

LEVEL UP WITH POWERSHELL

USING POWERSHELL TO STOP GLOBAL WARMING AND INCREASE YOUR RAW ANIMAL MAGNETISM.

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WHAT IS THIS POWERSHELL OF WHICH YOU SPEAK?

"WINDOWS POWERSHELL IS A MICROSOFT .NET FRAMEWORK-CONNECTED ENVIRONMENT DESIGNED FOR ADMINISTRATIVE AUTOMATION. WINDOWS POWERSHELL PROVIDES A NEW APPROACH TO BUILDING COMMANDS, COMPOSING SOLUTIONS, AND CREATING GRAPHICAL USER INTERFACE-BASED MANAGEMENT TOOLS." - MSDN

VERSION 1 WAS RELEASED IN NOVEMBER 2006

VERSION 2 WAS RELEASED AS PART OF WINDOWS 7 AND SERVER 2008 R2

VERSION 3 WAS RELEASED AS PART OF WINDOWS 8 AND SERVER 2012

VERSION 4 WAS RELEASED AS PART OF WINDOWS 8.1 AND SERVER 2012 R2

VERSION 5 IS IN PUBLIC PREVIEW SINCE APRIL 2014

WHAT MAKES POWERSHELL ANY DIFFERENT FROM OTHER SHELL LANGUAGES THAT I HAVE USED?

- PRETTY BLUE BACKGROUND
- IT HAS A REALLY POWERFUL OBJECT BASED PIPELINE
- IT IS .NET BASED AND CAN USE .NET OBJECTS
- IT SUPPORTS TRY / CATCH ERROR HANDLING
- YOU CAN BUILD GUI APPLICATIONS

THAT'S GREAT, BUT I'M A DEVELOPER. WHAT CAN POWERSHELL DO FOR ME?

AUTOMATE REPETITIVE TASKS

AUTOMATE REPETITIVE TASKS

RAPIDLY SETUP A DEVELOPMENT OR SERVER ENVIRONMENT

AUTOMATE BUILDS OR DEPLOYMENTS

TEST WEB AND API CALLS

MANAGE SQL SERVER, IIS, HYPER-V, MS EXCHANGE, SHAREPOINT, AND MORE

OK, YOU HAVE CONVINCED ME THAT I NEED TO USE POWERSHELL. NOW WHERE DO I START?

- THERE ARE TWO DIFFERENT POWERSHELL ENVIRONMENTS INSTALLED ON YOUR SYSTEM
 - THE STANDARD POWERSHELL COMMAND WINDOW
 - THE POWERSHELL INTEGRATED SCRIPTING ENVIRONMENT (ISE)
- POWERSHELL COMMANDS ARE CALLED CMDLETS
- POWERSHELL CMDLETS USE A “VERB-NOUN” PATTERN
 - GET-CHILDOBJECT
 - STOP-PROCESS
- YOU NEED TO SET THE EXECUTION POLICY BEFORE YOU WILL BE ABLE TO RUN SCRIPTS

SET EXECUTION POLICY DEMO

SOME CMDLETS TO REMEMBER

- **GET-HELP** – GET HELP FOR A SPECIFIC COMMAND
- **GET-COMMAND** – GET A LIST OF AVAILABLE COMMANDS
- **GET-MEMBER** – GET THE PROPERTIES AND METHODS OF AN OBJECT
- **MEASURE-OBJECT** – GETS A COUNT OF A COLLECTION
- **OUT-GRIDVIEW** – OUTPUT TO A GRAPHICAL WINDOW
- **FORMAT-TABLE** – FORMAT THE OUTPUT AS A TABLE
- **FORMAT-LIST** – FORMAT THE OUTPUT AS A KEY/VALUE LIST
- **SET-ALIAS** – CREATE YOUR OWN ALIASES

CORE CMDLETS DEMO

BASICS

- VARIABLES ARE DESIGNATED WITH A DOLLAR SIGN (\$)
- ARRAYS ARE DECLARED USING @(1,2,3) SYNTAX
- HASH TABLES ARE DECLARED USING @{A=1; B=2; C=3} SYNTAX
- YOU CAN FILTER COLLECTIONS WITH WHERE-OBJECT (WHERE OR ?)
- COMPARISONS USE -EQ, -GT, -LT, -NE, -LIKE, ETC...
- YOU CAN MODIFY WHAT IS SELECTED WITH SELECT-OBJECT (SELECT)
- SORT OUTPUT WITH SORT-OBJECT (SORT)
- PIPE THE OUTPUT OF ONE COMMAND TO ANOTHER COMMAND USING THE PIPE (|) SYMBOL
- SETUP COMMON SCRIPTS USING YOUR POWERSHELL PROFILE

BASICS DEMO

EXECUTION CONTROL

- IF STATEMENT
- FOR LOOP
- FOR-EACH (%) LOOP
 - `$_` IS THE REFERENCE TO THE CURRENT ITEM
- DO WHILE LOOP
- WHILE LOOP
- DO UNTIL LOOP

EXECUTION CONTROL DEMO

FUNCTIONS

- FUNCTIONS ARE DENOTED WITH THE KEYWORD FUNCTION
- FUNCTIONS CAN HAVE 0..N PARAMETERS
- FUNCTION PARAMETERS ARE PASSED IN WITHOUT PARENTHESES AND COMMAS
- YOU CAN SEE EXISTING FUNCTIONS USING THE FUNCTION: PS DRIVE

CREATING A FUNCTION DEMO

TIPS AND TRICKS

- YOU CAN USE SINGLE OR DOUBLE QUOTES, BUT VARIABLES ARE ONLY EXPANDED WHEN USING DOUBLE QUOTES
- THE BACK TICK (`) IS THE ESCAPE CHARACTER
- USE PARENTHESES TO EVALUATE SUB-EXPRESSIONS
- USE `-WHATIF` TO SEE WHAT WOULD HAPPEN IF YOU EXECUTED SOMETHING

TIPS AND TRICKS DEMO

ERROR HANDLING WITH TRY / CATCH

```
TRY {  
    CODE TO EXECUTE...  
}  
CATCH [EXCEPTIONTYPE] {  
    HANDLE THE ERROR...  
}  
FINALLY {  
    THIS CODE ALWAYS RUNS...  
}
```

ERROR HANDLING DEMO

USING .NET COMPONENTS

- CALL STATIC METHODS
 - \$RESULTS = [FULL.NAMESPACE]::STATICMETHOD(ARGS)
- CREATE A NEW AN OBJECT
 - \$THEOBJECT = New-Object FULL.NAMESPACE.OBJECT(ARGS..)

USING .NET COMPONENTS DEMO

CAPTURE SERVICES STATUS TO WEB PAGE
INTERACTIVE DEMO

EXAMPLE POWERSHELL SCRIPTS

SETUP PS ENVIRONMENT.ps1

REMAP IIS.ps1

RESOURCES

- WEBSITES
 - [HTTP://POWERSHELL.ORG](http://POWERSHELL.ORG)
 - [HTTP://BLOGS.TECHNET.COM/B/HEYSCRIPTINGGUY](http://BLOGS.TECHNET.COM/B/HEYSCRIPTINGGUY)
 - [HTTP://BLOGS.MSDN.COM/B/POWERSHELL](http://BLOGS.MSDN.COM/B/POWERSHELL)
 - [HTTPS://PSCX.CODEPLEX.COM](https://PSCX.CODEPLEX.COM)
- BOOKS
 - WINDOWS POWERSHELL FOR DEVELOPERS BY DOUGLAS FINKE

THANK YOU

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