

Ihr starker IT-Partner.
Heute und morgen.

BECHTLE

Deployment using ARM Templates and DSC

Automated deployments in Azure
Azure Meetup Hamburg | 11.07.2017 | Martin Gudel



Agenda.

About



Infrastructure as Code – what is this? What do I need it for?



PowerShell Desired State Configuration – some Basics



Azure Automation and DSC



ARM Templates, Visual Studio and the Azure SDK



Demo



Questions

About...

Martin Gudel – About me



Mail:
martin.gudel@bechtle.com

Working as IT Professional since 1996

Azure Experience since 2012

Office 365 Experience since 2002, most projects on Exchange Online and Lync

Powershell Experience since 2007 (with Exchange Server 2007)

First steps with DSC in 08/2015

Professional

Personal

UWP Windows App Developer, iCloud Computing, App Development in C#, C++, VB, .NET Plattform, Data Plattform Management, IoT Dev platforms, backend development

TheMigrationwizard.com, WizardOfApps.de

Freshwater tank owner (Pipidae breeder)

Die Bechtle Systemhäuser im Norden (Töchter der Bechtle AG)

Bechtle AG

2016

- 7.600 Mitarbeiter
- 65 Standorte, 14 Länder
- 3,1 Mrd. Euro Umsatz
- 75.000 Kunden, **10.000 IT-Projekte**
- 300 Herstellerpartner
- 17.000 Herstellerzertifizierungen
- Globale Allianzen: 180 Länder

Standort Hamburg/Kiel

- Mitarbeiter: 260 Bechtle+Hansevision
- Managed Services: 70.000 IT-Seats
- Service- und Logistikzentrum
- IT-Infrastruktur DataCenter: 30 Experten (Netzwerk, Security, Server, Storage)

Microsoft Kompetenz

- **>55 Microsoft Experten tragen**

<ul style="list-style-type: none"> Gold Application Development Gold Cloud Platform Gold Cloud Productivity Gold Collaboration and Content Gold Datacenter Gold Enterprise Resource Planning Gold Messaging Gold Small and Midmarket Cloud Solutions 	<ul style="list-style-type: none"> Gold Windows and Devices Silver Communications Silver Data Analytics Silver Data Platform Silver DevOps Silver Enterprise Mobility Management Silver Learning
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Herstellerunabhängige Beratung | Hocheffiziente IT-Beschaffung | Full-Service-Dienstleister



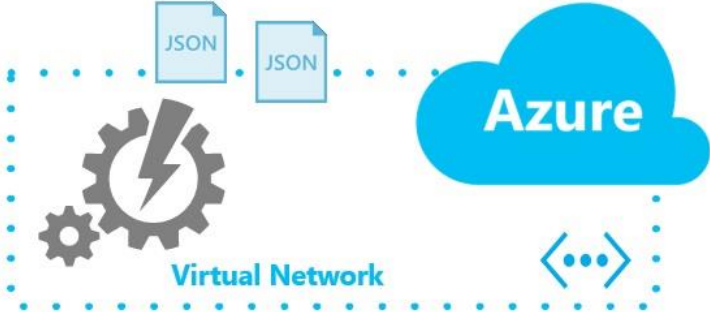
Infrastructure as Code

What is this? What do I need it for?

What is Infrastructure as Code

Infrastructure as Code is a Process, not a tool!

Microsoft defines Infrastructure as Code like that:
 “a process of **managing and provisioning computing infrastructure** with some declarative approach while setting their configuration using definition files instead of traditional interactive configuration tools.”



Picture source
<https://blogs.msdn.microsoft.com/azuredev/2017/02/11/iac-on-azure-an-introduction-of-infrastructure-as-code-iac-with-azure-resource-manager-arm-template/>

declarative

Let me know my properties, don't tell me how to get there

Property = value !

