**Proposed Outline for New Book**

## 1. Installing and Configuring PowerShell 7

Before you can begin to explore the richness of PowerShell 7, you need to install and configure it. Since there is no ISE, your alternative for script development is to use Visual Studio Code.

This chapter sets the scene with respect to PowerShell 7 with a short review of how we got to where we are, PowerShell 7.1, and looking forward. The chapter then looks at how to

install PowerShell 7.1 into Windows Server and how you setup a PowerShell environment with VS Code.

* 1. Install PowerShell 7
  2. Using PWSH.EXE
  3. Exploring PowerShell 7 Installation artifacts
  4. Building PowerShell 7 profile files
  5. Installing Cascadia Code Font
  6. Installing VS Code
  7. Exploring the PSReadLine module
  8. Installing PowerShell in WSL

23 pages, 8 Recipes  
New Material - 100%

## 2. Introducing PowerShell 7

With PowerShell 7 (and VS Code) installed, you can now look at the new features in 7.0 and 7.1

This chapter starts with an overview of the new features in 7 (and what has been added to 7.1). Then the chapter looks at the key features now to Windows PowerShell users.

1. Exploring new Operators (pipeline chain and ternary)
2. Exploring Parallel processing
3. Explore Performance improvements
4. Using Test-Connection
5. Using Select-String
6. Exploring Error view and Get-Error

20 pages - 6 recipes each one looking at a key new feature  
New Material - 100%

## 3. Compatibility with Windows PowerShell

Explains the compatibility background, the limitations of the

* 1. Exploring Windows Compatibility
  2. Using Compatibility Solution
  3. Exploring the compatibility limitations
  4. Exploring the Module Load Deny list
  5. Importing Display XML
  6. Leveraging compatibility

35 pages 6 recipes  
New Material - 100%

## 4. Managing PowerShell in the Enterprise

In the enterprise, you need more than the baked-in commands. This chapter looks at commands are packaged into modules as a prelude to seeing how you can build your own modules and obtain modules from third parties or even create your own module repository. This chapter also looks at additional enterprise security aspects including remoting over SSH, signing scripts, and using how to handle credentials in scripts. This chapter finishes by looking at using GitHub.

* 1. Installing RSAT Tools
  2. Exploring Package Management
  3. Exploring PowerShellGet and the PS Gallery
  4. Creating and using a local repository
  5. Establishing a code signing environment
  6. Working with Shortcuts and PSSHortCut module
  7. Working with Archive files

35 pages - 10 recipes

New Material - 75%

## 5. Exploring .NET

This chapter explores the .NET Framework, looking at the background, architecture, and key components. This chapter focuses on .NET 5, which PowerShell 7.1 relies on.

The chapter starts with a discussion of what .NET consists of. You look at key compoent5sw 9assemblies and classes). You then examine classes. You look at how to create your own .NET Extension (using C#) and examine how to support older versions of .NET.

* 1. Exploring .NET Assemblies
  2. Exploring .NET Classes
  3. Leveraging .NET Methods
  4. Creating a C# Extension
  5. Creating a cmdlet - ADD this to next edit pass

25 pages - 5 Recipes

New Material - 100%

## 6. Managing AD

Active Directory is at the heart of most organizations these days. The chapter looks at core AD concepts and how to manage AD. The chapter begins with installing a forest with multiple domains and domain controllers. The chapter then looks at managing core AD objects. The chapter then looks at creating a logon Installing Forest/Domain

* 1. Installing a Forest Root Domain
  2. Testing an AD Installation
  3. Installing a Replica Domain Controller
  4. Installing Child Domain
  5. Creating and Managing AD Users and groups
  6. Managing AD Computers
  7. Configuring CredSSP
  8. Adding/Removing users using CSV files
  9. Creating a Group Policy Objects
  10. Reporting on AD Computers
  11. Reporting on AD Users

30 pages - 5 recipes

New Material -30%

## 7. Managing Networking

Networking is fundamental today. This chapter begins by a look at using PowerShell to Configure IP addresses manually and then via DHCP. The chapter examines configuring DHCP scopes and options and deploying a failover/load balancing DHCP solution. The chapter finished with looking at installing DNS and managing DNS resource records.

* 1. Configure IP Addressing
  2. Testing Network Connectivity
  3. Installing DHCP
  4. Using DHCP
  5. Configure DHCP Scopes and Options
  6. Implanting DHCP Fail Over/Load Balancing
  7. Installing DNS in the Enterprise
  8. Configuring DNS Forwarding
  9. Managing DNS zones and DNS Resource records

40 pages and 8 recipes  
New Material - 40%

## 8. Implementing Enterprise Security

This chapter looks aspects of Enterprise server security. The chapter demonstrates how to establish and implement fine-grained security delegation, how you install/use AD-based certificate servers. Nest you look at reporting and report on users with potentially excessive permissions. Then you look at the event logs, both the Application and services log and examining logon events in the event log.

