Microsoft

DevOps与GitHub在企业中的最佳实践

Microsoft Online Tech Forum

庄俊乾 Azure AppDev Specialist

Agenda

Why DevOps.

Why Azure DevOps & GitHub

How Azure DevOps & GitHub

- Practice in Microsoft
- Best Practice in Enterprise

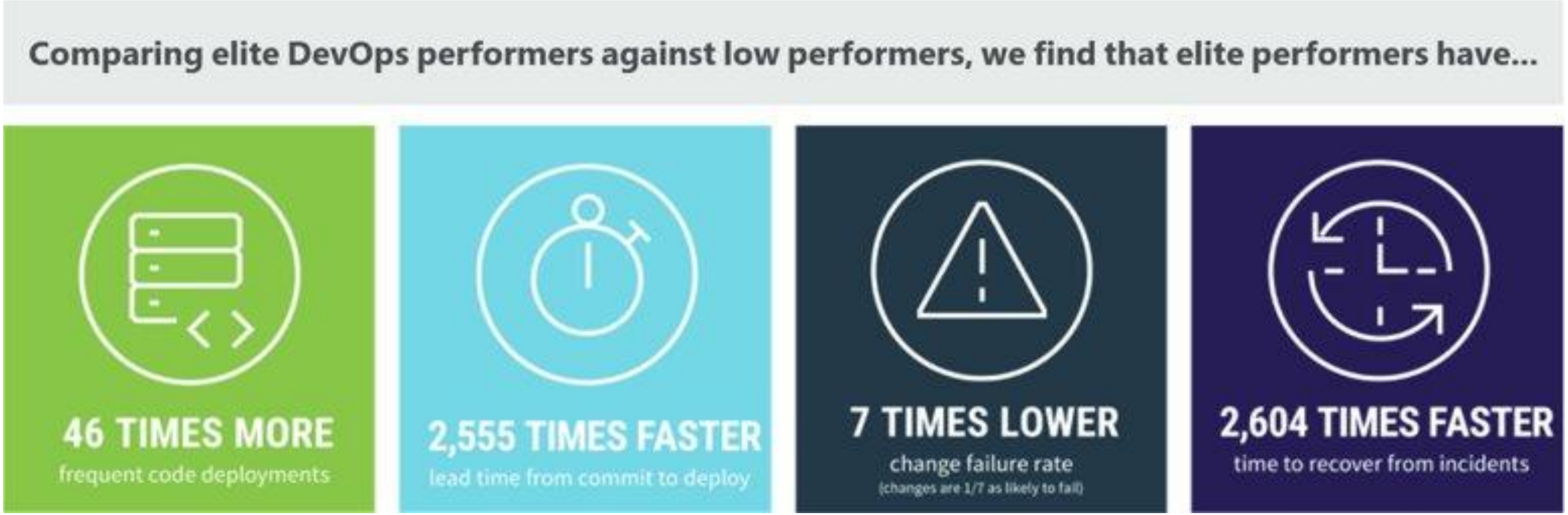
Discussion

Microsoft

Why DevOps

Why Azure DevOps

Why DevOps -高效能的DevOps组织获得的收益...



Comparing elite DevOps performers against low performers, we find that elite performers have...

46 TIMES MORE
frequent code deployments

2,555 TIMES FASTER
lead time from commit to deploy

7 TIMES LOWER
change failure rate
(changes are 1/7 as likely to fail)

2,604 TIMES FASTER
time to recover from incidents

Azure DevOps -5大功能模块

Azure Boards

Deliver value to your users faster using proven agile tools to plan, track, and discuss work across your teams.

Azure Pipelines

Build, test, and deploy with CI/CD that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.

Azure Repos

Get unlimited, cloud-hosted private Git repos and collaborate to build better code with pull requests and advanced file management.

Azure Test Plans

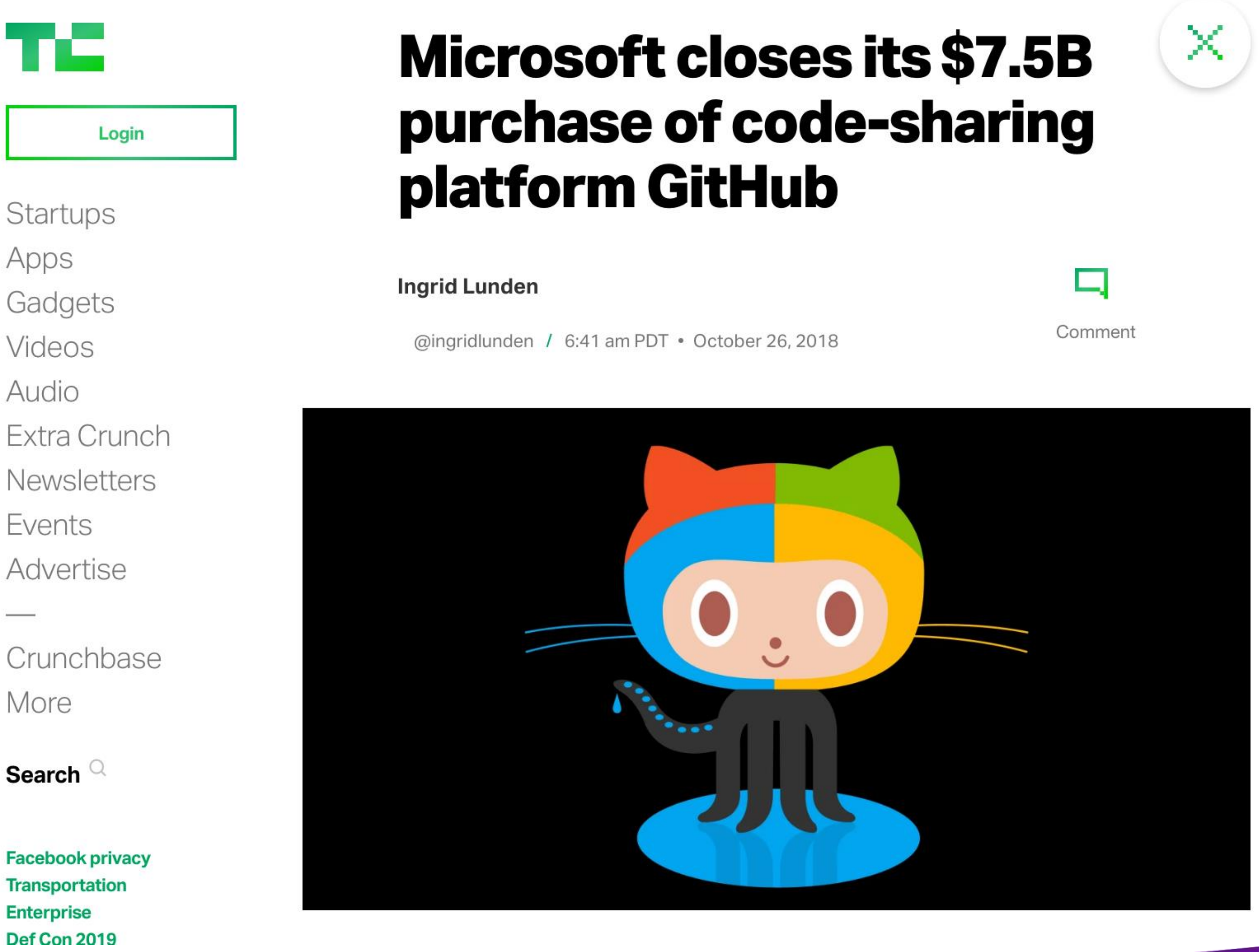
Test and ship with confidence using manual and exploratory testing tools.

Azure Artifacts

Create, host, and share packages with your team, and add artifacts to your CI/CD pipelines with a single click.

https://azure.com/devops

Microsoft acquired GitHub, the planet's codebase, in 2018



Microsoft closes its $7.5B purchase of code-sharing platform GitHub

Ingrid Lunden

@ingridlunden / 6:41 am PDT • October 26, 2018

Building the largest developer ecosystem

GitHub

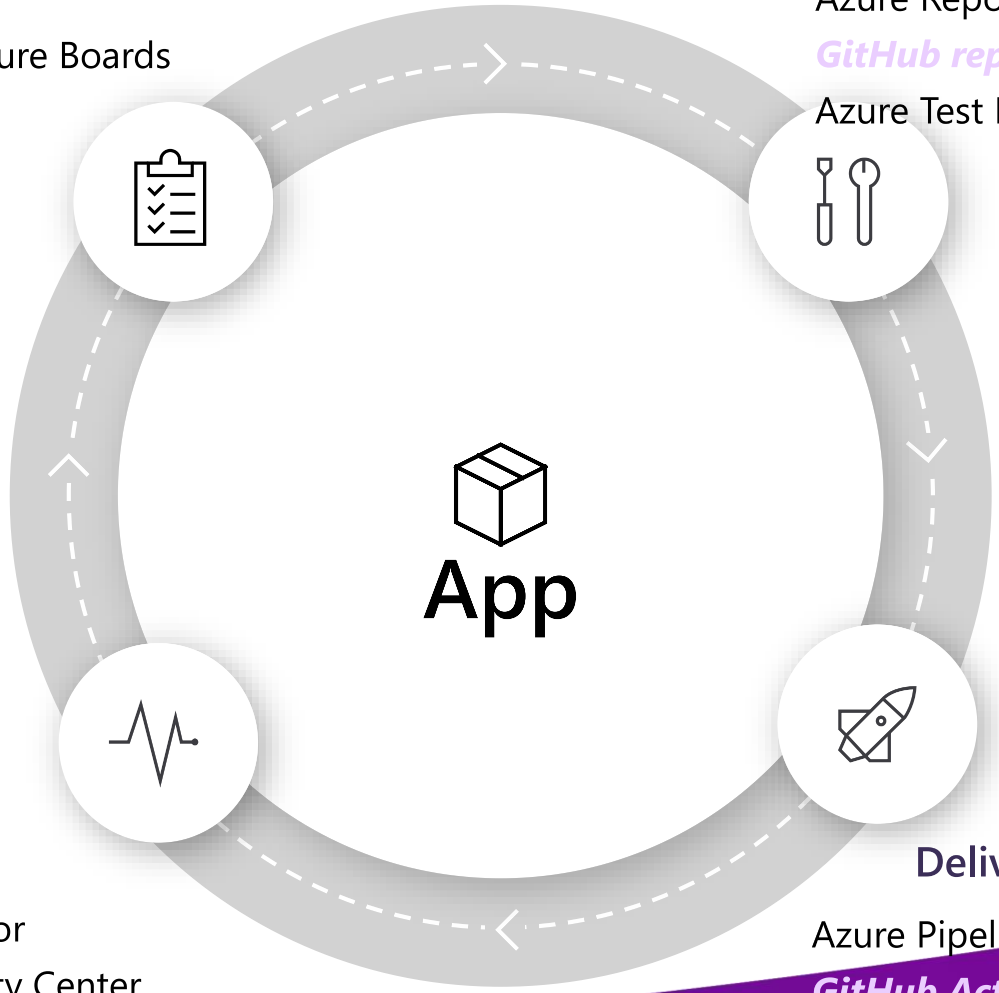
40 million developers

96 million repositories

Azure DevOps

thousands of enterprises

15+ years of developer innovation



Plan

Azure Boards

Develop

Azure Repos

GitHub repos

Azure Test Plans

Deliver

Azure Pipelines

GitHub Actions

Azure Artifacts

GitHub Package

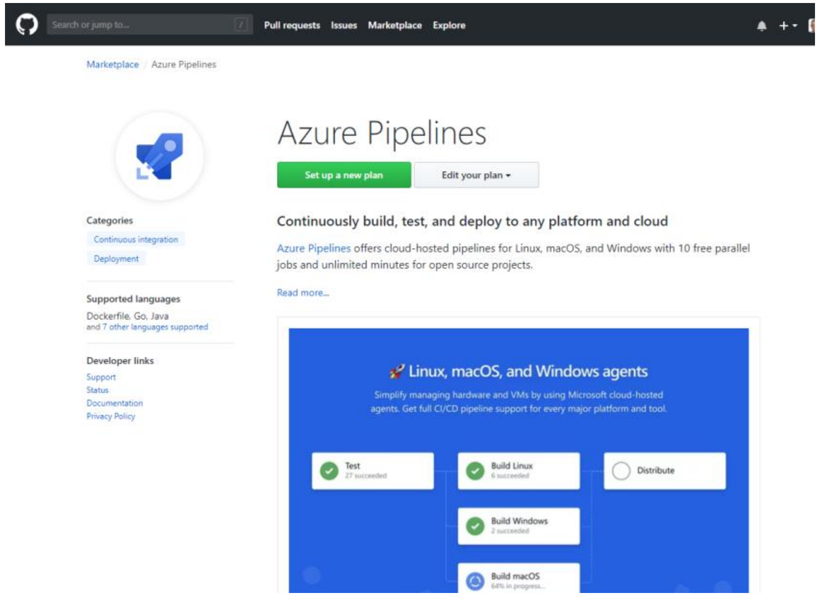
Operate

Azure Monitor

Azure Security Center

Azure DevOps & GitHub Integration

- GitHub integration
  - Azure Boards & GitHub
  - Azure Pipelines & GitHub



Azure Pipelines

Continuously build, test, and deploy to any platform and cloud

Azure Pipelines offers cloud-hosted pipelines for Linux, macOS, and Windows with 10 free parallel jobs and unlimited minutes for open source projects.

