

The Power of Azure DevOps

Jeff Bramwell

Global Azure Day 2020



Who Am I?

Jeff Bramwell

Farm Credit Services of America
VP – Solutions Architecture

Microsoft Development Technologies MVP

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blog.devmatter.com

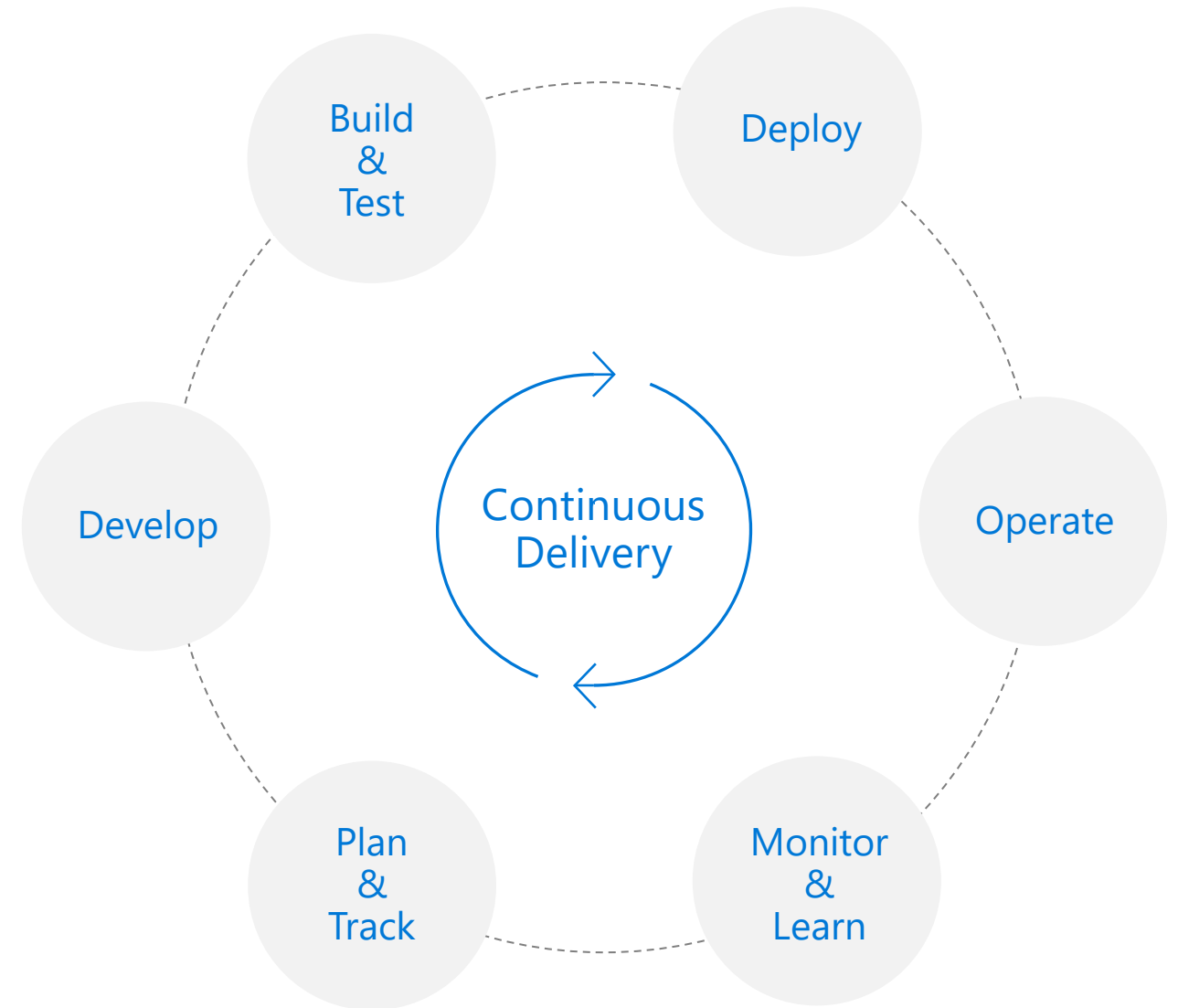
jeff@moonspace.net

What is DevOps?

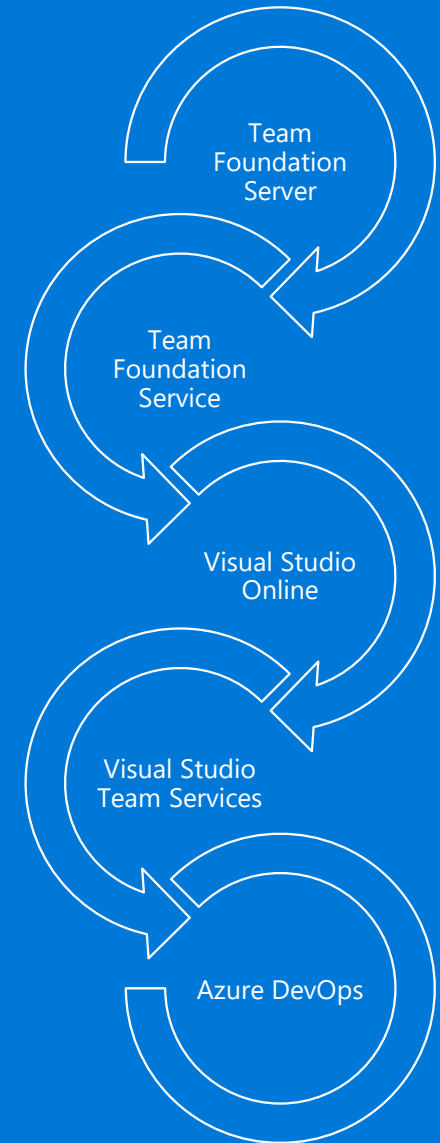
People. Process. Products.



