

Why Invest in PowerShell

POWERSHELL FOR YOUR COMPANY



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About Me



Robert C. Cain, MVP, MCTS

Arcane Training and Consulting

Microsoft MVP since 2008

Pluralsight Author

Co-Author 5 books

Speaker

- SQL Pass, IT/DEV Connections, SQL Saturdays, more



Why Invest in PowerShell



What is PowerShell

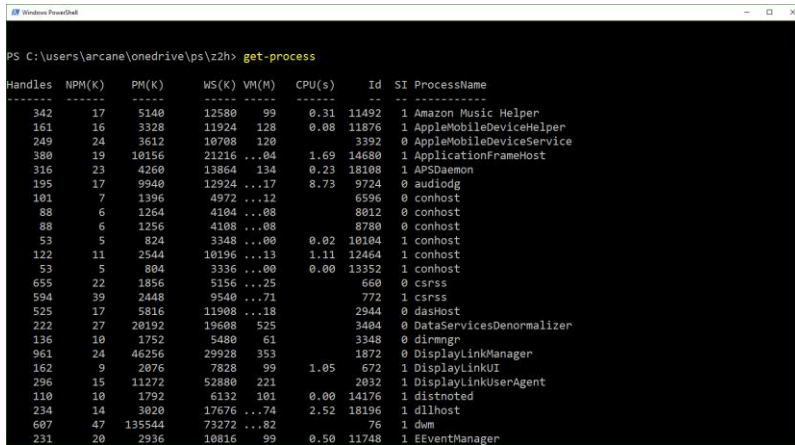
Why Invest in PowerShell

Demos!

Real World Experiences

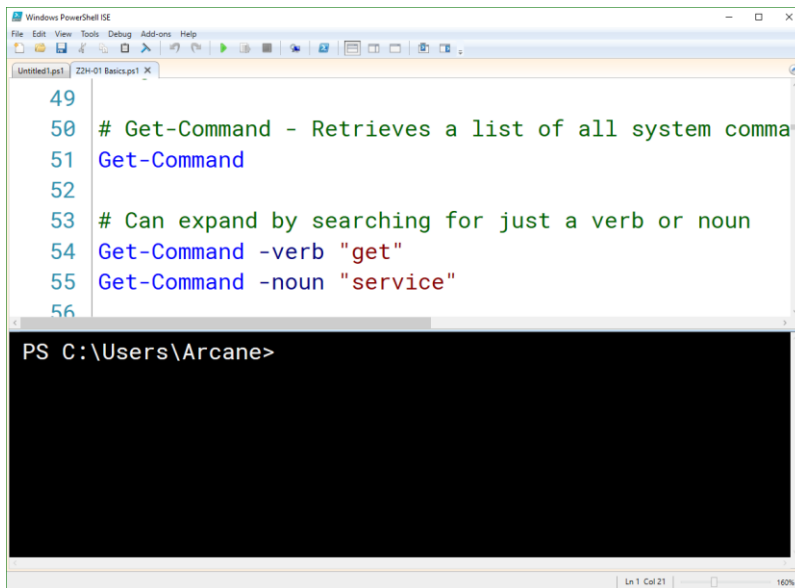


What is PowerShell?



```
PS C:\Users\arcane\onedrive\ps\z2h> get-process
```

Handles	NPM(K)	PM(K)	WS(K)	VM(M)	CPU(s)	Id	SI	ProcessName
342	17	5140	12580	99	0.31	11492	1	Amazon Music Helper
161	16	3328	11924	128	0.08	11876	1	AppleMobileDeviceHelper
249	24	3612	10708	120		3892	0	AppleMobileDeviceService
380	19	10156	21216	...04	1.69	14680	1	ApplicationFrameHost
316	23	4260	13864	134	0.23	18188	1	APSDaemon
195	17	9940	12924	...17	8.73	9724	0	audiodg
101	7	1396	4972	...12		6596	0	conhost
88	6	1264	4104	...08		8012	0	conhost
88	6	1256	4108	...08		8780	0	conhost
53	5	824	3348	...00	0.02	10104	1	conhost
122	11	2544	10196	...13	1.11	12464	1	conhost
53	5	804	3336	...00	0.00	13352	1	conhost
655	22	1856	5156	...25		660	0	csrss
594	39	2448	9540	...71		772	1	csrss
525	17	5816	11908	...18		2944	0	dashost
222	27	20192	19608	525		3404	0	DataServiceDenormalizer
136	10	1752	5480	61		3348	0	dimmgr
961	24	46256	29928	353		1872	0	DisplayLinkManager
162	9	2076	7828	99	1.05	672	1	DisplayLinkUI
296	15	11272	52880	221		2032	1	DisplayLinkUserAgent
110	10	1792	6132	101	0.00	14176	1	distnoted
234	14	3020	17676	...74	2.52	18196	1	dllhost
607	47	135544	73272	...82		76	1	dwm
231	20	2936	10816	99	0.50	11748	1	EEventManager



```
49
50 # Get-Command - Retrieves a list of all system commands
51 Get-Command
52
53 # Can expand by searching for just a verb or noun
54 Get-Command -verb "get"
55 Get-Command -noun "service"
56
```

```
PS C:\Users\Arcane>
```

Two tools in one!
Interactive Console
Scripting Language
Based on .NET
Everything is object based



