



DevOps Update

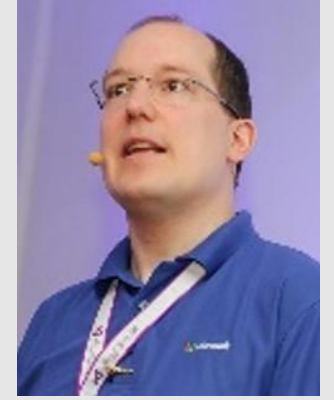
Gerwald Oberleitner

Evangelist & Sales Manager, Visual Studio & DevOps
DX, Microsoft Austria

gerwaldo@microsoft.com, www.linkedin.com/in/gerwaldo/

Who am I?

Gerwald



17yrs Microsoft

Sales Lead for Visual Studio, Xamarin, MSDN/subscriptions, DevOps, Azure Dev Services
Partner Business Evangelist for 3 of the largest ISVs in Austria

Technical grounds in networking

Certified SCRUM Master, agile software development



Speaker @ conferences (Linux Days, Software Quality Days, TopConf, ..)

Building a digital customer experience



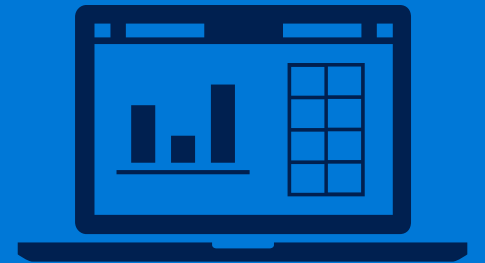
Amazing
experiences



Open and scalable
cloud platform



Data-driven
intelligence



Agility and
DevOps

The way we build applications is changing

Past

Long application cycles

Monolithic apps

Servers and VMs

Less data

Desktop

Distinct infrastructure and operations teams



SERVERS

Today

Rapid innovation

Loosely-coupled apps and microservices

Serverless

Big Data

Mobile

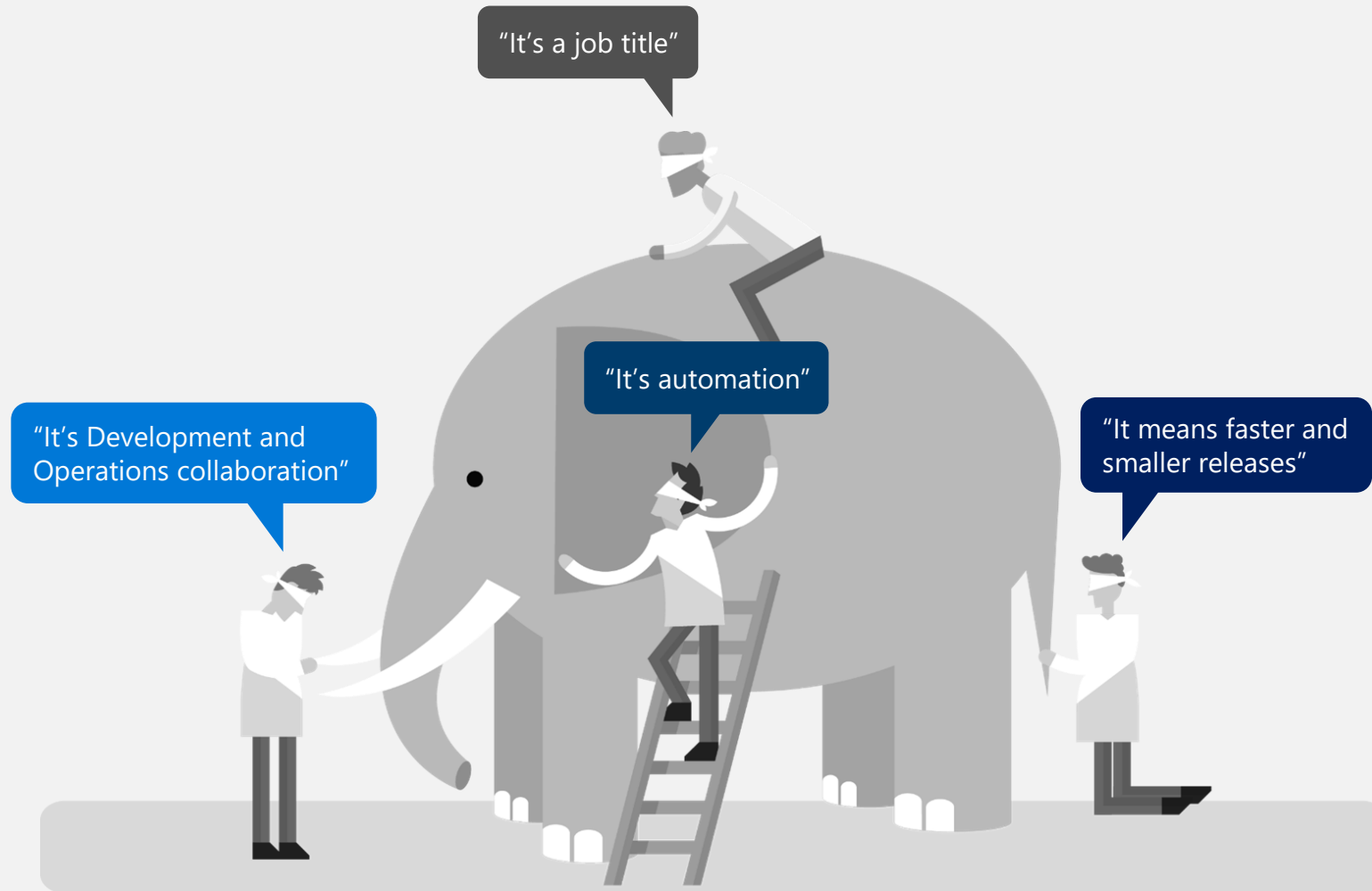
Service-focused DevOps teams



SERVICES

What is DevOps?

What is DevOps?



DevOps

“DevOps is the union of people, process, and platform to enable continuous **delivery of value to our end users.**”

