ITPogo Online Trainings - Windows PowerShell

Topic - PowerShell Basics and Advance Scripting

Basics of PowerShell   **(Duration: 44 Hours)**

01 – Introduction

- Course introduction and agenda

02 - Meet PowerShell

- Introduction to PowerShell - Console vs ISE environment
- Tab completion and intellisense in PowerShell
- Running as Administrator
- Checking PowerShell Version and Architecture

03 - Running Commands

- Finding commands
- Anatomy of commands
- Running external commands
- Dealing with errors
- Alias and Show-Command/Command Add-on
- Taking shortcuts

04 - Using the Help System

- Finding help topics
- Interpreting the help syntax - Symbols
- Help Parameters – Full, ShowWindow, Online, Example
- About **about_** Topics
- Updating help topics
- Updating help topics without internet (offline)

05 – Understanding Objects in PowerShell

- What are objects – Real world examples
- Why PS uses objects
- Analyzing the output objects
- Properties and methods
- Sorting, Selecting objects by Property names
- Objects at the end

06 - Formatting and Why it's Done on the Right

- Default formatting system – Default views
- Table, list, wide list
- Custom Property expression
- Grid view
- Why format on the Right

07 - Filtering and Comparisons and Why it's Done on the Left

- Using comparison operators
- Filtering output
- Why filter on left

08 - The Pipeline Connecting Commands

- Connecting commands – examples
- Exporting to CSV/XML/JSON
- Piping to file or printer
- HTML output

09 - The Pipeline Deeper

- Modifying the system (Confirm WhatIF)
- How data flows in Pipeline
- Plan A: By data type
- Plan B: By generic object (PSObject)
- Plan C: By Property name
- Parenthetical commands
- Extracting value from single property

10 - Working with Providers

- What are Providers
- File System as Provider
- Other hierarchical data stores
- Using wildcards and literal paths
- Other providers – AD, IIS, etc.

11 - Adding Commands

- About Snap-ins (old way)
- Modules – List, Import and Remove
- Profile scripts in brief.

12 - Using Windows Management Instrumentation

- WMI Basics
- Exploring WMI
- WMI vs CIM
- Getting WMI Objects
- Getting CIM Instances
- WMI Help/documentation

13 - Multitasking with Background Jobs

- Sync vs Async
- Local jobs
- WMI Jobs
- Remoting Jobs
- Child Jobs
- Managing Jobs
- Scheduled jobs

14 - Working with Bunches of Objects One at a Time

- Batch Cmdlets
- WMI Methods
- Enumerating objects

15 - Security Aspects

- Security goals
- Execution policy
- Certificates and trusting
- Other security measures

PowerShell Advance

16 - Variables A Place to Store Your Stuff

- What are variables
- Naming convention and rules
- Storing stuff in variables
- Variable types
- Creating Arrays/HashTables
- Storing multiple objects in variables
- Commands for variables

17 - Scope

- What is scope?
- Best practices for scope

18 – Programming Constructs

- If...ElseIf...Else
- Switch
- Do...While
- While
- ForEach/For Loop

19 - Input and Output

- Prompting for info
- Writing to screen
- Writing to pipeline
- Writing to other places

20 - You Call This Scripting

- Difference between Script and function
- Adding Parameters
- Making commands
- Adding Help/documentation

21 - Improving Your Parameterized Script

- Mandatory parameter
- Alias
- Validation
- Pipeline input

22 - Designing a Tool for Reusability

- Output objects
- Don't format/preserve data
- Never remove properties

23 - Adding Output

- Verbose
- Warning
- Progress indicators
- Operators (-join –split –f -replace)
- String and date manipulation

24 - Error Handling Techniques

- 2 Types of Errors
- Error Action Preference
- Error vs Exception
- Try Catch Finally

25 - Debugging Techniques

- 2 Types of bugs
- Writing debug messages
- Using PSBreakPoints
- Debugging example

26 - Remote Control One on One and One to Many

- What is remoting
- WinRM overview
- 1 to 1
- 1 to many
- Deserialized object

27 - Sessions Remote Control with Less Work

- Creating
- Managing
- Using
- Disconnected Session

28 – Script Module/Manifest Modules

- Converting your script in to modules
- Publishing your scripts
- Some extra (bonus) script examples. (IE Objects, Outlook, Excel, Class reference.)