock or even a file under a different culture, such as DE-DE for German.

```
PS C:\> Test-WithCulture fr-fr -Scriptblock {
    Get-winEvent -log system -max 500 |
    Select-Object -Property TimeCreated,ID,OpCodeDisplayName,Message |
    Sort-Object -property TimeCreated |
    Group-Object {$_.TimeCreated.ToShortDateString()} -NoElement}

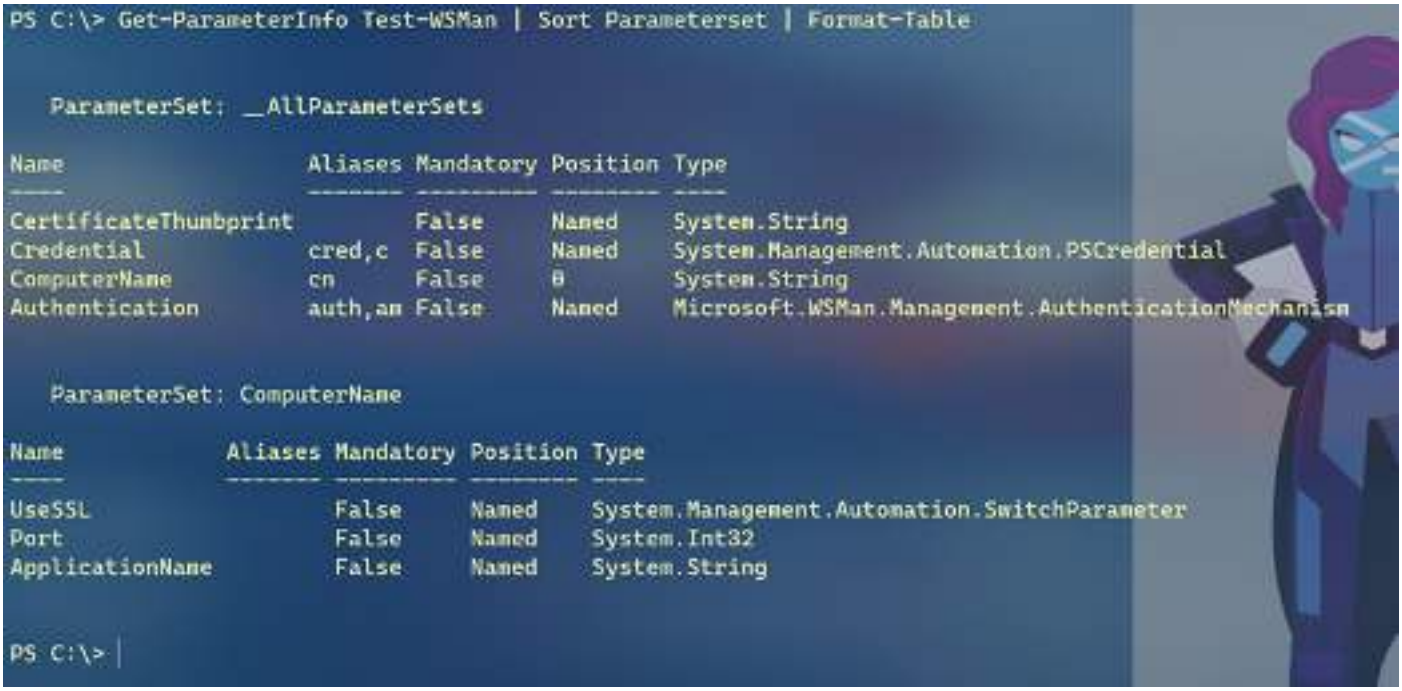
Count Name
----- ----
  165 10/07/2019
  249 11/07/2019
   17 12/07/2019
   16 13/07/2019
   20 14/07/2019
   26 15/07/2019
    7 16/07/2019
```

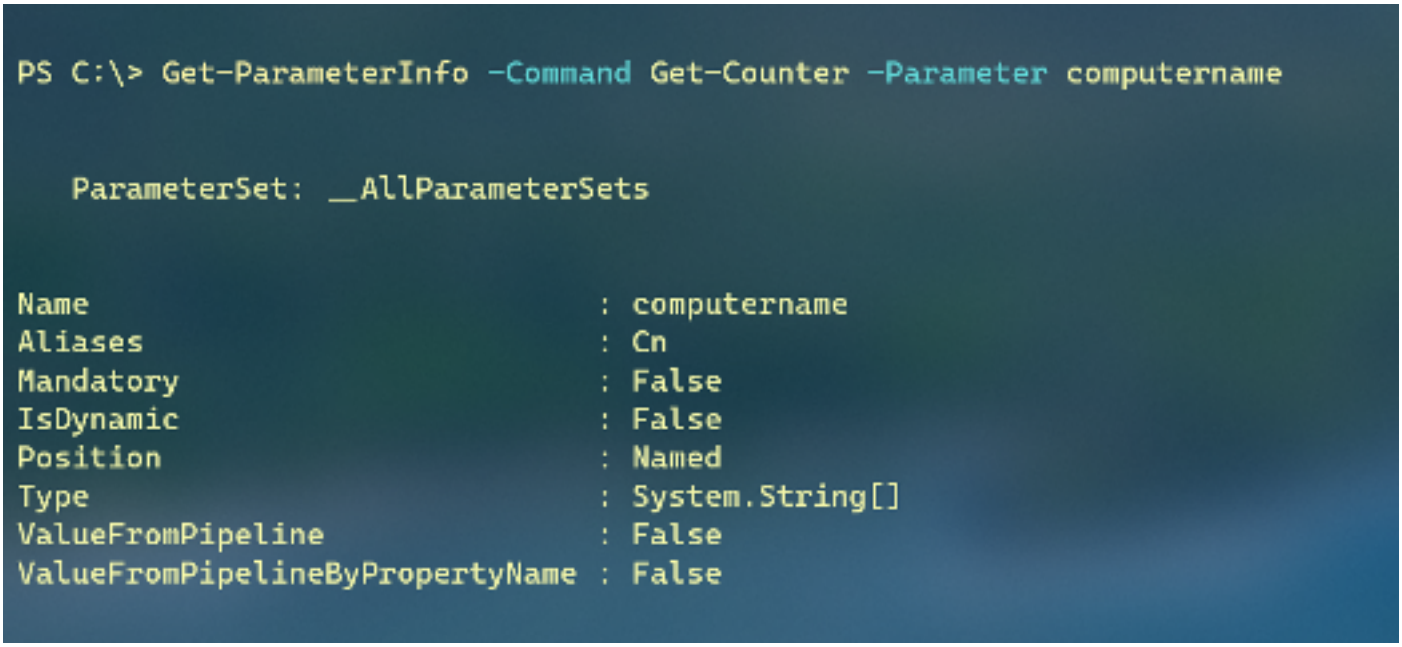
Copy-Command

This command will copy a PowerShell command, including parameters and help to a new user-specified command. You can use this to create a "wrapper" function or to easily create a proxy function. The default behavior is to create a copy of the command complete with the original comment-based help block.

Get-ParameterInfo

Using `Get-Command`, this function will return information about parameters for any loaded cmdlet or function. Common parameters like `Verbose` and `ErrorAction` are omitted. `Get-ParameterInfo` returns a custom object with the most useful information an administrator might need to know. The custom object includes default format views for a list and table.





New-PSFormatXML

When defining custom objects with a new typename, PowerShell by default will display all properties. However, you may wish to have a specific default view, be it a table or a list. Or you may want to have different views display the object differently. Format directives are stored in format.ps1xml files which can be tedious to create. This command simplifies that process.

Define a custom object:

```
$tname = "myThing"
$obj = [PSCustomObject]@{
  PSTypeName   = $tname
  Name         = "Jeff"
  Date         = (Get-Date)
  Computername = $env:computername
  OS           = (Get-CimInstance Win32_OperatingSystem).caption
}
```

```
$upParams = @{
  TypeName = $tname
  MemberType = "ScriptProperty"
  MemberName = "Runtime"
  value =  {(Get-Date) - [datetime]"1/1/2019"}
  force = $True
}
Update-TypeData @upParams
```

The custom object looks like this by default:

```
PS C:\> $obj

Name         : Jeff
Date         : 2/10/2019 8:49:10 PM
Computername : BOVINE320
OS           : Microsoft Windows 10 Pro
Runtime      : 40.20:49:43.9205882
```

Now you can create new formatting directives.

```
$tname = "myThing"
$params = @{
  Properties = "Name","Date","Computername","OS"
  FormatType = "Table"
  Path = "C:\scripts\$tname.format.ps1xml"
}
$obj | New-PSFormatXML @params

$params.Properties= "Name","OS","Runtime"
$params.Add("Viewname","runtime")
$params.Add(Append,$True)
$obj | New-PSFormatXML  @params

$params.formatType = "list"
$params.remove("Properties")
$obj | New-PSFormatXML @params

Update-FormatData -appendpath $params.path
```

And here is what the object looks like now:

```
PS C:\> $obj

Name Date                 Computername Operating System
---- ----                 ------------ ----------------
Jeff 2/10/2019 8:49:10 PM BOVINE320    Microsoft Windows 10 Pro

PS C:\> $obj | Format-Table -View runtime

Name OS Runtime
---- -- -------
Jeff    40.20:56:24.5411481

PS C:\> $obj | Format-List
```

```
Name            : Jeff
Date            : Sunday, February 10, 2019
Computername    : BOVINE320
OperatingSystem : Microsoft Windows 10 Pro
Runtime         : 40.21:12:01
```

Starting with v2.31.0, you can also use a hashtable to define custom properties from scriptblocks.

```
$p = @{
   FormatType = "List"
   ViewName = "run"
   Path  = "c:\scripts\run.ps1xml"
   Properties = "ID","Name","Path","StartTime",
   @{Name="Runtime";Expression={(Get-Date) - $_.starttime}}
}
Get-Process -id $pid | New-PSFormatXML @p
```

If you run this command from Visual Studio Code and specify `-PassThru`, the resulting file will be opened in your editor.

Test-IsPSWindows

PowerShell 7 introduced the `$IsWindows` variable. However, it is not available on Windows PowerShell. Use this command to perform a simple test if the computer is either running Windows or using the `Desktop` PSEdition. The command returns `True` or `False`.

Write-Detail

This command is designed to be used within your functions and scripts to make it easier to write a detailed message that you can use as verbose output. The assumption is that you are using an advanced function with a `Begin`, `Process`, and `End` scriptblocks. You can create a detailed message to indicate what part of the code is being executed. The output can be configured to include a datetime stamp or just the time.

```
PS C:\> write-detail "Getting file information" -Prefix Process -Date
9/15/2020 11:42:43 [PROCESS] Getting file information
```

In a script you might use it like this:

```
Begin {
    Write-Detail "Starting $($MyInvocation.MyCommand)" -Prefix begin -time |
    Write-Verbose
    $tabs = "`t" * $tab
    Write-Detail "Using a tab of $tab" -Prefix BEGIN -time | Write-Verbose
} #begin
```

Save-GitSetup

This command is intended for Windows users to easily download the latest 64-bit version of `Git`.

```
PS C:\> Save-GitSetup -Path c:\work -PassThru


    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           1/23/2020  4:31 PM       46476880 Git-2.25.0-64-bit.exe
```

You will need to manually install the file. Or you can try something like this:

```
Save-GitSetup -Path c:\work -PassThru | Invoke-Item
```

ANSI Tools

ANSI tools related to the filesystem are not loaded on computers where `PSStyle` is detected.

This module includes several custom format files for common objects like services. You can run `Get-Service` and pipe it to the custom table view.

```
Get-Service | Format-Table -view ansi
```

This will display the service status color-coded.

ANSI formatting will only work in a PowerShell 5.1 console window or VS Code. It will not display properly in the PowerShell ISE or older versions of PowerShell.

PSAnsiMap

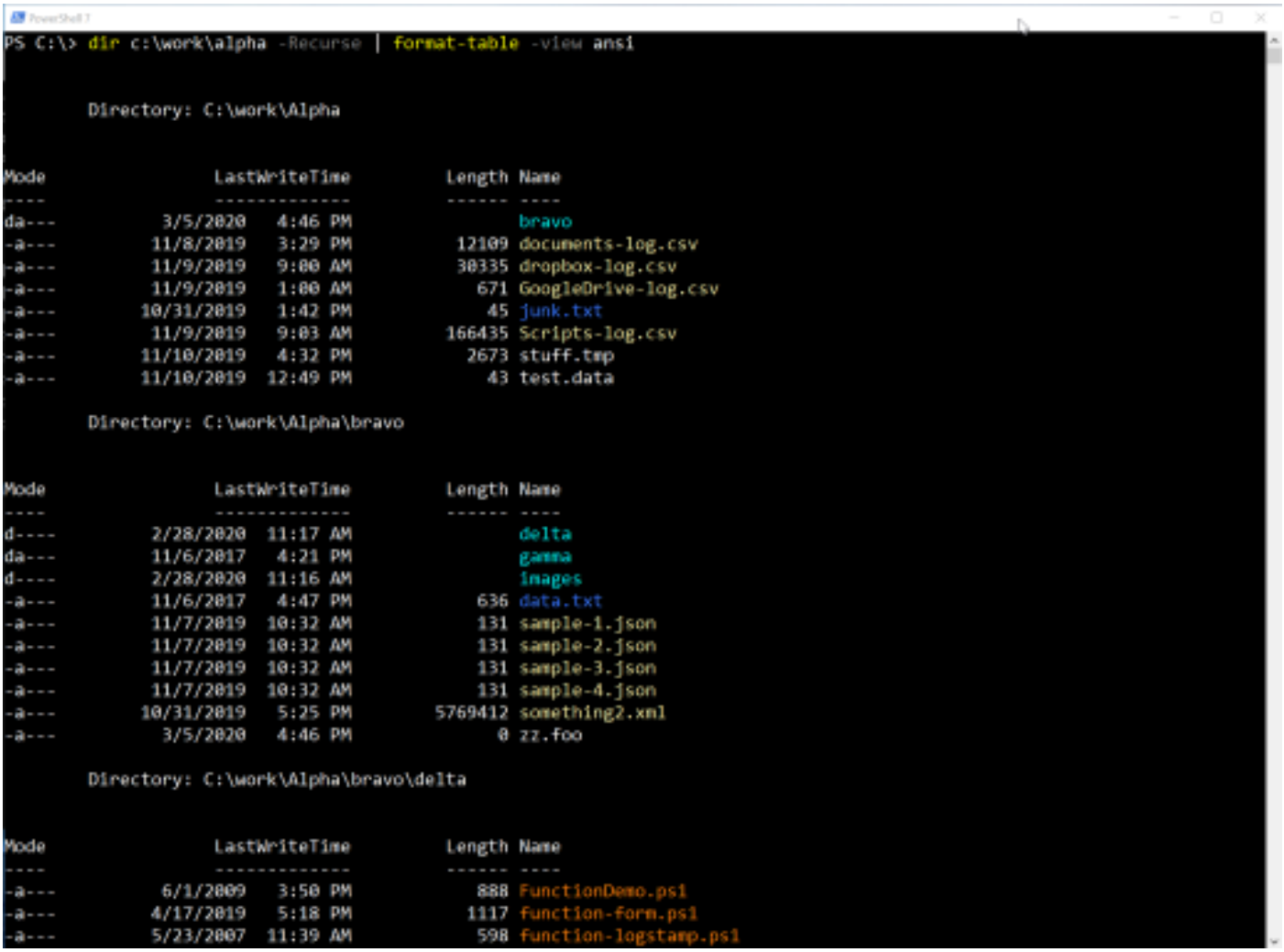
I have done something similar for output from `Get-ChildItem`. The module includes a JSON file that is exported as a global variable called `PSAnsiFileMap`.

```
PS C:\> $PSAnsiFileMap

Description    Pattern                                Ansi
-----------    -------                                ----
PowerShell     \.ps(d|m)?1$
Text           \.(txt)|(md)|(log)$
DataFile       \.(json)|(xml)|(csv)$
Executable     \.(exe)|(bat)|(cmd)|(sh)$
Graphics       \.(jpg)|(png)|(gif)|(bmp)|(jpeg)$
Media          \.(mp3)|(m4v)|(wav)|(au)|(flac)|(mp4)$
Archive        \.(zip)|(rar)|(tar)|(gzip)$
```

```
TopContainer
ChildContainer
```

The map includes ANSI settings for different file types. You won't see the ANSI value in the output. The module will add a custom table view called `ansi` which you can use to display colorized file results.



The mapping file is user-customizable. Copy the `psansifilemap.json` file from the module's root directory to $HOME. When you import this module, if the file is found, it will be imported and used as `psansifilemap`, otherwise, the module's file will be used.

The file will look like this:

```
[
  {
    "Description": "PowerShell",
    "Pattern": "\\.ps(d|m)?1$",
    "Ansi": "\u001b[38;2;252;127;12m"
  },
  {
    "Description": "Text",
    "Pattern": "\\.(txt)|(md)|(log)$",
    "Ansi": "\u001b[38;2;58;120;255m"
  },
  {
    "Description": "DataFile",
    "Pattern": "\\.(json)|(xml)|(csv)$",
    "Ansi": "\u001b[38;2;249;241;165m"
```

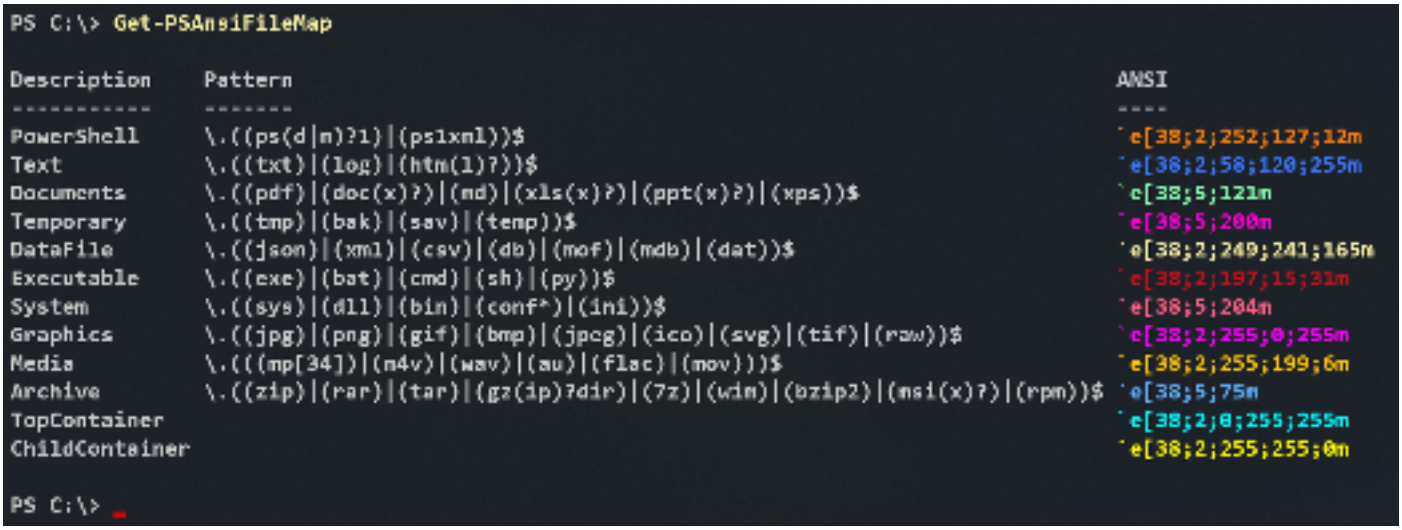
```
  },
  {
    "Description": "Executable",
    "Pattern": "\\.(exe)|(bat)|(cmd)|(sh)$",
    "Ansi": "\u001b[38;2;197;15;31m"
  },
  {
    "Description": "Graphics",
    "Pattern": "\\.(jpg)|(png)|(gif)|(bmp)|(jpeg)$",
    "Ansi": "\u001b[38;2;255;0;255m"
  },
  {
    "Description": "Media",
    "Pattern": "\\.(mp3)|(m4v)|(wav)|(au)|(flac)|(mp4)$",
    "Ansi": "\u001b[38;2;255;199;6m"
  },
  {
    "Description": "Archive",
    "Pattern": "\\.(zip)|(rar)|(tar)|(gzip)$",
    "Ansi": "\u001b[38;2;118;38;113m"
  },
  {
    "Description": "TopContainer",
    "Pattern": "",
    "Ansi": "\u001b[38;2;0;255;255m"
  },
  {
    "Description": "ChildContainer",
    "Pattern": "",
    "Ansi": "\u001b[38;2;255;255;0m"
  }
]
```

You can create or modify file groups. The Pattern value should be a regular expression pattern to match the filename. Don't forget you will need to escape characters for the JSON format. The ANSI value will be an ANSI escape sequence. You can use `\u001b` for the `` `e `` character.

If you prefer not to edit JSON files, you can use the PSAnsiFileMap commands from this module.

Get-PSAnsiFileMap

This command will display the value of the `$PSAnsiFileMap` variable, but will also show the ANSI sequence using the sequence itself.



Set-PSAnsiFileMap

Use this command to modify an existing entry. You need to specify a regular expression pattern to match the filename and/or an ANSI escape sequence. If the entry description doesn't exist, you will need to specify the regex pattern and the ANSI sequence to add the entry to $PSAnsiFileMap.

```
Set-PSAnsiFileMap Archive -Ansi "`e[38;5;75m"
```

Remove-PSAnsiFileEntry

If you need to, you can remove an entry from `$PSAnsiFileMap`.

```
Remove-PSAnsiFileEntry DevFiles
```

Export-PSAnsiFileMap

Any changes you make to `$PSAnsiFileMap` will only last until you import the module again. To make the change permanent, use Export-PSAnsiFileMap. This will create the `psansifilemap.json` file in your `$HOME` directory. When you import the PSSCriptTools module, if this file is found, it will be imported. Otherwise, the default module file will be used.

Convert-HtmlToAnsi

This simple function is designed to convert an HTML color code like #ff5733 into an ANSI escape sequence.

```
PS C:\> Convert-HtmlToAnsi "#ff5733"
[38;2;255;87;51m
```

To use the resulting value you still need to construct an ANSI string with the escape character and the closing [0m.

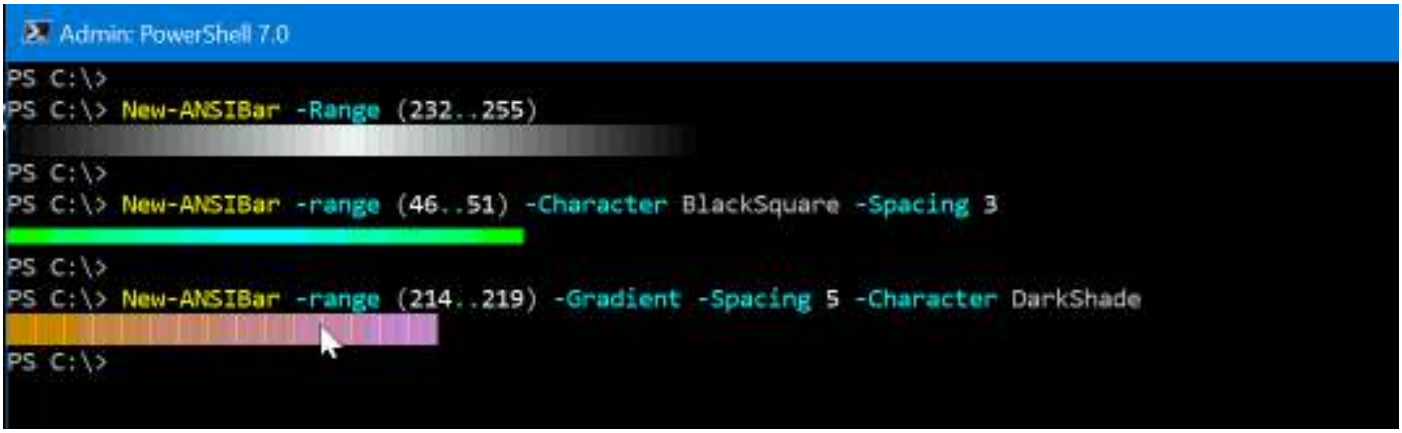
```
PS C:\> "`e$(Convert-HtmlToAnsi "#ff8738")Hello, World`e[0m"

Hello, World
```

In PowerShell 7 you can use `` `e ``. Or `$([char]27)` which works in all PowerShell versions.

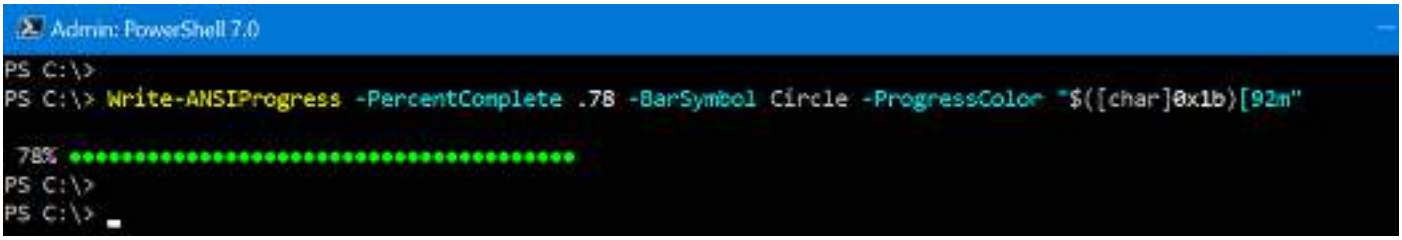
New-ANSIBar

You can use this command to create colorful bars using ANSI escape sequences based on a 256-color scheme. The default behavior is to create a gradient bar that goes from first to last values in the range and then back down again. Or you can create a single gradient that runs from the beginning of the range to the end. You can use one of the default characters or specify a custom one.



Write-ANSIProgress

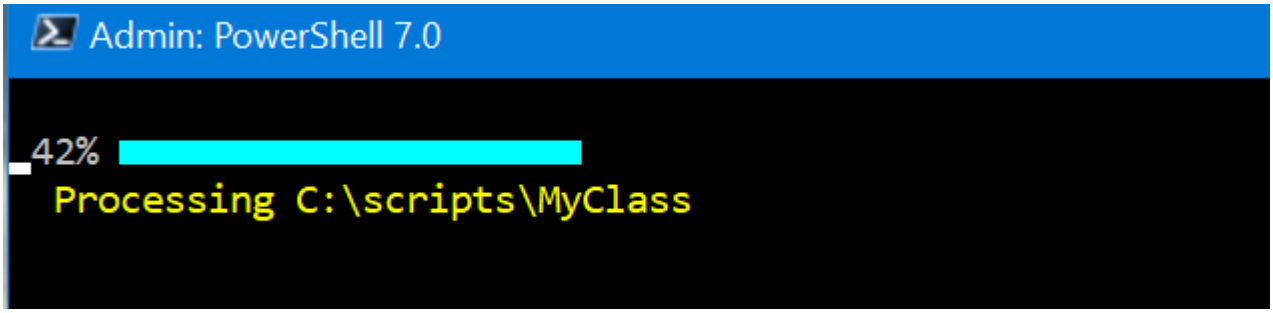
You could also use `Write-ANSIProgress` to show a custom ANSI bar.



Or you can use it in your code to display a console progress bar.

```
$sb = {
  Clear-Host
  $top = Get-ChildItem c:\scripts -Directory
```

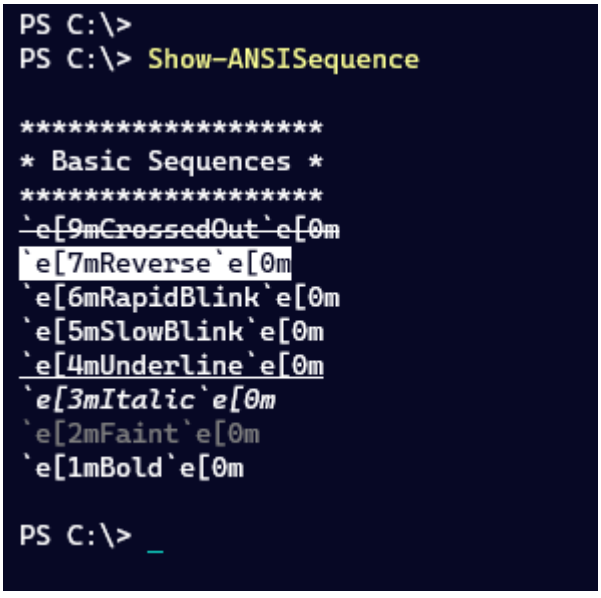
```
$i = 0
$out=@()
$pos = $host.UI.RawUI.CursorPosition
Foreach ($item in $top) {
    $i++
    $pct = [math]::round($i/$top.count,2)
    Write-ANSIProgress -PercentComplete $pct -position $pos
    Write-Host "  Processing $(($item.fullname).padright(80))"
    -ForegroundColor Yellow -NoNewline
    $out+= Get-ChildItem -Path $item -Recurse -file |
    Measure-Object -property length -sum |
    Select-Object @{Name="Path";Expression={$item.fullname}},Count,
    @{Name="Size";Expression={$_.Sum}}
}
Write-Host ""
$out | Sort-Object -property Size -Descending
  }
```



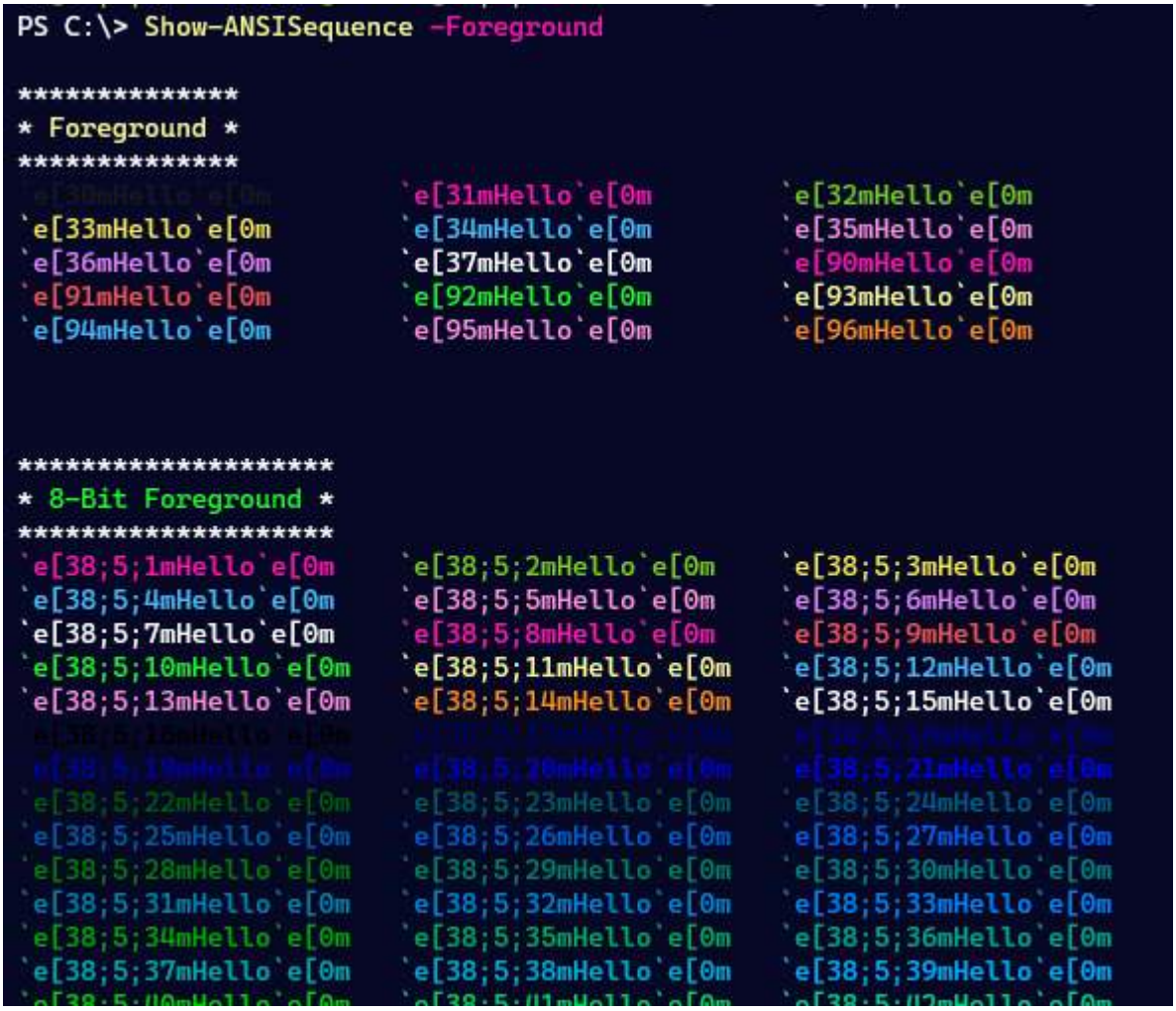
Show-ANSISequence

You can use `Show-ANSISequence` to preview how it will look in your PowerShell session. You might get a different appearance in Windows Terminal depending on the color scheme you are using.

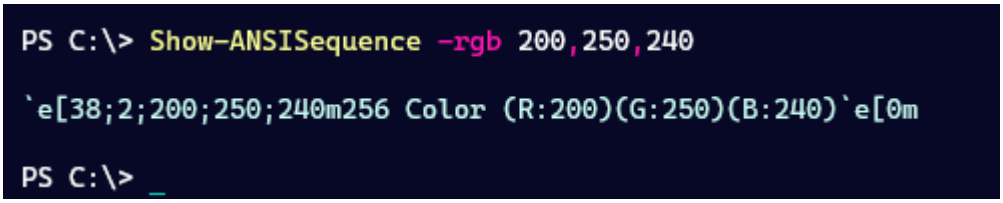
The default behavior is to show basic sequences.



You can also view foreground and or background settings.



You can even use an RGB value.



The escape character will match what is acceptable in your version of PowerShell. These screenshots are showing PowerShell 7.

Other Module Features

These are additional items in the module that you might find useful in your PowerShell work.

Custom Format Views

The module includes several custom `format.ps1xml` files that define additional views for common objects. Some of these have already been demonstrated elsewhere in this document.

For example, there is a custom table view for Aliases.

```
PS C:\> Get-Alias | Sort-Object Source | Format-Table -view Source


   Source:

Name                 Definition
----                 ----------
nmo                  New-Module
ni                   New-Item
npssc                New-PSSessionConfigurationFile
nv                   New-Variable
nsn                  New-PSSession
...

   Source: Microsoft.PowerShell.Management 3.1.0.0

Name                 Definition
----                 ----------
gtz                  Get-TimeZone
stz                  Set-TimeZone
...

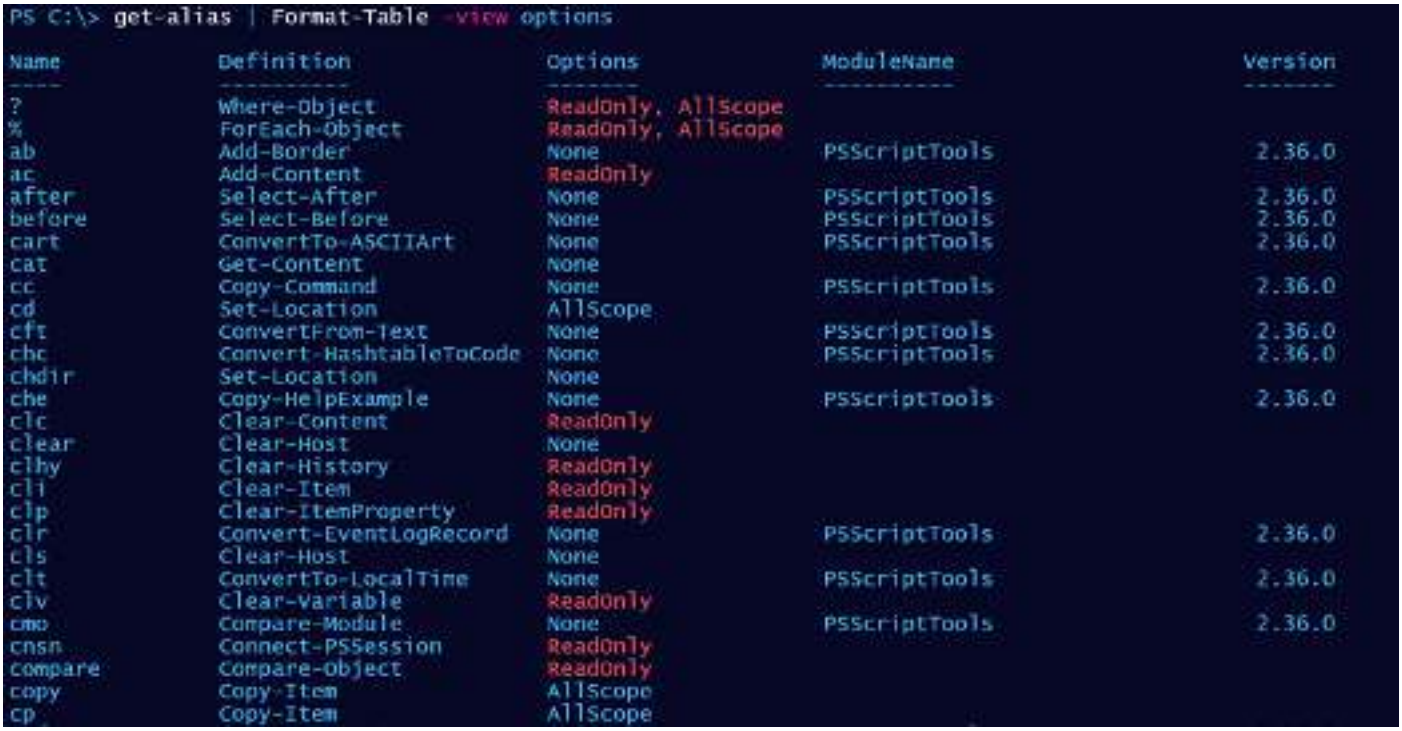

   Source: Microsoft.PowerShell.Utility 3.1.0.0

Name                 Definition
----                 ----------
fhx                  Format-Hex
CFS                  ConvertFrom-String


   Source: PSScriptTools 2.31.0

Name                 Definition
----                 ----------
clr                  Convert-EventLogRecord
gsi                  Get-FolderSizeInfo
wver                 Get-WindowsVersion
gpi                  Get-ParameterInfo
che                  Copy-HelpExample
...
```

Some custom formats use ANSI to highlight information, assuming you are running in PowerShell Console Host.



