

Partner Practice Enablement

Cloud Application Development

Day 3

Mathieu Benoit – CSA App Dev
January 2018



Objectives & Takeaways

Objectives → Be inter-active!

Train The Trainer - TTT

Get you excited! ☺

Introduce and cover most of the Azure Cloud App Dev capabilities (L100) – 25%

Illustrate with demos (L200) – 25%

Practice with Hands-on Labs (L300) – 50%

Takeaways → Be evangelist!

Think Cloud App Dev and PaaS offers first

Spread the words, help and train your teammates, managers and customers

Make more concrete your L300 by practicing

3 days!

Day 1 App Service

- ✓ Introduction
- ✓ App Service
- ✓ Web App
- ✓ Mobile App
- ✓ API App
- ✓ Functions
- ✓ Event Grid
- ✓ Logic App

+ Hands-on Lab

Day 2 Media, Storage & Containers

- ✓ Media, CDN, Cognitive Services
- ✓ Storage, Databases, Redis, Search
- ✓ Containers
- ✓ Service Fabric
- ✓ API Management

+ Hands-on Lab

Day 3 DevOps & VSTS

- ✓ Resource Groups
- ✓ ARM Templates
- ✓ Dev/Test Lab
- ✓ DevOps
- ✓ VSTS
- ✓ Application Insights, OMS
- ✓ Further resources

+ Hands-on Lab

Day 3

DevOps & VSTS

- ✓ Resource Groups
- ✓ ARM Templates
- ✓ Dev/Test Lab
- ✓ DevOps
- ✓ VSTS
- ✓ Application Insights, OMS
- ✓ Further resources

+ Hands-on Lab

Day 3's Agenda

8:30AM – *Breakfast*

9:00AM – Session Starts

[1h30] Resource Groups – ARM Templates – Dev/Test Lab

10:30AM – *Break*

10:45AM – Session Continues

[1h45] DevOps – VSTS – Application Insights
+ Wrap up

12:30PM – *Lunch*

1:30PM – Session Resumes

[2h15] Hands-On Lab
+ Wrap up

5:00PM – *Session Ends*

Who has experience with? How deep?

DevOps

ARM Templates

Application Insights

Dev/Test Lab

VSTS

Git

Which CI/CD tools do you use?

The breadth of Azure

60+ services and growing

Compose highly functional apps

Maximize app lifecycle efficiency

Leverage enterprise grade services

Limitless possibilities



Security & Management

- Security Center
- Portal
- Azure Active Directory
- Azure AD B2C
- Multi-Factor Authentication
- Automation
- Scheduler
- Key Vault
- Store/ Marketplace
- VM Image Gallery & VM Depot

Media & CDN



Integration

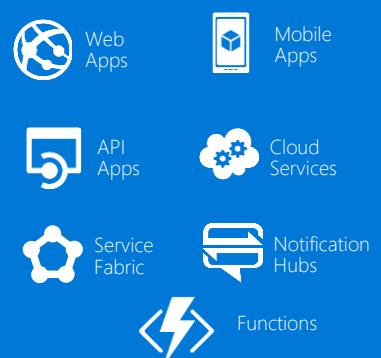


Compute Services



Platform Services

Application Platform



Data



Intelligence



Analytics & IoT



Hybrid Cloud

- Azure AD Health Monitoring
- AD Privileged Identity Management
- Domain Services
- Backup
- Operational Analytics
- Import/Export
- Azure Site Recovery
- StorSimple

Compute



Storage



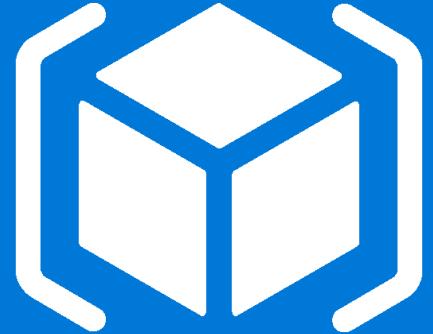
Infrastructure Services

Networking



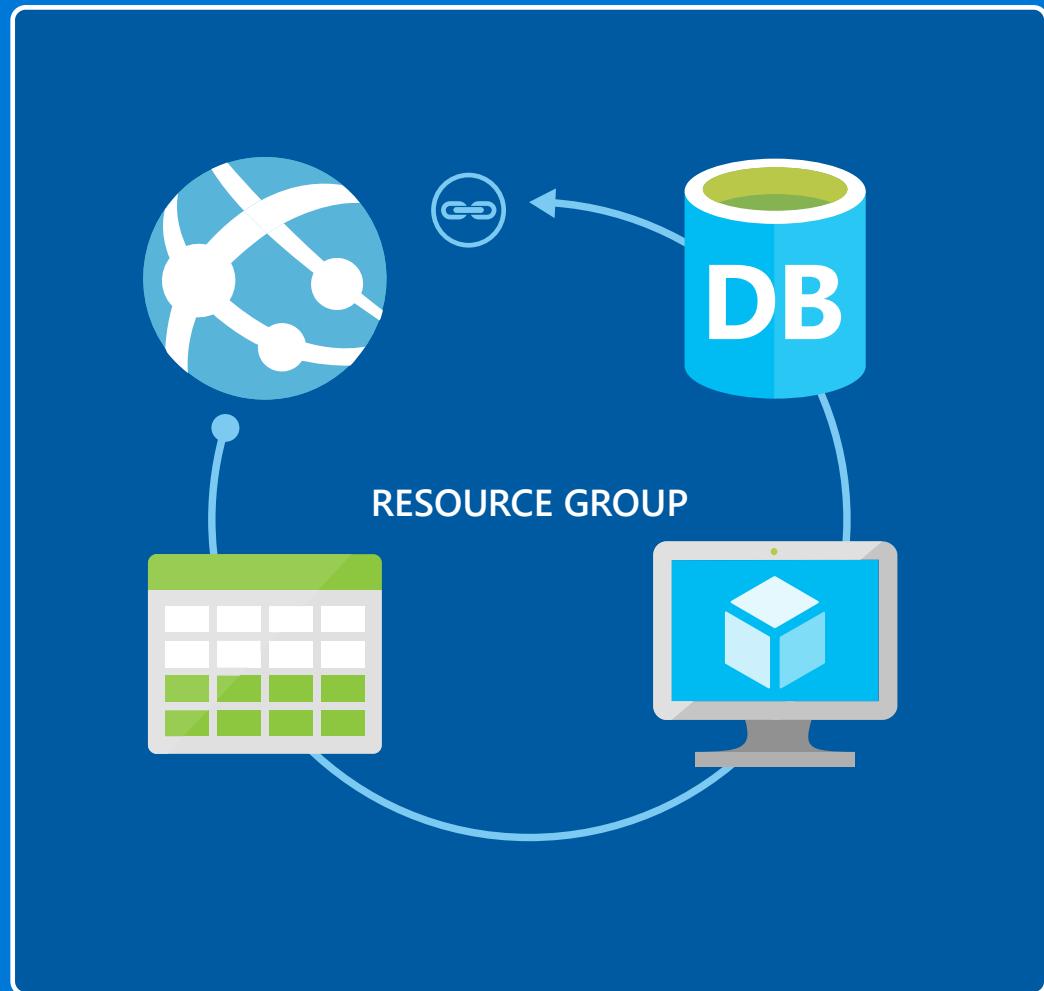
Datacenter Infrastructure (38 Regions, 30 Online)





Azure Resource Groups

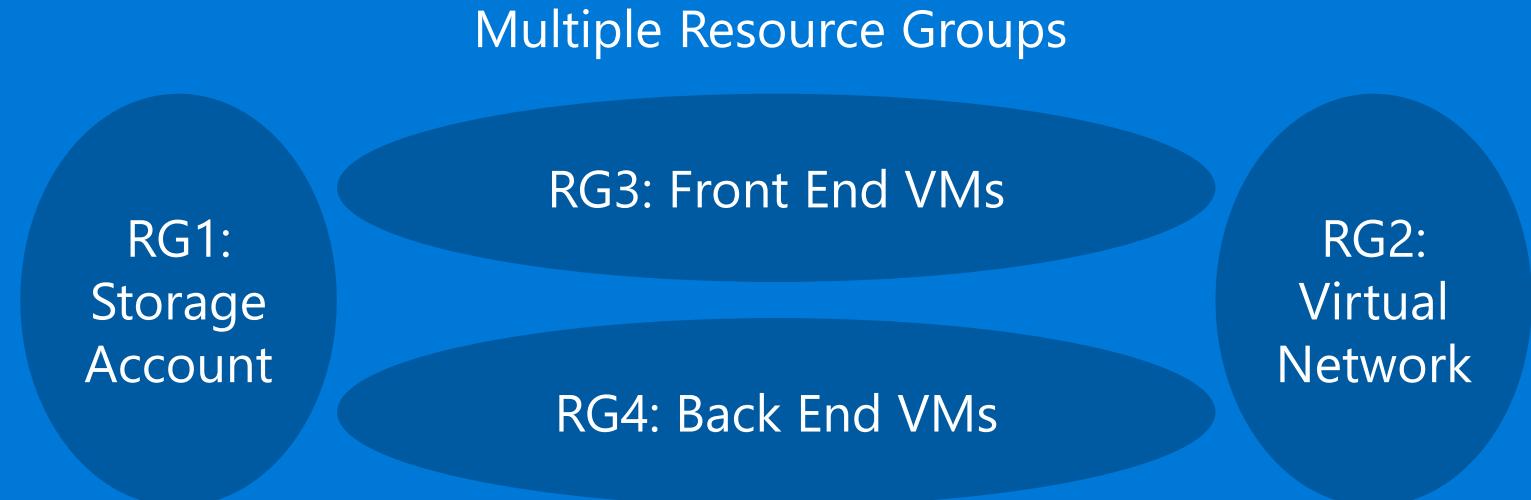
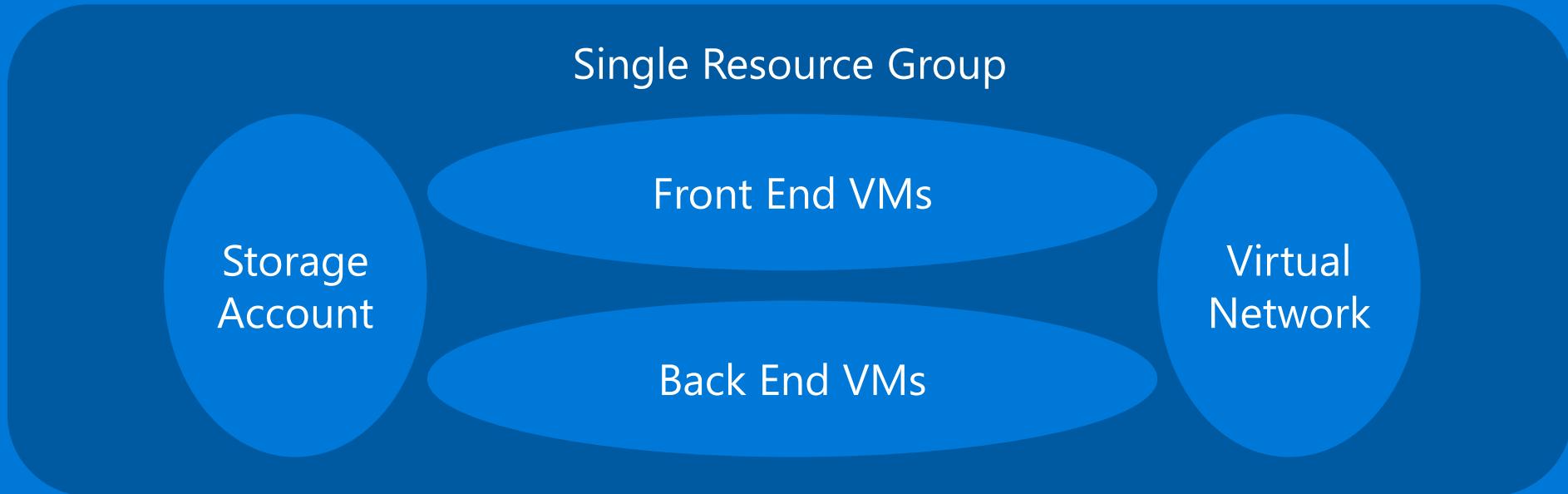
Group your resources as a “folder”.



Resource Groups

- Tightly coupled containers of multiple resources of similar or different types
- Every resource **must** exist in one and only one resource group
- Resource groups can span regions

Single or multiple resource groups?



Resource Tags



- Name-value pairs assigned to resources or groups
- Subscription-wide taxonomy
- Each resource can have up to 15 tags

Tagging Tips

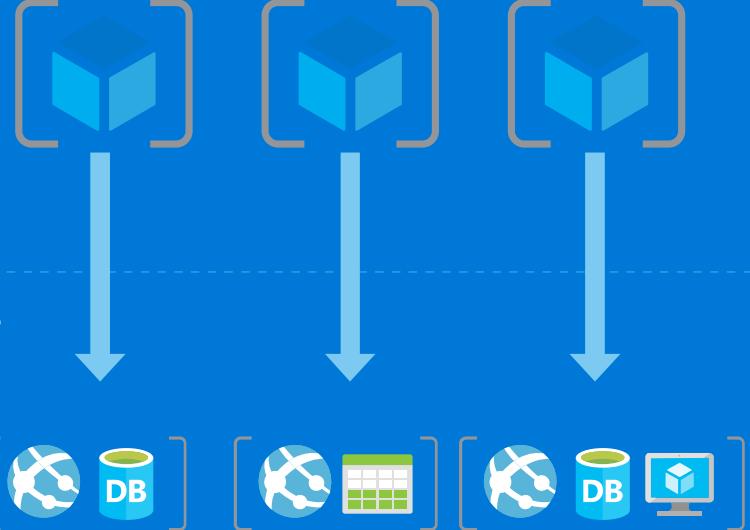
- Notes: Simple note for VM
- Creator: track the "owner" of a VM
- Department/Cost center: who pays
- Environment: production vs. pre-production vs. test

Role Based Access Control

SUBSCRIPTION

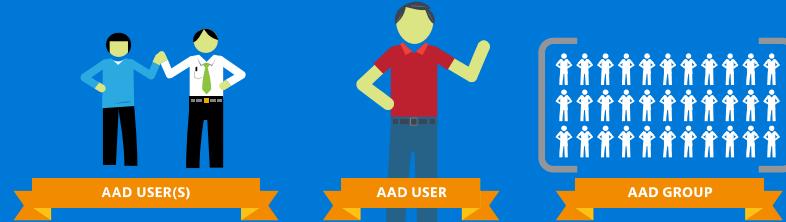


RESOURCE GROUPS



RESOURCES

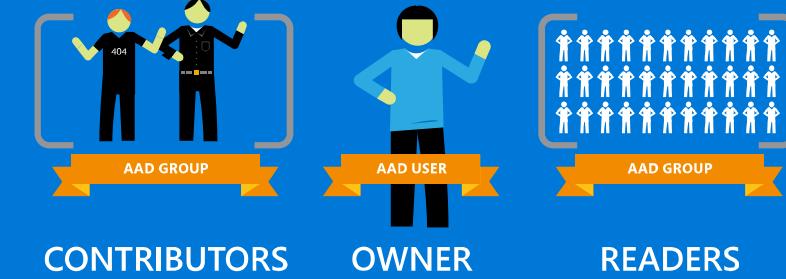
ACCESS INHERITANCE



CONTRIBUTORS

OWNER

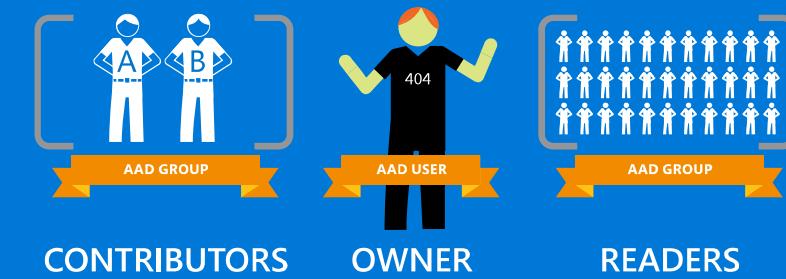
READERS



CONTRIBUTORS

OWNER

READERS



CONTRIBUTORS

OWNER

READERS

Access Control: RBAC

What is RBAC

- allows secure access with granular permissions to resources
- assignable to users, groups or service principals
- built-in roles make it easy to get started

Role Definitions

- describes the set of permissions (e.g. read actions)
- can be used in multiple assignments

Role Assignments

- associate role definitions with an identity (e.g. user/group) at a scope (e.g. resource group)
- always inherited – subscription assignments apply to all resources

Granular Scopes

/subscriptions/{id}/resourceGroups/{name}/providers/.../virtualmachines/{vmname}

subscription level – grants permissions for all resources in the sub

resource group level – grants permissions for all resources in the group

resource level – grants permissions to the specific resource

Demo: Azure Resource Groups

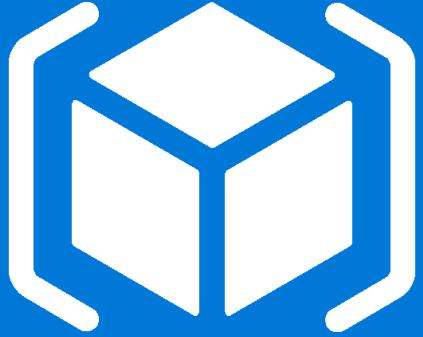
Create an empty Resource Group via the Azure portal

<https://portal.azure.com/#create/Microsoft.ResourceGroup>

Demonstrate the blades

- *Overview*
- *Activity Log*
- *Access Control (IAM)*
- *Tags*
- *Resource costs*
- *Deployments*
- *Locks*
- *Policies*

Resource Explorer from with the Azure portal or externally from <https://resources.azure.com/>



ARM Templates

Your Infrastructure as Code!