Interactive Console

```
PS C:\users\arcane\onedrive\ps\z2h> get-process
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Status of running jobs

Start and Stop services

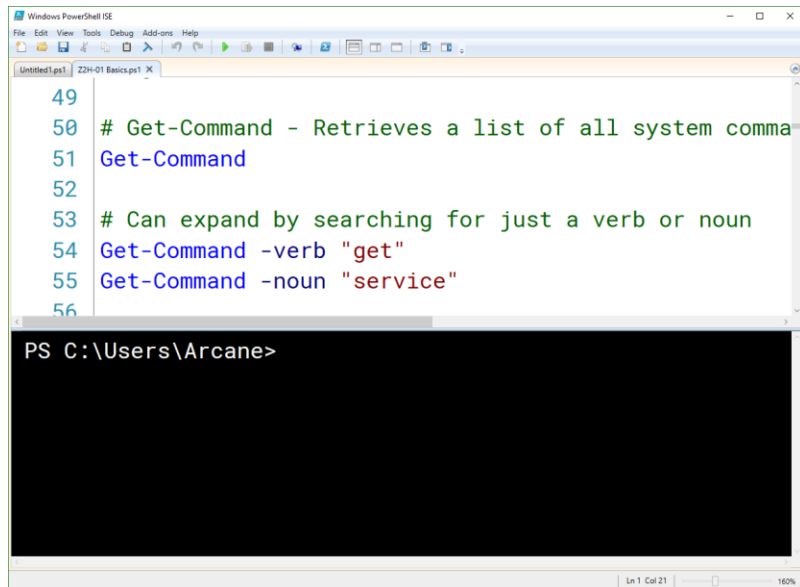
Status of backups

Interrogate running processes

Launch PowerShell Scripts



Integrated Scripting Environment



```
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50 # Get-Command - Retrieves a list of all system commands
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```

PS C:\Users\Arcane>

ISE for Script development

Repeatable, automatable actions

Quick development of small solutions

Development of larger projects



Why Invest in PowerShell?



Automation

Empowers people to do more

Fewer mistakes

Faster task completion

Reliable deployments and configuration

Remote control of servers and processes

Support for many products



Products that support PowerShell

Windows Server

Active Directory Server

Exchange Server

SQL Server

SharePoint

IIS (Internet Information Server)

Office 365

Microsoft Azure



Products that support PowerShell

Microsoft Deployment Toolkit

System Center Configuration Manager

System Center Operations Manager

System Center Virtual Machine Manager

System Center Data Protection Manager

Visual Studio Team System

MS PowerTools for Open XML



Non Microsoft products that support PowerShell

IBM WebSphere MQ

Quest Management Shell for Active Directory

VMware vSphere PowerCLI

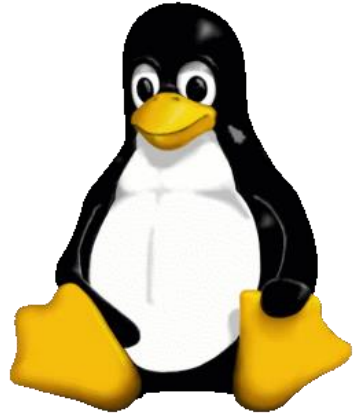
NetApp

JAMS Scheduler

Dell Equallogic



Open Source and Cross Platform



Mac OS X

PowerShell is now Open Source

Linux

Apple Mac OS X



Demo



Interactive Console

PowerShell Commands

Integrated Scripting Environment

Scripting Language



PowerShell Features



Modules

Remoting

JEA – Just Enough Administration

Workflows

Desired State Configuration (DSC)

Secure

- Machine / User settings
- Code Signing

Unit Testing (Pester)



Real World Scenario 1: Update from Web

1. **Download data from internet via REST API to CSV files**
2. **Insert data into SQL Server table**
3. **Execute SSIS package to process**
4. **Update SharePoint List with results**
5. **E-mail appropriate users**
6. **Archive downloaded data in ZIP format and move to storage server**
7. **Script runs as a scheduled Windows job.**



Real World Scenario 2: Zip Code Lookup

1. **Download data from internet via REST API to XML files**
2. **Data had Zip Codes, but no City/State**
3. **Use PowerShell to lookup data from Post Office via REST API**
4. **Import data to SQL Server**



Real World Scenario 3: Table Generation

1. **New enterprise level Data Warehousing Project in SQL Server**
2. **Needed to generate staging tables and SSIS packages**
3. **300 databases, 10,000 tables**
4. **Some source databases still in development**
5. **Rules to be applied when creating staging tables**
 1. No blob or XML columns included
 2. Add time stamp column, process ID column
6. **PowerShell – 1.5 weeks to code and gen 10,000 tables**



Resources



Beginning PowerShell Scripting for Developers

- <https://www.pluralsight.com/courses/beginning-powershell-scripting-developers>

Testing PowerShell with Pester

- <https://www.pluralsight.com/courses/powershell-testing-pester>

PowerShell and SQL Server

- <https://www.pluralsight.com/courses/powershell-and-sql-server>



Questions



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Downloads at:

<https://1drv.ms/f/s!Ao5PSFK6HwFdhBtyQFYUVv43We23>

<http://tinyurl.com/AcPsWebinar2016>

