

# Microsoft Azure

## DevOps with VSTS – Day 3

Mehmet Kut  
Kıdemli Danışman, Ceviz Bilgi Teknolojileri  
[mehmet.kut@cevizbilgi.com.tr](mailto:mehmet.kut@cevizbilgi.com.tr)



@mehmetkut



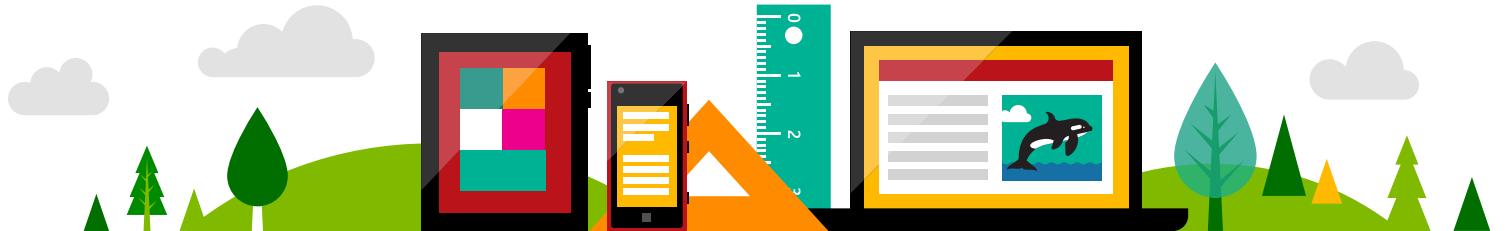
C E V I Z



Microsoft

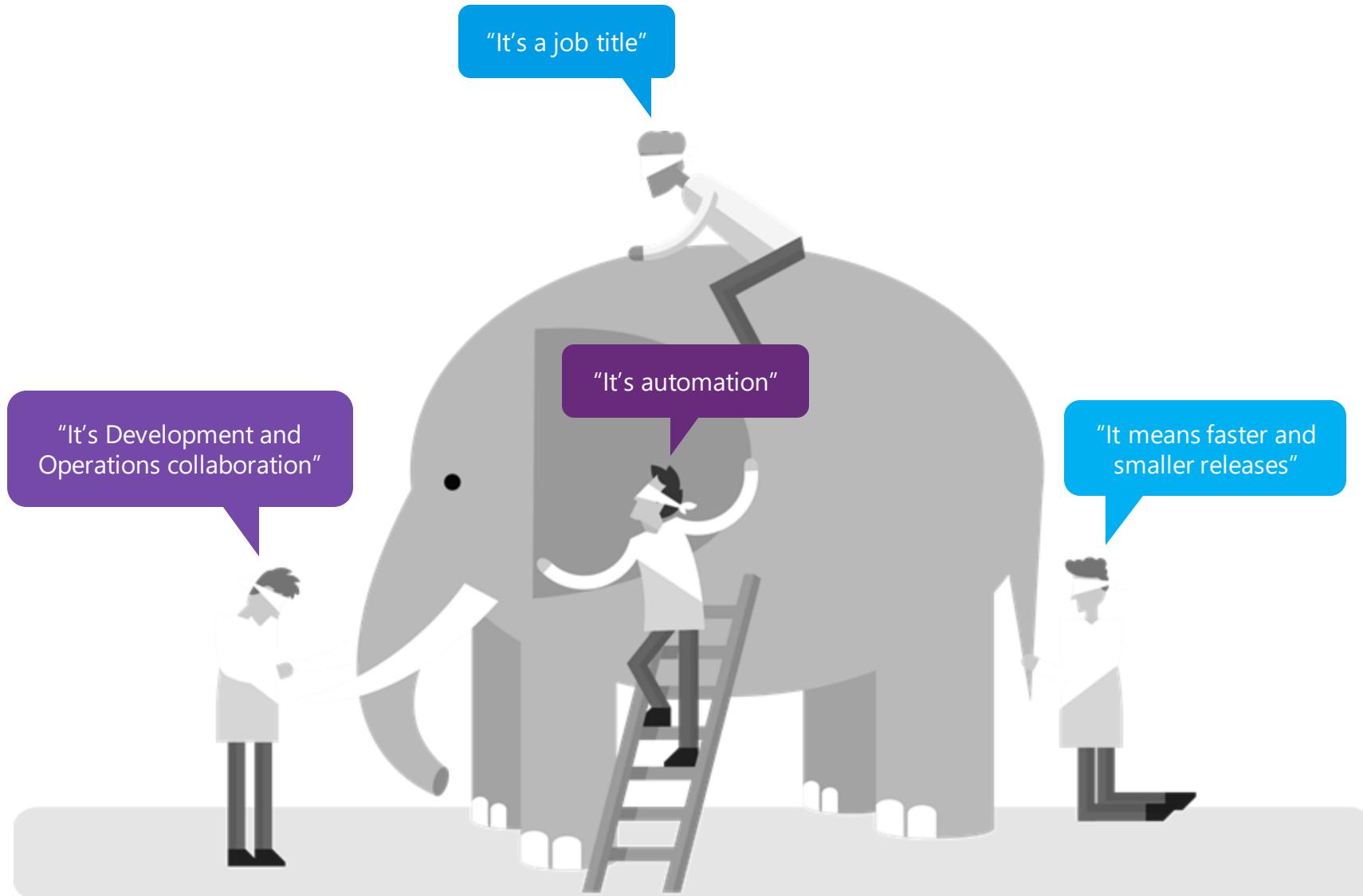
# Agenda

- What is DevOps?
- Introduction to Microsoft DevOps Platform
- Visual Studio Team Services
- End 2 End DevOps
- Planning with VSTS
- Dev with VSTS
- Continuous Integration/Deployment with VSTS
- Monitoring with VSTS

