

# Hybrid IT - Azure Stack & Azure

Genau so und nicht anders

Markus Klein, TSP Azure Infrastructure

Microsoft Deutschland GmbH

[www.azurestack.rocks](http://www.azurestack.rocks)

 @AzureStackRocks



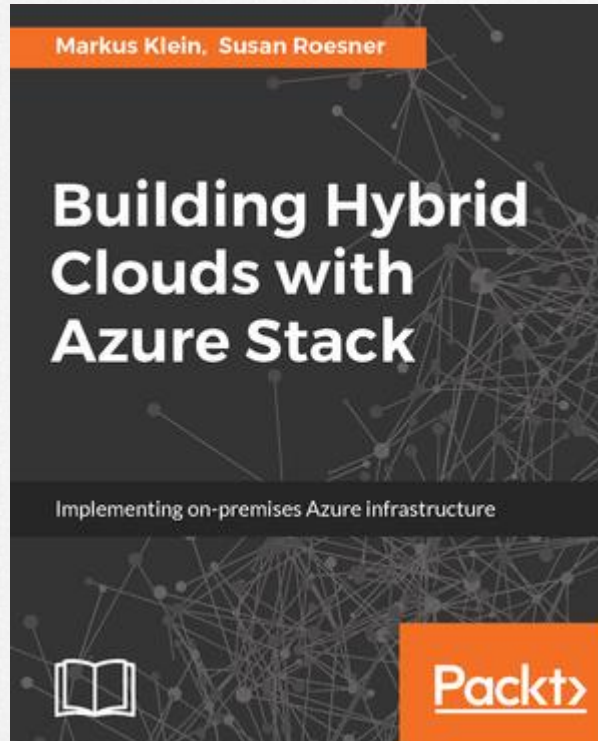
# About me

- >20 Jahre Erfahrung mit MS (Cloud) Technologie
- Ehemaliger MVP Cloud & Datacenter Management
- +15 Jahre Erfahrung mit Microsoft Private, Hybrid und Public Cloud
- Großkundenprojekte mit Azure Pack & Azure Stack
- Buchautor & Community-Freak (Azure Meetup Ruhrgebiet / Azure Meetup Münsterland)
- und vieles mehr ...





