



Going Backstage with AWS

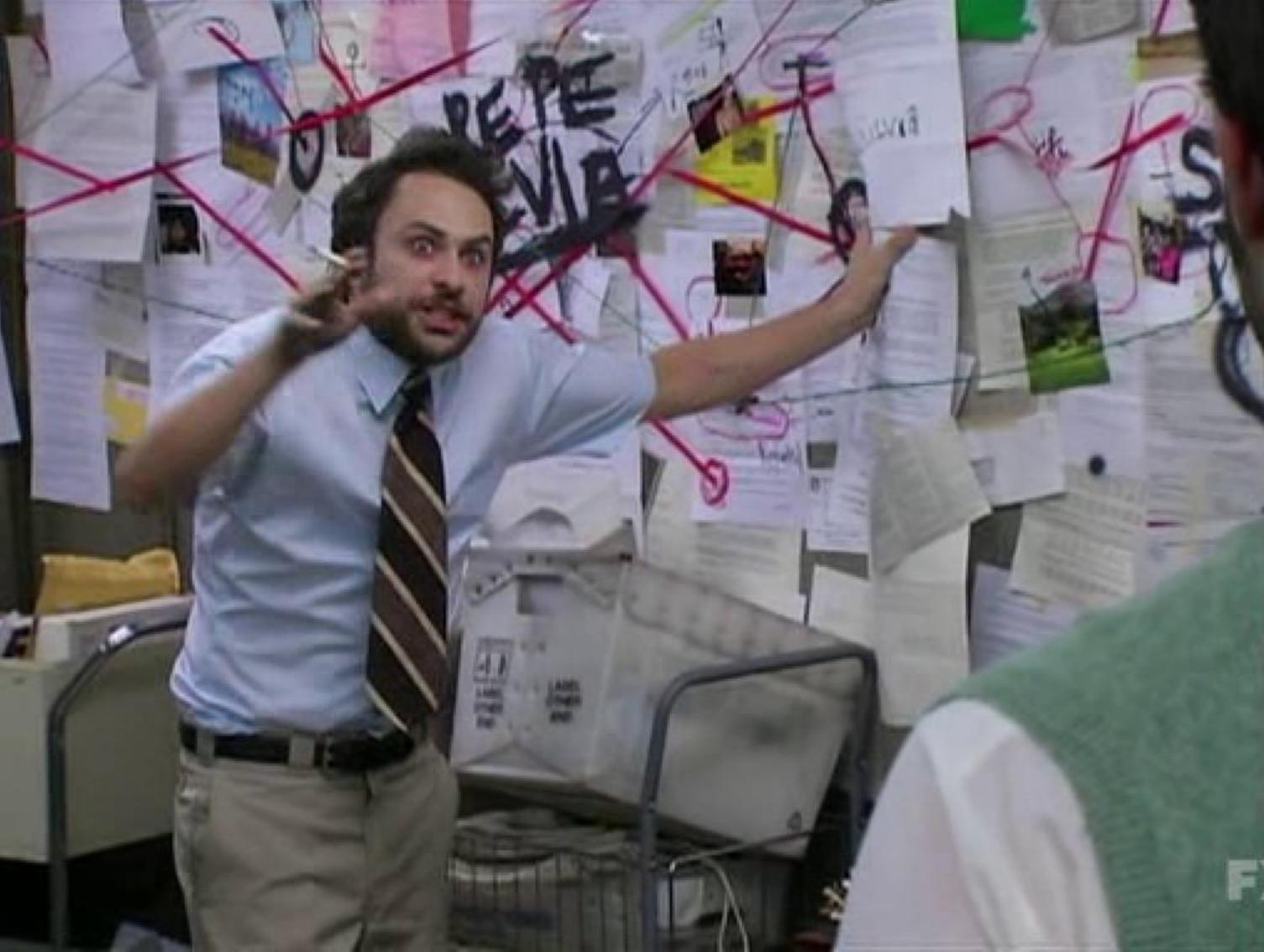
Leveraging Backstage.io to accelerate internal development platforms

