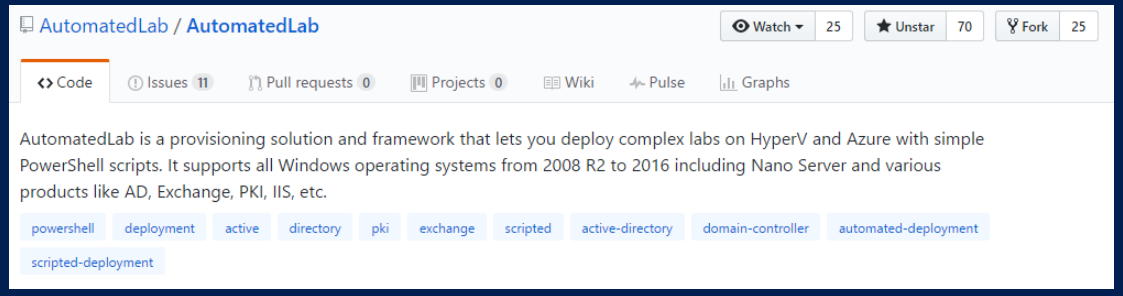
PSCONF.EU
2017

AutomatedLab – das erste voll flexible Hydration Tool

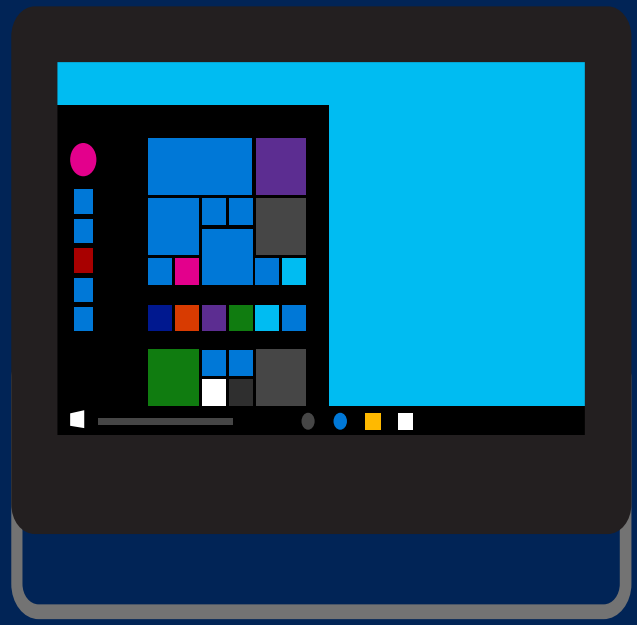


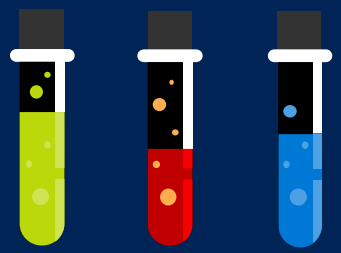
David das Neves
Premier Field Engineer

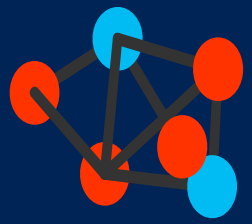
Raimund Andrée
Sr. Premier Field Engineer

Agenda

- Intro
- How does it work?
- Installation
- Demos!
- More Demos!







PowerShell Conference EU 2017

Intro

Problem

Why Automate?

- Time to Deploy
- Configuration Drift
- Human Error Avoidance
- Simplifying Complexity
- Fast and Easy Repeatability