# Announcing GA



Verfügbar seit 06.11.17  
als Paperback





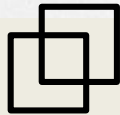
# Agenda

- Defining Azure Stack
- Designing Azure Stack
- Hybrid Scenarios
- Demo
- Q & A





# Microsoft Azure



Hybrid

Productive

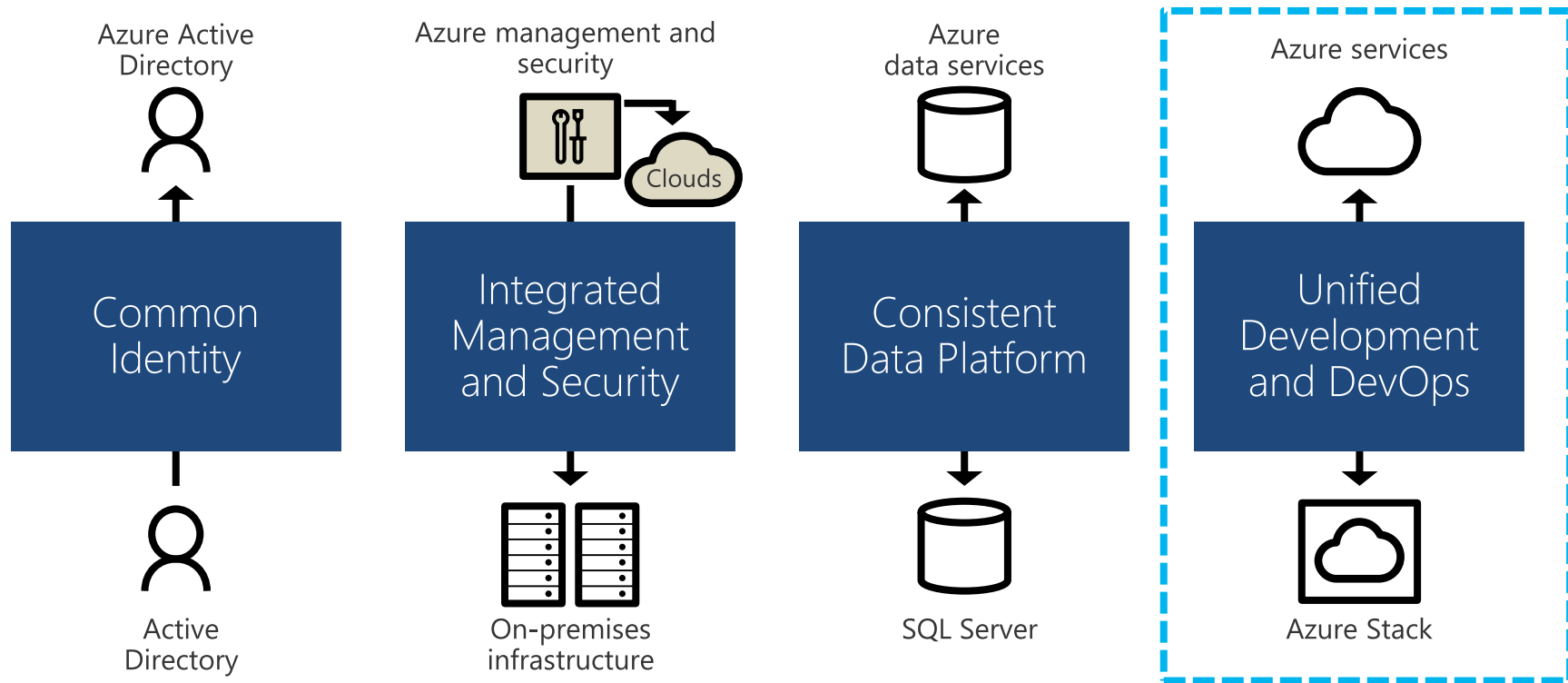
Intelligent

Trusted





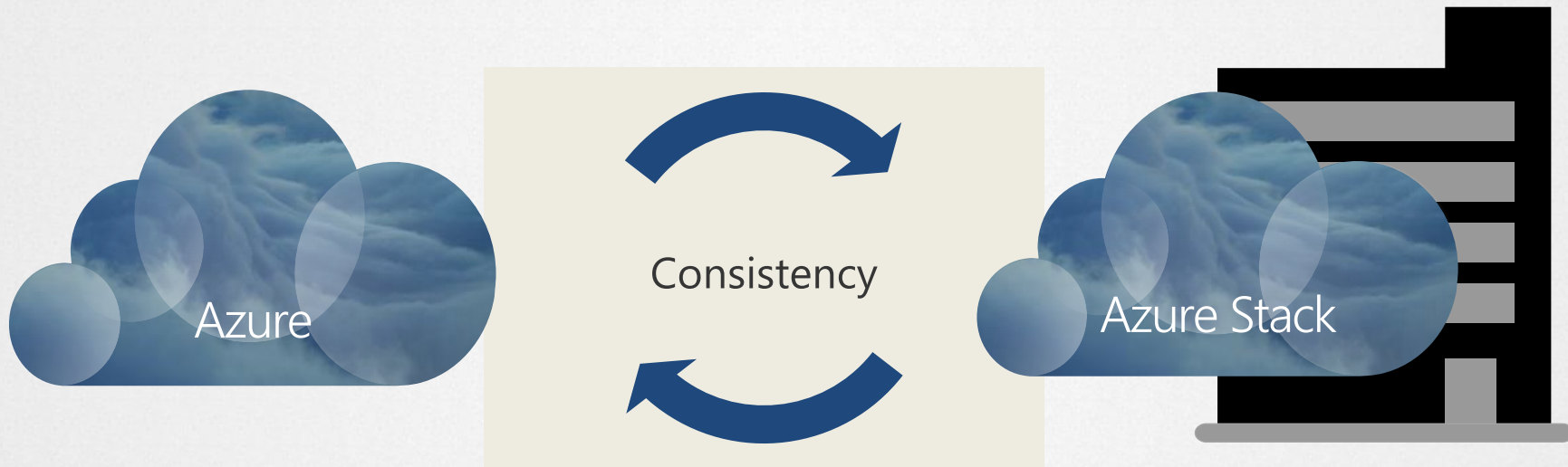
# Truly consistent hybrid cloud






# Azure Stack is an extension of Azure


Only consistent hybrid cloud platform





Azure services  
everywhere

