**Proposed Outline for PowerShell 7.2 and Server 2022 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 book focuses on PowerShell 7.2.

This chapter sets the scene with respect to PowerShell 7 with a short review of how we got to where we are, PowerShell 7.2, and looking forward. The chapter then looks at how to

install PowerShell 7.2 into Windows Server and how you set up a PowerShell environment with VS Code.

* 1. Install PowerShell 7
  2. Install PowerShell 7 from the app store
  3. Using PWSH.EXE
  4. Installing and configuring Windows Terminal
  5. Exploring PowerShell 7 Installation artifacts
  6. Building PowerShell 7 profile files
  7. Installing Cascadia Code Font
  8. Installing VS Code
  9. Exploring the PSReadLine module

23 pages, 9 Recipes

## 2. Introducing PowerShell 7

With PowerShell 7 (and VS Code) installed, you can now look at the new features in 7.2

This chapter starts with an overview of the new features in 7 (and what has been added since). 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

## 3. Compatibility with Windows PowerShell

Explains the compatibility background, the limitations of the compatibility solutions.

* 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

## 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
  8. Searching for files using Search Everything

35 pages - 8 recipes

## 5. Exploring .NET

This chapter explores the .NET Framework, looking at the background, architecture, and key components. This chapter focuses on .NET 6, which PowerShell 7.2 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

## 6. 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. Installing DHCP
  3. Using DHCP
  4. Configure Scopes and Options
  5. Implanting DHCP Fail Over/Load Balancing
  6. Installing DNS in the Enterprise
  7. Configuring DNS Forwarding
  8. Managing DNS zones and Resource records

40 pages and 8 recipes

## 7. 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. Adding/Removing users using a CSV file
  8. Creating a Group Policy Objects
  9. Reporting on AD Computers
  10. Reporting on AD Users
  11. Managing AD Replication

30 pages - 11 recipes

## 8. Implementing Enterprise Security

This chapter looks aspects of Enterprise server security. The chapter demonstrates how to establish implement fine-grained security delegation, how to 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. Implement JEA
  2. Implement a CA
  3. Reporting on Privileged users
  4. Examining the Application and Services logs
  5. Discovering Logon Events in Event Log

40 pages - 5 recipes

## 9. Managing Storage

This chapter looks at managing disks within Windows. You first look at disks, volumes and file systems. Then you look at PowerShell Provider and the File System provider. You conclude the chapter 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

## 10. Managing Shared Data

Once you have disks, volumes, and file systems, you can use the file system to create folders and, on NTFS, set permissions. You then setup 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 name spaces 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

45 pages - 10 recipes

## 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

## 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

## 13. Managing Hyper-V

Hyper-V is Microsoft’s native virtualisation 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

## 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

## 15. Managing AWS Resources using PowerShell

tbd

25 pages – 6 recipes

## 16. Managing Google Cloud Services using PowerShell

Tbd

25 pages - 6 recipes

## 17. 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

## 18. 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

## 17. Managing Windows Update

1. Installing WSUS
2. Configuring WSSUS Update Synchronization
3. Configuring Windows Update Client
4. Creating Computer Target Groups
5. Configuring WSUS Auto-Approvals
6. Manaing updates

40 Pages - 6 Recipes

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