

Google Cloud

Next '24

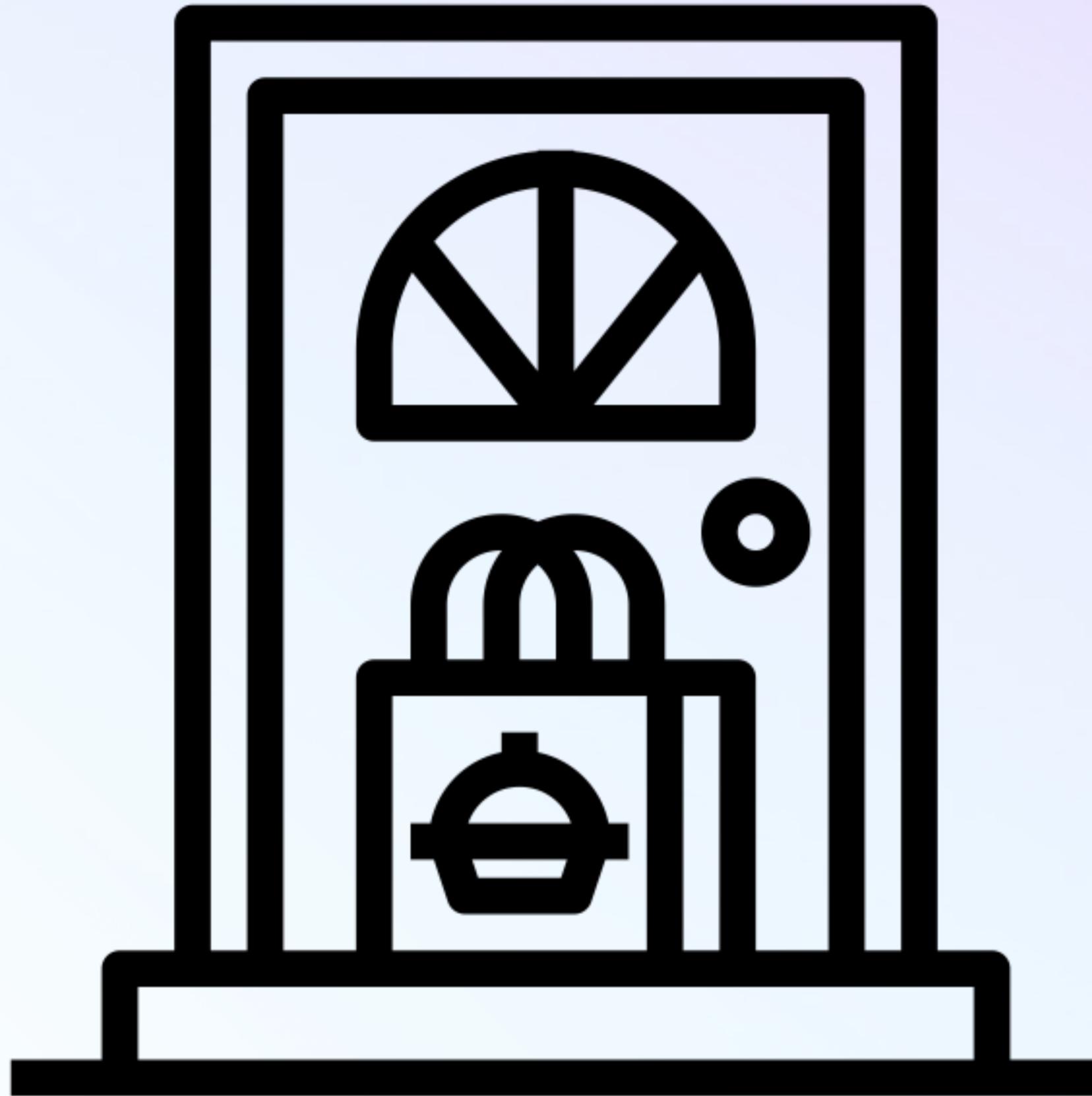
Shifting left, Delivering right

Insights from Datadog's Software
Delivery Journey

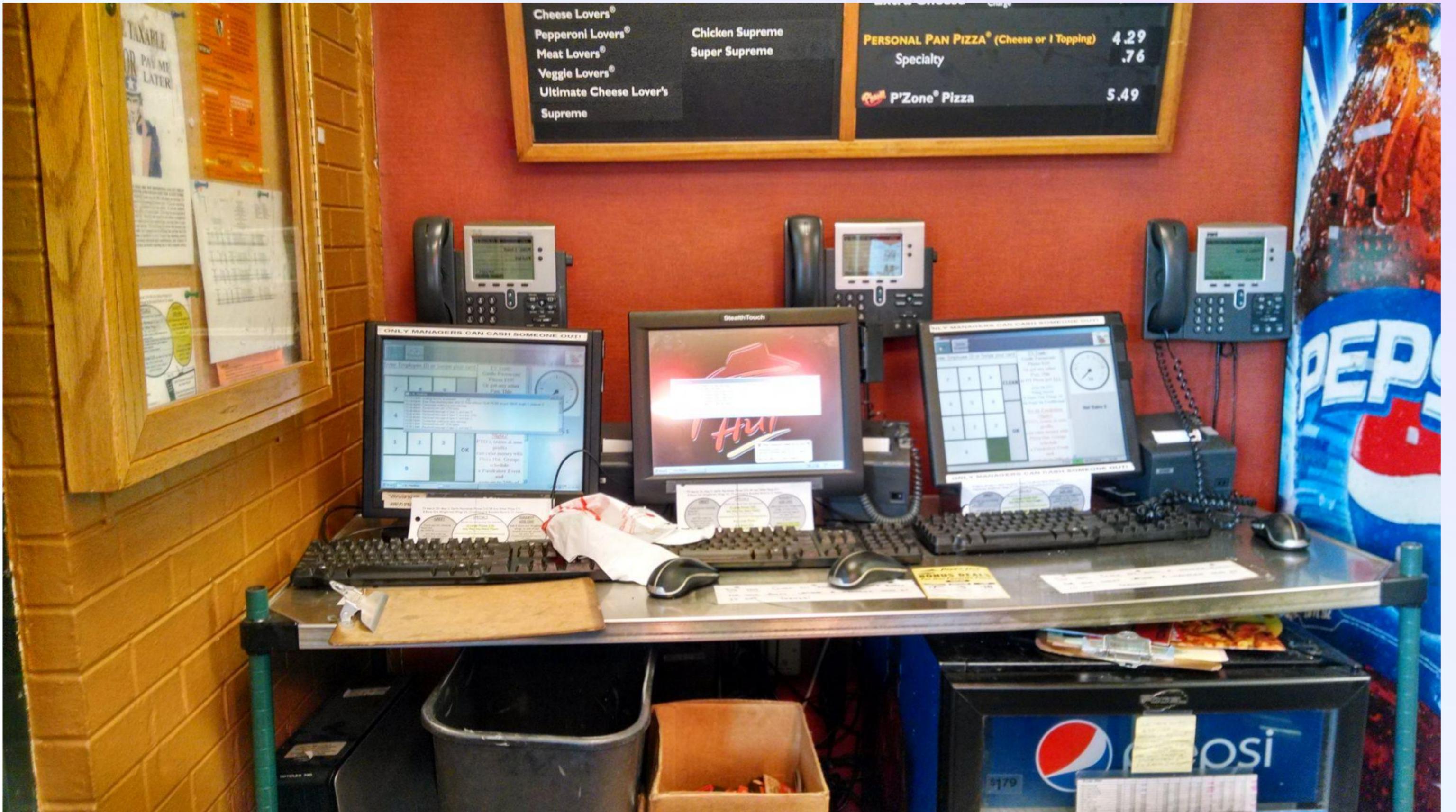
Ajuna Kyaruzi

Senior SRE & DevOps
Advocate at Datadog



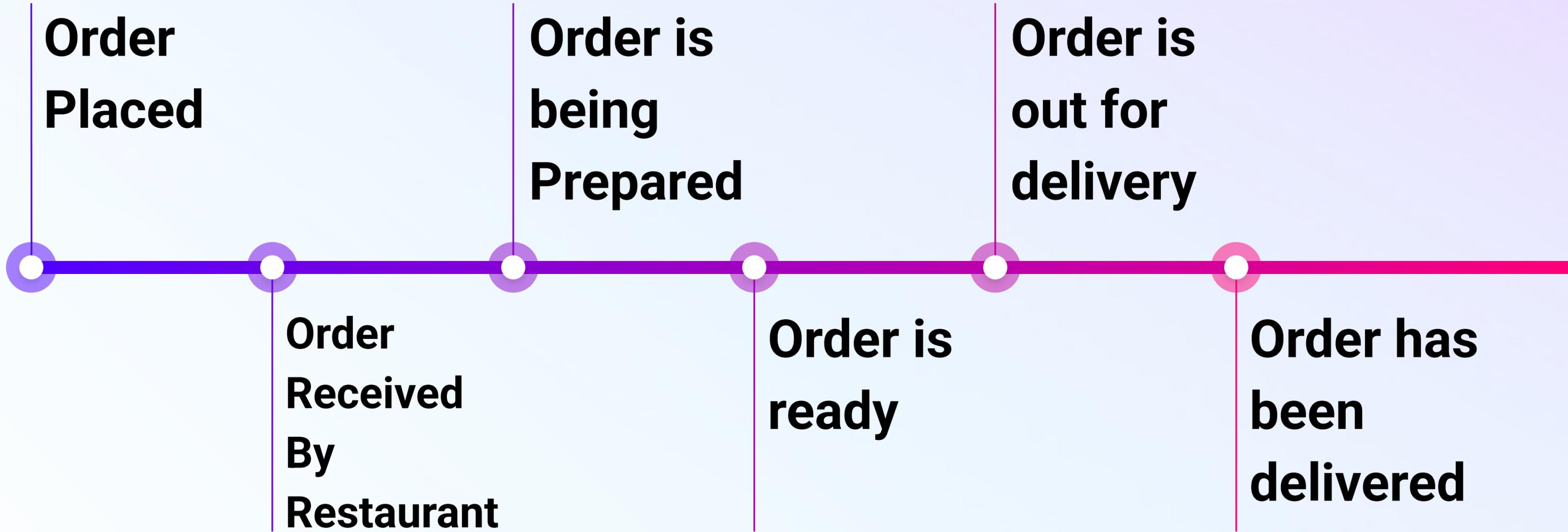


CREATED BY FERDIZZIMO FROM NOUN PROJECT



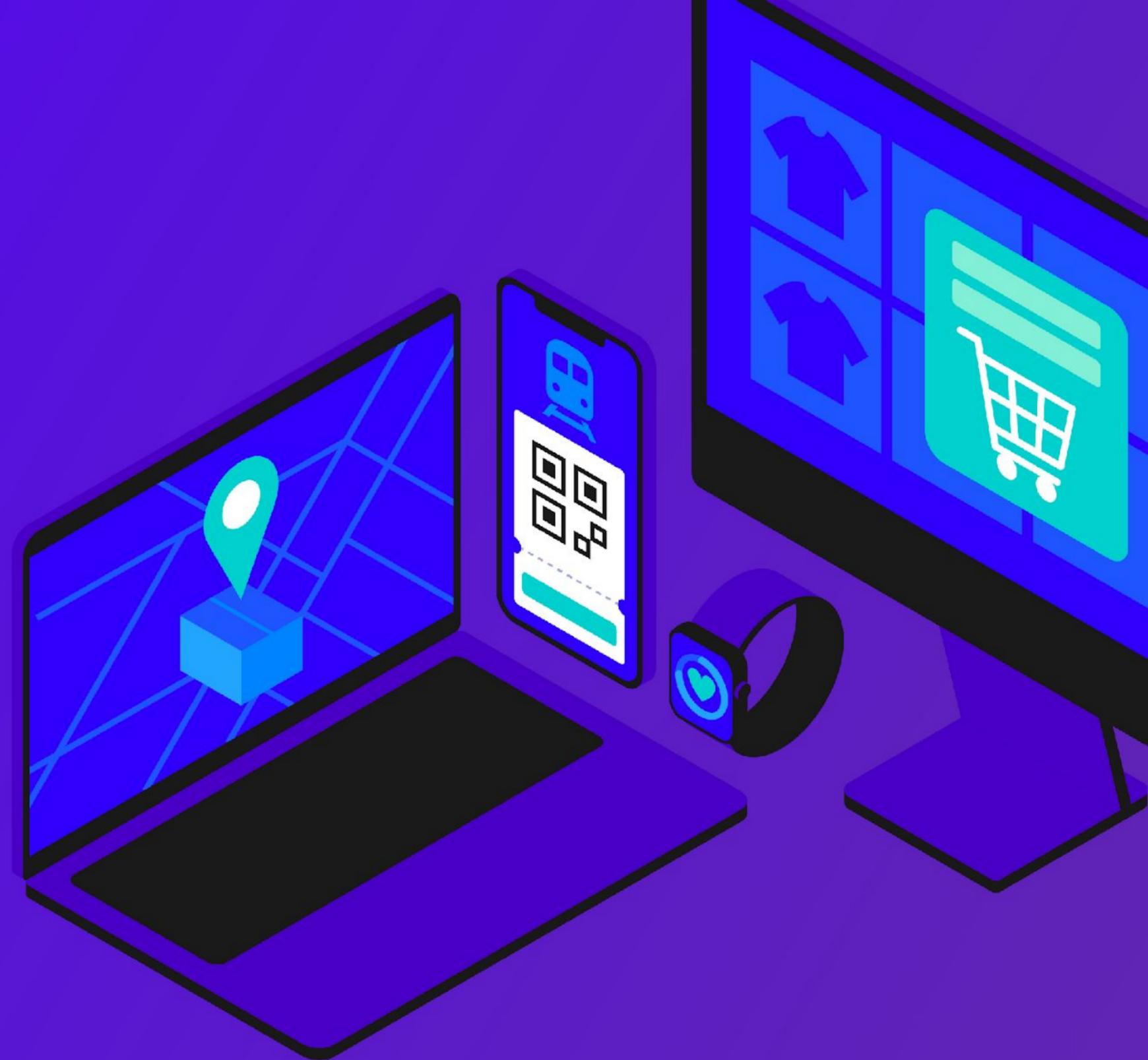
Cheese Lovers®	Chicken Supreme	PERSONAL PAN PIZZA® (Cheese or 1 Topping)	4.29
Pepperoni Lovers®	Super Supreme	Specialty	.76
Meat Lovers®		P'Zone® Pizza	5.49
Veggie Lovers®			
Ultimate Cheese Lover's Supreme			