 42 Azure regions

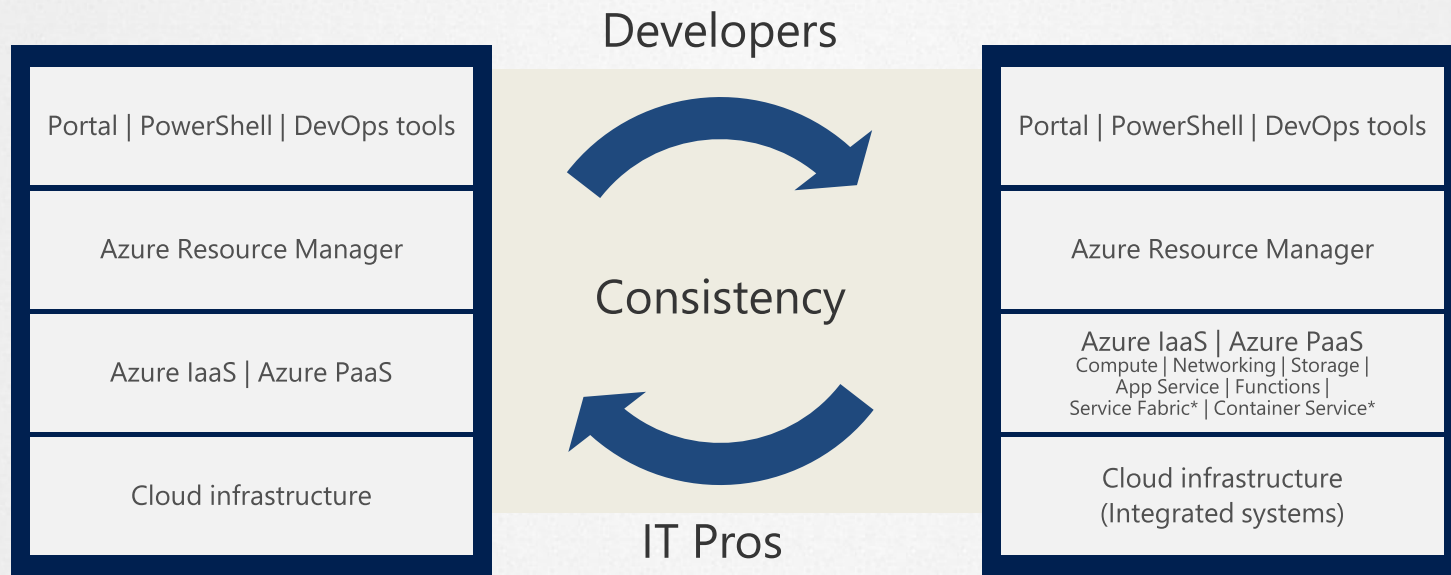
 100s of service providers

 1,000s of enterprises



# Azure and Azure Stack

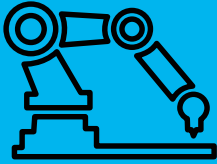
Truly consistent Hybrid Cloud platform



Azure

Azure Stack

# Hybrid use cases: Azure and Azure Stack



Edge and disconnected  
solutions



Cloud applications that  
meet every regulation



Modern applications across  
cloud and on-premises



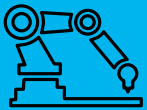


Deploy Azure Stack for:

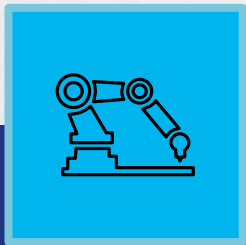
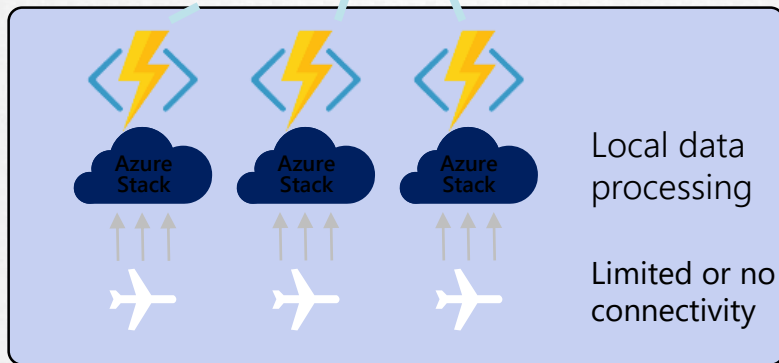
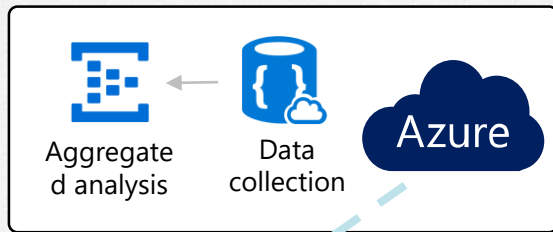
- Real-time latency requirements
- Connectivity issues
- Local data processing

Use Azure for aggregate analytics and big data modelling

Common application logic across both, connected or disconnected



# Edge and disconnected solutions



## Edge and disconnected solutions



Develop and deploy global application in Azure

Optionally deploy to Azure Stack to handle customer preferences for regulations:

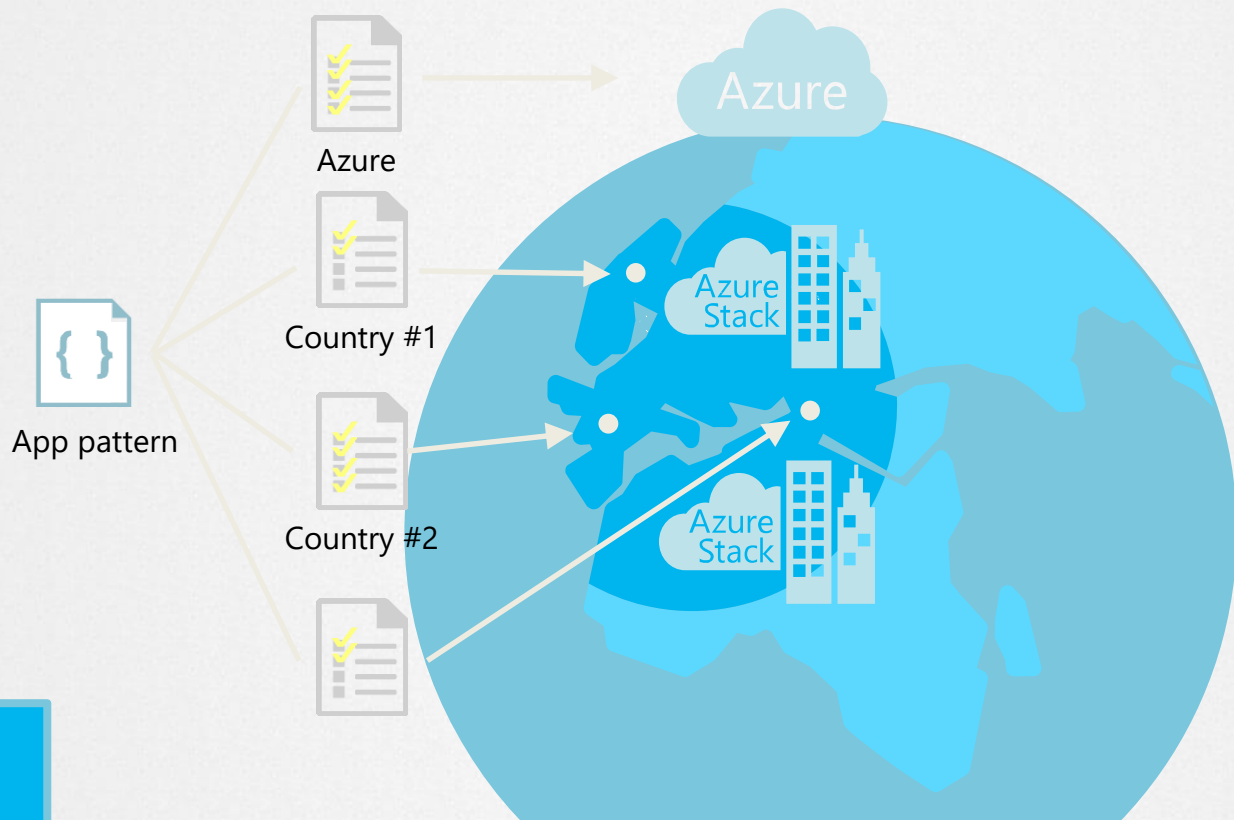
- Government
- Industry
- Region

No changes to application



Cloud applications that meet every regulation





Cloud applications that meet every regulation

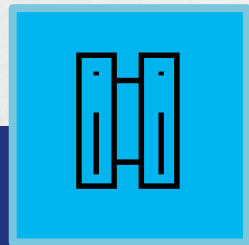


Apply modern architectures to on-premises apps not yet ready for cloud

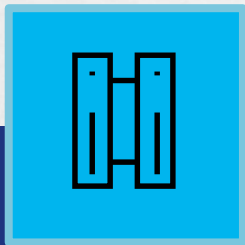
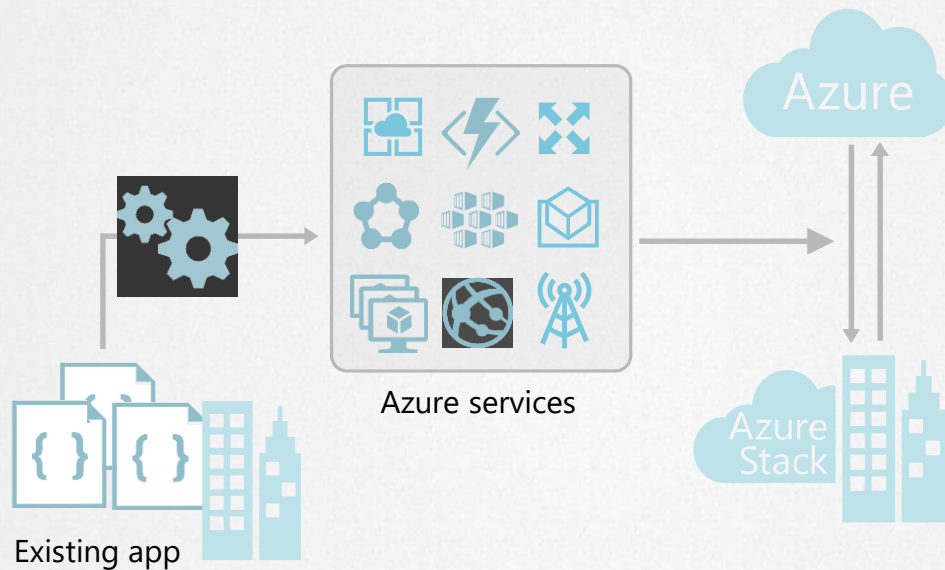
- PaaS
- Serverless Computing
- Microservices & Containers