Read more...

Categories
Continuous integration
Deployment

Supported languages
Dockerfile, Go, Java
and 7 other languages supported

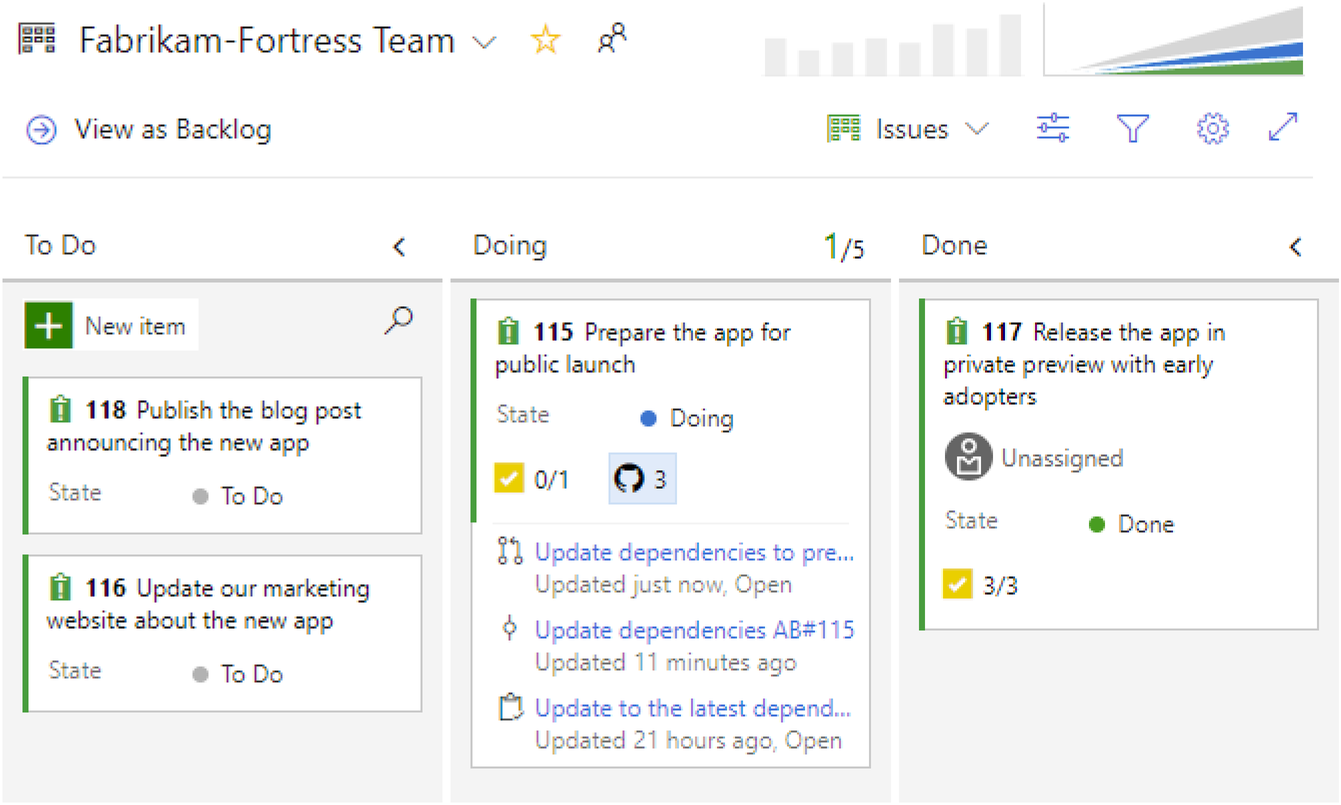
Developer links
Support
Status
Documentation
Privacy Policy

Linux, macOS, and Windows agents

Simplify managing hardware and VMs by using Microsoft cloud-hosted agents. Get full CI/CD pipeline support for every major platform and tool.

Test — 27 succeeded
Build Linux — 6 succeeded
Build Windows — 2 succeeded
Build macOS — 64% in progress...
Distribute

View GitHub objects on Kanban board



To Do

118 Publish the blog post announcing the new app
State ● To Do

116 Update our marketing website about the new app
State ● To Do

Doing

115 Prepare the app for public launch
State ● Doing
☑ 0/1 3

Update dependencies to pre...
Updated just now, Open

Update dependencies AB#115
Updated 11 minutes ago

Update to the latest depend...
Updated 21 hours ago, Open

Done

117 Release the app in private preview with early adopters
Unassigned
State ● Done
☑ 3/3

DevOps @Microsoft

https://aka.ms/DevOpsAtMicrosoft

Azure DevOps is the toolchain of choice for Microsoft engineering with over 105,000 internal users

105k
Engineers using Azure DevOps

4.4m
Builds per month

5m
Work items viewed per day

2m
Git commits per month

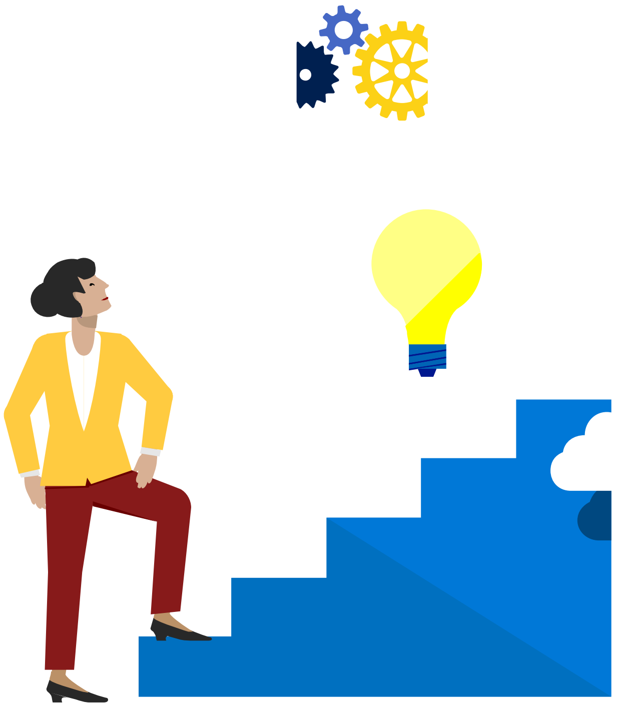
500m
Test executions per day

500k
Work items updated per day

85,000
Deployments per day

Data: Internal Microsoft engineering system activity, November 2018

Five DevOps Habits we've learned...



- Team Autonomy + Enterprise Alignment
- Customer Focused
- Shift Quality left
- Production First Mindset
- Infrastructure as Flexible Resource

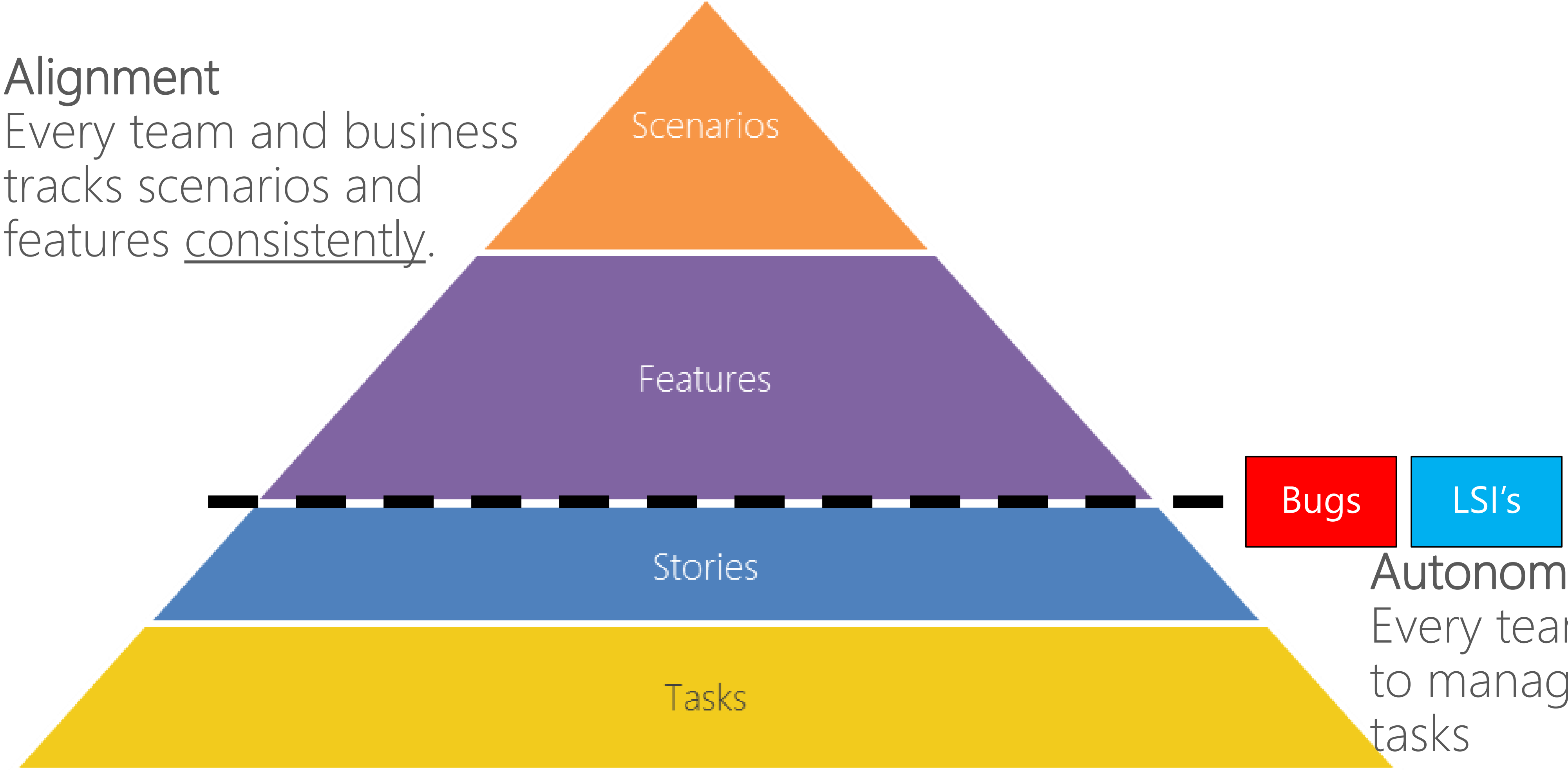
How do we stay aligned （冲锋舟&航空母舰）

- Azure DevOps team.
  - The Azure DevOps team… 700 people, spread out across 45 feature teams
  - （700人，45个功能小组）

  - Deliver product and SaaS
  - release product each 3 months
  - Release SaaS new features each 3 weeks.
  - (提供云端和本地两种版本，3周一个版本)

Taxonomy & Staying Aligned （需求对齐 & 团队自治）

Alignment
Every team and business tracks scenarios and features consistently.