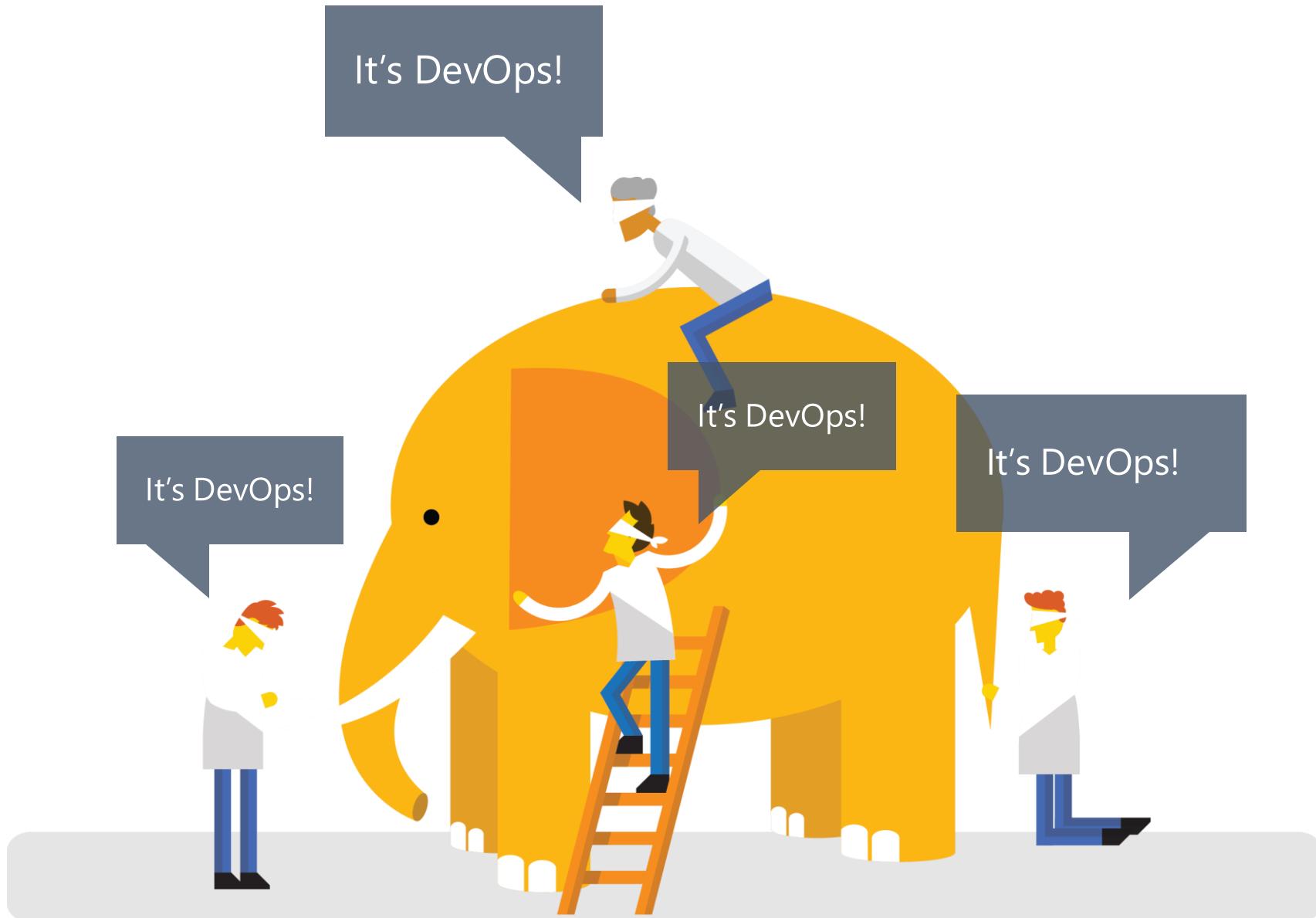


# What is DevOps?

# What is DevOps?

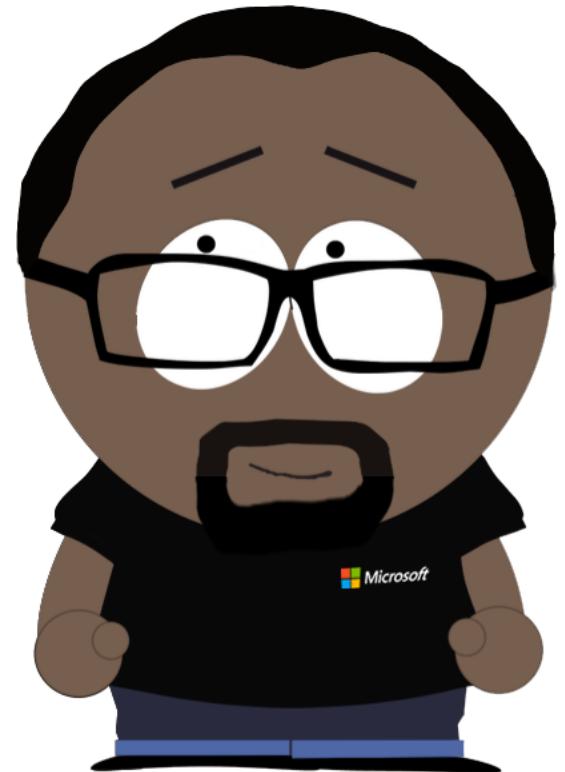


# What is DevOps?



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

- Donovan Brown



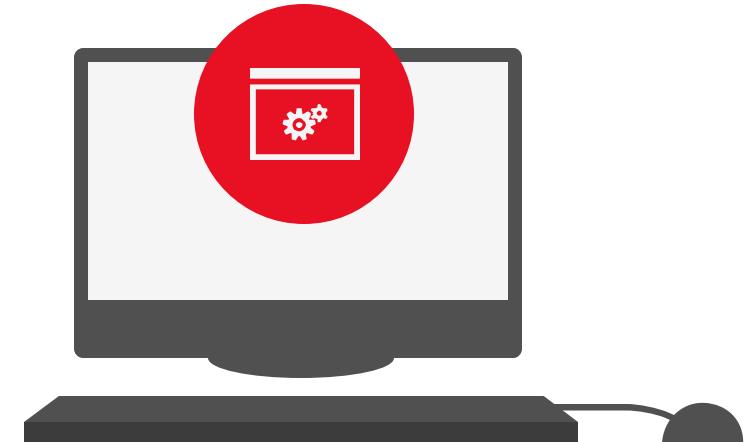
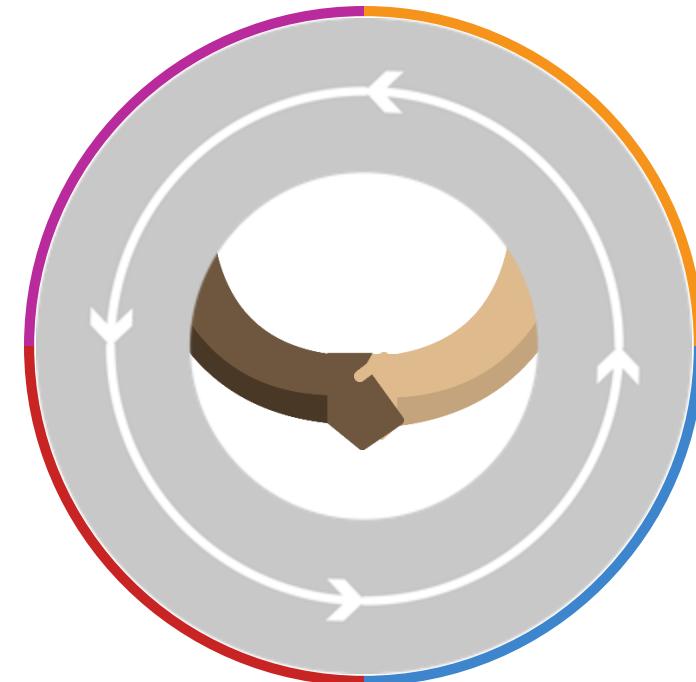
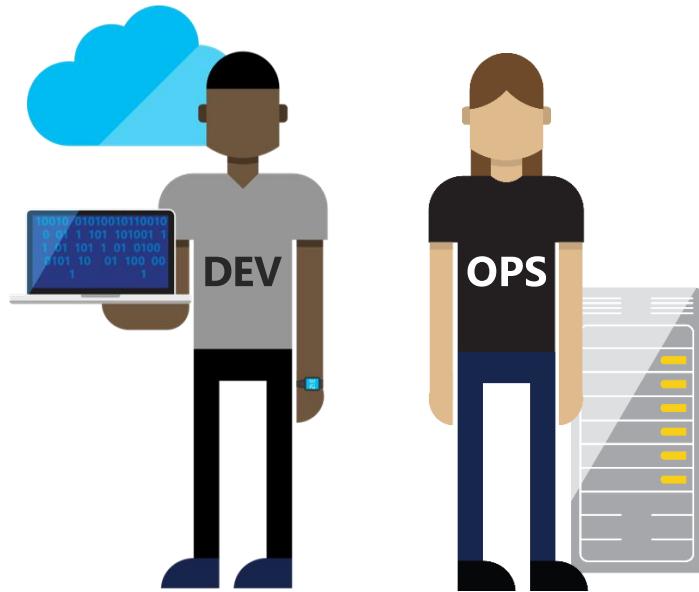
# What DevOps is NOT

- It is not a product
- It is not a specification
- It is not centralized
- It is not trademarked

*"You cannot buy DevOps and install it. DevOps is not just automation or infrastructure as code. DevOps is people following a process enabled by products to deliver value to our end users."*

- Donovan Brown

# DevOps: the three stage conversation



**1** | People

**2** | Process

**3** | Products

# The Enterprise Collaboration Solution



Project Manager



Business Analyst



Quality Analyst



Project Lead



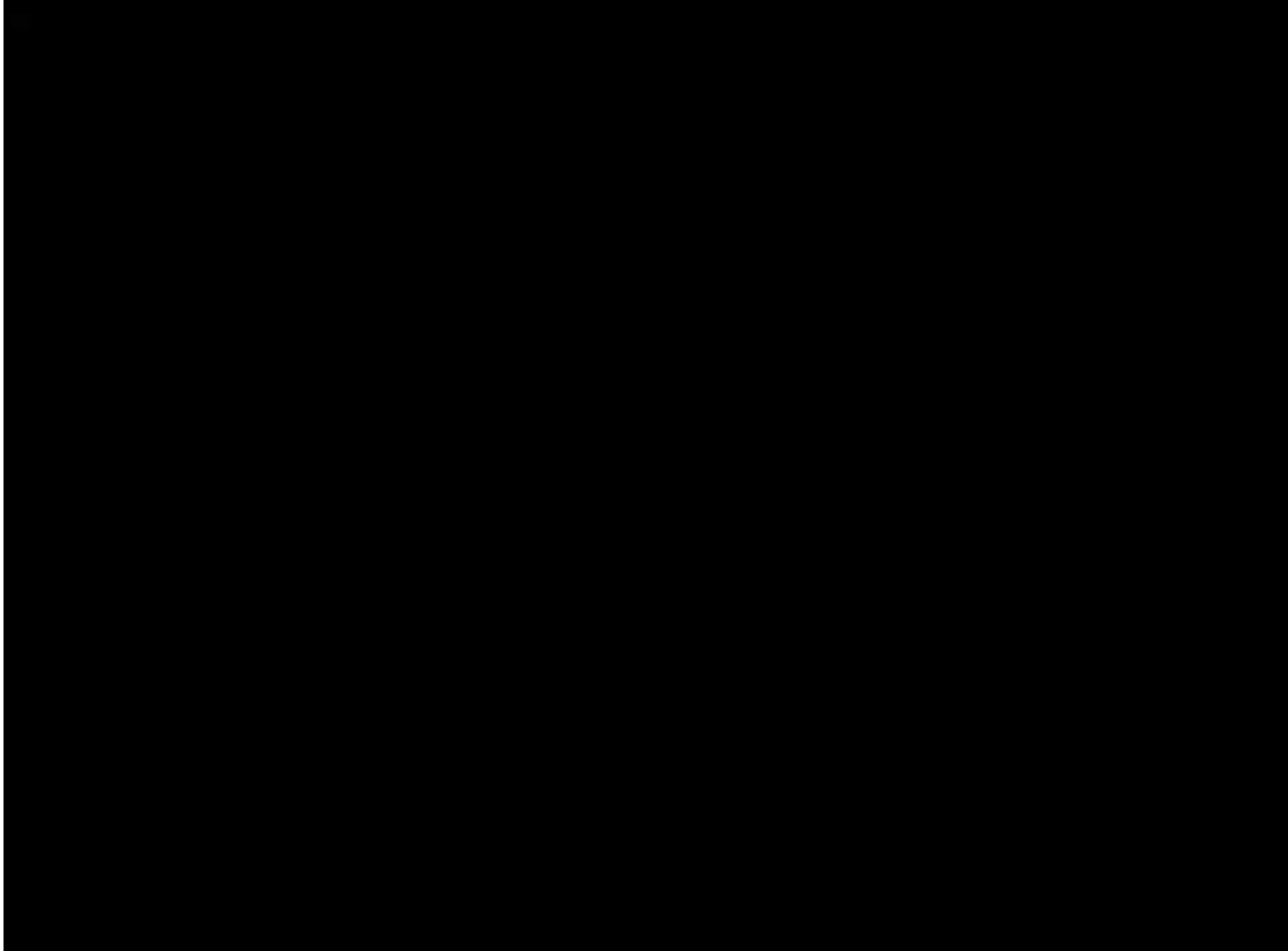
Developer



DevOps



# Why is DevOps important

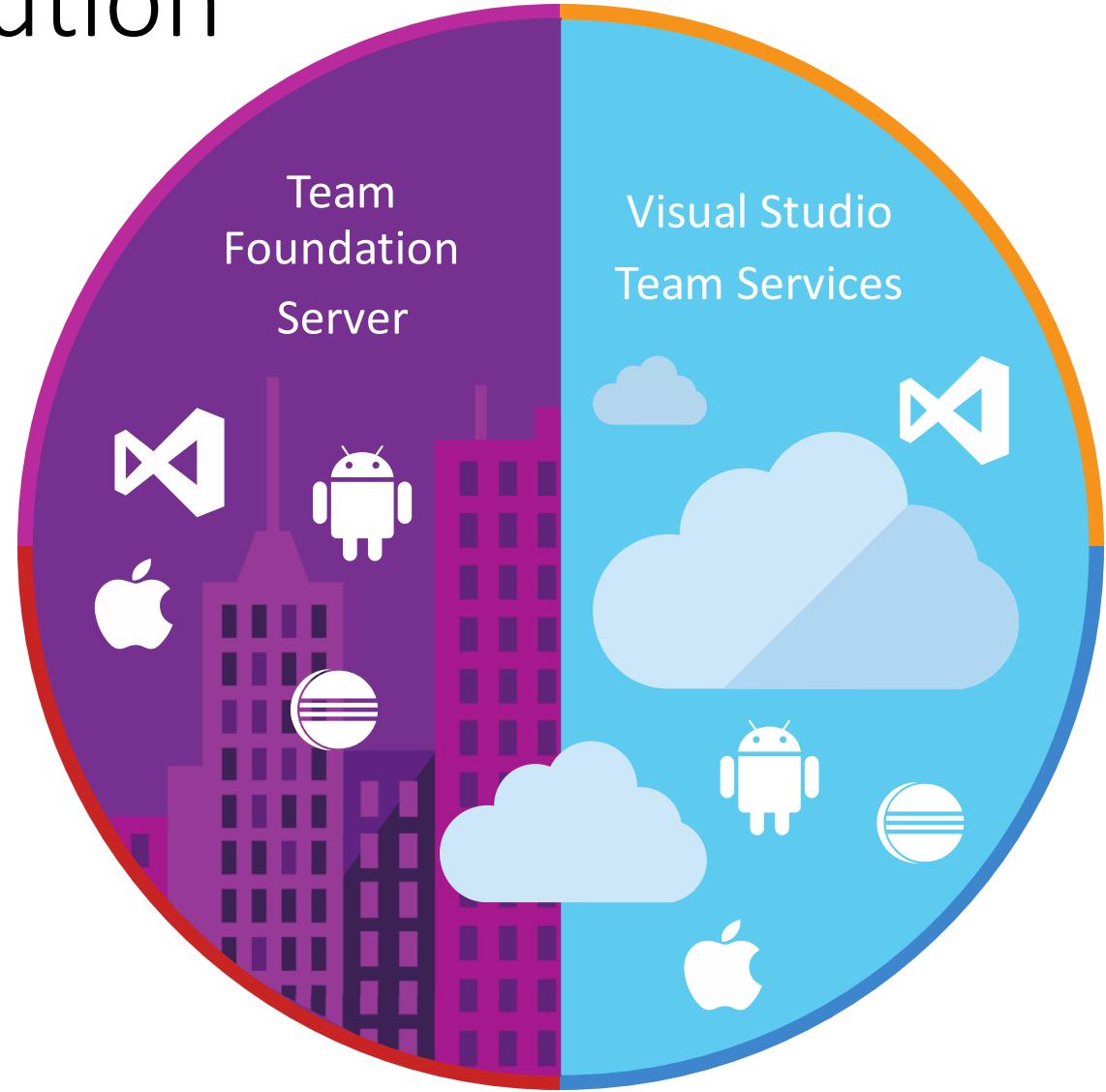


# Why is DevOps important

- Your competition is already doing this
- Increase velocity
- Reduce downtime
- Reduce human error