What is Azure Resource Manager?

Consistent
Management
Layer

Tools



Microsoft Azure



Command Line



Visual Studio

AZURE RESOURCE MANAGER API

RESOURCE MANAGER



Cloud + On-Premises



ADFS
AAD

RESOURCE PROVIDER CONTRACT

Provider
Rest Points



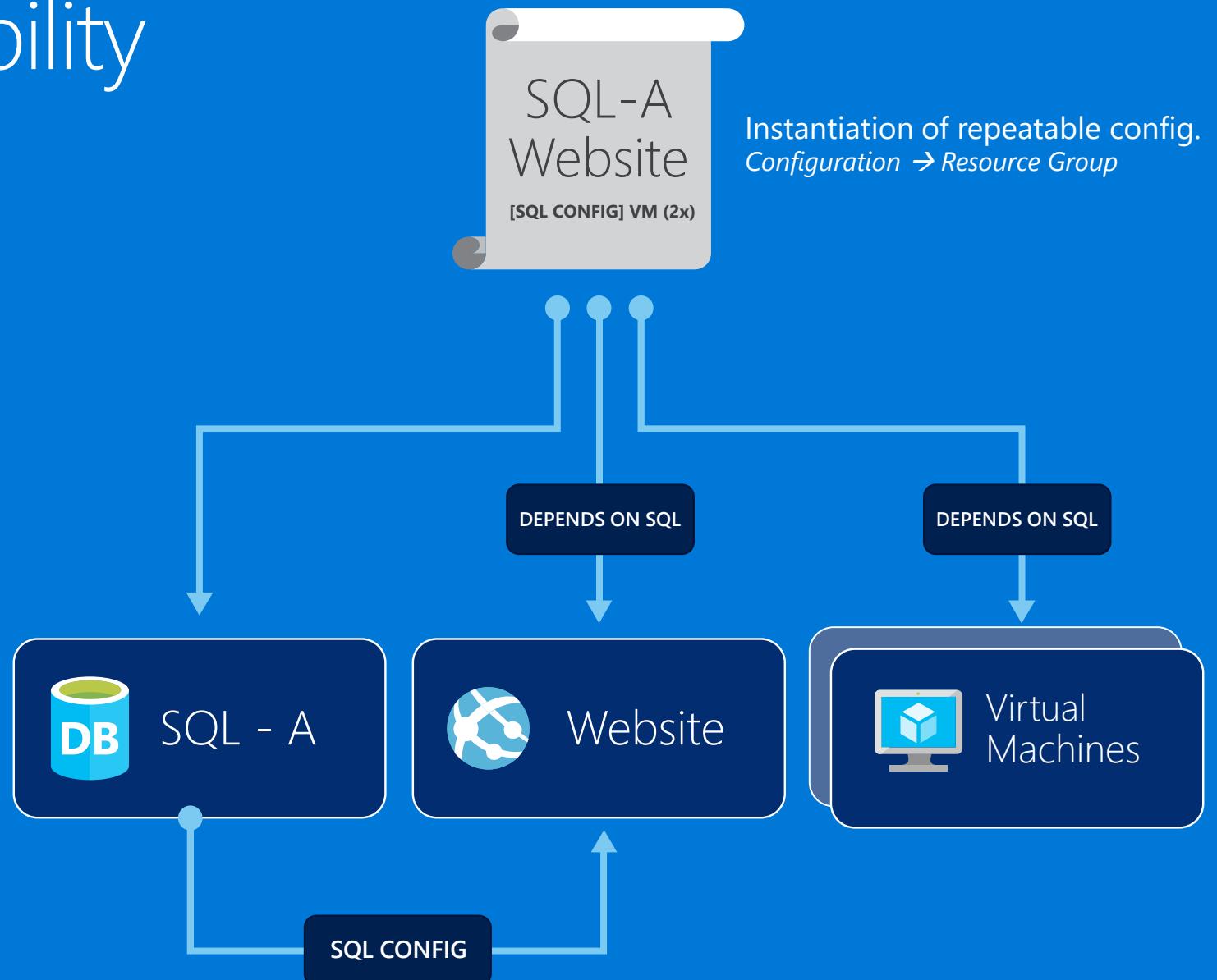
Power of Repeatability

Azure Templates can:

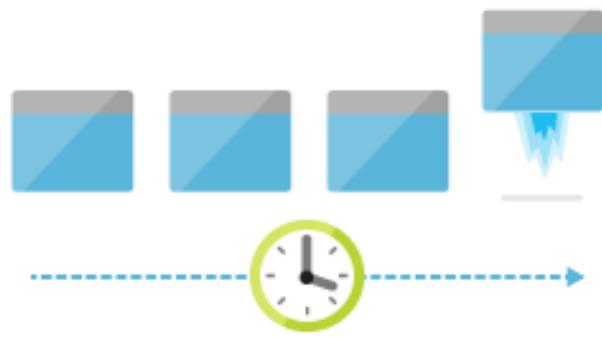
- Ensure Idempotency
- Simplify Orchestration
- Simplify Roll-back
- Provide Cross-Resource Configuration and Update Support

Azure Templates are:

- Source file, checked-in
- Specifies resources and dependencies (VMs, WebSites, DBs) and connections (config, LB sets)
- Parametrized input/output



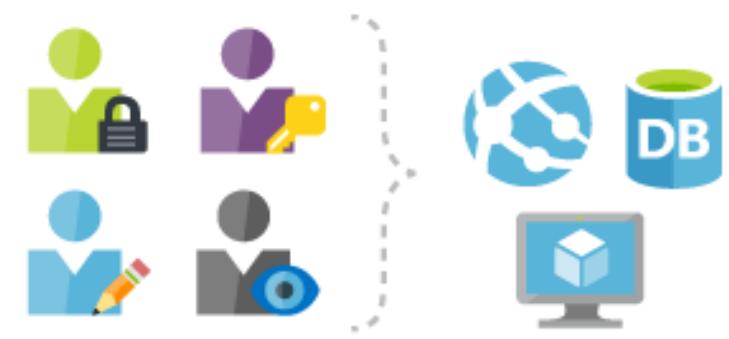
Features



Deploy



Organize



Control

The template

Structure and elements

```
{  
  "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",  
  "contentVersion": "",  
  "parameters": { },  
  "variables": { },  
  "resources": [ ],  
  "outputs": { }  
}
```

Declarative syntax

Allows you to declare the resources you want to have without having to write the script sequence of commands required to create it.

Automation



Scripting Language

POWERSHELL

- Task automation and configuration management framework
- Command-line shell and associated scripting language built on the .NET Framework
- Full access to COM and WMI, enabling administrators via WS-Management and CIM enabling management of remote Linux systems and network devices



Model / API / Engine

AZURE RESOURCE MANAGER

- Deploy - Automate initial deployments and upgrades using templates
- Manage - Access control, policies, auditing and tagging support management post-deployment
- Monitor - Monitor related resources as a group



Orchestration Service

AZURE AUTOMATION

- Automation as a Service
- An orchestration service in Azure to automate repetitive or long-running processes

Script Authoring Environment

- Uses PowerShell Workflows
- Combination of PowerShell 4.0 and WF
- Uses Integration Modules, very similar to PowerShell Modules

Scheduling and Monitoring

- Execute scripts on a schedule
- Review execution status on a dashboard



Demo: ARM Templates

From the Azure portal:

- From the resource creation blade – “Automation options”
- From an existing resource – “Automation script”
- From Resource Group “Deployments” history
- From the Template Deployment resource

<https://portal.azure.com/#create/Microsoft.Template>

From the Azure Quickstart Templates:

<https://github.com/Azure/azure-quickstart-templates>

From Visual Studio or Visual Studio Code:

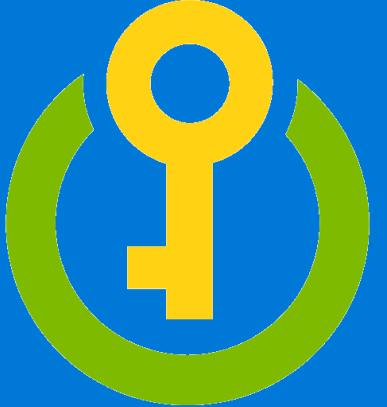
- Create a new Resource Group project and show the JSON Outline View

Tip: Azure Resource Explorer

<https://resources.azure.com/>

Getting started with ARM Templates

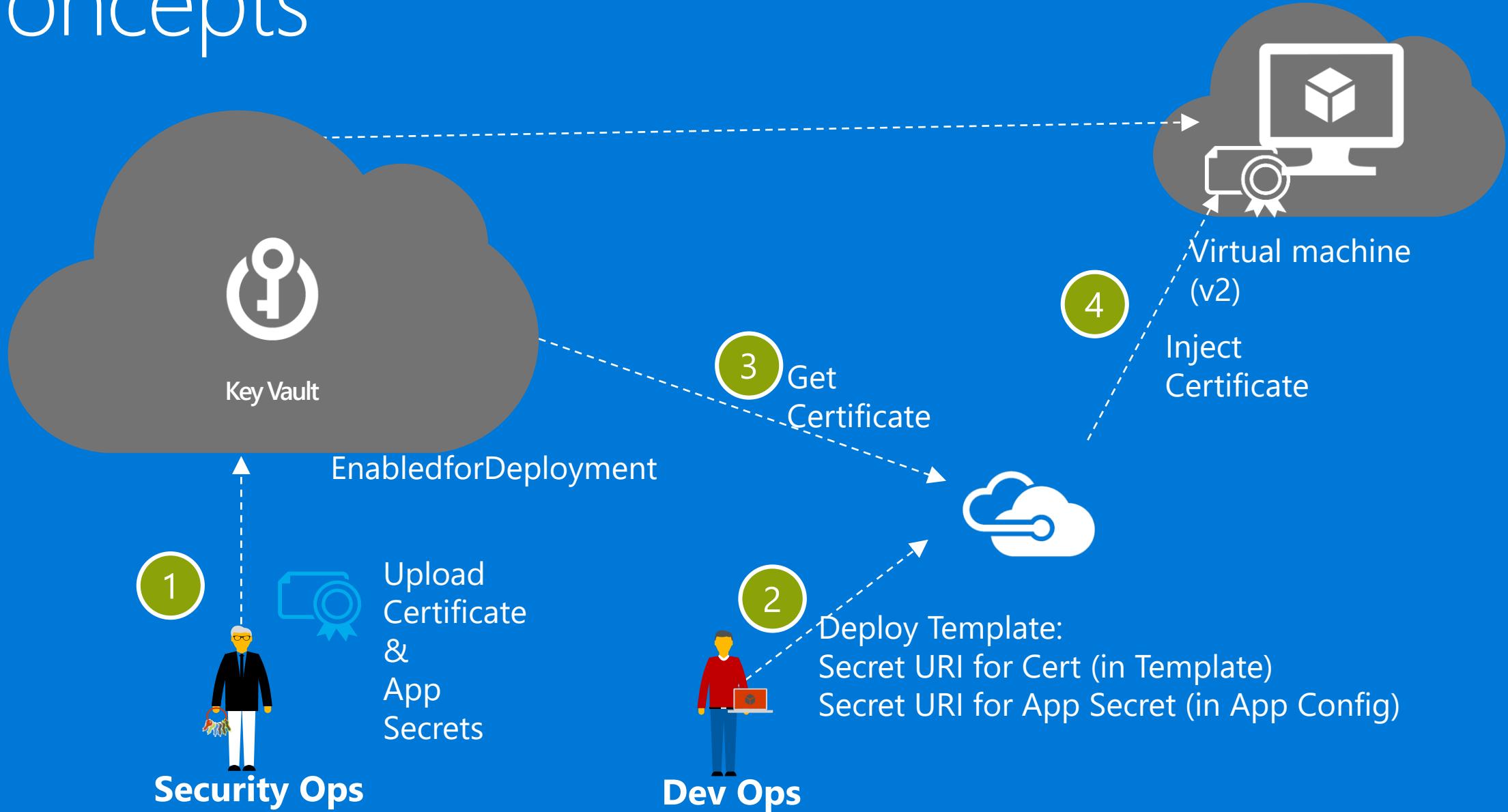
<https://aka.ms/mabenoit-arm>

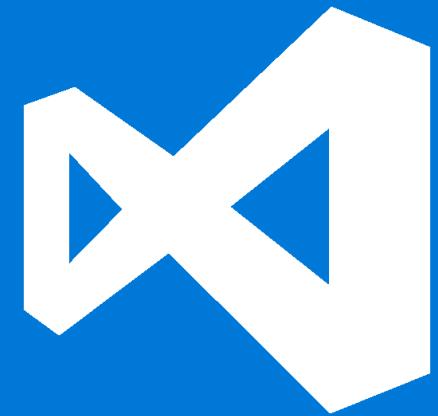


Azure Key Vault

Store and manage your secrets!