by definition

„be like that“, let the specialists decide on how to get to that status

Ready for use by customers, delivered by infrastructure developers

Version control

Migration by update

Lessons learned by code review

Changes can be tracked by comparing code

PowerShell Desired State Configuration Basics

PowerShell Desired State Configuration Basics

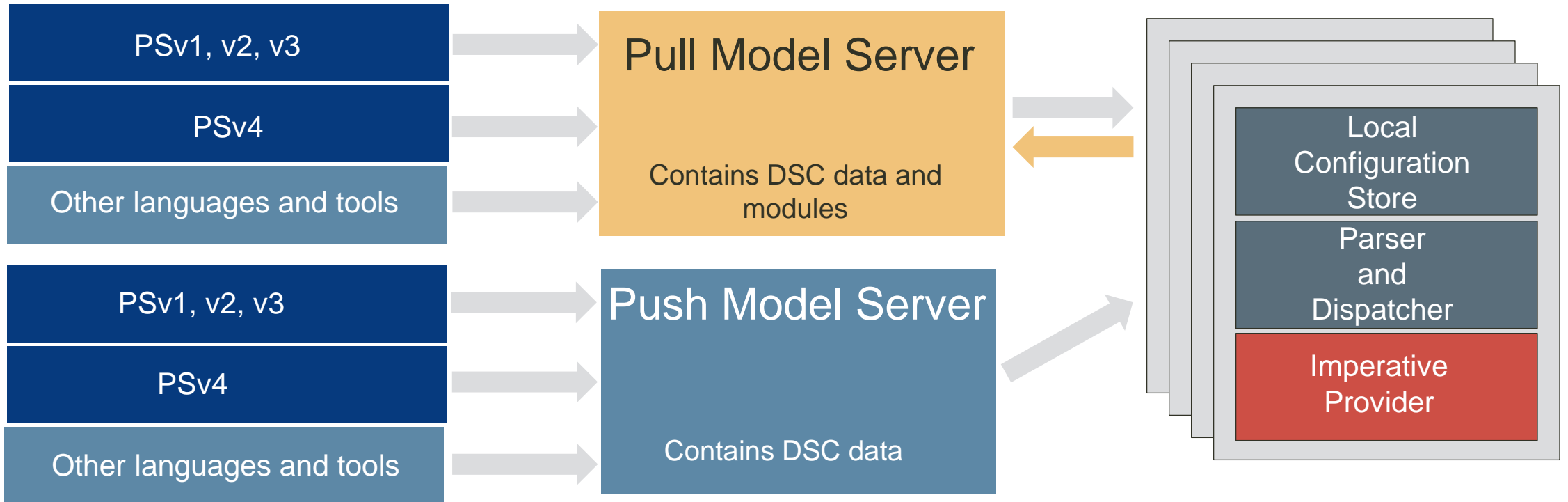
What DSC can do for you

DSC is a PowerShell extension that ships with Windows Server 2012 R2 and Windows Server 2016. (Windows Management Framework 4 (10/2013) required, also available for 2008 R2 SP1 by update)

- Install or remove server roles and features
- Manage registry settings
- Manage files and directories
- Manage local groups and user accounts
- Install and manage packages such as .msi and .exe
- Manage environment variables
- Start, stop, and manage processes and services
- Run custom Windows PowerShell scripts
- Fix a configuration that has drifted away from the desired state
- Discover the actual configuration state on a given node

PowerShell Desired State Configuration Basics

Desired State Configuration system design



Picture originally published on <https://blogs.technet.microsoft.com/privatecloud/2013/08/30/introducing-powershell-desired-state-configuration-dsc/>

PowerShell Desired State Configuration Basics

Main benefits you get by using DSC

Uuuuh, there is a long list of benefits; allow me to tell you my top arguments for using DSC:

- all declaring a DSC configuration is PowerShell based. So you can leverage all your PowerShell skills to not only define a configuration, but also for troubleshooting. In a Microsoft environment, PowerShell is the easy-to-get-there tool!
- DSC is designed to support “continuous deployments” which means that you can deploy your configuration over and over without breaking anything
- DSC can be used in a public or in a private Cloud environment. DSC is available on Linux as well; include VMWare by PowerCLI
- You can integrate DSC with any Microsoft or non-Microsoft solution. If you got a 3rd party product, you can enable DSC support as long as there is an API by using creating DSC resources.

Conclusion: Yes! it's definitely worth the initial pain to get your click configuration migrated!
Never let a human being do the computers Job!

ARM Templates, Visual Studio and the Azure SDK

ARM Templates

Declaratively provision resources

“Azure Resource Group” projects contain “Azure Resource Manager” “JSON templates”, which define the resources that you deploy to Azure.

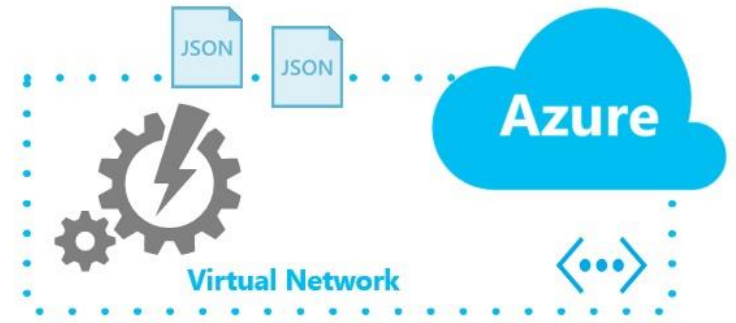
- Declarative – You declare the resources you want to have instead of imperative where you need to make rules.
- Idempotent – You can deploy the template over and over again without affecting the current state of resources.
- Multi-service – All services can be deployed using Azure Resource Manager, Website, Storage, VMs etc.
- Multi region- You can choose in which region you would like to deploy the resources.
- Extensible – Azure Resource Manager is extensible with more resource providers and thus resources.