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

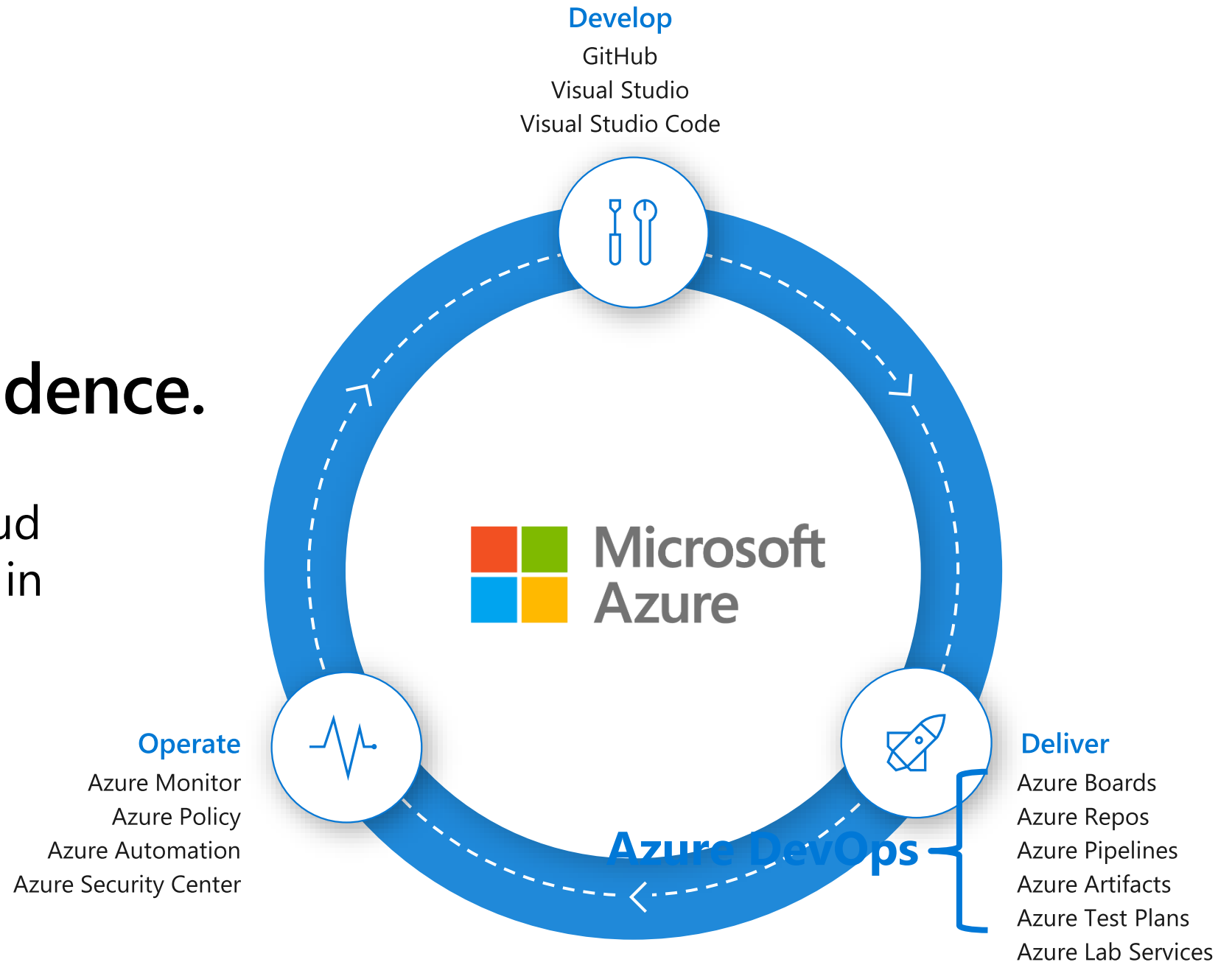


Introducing: Azure DevOps



Innovate at scale. Deliver with confidence.

Microsoft Azure is the cloud
with DevOps tooling built in



But First, Let's Clear Up the 'A' Word (hint: Azure)