- Donovan Brown

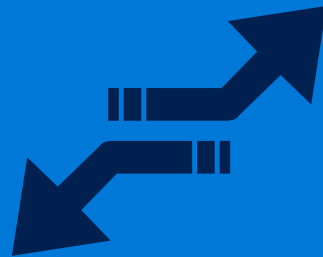
People



Bringing people together

- Collaborate more
- Share common goals
- Focus on improvement

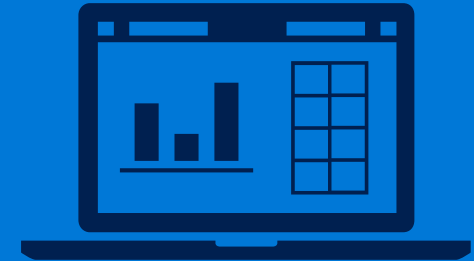
Process



Delivering value faster

- Eliminate waste
- Increase efficiency
- Streamline feedback

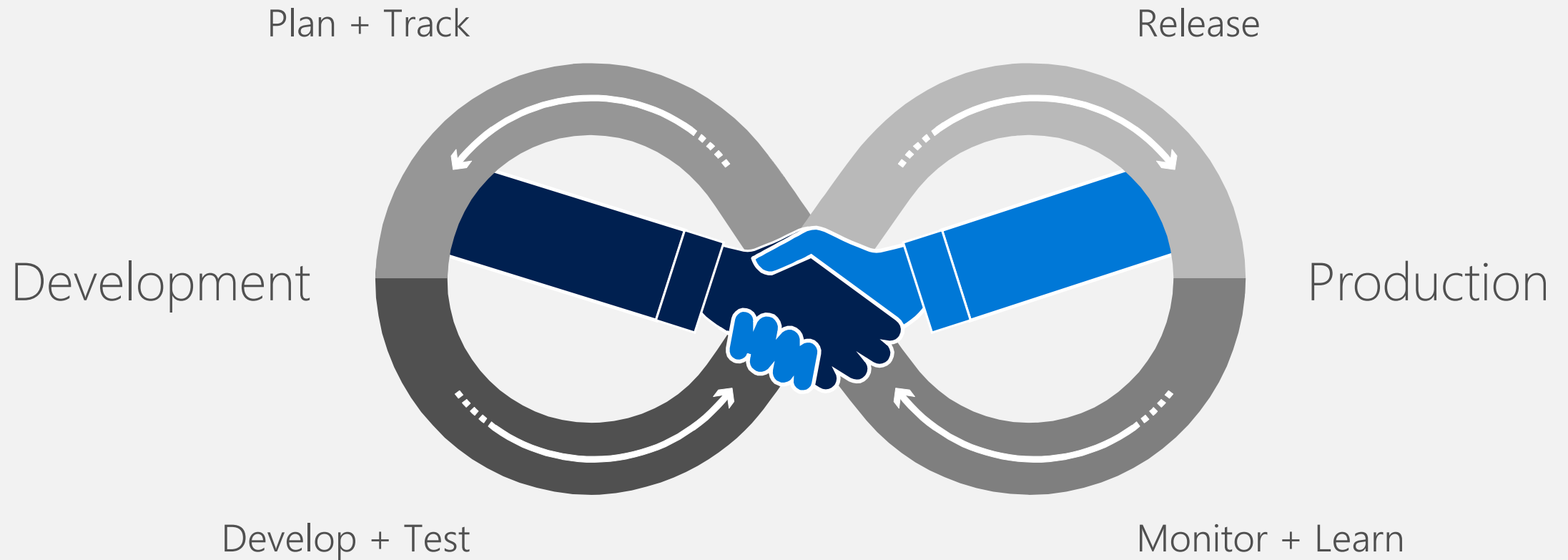
Platform



Executing DevOps strategically

- Enhance productivity
- Enable collaboration
- Facilitate experimentation

Agility & DevOps



Our shift to DevOps

Old world

Focus on planning
Compete, not collaborate
Static hierarchies
Individual productivity
Efficiency of process
Assumptions, not data



New world

Focus on delivering
Collaborate to win
Fluid and flexible teams
Collective value creation
Effectiveness of outcomes
Experiment, learn and respond

Demo

Visual Studio Team Services

What's new
in DevOps & VSTS?

Delivery Plans

see work across Teams & Projects

Calendar view/timeline
with teams and work items

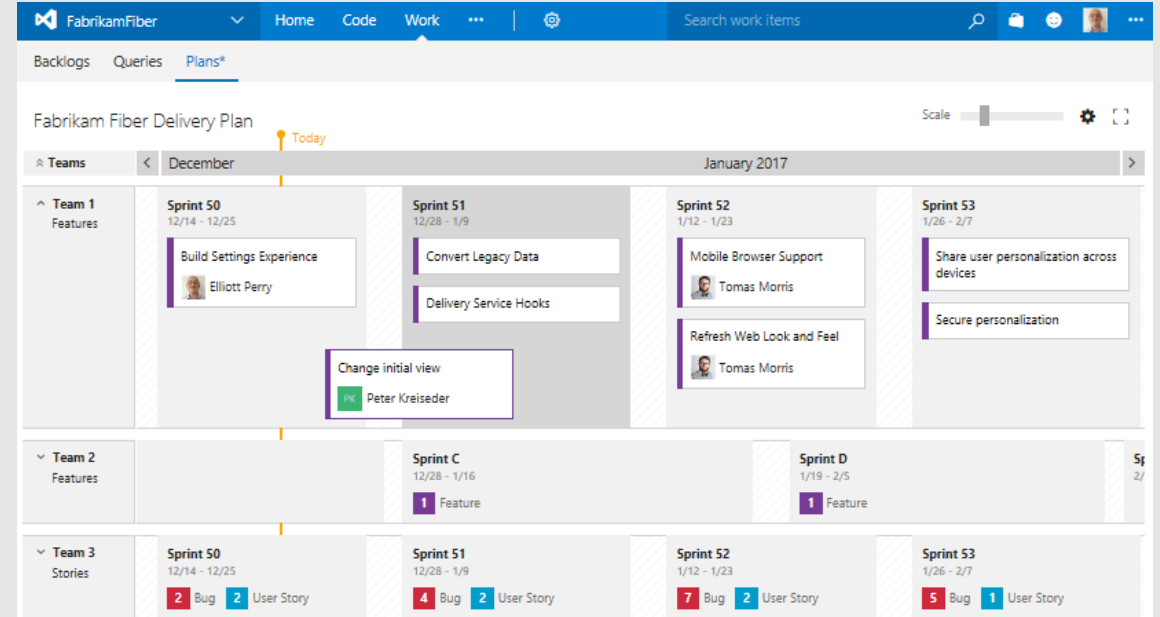
Marketplace Extension: [Plans](#)

Future

Markers to highlight key dates (such as release dates and customer demonstrations)

Field Criteria which will allow you to tailor your plans to only show a subset of cards (by tag or field value)

Dependency tracking with dependency links between work items



Deployment groups

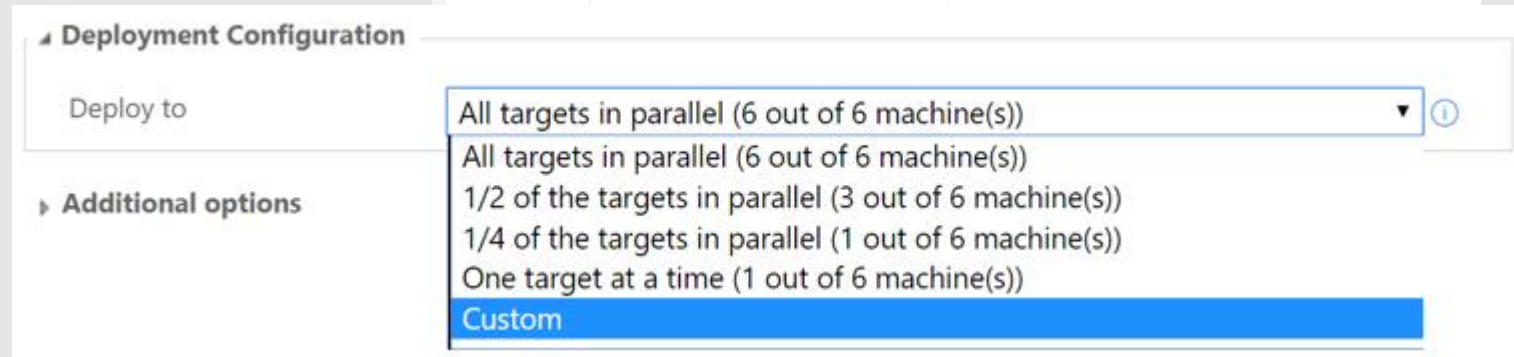
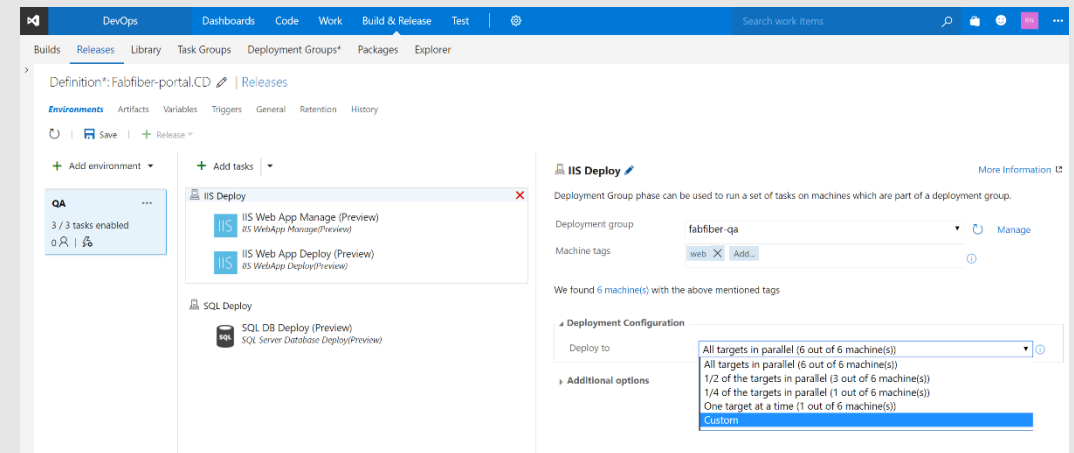
Deploy with agents directly on the server (not via a proxy)