In this format view, ReadOnly aliases are displayed in Red.

Use Get-FormatView to discover available format views. Or if you'd like to create your own custom views look at New-PSFormatXML

Custom Type Extensions

When you import the module, you will also get custom type extensions. These are designed to make it easier to work with common objects in PowerShell.

System.IO.FileInfo

The module will extend file objects with the following alias properties:

New Alias	Property
Size	Length
Created	CreationTime
Modified	LastWriteTime

You also have new script properties

Script Property	Description
ModifiedAge	A timespan between the current date the and last write time
CreatedAge	A timespan between the current date the and creation time
SizeKB	The file size formatted in KB to 2 decimal places
SizeMB	The file size formatted in MB to 2 decimal places

```
PS C:\> Get-ChildItem C:\work\pswork.xml | Select-Object
Name,Size,SizeKB,SizeMB,Created,CreatedAge,Modified,ModifiedAge

Name         : pswork.xml
Size         : 32072432
SizeKB       : 31320.73
SizeMB       : 30.59
Created      : 1/5/2021 6:46:43 PM
CreatedAge   : 175.17:47:00.4966770
Modified     : 1/6/2021 11:53:20 AM
ModifiedAge : 175.00:40:23.3527674
```

System.Diagnostics.Process

The module will extend process objects with a `Runtime` script property.

```
PS C:\> Get-Process | Sort-Object runtime -Descending |
Select-Object -first 5 -Property ID,Name,Runtime

 Id Name           Runtime
 -- ----           -------
120 Secure System 20:44:51.6139043
204 Registry      20:44:51.3661961
  4 System        20:44:48.2820565
704 smss          20:44:48.2726401
820 csrss         20:44:44.7760844
```

The Idle process will have a null value for this property.

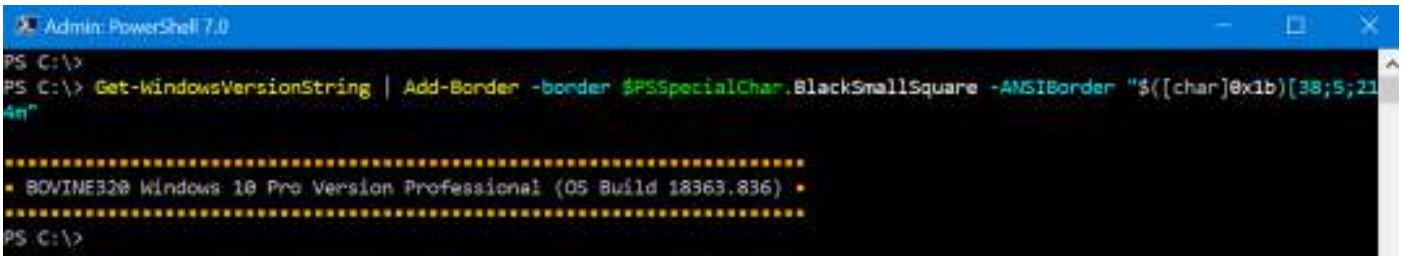
PSSpecialChar

A number of the commands in this module can use special characters. To make it easier, when you import the module, it will create a global variable that is a hash table of common special characters. Because it is a hashtable, you can add to it.

The names are the same as used in `CharMap.exe`. Don't let the naming confuse you. It may say `BlackSquare`,

but the color will depend on how you use it.

```
Get-WindowsVersionString |
Add-Border -border $PSSpecialChar.BlackSmallSquare `
-ANSIBorder "$([char]0x1b)[38;5;214m"
```

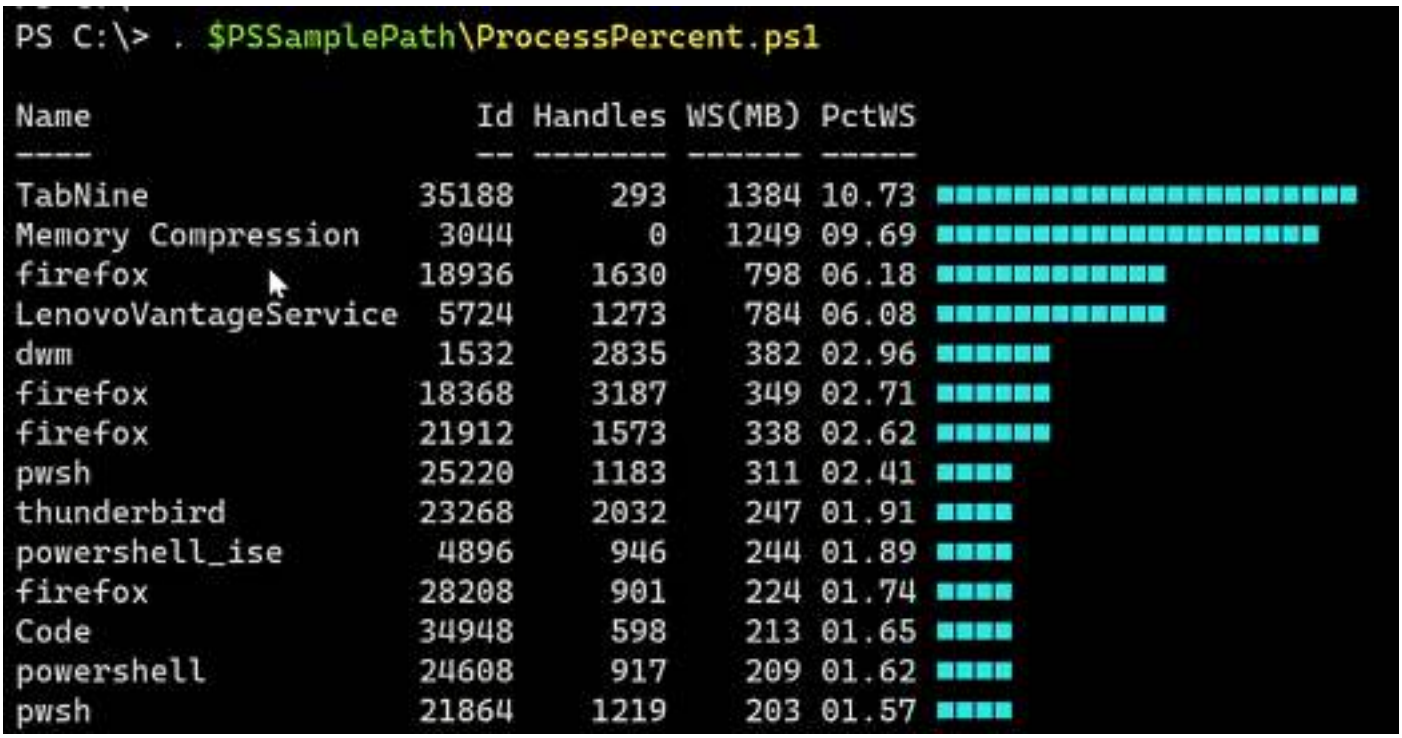


Sample Scripts

This PowerShell module contains several functions you might use to enhance your functions and scripts. The Samples folder contains demonstration script files. You can access the folder in PowerShell using the `$PSSamplePath`.

```
dir $pssamplepath
```

The samples provide suggestions on how you might use some of the commands in this module. The scripts are offered **AS-IS** and are for demonstration purposes only.



Open-PSScriptToolsHelp

I've created a PDF version of this document which I thought you might find useful since it includes screenshots and sample output rendered nicer than what you can get in PowerShell help. Run `Open-PSScriptToolsHelp` to open the PDF using the default associated application.

Deprecated Commands

The following commands have been marked as deprecated and will be removed in a future release.

- Set-ConsoleColor
- Out-ConditionalColor

Related Modules

If you find this module useful, you might also want to look at my PowerShell tools for:

- Keeping up to date with PowerShell 7.x releases
- Module and Project Status
- Creating and managing custom type extensions
- Managing scheduled jobs
- Automating the PowerShell scripting process
- A simple command-line task and to-do manager

Compatibility

Where possible, module commands have been tested with PowerShell 7.x, but not on every platform. If you encounter problems, have suggestions, or have other feedback, please post an issue. It is assumed you will **not** be running these commands on any edition of PowerShell Core, i.e PowerShell 6.

Module Commands

This section contains the same help content you would get from a PowerShell prompt using `Get-Help`. Note that most code examples have been formatted to fit the 80 character page width and sometimes with artificial formatting. Don't assume you can run examples *exactly* as they are shown. Some of the help examples might also use special or custom characters that might not render properly in the PDF.

Remember, you can also view the online help for each command:

```
Help ConvertTo-WPFGrid -online
```

If you can't remember what commands are in this module, you can always ask PowerShell.

```
Get-Command -module PSScriptTools
```

Or use the Get-PSScriptTools command.

```
PS C:\> Get-PSScriptTools


___ ___ ___         _       _  _____         _
| _ \ __/ __|__ _ _(_)_ __| |__   _|__ ___| |___
|  _\__ \__ \ _| '_| | '_ \  _|| |/ _ \ _ \ (_-<
|_| |___/___\__|_| |_| .__/\__||_|\___\___/_/__/
|_|
v2.46.0

   Verb: Add

Name                          Alias             Synopsis
----                          -----             --------
Add-Border                    ab                Create a text border around a string.

   Verb: Compare

Name                          Alias             Synopsis
----                          -----             --------
Compare-Module                cmo               Compare PowerShell module versions.
Compare-Script                csc               Compare PowerShell script versions.
...
```

You can also filter by verb.

```
PS C:\> Get-PSScriptTools -Verb test


___ ___ ___         _       _  _____         _
| _ \ __/ __|__ _ _(_)_ __| |__   _|__ ___| |___
|  _\__ \__ \ _| '_| | '_ \  _|| |/ _ \ _ \ (_-<
|_| |___/___\__|_| |_| .__/\__||_|\___\___/_/__/
|_|
v2.46.0

   Verb: Test
```

```
Name                        Alias             Synopsis
----                        -----             --------
Test-EmptyFolder                              Test if a folder is empty of files.
Test-Expression             tex               Test a PowerShell expression over a period of time.
Test-ExpressionForm         texf              Display a graphical test form for Test-Expression.
Test-IsElevated                               Test if the current user is running elevated.
Test-IsPSWindows                              Test if running PowerShell on a Windows platform.
Test-WithCulture                              Test your PowerShell code using a different culture.
```

All module commands should have an online help link.

Add-Border

Synopsis

Create a text border around a string.

Syntax

single (Default)

```
Add-Border [-Text] <String> [-Character <String>] [-InsertBlanks]
[-Tab <Int32>] [-ANSIBorder <String>] [-ANSIText <String>] [<CommonParameters>]
```

block

```
Add-Border [-TextBlock] <String[]> [-Character <String>] [-InsertBlanks]
[-Tab <Int32>] [-ANSIBorder <String>] [-ANSIText <String>] [<CommonParameters>]
```

Description

This command will create a character or text-based border around a line of text. You might use this to create a formatted text report or to improve the display of information to the screen.

Examples

EXAMPLE 1

```
PS C:\> Add-Border "PowerShell Wins!"

********************
* PowerShell Wins! *
********************
```

EXAMPLE 2

```
PS C:\> Add-Border "PowerShell Wins!" -tab 1

     ********************
     * PowerShell Wins! *
     ********************
```

Note that this example may not format properly in all consoles.

EXAMPLE 3

```
PS C:\> Add-Border "PowerShell Wins!" -character "-" -insertBlanks

--------------------
-                  -
- PowerShell Wins! -
-                  -
--------------------
```

EXAMPLE 4

```
PS C:\> Add-Border -textblock (Get-Service win* | Out-String).trim()

**********************************************************************
* Status   Name               DisplayName                            *
* ------   ----               -----------                            *
* Stopped  WinDefend          Windows Defender Antivirus Service     *
* Running  WinHttpAutoProx... WinHTTP Web Proxy Auto-Discovery Se... *
* Running  Winmgmt            Windows Management Instrumentation     *
* Stopped  WinRM              Windows Remote Management (WS-Manag... *
**********************************************************************
```

Create a border around the output of a Get-Service command.

EXAMPLE 5

```
PS C:\> Add-Border -Text $t -ANSIBorder "$([char]0x1b)[38;5;47m"
-ANSIText "$([char]0x1b)[93m" -InsertBlanks


******************
*                *
* I am the walrus *
*                *
******************
```

This will write a color version of the text and border. You would this type of ANSI syntax for Windows PowerShell. In PowerShell 7, you can use the same syntax or the much easier "`e[38;5;47m".

EXAMPLE 6

```
PS C:\> Add-Border -textblock (Get-PSWho -AsString ).trim() -ANSIBorder
"`e[38;5;214m" -Character ([char]0x25CA) -ANSIText "`e[38;5;225m"

◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊
◊ User            : BOVINE320\Jeff                    ◊
◊ Elevated        : True                              ◊
◊ Computername    : BOVINE320                         ◊
◊ OperatingSystem : Microsoft Windows 10 Pro [64-bit] ◊
◊ OSVersion       : 10.0.18363                        ◊
```

```
◊ PSVersion       : 7.0.1                          ◊
◊ Edition         : Core                           ◊
◊ PSHost          : ConsoleHost                    ◊
◊ WSMan           : 3.0                            ◊
◊ ExecutionPolicy : RemoteSigned                   ◊
◊ Culture         : English (United States)        ◊
◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊◊
```

This example requires PowerShell 7 because of the way the escape sequence is defined. The border character is a diamond. Depending on how you are viewing this help content, it may not display properly.

Parameters

-Text

A single line of text that will be wrapped in a border.

```
Type: String
Parameter Sets: single
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-TextBlock

A multi-line block of text. You might want to trim blank lines from the beginning, end or both.

```
Type: String[]
Parameter Sets: block
Aliases: tb

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Character

The character to use for the border. It must be a single character.

```
Type: String
Parameter Sets: (All)
Aliases: border

Required: False
Position: Named
```

```
Default value: *
Accept pipeline input: False
Accept wildcard characters: False
```

-InsertBlanks

Insert blank lines before and after the text. The default behavior is to create a border box close to the text. See examples.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Tab

Insert X number of tabs.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-ANSIBorder

Enter an ANSI escape sequence to color the border characters.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ANSIText

Enter an ANSI escape sequence to color the text.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-ANSIBar

Compare-Module

Synopsis

Compare PowerShell module versions.

Syntax

```
Compare-Module [[-Name] <String>] [-Gallery <String>] [<CommonParameters>]
```

Description

Use this command to compare module versions between what is installed against an online repository like the PSGallery. Results will be automatically sorted by module name.

Examples

EXAMPLE 1

```
PS C:\> Compare-Module | Where-object {$_.UpdateNeeded}

Name             : DNSSuffix
OnlineVersion    : 0.4.1
InstalledVersion : 0.2.0
PublishedDate    : 10/22/2018 8:21:46 PM
UpdateNeeded     : True

Name             : InvokeBuild
OnlineVersion    : 5.4.2
InstalledVersion : 3.2.2
PublishedDate    : 12/7/2018 1:30:46 AM
UpdateNeeded     : True
...
```

List all modules that could be updated.

EXAMPLE 2

```
PS C:\> Compare-Module | Where UpdateNeeded |
Out-GridView -title "Select modules to update" -outputMode multiple |
Foreach-Object { Update-Module $_.name }
```

Compare modules and send results to Out-GridView. Use Out-GridView as an object picker to decide what modules to update.

EXAMPLE 3

```
PS C:\> Compare-Module -name xWin* | Format-Table

Name           OnlineVersion InstalledVersion PublishedDate         UpdateNeeded
----           ------------- ---------------- -------------         ------------
xWindowsUpdate 2.7.0.0       2.7.0.0,2.5.0.0  7/12/2017 10:43:54 PM        False
xWinEventLog   1.2.0.0       1.2.0.0          6/13/2018 8:06:45 PM         False
```

Compare all modules that start with xWin* and display results in a table format.

EXAMPLE 4

```
PS C:\> get-dscresource xAD* | Select-Object moduleName -Unique |
Compare-Module

Name             : xActiveDirectory
OnlineVersion    : 2.22.0.0
InstalledVersion : 2.16.0.0,2.14.0.0
PublishedDate    : 10/25/2018 5:25:24 PM
UpdateNeeded     : True

Name             : xAdcsDeployment
OnlineVersion    : 1.4.0.0
InstalledVersion : 1.1.0.0,1.0.0.0
PublishedDate    : 12/20/2017 10:10:43 PM
UpdateNeeded     : True
```

Get all DSC Resources that start with xAD and select the corresponding module name. Since the module name will be listed for every resource, get a unique list and pipe that to Compare-Module.

Parameters

-Name

The name of a module to check. Wildcards are permitted.

```
Type: String
Parameter Sets: (All)
Aliases: modulename

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: True
```

-Gallery

Specify the remote repository or gallery to check.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: PSGallery
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

PSCustomObject

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Find-Module

Get-Module

Update-Module

Compare-Script

Synopsis

Compare PowerShell script versions.

Syntax

```
Compare-Script [[-Name] <String>] [-Gallery <String>] [<CommonParameters>]
```

Description

Use this command to compare script versions between what is installed against an online repository like the PSGallery. Results will be automatically sorted by the script name.

Examples

EXAMPLE 1

```
PS C:\> Compare-Script | Where-object {$_.UpdateNeeded}

Name             : DNSSuffix
OnlineVersion    : 0.4.1
InstalledVersion : 0.2.0
PublishedDate    : 10/22/2020 8:21:46 PM
UpdateNeeded     : True

Name             : InvokeBuild
OnlineVersion    : 5.4.2
InstalledVersion : 3.2.2
PublishedDate    : 12/7/2020 1:30:46 AM
UpdateNeeded     : True
...
```

List all scripts that could be updated.

EXAMPLE 2

```
PS C:\> Compare-Script | Where UpdateNeeded |
Out-GridView -Title "Select scripts to update" -OutputMode multiple |
Foreach-Object { Update-Script $_.name }
```

Compare scripts and send results to Out-GridView. Use Out-GridView as an object picker to decide what scripts to update.

Parameters

-Name

The name of a script to check. Wildcards are permitted.

```
Type: String
Parameter Sets: (All)
Aliases: scriptname

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: True
```

-Gallery

Specify the remote repository or gallery to check.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: PSGallery
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

PSCustomObject

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Find-Script

Get-InstalledScript

Update-Script

Convert-CommandToHashtable

Synopsis

Convert a PowerShell expression into a splatting equivalent.

Syntax

```
Convert-CommandToHashtable [-Text] <String> [<CommonParameters>]
```

Description

This command is intended to convert a long PowerShell expression with named parameters into a splatting alternative. The central concept is that you are editing a script file with a lengthy PowerShell expression with multiple parameters and you would like to turn it into splatting code.

Examples

Example 1

```
PS C:\> $text ="Get-Winevent -listlog p* -computername SRV1 -erroraction stop"
PS C:\> Convert-CommandToHashtable -Text $text | Set-Clipboard
```

The $text variable might be a line of code from your script. The second line converts into a splatting sequence and copies it to the Windows clipboard so you can paste it back into your script. You could create a VS Code task sequence using this function.

Parameters

-Text

A PowerShell command using a single cmdlet or function, preferably with named parameters.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

Hashtable

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Convert-HashtableToCode

Convert-EventLogRecord

Synopsis

Convert EventLogRecords to structured objects.

Syntax

```
Convert-EventLogRecord [-LogRecord] <EventLogRecord[]> [<CommonParameters>]
```

Description

When you use Get-WinEvent, the results are objects you can work with in PowerShell. However, often times there is additional information that is part of the eventlog record, such as replacement strings, that are used to construct a message. This additional information is not readily exposed. You can use this command to convert the results of a Get-WinEvent command into a PowerShell custom object with additional information. For best results, you should pipe the same event IDs to this command.

Note that not every event record exposes data that is compatible with this command. For those types of event log records, you will see a RawProperties property with most likely an array of strings. Use the Message property for more information.

Examples

EXAMPLE 1

```
PS C:\> Get-WinEvent -FilterHashtable @{Logname = 'security';ID=5059} |
Convert-EventLogRecord | Select-Object -Property TimeCreated,Subject*,
Computername

TimeCreated       : 1/20/2020 10:48:45 AM
SubjectUserSid    : S-1-5-83-1-2951761591-1086169693-630393256-923523501
SubjectUserName   : AFF04EB7-A25D-40BD-A809-9325ADD90B37
SubjectDomainName : NT VIRTUAL MACHINE
SubjectLogonId    : 0x7cbf5
Computername      : Bovine320

TimeCreated       : 1/20/2020 10:48:45 AM
SubjectUserSid    : S-1-5-83-1-2951761591-1086169693-630393256-923523501
SubjectUserName   : AFF04EB7-A25D-40BD-A809-9325ADD90B37
SubjectDomainName : NT VIRTUAL MACHINE
SubjectLogonId    : 0x7cbf5
Computername      : Bovine320
```

EXAMPLE 2

```
PS C:\> Get-WinEvent -FilterHashtable @{Logname = 'security';ID=4624} `
```

```
-MaxEvents 100 -computername win10 | Convert-EventLogRecord |
Where-Object {$_.LogonType -eq 3} |
Select-Object -first 10 -property TargetUsername,IPAddress,
TimeCreated,Computername | Format-Table

TargetUserName  IpAddress                 TimeCreated           Computername
--------------  ---------                 -----------           ------------
ArtD            fe80::ddae:8ade:c3ff:e584 1/20/2020 12:05:12 PM WIN10.Company.Pri
WIN10$          -                         1/20/2020 11:56:52 AM WIN10.Company.Pri
WIN10$          -                         1/20/2020 11:56:52 AM WIN10.Company.Pri
WIN10$           -                        1/20/2020 11:56:52 AM WIN10.Company.Pri
WIN10$           -                        1/20/2020 11:56:51 AM WIN10.Company.Pri
ArtD            192.168.3.10              1/20/2020 11:45:31 AM WIN10.Company.Pri
WIN10$          ::1                       1/20/2020 11:39:52 AM WIN10.Company.Pri
ArtD            192.168.3.10              1/20/2020 11:35:49 AM WIN10.Company.Pri
ArtD            192.168.3.10              1/20/2020 11:34:36 AM WIN10.Company.Pri
ArtD            192.168.3.10              1/20/2020 11:32:06 AM WIN10.Company.Pri
```

This example filters on a property added by this command to only show interactive logons.

EXAMPLE 3

```
PS C:\> Get-WinEvent -FilterHashtable @{Logname ='system';
ID =7040} -MaxEvent 10 | Convert-EventlogRecord |
Select-Object -Property TimeCreated,@{Name="Service";Expression={$_.param4}},
@{Name="OriginalState";Expression = {$_.param2}},
@{Name="NewState";Expression={$_.param3}},Computername | Format-Table

TimeCreated          Service          OriginalState NewState     Computername
-----------          -------          ------------- --------     ------------
1/20/2020 9:26:08 AM BITS             demand start  auto start   Bovine320
1/20/2020 5:47:17 AM BITS             auto start    demand start Bovine320
1/20/2020 5:45:11 AM BITS             demand start  auto start   Bovine320
1/20/2020 1:44:31 AM BITS             auto start    demand start Bovine320
1/20/2020 1:42:30 AM BITS             demand start  auto start   Bovine320
1/19/2020 8:53:37 PM BITS             auto start    demand start Bovine320
1/17/2020 8:27:10 PM TrustedInstaller demand start  auto start   Bovine320
1/17/2020 8:27:10 PM TrustedInstaller auto start    demand start Bovine320
1/17/2020 8:26:29 PM TrustedInstaller demand start  auto start   Bovine320
1/17/2020 8:26:20 PM TrustedInstaller auto start    demand start Bovine320
```

Once you know the type of data, you can customize the output or build a script around it.

EXAMPLE 4

```
PS C:\> Get-WinEvent -FilterHashtable @{Logname = "Application";
ID=17137} -MaxEvents 1 | Convert-EventLogRecord

LogName       : Application
RecordType    : Information
TimeCreated   : 1/20/2020 2:31:52 PM
ID            : 17137
RawProperties : {TickleEventDB}
Message       : Starting up database 'TickleEventDB'.
Keywords      : {Classic}
Source        : MSSQL$SQLEXPRESS
```

```
Computername  : Bovine320
```

This record doesn't have structured extra data. The replacement strings are stored as text so the command displays the data using the RawProperties property.

EXAMPLE 5

```
PS C:\> $all = New-PSSession -ComputerName 'win10','srv1','srv2','dom1'
PS C:\> $local = Get-Item Function:\Convert-EventLogRecord
PS C:\> Invoke-Command -ScriptBlock {
 New-item -Path Function: -Name $using:local.name -Value $using:local.ScriptBlock
 } -Session $all
PS C:\> Invoke-Command {
    Get-WinEvent -FilterHashtable @{Logname='security';id=4624} -MaxEvents 10 |
    Convert-EventLogRecord |
    Select-Object -Property Computername,Time*,TargetUser*,
    TargetDomainName,Subject*} -session $all -HideComputerName |
    Select-Object -Property * -ExcludeProperty runspaceID

Computername      : WIN10.Company.Pri
TimeCreated       : 1/20/2020 5:21:17 PM
TargetUserSid     : S-1-5-18
TargetUserName    : SYSTEM
TargetDomainName  : NT AUTHORITY
SubjectUserSid    : S-1-5-18
SubjectUserName   : WIN10$
SubjectDomainName : COMPANY
SubjectLogonId    : 0x3e7

Computername      : WIN10.Company.Pri
TimeCreated       : 1/20/2020 5:18:51 PM
TargetUserSid     : S-1-5-18
TargetUserName    : SYSTEM
TargetDomainName  : NT AUTHORITY
SubjectUserSid    : S-1-5-18
SubjectUserName   : WIN10$
SubjectDomainName : COMPANY
SubjectLogonId    : 0x3e7

Computername      : WIN10.Company.Pri
TimeCreated       : 1/20/2020 5:16:07 PM
TargetUserSid     : S-1-5-21-278538743-3177530655-100218012-1105
TargetUserName    : ArtD
TargetDomainName  : COMPANY.PRI
SubjectUserSid    : S-1-0-0
SubjectUserName   : -
SubjectDomainName : -
SubjectLogonId    : 0x0
...
```

The first command creates PSSessions to several remote computers. The local copy of this command is created in the remote PSSessions. Then event log data is retrieved in the remote sessions and converted using the Convert-EventlogRecord function in each session.

Parameters

-LogRecord

An event log record from the Get-WinEvent command.

```
Type: EventLogRecord[]
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Diagnostics.Eventing.Reader.EventLogRecord

Outputs

PSCustomObject

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-WinEvent

Convert-HashtableString

Synopsis

Convert a hashtable string into a hashtable object.

Syntax

```
Convert-HashtableString [-Text] <String> [<CommonParameters>]
```

Description

This function is similar to Import-PowerShellDataFile. But where that command can only process a file, this command will take any hashtable-formatted string and convert it into an actual hashtable.

Examples

Example 1

```
PS C:\> get-content c:\work\test.psd1 | unprotect-cmsmessage | Convert-HashtableString

Name                           Value
----                           -----
CreatedBy                      BOVINE320\Jeff
CreatedAt                      10/02/2020 21:28:47 UTC
Computername                   Think51
Error
Completed                      True
Date                           10/02/2020 21:29:35 UTC
Scriptblock                    restart-service spooler -force
CreatedOn                      BOVINE320
```

The test.psd1 file is protected as a CMS Message. In this example, the contents are decoded as a string which is then in turn converted into an actual hashtable.

Parameters

-Text

Enter your hashtable string.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
```

```
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

hashtable

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Import-PowerShellDatafile

Convert-HashtableToCode

Convert-HashtableToCode

Synopsis

Convert a hashtable to a string representation.

Syntax

psd1 (Default)

```
Convert-HashtableToCode [-Hashtable] <Hashtable> [-Indent <Int32>]
[<CommonParameters>]
```

inline

```
Convert-HashtableToCode [-Hashtable] <Hashtable> [-Inline] [<CommonParameters>]
```

Description

Use this command to convert a hashtable into its text or string equivalent. It is assumed that any array values contain items of the same type. This command has not been tested with large or complex hashtables, so you might need to manually edit the output to meet your tastes or requirements.

Examples

Example 1

```
PS C:\> $h = @{Name="SRV1";Asset=123454;Location="Omaha"}
PS C:\> Convert-HashtableToCode $h
@{
        Name = 'SRV1'
        Asset = 123454
        Location = 'Omaha'
}
```

Convert a hashtable object to a string equivalent that you can copy into your script.

Example 2

```
PS C:\> Convert-HashtableToCode $h -inline

@{Name = 'SRV1';Asset = 123454;Location = 'Omaha'}
```

Create an inline string version of the hashtable.

Parameters

-Hashtable

A hashtable to convert. It can be standard or ordered hashtable.

```
Type: Hashtable
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Indent

Specify the number of tabs to indent. You shouldn't need to specify this parameter. It exists for situations where there are nested hashtables.

```
Type: Int32
Parameter Sets: psd1
Aliases: tab

Required: False
Position: Named
Default value: 1
Accept pipeline input: False
Accept wildcard characters: False
```

-Inline

Write the hashtable as an inline expression.

```
Type: SwitchParameter
Parameter Sets: inline
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Collections.Hashtable

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Convert-HashtableString

Convert-HtmlToAnsi

Synopsis

Convert an HTML color code to ANSI.

Syntax

```
Convert-HtmlToAnsi [-HtmlCode] <String> [<CommonParameters>]
```

Description

This simple function is designed to convert an HTML color code like #ff5733 into an ANSI escape sequence. To use the resulting value you still need to construct an ANSI string with the escape character and the closing [0m.

Examples

Example 1

```
PS C:\> Convert-HtmlToAnsi  "#ff5733"

[38;2;255;87;51m
```

Example 2

```
PS C:\> "Running processes: `e$(cha "#ff337d")$((Get-Process).count)`e[0m"

Running processes: 306
```

The number of processes will be displayed in color. This example is using the cha alias for Convert-HtmlToAnsi.

Parameters

-HtmlCode

Specify an HTML color code like #13A10E. You need to include the # character.

```
Type: String
Parameter Sets: (All)
Aliases: code

Required: True
Position: 0
Default value: None
```

```
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

ConvertFrom-LexicalTimespan

Synopsis

Convert a lexical timespan into a PowerShell timespan.

Syntax

```
ConvertFrom-LexicalTimespan [-String] <String> [-AsString] [<CommonParameters>]
```

Description

When working with some XML data, such as that from scheduled tasks, timespans or durations are stored in a lexical format like P0DT0H0M47S. You can use this command to convert that value into a timespan object.

Examples

Example 1

```
PS C:\> ConvertFrom-LexicalTimespan P0DT0H0M47S


Days              : 0
Hours             : 0
Minutes           : 0
Seconds           : 47
Milliseconds      : 0
Ticks             : 470000000
TotalDays         : 0.000543981481481481
TotalHours        : 0.0130555555555556
TotalMinutes      : 0.783333333333333
TotalSeconds      : 47
TotalMilliseconds : 47000
```

Example 2

```
PS C:\> Get-ScheduledTask -TaskName DailyWatcher |
Select-Object Taskname,
@{Name="ExecutionLimit";Expression = `
{ ConvertFrom-LexicalTimespan $_.settings.ExecutionTimeLimit }}

Taskname     ExecutionLimit
--------     --------------
DailyWatcher 3.00:00:00
```

Parameters

-AsString

Format the timespan as a string

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-String

Enter a lexical time string like P23DT3H43M. This is case-sensitive.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

String

Timespan

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

ConvertTo-LexicalTimespan

ConvertFrom-Text

Synopsis

Convert structured text to objects.

Syntax

File (Default)

```
ConvertFrom-Text [-Pattern] <Regex> [-Path] <String> [-TypeName <String>]
[-NoProgress] [<CommonParameters>]
```

InputObject

```
ConvertFrom-Text [-Pattern] <Regex> [-InputObject] <String>
[-TypeName <String>] [-NoProgress] [<CommonParameters>]
```

Description

This command will take structured text such as from a log file and convert it to objects that you can use in the PowerShell pipeline. You can specify the path to a text file, or pipe content directly into this command. The piped content could even be output from command-line tools. You have to specify a regular expression pattern that uses named captures. The names will become property names in the custom objects.

The command will write a generic custom object to the pipeline. However, you can specify a custom type name. You might want to do this if you have your own format ps1xml file and want to handle formatting through that file.

Examples

EXAMPLE 1

```
PS C:\> $b = "(?<Date>\d{2}-\d{2}-
\d{4}\s\d{2}:\d{2}).*(?<Error>\d+),\s+(?<Step>.*):\s+(?<Action>\w+),\s+(?<Path>(\w+\\)*\w+\.\w+)"
PS C:\> ConvertFrom-Text -pattern $b -Path C:\windows\DtcInstall.log

Date   : 10-18-2020 10:49
Error  : 0
Step   : CMsdtcUpgradePlugin::PostApply
Action : Enter
Path   : com\complus\dtc\dtc\msdtcstp\msdtcplugin.cpp

Date   : 10-18-2020 10:49
Error  : 0
Step   : CMsdtcUpgradePlugin::PostApply
```

```
Action : Exit
Path   : com\complus\dtc\dtc\msdtcstp\msdtcplugin.cpp
...
```

The first command creates a variable to hold the regular expression pattern that defines named captures for content in the DtcInstall.log. The second line runs the command using the pattern and the log file.

EXAMPLE 2

```
PS C:\> $wu = "(?<Date>\d{4}-\d{2}-
\d{2})\s+(?<Time>(\d{2}:)+\d{3})\s+(?<PID>\d+)\s+(?<TID>\w+)\s+(?<Component>\w+)\s+(?<Message>.*)"
PS C:\> $out == ConvertFrom-Text -pattern $wu -Path C:\Windows\WindowsUpdate.log -noprogress
PS C:\> $out | Group-Object Component | Sort-Object Count

Count Name                      Group
----- ----                      -----
   20 DtaStor                   {@{Date=2020-01-27; Time=07:19:19:584; PID=1...
   72 Setup                     {@{Date=2020-01-27; Time=07:19:05:868; PID=1...
  148 SLS                       {@{Date=2020-01-27; Time=07:19:05:086; PID=1...
  150 PT                        {@{Date=2020-01-27; Time=07:19:08:946; PID=1...
  209 WuTask                    {@{Date=2020-01-26; Time=20:05:28:483; PID=1...
  256 EP                        {@{Date=2020-01-26; Time=21:21:23:341; PID=1...
  263 Handler                   {@{Date=2020-01-27; Time=07:19:42:878; PID=3...
  837 Report                    {@{Date=2020-01-26; Time=21:21:23:157; PID=1...
  900 IdleTmr                   {@{Date=2020-01-26; Time=21:21:23:338; PID=1...
  903 Service                   {@{Date=2020-01-26; Time=20:05:29:104; PID=1...
  924 Misc                      {@{Date=2020-01-26; Time=21:21:23:033; PID=1...
 1062 DnldMgr                   {@{Date=2020-01-26; Time=21:21:23:159; PID=1...
 2544 AU                        {@{Date=2020-01-26; Time=19:55:27:449; PID=1...
 2839 Agent                     {@{Date=2020-01-26; Time=21:21:23:045; PID=1...

PS C:\> $out |
Where-Object {\[datetime\]$_.date -ge \[datetime\]"2/10/2020" -AND $_.component -eq "AU"} |
Format-Table Date,Time,Message -wrap

Date       Time         Message
----       ----         -------
2020-02-10 05:36:44:183 ############  AU: Initializing Automatic Updates  ############
2020-02-10 05:36:44:184 Additional Service {117CAB2D-82B1-4B5A-A08C-4D62DBEE7782} with Approval
                        type {Scheduled} added to AU services list
2020-02-10 05:36:44:184 AIR Mode is disabled
2020-02-10 05:36:44:185 # Approval type: Scheduled (User preference)
2020-02-10 05:36:44:185 # Auto-install minor updates: Yes (User preference)
2020-02-10 05:36:44:185 # ServiceTypeDefault: Service 117CAB2D-82B1-4B5A-A08C-4D62DBEE7782
                        Approval type: (Scheduled)
2020-02-10 05:36:44:185 # Will interact with non-admins (Non-admins are elevated (User preference))
2020-02-10 05:36:44:204 WARNING: Failed to get Wu Exemption info from NLM, assuming not exempt,
                        error = 0x80070490
2020-02-10 05:36:44:213 AU finished delayed initialization
2020-02-10 05:38:01:000 ##############
...
```

In this example, the WindowsUpdate log is converted from text to objects using the regular expression pattern. Given the size of the log file this process can take some time to complete so the progress bar is turned off to improve performance.

