

Putting Windows PowerShell to Work

INTRODUCTION AND WELCOME



Jeff Hicks

AUTHOR ~ TEACHER ~ SENSEI

@jeffhicks <http://blog.jdhitsolutions.com>



You are new to
PowerShell

You can copy and run
commands

But you need to know
why they work



Who am I?

Long time Microsoft
MVP



Who am I?

Long time Microsoft
MVP

Longtime Pluralsight
author

pluralsight 

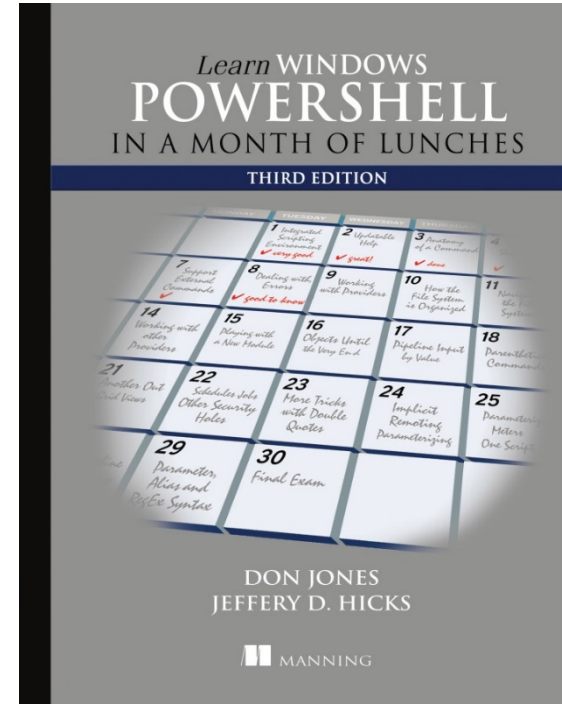


Who am I?

Long time Microsoft
MVP

Longtime Pluralsight
author

Author & Speaker



Course Scenario

**Windows Admin
with a few years
experience**

**You've been
dabbling in
PowerShell**

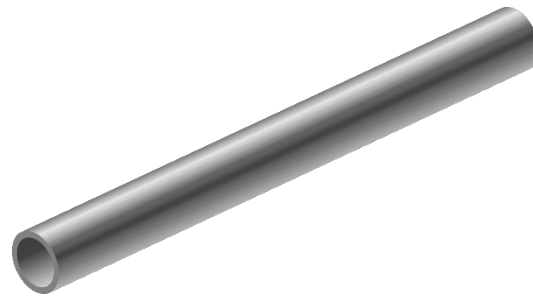
**How does
PowerShell work
and how should
you use it?**



Our Objectives



Learn about the
role of objects



Understand how
the pipeline
works

A screenshot of a PowerShell console window showing command output and formatting. The output is formatted into tables for different owners. The command executed is `get-content c:\work\ch1.txt | Get-PSRemoteSession | sort Owner | format-table -groupby Owner -Property PSComputerName,CreationDate,Runtime`.

```
PS S:\> get-content c:\work\ch1.txt | Get-PSRemoteSession | sort Owner |
>> format-table -groupby Owner -Property PSComputerName,CreationDate,Runtime
>>
WARNING: Failed to ping chi-app01

Owner: GLOBOMANTICS\Administrator
-----
PSComputerName      CreationDate      Runtime
-----
chi-dc04             4/21/2014 10:13:40 PM 11:13:50.2628757
chi-core01           4/21/2014 10:13:24 PM 11:14:06.1937131
chi-dc02             4/22/2014 8:59:08 AM  00:26:21.8956181

Owner: GLOBOMANTICS\jeff
-----
PSComputerName      CreationDate      Runtime
-----
chi-core01           4/21/2014 10:18:14 PM 11:09:15.9636938
chi-fp02             4/22/2014 9:20:26 AM  00:07:07.0812441
chi-core01           4/22/2014 8:47:20 AM  00:40:10.0298749

Owner: GLOBOMANTICS\rgbiv
-----
PSComputerName      CreationDate      Runtime
-----
chi-dc01             4/21/2014 10:53:23 PM 10:34:02.2879474
chi-dc04             4/21/2014 10:54:10 PM 10:33:20.1312805
```