Move to Azure without code changes

Consistent programming model, skills, and processes

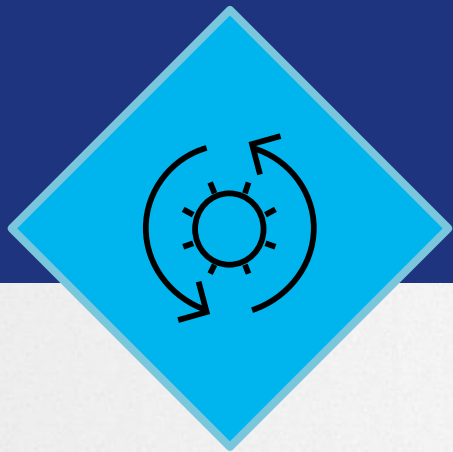


Modern applications across cloud and on-premises

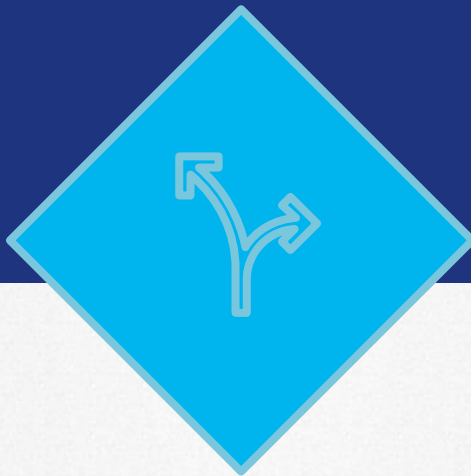


Modern applications across cloud and on-premises

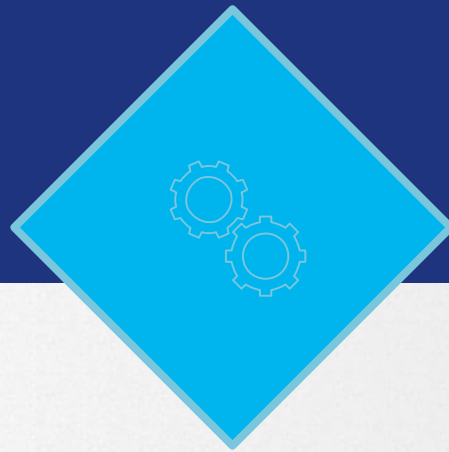
# Azure Stack promise



Consistent  
application development



Azure services  
available on-premises



Integrated  
delivery experience





# Hybrid Has Many Forms



Matching resources on both  
Clouds



Resources **spread** across Clouds  
Using public endpoints for  
connectivity



**Seamless connectivity** across  
the Clouds







# Know your Environment

- Endpoints
- Resource Availability
  - Types
  - Versions
- Connectivity





# Content

- Add images to your Azure Stack
- Syndication
  - Convenient
  - Available to many
  - Images + Gallery Item + Deployment
- Azure Quick starts





# Latest API Versions in Azure Stack

Compute: 2016-03-30  
Network: 2015-06-15  
Storage: 2016-01-01  
KeyVault: 2015-06-01  
App Service: 2015-08-01





# API Profiles

Provide a way to manage version differences between Azure Clouds

Available on:

- PowerShell & CLI
- ARM & SDKs
- Visual Studio



# Identity

## Authentication with Service Principal

### Steps:

1. Create Service Principal in your AAD tenant using password or certificate
2. Assign the Service Principal a Role on your Subscription
3. Logon using password or certificate
4. [optional] Save access token to simplify log in







# ARM Templates

- Use dynamic endpoints
- Parametrize
  - Locations
  - VM Sizes & Images
- Be Flexible
  - OS Images
  - Scaling





# Deployment

- Use parameter files
- Authenticate with a service principal
- Use the tools in the Azure Stack Tools Repository
- Leverage tooling
  - Visual Studio
  - VSTS Agents






# What to avoid

- Hardcoded deployment endpoints
- Assuming content exists
- Using services that are not available





# Azure PaaS available on-premises: |

## High productivity development



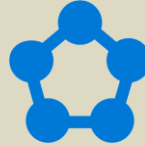
Azure App  
Service

Web, Mobile,  
and API apps



Azure Functions

Serverless  
Computing



Azure Service  
Fabric

Scalable  
distributed  
applications,  
deploy standalone  
Service Fabric  
clusters initially



Azure Container  
Service (ACS)

Container  
management, with  
ACS engine support  
for Docker Swarm,  
Kubernetes, and  
Mesosphere DC/OS



Cloud Foundry

Open source  
platform



Roadmap: Azure Service Fabric-as-a-Service and Azure Container Service-as-a-Service are planned to be available in CY18

# Azure IaaS available on-premises: beyond traditional virtualization



Virtual machines (VM),  
VM scale sets

Rapid deployment  
with automated  
scaling



Containers  
with Docker

Linux and  
Windows Server  
containers



Networking

Virtual network,  
load balancer,  
VPN gateway



Storage

Blobs, tables,  
queues



Key Vault

Securely protect  
application keys  
and secrets

Roadmap: Additional Azure consistency (New VM types, Managed Disks, storage API updates) in CY18. Windows Azure Pack Connector for Azure Stack in CY17.