Bryan Landes

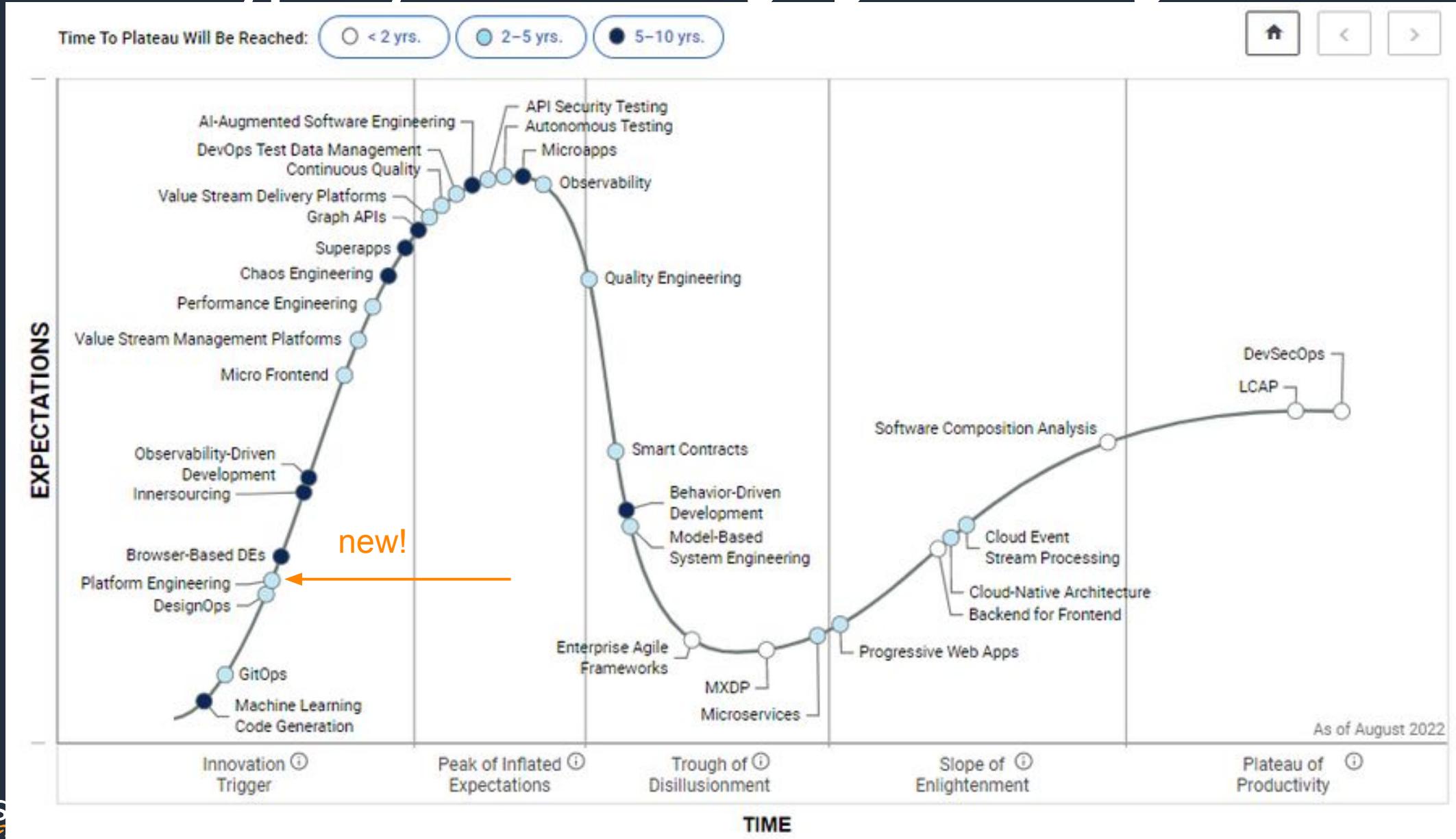
Sr. Global Solutions Architect
AWS

Niall Thomson

Sr Container Specialist



Gartner's Hype Cycle for Emerging Technologies

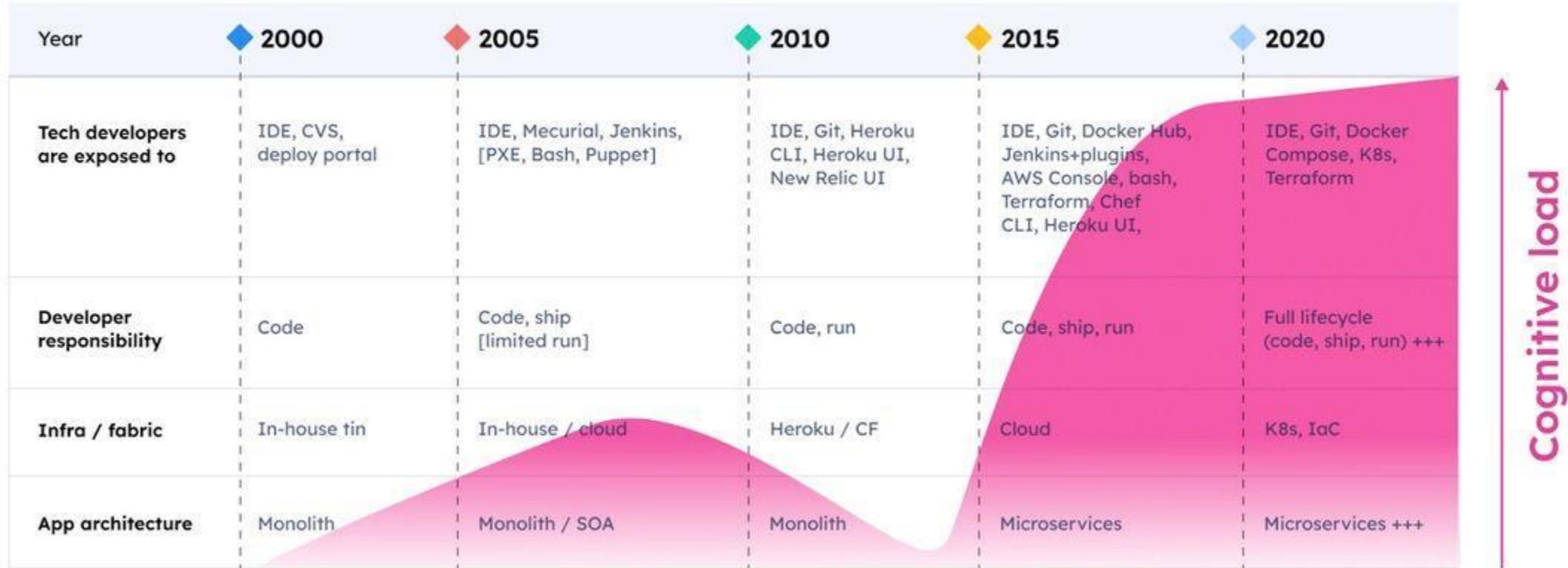


Download the 2023 State of Platform Engineering Report

**Platform Engineering is the DevOps
Differentiator — Learn Why**

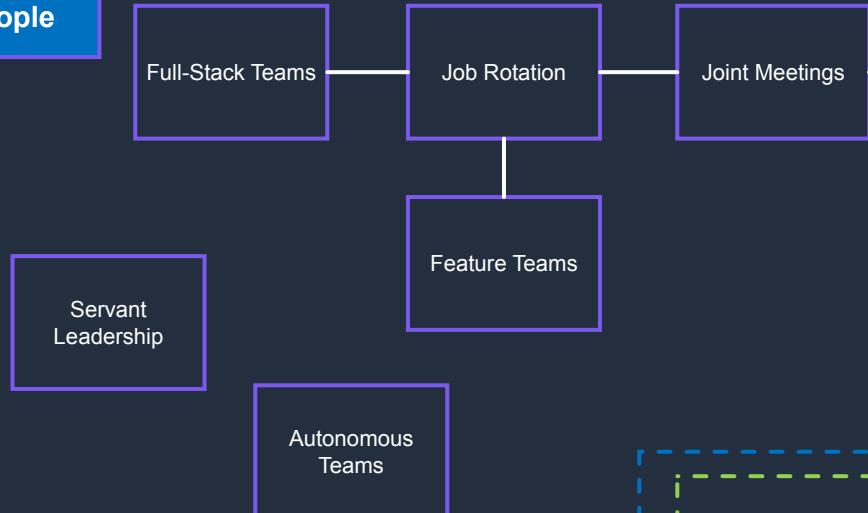


<https://www.puppet.com/resources/state-of-platform-engineering>