# Introduction to Microsoft DevOps Platform

# Microsoft Solution

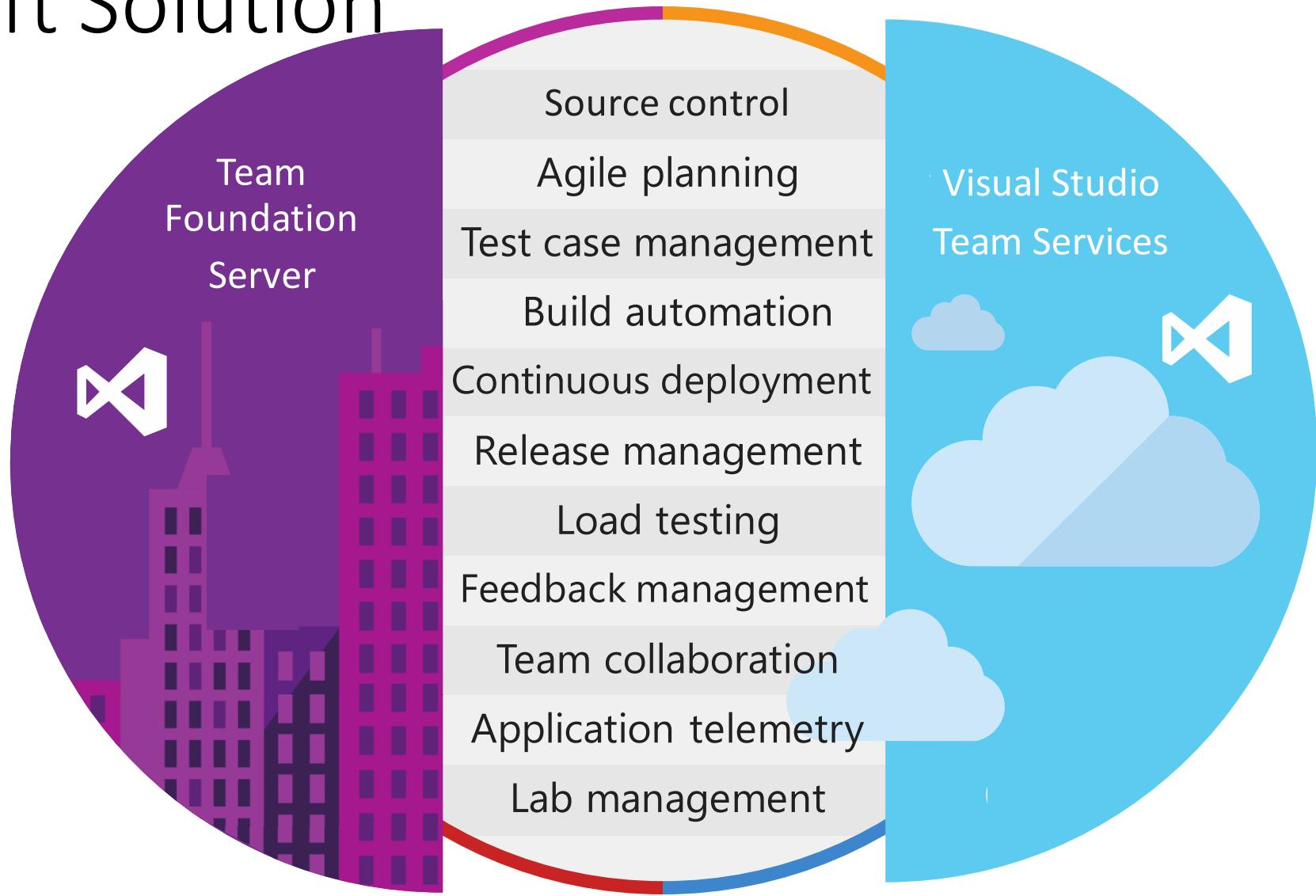


Office Project Server

Microsoft System Center

Microsoft Azure SharePoint

# Microsoft Solution



Office Project Server

Microsoft System Center

Microsoft Azure

SharePoint

# Any Language, Any Platform

- Program in any language
  - .NET
  - Java
  - Python
  - Ruby
  - Nodejs
  - ...
- Deploy to any Platform
  - Android
  - iOS
  - Windows Phone
  - Docker
  - Azure
  - AWS
  - Linux
  - Mac
  - ...
- Develop on any OS
  - Linux
  - Mac
  - Windows

# Manage the full stack

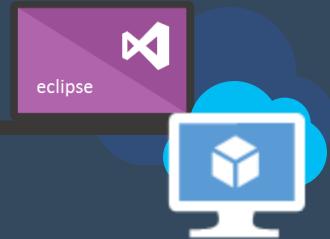
Monitor/Learn	Telemetry	Application Insights
	Diagnostics	Application Insights
	Performance	Application Insights
Approve	Collect Approvals	Release Management
	Notify Approvers	Release Management
Test	Manual Tests	Microsoft Test Manager
	Automated Tests	Coded UI, Web, Load
	Create Test Data	BacPac with SSDT
App	Configure Application	Tokenization
	Install Application	NuGet, WebDeploy, etc
Infra	Configure Environment	Desired State Configuration
	Provision Environment	Azure Resource Manager
Plan	Tracking Work	TFS / VSTS
	Planning Work	TFS / VSTS