Deployment group represents a farm, multiple machine environment (all web servers)

Enables rolling deployment:

Set rules how to deploy to a group (1/4 of resources, 50% at once, 1 after each other)

To enable this the licensing changed as well



Concurrent Pipeline

Explanation of the term

Concurrent Pipeline refers to the right to execute one build or deploy one release *concurrently*

It's not the number of build/RM definitions you can have or run

A team can:

Have any number of users

Have any number of build definitions and release definitions

Have any number of machines running agent software (previously charged \$15 per month per agent)

Execute any number of builds and deploy any number of releases (Any number of build/releases can be triggered and they will run sequentially (based on a queue) ; This might be OK for some teams (small) but for many teams that need parallel jobs, Concurrent Pipelines are required)

- **Private pipelines:** Concurrent jobs that are run using your machines, running agent software supplied by Microsoft
- **Hosted pipelines:** Concurrent jobs that are run on machines managed by Microsoft

How to calculate?

Factors to consider

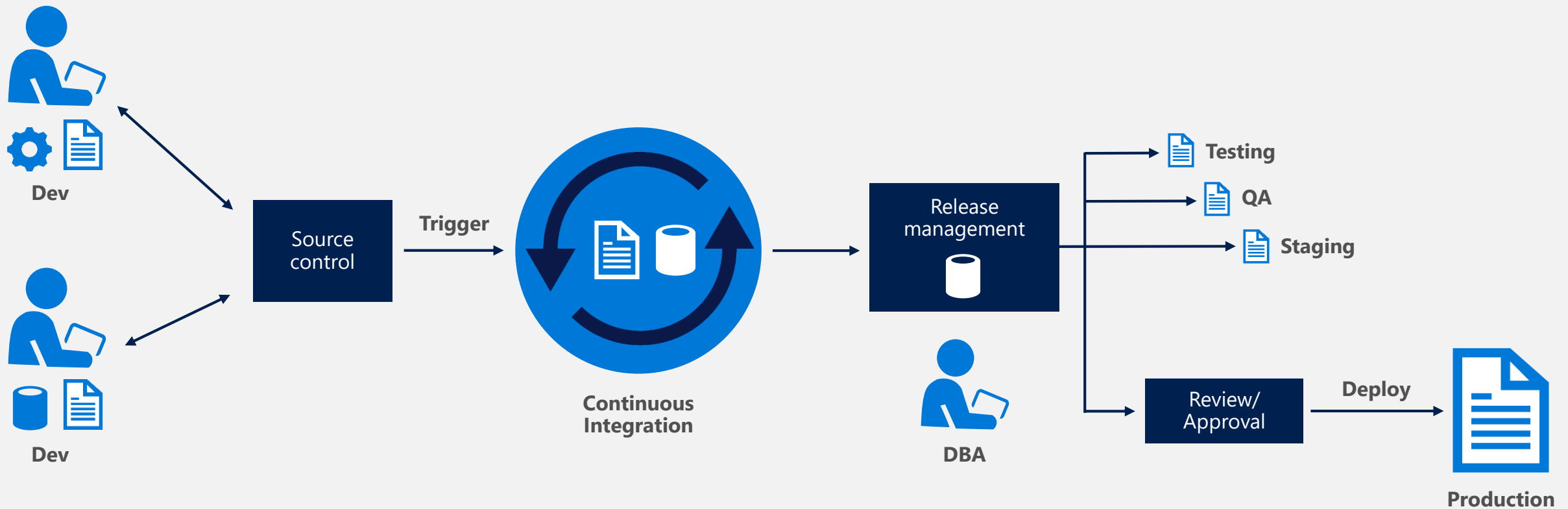
Calculating the pipelines you need, is both science and art 😊

- What does **not** count?
 - No additional charges for users – Team Services users (Basic access can author/run releases)
 - No charges on the number of definitions, number of agents, number of deployment environments or build configurations
 - Release Approvals does not count and will continue to be free
- What you **need** to consider?
 - Frequency of deployment by teams (Dev, QA, Production, etc.)
 - How long are each build/release jobs taking? Long jobs would make other jobs queue
 - Does your team develop multiple applications (mobile, web, etc.,)?
 - Does your team practice CI/CD and have multiple check-ins every day?
 - Does your releases include manual interventions in the pipeline?



1 Pipe : 10 users

DevOps for databases—automated deployment



Redgate ReadyRoll Core

Extend DevOps processes to SQL Server and Azure SQL databases

Develop, source control, and safely automate deployments of database changes, right alongside your application changes.

Your database will no longer be the bottleneck to delivering value to your customers quickly.

Included in VS 2017 Enterprise **ONLY**

The screenshot displays the Redgate ReadyRoll interface within a Visual Studio environment. At the top, a window titled 'PartsUnlimitedDB_Production_Update.sql' is visible. The main interface shows a 'Build Succeeded' notification for 'Build 20160322.3', which ran for 28 seconds and completed 7 days ago. Below this, there are tabs for 'Summary', 'Timeline', 'Artifacts', 'Tests', 'Database diff report', and 'Database script'. The 'Summary' tab is active, showing build details such as 'Definition: LightningWorks (edit)', 'Source branch: refs/heads/master', and 'Requested by: Accounts on behalf of John Walley'. It also lists 'Test Results' for various SQLCop tests, all of which passed. A 'Database deployment preview' section is highlighted in yellow, showing 'Migrations pending' for a specific build. At the bottom, a button labeled 'View PartsUnlimitedDB' is shown, with the subtitle 'Preview objects pending Import'. The Redgate logo is visible in the bottom right corner of the interface.