Explore how to
use formatting
cmdlets



Discover how to
use background
jobs





No PowerShell scripting

Emphasis on using PowerShell from the command line



What to Expect



Emphasis on seeing PowerShell at work



Feel free to follow along



PowerShell v5.1 on
Windows 10

Should have admin
rights

Or setup a lab
environment

No servers needed



AutoLab

8GB-16GB of RAM

**50GB-100GB free
disk space**

**Computer that
supports Hyper-V
virtualization**



<https://github.com/theJasonHelmick/PS-AutoLab-Env>

Scroll through the README

Download the latest release
zip file

Extract zip file to C:\

Reboot before running setup

Versions

Current Release is v3.0.2

Unreleased (Dev Branch)

New release under development

- Updated to Lablity version 0.11.0

Version 3.0.2

- Download release [PS-AutoLab-Env v3.0.2](#)
- Added New course config for Michael Bender



Open elevated PowerShell prompt

Type: `cd C:\PS-AutoLab-Env-<version>`

Type: `.\Setup-Host.ps1`

Follow prompts

Some errors are ok

Reboot as necessary

```
Windows PowerShell 5.1

ConfigurationPath      : C:\AutoLab\Configurations
DifferencingVhdPath    : C:\AutoLab\VMVirtualHardDisks
HotfixPath             : C:\AutoLab\Hotfixes
IsoPath               : C:\AutoLab\ISOs
ModuleCachePath        : C:\ProgramData\Lability\Modules
ParentVhdPath          : C:\AutoLab\MasterVirtualHardDisks
ResourcePath           : C:\AutoLab\Resources
ResourceShareName      : Resources
DisableLocalFileCaching : False
EnableCallStackLogging : False
DismPath               : C:\WINDOWS\System32\WindowsPowerShell\v1.0\Modules\Dism\Microsoft.Dism.PowerShell.dll

Starting to initialize host and install Hyper-V
Get-ChildItem : Cannot find path
'HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\SOFTWARE\Microsoft\Windows\CurrentVersion\Component
Based Servicing' because it does not exist.
At C:\Program Files\WindowsPowerShell\Modules\Lability\0.10.1\DSCResources\xPendingReboot\DSCResources\MSFT_xPendingReb
oot\MSFT_xPendingReboot.psml:14 char:37
+ ... cingKeys = (Get-ChildItem 'hk1m:SOFTWARE\Microsoft\Windows\CurrentVer ...
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (HKEY_LOCAL_MACH...ased Servicing:String) [Get-ChildItem], ItemNotFound
Exception
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.GetChildItemCommand

Get-ChildItem : Cannot find path 'HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\SOFTWARE\Microsoft\windo
ws\CurrentVersion\WindowsUpdate\Auto Update\' because it does not exist.
At C:\Program Files\WindowsPowerShell\Modules\Lability\0.10.1\DSCResources\xPendingReboot\DSCResources\MSFT_xPendingReb
oot\MSFT_xPendingReboot.psml:24 char:27
+ ... dateKeys = (Get-ChildItem 'hk1m:SOFTWARE\Microsoft\Windows\CurrentVer ...
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (HKEY_LOCAL_MACH...te\Auto Update:String) [Get-ChildItem], ItemNotFound
Exception
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.GetChildItemCommand

Copying configs to C:\AutoLab\Configurations

The Host is about to reboot.
After the reboot, open Powershell, navigate to a configuration directory
C:\AutoLab\Configuration\<yourconfigfolder>
And run:

PS C:\AutoLab\Configuration\<yourconfigfolder>.\Setup-Lab.ps1
or
PS C:\AutoLab\Configuration\<yourconfigfolder>.\Unattend-Lab.ps1

Note! - You may delete the folder C:\PS-AutoLab-Env-master when this setup finished and the system has been rebooted.
WARNING: System needs to reboot
Do you wish to reboot now? (y/n):
```