EXAMPLE 3

```
PS C:\> Get-Content c:\windows\windowsupdate.log -totalcount 50 |
ConvertFrom-Text $wu
```

This example gets the first 50 lines from the Windows update log and converts that to objects using the pattern from the previous example.

EXAMPLE 4

```
PS C:\> $c =
"(?<Protocol>\w{3})\s+(?<LocalIP>(\d{1,3}\.){3}\d{1,3}):(?<LocalPort>\d+)\s+(?<ForeignIP>.*):(?<ForeignPo
rt>\d+)\s+(?<State>\w+)?"
PS C:\> netstat | select -skip 4 | ConvertFrom-Text $c |
Format-Table -autosize

Protocol LocalIP      LocalPort ForeignIP      ForeignPort State
-------- -------      --------- ---------      ----------- -----
TCP      127.0.0.1    19872     Novo8          50835       ESTABLISHED
TCP      127.0.0.1    50440     Novo8          50441       ESTABLISHED
TCP      127.0.0.1    50441     Novo8          50440       ESTABLISHED
TCP      127.0.0.1    50445     Novo8          50446       ESTABLISHED
TCP      127.0.0.1    50446     Novo8          50445       ESTABLISHED
TCP      127.0.0.1    50835     Novo8          19872       ESTABLISHED
TCP      192.168.6.98 50753     74.125.129.125 5222        ESTABLISHED
```

The first command creates a variable to be used with output from the Netstat command which is used in the second command.

EXAMPLE 5

```
PS C:\> $arp = "(?<IPAddress>(\d{1,3}\.){3}\d{1,3})\s+(?<MAC>(\w{2}-){5}\w{2})\s+(?<Type>\w+$)"
PS C:\> arp -g -N 172.16.10.22 | Select-Object -skip 3 |
ForEach-Object {$_.Trim()} |
ConvertFrom-Text $arp -noprogress -typename arpData

IPAddress                      MAC                            Type
---------                      ---                            ----
172.16.10.1                    00-13-d3-66-50-4b              dynamic
172.16.10.100                  00-0d-a2-01-07-5d              dynamic
172.16.10.101                  2c-76-8a-3d-11-30              dynamic
172.16.10.121                  00-0e-58-ce-8b-b6              dynamic
172.16.10.122                  1c-ab-a7-99-9a-e4              dynamic
172.16.10.124                  00-1e-2a-d9-cd-b6              dynamic
172.16.10.126                  00-0e-58-8c-13-ac              dynamic
172.16.10.128                  70-11-24-51-84-60              dynamic
...
```

The first command creates a regular expression for the ARP command. The second prompt shows the ARP command being used to select the content, trimming each line, and then converting the output to text using the regular expression named pattern. This example also defines a custom type name for the output.

Parameters

-InputObject

Any text that you want to pipe into this command. It can be a certain number of lines from a large text or log file. Or the output of a command line tool. Be sure to filter out blank lines.

```
Type: String
Parameter Sets: InputObject
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-NoProgress

By default this command will display a progress bar to inform the user on the status. For large data sets this can impact performance. Use this parameter to suppress the progress messages.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

The filename and path to the text or log file.

```
Type: String
Parameter Sets: File
Aliases: file

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Pattern

A regular expression pattern that uses named captures. This parameter has an aliases of regex and rx.

```
Type: Regex
Parameter Sets: (All)
Aliases: regex, rx

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-TypeName

Enter an optional typename for the object output. If you don't use one, the command will write a generic custom object to the pipeline.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

PSCustomObject

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Content

About_Regular_Expressions

ConvertFrom-UTCTime

Synopsis

Convert a datetime value from universal.

Syntax

```
ConvertFrom-UTCTime [-DateTime] <DateTime> [<CommonParameters>]
```

Description

Use this command to convert a universal datetime object into local time.

This command was introduced in v2.3.0.

Examples

Example 1

```
PS C:\> ConvertFrom-UTCTime "18:00"

Monday, March 4, 2020 1:00:00 PM
```

Covert the time 18:00 for the current day from universal time to local time. This result reflects Eastern Time which on this date is UTC-5.

Parameters

-DateTime

Enter a Universal Datetime value

```
Type: DateTime
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.DateTime

Outputs

System.DateTime

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

ConvertTo-UTCTime

Get-Date

ConvertTo-Hashtable

Synopsis

Convert an object into a hashtable.

Syntax

```
ConvertTo-Hashtable [-InputObject] <Object> [-NoEmpty] [-Exclude <String[]>]
[-Alphabetical] [<CommonParameters>]
```

Description

This command will take an object and create a hashtable based on its properties. You can have the hashtable exclude some properties as well as properties that have no value.

Examples

EXAMPLE 1

```
PS C:\> Get-Process -id $pid |
Select-Object name,id,handles,workingset |
ConvertTo-Hashtable

Name                           Value
----                           -----
WorkingSet                     418377728
Name                           powershell_ise
Id                             3456
Handles                        958
```

EXAMPLE 2

```
PS C:\> $hash = Get-Service spooler |
ConvertTo-Hashtable -Exclude CanStop,CanPauseAndContinue -NoEmpty
PS C:\> $hash

Name                           Value
----                           -----
ServiceType                    Win32OwnProcess, InteractiveProcess
ServiceName                    spooler
ServiceHandle                  SafeServiceHandle
DependentServices              {Fax}
ServicesDependedOn             {RPCSS, http}
Name                           spooler
Status                         Running
MachineName                    .
RequiredServices               {RPCSS, http}
```

```
DisplayName                    Print Spooler
```

This created a hashtable from the Spooler service object, skipping empty properties and excluding CanStop and CanPauseAndContinue.

EXAMPLE 3

```
PS C:\> Get-Service bits |
Select-Object Name,DisplayName,Status,
@{Name="Computername";Expression={$_.Machinename}} |
ConvertTo-Hashtable -Alphabetical

Name                           Value
----                           -----
Computername                   .
DisplayName                    Background Intelligent Transfer Service
Name                           bits
Status                         Running
```

Convert an object to a hashtable and order the properties alphabetically.

Parameters

-InputObject

A PowerShell object to convert to a hashtable.

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-NoEmpty

Do not include object properties that have no value.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Exclude

An array of property names to exclude from the hashtable.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Alphabetical

Create a hashtable with property names arranged alphabetically.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.Object

Outputs

System.Collections.Specialized.OrderedDictionary

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

This was originally described at: http://jdhitsolutions.com/blog/2013/01/convert-powershell-object-to-

hashtable-revised

Related Links

About_Hash_Tables

Get-Member

ConvertTo-LexicalTimespan

Synopsis

Convert a timespan to lexical time.

Syntax

```
ConvertTo-LexicalTimespan [-Timespan] <TimeSpan> [<CommonParameters>]
```

Description

Convert a timespan into a lexical version that you can insert into an XML document.

Examples

Example 1

```
PS C:\> ConvertTo-LexicalTimespan (New-Timespan -Days 7)

P7D
```

You can insert this value into an XML document where you need to represent a time-span.

Parameters

-Timespan

Enter a timespan object

```
Type: TimeSpan
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and

-WarningVariable. For more information, see about_CommonParameters.

Inputs

System.TimeSpan

Outputs

String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

ConvertFrom-LexicalTimespan

ConvertTo-LocalTime

Synopsis

Convert a foreign time to local.

Syntax

```
ConvertTo-LocalTime [-Datetime] <DateTime> [-UTCOffset] <TimeSpan>
[-DaylightSavingTime] [<CommonParameters>]
```

Description

It can be tricky sometimes to see a time in a foreign location and try to figure out what that time is locally. This command attempts to simplify this process. In addition to the remote time, you need the base UTC offset for the remote location. You can use Get-Timezone or Get-TZData to help. See examples.

The parameter for DaylightSavingTime is to indicate that the remote location is observing DST. You can use this with the location's standard UTC offset, or you can specify an offset that takes DST into account.

Examples

Example 1

```
PS C:\> ConvertTo-LocalTime "3/15/2019 7:00AM" 8:00:00

Thursday, March 14, 2019 7:00:00 PM
```

Convert a time that is in Singapore to local (Eastern) time.

Example 2

```
PS C:\> Get-TimeZone -ListAvailable | where-object id -match hawaii


Id                         : Hawaiian Standard Time
DisplayName                : (UTC-10:00) Hawaii
StandardName               : Hawaiian Standard Time
DaylightName               : Hawaiian Daylight Time
BaseUtcOffset              : -10:00:00
SupportsDaylightSavingTime : False

PS C:\> ConvertTo-LocalTime "10:00AM" -10:00:00

Thursday, March 14, 2019 4:00:00 PM
```

In this example, the user is first determining the UTC offset for Hawaii. Then 10:00AM in Honolulu, is converted to local time which in this example is in the Eastern Time zone.

Parameters

-Datetime

Enter a non-local date time

```
Type: DateTime
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UTCOffset

Enter the location's' UTC Offset. You can use Get-Timezone to discover it.

```
Type: TimeSpan
Parameter Sets: (All)
Aliases: offset

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: False
```

-DaylightSavingTime

Indicate that the foreign location is using Daylight Saving Time

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: dst

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

DateTime

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-TimeZone

Get-Date

Get-MyTimeInfo

Get-TZList

ConvertFrom-UTCTime

ConvertTo-UTCTime

ConvertTo-Markdown

Synopsis

Convert pipeline output to a markdown document.

Syntax

text (Default)

```
ConvertTo-Markdown [[-InputObject] <Object>] [-Title <String>]
[-PreContent <String[]>] [-PostContent <String[]>] [-Width <Int32>] [<CommonParameters>]
```

table

```
ConvertTo-Markdown [[-InputObject] <Object>] [-Title <String>] [-PreContent <String[]>] [-PostContent
<String[]>] [-AsTable] [<CommonParameters>]
```

list

```
ConvertTo-Markdown [[-InputObject] <Object>] [-Title <String>] [-PreContent <String[]>] [-PostContent
<String[]>] [-AsList] [<CommonParameters>]
```

Description

This command is designed to accept pipelined output and create a generic markdown document. The pipeline output will formatted as a text block or you can specify a table. The AsList parameter technically still create a table, but it is two columns with the property namd and value.

You can optionally define a title, content to appear before the output, and content to appear after the output. Best efforts have been made to produce markdown output that meets basic standards.

The command does not create a text file. You need to pipe results from this command to a cmdlet like Out-File or Set-Content. See examples.

Examples

EXAMPLE 1

```
PS C:\> Get-Service Bits,Winrm |
Convertto-Markdown -title "Service Check" -precontent "## $($env:computername)"

# Service Check
```

```
## THINK51

\`\`\`text

Status   Name               DisplayName
------   ----               -----------
Running  Bits               Background Intelligent Transfer Ser...
Running  Winrm              Windows Remote Management (WS-Manag...
\`\`\`
```

Create markdown output from a Get-Service command.

EXAMPLE 2

```
PS C:\> Get-Service Bits,Winrm |
Convertto-Markdown -title "Service Check" -precontent "## $($env:computername)"`
-postcontent "_report $(Get-Date)_" | Out-File c:\work\svc.md
```

Re-run the previous command and save the output to a file.

EXAMPLE 3

```
PS C:\> $computers = "srv1","srv2","srv4"
PS C:\> $Title = "System Report"
PS C:\> $footer = "_report run by $($env:USERDOMAIN)\$($env:USERNAME)_"
PS C:\> $sb =  {
$os = Get-CimInstance -classname Win32_OperatingSystem -property caption,
lastbootUptime
\[PSCustomObject\]@{
PSVersion = $PSVersionTable.PSVersion
OS = $os.caption
Uptime = (Get-Date) - $os.lastbootUpTime
SizeFreeGB = (Get-Volume -DriveLetter C).SizeRemaining /1GB
 }
}
PS C:\> $out == ConvertTo-Markdown -title $Title
PS C:\> foreach ($computer in $computers) {
$out+= Invoke-command -scriptblock $sb -Computer $computer -HideComputerName |
Select-Object -Property * -ExcludeProperty RunspaceID |
ConvertTo-Markdown -PreContent "## $($computer.ToUpper())"
}
PS C:\>$out +== ConvertTo-Markdown -PostContent $footer
PS C:\>$out | Set-Content c:\work\report.md
```

Here is an example that creates a series of markdown fragments for each computer and in the end creates a markdown document. The commands are shown at a PowerShell prompt, but you are likely to put them in a PowerShell script file.

EXAMPLE 4

```
PS C:\> Get-WindowsVersion | ConvertTo-Markdown -title "OS Summary" -PreContent "## $($env:computername)"
```

```
-AsList
# OS Summary

## THINKX1

|    |    |
|----|----|
|ProductName|Windows 10 Pro|
|EditionID|Professional|
|ReleaseID|2009|
|Build|22000.376|
|Branch|co_release|
|InstalledUTC|8/10/2021 12:17:07 AM|
|Computername|THINKX1-JH|
```

Create a "list" table with output from the Get-WindowsVersion command.

EXAMPLE 5

```
PS C:\> Get-Service | Sort-Object -property DisplayName |
Foreach-Object -begin {
    "# Service Status`n"
} -process {
    $name = $_.DisplayName
    $_ | Select-Object -property Name,StartType,Status,
    @{Name="RequiredServices";Expression = {$_.requiredservices.name -join ','}} |
    ConvertTo-Markdown -asList -PreContent "## $Name"
} -end {
    "### $($env:computername) $(Get-Date)"
} | Out-File c:\work\services.md
```

The example will create a markdown file with a title of Service Status. Each service will be converted to a markdown list with the DisplayName as pre-content.

Parameters

-InputObject

Typically the results of a PowerShell command or expression.

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Title

Specify a top-level title. You do not need to include any markdown. It will automatically be formatted with a H1 tag.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PreContent

Enter whatever content you want to appear before converted input. You can use whatever markdown you wish.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PostContent

Enter whatever content you want to appear after converted input. You can use whatever markdown you wish.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Width

Specify the document width. Depending on what you intend to do with the markdown from this command you may want to adjust this value.

```
Type: Int32
Parameter Sets: text
```

```
Aliases:

Required: False
Position: Named
Default value: 80
Accept pipeline input: False
Accept wildcard characters: False
```

-AsTable

Format the incoming data as a markdown table. This works best with similar content such as the result of running a PowerShell command.

```
Type: SwitchParameter
Parameter Sets: table
Aliases: table

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-AsList

Display results as a 2 column markdown table. The first column will be the property name with the value formatted as a string in the second column.

```
Type: SwitchParameter
Parameter Sets: list
Aliases: list

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Object

Outputs

System.String

Notes

Learn more about PowerShell: https://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Convertto-HTML

Out-File

ConvertTo-TitleCase

Synopsis

Convert a string to title case.

Syntax

```
ConvertTo-TitleCase [-Text] <String> [<CommonParameters>]
```

Description

This command is a simple function to convert a string to title or proper case.

Examples

Example 1

```
PS C:\> ConvertTo-TitleCase "working summary"

Working Summary
```

Example 2

```
PS C:\> "art deco","jack frost","al fresco" | ConvertTo-TitleCase

Art Deco
Jack Frost
Al Fresco
```

Parameters

-Text

Text to convert to title case.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
```

```
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

System.String

Notes

Related Links

ConvertTo-UTCTime

Synopsis

Convert a local datetime to universal time.

Syntax

```
ConvertTo-UTCTime [[-DateTime] <DateTime>] [-AsString] [<CommonParameters>]
```

Description

Convert a local datetime to universal time. The default is now but you can specify a datetime value. You also have an option to format the result as a sortable string.

This command was introduced in v2.3.0.

Examples

Example 1

```
PS C:\> Get-Date

Monday, December 28, 2020 7:43:13 PM


PS C:\> ConvertTo-UTCTime

Tuesday, December 29, 2020 12:43:37 AM
```

Example 2

```
PS C:\> ConvertTo-UTCTime -asString
2020-12-29 00:44:01Z
```

Parameters

-DateTime

Enter a Datetime value

```
Type: DateTime
Parameter Sets: (All)
Aliases:
```

```
Required: False
Position: 0
Default value: now
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-AsString

Convert the date-time value to a sortable string. This is the same thing as running a command like "{0:u}" -f (Get-Date).ToUniversaltime()

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.DateTime

Outputs

System.DateTime

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

ConvertFrom-UTCTime

Get-Date

ConvertTo-WPFGrid

Synopsis

Send command output to an interactive WPF-based grid.

Syntax

input (Default)

```
ConvertTo-WPFGrid [[-Title] <String>] [[-Timeout] <Int32>] [-Refresh]
[-GridLines <String>] [-InitializationScript <ScriptBlock>]
[-UseLocalVariable <String[]>] [-UseProfile] [<CommonParameters>]
```

Input

```
ConvertTo-WPFGrid [[-InputObject] <PSObject>] [[-Title] <String>]
[[-Timeout] <Int32>] [-Refresh] [-GridLines <String>]
[-InitializationScript <ScriptBlock>] [-UseLocalVariable <String[]>]
[-UseProfile] [<CommonParameters>]
```

scriptblock

```
ConvertTo-WPFGrid [-Scriptblock <ScriptBlock>] [[-Title] <String>]
[[-Timeout] <Int32>] [-Refresh] [-GridLines <String>]
[-InitializationScript <ScriptBlock>] [-UseLocalVariable <String[]>]
[-UseProfile] [<CommonParameters>]
```

Description

This command is an alternative to Out-GridView. It works much the same way. Run a PowerShell command and pipe it to this command. The output will be displayed in an auto-sized data grid. You can click on column headings to sort. You can resize columns and you can re-order columns. You will want to be selective about which properties you pipe through to this command. See examples.

You can specify a timeout value which will automatically close the form. If you specify a timeout and the Refresh parameter, then the contents of the datagrid will automatically refreshed using the timeout value as an integer. This will only work when you pipe a PowerShell expression to ConvertTo-WPFGrid as one command. This will fail if you break the command in the PowerShell ISE or use a nested prompt. Beginning with v2.4.0 the form now has a Refresh button which will automatically refresh the datagrid. You should set a refresh interval that is greater than the time it takes to complete the command.

Because the grid is running in a new background runspace, it does not automatically inherit anything from your current session. However, you can use the -UserProfile parameter which will load your user profile scripts into the runspace. You can specify a list of locally defined variables to be used in the form. Use the variable

name without the $. Finally, you can also use the -InitializationScript parameter and specify a scriptblock of PowerShell code to initialize the runspace. This is helpful when you need to dot source external scripts or import modules not in your module path.

This command runs the WPF grid in a new runspace so your PowerShell prompt will not be blocked. However, after closing the form you may be left with the runspace. You can use Remove-Runspace to clean up or wait until you restart PowerShell.

This command requires a Windows platform.

Examples

EXAMPLE 1

```
PS C:\> Get-Process | Sort-Object WS -Descending |
Select-object -first 20 ID,Name,WS,VM,PM,Handles,StartTime |
ConvertTo-WPFGrid -Refresh -timeout 20 -Title "Top Processes"
```

Get the top 20 processes based on the value of the WorkingSet property and display selected properties in the WPF Grid. The contents will automatically refresh every 20 seconds. You will need to manually close the form.

EXAMPLE 2

```
PS C:\> $vmhost = "CHI-HVR2"
PS C:\> Get-VM -computername $VMHost | Select Name,State,Uptime,
@{Name="AssignedMB";Expression={$_.MemoryAssigned/1mb -as [int]}},
@{Name="DemandMB";Expression={$_.MemoryDemand/1mb -as [int]}} |
ConvertTo-WPFGrid -title "VM Report $VMHost" -timeout 30 -refresh
-uselocalvariable VMHost
```

Get Hyper-V virtual machine information and refresh every 30 seconds. Because the command is using a locally defined variable it is also being used in the form. Note that this would be written as one long pipelined expression. It is formatted here for the sake of the help documentation.

EXAMPLE 3

```
PS C:\> Get-VMData -host CHI-HVR2 |
ConvertTo-WPFGrid -title "VM Data" -refresh -timeout 60 -useprofile
```

This example uses a hypothetical command that might be defined in a PowerShell profile script. ConvertTo-WPFGrid will load the profile scripts so that the data can be updated every 60 seconds.

EXAMPLE 4

```
PS C:\> (Get-ProcessData -Computername $computers).where({$_.workingset -ge 100mb}) |
ConvertTo-WPFGrid -Title "Process Report" -UseLocalVariable computers -InitializationScript {.
```

```
C:\scripts\Get-ProcessData.ps1} -Refresh -Timeout 30
```

This command runs a function that is defined in a script file. In order for the form to refresh, it must also dot source the script which is happening with the InitializationScript parameter. The example is also loading the local $computers variable so that it too is available upon refresh.

Parameters

-InputObject

Typically the results of a PowerShell command or expression. You should select the specific properties you wish to display.

```
Type: PSObject
Parameter Sets: Input
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Title

Specify a title for your form.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 2
Default value: ConvertTo-WPFGrid
Accept pipeline input: False
Accept wildcard characters: False
```

-Timeout

By default, the grid will remain displayed until you manually close it. But you can specify a timeout interval in seconds. The minimum accepted value is 5 seconds. If you use this parameter with -Refresh, then the datagrid will be refreshed with results of the PowerShell expression you piped to ConvertTo-WPFGrid.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: 3
Default value: 0
```

```
Accept pipeline input: False
Accept wildcard characters: False
```

-Refresh

If you specify this parameter and a Timeout value, this command will refresh the datagrid with the PowerShell expression piped into ConvertTo-WPFGrid. You should use a value that is longer than the time it takes to complete the command that generates your data.

This parameter will only work if you are using ConvertTo-WPFGrid at the end of a pipelined expression. See examples.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseProfile

Load your PowerShell profiles into the background runspace.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: profile

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Scriptblock

Enter a scriptblock that will generate data to be populated in the form

```
Type: ScriptBlock
Parameter Sets: scriptblock
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseLocalVariable

Load locally defined variables into the background runspace

```
Type: String[]
Parameter Sets: (All)
Aliases: var

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-InitializationScript

Run this scriptblock to initialize the background runspace. You might need to dot source a script file or load a non-standard module.

```
Type: ScriptBlock
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-GridLines

Control how grid lines are displayed in the form. You may not want to have any or perhaps only vertical or horizontal lines.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.Object

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Out-GridView

ConvertTo-HTML

ConvertTo-Markdown

Copy-Command

Synopsis

Copy a PowerShell command.

Syntax

```
Copy-Command [-Command] <String> [[-NewName] <String>] [-IncludeDynamic]
[-AsProxy] [-UseForwardHelp] [<CommonParameters>]
```

Description

This command will copy a PowerShell command, including parameters and help to a new user-specified command. You can use this to create a "wrapper" function or to easily create a proxy function. The default behavior is to create a copy of the command complete with the original comment-based help block.

For best results, run this in the PowerShell ISE or Visual Studio code, the copied command will be opened in a new tab or file.

Examples

EXAMPLE 1

```
PS C:\> Copy-Command Get-Process Get-MyProcess
```

Create a copy of Get-Process called Get-MyProcess.

EXAMPLE 2

```
PS C:\> Copy-Command Get-Eventlog -asproxy -useforwardhelp
```

Create a proxy function for Get-Eventlog and use forwarded help links.

EXAMPLE 3

```
PS C:\> Copy-Command Get-ADComputer Get-MyADComputer -includedynamic
```

Create a wrapper function for Get-ADComputer called Get-MyADComputer. Due to the way the Active Directory cmdlets are written, most parameters appear to be dynamic so you need to include dynamic parameters otherwise there will be no parameters in the final function.

Parameters

-Command

The name of a PowerShell command, preferably a cmdlet but that is not a requirement. You can specify an alias and it will be resolved.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-NewName

Specify a name for your copy of the command. If no new name is specified, the original name will be used.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 2
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-IncludeDynamic

The command will only copy explicitly defined parameters unless you specify to include any dynamic parameters as well. If you copy a command and it seems to be missing parameters, re-copy and include dynamic parameters.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-AsProxy

Create a traditional proxy function.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-UseForwardHelp

By default the copy process will create a comment-based help block with the original command's help which you can then edit to meet your requirements. Or you can opt to retain the forwarded help links to the original command.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Command

Copy-HelpExample

Synopsis

Copy code snippet from help examples.

Syntax

```
Copy-HelpExample [-Name] <String> [-Path <String>] [-UseGridView]
[<CommonParameters>]
```

Description

This command is intended to make it easier to copy code snippets from help examples to the clipboard. You can select one or more examples which have been trimmed of comments, blank lines and most prompts. Some code examples contain the output or have several lines of code. You will need to manually delete what you don't want. If this command is run on a Windows system you have a dynamic parameter to use Out-GridView to display your choices. When prompted enter a comma-separated list of the examples you wish to copy. Otherwise, the command will display a console-based menu. Note that if you are using the PowerShell ISE you will be forced to use Out-GridView.

Examples

Example 1

```
PS C:\> Copy-HelpExample -Name Stop-Process

Code Samples

Each help example is numbered to the left. At the prompt below, select the code samples you want to copy
to the clipboard. Separate multiple values with a comma.

Some example code includes the output.


[1] Example 1: Stop all instances of a process

    Stop-Process -Name "notepad"

[2] Example 2: Stop a specific instance of a process

    Stop-Process -Id 3952 -Confirm -PassThru
Confirm
Are you sure you want to perform this action?
Performing operation "Stop-Process" on Target "notepad (3952)".
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [S] Suspend  [?] Help
(default is "Y"):y
Handles  NPM(K)    PM(K)      WS(K) VM(M)   CPU(s)     Id ProcessName
-------  ------    -----      ----- -----   ------     -- -----------
41       2      996       3212    31            3952 notepad
```

```
[3] Example 3: Stop a process and detect that it has stopped

    calc
 $p = Get-Process -Name "calc"
 Stop-Process -InputObject $p
 Get-Process | Where-Object {$_.HasExited}

[4] Example 4: Stop a process not owned by the current user

    Get-Process -Name "lsass" | Stop-Process

Stop-Process : Cannot stop process 'lsass (596)' because of the following error
: Access is denied
At line:1 char:34
+ Get-Process -Name "lsass" | Stop-Process <<<<

[ADMIN]:  Get-Process -Name "lsass" | Stop-Process

Warning!
Are you sure you want to perform this action?
Performing operation 'Stop-Process' on Target 'lsass(596)'
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [S] Suspend  [?] Help (default is "Y"):
[ADMIN]:  Get-Process -Name "lsass" | Stop-Process -Force
[ADMIN]:

Please select items to copy to the clipboard by number. Separate multiple entries with a comma. Press
Enter alone to cancel:
```

The console menu will be displayed using ANSI. Enter a comma separated list of numbers for the items to copy to the clipboard.

Parameters

-Name

Enter the name of the PowerShell command.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Gets help that explains how the cmdlet works in the specified provider path. Enter a PowerShell provider path.

```
Type: String
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseGridView

Select help examples using Out-GridView. This parameter is only available on Windows systems. The parameter has an alias of 'ogv'.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: ogv

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Help

Copy-HistoryCommand

Synopsis

Copy a history command line to the clipboard.

Syntax

```
Copy-HistoryCommand [[-ID] <Int32[]>] [-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

You can use this command to copy the command line from a given PowerShell history item to the clipboard.The default item will the be last history item. Once copied, you can paste into your following prompt to edit and/or re-run.

Linux platforms require the xclip utility to be in the path.

Lee Holmes has a similar function called Copy-History in the PowerShell Cookbook that lets you copy a range of history commands to the clipboard.

Examples

Example 1

```
PS C:\> Copy-HistoryCommand
```

Copy the last command to the clipboard.

Example 2

```
PS C:\> Copy-HistoryCommand 25 -PassThru
get-process -computername $computer | sort ws -Descending | select -first 3
```

Copy the command from history item 25 to the clipboard and also pass it to the pipeline.

Example 3

```
PS C:\> Copy-HistoryCommand (100..110)
```

Copy history items 100 through 110 to the clipboard.

Example 4

```
PS C:\> $c = [scriptblock]::Create($(Copy-HistoryCommand 25 -PassThru))
PS C:\> &$c

Handles  NPM(K)    PM(K)      WS(K) VM(M)   CPU(s)     Id  SI ProcessName
-------  ------    -----      ----- -----   ------     --  -- -----------
  10414   12744   488164     461596 ...76            3128   0 dns
    581      67   171868     141620 ...82            3104   0 MsMpEng
    678      48   118132      89572   840            7180   0 ServerManager
```

This copies the command from history item 25 and turns it into a scriptblock.

Parameters

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ID

The history ID number. The default is the last command.

```
Type: Int32[]
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: $(Get-History).Count
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Use this parameter if you also want to see the command as well as copy it to the clipboard.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:
```

```
Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Int

Outputs

None

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-History

Set-Clipboard

Out-Copy

Copy-PSFunction

Synopsis

Copy a local PowerShell function to a remote session.

Syntax

```
Copy-PSFunction [-Name] <String[]> -Session <PSSession> [-Force]
[<CommonParameters>]
```

Description

This command is designed to solve the problem when you want to run a function loaded locally on a remote computer. Copy-PSFunction will copy a PowerShell function that is loaded in your current PowerShell session to a remote PowerShell session. The remote session must already be created. The copied function only exists remotely for the duration of the remote PowerShell session.

If the function relies on external or additional files, you will have to copy them to the remote session separately.

Examples

Example 1

```
PS C:\> "Get-LastBoot","Get-DiskFree" | Copy-PSFunction -session $S
```

Copy the local functions Get-LastBoot and Get-DiskFree to a previously created PSSession saved as $S. You could then run the function remotely using Invoke-Command.

Parameters

-Force

Overwrite an existing function with the same name. The default behavior is to skip existing functions.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Name

Enter the name of a local function.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Session

Specify an existing PSSession.

```
Type: PSSession
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String[]

Outputs

Deserialized.System.Management.Automation.FunctionInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Copy-Item

Export-PSAnsiFileMap

Synopsis

Export a PSAnsiFileMap to a file.

Syntax

```
Export-PSAnsiFileMap [-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

The PSScriptTools module includes a JSON file that is automatically imported as the global PSAnsiFileMap variable. This variable is used for the custom ANSI formatted table view, among other module commands. If you wish to customize the file map, you can use the Set-PSAnsiFileMap command. These changes are not permanent and will be overwritten the next time you import the PSScriptTools module. To use your customized settings, you need to export your modified $PSAnsiFileMap object with this command.

The command will export the settings to a JSON file called psansifilemap.json in the root of $HOME. The next time you import the PSScriptTools module, it will use this file if found. To revert to the default file map either rename or delete the file in $HOME.

Examples

Example 1

```
PS C:\>Export-PSAnsiFileMap -PassThru

    Directory: C:\Users\Jeff

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          12/28/2020  1:02 PM           1631 psansifilemap.json
```

Parameters

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
```

```
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

System.IO.FileInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-PSAnsiFileMap

Set-PSAnsiFileMap

Find-CimClass

Synopsis

Search CIM for a class.

Syntax

```
Find-CimClass [-ClassName] <String> [-Exclude <String>]
[-Computername <String>] [<CommonParameters>]
```

Description

This function is designed to search an entire CIM repository for a class name. Sometimes, you can guess a CIM/WMI class name but not know the full name or even the correct namespace. Find-CimClass will recursively search for a given class name in all namespaces. You can use wildcards and search remote computers.

This command requires a Windows platform.

Examples

Example 1

```
PS C:\> Find-CimClass -ClassName *protection*


   NameSpace: Root/CIMV2/mdm/dmmap

CimClassName                        CimClassMethods      CimClassProperties
------------                        ---------------      ------------------
MDM_AppLocker_EnterpriseDataProt... {}                   {InstanceID, Parent...
MDM_AppLocker_EnterpriseDataProt... {}                   {InstanceID, Parent...
MDM_EnterpriseDataProtection        {}                   {InstanceID, Parent...
MDM_EnterpriseDataProtection_Set... {}                   {AllowAzureRMSForED...
MDM_Policy_Config01_DataProtecti... {}                   {AllowDirectMemoryA...
MDM_Policy_Result01_DataProtecti... {}                   {AllowDirectMemoryA...
MDM_Reporting_EnterpriseDataProt... {}                   {InstanceID, LogCou...
MDM_Reporting_EnterpriseDataProt... {}                   {InstanceID, Logs, ...
MDM_WindowsAdvancedThreatProtection {}                   {InstanceID, Offboa...
MDM_WindowsAdvancedThreatProtect... {}                   {GroupIds, Instance...
MDM_WindowsAdvancedThreatProtect... {}                   {Criticality, Grou ...
MDM_WindowsAdvancedThreatProtect... {}                   {InstanceID, LastCo...


   NameSpace: Root/Microsoft/SecurityClient

CimClassName                        CimClassMethods      CimClassProperties
------------                        ---------------      ------------------
ProtectionTechnologyStatus          {}                   {PackedXml, SchemaV...
...
```

Example 2

```
PS C:\> Find-CimClass -ClassName *volume* -Exclude "win32_Perf*"
```

Search for any class with 'volume' in the name but exclude anything that starts with 'win32_Perf'.

Parameters

-ClassName

Enter the name of a CIM/WMI class. Wildcards are permitted.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: True
```

-Computername

Enter the name of a computer to search.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: localhost
Accept pipeline input: False
Accept wildcard characters: False
```

-Exclude

Enter a pattern for class names to EXCLUDE from the results. You can use wildcards or regular expressions.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

Microsoft.Management.Infrastructure.CimClass

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources

Related Links

Get-CimClass

Format-Percent

Synopsis

Format a value as a percentage.

Syntax

None (Default)

```
Format-Percent [-Value] <Object> [-Total] <Object> [-Decimal <Int32>]
[<CommonParameters>]
```

String

```
Format-Percent [-Value] <Object> [-Total] <Object> [-Decimal <Int32>]
[-AsString] [<CommonParameters>]
```

Description

This command calculates a percentage of a value from a total, with the formula: (value/total)*100. The default is to return a value to 2 decimal places but you can configure that with -Decimal. There is also an option to format the percentage as a string which will include the % symbol.

Examples

EXAMPLE 1

```
PS C:\> Format-Percent -value 1234.567 -total 5000 -decimal 4

24.6913
```

Calculate a percentage from 1234.567 out of 5000 (i.e. 1234.567/5000) to 4 decimal points.

EXAMPLE 2

```
PS C:\> Get-CimInstance Win32_OperatingSystem -computer chi-dc04 |
Select-Object PSComputername,TotalVisibleMemorySize,
@{Name="PctFreeMem";Expression={
Format-Percent $_.FreePhysicalMemory $_.TotalVisibleMemorySize}}

PSComputerName             TotalVisibleMemorySize           PctFreeMem
--------------             ----------------------           ----------
```

```
chi-dc04                                1738292               23.92
```

EXAMPLE 3

```
PS C:\> Get-CimInstance Win32_OperatingSystem -computer chi-dc04 |
Select-Object PSComputername,TotalVisibleMemorySize,
@{Name="PctFreeMem";Expression={
Format-Percent $_.FreePhysicalMemory $_.TotalVisibleMemorySize -asString}}

PSComputerName             TotalVisibleMemorySize           PctFreeMem
--------------             ----------------------           ----------
chi-dc04                                1738292           23.92%
```

Parameters

-Value

The numerator value.

```
Type: Object
Parameter Sets: (All)
Aliases: X, Numerator

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Total

The denominator value.

```
Type: Object
Parameter Sets: (All)
Aliases: Y, Denominator

Required: True
Position: 2
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Decimal

The number of decimal places to return between 0 and 15.

```
Type: Int32
```

```
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 2
Accept pipeline input: False
Accept wildcard characters: False
```

-AsString

Write the result as a string.

```
Type: SwitchParameter
Parameter Sets: String
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.Object

Outputs

System.Double

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Format-Value

Format-String

Format-String

Synopsis

Options for formatting strings.

Syntax

```
Format-String [-Text] <String> [-Reverse] [-Case <String>]
[-Replace <Hashtable>] [-Randomize] [<CommonParameters>]
```

Description

Use this command to apply different types of formatting to strings. You can apply multiple transformations.

They are applied in this order:

1) Reverse 2) Randomization 3) Replace 4) Case

Examples

EXAMPLE 1

```
PS C:\> "P@ssw0rd" | Format-String -Reverse

dr0wss@P
```

EXAMPLE 2

```
PS C:\> "P@ssw0rd" | Format-String -Reverse -Randomize

rs0Pd@ws
```

EXAMPLE 3

```
PS C:\> $env:computername | Format-String -Case Lower

win81-ent-01
```

EXAMPLE 4

```
PS C:\> Format-String "p*wer2she!!" -Case Alternate
```

```
P*WeR2ShE!!
```

EXAMPLE 5

```
PS C:\> Format-String "alphabet" -Randomize -Replace @{a="@";e=3} `
-Case Alternate

3bPl@tH@
```

EXAMPLE 6

```
PS C:\> "pOWERSHELL" | Format-String -Case Toggle

Powershell
```

Parameters

-Text

Any string you want to format.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Reverse

Reverse the text string.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Case

Valid values are Upper, Lower, Proper, Alternate, and Toggle.

Proper case will capitalize the first letter of the string.

Alternate case will alternate between upper and lower case, starting with upper case, e.g. PoWeRsHeLl

Toggle case will make upper case lower and vice versa, e.g. Powershell -> pOWERSHELL

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Replace

Specify a hashtable of replacement values. The hashtable key is the string you want to replace and the value is the replacement (see examples). Replacement keys are CASE SENSITIVE.

