

Putting PowerShell to Work

RUN POWERSHELL COMMANDS



Jeff Hicks

AUTHOR/TEACHER

@jeffhicks | <https://jdhitsolutions.com>



How to Follow Along

Windows 10 Desktop

Administrator Privileges

Latest PowerShell 7 Release

<https://github.com/powershell/powershell>

Optional

Virtual Machine/Windows Sandbox



Demo Files



Download course files



Open ps1 files in a script editor



Run demo commands individually



Discovering PowerShell Commands



Get-Command



Get-Help

Command Types



Cmdlet

Function

Script

Application

You can run any command-line tool

Even other scripting languages

Command Naming Conventions



Applies to PowerShell cmdlets and functions

Verb-Noun

Singular Noun

.NET Standard Verb

Get-Verb

Command Aliases



Alternate command name

Technically another command type

Often shorter

Used as transition tools

Get-Alias

```
PS C:\> Get-Volume
```

Running PowerShell Commands

Type the command and press enter




```
PS C:\> Get-Volume
```

Drive	SizeGB	FreeGB	PercentFree	HealthStatus
	1	0	36.89	Healthy
	0	0	81.9	Healthy
	237	106	44.68	Healthy
C	237	106	44.68	Healthy
	8	8	94.77	Healthy
D	931	512	55	Healthy

Running PowerShell Commands

Type the command and press Enter

Not case-sensitive

Use tab completion



```
PS C:\> Get-Volume
```

Using Command Parameters

Customize the command



```
PS C:\> Get-Volume -DriveLetter D
```

Using Command Parameters

Customize the command

Tab completion

PSReadline completion



```
PS C:\> Get-Volume -DriveLetter D
```

Drive	SizeGB	FreeGB	PercentFree	HealthStatus
D	931	512	55	Healthy

Using Command Parameters

Parameter name preceded by a dash

Space

Parameter value



```
PS C:\> Get-Service bits,winrm,spooler
```

Using Command Parameters

Some parameters are positional

Some parameters are mandatory

Separate multiple values with commas



```
PS C:\> Get-CimInstance -ClassName win32_bios -Verbose
```

Using Command Parameters

-Verbose



```
PS C:\> Get-CimInstance -ClassName win32_bios -Verbose
```

```
VERBOSE: Perform operation 'Enumerate CimInstances' with following  
parameters, 'namespaceName' = root\cimv2,'className' = win32_bios'.
```

```
SMBIOSBIOSVersion : M2WKT40A  
Manufacturer      : LENOVO  
Name               : M2WKT40A  
SerialNumber       : MJ0D9JCA  
Version            : LENOVO - 1280
```

```
VERBOSE: Operation 'Enumerate CimInstances' complete.
```

Using Command Parameters

-Verbose

Must be built-in to the command



```
PS C:\> Stop-Service -Name WinRM -WhatIf
```

Using Command Parameters

-WhatIf




```
PS C:\> Stop-Service -Name WinRM -WhatIf
```

```
What if: Performing the operation "Stop-Service" on target "Windows Remote Management (WS-Management) (WinRM)".
```

Using Command Parameters

-WhatIf

Shows what PowerShell would have done

Should apply to commands that change things



PowerShell Command History



Scroll through command history

Get-History

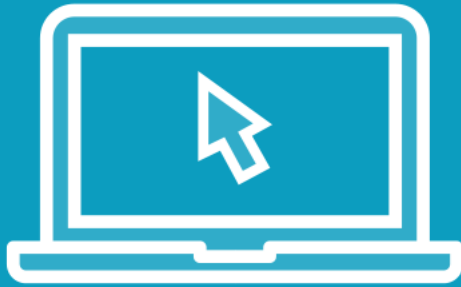
Invoke-History

Search command history with PSReadline

- InlinePrediction



Demo



Running PowerShell Commands



Understanding the PowerShell Host



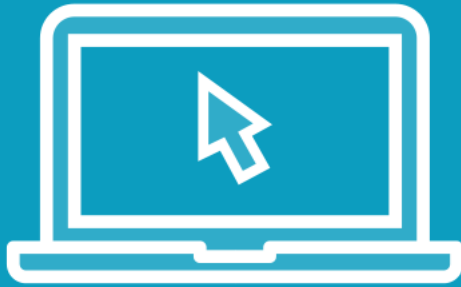
PowerShell alone is an *engine*

PowerShell is *hosted* in an application

PowerShell commands write objects to the *pipeline*

You can read and write directly to the hosting application

Demo



The PowerShell Host

- Commands in the Pipeline
- Using Write-Host
- Using Read-Host