77%

US Consumers ordered food delivery in the past month



Doordash Food Delivery Statistics

get.doordash.com/en-us/blog/food-delivery-statistics

[Order Details](#)

Joe's Home of soup dumplings

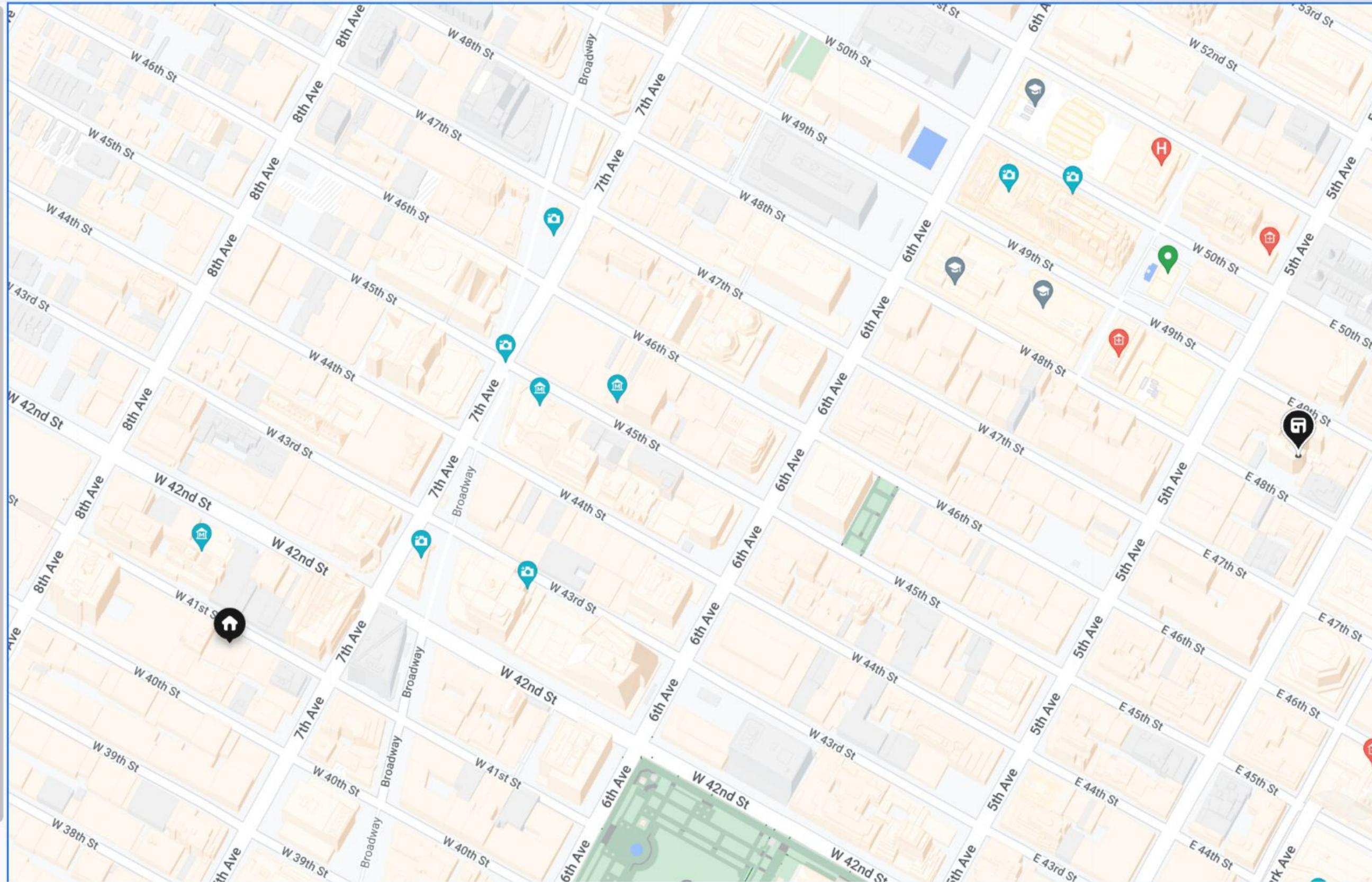
[Download Receipt](#) [Help](#)

Use the app to follow your order in real-time.

Ajuna K

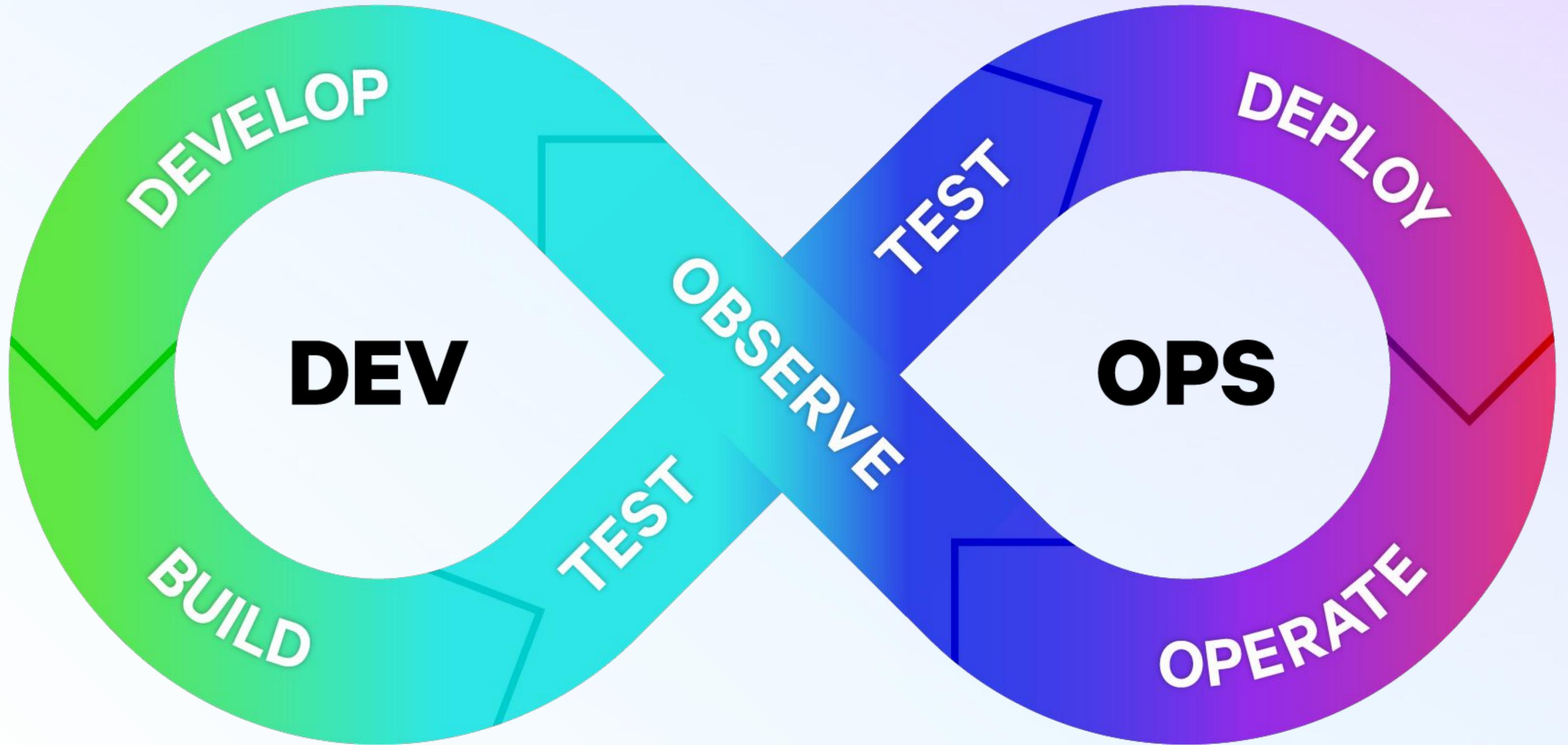
Order Details

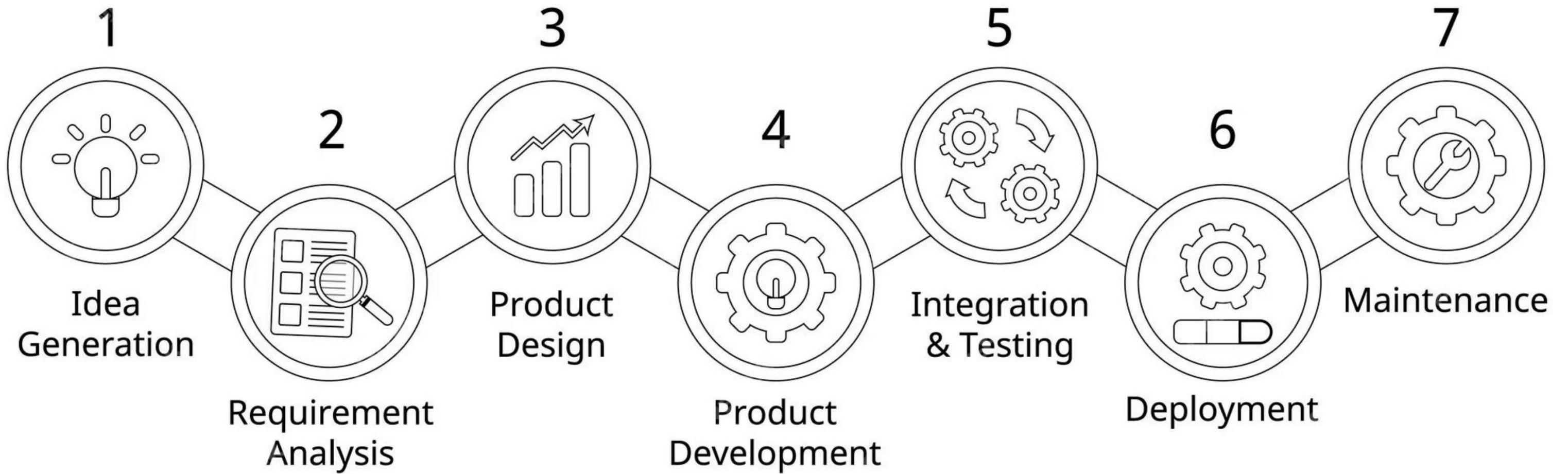
1x 小籠包 / Pork Steamed Buns (6 Pieces) / \$11.25

