Learn PowerShell Live

**Workshop Overview:**

This all-day workshop is designed to introduce participants to the basics of Microsoft PowerShell. Through a combination of lectures, demonstrations, and hands-on lab exercises, students will learn how to use PowerShell for automation, configuration management, and general scripting tasks.

**Syllabus**

**Session 1: Introduction to PowerShell**

• **Duration:** 1 hour

• **Topics Covered:**

• What is PowerShell?

• History and evolution of PowerShell

• PowerShell vs. Command Prompt vs. Bash

• Installing and updating PowerShell

• **Student Handout Information:**

• PowerShell basics cheat sheet

• PowerShell installation guide

• **Lab Exercise 1:**

• Installing PowerShell on Windows and Linux

• Opening and navigating PowerShell

**Session 2: PowerShell Cmdlets and Syntax**

• **Duration:** 1.5 hours

• **Topics Covered:**

• Understanding cmdlets

• Common cmdlets: Get-Help, Get-Command, Get-Member

• Aliases in PowerShell

• Using and understanding parameters

• **Student Handout Information:**

• List of common cmdlets and their usage

• Cmdlet syntax guide

• **Lab Exercise 2:**

• Exploring Get-Help and Get-Command

• Using Get-Member to inspect objects

• Creating and using aliases

**Session 3: Working with the PowerShell Pipeline**

• **Duration:** 1 hour

• **Topics Covered:**

• Understanding the pipeline

• Using the pipeline to pass data between cmdlets

• Filtering, sorting, and selecting data

• **Student Handout Information:**

• Pipeline usage guide

• Common pipeline cmdlets and examples

• **Lab Exercise 3:**

• Practicing pipeline commands

• Filtering and sorting output data

**Lunch Break**

• **Duration:** 1 hour

**Session 4: Variables, Arrays, and Hash Tables**

• **Duration:** 1.5 hours

• **Topics Covered:**

• Defining and using variables

• Understanding and using arrays

• Working with hash tables

• **Student Handout Information:**

• Variable and array usage guide

• Hash table quick reference

• **Lab Exercise 4:**

• Creating and manipulating variables

• Working with arrays and hash tables in scripts

**Session 5: Scripting Basics**

• **Duration:** 1.5 hours

• **Topics Covered:**

• Writing simple scripts

• Understanding script structure

• Script execution policies

• Handling errors and exceptions

• **Student Handout Information:**

• Script writing guide

• Common scripting pitfalls and solutions

• **Lab Exercise 5:**

• Writing a basic script

• Running and troubleshooting scripts

**Session 6: PowerShell Remoting and Automation**

• **Duration:** 1 hour

• **Topics Covered:**

• Introduction to PowerShell remoting

• Setting up and using remoting

• Automating tasks with scheduled jobs and tasks

• **Student Handout Information:**

• Remoting setup guide

• Automation tips and best practices

• **Lab Exercise 6:**

• Setting up a remote session

• Automating a simple task using a script

**Session 7: Introduction to PowerShell Modules**

• **Duration:** 1 hour

• **Topics Covered:**

• Understanding modules

• Finding and installing modules from the PowerShell Gallery

• Creating and using custom modules

• **Student Handout Information:**

• Module usage guide

• List of useful modules from PowerShell Gallery

• **Lab Exercise 7:**

• Installing a module from the PowerShell Gallery

• Creating a simple custom module

***Conclusion and Q&A***

*•* ***Duration:*** *30 minutes*

*•* ***Activities:***

*• Recap of key topics covered*

*• Q&A session*

*• Feedback collection*

**Student Information:**

• **Prerequisites:** Basic understanding of command-line interfaces

• **Materials Provided: W**orkshop handouts, lab exercise guide

• **What to Bring:** Personal laptop (with or without PowerShell pre-installed)

**Student Handout Information:**

1. **PowerShell Basics Cheat Sheet:** Overview of key concepts, commands, and syntax.

2. **Cmdlet Syntax Guide:** Detailed guide on cmdlet structure and usage.

3. **Pipeline Usage Guide:** Examples and explanations of how to use the pipeline effectively.

4. **Variable and Array Usage Guide:** Instructions and examples for using variables, arrays, and hash tables.

5. **Script Writing Guide:** Best practices for writing and troubleshooting PowerShell scripts.

6. **Remoting Setup Guide:** Step-by-step instructions for setting up and using PowerShell remoting.

7. **Module Usage Guide:** Information on finding, installing, and creating PowerShell modules.

**Lab Exercises:**

1. **Installing PowerShell:** Step-by-step installation on various platforms.

2. **Exploring Cmdlets:** Using Get-Help, Get-Command, and Get-Member.

3. **Using the Pipeline:** Filtering and sorting data in the pipeline.

4. **Variables and Arrays:** Creating and manipulating variables, arrays, and hash tables.

5. **Writing Scripts:** Developing and running basic PowerShell scripts.

6. **Remoting and Automation:** Setting up remoting and automating tasks.

7. **Working with Modules:** Installing and creating PowerShell modules.