```
Type: Hashtable
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Randomize

Re-arrange the text in a random order.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Format-Value

Format-Percent

Format-Value

Synopsis

Format a numeric value.

Syntax

Default (Default)

```
Format-Value [-InputObject] <Object> [[-Unit] <String>] [-Decimal <Int32>]
[<CommonParameters>]
```

Number

```
Format-Value [-InputObject] <Object> [-Decimal <Int32>] [-AsNumber]
[<CommonParameters>]
```

Auto

```
Format-Value [-InputObject] <Object> [-Decimal <Int32>] [-Autodetect]
[<CommonParameters>]
```

Currency

```
Format-Value [-InputObject] <Object> [-AsCurrency] [<CommonParameters>]
```

Description

This command will format a given numeric value. By default, it will treat the number as an integer. Or you can specify a certain number of decimal places. The command will also allow you to format the value in KB, MB, etc.

You can let the command auto-detect the value and divide with an appropriate value.

Examples

Example 1

```
PS C:\> Get-CimInstance -class win32_logicaldisk -filter "DriveType=3" |
Select-Object DeviceID,
@{Name="SizeGB";Expression={$_.size | Format-Value -unit GB}},
```

```
@{Name="FreeGB";Expression={$_.freespace | Format-Value -unit GB -decimal 2}}

DeviceID             SizeGB                    FreeGB
--------             ------                    ------
C:                       200                    124.97
D:                       437                     29.01
E:                        25                      9.67
```

Example 2

```
PS C:\> (Get-Process chrome | measure ws -sum ).sum |
Format-Value -Autodetect -verbose -Decimal 4

VERBOSE: Starting: Format-Value
VERBOSE: Status: Using parameter set Auto
VERBOSE: Status: Formatting 965332992
VERBOSE: Status: Using Autodetect
VERBOSE: ..as MB
VERBOSE: Status: Reformatting 920.61328125
VERBOSE: ..to 4 decimal places
920.6133
VERBOSE: Ending: Format-Value
```

Example 3

```
PS C:\> 3456.5689 | Format-Value -AsCurrency

$3,456.57
```

Format a value as currency.

Example 4

```
PS C:\> 1234567.8973 | Format-Value -AsNumber -Decimal 2

1,234,567.90
```

Format the value as a number to 2 decimal points.

Parameters

-InputObject

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: True
Position: 2
```

```
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Unit

The unit of measurement for your value. Valid choices are "KB","MB","GB","TB", and "PB".

If you don't specify a unit, the value will remain as is, although you can still specify the number of decimal places.

```
Type: String
Parameter Sets: Default
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Decimal

The number of decimal places to return between 0 and 15.

```
Type: Int32
Parameter Sets: Default, Number, Auto
Aliases:

Required: False
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Autodetect

Attempt to autodetect and format the value.

```
Type: SwitchParameter
Parameter Sets: Auto
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-AsCurrency

Format the numeric value as currency using detected cultural settings. The output will be a string.

```
Type: SwitchParameter
Parameter Sets: Currency
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-AsNumber

Format the numeric value as a number using detected cultural settings for a separator like a comma. If the incoming value contains decimal points, by default they will be removed unless you use -Decimal.

The output will be a string.

```
Type: SwitchParameter
Parameter Sets: Number
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.Object

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Format-String

Format-Percent

Get-CommandSyntax

Synopsis

Get provider-specific command syntax.

Syntax

```
Get-CommandSyntax [-Name] <String> [<CommonParameters>]
```

Description

Some PowerShell commands are provider aware and may have special syntax or parameters depending on what PSDrive you are using when you run the command. In Windows PowerShell, the help system could show you syntax based on a given path. However, this no longer appears to work. This command is intended as an alternative. Specify a cmdlet or function name, and the output will display the syntax detected when using different providers. Dynamic parameters will be highlighted with an ANSI-escape sequence.

Examples

Example 1

```
PS C:\> Get-CommandSyntax -Name Get-Item

Registry

Get-Item [-Path] <string[]> [-Filter <string>] [-Include <string[]>]
[-Exclude <string[]>] [-Force] [-Credential <PSCredential>]
[<CommonParameters>]

Get-Item -LiteralPath <string[]> [-Filter <string>] [-Include <string[]>]
[-Exclude <string[]>] [-Force] [-Credential <PSCredential>]
[<CommonParameters>]


Alias

Get-Item [-Path] <string[]> [-Filter <string>] [-Include <string[]>]
[-Exclude <string[]>] [-Force] [-Credential <PSCredential>]
[<CommonParameters>]

Get-Item -LiteralPath <string[]> [-Filter <string>] [-Include <string[]>]
[-Exclude <string[]>] [-Force] [-Credential <PSCredential>]
[<CommonParameters>]

...
```

The output will show each PowerShell Provider and the corresponding command syntax. Dynamic parameters will be highlighted by color.

Parameters

-Name

Enter the name of a PowerShell cmdlet or function. Ideally, it has been loaded into the current PowerShell session.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Help

Get-Command

Get-ParameterInfo

Get-DirectoryInfo

Synopsis

Get directory information.

Syntax

```
Get-DirectoryInfo [[-Path] <String>] [-Depth <Int32>] [<CommonParameters>]
```

Description

This command is designed to provide quick access to top-level directory information. The default behavior is to show the total number of files in the immediate directory. Although the command will also capture the total file size in the immediate directory. You can use the Depth parameter to recurse through a specified number of levels.

The command output will use a wide format by default. However, other wide views are available. See Examples.

Examples

Example 1

```
PS C:\> Get-DirectoryInfo


   Path: C:\


gemfonts [15]                   PerfLogs [0]
Pluralsight [17]                Presentations [1]
Program Files [0]               Program Files (x86) [0]
Ruby27-x64 [3]                  Scripts [3652]
Thunderbird [0]                 Training [3]
Users [0]                       Windows [38]
Windows.old [0]                 Windows10Upgrade [23]
work [13]
```

The default output will use ANSI escape sequences.

Example 2

```
PS C:\> Get-DirectoryInfo -Path D:\ | Format-Wide -View sizemb

   Path: D:\


autolab [0MB]                                           backtemp [0MB]
```

```
Backup [0.01MB]                                     Backups [140.49MB]
bovine320 [0MB]                                     Databases [0MB]
Exports [0MB]                                       iso [16137.65MB]
JDHIT [35.58MB]                                     Logitech [0MB]
OneDrive [0MB]                                      rip [60.99MB]
temp [10.67MB]                                      video [83.56MB]
VMDisks [68053MB]                                   VMs [0MB]
```

Using one of the alternate Format-Wide views. Other views are size and sizekb.

Example 3

```
PS C:\> Get-DirectoryInfo D:\Autolab\ -Depth 2 |
Format-Table -GroupBy parent -Property Name,File* -wrap


   Parent: D:\Autolab

Name                   FileCount    FileSize
----                   ---------    --------
Configurations                 0           0
Hotfixes                       0           0
ISOs                           6 16838768742
MasterVirtualHardDisks         3 22326280192
Resources                      0           0
VMVirtualHardDisks             0           0


   Parent: D:\Autolab\Configurations

Name                                  FileCount FileSize
----                                  --------- --------
Implement-Windows-Server-DHCP-2016            7    65126
Jason-DSC-Env                                 7    66933
microsoft-powershell-implementing-jea         7    65462
MultiRole                                     7    65820
MultiRole-Server-2016                         7    62063
PowerShellLab                                 7    83541
SingleServer                                  4    15784
SingleServer2012R2                            4    15937
SingleServer2012R2-GUI                        4    16005
SingleServer-GUI-2016                         4    16397
SingleServer-GUI-2019                         4    15845
Windows10                                     4    20695


   Parent: D:\Autolab\Configurations\PowerShellLab

Name      FileCount FileSize
----      --------- --------
PostSetup         5    15275
```

Here's an example using the DirectoryStat object with different formatting.

Parameters

-Depth

The Depth parameter determines the number of subdirectories to recursively query.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Specify the top-level path.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

DirectoryStat

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-ChildItem

Get-FileExtensionInfo

Synopsis

Get a report of files based on their extension.

Syntax

```
Get-FileExtensionInfo [[-Path] <String>] [-Recurse] [-Hidden] [-IncludeFiles] [<CommonParameters>]
```

Description

This command will search a given directory and produce a report of all files based on their file extension. This command is only available in PowerShell 7.

Examples

Example 1

```
PS C:\> Get-FileExtensionInfo c:\work

   Path: C:\work [THINKP1]

Extension Count TotalSize Smallest   Average  Largest
--------- ----- --------- --------   -------  -------
              1         0        0         0        0
.bat          1       122      122       122      122
.bmp          2     14113     4509    7056.5     9604
.csv          7    188085      107  26869.29   129351
.db           3     18432     6144      6144     6144
.gif          1      7110     7110      7110     7110
.htm          1      2586     2586      2586     2586
.html         8    580178     1060  72522.25   238054
.jdh          1        92       92        92       92
.jpb          1      9604     9604      9604     9604
.jpg          2     23827     9604   11913.5    14223
.json         8    366166      546  45770.75   310252
.log          1      6323     6323      6323     6323
.md           2      4031      389    2015.5     3642
.pdf          1     80704    80704     80704    80704
.png          4     47598     1071   11899.5    22700
.ps1          5      2713       64     542.6     1530
.ps1xml       2      5765     2794    2882.5     2971
.psd1         1      7696     7696      7696     7696
.reg          1      8802     8802      8802     8802
.txt         27    332297        7   12307.3    72047
.xml         10  67920544     1584 6792054.4 58504746
.zip          1  13493443 13493443  13493443 13493443
```

The extension with the largest total size will be highlighted in color.

Parameters

-Hidden

Include files in hidden folders

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-IncludeFiles

Add the corresponding collection of files. You can access these items by the Files property.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Specify the root directory path to search

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Recurse

Recurse through all folders.

```
Type: SwitchParameter
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

FileExtensionInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-FolderSizeInfo

Get-FileItem

Synopsis

A PowerShell version of the Where CLI command.

Syntax

Default (Default)

```
Get-FileItem [-Pattern] <String[]> [-Regex] [-Full] [-Quiet] [-First]
[<CommonParameters>]
```

Path

```
Get-FileItem [-Pattern] <String[]> [-Regex] [-Path <String[]>] [-Recurse]
[-Full] [-Quiet] [-First] [<CommonParameters>]
```

Description

This is an enhanced, PowerShell version of the WHERE command from the traditional CLI which will find files in %PATH% that match a particular pattern.

Examples

EXAMPLE 1

```
PS C:\> Get-Fileitem notepad.exe

C:\Windows\system32\notepad.exe
C:\Windows\notepad.exe
```

Find notepad.exe in %PATH% and return the full file name. This is the default behavior.

EXAMPLE 2

```
PS C:\> PSWhere foo.exe -quiet

False
```

Search for foo.exe and return $True if found. This command is using the PSWhere alias.

EXAMPLE 3

```
PS C:\> Get-FileItem "^\d+\S+\.txt" -Regex -Path c:\scripts -full

Directory: C:\scripts


Mode                 LastWriteTime     Length Name
----                 -------------     ------ ----
-a---          12/5/2007   2:19 PM      30146 1000FemaleNames.txt
-a---          12/5/2007   2:19 PM      29618 1000MaleNames.txt
-a---           6/2/2010  11:02 AM      31206 1000names.txt
-a---           6/3/2010   8:52 AM       3154 100names.txt
-a---          4/13/2012  10:27 AM       3781 13ScriptBlocks-v2.txt
-a---          8/13/2010  10:41 AM       3958 13ScriptBlocks.txt
-a---           2/7/2011   1:37 PM      78542 2500names.txt
-a---           2/8/2011   9:43 AM     157396 5000names.txt
```

Find all TXT files in C:\Scripts that start with a number and display full file information.

Parameters

-Pattern

The name of the file to find. Separate multiple entries with a comma. Wildcards are allowed. You can also specify a regular expression pattern by including the -REGEX parameter.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Regex

Indicates that the pattern is a regular expression.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

The folders to search other than %PATH%.

```
Type: String[]
Parameter Sets: Path
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Recurse

Used with -Path to indicate a recursive search.

```
Type: SwitchParameter
Parameter Sets: Path
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Full

Write the full file object to the pipeline. The default is just the full name.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Quiet

Returns True if a match is made. This parameter will override -Full.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
```

```
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-First

Stop searching after the pattern is found. Don't search any more paths.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

String

Outputs

String

Boolean

System.IO.FileInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-ChildItem

Where.exe

Get-FolderSizeInfo

Synopsis

Get folder size information.

Syntax

```
Get-FolderSizeInfo [-Path] <String[]> [-Hidden] [-EnableLongFileName] [<CommonParameters>]
```

Description

This command is an alternative to discovering the size of a folder, or at least an easier method. Use the -Hidden parameter to include hidden files in the output. The measurement will include all files in all sub-folders.

Note that this command has been optimized for performance, but if you have a lot of files to count that will take time, especially when using Windows PowerShell. When querying system folders like C:\Windows on a Windows PowerShell platform, you might get better results including hidden files. Due to the nature of the .NET Framework changes, you might see different results for the same folder when run in PowerShell 7 compared to Windows PowerShell 5.1.

Examples

Example 1

```
PS C:\> Get-FolderSizeInfo -Path d:\temp

Computername    Path                          TotalFiles     TotalSize
------------    ----                          ----------     ---------
BOVINE320       D:\temp                               48     121824451
```

Example 2

```
PS C:\> Get-FolderSizeInfo -Path d:\temp -hidden

Computername    Path                          TotalFiles     TotalSize
------------    ----                          ----------     ---------
BOVINE320       D:\temp                              146     125655552
```

Include hidden files.

Example 3

```
PS C:\> Get-ChildItem d:\ -Directory | Get-FolderSizeInfo |
```

```
Where-Object TotalSize -gt 1MB | Sort-Object TotalSize -Descending |
Format-Table -View mb

Computername    Path                         TotalFiles   TotalSizeMB
------------    ----                        ----------   -----------
BOVINE320       D:\VMDisks                          18   114873.7246
BOVINE320       D:\ISO                              17    42526.8204
BOVINE320       D:\SQLServer2017Media                1      710.8545
BOVINE320       D:\officeViewers                     4      158.9155
BOVINE320       D:\Temp                             48      116.1809
BOVINE320       D:\Sysinternals                    153       59.6169
BOVINE320       D:\blog                             41       21.9948
BOVINE320       D:\BackTemp                          2       21.6734
BOVINE320       D:\rip                               3       11.1546
BOVINE320       D:\logs                            134        3.9517
BOVINE320       D:\2016                              5        1.5608
```

Get the top-level directories from D and pipe them to Get-FolderSizeInfo. Items with a total size of greater than 1MB are sorted on the total size and then formatted as a table using a built-in view called MB which formats the total size in MB. There are also views named KB,GB and TB to display formatted results accordingly.

Example 4

```
PS C:\> Get-ChildItem c:\work -Directory | Get-FolderSizeInfo -Hidden |
Where-Object {$_.totalsize -ge 2mb} | Format-Table -view name


   Path: C:\work

Name                    TotalFiles      TotalKB
----                    ----------      -------
A                               20    5843.9951
keepass                         15     5839.084
PowerShellBooks                 26    4240.3779
sunday                          47   24540.6523
```

Get all sub-folders under C:\work greater than 2MB in size and display using the Name table view.

Parameters

-Hidden

Include hidden directories.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Enter a file system path like C:\Scripts.

```
Type: String[]
Parameter Sets: (All)
Aliases: PSPath

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

-EnableLongFileName

Enable support for long file and folder names. Read https://learn.microsoft.com/windows/win32/fileio/maximum-file-Path-limitation?tabs=registry to learn more.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: lfn,EnableLN

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String[]

Outputs

FolderSizeInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Test-EmptyFolder

Get-ChildItem

Measure-Object

Get-FormatView

Synopsis

Get defined format views.

Syntax

```
Get-FormatView [[-TypeName] <String>] [[-PowerShellVersion] <Version>] [<CommonParameters>]
```

Description

PowerShell's formatting system includes custom views that display objects in different ways. Unfortunately, this information is not readily available to a typical PowerShell user. Get-FormatView displays the available views for a given object type. You might get additional views when importing modules such as the PSScriptTools module. The result is there might be different views depending on if you use Format-Table, or Format-List. If you only see a single defined view, that is the default for that type of control.

Examples

Example 1

```
PS C:\> Get-FormatView system.diagnostics.process


   Type: System.Diagnostics.Process

Format    Name
------    ----
Table     process
Table     Priority
Table     StartTime
Wide      process
Table     WS
```

The default view should be the first one listed for each format type. With this information, you can now run a command like `Get-Process | Format-Table -view Priority`. The WS view is added when you import the PSScriptTools module.

Example 2

```
PS C:\> (Get-Service bits).gettype() | Get-FormatView


   Type: System.ServiceProcess.ServiceController

Format    Name
```

```
------    ----
Table     service
List      System.ServiceProcess.ServiceController
Table     service
Table     Ansi
```

You can pipe a type name to the command.

Example 3

```
PS C:\> Get-FormatView | Where-Object Format -eq Table |
Group-Object typename | Where-Object count -gt 1  | Select-Object Name,
@{Name="Names";Expression = {$_.group.name}}

Name                                          Names
----                                          -----
FolderSizeInfo                                {default, MB, GB, KB...}
gitsize                                       {mb, default}
ModuleCommand                                 {default, verb}
System.Diagnostics.Process                    {process, Priority, StartTime..
System.IO.DirectoryInfo                       {children, ansi}
System.IO.FileInfo                            {children, ansi}
System.Management.Automation.AliasInfo        {CommandInfo, AliasInfo, opti..
System.Management.Automation.ApplicationInfo  {CommandInfo, ApplicationInfo}
System.Management.Automation.ExternalScriptInfo {CommandInfo, ExternalScriptI..
System.Management.Automation.FilterInfo       {CommandInfo, FilterInfo}
System.Management.Automation.FunctionInfo     {CommandInfo, FunctionInfo}
System.Management.Automation.ScriptInfo       {CommandInfo, ScriptInfo}
System.ServiceProcess.ServiceController       {service, service, Ansi}
```

This example expression is getting all Table format views for types that have more than 1 defined. If a type only has a single view, that is the default which you are seeing already. The output you see here shows additional table views for different object types.

Parameters

-TypeName

Specify a typename such as System.Diagnostics.Process.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: *
Accept pipeline input: True (ByValue)
Accept wildcard characters: True
```

-PowerShellVersion

Specify the version of PowerShell this cmdlet gets for the formatting data. Enter a two-digit number separated by a period.

```
Type: Version
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: your current PowerShell version
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSFormatView

Notes

This command relies on data provided by Get-FormatData. Some object types might be stored in PowerShell in unexpected ways. This command should have an alias of gfv.

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-FormatData

Get-Member

New-PSFormatXML

Get-GitSize

Synopsis

Get the size of .git folder.

Syntax

```
Get-GitSize [[-Path] <String>] [<CommonParameters>]
```

Description

When using git, it creates a hidden folder for change tracking. Because the file is hidden it is easy to overlook how large it might become. The command uses a formatting file to display a default view. There is an additional table view called MB that you can use.

Examples

EXAMPLE 1

```
PS C:\Scripts\PiedPiper> Get-GitSize

Path                                          Files          SizeKB
----                                          -----          ------
C:\scripts\PiedPiper                            751       6859.9834
```

Get the size of the .git folder from the current path.

EXAMPLE 2

```
PS C:\> Get-ChildItem c:\scripts -Directory | Get-GitSize |
Sort-Object -property Size -descending |
Select-Object -first 5 -property Computername,Name,Files,Size

Computername Name           Files      Size
------------ ----           -----      ----
WIN10DSK2    PSAutoLab        526 193760657
WIN10DSK2    DevOps-Courses    29  53298180
WIN10DSK2    PSScriptTools    751   7024623
WIN10DSK2    PSGUI             32   6705894
WIN10DSK2    DscWorkshop       24   5590511
```

Get the directories under C:\Scripts that have a .git folder and sort on the Size property in descending order. Then select the first 5 directories and use the specified properties.

EXAMPLE 3

```
PS S:\PSReleaseTools> Get-GitSize | Format-Table -view mb

Path                                        Files          SizeMB
----                                        -----          ------
C:\scripts\PSReleaseTools                     440          3.0588
```

Get the git folder size and format using the MB table view.

Parameters

-Path

The path to the parent folder, not the .git folder.

```
Type: String
Parameter Sets: (All)
Aliases: pspath

Required: False
Position: 1
Default value: current location
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

gitSize

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

This is a variation of code posted at https://gist.github.com/jdhitsolutions/cbdc7118f24ba551a0bb325664415649

Related Links

Get-ChildItem

Measure-Object

Remove-MergedBranch

Get-LastModifiedFile

Synopsis

Get files based on last modified data.

Syntax

```
Get-LastModifiedFile [[-Filter] <String>] [[-Path] <String>]
[-Interval <String>] [-IntervalCount <Int32>] [-Recurse] [<CommonParameters>]
```

Description

This command is designed to make it easier to identify last modified files. You can specify by an interval such as 3 months or 24 hours.

Examples

Example 1

```
PS C:\> Get-LastModifiedFile -Path c:\work

    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          11/30/2021  1:52 PM           2010 a.txt
-a---          11/30/2021  1:52 PM           5640 b.txt
```

The default behavior is to find all files modified in the last 24 hours.

Example 2

```
PS C:\> Get-LastModifiedFile -Path c:\scripts -Filter *.ps1 -Interval Months -IntervalCount 6

    Directory: C:\Scripts

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          11/19/2021  2:36 PM           1434 calendar-prompt.ps1
-a---          10/11/2021 11:26 AM           1376 ChangeOSCaption.ps1
-a---           8/27/2021  8:06 AM           2754 Check-ModuleUpdate.ps1
-a---           9/17/2021  9:23 AM           1822 CleanJobs.ps1
-a---           7/14/2021 10:36 AM            436 Clear-Win11Recommended.ps1
-a---          10/18/2021  5:24 PM           5893 ComingSoon.ps1
-a---          10/25/2021  5:23 PM           4966 Configure-PSVirtualMachine.ps1
...
```

Get all .ps1 files in C:\Scripts that have been modified in the last 6 months.

Parameters

-Filter

Specify a file filter like *.ps1.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Interval

Specify the search interval based on the last write time.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values: Hours, Minutes, Days, Months, Years

Required: False
Position: Named
Default value: Hours
Accept pipeline input: False
Accept wildcard characters: False
```

-IntervalCount

Specify the number of intervals.

```
Type: Int32
Parameter Sets: (All)
Aliases: ic

Required: False
Position: Named
Default value: 24
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Specify the folder to search.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: current location
Accept pipeline input: False
Accept wildcard characters: False
```

-Recurse

Recurse from the specified path.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.IO.FileInfo

Notes

This command was first described at https://jdhitsolutions.com/blog/powershell/8622/finding-modified-files-with-powershell/

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-ChildItem

Get-DirectoryInfo

Get-FolderSizeInfo

Get-ModuleCommand

Synopsis

Get a summary of module commands.

Syntax

name (Default)

```
Get-ModuleCommand [-Name] <String> [-ListAvailable] [<CommonParameters>]
```

fqdn

```
Get-ModuleCommand -FullyQualifiedName <ModuleSpecification> [-ListAvailable] [<CommonParameters>]
```

Description

This is an alternative to Get-Command to make it easier to see at a glance what commands are contained within a module and what they can do. By default, Get-ModuleCommand looks for loaded modules. Use -ListAvailable to see commands in the module but not currently loaded. Note that if the help file is malformed or missing, you might get oddly formatted results.

Examples

Example 1

```
PS C:\> Get-ModuleCommand PSCalendar


   ModuleName: PSCalendar

Name             Alias Synopsis
----             ----- --------
Get-Calendar     cal   Displays a visual representation of a calendar.
Show-Calendar    scal  Display a colorized calendar month in the console.
Show-GuiCalendar gcal  Display a WPF-based calendar
```

Get module commands using the default formatted view. You can install this module from the PowerShell Gallery.

Example 2

```
PS C:\> Get-ModuleCommand smbshare -ListAvailable | Format-List
```

```
ModuleName : SmbShare
Name       : Block-SmbShareAccess
Alias      : blsmba
Synopsis   : Adds a deny ACE for a trustee to the security descriptor of the SMB share.

ModuleName : SmbShare
Name       : Close-SmbOpenFile
Alias      : cssmbo
Synopsis   : Closes a file that is open by one of the clients of the SMB server.

ModuleName : SmbShare
Name       : Close-SmbSession
Alias      : cssmbse
Synopsis   : Ends forcibly the SMB session.
...
```

Using the default list view.

Example 3

```
PS C:\> Get-ModuleCommand PSScriptTools | Format-Table -view verb



   Verb: Add

Name             Alias        Type        Synopsis
----             -----        ----        --------
Add-Border                    Function    Create a text border around a string.


   Verb: Compare

Name            Alias           Type        Synopsis
----            -----           ----        --------
Compare-Module  cmo             Function    Compare PowerShell module versions.

...
```

Display commands using a custom table view called 'Verb'.

Example 4

```
PS C:\ Get-ModuleCommand PSScriptTools | Format-Table -view version

   ModuleName: PSScriptTools [v2.41.0]

Name                        Alias            Compatible      PSVersion
----                        -----            ----------      ---------
Add-Border                  ab               {Desktop, Core}       5.1
Compare-Module              cmo              {Desktop, Core}       5.1
Compare-Script              csc              {Desktop, Core}       5.1
Convert-CommandToHashtable                   {Desktop, Core}       5.1
```

```
...
```

Using the custom table view 'version'.

Parameters

-FullyQualifiedName

Specifies names of modules in the form of ModuleSpecification objects. The FullyQualifiedName parameter accepts a module name that is specified in the following formats:

@{ModuleName = "modulename"; ModuleVersion = "version_number"}

@{ModuleName = "modulename"; ModuleVersion = "version_number"; Guid = "GUID"}

ModuleName and ModuleVersion are required, but Guid is optional.

You cannot specify the FullyQualifiedName parameter in the same command as a Name parameter.

```
Type: ModuleSpecification
Parameter Sets: fqdn
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ListAvailable

Indicates that this cmdlet gets all installed modules. Get-Module finds modules in paths listed in the PSModulePath environment variable. Without this parameter, Get-ModuleCommand gets only the modules that are both listed in the PSModulePath environment variable, and that are loaded in the current session.

ListAvailable does not return information about modules that are not found in the PSModulePath environment variable, even if those modules are loaded in the current session.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Name

The name of an installed module.

```
Type: String
Parameter Sets: name
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

ModuleCommand

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Command

Get-Module

Get-MyAlias

Synopsis

Get non-default aliases defined in the current session.

Syntax

```
Get-MyAlias [-NoModule] [<CommonParameters>]
```

Description

Often you might define aliases for functions and scripts you use often. It may difficult sometimes to remember them all or to find them in the default Get-Alias output. This command will list all currently defined aliases that are not part of the initial PowerShell state.

The PSScriptTools module also includes a custom formatting file for alias objects which you can use with Get-Alias or Get-MyAlias. See examples.

Examples

Example 1

```
PS C:\> Get-MyAlias

CommandType     Name                                Version    Source
-----------     ----                                -------    ------
Alias           abt -> Get-AboutInfo
Alias           bv -> Brave
Alias           cal -> Get-Calendar                 1.11.0     PSCalendar
Alias           cc -> Copy-Command                  2.27.0     PSScriptTools
Alias           cfn -> New-CustomFileName           2.27.0     PSScriptTools
Alias           CFS -> ConvertFrom-String           3.1.0.0    Microsoft.Po...
Alias           cft -> ConvertFrom-Text             2.27.0     PSScriptTools
Alias           chc -> Convert-HashTableToCode      2.27.0     PSScriptTools
Alias           che -> Copy-HelpExample             2.27.0     PSScriptTools
Alias           cl -> Create-List
Alias           clr -> Convert-EventLogRecord       2.27.0     PSScriptTools
Alias           clt -> ConvertTo-LocalTime          2.27.0     PSScriptTools
Alias           cmo -> Compare-Module               2.27.0     PSScriptTools
...
```

Get all aliases that aren't par of the initial session state. This will include aliases defined in any modules you have loaded.

Example 2

```
PS C:\> Get-MyAlias -NoModule

CommandType     Name                                Version    Source
-----------     ----                                -------    ------
Alias           abt -> Get-AboutInfo
Alias           bv -> Brave
Alias           cl -> Create-List
```

Get defined aliases that don't belong to a module. These should be aliases you have defined in stand-alone scripts or your profile.

Example 3

```
PS C:\> Get-MyAlias -NoModule | Format-Table -View options

Name Definition    Options  ModuleName Version
---- ----------    -------  ---------- -------
abt  Get-AboutInfo None
bv   Brave         None
cl   Create-List   None
np   notepad       ReadOnly
```

Get your aliases and pipe to format table using a custom view defined by the PSScriptTools module.

Parameters

-NoModule

Only show aliases that DO NOT belong to a module.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.Management.Automation.AliasInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Alias

Get-MyCounter

Synopsis

Get performance counter data.

Syntax

```
Get-MyCounter [[-Counter] <String[]>] [-SampleInterval <Int32>]
[-MaxSamples <Int64>] [-Continuous] [-ComputerName <String[]>]
[<CommonParameters>]
```

Description

Get-MyCounter is an enhanced version of Get-Counter which is available on Windows platforms to retrieve performance counter data. One of the challenges with Get-Counter is how it formats results. Get-MyCounter takes the same information and writes a custom object to the pipeline that is easier to work with. You can pipe counters from Get-Counter to this command.

The custom object has an associated formatting file with custom views. See examples.

Examples

Example 1

```
PS C:\> Get-Counter -list "system" | Get-MyCounter

   Computername: SERVER18

Timestamp             Category Counter                          Value
---------             -------- -------                          -----
11/4/2020 10:48:47 AM system   file read operations/sec       203.3096
11/4/2020 10:48:47 AM system   file write operations/sec      252.6566
11/4/2020 10:48:47 AM system   file control operations/sec    197.3879
11/4/2020 10:48:47 AM system   file read bytes/sec         206336.5281
11/4/2020 10:48:47 AM system   file write bytes/sec         56409.5271
11/4/2020 10:48:47 AM system   file control bytes/sec       10452.6787
11/4/2020 10:48:47 AM system   context switches/sec          6068.6924
11/4/2020 10:48:47 AM system   system calls/sec             17854.7266
11/4/2020 10:48:47 AM system   file data operations/sec       455.9662
11/4/2020 10:48:47 AM system   system up time               73056.4005
11/4/2020 10:48:47 AM system   processor queue length               0
11/4/2020 10:48:47 AM system   processes                          301
11/4/2020 10:48:47 AM system   threads                           4502
11/4/2020 10:48:47 AM system   alignment fixups/sec                 0
11/4/2020 10:48:47 AM system   exception dispatches/sec        6.9086
11/4/2020 10:48:47 AM system   floating emulations/sec              0
11/4/2020 10:48:47 AM system   % registry quota in use         4.0327
```

Get all of the System counters with Get-Counter and pipe them to Get-MyCounter.

Example 2

```
PS C:\> Get-MyCounter -computername server18 | Format-table -view category


   Category: network interface(intel[r] ethernet connection [11] i219-lm)

Computername    Timestamp             Counter                          Value
------------    ---------             -------                          -----
SERVER18        11/4/2020 11:20:09 AM bytes total/sec              2662.0477

   Category: network interface(intel[r] wi-fi 6 ax201 160mhz)

Computername    Timestamp             Counter                          Value
------------    ---------             -------                          -----
SERVER18        11/4/2020 11:20:09 AM bytes total/sec                    0

   Category: processor(_total)

Computername    Timestamp             Counter                          Value
------------    ---------             -------                          -----
SERVER18        11/4/2020 11:20:09 AM % processor time               1.4158

   Category: memory

Computername    Timestamp             Counter                          Value
------------    ---------             -------                          -----
SERVER18        11/4/2020 11:20:09 AM % committed bytes in use      40.5214
SERVER18        11/4/2020 11:20:09 AM cache faults/sec                   0

   Category: physicaldisk(_total)

Computername    Timestamp             Counter                          Value
------------    ---------             -------                          -----
SERVER18        11/4/2020 11:20:09 AM % disk time                    0.0217
SERVER18        11/4/2020 11:20:09 AM current disk queue length          0
```

Get the default counter set and pipe to Get-MyCounter to get values for the local host.

Example 3

```
PS C:\> $c = (Get-Counter -list logicaldisk).PathsWithinstances |
Where-Object {$_ -match "\(c:\)\\%"}
PS C:\> Get-MyCounter -Counter $c -ComputerName SERVER18,SERVER2 |
Format-Table -view category

   Category: logicaldisk(c:)

Computername    Timestamp             Counter                          Value
------------    ---------             -------                          -----
SERVER18        11/4/2020 10:50:03 AM % free space                  48.3822
SERVER2         11/4/2020 10:50:04 AM % free space                  54.5916
SERVER18        11/4/2020 10:50:03 AM % disk time                    1.4669
SERVER2         11/4/2020 10:50:04 AM % disk time                    5.3787
SERVER18        11/4/2020 10:50:03 AM % disk read time               0.8467
```

```
SERVER2         11/4/2020 10:50:04 AM % disk read time                    0
SERVER18        11/4/2020 10:50:03 AM % disk write time              0.6203
SERVER2         11/4/2020 10:50:04 AM % disk write time              5.3787
SERVER18        11/4/2020 10:50:03 AM % idle time                   98.5846
SERVER2         11/4/2020 10:50:04 AM % idle time                   93.3567

PS C:\> Get-MyCounter -Counter $c -ComputerName SERVER18,SERVER2 |
Sort-Object Computername

   Computername: SERVER18

Timestamp             Category        Counter             Value
---------             --------        -------             -----
11/4/2020 10:50:35 AM logicaldisk(c:) % free space      48.3822
11/4/2020 10:50:35 AM logicaldisk(c:) % disk time        0.0263
11/4/2020 10:50:35 AM logicaldisk(c:) % disk read time        0
11/4/2020 10:50:35 AM logicaldisk(c:) % disk write time  0.0263
11/4/2020 10:50:35 AM logicaldisk(c:) % idle time       99.9435

   Computername: SERVER2

Timestamp             Category        Counter             Value
---------             --------        -------             -----
11/4/2020 10:50:37 AM logicaldisk(c:) % free space      54.5916
11/4/2020 10:50:37 AM logicaldisk(c:) % disk time             0
11/4/2020 10:50:37 AM logicaldisk(c:) % disk read time        0
11/4/2020 10:50:37 AM logicaldisk(c:) % disk write time       0
11/4/2020 10:50:37 AM logicaldisk(c:) % idle time       99.0114
```

The first command gets a collection of logical disk counters for drive C. The second command gets performance counter data for two remote computers and formats the results using a custom view. The last command repeats the process but sorts the result by the computer name.

Example 4

```
PS C:\> $p == Get-MyCounter -Counter "\IPv4\Datagrams/sec" -ComputerName SERVER2
-SampleInterval 5 -MaxSamples 30
```

This command will get the specified counter value every 5 seconds for a total of 30 samples.

Parameters

-ComputerName

The name of a remote computer. Querying a remote computer does not use PowerShell remoting and requires administrator-level permissions. Typically, the RemoteRegistry service must also be running.

```
Type: String[]
Parameter Sets: (All)
Aliases: Cn

Required: False
Position: Named
Default value: localhost
```

```
Accept pipeline input: False
Accept wildcard characters: False
```

-Continuous

Gets samples continuously until you press CTRL+C. By default, Get-MyCounter gets only one counter sample. You can use the SampleInterval parameter to set the interval for continuous sampling.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Counter

Gets data from the specified performance counters. Enter one or more counter paths. Wildcards are permitted only in the Instance value. You can also pipe counter path strings to Get-MyCounter.

Each counter path has the following format:

\\ComputerName\CounterSet(Instance)\CounterName

For example:

\\Server01\Processor(2)\% User Time

The ComputerName element is optional. If you omit it, Get-MyCounter uses the value of the ComputerName parameter.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: None
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

-MaxSamples

Specifies the number of samples to get from each counter. The default is 1 sample. To get samples continuously (no maximum sample size), use the Continuous parameter.

```
Type: Int64
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-SampleInterval

Specifies the time between samples in seconds. The minimum value and the default value are 1 second

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String[]

Outputs

myCounter

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Counter

Get-MyTimeInfo

Synopsis

Display time settings for a collection of locations.

Syntax

```
Get-MyTimeInfo [[-Locations] <OrderedDictionary>] [-HomeTimeZone <String>]
[-DateTime <DateTime>] [-AsTable] [-AsList] [<CommonParameters>]
```

Description

This command is designed to present a console-based version of a world clock. You provide a hashtable of locations and their respective time zones and the command will write a custom object to the pipeline. Be aware that TimeZone names may vary depending on the .NET Framework version. You may need to enumerate using a command like [System.TimeZoneInfo]::GetSystemTimeZones().ID or the Get-TZList command.