# Microsoft Ecosystem

01

Develop

Developer Workstation



Team Collaboration

TFS / VSTS



People | Process | Products

02

Build & Test

Build/CI



Release Management  
for Visual Studio

Test

TFS / VSTS

Microsoft Test Manager



03

Deploy

Release

Microsoft System Center

Release Management  
for Visual Studio



Automation Service

PowerShell | WAML



Azure  
Resource  
Management

xPlat Command Line



04

Monitor & Learn

Monitor

Microsoft System Center



VSTS

Application Insights



Monitoring - On-Premises | Hybrid | Cloud

Workstations - On-Premises | Hybrid | Cloud

ALM Services - On-Premises | Hybrid | Cloud

Environments - On-Premises | Hybrid | Cloud

# Mixed Ecosystem

People | Process | Products

01

Develop

Developer Workstation



Team Collaboration

**GitHub**



02

Build & Test

Build/CI

**gradle**  
**GRUNT**  
**Jenkins**  
**Hudson**

Test

**gradle**  
**GRUNT**

03

Deploy

Configuration

**puppet labs**  
**CHEF**

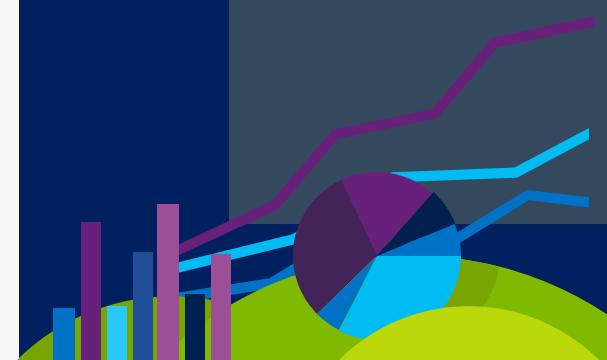
Release

**gradle**  
**GRUNT**  
**Jenkins**  
**Hudson**  
**VAGRANT**

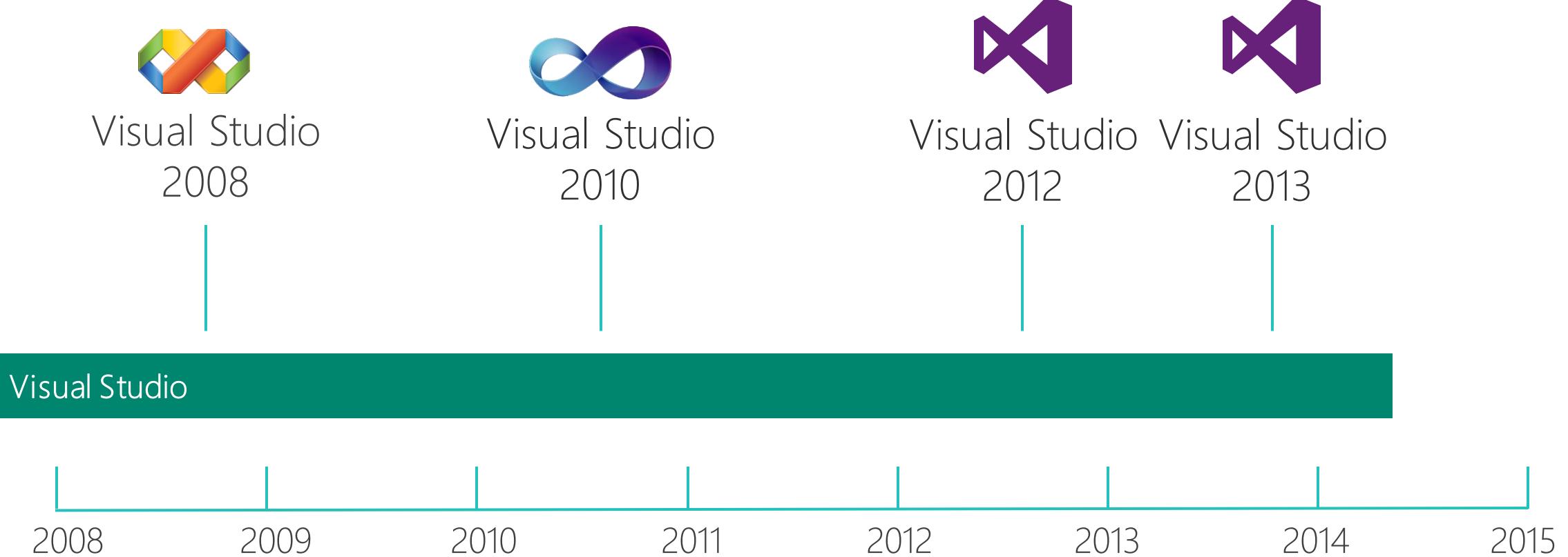
04

Monitor & Learn

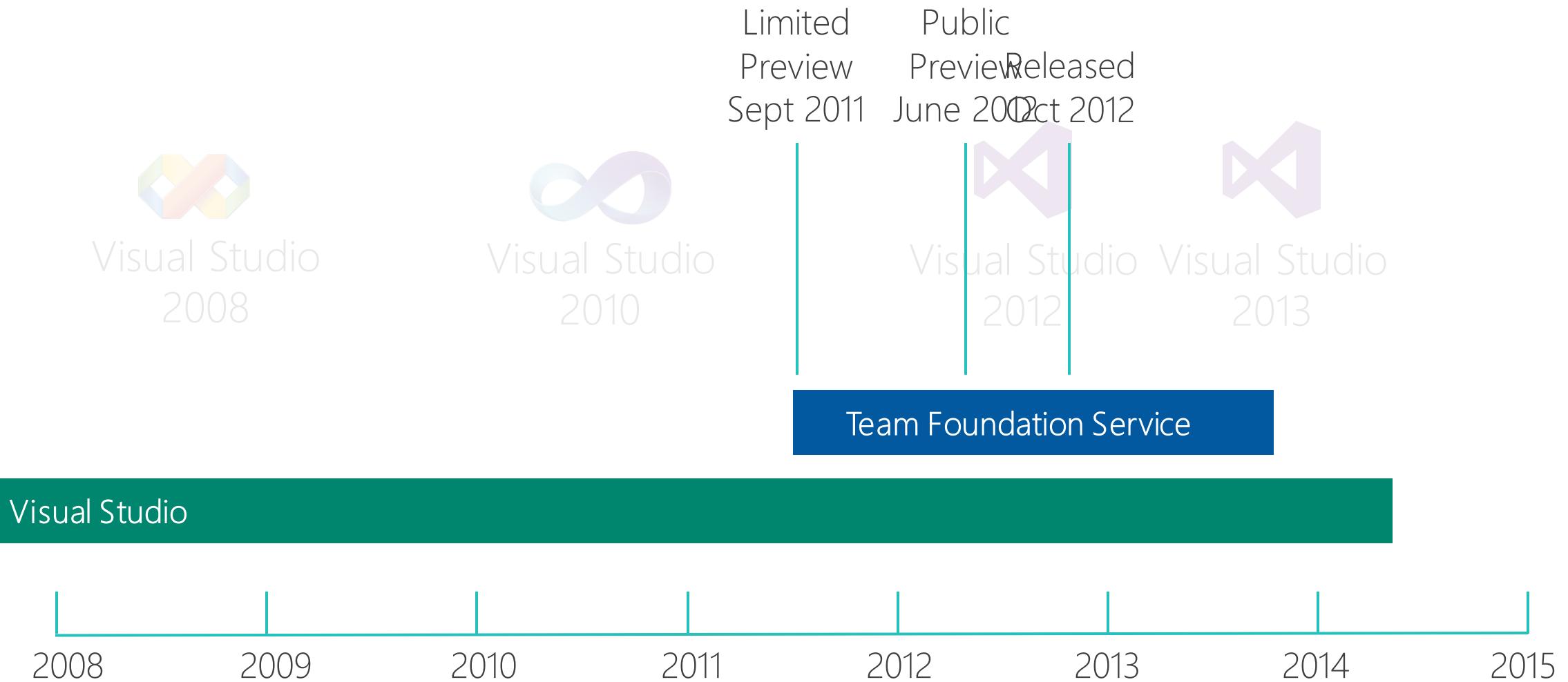
**Nagios**  
**ZABBIX**



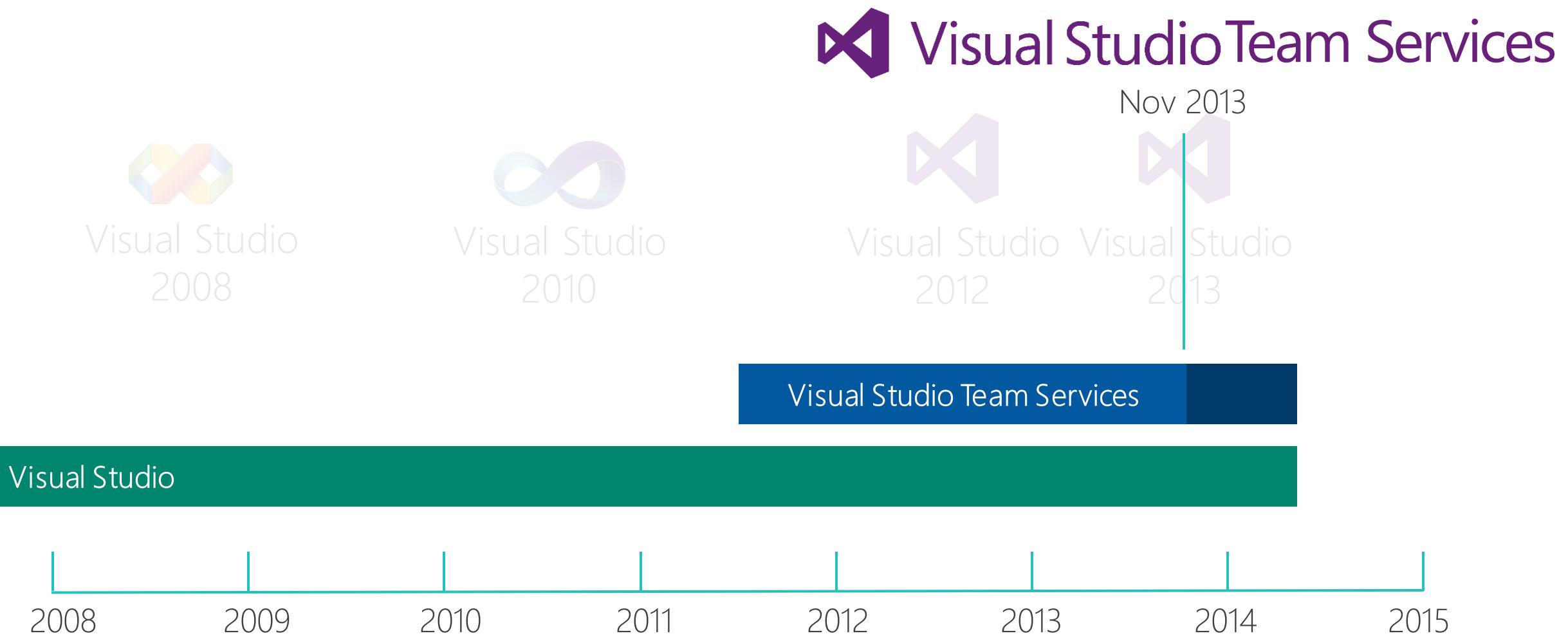
# The journey



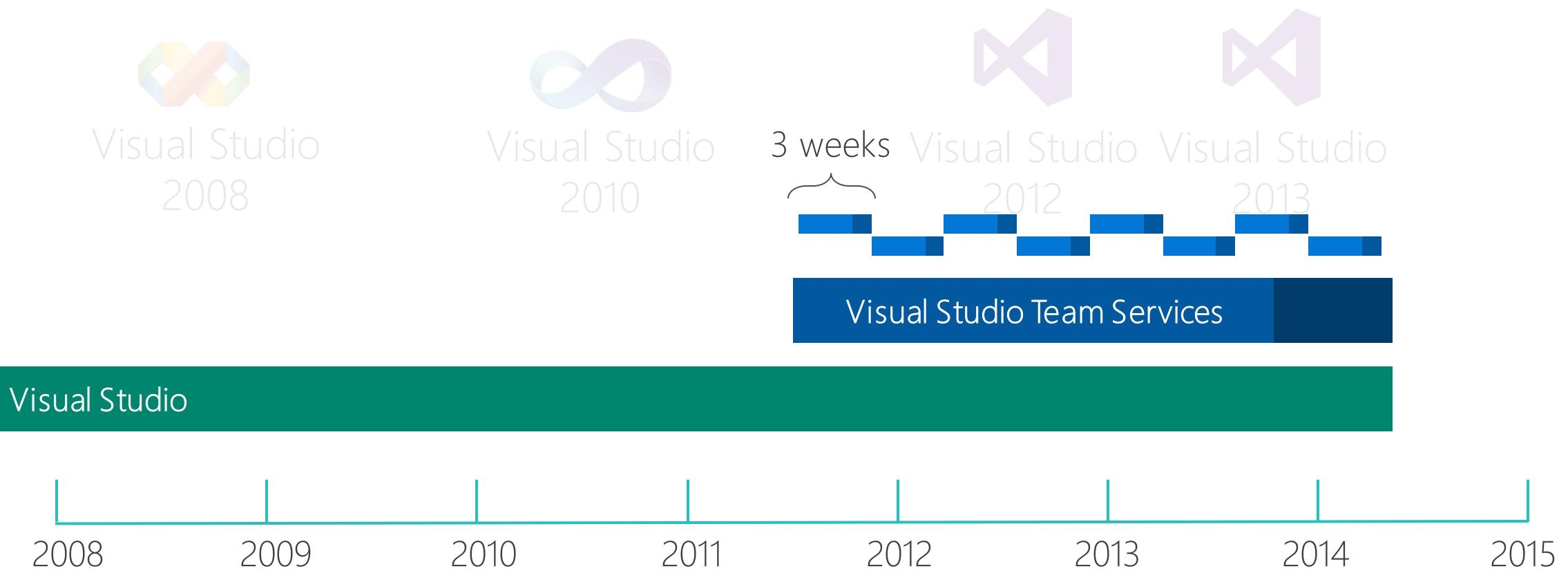
# The journey



# The journey



# The journey

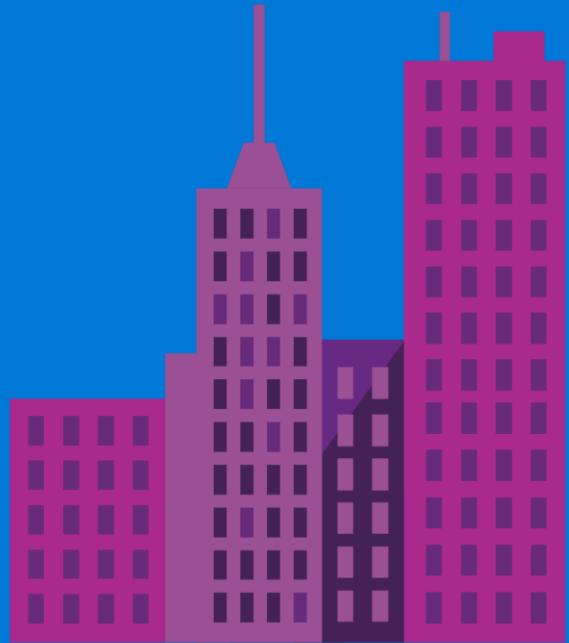


# Hands On Lab

HOL 14 – VSTS Account

- Create VSTS Account

# Visual Studio Team Services



# Visualize KPIs with Dashboards and Charts

HOME CODE WORK BUILD TEST PACKAGE \* RELEASE TIME ARCADE HUB

Welcome | **Overview** QA Metrics Defect Dashboard DevOps Dashboard CAT Dashboard New Dashboard Other Dashboard My newdashboard +

All Work - Chart

Word Cloud Gen... 8 Commits in last 7 days

Word Cloud Gen... 8 Commits in last 7 days

Work

Backlog Board Task board Queries

Product Backlog 17 Work items

All Bugs 65 Work items

All Work - Chart

291

Done New In Progress Design Committed To Do Active Approved Removed Total

Category	Dan Gartner	(blank)	Clark R Mil...	Pete Rodrig...	Al Kroska	Dan Stakeho...	Jason.Keich...	Total
Done	77	15	19	12	0	1	0	168
New	31	34	6	0	4	2	3	59
In Progress	14	0	5	0	0	2	0	38
Design	17	1	1	0	1	0	0	14
Committed	13	2	2	0	1	1	0	6
To Do	4	2	4	2	1	0	0	3
Active	9	2	1	0	0	0	0	0
Approved	2	0	0	0	0	0	0	0
Removed	1	0	0	0	0	0	0	0

All Work - Chart

Done New In Progress Design Committed To Do Active Approved Removed Total

Status	Count	Total
Done	125	291
New	76	291
In Progress	19	291
Design	19	291
Committed	16	291
To Do	12	291
Active	18	291
Approved	0	291
Removed	0	291
Total	291	291

Sprint 7 July 18 - July 29

Fabrikam Bugs by Assigned To

Sprint 7 July 18 - July 29

# Marketplace

Customize and extend the Visual Studio platform and create the perfect development environment that you'll love as much as your code.

The screenshot shows the Visual Studio Marketplace interface. At the top, there's a navigation bar with tabs for "Visual Studio", "Visual Studio Team Services" (which is highlighted in pink), "Visual Studio Code", "Subscriptions", and "Build your own". There's also a "Sign in" button and a search icon. Below the navigation, a main heading says "Extensions for the Visual Studio family of products". A search bar with the placeholder "Search Visual Studio Team Services extensions" and a magnifying glass icon is centered. The page is divided into sections: "Featured" and "Most Popular". Under "Featured", there are six extension cards: "HockeyApp" (Microsoft) with 1.8K installs, "Octopus Deploy Build an Octopus Deploy" (Octopus Deploy) with 746 installs, "Agile Cards" (Spartez) with 318 installs, "Redgate ReadyRoll" (Redgate Software) with 103 installs, "LaunchDarkly Integration" (LaunchDarkly) with 85 installs, and "Slack Integration" (Microsoft) which is free. Each card includes a star rating and a "FREE" badge if applicable. Under "Most Popular", there are six more extension cards: "Code Search" (Microsoft) with 10.8K installs, "Exploratory Testing - Cap" (Microsoft) with 8.8K installs, "Package Management" (Microsoft) with 4.6K installs, "Work Item Visualization" (Microsoft DevLabs) with 2.8K installs, "TFS Timetracker" (Berichthaus Software) with 2.5K installs, and "Folder Management" (Microsoft DevLabs) with 2.3K installs. Each card also includes a star rating and a "FREE" badge if applicable. A "See More" link is located at the bottom right of the "Most Popular" section.

VisualStudio | Marketplace

Sign in

Visual Studio Visual Studio Team Services Visual Studio Code Subscriptions Build your own

Extensions for the Visual Studio family of products

Search Visual Studio Team Services extensions

Featured

HockeyApp Microsoft 1.8K Distribute your builds, collect crash reports, and get feedback from your users. ★★★★★ FREE

Octopus Deploy Build an Octopus Deploy Microsoft 746 Build and Release tasks for integrating with Octopus Deploy. ★★★★★ FREE

Agile Cards Spartez 318 Print work items as cards for your agile teams directly from backlog, boards or query. ★★★★★ PREVIEW

Redgate ReadyRoll Redgate Software 103 Develop and deploy databases in Visual Studio with migration scripts. ★★★★★ FREE

LaunchDarkly Integration LaunchDarkly 85 Automatically roll out your LaunchDarkly feature flags during release. ★★★★★ FREE

Slack Integration Microsoft Team communication for the 21st century integrated with your software development. ★★★★★ FREE

Most Popular

Code Search Microsoft 10.8K Code Search provides fast, flexible and accurate search across all your code. ★★★★★ PREVIEW

Exploratory Testing - Cap Microsoft 8.8K Exploratory Testing for everyone. ★★★★★ PREVIEW

Package Management Microsoft 4.6K Build, manage, secure, and share your team's software components. ★★★★★ PREVIEW

Work Item Visualization Microsoft DevLabs 2.8K Visualize relationships between work items from within the work item form. ★★★★★ PREVIEW

TFS Timetracker Berichthaus Software 2.5K Track and manage working time on work items, with rich features and reports. ★★★★★ PREVIEW

