

Powershell@MSUGS

20.5.15 MSUGS

Manuel Meyer, Trivadis AG



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■ Agenda

1. Basic PS

- Key Features
- My First Script

2. Advanced PS

- WMI / COM / .NET

3. PS Integration

- Windows / IIS / SQL Server / TFS / Azure / Sharepoint

4. Real Life Powershell

- Turtle, PSI, System Checker.

Powershell Basics

■ Key Features

- Automation
- PS Remoting
- PS Workflow
- .NET, COM, WMI, Perfcounters, EventLog, etc.
- Integration in Products
 - Windows, IIS, SQL Server, TFS, Microsoft Azure, Sharepoint.

■ The Shell

- Powershell.exe

- ISE

■ Basics

■ Verb-Noun Commandlets

Get-Process

Get-NetFirewallProfile

Set-Acl

Set-AuthenticodeSignature

Add-PhysicalDisk

Remove-BitLockerKeyProtector

Show-EventLog

■ Basics

- Help

- Objects

- Pipelining

- Output

■ More Basics

- Comparison: -eq, -ne, -lt, -gt, -le, -ge, -contains, -notcontains
- Arrays, HashTables
- If-else, switch
- For, foreach, while, do-while
- Functions

```
Function Invoke-WMIQuery {  
    $wmiClass = ($WMI_txtbx.Text).Trim()  
    Try {  
        $Data = Get-WmiObject -ComputerName $Computer.  
        $OutputBox.Foreground = "white"  
        $OutputBox.Text = $Data | Out-String  
    } catch {  
        $OutputBox.Foreground = "Red"  
        $OutputBox.Text = $_.Exception.Message  
    }  
}
```

Advanced Powershell

■ Basics: Providers

■ Get-PSProviders

- Environment
- FileSystem
- Function
- Registry
- Certificate

■ Windows Management Instrumentation (WMI)

“...a set of extensions to the Windows Driver Model that provides an operating system interface...”

■ COM Interop

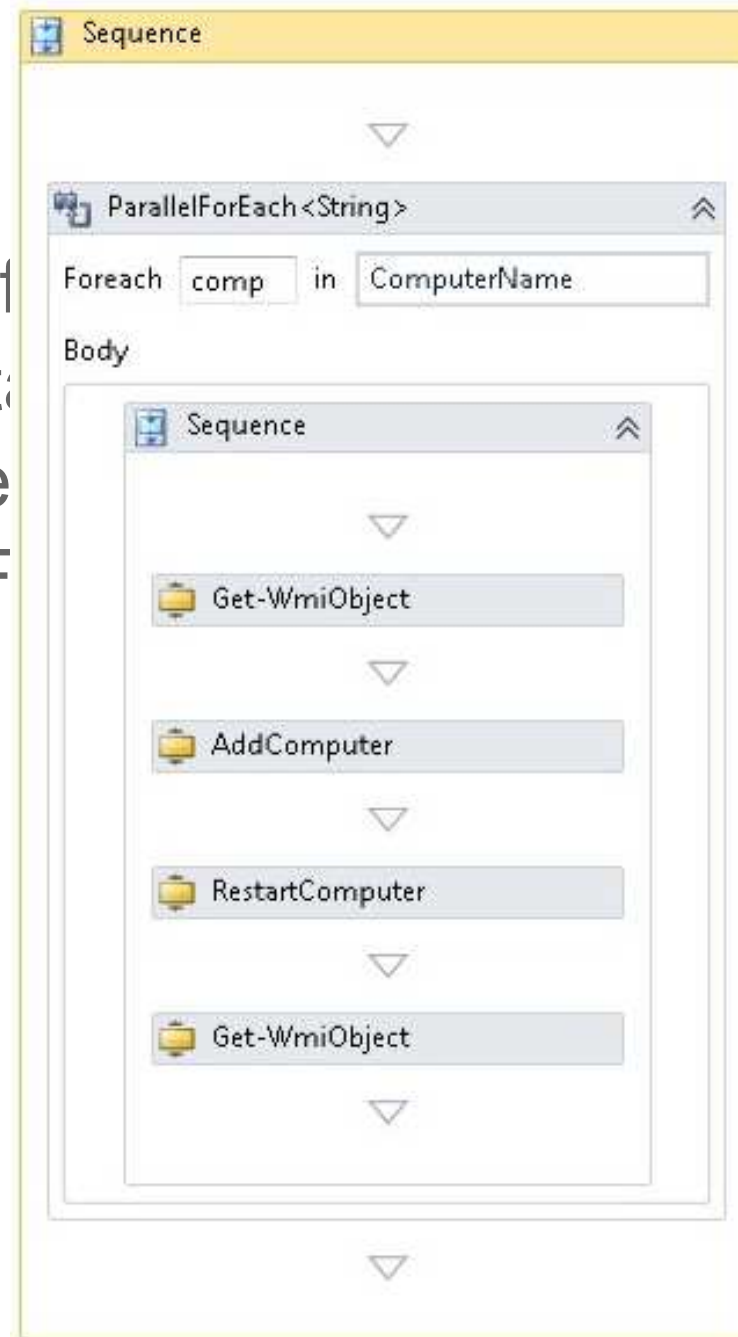
- Speech
- Outlook.com Login
- Excel Interop