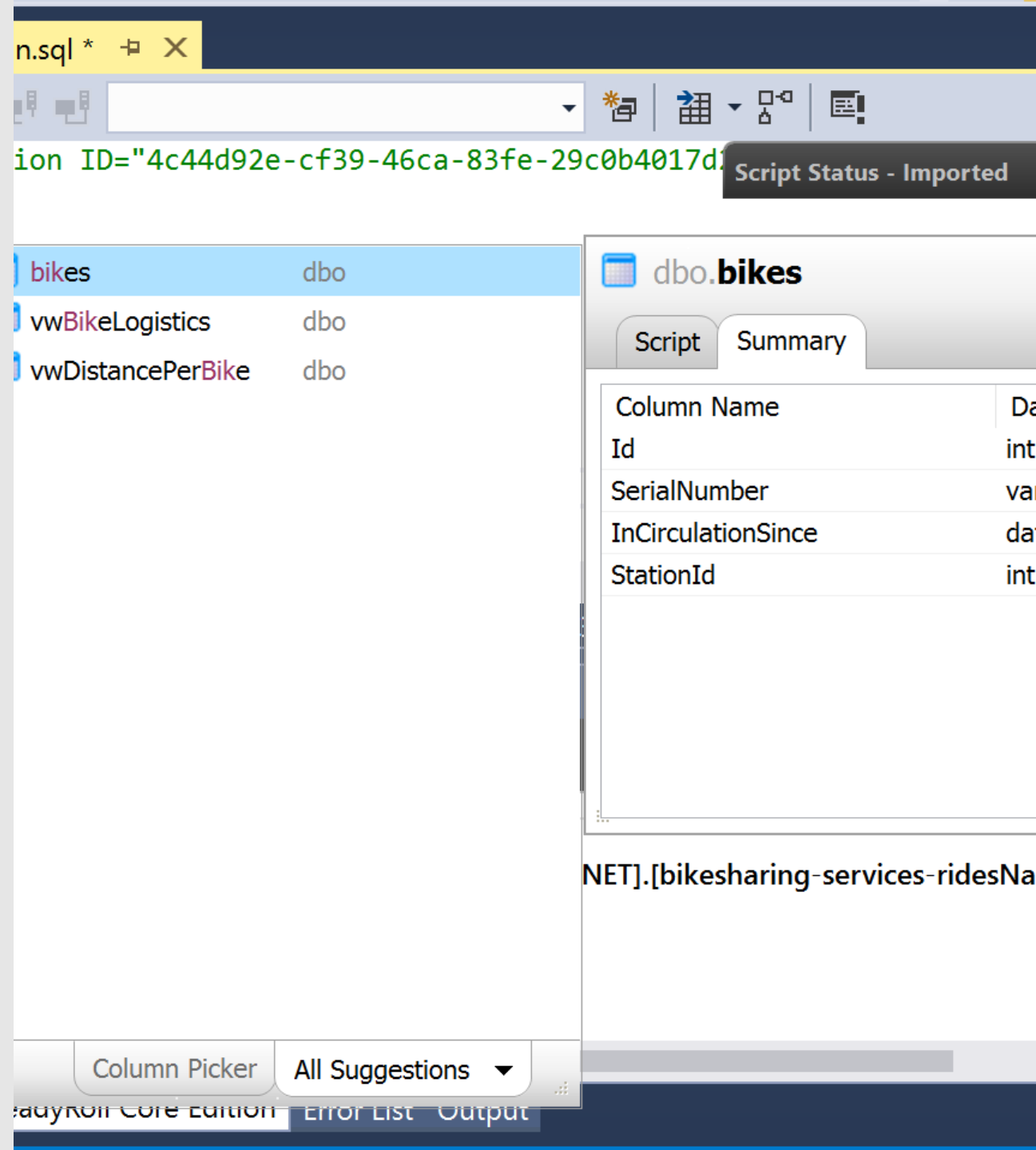
Redgate SQL Prompt Core

Increased SQL Productivity

Write SQL effortlessly with advanced IntelliSense-style code completion.

Be more productive when working with SQL even if your not familiar with the database.

Included in VS 2017 Enterprise **ONLY**



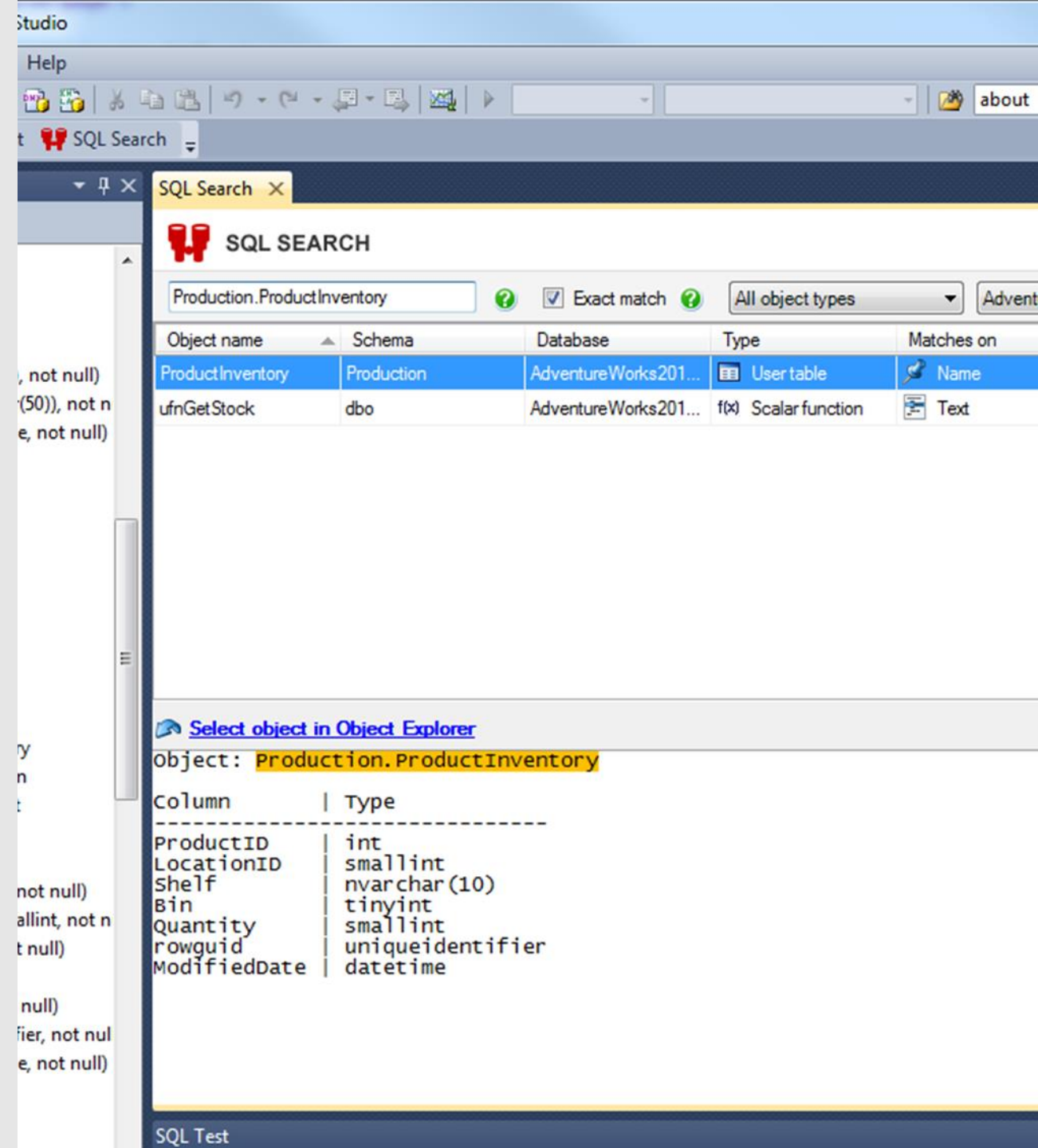
Redgate SQL Search

Increased SQL Productivity
even more

Speed up database development by finding SQL
objects fast.