A Note on Formatting:

Normally, a PowerShell command should write an object to the pipeline and then you could use Format-Table or Format-List as you wanted. Those commands will continue to work. However, given the way this command writes to the pipeline, that is with dynamically generated properties, it is difficult to create the usual format ps1xml file. To provide some nicer formatting this command has optional parameters to help your format the output. Note that even though it may look like a table, the output object will be a string.

This command was added in v2.3.0.

Examples

EXAMPLE 1

```
P{S C:\>Get-MyTimeInfo


Now               : 3/4/2020 1:28:43 PM
Home              : 3/4/2020 1:28:43 PM
UTC               : 3/4/2020 6:28:43 PM
Singapore         : 3/5/2020 2:28:43 AM
Seattle           : 3/4/2020 10:28:43 AM
Stockholm         : 3/4/2020 7:28:43 PM
IsDaylightSavings : False
```

The default output is a custom object with each timezone as a property.

EXAMPLE 2

```
Get-MyTimeInfo -AsTable

   Now: 03/04/2020 13:28:11
   UTC: 03/04/2020 18:28:11

Home                Singapore           Seattle             Stockholm           IsDaylightSavings
----                ---------           -------             ---------           -----------------
3/4/2020 1:28:11 PM 3/5/2020 2:28:11 AM 3/4/2020 10:28:11 AM 3/4/2020 7:28:11 PM             False
```

Display current time information as a table. The output is a string.

EXAMPLE 3

```
PS C:\> Get-MyTimeInfo -AsList

   Now: 03/04/2020 13:27:03
   UTC: 03/04/2020 18:27:03


Home              : 3/4/2020 1:27:03 PM
Singapore         : 3/5/2020 2:27:03 AM
Seattle           : 3/4/2020 10:27:03 AM
Stockholm         : 3/4/2020 7:27:03 PM
IsDaylightSavings : False
```

Get current time info formatted as a list.

EXAMPLE 4

```
PS C:\> $loc = [ordered]@{"Hong Kong"="China Standard Time";Honolulu="Hawaiian Standard Time";Mumbai =
"India Standard Time"}

PS C:\> Get-MyTimeInfo -Locations $loc -ft

   Now: 03/04/2020 13:26:23
   UTC: 03/04/2020 18:26:23

Home                Hong Kong           Honolulu            Mumbai              IsDaylightSavings
----                ---------           --------            ------              -----------------
3/4/2020 1:26:23 PM 3/5/2020 2:26:23 AM 3/4/2020 8:26:23 AM 3/4/2020 11:56:23 PM             False
```

Using a custom location hashtable, get time zone information formatted as a table. This example is using the -ft alias for the AsTable parameter. Even though this is formatted as a table the actual output is a string.

EXAMPLE 5

```
PS C:\> Get-MyTimeInfo -Locations ([ordered]@{Seattle="Pacific Standard time";"New Zealand" = "New
Zealand Standard Time"}) -HomeTimeZone "central standard time" | Select Now,Home,Seattle,'New Zealand'
```

```
Now                 Home                Seattle             New Zealand
---                 ----                -------             -----------
3/4/2020 1:18:36 PM 3/4/2020 12:18:36 PM 3/4/2020 10:18:36 AM 3/5/2020 7:18:36 AM
```

This is a handy command when traveling and your laptop is using a locally derived time and you want to see the time in other locations. It is recommended that you set a PSDefaultParameter value for the HomeTimeZone parameter in your PowerShell profile.

Parameters

-Locations

Use an ordered hashtable of location names and timezones. You can find timezones with the Get-TimeZone cmdlet or through the .NET Framework with an expression like

```
[System.TimeZoneinfo]::GetSystemTimeZones()
```

The hashtable key should be the location or city name and the value should be the time zone ID. Be careful as it appears time zone IDs are case-sensitive.

The default value is:

```
[ordered]@{
   Singapore = "Singapore Standard Time";
   Seattle   = "Pacific Standard Time";
   Stockholm = "Central Europe Standard Time";
}
```

You might want to define a default value in $PSDefaultParameterValues with your own defaults.

It is recommended you limit this hashtable to no more than 5 locations, especially if you want to format the results as a table.

```
Type: OrderedDictionary
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: see note
Accept pipeline input: False
Accept wildcard characters: False
```

-HomeTimeZone

Specify the timezone ID of your home location. You might want to set this as a PSDefaultParameterValue

```
Type: String
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: Eastern Standard Time
Accept pipeline input: False
Accept wildcard characters: False
```

-DateTime

Specify the datetime value to use. The default is now.

```
Type: DateTime
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: $(Get-Date)
Accept pipeline input: False
Accept wildcard characters: False
```

-AsTable

Display the results as a formatted table. This parameter has an alias of ft.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: ft

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-AsList

Display the results as a formatted list. This parameter has an alias of fl.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: fl

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

Datetime

Outputs

myTimeInfo

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-TimeZone

Get-MyVariable

Synopsis

Get all user-defined variables.

Syntax

```
Get-MyVariable [[-Scope] <String>] [-NoTypeInformation] [<CommonParameters>]
```

Description

This function will return all variables not defined by PowerShell or by this function itself. The default is to return all user-created variables from the global scope but you can also specify a scope such as script, local, or a number 0 through 5. The command will also display the value type for each variable. If you want to suppress this output use the -NoTypeInformation switch.

Examples

EXAMPLE 1

```
PS C:\> Get-MyVariable

NName Value                  Type
---- -----                  ----
a    bits                   ServiceController
dt   10/22/2020 10:49:38 AM DateTime
foo  123                    Int32
r    {1, 2, 3, 4...}        Object[]
...
```

Depending on the value and how PowerShell chooses to display it, you may not see the type.

EXAMPLE 2

```
PS C:\> Get-MyVariable | Select-Object name,type

Name Type
---- ----
a    ServiceController
dt   DateTime
foo  Int32
r    Object[]
```

EXAMPLE 3

```
PS C:\> Get-MyVariable | Export-Clixml myvar.xml
PS C:\> import-clixml .\myvar.xml |
ForEach-Object {set-variable -Name $_.name -Value $_.value}
```

You can then import this XML file in another session to restore these variables.

EXAMPLE 4

```
PS C:\> function foo {
     c:\scripts\Get-MyVariable2.ps1;
     $a=4;$b=2;$c=$a*$b;
     Get-MyVariable -notypeinformation -scope 1 -verbose;
     $c
     }

PS C:\> foo
VERBOSE: Getting system defined variables
VERBOSE: Found 49
VERBOSE: Getting current variables in 1 scope
VERBOSE: Found 27
VERBOSE: Filtering variables

Name                           Value
----                           -----
a                              4
b                              2
c                              8
VERBOSE: Finished getting my variables
8
```

This sample function dot sources the script with this function. Within the function, Get-MyVariable is called specifying scope 1, or the parent scope. Scope 0 would be the scope of the Get-MyVariable function. Here's the result.

EXAMPLE 5

```
PS C:\> Get-MyVariable | where {$_.type -eq "Scriptblock"} |
Select-Object name,value

Name                                Value
----                                -----
bigp                                ps | where {$_.ws -gt 100mb}
dirt                                Param(\[string\]$Path=$env:temp) Get-C...
disk                                Param (\[string\]$computername=$env:co...
run                                 gsv | where {$_.status -eq "running"}
up                                  Param(\[string\]$computername=$env:com...
```

Get all my variables that are scriptblocks.

Parameters

-Scope

The scope to query. The default is the Global scope but you can also specify Local, Script, Private or a number between 0 and 3 where 0 is the current scope, 1 is the parent scope, 2 is the grandparent scope, and so on.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: Global
Accept pipeline input: False
Accept wildcard characters: False
```

-NoTypeInformation

If specified, suppress the type information for each variable value.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

System.Management.Automation.PSVariable

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

An earlier version of this function is described at http://jdhitsolutions.com/blog/2012/05/get-my-variable-revisited

Related Links

Get-Variable

About_Variables

About_Scope

Get-ParameterInfo

Synopsis

Retrieve command parameter information.

Syntax

```
Get-ParameterInfo [-Command] <String> [-Parameter <String>]
[<CommonParameters>]
```

Description

Using Get-Command, this function will return information about parameters for any loaded cmdlet or function. The common parameters like Verbose and ErrorAction are omitted. Get-ParameterInfo returns a custom object with the most useful information an administrator might need to know. See examples.

Examples

EXAMPLE 1

```
PS C:\> Get-ParameterInfo Get-Service


   ParameterSet: Default


Name                            : Name
Aliases                         : ServiceName
Mandatory                       : False
IsDynamic                       : False
Position                        : 0
Type                            : System.String[]
ValueFromPipeline               : True
ValueFromPipelineByPropertyName : True



   ParameterSet: __AllParameterSets


Name                            : ComputerName
Aliases                         : Cn
Mandatory                       : False
IsDynamic                       : False
Position                        : Named
Type                            : System.String[]
ValueFromPipeline               : False
ValueFromPipelineByPropertyName : True

Name                            : DependentServices
```

```
Aliases                          : DS
Mandatory                        : False
IsDynamic                        : False
Position                         : Named
Type                             : System.Management.Automation.SwitchParameter
ValueFromPipeline                : False
ValueFromPipelineByPropertyName : False
...
```

Return parameter information for Get-Service using the default list view.

EXAMPLE 2

```
PS C:\> Get-ParameterInfo mkdir |
Select-Object Name,Type,Position,parameterset

Name           Type                                Position ParameterSet
----           ----                                -------- ------------
Path           System.String[]                            0 pathSet
Path           System.String[]                            0 nameSet
Name           System.String                          Named nameSet
Value          System.Object                          Named __AllParameterSets
Force          System.Management.Automation.Switch...  Named __AllParameterSets
Credential     System.Management.Automation.PSCred...  Named __AllParameterSets
UseTransaction System.Management.Automation.Switch...  Named __AllParameterSets
```

Get selected parameter information for the mkdir command.

EXAMPLE 3

```
PS C:\> Get-ParameterInfo Test-WSMan | Sort Parameterset | Format-Table


   ParameterSet: __AllParameterSets

Name                  Aliases Mandatory Position Type
----                  ------- --------- -------- ----
CertificateThumbprint         False     Named    System.String
Credential            cred,c  False     Named    System.Management.Automati...
ComputerName          cn      False     0        System.String
Authentication        auth,am False     Named    Microsoft.WSMan.Management....


   ParameterSet: ComputerName

Name            Aliases Mandatory Position Type
----            ------- --------- -------- ----
UseSSL                  False     Named    System.Management.Automation.Swit...
Port                    False     Named    System.Int32
ApplicationName         False     Named    System.String
```

Get all parameters from Test-WSMan and display details as a formatted table. The object type from Get-ParameterInfo has a default table view.

Example 4

```
PS C:\> Get-ParameterInfo -Command Get-Counter -Parameter computername

   ParameterSet: __AllParameterSets


Name                            : computername
Aliases                         : Cn
Mandatory                       : False
IsDynamic                       : False
Position                        : Named
Type                            : System.String[]
ValueFromPipeline               : False
ValueFromPipelineByPropertyName : False
```

Get details on the Computername parameter of the Get-Counter cmdlet.

Parameters

-Command

The name of a cmdlet or function. The parameter has an alias of Name.

```
Type: String
Parameter Sets: (All)
Aliases: name

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

-Parameter

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and

-WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

PSParameterInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Command

Get-CommandSyntax

Get-PathVariable

Synopsis

Get information from locations in %PATH%.

Syntax

```
Get-PathVariable [[-Scope] <String>] [<CommonParameters>]
```

Description

Use this command to test the locations specified in the %PATH% environment variable. On Windows platforms, you can distinguish between settings set per machine and those set per user. On non-Windows platforms, the scope will be Process.

Examples

Example 1

```
PS C:\> Get-PathVariable

Scope   UserName Path                                          Exists
-----   -------- ----                                          ------
User    Jeff     C:\Program Files\kdiff3                       True
User    Jeff     C:\Program Files (x86)\Bitvise SSH Client     True
User    Jeff     C:\Program Files\OpenSSH                      True
...
Machine Jeff     C:\WINDOWS                                    True
Machine Jeff     C:\WINDOWS\system32                           True
Machine Jeff     C:\WINDOWS\System32\Wbem                      True
...
```

Example 2

```
PS /home/jeff> Get-PathVariable | Where-Object {-Not $_.exists}

Scope        : Process
Computername : Bovine320
UserName     : jeff
Path         : /snap/bin
Exists       : False
```

This example is on a Linux platform, finding locations that don't exist or can be verified. You could run the same command on Windows.

Parameters

-Scope

On Windows platforms you can distinguish between Machine and User specific settings.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values: All, User, Machine

Required: False
Position: 0
Default value: All
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

EnvPath

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-PowerShellEngine

Synopsis

Get the path to the current PowerShell engine.

Syntax

```
Get-PowerShellEngine [-Detail]
```

Description

Use this command to find the path to the PowerShell executable, or engine that is running your current session. The default is to provide the path only. But you can also get detailed information

Examples

EXAMPLE 1

```
PS C:\> Get-PowerShellEngine
C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe
```

EXAMPLE 2

```
PS C:\> Get-PowerShellEngine -detail


Path           : C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe
FileVersion    : 10.0.15063.0 (WinBuild.160101.0800)
PSVersion      : 5.1.15063.502
ProductVersion : 10.0.15063.0
Edition        : Desktop
Host           : Visual Studio Code Host
Culture        : en-US
Platform       :
```

This result is from running in the Visual Studio Code integrated PowerShell terminal.

EXAMPLE 3

```
PS C:\> Get-PowerShellEngine -detail


Path           : C:\Program Files\PowerShell\7\pwsh.exe
FileVersion    : 7.1.0.0
```

```
PSVersion      : 7.1.0
ProductVersion : 7.1.0 SHA: d2953dcaf8323b95371380639ced00dac4ed209f
Edition        : Core
Host           : ConsoleHost
Culture        : en-US
Platform       : Win32NT
```

This result is from running in a PowerShell 7 session on Windows 10

Parameters

-Detail

Include additional information. Not all properties may have values depending on operating system and PowerShell version.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

Inputs

Outputs

System.String

PSCustomObject

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

$PSVersionTable

$Host

Get-Process

Get-PSAnsiFileMap

Synopsis

Display the PSAnsiFileMap

Syntax

```
Get-PSAnsiFileMap [<CommonParameters>]
```

Description

Use this command to display the PSAnsiFileMap global variable. The Ansi pattern will be shown using the pattern.

Examples

Example 1

```
PS C:\> Get-PSAnsiFileMap

Description  Pattern                    ANSI
-----------  -------                    ----
PowerShell   \.((ps(d|m)?1)|(ps1xml))$   `e[38;2;252;127;12m`e[38;2;252;127;12m
Text         \.((txt)|(log)|(htm(l)?))$  `e[38;2;58;120;255m`e[38;2;58;120;255m
...
```

The output will display the ANSI sequence using the sequence itself. The escape character will be based on the version of PowerShell you are using. This example shows output from PowerShell 7.

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSAnsiFileEntry

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Set-PSAnsiFileMap

Get-PSLocation

Synopsis

Get common location values.

Syntax

```
Get-PSLocation [<CommonParameters>]
```

Description

This command will write an object to the pipeline that displays the values of common file locations. You might find this helpful when scripting cross-platform.

Examples

EXAMPLE 1

```
PS C:\> Get-PSLocation

Temp       : C:\Users\Jeff\AppData\Local\Temp\
Home       : C:\Users\Jeff\Documents
Desktop    : C:\Users\Jeff\Desktop
PowerShell : C:\Users\Jeff\Documents\WindowsPowerShell
PSHome     : C:\Windows\System32\WindowsPowerShell\v1.0
```

Results on a Windows system.

EXAMPLE 2

```
PS C:\> Get-PSLocation

Temp       : /tmp/
Home       : /home/jeff
Desktop    :
PowerShell : /home/jeff/.config/powershell
PSHome     : /opt/microsoft/powershell/7
```

Results on a Linux system running PowerShell.

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSLocation

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Location

Set-Location

Get-PSProfile

Synopsis

Get PowerShell profile locations

Syntax

```
Get-PSProfile [<CommonParameters>]
```

Description

This command is designed for Windows-based systems to show all possible PowerShell profile scripts. Including those for VS Code and the PowerShell ISE.

Examples

Example 1

```
PS C:\> Get-PSProfile

   Name: PowerShell

Scope                 Path                                                          Exists
-----                 ----                                                          ------
AllUsersCurrentHost   C:\Program Files\PowerShell\7\Microsoft.PowerShell_profile.ps1 False
AllUsersAllHosts      C:\Program Files\PowerShell\7\profile.ps1                      False
CurrentUserAllHosts   C:\Users\Jeff\Documents\PowerShell\profile.ps1                 True
CurrentUserCurrentHost C:\Users\Jeff\Documents\PowerShell\Microsoft.PowerShell_profile.ps1 True


   Name: Windows PowerShell

Scope                 Path                                                                  Exists
-----                 ----                                                                  ------
AllUsersCurrentHost   C:\WINDOWS\System32\WindowsPowerShell\v1.0\Microsoft.PowerShell_profile.ps1 True
AllUsersAllHosts      C:\WINDOWS\System32\WindowsPowerShell\v1.0\profile.ps1                 True
CurrentUserAllHosts   C:\Users\Jeff\Documents\WindowsPowerShell\profile.ps1                  True
CurrentUserCurrentHost C:\Users\Jeff\Documents\WindowsPowerShell\Microsoft.PowerShell_profile.ps1 True


   Name: VSCode PowerShell

Scope                 Path                                                          Exists
-----                 ----                                                          ------
CurrentUserCurrentHost C:\Users\Jeff\Documents\PowerShell\Microsoft.VSCode_profile.ps1 True
AllUsersCurrentHost   C:\Program Files\PowerShell\7\Microsoft.VSCode_profile.ps1    False
...
```

The command has a default formatted table view.

Example 2

```
 PS C:\> Get-PSProfile | Where-Object Exists | Format-List


   Name: PowerShell


Scope        : CurrentUserAllHosts
Path         : C:\Users\Jeff\Documents\PowerShell\profile.ps1
Exists       : True
LastModified : 9/9/2020 2:35:45 PM

Scope        : CurrentUserCurrentHost
Path         : C:\Users\Jeff\Documents\PowerShell\Microsoft.PowerShell_profile.ps1
Exists       : True
LastModified : 9/9/2020 2:03:44 PM



   Name: Windows PowerShell


Scope        : AllUsersCurrentHost
Path         : C:\WINDOWS\System32\WindowsPowerShell\v1.0\Microsoft.PowerShell_profile.ps1
Exists       : True
LastModified : 10/9/2020 4:08:35 PM
...
```

The command has a default list view.

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSProfilePath

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-PSScriptTools

Synopsis

Get a summary of PSScriptTools commands.

Syntax

```
Get-PSScriptTools [-Verb <String>] [<CommonParameters>]
```

Description

You can use this command to get a summary display of functions included in the PSScriptTools module. Use the -Verb parameter to filter the output.

Examples

Example 1

```
PS C:\> Get-PSScriptTools


___ ___ ___          _       _  _____         _
| _ \ __/ __|__ _ _(_)_ __| |__   _|__ ___| |___
|  _\__ \__ \ _| '_| | '_ \  _|| |/ _ \ _ \ (_-<
|_| |___/___\__|_| |_| .__/\__||_|\___\___/_/__/
|_|

   Verb: Add

Name                 Alias               Synopsis
----                 -----               --------
Add-Border                               Create a text border around a string.


   Verb: Compare

Name                 Alias               Synopsis
----                 -----               --------
Compare-Module       cmo                 Compare PowerShell module versions.


   Verb: Convert

Name                         Alias          Synopsis
----                         -----          --------
Convert-CommandToHashtable                  Convert a PowerShell expression i...
Convert-EventLogRecord       clr            Convert EventLogRecords to struct...
Convert-HashtableString                     Convert a hashtable string into a...
Convert-HashtableToCode                     Convert a hashtable to a string r...
...
```

The header is written to the host and not the pipeline.

Example 2

```
PS C:\> Get-PSScriptTools | Where alias


___ ___ ___          _       _  _____         _
| _ \ __/ __|__ _ _(_)_ __| |__   _|__ ___| |___
|  _\__ \__ \ _| '_| | '_ \  _|| |/ _ \ _ \ (_-<
|_| |___/___\__|_| |_| .__/\__||_|\___\___/_/__/
|_|

   Verb: Compare

Name                        Alias      Synopsis
----                        -----      --------
Compare-Module              cmo        Compare PowerShell module versions.
Compare-Script              csc        Compare PowerShell script versions.

   Verb: Convert

Name                        Alias      Synopsis
----                        -----      --------
Convert-EventLogRecord      clr        Convert EventLogRecords to structured...
Convert-HashtableToCode     chc        Convert a hashtable to a string repre...
...
```

List commands with defined aliases in the PSScriptTools module.

Example 3

```
PS C:\> Get-PSScriptTools -Verb Select


___ ___ ___          _       _  _____         _
| _ \ __/ __|__ _ _(_)_ __| |__   _|__ ___| |___
|  _\__ \__ \ _| '_| | '_ \  _|| |/ _ \ _ \ (_-<
|_| |___/___\__|_| |_| .__/\__||_|\___\___/_/__/
|_|

   Verb:Select

Name                        Alias               Synopsis
----                        -----               --------
Select-After                after               Select objects after a give...
Select-Before               before              Select objects before a giv...
Select-First                First               Select the first X number o...
Select-Last                 Last                Select the last X number of...
Select-Newest               newest              Select the newest X number ...
Select-Oldest               oldest              Select the oldest X number ...
```

Get all module commands that use the Select verb.

Parameters

-Verb

Filter commands based on a standard PowerShell verb.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSScriptTool

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Command

Get-Module

Open-PSScriptToolsHelp

Get-PSSessionInfo

Synopsis

Get details about the current PowerShell session

Syntax

```
Get-PSSessionInfo [<CommonParameters>]
```

Description

This command will provide a snapshot of the current PowerShell session. The Runtime and Memory properties are defined by script so if you save the result to a variable, you will get current values everytime you look at the variable.

Examples

Example 1

```
PS C:\> Get-PSSessionInfo

ProcessID   : 1112
Command     : "C:\Program Files\PowerShell\7\pwsh.exe" -noprofile
Host        : ConsoleHost
Started     : 4/9/2021 9:36:13 AM
PSVersion   : 7.1.3
Elevated    : True
Parent      : System.Diagnostics.Process (WindowsTerminal)
Runtime     : 00:31:26.2716486
MemoryMB    : 129
```

The Memory value is in MB. If running in a PowerShell console session, the Elevated value will be displayed in color.

Example 2

```
PS /home> Get-PSSessionInfo

ProcessID   : 71
Command     : pwsh
Host        : ConsoleHost
Started     : 04/09/2021 09:38:55
PSVersion   : 7.1.3
Elevated    : False
Parent      : System.Diagnostics.Process (bash)
Runtime     : 00:30:07.1669248
```

```
MemoryMB    : 133
```

The result from a Linux host.

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSSessionInfo

Notes

This command has an alias of gsin.

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Host

Get-Process

Get-PSUnique

Synopsis

Filter for unique objects.

Syntax

```
Get-PSUnique [-InputObject] <Object> [<CommonParameters>]
```

Description

You can use this command to filter for truly unique objects. That is, every property on every object is considered unique. Most things in PowerShell are already guaranteed to be unique, but you might import data from a CSV file with duplicate entries. Get-PSUnique can help filter.

This command works best with simple objects. Objects with nested objects as properties may not be properly detected.

Examples

EXAMPLE 1

```
PS C:\> $clean = Import-CSV c:\data\newinfo.csv | Get-PSUnique
```

Import unique objects from a CSV file and save the results to a variable.

Parameters

-InputObject

Simple, objects. The flatter the better this command will work.

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Object

Outputs

Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Compare-Object

Get-PSWho

Synopsis

Get PowerShell user summary information.

Syntax

```
Get-PSWho [-AsString] [<CommonParameters>]
```

Description

This command will provide a summary of relevant information for the current user in a PowerShell session. You might use this to troubleshoot an end-user problem running a script or command.

The default behavior is to write an object to the pipeline, but you can use the -AsString parameter to force the command to write a string. This makes it easier to use in your scripts with Write-Verbose.

Examples

EXAMPLE 1

```
PS C:\> Get-PSWho

User            : Desk01\Jeff
Elevated        : False
Computername    : Desk01
OperatingSystem : Microsoft Windows 10 Pro [64-bit]
OSVersion       : 10.0.19042
PSVersion       : 5.1.19041.906
Edition         : Desktop
PSHost          : ConsoleHost
WSMan           : 3.0
ExecutionPolicy : RemoteSigned
Culture         : English (United States)
```

EXAMPLE 2

```
PS /home/jhicks> Get-PSWho

User            : jeff
Elevated        : False
Computername    : Desk01
OperatingSystem : Linux 5.4.72-microsoft-standard-WSL2 #1 SMP Wed Oct 28 23:40:43 UTC 2020
OSVersion       : Ubuntu 20.04.2 LTS
PSVersion       : 7.1.3
Edition         : Core
PSHost          : ConsoleHost
```

```
WSMan           : 3.0
ExecutionPolicy : Unrestricted
Culture         : Invariant Language (Invariant Country)
```

EXAMPLE 3

```
PS C:\> Get-PSWho

User            : DESK11\Jeff
Elevated        : True
Computername    : DESK11
OperatingSystem : Microsoft Windows 11 Pro [64-bit]
OSVersion       : 10.0.22623
PSVersion       : 7.3.3
Edition         : Core
PSHost          : ConsoleHost
WSMan           : 3.0
ExecutionPolicy : RemoteSigned
Culture         : English (United States)
```

EXAMPLE 4

```
PS C:\> Get-PSWho -asString | Set-Content c:\test\who.txt
```

Parameters

-AsString

Write the summary object as a string. This can be useful when you want to save the information in a log file.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

PSWho

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Test-IsElevated

Get-CimInstance

Get-ExecutionPolicy

$PSVersionTable

Get-Host

Get-TypeMember

Synopsis

Get type member information.

Syntax

member (Default)

```
Get-TypeMember [-TypeName] <Type> [-MemberType <String>] [<CommonParameters>]
```

static

```
Get-TypeMember [-TypeName] <Type> [-StaticOnly] [<CommonParameters>]
```

name

```
Get-TypeMember [-TypeName] <Type> -MemberName <String> [<CommonParameters>]
```

Description

This is an alternative to using Get-Member. Specify a type name to see a simple view of an object's members. The output will only show native members, including static methods, but not those added by PowerShell such as ScriptProperties. The command in this module includes custom format and type extensions. See help examples.

Examples

EXAMPLE 1

```
PS C:\> Get-TypeMember DateTime

   Type: System.DateTime

Name                 MemberType ResultType   IsStatic IsEnum
----                 ---------- ----------   -------- ------
MaxValue             Field      datetime         True
MinValue             Field      datetime         True
Add                  Method     DateTime
AddDays              Method     DateTime
AddHours             Method     DateTime
AddMilliseconds      Method     DateTime
AddMinutes           Method     DateTime
```

```
AddMonths             Method     DateTime
AddSeconds            Method     DateTime
...
Date                  Property   DateTime
Day                   Property   Int32
DayOfWeek             Property   DayOfWeek               True
DayOfYear             Property   Int32
Hour                  Property   Int32
Kind                  Property   DateTimeKind            True
Millisecond           Property   Int32
Minute                Property   Int32
...
```

Static items will be shown in green. Enum properties will be shown in orange.

EXAMPLE 2

```
PS C:\> Get-TypeMember DateTime -StaticOnly

   Type: System.DateTime

Name            MemberType ResultType IsStatic IsEnum
----            ---------- ---------- -------- ------
MaxValue        Field      datetime       True
MinValue        Field      datetime       True
Compare         Method     Int32          True
DaysInMonth     Method     Int32          True
Equals          Method     Boolean        True
FromBinary      Method     DateTime       True
FromFileTime    Method     DateTime       True
...
```

EXAMPLE 3

```
PS C:\> Get-TypeMember system.io.fileinfo -MemberType Property

   Type: System.IO.FileInfo

Name              MemberType ResultType     IsStatic IsEnum
----              ---------- ----------     -------- ------
Attributes        Property   FileAttributes            True
CreationTime      Property   DateTime
CreationTimeUtc   Property   DateTime
Directory         Property   DirectoryInfo
DirectoryName     Property   String
Exists            Property   Boolean
Extension         Property   String
FullName          Property   String
...
```

Get only properties for System.IO.FileInfo.

EXAMPLE

```
PS C:\> Get-TypeMember datetime -MemberName add* | Format-Table -view syntax

        Type: System.DateTime

Name             ReturnType Syntax
----             ---------- ------
Add              DateTime   $obj.Add(\[TimeSpan\]value)
AddDays          DateTime   $obj.AddDays(\[Double\]value)
AddHours         DateTime   $obj.AddHours(\[Double\]value)
AddMicroseconds DateTime   $obj.AddMicroseconds(\[Double\]value)
AddMilliseconds DateTime   $obj.AddMilliseconds(\[Double\]value)
AddMinutes       DateTime   $obj.AddMinutes(\[Double\]value)
AddMonths        DateTime   $obj.AddMonths(\[Int32\]months)
AddSeconds       DateTime   $obj.AddSeconds(\[Double\]value)
AddTicks         DateTime   $obj.AddTicks(\[Int64\]value)
AddYears         DateTime   $obj.AddYears(\[Int32\]value)
```

Use the custom table view to see method syntax.

EXAMPLE

```
PS C:\> Get-TypeMember system.io.path -static | Where-Object membertype -eq 'method' | Select-Object
methodsyntax

Name                         ReturnType     IsStatic Syntax
----                         ----------     -------- ------
ChangeExtension              System.String      True $obj.ChangeExtension([Str...
Combine                      System.String      True {$obj.Combine([String[]]p...
GetDirectoryName             System.String      True $obj.GetDirectoryName([St...
GetExtension                 System.String      True $obj.GetExtension([String...
GetFileName                  System.String      True $obj.GetFileName([String]...
GetFileNameWithoutExtension System.String      True $obj.GetFileNameWithoutEx...
GetFullPath                  System.String      True $obj.GetFullPath([String]...
...
```

MethodSyntax is a custom property set for Get-TypeMember output.

Parameters

-TypeName

Specify a .NET type name like DateTime

```
Type: Type
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: False
```

```
Accept wildcard characters: False
```

-StaticOnly

Get only static members.

```
Type: SwitchParameter
Parameter Sets: static
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-MemberType

Filter for a specific member type. Valid values are Property, Method, Event, and Field.

```
Type: String
Parameter Sets: member
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-MemberName

Specify a member name.

```
Type: String
Parameter Sets: name
Aliases: Name

Required: True
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: True
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Outputs

psTypeMember

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Member

Get-TZData

Synopsis

Get time zone details.

Syntax

```
Get-TZData [-TimeZoneArea] <String> [-Raw] [<CommonParameters>]
```

Description

This command uses a free and publicly available REST API offered by http://worldtimeapi.org to get information about a time zone. You can use Get-TZList to find an area and this command to display the details. The time zone area name is case-sensitive. The default is to write a custom object to the pipeline, but you also have an option of seeing the raw data that is returned from the API. On PowerShell Core, the raw data will be slightly different.

Note that if the site is busy you may get an error. If that happens, wait a minute and try again.

Examples

Example 1

```
PS C:\> Get-TZData Australia/Hobart

PS C:\> Get-TZData Australia/Hobart

Timezone                       Label        Offset     DST                  Time
--------                       -----        ------     ---                  ----
Australia/Hobart               AEDT       11:00:00    True  3/16/2020 5:35:46 AM
```

Get time zone information for Hobart.

Example 2

```
PS C:\> Get-TZData Asia/Tokyo -Raw


week_number  : 11
utc_offset   : +09:00
unixtime     : 1552674997
timezone     : Asia/Tokyo
dst_until    :
dst_from     :
dst          : False
day_of_year  : 75
```

```
day_of_week  : 6
datetime     : 2020-03-16T03:36:37.829505+09:00
abbreviation : JST
```

Get time zone information for Tokyo as a raw format.

Example 3

```
PS C:\> Get-TZList Antarctica | Get-TZData | Sort-Object Offset

Timezone                        Label        Offset     DST                  Time
--------                        -----        ------     ---                  ----
Antarctica/Rothera               -03      -03:00:00   False  3/15/2020 3:39:59 PM
Antarctica/Palmer                -03      -03:00:00   False  3/15/2020 3:39:59 PM
Antarctica/Troll                 +00       00:00:00   False  3/15/2020 6:40:00 PM
Antarctica/Syowa                 +03       03:00:00   False  3/15/2020 9:39:59 PM
Antarctica/Mawson                +05       05:00:00   False 3/15/2020 11:39:59 PM
Antarctica/Vostok                +06       06:00:00   False 3/16/2020 12:40:00 AM
Antarctica/Davis                 +07       07:00:00   False  3/16/2020 1:39:58 AM
Antarctica/Casey                 +08       08:00:00   False  3/16/2020 2:39:58 AM
Antarctica/DumontDUrville        +10       10:00:00   False  3/16/2020 4:39:58 AM
Antarctica/Macquarie             +11       11:00:00   False  3/16/2020 5:39:58 AM
```

Get all time zone areas in Antarctica and pipe them to Get-TZData to retrieve the details.

Example 4

```
PS C:\> Get-TZData Europe/Rome | ConvertTo-LocalTime -Datetime "3/15/2020 4:00PM"

Friday, March 15, 2020 11:00:00 AM
```

Convert the datetime in Rome to local time, which in this example is Eastern time.

Parameters

-Raw

Return raw, unformatted data. Due to the way PowerShell Core automatically wants to format date time strings, raw output had to be slightly adjusted.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-TimeZoneArea

Enter a timezone location like Pacific/Auckland. It is case sensitive. Use Get-TZList to retrieve a list of areas.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

PSCustomObject

TimeZoneData

Notes

Learn more about PowerShell:http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-TZList

Get-TZList

Synopsis

Get a list of time zone areas.

Syntax

zone (Default)

```
Get-TZList [-TimeZoneArea] <String> [<CommonParameters>]
```

all

```
Get-TZList [-All] [<CommonParameters>]
```

Description

This command uses a free and publicly available REST API offered by http://worldtimeapi.org to get a list of time zone areas. You can get a list of all areas or by geographic location. Use Get-TZData to then retrieve details. You must have Internet access for this command to work. Note that if the site is busy you may get an error. If that happens, wait a minute and try again.

Examples

Example 1

```
PS C:\> Get-TZList -all

Africa/Abidjan
Africa/Accra
Africa/Algiers
Africa/Bissau
Africa/Cairo
...
```

Get a list of all time zone areas.

Example 2

```
PS C:\> Get-TZList Atlantic

Atlantic/Azores
Atlantic/Bermuda
```

```
Atlantic/Canary
Atlantic/Cape_Verde
Atlantic/Faroe
Atlantic/Madeira
Atlantic/Reykjavik
Atlantic/South_Georgia
Atlantic/Stanley
```

Get all time zone areas in the Atlantic region.

Parameters

-All

Get a list of all timezone areas

```
Type: SwitchParameter
Parameter Sets: all
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-TimeZoneArea

Specify a time zone region.

```
Type: String
Parameter Sets: zone
Aliases:
Accepted values: Africa, America, Antarctica, Asia, Atlantic, Australia, Europe, Indian, Pacific

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

string

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-TZData

Get-WhoIs

Synopsis

Lookup WhoIS data for a given IPv4 address.

Syntax

```
Get-WhoIs [-IPAddress] <String> [<CommonParameters>]
```

Description

This command queries the ARIN database to lookup WhoIs information for a given IPv4 address.

Examples

Example 1

```
PS C:\> get-whois 208.67.222.222 | Select-Object -Property *


IP                     : 208.67.222.222
Name                   : OPENDNS-NET-1
RegisteredOrganization : Cisco OpenDNS, LLC
City                   : San Francisco
StartAddress           : 208.67.216.0
EndAddress             : 208.67.223.255
NetBlocks              : 208.67.216.0/21
Updated                : 3/2/2012 8:03:18 AM
```

Example 2

```
PS C:\> '1.1.1.1','8.8.8.8','208.67.222.222'| get-whois

Name            IP             RegisteredOrganization                  NetBlocks       Updated
----            --             ----------------------                  ---------       -------
APNIC-1         1.1.1.1        Asia Pacific Network Information Centre 1.0.0.0/8       7/30/2010 8:23:43
AM
LVLT-GOGL-8-8-8 8.8.8.8        Google LLC                              8.8.8.0/24      3/14/2014 3:52:05
PM
OPENDNS-NET-1   208.67.222.222 Cisco OpenDNS, LLC                      208.67.216.0/21 3/2/2012 8:03:18
AM
```

Parameters

-IPAddress

Enter a valid IPV4 address to lookup with WhoIs. It is assumed all of the octets are less than 254.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

WhoIsResult

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Invoke-RestMethod

Get-WindowsVersion

Synopsis

Get Windows version information.

Syntax

```
Get-WindowsVersion [[-Computername] <String[]>] [-Credential <PSCredential>]
[-UseSSL] [-ThrottleLimit <Int32>] [-Authentication <String>] [<CommonParameters>]
```

Description

This is a PowerShell version of the winver.exe utility. This command uses PowerShell remoting to query the registry on a remote machine to retrieve Windows version information. The parameters are the same as in Invoke-Command.

If you are querying the local computer, all other parameters will be ignored.

This command is an alternative to using Get-CimInstance and querying the Win32_OperatingSystem.

Examples

EXAMPLE 1

```
PS C:\>Get-WindowsVersion


   Computername: WINDESK11

ProductName                    EditionID             Release Build  InstalledUTC
-----------                    ---------             ------- -----  ------------
Microsoft Windows 11 Pro       Professional             22H2 22622  5/12/2022 1:01:53 PM
```

Query the local host.

EXAMPLE 2

```
PS C:\> Get-WindowsVersion -Computername srv1,srv2,win10 -Credential $art

   Computername: WIN10

ProductName                    EditionID             Release Build  InstalledUTC
-----------                    ---------             ------- -----  ------------
Microsoft Windows 10           Enterprise               21H2 19044  8/26/2022 4:25:49 PM
Enterprise
```

```
   Computername: SRV2

ProductName                    EditionID             Release Build  InstalledUTC
-----------                    ---------             ------- -----  ------------
Microsoft Windows Server 2016  ServerStandard                14393  8/26/2022 4:26:00 PM
Standard


   Computername: SRV1

ProductName                    EditionID             Release Build  InstalledUTC
-----------                    ---------             ------- -----  ------------
Microsoft Windows Server 2016  ServerStandard               14393  8/26/2022 4:25:54 PM
Standard
```

Get Windows version information from remote computers using an alternate credential.

Example 3

```
PS C:\> Get-WindowsVersion -Computername Dom1 | Select-Object *

ProductName    : Microsoft Windows Server 2016 Standard
ReleaseVersion :
EditionID      : ServerStandard
ReleaseID      : 1607
Build          : 14393.693
Branch         : rs1_release
InstalledUTC   : 8/26/2022 4:17:05 PM
Computername   : DOM1
```

Parameters

-Computername

Specifies the computers on which the command runs. The default is the local computer.

When you use the ComputerName parameter, Windows PowerShell creates a temporary connection that is used only to run the specified command and is then closed. If you need a persistent connection, use the Session parameter.

Type the NETBIOS name, IP address, or fully qualified domain name of one or more computers in a comma-separated list. To specify the local computer, type the computer name, localhost, or a dot (.).

To use an IP address in the value of ComputerName , the command must include the Credential parameter. Also, the computer must be configured for HTTPS transport or the IP address of the remote computer must be included in the WinRM TrustedHosts list on the local computer. For instructions for adding a computer name to the TrustedHosts list, see "How to Add a Computer to the Trusted Host List" in about_Remote_Troubleshooting.

On Windows Vista and later versions of the Windows operating system, to include the local computer in the value of ComputerName , you must open Windows PowerShell by using the Run as administrator option.