DevOps – It's Complicated

People



Culture



Collection Ownership

Never Done

Engineering Culture

Learning Culture

Technology



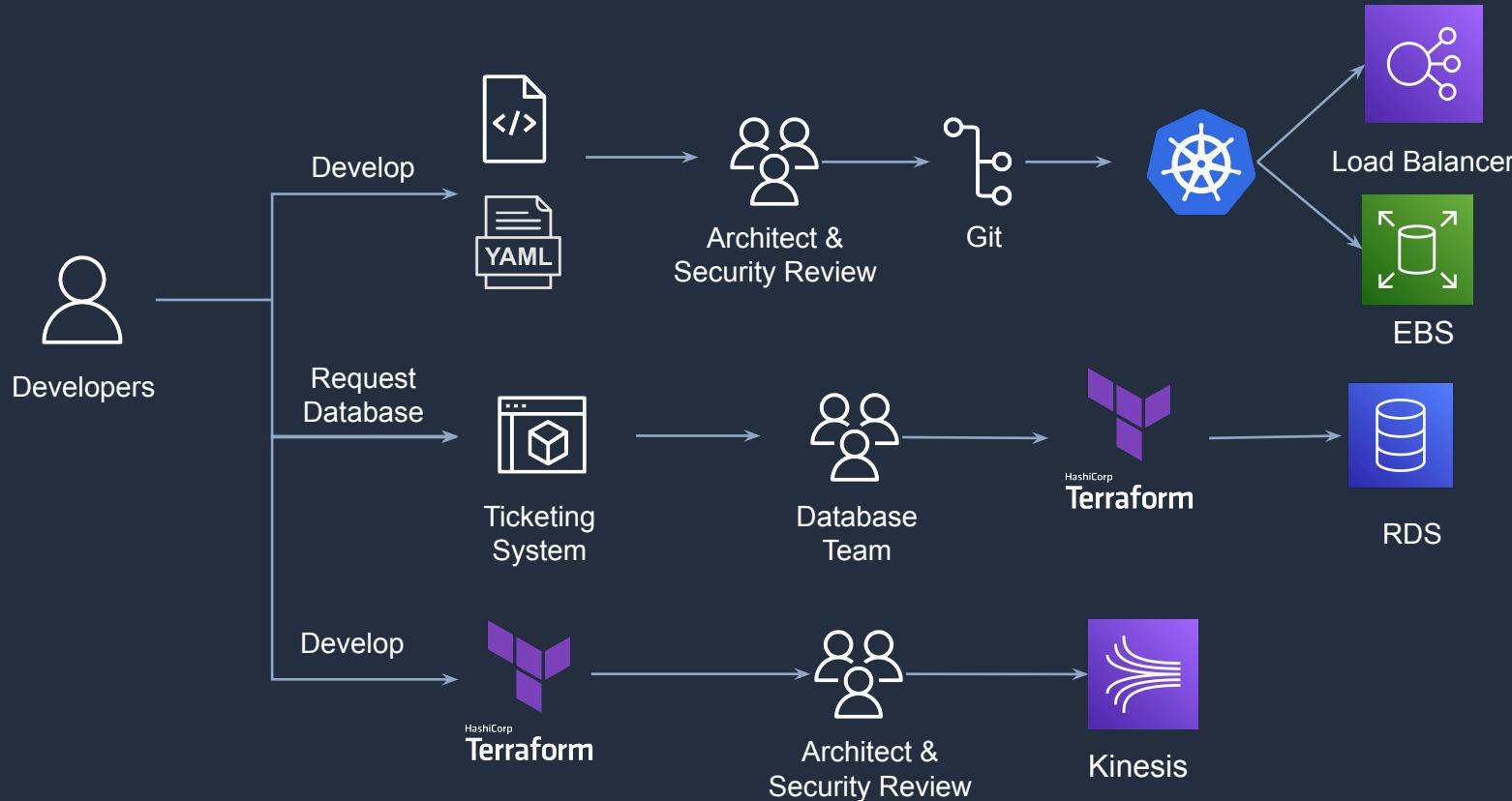
Technology

Technology

Technology

Technology

Disjointed Workflows Add to Cognitive Load and Developer Overhead



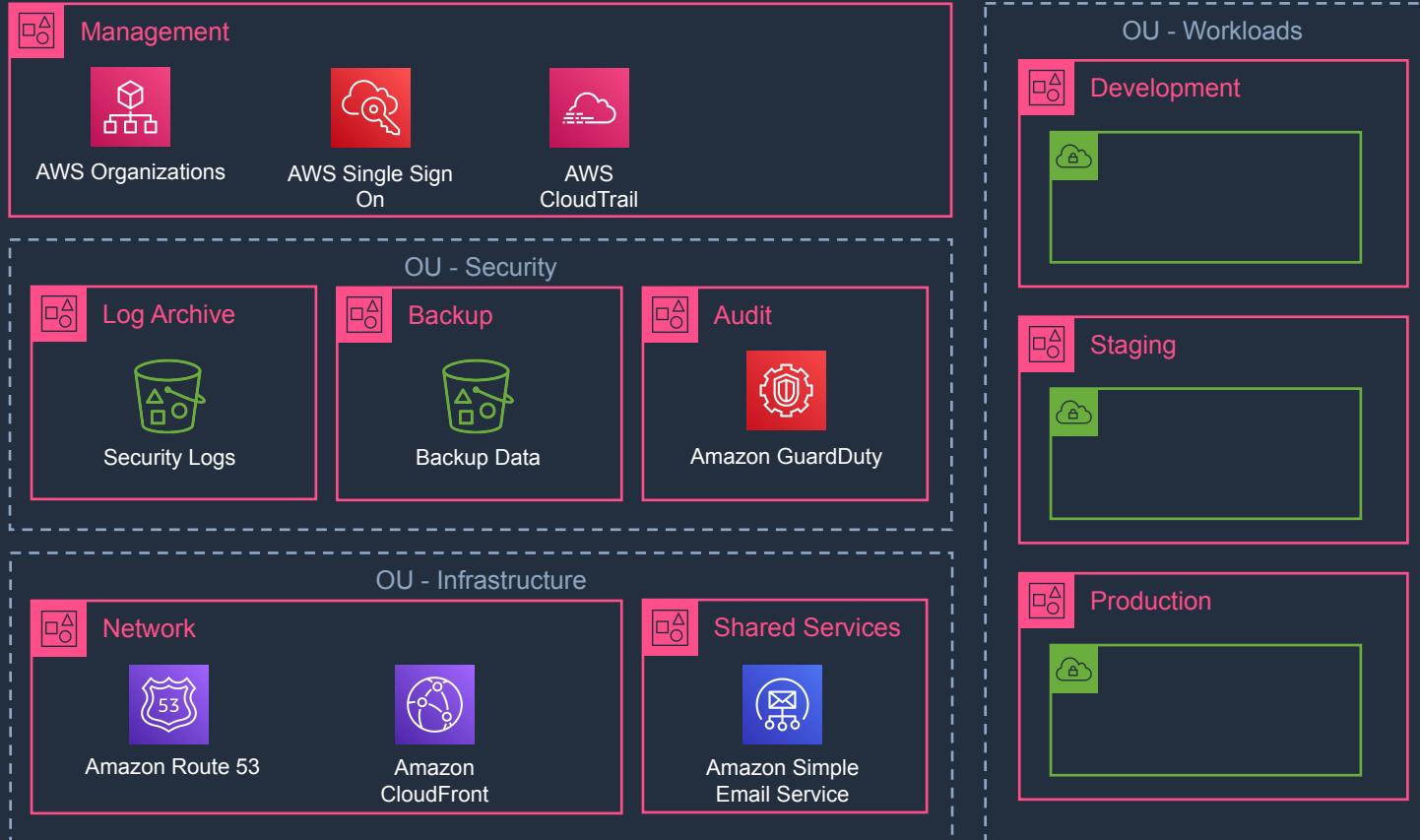
How do you get the state of the entire system?

How do you debug and remediate issues?

