PowerShell Quick Start

very quick - up to 6 hours
delivered (or not :)) by Ziemek Borowski, with some lab, homework and code review

Summary

quick PowerShell course for people with limited experience on system administrator scripting (5 hours in person meeting + homework + online homework summary session). Course is based on "Learn Windows PowerShell 3 in a Month of Lunches, Second Edition' by Don Jones and Jeffery Hicks".

Method of participation

- 5 hours in person meeting
- homework
- 1 hour online (WebEx/telco) meeting to summary homework

Participant requirements

Required knowledge / skills

- basic knowledge on Windows Server administration and basic knowledge on computer programming (simple VBA macros, Lego Robotics, VBScript or cmd.exe are enough).

Required equipment

- Windows 7 or Windows 10 virtual machine
- working access to 'Laboratory' with Windows Server 2016

Agenda

- What is PowerShell
- How to apply for everyday tasks
- Running commands
- The pipeline: connecting commands
- Adding commands: function, snap-ins, modules

Agenda cont'ed

- Objects: data by another name
- Formatting: how to do it properly
- Filtering and comparison
- Simple function & script
- Homework selection: write script for specific needs

Homework

I expect one week for homework done. In middle of that time I will organize office hours using WebEx remote conference tool. After homework submission date, we will meet and discuss selected works.

Supporting sources

- 'Using Windows PowerShell' / free
- 'Learn Windows PowerShell 3 in a Month of Lunches, Second Edition' by Don Jones and Jeffery Hicks Publisher: Manning Publications / paid, here Safair Books Online
- MikeFal/IntroToPowershell / free
- Rafał Kraik Powershell dla administratora Windows - kompletny kurs / paid, Udemy

Note:
Windows PowerShell Survival Guide @ TechNet Wikihttps://social.technet.microsoft.com/wiki/contents/articles/183.windows-powershell-survival-guide.aspx

What is PowerShell?

- PowerShell is a command-line interface (CLI)...
- ... that contains a rich, yet simplified scripting language for automating complex, multi-step tasks
- Built on the .NET Framework
- Extensible, so various products and technologies can be managed by “snapping in” tech-specific extensions
- Most importantly... it’s **discoverable**! It can teach you how to use itself!

... some facts

before

- DOS's `command.com`, cmd.exe, KixStart, VBScript/JScript (based on Windows Scripting Host (WHS)
- bash, python, perl (on Unicses or via Cygwin or native ports)
- Monad, Exchange Server

PowerShell scope of use

- PowerShell System Requirements
- Installing PowerShell v5.1

Operating System Version	WMF 5.1	WMF 5.0	WMF 4.0	WMF 3.0	WMF 2.0
Windows Server 2016	Ships in-box				
Windows Server 2012 R2	Yes	Yes	Ships in-box		
Windows Server 2008 R2 SP1	Yes	Yes	Yes	Yes	Ships in-box
Windows 7 SP1	Yes	Yes	Yes	Yes	Ships in-box
Windows Server 2003					Yes
Windows XP					Yes

How to apply for everyday tasks

- interactive shell
- ad-hoc scripts
- tools
- CI/CD (Contionous Integration/Contionous Delivery)

Using help

- on fresh system execute `update-help` require Internet access and escalate shell.
- `get-help` is main command for geting help :)

```
help get-ChildItem
help get-ChildItem -examples
help get-ChildItem -detailed
help get-ChildItem -full
help get-ChildItem -examples
Get-Help Get-ChildItem -ShowWindow
```

- show-command Get-ChildItem
-

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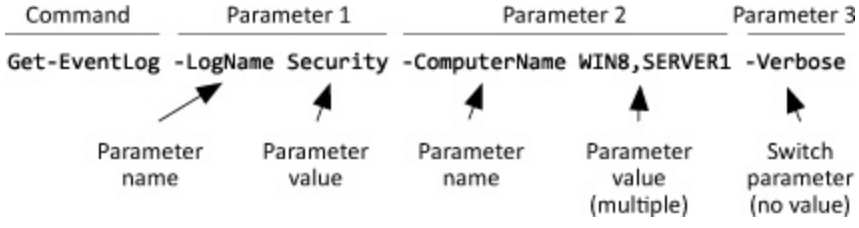
Running commands



The pipeline: connecting commands

Adding commands: function, snap-ins, modules

Objects: data by another name

Formatting: how to do it properly

Filtering and comparison

Variables, input, output

Homework selection: write script for specific needs

- return date and time of last restart - it should return at least 2 properties: name of machine and datetime of event
- test if specified application is installed and if it happen after date of create new version of software (stored somewere in local machine as MSI package). if test goes OK: install unattended that newer version of software.
- write script which will removed

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