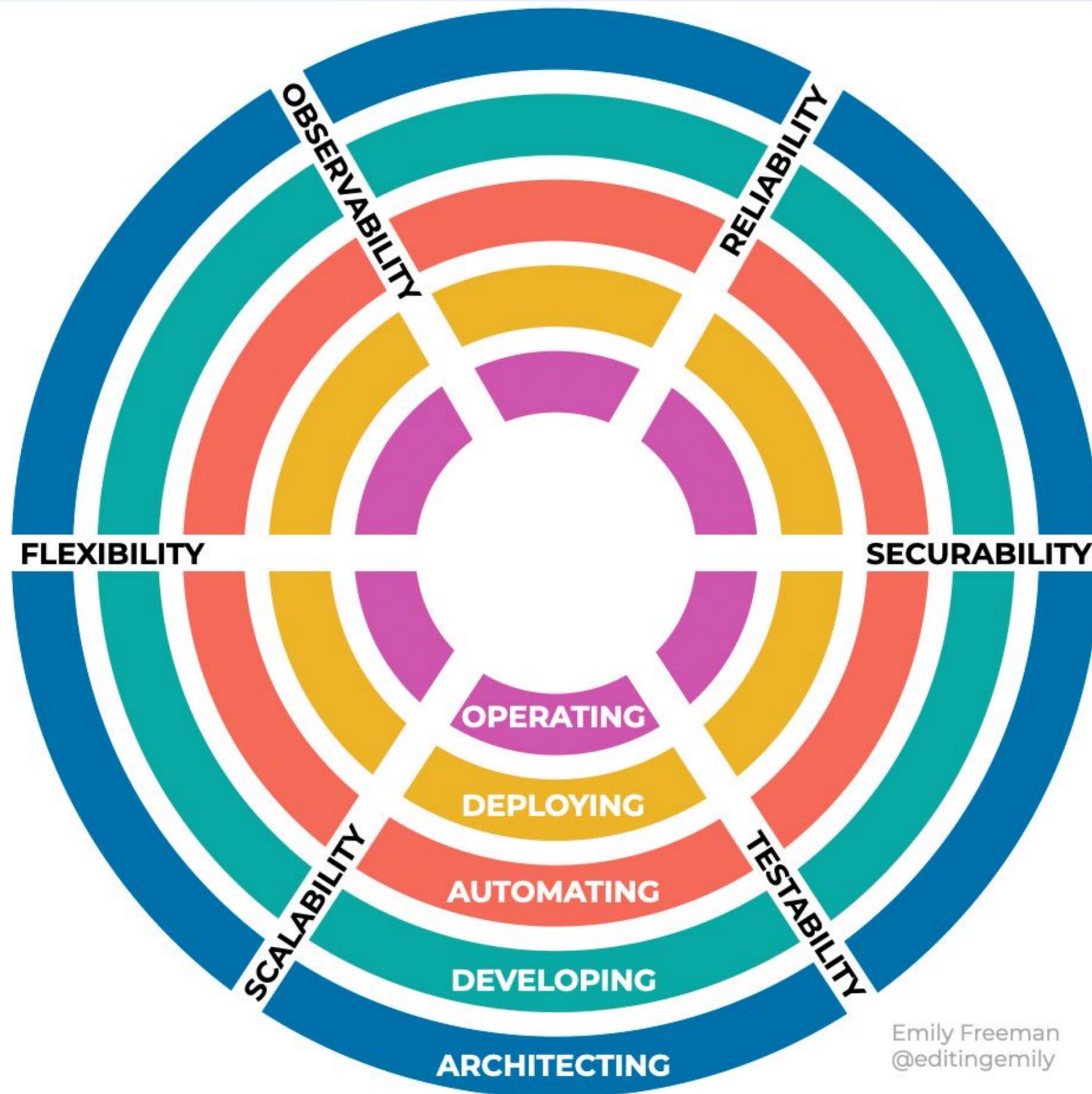




Software Development Lifecycle

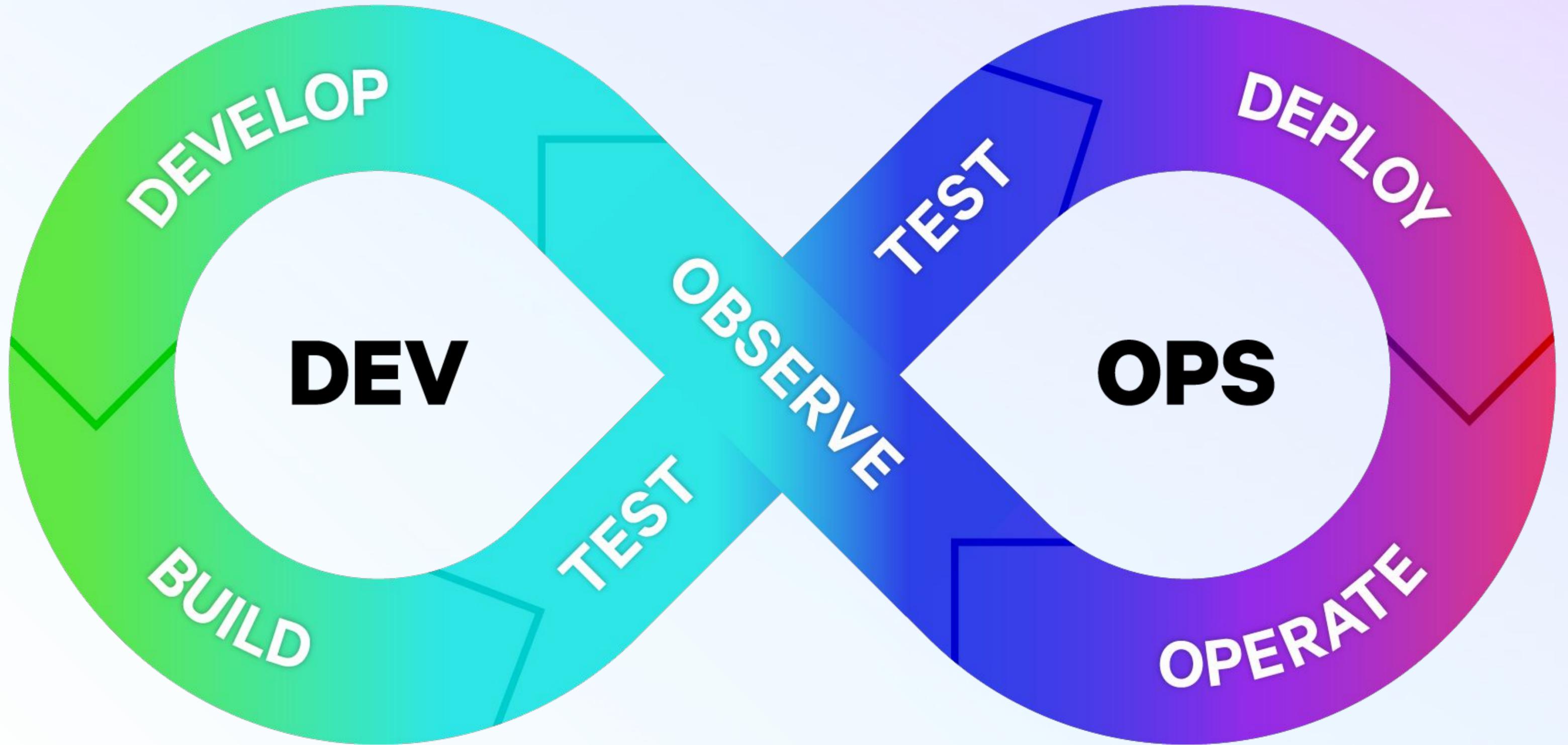






Emily Freeman
@editingemily

Software Development Lifecycle



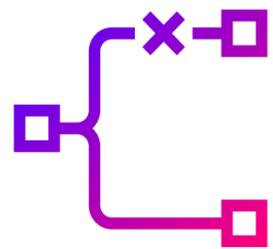


...and bringing that level of visibility to your tests and pipelines in earlier stage environments

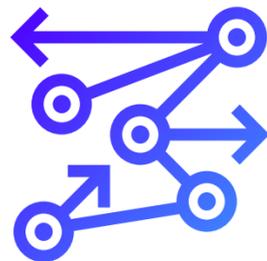


Taking visibility mostly seen in production...

Lack of visibility in the SDLC



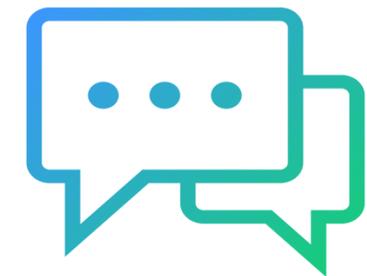
Hard to debug failures and regressions



Complex builds lead to slow release velocity

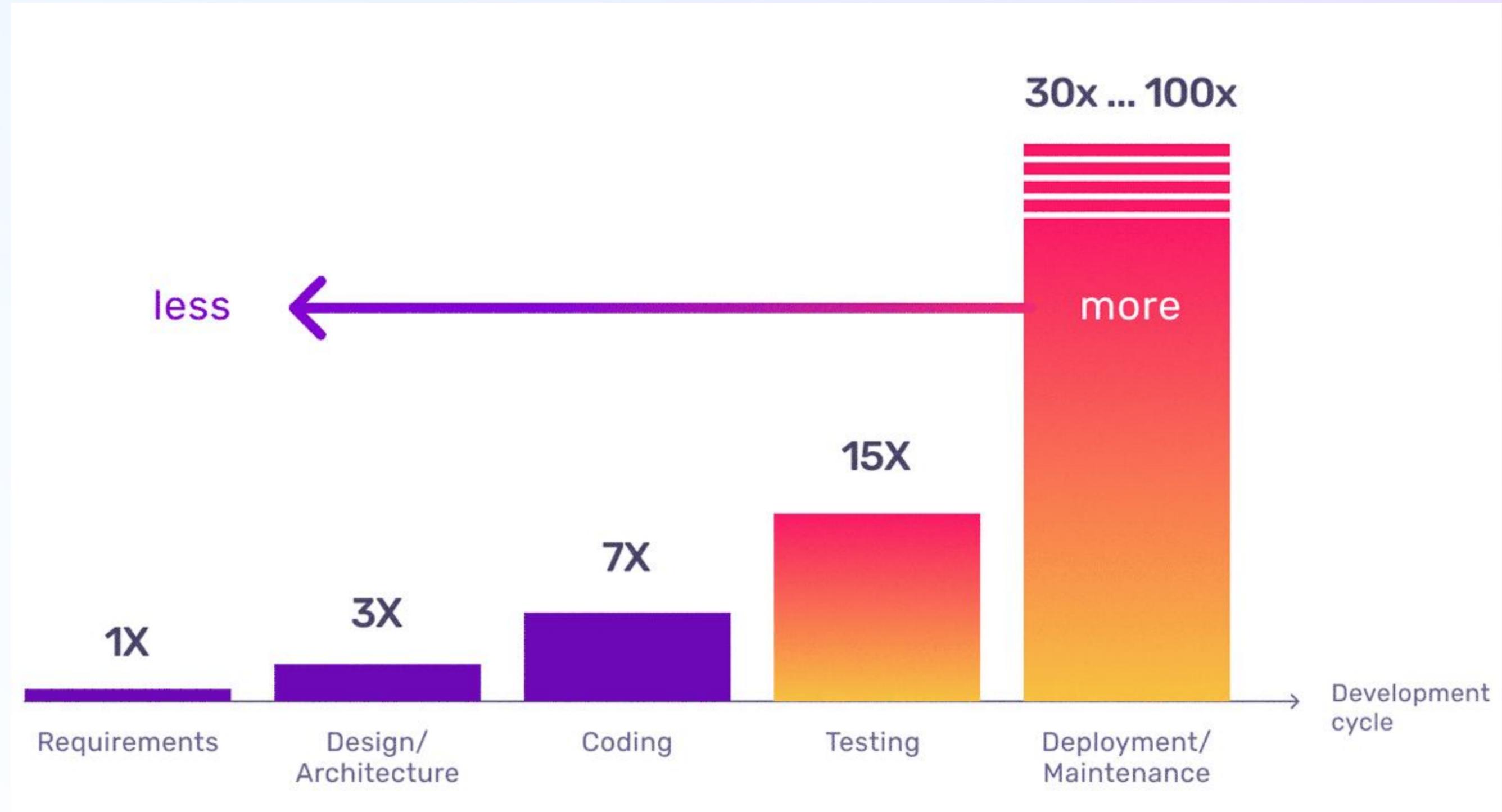


CI/CD costs only increase over time



DevEx – enable developers to do their best work

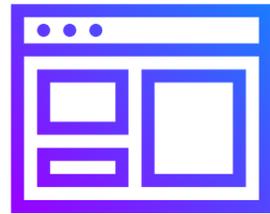
Cost of finding bugs in the SDLC



What does shifting left look like?

17

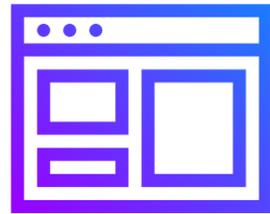
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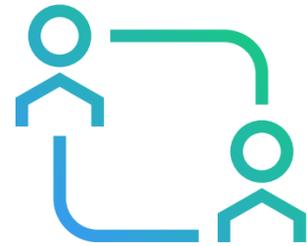
Tooling
consolidation &
automation

18

What does shifting left look like?

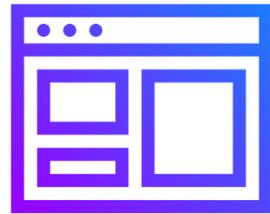


Tooling
consolidation &
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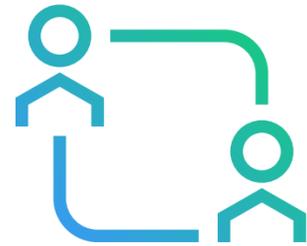


Developer
experience &
productivity

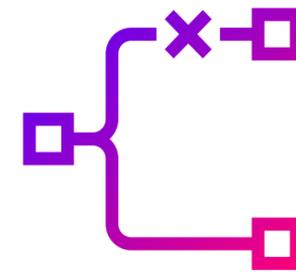
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Tooling
consolidation &
automation

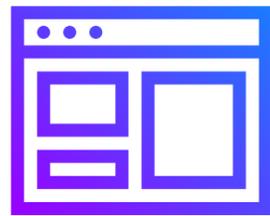


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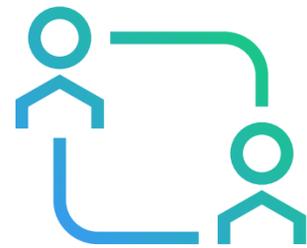


Code & release
quality

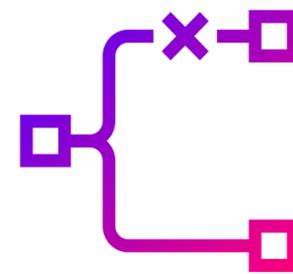
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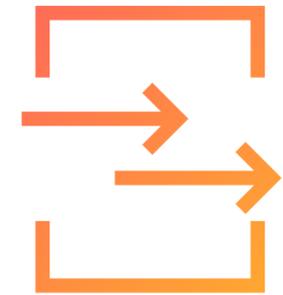
Tooling
consolidation &
automation



Developer
experience &
productivity



Code & release
quality



Measure &
accelerate
software delivery

A Datadog Case Study

BUSINESS DRIVERS

Datadog's internal Developer Experience team is able to improve and maintain platform stability while supporting the velocity and experience of product engineering teams

DATADOG CAPABILITIES



CI Pipeline
Visibility



CI Test Visibility



Intelligent Test
Runner



SaaS



New York, NY



27k+ Customers

CHALLENGE

Tooling sprawl Multiple CI providers and testing languages

Reactive to development issues “Firefighting” troubleshooting by internal platform teams

Difficult to understand the system Didn't know how to improve stability and performance of CI/CD

BUSINESS DRIVERS

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CHALLENGE

Developer frustration and loss of trusts in tests - no incentive

Retries in CI racked up costs When builds fail, first instinct was to hit retry. "Probably a flaky test" – tribal knowledge at best

Collateral damage Developers will inherit and run other developers' flaky tests, no path to remediation

BUSINESS DRIVERS

Increased developer productivity and satisfaction by accelerating feedback loops, as well as decreased CI costs by \$M. Engineers debugging complex integration tests report up to 98% reduction in MTTR (3 hours to 5 minutes)