How do you pass secrets from one pipeline passed to the other?

How do you tear-down *all* unused resources?

Shared Services Platform or Multi-Account Landing Zone

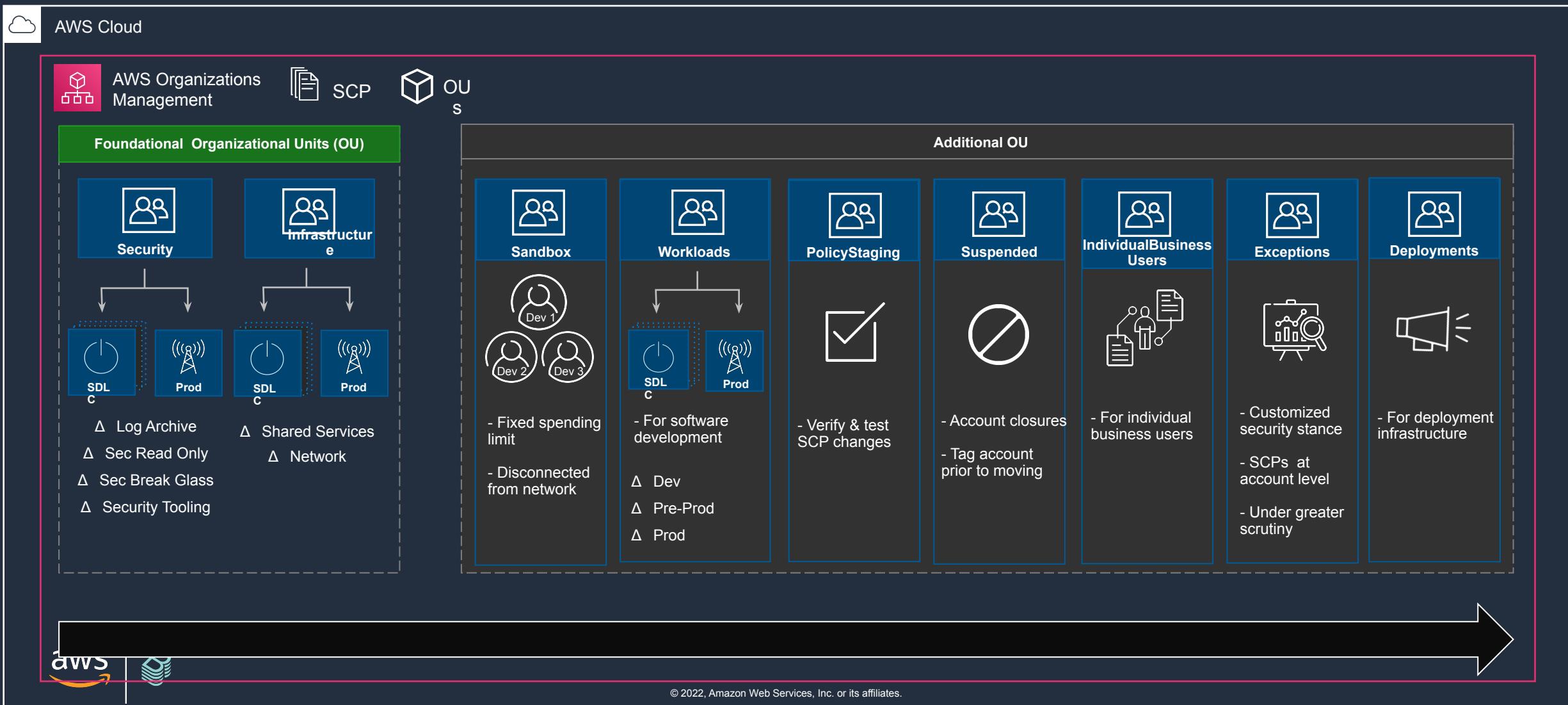


Multi-account setup

- Isolate workloads based on
 - Business outcomes
 - Data sensitivity, compliance
- Limit impact of adverse events
- Distinct security controls
- Improved visibility of costs e.g. SaaS