```
Type: String[]
```

```
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: $env:COMPUTERNAME
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

-Credential

Specifies a user account that has permission to perform this action. The default is the current user.

Type a user name, such as User01 or Domain01\User01. Or, enter a PSCredential object, such as one generated by the Get-Credential cmdlet. If you type a user name, this cmdlet prompts you for a password.

```
Type: PSCredential
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseSSL

Indicates that this cmdlet uses the Secure Sockets Layer (SSL) protocol to establish a connection to the remote computer. By default, SSL is not used.

WS-Management encrypts all Windows PowerShell content transmitted over the network. The UseSSL parameter is an additional protection that sends the data across an HTTPS, instead of HTTP.

If you use this parameter, but SSL is not available on the port that is used for the command, the command fails.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-ThrottleLimit

Specifies the maximum number of concurrent connections that can be established to run this command. If you omit this parameter or enter a value of 0, the default value, 32, is used.

The throttle limit applies only to the current command, not to the session or to the computer.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Authentication

Specifies the mechanism that is used to authenticate the user's credentials. The acceptable values for this parameter are:

- Default
- Basic
- Credssp
- Digest
- Kerberos
- Negotiate
- NegotiateWithImplicitCredential

The default value is Default.

CredSSP authentication is available only in Windows Vista, Windows Server 2008, and later versions of the Windows operating system.

For information about the values of this parameter, see the description of the AuthenticationMechanismEnumeration (http://go.microsoft.com/fwlink/?LinkID=144382) in the Microsoft Developer Network (MSDN) library.

Credential Security Support Provider (CredSSP) authentication, in which the user's credentials are passed to a remote computer to be authenticated, is designed for commands that require authentication on more than one resource, such as accessing a remote network share. This mechanism increases the security risk of the remote operation. If the remote computer is compromised, the credentials that are passed to it can be used to control the network session.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: Default
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

WindowsVersion

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-WindowsVersionString

WinVer.exe

SystemInfo.exe

Invoke-Command

Get-WindowsVersionString

Synopsis

Get Windows version information.

Syntax

```
Get-WindowsVersionString [[-Computername] <String[]>]
[-Credential <PSCredential>] [-UseSSL] [-ThrottleLimit <Int32>]
[-Authentication <String>] [<CommonParameters>]
```

Description

This is a PowerShell version of the winver.exe utility.T his command uses PowerShell remoting to query the registry on a remote machine to retrieve Windows version information. The parameters are the same as in Invoke-Command. The command writes a string of version information.

If you are querying the local computer, all other parameters will be ignored.

Examples

EXAMPLE 1

```
PS C:\> Get-WindowsVersionString -Computername win10 -credential company\artd
WIN10 Windows 10 Enterprise (OS Build 15063.1418)
```

Get a string version of Windows version information from a remote computer and use an alternate credential.

EXAMPLE 2

```
PS C:\> Get-WindowsVersionString
BOVINE320 Windows 10 Pro Version Professional (OS Build 17763.253)
```

Get version information for the local host.

Parameters

-Computername

Specifies the computers on which the command runs. The default is the local computer.

When you use the ComputerName parameter, Windows PowerShell creates a temporary connection that is used only to run the specified command and is then closed. If you need a persistent connection, use the

Session parameter.

Type the NETBIOS name, IP address, or fully qualified domain name of one or more computers in a comma-separated list. To specify the local computer, type the computer name, localhost, or a dot (.).

To use an IP address in the value of ComputerName , the command must include the Credential parameter. Also, the computer must be configured for HTTPS transport or the IP address of the remote computer must be included in the WinRM TrustedHosts list on the local computer. For instructions for adding a computer name to the TrustedHosts list, see "How to Add a Computer to the Trusted Host List" in about_Remote_Troubleshooting.

On Windows Vista and later versions of the Windows operating system, to include the local computer in the value of ComputerName , you must open Windows PowerShell by using the Run as administrator option.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: $env:COMPUTERNAME
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

-Credential

Specifies a user account that has permission to perform this action. The default is the current user.

Type a user name, such as User01 or Domain01\User01. Or, enter a PSCredential object, such as one generated by the Get-Credential cmdlet. If you type a user name, this cmdlet prompts you for a password.

```
Type: PSCredential
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseSSL

Indicates that this cmdlet uses the Secure Sockets Layer (SSL) protocol to establish a connection to the remote computer. By default, SSL is not used.

WS-Management encrypts all Windows PowerShell content transmitted over the network. The UseSSL parameter is an additional protection that sends the data across an HTTPS, instead of HTTP.

If you use this parameter, but SSL is not available on the port that is used for the command, the command fails.

```
Type: SwitchParameter
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-ThrottleLimit

Specifies the maximum number of concurrent connections that can be established to run this command. If you omit this parameter or enter a value of 0, the default value, 32, is used.

The throttle limit applies only to the current command, not to the session or to the computer.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Authentication

Specifies the mechanism that is used to authenticate the user's credentials. The acceptable values for this parameter are:

- Default
- Basic
- Credssp
- Digest
- Kerberos
- Negotiate
- NegotiateWithImplicitCredential

The default value is Default.

CredSSP authentication is available only in Windows Vista, Windows Server 2008, and later versions of the Windows operating system.

For information about the values of this parameter, see the description of the AuthenticationMechanismEnumeration (http://go.microsoft.com/fwlink/?LinkID=144382) in the Microsoft Developer Network (MSDN) library.

Credential Security Support Provider (CredSSP) authentication, in which the user's credentials are passed to a remote computer to be authenticated, is designed for commands that

> require authentication on more than one resource, such as accessing a remote network share. This mechanism increases the security risk of the remote operation. If the remote computer is compromised, the credentials that are passed to it can be used to control the network session.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: Default
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-WindowsVersion

Winver.exe

Invoke-InputBox

Synopsis

Launch a graphical input box.

Syntax

plain (Default)

```
Invoke-InputBox [-Title <String>] [-Prompt <String>]
[-BackgroundColor <String>] [<CommonParameters>]
```

secure

```
Invoke-InputBox [-Title <String>] [-Prompt <String>] [-AsSecureString]
[-BackgroundColor <String>] [<CommonParameters>]
```

Description

Use this command as a graphical replacement for Read-Host. The command will write either a string or a secure string to the pipeline. You can customize the prompt, title and background color.

This command requires a Windows platform.

Examples

EXAMPLE 1

```
PS C:\> $name == Invoke-InputBox -prompt "Enter a user name" -title "New User"
```

Display an graphical inputbox with a given prompt and title. The entered value will be saved to $name.

EXAMPLE 2

```
PS C:\> $pass == Invoke-InputBox -prompt "Enter a new password"
-title "New User" -asSecureString -background red
```

Get a secure string value from the user. This example also changes the form background to red.

Parameters

-AsSecureString

Use to mask the entry and return a secure string.

```
Type: SwitchParameter
Parameter Sets: secure
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-BackgroundColor

Set the form background color. You can use a value like 'red' or a '#c0c0c0'.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: White
Accept pipeline input: False
Accept wildcard characters: False
```

-Prompt

Enter a prompt. No more than 50 characters.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: "Please enter a value"
Accept pipeline input: False
Accept wildcard characters: False
```

-Title

Enter the title for the input box. No more than 25 characters.

```
Type: String
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: "User Input"
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

System.Security.SecureString

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Read-Host

New-WPFMessageBox

Join-Hashtable

Synopsis

Combine two hashtables into one.

Syntax

```
Join-Hashtable [[-First] <Hashtable>] [[-Second] <Hashtable>] [-Force]
[<CommonParameters>]
```

Description

This command will combine two hashtables into a single hashtable. Normally this is as easy as $hash1+$hash2. But if there are duplicate keys, this will fail. Join-Hashtable will test for duplicate keys. If any of the keys from the first, or primary hashtable are found in the secondary hashtable, you will be prompted for which to keep. Or you can use -Force which will always keep the conflicting key from the first hashtable.

The original hashtables will not be modified.

Examples

EXAMPLE 1

```
PS C:\> $a=@{Name="Jeff";Count=3;Color="Green"}
PS C:\> $b=@{Computer="HAL";Enabled=$True;Year=2020;Color="Red"}
PS C:\> Join-Hashtable $a $b
Duplicate key Color
A Green
B Red
Which key do you want to KEEP \[AB\]?: A

Name                           Value
----                           -----
Year                           2020
Name                           Jeff
Enabled                        True
Color                          Green
Computer                       HAL
Count                          3
```

EXAMPLE 2

```
PS C:\>$c == Join-Hashtable $a $b -force
PS C:\> $c

Name                           Value
----                           -----
```

```
Year                           2020
Name                           Jeff
Enabled                        True
Color                          Green
Computer                       HAL
Count                          3
```

Parameters

-First

The primary hashtable. If there are any duplicate keys and you use -Force, values from this hashtable will be kept.

```
Type: Hashtable
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Second

The secondary hashtable.

```
Type: Hashtable
Parameter Sets: (All)
Aliases:

Required: False
Position: 2
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Force

Do not prompt for conflicts. Always keep the key from the first hashtable.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
```

```
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

hashtable

Outputs

hashtable

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

About_Hash_Tables

New-ANSIBar

Synopsis

Display an ANSI colored bar.

Syntax

standard (Default)

```
New-ANSIBar -Range <Int32[]> [-Spacing <Int32>] [-Character <String>]
[-Gradient] [<CommonParameters>]
```

custom

```
New-ANSIBar -Range <Int32[]> [-Spacing <Int32>] [-Custom <Char>] [-Gradient]
[<CommonParameters>]
```

Description

You can use this command to create colorful bars using ANSI escape sequences based on a 256 color scheme. The default behavior is to create a gradient bar that goes from first to last values in the range and then back down again. Or you can create a single gradient that runs from the beginning of the range to the end. You can use one of the default characters or specify a custom one.

You can learn more about ANSI escape codes at https://en.wikipedia.org/wiki/ANSI_escape_code.

Examples

Example 1

```
PS C:\> New-ANSIBar -range (232..255)
```

This will create a grayscale gradient bar that goes from dark to light to dark.

Example 2

```
PS C:\> New-ANSIBar -range (46..51) -Character BlackSquare -Spacing 3
```

Example 3

```
PS C:\> New-ANSIBar -range (214..219) -Gradient -Spacing 5 -Character DarkShade
```

Parameters

-Character

Specify a character to use for the bar.

```
Type: String
Parameter Sets: standard
Aliases:
Accepted values: FullBlock, LightShade, MediumShade, DarkShade, BlackSquare, WhiteSquare

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Custom

Specify a custom character.

```
Type: Char
Parameter Sets: custom
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Gradient

Display as a single gradient from the first value to the last.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Range

Enter a range of 256 color values, e.g. (232..255)

```
Type: Int32[]
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Spacing

How many characters do you want in the bar of each value? This will increase the overall length of the bar.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-RedGreenGradient

Write-ANSIProgress

Show-ANSISequence

New-CustomFileName

Synopsis

Create a custom file name based on a template.

Syntax

```
New-CustomFileName [-Template] <String> [-Case <String>] [<CommonParameters>]
```

Description

This command will generate a custom file name based on a template string that you provide. You can create a template string using any of these variables. Most of these should be self-explanatory

- %username
- %computername
- %year - 4 digit year
- %yr - 2 digit year
- %monthname - The abbreviated month name
- %month - The month number
- %dayofweek - The full name of the week day
- %day
- %hour - the hour of the day in 12-hour format to 2 digits
- %hour24 - the hour of the day in 24-hour format to 2 digits
- %minute
- %seconds
- %time - A compact string of HourMinuteSecond
- %string - A random string
- %guid

You can also insert a random number using %# with a # character for each digit. If you want a 2 digit random number use %. If you want 6 digits, use %.

The command will attempt to preserve case for any non-pattern string, but you should separate it from other placeholder patterns with one of these characters: - ( ) [ ] or a . Using an underscore will not work.

Another option, is to turn the entire custom name into upper or lower case.

Examples

EXAMPLE 1

```
PS C:\> New-CustomFileName %computername_%day%monthname%yr-%time.log
COWPC_28Nov20-142138.log
```

EXAMPLE 2

```
PS C:\> New-CustomFileName %dayofweek-%####.dat
Tuesday-3128.dat
```

Create a custom file name using the day of the week and a 4 digit random number.

EXAMPLE 3

```
PS C:\> New-CustomFileName %username-%string.tmp -Case Upper
JEFF-Z0XUXMFS.TMP
```

Create an upper case custom file name. The %string placeholder will be replaced with a random 8 character string.

EXAMPLE 4

```
PS C:\> Join-Path c:\work (New-CustomFilename "%Year%Monthname-LOG-%computername[%username].txt" -case
lower)
c:\work\2020nov-log-bovine320[jeff].txt
```

Create a lower case filename using Join-Path. This command does not create the file, it only generates a name for you to use.

EXAMPLE 5

```
PS C:\> 1..10 | foreach-object {
    $file = New-Item (Join-Path c:\work\data (New-CustomFileName %string-%####.dat))
    $stream =$file.open("OpenOrCreate")
    $stream.Seek((Get-Random -minimum 250 -Maximum 2KB), "Begin") | Out-Null
    $stream.WriteByte(0)
    $stream.Close()
    $file
}

    Directory: C:\work\data

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
```

```
-a----        3/15/2020   4:46 PM            976 rcphz2nj-6431.dat
-a----        3/15/2020   4:46 PM           1797 viz32er5-0526.dat
-a----        3/15/2020   4:46 PM           1775 k2mukuv4-8267.dat
-a----        3/15/2020   4:46 PM            666 0encqdlt-8753.dat
-a----        3/15/2020   4:46 PM            513 dbswpujf-6314.dat
-a----        3/15/2020   4:46 PM            371 qlkdufp0-0481.dat
-a----        3/15/2020   4:46 PM           2010 5cxq3tb5-5624.dat
-a----        3/15/2020   4:46 PM           2043 mcvoh4n5-8041.dat
-a----        3/15/2020   4:46 PM           1048 4iwibnmf-1584.dat
-a----        3/15/2020   4:46 PM            378 fgsj0rtd-2894.dat
```

Create 10 dummy files with random names and sizes.

Parameters

-Case

Some values like username or computername might be in a different case than what you want. You can use the default value, or return a value that is all upper or lower case.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values: Lower, Upper, Default

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Template

A string that defines the naming pattern based on a set of placeholders. You can create a template string using any of these variables, including the % symbol.

- %username
- %computername
- %year - 4 digit year
- %yr - 2 digit year
- %monthname - The abbreviated month name
- %month - The month number
- %dayofweek - The full name of the week day
- %day
- %hour - the hour of the day in 12-hour format to 2 digits
- %hour24 - the hour of the day in 24-hour format to 2 digits
- %minute

- %seconds
- %time - A compact string of HourMinuteSecond
- %string - A random string
- %guid
- %# - a random number matching the number of # characters

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-RandomFileName

New-FunctionItem

Synopsis

Create a function item from the console

Syntax

```
New-FunctionItem [-Name] <String> [-Scriptblock] <ScriptBlock> [[-Description] <String>] [-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

You can use this function to create a quick function definition directly from the console. This command does not write anything to the pipeline unless you use -PassThru.

Examples

EXAMPLE 1

```
PS C:\> New-FunctionItem -name ToTitle -scriptblock {param([string]$Text)
(Get-Culture).TextInfo.ToTitleCase($text.ToLower())} -PassThru

CommandType     Name                    Version    Source
-----------     ----                    -------    ------
Function        ToTitle
```

EXAMPLE 2

```
PS C:\> {Get-Date -format g | Set-Clipboard} | New-FunctionItem -name Copy-Date
```

Parameters

-Name

What is the name of your function?

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
```

```
Accept pipeline input: False
Accept wildcard characters: False
```

-Scriptblock

What is your function's scriptblock?

```
Type: ScriptBlock
Parameter Sets: (All)
Aliases:

Required: True
Position: 2
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Description

You can specify an optional description. This only lasts for as long as your function is loaded.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 3
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Show the newly created function.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
```

```
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Scriptblock

Outputs

None

System.Management.Automation.FunctionInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Show-FunctionItem

New-PSDriveHere

Synopsis

Create a new PSDrive at the current location.

Syntax

Folder (Default)

```
New-PSDriveHere [[-Path] <String>] [-First] [-SetLocation] [-PassThru]
[-WhatIf] [-Confirm] [<CommonParameters>]
```

Name

```
New-PSDriveHere [[-Path] <String>] [[-Name] <String>] [-SetLocation]
[-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

This function will create a new PSDrive at the specified location. The default is the current location, but you can specify any PSPath. The function will take the last word of the path and use it as the name of the new PSDrive. If you prefer to use the first word of the location, use -First. If you prefer to specify a completely different name, then use the -Name parameter.

This command will not write anything to the pipeline unless you use -PassThru.

Examples

EXAMPLE 1

```
PS C:\users\jeff\documents\Enterprise Mgmt Webinar\> New-PSDriveHere
```

This will create a new PSDrive called Webinar rooted to the current location.

EXAMPLE 2

```
PS C:\users\jeff\documents\Enterprise Mgmt Webinar\> New-PSDriveHere -first
```

This will create a new PSDrive called Enterprise rooted to the current location.

EXAMPLE 3

```
PS C:\> New-PSDriveHere HKLM:\software\microsoft -PassThru |
Select-Object -Expandproperty Name

microsoft
```

EXAMPLE 4

```
PS C:\> New-PSDriveHere -Path "\\NAS\files\powershell" -Name PSFiles
```

Create a new PSDrive called PSFiles rooted to the specified path.

EXAMPLE 5

```
PS C:\Users\Jeff\Documents\DeepDive\> New-PSDriveHere . DeepDive -setlocation
PS DeepDive:\>
```

Create a new PSDrive and change location to it.

Parameters

-Path

The path for the new PSDrive. The default is the current location.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: .
Accept pipeline input: False
Accept wildcard characters: False
```

-Name

The name for the new PSDrive. The default is the last word in the specified location, unless you use -First.

```
Type: String
Parameter Sets: Name
Aliases:

Required: False
Position: 2
Default value: None
```

```
Accept pipeline input: False
Accept wildcard characters: False
```

-First

Use the first word of the current location for the new PSDrive.

```
Type: SwitchParameter
Parameter Sets: Folder
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-SetLocation

Set location to this new drive. This parameter has an alias of CD.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cd

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
```

```
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Pass the new PSDrive object to the pipeline.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

System.Management.Automation.PSDrive

Notes

Originally published at http://jdhitsolutions.com/blog/2010/08/New-PSDriveHere/

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-PSDrive

New-PSDrive

New-PSDynamicParameter

Synopsis

Create a PowerShell dynamic parameter.

Syntax

```
New-PSDynamicParameter [-ParameterName] <String[]> -Condition <String> [-Mandatory] [-DefaultValue
<Object[]>] [-Alias <String[]>]
[-ParameterType <Type>] [-HelpMessage <String>][-ValueFromPipelineByPropertyName]  [-ParameterSetName
<String>]
[-Comment <String>] [-ValidateNotNullOrEmpty] [-ValidateLength <Int32[]>]
[-ValidateSet <Object[]>] [-ValidateRange <Int32[]>] [-ValidateCount <Int32[]>] [-ValidatePattern
<String>] [-ValidateScript <ScriptBlock>] [<CommonParameters>]
```

Description

This command will create the code for a dynamic parameter that you can insert into your PowerShell script file. You need to specify a parameter name and a condition. The condition value is code that would run inside an If statement. Use a value like $True if you want to add it later in your scripting editor.

Examples

Example 1

```
PS C:\> New-PSDynamicParameter -Condition "$PSEdition -eq 'Core'" -ParameterName ANSI -Alias color
-Comment "Create a parameter to use ANSI if running PowerShell 7" -ParameterType switch

    DynamicParam {
    # Create a parameter to use ANSI if running PowerShell 7
        If (Core -eq 'Core') {

        $paramDictionary = New-Object -Type
System.Management.Automation.RuntimeDefinedParameterDictionary

        # Defining parameter attributes
        $attributeCollection = New-Object -Type
System.Collections.ObjectModel.Collection[System.Attribute]
        $attributes = New-Object System.Management.Automation.ParameterAttribute
        $attributes.ParameterSetName = '__AllParameterSets'
        $attributeCollection.Add($attributes)

        # Adding a parameter alias
        $dynalias = New-Object System.Management.Automation.AliasAttribute -ArgumentList 'color'
        $attributeCollection.Add($dynalias)

        # Defining the runtime parameter
        $dynParam1 = New-Object -Type System.Management.Automation.RuntimeDefinedParameter('ANSI',
[Switch], $attributeCollection)
        $paramDictionary.Add('ANSI', $dynParam1)
```

```
        return $paramDictionary
    } # end if
} #end DynamicParam
```

This creates dynamic parameter code that you can use in a PowerShell function. Normally you would save this output to a file or copy to the clipboard so that you can paste it into scripting editor.

Parameters

-ParameterName

Enter the name of your dynamic parameter. This is a required value.

```
Type: String[]
Parameter Sets: (All)
Aliases: Name

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Condition

Enter an expression that evaluates to True or False. This is code that will go inside an IF statement. If using variables, wrap this in single quotes. You can also enter a placeholder like '$True' and edit it later. This is a required value.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Mandatory

Is this dynamic parameter mandatory?

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
```

```
Accept pipeline input: False
Accept wildcard characters: False
```

-DefaultValue

Enter an optional default value.

```
Type: Object[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Alias

Enter an optional parameter alias. Specify multiple aliases separated by commas.

```
Type: String[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ParameterType

Enter the parameter value type such as String or Int32. Use a value like string[] to indicate an array.

```
Type: Type
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: String
Accept pipeline input: False
Accept wildcard characters: False
```

-HelpMessage

Enter an optional help message.

```
Type: String
```

```
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValueFromPipelineByPropertyName

Does this dynamic parameter take pipeline input by property name?

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-ParameterSetName

Enter an optional parameter set name.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Comment

Enter an optional comment for your dynamic parameter. It will be inserted into your code as a comment.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidateNotNullOrEmpty

Validate that the parameter is not NULL or empty.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidateLength

Enter a minimum and maximum string length for this parameter value as an array of comma-separated set values.

```
Type: Int32[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidateSet

Enter a set of parameter validations values

```
Type: Object[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidateRange

Enter a set of parameter range validations values as a comma-separated list from minimum to maximum

```
Type: Int32[]
Parameter Sets: (All)
Aliases:
```

```
Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidateCount

Enter a set of parameter count validations values as a comma-separated list from minimum to maximum

```
Type: Int32[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidatePattern

Enter a parameter validation regular expression pattern

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ValidateScript

Enter a parameter validation scriptblock. If using the form, enter the scriptblock text.

```
Type: ScriptBlock
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Outputs

System.String[]

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-PSDynamicParameterForm

about_Functions_Advanced_Parameters

New-PSDynamicParameterForm

Synopsis

Launch a WPF front-end to New-PSDynamicParameter.

Syntax

```
New-PSDynamicParameterForm [<CommonParameters>]
```

Description

This function will launch a WPF form that you can use to enter values for the New-PSDynamicParameter function. The resulting PowerShell code is copied to the clipboard so that you can paste it into your scripting editor. Mandatory settings are indicated with an asterisk. There should be tool tip help for every setting.

If you import the PSScriptTools module in the PowerShell ISE, you will get a menu shortcut under Add-Ins. If you import the module in VS Code using the integrated PowerShell terminal, it will a a new command.

Examples

Example 1

```
PS C:\> New-PSDynamicParameterForm
```

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-PSDynamicParameter

about_Functions_Advanced_Parameters

New-PSFormatXML

Synopsis

Create or modify a format.ps1xml file.

Syntax

```
New-PSFormatXML [-InputObject] <Object> [[-Properties] <Object[]>]
[-Typename <String>] [[-FormatType] <String>] [[-ViewName] <String>]
[-Path] <String> [-GroupBy <String>] [-Wrap] [-Append]
 [-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

When defining custom objects with a new typename, PowerShell by default will display all properties. However, you may wish to have a specific default view, such as a table or list. Or you may want to have different views that display the object differently. Format directives are stored in format.ps1xml files which can be tedious to create. This command simplifies that process.

Note that the table and wide views are set to Autosize. However, the table definition will include best guesses for column widths. If you prefer a more granular approach you can delete the Autosize tag and experiment with varying widths. Don't forget to run Update-FormatData to load your new file. You may need to start a new PowerShell session to fully test changes.

Pipe an instance of your custom object to this function and it will generate a format.ps1xml file based on either all the properties or a subset that you provide. You can repeat the process to add additional views. When finished, edit the format.ps1xml file and fine-tune it. The file will have notes on how to substitute script blocks. Although, beginning with v2.31.0, you can specify a hashtable as a custom property name just as you can with Select-Object.

Even though this command was written to make it easier when writing modules that might use custom objects, you can use this command to define additional views for standard objects such as files and processes. See Examples.

If you run this command inside the Visual Studio Code PowerShell Integrated Console and use -PassThru, the new file will automatically be opened in your editor.

Examples

Example 1

```
PS C:\> $tname = "myThing"
PS C:\> $obj = [PSCustomObject]@{
    PSTypeName   = $tname
    Name         = "Jeff"
    Date         = (Get-Date)
    Computername = $env:computername
```

```
    OS           = (Get-Ciminstance Win32_OperatingSystem ).caption
}
PS C:\> $upParams = @{
 TypeName = $tname
 MemberType = "ScriptProperty"
 MemberName = "Runtime"
 Value = {(Get-Date) - [datetime]"1/1/2020"}
 Force = $True
}
PS C:\> Update-TypeData @upParams
PS C:\> $obj

Name         : Jeff
Date         : 2/10/2020 8:49:10 AM
Computername : BOVINE320
OS           : Microsoft Windows 10 Pro
Runtime      : 40.20:49:43.9205882
```

This example begins be creating a custom object. You might normally do this in a script or module.

Example 2

```
PS C:\> $fmt = "C:\scripts\$tname.format.ps1xml"
PS C:\> $obj | New-PSFormatXML -Prop Name,Date,Computername,OS -Path $fmt
PS C:\> $obj | New-PSFormatXML -Prop Name,OS,Runtime -view runtime -Path $fmt -append
PS C:\> $obj | New-PSFormatXML -FormatType List -Path $fmt -append
```

The object is then piped to New-PSFormatXML to generate a new format.ps1xml file. Subsequent commands add more formatted views. When the file is completed it can be modified. Note that these examples are using shortened parameter names.

Example 3

```
PS C:\> Update-FormatData -appendpath "C:\work\$tname.format.ps1xml"
PS C:\> $obj

Name Date                  Computername Operating System
---- ----                  ------------ ----------------
Jeff 2/10/2020 8:49:10 AM BOVINE320    Microsoft Windows 10 Pro

PS C:\> $obj | Format-Table -View runtime

Name OS Runtime
---- -- -------
Jeff    40.20:56:24.5411481

PS C:\> $obj | Format-List


Name            : Jeff
Date            : Sunday, February 10, 2020
Computername    : BOVINE320
OperatingSystem : Microsoft Windows 10 Pro
Runtime         : 40.21:12:01
```

After the format.ps1xml file is applied, the object can be formatted as designed.

Example 4

```
PS C:\> $obj | New-PSFormatXML -view computer -Group Computername
-Path "c:\work\$tname.format.ps1xml" -append
PS C:\> Update-FormatData -appendpath "C:\work\$tname.format.ps1xml"
PS C:\> $obj | Format-Table -View computer


   Computername: BOVINE320

Name Date                  OS                       Runtime
---- ----                  --                       -------
Jeff 2/10/2020 8:49:10 AM Microsoft Windows 10 Pro 40.20:56:24.5411481
```

This adds another view called Computer that groups objects on the Computername property.

Example 5

```
PS C:\>$params = @{
Properties = "DisplayName"
FormatType = "Wide"
Path = "C:\work\svc.format.ps1xml"
GroupBy = "Status"
ViewName ="Status"
}
PS C:\> Get-Service bits | New-PSFormatXML @params
PS C:\> Update-FormatData $params.path
```

This will create a custom format file for service objects. This will create a wide display using the DisplayName property. Once loaded into PowerShell, you can run a command like this:

Get-Service	Sort-Object Status	Format-Wide -view Status

Example 6

```
PS C:\> '' | Select-Object -Property Name,Size,Date,Count,Age |
New-PSFormatXML -Typename myThing -Path c:\scripts\mything.format.ps1xml
```

This is an example of creating a formatting file from an empty object. Normally, you would first define your object and verify it has all the properties you need, and then you would create the formatting file. But you may want to create the formatting file in parallel using an older technique like this.

Example 7

```
PS C:\> $p = @{
FormatType = "List"
ViewName = "run"
```

```
Path  = "c:\scripts\run.ps1xml"
Properties = "ID","Name","Path","StartTime",
@{Name="Runtime";Expression={(Get-Date) - $_.starttime}}
}
PS C:\> Get-Process -id $pid | New-PSFormatXML @p
```

Beginning with v2.31.0 of the PSScriptTools module, you can specify a property defined as a scriptblock, just as you do with Select-Object. The XML file will be automatically created using the script block.

Parameters

-Append

Append the new view to an existing format.ps1xml file. You need to make sure that view names are unique. With the exception of default. You can have multiple default views as long as they are different types, such as table and list.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-FormatType

Specify whether to create a table, list, or wide view.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values: Table, List, Wide

Required: False
```

```
Position: 2
Default value: Table
Accept pipeline input: False
Accept wildcard characters: False
```

-InputObject

Specify an object to analyze and generate or update a ps1xml file. All you need is one instance of the object. Ideally, the object will have values for all properties.

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-PassThru

Write the ps1xml file object to the pipeline. If you run this command inside the VS Code PowerShell integrated console, or the PowerShell ISE and use this parameter, the file will be opened in the editor.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Enter full filename and path for the format.ps1xml file.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 4
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Properties

Enter a set of properties to include. If you don't specify anything then all properties will be used. When creating a Wide view you should only specify a single property. If you specify an invalid property name, the ps1xml file will NOT be created. Ideally, you will specify an instance of the object that contains a value for all the properties you want to use.

```
Type: Object[]
Parameter Sets: (All)
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ViewName

Enter the name of your view.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 3
Default value: default
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Typename

Specify the object typename. If you don't, then the command will use the detected object type from the InputObject.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-GroupBy

Specify a property name to group objects on. You can edit the file if you need to change how it is displayed and/or calculated.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Wrap

Wrap long lines. This only applies to Tables.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Object

Outputs

None

System.IO.FileInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Update-FormatData

Get-FormatView

New-RandomFileName

Synopsis

Create a random file name.

Syntax

none (Default)

```
New-RandomFileName [-Extension <String>] [<CommonParameters>]
```

temp

```
New-RandomFileName [-Extension <String>] [-UseTempFolder] [<CommonParameters>]
```

home

```
New-RandomFileName [-Extension <String>] [-UseHomeFolder] [<CommonParameters>]
```

Description

Create a new random file name. The default is a completely random name including the extension. But you can also create a filename that includes either the TEMP folder or the user's home folder. In the case of a Windows system, the home folder will be the documents folder.

This command does not create the file, it only generates a name for you to use.

Examples

EXAMPLE 1

```
PS C:\> New-RandomFileName
fykxecvh.ipw
```

EXAMPLE 2

```
PS C:\> New-RandomFileName -extension dat
emevgq3r.dat
```

Specify a file extension.

EXAMPLE 3

```
PS C:\> New-RandomFileName -extension log -UseHomeFolder
C:\Users\Jeff\Documents\kbyw4fda.log
```

Create a random file name using the user's home folder. In Windows, this will be the Documents folder.

EXAMPLE 4

```
PS /mnt/c/scripts> new-randomfilename -home -Extension tmp
/home/jhicks/oces0epq.tmp
```

Create a random file name using the user's home folder on a Linux installation.

Parameters

-Extension

Use a specific extension. Do not include the period.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseHomeFolder

Include the user's HOME folder.

```
Type: SwitchParameter
Parameter Sets: home
Aliases: home

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-UseTempFolder

Include the TEMP folder.

```
Type: SwitchParameter
Parameter Sets: temp
Aliases: temp

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-CustomFileName

New-RedGreenGradient

Synopsis

Create an ANSI gradient from red to green.

Syntax

```
New-RedGreenGradient [[-Percent] <Double>] [-Step <Int32>] [-Character <Char>]
[<CommonParameters>]
```

Description

You can use this command to create an ANSI colored gradient bar running from red to green. By specifying a percentage, you can provide a visual representation. The closer the percent value is to 1 the more green will be displayed. Use the -Step parameter to adjust the bar length. The smaller the step the longer the bar.

Examples

Example 1

```
PS C:\> New-RedGreenGradient -Percent .75
```

This will display a red to green gradient bar.

Example 2

```
PS C:\> Get-Volume |
Where {$_.FileSystemType -eq 'NTFS' -AND $_.driveletter -match "[C-Zc-z]"} |
Sort-Object -property DriveLetter |
Select-Object -property DriveLetter, FileSystemLabel,
@{Name="FreeGB";Expression={Format-Value -input $_.SizeRemaining -unit GB}},
@{Name = "PctFree"; Expression = {
$pct = Format-Percent -value $_.sizeremaining -total $_.size -decimal 2;
"{1} {0}" -f $(New-RedGreenGradient -percent ($pct/100) -step 6),$pct}}

DriveLetter FileSystemLabel FreeGB PctFree
----------- --------------- ------ -------
          C Windows             92 38.84 ████████████████
          D Data               104 21.82 ████████
```

The bar graph will be colored from red towards green. This example is using the Format-Percent and Format-Value commands from the PSScriptTools module.

Parameters

-Character

Specify a character to use for the gradient bar

```
Type: Char
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: [char]0x2588
Accept pipeline input: False
Accept wildcard characters: False
```

-Percent

Specify a percentage as a decimal value like .35

```
Type: Double
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Step

Specify a relative bar length between 2 and 10. The smaller the number the longer the bar.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 5
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-ANSIBar

Write-ANSIProgress

New-WPFMessageBox

Synopsis

Display a customizable WPF-based message box.

Syntax

standard (Default)

```
New-WPFMessageBox [-Message] <String> [-Title <String>] [-Icon <String>]
[-ButtonSet <String>] [-Background <String>] [-Quiet] [<CommonParameters>]
```

custom

```
New-WPFMessageBox [-Message] <String> [-Title <String>] [-Icon <String>]
[-CustomButtonSet <OrderedDictionary>] [-Background <String>] [-Quiet]
[<CommonParameters>]
```

Description

This function creates a Windows Presentation Foundation (WPF) based message box. This is intended to replace the legacy MsgBox function from VBScript and the Windows Forms library. The command uses a set of predefined button sets, each of which will close the form and write a value to the pipeline.

```
OK     = 1

Cancel = 0

Yes    = $True

No     = $False
```

You can also create an ordered hashtable of your own buttons and values. See examples. If you prefer to simply display the form, you can use the -Quiet parameter to suppress any output. PowerShell will block until a button is clicked or the form dismissed.