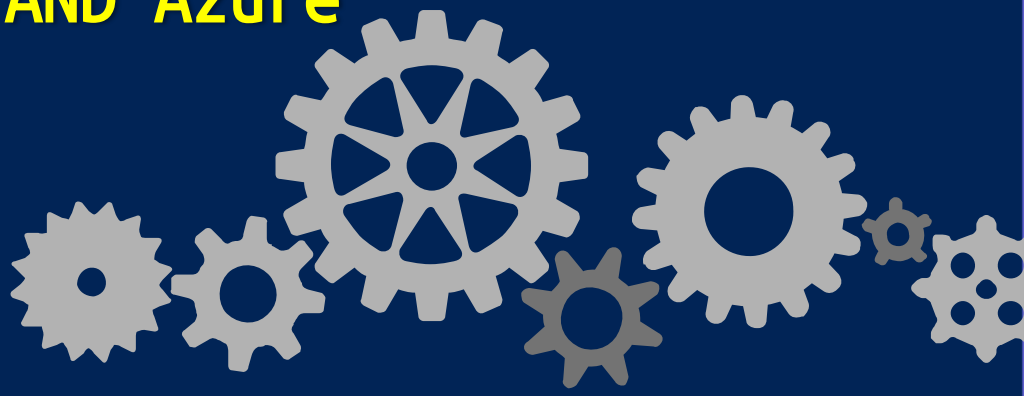
IaC Best Practices

Treat your infrastructure like “cattle”,

...not “pets”

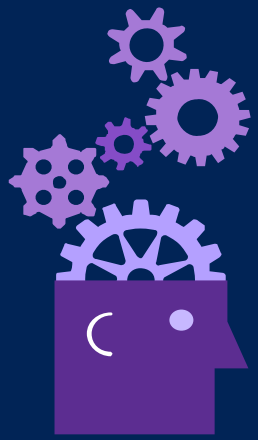
AutomatedLab Capabilities

- Framework to manage lab resources like
- networks, disks, VMs, common services, software installation, customization
- Let’s you easily customize your lab after deployment
- Deploys on Hyper-V **AND Azure**



AutomatedLab Requirements

- Basic PowerShell Knowledge (there is no UI and no plans to add one)
- ISO files (from MSDN for example)
- AutomatedLab (http://aka.ms/automatedlab)



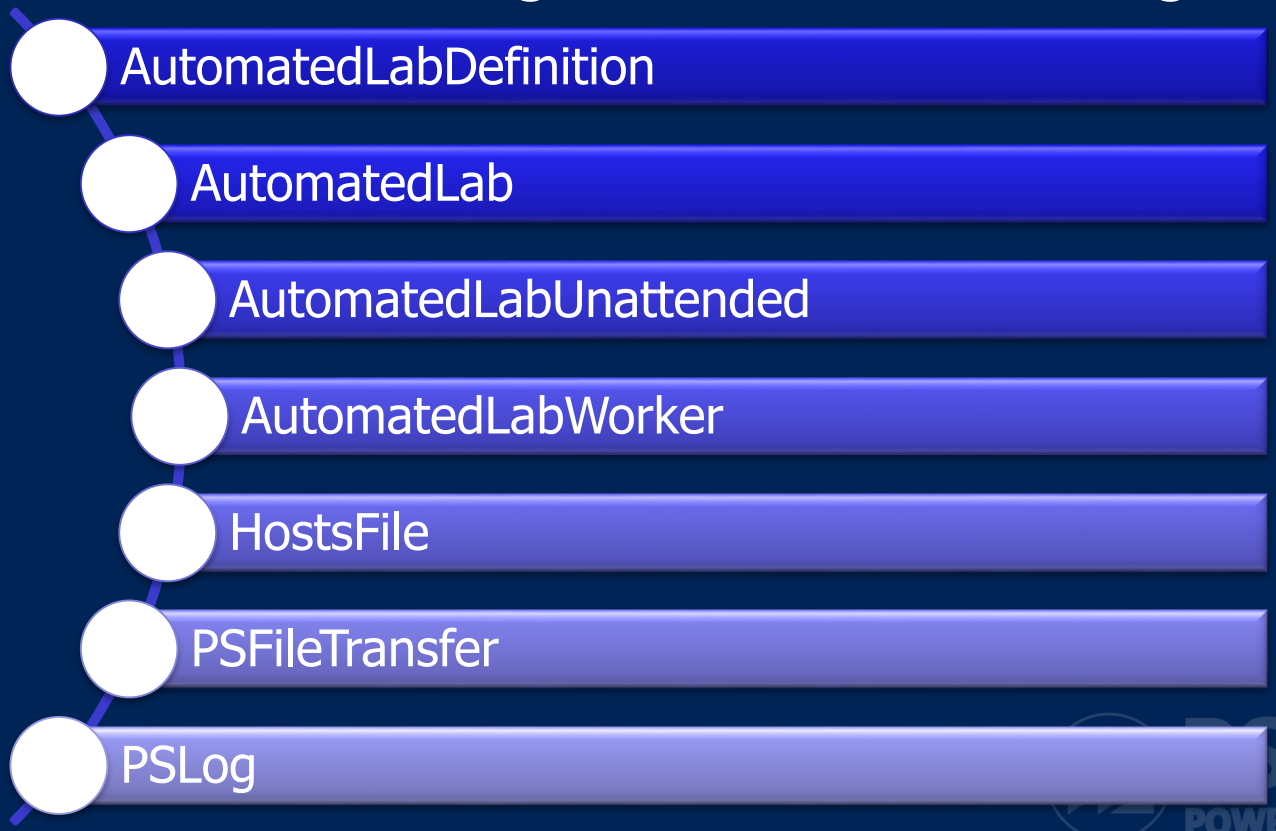
How does it work?