Q. Does *Azure DevOps* require an Azure subscription?

A. No!

Q. Will *Azure DevOps* work with non-Microsoft technologies?

A. Yes!

Q. Will *Azure DevOps* work with AWS or GCP?

A. Yes!

Q. How about open source (OSS)?

A. Yes!





Deliver with Azure DevOps



Azure Boards



Azure Repos



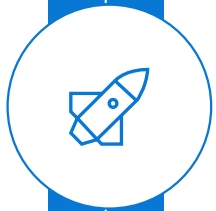
Azure Pipelines



Azure Artifacts



Azure Test Plans



Deliver



Azure Boards



Azure Repos



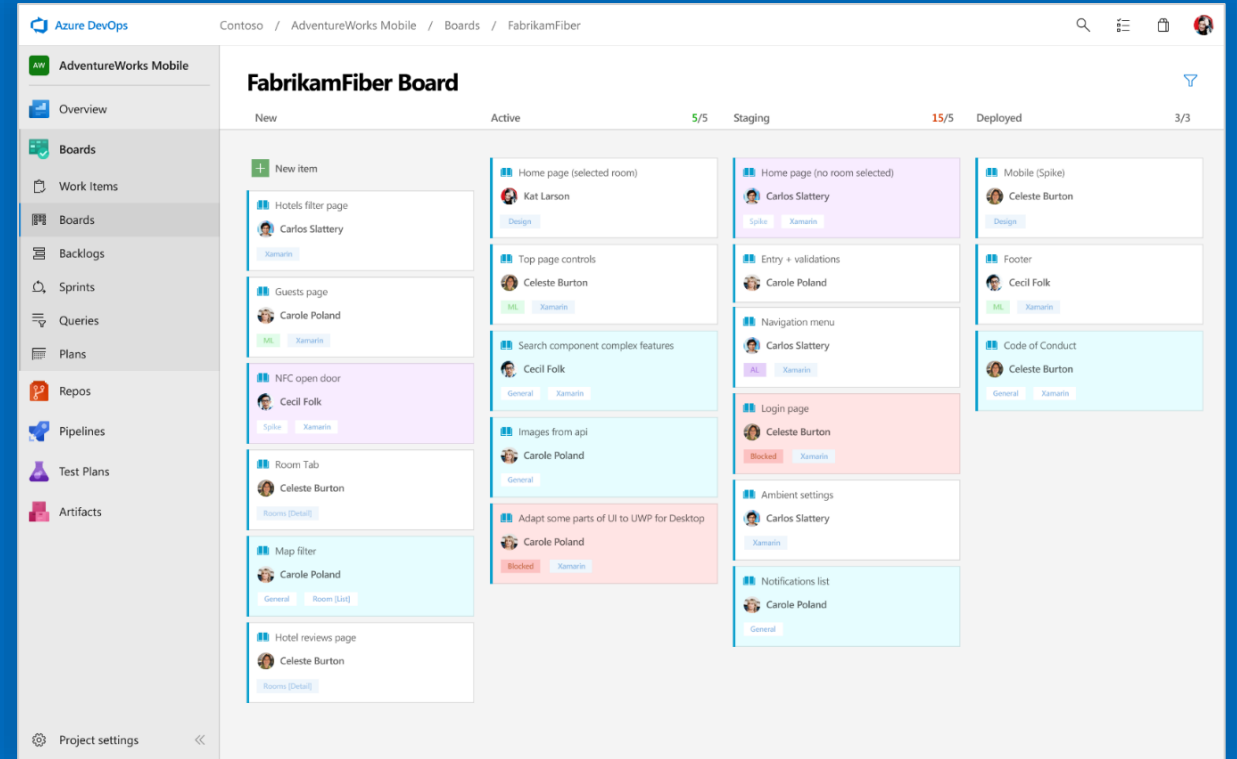
Azure Pipelines



Azure Artifacts



Azure Test Plans



Connecting ideas to releases

Scrum ready to help your teams run sprints, stand-ups, and plan work

Integrated with GitHub commits and pull requests

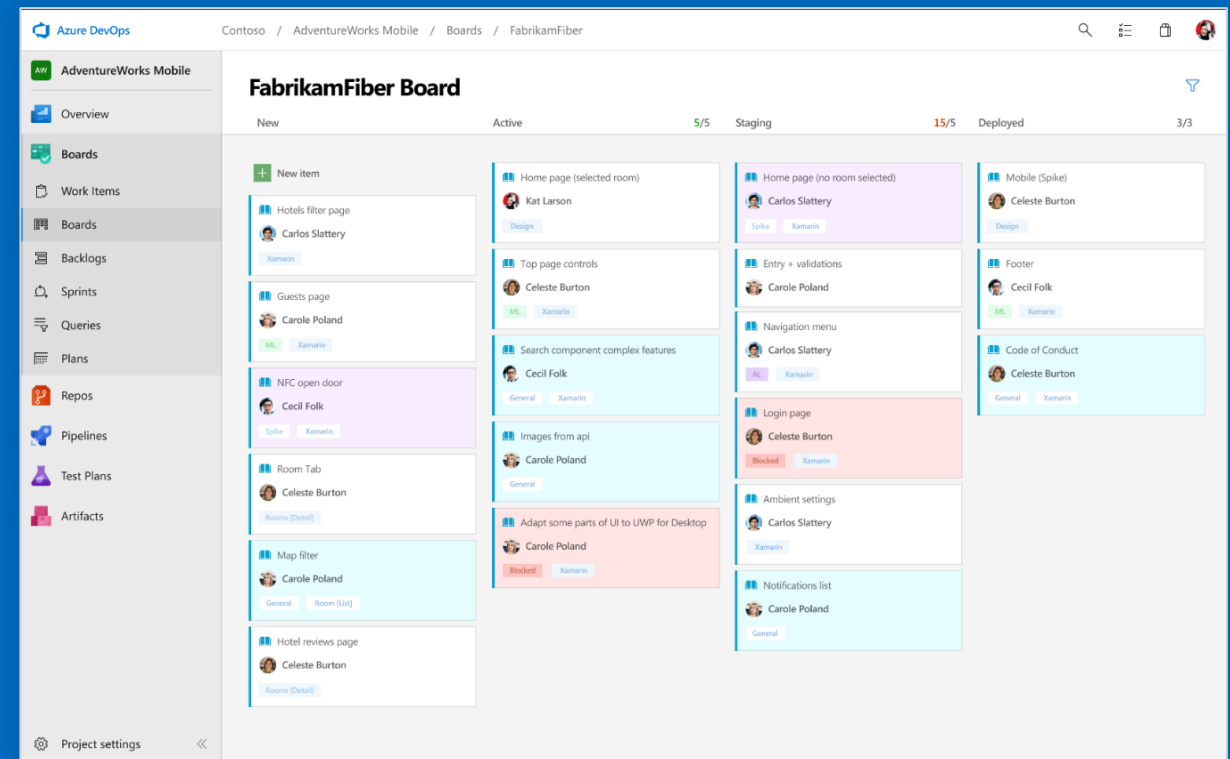
Insights into project status and health

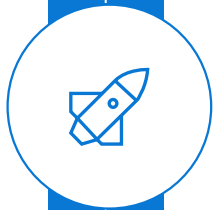
Azure Boards – Other Thoughts

- **Based on process templates**
 - Can use out-of-the-box templates or create custom templates
 - Defines the fields that show up on work items and the rules that control moving from one state to another
- **Easy to add/remove board columns**
 - Can also add swim lanes – e.g. *Expedite*, etc.
- **Configurable rules to modify background and/or tag colors**
- **Track conversations related to ideas, over time**
- **Tie work items to source code, builds and deployments**
 - E.G. via pull requests

Azure Boards Demo

Let's take a closer look...





Deliver



Azure Boards



Azure Repos



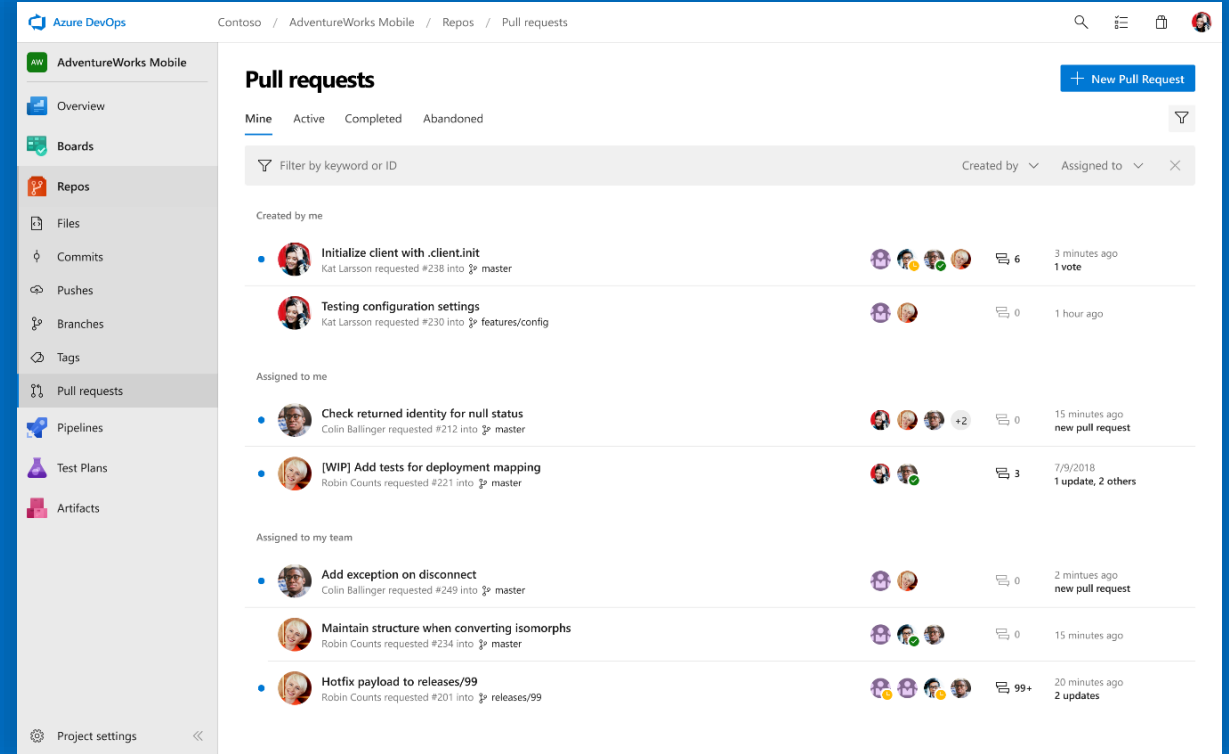
Azure Pipelines



Azure Artifacts



Azure Test Plans



Private Git and TFVC repos for your teams

Code review via branch pull requests

Branch policies and build validation

Easy migration path to / from GitHub

Azure Repos – Other Thoughts

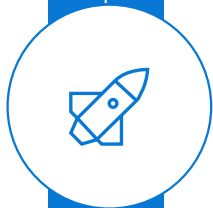
- Enterprise-class source control
 - Highly scalable
 - Supports pull request (PR) workflows (w/Git)
 - Granular security control
- Works with any coding language
 - C#, C++, Java, Go, PHP, Python, JavaScript, Swift, Ruby, etc....
- Supports multiple development workflows such as GitFlow, trunk-based development, etc.
- Lots more!

Azure Repos Demo

Let's take a closer look...

The screenshot displays the Azure DevOps web interface for managing pull requests. The left sidebar contains navigation links for AdventureWorks Mobile, Overview, Boards, Repos (selected), Files, Commits, Pushes, Branches, Tags, Pull requests, Pipelines, Test Plans, and Artifacts. The main content area is titled 'Pull requests' and includes tabs for Mine, Active, Completed, and Abandoned. A search bar and filters for 'Created by' and 'Assigned to' are present. The pull requests are categorized into three sections: 'Created by me', 'Assigned to me', and 'Assigned to my team'. Each pull request entry shows the title, author, target branch, and a list of reviewers with their status (approved, pending, or rejected).