Autonomy
Every team chooses how to manage stories and/or tasks

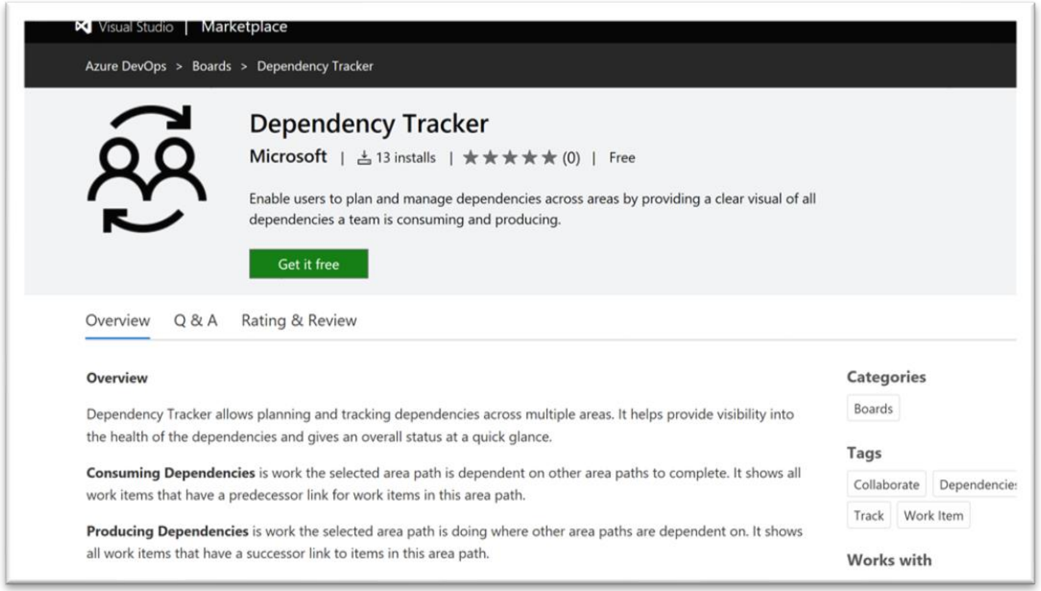
Scale Agile in Azure DevOps: Area paths &teams

When discussing area paths in Azure DevOps a taxonomy of levels is used. L1 is the first level and levels below continue in succession

Full path	Level	Level Classificiation
OS\Core\ES\EL-Engineering Lifecycle	OS	L1
OS\Core\ES\EL-Engineering Lifecycle	Core	L2
OS\Core\ES\EL-Engineering Lifecycle	ES	L3
OS\Core\ES\EL-Engineering Lifecycle	EL-Engineering Lifecycle	L4

DEPENDENCY TRACKER

Dependency Tracker allows planning and tracking dependencies across multiple areas. It helps provide visibility into the health of the dependencies and gives an overall status at a quick glance


Visual Studio | Marketplace
Azure DevOps > Boards > Dependency Tracker

Dependency Tracker

Microsoft | 13 installs | ★★★★★ (0) | Free

Enable users to plan and manage dependencies across areas by providing a clear visual of all dependencies a team is consuming and producing.

Get it free
Overview
Q & A
Rating & Review

Overview

Dependency Tracker allows planning and tracking dependencies across multiple areas. It helps provide visibility into the health of the dependencies and gives an overall status at a quick glance.

Consuming Dependencies is work the selected area path is dependent on other area paths to complete. It shows all work items that have a predecessor link for work items in this area path.

Producing Dependencies is work the selected area path is doing where other area paths are dependent on. It shows all work items that have a successor link to items in this area path.

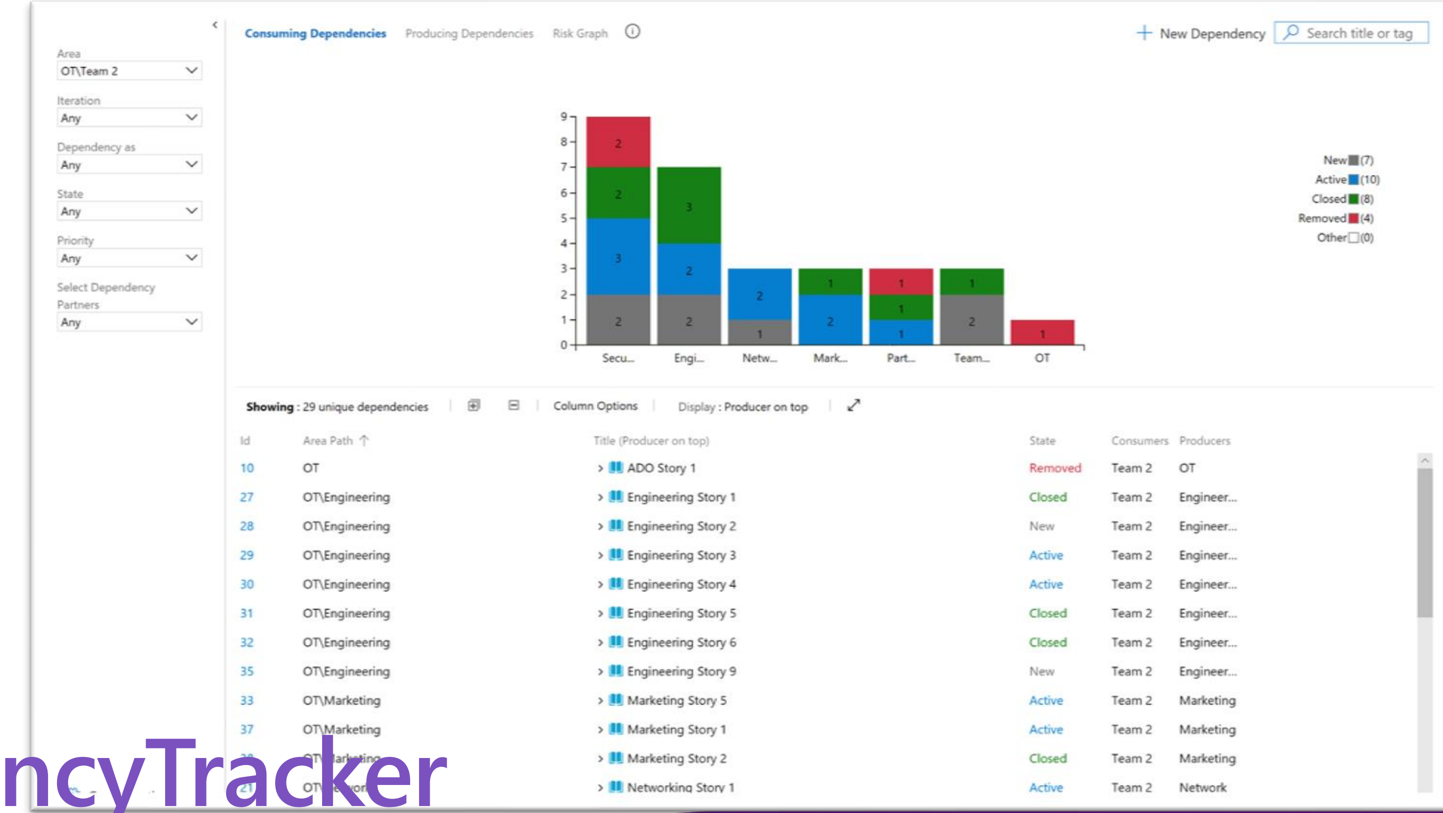
Categories

Boards

Tags

Collaborate | Dependencie | Track | Work Item

Works with



Area: OT\Team 2

Iteration: Any

Dependency as: Any

State: Any

Priority: Any

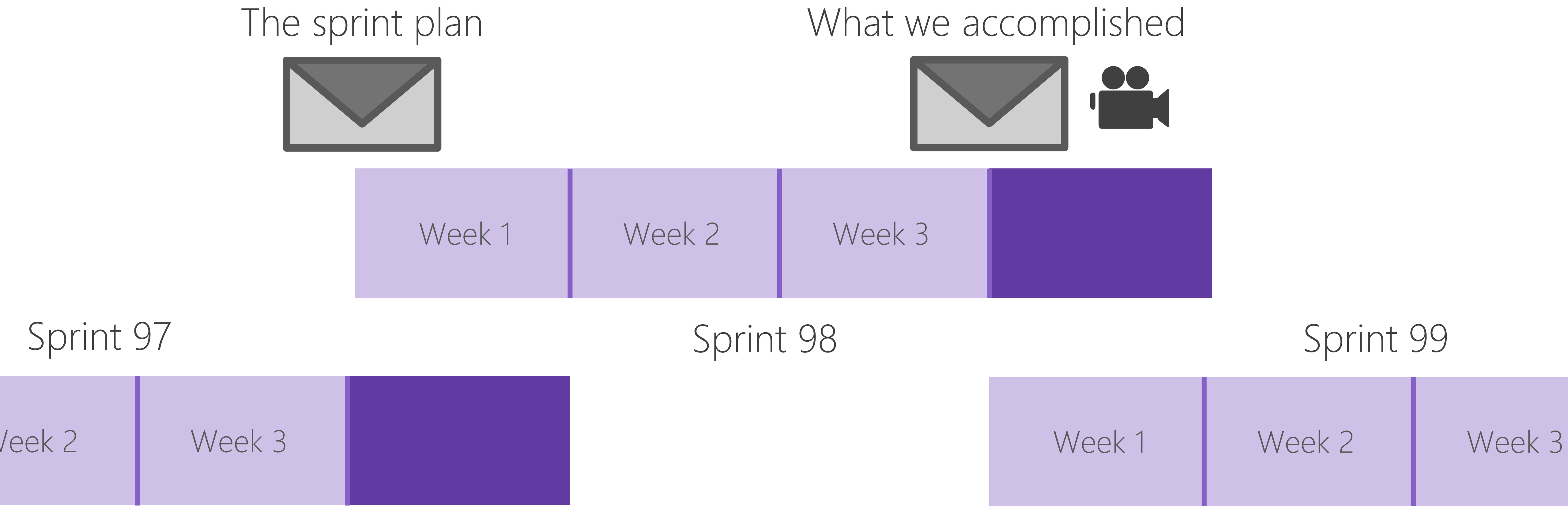
Select Dependency Partners: Any

Showing : 29 unique dependencies | Column Options | Display : Producer on top

Id	Area Path	Title (Producer on top)	State	Consumers	Producers
10	OT	ADO Story 1	Removed	Team 2	OT
27	OT\Engineering	Engineering Story 1	Closed	Team 2	Engineer...
28	OT\Engineering	Engineering Story 2	New	Team 2	Engineer...
29	OT\Engineering	Engineering Story 3	Active	Team 2	Engineer...
30	OT\Engineering	Engineering Story 4	Active	Team 2	Engineer...
31	OT\Engineering	Engineering Story 5	Closed	Team 2	Engineer...
32	OT\Engineering	Engineering Story 6	Closed	Team 2	Engineer...
35	OT\Engineering	Engineering Story 9	New	Team 2	Engineer...
33	OT\Marketing	Marketing Story 5	Active	Team 2	Marketing
37	OT\Marketing	Marketing Story 1	Active	Team 2	Marketing
[illegible]	OT\Marketing	Marketing Story 2	Closed	Team 2	Marketing
21	OT\Networking	Networking Story 1	Active	Team 2	Network

http://Aka.ms/DependencyTracker

3 week sprints (迭代计划)