Most Interesting Features

- VHDS
  - One differential disks per VM
  - One base disk per OS SKU
- Almost everything is build on Powershell Remoting
  - Internal or External Network Adapter
  - CredSSP is used for double hop authentication by default
  - TrustedHosts is set to “*” on the host
- Checkpoints
  - Create, Restore or Remove checkpoints of the whole lab
- Post Installation Activities and Customizations
  - Scripts, Invoke-LabCommand
- Install Software Packages
  - MSI and Exe and MSU
- Offline patching by creating new ISOs

Powershell Modules

AutomatedLab comes with 7 PowerShell modules because we have tried to separate the solution into its main building blocks.
This makes the coding and troubleshooting easier.



AutomatedLab Cmdlets

- Update-LabIsoImage
- New-LabDefinition
  - Add-LabIsoImageDefinition
  - Add-LabVirtualNetworkDefinition
  - Add-LabMachineDefinition
- Get-LabVM
  - Start / Stop-LabVM
  - Restart-LabVM -Wait
  - Wait-LabVM
  - Get-LabVMStatus
  - Checkpoint-LabVM, Restore / Remove-LabVMSnapshot

AutomatedLab Cmdlets

- Install-Lab
- Install-LabWindowsFeature
- Mount / Dismount-LabISOImage
- Copy-LabFile
- Install-LabSoftwarePackage

AutomatedLab Cmdlets

- Invoke-LabCommand
  - Variable Injection
  - Function Injection
  - Modules Injection (V4.5)
  - DSC Configuration Support (V5)
  - PSSession reuse
  - CredSsp by default

Demos

Installation

Creating a Simple Lab

Deep Dive

```
#The most easy example

New-LabDefinition -Name Lab1' -DefaultVirtualizationEngine
HyperV

Add-LabMachineDefinition -Name Client1 -Memory 1GB -
OperatingSystem 'Windows Server 2012 R2 SERVERDATACENTER'

Install-Lab

#Just one single Windows 2012 R2 server, nothing thrilling
```

```powershell
#The most easy example extended and a little bit more
thrilling having now AD, a CA and a member server

New-LabDefinition -Name 'Lab1' -DefaultVirtualizationEngine
HyperV

$PSDefaultParameterValues = @{
    'Add-LabMachineDefinition:ToolsPath'= "$labSources\Tools"
    'Add-LabMachineDefinition:DomainName' = 'contoso.com'
    'Add-LabMachineDefinition:Memory' = 1GB
    'Add-LabMachineDefinition:OperatingSystem' = 'Windows
Server 2012 R2 SERVERDATACENTER'
}

Add-LabMachineDefinition -Name DC -Role RootDC
Add-LabMachineDefinition -Name PKI -Roles CaRoot
Add-LabMachineDefinition -Name Server1

Install-Lab
```