Category	Title	Author	Target Branch	Reviewers	Status	Time
Created by me	Initialize client with .clientInit	Kat Larsson	master	6 reviewers	1 vote	3 minutes ago
	Testing configuration settings	Kat Larsson	features/config	0 reviewers	0 votes	1 hour ago
Assigned to me	Check returned identity for null status	Colin Ballinger	master	0 reviewers	0 votes	15 minutes ago
	[WIP] Add tests for deployment mapping	Robin Counts	master	3 reviewers	1 update, 2 others	7/9/2018
Assigned to my team	Add exception on disconnect	Colin Ballinger	master	0 reviewers	0 votes	2 minutes ago
	Maintain structure when converting isomorphs	Robin Counts	master	0 reviewers	0 votes	15 minutes ago
	Hotfix payload to releases/99	Robin Counts	releases/99	99+ reviewers	2 updates	20 minutes ago



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Azure Boards



Azure Repos



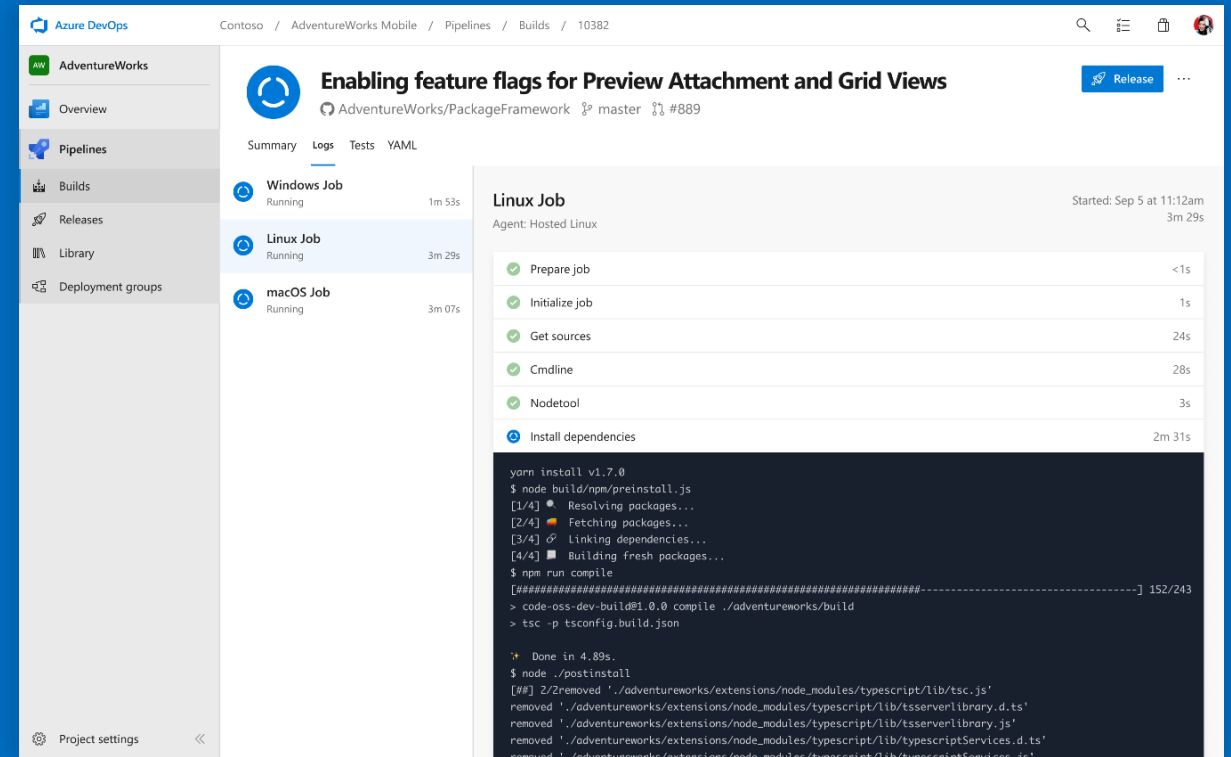
Azure Pipelines



Azure Artifacts



Azure Test Plans



Cloud-hosted pipelines for Linux, macOS and Windows

Any language, any platform, any cloud

Native support for containers and Kubernetes

Best-in-class for open source





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Azure Boards



Azure Repos



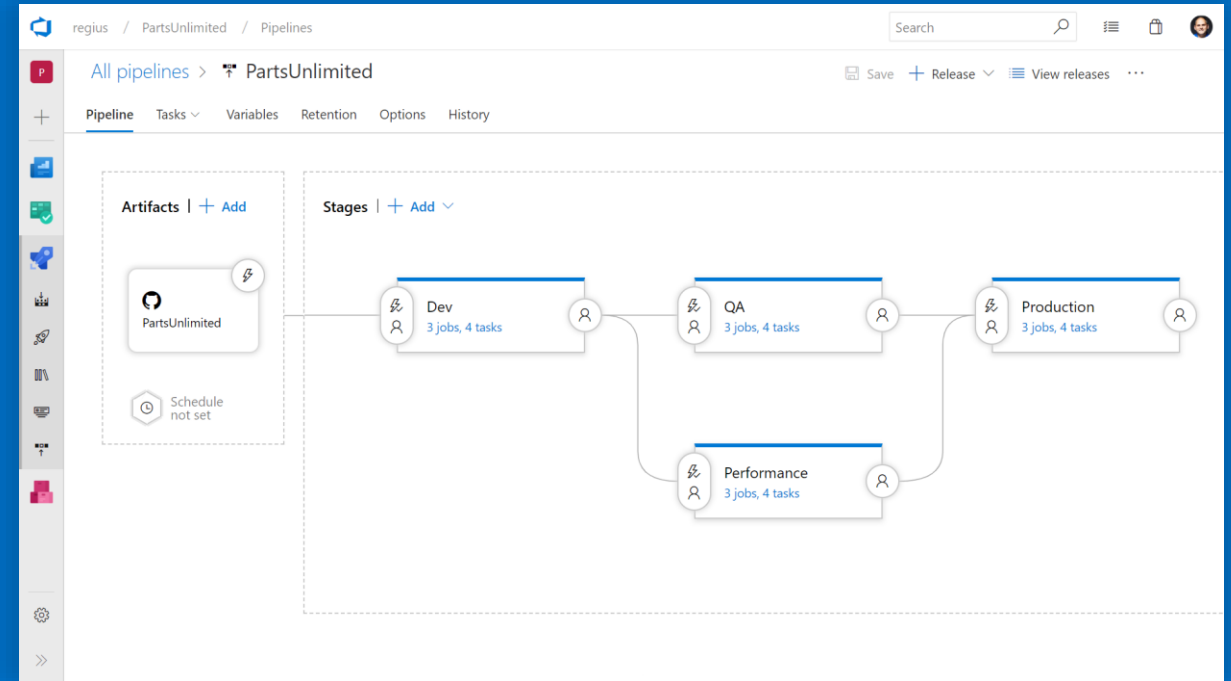
Azure Pipelines



Azure Artifacts



Azure Test Plans



Deploy to on-premises, any cloud or a hybrid of cloud and on-prem

Staged environment releases

Pre and post deployment approvals with gates to automate approval based on conditions

Azure Pipelines – Other Thoughts

- Great for projects that span platforms – e.g. Windows, Linux & macOS
 - A single tool for all builds & deployments
- Native integration with GitHub and Azure Repos
- Native integration with Kubernetes and containers
- Can create builds with “drag-n-drop” UI or as “code” (via YAML)
 - Great for branching pipeline definitions with code

Pipelines Demo

Let's take a closer look...

The screenshot displays the Azure DevOps web interface. The left sidebar shows the navigation menu with 'Pipelines' selected. The main area shows a pipeline run for 'Enabling feature flags for Preview Attachment and Grid Views' (AdventureWorks/PackageFramework, master, #889). The pipeline is currently running, and the 'Linux Job' is the active step. The 'Linux Job' details show a table of steps and their durations, followed by a terminal output window showing the execution of 'yarn install' and 'npm run compile'.