The sprint plan

What we accomplished

Week 1

Week 2

Week 3

Sprint 97

Sprint 98

Sprint 99

eek 2

Week 3

Week 1

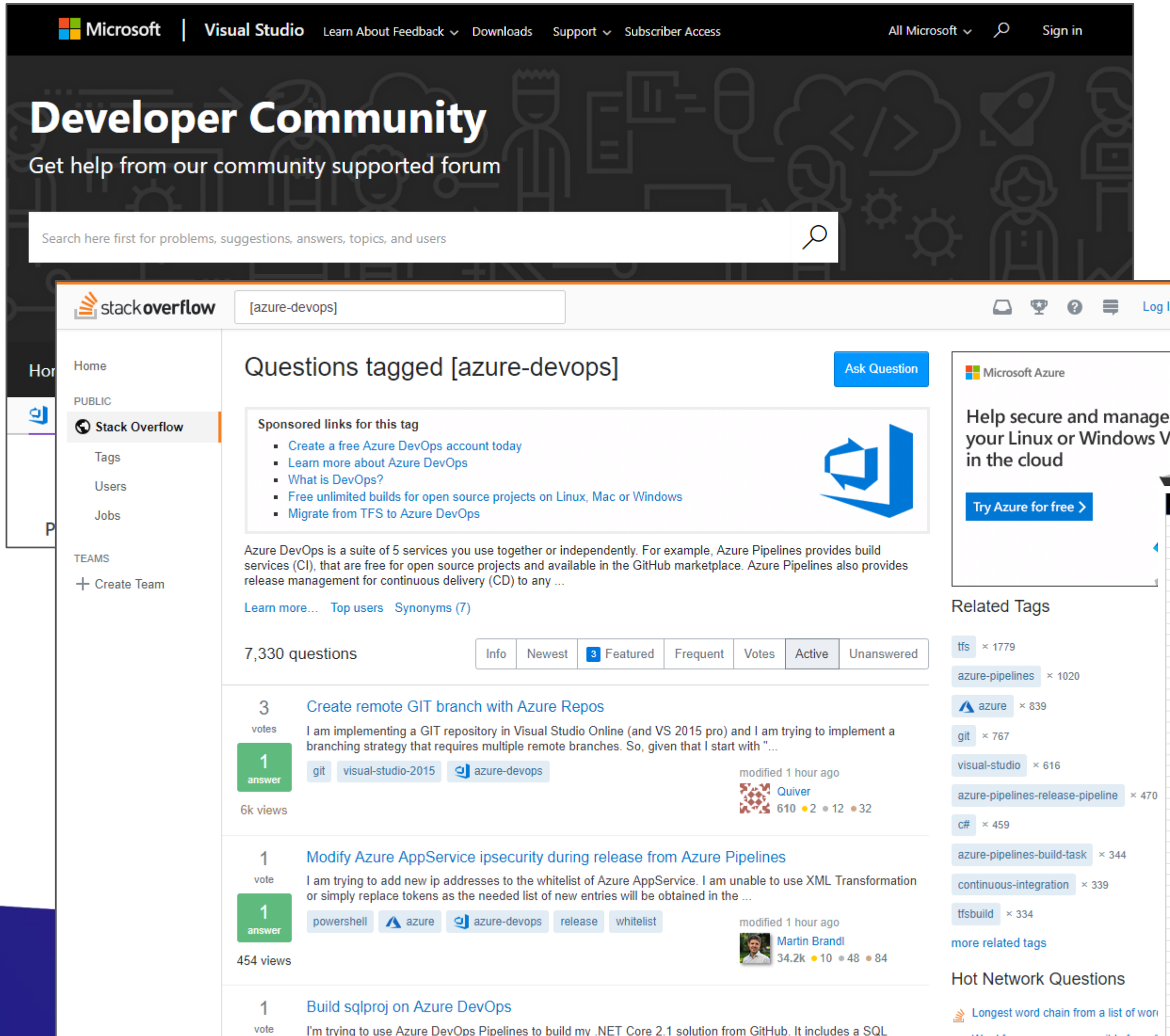
Week 2

Week 3

Five DevOps Habits we've learned...

- Team Autonomy + Enterprise Alignment
- Customer Focused
- Shift Quality left
- Production First Mindset
- Infrastructure as Flexible Resource

Listen to our customers-倾听用户



Developer Community

Get help from our community supported forum

Search here first for problems, suggestions, answers, topics, and users

Questions tagged [azure-devops]

Ask Question

Sponsored links for this tag

- Create a free Azure DevOps account today
- Learn more about Azure DevOps
- What is DevOps?
- Free unlimited builds for open source projects on Linux, Mac or Windows
- Migrate from TFS to Azure DevOps

Azure DevOps is a suite of 5 services you use together or independently. For example, Azure Pipelines provides build services (CI), that are free for open source projects and available in the GitHub marketplace. Azure Pipelines also provides release management for continuous delivery (CD) to any ...

Learn more... Top users Synonyms (7)

7,330 questions

Info | Newest | 3 Featured | Frequent | Votes | Active | Unanswered

3 votes · 1 answer · 6k views

Create remote GIT branch with Azure Repos

I am implementing a GIT repository in Visual Studio Online (and VS 2015 pro) and I am trying to implement a branching strategy that requires multiple remote branches. So, given that I start with "...

git · visual-studio-2015 · azure-devops

modified 1 hour ago Quiver 610 ●2 ●12 ●32

1 vote · 1 answer · 454 views

Modify Azure AppService ipsecurity during release from Azure Pipelines

I am trying to add new ip addresses to the whitelist of Azure AppService. I am unable to use XML Transformation or simply replace tokens as the needed list of new entries will be obtained in the ...

powershell · azure · azure-devops · release · whitelist

modified 1 hour ago Martin Brandl 34.2k ●10 ●48 ●84

1 vote

Build sqlproj on Azure DevOps

I'm trying to use Azure DevOps Pipelines to build my .NET Core 2.1 solution from GitHub. It includes a SQL

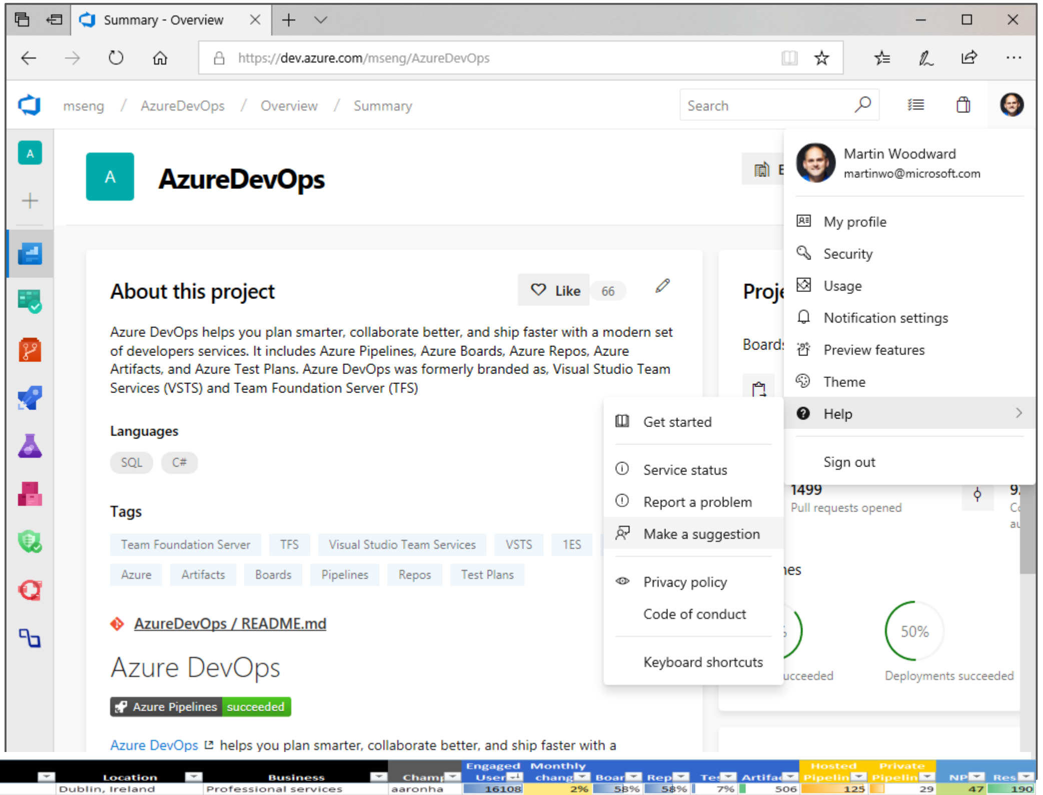
Related Tags

tfs	× 1779
azure-pipelines	× 1020
azure	× 839
git	× 767
visual-studio	× 616
azure-pipelines-release-pipeline	× 470
c#	× 459
azure-pipelines-build-task	× 344
continuous-integration	× 339
tfsbuild	× 334

more related tags

Hot Network Questions

Longest word chain from a list of word



AzureDevOps

About this project

Azure DevOps helps you plan smarter, collaborate better, and ship faster with a modern set of developers services. It includes Azure Pipelines, Azure Boards, Azure Repos, Azure Artifacts, and Azure Test Plans. Azure DevOps was formerly branded as, Visual Studio Team Services (VSTS) and Team Foundation Server (TFS)

Languages

SQL · C#

Tags

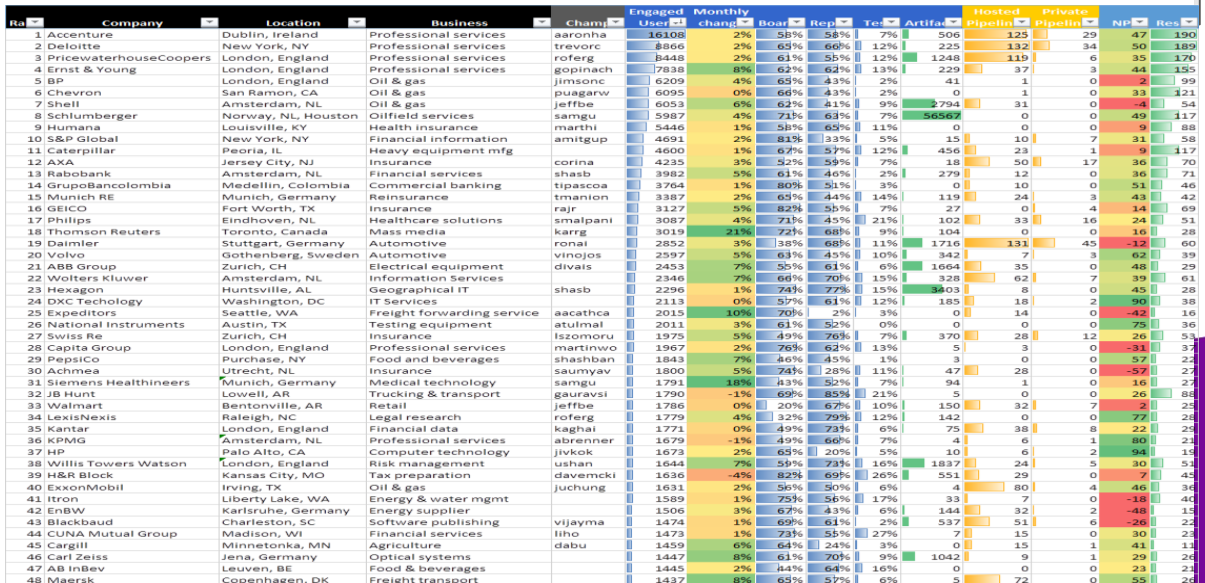
Team Foundation Server · TFS · Visual Studio Team Services · VSTS · 1ES · Azure · Artifacts · Boards · Pipelines · Repos · Test Plans