# Customers

Edge and  
disconnected solutions



Cloud applications to  
meet varied regulations



Cloud application  
model on-premises



# One Azure ecosystem

Work with the tools and technologies you want across Azure and Azure Stack

Goal: Applications and services that are certified for Azure work on Azure Stack





# Integrated delivery experience



Integrated  
systems

DELL EMC

  
Hewlett Packard  
Enterprise

Lenovo



 HUAWEI



Fast to deploy

Get up and running  
quickly

Deliver 100s of VMs  
initially (and grow  
over time)



Pay-as-you-use

Extension of Azure model  
Receive one bill



Integrated  
support, broadly  
available

Consistent support  
experience, no  
matter who you call

Available in 46  
geos initially

**Roadmap:** Cisco systems are ready to order Sept 2017. Huawei & Wortmann/Intel integrated systems are announce for Q1 CY18,



# Two ways to purchase Azure Stack

## As an integrated system

Customer controls management and operations (DIY or via SI)

Two contracts: one for Azure services and another for hardware

Typically hosted at customer premises

Example: Customer purchases Azure services from Microsoft, integrated systems from Dell EMC/HPE/Lenovo


## As a fully managed service

Managed service provider does management and operations

Single point of purchase, one contract

Typically hosted at managed service provider premises

Example: Customer purchases a complete solution from Avanade or one of many other Azure MSPs