Azure DevOps Contoso / AdventureWorks Mobile / Pipelines / Builds / 10382

Enabling feature flags for Preview Attachment and Grid Views
AdventureWorks/PackageFramework master #889

Summary Logs Tests YAML

Windows Job Running 1m 53s

Linux Job Running 3m 29s

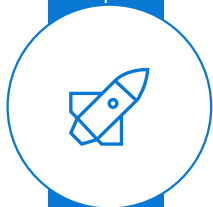
macOS Job Running 3m 07s

Linux Job
Agent: Hosted Linux
Started: Sep 5 at 11:12am 3m 29s

Step	Duration
Prepare job	<1s
Initialize job	1s
Get sources	24s
Cmdline	28s
Nodetool	3s
Install dependencies	2m 31s

```
yarn install v1.7.0
$ node build/npm/preinstall.js
[1/4] Resolving packages...
[2/4] Fetching packages...
[3/4] Linking dependencies...
[4/4] Building fresh packages...
$ npm run compile
[#####] 152/243
> code-oss-dev-build@1.0.0 compile ./adventureworks/build
> tsc -p tsconfig.build.json

Done in 4.89s.
$ node ./postinstall
[##] 2/2removed './adventureworks/extensions/node_modules/typescript/lib/tsc.js'
removed './adventureworks/extensions/node_modules/typescript/lib/tsserverlibrary.d.ts'
removed './adventureworks/extensions/node_modules/typescript/lib/tsserverlibrary.js'
removed './adventureworks/extensions/node_modules/typescript/lib/typescriptServices.d.ts'
removed './adventureworks/extensions/node_modules/typescript/lib/typescriptServices.js'
```



Deliver



Azure Boards



Azure Repos



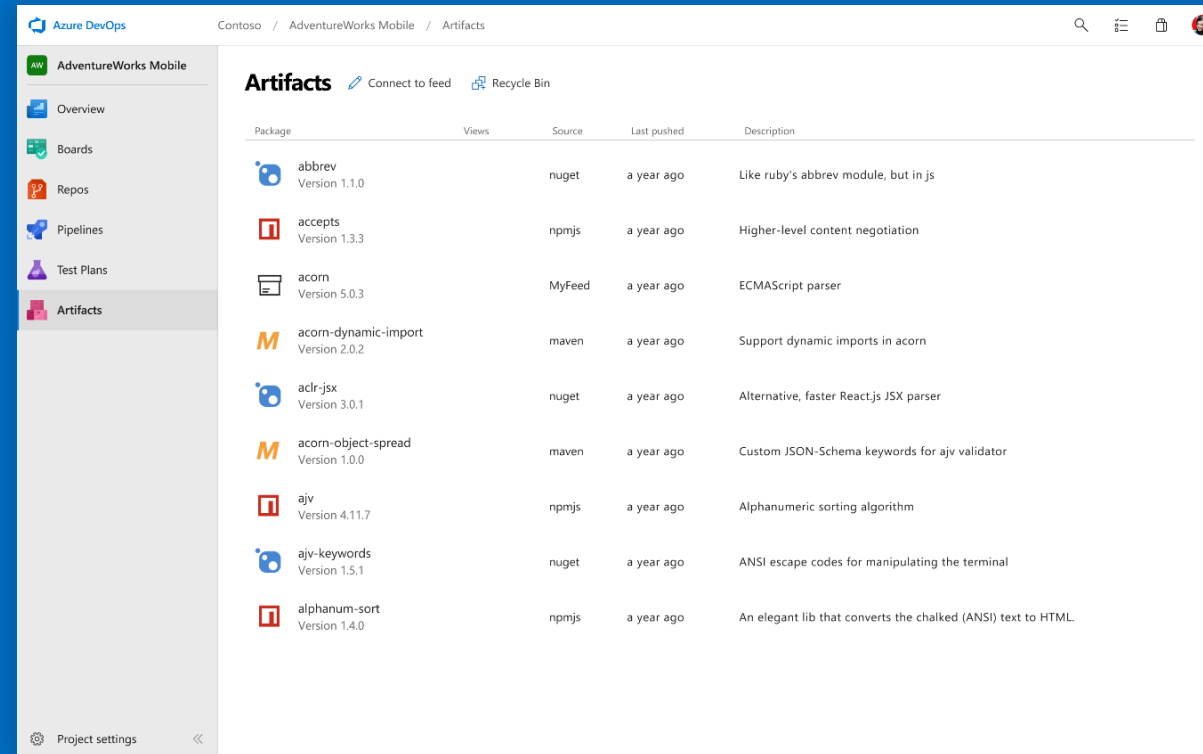
Azure Pipelines



Azure Artifacts



Azure Test Plans



Share code efficiently

Keep your Maven, npm, NuGet and Python packages and more in the same place

Aggregate from public registries and internal teams

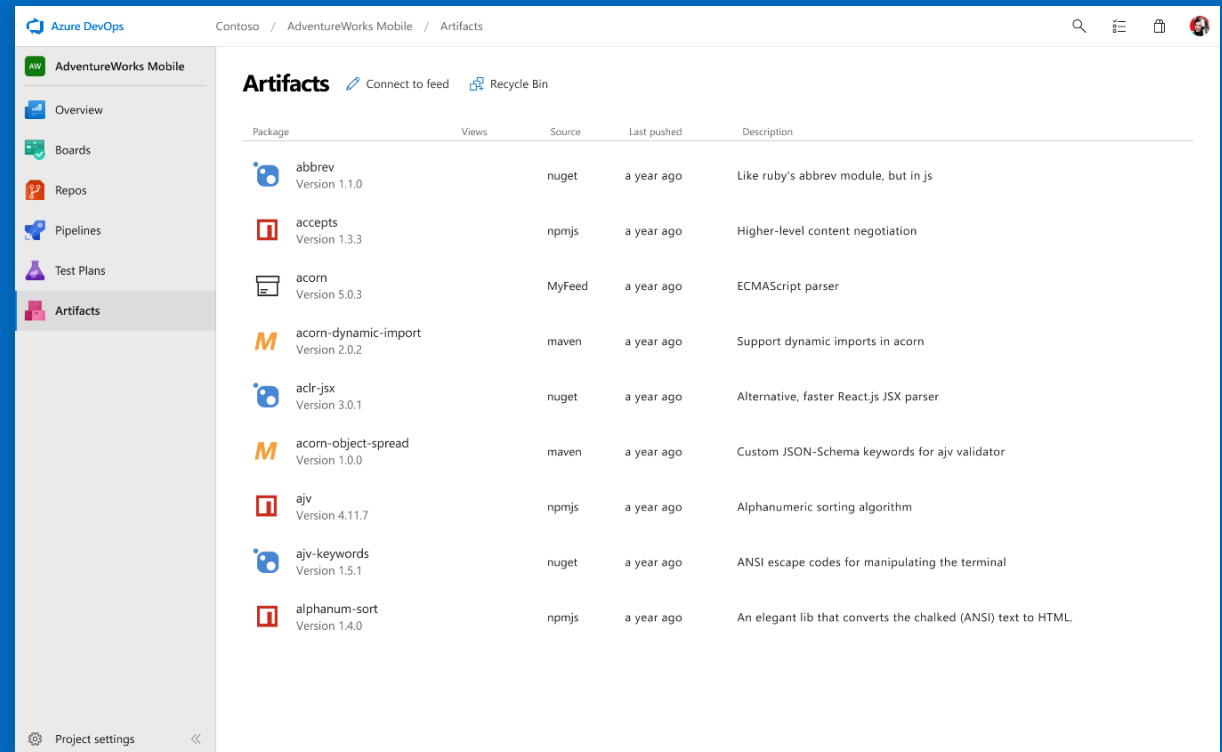
Publish and track from any pipeline

Azure Artifacts – Other Thoughts










- Great for code reuse!
 - E.G. reusable NuGet/NPM packages
- Can create multiple feeds

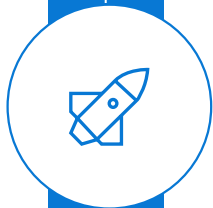
Artifacts Demo

Let's take a closer look...