DATADOG CAPABILITIES



SOLUTION

Single pane of glass Aggregated visibility into pipelines, stages, and jobs across providers

Reduced alert fatigue Instead of every team investigating a failure, routed alerts to teams and individuals responsible

Identify high-leverage problem areas Found most problematic pipelines and jobs with the most impact, optimized queue times, made informed decisions to balance velocity & stability

BUSINESS DRIVERS

Increased developer productivity and satisfaction by accelerating feedback loops, as well as decreased CI costs by \$M. Engineers debugging complex integration tests report up to 98% reduction in MTTR (3 hours to 5 minutes)

DATADOG CAPABILITIES



CI Pipeline
Visibility



CI Test Visibility



Intelligent Test
Runner



SaaS



New York, NY



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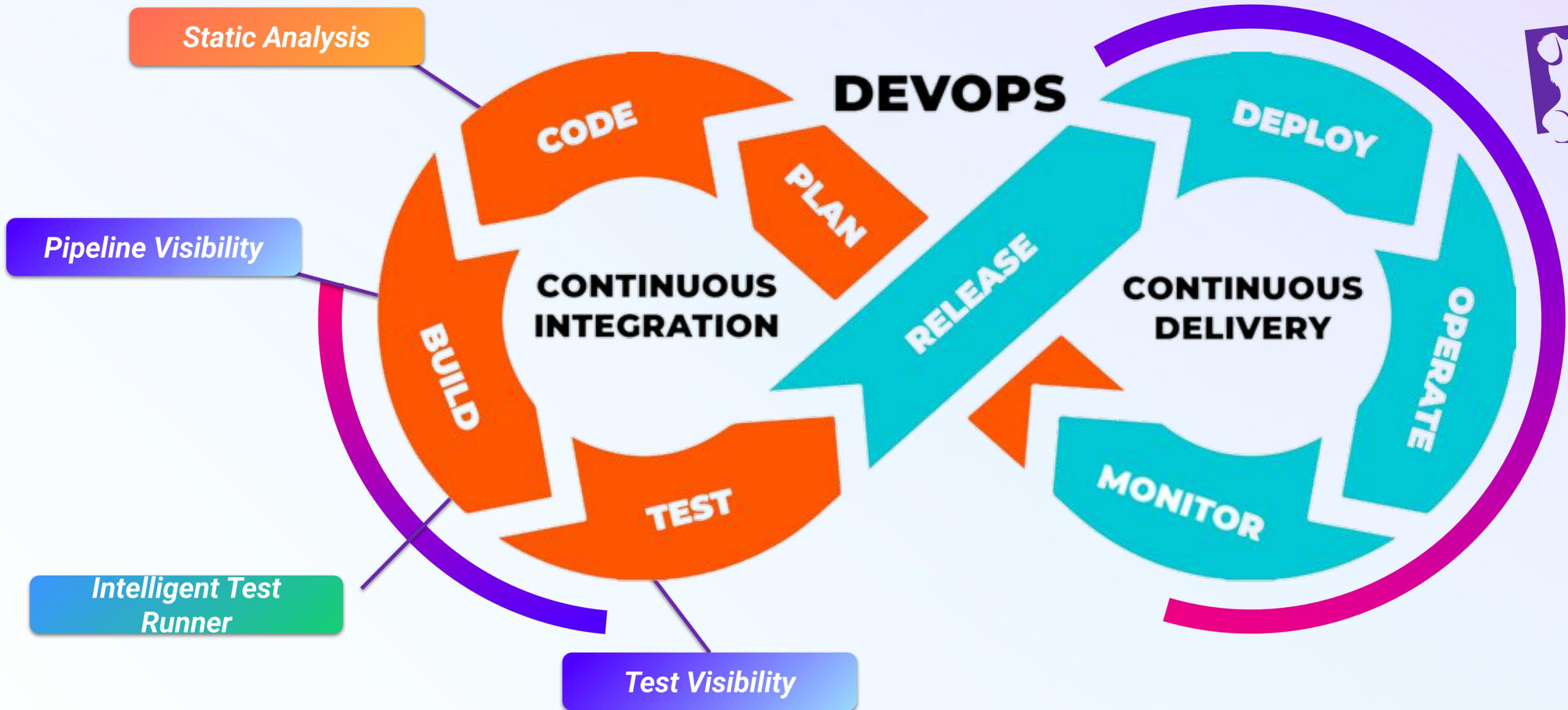
SOLUTION

Flaky test triage & prioritization Which tests should we prioritize fixing first?

Distinguish between true failure and flake

Data-driven instead of relying on tribal knowledge & feelings

Built a culture of accountability Tie flakiness back to a specific commit and developer, alert on flakiness, post weekly reports to Slack





List Map

Search for

Group by Select value ▼

Ownership
Find Service Owners

Reliability
Evaluate Operational Health

Performance
Monitor Application Performance

Security
Improve Security Posture

Costs NEW
Optimize Cloud Spend

Delivery NEW
Streamline Development Lifecycle

Discover services with USM

> My Teams 🔴

Select a Component BETA

- Services** 429
- Hide 23 inferred services
- Datastores 36
- Queues 17
- External Providers 0

Search facets

SERVICE OVERVIEW

- Type
- Web 85
 - DB 24
 - Cache 6
 - fx** Function 13
 - Spark 4
 - Job 5
 - Custom 295
 - Browser 2
 - Mobile 5

- Telemetry Type
- Filter 10 values
- Distributed Traci... 186
 - Universal Servic... 56

Security Vulnerabilities 9 services 📊

Attack Exposure 17 services 📊

Breached SLOs 9 services 📊

No One On-Call 428 services 📊

Hide Controls | env:* 429 services across 13 environments | Scope APM data to: cluster-name:* ▼ Export as CSV ⚙️

★	TYPE	SERVICE	SCORECARDS	TEAM	ON-CALL	CONTACT	REPO	TELEMETRY
>	🌐	web-store env:dev +2	100%	Shopist				
>	🌐	product-recommendation env:dev +2	93%	Shopist				
>	🌐	product-recommendation INFERRED env:dev +2	93%	Shopist				
☆	🗄️	web-store-mongo	93%	Dbas				
>	🌐	auth-dotnet env:dev +2	87%	Shopist				
>	🌐	auth-dotnet INFERRED env:dev +2	87%	Shopist				
☆	🗄️	user-db env:dev	87%	Dbas				
>	⚙️	payment AUTO env:dev +1	87%	Bitsboutique				
>	🌐	carts env:dev +1	87%	Bitsboutique				
>	⚙️	api-layer env:dev +1	86%	Bitsboutique				
>	🌐	fraud-prevention-api INFERRED env:dev +2	80%	Shopist				
☆	🌐	fraud-prevention-api	80%	Shopist				
>	⚙️	first-party-orders-service env:dev +1	80%	Bitsboutique				

List Map

Group by Select value

Ownership Find Service Owners
 Reliability Evaluate Operational Health
 Performance Monitor Application Performance
 Security Improve Security Posture
 Costs NEW Optimize Cloud Spend
 Delivery NEW Streamline Development Lifecycle
 Discover services with USM

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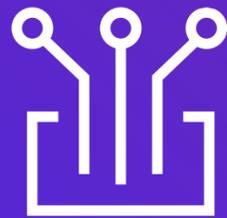
Security Vulnerabilities 9 services
 Attack Exposure 17 services
 Breached SLOs 9 services
 No One On-Call 428 services

Hide Controls | env:* | 429 services across 13 environments | Scope APM data to: cluster-name:*

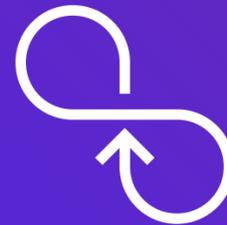
★	TYPE	SERVICE	ASSOCIATED PIPELINES	AVERAGE BUILD DURATION	BUILD SUCCESS RATE	LAST EXECUTION
>	★	web-store env:dev +2	3 Pipelines	4 min 40 s	90% 336 of 373	SUCCESS 21m ago
>	★	product-recommendation env:dev +2	8 Pipelines	1 min 19 s	14% 31 of 216	ERROR 43m ago
>	★	product-recommendation INFERRED env:dev +2	8 Pipelines	1 min 19 s	14% 31 of 216	ERROR 43m ago
★		web-store-mongo	None found			
>	★	auth-dotnet env:dev +2	None found			
>	★	auth-dotnet INFERRED env:dev +2	None found			
★		user-db env:dev	None found			
>	★	payment AUTO env:dev +1	3 Pipelines	37 min 16 s	23% 29 of 128	ERROR 1h ago
>	★	carts env:dev +1	None found			
>	★	api-layer env:dev +1	DataDog/deliveries-proxy	2 h 28 min	3% 1 of 33	ERROR 3h ago
>	★	fraud-prevention-api INFERRED env:dev +2	None found			
★		fraud-prevention-api	None found			
>	★	first-party-orders-service env:dev +1	None found			