Concepts

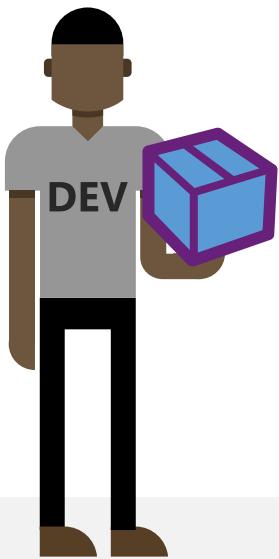




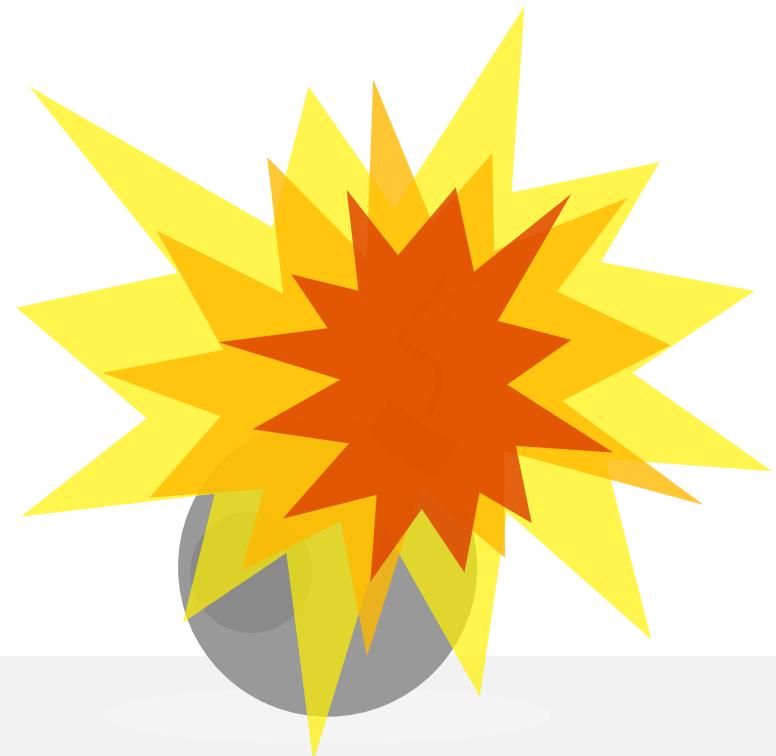
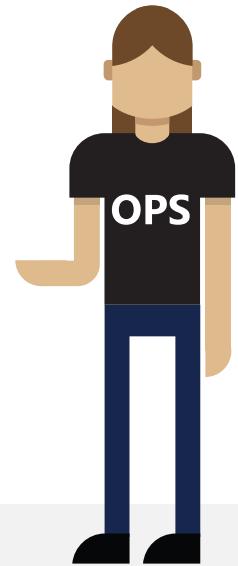
DevOps

Traditional Dev and Ops

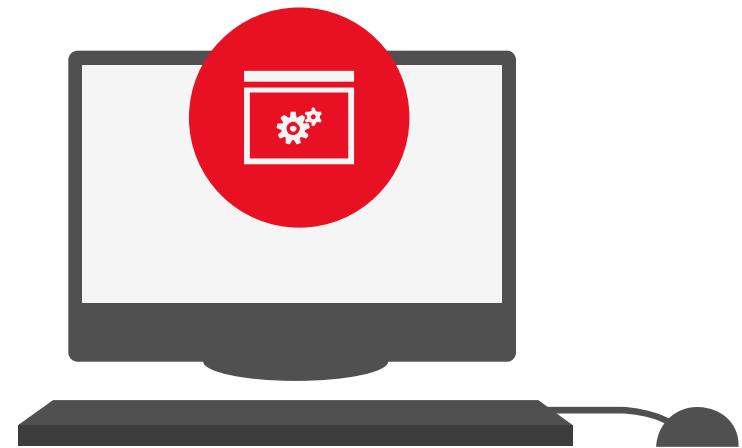
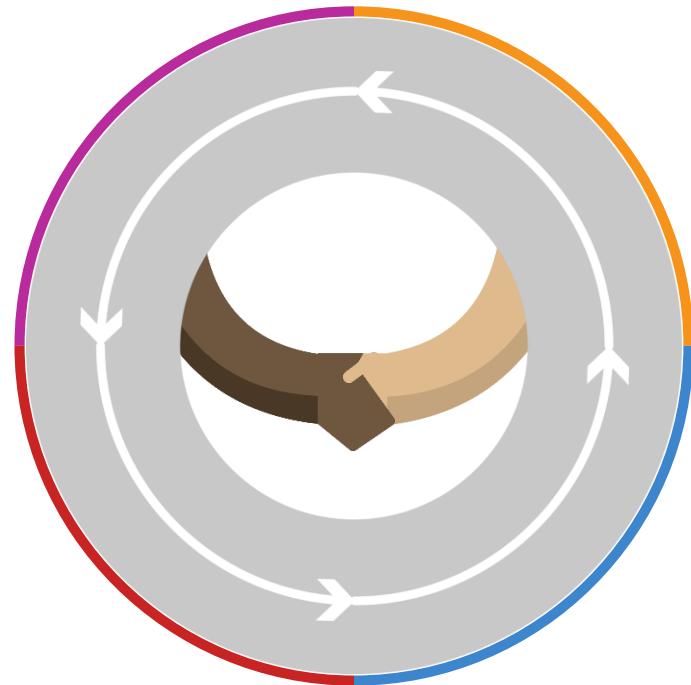
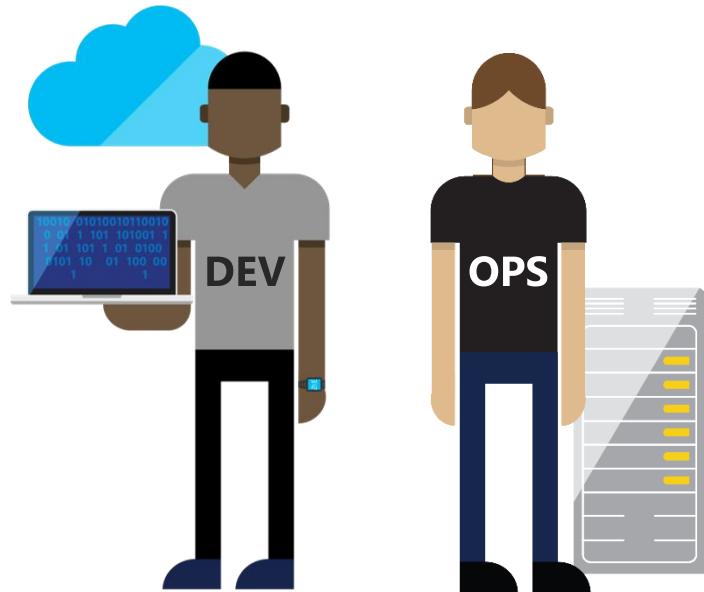
Measured for abilities
to deliver CHANGE



Measured for abilities
to deliver RELIABILITY



DevOps: the 3 stage conversation



1 | People

2 | Process

3 | Products

“DevOps is
development
and operations
collaboration”

“DevOps
is using
automation”

“DevOps
is **small**
deployments”

“DevOps is
treating your
infrastructure
as code”

“DevOps
is feature
switches”

“Kanban
for Ops?”

It's DevOps!

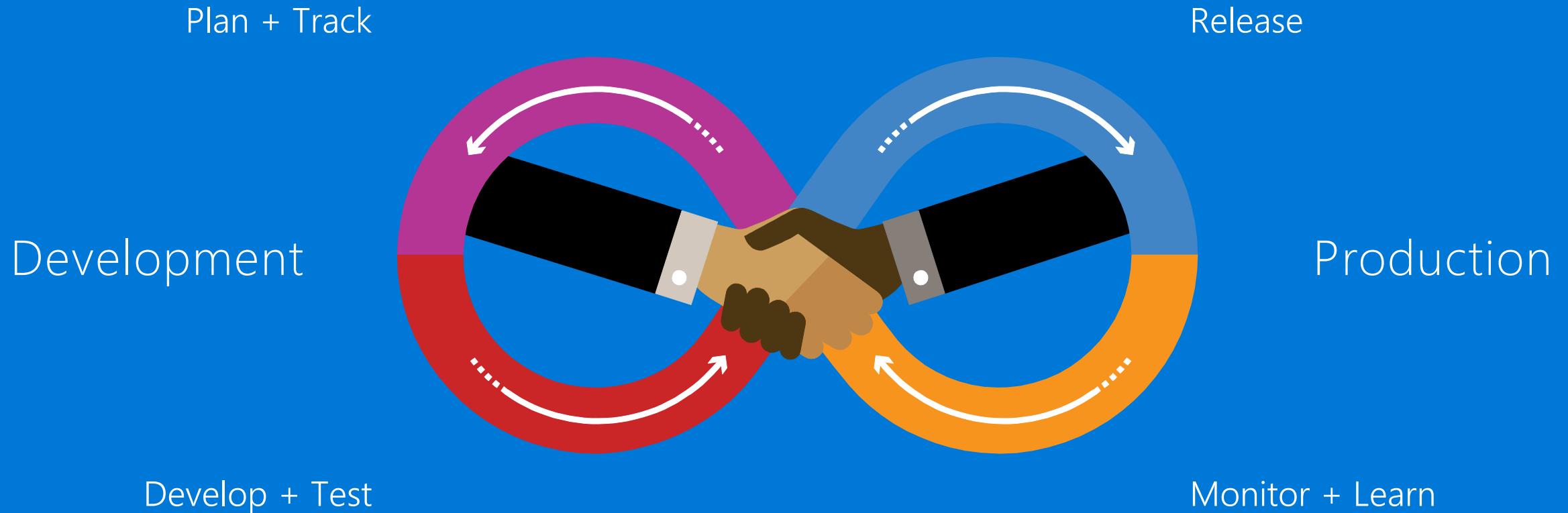
It's DevOps!

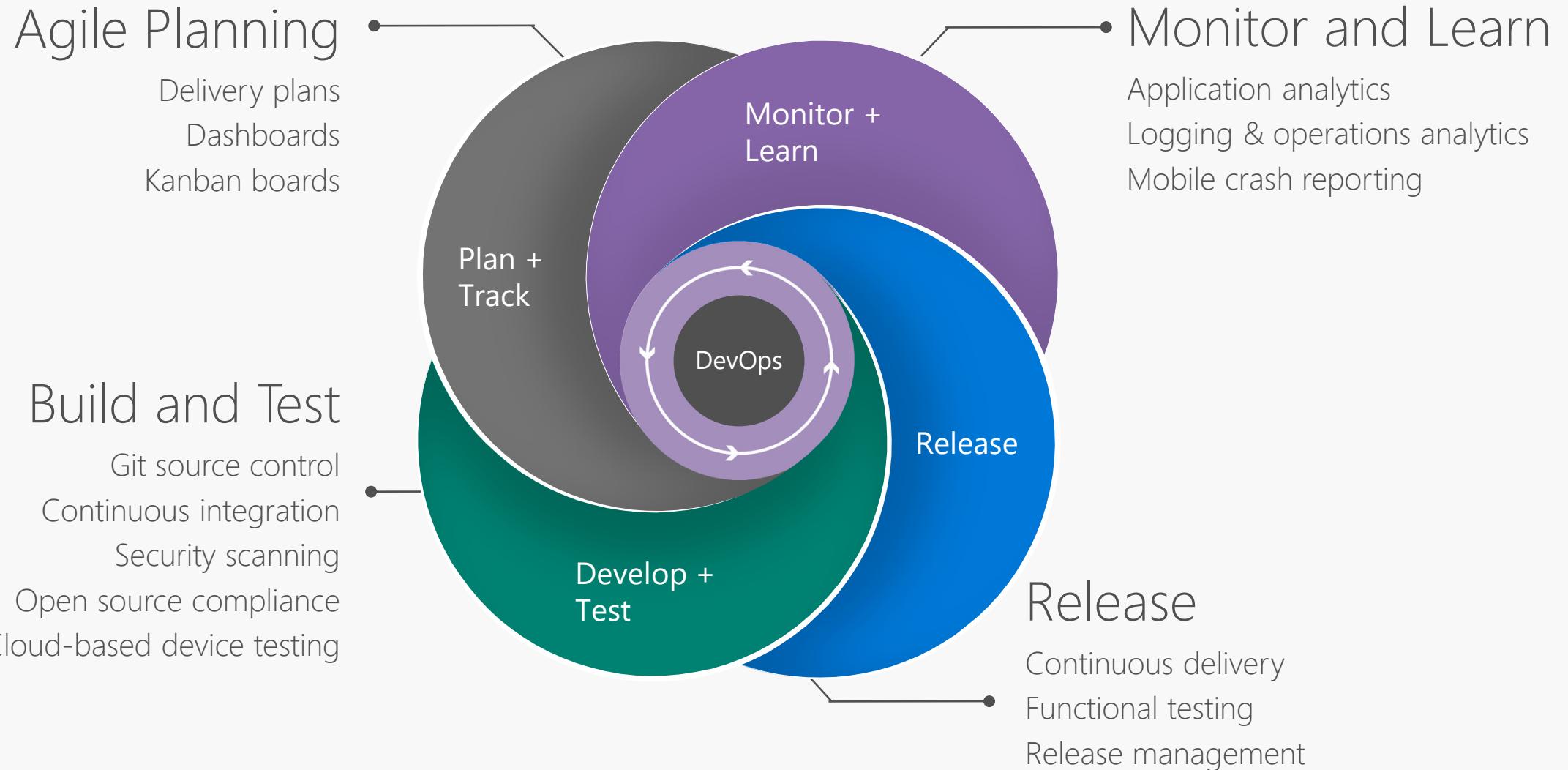
It's DevOps!

It's DevOps!