Easily explore across databases.

Included in **ALL** VS 2017 editions



Docker, ACS & ACR

Docker deeply integrated in Visual Studio, VSTS
F5 can also trigger a Docker compose/run
Docker build & release steps

Azure Container Service

Kubernetes as „orchestration/management Service“

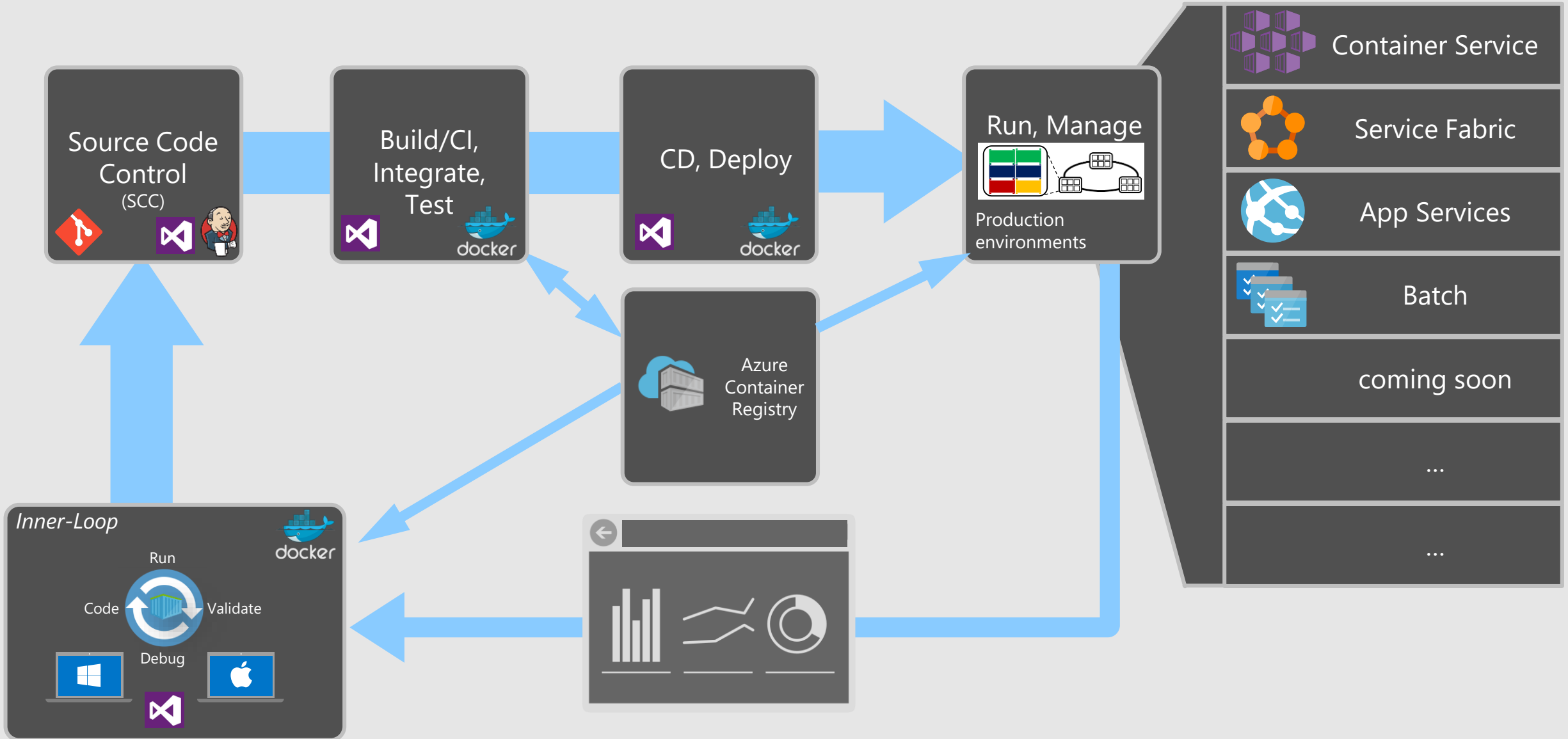
Microsoft to acquire Deis  **DEIS**

Creators of [Helm](#), [Workflow](#), and [Steward](#) (Service-Catalog)

Azure Container Registry

Manage a Docker private registry in Azure

Container DevOps Workflow



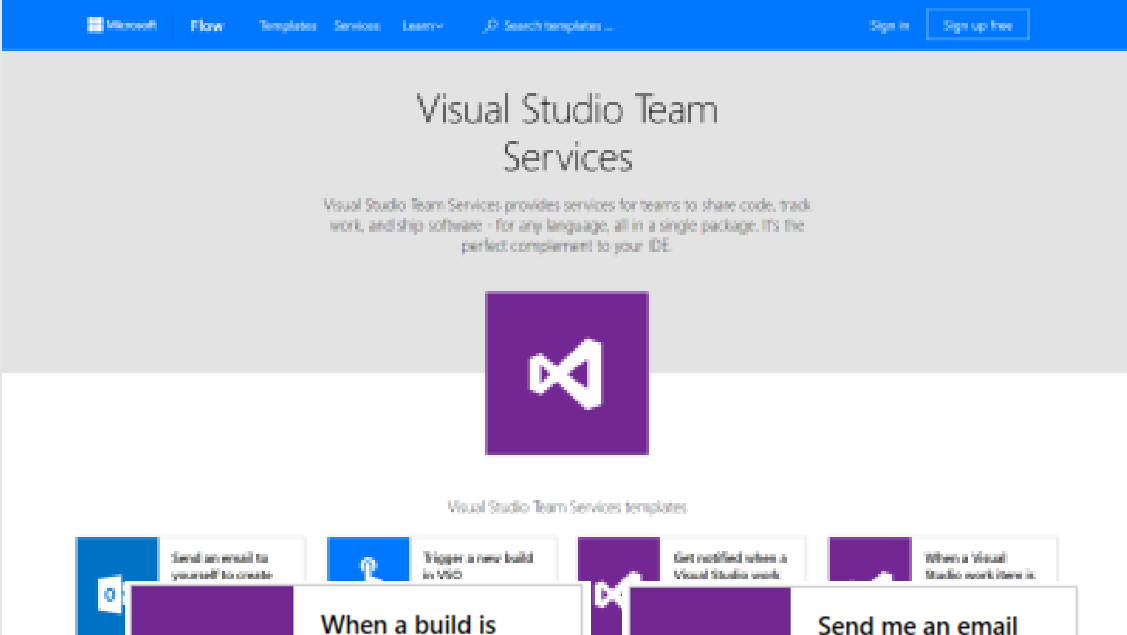
Microsoft Flow

Create workflows without a single line of code

Integrate VSTS with Microsoft and non-Microsoft systems

Templates for common tasks

Included in Dynamics 365 and Office 365 plans



The screenshot shows the Microsoft Flow website interface. At the top, there is a blue navigation bar with the Microsoft logo, 'Flow', 'Templates', 'Services', 'Learn+', and a search bar for templates. Below the navigation bar, the main heading reads 'Visual Studio Team Services'. A sub-heading states: 'Visual Studio Team Services provides services for teams to share code, track work, and ship software - for any language, all in a single package. It's the perfect complement to your IDE.' A large purple square with the Visual Studio logo is centered below the text. Underneath, a section titled 'Visual Studio Team Services templates' displays several workflow cards. Two cards are prominently shown in the foreground:

- Card 1:** Features a purple header with the Visual Studio logo and a teal footer with a Slack icon. The text reads: 'When a build is completed, post a message to a slack channel'. It is attributed to 'By Microsoft'.
- Card 2:** Features a purple header with the Visual Studio logo and a teal footer with an email icon. The text reads: 'Send me an email whenever there's a new bug in TFS'. It is attributed to 'By Microsoft' and 'Used 39 times'.