Tooling Consolidation & Automation

Aggregating data across tools/vendors



CI/CD provider
integrations

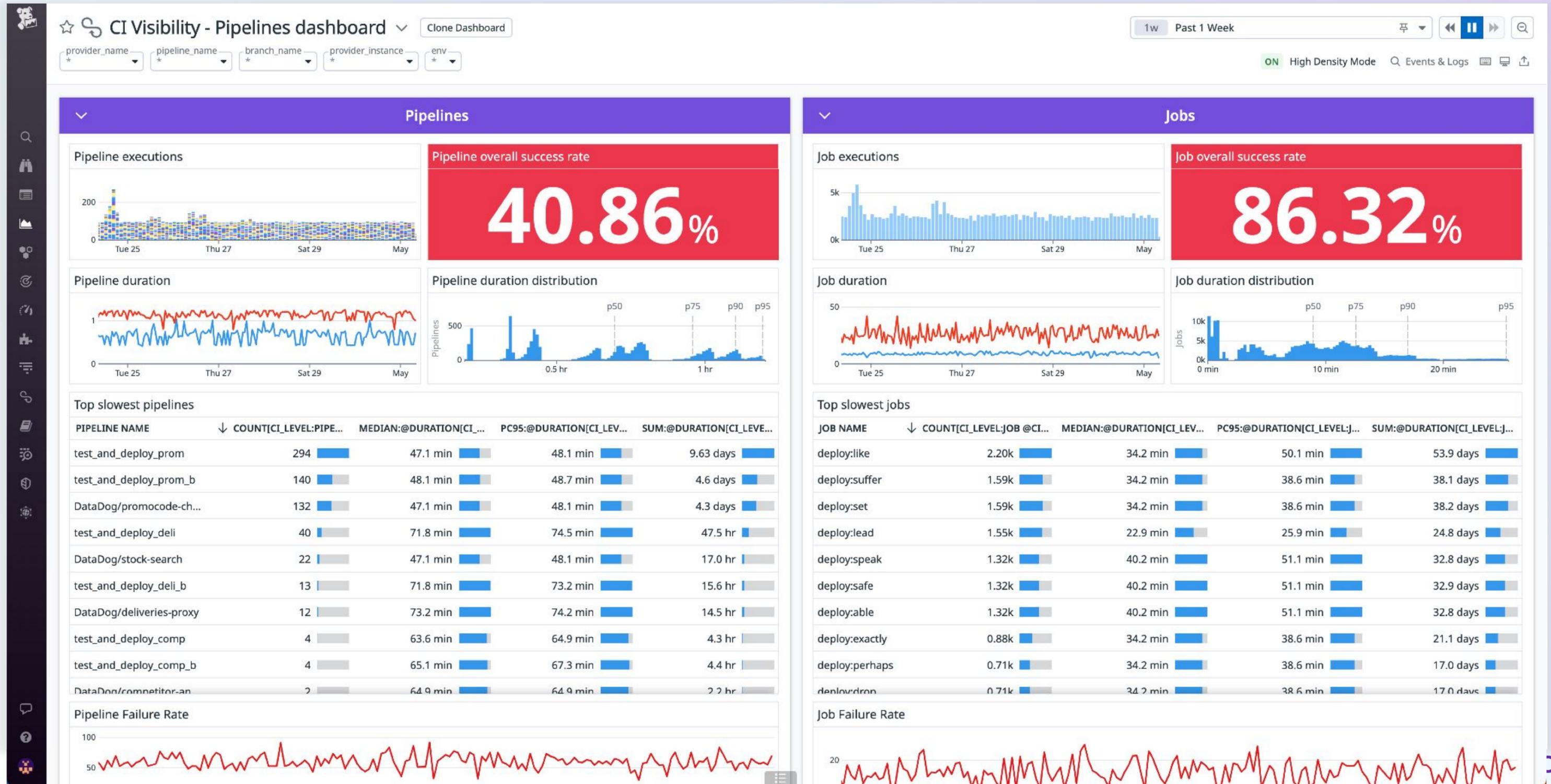


Test instrumentation
across languages &
frameworks



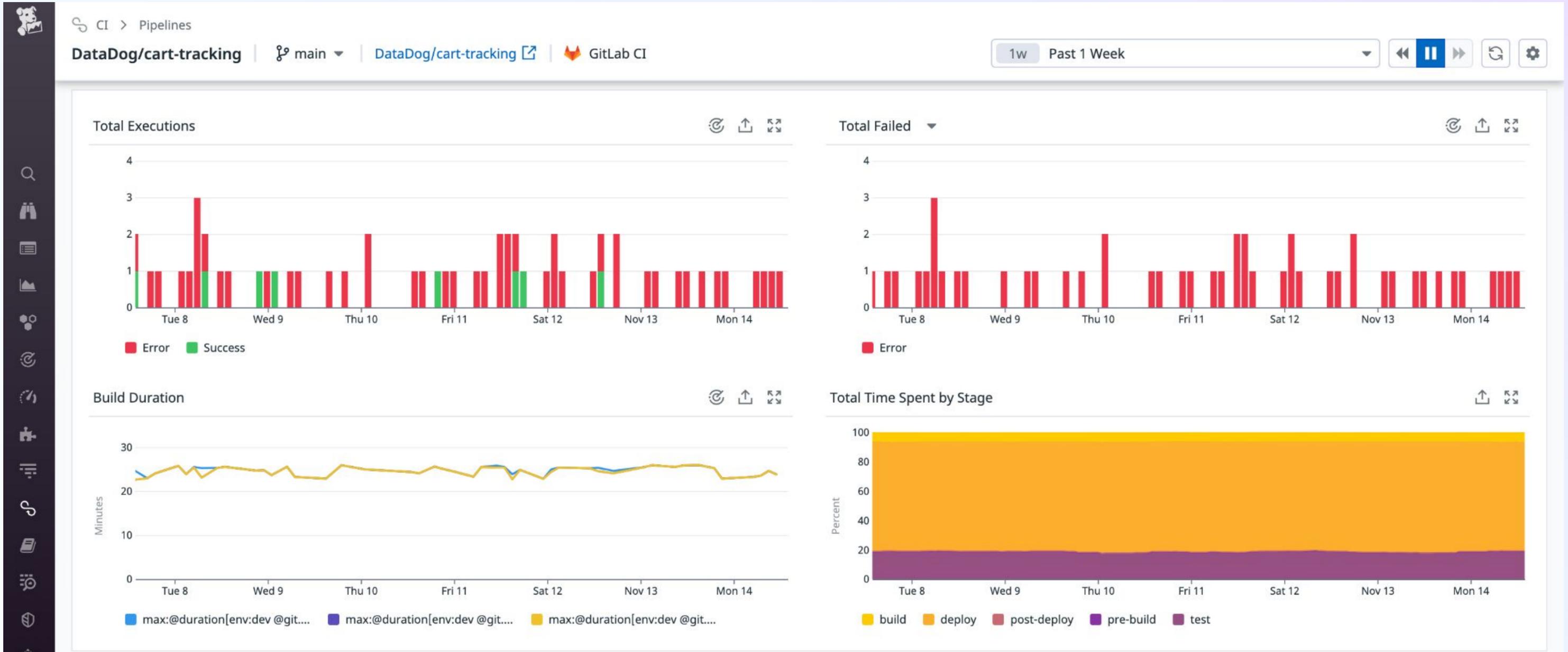
Reduced context
switching

Continuous Integration Pipeline Visibility



Continuous Integration Pipeline Visibility

Granular visibility into your pipelines, stages, & jobs across providers



Stage Summary

STAGE	P50 DURATION	P95 DURATION	EXEC TIME %	FAILURE %
deploy	18 min 14 s	19 min 28 s	74.7%	0%
test	4 min 23 s	4 min 37 s	18.0%	17.0%

Developer Experience & Productivity

Reactive fixes → proactive ownership



Identify, triage, and manage flaky tests



Developer-oriented dashboards & views



Self-service & best practices

Continuous Integration Test Visibility

Track & troubleshoot flaky tests & complex test failures



The dashboard is divided into several sections:

- Flaky Tests:** A bar chart titled "New Flaky Test Runs" shows the number of new flaky runs over time (Wed 6 to Sat 9). A search bar for flaky tests is present.
- TEST RUNS:** A list of 21 test runs with their durations and status (pass/fail).
- Failed Test Trace:** A detailed trace for the failed test "Test: DEMO_Factor_New_life_short_'OK'_response". It shows a flame graph with various spans like "test v8/Everybody_Security.DEMO_Factor_New_life_short_'OK'_response", "peace Receive_still_is_a_always_'next'_in_nor_system", "Write http.request", "commercial.whatever POST /Democrat/v2/yeah", "option.request pressure/wind.create_including_v2", "address.request pressure/wind.create_including_v2", "course_answer.unit.call some_food.item.__call__", "won...", "cle...", "ed...", "skill.b...", "lawyer...", "get.him.training_call", "wond...", "clear...", "educ...", "get.him.training_call", "public...", "netwo...".
- Service Performance:** A table showing the percentage of execution time for various services.
- Span Tags:** A section showing the span tags for the failed test, including "ci" and "job".

Service	% Exec Time
web-server-90	50.2%
api-server-83	29.3%
database-20	7.81%
shopist	5.74%
auth-service-28	2.23%
web-server-40	1.86%
cache-server-69	1.51%
auth-service-4	0.73%
database-44	0.39%
auth-service-91	0.17%
proxy-29	< 0.1%

TEST NAME	AVERAGE	STATUS	TIME	AGE
DEMO_Factor_New_life_short_'OK'_response	2.1 s	Failed	185 ms	3h ago
test_red_knowledge_under_will_him	3.6 s	Passed	3.20 s	3h ago
test_brother_section_nation_who_set	1 min	Passed	3.15 s	3h ago
test_now_himself_exist_board_space	1 min	Passed	3.07 s	3h ago
test_one_economy_raise_social_speak	1 min	Passed	3.27 s	3h ago
		Passed	3.29 s	3h ago
		Passed	3.15 s	3h ago
		Passed	3.07 s	3h ago
		Passed	3.27 s	3h ago
		Passed	3.13 s	3h ago
		Passed	3.29 s	3h ago
		Passed	3.06 s	3h ago
		Passed	3.20 s	3h ago
		Passed	3.15 s	3h ago
		Passed	3.07 s	3h ago
		Passed	3.27 s	3h ago
		Passed	3.29 s	3h ago
		Passed	3.10 s	3h ago
		Passed	3.09 s	3h ago

Flaky Test Management

Manage & triage flaky tests



CI > Tests

main DEFAULT | shopist | DataDog/shopist | GitHub Actions

1w Past 1 Week

Flaky Tests 65

How are flaky tests defined?

New Flaky Test Runs

Known Flaky Test Runs Failed

Search flaky tests

Flaky tests per page: 5

TEST NAME	AVERAGE DURATION	FIRST FLAKED	LAST FLAKED	COMMITTS FLAKED	FAILURE RATE	TREND
DEMO_Factor_New_life_short_"OK"_response v8/Everybody_Security Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	5.20 s	2 years ago -o- 43e0a29	1 hour ago -o- de5cb36	86	3.24%	-26
test_red_knowledge_under_will_him TestWhereCauseSimplySuccessProcess Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	36.7 s	2 years ago -o- 3631def	1 hour ago -o- de5cb36	81	2.91%	-18
test_brother_section_nation_who_set TestWindNationMakeTalkShoulder Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	1 min 37 s	2 years ago -o- 43e0a29	1 hour ago -o- de5cb36	80	3.02%	-26
test_structure_deal_expect_my_event TestCoupleKeepAgainPhysicalPaper Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	1 min 38 s	2 years ago -o- 43e0a29	1 hour ago -o- de5cb36	78	2.61%	-18
test_one_economy_raise_social_speak TestCoupleKeepAgainPhysicalPaper Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	1 min 37 s	2 years ago -o- a3b5df7	1 hour ago -o- de5cb36	78	2.91%	-15

Known Flaky Tests

CI > Tests > main

156b99e shopist DataDog/shopist Buildkite

1mo Past 1 Month

Commit Overview

Add new payment method with bitcoins
modified: laugh.go
removed: everyone.html...

Calvin Little 2 hours ago • Expand Message

156b99e FAILED

TEST STATUS

3 FAILED ✖ 1 KNOWN FLAKY ✖ 1 NEW FLAKY 159 PASSED 0 SKIPPED

TEST WALL TIME

23 min 56 s | 1.4% ↑ than main DEFAULT

Failed Tests 3 ✖ 1

Search failed tests

TEST NAME	AVERAGE DURATION	ERROR DETAILS
test_evidence_receive_environment_democrat_happy TestWhetherMouthParticipantChanceIncluding Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	12.7 ms	AssertionError: Expected size:<1> but was:<0> in: <[]>
✖ test_like_full_paper_congress_they TestWhetherMouthParticipantChanceIncluding Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	1.12 s	AssertionError: Expecting actual not to be empty
DEMO_It_Short_a_user_toward_"OK"_response v4/Society_Support Linux (Unknown Distribution) unknown amd64 gc go1.15.12	90.6 ms	-

New Flaky Tests ✖ 1

How are flaky tests defined? Ignore Flaky Tests

Search new flaky tests

TEST NAME	AVERAGE DURATION	ERROR DETAILS
test_reason_movement_around_for_real_2022_10_05_20 TestWhetherMouthParticipantChanceIncluding Linux Ubuntu Bionic 18.04 amd64 go 1.15.12	362 ms	RuntimeError: Too long to join

My Commits View

CI Commits v Your Commits 4h Past 4 Hours

Search for

Filters Hide 2,094 matching commits | Scoped to git author: nick.adams@datadoghq.com nick@nick-adams.com [Manage](#) Options

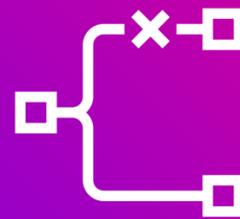
	DATE	COMMIT	BRANCH	REPO	TEST STATUSES	ITR TIME SAVED	LATEST EXECUTIONS
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	0 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	10 FAILED 2 2 NEW	12 min	3 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	0 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	0 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	0 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	0 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	No Associated Pipelines
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	No Associated Test Services		0 FAILED
<input checked="" type="checkbox"/>	Nov 21 10:25AM	470d59b	branch-name	Datadog	0 FAILED 0 NEW	12 min	0 FAILED

Code & Release Quality

Scaling fast, but with confidence



Catch errors & vulnerabilities in development



Gate workflows based on signals



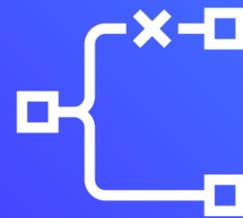
Increase speed & stability of pipelines & tests

Intelligent Test Runner

Speed up time to market by running only the tests impacted by a code change and skip the rest



Increase developer experience via faster feedback loops



Accelerate software delivery with fewer broken CI pipelines



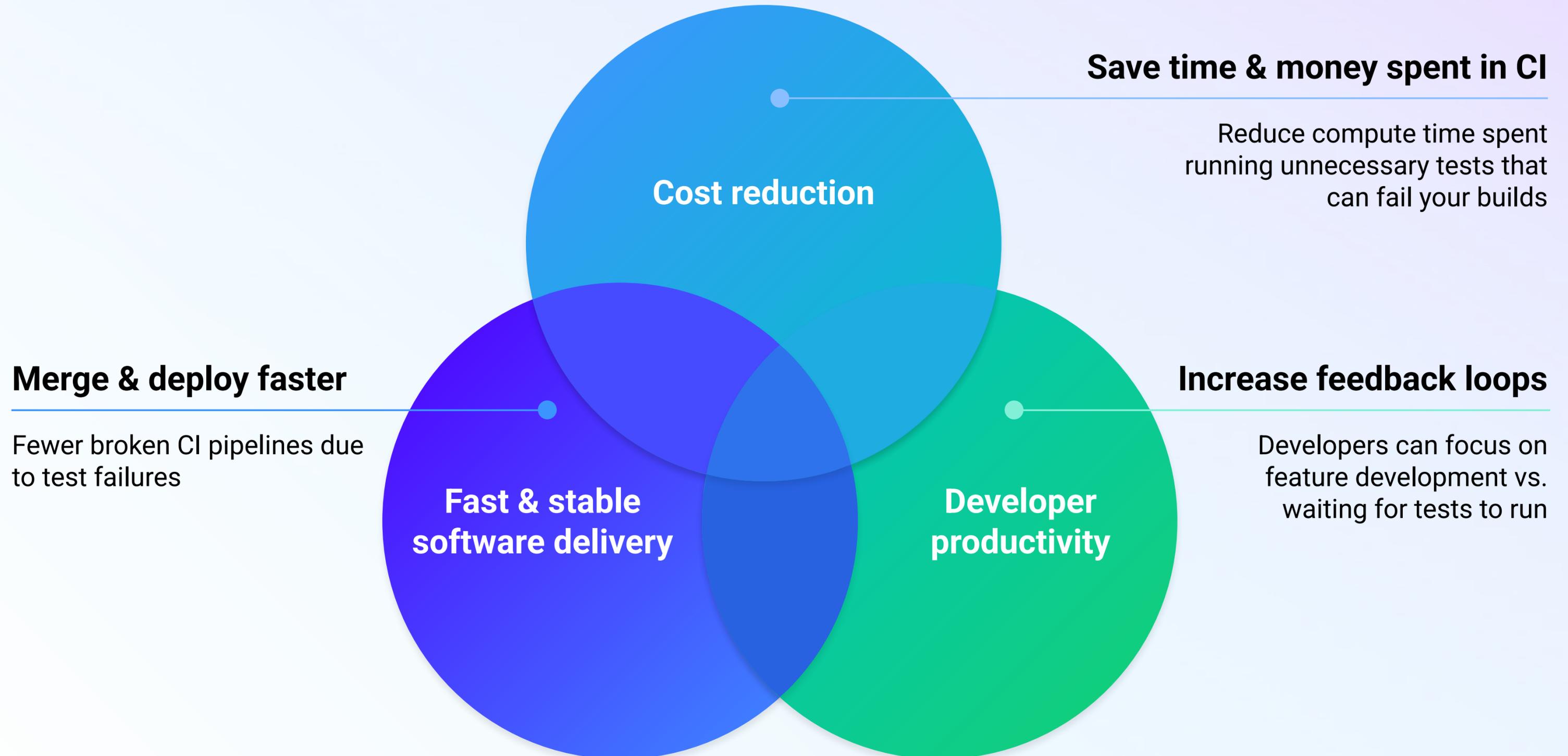
Reduce time and costs spent in CI

Intelligent Test Runner - How does it work?