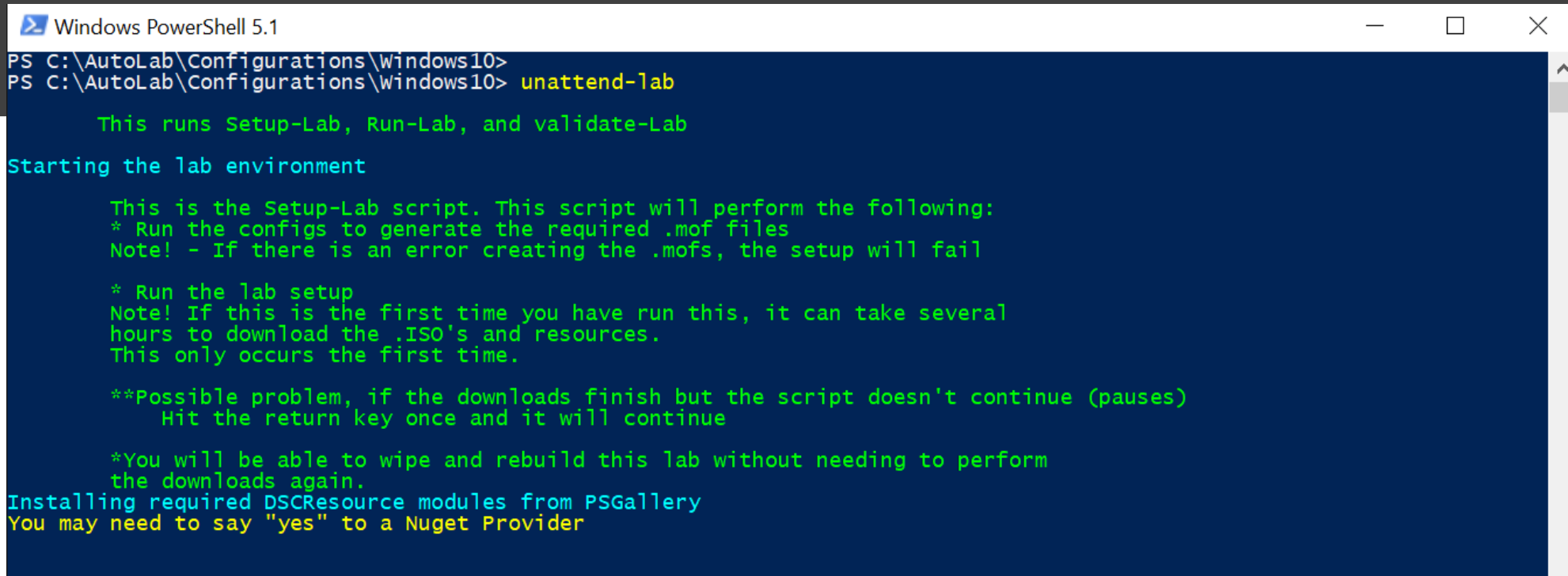
Open elevated PowerShell prompt

Type: `cd C:\Autolab\configurations\Windows10`

Read: `Instructions.md`

Run: `unattend-lab`

Wait...



```
Windows PowerShell 5.1
PS C:\AutoLab\Configurations\Windows10>
PS C:\AutoLab\Configurations\Windows10> unattend-lab

    This runs Setup-Lab, Run-Lab, and validate-Lab
Starting the lab environment

    This is the Setup-Lab script. This script will perform the following:
    * Run the configs to generate the required .mof files
    Note! - If there is an error creating the .mofs, the setup will fail

    * Run the lab setup
    Note! If this is the first time you have run this, it can take several
    hours to download the .ISO's and resources.
    This only occurs the first time.

    **Possible problem, if the downloads finish but the script doesn't continue (pauses)
        Hit the return key once and it will continue

    *You will be able to wipe and rebuild this lab without needing to perform
    the downloads again.
Installing required DSCResource modules from PSGallery
You may need to say "yes" to a Nuget Provider
```