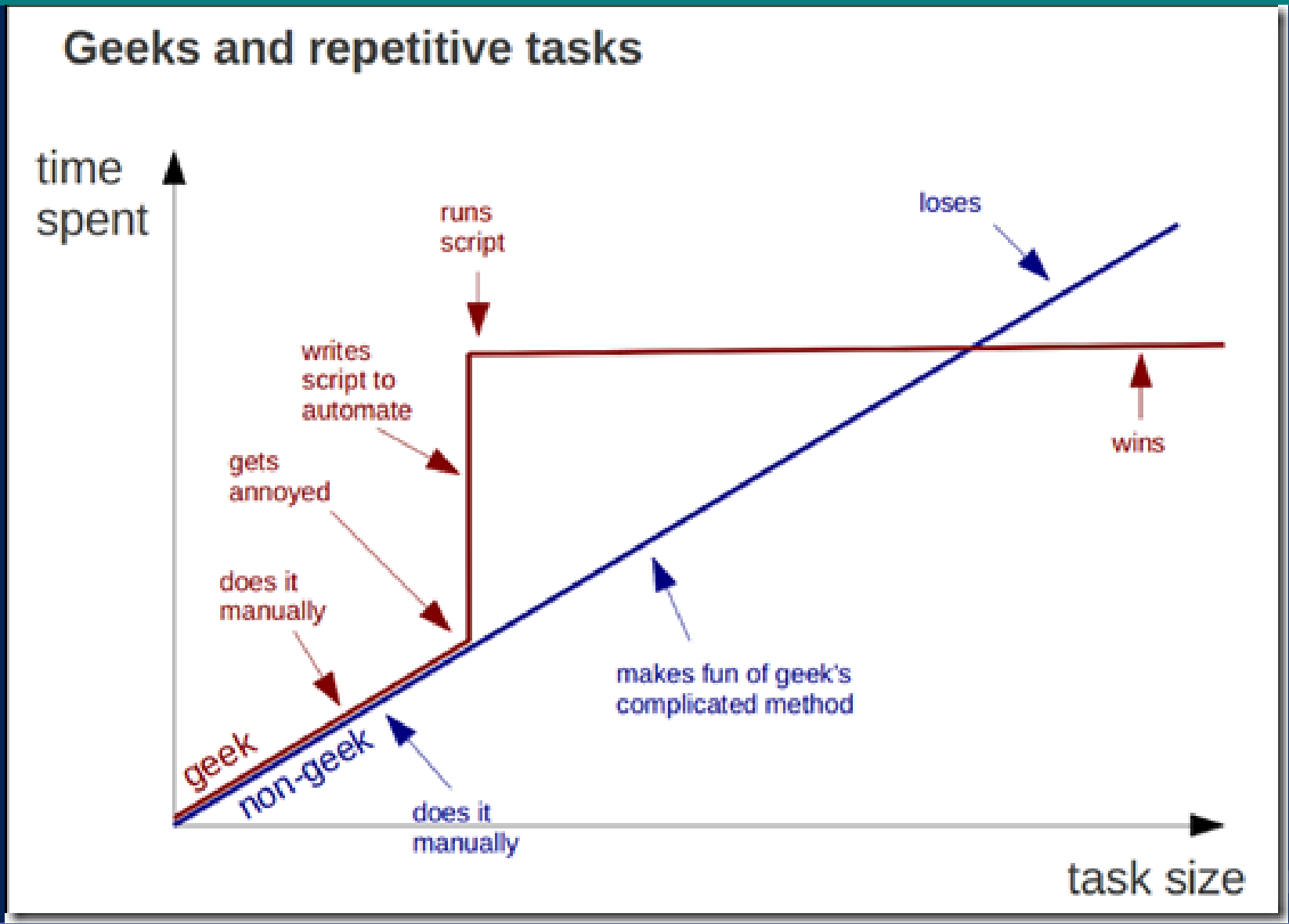
```powershell
#Software and Custom Commands

Install-LabSoftwarePackage -ComputerName Server1 -Path
E:\LabSources\SoftwarePackages\Notepad++.exe -CommandLine /S
-AsJob

Invoke-LabCommand -ActivityName AddSite -ComputerName (Get-
LabVM -Role RootDC) -ScriptBlock {
    Get-Date
} -PassThru



Invoke-LabCommand -ActivityName AddSite -ComputerName (Get-
LabVM -Role RootDC) -ScriptBlock {
    $dc = Get-ADDomainController -Discover
    New-ADReplicationSite -Name 'Datacenter - DR'
}

#Install software and use custom commands as you need it.
```