* 1. Implementing JEA
  2. Examining Event Logs
  3. Discovering Logon Events in Event Log

1. Deploying PowerShell Group Policies
2. Using PowerShell Script block logging
3. Configuring AD Default Password Policy
4. Managing Windows Defender<https://www.msn.com/en-gb/entertainment/news/lost-19th-century-tlingit-fort-discovered-in-alaska/ar-BB1d4Rnk>

Removed

1. Reporting on Privileged users (done in an earlier chapter)
2. Implementing a CA
3. Installing WSL and WSL 2 (not needed).

40 pages - 4 recipes

New Material - 100%

## 9. Managing Storage

This chapter looks at managing disks within Windows. First, you look at disks, volumes and file systems. Then you look at PowerShell Provider and the File System provider. You conclude the chapter with Deploying Storage Replica and Storage Space Direct.

* 1. Managing Physical Disks and Volumes
  2. Managing File Systems
  3. Exploring Providers and the File System provider
  4. Manage Storage Replica
  5. Deploying Storage Spaces

25 pages and 5 recipes   
New-Material - 25%

## 10. Managing Shared Data

Once you have disks, volumes, and file systems, you can use the file system to create folders and set NTFS permissions. You then set up and secure a simple SMB file serve and a scale-out SMB 3 file server. The chapter looks next at FSRM quotas and reporting. You look at DFS, both DFS replication and DFS namespaces and conclude with implementing and using an NFS server

1. Managing files and folders
2. Managing NTFS Permissions
3. Setting up and securing an SMB File server
4. Creating a scale-out file SMB 3 server
5. Creating an iSCSI target
6. Using an ISCSI Target
7. Implementing FSRM Quotas
8. Implementing FSRM Reporting
9. Implementing DFS Name Space
10. Implementing DFS Replication
11. Implementing NFS Server
12. ~~Using an NFS Server in WSL 2~~

45 pages - 11 recipes  
New Material 20%

## 11. Managing Printing

This chapter, little changed from earlier editions, looks at printing,.

* 1. Installing and sharing Printers
  2. Changing Spooler directory
  3. Changing printer drivers
  4. Printing a test page
  5. Managing Printer security ?
  6. Creating a printer pool

25 pages - 6 recipes

New Material - 5%

## 12. Exploring Windows Containers

This chapter looks at the basics of Windows containers. The chapter starts with setting up a container host and deploying a sample container and deploying IIS in a Container. The chapter concludes with creating your own container using a dockerfile.

* 1. Configuring a Container host
  2. Deploying Sample Containers
  3. Deploying IIS in a Container
  4. Using a dockerfile to create and use a container

25 pages - 4 recipes

New Material - 10 %

## 13. Managing Hyper-V

Hyper-V is Microsoft’s native virtualization offering. This chapter looks installation of Hyper and creating and managing VMs. The chapter also looks at advanced features including storage/vm movement, storage replication, and managing checkpoints and Hyper-V clusters.

* 1. Installing Hyper-V inside Windows Server
  2. Creating a Hyper-V VM
  3. Using PowerShell Direct
  4. Configuring VM Hardware
  5. Configuring VM Networking
  6. Implementing Nested Virtualization
  7. Managing VM state
  8. Managing storage Movement
  9. Configure VM replication
  10. Manage VM Checkpoints
  11. Clustering Hyper-V servers

35 pages - 11 recipes

New Material - 10%

## 14. Managing Azure

Azure is Microsoft’s cloud offering. We look at some basic IAAS operations mae possible with Azure.

* 1. Using PowerShell with Azure
  2. Create core Azure Resources
  3. Exploring Storage Account
  4. Creating Azure SMB Share
  5. Creating an Azure web site
  6. Creating an Azure VM
  7. ~~Creating a p2s VPN ?~~

30 pages - 7 recipes

10 % new material

## **15. Debugging and Troubleshooting Windows Server**

* 1. Using PS Script Analyser
  2. Checking Networking connectivity
  3. Using Best Practices Analyzer
  4. Exploring PowerShell debugging
  5. Networking Troubleshooting

25 pages, 5 recipes

100% new material

20 pages - 5 recipes  
New Material 25%

## 16. Managing Window Server with WMI

* 1. Exploring WMI architecture
  2. Exploring WMI Name Spaces
  3. Exploring WMI Classes
  4. Obtaining WMI Class instances
  5. Using WMI Methods
  6. Using WMI Events
  7. Implementing Permanent WMI eventing
  8. Detecting USB Insertion

40 Pages - 8 Recipes

New Material - 100%

## Recipe Counts

|  |  |
| --- | --- |
| Chapter | Recipe Count |
| 1 Install and Config | 8 |
| 2. Introducing PowerShell 7 | 6 |
| 3. Win PS Compat PWSH in enterprise | 6 |
| 4. PWSH in enterprise | 7 |
| 5. .NET | 5 |
| 6. AD | 11 |
| 7. Networking | 9 |
| 8. Enterprise security | 4 |
| 9. Storage | 5 |
| 10 Shared Data | 11 |
| 11. Printing | 6 |
| 12. Containers | 4 |
| 13. Hyper-V | 11 |
| 14. Azure | 6 |
| 15. Debugging | 5 |
| 16. WMI | 8 |
|  | 112 |