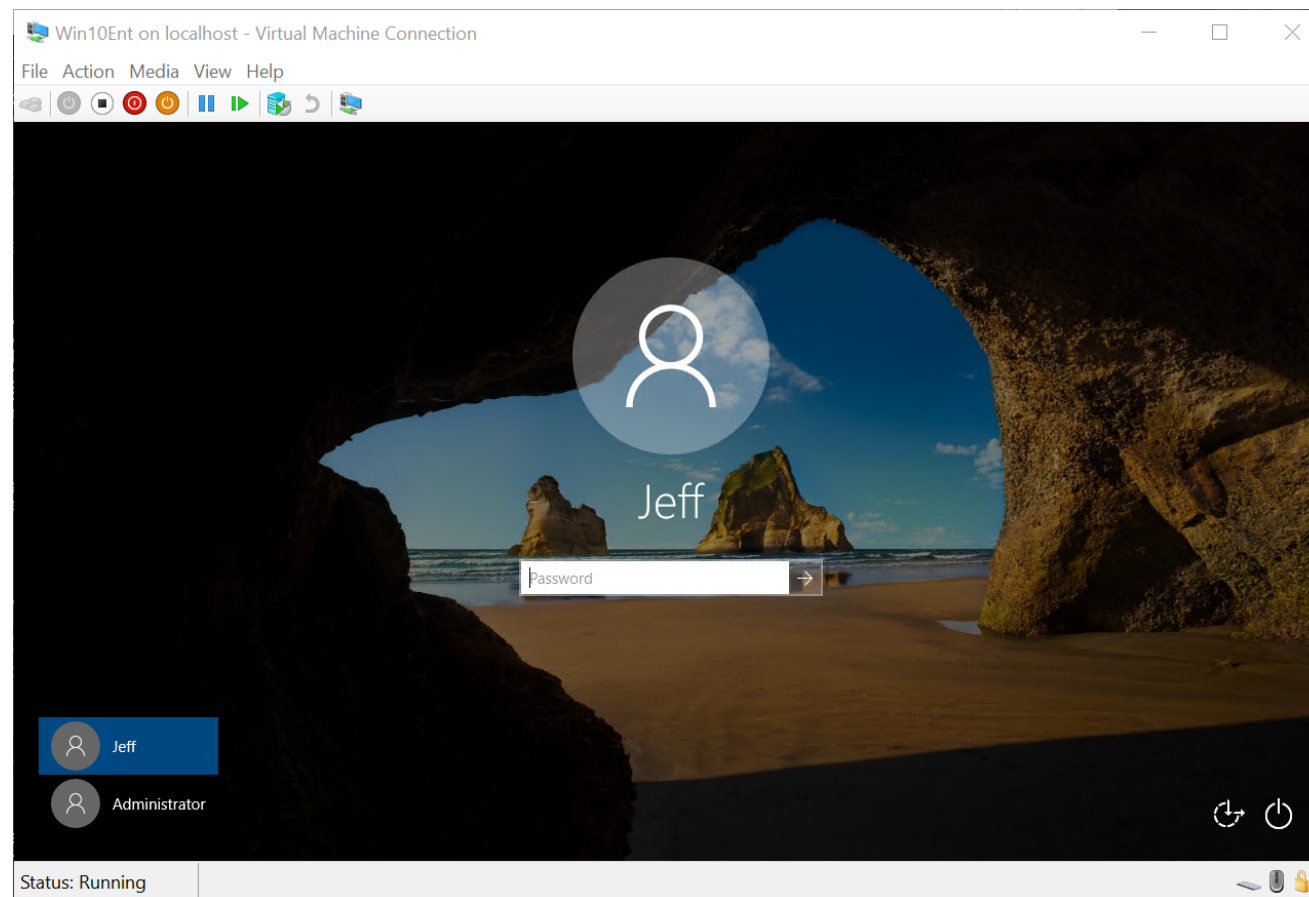


Use Hyper-V to manage
the VM

Use Remote Desktop or
VMConnect to connect
to client

Logon with your
username

P@sswOrd



Related Material



PowerShell: Getting Started – Michael Bender (Pluralsight)

Learn PowerShell in a Month of Lunches, 3rd ed. by Don Jones and Jeff Hicks (Manning 2017)



Learning PowerShell is like
learning a foreign language
– use it or lose it.



Summary



We know where we're going

We know how we're going to get there

Get ready and let's go!