The converged DevOps lifecycle





Microsoft DevOps Solution

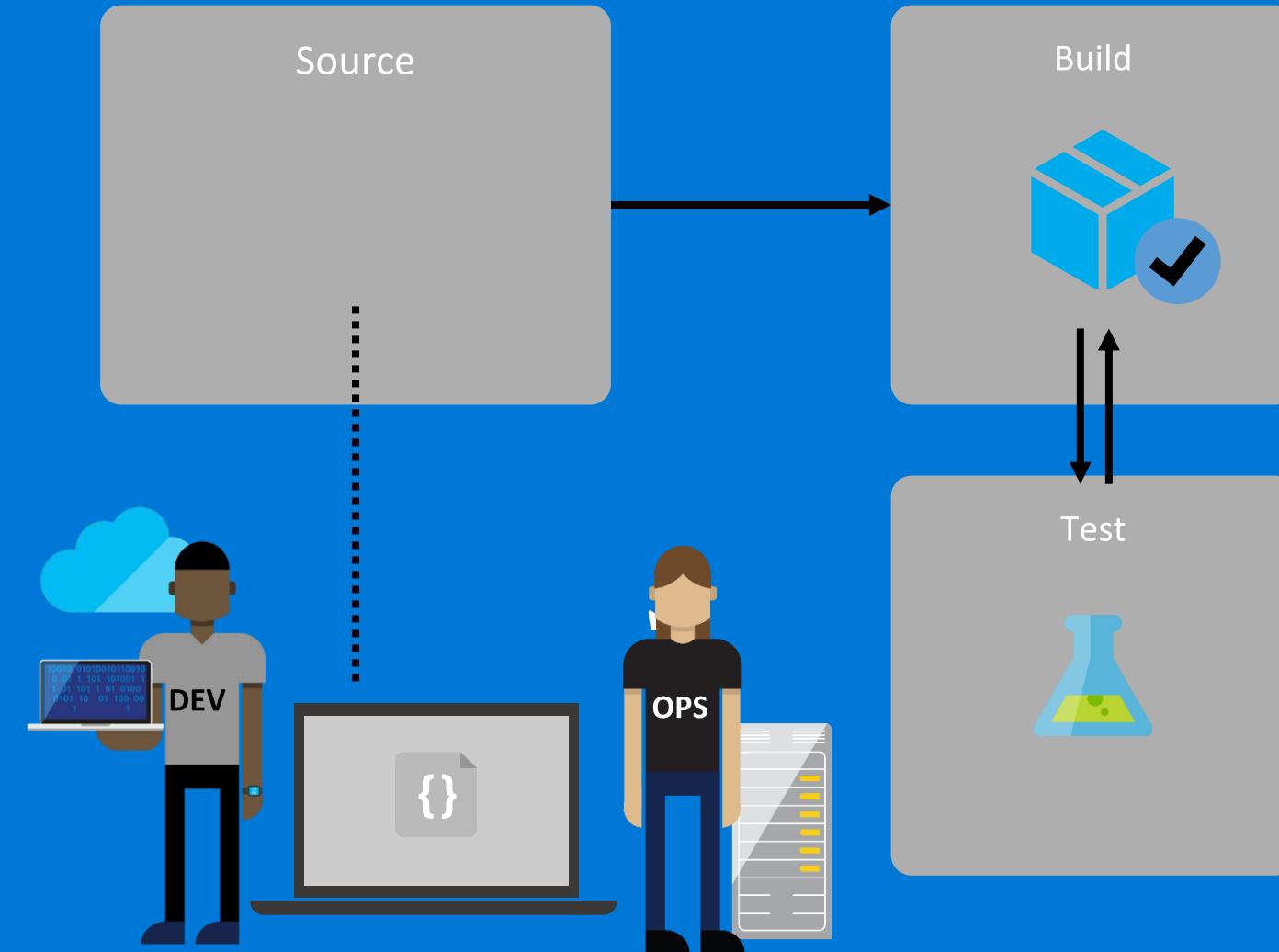
Visual Studio Team Services

Team Foundation Server

Application Insights

Visual Studio Mobile Center

Continuous Integration



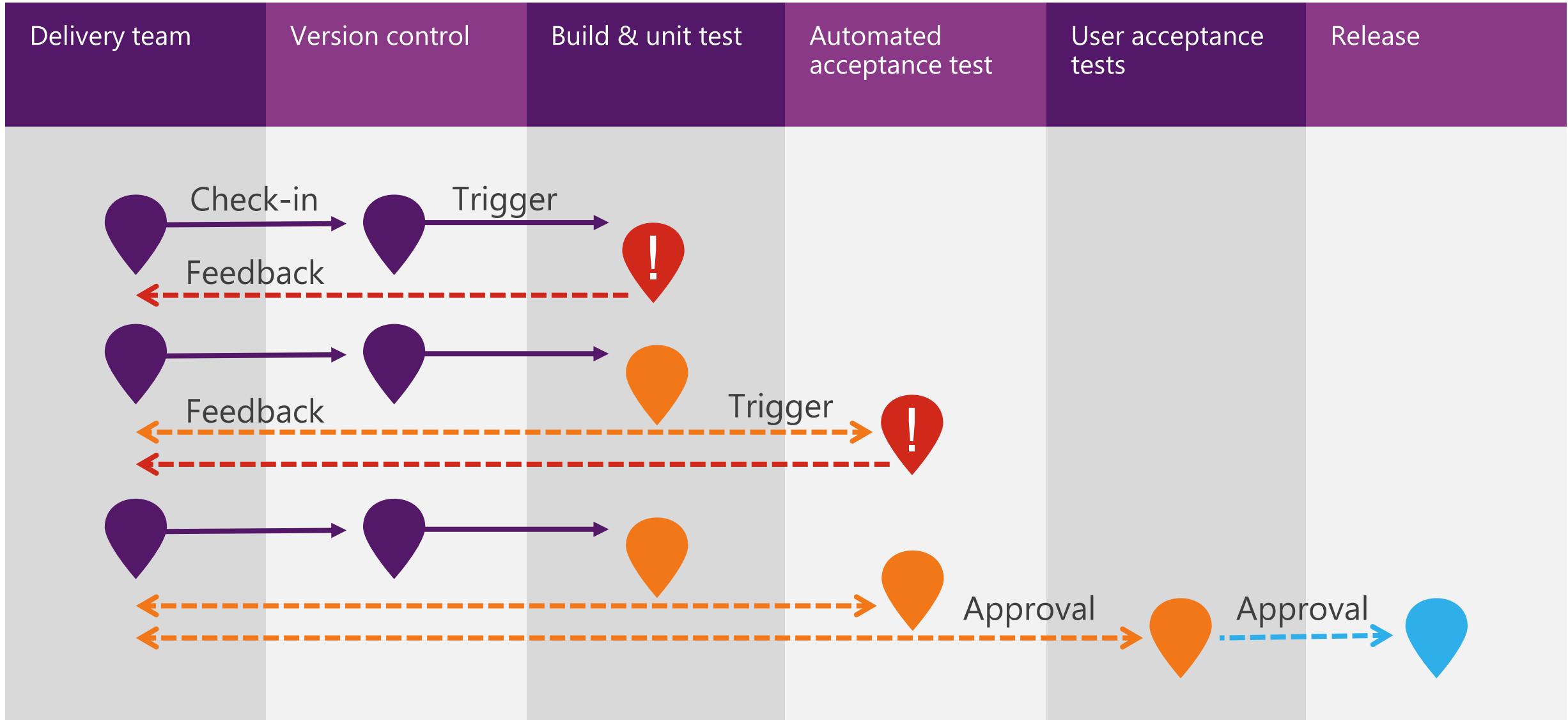
Value

- Accelerate Delivery
- Repeatability
- Optimized Resources

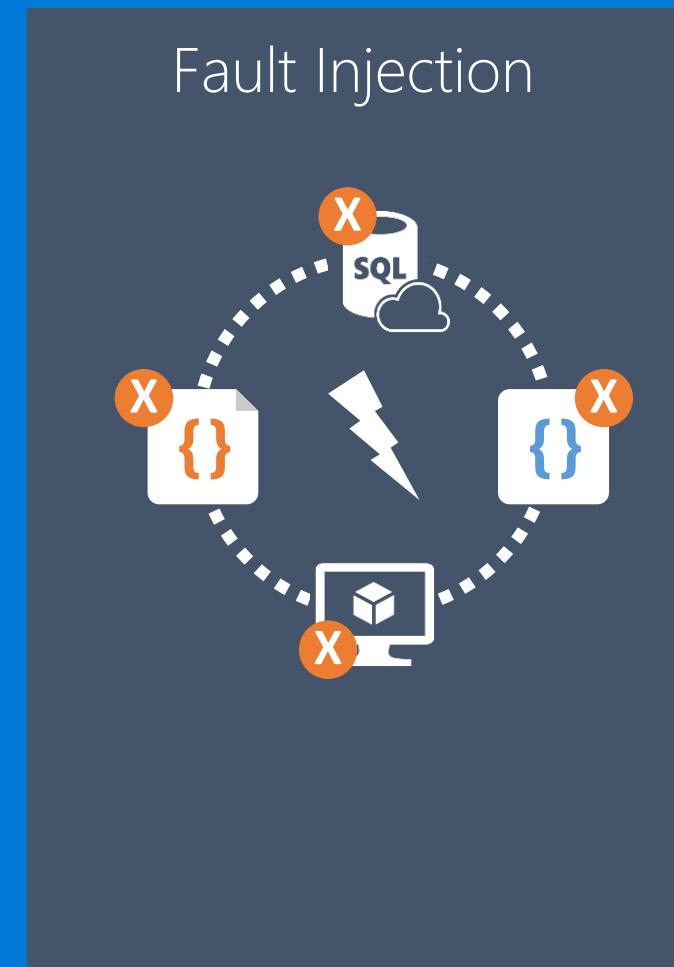
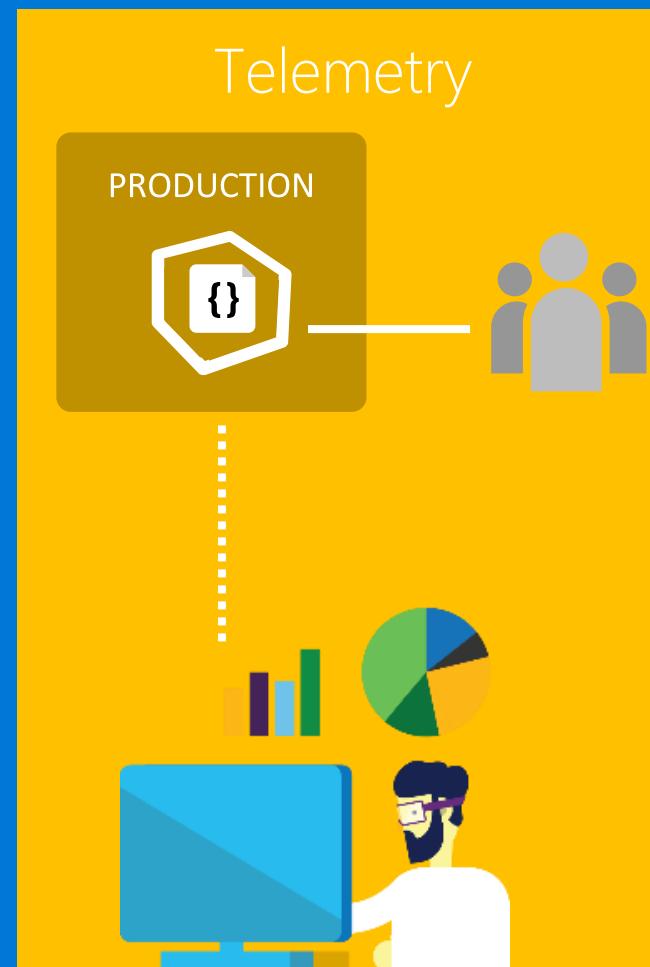
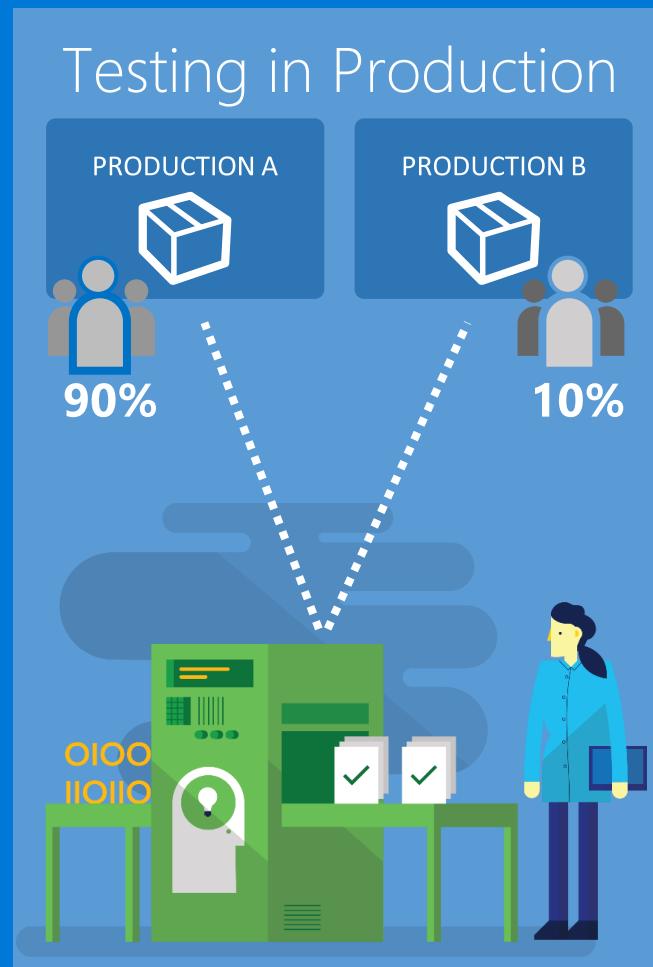
Measure

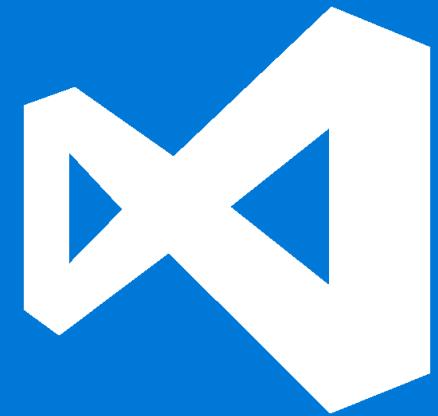
- More frequent releases
- MTTR
- MTTD

Continuous delivery process



Monitor and Learn





Visual Studio Team Services

a.k.a. VSTS

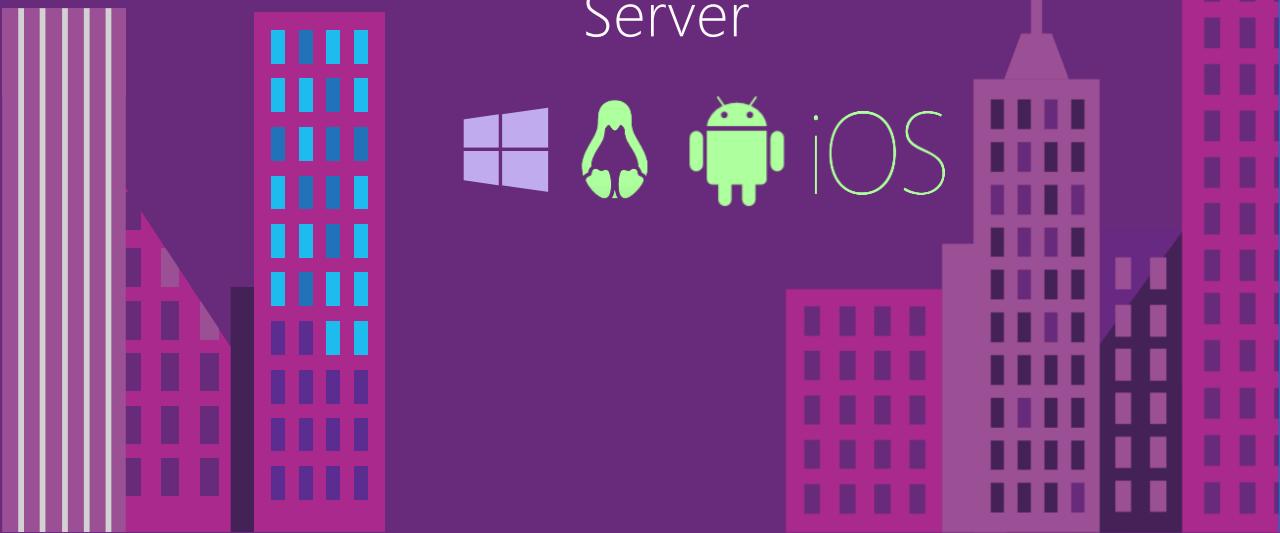
*Simplify and accelerate your DevOps
journey!*