The screenshot displays the Azure DevOps Artifacts page for the 'AdventureWorks Mobile' project. The left sidebar contains navigation links: Overview, Boards, Repos, Pipelines, Test Plans, and Artifacts (which is highlighted). The main content area shows a table of artifacts with columns for Package, Views, Source, Last pushed, and Description. The table lists ten packages, including 'abbrev', 'accepts', 'acorn', 'acorn-dynamic-import', 'acorn-jsx', 'acorn-object-spread', 'ajv', 'ajv-keywords', and 'alphanum-sort'. Each package entry includes its name, version, source (e.g., nuget, npmjs, MyFeed, maven), the time it was last pushed (all 'a year ago'), and a brief description.

Package	Views	Source	Last pushed	Description
 abbrev Version 1.1.0		nuget	a year ago	Like ruby's abbrev module, but in js
 accepts Version 1.3.3		npmjs	a year ago	Higher-level content negotiation
 acorn Version 5.0.3		MyFeed	a year ago	ECMAScript parser
 acorn-dynamic-import Version 2.0.2		maven	a year ago	Support dynamic imports in acorn
 acorn-jsx Version 3.0.1		nuget	a year ago	Alternative, faster Reactjs JSX parser
 acorn-object-spread Version 1.0.0		maven	a year ago	Custom JSON-Schema keywords for ajv validator
 ajv Version 4.11.7		npmjs	a year ago	Alphanumeric sorting algorithm
 ajv-keywords Version 1.5.1		nuget	a year ago	ANSI escape codes for manipulating the terminal
 alphanum-sort Version 1.4.0		npmjs	a year ago	An elegant lib that converts the chalked (ANSI) text to HTML



Deliver



Azure Boards



Azure Repos



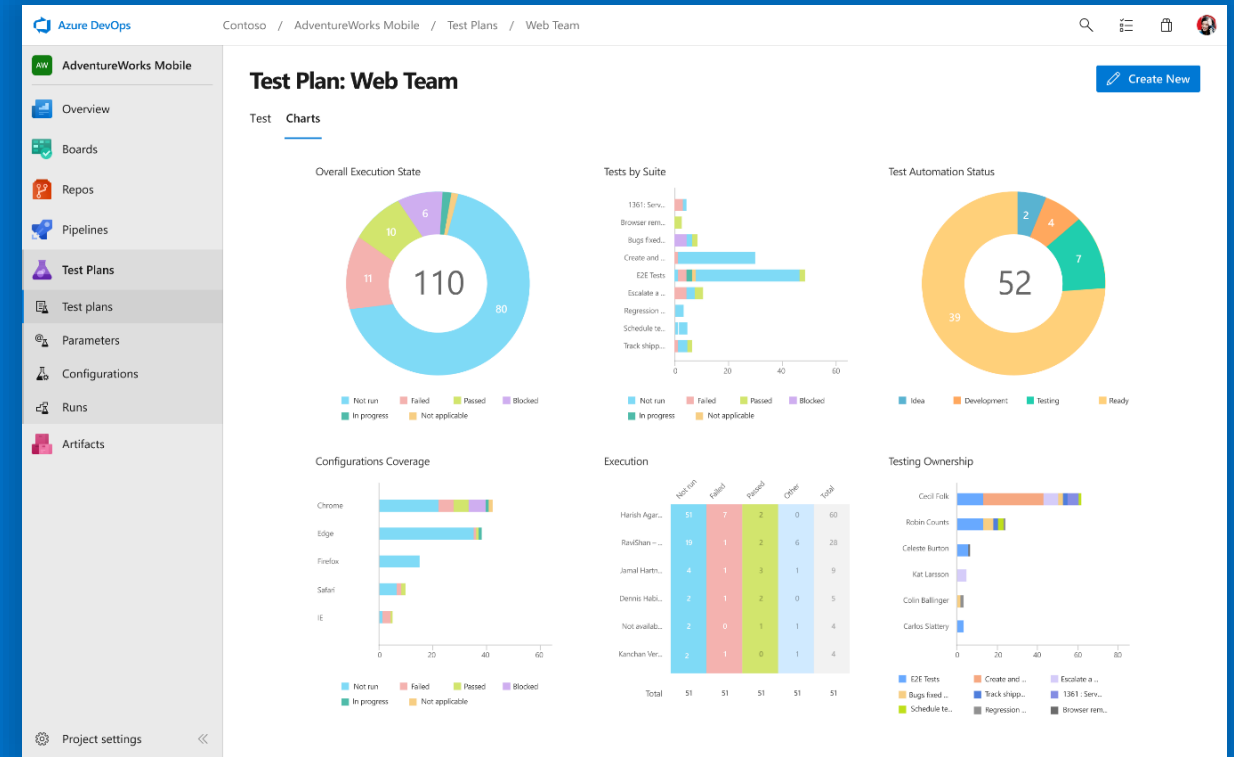
Azure Pipelines



Azure Artifacts



Azure Test Plans



Run tests and log defects from your browser

Track and assess quality throughout your lifecycle

Capture rich data for reproducibility

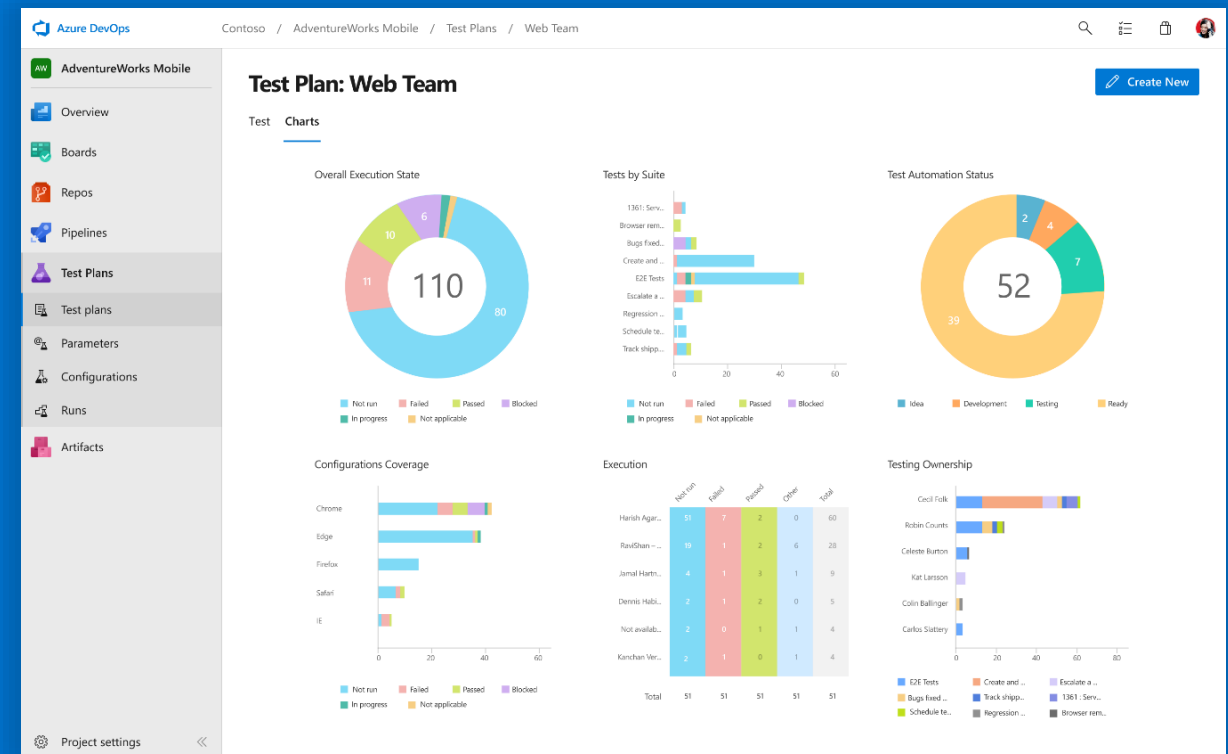
Create tests directly from exploratory sessions

Azure Test Plans – Other Thoughts








- Enhance traceability across your SDLC
- At-a-glance dashboard of test outcomes

Test Plans Demo

Let's take a closer look...