AzureDevOps / README.md

Azure DevOps

Azure Pipelines succeeded

Azure DevOps helps you plan smarter, collaborate better, and ship faster with a



Ra	Company	Location	Business	Champ	Engaged User	Monthly chang	Boar	Rep	Tes	Artifac	Hosted Pipelin	Private Pipelin	NP	Res
1	Accenture	Dublin, Ireland	Professional services	aaronha	16108	2%	58%	58%	7%	506	125	29	47	190
2	Deloitte	New York, NY	Professional services	trevorc	8866	2%	65%	66%	12%	225	132	34	50	189
3	PricewaterhouseCoopers	London, England	Professional services	roferg	8448	2%	61%	55%	12%	1248	119	6	35	170
4	Ernst & Young	London, England	Professional services	gopinach	7838	8%	62%	62%	13%	229	37	3	44	155
5	BP	London, England	Oil & gas	jimsonc	6209	4%	65%	43%	2%	41	1	0	2	99
6	Chevron	San Ramon, CA	Oil & gas	puagarw	6095	0%	66%	43%	2%	0	1	0	33	121
7	Shell	Amsterdam, NL	Oil & gas	jeffbe	6053	6%	62%	41%	9%	2794	31	0	-4	54
8	Schlumberger	Norway, NL, Houston	Oilfield services	samgu	5987	4%	71%	63%	7%	56567	0	0	49	117
9	Humana	Louisville, KY	Health insurance	marthi	5446	1%	58%	65%	11%	0	0	0	9	88
10	S&P Global	New York, NY	Financial information	amitgup	4691	2%	81%	33%	5%	15	10	7	31	58
11	Caterpillar	Peoria, IL	Heavy equipment mfg		4600	1%	67%	57%	12%	456	23	1	9	117
12	AXA	Jersey City, NJ	Insurance	corina	4235	3%	52%	59%	7%	18	50	17	36	70
13	Rabobank	Amsterdam, NL	Financial services	shasb	3982	5%	61%	46%	2%	279	12	0	36	71
14	GrupoBancolombia	Medellin, Colombia	Commercial banking	tipascoa	3764	1%	80%	51%	3%	0	10	0	51	46
15	Munich RE	Munich, Germany	Reinsurance	tmanion	3387	2%	65%	44%	14%	119	24	3	43	42
16	GEICO	Fort Worth, TX	Insurance	rajr	3127	5%	82%	55%	7%	27	0	4	14	69
17	Philips	Eindhoven, NL	Healthcare solutions	smalpani	3087	4%	71%	45%	21%	102	33	16	24	51
18	Thomson Reuters	Toronto, Canada	Mass media	karrg	3019	21%	72%	68%	9%	104	0	0	16	28
19	Daimler	Stuttgart, Germany	Automotive	ronai	2852	3%	38%	68%	11%	1716	131	45	-12	60
20	Volvo	Gothenberg, Sweden	Automotive	vinojos	2597	5%	63%	45%	10%	342	7	3	62	39
21	ABB Group	Zurich, CH	Electrical equipment	divais	2453	7%	55%	61%	6%	1664	35	0	48	29
22	Wolters Kluwer	Amsterdam, NL	Information Services		2346	7%	66%	70%	15%	328	62	7	39	61
23	Hexagon	Huntsville, AL	Geographical IT	shasb	2296	1%	74%	77%	15%	3403	8	0	45	28
24	DXC Techology	Washington, DC	IT Services		2113	0%	57%	61%	12%	185	18	2	90	38
25	Expeditors	Seattle, WA	Freight forwarding service	aacathca	2015	10%	70%	2%	3%	0	14	0	-42	16
26	National Instruments	Austin, TX	Testing equipment	atulmal	2011	3%	61%	52%	0%	0	0	0	75	36
27	Swiss Re	Zurich, CH	Insurance	lszomoru	1975	5%	49%	76%	7%	370	28	12	26	53
28	Capita Group	London, England	Professional services	martinwo	1967	2%	76%	62%	13%	5	3	0	-31	37
29	PepsiCo	Purchase, NY	Food and beverages	shashban	1843	7%	46%	45%	1%	3	0	0	57	22
30	Achmea	Utrecht, NL	Insurance	saumyav	1800	5%	74%	28%	11%	47	28	0	-57	27
31	Siemens Healthineers	Munich, Germany	Medical technology	samgu	1791	18%	43%	52%	7%	94	1	0	16	27
32	JB Hunt	Lowell, AR	Trucking & transport	gauravsi	1790	-1%	69%	85%	21%	5	0	0	26	88
33	Walmart	Bentonville, AR	Retail	jeffbe	1786	0%	20%	67%	10%	150	32	7	2	25
34	LexisNexis	Raleigh, NC	Legal research	roferg	1779	4%	32%	79%	12%	142	0	0	77	28
35	Kantar	London, England	Financial data	kaghai	1771	0%	49%	73%	6%	75	38	8	22	29
36	KPMG	Amsterdam, NL	Professional services	abrenner	1679	-1%	49%	66%	7%	4	6	1	80	21
37	HP	Palo Alto, CA	Computer technology	jivkok	1673	2%	65%	20%	5%	10	6	2	94	19
38	Willis Towers Watson	London, England	Risk management	ushan	1644	7%	59%	73%	16%	1837	24	5	30	51
39	H&R Block	Kansas City, MO	Tax preparation	davemcki	1636	-4%	82%	69%	26%	551	29	0	7	45
40	ExxonMobil	Irving, TX	Oil & gas	juchung	1631	2%	56%	50%	6%	4	80	4	46	36
41	Itron	Liberty Lake, WA	Energy & water mgmt		1589	1%	75%	56%	17%	33	7	0	-18	40
42	EnBW	Karlsruhe, Germany	Energy supplier		1506	3%	67%	43%	6%	144	32	2	-48	15
43	Blackbaud	Charleston, SC	Software publishing	vijayma	1474	1%	69%	61%	2%	537	51	6	-26	22
44	CUNA Mutual Group	Madison, WI	Financial services	liho	1473	1%	73%	55%	27%	7	15	0	30	23
45	Cargill	Minnetonka, MN	Agriculture	dabu	1459	6%	64%	24%	3%	0	15	1	41	11
46	Carl Zeiss	Jena, Germany	Optical systems		1447	8%	61%	70%	9%	1042	9	1	29	26
47	AB InBev	Leuven, BE	Food & beverages		1445	2%	44%	64%	16%	0	0	0	23	21
48	Maersk	Copenhagen, DK	Freight transport		1437	8%	65%	57%	6%	5	72	0	55	26

Our Definition of Done（对完成的定义）

- Live in production（发布到生产环境），
- collecting telemetry （功能可度量）
- that examines the hypothesis which motivated the deployment
- （需求可以验证）．

You get what you measure (Don’t measure what you don’t want)

Customer Usage

Acquisition
Retention
Engagement
Satisfaction (NPS)
Feature Usage

Pipeline Throughput

Time to Build
Time to Test
Time to Deploy
Time to Improve
Failed and flaky automation

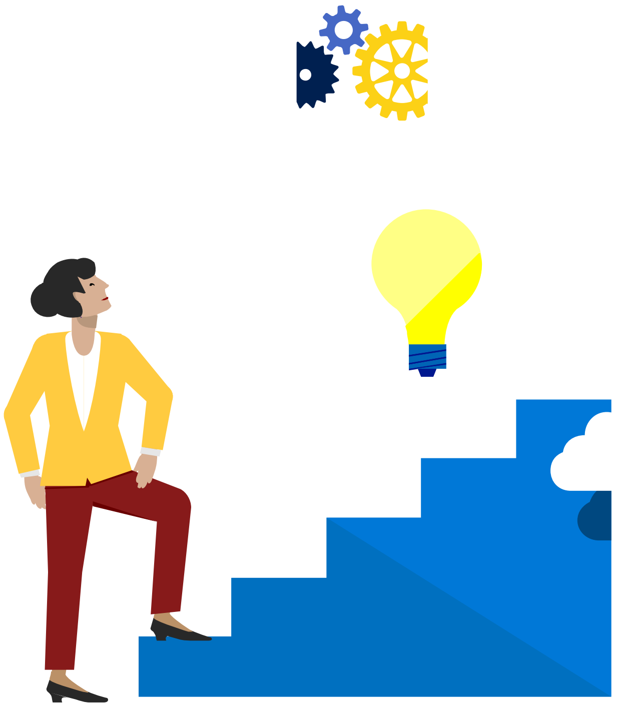
Service Reliability

Time to Detect
Time to Communicate
Time to Mitigate
Which customers affected
Incident Prevention Items
Aging Prevention Items
SLA per Customer
Customer Support Metrics

Things we don’t watch

Original estimate
Completed hours
Lines of Code
Team capacity
Team burndown
Team story point velocity
# of bugs found
% code coverage

Five DevOps Habits we've learned...



- Team Autonomy + Enterprise Alignment
- Customer Focused
- **Shift Quality left**
- Production First Mindset
- Infrastructure as Flexible Resource

Managing the pipeline: 如何快又稳?

How do you

go fast

and

not

break things?

Pull Requests（代码评审和测试）

PR’s are point of code review

L0+L1 Tests performed before merge

Security tested before commit

Result:

Shift-left testing to pre-merge

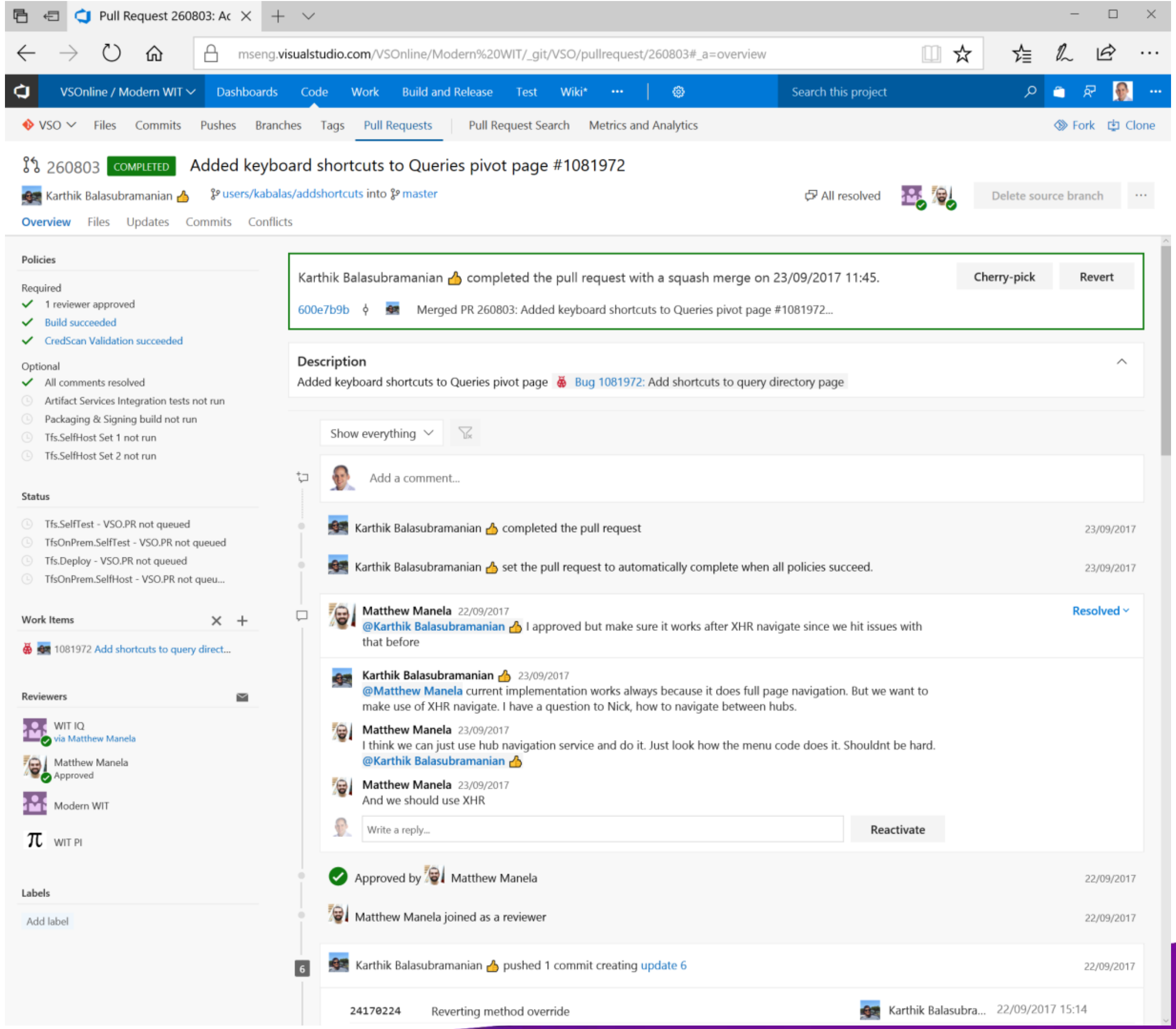
1/5 Pull requests fail

Makes CI build failures rare

1/100 CI builds fail

Accelerates the inner and outer loops

Feedback in minutes, before acceptance of PR



260803 COMPLETED Added keyboard shortcuts to Queries pivot page #1081972

Karthik Balasubramanian users/kabalas/addshortcuts into master

Policies

Required
- ✓ 1 reviewer approved
- ✓ Build succeeded
- ✓ CredScan Validation succeeded

Optional
- ✓ All comments resolved
- Artifact Services Integration tests not run
- Packaging & Signing build not run
- Tfs.SelfHost Set 1 not run
- Tfs.SelfHost Set 2 not run

Status
- Tfs.SelfTest - VSO.PR not queued
- TfsOnPrem.SelfTest - VSO.PR not queued
- Tfs.Deploy - VSO.PR not queued
- TfsOnPrem.SelfHost - VSO.PR not queu...