Visual Studio
Team Services



Team Foundation
Server



Plan & Track Work

Source Code Management

Package Management

Quality Management

Cross-platform Build

Continuous Deployment

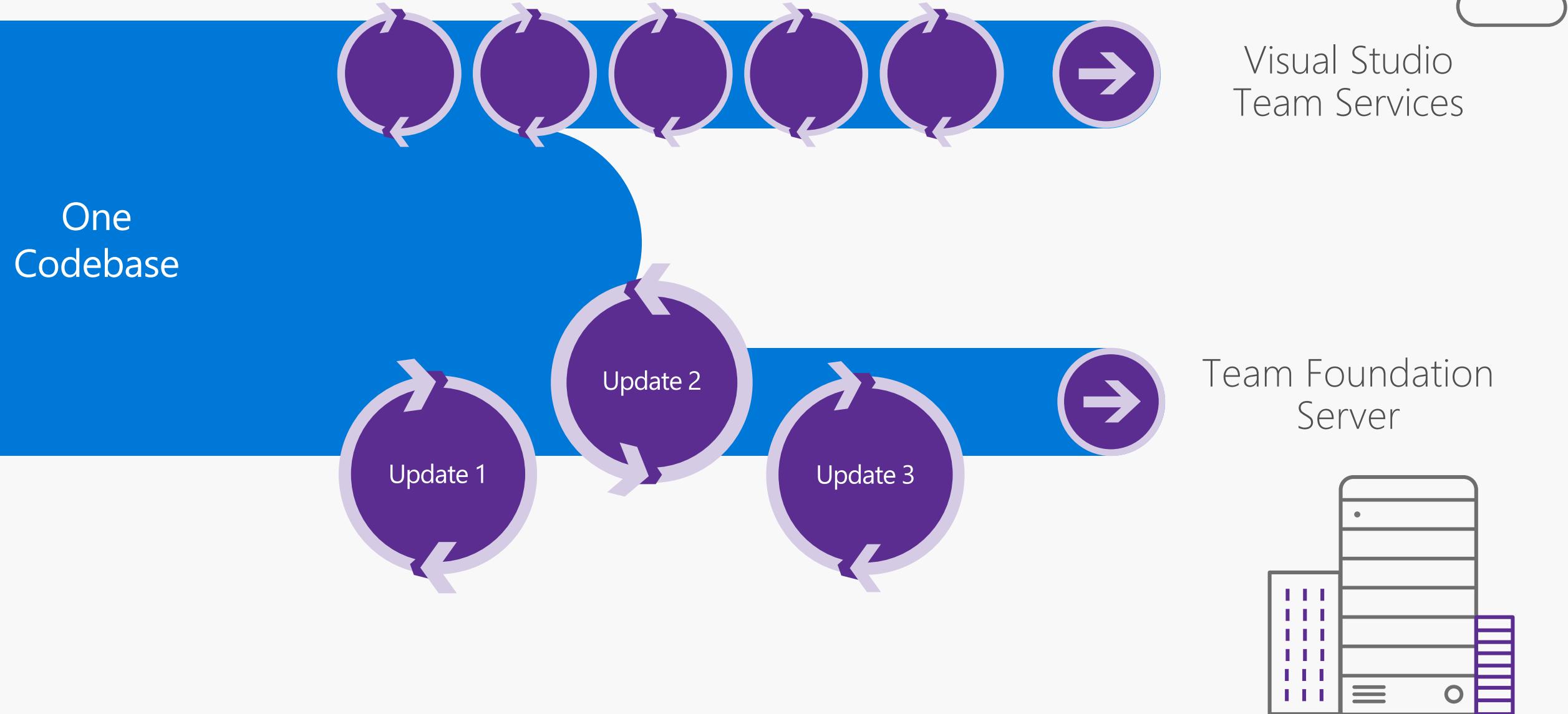
Release Management

Feedback Management

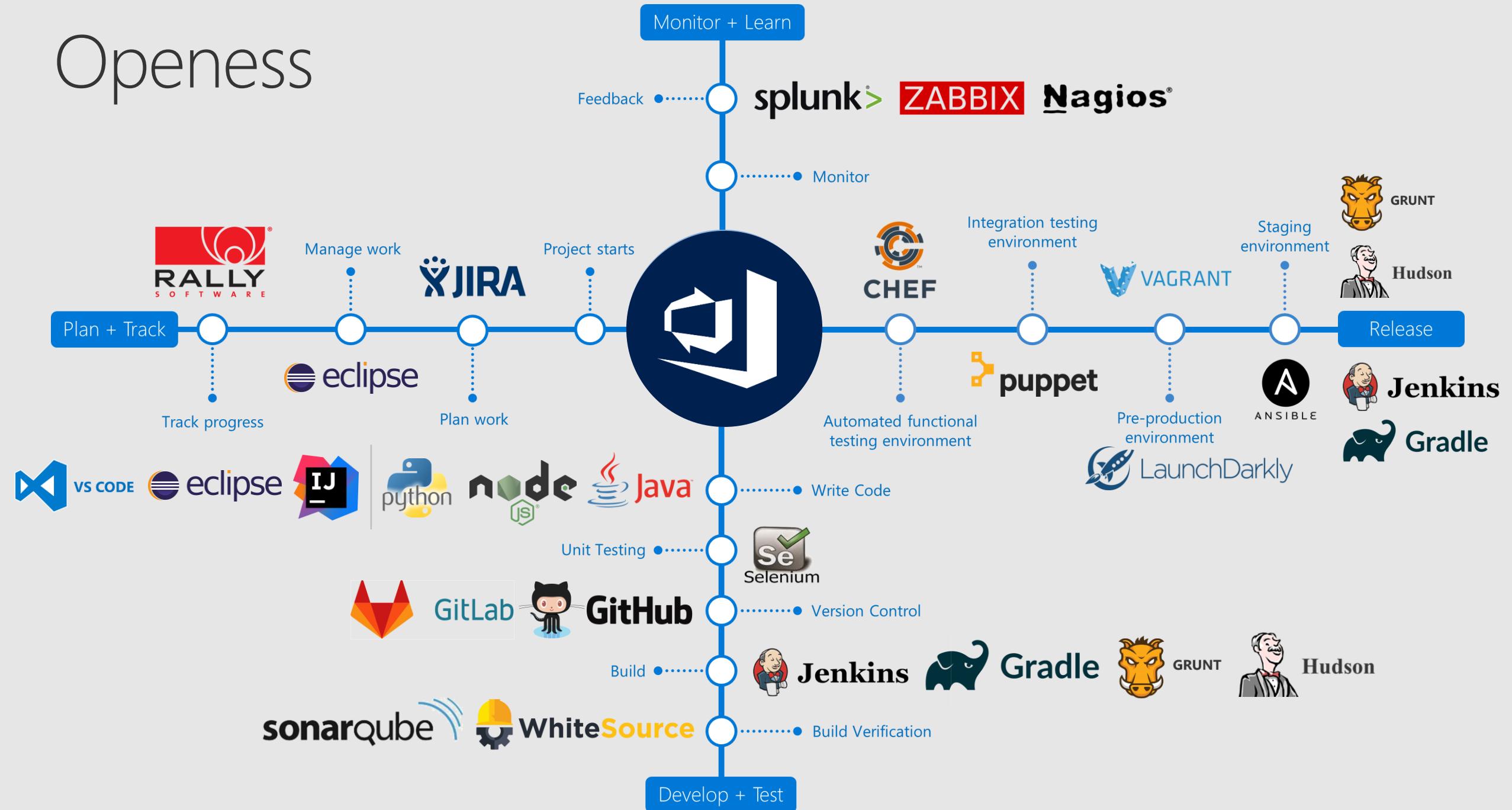
Application Telemetry

Extend and Customize

One codebase, two delivery streams



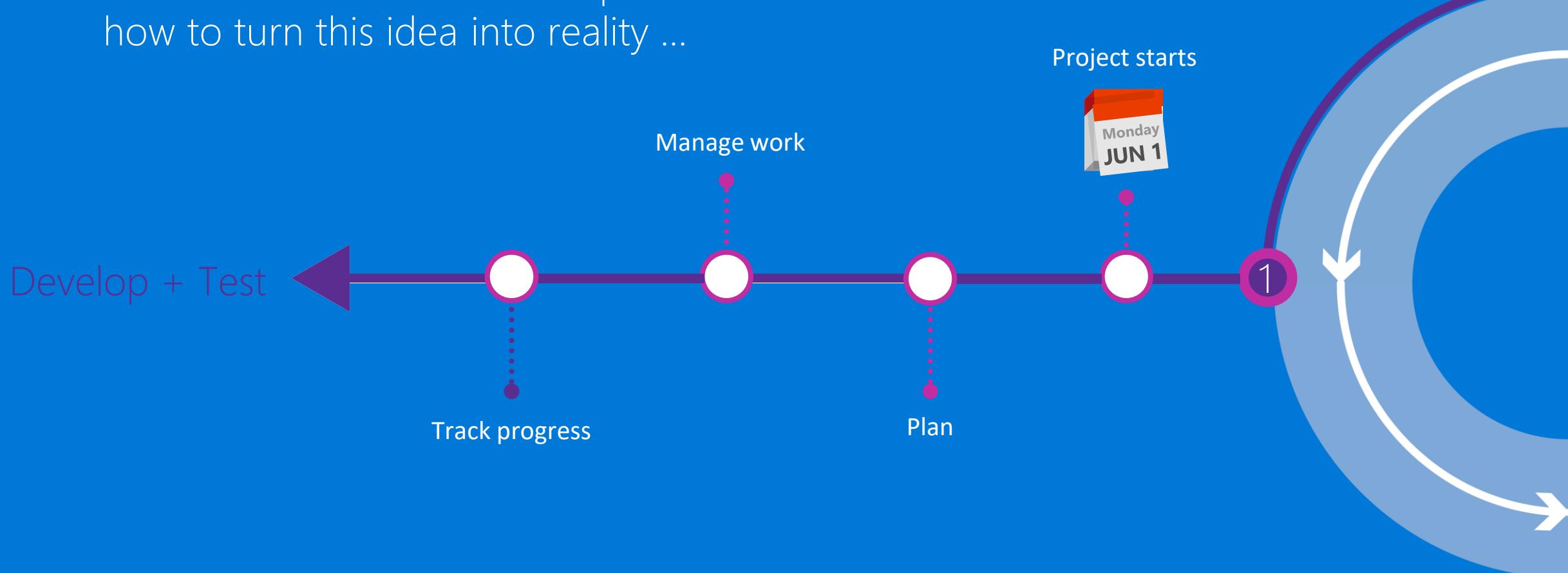
Openness





Plan

It starts with an idea – and a plan
how to turn this idea into reality ...



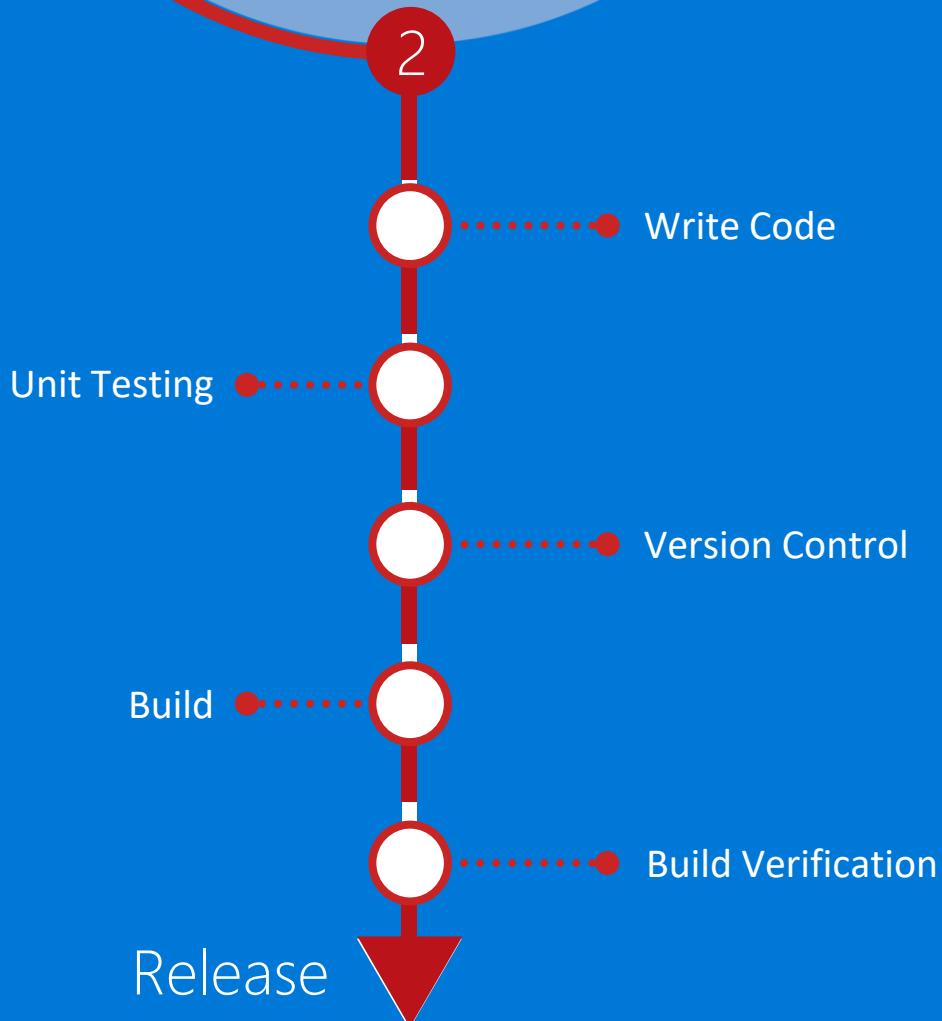
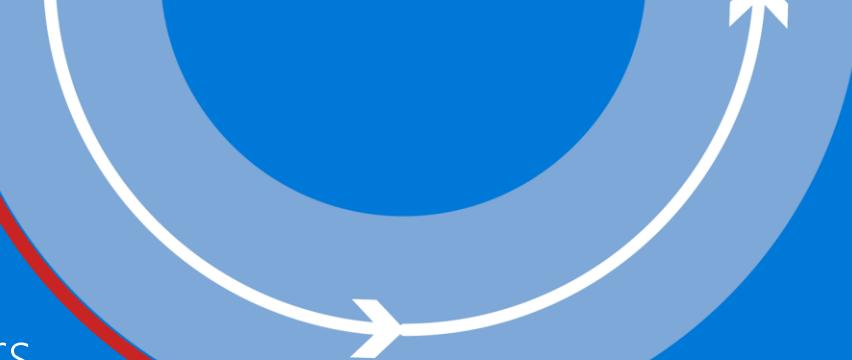
Demo: VSTS Plan

- Work items
- Related items links
- Definition of done
- Discussions (with @mention)
- Related work, development (links to commits)
- Visualize work item (graphical view of links and related items - work item visualization add-in from marketplace)
- Kanban board
- Styling rules for card (red if one task/work item is not taken within 2 days)
- Charts and Queries



Develop, Build, Test

Once the iteration starts, developers turn great ideas into features ...



Demo: VSTS Code

- TFVC or Git - centralized versus decentralized repo
- Multi repositories per project
- Online editor
- History
- Discussion on changings, branch,
- Pull Request for review, cherry-pick, revert, etc.
- Integration with Visual Studio, Eclipse, Android Studio

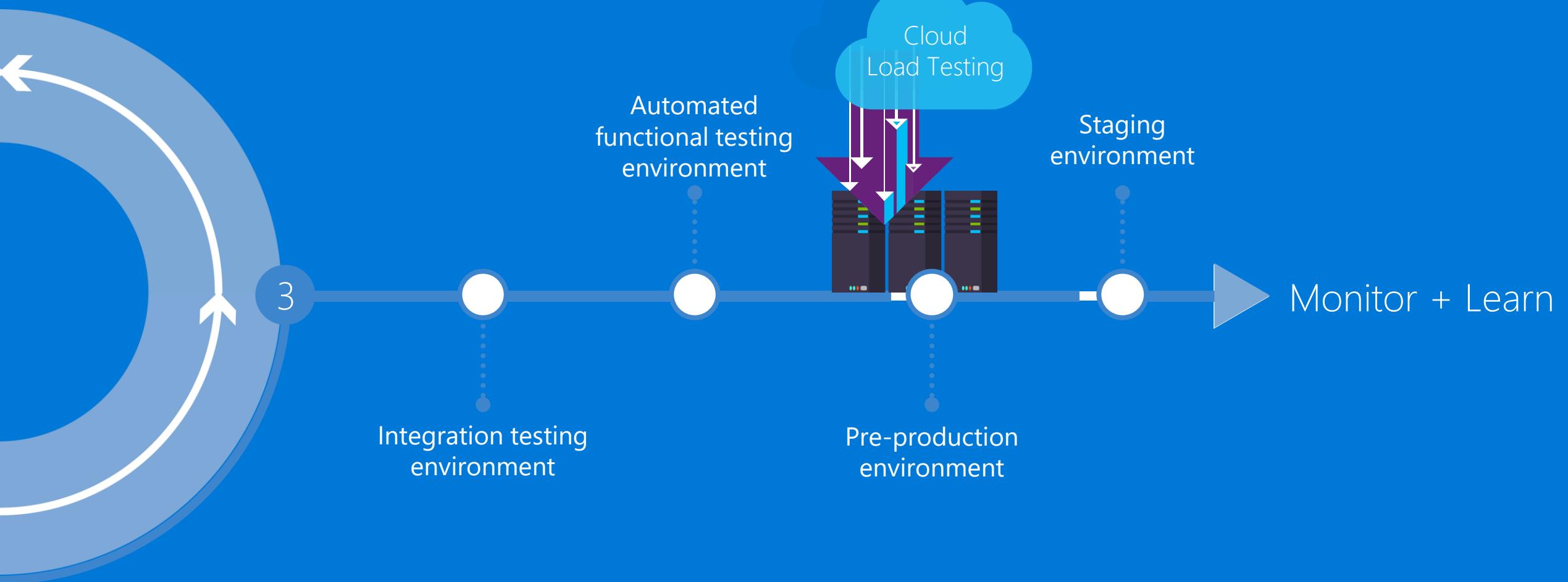
Demo: VSTS Build

- Build Definition – Continuous Integration
- Source code integration: VSTS, GitHub, Subversion, Remote Git
- Tasks
- Summary results, unit test integrated, associated commits, associated deployments,
- Console, logs,
- Marketplace (as devs you could build your own)
- History of the build definition modification by itself (json file)



Release

When unit tests pass, the build is deployed and tested for each stage in the release process



Demo: VSTS Release

Release

- Release Definition
- Build link (artifacts) – VSTS or Jenkins
- Tasks
- Environments
- Workflow, list of approvers, etc.