■ .NET

- Access any class from .NET
- Load Assembly and Show UI
- WPF Samples
- Web Services

■ PS Workflows

- Based on .NET Workflow
- Long-running, persistent
- Interrupt, suspend, re
- Sequence, Parallel, F



PS Integration

■ Working with Windows

■ Roles & Features

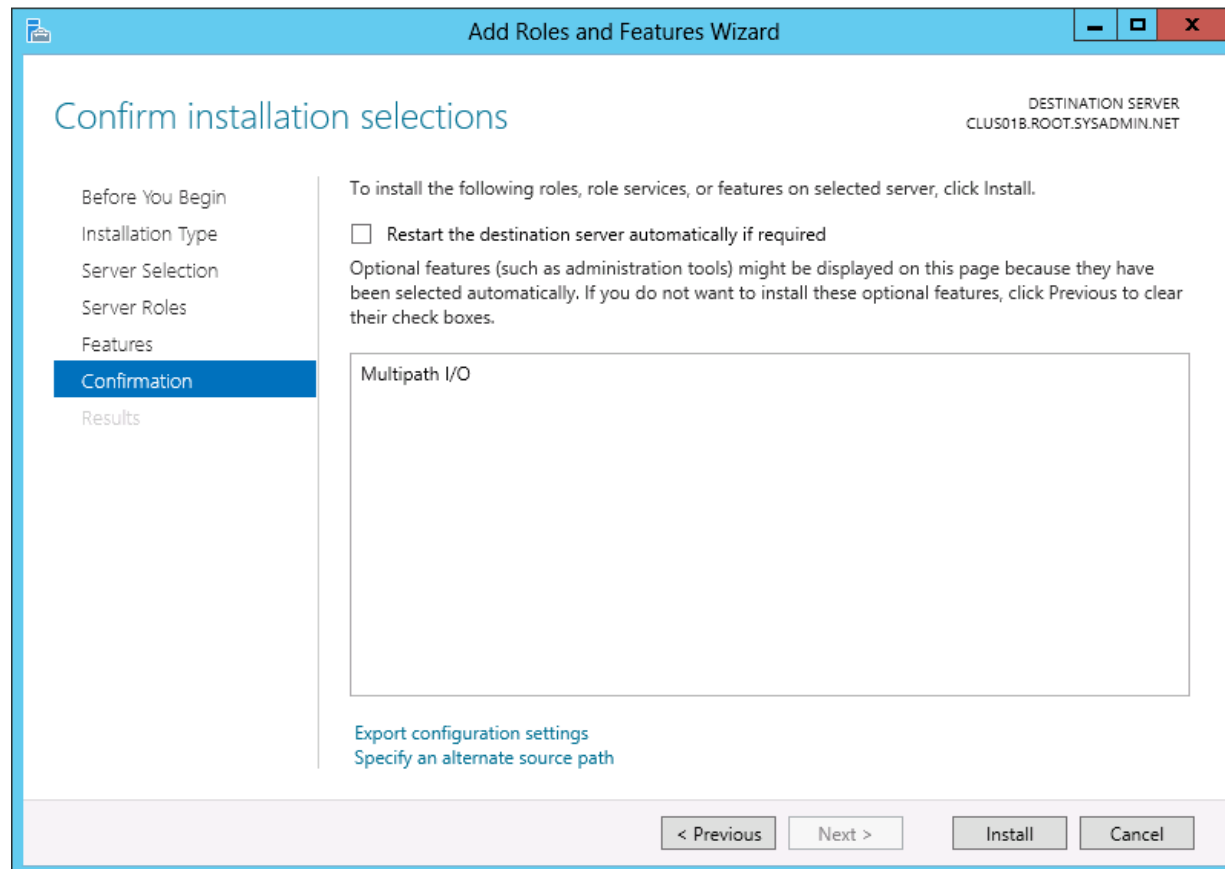
```
Get-WindowsFeature/Install-  
WindowsFeature/Uninstall-  
WindowsFeature
```

```
Install-WindowsFeature Web-Server  
-IncludeAllSubFeature -  
IncludeManagementTools
```

```
'WebSrv01', 'WebSrv02', 'WebSrv03'  
| ForEach-Object  
{ Install-WindowsFeature Web-Server  
-IncludeAllSubFeature -  
IncludeManagementTools -  
ComputerName $_ }
```

■ Working with Windows

Install-windowsFeature
-ConfigurationFilePath
d:\webServerConfigFile.xml



■ Working with IIS

Import-Module webAdministration

- Add, change, remove
 - Application pools
 - Web Sites
 - Virtual Directories
 - Web Applications
 - Website Bindings
- Backup & Restore
 - Web Configuration