Work Items
- 1081972 Add shortcuts to query direct...

Reviewers
- WIT IQ via Matthew Manela
- Matthew Manela Approved
- Modern WIT
- WIT PI

Labels

Karthik Balasubramanian completed the pull request with a squash merge on 23/09/2017 11:45.

600e7b9b Merged PR 260803: Added keyboard shortcuts to Queries pivot page #1081972...

Description

Added keyboard shortcuts to Queries pivot page Bug 1081972: Add shortcuts to query directory page

Karthik Balasubramanian completed the pull request 23/09/2017

Karthik Balasubramanian set the pull request to automatically complete when all policies succeed. 23/09/2017

Matthew Manela 22/09/2017
@Karthik Balasubramanian I approved but make sure it works after XHR navigate since we hit issues with that before

Karthik Balasubramanian 23/09/2017
@Matthew Manela current implementation works always because it does full page navigation. But we want to make use of XHR navigate. I have a question to Nick, how to navigate between hubs.

Matthew Manela 23/09/2017
I think we can just use hub navigation service and do it. Just look how the menu code does it. Shouldnt be hard. @Karthik Balasubramanian

Matthew Manela 23/09/2017
And we should use XHR

Approved by Matthew Manela 22/09/2017

Matthew Manela joined as a reviewer 22/09/2017

6 Karthik Balasubramanian pushed 1 commit creating update 6 22/09/2017

24170224 Reverting method override Karthik Balasubra... 22/09/2017 15:14

Testing: Shift Left from Integration to Unit

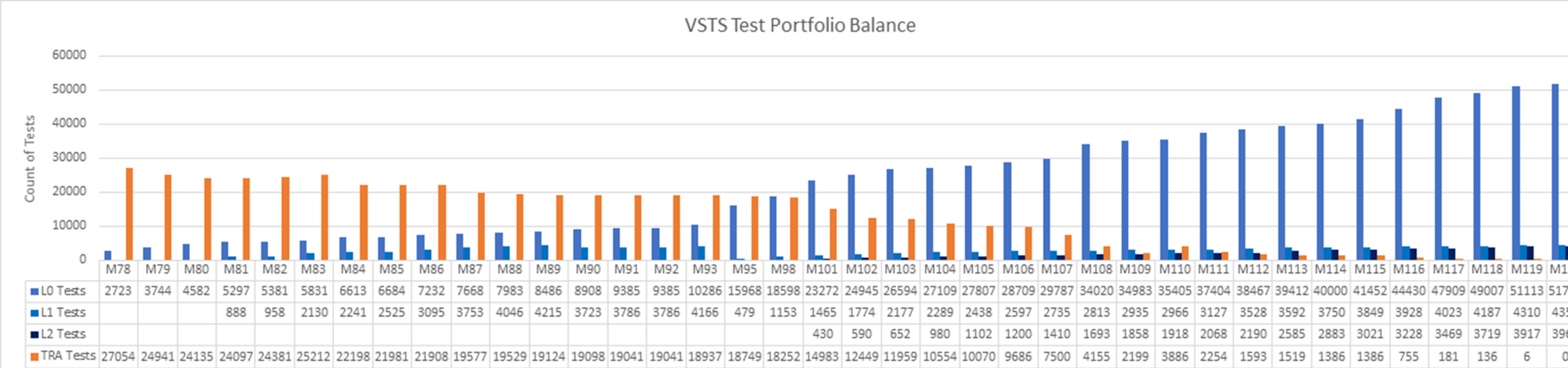
L0 – Requires only built binaries, no dependencies

L1 – Adds ability to use SQL and file system

Run L0 & L1 in the pull request builds

L2 – Test a service via REST APIs

L3 – Full environment to test end to end



	M78	M79	M80	M81	M82	M83	M84	M85	M86	M87	M88	M89	M90	M91	M92	M93	M95	M98	M101	M102	M103	M104	M105	M106	M107	M108	M109	M110	M111	M112	M113	M114	M115	M116	M117	M118	M119	M1
■ L0 Tests	2723	3744	4582	5297	5381	5831	6613	6684	7232	7668	7983	8486	8908	9385	9385	10286	15968	18598	23272	24945	26594	27109	27807	28709	29787	34020	34983	35405	37404	38467	39412	40000	41452	44430	47909	49007	51113	517
■ L1 Tests				888	958	2130	2241	2525	3095	3753	4046	4215	3723	3786	3786	4166	479	1153	1465	1774	2177	2289	2438	2597	2735	2813	2935	2966	3127	3528	3592	3750	3849	3928	4023	4187	4310	435
■ L2 Tests																			430	590	652	980	1102	1200	1410	1693	1858	1918	2068	2190	2585	2883	3021	3228	3469	3719	3917	396
■ TRA Tests	27054	24941	24135	24097	24381	25212	22198	21981	21908	19577	19529	19124	19098	19041	19041	18937	18749	18252	14983	12449	11959	10554	10070	9686	7500	4155	2199	3886	2254	1593	1519	1386	1386	755	181	136	6	0

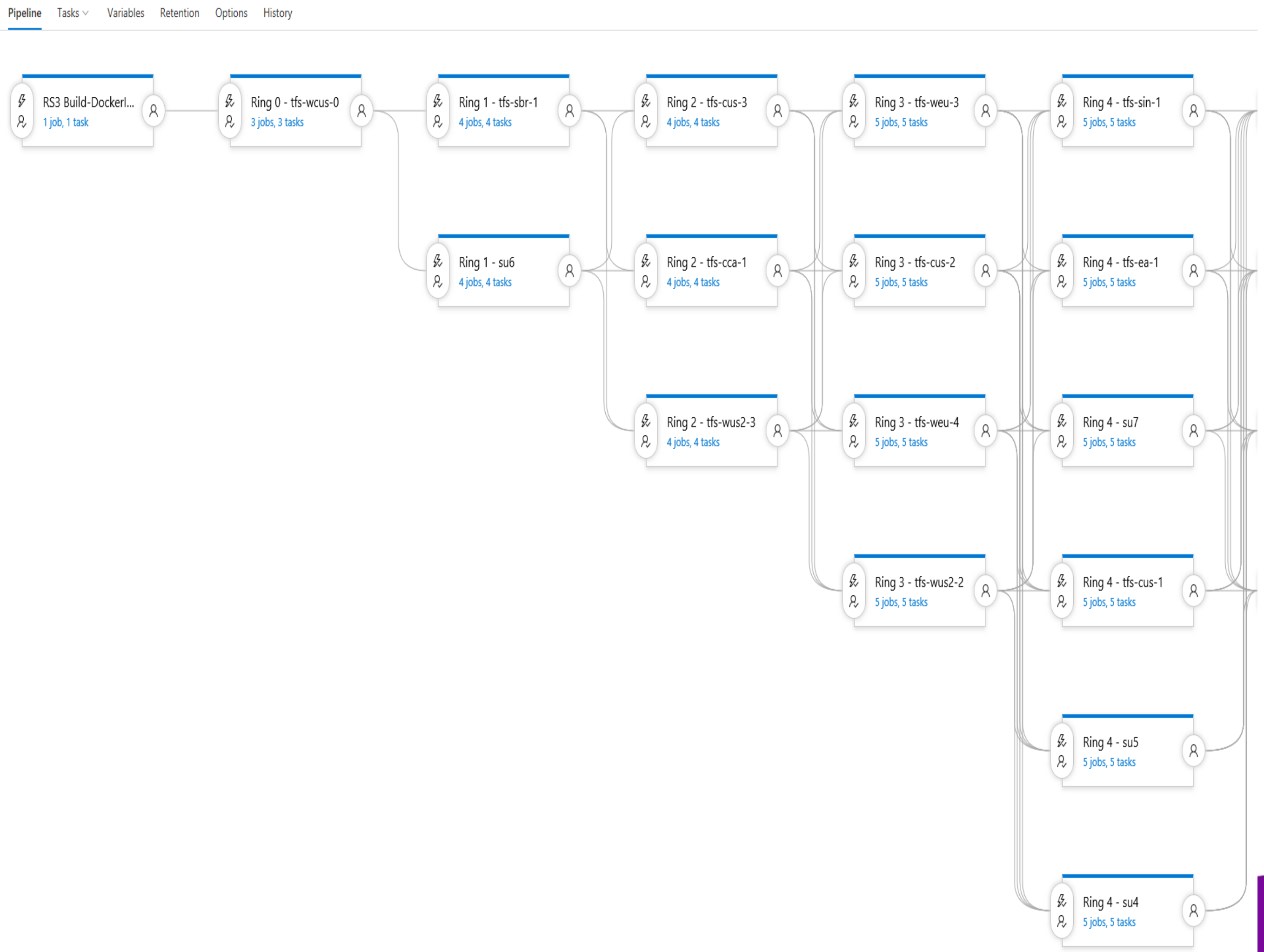
Five DevOps Habits we've learned...

- Team Autonomy + Enterprise Alignment
- Customer Focused
- Shift Quality left
- Production First Mindset
- Infrastructure as Flexible Resource

Multiple Data Centers with incremental roll out

Deploy one stage at a time

- Release Gates control progression
- Automated (L3) tests to check current ring
- Can slow down with explicit approval



Result:

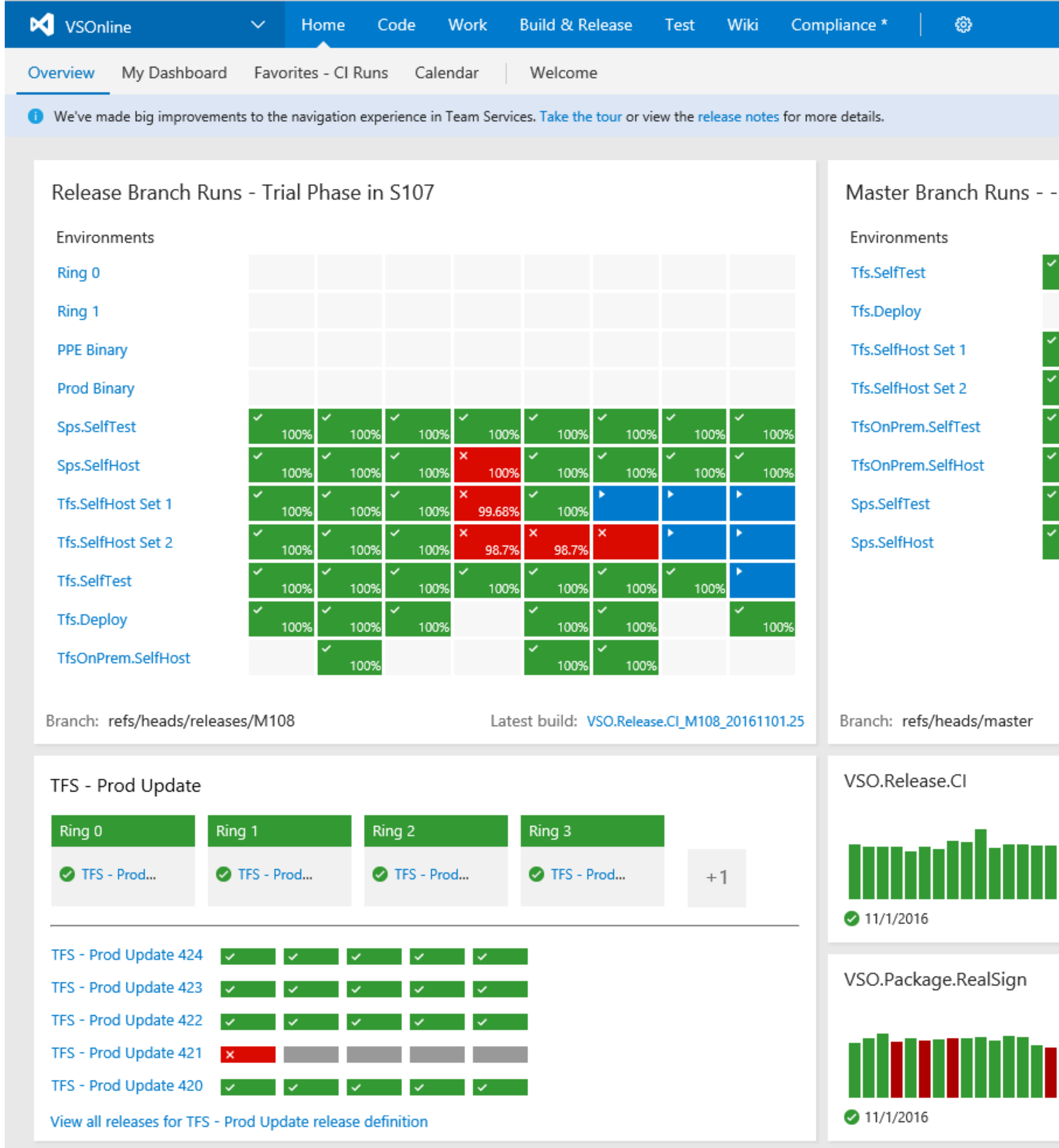
- Visibility into impact of every deployment
- Move across
  1. Canary
  2. Data centers with small user counts
  3. Data center with large user count
  4. Highest latency
  5. The rest