AW AdventureWorks Mobile

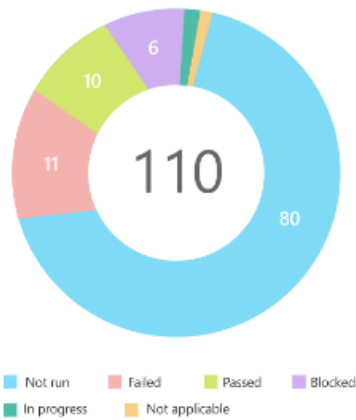
 Overview Boards Repos Pipelines Test Plans Test plans Parameters Configurations Runs Artifacts Project settings

Test Plan: Web Team

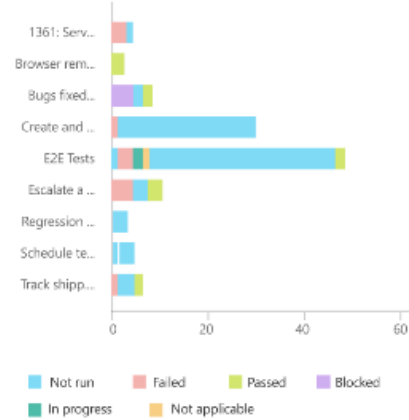
 Create New

Test Charts

Overall Execution State



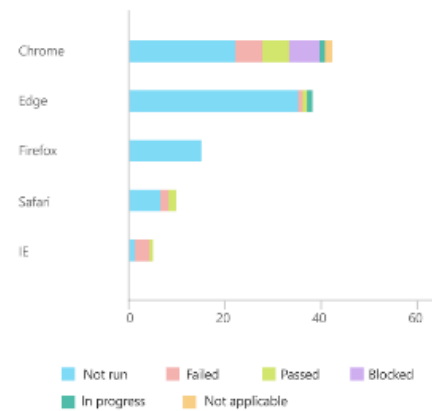
Tests by Suite



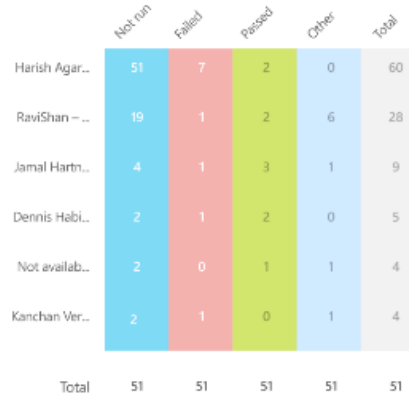
Test Automation Status



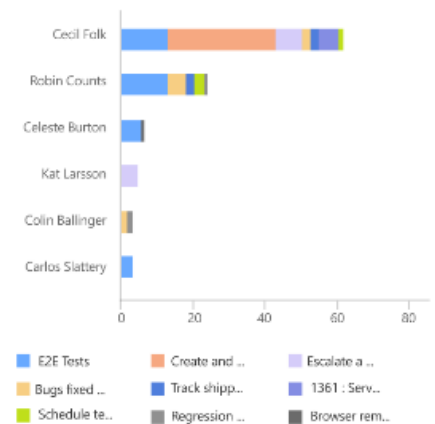
Configurations Coverage



Execution

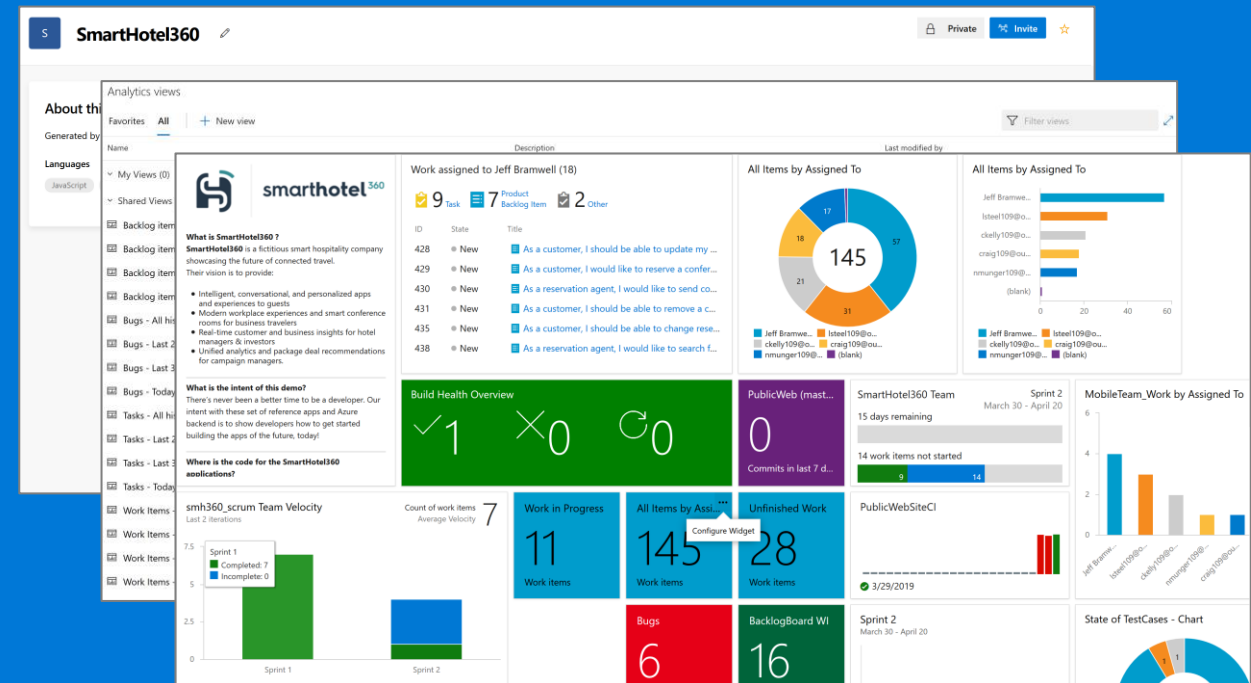


Testing Ownership



The Other “Stuff”

Let's take a closer look...



Microsoft ~~Acquires~~ Acquired Popular Open Source Tool!