Multi-account framework



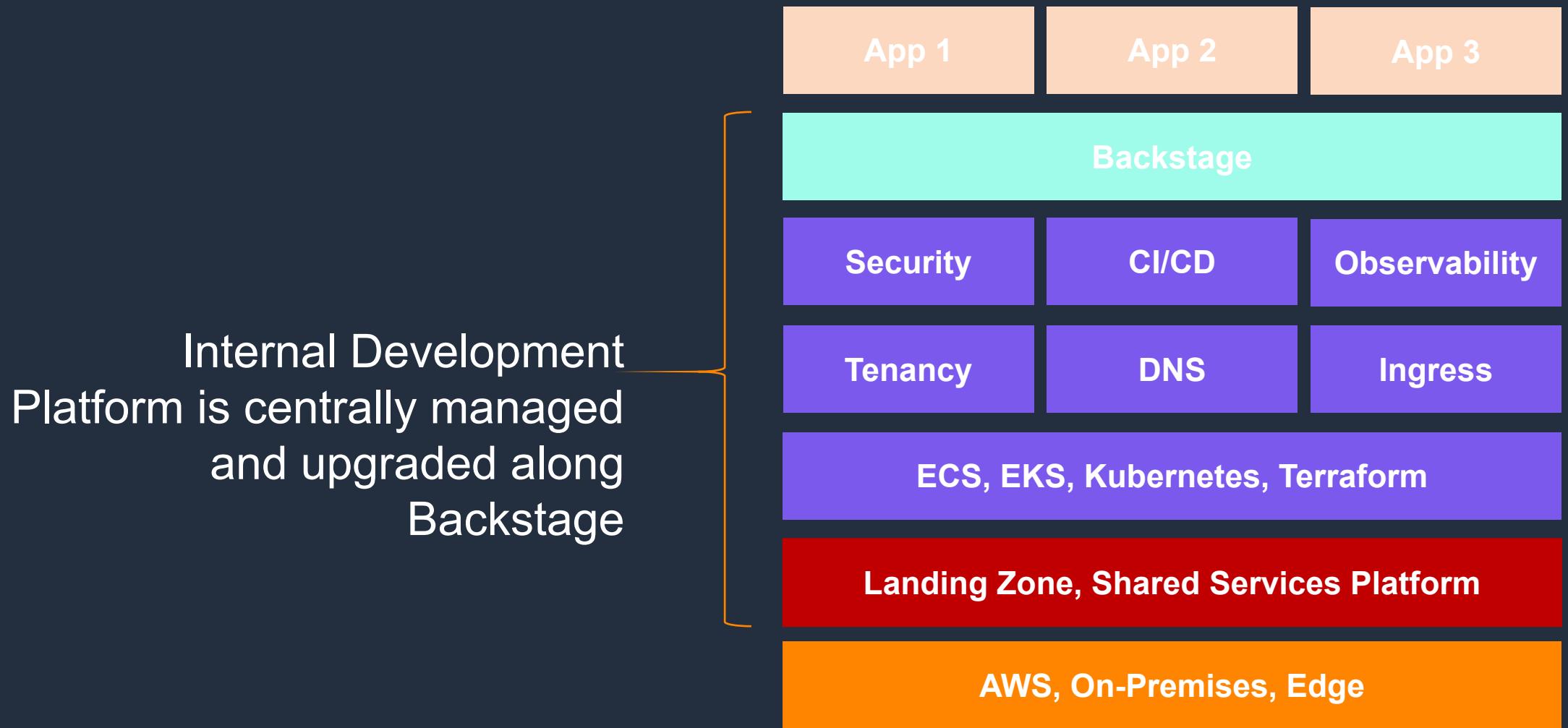
The rise of Internal Development Platforms



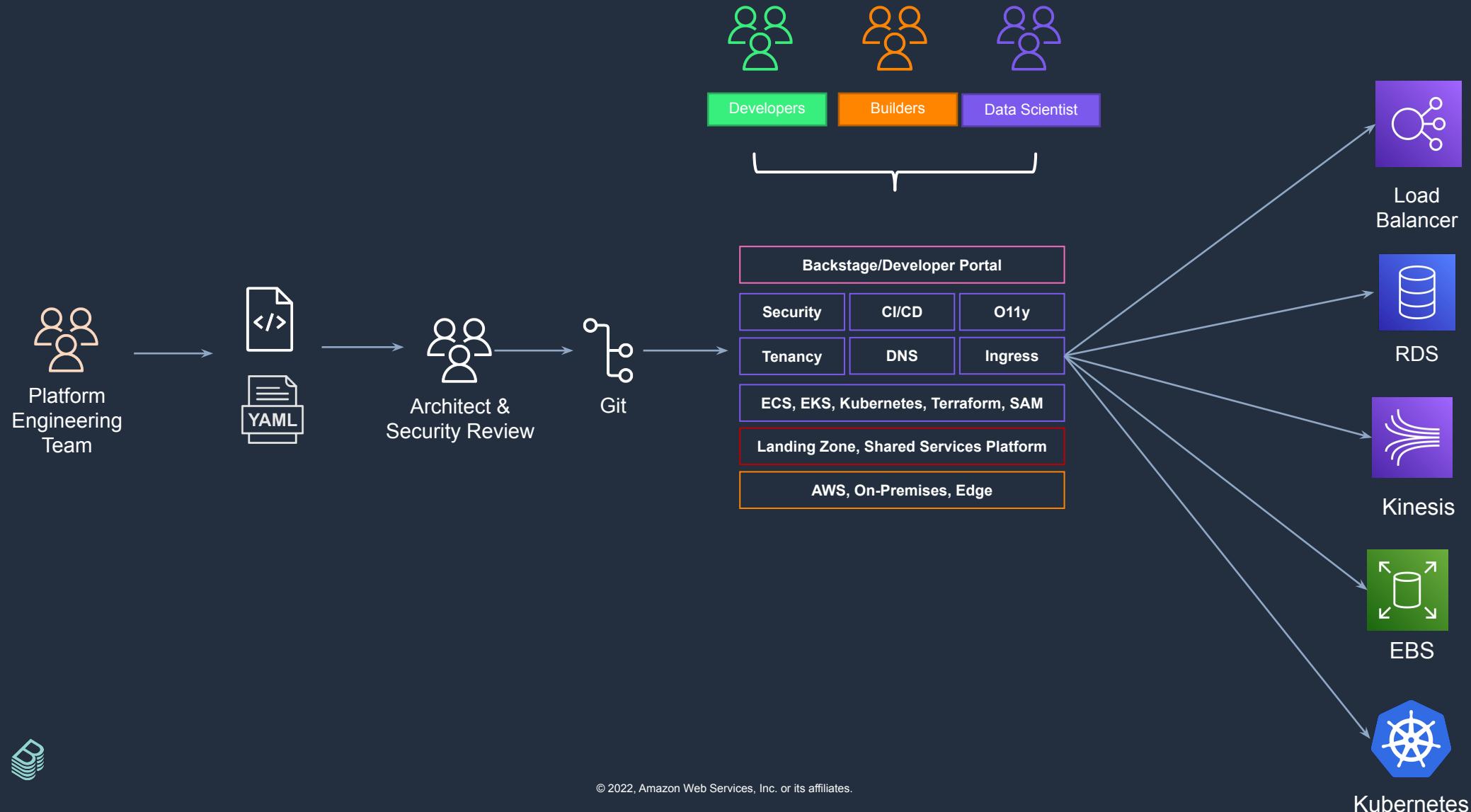
<https://internaldeveloperplatform.org/>