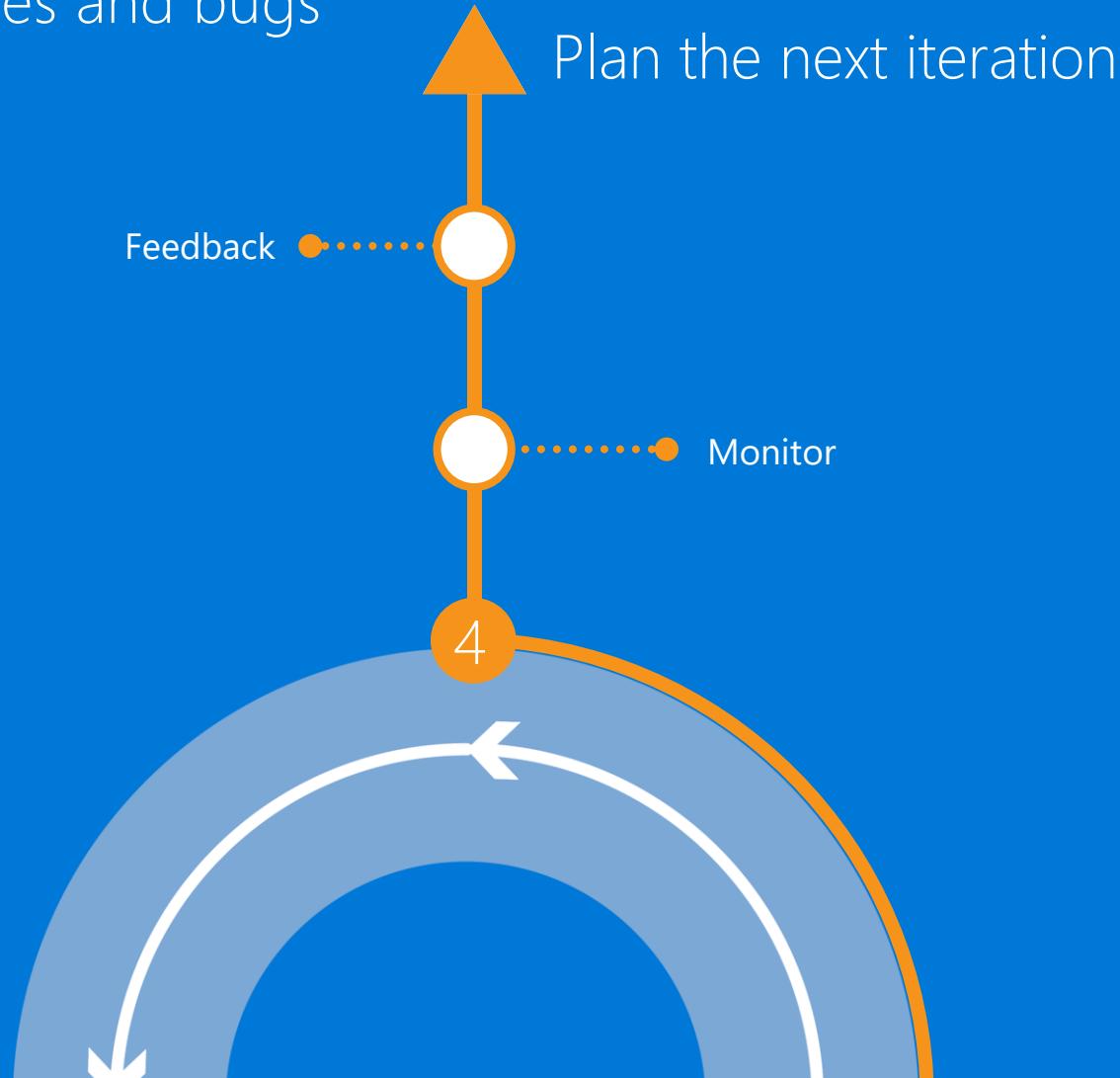
Test

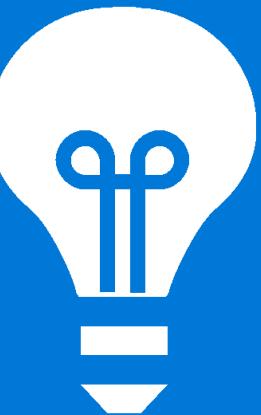
- Test plan
- Load Tests



Monitor + Learn

Learn and understand how users use your app, how it reacts and quickly fix issues and bugs



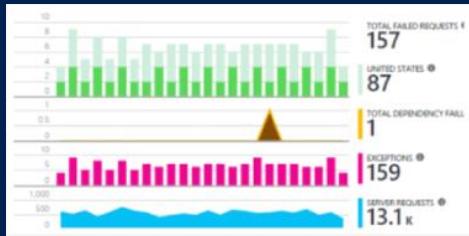


Application Insights

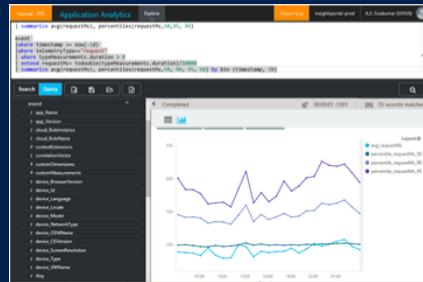
Application Insights

Detect, triage, and diagnose issues in your web apps and services

Exceptions and performance diagnostics



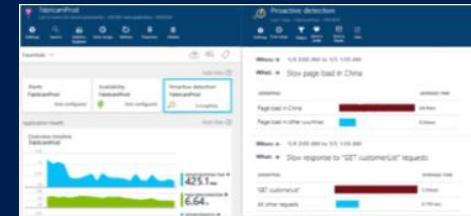
Interactive data analytics



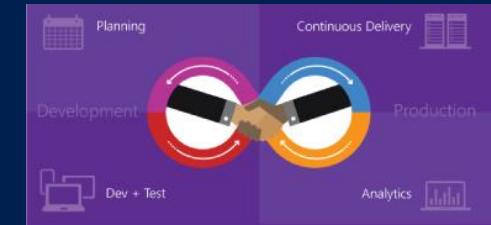
Azure Diagnostics



Proactive Detection



DevOps and Application Lifecycle Management



Outside-in monitoring

- URL pings and web tests from 16 global points of presence

Observed user behavior

- Real user monitoring for deeper diagnostic insights

Sources of Telemetry

Developer traces and events

- Whatever the developer would like to send to Application Insights

Observed application behavior

- No coding required – service dependencies, queries, response time, exceptions, logs, etc.

Infrastructure performance

- System performance counters

Features



App Map

Understand component dependencies



Smart Detection

Detects anomalies and alerts you



VS Search

Search and analyze your telemetry in VS



Analytics

Query terabytes of data in just seconds



CodeLens

View method performance inline with your code in VS



Live Metrics

See the effects of your web app in real time



Included with
Visual Studio 2015
and Visual Studio 2017

Also available in the
Visual Studio Marketplace:
"Developer Analytics Tools"



Available in the
Visual Studio Code
extension gallery:
"Azure Application Insights"

Work item integration

The screenshot illustrates the integration of work item management within a web application. On the left, a 'Failed Request Details' table shows logs for a failed request. On the right, a 'New Work Item' dialog is open, and a green arrow points from the work item's title in the dialog to its detailed view on the right.

Failed Request Details

Event time	6/13/2016 1:52:39 PM	...
Request name	GET Home/About	...
Response code	500	...
Successful request	false	...
Response time	1.41 ms	...
Request URL	http://webapplication1test20160323025055.azurewebsites.net/Home/About	...
Client IP address	73.183.241.0	...
First session	false	...

New Work Item

Visual Studio Team Services

* Title: Issue with GET Home/About

* Area: AI_Test_Playground

Work Item Type: Bug

Assigned To: (empty)

Details:

- Authenticated or anonymous traffic
- Anonymous user traffic
- City: Houston
- Client IP address: 73.183.241.0
- Continent: North America
- Country or region: United States
- Device type: PC

Recent work items

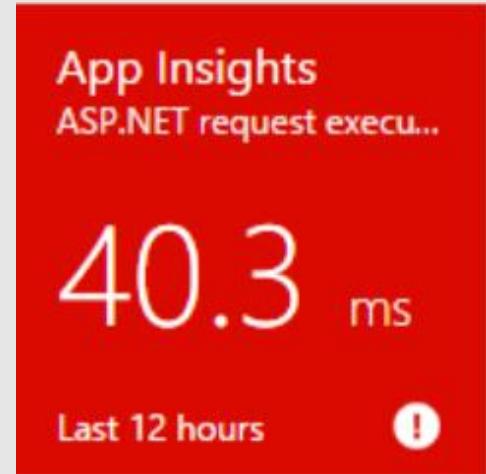
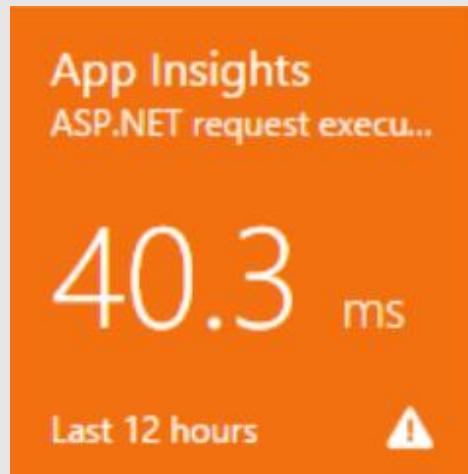
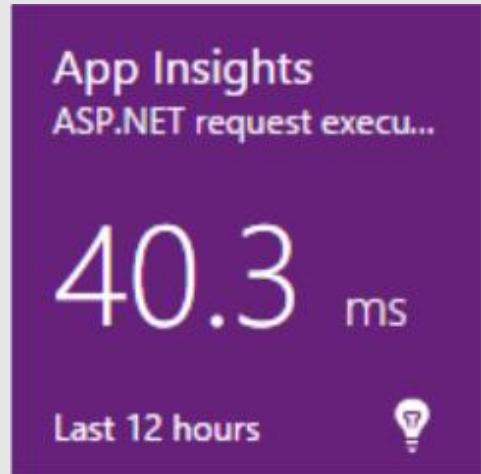
Bug 21

Repro Steps

Authenticated or anonymous traffic: Anonymous user traffic
City: Houston
Client IP address: 73.183.241.0
Continent: North America
Country or region: United States
Device type: PC
Event time: 6/13/2016 1:52:39 PM
First session: false
Operation Id: T4mU0HADM/0=

Operation name: GET Home/About
Real or synthetic traffic: Real user traffic
Request count: 1

VSTS dashboard widgets



Demo: Application Insights

Create a Web App from scratch via Visual Studio +Add Application Insights

Publish locally the app and watch the Events tab of the Diagnostic Tools View

Open the Application Insights Search View

Go to the portal to explore the associated Azure service

- *For creation: <https://portal.azure.com/#create/Microsoft.AppInsights>*
- *Overview – Analytics Search*
- *Usage*
- *Application Map*
- *Failures / Performance*
- *Servers / Browser*
- *Getting Started – Snippets*
- *Alerts, Features + pricing*
- *Work Items*
- *Continuous Export to Blob*