Future

New Build/CI & RM editors/templates

Test & Feedback extension for Edge

Private Azure agent pools for Build and RM (provide your own image, we manage the lifetime)

Encryption a rest

1ES

One Engineering System

65.000 developers @ Microsoft using VSTS

.... (more details during the talk only)



Demo ?

DevOps habits and practices

Practices

- Shift left
- Continuous integration
- Continuous deployment
- Continuous testing

Practices

- User telemetry
- Usage monitoring
- Continuous learning
- Stakeholder feedback
- A/B testing in production

Practices

- Code metrics
- Test automation
- Code style rules
- Peer code reviews
- Continuous integration
- Continuous unit testing
- Architectural validation

Practices

- Cloud infrastructure
- Developer sandbox
- Cloud DEV/TEST labs
- Containers
- Microservices
- Automatic scaling
- Automatic failover

Flow of customer value

Team autonomy & alignment

Backlog improved by learning

Evidence gathered in production

Managed technical debt

Production first mindset

Infrastructure is a flexible resource

Practices

- Self-managing teams
- Planning chats
- Feature crews
- Sprint rituals
- Scaled agile
- Team rooms

Practices

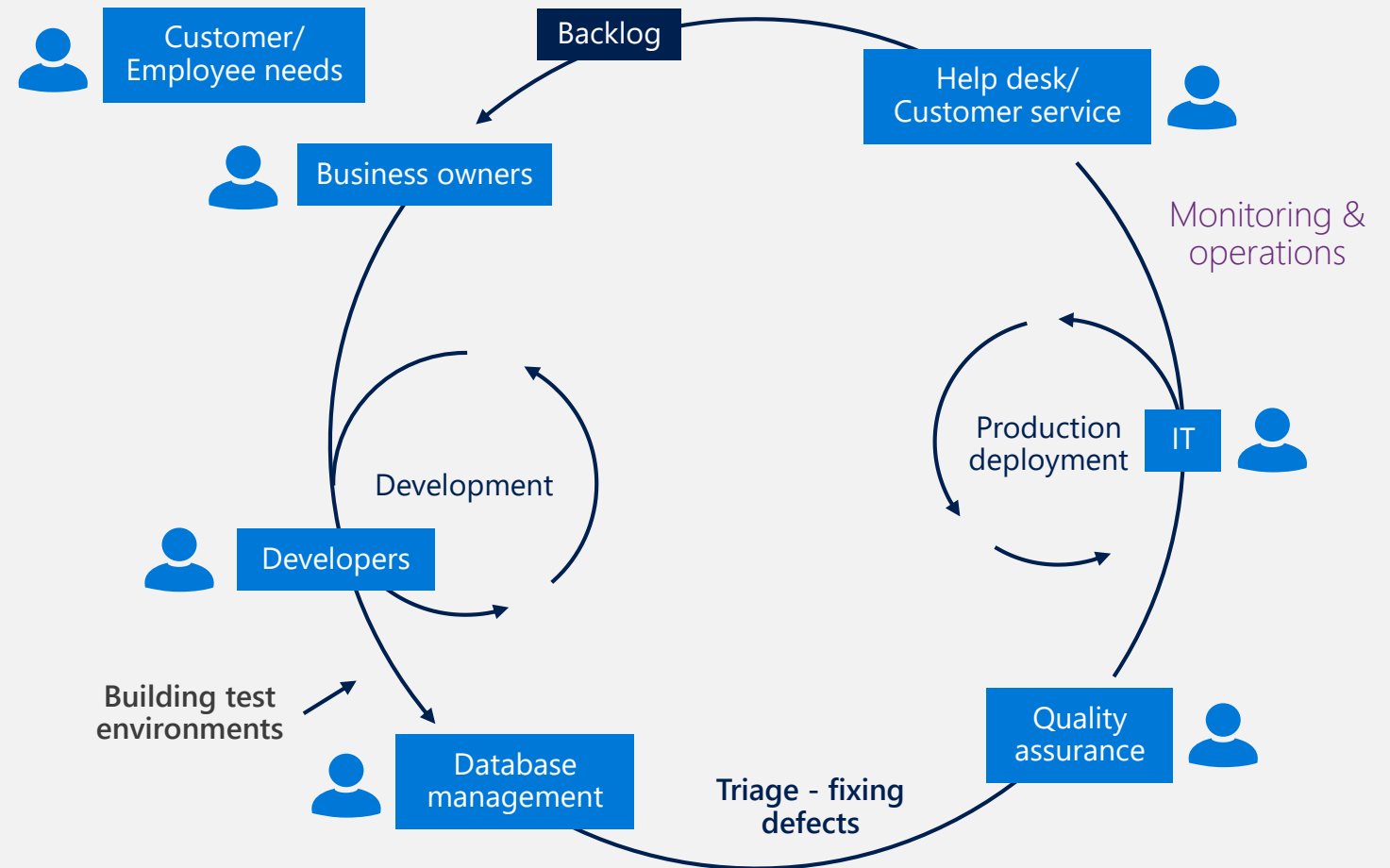
- Testing in production
- Stakeholder feedback
- Usage monitoring
- User telemetry
- Feature flags

Practices

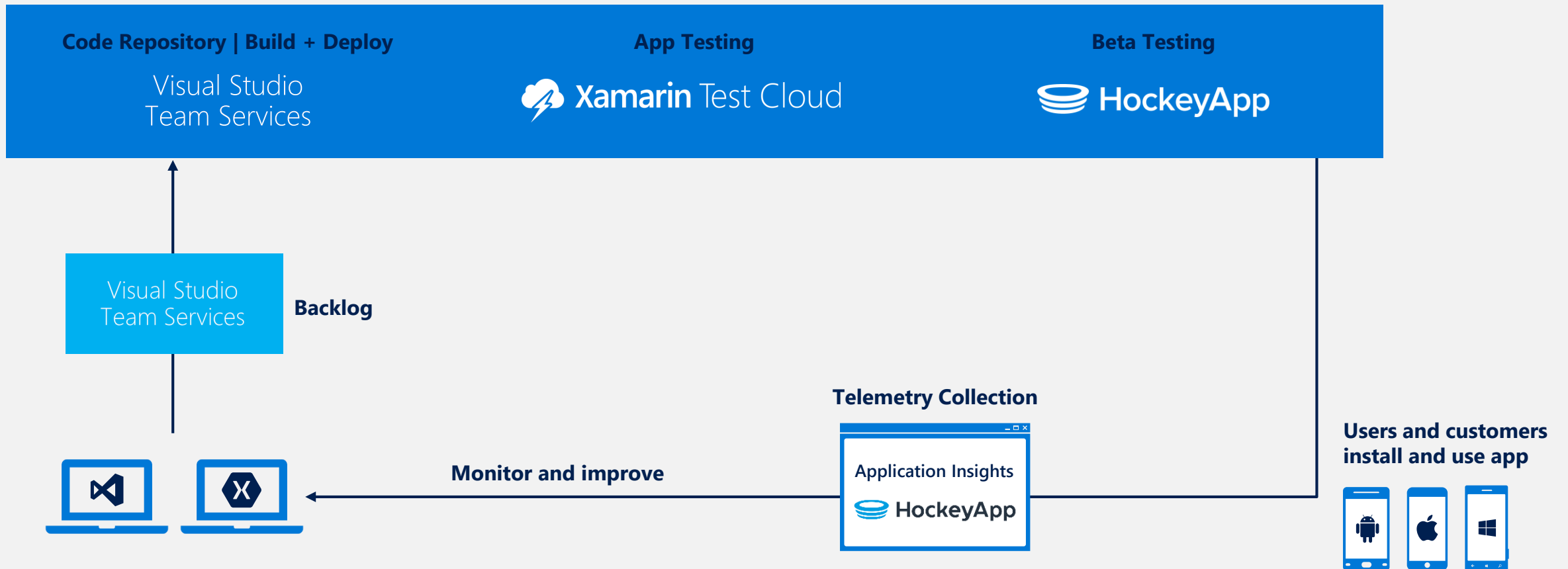
- Application performance management
- Configuration management
- Infrastructure as code
- Automated recovery
- Continuous deployment