An Internal Developer Platform (IDP) is built by a platform team to build golden paths and enable developer self-service. An IDP consists of many different techs and tools glued together in a way that lowers the cognitive load on developers without abstracting away context and underlying technologies. Following best practices, platform teams treat their platform as a product and build it based on user research, maintaining and continuously improving it

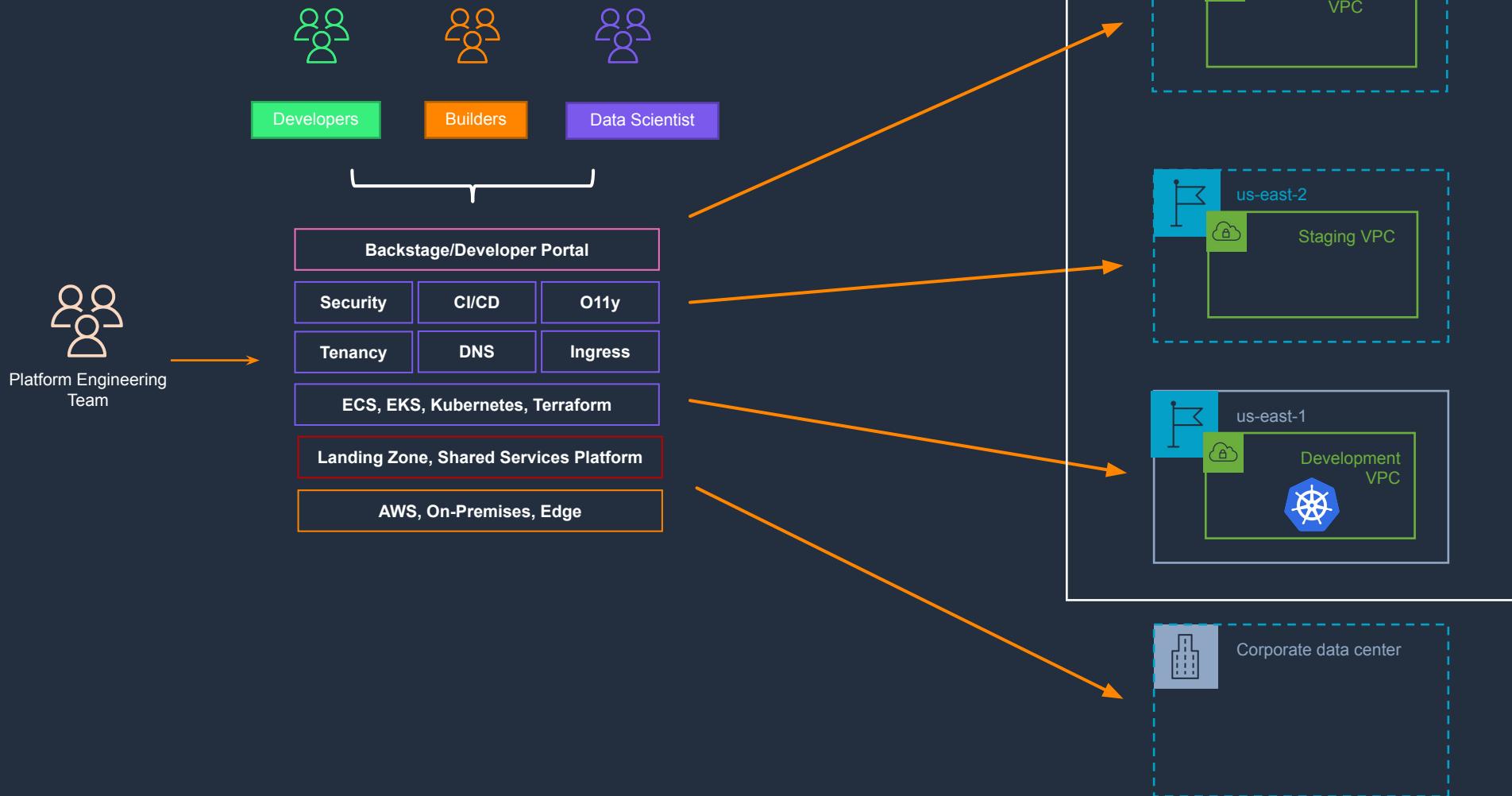
What does the platform look like?