Tip: use cloud RoleName for your multi-component / microservices purposes



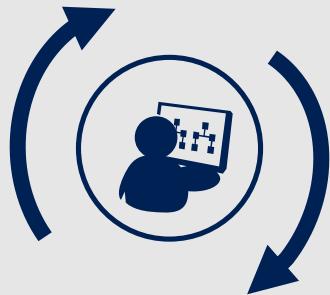
OMS

Services in OMS



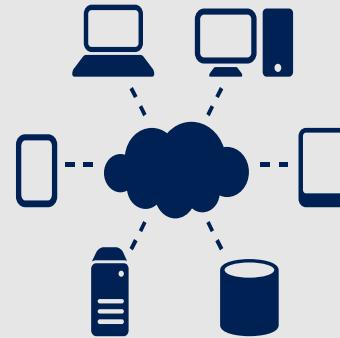
Log Analytics

Insights & Analytics
Security & Protection



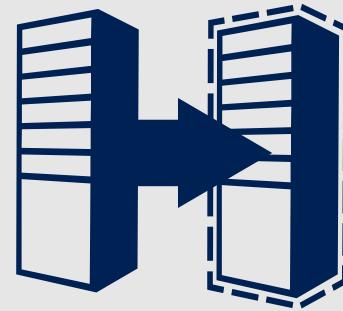
Azure Automation

Configuration & Automation



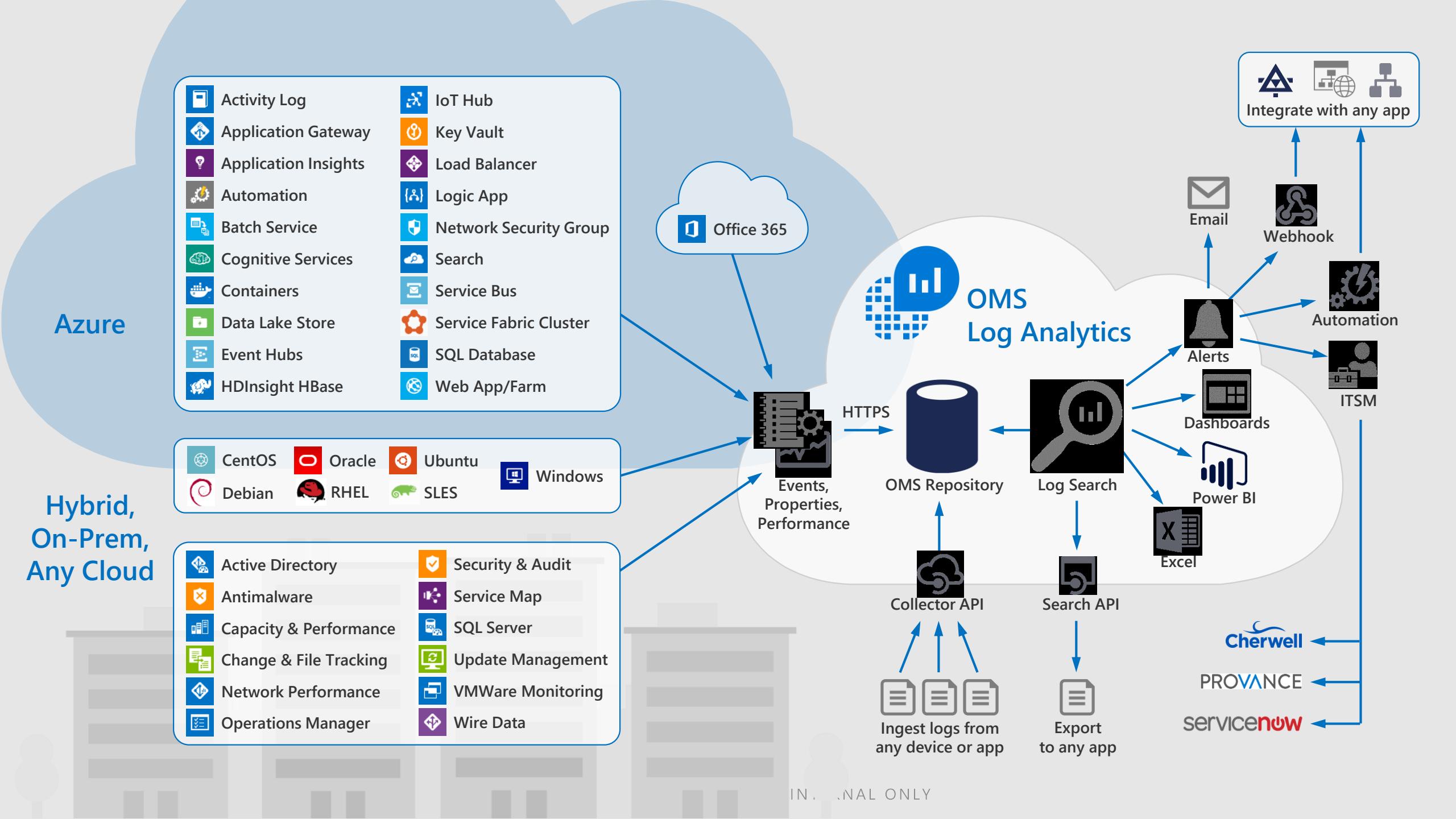
Azure Site Recovery

Backup & Disaster Recovery



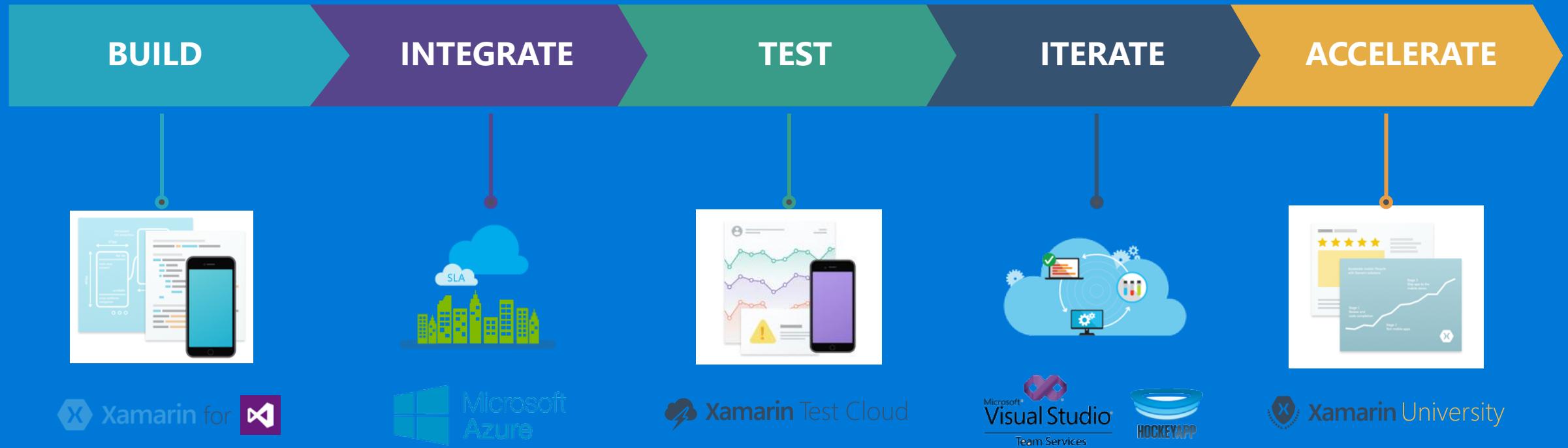
Azure Backup

Backup & Disaster Recovery



Visual Studio App Center

Mobile Lifecycle Solution



► Build

✓ Test

Analytics

Push Notifications

↑ Distribute

Visual Studio App Center

Mission control for mobile apps



Crash Reporting



Tables



Live Update



Identity



Storage



Visual Studio App Center

Automate your entire mobile app lifecycle in a few easy steps

Deliver high-quality apps that keep users coming back for more

Move faster and increase quality with the tools you already use—we support a wide variety of platforms

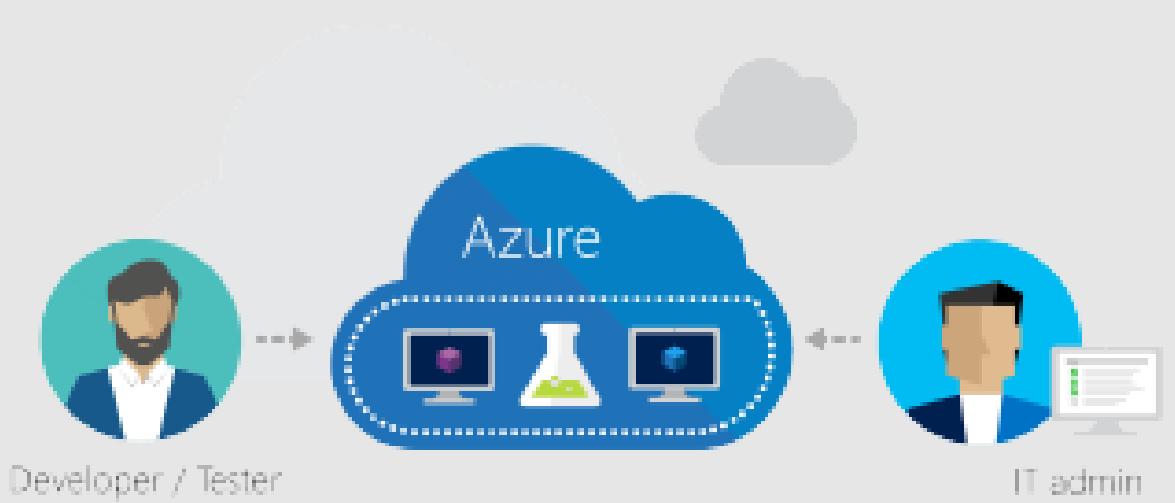
The screenshot shows the Visual Studio App Center interface. On the left, a sidebar menu lists various features: Getting Started, Build, Test, Distribute, Groups, Releases, Tables, Identity, Crashes, Analytics, and Push. The 'Groups' item is currently selected. In the main area, the 'Distribution Groups' section is displayed, listing four groups: 'Collaborators' (14 testers), 'Alpha Team' (5 testers), 'Beta Testers' (9 testers), and 'Just Thomas' (1 tester). Each group entry includes a small grid of user profiles. To the right of the distribution groups, there are tabs for 'TESTERS' and 'RELEASES'. A modal window titled 'TESTERS' is open, showing a list of users with checkboxes next to their names: 'olegde' (olegde@micromax.com), 'Andreas L' (anlinde@micromax.com), 'Karl Piteir' (kapiteir@micromax.com), 'DennisP' (dpan@micromax.com), and 'Siminuk' (Siminap@micromax.com). At the bottom of the interface, there are navigation icons for 'builddemo', '?', and '⚙'.



Dev/Test Lab

Fast, easy and lean dev-test environments in Azure!

Dev/Test Lab



- Simplify cost management
- Quickly set up environments
- Integrate with your existing toolchain
- Tailor Labs to your scenario

Solution components

- Reducing Cost
 - Reduce service cost to near zero with Azure DTL
 - Reduce VM Hours - Azure DTL VM Policies (auto shutdown)
 - Constrain cost – Azure DTL VM Policies restrict VM sizes
 # of VMs per Lab and/or User
 - MSDN Pricing (DevTest Offer)
- DevSeat Service
 - Replace 3rd Party Service with Azure DTL
 - Enable self service
 - Image Bakery
 - Integration with VSTS

Demo: Dev/Test Lab

Create a Dev/Test Lab via the Azure portal

<https://portal.azure.com/#create/Microsoft.DevTestLab>

Dev/Test Lab introduction video

<https://channel9.msdn.com/Blogs/Azure/What-is-Azure-DevTest-Labs>

Go through the blades via the Azure portal: My VMs, My secrets and Configuration and policies

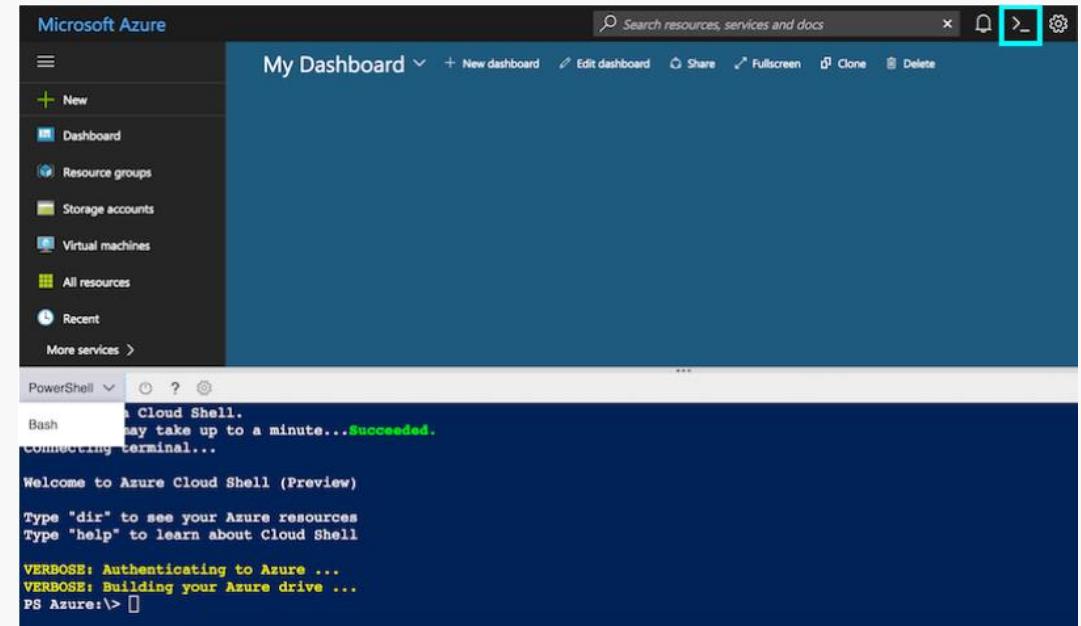
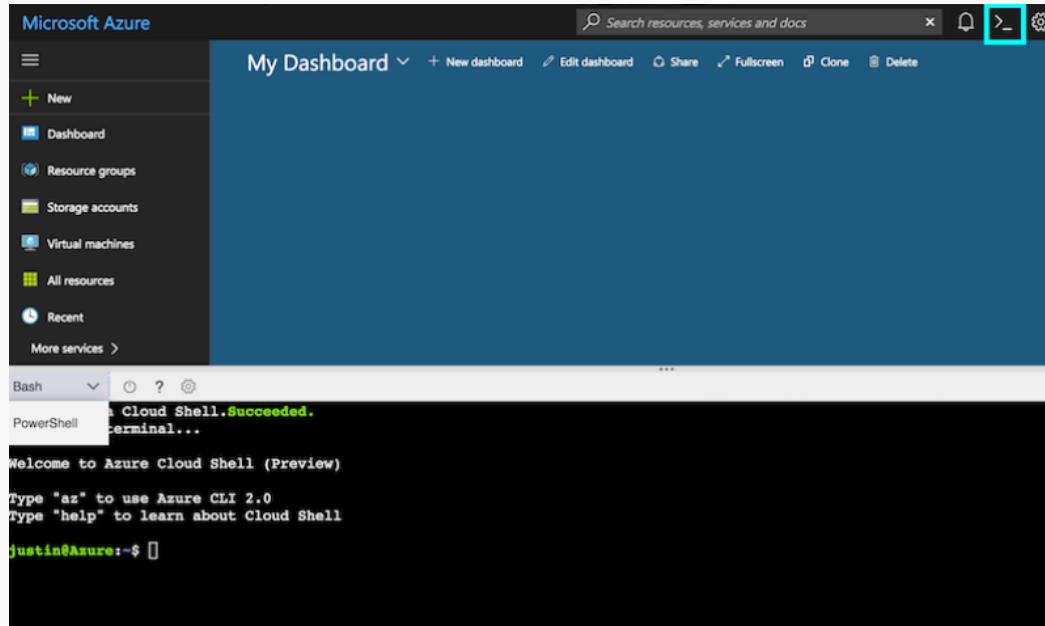
Azure Dev/Test Lab artifacts, scripts and samples on GitHub

<https://github.com/Azure/azure-devtestlab>

Azure Cloud Shell

*Interactive, browser-accessible shell
for managing Azure resources*

Azure Cloud Shell



Try from shell.azure.com using this button.

 [Launch Cloud Shell](#)

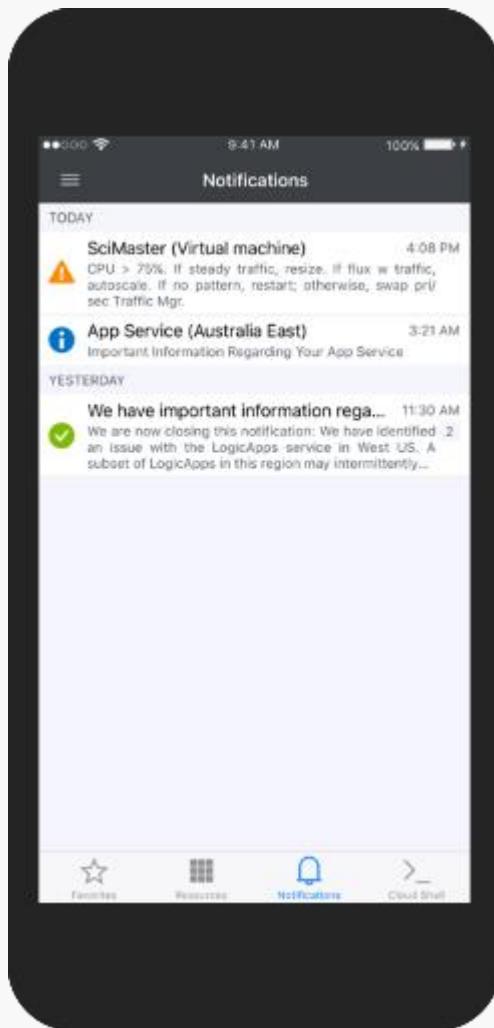
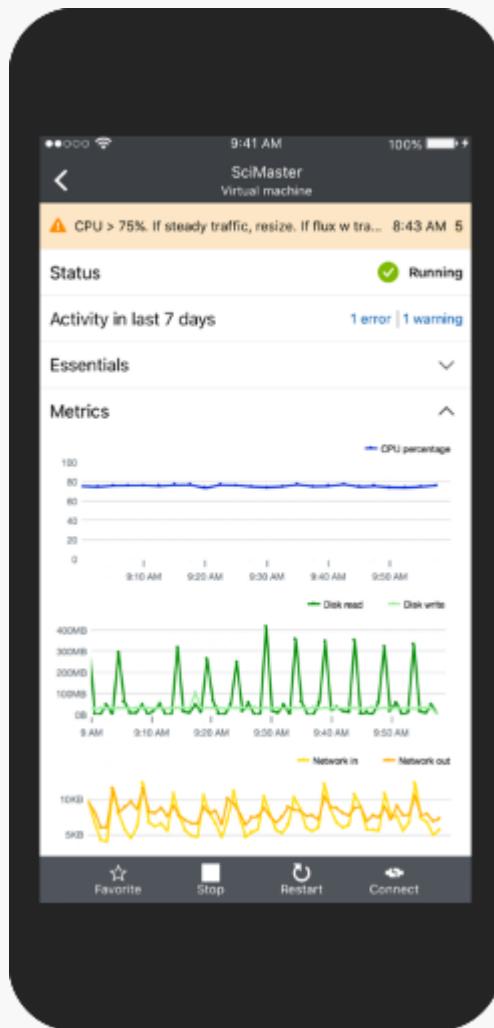
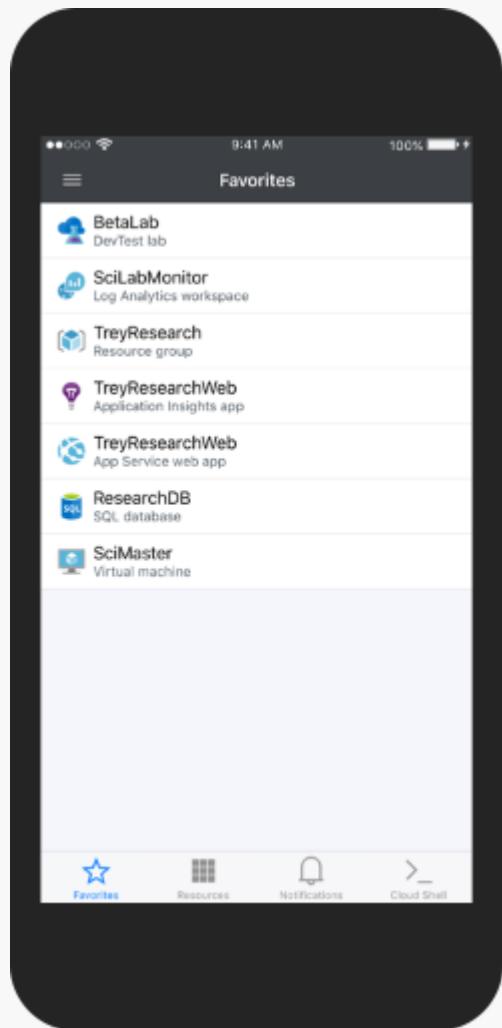
Try from Azure portal using the Cloud Shell icon.