Five areas of concern

1. Development
2. Building test environments
3. Testing
4. Production quality
5. Monitoring & operations



Microsoft's end-to-end Mobile DevOps solution



Xamarin Test Cloud for iOS

Mobile app quality,
done right

Diverse library of real devices (2.000+)

Simulate real user interactions

Test continuously

Analyze app performance

UITest, Calabash, Appium, Espresso

Test native device functionality

Xamarin test cloud > Xamarin CRM > master > Aug 23, 2015 10:03:59 PM

Overview

ADD AN ITEM
Then I tap 'Sales'

ALL RESULTS

Customers tests

- Check Customer Details ✓
- Check Customer Navigation ✓
- Check Customer Phone ✓
- Investigate Customer Page ✓

Sales tests

Add an item

- First I launch the app
- Then I tap 'Sales'**
- Then I tap 'Add'
- Then I choose the first result
- Then I set the title and description
- Then I tap 'Save'
- Then I go back

Inspect an item ✓

Remove an item ✓

Apple iPhone 5C iOS 8.2

Apple iPhone 5 iOS 8.3

Apple iPhone 5C iOS 8.3

Apple iPhone 5S iOS 8.3

Apple iPhone 6 iOS 8.3

Apple iPhone 6 Plus iOS 8.3

Apple iPhone 6 iOS 8.2

Apple iPhone 5S iOS 8.1.3

Apple iPhone 6 iOS 8.1.3

Apple iPhone 5 iOS 7.4

Apple iPhone 5C iOS 7.4

Apple iPhone 5S iOS 7.4

Apple iPhone 5 iOS 7.1.1

Apple iPhone 5C iOS 7.1.1

Apple iPhone 5S iOS 7.1.1

Apple iPhone 6 iOS 7.1.1

Apple iPhone 6 iOS 7.0.4

Apple iPhone 5S iOS 7.0.4

Xamarin test cloud > Xamarin CRM > master > Aug 23, 2015 10:03:59 PM

Overview

Aug 23, 2015 10:03:59 PM

Xamarin CRM Version 2.0 (1.0)

4/15 tests failed

4/10 devices failed

Total Device Time	Devices	OS Versions	Peak Memory	App Size
266 min	10	3	159.70 MB	17.78

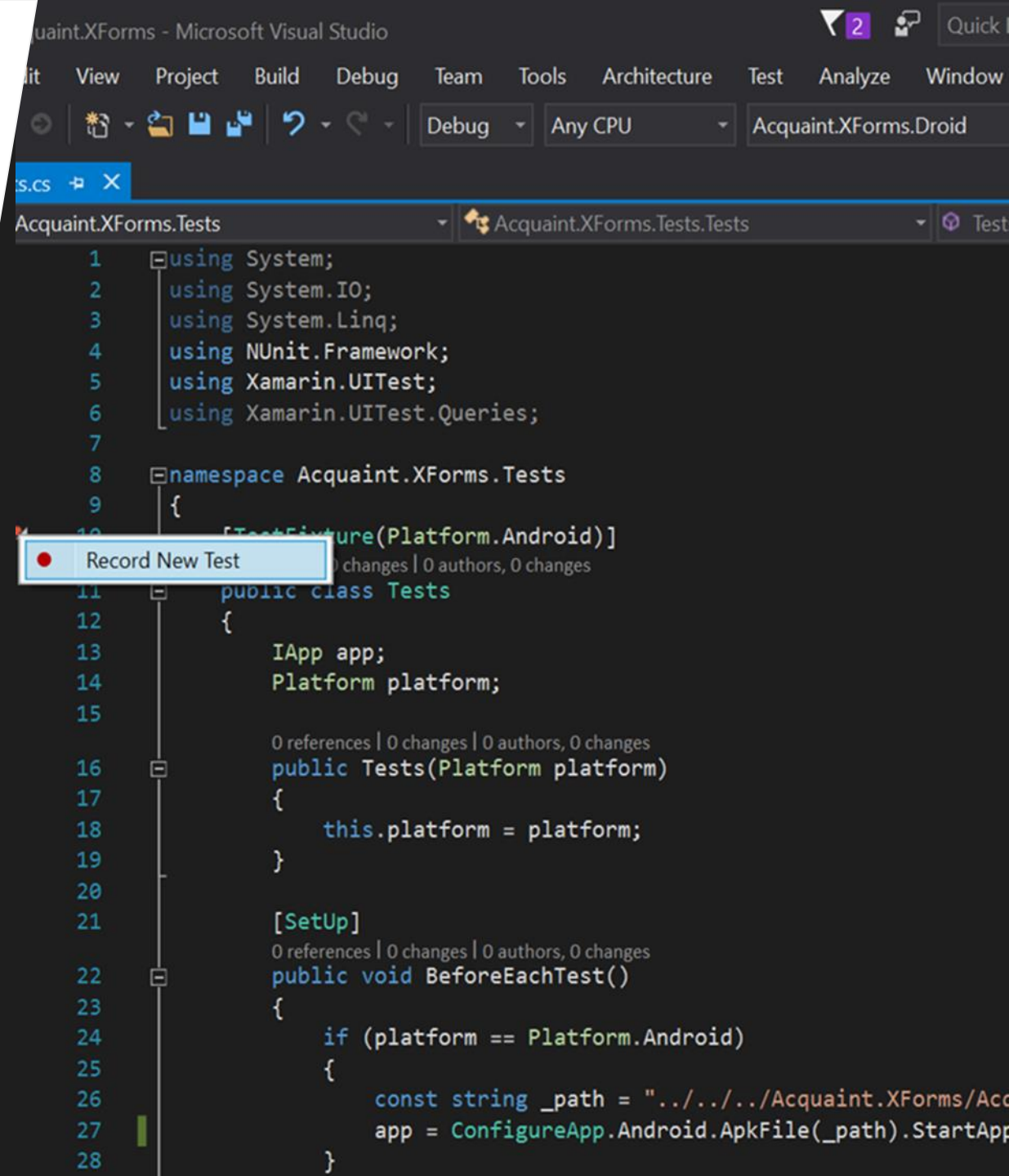
Failures by category

- By OS version
- By form factor
- By manufacturer

Xamarin Test Recorder

Effortlessly Create UI Test Scripts

Simply and quickly generate UI test scripts by running your app and performing actions. You can execute UI tests locally in the emulator or on thousands of devices simultaneously with Xamarin Test Cloud.



```
Acquaint.XForms - Microsoft Visual Studio
File View Project Build Debug Team Tools Architecture Test Analyze Window
Debug Any CPU Acquaint.XForms.Droid
Acquaint.XForms.Tests
Acquaint.XForms.Tests.Tests
1 using System;
2 using System.IO;
3 using System.Linq;
4 using NUnit.Framework;
5 using Xamarin.UITest;
6 using Xamarin.UITest.Queries;
7
8 namespace Acquaint.XForms.Tests
9 {
10     [TestFixture(Platform.Android)]
11     public class Tests
12     {
13         IApp app;
14         Platform platform;
15
16         public Tests(Platform platform)
17         {
18             this.platform = platform;
19         }
20
21         [SetUp]
22         public void BeforeEachTest()
23         {
24             if (platform == Platform.Android)
25             {
26                 const string _path = "../../Acquaint.XForms/Android/Assets/Resource/Drawable/";
27                 app = ConfigureApp.Android.ApkFile(_path).StartApp();
28             }
29         }
30     }
31 }
```