Common issues

- Slow disks
  - Almost everything that is not an SSD
- AutomatedLab is build on PowerShell remoting
  - Name resolution must work (we use the good old hosts file)
  - Routing must work
  - The domain names must not be used elsewhere
- Layer 8 issues
  - IP Addresses used are not aligned
  - Wrong FFL or DFL

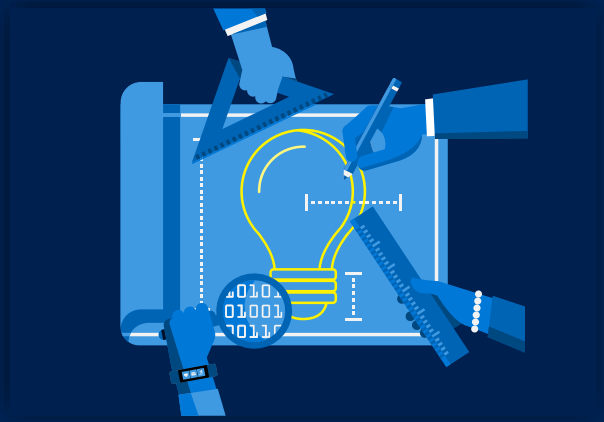
Summary

-
-
-


Geeks and repetitive tasks
time spent
runs script
loses
writes script to automate
wins
gets annoyed
does it manually
makes fun of geek's complicated method
geek
non-geek
does it manually
task size

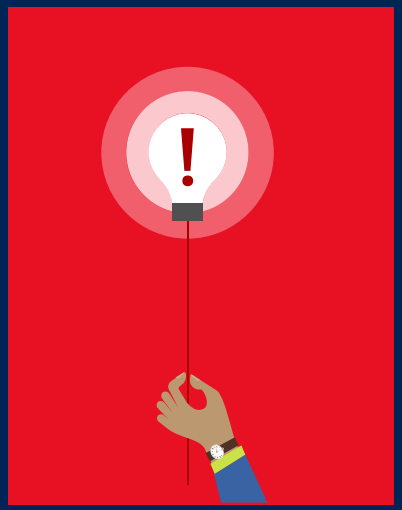
Ending

- Who uses it?
- Who likes it?
- Who needs it?
- What do you need more?



- We heavily rely on feedback
- We seek for people using AL
- We seek for people participating

Questions?



About_Author

```
PS C:\Users\raandree> Get-Introduction

Name             : Raimund Andrée
Born             : 1978-07-31
Profession       : PFE @ Microsoft Germany
Years in Field   : 22
Technologies     : {PowerShell, DevOps, DSC, Active
                    Directory}
Hobbies          : {Travelling to high so called
                    risk countries, Coding, Hiking}
```

About_Author

```
PS C:\Users\dadasnev> Get-Introduction

Name             : David das Neves
Born             : 1986-04-17
Profession       : PFE@ Microsoft Germany
Years in Field   : 3 - former software dev 6
Technologies     : {PowerShell, Windows 10, Client
                    Security}
Hobbies          : {Cinema, Coding, Tech, Travel,
                    Social Media}
Fun Fact         : “David das Neves” is a portuguese
                    name and means “David from the blizzard”.
```

Next Steps...

- Now: 15 min break

- Grab a coffee
- Stay here to enjoy next presentation
- Change track and switch to another room

- Ask me questions or meet me in a breakout session room afterwards

psconf.eu 2018

scheduled to be in the week of

April 16-20, 2018

details on www.psconf.eu as they become available