■ Working with SQL Server

Import-Module SQLPS or launch from SSMS

- Execute T-SQL
- Backup & Restore DBs
- Generate Scripts for DB, Tables, Procedures

■ Working with TFS

■ Get info

- Work Items
- Source Control

■ Manage

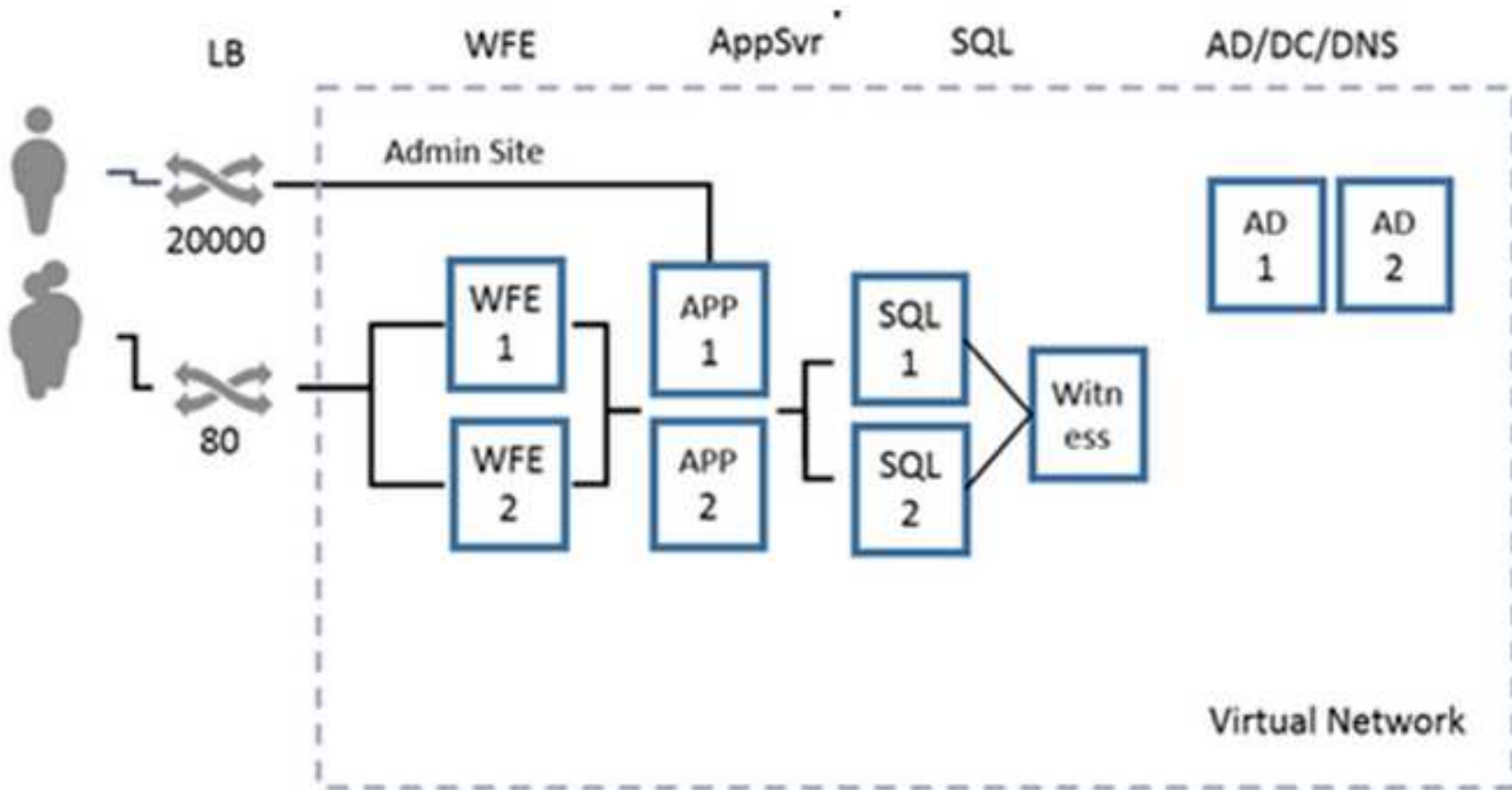
- Workspaces
- Changesets, Shelvesets, Pending Changes
- Build Definitions
- ...

■ Working with Microsoft Azure

■ Manage

- Storage
- VMs
- WebSites
- Resources
- Active Directory
- ...

■ Create multi-tier IaaS environments



■ Working with Sharepoint

- Install Sharepoint

- Manage

 - Site Collections

 - Lists

 - ...

- Import/Export

Real Life Powershell

■ Real Life Powershell

■ .NET Development

- CleanAllProjects.ps1
- PublishAll.ps1
- QueueDeploymentBuilds.ps1
- InstallAppServer.ps1
- InstallWebServer.ps1

■ Real Life Powershell

- Turtle

- PSI

- System Checker

Q & A

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