Automate completely

Automate completely

No more "one time" commands run manually

- Every command goes in PowerShell scripts that are checked in
- Deployment to pre-production & canary is the same as deployment to production **every time**
- All orchestrated with Azure Pipelines



We've made big improvements to the navigation experience in Team Services. Take the tour or view the release notes for more details.

Release Branch Runs - Trial Phase in S107

Environments								
Ring 0								
Ring 1								
PPE Binary								
Prod Binary								
Sps.SelfTest	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%
Sps.SelfHost	✓ 100%	✓ 100%	✓ 100%	✗ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%
Tfs.SelfHost Set 1	✓ 100%	✓ 100%	✓ 100%	✗ 99.68%	✓ 100%	▶	▶	▶
Tfs.SelfHost Set 2	✓ 100%	✓ 100%	✓ 100%	✗ 98.7%	✗ 98.7%	✗	▶	▶
Tfs.SelfTest	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%	✓ 100%	▶
Tfs.Deploy	✓ 100%	✓ 100%	✓ 100%		✓ 100%	✓ 100%		✓ 100%
TfsOnPrem.SelfHost		✓ 100%			✓ 100%	✓ 100%		

Branch: refs/heads/releases/M108 Latest build: VSO.Release.CI_M108_20161101.25

Master Branch Runs - -

Environments	
Tfs.SelfTest	✓
Tfs.Deploy	
Tfs.SelfHost Set 1	✓
Tfs.SelfHost Set 2	✓
TfsOnPrem.SelfTest	✓
TfsOnPrem.SelfHost	✓
Sps.SelfTest	✓
Sps.SelfHost	✓

Branch: refs/heads/master

TFS - Prod Update

Ring 0	Ring 1	Ring 2	Ring 3	
✓ TFS - Prod...	✓ TFS - Prod...	✓ TFS - Prod...	✓ TFS - Prod...	+1

TFS - Prod Update 424	✓	✓	✓	✓	✓
TFS - Prod Update 423	✓	✓	✓	✓	✓
TFS - Prod Update 422	✓	✓	✓	✓	✓
TFS - Prod Update 421	✗				
TFS - Prod Update 420	✓	✓	✓	✓	✓

View all releases for TFS - Prod Update release definition

VSO.Release.CI

✓ 11/1/2016

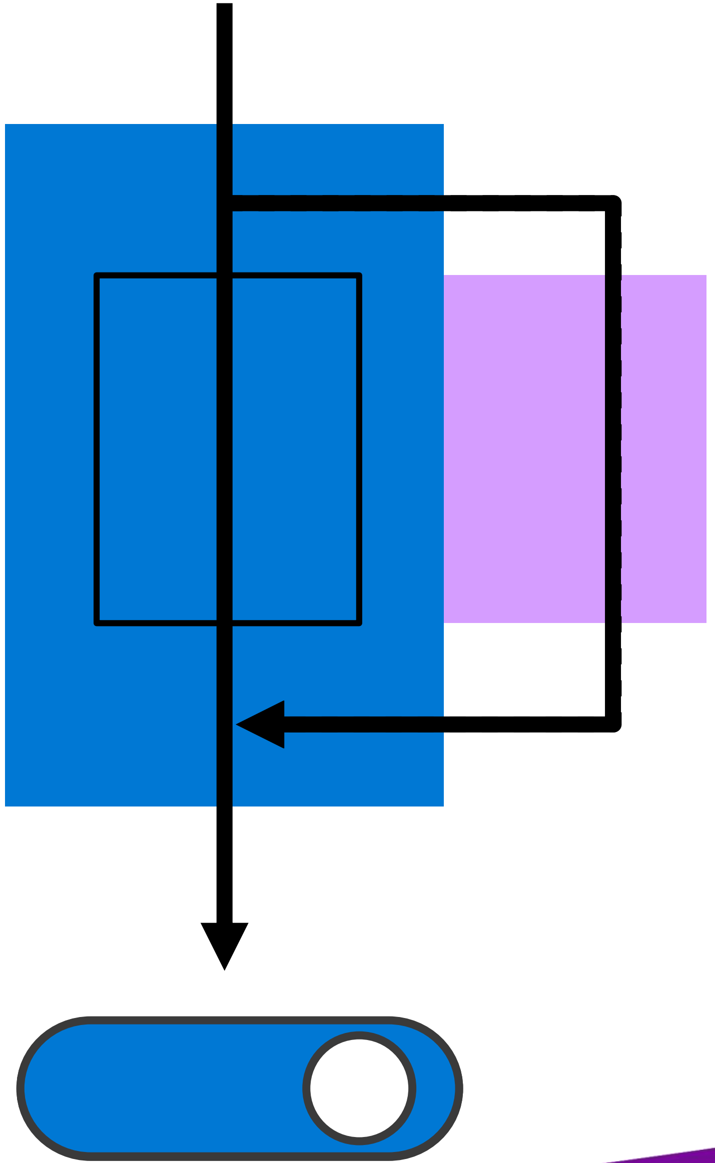
VSO.Package.RealSign

✓ 11/1/2016

Feature Flags （功能开关)

Deploy one stage at a time

- All code is deployed, but feature flags control exposure
- Reduces integration debt
- Flags provide runtime control down to individual user
- Users can be added or removed with no redeployment
- Mechanism for progressive experimentation & refinement
- Enables dark launch



SHARING IS CARING

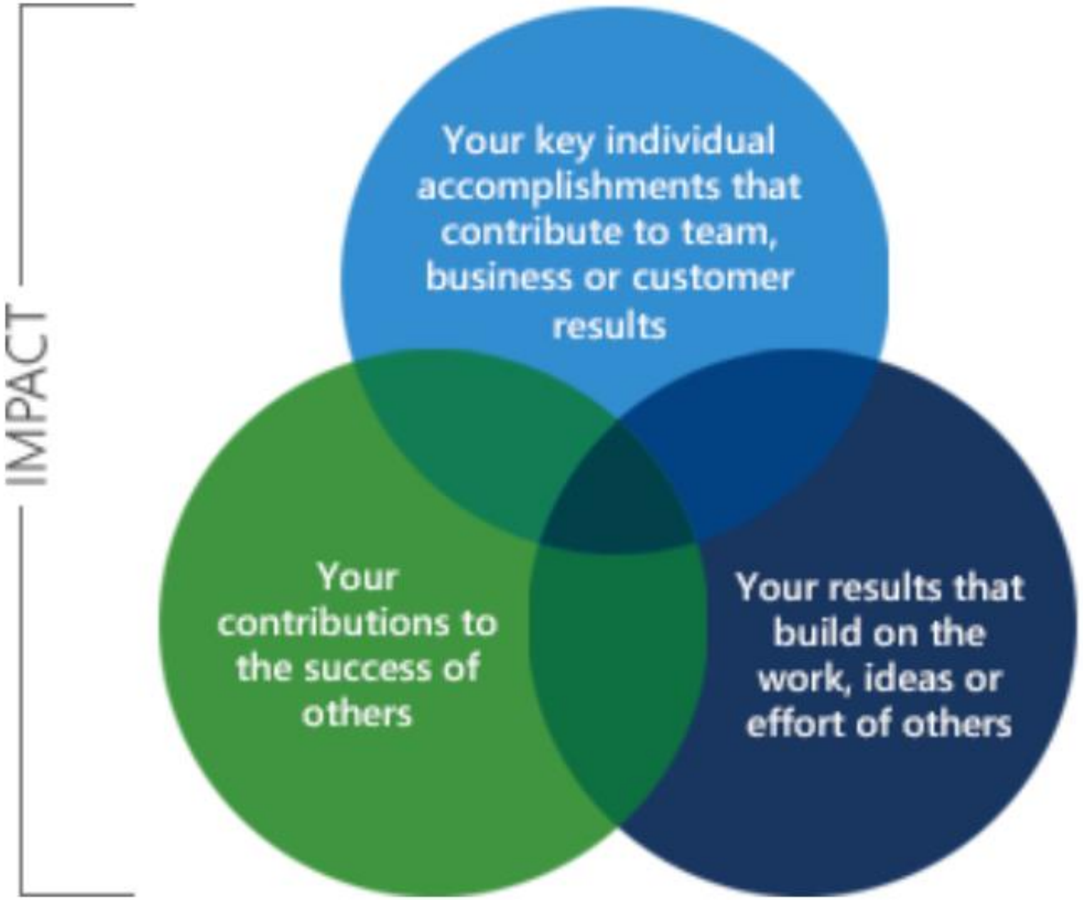
SHARING IS CARING

If you want to go fast, go alone. If you want to go far, go together.

One Engineering System

Learn about the importance of 1ES

“In order to deliver the experiences our customers need for the mobile-first and cloud-first world, we will modernize our engineering processes to be customer-obsessed, data-driven, speed-oriented and quality-focused..."



Your key individual accomplishments that contribute to team, business or customer results

Your contributions to the success of others

Your results that build on the work, ideas or effort of others

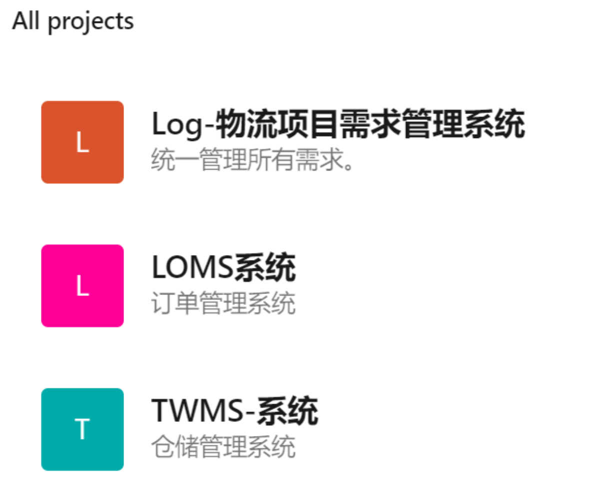
Customer Scenarios & Best practice

JunQian Zhuang

Mapping Product & Project to Azure DevOps Project

- 强项目模式下；每个项目组建立一个Azure DevOps project.集中管理该敏捷小组下面的需求/任务；
- 传统的产品团队，是强系统的矩阵模式； 按照产品系统建立Azure DevOps Project；
- 在项目管理对应的Azure DevOps 项目中，管理项目的需求/进度/文档等；在产品级的Azure DevOps 项目中，管理源代码/构建/自动化发布等。无法归属到具体项目，具体产品的需求，归并到一个专门的“统一需求池”Project中，在这里做需求的分析，分拆，明确需求后归并到对应的产品/项目中；

系统维度\项目维度	CHN-PM-001	CHN-PM-002
物流产品-仓储系统		
物流产品-计费系统		
物流产品-订单系统		



All projects

L Log-物流项目需求管理系统
统一管理所有需求。

L LOMS系统
订单管理系统

T TWMS-系统
仓储管理系统

集中的项目管理项目；管理项目级别的，跨产品的需求，缺陷等。

产品类型的项目；管理产品的开发源代码，开发过程的任务管理，缺陷管理等，并实现自动化构建和发布；

产品类型的项目；管理产品的开发源代码，开发过程的任务管理，缺陷管理等，并实现自动化构建和发布

Azure DevOps is flexible. cross-project management

Azure DevOps 5大模块之间彼此关联，协同工作：

Azure Board模块的workitem和Azure Repo模块的source code commit 是最经常应用的关联（回答了代码为什么修改，是修补了某个缺陷，还是完成了某个开发需求/任务？）

Azure board 是血液，贯串全部

Azure Board 模块是源头，每个角色都会用到，但是层次不同

Azure board的workitem是分为需求层次(backlog)和非需求层次的(Task);在需求层次又是分层的；

你知道吗？Azure Board 支持跨项目关联和查询(Cross project)

Azure Board 中的workitem可以关联其他项目中的workitem?