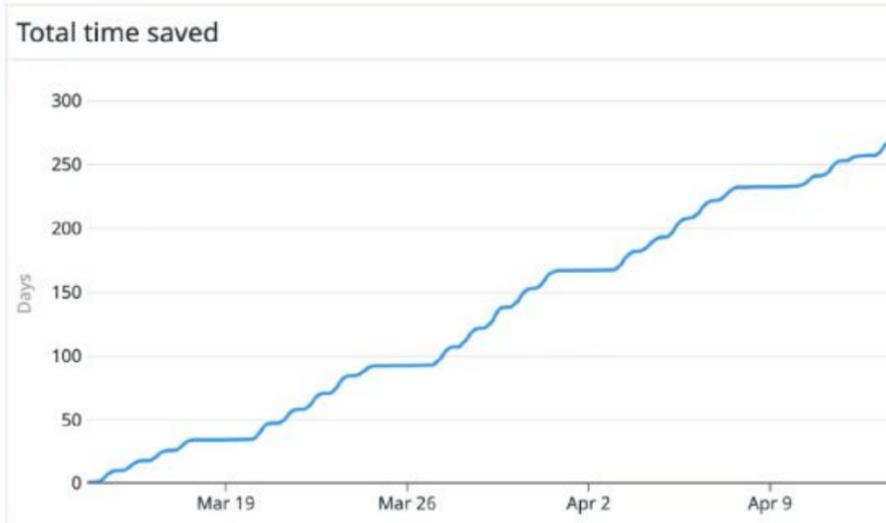
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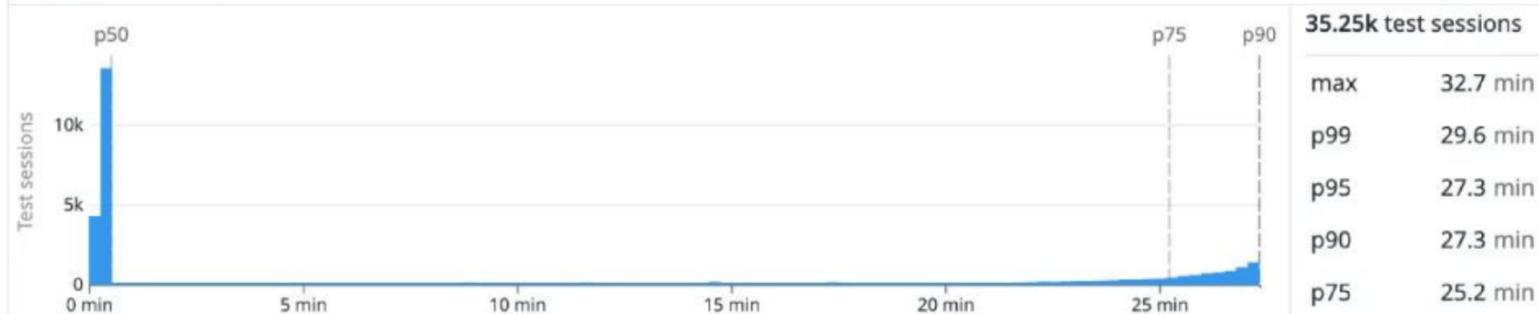


Time Saved by Tests Skipped

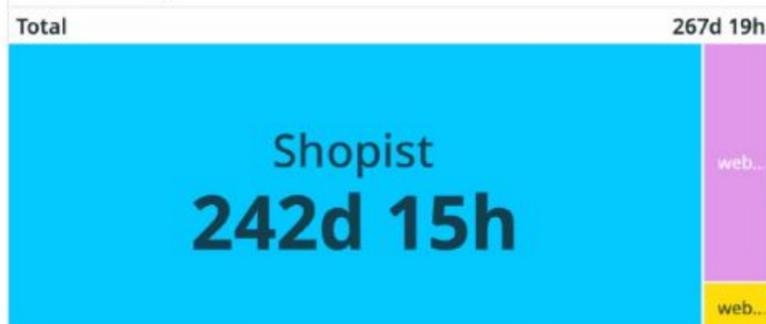
Total time saved
267.78
days



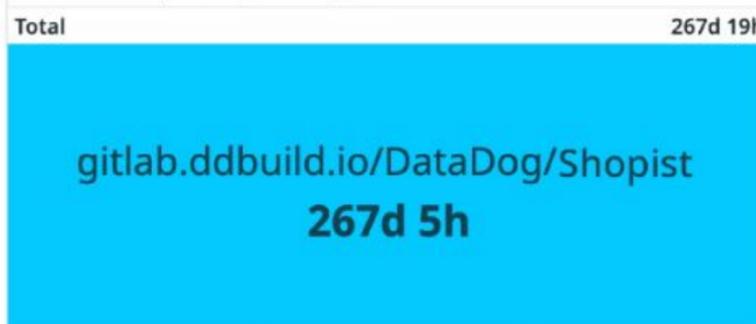
Time saved distribution



Time saved per Test Service



Time saved per Repository



Intelligent Test Runner

Intelligent Test Runner is Datadog's test impact analysis solution. Reduce your time spent testing by 50-98% by only running tests relevant to the code changed.

More

Intelligent Test Runner Usage

Repositories using ITR

7

Test Services using ITR

9

% Test Services using ITR

21.31%

Git Authors using ITR

534

% Git Authors using ITR

28.79%

Commits using ITR

17.21k

% Repositories using ITR

14.89%

% Commits using ITR

22.55%

List Map

Group by Select value

Ownership Find Service Owners
 Reliability Evaluate Operational Health
 Performance Monitor Application Performance
 Security Improve Security Posture
 Costs Optimize Cloud Spend
 Delivery Streamline Development Lifecycle
 Discover services with USM

My Teams
Security Vulnerabilities 3 services
 Attack Exposure 6 services
 Breached SLOs 3 services
 No One On-Call 127 services

Hide Controls
env:dev 128 services
 Scope APM data to: cluster-name:*

SERVICE OVERVIEW

Type

- Web 38
- DB 12
- Cache 5
- Function 1
- Spark 0
- Job 0
- Custom 72
- Browser 0
- Mobile 0

Telemetry Type

Filter 10 values

- Distributed Tracing 97
- Universal Service ... 48
- Infrastructure Mon... 44
- Network Performa... 41
- Log Management 93
- Real User Monitori... 1
- Continuous Profiler 30

TYPE	SERVICE	CODE VIOLATIONS	ASSOCIATED PIPELINES	AVERAGE BUILD DURATION	BUILD SUCCESS RATE	LAST EXECUTION
★	ad-server JS	9 WARNING +6	test_and_deploy_mark_b	20 min 9 s	100% 1 of 1	SUCCESS 28m ago
☆	ad-auction JS	15 Code Violations		20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	ad-auction-mongodb JS	0 ERROR 9 WARNING 6 NOTICE 0 INFO		20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	event-processor			20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	event-intake	0 Error 1 WARNING 6 NOTICE 0 Info		20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	automatic-trader			20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	notification-service	0 Error 8 WARNING 0 Notice 0 Info		20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	fax-service			20 min 9 s	100% 1 of 1	SUCCESS 28m ago
☆	emailer			20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	email-service	0 Error 0 Warning 0 Notice 0 Info		20.0 s	75% 6 of 8	SUCCESS 11m ago
☆	sms-service	0 Error 0 Warning 0 Notice 0 Info		20 min 9 s	100% 1 of 1	SUCCESS 28m ago
☆	news-crawler			20.0 s	75% 6 of 8	SUCCESS 11m ago

15 Code Violations [View All](#)

0 ERROR 9 WARNING 6 NOTICE 0 INFO

Design Related

0 Error 1 WARNING 6 NOTICE 0 Info

Security

0 Error 8 WARNING 0 Notice 0 Info

Performance

0 Error 0 Warning 0 Notice 0 Info

Error-Prone

0 Error 0 Warning 0 Notice 0 Info

Service Catalog Explore Setup & Config Scorecards BETA Resour

List Map

Ownership Find Service Owners **Reliability** Evaluate Operational Health **Performance** Monitor Application Performance **Security** Improve

> My Teams Security Vulnerabilities 27 services Attack Exposure 7 services

Hide Inferred Services Hide Controls env:dev 139 services Scope APM da

SERVICE OVERVIEW

Type

- Web 41
- DB 13
- Cache 6
- fx Function 5
- Spark 1
- Job 0
- Custom 73
- Browser 0
- Mobile n

Telemetry Type

- Distributed Tracing 110
- Universal Service ... 46
- Infrastructure Mon... 44
- Network Performa... 40
- Log Management 101
- Real User Monitori... 0
- Continuous Profiler 30
- Database Monitori... 6
- Data Stream Moni 14

★ **TYPE** **SERVICE**

- ★ **ad-auction JS**
- ★ **ad-auction-redis JS**
- ★ **ad-server JS**
- ★ **ad-auction-mongodb JS**
- ★ **event-processor**
- ★ **event-intake**
- ★ **email-service**
- ★ **emailer**
- ★ **automatic-trader**
- ★ **notification-service**
- ★ **news-crawler**
- ★ **fax-service**
- ★ **sms-service**

☆ **ad-server JS** View Service Page ✕

Ownership Reliability Performance Security Costs NEW **Delivery NEW**

CI Pipeline Visibility

PIPELINE	AVERAGE BUILD DURATION	SUCCESS RATE	LAST EXECUTION	STAGES
test_and_deploy_mark_b	20 min 44 s	92% 46 of 50	SUCCESS 3h ago	
test_and_deploy_mark	20 min 45 s	82% 37 of 45	SUCCESS 39m ago	
test_and_deploy_mark	20 min 38 s	80% 59 of 74	SUCCESS 8h ago	

Static Analysis | Code Violations: 0 ERROR 9 WARNING 2 NOTICE 0 INFO

STATUS	DATE	RESULT
NOTICE	Dec 6, 10:48 am	JS Unexpected unnamed function. datadog-static-analyzer -o- 1fa0e9e Service: ad-server Env: ci Rule: javascript-code-style/func-names - Enforce named function expressions Source: ad-server/src/log-config.js
NOTICE	Dec 6, 10:48 am	JS Unexpected unnamed function. datadog-static-analyzer -o- 1fa0e9e Service: ad-server Env: ci Rule: javascript-code-style/func-names - Enforce named function expressions Source: ad-server/src/tracer.js
WARNING	Dec 6, 10:48 am	JS Unexpected console statement. datadog-static-analyzer -o- 1fa0e9e Service: ad-server Env: ci Rule: javascript-best-practices/no-console - Avoid leaving console debug statements Source: ad-server/src/cache.js
WARNING	Dec 6, 10:48 am	JS Security misconfiguration detected datadog-static-analyzer -o- 1fa0e9e Service: ad-server Env: ci Rule: javascript-express/reduce-server-fingerprinting - Server fingerprinting misconfiguration Source: ad-server/src/app.js

Setup Guidance **Definition** Dashboards Dependencies Tracing Configuration Libraries Scorecards

Edit in GitHub Added via: Github Integration Last updated: Nov 2, 2023. 3:49 pm

Static Analysis

Detect bad code before it causes an incident or potential outage

The screenshot displays the 'Static Analysis Results' page in the CI Static Analysis interface. At the top, there's a search bar and a 'Visualize as' menu with options for List, Timeseries, Top List, and Table. A timeline chart shows event frequency from August 1st to August 7th. Below the chart, a table lists 792 events found, with the first few rows showing various error and warning messages.

STATUS	DATE	RESULT	Source
ERROR	Aug 7, 4:16:42 pm	timeout not defined datadog-static-analyzer -O- 5923225	api.py
NOTICE	Aug 7, 4:16:42 pm	string he discouraged datadog-static-analyzer -O- 5923225	api.py
WARNING	Aug 7, 4:16:42 pm	Generic Exception, use a specific error to catch datadog-static-analyzer -O- 5923225	api.py
ERROR	Aug 7, 4:16:42 pm	potential SQL injection datadog-static-analyzer -O- 5923225	database.py
NOTICE	Aug 7, 4:16:42 pm	use snake_case and not camelCase datadog-static-analyzer -O- 5923225	database.py
NOTICE	Aug 7, 4:16:42 pm	else is not necessary since the if clause has a return datadog-static-analyzer -O- 5923225	database.py
ERROR	Aug 7, 3:16:55 pm	timeout not defined datadog-static-analyzer -O- 5923225	api.py

Static Analysis

The screenshot displays the Datadog CI Static Analysis interface. On the left, a sidebar contains navigation icons and a search bar. The main dashboard features a bar chart showing event counts over time (Sep 3 to Fri 15). Below the chart is a search bar and a list of filters for 'CORE', 'Service', 'Env', 'STATIC ANALYSIS', 'Result Status', and 'Rule ID'. The 'Result Status' filter is expanded, showing counts for Error (1,01k), Warning (505), and Notice (1,51k). The 'Rule ID' filter is also expanded, listing various rules such as 'python-security/varia...' (507) and 'python-best-practices/...' (505).

The central panel displays a table of events with columns for STATUS, DATE, and RESULT. The table shows several events, including an ERROR for 'timeout not defined', a NOTICE for 'string he discouraged', a WARNING for 'Generic Exception, use a specific error to catch', and an ERROR for 'potential SQL injection'.

The right panel provides a detailed view of the 'potential SQL injection' error. It includes the following information:

- On:** Sep 23, 5:15:30 pm 9 days ago
- Service:** static-analysis-demo-python
- Env:** github
- SOURCE:** database.py
- TOOL:** datadog-static-analyzer
- RULE:** python-security/variable-sql-statement-injection
- COMMIT:** 592322546ec9d858e8c5516c100c5811...
- BRANCH:** main
- REPOSITORY:** github.com/DataDog/demo-static-anal...