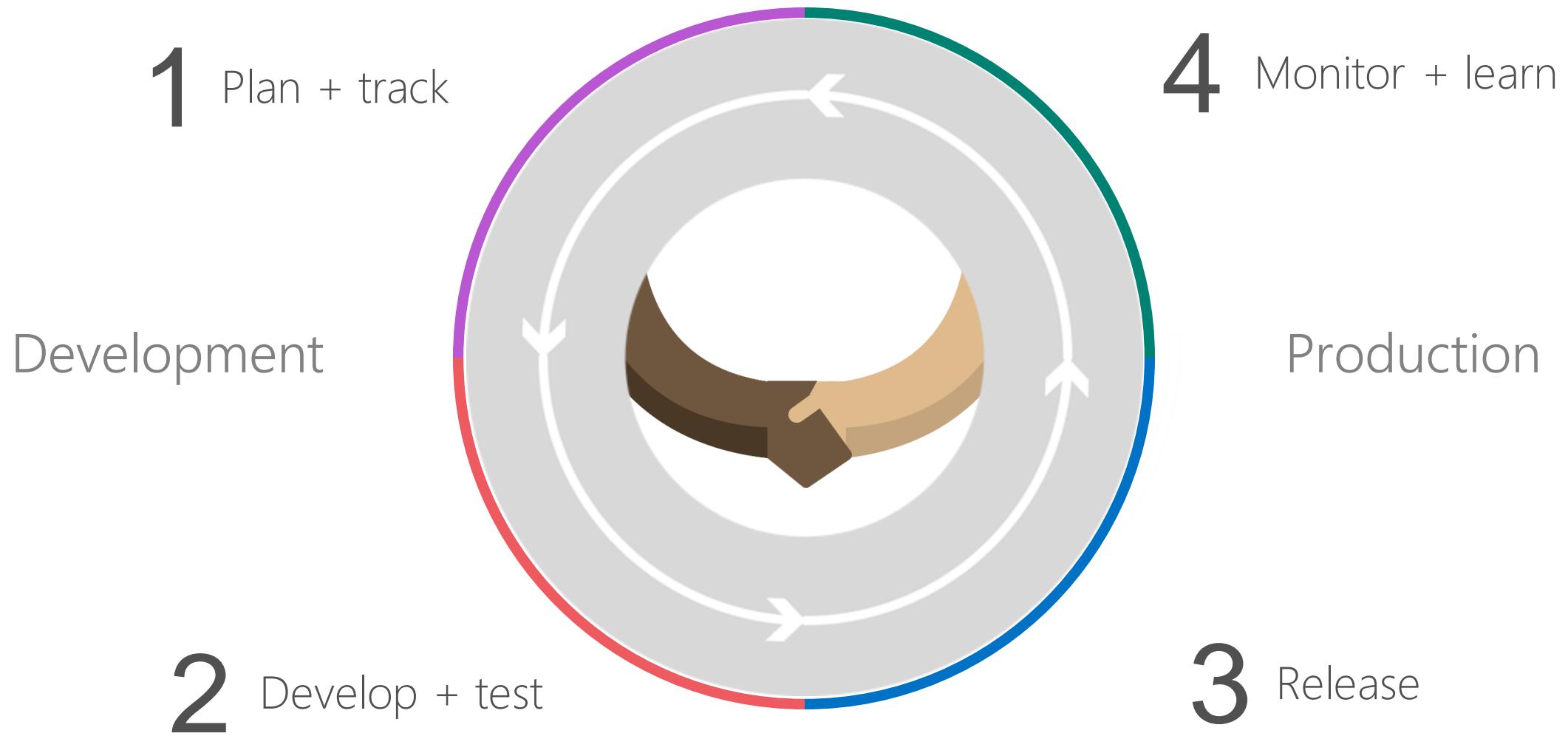
Folder Management Microsoft DevLabs 2.3K Quickly create a folder in your Visual Studio Team Services source repositories from the ★★★★★ FREE

See More

# New & Popular extensions

 <b>Code Search</b> Microsoft <span style="float: right;">10.8K</span> <p>Code Search provides fast, flexible and accurate search across all your code</p> <p>★★★★★ PREVIEW</p>	 <b>Exploratory Testing - Cap</b> Microsoft <span style="float: right;">8.8K</span> <p>Exploratory Testing for everyone</p> <p>★★★★★ PREVIEW</p>	 <b>Package Management</b> Microsoft <span style="float: right;">4.6K</span> <p>Build, manage, secure, and share your team's software components.</p> <p>★★★★★ PREVIEW</p>	 <b>Work Item Visualization</b> Microsoft DevLabs <span style="float: right;">2.8K</span> <p>Visualize relationships between work items from within the work item form.</p> <p>★★★★★ PREVIEW</p>	 <b>TFS Timetracker</b> Berichthaus Software <span style="float: right;">2.5K</span> <p>Track and manage working time on work items, with rich features and reports.</p> <p>★★★★★ PREVIEW</p>	 <b>Folder Management</b> Microsoft DevLabs <span style="float: right;">2.3K</span> <p>Quickly create a folder in your Visual Studio Team Services source repositories from the</p> <p>★★★★★ FREE</p>
 <b>Team Calendar</b> Microsoft DevLabs <span style="float: right;">1.9K</span> <p>Track events important to your team, view and manage days off, quickly see when</p> <p>★★★★★ FREE</p>	 <b>HockeyApp</b> Microsoft <span style="float: right;">1.8K</span> <p>Distribute your builds, collect crash reports, and get feedback from your users.</p> <p>★★★★★ FREE</p>	 <b>Test Manager</b> Microsoft <span style="float: right;">1.3K</span> <p>Integrated test management system for all your manual, exploratory and user</p> <p>★★★★★ PAID</p>	 <b>Branch Delete</b> Microsoft Samples <span style="float: right;">1.2K</span> <p>Clean up old or unneeded Git branches right from within Visual Studio Team Services.</p> <p>★★★★★ FREE</p>	 <b>Estimate</b> Microsoft DevLabs <span style="float: right;">1.2K</span> <p>Planning Poker in Visual Studio Team Services.</p> <p>★★★★★ FREE</p>	 <b>Scrum Report</b> Mikael Krief And Vlak <span style="float: right;">990</span> <p>Keep track with the team's progress with a scrum report.</p> <p>★★★★★ FREE</p>