This command requires a Windows platform.

Examples

Example 1

```
PS C:\> New-WPFMessageBox -Message "Are you sure you want to do this?"
```

```
-Title Confirm -Icon Question -ButtonSet YesNo
False
```

Display a Yes/No message box. The value of the clicked button will be written to the pipeline. It is assumed you would use this in a script and have logic to determine what to do based on the value.

Example 2

```
PS C:\> New-WPFMessageBox -Message "Press OK when ready to continue."
-Title "User Deletion" -Quiet -Background crimson -Icon Shield
```

Display a message box with a crimson background and using the Shield icon. No value will be written to the pipeline and PowerShell will wait until OK is clicked or the form dismissed.

Example 3

```
PS C:\> New-WPFMessageBox -Message "Select a system option from these choices:"
-Title "You Decide" -Background cornsilk -Icon Warning
-CustomButtonSet ([ordered]@{"Reboot"=1;"Shutdown"=2;"Cancel"=3})
```

Create a custom message box with a user-defined set of buttons.

Parameters

-Background

You can specify any console color or any value from https://docs.microsoft.com/en-us/dotnet/api/system.windows.media.brushes?view=netframework-4.7.2. You can use the name or the code. Keep in mind there are no provisions to change the font color.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: White
Accept pipeline input: False
Accept wildcard characters: False
```

-ButtonSet

Select a pre-defined set of buttons. Each button will close the form and write a value to the pipeline. This can serve as the "return value" of the form.

OK = 1

Cancel = 0

Yes = $True

No = $False

```
Type: String
Parameter Sets: standard
Aliases:
Accepted values: OK, OKCancel, YesNo

Required: False
Position: Named
Default value: OK
Accept pipeline input: False
Accept wildcard characters: False
```

-CustomButtonSet

You can specify your own button set defined in an ordered hashtable. Buttons will be displayed in order from left to right. You can display up to 3 buttons. The key should be the text to display and the value should be the value you expect to write to the pipeline. It is recommended that you keep the button text short. The first letter of each key will automatically be formatted as an accelerator so you should make sure each key starts with a different letter. The first key will also be set as the default.

```
Type: OrderedDictionary
Parameter Sets: custom
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Icon

Select one of the standard system icons.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values: Information, Warning, Error, Question, Shield

Required: False
Position: Named
Default value: Information
Accept pipeline input: False
Accept wildcard characters: False
```

-Message

Enter the text message to display.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Quiet

Suppress any pipeline output.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Title

Enter the text to be displayed in the title bar. You should keep this brief.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

System.Int32

System.Boolean

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Invoke-InputBox

Open-PSScriptToolsHelp

Synopsis

Open the PSScriptTools PDF manual.

Syntax

```
Open-PSScriptToolsHelp [<CommonParameters>]
```

Description

This command will launch a PDF manual for all commands in the PSScriptTools module. It is assumed you have a default application associated with PDF files.

Examples

Example 1

```
PS C:\> Open-PSScriptToolsHelp
```

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Help

Get-PSScriptTools

Optimize-Text

Synopsis

Clean and optimize text input.

Syntax

default (Default)

```
Optimize-Text [[-Text] <String[]>] [-Filter <Regex>] [-Ignore <String>]
[-ToUpper] [<CommonParameters>]
```

object

```
Optimize-Text [[-Text] <String[]>] [-Filter <Regex>][-Ignore <String>]
[-ToUpper]  [-PropertyName <String>]  [<CommonParameters>]
```

Description

Use this command to clean and optimize content from text files. Sometimes text files have blank lines or the content has trailing spaces. These sorts of issues can cause problems when passing the content to other commands.

This command will strip out any lines that are blank or have nothing by white space, and trim leading and trailing spaces. The optimized text is then written back to the pipeline. Optionally, you can specify a property name. This can be useful when your text file is a list of computer names and you want to take advantage of pipeline binding. See examples.

If your text file has commented lines, use the ignore parameter. As long as the character is the first non-whitespace character in the line, the line will be treated as a comment and ignored.

Finally, you can use the -Filter parameter to specify a regular expression pattern to further filter what text is written to the pipeline. The filter is applied after leading and trailing spaces have been removed and before any text is converted to upper case.

Examples

EXAMPLE 1

```
PS C:\> Get-Content c:\scripts\computers.txt

win10-ent-01
srv1
 srv2
```

```
dc01

app02



PS C:\> Get-Content c:\scripts\computers.txt | Optimize-Text
win10-ent-01
srv1
quark
dc01
app02
```

The first example shows a malformed text file. In the second command, it has been optimized or normalized.

EXAMPLE 2

```
PS C:\> Get-Content c:\scripts\computers.txt |
Optimize-Text -property computername

computername
------------
win10-ent-01
srv1
quark
dc01
app02
```

Using the same text file, the command creates a custom object using the Computername property.

EXAMPLE 3

```
PS C:\> Get-Content computers.txt | Optimize-Text -prop computername |
Where-Object {Test-Connection $_.computername -count 1 -ea SilentlyContinue} |
Get-Service bits | Select-Object Name,Status,Machinename

Name                           Status MachineName
----                           ------ -----------
bits                           Running win10-ent-01
bits                           Running dc01
bits                           Running app02
```

Optimize the computer names in computers.txt and add a Computername property. Test each computer, ignoring those that fail, and get the Bits service on the ones that can be pinged.

EXAMPLE 4

```
PS C:\> Get-Content .\ChicagoServers.txt |
Optimize-Text -Ignore "#" -Property ComputerName

ComputerName
------------
```

```
chi-fp01
chi-fp02
chi-core01
chi-test
chi-dc01
chi-dc02
chi-dc04
chi-db01
```

Optimize the text file ignoring any lines that start with the # character.

EXAMPLE 5

```
PS C:\> Get-Content .\ChicagoServers.txt |
Optimize-Text -filter "dc\d{2}" -ToUpper -PropertyName Computername |
Test-Connection -count 1

Source        Destination     IPV4Address      IPV6Address    Bytes    Time(ms)
------        -----------     -----------      -----------    -----    --------
win10-ENT-01  CHI-DC01        172.16.30.200                   32       0
win10-ENT-01  CHI-DC02        172.16.30.201                   32       0
win10-ENT-01  CHI-DC04        172.16.30.203                   32       0
```

Get names from a text file that match the pattern, turn into an object with a property name, and pipe to Test-Connection.

Parameters

-Text

The text to be optimized. Typically read in from a file.

```
Type: String[]
Parameter Sets: default
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

```
Type: String[]
Parameter Sets: object
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Filter

Use a regular expression pattern to filter. The filtering is applied after leading and trailing spaces have been trimmed and before text can be converted to upper case.

```
Type: Regex
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PropertyName

Assign each line of text a property name. This has the effect of turning your text file into an array of objects with a single property.

```
Type: String
Parameter Sets: object
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Ignore

Specify a character that will be interpreted as a comment character. It must be the first-word character in a line. These lines will be ignored. This parameter has an alias of 'comment'.

```
Type: String
Parameter Sets: (All)
Aliases: comment

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ToUpper

Write text output as upper case.

```
Type: SwitchParameter
```

```
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.String

Outputs

System.String

System.Management.Automation.PSObject

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

This function was originally described at http://jdhitsolutions.com/blog/2014/09/using-optimized-text-files-in-powershell

Related Links

Get-Content

Out-ConditionalColor

Synopsis

Display colorized pipelined output.

Syntax

property (Default)

```
Out-ConditionalColor [-PropertyConditions] <Hashtable> -Property <String>
-InputObject <PSObject[]> [<CommonParameters>]
```

conditions

```
Out-ConditionalColor [-Conditions] <OrderedDictionary>
-InputObject <PSObject[]> [<CommonParameters>]
```

Description

This command is designed to take pipeline input and display it in a colorized format, based on a set of conditions. Unlike Write-Host which doesn't write to the pipeline, this command will write to the pipeline. You can get colorized data and save the output to a variable at the same time, although you'll need to use the common OutVariable parameter (see examples).

The default behavior is to use a hash table with a property name and color. The color must be one of the standard console colors used with Write-Host.

```
$c = @{Stopped='Red';Running='Green'}
```

You can then pipe an expression to this command, specifying a property name and the hash table. If the property matches the key name, the output for that object will be colored using the corresponding hash table value.

```
Get-Service -DisplayName windows* | Out-ConditionalColor $c -property status
```

Or you can do more complex processing with an ordered hash table constructed using this format:

```
[ordered]@{ <comparison scriptblock> = <color>}
```

The comparison scriptblock can use $PSitem.

```
$h=[ordered]@{

  {$psitem.ws -gt 500mb}='red'

  {$psitem.ws -gt 300mb}='yellow'

  {$psitem.ws -gt 200mb}='cyan'
}

Get-Process | Out-ConditionalColor $h
```

When doing a complex comparison you must use an [ordered] hashtable as each key will be processed in order using an If/ElseIf statement.

This command should be the last part of any pipelined expression. If you pipe to anything else, such as Sort-Object, you will lose your color formatting. Do any other sorting or filtering before piping to this command.

This command works best in the PowerShell console. It won't do anything in the PowerShell ISE.

LIMITATIONS

Due to the nature of PowerShell's formatting system, there are some limitations with this command. If the first item in your output matches one of your conditions, any text before it, such as headers, will also be colorized. This command will have no effect if the incoming object does not have a defined format view. This means you can't pipe custom objects or something using Select-Object that only includes selected properties to this command.

This command has been marked as deprecated and will be removed in a future release.

Examples

EXAMPLE 1

```
PS C:\> Get-Service -DisplayName windows* |
Out-ConditionalColor -propertyconditions @{Stopped='Red'} -property Status
```

Get all services where the display name starts with windows and display stopped services in red.

EXAMPLE 2

```
PS C:\> Get-Service -DisplayName windows* |
Out-ConditionalColor @{Stopped='Red'} status -ov winstop
```

Repeat the previous example, but also save the output to the variable winstop. When you look at $Winstop you'll see the services, but they won't be colorized. This example uses the parameters positionally.

EXAMPLE 3

```
PS C:\> Get-EventLog system -newest 50 |
Out-ConditionalColor @{error='red';warning='yellow'}
Enter a property name: entrytype
```

Get the newest 50 entries from the System event log. Display errors in red and warnings in yellow. If you don't specify a property you will be prompted.

EXAMPLE 4

```
PS C:\> $c =[ordered]@{
{$psitem.length -ge 1mb}='red';
{$psitem.length -ge 500KB}='yellow';
{$psitem.length -ge 100KB}='cyan'}
```

The first command creates an ordered hashtable based on the Length property.

EXAMPLE 5

```
PS C:\> dir c:\scripts\*.doc,c:\scripts\*.pdf,c:\scripts\*.xml |
Out-ConditionalColor $c
```

The next command uses it to get certain file types in the scripts folder and display the selected properties in color depending on the file size.

Parameters

-Conditions

Use an ordered hashtable for more complex processing. See examples.

```
Type: OrderedDictionary
Parameter Sets: conditions
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-InputObject

The output from a PowerShell expression that you want to colorize.

```
Type: PSObject[]
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Property

When using a simple hash table, specify the property to compare which will be done by using the -eq operator.

```
Type: String
Parameter Sets: property
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PropertyConditions

Use a simple hashtable for basic processing or an ordered hash table for complex.

```
Type: Hashtable
Parameter Sets: property
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Management.Automation.PSObject[]

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Originally published at: http://jdhitsolutions.com/blog/powershell/3462/friday-fun-Out-ConditionalColor/

Related Links

About_Hash_Tables

Show-Tree

Out-Copy

Synopsis

Send command output to the pipeline and clipboard.

Syntax

```
Out-Copy [-InputObject] <Object> [-Width <Int32>] [-CommandOnly] [-Ansi] [<CommonParameters>]
```

Description

This command is intended for writers and those who need to document with PowerShell. You can pipe any command to this function and you will get the regular output in your PowerShell session. Simultaneously, a copy of the output will be sent to the Windows clipboard. The copied output will include a prompt constructed from the current location unless you use the CommandOnly parameter.

You can only capture what is written to the Success pipeline. This command will not copy any other streams such as Verbose, Warning, or Error.

Examples

Example 1

```
PS C:\> Get-Process | Sort WS -Descending | Select-First 5 | Out-Copy
```

This will execute your expression and write the output to the pipeline. The output plus the command except for the pipe to Out-Copy will be copied to the clipboard. This example is using the Select-First function from the PSScriptTools module.

Example 2

```
PS C:\> Get-ChildItem *.ps1 | Out-File c:\work\ps.txt | Out-Copy
```

Even if your command doesn't write anything to the pipeline, Out-Copy will still capture a prompt and PowerShell expression.

Example 3

```
PS C:\> Get-CimInstance -class win32_logicaldisk -filter "drivetype = 3" |
Out-Copy -commandonly
```

This will run the Get-CimInstance command and write results to the pipeline. But the only text that will be copied to the clipboard is:

Get-CimInstance -class win32_logicaldisk -filter "drivetype = 3"

Example 4

```
PS C:\> Get-Process | Sort WS -Descending | Select-Object -first 5  | Out-Copy -ansi
```

Copy the command and output including any ANSI formatting which you might get in PowerShell 7.

Parameters

-InputObject

This is the piped in command.

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Width

Specifies the number of characters in each line of output. Any additional characters are truncated, not wrapped.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 80
Accept pipeline input: False
Accept wildcard characters: False
```

-CommandOnly

Only copy the executed command, without references to Out-Copy, to the Windows clipboard.

```
Type: SwitchParameter
Parameter Sets: (All)
```

```
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Ansi

Include any Ansi formatting. The default behavior is to capture plain text.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Object

Outputs

System.Object

Notes

Learn more about PowerShell:http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Out-String

Set-Clipboard

Tee-Object

Copy-HistoryCommand

Out-More

Synopsis

Send "pages" of objects to the pipeline.

Syntax

```
Out-More [-InputObject] <Object[]> [[-Count] <Int32>] [-ClearScreen]
```

Description

This function is designed to display groups or "pages" of objects to the PowerShell pipeline. It is modeled after the legacy More.com command-line utility. By default, the command will write objects out to the pipeline in groups of 50. You will be prompted after each grouping.

Pressing M or Enter will get the next group. Pressing A will stop paging and display all of the remaining objects. Pressing N will display the next object. Press Q to stop writing anything else to the pipeline.

Note that you may encounter an error message when quitting prematurely, especially on non-Windows platforms. You can ignore these errors.

Examples

EXAMPLE 1

```
PS C:\> Get-Process | Out-More -count 10

Handles  NPM(K)    PM(K)      WS(K) VM(M)   CPU(s)     Id  SI ProcessName
-------  ------    -----      ----- -----   ------     --  -- -----------
    103       9     1448       4220    67     0.02   1632   0 BtwRSupportService
     80       9     3008       8588 ...27    21.00   5192   1 conhost
     40       5      752       2780 ...82     0.00   5248   0 conhost
     53       7      972       3808 ...07     0.02   6876   1 conhost
    482      17     1932       3692    56     0.91    708   0 csrss
    520      30     2488     134628   180    31.67    784   1 csrss
    408      18     6496      12436 ...35     0.56   1684   0 dasHost
    180      14     3348       6748    66     0.50   4688   0 devmonsrv
\[M\]ore \[A\]ll \[N\]ext \[Q\]uit
```

Display processes in groups of 10.

EXAMPLE 2

```
PS C:\> dir c:\work -file -Recurse | Out-More -ClearScreen | tee -Variable work
```

List all files in C:\Work and page them to Out-More using the default count, but after clearing the screen first. The results are then piped to Tee-Object which saves them to a variable.

Parameters

-InputObject

```
Type: Object[]
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Count

The number of objects to group as a page.

```
Type: Int32
Parameter Sets: (All)
Aliases: i

Required: False
Position: 2
Default value: 50
Accept pipeline input: False
Accept wildcard characters: False
```

-ClearScreen

Clear the screen before writing data to the pipeline.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cls

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

Inputs

System.Object

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

This command was first demonstrated at http://jdhitsolutions.com/blog/powershell/4707/a-better-powershell-more/

Related Links

more

Out-VerboseTee

Synopsis

Write to the Verbose stream and a file.

Syntax

```
Out-VerboseTee -Value <Object> [-Path] <String> [-Encoding <Encoding>]
[-Append] [<CommonParameters>]
```

Description

This command is intended to let you see your verbose output and write the verbose messages to a log file. It will only work if the verbose pipeline is enabled, usually when your command is run with -Verbose. This function is designed to be used within your scripts and functions. You either have to hard code a file name or find some other way to define it in your function or control script. You could pass a value as a parameter or set it as a PSDefaultParameterValue.

This command has an alias of Tee-Verbose.

You might use it like this in a script.

Begin {

```
$log = New-RandomFilename -useTemp -extension log

Write-Detail "Starting $($MyInvocation.MyCommand)" -Prefix begin | Tee-Verbose $log

Write-Detail "Logging verbose output to $log" -prefix begin | Tee-Verbose -append

Write-Detail "Initializing data array" -Prefix begin | Tee-Verbose $log -append

$data = @()
```

} #begin

When the command is run with -Verbose you will see the verbose output and it will be saved to the specified log file.

Examples

Example 1

```
PS C:\> $VerbosePreference= "continue"
PS C:\> $log = New-CustomFileName ".\VerboseLog_%time.txt"
PS C:\> Write-Detail "This is a verbose log test" | Out-VerboseTee -Path $log
```

```
PS C:\> Get-Content $log
11/29/2020 08:21:31:0704 [PROCESS] This is a verbose log test
PS C:\> $verbosePreference = "SilentlyContinue"
```

Normally you would use this command inside a function or script, but you can run it from the console if you want to understand how it works.

Parameters

-Append

Append to the specified text file.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Encoding

Specify a file encoding.

```
Type: Encoding
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

The path for the output file.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Value

The message to be displayed as a verbose message and saved to the file.

```
Type: Object
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.Object

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Write-Verbose

Write-Detail

Tee-Object

Remove-MergedBranch

Synopsis

Removed merged git branches.

Syntax

```
Remove-MergedBranch [-MainBranch <String>] [-Force] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

When using git you may create multiple branches. Presumably, you merge these branches into the main or master branch. The development or patching branch remains. You can use git to remove branches. Or use this command to remove all merged branches other than master and the current branch. You must be in the root of your project to run this command.

Examples

Example 1

```
PS C:\MyProject> Remove-MergedBranch

Remove merged branch from MyProject?
2.1.1
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): n

Remove merged branch from MyProject?
dev1
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): y
Deleted branch dev1 (was 75f6ab8).

Remove merged branch from MyProject?
dev2
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): y
Deleted branch dev2 (was 75f6ab8).

Remove merged branch from MyProject?
patch-254
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): n
PS C:\MyProject>
```

By default you will be prompted to remove each branch.

Example 2

```
PS C:\MyProject> Remove-MergedBranch main -force
Deleted branch 2.1.1 (was 75f6ab8).
```

```
Deleted branch patch-254 (was 75f6ab8).
```

Remove all branches with no prompting. This example assumes the master branch is called main.

Parameters

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Force

Remove all merged branches except current and master with no prompting.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-MainBranch

Specify the name of your master branch.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: master
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

git.exe

Get-GitSize

Remove-PSAnsiFileEntry

Synopsis

Remove a PSAnsiFileMap entry.

Syntax

```
Remove-PSAnsiFileEntry [-Description] <String> [-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

Use this command to remove an entry from the global $PSAnsiFileMap variable. The change will not be persistent unless you export the map to a file.

Examples

Example 1

```
PS C:\> Remove-PSAnsiFileEntry Samples
```

Remove a PSAnsiFileMap entry with a description of 'Samples'. The change will not be persistent unless you export the map to a file.

Parameters

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Description

Specify the description of the entry to remove.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Display the updated PSAnsiFileMap.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSAnsiFileEntry

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Set-PSAnsiFileMapEntry

Get-PSAnsiFileMapEntry

Remove-Runspace

Synopsis

Remove a runspace from your session.

Syntax

id (Default)

```
Remove-Runspace [-ID] <Int32> [-WhatIf] [-Confirm] [<CommonParameters>]
```

runspace

```
Remove-Runspace [-Runspace] <Runspace> [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

When working with PowerShell, you may discover that some commands and scripts can leave behind runspaces. You may even deliberately be creating additional runspaces. These runspaces will remain until you exit your PowerShell session. Or use this command to cleanly close and dispose of runspaces. You cannot remove any runspace with an availability of Busy or that is already closing.

This command does not write anything to the pipeline.

Examples

Example 1

```
PS C:\> Remove-Runspace -id 18 -WhatIf
What if: Performing the operation "Remove-Runspace" on target "18 - Runspace18".
```

Show what would have happened to remove runspace with an ID of 18.

Example 2

```
PS C:\> Get-Runspace | where ID -gt 1 | Remove-Runspace
```

Get all runspaces with an ID greater than 1, which is typically your session, and remove the runspace.

Parameters

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-ID

The runspace ID number.

```
Type: Int32
Parameter Sets: id
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Runspace

A runspace presumably piped into this command using Get-Runspace.

```
Type: Runspace
Parameter Sets: runspace
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
```

```
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

System.Management.Automation.Runspaces.Runspace

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Runspace

Rename-Hashtable

Synopsis

Rename a hashtable key.

Syntax

Pipeline (Default)

```
Rename-Hashtable [-InputObject] <Object> [-Key] <String> [-NewKey] <String>
[-PassThru] [-Scope <String>] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Name

```
Rename-Hashtable [-Name] <String> [-Key] <String> [-NewKey] <String>
[-PassThru] [-Scope <String>] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

This command will rename a key in an existing hashtable or ordered dictionary. You can either pipe a hashtable object to this command or you can specify a variable name for a pre-defined hashtable. If you use this option, specify the variable name without the $.

This command will create a temporary copy of the hashtable, create the new key, and copy the value from the old key, before removing the old key. The temporary hashtable is then set as the new value for your original variable.

This command does not write anything to the pipeline when you use a variable name unless you use -PassThru. If you pipe a hashtable to this command, the new hashtable will automatically be written to the pipeline.

You might find this command useful when building a hashtable that you intend to use with splatting where you need to align key names with parameter names.

Examples

EXAMPLE 1

```
PS C:\> Rename-Hashtable -name MyHash -key Name -newKey Computername
```

EXAMPLE 2

```
PS C:\> $newhash = Get-Service spooler |
```

```
ConvertTo-HashTable |
Rename-Hashtable -Key Machinename -NewKey Computername
```

This command uses the ConvertTo-Hashtable command from the PSScriptTools module to turn an object into a hashtable. The Machinename key is then renamed to Computername.

Parameters

-Name

The variable name of your hash table. DO NOT include the $.

```
Type: String
Parameter Sets: Name
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-InputObject

A piped in hashtable object

```
Type: Object
Parameter Sets: Pipeline
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Key

The name of the existing hashtable key you want to rename.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 2
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-NewKey

The new name of the hashtable key.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 3
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Write the revised hashtable back to the pipeline. If you pipe a variable to this command, PassThru will happen automatically.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Scope

The scope where your variable is defined. The default is the global scope.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: Global
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi
```

```
Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

hashtable

Outputs

None

Hashtable

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

This code was first described at http://jdhitsolutions.com/blog/2013/01/Rename-Hashtable-key-revised

Related Links

About_hash_tables

ConvertTo-Hashtable

Join-Hashtable

Save-GitSetup

Synopsis

Download the latest 64bit version of Git for Windows.

Syntax

```
Save-GitSetup [[-Path] <String>] [-PassThru] [<CommonParameters>]
```

Description

Non-Windows platforms have package management that make it easy to install newer versions of git. This command is for Windows platforms. You can run this command to download the latest 64bit version of Git for Windows. You will need to manually install it.

Examples

Example 1

```
C:\> Save-GitSetup -Path c:\work -PassThru

    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          12/28/2020  7:29 PM       48578904 Git-2.29.2.3-64-bit.exe
```

Parameters

-PassThru

Show the downloaded file.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Specify the location to store the downloaded file.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: $env:TEMP
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

System.IO.FileInfo

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

git.exe

Select-After

Synopsis

Select objects after a given datetime.

Syntax

```
Select-After -InputObject <PSObject> [-After] <DateTime> [-Property <String>]
[<CommonParameters>]
```

Description

Select-After is a simplified version of Select-Object. The premise is that you can pipe a collection of objects to this command and select objects after a given datetime, based on a property, like LastWriteTime, which is the default.

Examples

Example 1

```
PS C:\> Get-ChildItem c:\work -file | Select-After "11/1/2022"


    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           11/4/2022 11:36 AM           5008 ipperf.csv
```

Select all objects that have been modified after 11/1/2022. This example is using the default -Property value of LastWriteTime.

Example 2

```
PS C:\> Get-Process | After (Get-Date).AddMinutes(-10) -Property StartTime

 NPM(K)    PM(M)      WS(M)     CPU(s)      Id  SI ProcessName
 ------    -----      -----     ------      --  -- -----------
      8     1.49       7.17       0.00   33248   0 SearchFilterHost
     12     2.46      12.99       0.02   15328   0 SearchProtocolHost
      8     2.60       8.58       0.03    9756   0 svchost
     76    20.27      39.93       2.14   22976   0 svchost
      8     1.53       7.29       0.00   29752   0 svchost
```

Get all processes where the StartTime property value is within the last 10 minutes. This example is using the

"after" alias.

Parameters

-After

Enter the cutoff date.

```
Type: DateTime
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-InputObject

A piped in object.

```
Type: PSObject
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Property

Enter the property name to use for the datetime sort. It needs to be a datetime object.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: LastWriteTime
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and

-WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Management.Automation.PSObject

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Select-Before

Select-Object

Select-Before

Synopsis

Select objects before a given datetime.

Syntax

```
Select-Before -InputObject <PSObject> [-Before] <DateTime> [-Property <String>]
[<CommonParameters>]
```

Description

Select-Before is a simplified version of Select-Object. The premise is that you can pipe a collection of objects to this command and select objects before a given datetime, based on a property, like LastWriteTime, which is the default.

Examples

Example 1

```
PS C:\> Get-ChildItem c:\work -file | Select-Before "11/1/2022"


    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          10/10/2022  2:09 PM           8862 Book1.xlsx
-a---          10/30/2022 10:48 AM              0 dummy.dat
-a---          10/13/2022  9:35 AM         447743 key1013.pdf
-a---           10/6/2022  4:03 PM           2986 labsummary.format.ps1xml
-a---          10/11/2022 12:33 PM           1678 prun.format.ps1xml
-a---          10/10/2022  6:49 PM           1511 w.format.ps1xml
```

Select all objects that have been modified before 11/1/2022. This example is using the default -Property value of LastWriteTime.

Example 2

```
PS C:\> Get-Process | before (Get-Date).AddMinutes(-10) -Property StartTime

 NPM(K)    PM(M)      WS(M)     CPU(s)      Id  SI ProcessName
 ------    -----      -----     ------      --  -- -----------
     33    30.21      46.19       0.81    9952   2 ApplicationFrameHost
     75   102.42     126.08       4.89   16048   2 Box
     23    25.27      33.83       0.33    5320   0 Box.Desktop.UpdateService
     30    46.92      60.98       0.91   17384   2 BoxUI
```

```
     31    39.82       4.34       0.56   26992   2 Calculator
...
```

Get all processes where the StartTime property value is before the last 10 minutes. This example is using the "before" alias.

Parameters

-Before

Enter the cutoff date.

```
Type: DateTime
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-InputObject

A piped in object.

```
Type: PSObject
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Property

Enter the property name to use for the datetime sort. It needs to be a datetime object.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: LastWritetime
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Management.Automation.PSObject

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Select-After

Select-Object

Select-First

Synopsis

Select the first X number of objects.

Syntax

```
Select-First -InputObject <PSObject> [-First] <Int32> [[-Property] <String>]
[-Skip <Int32>] [-Descending] [<CommonParameters>]
```

Description

This command is intended to take pipelined input and select the first specified number of objects which are then written to the pipeline. You also have the option to sort on a specified property.

When using this command, there is a trade-off of convenience for performance. For a very large number of processed objects, use Select-Object.

Examples

EXAMPLE 1

```
PS C:\> Get-Process | Select-First 3 -property WS -descending

Handles  NPM(K)    PM(K)      WS(K) VM(M)   CPU(s)     Id  SI ProcessName
-------  ------    -----      ----- -----   ------     --  -- -----------
   1118      66   419952     392396 ...12   107.33   7312   1 powershell
    343      43   237928     235508  1237 3,905.22   6424   1 slack
   1051      88   231216     234728  1175    61.88   8324   1 powershell_ise
```

EXAMPLE 2

```
PS C:\> 1..10 | Select-First 3 -Skip 2

3
4
5
```

Select the first 3 objects after skipping 2.

Parameters

-InputObject

Pipelined input to be selected.

```
Type: PSObject
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-First

How many items do you want to select?

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Property

Sort first on this property then select the specified number of items.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 2
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Skip

Skip or omit the first X number of items.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
```

```
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Descending

Sort the property in descending order.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Object[]

Outputs

Object[]

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Select-Object

Select-Last

Select-Last

Synopsis

Select the last X number of objects.

Syntax

```
Select-Last -InputObject <PSObject> [-Last] <Int32> [[-Property] <String>]
[-Skip <Int32>] [-Descending] [<CommonParameters>]
```

Description

This is a modified version of Select-Object designed to select the last X number of objects. The command takes pipelined input and selects the last specified number of objects which are then written to the pipeline. You have an option to first sort on the specified property.

When using this command, there is a trade-off of convenience for performance. For a very large number of processed objects, use Select-Object.

Examples

EXAMPLE 1

```
PS C:\> dir c:\scripts\*.ps1 | last 5 -property lastwritetime

Directory: C:\scripts


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        1/11/2020   7:18 PM           1818 demo-v5Classes.ps1
-a----        1/11/2020   7:20 PM           1255 demo-v5DSCClassResource.ps1
-a----        1/14/2020  12:58 PM           1967 Demo-ParamTest.ps1
-a----        1/15/2020   9:23 AM            971 Get-WorkflowVariable.ps1
-a----        1/15/2020  12:08 PM           1555 Cost.ps1
```

Get the last 5 ps1 files sorted on the LastWritetime property. This example is using the alias 'last' for Select-Last.

EXAMPLE 2

```
PS C:\> 1..10 | Select-Last 3 -skip 1

7
8
```

```
9
```

Select the last 3 items, skipping the last 1.

Parameters

-InputObject

Pipelined input to be selected.

```
Type: PSObject
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Last

How many items do you want to select?

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: True
Position: 1
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Property

Sort first on this property then select the specified number of items.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 2
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Skip

Skip or omit the last X number of items.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-Descending

Sort on the specified property in descending order.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Object[]

Outputs

Object[]

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Select-Object

Select-First

Select-Newest

Synopsis

Select the newest X number of objects after a given datetime.

Syntax

```
Select-Newest -InputObject <PSObject> [-Newest] <Int32> [-Property <String>]
[<CommonParameters>]
```

Description

Select-Newest is a variation on Select-Object. It is designed to make it easier to select X number of objects based on a datetime property. The default property value is LastWriteTime.

Examples

Example 1

```
PS C:\> Get-ChildItem c:\work -file | Select-Newest 1


    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           11/4/2022 11:36 AM           5008 ipperf.csv
```

Get the newest file in the Work folder. This example is using the default -Property parameter value of LastWriteTime.

Example 2

```
PS C:\> Get-Process | newest 10 -Property starttime

 NPM(K)    PM(M)      WS(M)     CPU(s)      Id  SI ProcessName
 ------    -----      -----     ------      --  -- -----------
     15     5.34      12.85       0.09   25208   0 WmiPrvSE
      7     1.31       5.95       0.02   10552   0 svchost
     35   128.28     136.05       8.62    3376   0 esrv_svc
     98    47.31      40.01       0.48   24496   2 firefox
     99    48.46      46.07       0.53   22064   2 firefox
     13     3.41      16.19       0.77   33136   2 notepad
     14     6.78      10.96       0.06   31784   0 svchost
     69   110.45     150.37       4.28    8848   2 pwsh
      5     2.52       4.52       0.02   34024   2 cmd
```

```
    10     2.06       9.00       0.12   25384   2 OpenConsole
```

Get the 10 most recent processes based on the StartTime property. This example is using the "newest" alias.

Parameters

-InputObject

A piped in object.

```
Type: PSObject
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Newest

Enter the number of newest items to select.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Property

Enter the property name to select on. It must be a datetime object.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: LastWriteTime
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Management.Automation.PSObject

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Select-Oldest

Select-Object

Select-Oldest

Synopsis

Select the oldest X number of objects before a given datetime.

Syntax

```
Select-Oldest -InputObject <PSObject> [-Oldest] <Int32> [-Property <String>]
[<CommonParameters>]
```

Description

Select-Oldest is a variation on Select-Object. It is designed to make it easier to select X number of objects based on a datetime property. The default property value is LastWriteTime.

Examples

Example 1

```
PS C:\> Get-ChildItem c:\work -file | Select-oldest 1


    Directory: C:\work

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---           10/6/2022  4:03 PM           2986 labsummary.format.ps1xml
```

Get the oldest file in the Work folder. This example is using the default -Property parameter value of LastWriteTime.

Example 2

```
PS C:\> Get-Process | where-object name -notmatch "idle|System" |
oldest 10 -Property starttime

 NPM(K)    PM(M)      WS(M)     CPU(s)      Id  SI ProcessName
 ------    -----      -----     ------      --  -- -----------
     16     8.43      99.83       2.27     204   0 Registry
      3     1.03       1.12       0.44     712   0 smss
     30     2.23       5.67       4.23     816   0 csrss
     11     1.52       6.65       0.02    1592   0 wininit
     11     6.55      11.63      25.33    1676   0 services
      7     1.10       3.27       0.09    1696   0 LsaIso
     28     9.81      24.70      29.61    1704   0 lsass
      4     0.81       3.31       0.00    1824   0 svchost
     26    13.48      30.38      22.62    1852   0 svchost
```

```
     6     1.91       4.15       0.11    1876   0 fontdrvhost
```

Get the oldest 10 processes that don't include Idle or System. This example is using the "oldest" alias.

Parameters

-InputObject

A piped in object.

```
Type: PSObject
Parameter Sets: (All)
Aliases:

Required: True
Position: Named
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Oldest

Enter the number of Oldest items to select.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Property

Enter the property name to select on. It must be a datetime object.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Management.Automation.PSObject

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Select-Newest

Select-Object

Set-ConsoleColor

Synopsis

Set the PowerShell console color.

Syntax

```
Set-ConsoleColor [[-Foreground] <ConsoleColor>] [[-Background] <ConsoleColor>]
[-ClearScreen] [-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

You can use this command to modify the PowerShell console's foreground and/or background color. If you are running the PSReadline module, that module has its own commands, like Set-PSReadLineOption, that you can use to modify your console. Set-ConsoleColor is designed for use in a traditional PowerShell console. It will not work in consoles that are part of the PowerShell ISE or Visual Studio Code.

This command has been marked as deprecated and will be removed in a future release.

Examples

Example 1

```
PS C:\> Set-ConsoleColor -foreground Yellow -background DarkGray -clear
```

Set the console color to yellow text and on a dark gray background.

Parameters

-Background

Specify a background console color

```
Type: ConsoleColor
Parameter Sets: (All)
Aliases: bg
Accepted values: Black, DarkBlue, DarkGreen, DarkCyan, DarkRed, DarkMagenta,DarkYellow, Gray, DarkGray,
Blue, Green, Cyan, Red, Magenta, Yellow, White

Required: False
Position: 1
Default value: None
Accept pipeline input: False
```

```
Accept wildcard characters: False
```

-ClearScreen

Clear the console host screen.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cls

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Foreground

Specify a foreground console color.

```
Type: ConsoleColor
Parameter Sets: (All)
Aliases: fg
Accepted values: Black, DarkBlue, DarkGreen, DarkCyan, DarkRed, DarkMagenta,DarkYellow, Gray, DarkGray,
Blue, Green, Cyan, Red, Magenta, Yellow, White

Required: False
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Display the foreground and background color values.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Set-ConsoleTitle

Set-ConsoleTitle

Synopsis

Set the console title text.

Syntax

```
Set-ConsoleTitle [-Title] <String> [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

Use this command to modify the text displayed in the title bar of your PowerShell console window. This command is intended for use in a traditional PowerShell console. It will not work in consoles that are part of the PowerShell ISE or Visual Studio Code. It should work in a PowerShell session running in Windows Terminal.

Examples

Example 1

```
PS C:\> Set-ConsoleTitle $env:computername
```

Set the console title to the computer name.

Example 2

```
PS C:\> if (Test-IsAdministrator) {
    Set-ConsoleTitle "Admin: PS $($PSVersionTable.PSVersion)"
    }
```

Modify the console title if running as Administrator

Parameters

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
```

```
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Title

Enter the title for the console window.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable.

For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

None

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Set-ConsoleColor

Set-LocationToFile

Synopsis

Change script editor terminal location.

Syntax

```
Set-LocationToFile [<CommonParameters>]
```

Description

This command will only be available if you import the PSScriptTools module into an integrated PowerShell terminal in Visual Studio Code or the PowerShell ISE. It is designed to set the location of the terminal to the same directory as the active file. Run the command or its aliases in the integrated terminal. Use the aliases sd or jmp.