...kinda old news now ;-)





Deliver with



Azure Boards



Azure Repos



Azure Pipelines



Azure Artifacts



Azure Test Plans

GitHub

GitHub brings the **premier** social coding workflows to your team, breaking down silos and enabling Inner Source through:

- Expertise sharing
- Cross-team collaboration
- Improved code reuse
- Increased velocity

DevOps at Microsoft

Azure DevOps is the toolchain of choice for Microsoft engineering with over 100,000 internal users

 <https://aka.ms/DevOpsAtMicrosoft>

442k

Pull Requests per
month

4.6m

Builds per month

28k

Work items
created per day

2.4m

Private Git commits per
month

3.5k

Open Source repos

12k

Employees contributing
to open source


82,000

Deployments per day

Azure DevOps Services Pricing

Open Source Projects

Free

Unlimited users and build time

- **Azure Pipelines:** 10 parallel jobs with unlimited minutes for CI/CD
- **Azure Boards:** Work item tracking and Kanban boards
- **Azure Repos:** Unlimited public Git repos

Small Teams

Free

Start free with up to 5 users

- **Azure Pipelines:** Run 1 Microsoft-hosted job for 1,800 minutes per month and 1 self-hosted job for any amount of time
- **Azure Boards:** Work item tracking and Kanban boards
- **Azure Repos:** Unlimited public Git repos
- **Azure Artifacts:** package management
- Unlimited stakeholders

Teams of any size

Starts at \$6

per user, per month for Boards & Repos*

Easy pricing that grows with your team

- **Azure Pipelines:** Run 1 Microsoft-hosted job for 1,800 minutes per month and 1 self-hosted job for any amount of time
- **Azure Boards:** Work item tracking and Kanban boards
- **Azure Repos:** Unlimited public Git repos
- **Azure Artifacts:** package management
- Unlimited stakeholders
- Boards & Repos included for Visual Studio subscribers



<https://azure.com/pricing/details/devops/>

* 5 Boards & Repos users and 5 Artifacts users free. Pipelines with unlimited minutes, Test Plans users and additional Artifacts users also available. Please see the Azure pricing calculator for details.


Azure DevOps Extensions

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Extensions for Azure DevOps


Search Azure DevOps extensions

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★★★★★ FREE TRIAL




WhiteSource Bolt

WhiteSource 3K
★★★★★ FREE




Retrospectives

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★★★★★ FREE




Azure Cost Insights

Kees Schollaart 963
★★★★★ FREE



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Analytics

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Azure Artifacts

Microsoft 31.4K
★★★★★ FREE TRIAL

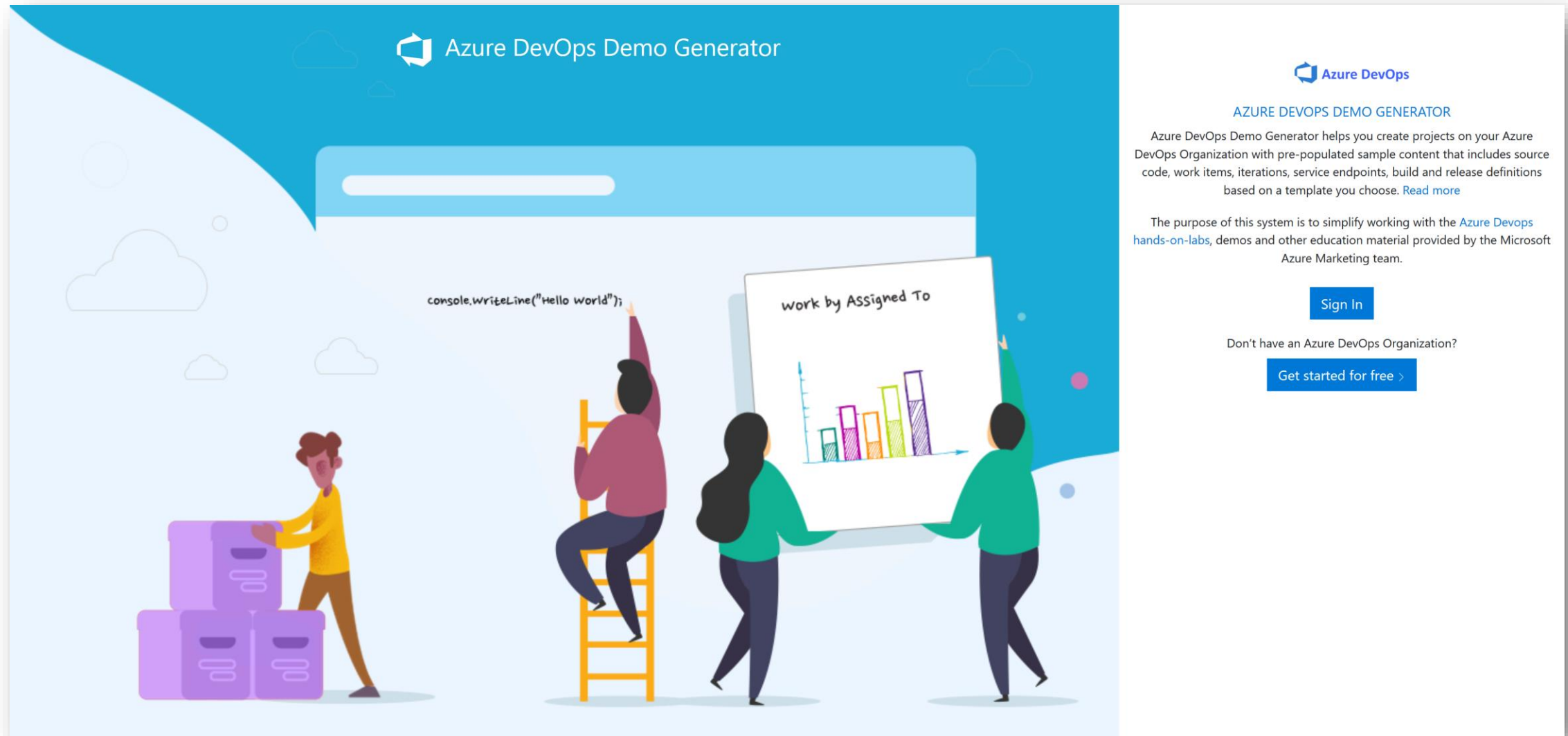


Folder Management

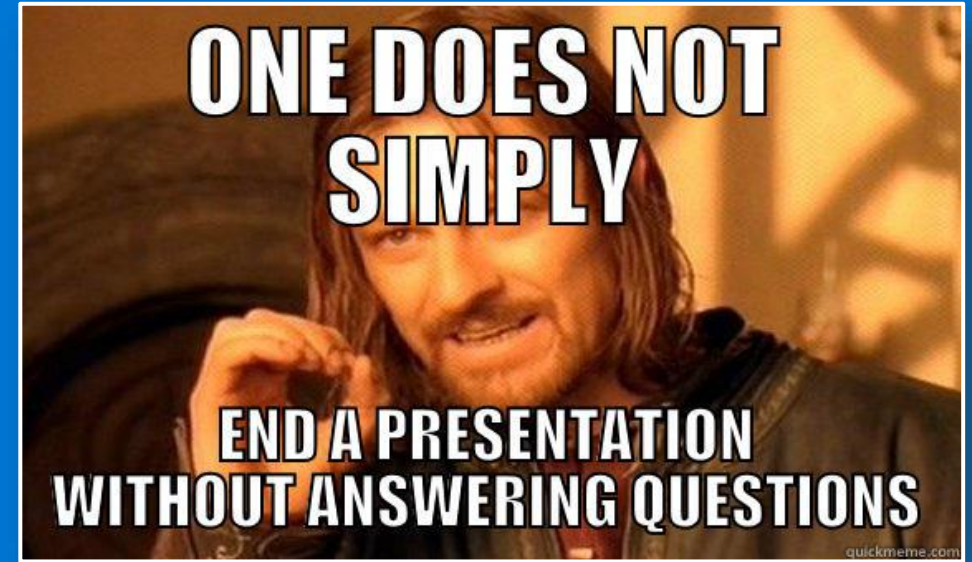
Microsoft DevLabs 30.3K
★★★★★ FREE

<https://marketplace.visualstudio.com/azuredevops/>

Azure DevOps Demo Generator



<https://azuredevopsdemogenerator.azurewebsites.net/>



Thanks!

Please post questions in the chat window...