Azure mobile app

Stay connected to your Azure resources—anytime, anywhere

Azure mobile app



The Cloud Shell screen shows a terminal session titled "Bash" with the following output:

```
Bash ✘ ⓘ Requesting a Cloud Shell...Succeeded.
Connecting terminal...
Welcome to Cloud Shell (Preview)
"az account list" for subscriptions
"help" to learn more
michael@Azure:-$ az account set --subscription c6936c36-beb3-27a7-90b7-390c1b605e3
a
michael@Azure:-$ az group create -l westus -n ResearchLab
{
  "id": "/subscriptions/c6936c36-beb3-27a7-90b7-390c1b605e3/resourceGroups/ResearchLab",
  "location": "westus",
  "managedBy": null,
  "name": "ResearchLab",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null
}
michael@Azure:-$ az vm create -n LabMaster -g ResearchLab --image UbuntuLTS --generate-ssh-keys
Created SSH key files: /home/michael/.ssh/id_rsa, /home/michael/.ssh/id_rsa.pub
```

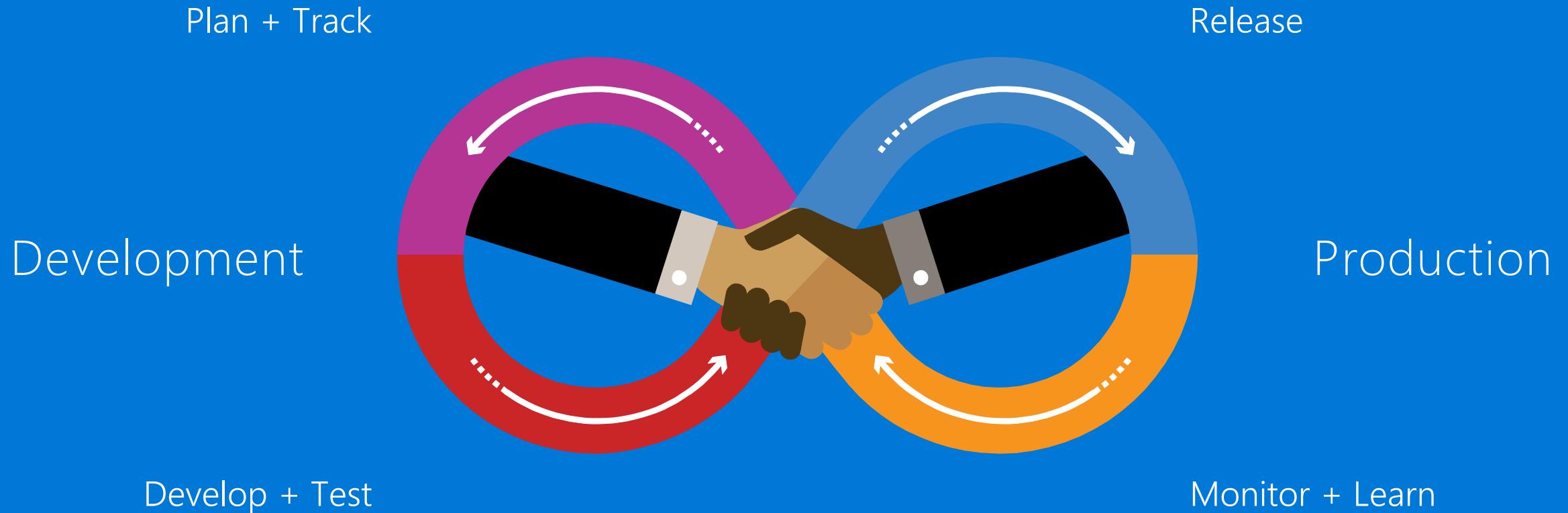
Wrap up

DevOps & VSTS

- ✓ Resource Groups
- ✓ ARM Templates
- ✓ Dev/Test Lab
- ✓ DevOps
- ✓ VSTS
- ✓ Application Insights, OMS
- ✓ Further resources

+ Hands-on Lab

The converged DevOps lifecycle



Azure is an open cloud

DevOps



Management



Applications



App frameworks and tools



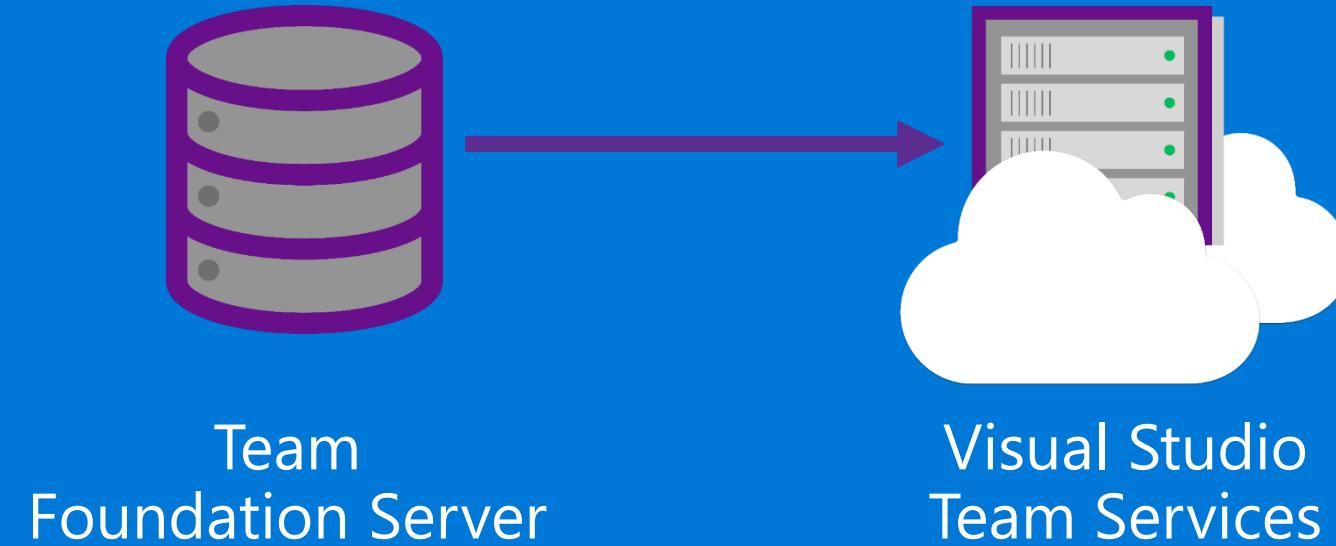
Databases and middleware



Infrastructure



TFS to VSTS migration guide



<https://aka.ms/tfsimportdata>

Resources

Cloud Application Development

<https://mva.microsoft.com/en-US/training-courses/cloud-application-development-17172>

Building Infrastructure in Azure using Azure Resource Manager

<https://mva.microsoft.com/en-US/training-courses/building-infrastructure-in-azure-using-azure-resource-manager-14321>

Azure Resource Manager DevOps Jump Start

<https://mva.microsoft.com/en-us/training-courses/azure-resource-manager-devops-jump-start-8413>

Dev/Test in the Cloud

<https://mva.microsoft.com/en-US/training-courses/devtest-in-the-cloud-16274>

Microsoft Azure on EdX

https://www.edx.org/course/?search_query=azure&school=Microsoft%3A%20Microsoft

Objectives & Takeaways

Objectives → Be inter-active!

Train The Trainer - TTT

Get you excited! ☺

Introduce and cover most of the Azure Cloud App Dev capabilities (L100) – 25%

Illustrate with demos (L200) – 25%

Practice with Hands-on Labs (L300) – 50%

Takeaways → Be evangelist!

Think Cloud App Dev and PaaS offers first

Spread the words, help and train your teammates, managers and customers

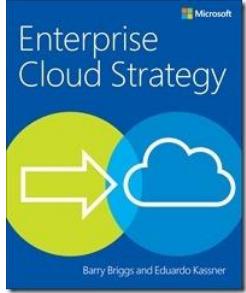
Make more concrete your L300 by practicing

Further resources

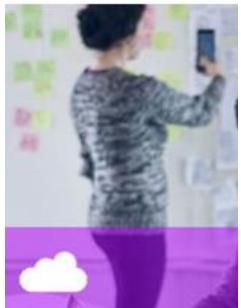
Architecture guidance

- Know the limits of each service
- Know the SLA of each service
- Know the price of each service
- Know the regions where you could host each service
- Know the compliances of the Azure platform
- Know the Azure PaaS Security Best Practices and the Azure Security Services and Technologies
- Automate early and always with ARM Templates and for example with Visual Studio Team Services
- Don't reinvent the wheel, check out these Azure samples!
- Get inspired from the Microsoft Technical Case Studies and the Azure Solution Architectures and make amazing architecture diagrams with these icons
- Are you an AWS expert? Take a look at this service mapping page
- Are you a Java expert? Take a look at the Java Developer Center

Free e-books



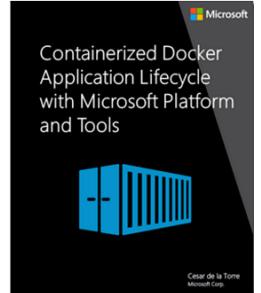
[Enterprise Cloud
Strategy \(2nd edition\)](#)



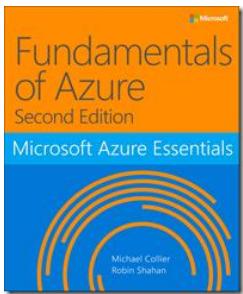
[Cloud Practice
Playbooks](#)



[Cloud Application
Architecture Guide](#)



[Containerized Docker
Application Lifecycle](#)



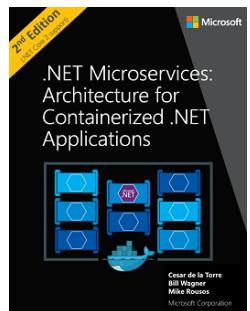
[Fundamentals
\(2nd edition\)](#)



[Azure Developer
Guide \(2nd edition\)](#)



[Web Apps for
Devs](#)



[Architecting &
Developing
Containerized and
Microservice based .NET
Applications](#)

<https://aka.ms/cloudappdevplaybook>



Microsoft
Partner
Network



DEFINE YOUR
STRATEGY



OPERATIONALIZE &
GET TRAINED



GO TO
MARKET



CLOSE & EXECUTE
DEALS



OPTIMIZE & GROW
YOUR PRACTICE



Grow revenue
streams with your
Cloud Application
Development
practice

Download the
playbook!



Microsoft Azure Certifications

[70-532](#): Developing Microsoft Azure Solutions

[70-533](#): Implementing Microsoft Azure Infrastructure Solutions

[70-535](#): Architecting Microsoft Azure Solutions

[70-473](#): Designing and Implementing Cloud Data Platform Solutions

[70-475](#): Designing and Implementing Big Data Analytics Solutions

[70-537](#): Configuring and Operating a Hybrid Cloud with Microsoft Azure Stack (Beta)

[70-538](#): Implementing Microsoft Azure DevOps Solutions

[70-539](#): Managing Linux Workloads on Azure

→ [MPN – Cloud Platform Competency](#)

→ [MTA / MCSA / MCSE - Cloud](#)

Exam Voucher Promotion

Are you working towards completing your cloud competency....we are offering exam vouchers at 50% off (two per partner)

To request your code please email

partner@microsoft.com



Microsoft Azure - Conferences

Global Azure Bootcamp - April

//build – May

Global DevOps Bootcamp - June

Inspire - July

Ignite - September

Connect() - November

Microsoft Tech Summit – different places/dates

Azure Support Options

	BASIC	DEVELOPER	STANDARD	PROFESSIONAL DIRECT	PREMIER
		Purchase support	Purchase support	Purchase support	Contact Premier
Customer Service and Communities	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums
Best Practices	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations
Health Status and Notifications	Access to personalized Service Health Dashboard & Health API	Access to personalized Service Health Dashboard & Health API	Access to personalized Service Health Dashboard & Health API	Access to personalized Service Health Dashboard & Health API	Access to personalized Service Health Dashboard & Health API
Technical Support		Business hours access ¹ to Support Engineers via email	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone
Who Can Open Cases		Unlimited contacts / unlimited cases			
Third-Party Software Support		Interoperability & configuration guidance and troubleshooting			
Case Severity/Response Times		Minimal business impact (Sev C): <8 business hours ¹	Minimal business impact (Sev C): <8 business hours ¹	Minimal business impact (Sev C): <4 business hours ¹	Minimal business impact (Sev C): <4 business hours
			Moderate business impact (Sev B): <4 hours	Moderate business impact (Sev B): <2 hours	Moderate business impact (Sev B): <2 hours

Questions

Answers

Hands-on labs

Day 3

DevOps on Azure with VSTS – 3h

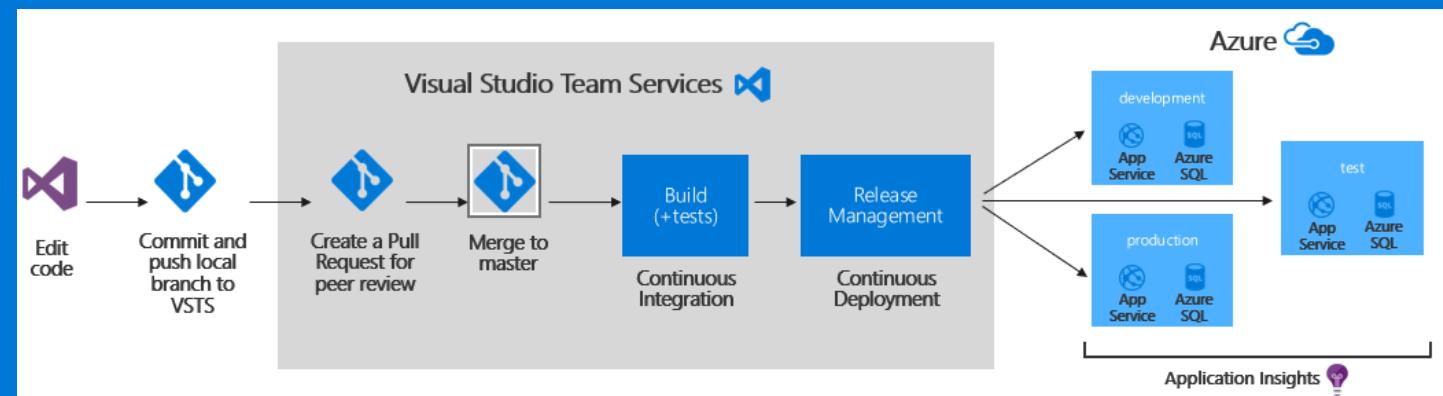
Create an [Azure Resource Manager \(ARM\)](#) template to provision Azure resources

Configure continuous delivery with [Visual Studio Team Services \(VSTS\)](#)

Configure [Application Insights](#) into an application

Create a Visual Studio Team Services project and [Git](#) repository

And more [DevOps](#) practices!



Questions

Answers