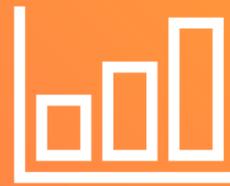
The detailed view also shows the source code snippet where the violation occurred:

```
17 def get_product_by_id(db_connection, product_id):
18     cursor = db_connection.cursor()
19     res = cursor.execute(f"SELECT id, title from products WHERE id={product_id}")
20     data = res.fetchone()
21     if data is not None:
```

Below the code, there is a 'Full Description' section that reads: 'Check for declarations of variables for a SQL statement where we have potential SQL injections.' A note states: 'Note: You can dismiss this violation by commenting `no-dd-sa` above the line you wish to have ignored by Static Analysis'.

Measure & Accelerate Software Delivery

Establish performance baselines and track progress



Identify baselines from
pre-production to
production



Set goals & define KPIs
for software delivery

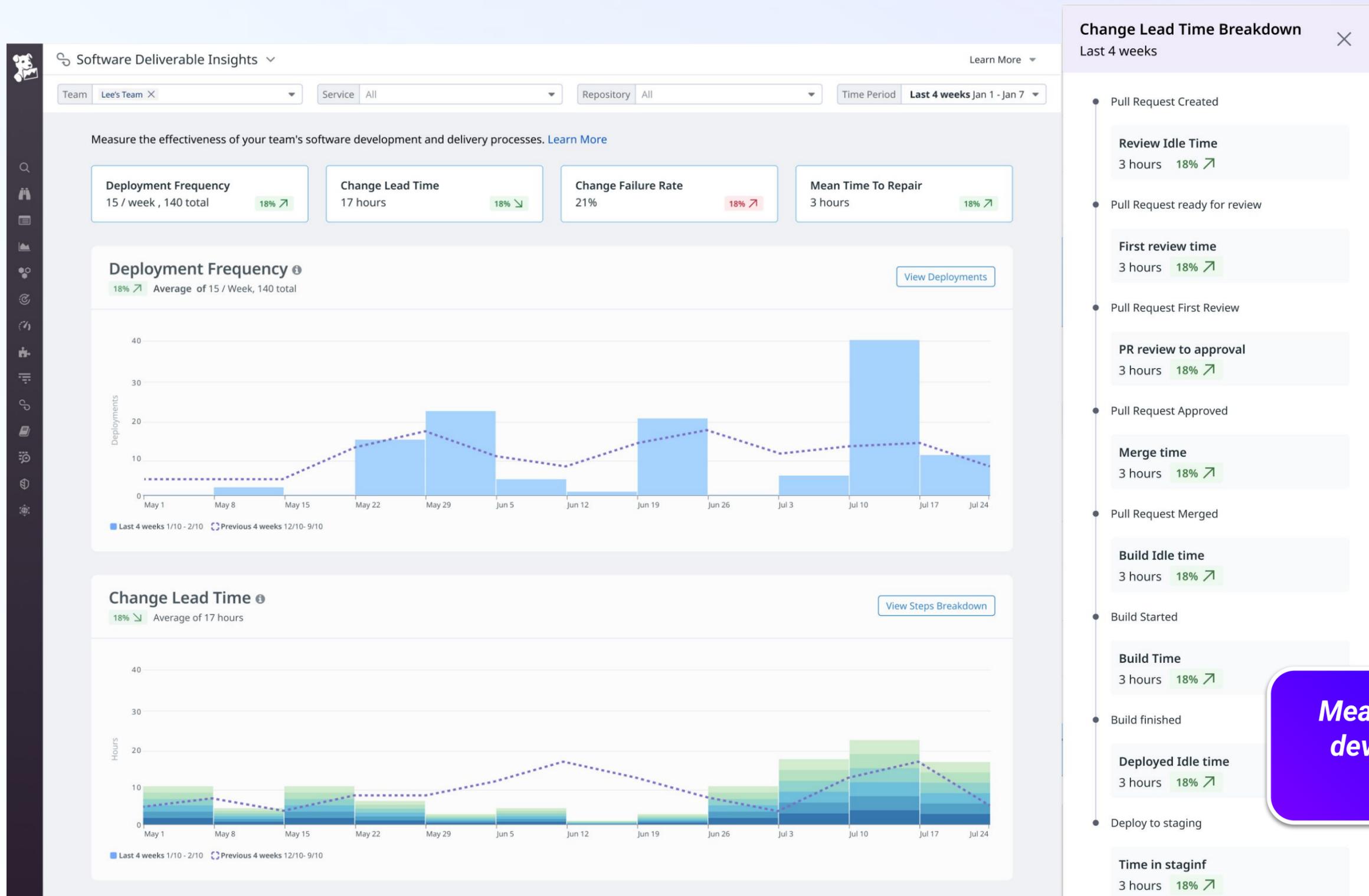


Track and prove results
across the organization

Software Delivery Performance Measures

- Deployment frequency
- Change lead time
- Change failure rate
- Failed deployment recovery time (MTTR)

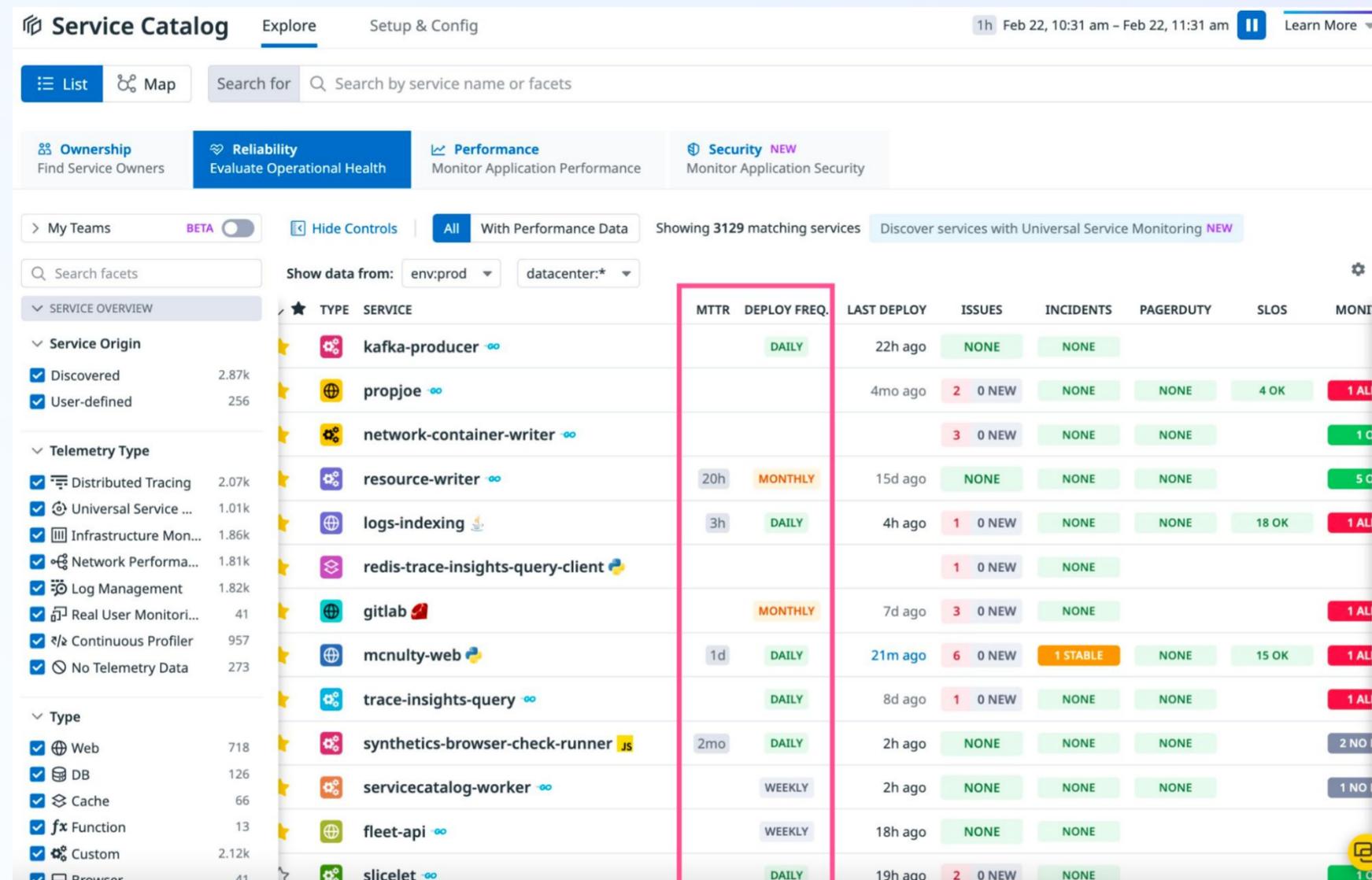
DORA Metrics



Measure & set goals around development velocity with DORA metrics

DORA Metrics

- Additional data source(s) to derive DORA Metrics
- Will be able to tie DORA metrics to product development areas easier: repositories, branches, pipelines, test services, teams



The screenshot shows the Service Catalog interface with a table of services. A pink box highlights the columns: MTTR, DEPLOY FREQ., LAST DEPLOY, ISSUES, INCIDENTS, PAGERDUTY, SLOS, and MONITORING. The table lists various services such as kafka-producer, propjoe, network-container-writer, resource-writer, logs-indexing, redis-trace-insights-query-client, gitlab, mcnulty-web, trace-insights-query, synthetics-browser-check-runner, servicecatalog-worker, fleet-api, and slicelet.

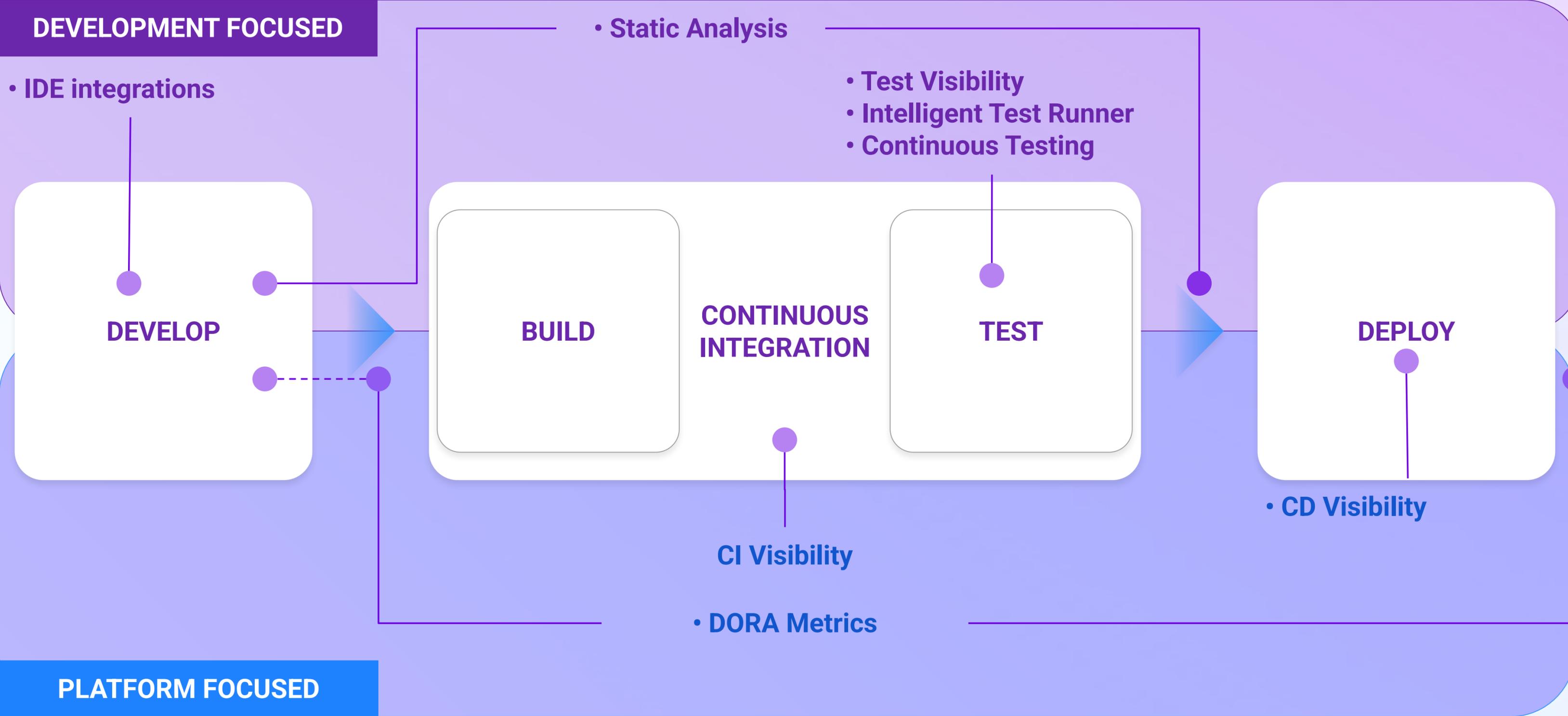
TYPE	SERVICE	MTTR	DEPLOY FREQ.	LAST DEPLOY	ISSUES	INCIDENTS	PAGERDUTY	SLOS	MONITORING
	kafka-producer		DAILY	22h ago	NONE	NONE			
	propjoe			4mo ago	2 0 NEW	NONE	NONE	4 OK	1 AL
	network-container-writer				3 0 NEW	NONE	NONE		1 C
	resource-writer	20h	MONTHLY	15d ago	NONE	NONE	NONE		5 C
	logs-indexing	3h	DAILY	4h ago	1 0 NEW	NONE	NONE	18 OK	1 AL
	redis-trace-insights-query-client				1 0 NEW	NONE			
	gitlab		MONTHLY	7d ago	3 0 NEW	NONE			1 AL
	mcnulty-web	1d	DAILY	21m ago	6 0 NEW	1 STABLE	NONE	15 OK	1 AL
	trace-insights-query		DAILY	8d ago	1 0 NEW	NONE	NONE		1 AL
	synthetics-browser-check-runner	2mo	DAILY	2h ago	NONE	NONE	NONE		2 NO
	servicecatalog-worker		WEEKLY	2h ago	NONE	NONE	NONE		1 NO
	fleet-api		WEEKLY	18h ago	NONE	NONE			
	slicelet		DAILY	19h ago	2 0 NEW	NONE			1 C

Performance level	Deployment frequency	Change lead time	Change failure rate	Failed deployment recovery time	% of respondents
Elite	On demand	Less than one day	5%	Less than one hour	18%
High	Between once per day and once per week	Between one day and one week	10%	Less than one day	31%
Medium	Between once per week and once per month	Between one week and one month	15%	Between one day and one week	33%
Low	Between once per week and once per month	Between one week and one month	64%	Between one month and six months	17%

State of DevOps Report 2023

cloud.google.com/devops/state-of-devops

Visibility across your SDLC, in one place



BUSINESS DRIVERS

This is one of the largest multinational fast food chains in the world, operating digitally and in tens of thousands of locations worldwide.