Examples

Example 1

```
PS D:\> sd
PS C:\Scripts\Foo\>
```

Use the sd alias in the integrated terminal window to change location to the directory of the active file in Visual Studio Code or the PowerShell ISE. This will also clear the host.

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

None

Notes

Related Links

Set-Location

Set-PSAnsiFileMap

Synopsis

Modify or add a PSAnsiFileEntry

Syntax

```
Set-PSAnsiFileMap [-Description] <String> [-Pattern <String>] [-Ansi <String>]
[-PassThru] [-WhatIf] [-Confirm] [<CommonParameters>]
```

Description

Use this command to modify an existing entry in the global $PSAnsiFileMap variable or add a new entry. If modifying, you must specify a regular expression pattern or an ANSI escape sequence. If you are adding a new entry, you need to supply both values.

Examples

Example 1

```
PS C:\> Set-PSAnsiFileMap Temporary -Ansi "`e[38;5;190m"
```

Update the ANSI pattern for temporary files. This change will not persist unless you export the map.

Example 2

```
PS C:\> Set-PSAnsiFileMap -Description "Config" -Pattern "\.(yml)$" -Ansi "`e[38;5;25m"ge
```

Add a new PSAnsiFileMap entry. This change will not persist unless you export the map.

Parameters

-Ansi

Specify an ANSI escape sequence. You only need to define the opening sequence.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
```

```
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Confirm

Prompts you for confirmation before running the cmdlet.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: cf

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Description

Specify the file map entry. If it is a new entry it will be added.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-PassThru

Display the updated map.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Pattern

Specify a regular expression pattern for the file name.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-WhatIf

Shows what would happen if the cmdlet runs. The cmdlet is not run.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: wi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

PSAnsiFileEntry

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-PSAnsiFileMap

Remove-PSAnsiFileEntry

Export-PSAnsiFileMap

Show-ANSISequence

Synopsis

Display ANSI escape sequences

Syntax

basic (Default)

```
Show-ANSISequence [-Basic] [-AsString] [<CommonParameters>]
```

foreback

```
Show-ANSISequence [-Foreground] [-Background] [-Type <String>] [-AsString]
[<CommonParameters>]
```

RGB

```
Show-ANSISequence [-RGB <Int32[]>] [-AsString] [<CommonParameters>]
```

Description

This script is designed to make it easy to see ANSI escape sequences and how they will display in your PowerShell session. Use the -AsString parameter to write simple strings to the pipeline which makes it easier to copy items to the clipboard.

The escape character will depend on whether you are running Windows PowerShell or PowerShell 7.x. For best results, you need to run this command in a PowerShell session and host that supports ANSI escape sequences.

Examples

EXAMPLE 1

```
PS C:\> Show-ANSISequence

******************
* Basic Sequences *
******************
`e[9mCrossedOut`e[0m
`e[7mReverse`e[0m
`e[6mRapidBlink`e[0m
`e[5mSlowBlink`e[0m
`e[4mUnderline`e[0m
```

```
`e[3mItalic`e[0m
`e[2mFaint`e[0m
`e[1mBold`e[0m
```

The output will be formatted using the corresponding ANSI escape sequence as seen in PowerShell 7.x.

EXAMPLE 2

```
PS C:\> Show-ANSISequence -Foreground -Type simple

**************
* Foreground *
**************

`e[30mHello`e[0m    `e[31mHello`e[0m    `e[32mHello`e[0m
`e[34mHello`e[0m    `e[35mHello`e[0m    `e[36mHello`e[0m
`e[90mHello`e[0m    `e[91mHello`e[0m    `e[92mHello`e[0m
`e[94mHello`e[0m    `e[95mHello`e[0m    `e[96mHello`e[0m
```

EXAMPLE 3

```
PS C:\> Show-ANSISequence -RGB 225,100,50

`e[38;2;225;100;50m256 Color (R:225)(G:100)(B:50)`e[0m
```

Show an RGB ANSI sequence. The output will be formatted using the sequence.

EXAMPLE 4

```
PS C:\> Show-ANSISequence -RGB 225,100,50 -AsString | Set-Clipboard
```

Repeat the previous example but write the output as a plain string and copy it to the clipboard.

Parameters

-Basic

Display basic ANSI settings. This is the default output.

```
Type: SwitchParameter
Parameter Sets: basic
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
```

```
Accept wildcard characters: False
```

-Foreground

Display foreground ANSI format settings. If you use -Type without specifying -Foreground or -Background, -Foreground will be used by default.

```
Type: SwitchParameter
Parameter Sets: foreback
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Background

Display background ANSI format settings.

```
Type: SwitchParameter
Parameter Sets: foreback
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Type

You can display simple ANSI, 8-bit, or all sequences. Valid values are All,Simple and 8bit.

```
Type: String
Parameter Sets: foreback
Aliases:

Required: False
Position: Named
Default value: All
Accept pipeline input: False
Accept wildcard characters: False
```

-RGB

Display an RGB ANSI sequence. You must pass an array of values for Red,Blue, and Green. Each value must be between 0 and 255.

```
Type: Int32[]
Parameter Sets: RGB
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-AsString

Show the value as an unformatted string.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.String

Notes

Learn more about ANSI sequences at https://en.wikipedia.org/wiki/ANSI_escape_code

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Write-ANSIProgress

New-ANSIBar

Show-FunctionItem

Synopsis

Show a function in written form.

Syntax

```
Show-FunctionItem [-Name] <String> [<CommonParameters>]
```

Description

This command will display a loaded function as it might look in a code editor. You could use this command to export a loaded function to a file.

Examples

EXAMPLE 1

```
PS C:\> Show-FunctionItem prompt

Function Prompt {

"PS $($executionContext.SessionState.Path.CurrentLocation)$('\>' * ($nestedPromptLevel + 1)) ";
# .Link
# https://go.microsoft.com/fwlink/?LinkID=225750
# .ExternalHelp System.Management.Automation.dll-help.xml

} #close prompt
```

EXAMPLE 2

```
PS C:\> Show-FunctionItem Copy-Zip | Out-File c:\Scripts\copy-zip.ps1
```

Here's how you can save or export a function you might have created on-the-fly to a file.

Parameters

-Name

What is the name of your function?

```
Type: String
Parameter Sets: (All)
```

```
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

Outputs

String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-FunctionItem

Show-Tree

Synopsis

Shows the specified path as a tree.

Syntax

Path (Default)

```
Show-Tree [[-Path] <String[]>] [[-Depth] <Int32>] [-IndentSize <Int32>]
[-ShowItem] [-ShowProperty <String[]>] [-InColor] [<CommonParameters>]
```

LiteralPath

```
Show-Tree [[-LiteralPath] <String[]>] [[-Depth] <Int32>] [-IndentSize <Int32>]
[-ShowItem] [-ShowProperty <String[]>] [-InColor] [<CommonParameters>]
```

Description

Shows the specified path as a graphical tree in the console. Show-Tree is intended as a PowerShell alternative to the tree DOS command. This function should work for any type of PowerShell provider and can be used to explore providers used for configuration like the WSMan provider or the registry. Currently, this will *not work* with any PSDrives created with the Certificate provider. It should work cross-platform.

By default, the output will only show directory or equivalent structures. But you can opt to include items well as item details by using the ShowProperty parameter. Specify a comma-separated list of properties or use * to view them all.

If the Path is a FileSystem path there is a dynamic parameter, -InColor, that will write ANSI-colored output to the pipeline. This parameter has an alias of ansi.

This is an update to an older function in my library. I seem to recall I found the original code somewhere online, perhaps from someone like Lee Holmes. Sadly, I neglected to record the source.

Examples

EXAMPLE 1

```
PS C:\> Show-Tree C:\Work -Depth 2

C:\work
+--A
|   \--B
```

```
+--dnssuffix
|  +--docs
|  +--en-us
|  \--images
+--gpo
|  +--{65D9E940-AAD4-4508-A199-86EAE4E9E535}
|  \--{7E7F01CE-6889-44B0-9D03-818F8284EDE0}
+--installers
+--remoteop
|  \--archive
+--test files
\--tryme
   +--.vscode
   +--docs
   +--en-us
   \--test
```

Shows the directory tree structure, recursing down two levels.

EXAMPLE 2

```
PS C:\>Show-Tree HKLM:\SOFTWARE\Microsoft\.NETFramework -Depth 2 -ShowProp *

HKLM:\SOFTWARE\Microsoft\.NETFramework
+-- Enable64Bit = 1
+-- InstallRoot = C:\Windows\Microsoft.NET\Framework64\
+-- UseRyuJIT = 1
+--Advertised
|  +--Policy
|  \--v2.0.50727
+--AssemblyFolders
|  +--ADOMD.Client 14.0
|  |  \-- (default) = C:\Program Files\Microsoft.NET\ADOMD.NET\140\
|  +--Microsoft .NET Framework 3.5 Reference Assemblies
|  |  \-- (default) = C:\Program Files\Reference Assemblies\Microsoft\Framew...
|  +--SQL Server Assemblies 140
|  |  \-- (default) = C:\Program Files\Microsoft SQL Server\140\SDK\Assemblies\
|  +--v3.0
|  |  +-- <IncludeDotNet2Assemblies> = 1
|  |  \-- All Assemblies In = C:\Program Files\Reference Assemblies\Microsof...
|  \--v3.5
|     +-- <IncludeDotNet2Assemblies> = 1
|     \-- All Assemblies In = C:\Program Files\Reference Assemblies\Microsof...
...
```

Shows the hierarchy of registry keys and values (-ShowProperty), recursing down two levels.

EXAMPLE 3

```
PS C:\> Show-Tree WSMan: -ShowItem

WSMan:\
\--localhost
   +--MaxEnvelopeSizekb
   +--MaxTimeoutms
   +--MaxBatchItems
```

```
   +--MaxProviderRequests
   +--Client
   |  +--NetworkDelayms
   |  +--URLPrefix
   |  +--AllowUnencrypted
   |  +--Auth
   |  |  +--Basic
   |  |  +--Digest
   |  |  +--Kerberos
   |  |  +--Negotiate
...
```

Shows all the containers and items in the WSMan: drive.

Example 4

```
PS C:\> pstree c:\work\alpha -files -properties LastWriteTime,Length -ansi

C:\work\Alpha\
+-- LastWriteTime = 02/28/2020 11:19:32
+--bravo
|  +-- LastWriteTime = 02/28/2020 11:20:30
|  +--delta
|  |  +-- LastWriteTime = 02/28/2020 11:17:35
|  |  +--FunctionDemo.ps1
|  |  |  +-- Length = 888
|  |  |  \-- LastWriteTime = 06/01/2009 15:50:47
|  |  +--function-form.ps1
|  |  |  +-- Length = 1117
|  |  |  \-- LastWriteTime = 04/17/2019 17:18:28
|  |  +--function-logstamp.ps1
|  |  |  +-- Length = 598
|  |  |  \-- LastWriteTime = 05/23/2007 11:39:55
|  |  +--FunctionNotes.ps1
|  |  |  +-- Length = 617
|  |  |  \-- LastWriteTime = 02/24/2016 08:59:03
|  |  \--Function-SwitchTest.ps1
|  |     +-- Length = 242
|  |     \-- LastWriteTime = 06/09/2008 15:55:44
|  +--gamma
...
```

Show a tree listing with files including a few user-specified properties in color. This example is using parameter and command aliases.

Parameters

-Path

The path to the root of the tree that will be shown.

```
Type: String[]
Parameter Sets: Path
Aliases: FullName
```

```
Required: False
Position: 1
Default value: current location
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

-LiteralPath

Use a literal path value.

```
Type: String[]
Parameter Sets: LiteralPath
Aliases:

Required: False
Position: 1
Default value: None
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: False
```

-Depth

Specifies how many levels of the specified path are recursed and shown.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: 2
Default value: 2147483647
Accept pipeline input: False
Accept wildcard characters: False
```

-IndentSize

The size of the indent per level. The default is 3. The minimum value is 1. You shouldn't have to modify this parameter.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 3
Accept pipeline input: False
Accept wildcard characters: False
```

-ShowItem

Shows the items in each container or folder.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: files

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-ShowProperty

Shows the properties on containers and items. Use * to display all properties otherwise specify a comma separated list.

```
Type: String[]
Parameter Sets: (All)
Aliases: properties

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-InColor

Show tree and item colorized. Values are from the $PSAnsiMap variable.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: ansi

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

tree.com

Get-ChildItem

Test-EmptyFolder

Synopsis

Test if a folder is empty of files.

Syntax

```
Test-EmptyFolder [-Path] <String[]> [-PassThru] [<CommonParameters>]
```

Description

This command will test if a given folder path is empty of all files anywhere in the path. This includes hidden files. The command will return True even if there are empty sub-folders. The default output is True or False but you can use -PassThru to get more information. See examples.

Examples

Example 1

```
PS C:\> Test-EmptyFolder c:\work
False
```

Test a single folder from a parameter.

Example 2

```
PS C:\> Get-ChildItem c:\work -Directory | Test-EmptyFolder -PassThru


Path          Name  IsEmpty Computername
----          ----  ------- ------------
C:\work\A     A       False DESK10
C:\work\alpha alpha   False DESK10
C:\work\B     B       True  DESK10
C:\work\data  data    False DESK10
C:\work\demo3 demo3    True DESK10
C:\work\demos demos   False DESK10
...
```

Test child folders under C:\work.

Example 3

```
PS C:\> Get-ChildItem c:\work -Directory | Test-EmptyFolder -PassThru |
```

```
Where-object {$_.Isempty} |
Foreach-Object { Remove-Item -LiteralPath $_.path -Recurse -force -whatif}

What if: Performing the operation "Remove Directory" on target "C:\work\demo3".
What if: Performing the operation "Remove Directory" on target "C:\work\installers".
What if: Performing the operation "Remove Directory" on target "C:\work\new".
What if: Performing the operation "Remove Directory" on target "C:\work\sqlback".
What if: Performing the operation "Remove Directory" on target "C:\work\todd".
What if: Performing the operation "Remove Directory" on target "C:\work\[data]".
```

Find all empty sub-folders under C:\Work and pipe them to Remove-Item. This is one way to remove empty folders. The example is piping objects to ForEach-Object so that Remove-Item can use the -LiteralPath parameter, because C:\work[data] is a non-standard path.

Parameters

-PassThru

Write a test object to the pipeline.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Path

Enter a file system path like C:\Scripts.

```
Type: String[]
Parameter Sets: (All)
Aliases: PSPath

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByPropertyName, ByValue)
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String[]

Outputs

Boolean

EmptyFolder

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-FolderSizeInfo

Test-Expression

Synopsis

Test a PowerShell expression over a period of time.

Syntax

Interval (Default)

```
Test-Expression [-Expression] <ScriptBlock> [-ArgumentList <Object[]>]
[-Count <Int32>] [-Interval <Double>] [-IncludeExpression] [-AsJob]
[<CommonParameters>]
```

Random

```
Test-Expression [-Expression] <ScriptBlock> [-ArgumentList <Object[]>]
[-Count <Int32>] -RandomMinimum <Double> -RandomMaximum <Double>
[-IncludeExpression] [-AsJob] [<CommonParameters>]
```

Description

This command will test a PowerShell expression or scriptblock for a specified number of times and calculate the average runtime, in milliseconds, over all the tests. The output will also show the median and trimmed values.

The median is calculated by sorting the values in ascending order and selecting the value in the center of the array. If the array has an even number of elements then the median is the average of the two values in the center. The trimmed value will toss out the lowest and highest values and average the remaining values. This may be the most accurate indication as it will eliminate any small values which might come from caching and any large values which may come a temporary shortage of resources. You will only get a value if you run more than 1 test.

Examples

Example 1

```
PS C:\> $cred = Get-credential globomantics\administrator
PS C:\> $c = "chi-dc01","chi-dc04"
PS C:\> Test-Expression {
  param ([string[]]$computer,$cred)
  get-wmiobject win32_logicaldisk -computername $computer -credential $cred
  } -argumentList $c,$cred


Tests        : 1
TestInterval : 0.5
```

```
AverageMS    : 1990.6779
MinimumMS    : 1990.6779
MaximumMS    : 1990.6779
MedianMS     : 1990.6779
TrimmedMS    :
PSVersion    : 5.1.19041.1
OS           : Microsoft Windows 10 Pro
```

Test a command once passing an argument to the scriptblock. There is no TrimmedMS value because there was only one test.

Example 2

```
PS C:\> $sb = {1..1000 | Foreach-Object {$_*2}}
PS C:\> Test-Expression $sb -count 10 -interval 2

Tests        : 10
TestInterval : 2
AverageMS    : 72.78199
MinimumMS    : 29.4449
MaximumMS    : 110.6553
MedianMS     : 90.3509
TrimmedMS    : 73.4649625
PSVersion    : 5.1.19041.1
OS           : Microsoft Windows 10 Pro

PS C:\> $sb2 = { foreach ($i in (1..1000)) {$_*2}}
PS C:\> Test-Expression $sb2 -Count 10 -interval 2

Tests        : 10
TestInterval : 2
AverageMS    : 6.40283
MinimumMS    : 0.7466
MaximumMS    : 22.968
MedianMS     : 2.781
TrimmedMS    : 5.0392125
PSVersion    : 5.1.19041.1
OS           : Microsoft Windows 10 Pro
```

These examples are testing two different approaches that yield the same results over a span of 10 test runs, pausing for 2 seconds between each test. The values for Average, Minimum, and Maximum are in milliseconds.

Example 3

```
PS C:\> Test-Expression {
    Param([string]$computer)
    Get-Service bits,wuauserv,winrm -computername $computer
    } -count 5 -IncludeExpression -argumentList chi-hvr2


Tests        : 5
TestInterval : 500
AverageMS    : 15.53376
MinimumMS    : 11.6745
MaximumMS    : 24.9331
```

```
MedianMS     : 13.8928
TrimmedMS    : 13.6870666666667
PSVersion    : 5.1.19041.1
OS           : Microsoft Windows 10 Pro
Expression   : Param([string]$computer) get-service bits,wuauserv,winrm -com...
Arguments    : {chi-hvr2}
```

Include the tested expression in the output.

Example 4

```
PS C:\> $j=Test-Expression { get-eventlog -list } -count 10 -Interval 5 -AsJob
PS C:\> $j | Receive-Job -keep

Tests        : 10
TestInterval : 5
AverageMS    : 2.80256
MinimumMS    : 0.7967
MaximumMS    : 14.911
MedianMS     : 1.4469
TrimmedMS    : 1.5397375
PSVersion    : 5.1.19041.1
OS           : Microsoft Windows 10 Pro
RunspaceId   : f30eb879-fe8f-4ad0-8d70-d4c8b6b4eccc
```

Run the test as a background job. When the job is complete, get the results.

Example 5

```
PS C:\>{1..1000} | Test-Expression -count 10 -RandomMinimum 1 -RandomMaximum 10

Tests        : 10
TestInterval : Random
AverageMS    : 0.63899
MinimumMS    : 0.2253
MaximumMS    : 3.9062
MedianMS     : 0.24475
TrimmedMS    : 0.2823
PSVersion    : 5.1.19041.1
OS           : Microsoft Windows 10 Pro
```

Pipe a scriptblock to be tested.

Parameters

-ArgumentList

An array of parameters to pass to the test scriptblock. Arguments are positional. If passing an array for a value enter with @().

```
Type: Object[]
```

```
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-AsJob

Run the tests as a background job.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: False
Accept pipeline input: False
Accept wildcard characters: False
```

-Count

The number of times to test the scriptblock.

```
Type: Int32
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: 1
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: False
```

-Expression

The scriptblock you want to test.

```
Type: ScriptBlock
Parameter Sets: (All)
Aliases: sb

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-IncludeExpression

Include the test scriptblock in the output.

```
Type: SwitchParameter
Parameter Sets: (All)
Aliases: ie

Required: False
Position: Named
Default value: False
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: False
```

-Interval

How much time to sleep in seconds between each test. The maximum value is 60. You may want to use a sleep interval to mitigate possible caching effects.

```
Type: Double
Parameter Sets: Interval
Aliases: sleep

Required: False
Position: Named
Default value: 0.5
Accept pipeline input: True (ByPropertyName)
Accept wildcard characters: False
```

-RandomMaximum

You can also specify a random interval by providing random minimum and maximum values in seconds.

```
Type: Double
Parameter Sets: Random
Aliases: max

Required: True
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

-RandomMinimum

You can also specify a random interval by providing random minimum and maximum values in seconds.

```
Type: Double
Parameter Sets: Random
Aliases: min
```

```
Required: True
Position: Named
Default value: 0
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

scriptblock

Outputs

TestResult

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/ This command was first described at https://github.com/jdhitsolutions/Test-Expression/blob/master/docs/Test-Expression.md)

Related Links

Measure-Command

Test-ExpressionForm

Test-ExpressionForm

Synopsis

Display a graphical test form for Test-Expression.

Syntax

```
Test-ExpressionForm [<CommonParameters>]
```

Description

This command will display a WPF-based form that you can use to enter in testing information. Testing intervals are in seconds. All of the values are then passed to the Test-Expression command. Results will be displayed in the form. The results only show you how long the tests took, regardless of whether or not there were errors.

When you close the form, the last result object will be passed to the pipeline, including all metadata, the scriptblock, and arguments.

This command requires a Windows platform that supports WPF.

Examples

Example 1

```
PS C:\> test-expressionform
```

Launch the form.

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/ This command was first explained at https://github.com/jdhitsolutions/Test-Expression/blob/master/docs/Test-ExpressionForm.md

Related Links

Test-Expression

Measure-Command

Test-IsElevated

Synopsis

Test if the current user is running elevated.

Syntax

```
Test-IsElevated [<CommonParameters>]
```

Description

This command will test if the current session is running elevated, or as Administrator. On Windows platforms, the command uses the NET Framework to determine if the user is running as Administrator. On non-Windows systems, the command is checking the user's UID value.

Examples

Example 1

```
PS C:\> Test-IsElevated
True
```

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

Boolean

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-PSWho

Test-IsPSWindows

Synopsis

Test if running PowerShell on a Windows platform.

Syntax

```
Test-IsPSWindows [<CommonParameters>]
```

Description

PowerShell Core introduced the $IsWindows variable. However, it is not available on Windows PowerShell. Use this command to perform a simple test if the computer is either running Windows or using the Desktop PSEdition.

Examples

Example 1

```
PS C:\> Test-IsPSWindows
True
```

Parameters

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.Boolean

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Test-WithCulture

Synopsis

Test your PowerShell code using a different culture.

Syntax

scriptblock (Default)

```
Test-WithCulture [-Culture] <CultureInfo> [-Scriptblock] <ScriptBlock>
[-ArgumentList <Object[]>] [<CommonParameters>]
```

file

```
Test-WithCulture [-Culture] <CultureInfo> -FilePath <ScriptBlock>
[-ArgumentList <Object[]>] [<CommonParameters>]
```

Description

When writing PowerShell commands, sometimes the culture you are running under becomes critical. For example, European countries use a different datetime format than North Americans which might present a problem with your script or command. Unless you have a separate computer running under the foreign culture, it is difficult to test. This command will allow you to test a scriptblock or even a file under a different culture, such as DE-DE for German.

Note that this command is not an absolute test. There may be commands that fail to produce the alternate culture results you expect.

Examples

Example 1

```
PS C:\> Test-WithCulture de-de -Scriptblock {(Get-Date).addDays(90)}
Montag, 14. Oktober 2020 08:59:01
```

Example2

```
PS C\> Test-WithCulture fr-fr -Scriptblock {
  Get-winEvent -log system -max 500 |
  Select-Object -Property TimeCreated,ID,OpCodeDisplayName,Message |
  Sort-Object -property TimeCreated |
  Group-Object {$_.timecreated.toshortdatestring()} -noelement
```

```
  }

Count Name
----- ----
  165 10/07/2020
  249 11/07/2020
   17 12/07/2020
   16 13/07/2020
   20 14/07/2020
   26 15/07/2020
    7 16/07/2020
```

Parameters

-ArgumentList

Specify an array of positional arguments to pass to the scriptblock for file.

```
Type: Object[]
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Culture

Enter a new culture like de-de

```
Type: CultureInfo
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-FilePath

Enter the path to a PowerShell script file to execute using the specified culture.

```
Type: ScriptBlock
Parameter Sets: file
Aliases:

Required: True
```

```
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Scriptblock

Enter a scriptblock to execute using the specified culture. Be aware that long or complex pipelined expressions might not give you the culture-specific results you expect.

```
Type: ScriptBlock
Parameter Sets: scriptblock
Aliases:

Required: True
Position: 1
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

None

Outputs

System.Object

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Get-Culture

Get-UICulture

Trace-Message

Synopsis

Create a graphical trace window.

Syntax

message (Default)

```
Trace-Message [[-Message] <String>] [<CommonParameters>]
```

init

```
Trace-Message [-Title <String>] [-BackgroundColor <String>] [-Width <Int32>]
[-Height <Int32>] [<CommonParameters>]
```

Description

Trace-Message is designed to be used with script or function. Its purpose is to create a graphical trace window using Windows Presentation Foundation. Inside the function or script, you can use this command to send messages to the window. When finished, you have an option to save the output to a text file.

There are 3 steps to using this function. First, in your code, you need to create a boolean global variable called TraceEnabled. When the value is $True, the Trace-Message command will run. When set to false, the command will be ignored. Second, you need to initialize a form, specifying the title and dimensions. The form will automatically include some pre-defined metadata. Finally, you can send trace messages to the window. All messages are prepended with a timestamp.

This command is not optimized for performance and is intended for development purposes. When your code is finished, you can set $TraceEnabled to $False. If you need to troubleshoot, you can set it to $True.

Examples

Example 1

```
PS C:\> Trace-Message -title "Troubleshooting Log" -width 600
```

This command will initialize a trace window with the given title and width. It is assumed you have set $TraceEnabled to $True. This is a command you would normally run in your code and not from the console.

Example 2

```
PS C:\> Trace-Message -message "Starting MyCommand"
```

This example is a continuation of the previous example. The message text will be appended to the graphical form, prepended with a timestamp.

Parameters

-BackgroundColor

Specify a background color for the trace window. You can use console colors like "Cyan" or HTML color codes.

```
Type: String
Parameter Sets: init
Aliases:

Required: False
Position: Named
Default value: "#FFFFF8DC",
Accept pipeline input: False
Accept wildcard characters: False
```

-Height

Specify the Width of the trace window.

```
Type: Int32
Parameter Sets: init
Aliases:

Required: False
Position: Named
Default value: 500
Accept pipeline input: False
Accept wildcard characters: False
```

-Message

Specify a message to write to the trace window.

```
Type: String
Parameter Sets: message
Aliases:

Required: $True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
```

```
Accept wildcard characters: False
```

-Title

Specify a title for the trace window.

```
Type: String
Parameter Sets: init
Aliases:

Required: False
Position: Named
Default value: "Trace Messages"
Accept pipeline input: False
Accept wildcard characters: False
```

-Width

Specify the Width of the trace window.

```
Type: Int32
Parameter Sets: init
Aliases:

Required: False
Position: Named
Default value: 800
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.String

Outputs

None

Notes

Look at $PSSamplePath\Get-Status.ps1 for a demonstration of this command in a function. The buttons have

key acclerators of Q and S.

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Write-Verbose

Write-ANSIProgress

Synopsis

Display an ANSI progress bar.

Syntax

```
Write-ANSIProgress [-PercentComplete] <Double> [-ProgressColor <String>]
[-BarSymbol <String>] [-Position <Coordinates>] [<CommonParameters>]
```

Description

You can use this command to write an ANSI colored progress bar to the console. The output will be an array of strings. The item may be a blank line. See examples.

If you are using the Windows Terminal and are at the bottom of the screen, you may get improperly formatted results. Clear the host and try again.

Examples

Example 1

```
PS C:\> $pct = @(.10, .12, .19, .25, .43, .55, .66, .78, .90, .95,1)
PS C:\> $pct | Write-ANSIProgress -BarSymbol Block
```

This will build a progress bar using a block symbol and the default ANSI color escape.

Example 2

```
PS C:\> $params = @{
  PercentComplete = .78
  BarSymbol = "Circle"
  "ProgressColor" =  "$([char]0x1b)[92m"
}
PS C:\> Write-ANSIProgress @params
```

Create a single progress bar for 78% using the Circle symbol and a custom color.

Example 3

```
PS C:\> Get-CimInstance -ClassName Win32_OperatingSystem |
Select-Object -property @{N="Computername";E={$_.CSName}},
@{N="TotalMemGB";E={Format-Value $_.TotalVisibleMemorySize -unit MB}},
```

```
@{N="FreeMemGB";E={Format-Value $_.FreePhysicalMemory -unit MB}},
@{N="PctFree"; E={
$pct=Format-Percent $_.freephysicalmemory $_.totalVisiblememorySize
Write-ANSIProgress -PercentComplete ($pct/100) | Select-Last 1
}}


Computername TotalMemGB FreeMemGB PctFree
------------ ---------- --------- -------
BOVINE320            32        12 37.87% ■■■■■■■■■■■■■■■■■■■
```

Note that this example is using abbreviations in the Select-Object hashtables.

Example 4

```
PS C:\> $sb = {
  Clear-Host
  $top = Get-ChildItem c:\scripts -Directory
  $i = 0
  $out=@()
  $pos = $host.UI.RawUI.CursorPosition
  Foreach ($item in $top) {
    $i++
    $pct = [math]::round($i/$top.count,2)
    Write-ANSIProgress -PercentComplete $pct -position $pos
    Write-Host "  Processing $(($item.fullname).padright(80))"  -NoNewline
    $out+= Get-ChildItem -Path $item -Recurse -file |
    Measure-Object -property length -sum |
    Select-Object @{Name="Path";Expression={$item.fullname}},Count,
    @{Name="Size";Expression={$_.Sum}}
  }
  Write-Host ""
  $out | Sort-Object -property Size -Descending
}
PS C:\> Invoke-Command -scriptblock $sb
```

You are most likely to use this command in a function or script. This example demonstrates using a script block.

Parameters

-BarSymbol

Specify what shape to use for the progress bar.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values: Box, Block, Circle

Required: False
Position: Named
Default value: Box
Accept pipeline input: False
```

```
Accept wildcard characters: False
```

-PercentComplete

Enter a percentage in decimal value like .25 up to 1.

```
Type: Double
Parameter Sets: (All)
Aliases:

Required: True
Position: 0
Default value: None
Accept pipeline input: True (ByValue)
Accept wildcard characters: False
```

-Position

Specify the cursor position or where you want to place the progress bar.

```
Type: Coordinates
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: Current position
Accept pipeline input: False
Accept wildcard characters: False
```

-ProgressColor

Specify an ANSI escape sequence for the progress bar color.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters.

Inputs

System.Double

Outputs

System.String

Notes

This command will not work in the PowerShell ISE. The verbose output should only be used when troubleshooting a display problem.

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

New-ANSIBar

New-RedGreenGradient

Show-ANSISequence

Write-Detail

Synopsis

Write a detailed message string.

Syntax

Default (Default)

```
Write-Detail [[-Message] <String>] [-Prefix <String>] [<CommonParameters>]
```

Time

```
Write-Detail [[-Message] <String>] [-Prefix <String>] [-Time]
[<CommonParameters>]
```

Date

```
Write-Detail [[-Message] <String>] [-Prefix <String>] [-Date]
[<CommonParameters>]
```

Description

This command is designed to be used within your functions and scripts to make it easier to write a detailed message that you can use as verbose output. The assumption is that you are using an advanced function with Begin, Process, and End scriptblocks. You can create a detailed message to indicate what part of the code is being executed. The output can include a full-time stamp, or a time string which includes a millisecond value.

In a script you might use it like this in a Begin block:

```
$pfx = "BEGIN"

Write-Detail "Starting $($MyInvocation.MyCommand)" -Prefix $pfx | Write-Verbose

Write-Detail "PS $($PSVersionTable.PSVersion)" -Prefix $pfx | Write-Verbose
```

If you don't specify a prefix, it will default to PROCESS.

Examples

EXAMPLE 1

```
PS C:\> Write-Detail "Getting file information" -Prefix Process
[PROCESS] Getting file information
```

Normally you would use this command in a function, but here is an example from the console so that you can see what to expect.

Parameters

-Message

The message to display after the time stamp and prefix.

```
Type: String
Parameter Sets: (All)
Aliases:

Required: False
Position: 0
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Prefix

Indicate whether you are in the BEGIN, PROCESS, or END script block. Although you can specify any text. It will be displayed in upper case.

```
Type: String
Parameter Sets: (All)
Aliases:
Accepted values:

Required: False
Position: Named
Default value: PROCESS
Accept pipeline input: False
Accept wildcard characters: False
```

-Date

Display a date value like 9/15/2020 11:36:41.

```
Type: SwitchParameter
Parameter Sets: Date
Aliases:

Required: False
```

```
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

-Time

Display a time value with milliseconds like 11:37:01:4029.

```
Type: SwitchParameter
Parameter Sets: Time
Aliases:

Required: False
Position: Named
Default value: None
Accept pipeline input: False
Accept wildcard characters: False
```

CommonParameters

This cmdlet supports the common parameters: -Debug, -ErrorAction, -ErrorVariable, -InformationAction, -InformationVariable, -OutVariable, -OutBuffer, -PipelineVariable, -Verbose, -WarningAction, and -WarningVariable. For more information, see about_CommonParameters (http://go.microsoft.com/fwlink/?LinkID=113216).

Inputs

None

Outputs

System.String

Notes

Learn more about PowerShell: http://jdhitsolutions.com/blog/essential-powershell-resources/

Related Links

Write-Verbose

Change Log for PSScriptTools

This file contains the most recent change history for the PSScriptTools module.

v2.47.0

Changed

- Added missing online help links.
- Updated module description in the manifest.
- Added `EnableLN` parameter alias to `Get-FolderSizeInfo`.
- Help updates.
- Update `Get-TypeMember` to identify properties that are enumerations.
- Updated format file for `Get-TypeMember` to highlight enum properties.
- Updated `README.md`.

v2.46.0

Changed

- General code cleanup and formatting.
- Modified module to only load ANSI file format features if PSStyle is not detected.
- Modified `psparameterinfo.format.ps1xml` to highlight True values with an ANSI highlight color.
- Modified `Get-FolderSizeInfo` to use `System.Collections.Generic.List[]` in place of `ArrayList`.
- Modified back-end processing for the help PDF file to reduce its size.
- Restored header to `Get-PSScriptTools`.
- Help updates.
- Revised Changelog layout.
- Updated `README.md`.

Fixed

- Fixed a bug in `Get-GitSize` that was failing to get hidden items in the `.git` folders. Also modified the command to use `Get-FolderSizeInfo` which is faster than using `Get-ChildItem`.
- Modified `Get-PSScriptTools` to properly return version information.

Added

- Added function `Get-TypeMember` with format file `pstypemember.format.ps1xml` and type extension `pstypemember.types.ps1xml`. The function has an alias of `gtm`.
- Added the parameter `MainBranch` to `Remove-MergedGitBranch` to allow the user to specify the name of their main or master branch. The default is `master`.

Deprecated

- Marked `Out-ConditionalColor` and `Set-ConsoleColor` as deprecated. They will be removed in a future release.

v2.45.0

- Fixed help typo for `Get-PSUnique` PR 133. Thank you @fiala-sns.
- Updated `Get-WindowsVersion` to include `DisplayVersion`, e.g. `22H2`.
- Modified format file `windowsversion.format.ps1xml` to replace `ReleaseID` with the `DisplayVersion` value.
- Revised `Get-WindowsVersion` to use `systeminfo` to retrieve the operating system name and if that fails, fall back to using the registry entry. The registry entry for Windows 11 typically still shows Windows 10.
- Help updates.
- Updated `README.md`.

v2.44.0

- Updated `Show-ANSISequence` to fix a bug where foreground samples where included when specifying background. Issue #130
- Updated contributing guidelines.
- Updated `README.md`.

v2.43.0

- Fixed VSCode snippets to run in a PowerShell 7 integrated console. Issue #124
- Updated `Show-AnsiSequence` to fix a display bug that was dropping values. Issue #125
- Removed `ConvertTo-ASCIIArt` as the online resource no longer appears to exist. Issue #127
- Updated missing online help links.
- Updated `Get-FoldersizeInfo` to better handle null values. Issue #129
- Added new sample script `today.ps1`.
- Help updates.
- Updated `README.md`.

v2.42.0

- Updated module manifest to load required .NET assembly for `Convert-HTMLtoAnsi`. Issue #124
- Updated `Show-AnsiSequence` to fix a display bug that was dropping values. Issue #125
- Updated missing online help links.
- Added new sample script `today.ps1`.
- Help updates.
- Updated `README.md`.

v2.41.0

- Added function `Copy-CommandHistory` with an alias of `ch`.
- Updated `Out-Copy` to ignore ANSI unless specified. Issue #118
- Added an alias of `oc` for `Out-Copy`.
- Updated `New-PSFormatXML` to fix ReadOnly property error. Issue #121
- Updated `Get-ModuleCommand` to include version information and to accept pipeline input.
- Updated `modulecommand.format.ps1xml` with a new table view called `version`.
- Updated missing online help links.
- Updated `README.md`.

Archive

If you need to see older change history, look at the Archive ChangeLog online.