PowerShell Fundamentals for Beginners

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What is PowerShell?

- Ask 10 People what PowerShell is and Get 10 Different Answers.
- PowerShell is a Multi-Purpose Tool like a GIANT Swiss Army Knife:
My definition: PowerShell is an easy to use command-line shell and scripting interface or environment for automating administrative tasks of Windows based systems.
PowerShell IS where Microsoft is going for administration of its products

Moving entire GUI admin toolset to running PowerShell behind the scenes.
PowerShell Commands are called Cmdlets

Cmdlet is pronounced command-let (not CMD-let)

Cmdlets are in the form of singular Verb-Noun syntax

A cmdlet such as Get-Service is pronounced Get Service omitting the dash

PowerShell 1.0
  Installed but not enabled on Windows Vista and Server 2008

PowerShell 2.0
  Installed by default on Windows 7 and Server 2008 R2
  The PowerShell ISE is installed by default on Windows 7
  Can be installed on Windows XP and Server 2003 or Higher

PowerShell 3.0
  Installed by default on Windows 8 and Server 2012
  ISE is installed by default on Windows 8 and Server 2012 GUI
  Can be installed on Windows 7 and Server 2008 or Higher
  PowerShell Remoting is enabled by default on Server 2012
Want VM Reliability and Uptime?
- Hyper-V on Server Core
How do I start PowerShell?

Windows 7 / Server 2008 R2 and Prior OS’s
“Start > All Programs > Accessories > Windows PowerShell”

Windows 8 and Server 2012
Accessed from the all apps page
Select “Run as Administrator” when opening PowerShell
   PowerShell is unable to participate in User Account Control (UAC)

Learn to investigate and explore PowerShell
   **Get-Help**
      - Update-Help
      - Save-Help

Parameter Sets
   Parameters
      - Mandatory Parameters
      - Optional Parameters

Named Parameters
   - Parameter names always start with a dash (-)

Positional Parameters

Switch Parameters

Abbreviating Parameter Names
   Parameter Aliases
Get-Command
- Snap-ins
  - Get-PSSnapin
  - Add-PSSnapin
- Modules
  - Get-Module
  - Add-Module

Get-Member
- Discover Objects, Properties, and Methods

The Pipeline

Filtering
- Filter Left and Filter Often
  - Whenever possible, try to filter before the first pipeline
- Where-Object
- Select-Object
  - Dotted Notation
Sorting
- Sort-Object

Formatting
- Format Right
- Format-Table
- Format-List

Use Sorting and Format-Table –AutoSize sparingly

Scripts
- Script Execution Policy
  - Get-ExecutionPolicy
  - Set-ExecutionPolicy
- Be verbose in your scripts

Syntax
- Back Tick (Grave Ascent) is the line continuation and escape character
- Break at the pipe symbol
- Cmdlet and parameter names are not case sensitive
- Tabbed Expansion & Intellisense
Variables

PowerShell Remoting

PowerShell Web Access

Aliases
   Aliases are Nick Names
My Blog: mikefrobbins.com or mrpowershell.com
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Other Resources:
- Learn Windows PowerShell in a Month of Lunches Book
- Hey, Scripting Guy! Blog (scriptingguys.com)
- PowerShell Team Blog (blogs.msdn.com/b/powershell)
- PowerShell Community (PowerShell.org)
- Scripting Games: PowerShell.org/Games
- PowerScripting Podcast: powerscripting.net
- youtube.com/powershelldon
- Twitter: #PowerShell

Questions?
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