# End-to-end DevOps



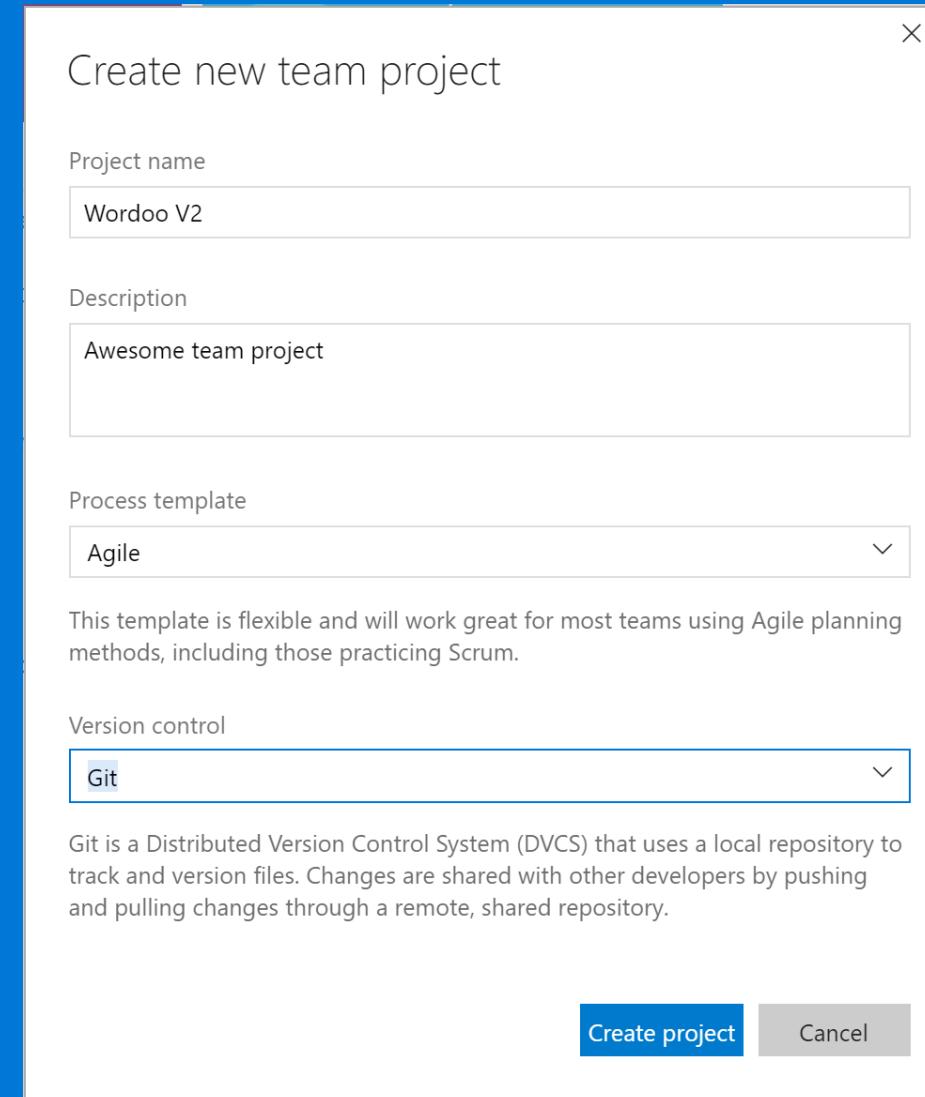
# Planning

# Creating a Team Project

Select a process template

Name can be changed later

Version Control can be changed later



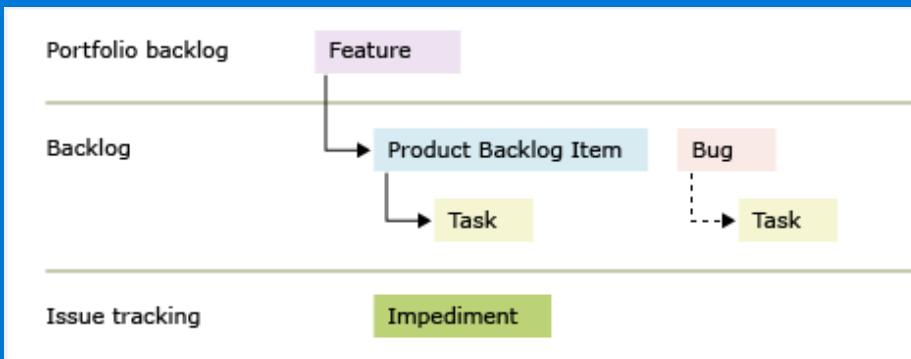
# Process Templates

Determine  
the Types of  
Work you  
track

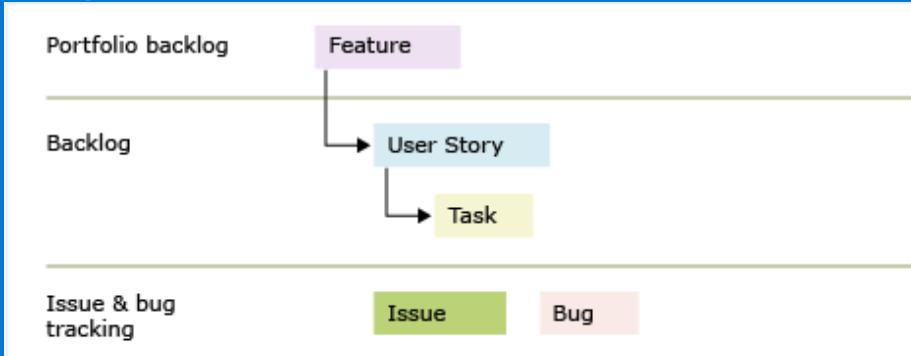
Customizable

One per Team  
Project

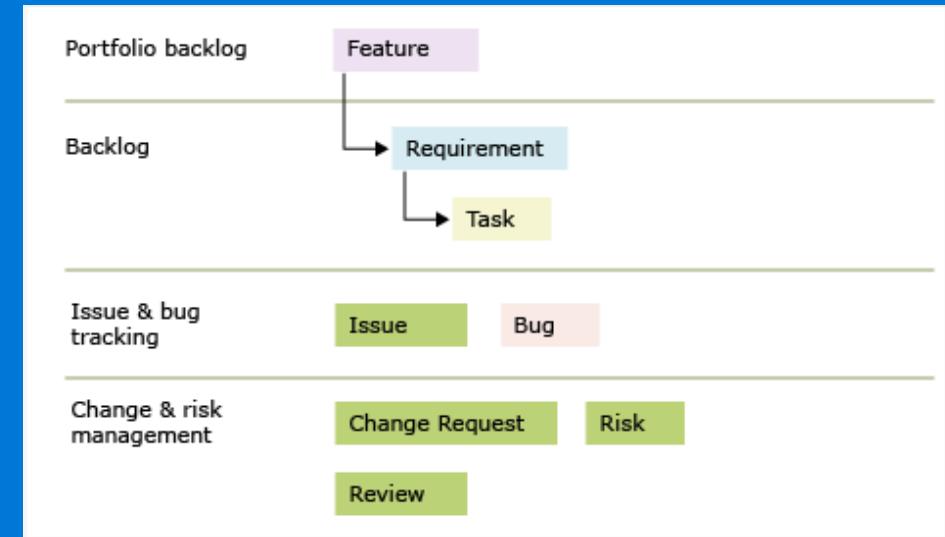
## SCRUM



## Agile



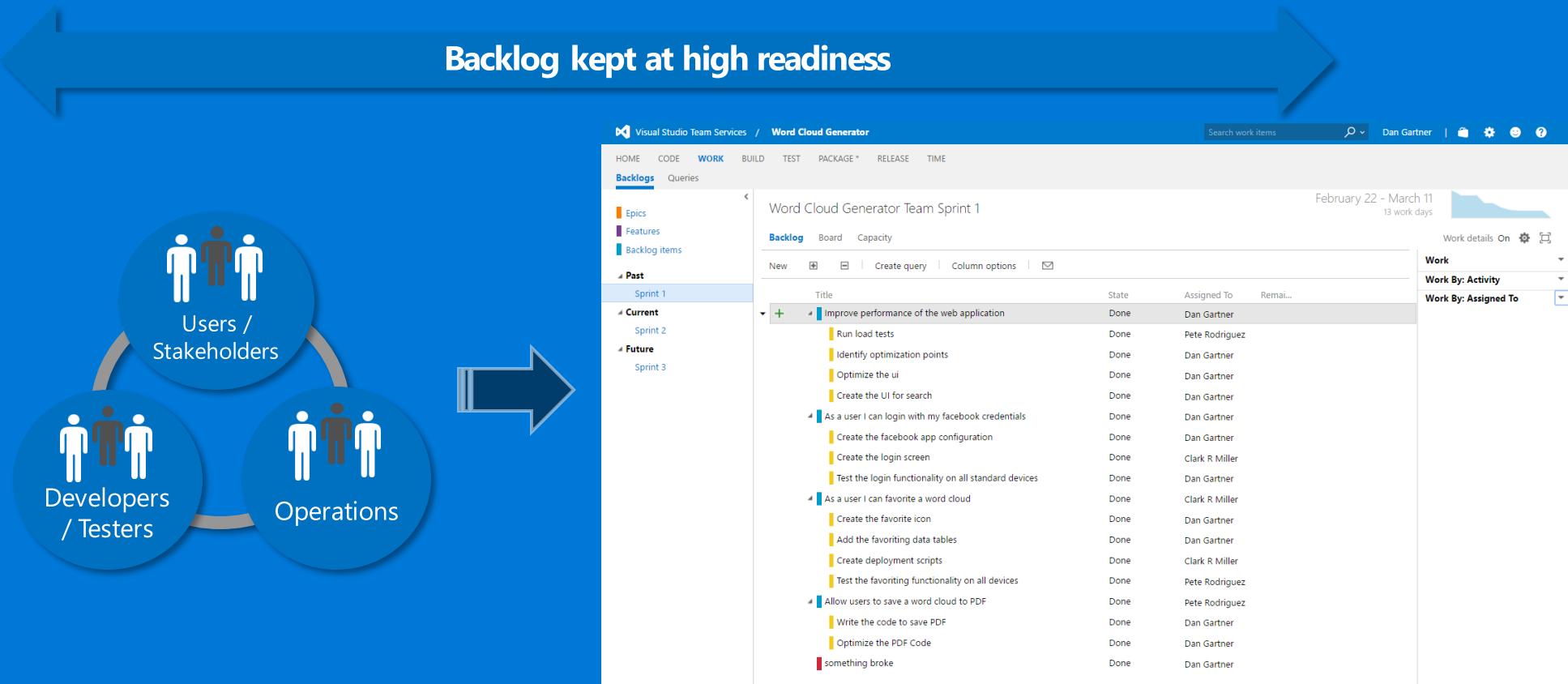
## CMMI



## Common Work Item Types:

- Code Review Request / Response
- Test Case / Shared Steps
- Feedback Requests

# collaboration and planning the Backlog



Accelerated decision making

Agreement on requirements

Familiar tools to ease definition

Prioritize by Value

# Work Items

Vary  
depending  
on your  
process  
template

Customizable  
and  
extensible

Can be linked  
to any other  
work item

Can be linked  
to code  
changes

The screenshot shows a Microsoft Work Item details page for a 'PRODUCT BACKLOG ITEM 1291'. The title of the work item is '1291 As a user I can interact with the wordoo service as a bot'. The work item is assigned to 'Dan Gartner' and has a priority of '2'. It is currently in the 'Committed' state and is part of the 'Word Cloud Generator' area, specifically in the 'Word Cloud Generator\Release 2\Sprint 7' iteration. The 'Acceptance Criteria' section lists three items: 'The bot service is developed and fully tested, and exposed as a web api', 'The api is linked to the Microsoft Bot Framework portal', and 'The api is exposed via various services such as Facebook messenger, skype, email, sms, etc'. The 'Details' section includes fields for 'Priority' (2), 'Effort' (12), 'Business Value', 'Value area' (Business), and 'MY cool field'. The 'Work' section shows a 'Start Tracking' button and a total of 0 hours. The 'Development' section lists four related items: 'Merge botapp to master' (Created 7/15/2016, Abandoned), 'Implemented the Bot! #1291' (Created Monday), 'Added bot app for #1291' (Created 7/15/2016), and 'Botify the wordoo service' (Updated 16 minutes ago, New). The 'Related Work' section lists four child items: 'Place the chat bot code on the wordoo website' (Updated Monday, To Do), 'Publish the bot app' (Updated 20 minutes ago, In Progress), 'Validate the bot app can generate a word cloud' (Updated 20 minutes ago, Done), and 'Write the Bot App to generate the word cloud' (Updated 20 minutes ago, Done).

PRODUCT BACKLOG ITEM 1291\*

1291 As a user I can interact with the wordoo service as a bot

Dan Gartner 1 bot X bot-framework X some-tag X +

State Committed Area Word Cloud Generator

Reason Commitment made by... Iteration Word Cloud Generator\Release 2\Sprint 7

Updated by Dan Gartner 6 minutes ago

Description

**Bot Plan**  
Implement the wordoo service so that it can be accessed via the bot framework. Once implemented, it can then be exposed via various services such as Skype, Facebook Messenger, etc.

Acceptance Criteria

- The bot service is developed and fully tested, and exposed as a web api
- The api is linked to the Microsoft Bot Framework portal
- The api is exposed via various services such as Facebook messenger, skype, email, sms, etc

Details

Priority 2

Effort 12

Business Value

Value area Business

MY cool field

Country

Work

Total 0h

Start Tracking

Development

- + Add link
- Merge botapp to master Created 7/15/2016, Abandoned
- Implemented the Bot! #1291 Created Monday
- Added bot app for #1291 Created 7/15/2016
- Botify the wordoo service Updated 16 minutes ago, New

Related Work

+ Add link

Parent

Child (4)

- 1304 Place the chat bot code on the wordoo website Updated Monday, To Do
- 1294 Publish the bot app Updated 20 minutes ago, In Progress
- 1295 Validate the bot app can generate a word cloud Updated 20 minutes ago, Done
- 1293 Write the Bot App to generate the word cloud Updated 20 minutes ago, Done

# Customizing your process and work items

## Adding custom fields and picklists to work items

The image shows two screenshots of the Azure DevOps Control panel. The top screenshot displays the 'Process' section of the 'DefaultCollection' control panel, listing several process templates: Agile (default), MyAgile, CMMI, Scrum, and MyScrum. A purple arrow points from the 'MyAgile' template in this list to the 'Fields' tab in the bottom screenshot. The bottom screenshot shows the 'Work Item Types' page for the 'MyAgile' template. The 'Fields' tab is selected, and a purple arrow points from the 'New Field' button to the 'ADD A FIELD TO BUG' dialog box. This dialog box is titled 'Bug' and contains fields for defining a new custom field named 'Colors' of type 'Picklist (String)' with items 'Blue', 'Green', 'Orange', and 'Red'. The dialog also includes sections for 'Layout' and 'Options'.

Control panel > DefaultCollection

Process

Name	Description	Version	Projects	Enabled
Agile (default)	This template is flexible and will work great for most team...	14.5	1	✓
MyAgile		1.0	1	✓
CMMI	This template is for more formal projects requiring a m...	14.6	0	✓
Scrum	This template is for teams who follow the Scrum fram...	14.6	0	✓
MyScrum	Customizable Scrum-based process	1.0	0	✓

faultCollection

MyAgile

Overview Work Item Types Fields Security

Bug: Fields

New Field

Name	Type	Required	Default value	Description
Activated By	Text (single line)			Type of work inv...
Activated Date	Date/Time			The date and time...
Activity	Text (single line)			The person current...
Area Path	Tree path			The area of the pr...
Assigned To	Text (single line)			The person current...

ADD A FIELD TO BUG

Bug

Define Field

Add a field to store custom, queryable data about your work items.

Layout

Options

Accepted By

Create a field

Name: Colors

Type: Picklist (String)

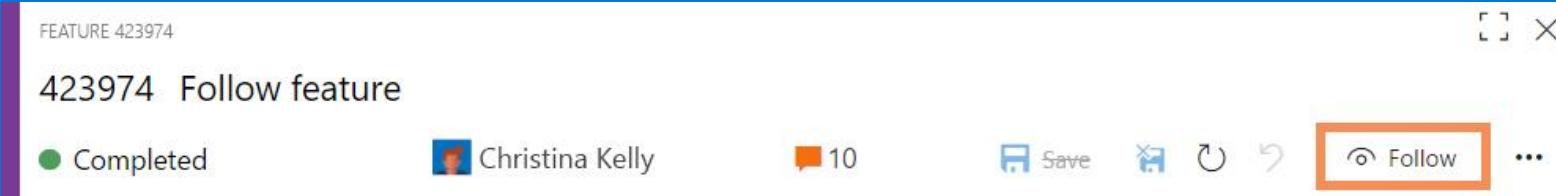
Description: Optionally provide a description for the field