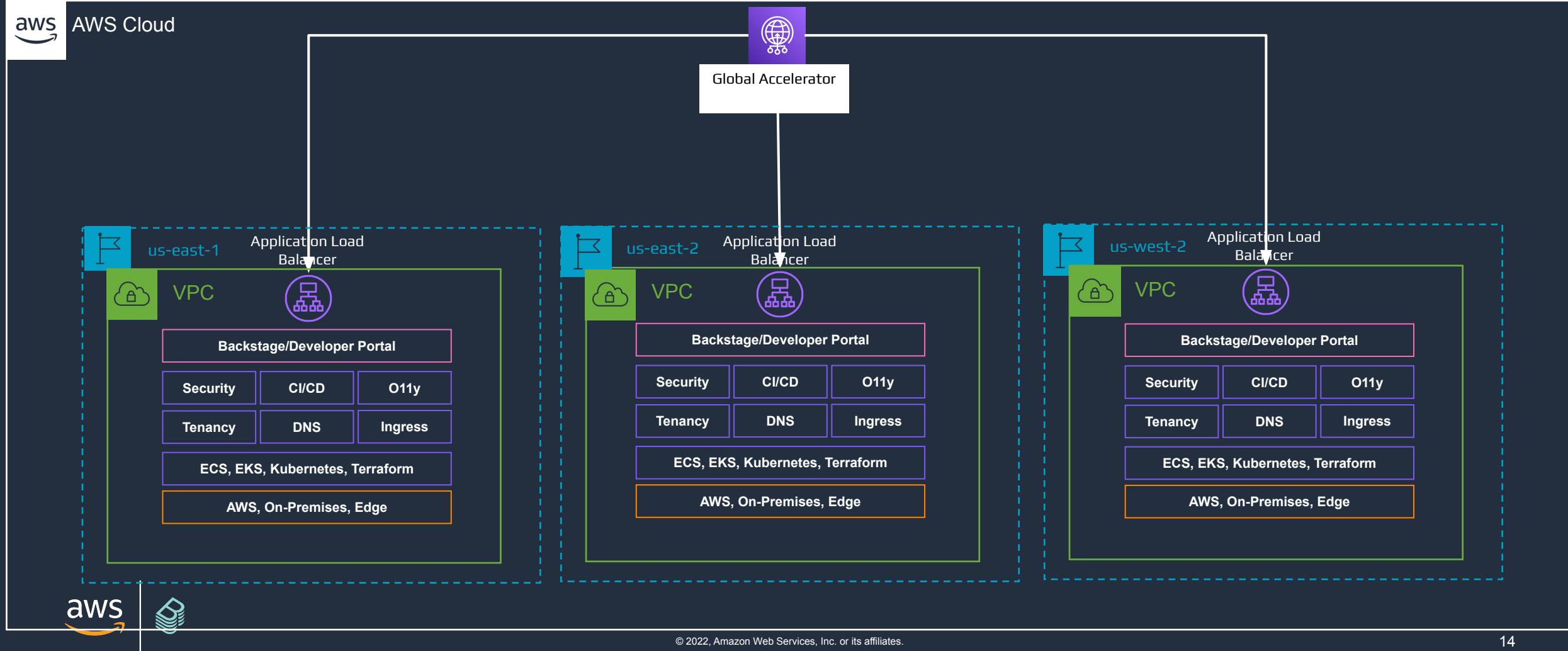
Consistent API enables automation and self-service Workflows

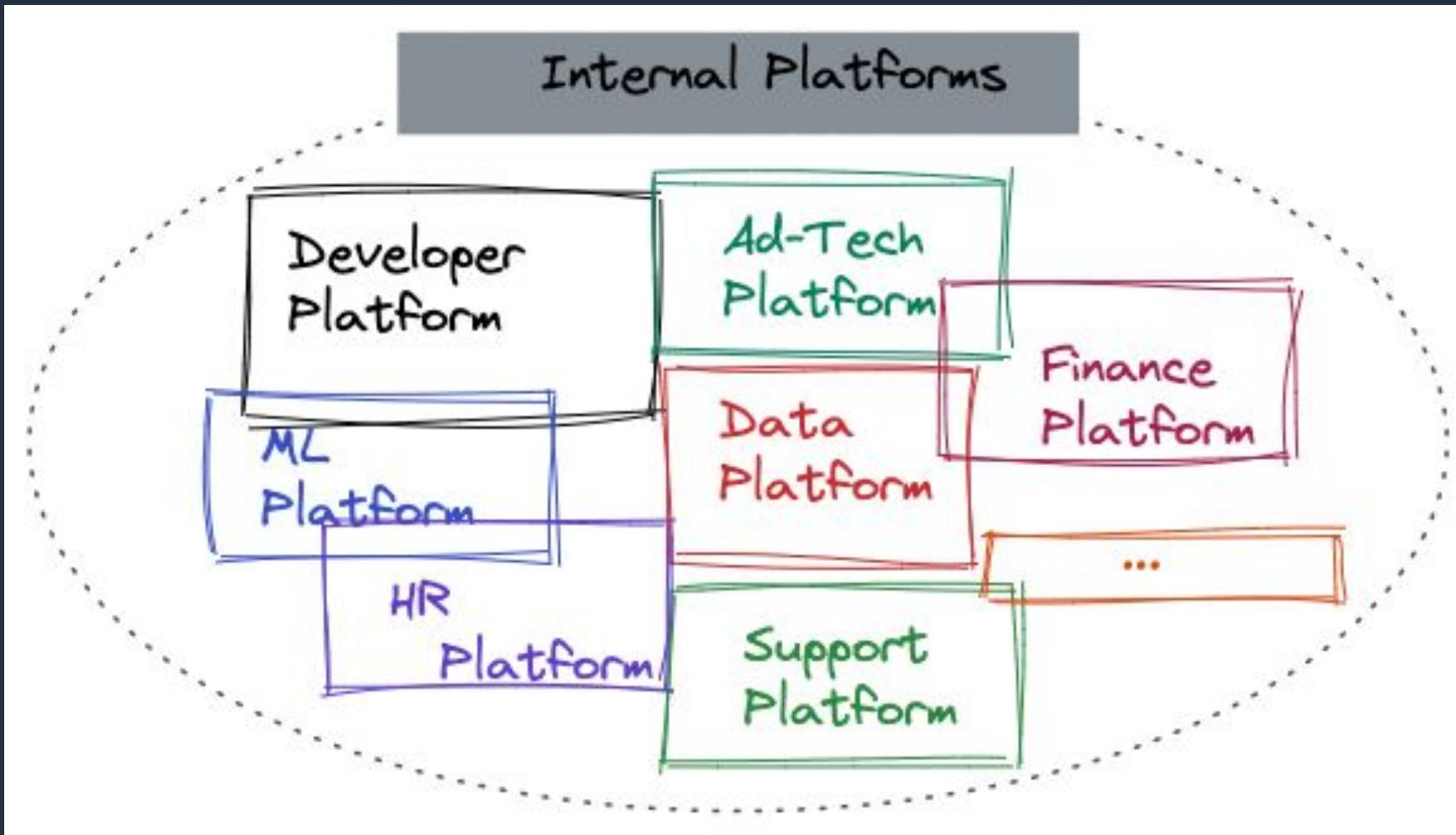


What does the platform look like?