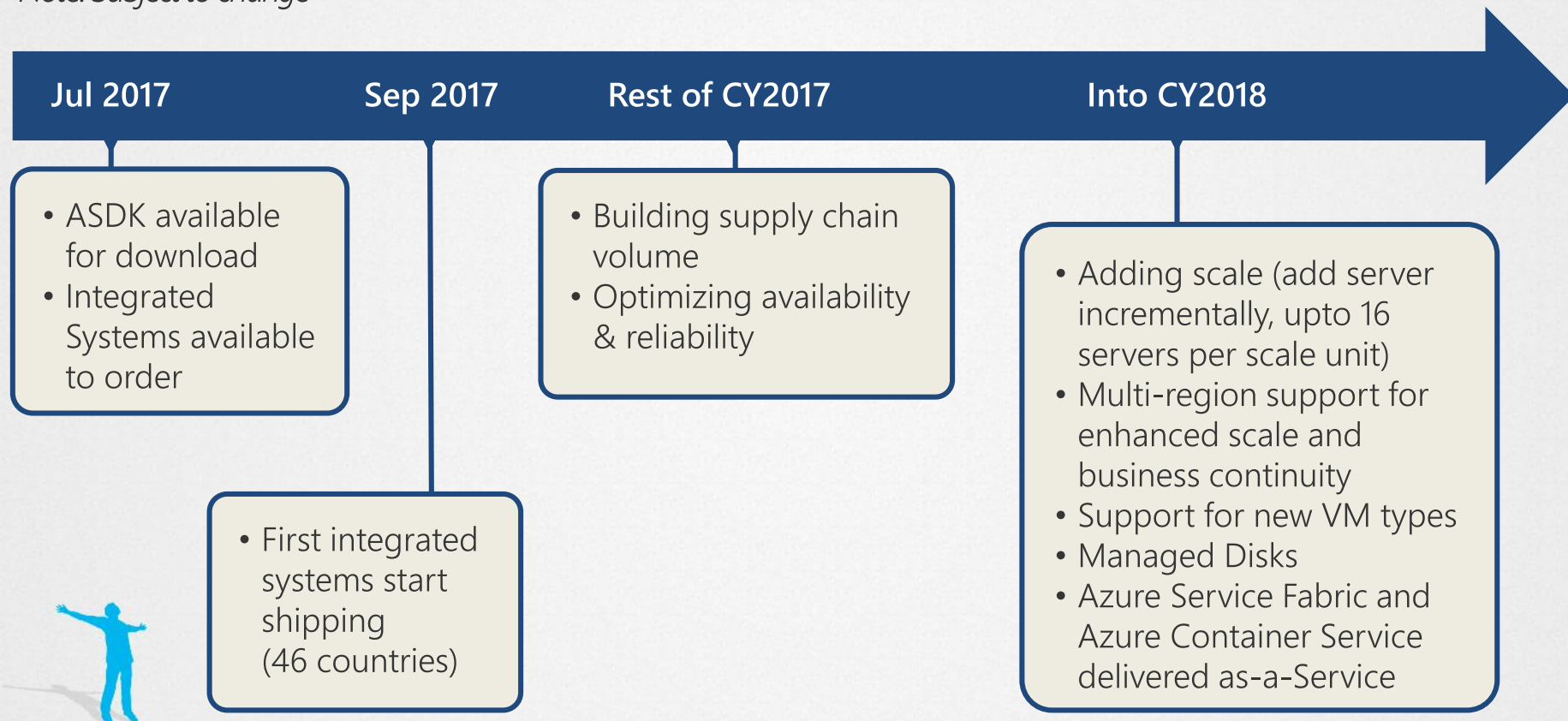
One integrated support experience 





# Roadmap

*Note: Subject to change*







# Accurately positioning Azure Stack

## *What it is*

First consistent Hybrid Cloud Platform

Integrated system with IaaS & PaaS

Regularly updated for Azure-consistency

Truly open and flexible (just like Azure)

## *What it isn't*

Virtualization-replacement play

"Do it yourself" infrastructure

Static system you deploy & forget

.NET/Windows only



# Get going with Azure Stack

1

Develop

applications in Azure

2

Validate

Download Azure Stack  
Development Kit

3

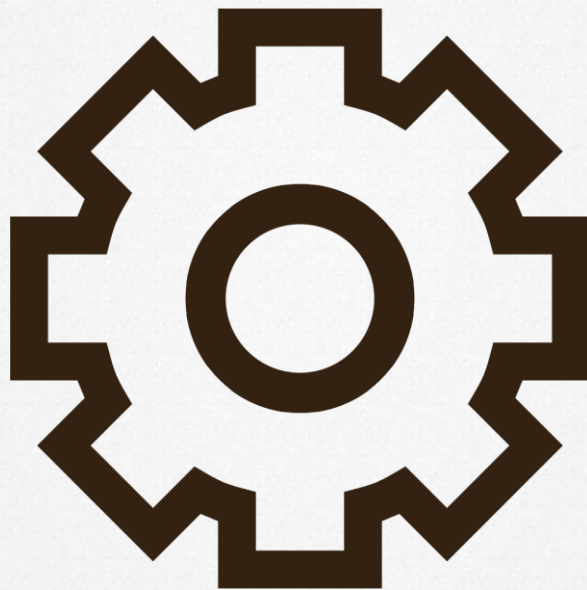
Deploy

Order Azure Stack  
integrated systems for  
production deployment





# Demo





# How I did it?

<https://azurestack.rocks/azure-as-development-environment-for-azure-stack/>





# Start in Azure

## Will your Azure solution work on Azure Stack?



2 tools you can get from the Azure Stack Tool repository on GitHub.

Azure Resource Manager **Template Validator** for Azure Stack

Azure Resource Manager **Policy** for Azure Stack

Guardrails to check your ARM template for resource dependencies that may not be available on Azure Stack



Download the tool: <https://github.com/Azure/AzureStack-Tools>





# What to do next

READY

**Read** the docs: <http://aka.ms/azurestackdocs>  
**Read** the whitepaper: <http://aka.ms/azurestackwhitepaper>  
**Read** the CI/CD walkthrough: <https://aka.ms/hybridcicd>  
**Read** the community stuff: <http://www.azurestack.rocks>

STEADY

**Deploy** the product: <http://aka.ms/azurestack>

GO

Deploy **Azure Apps**: <http://aka.ms/azurestackgithub>  
Try **PaaS services**: <http://aka.ms/azurestackpaasservices>  
Build **Hybrid Apps**: <http://aka.ms/DesignHybridApps>





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