可以移动到/Copy到其他项目中---跨项目关联(Cross-Project link!)—项目需求分级到产品需求!

workitem 查询的时候，可以跨项目查询工作---想知道自己在所有项目中的工作?

代码Commit时候，可以关联到其他项目中的workitem! ---本次代码修改是为了配合A项目！

Azure Repo跨项目，使用Git fork功能！

支持跨项目的代码复制，以及代码签入

项目内 branch. 跨项目，Git fork

Microsoft

DevOps Practice in Enterprise---Build & Release

Azure DevOps 发布到Azure china, AWS,Huawei cloud? 本地数据中心，统统支持!

应用需要发布到多个环境（Azure China & Huawei cloud & on-premise Environment)

客户不同应用，有不同的部署环境，希望统一部署方案

公有云有使用微软中国云和华为云，AWS海外云；

同时也有本地的数据中心---深圳/上海；

方案高度注重安全性，本地数据的目标环境不允许上Internet (物理隔离）.

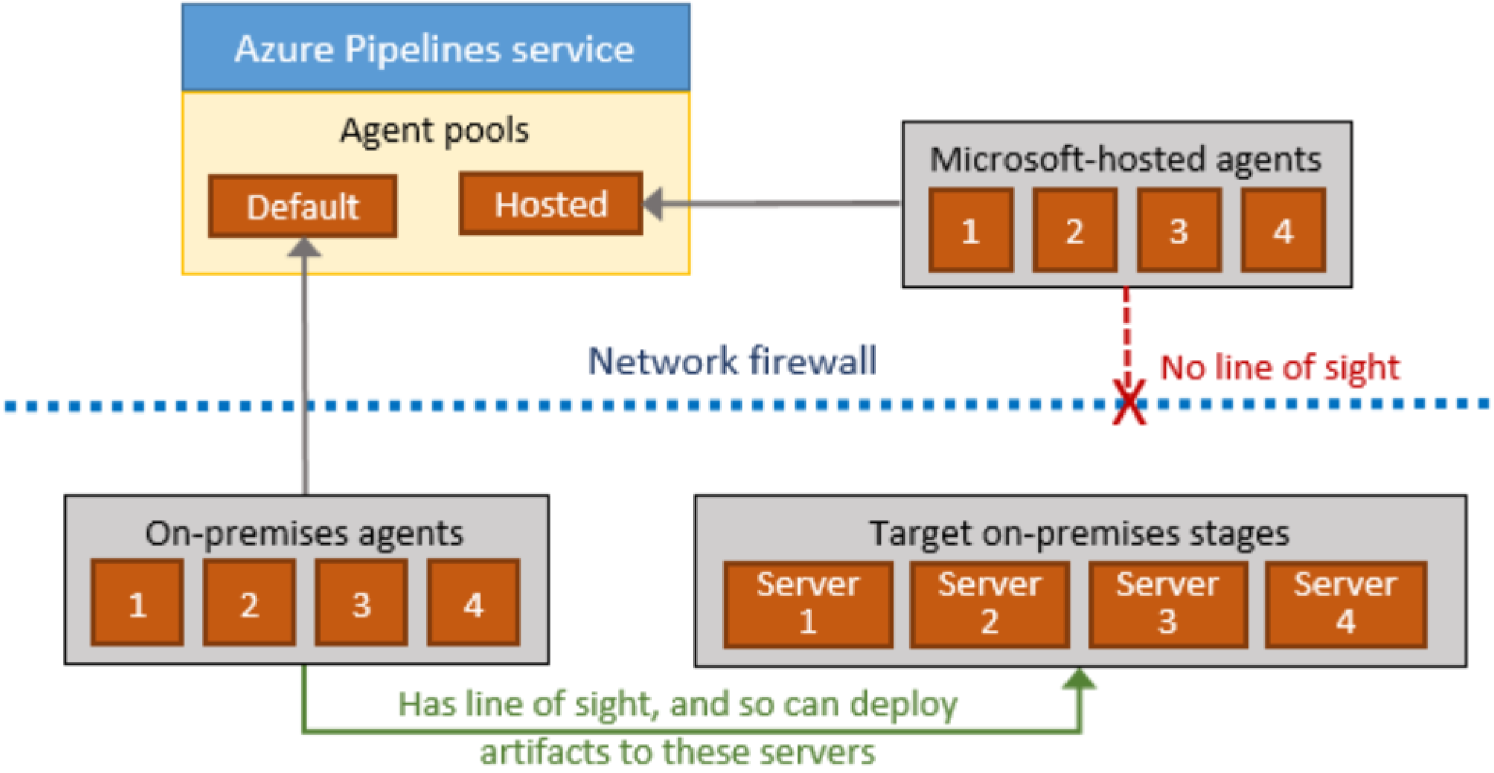
Azure DevOps 之Azure pipeline是否可以满足？使用公有云的Azure DevOps发布应用到本地数中心，本地数据中心目标服务器不联网！

数据隔离&安全性

Azure Pipeline workflow

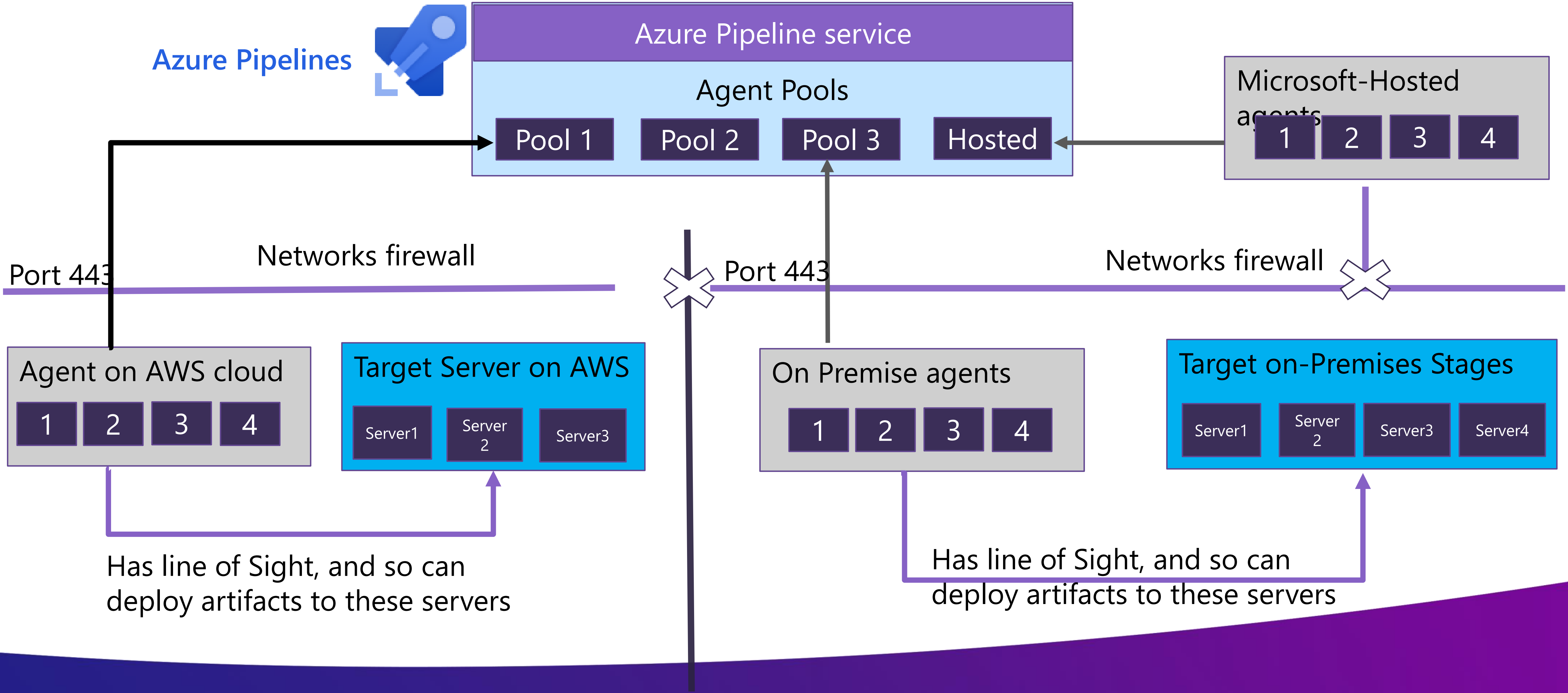
Azure Pipelines 流水线

- 安装：Azure Build 和Release Agent 支持跨平台 (Linux/Windows/Docker)
- 运行:Agent 主动访问Server,获取分配的工作
- 每次运行工作，都会产生一个job-specific OAuth token，用于获取资源。
- 运行完毕，删除job-specific OAuth token
- 安全: Agent 和Server是单向网络联通；走Http/Https协议；每个Agent都有一个public-private key pair。服务器端加密，客户端解密



https://docs.microsoft.com/zh-cn/azure/devops/pipelines/agents/agents?view=azure-devops

Azure Pipeline 的网络链接和安全考虑



https://docs.microsoft.com/zh-cn/azure/devops/pipelines/agents/agents?view=azure-devops

Microsoft

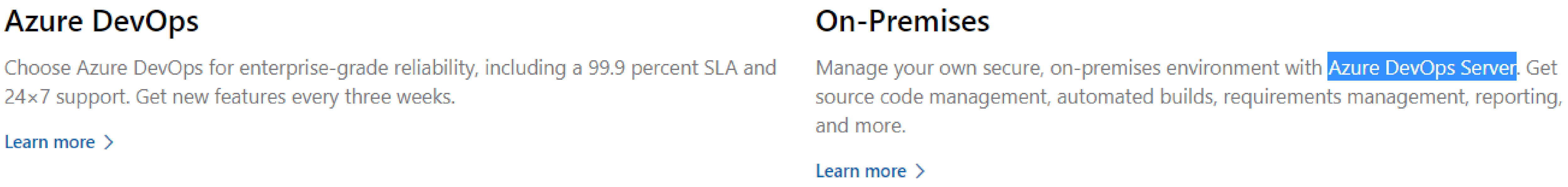
Q&A

Azure DevOps & GitHub

Azure DevOps Service or Azure DevOps Server

Both offerings provide an integrated, collaborative environment that supports Git, continuous integration, and Agile tools for planning and tracking work.

DevOps Services is the **cloud offering** that provides a scalable, reliable, and globally available



Azure DevOps

Choose Azure DevOps for enterprise-grade reliability, including a 99.9 percent SLA and 24×7 support. Get new features every three weeks.

Learn more >

On-Premises

Manage your own secure, on-premises environment with Azure DevOps Server. Get source code management, automated builds, requirements management, reporting, and more.

Learn more >

https://docs.microsoft.com/en-us/azure/devops/user-guide/about-azure-devops-services-tfs?view=azure-devops

Microsoft

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