for   iOS

Insights into Mobile Apps

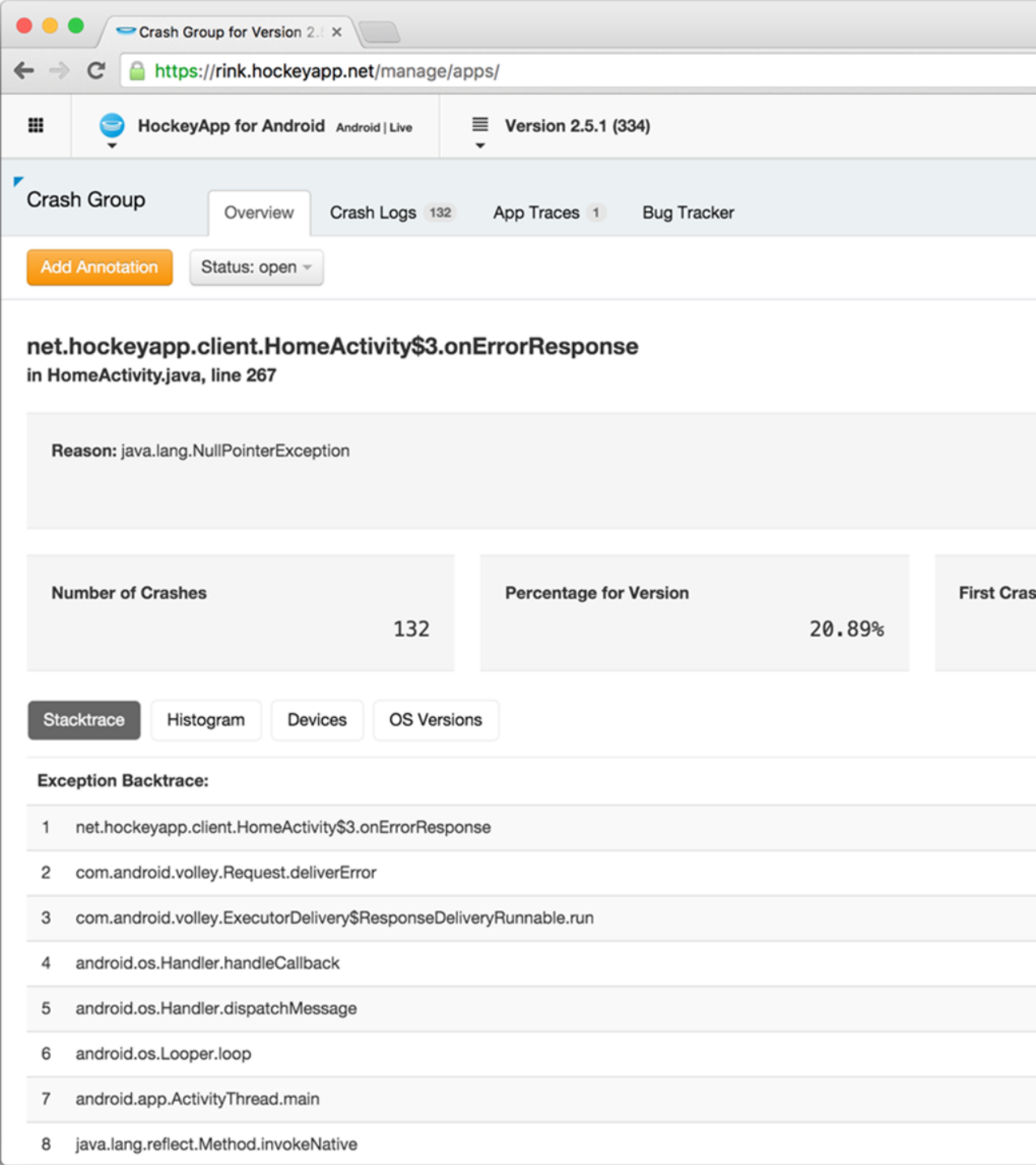
Distribute your app, Betastore

Collect crash reports

Gather user feedback

Understand app adoption

Track app usage



The screenshot shows the HockeyApp web interface for a crash report. The browser address bar shows the URL `https://rink.hockeyapp.net/manage/apps/`. The page title is "Crash Group for Version 2.5.1 (334)". The main navigation includes "Crash Group", "Overview", "Crash Logs 132", "App Traces 1", and "Bug Tracker". Below the navigation, there is an "Add Annotation" button and a "Status: open" dropdown menu. The main content area displays the crash details: "net.hockeyapp.client.HomeActivity\$3.onErrorResponse" in "HomeActivity.java, line 267". The reason for the crash is "java.lang.NullPointerException". Below this, there are two summary cards: "Number of Crashes" with a value of 132, and "Percentage for Version" with a value of 20.89%. At the bottom, there are tabs for "Stacktrace", "Histogram", "Devices", and "OS Versions". The "Stacktrace" tab is selected, showing an "Exception Backtrace" with 8 frames:

- 1 net.hockeyapp.client.HomeActivity\$3.onErrorResponse
- 2 com.android.volley.Request.deliverError
- 3 com.android.volley.ExecutorDelivery\$ResponseDeliveryRunnable.run
- 4 android.os.Handler.handleCallback
- 5 android.os.Handler.dispatchMessage
- 6 android.os.Looper.loop
- 7 android.app.ActivityThread.main
- 8 java.lang.reflect.Method.invokeNative

Demo

Mobile DevOps: VSTS, Test Cloud & HockeyApp

▶ Build

✓ Test

📊 Analytics

📄 Push Notifications

↕ Distribute

△○ A/B Testing

⚠ Crash Reporting

☁ Remote Config

👆 Identity

📅 Tables

🔄 Live Update

📄 Storage

Visual Studio Mobile Center



Enabling strategic DevOps with Microsoft

Microsoft Visual Studio Enterprise



DevOps



Agile



Quality



Subscriber benefits



Mobile

VSTS



Idea to app



Any language



Any tool



Training + support

Azure marketplace + dev services



Application insights



Azure Service Fabric



Azure Resource Manager



Azure Container Service



Docker



Ubuntu



Python



Node JS

Microsoft Operations Management Suite



All your IT operations tasks in one



Access to insights in minutes



Hybrid and open



Management anywhere, anytime

SQL, BI, Cortana Intelligence



Built for intelligence



Layered with security



Cloud powered



Enables apps

Try it out!

Visual Studio Team Services

5 users free

<https://www.visualstudio.com/team-services/>

Visual Studio Mobile Center Preview

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

Container Lifecycle Management Whitepaper

<https://azure.microsoft.com/de-de/resources/containerized-docker-application-lifecycle-with-microsoft-platform-and-tools/>

Thank you