Picklist items: Blue, Green, Orange, Red

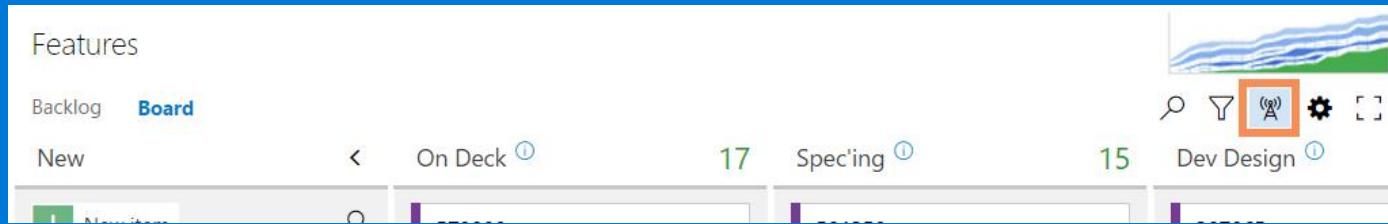
Learn more about adding a field

Add field Cancel

# Easier to stay up to date



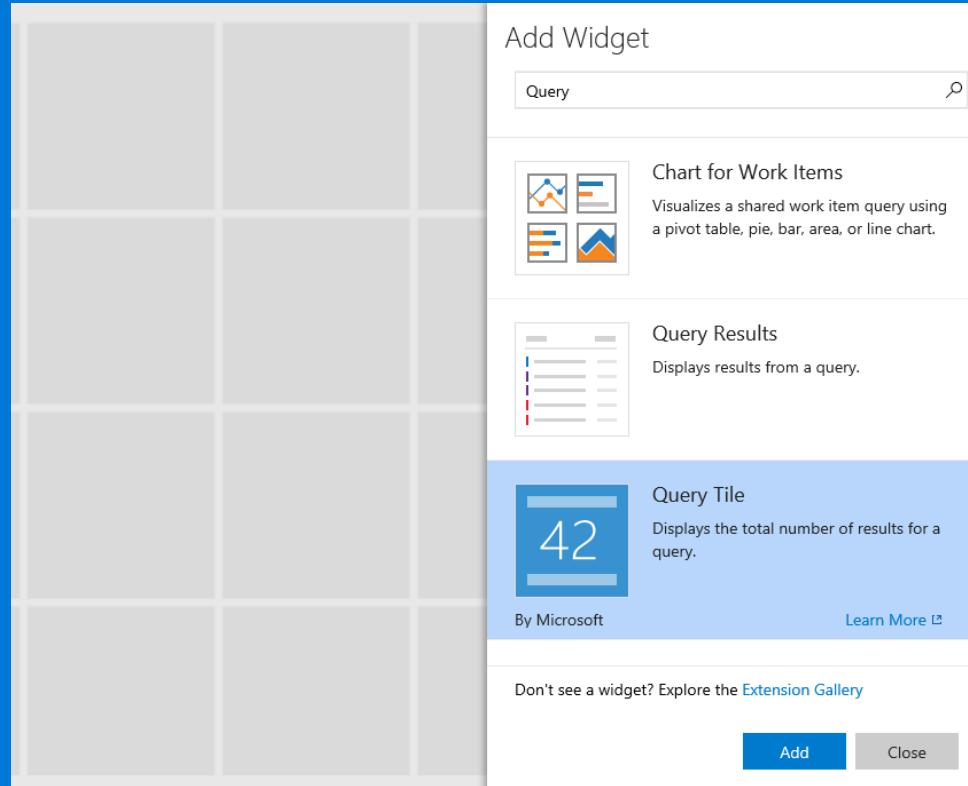
"Follow" a work item and never miss out



See work as it happens with Live updates on boards

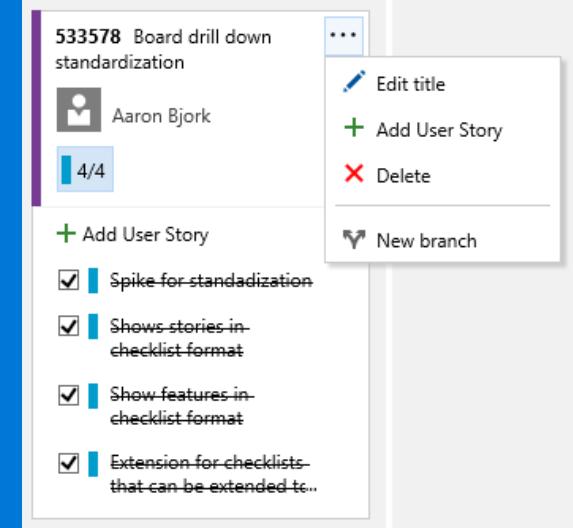
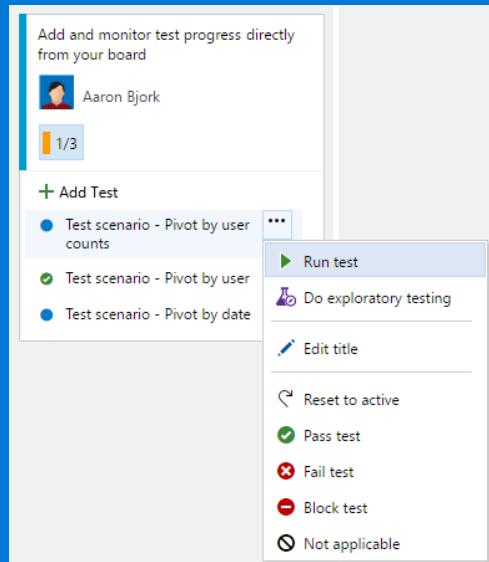
# Easier to stay up to date

- Dashboard improvements – Catalog and REST API



# Visualize work better on Kanban board

Epic, feature, task and test breakdown

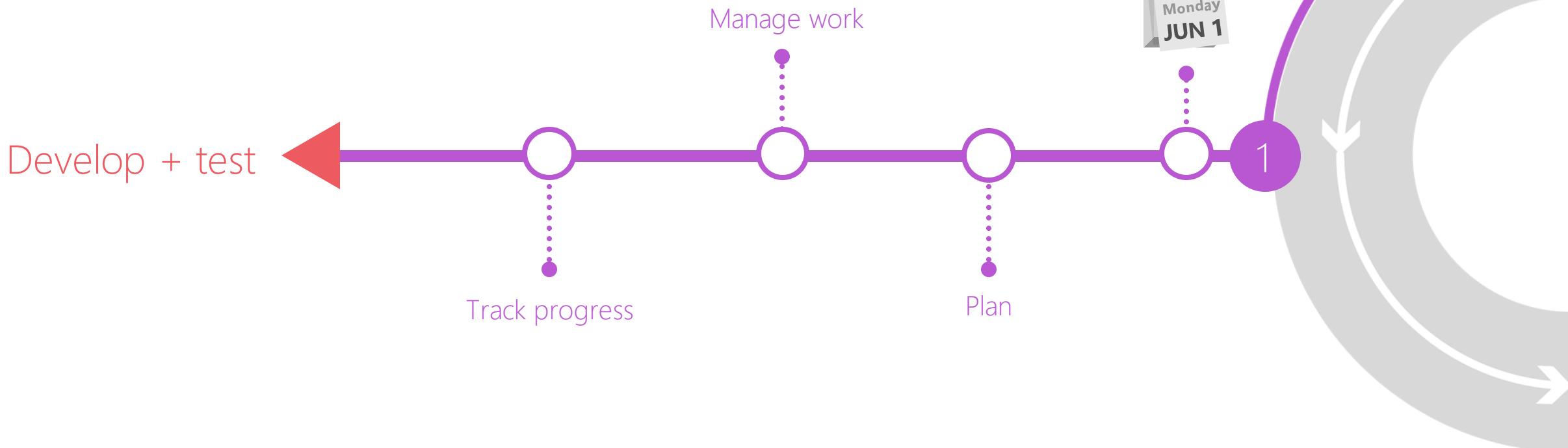


Exploratory testing right from a work item



# Plan + track

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



# Hands On Lab

HOL 14 - VSTS - Plan

- Planning

# Development

# Git + Team Services = more power, more social!

## Pull requests view

The screenshot shows a pull request interface for a file named RouteConfig.cs. The top bar indicates the pull request has been merged successfully. The main area displays the C# code for the RouteConfig class, with several code review comments overlaid. One comment from Raisa Pokrovskaya suggests including a name parameter in a route. Another comment from Alvin Westlink asks to capture this in the test plan. The right sidebar shows the pull request status as completed, with merge details and a list of reviewers.

Pull Request 105: Adding a new address controller to enable the multiple address scenario

Fabrikam : Successfully merged 89 users/alvin/multi-address To master

Discussion Files (8) Commits (1) Compare - RouteConfig.cs

```
1 using System;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Web;
5 using System.Web.Mvc;
6 using System.Web.Routing;
7
8 namespace FabrikamWeb
9 {
10    public class RouteConfig
11    {
12        public static void RegisterRoutes(RouteCollection routes)
13        {
14            routes.IgnoreRoute("{resource}.axd/{pathInfo}");
15
16            routes.MapRoute(
17                name: "Default",
18                url: "{controller}/{action}/{id}",
19                defaults: new { controller = "Home", action = "Index", id =
20            );
21
22
23
24
25
}

```

Completed

Merged successfully, Commit b64cae5f  
Reviewers approved

Delete source branch

Related Work Items

Add work items

519 Option for setting preferre... Updated 2 hours ago, Active

Reviewers

Fabrikam Team via Alvin Westlink Approved

Alvin Westlink Approved

Brett Cambell

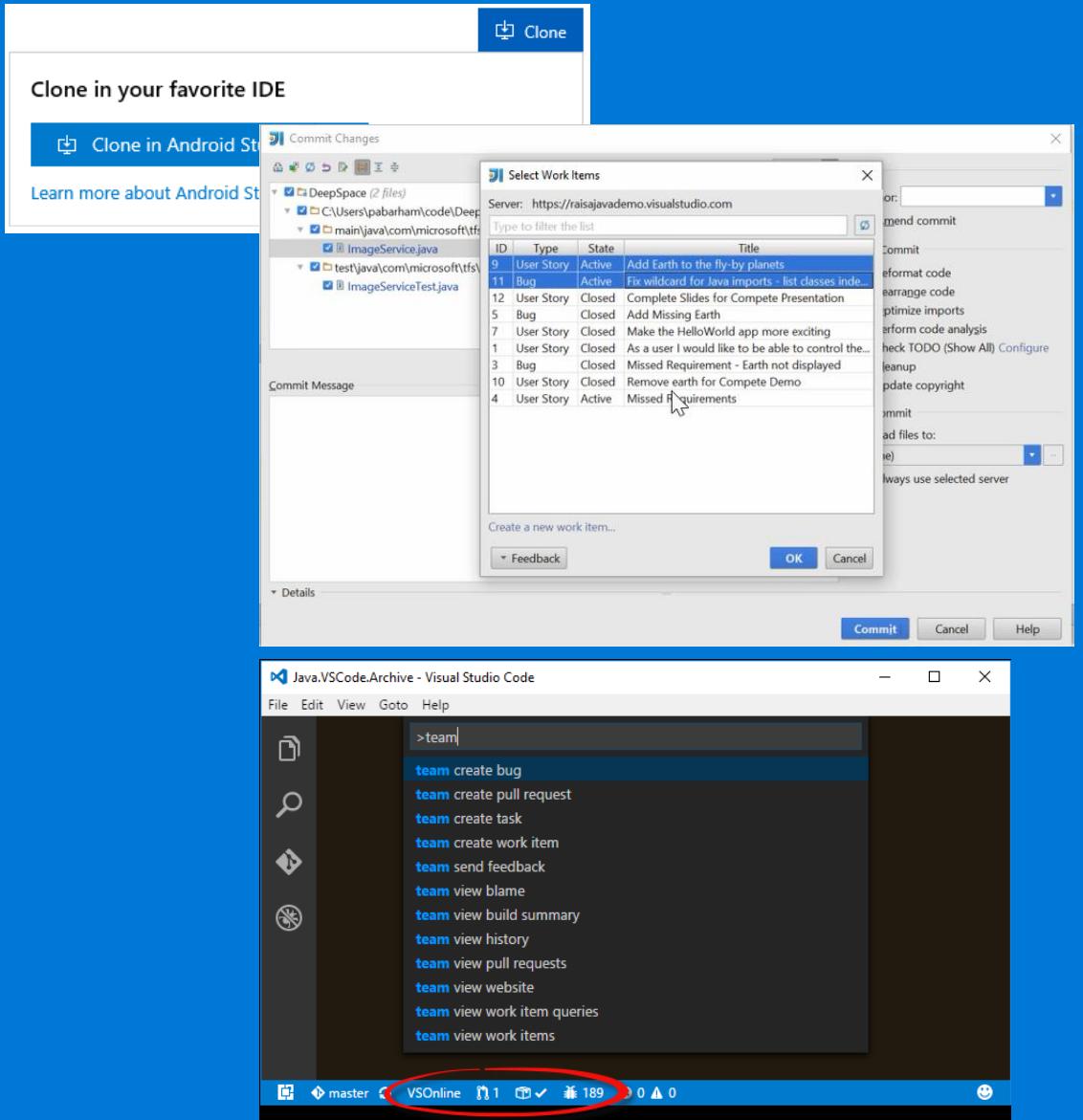
Raisa Pokrovskaya

I think you'll want to include the name parameter in this route. Otherwise, it's not going to route correctly to the new end point.  
Raisa Pokrovskaya - 4 weeks ago Status: Active

@Alvin Westlink Let's make sure we capture this in the test plan  
Brett Cambell - 4 weeks ago - reply

# Git + Any language, any platform!

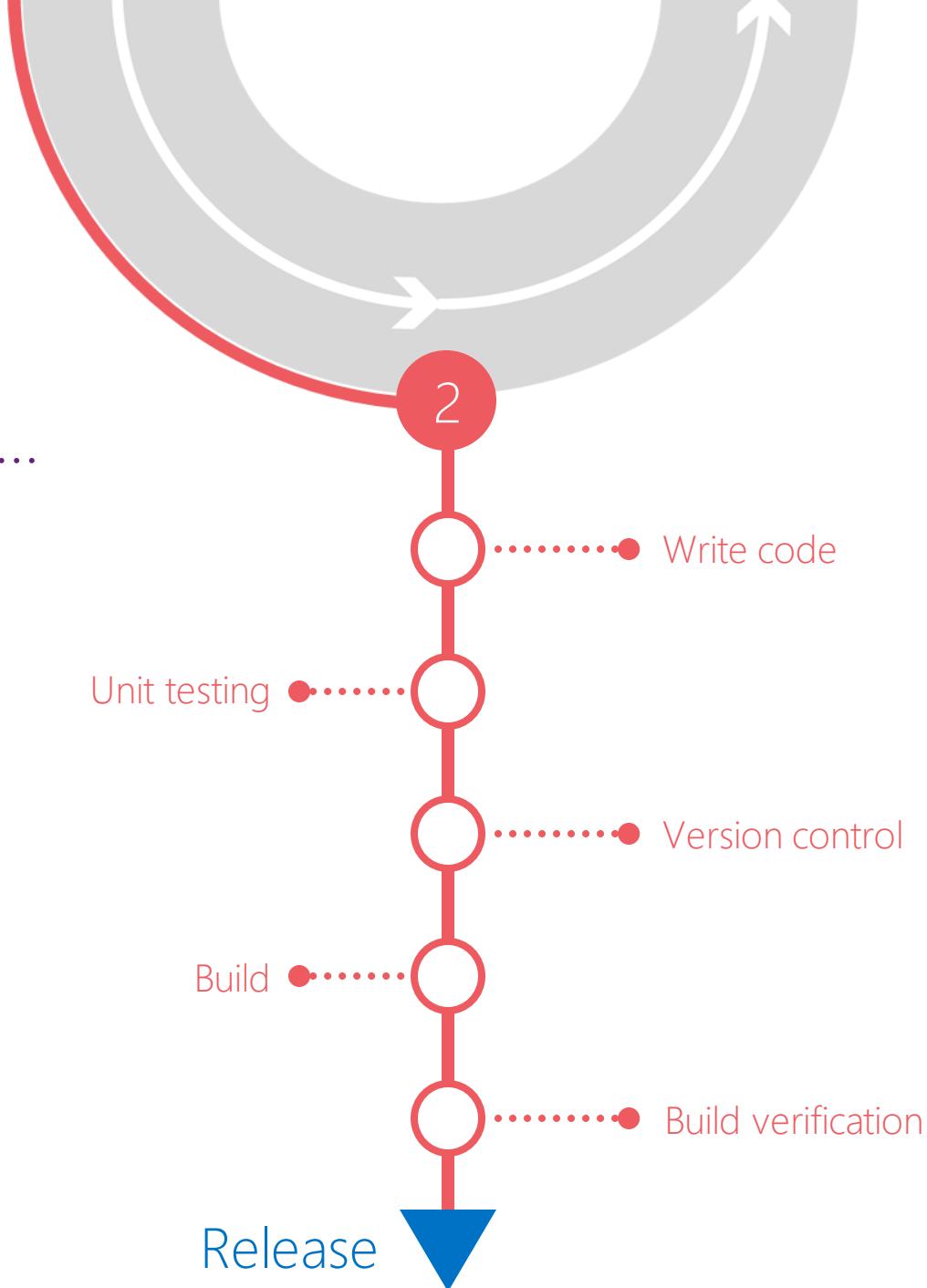
Plugins for Android Studio,  
IntelliJ,  
Eclipse,  
Visual Studio Code





## Develop + test

After the iteration starts,  
developers turn great ideas  
into features and functionality ...