Visual Studio



PowerShell





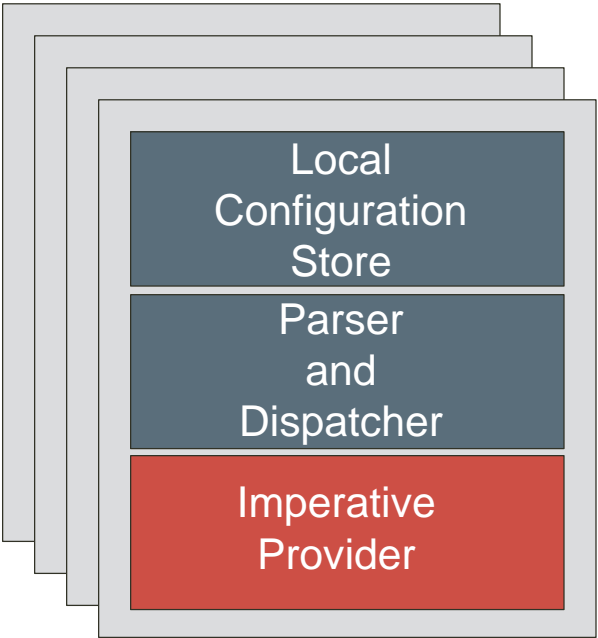
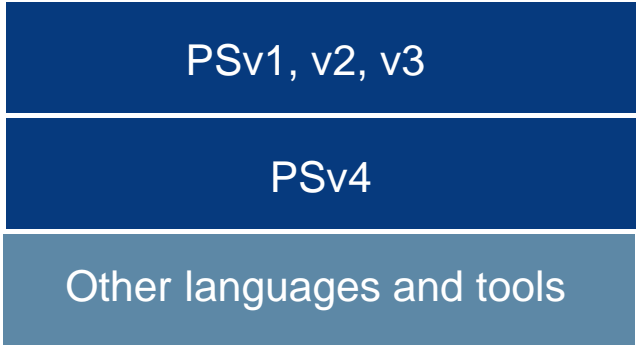
Azure Automation and DSC

Azure Automation and Desired State Configuration

Design considerations

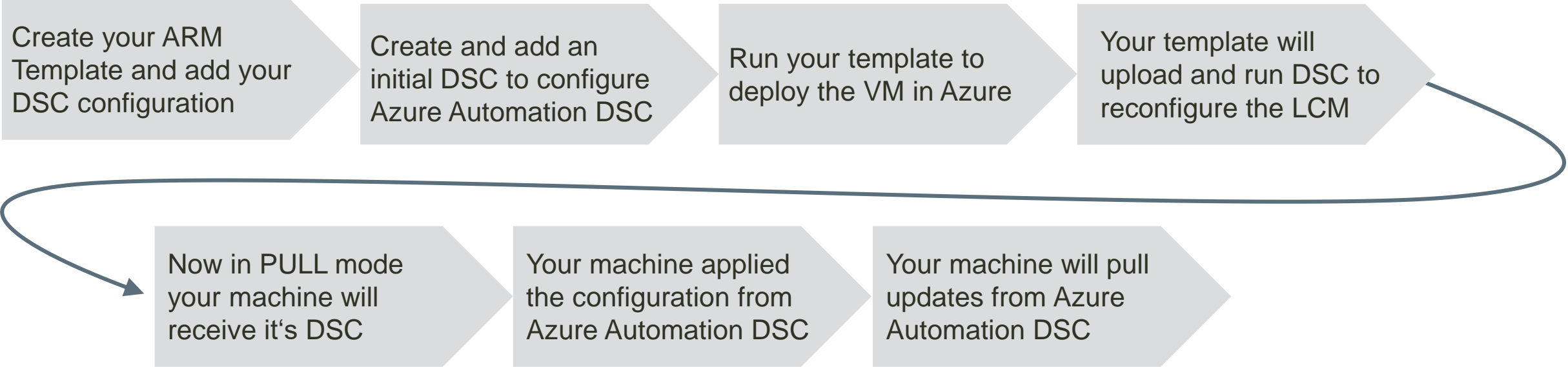


Azure Automation DSC implements the Pull Model Server only!



Onboarding to Azure Automation.

The fastest way to your Azure Automation Account DSC in Azure



So you still need to deploy a PUSH configuration to get your VM configured to use the PULL server on Azure

Demo



Questions?

Weitere Infos:
[bechtle.com](https://www.bechtle.com)



Thanks.

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