Mastering PowerShell for Exchange Online

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Session Agenda

• Introduction
• Environment Setup
• Connecting to Exchange Online & Azure Active Directory
• PowerShell Techniques
• Exchange Online Reporting
Introduction

- **Background**
  - PowerShell 1.0 used by Exchange 2007
  - Built on .NET Framework
  - All of Microsoft’s enterprise products support it
    - Many GUIs literally use PS behind the scenes.
  - Broad 3rd party support and use (AWS, VMware, KEMP, etc.)

- **Great for**
  - Recipient Management & Bulk Automation
  - Ensuring consistent configurations
  - Reporting
  - Hidden Configurations
  - Documentation
  - Custom Tooling
  - Deeper understanding of the service
  - Getting the status of your Dominos pizza order*

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*http://poshcode.org/1355
• **CMDlets**
  - Performs an action and return an object(s)
  - Verb-Noun
  - Named and Positional Parameters

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• **The Pipeline**
  - I prefer: “conveyer belt”
  - Objects placed to the left come out the right

```
PS C:\> DoWhat-WithWhat -Param1 "Carefully"
```
Introduction

• Exploring
  – Tab to auto-complete
  – Get-Help -Online
  – Get-whatever | select *
    • To explore possible fields
  – ISE Commands Add-On

• Common Objects
  – Strings
    • "Just a line of text"
  – Arrays
    • @("a group of"
      "multiple objects")
  – Hash Tables
    • @{Maryland = "Annapolis"
      Nevada = "Carson City"
      Alaska = "Juneau"}

• Common Functions
  – Where-Object
    • -EQ -NE -GE -GT -LE -LT -LIKE
  – ForEach-Object

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Environment Setup

• Download the latest version
  – 4.0
  – 5.0 (Production preview)

• Download modules as necessary
  – Azure AD: http://msdn.microsoft.com/jj151815
  – Remote Server Administration Tools: Search for (RSAT + YourOS)
  – No module necessary for Exchange Online

• Execution Policy
  – “Class III Authenticode Code-Signing Certificate”
    • AD CS
    • Internet CA
    • Self-signed (limited use)
  – Set-ExecutionPolicy -ExecutionPolicy Unrestricted
    • Don’t forget to reinstate once done
  – Powershell.exe -executionpolicy bypass –file myfile.ps1

• Profiles
  – Automatically load frequently-used functions, modules, settings etc.

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Environment Setup

- PowerShell Integrated Scripting Environment (ISE)
  - You really need to use this!
  - Kinda stunk before 3.0
  - Might not be installed by default on your workstation
  - Helps keep track of commands you’ve run
  - Facilitates script debugging
  - Preserves formatting for professional looking and easy to read documentation
Connecting to ExO & AAD

- Exchange Online / EOP
  - Remote PowerShell (2.0 and later)

- Azure Active Directory
  - Requires MSOnline module
Connecting to ExO & AAD

• A few tweaks:
  – Credential Handling
  – Splatting
  – Session Prefixes

• ExO & AAD Multi-factor Authentication
  – “Coming soon”
PowerShell Techniques

• Comments & Comment-Based Help
• Variables
  – Leverage environmental variables
  – Be careful with object type mismatches
  – Variable scopes
    • technet.microsoft.com/hh847849
• Functions
  – Function Get-Beer {Signal-Bartender; Place-Order -Id Killians }
• Dates and Date Spans
• XML
  – Surprisingly easy to work with in later PS versions
  – Be aware of CLIXML’s depth

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PowerShell Techniques

- Formatting
  - Out-Default
  - Format-List (meh)
  - Format-Table
    - -Auto
    - -wrap
  - Select-Object

- Outputs
  - Out-File
  - Export-csv
  - Export-Clixml
  - Out-Gridview
# ExO Reporting

- **EAC Reports Web Dashboard**
  - Also available as Excel workbook
ExO Reporting

• Reporting CMDlets
  – technet.microsoft.com/dn641232

• Web Service API

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Additional Resources

• **Getting Started Stuff**
  - A Windows PowerShell Tutorial
    • [http://www.computerperformance.co.uk/powershell](http://www.computerperformance.co.uk/powershell)
  - CMDlet Reference
  - Windows PowerShell Best Practices and Patterns (Webcast)

• **Repositories**
  - TechNet Gallery
    • [https://gallery.technet.microsoft.com](https://gallery.technet.microsoft.com)
  - GitHub
    • [https://github.com/powershell](https://github.com/powershell)
  - PowerShell Gallery
    • [https://www.powershellgallery.com](https://www.powershellgallery.com)
  - Scripts for Your Exchange Server Toolkit
    • [https://exchangeserverpro.com/powershell-scripts-exchange-server-toolkit](https://exchangeserverpro.com/powershell-scripts-exchange-server-toolkit)
  - PoshCode
    • [http://poshcode.org](http://poshcode.org)
  - Power Tips (& Tip of the day)

• **Blogs**
  - Windows PowerShell Blog
  - Hey, Scripting Guy! Blog
  - Mike Crowley’s Whiteboard *(Demo Scripts Here)*
    • [http://MikeCrowley.us](http://MikeCrowley.us)
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