# Hands On Lab

HOL 15 - Development

- Development

break;

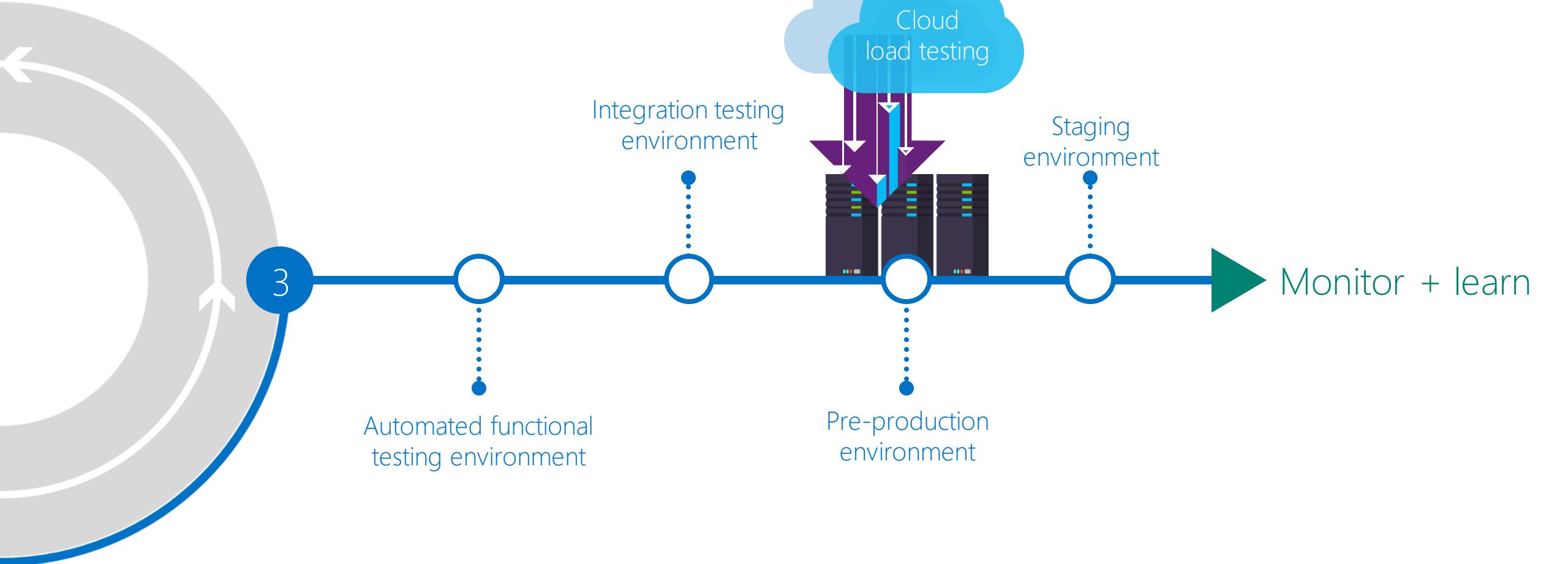
*Coming up:*  
*Continuous Integration*  
*Continuous Deployment*  
*Monitoring*

# Continuous Integration/Deployment



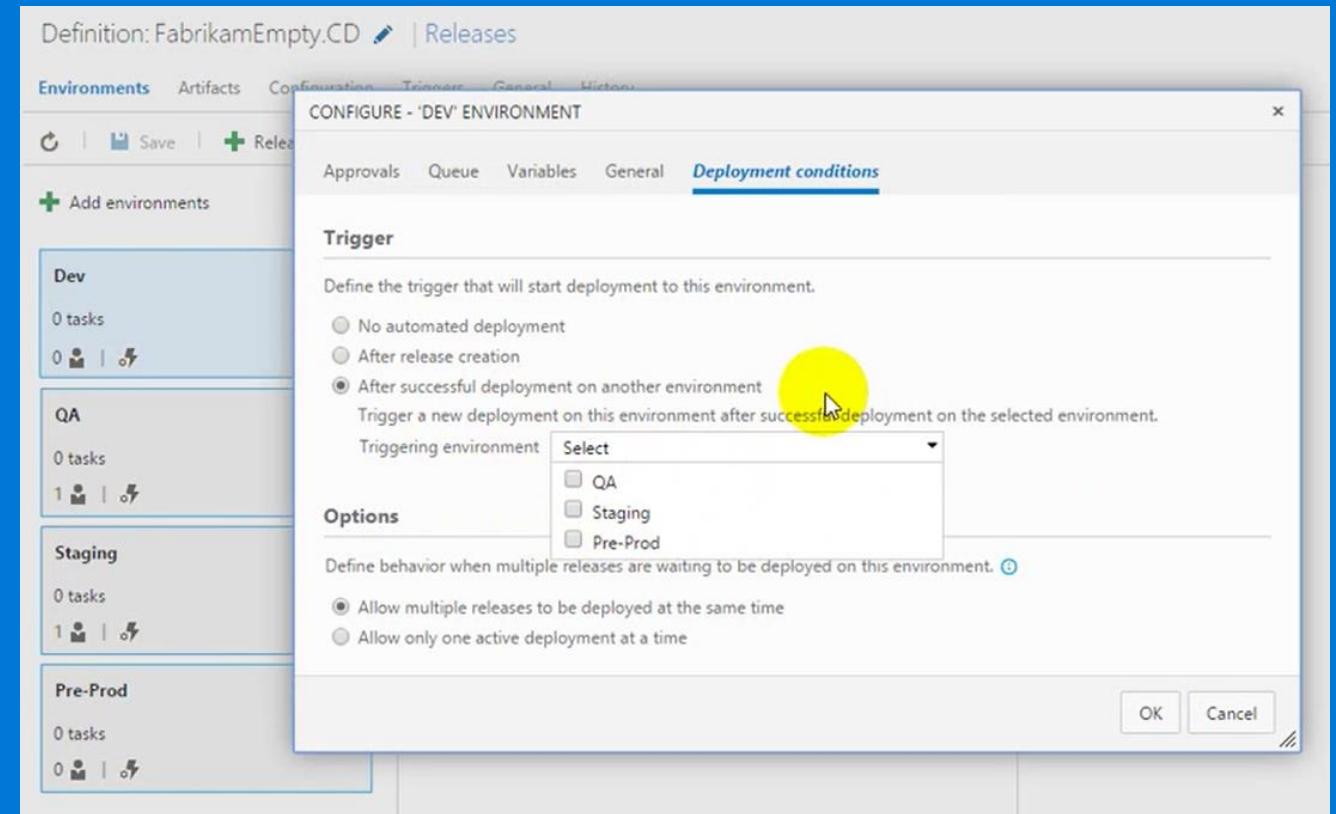
# Release

When all tests pass, the build is deployed to testing environments for each stage in the release process ...



# Auto triggers for releases

Deploy based on conditions in multiple environments  
....Or promote release on a set schedule



# Hands On Lab

HOL 16 - VSTS - CI

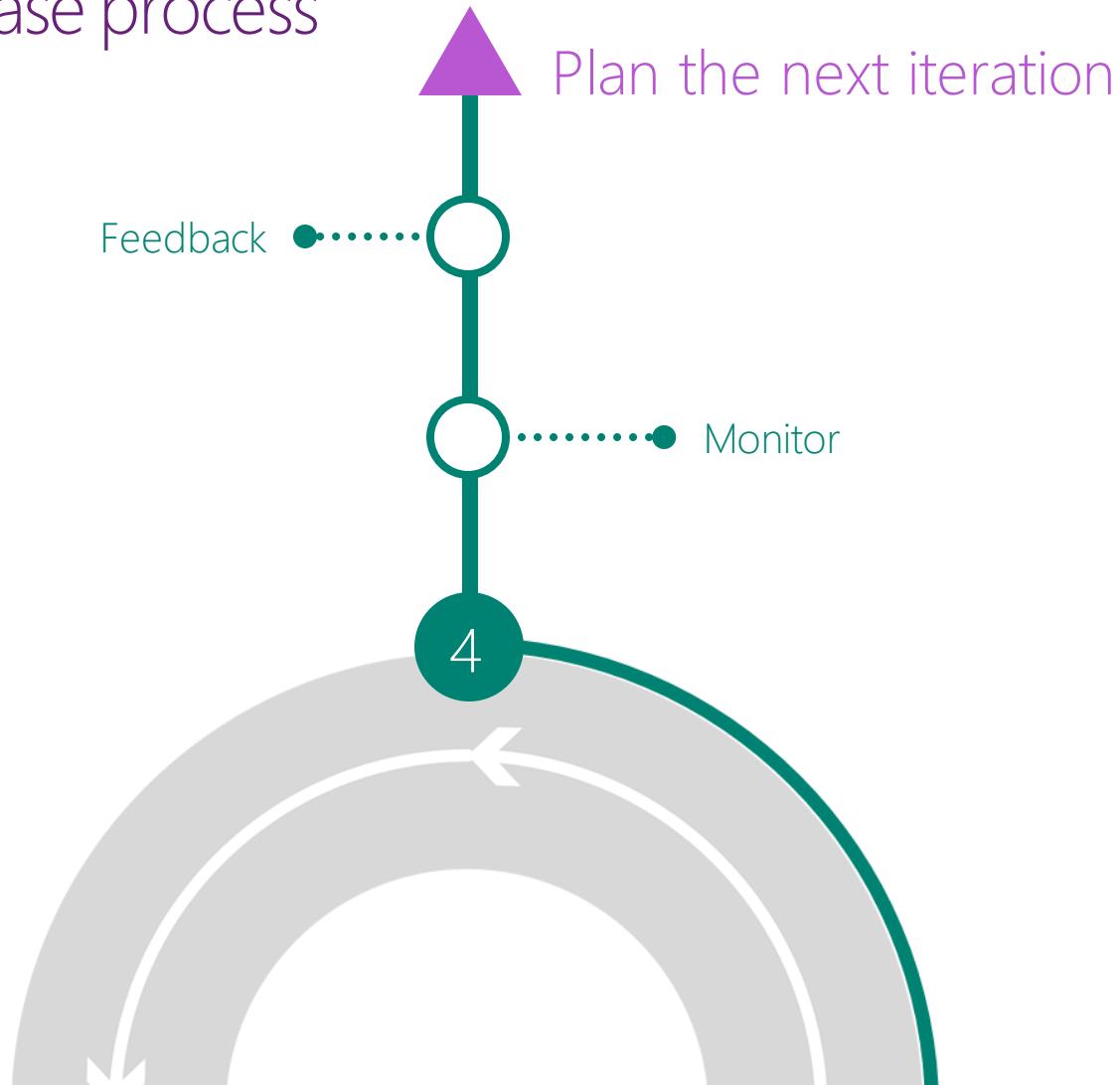
HOL 17 - VSTS - CD

- Continuous Integration
- Continuous Delivery



# Monitor + learn

When all tests pass, the build is deployed to testing environments for each stage in the release process



# Hands On Lab

HOL 18 - VSTS - Monitor

- Monitor

Teşekkürler.