Delivering fast, easy, and performant experience to tens of millions of daily customers and crew members is critical to the success of their business. The company needed a way to optimize its CI/CD process and ensure that issues are caught quicker and new features are released faster.

DATADOG CAPABILITIES



CI Pipeline
Visibility



Log Management



CI Test Visibility



Containers



Food & Beverages



Global



Tens of Millions
Daily Customers

CHALLENGE

Limited observability hindering releases Lack of ability to detect CI performance issues such as regressions in Wall Time

Tool Sprawl Different teams working with different CI tools and standards led to context switching and poor collaboration

Slow, manual investigations Process to identify exact problem area and root cause is time-consuming, delaying releases

BUSINESS DRIVERS

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DATADOG CAPABILITIES



CI Pipeline
Visibility



Log Management



CI Test Visibility



Containers



Food & Beverages



Global



Tens of Millions
Daily Customers

SOLUTION

Deep CI observability This company automatically tracks key metrics indicating the quality of upcoming releases as they proceed through the pipeline and testing process

Unified platform for all Engineering and business stakeholders can track performance of various CI tools in a single view

Fast root cause analysis Engineers are now seamlessly correlating pipeline and test errors and bottlenecks with their associated log and cloud infrastructure data



Datadog's unique CI/CD and test visibility solutions brought production-level observability into our pre-prod environments for the first time in the organization's history



Food & Beverages



Global



Tens of Millions
Daily Customers

RESULTS

This company's engineers at all skill levels can see multiple CI tool readouts in a single view, catch performance regressions and test failures in the bud, and accelerate release cycle & code quality for new features and services



CI tool consolidation

All teams have shared context and visibility into various CI tools



Unified platform

Seamless correlations between pipeline and test regressions to relevant logs and metrics



~200 committers

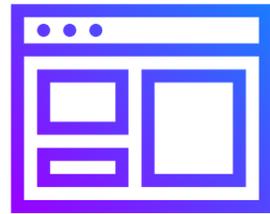
are monitoring their CI pipelines and test to ensure frequent, reliable releases

“
**Teams with shorter code
review times have 50%
better software delivery
performance.**”

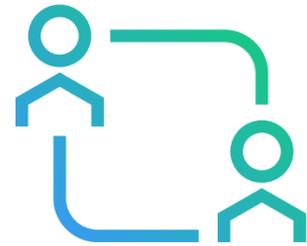
State of DevOps Report 2023

cloud.google.com/devops/state-of-devops

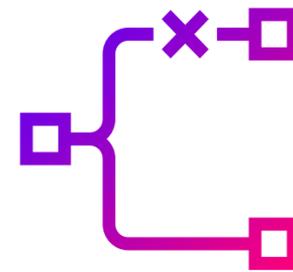
To recap:



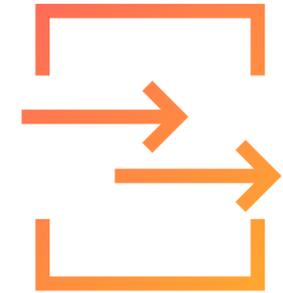
Tooling
consolidation &
automation



Developer
experience &
productivity



Code & release
quality

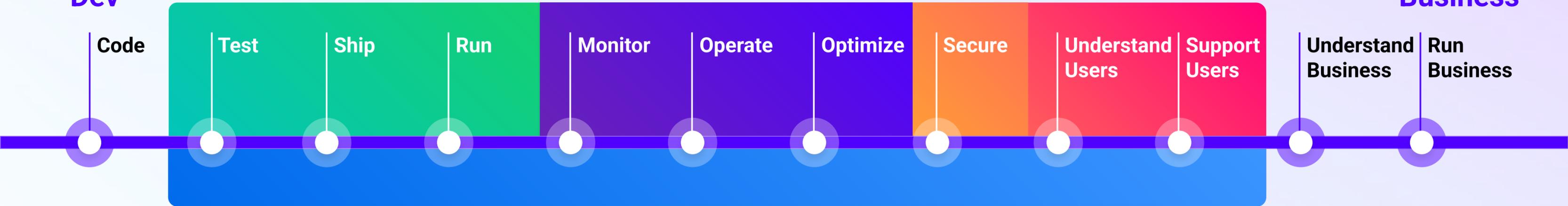


Measure &
accelerate
software delivery



Dev

Business



Software Delivery

- CI Pipeline Visibility
- CD Visibility
- CI Test Visibility
- IDE Integrations
- Intelligent Test Runner
- DORA metrics

Monitor & Operate

- Infra Monitoring
- Network Monitoring
- APM
- Synthetics
- Log Mgmt
- Universal Service Monitoring
- Observability Pipelines

Optimize

- Continuous Profiler
- Database Monitoring
- Data Streams Monitoring
- Cloud Cost Mgmt

Secure

- Cloud Security Mgmt
- Application Security Mgmt
- Cloud SIEM
- Software Composition Analysis
- Sensitive Data Scanner

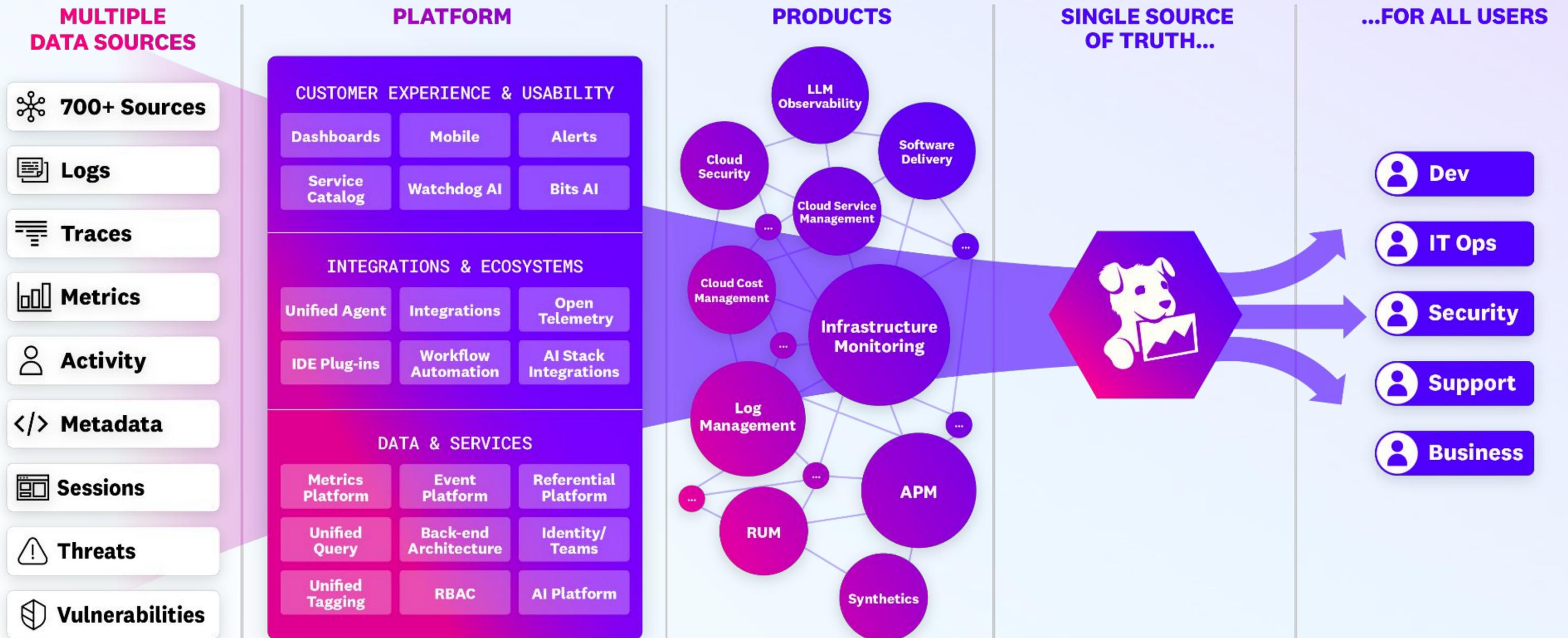
Analyze

- RUM
- RUM Heatmap/Clickmap/Scrollmap
- Mobile App Testing
- Session Replay

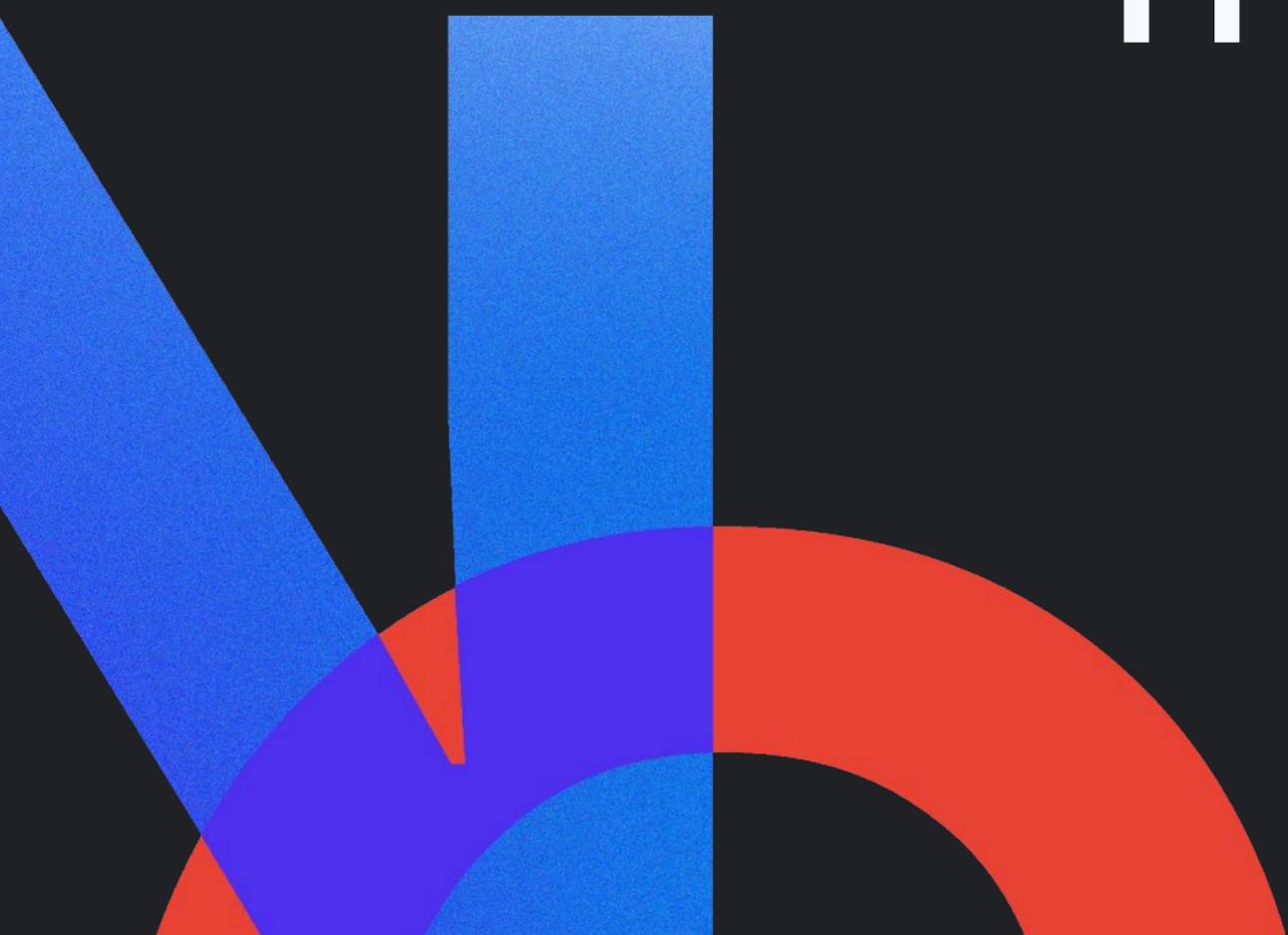
Cloud Service Management

- Incident Management
- Case Management
- Workflow Automation
- App Builder
- Service Catalog
- Resource Catalog

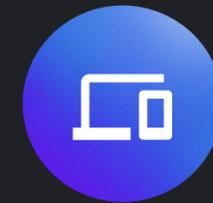
Breaking down silos with our unified platform



Thank you



Continue your Datadog learning journey!



Booth #710

[SEC210](#) - You can only secure what you can see: how observability empowers security

Thur 4/11 9:45-10:30 am

[OPS206](#) - Use Gemini to improve productivity while using Datadog

Thur 4/11 10:15-11:00 am