What does the global idp look like?





Deployments via GitOps



Platform Engineering



<https://platformengineering.org/>

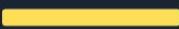
Platform engineering is the discipline of **designing** and **building** toolchains and **workflows** that enable self-service capabilities for software engineering organizations in the cloud-native era. Platform engineers provide an integrated product most often referred to as an "**Internal Developer Platform**" covering the operational necessities of the entire lifecycle of an application.

Luca Galante
Product @ Humanitec



Team Topologies: FOUR FUNDAMENTAL TOPOLOGIES

4 fundamental topologies

-  Stream-aligned team
-  Enabling team
-  Complicated Subsystem team
-  Platform team



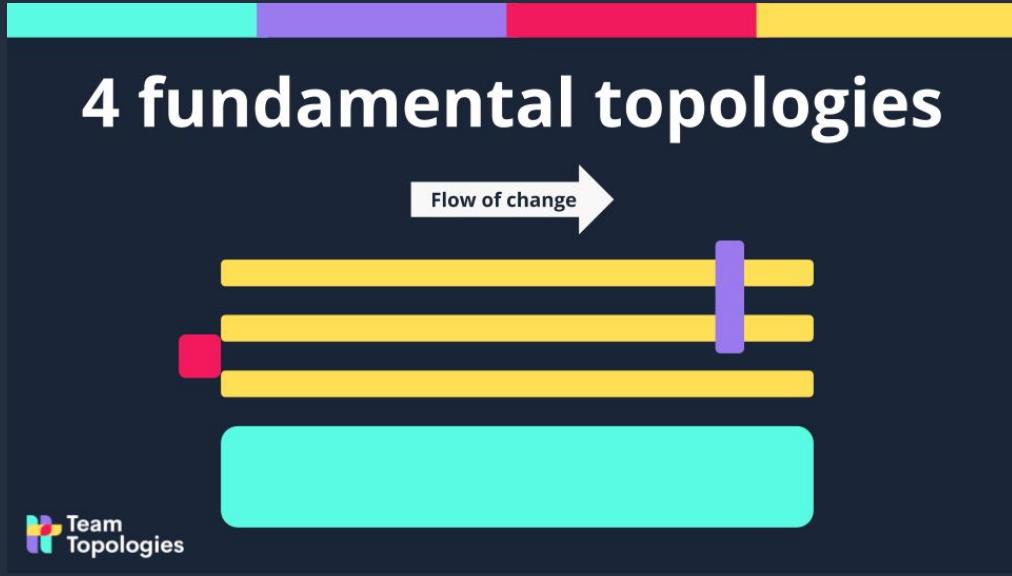
Stream-aligned team: aligned to a flow of work from a segment of the business domain, they work on core business logic.

Enabling team: helps stream-aligned teams to overcome obstacles and detects missing capabilities.

Complicated subsystem team: forms whenever significant mathematical/technical expertise is needed.

Platform team: provides a compelling internal platform to accelerate delivery by stream-aligned teams

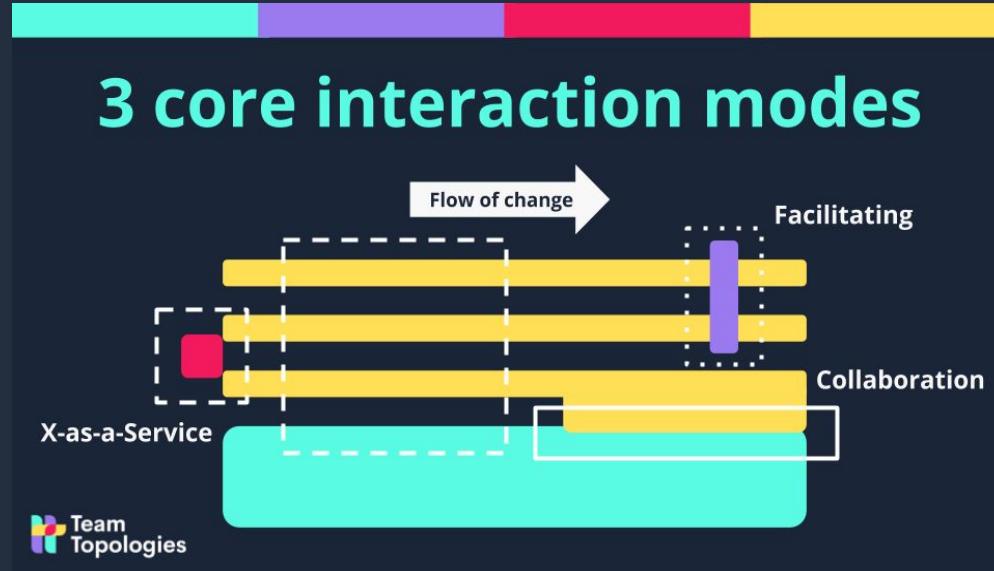
Team Topologies: FOUR FUNDAMENTAL TOPOLOGIES - WITH THE FLOW OF CHANGE



The flow of change is shown left-to-right. **Stream-aligned teams own an entire slice of the business domain (or other flow) end-to-end.** The Stream-aligned teams are “**You Built It, You Run It**” teams. There are no hand-offs to other teams for any purpose.

This diagram is a snapshot in time. The team relationships **WILL** change as new goals are set and the teams discover new things.

Team Topologies: THREE TEAM INTERACTION MODES



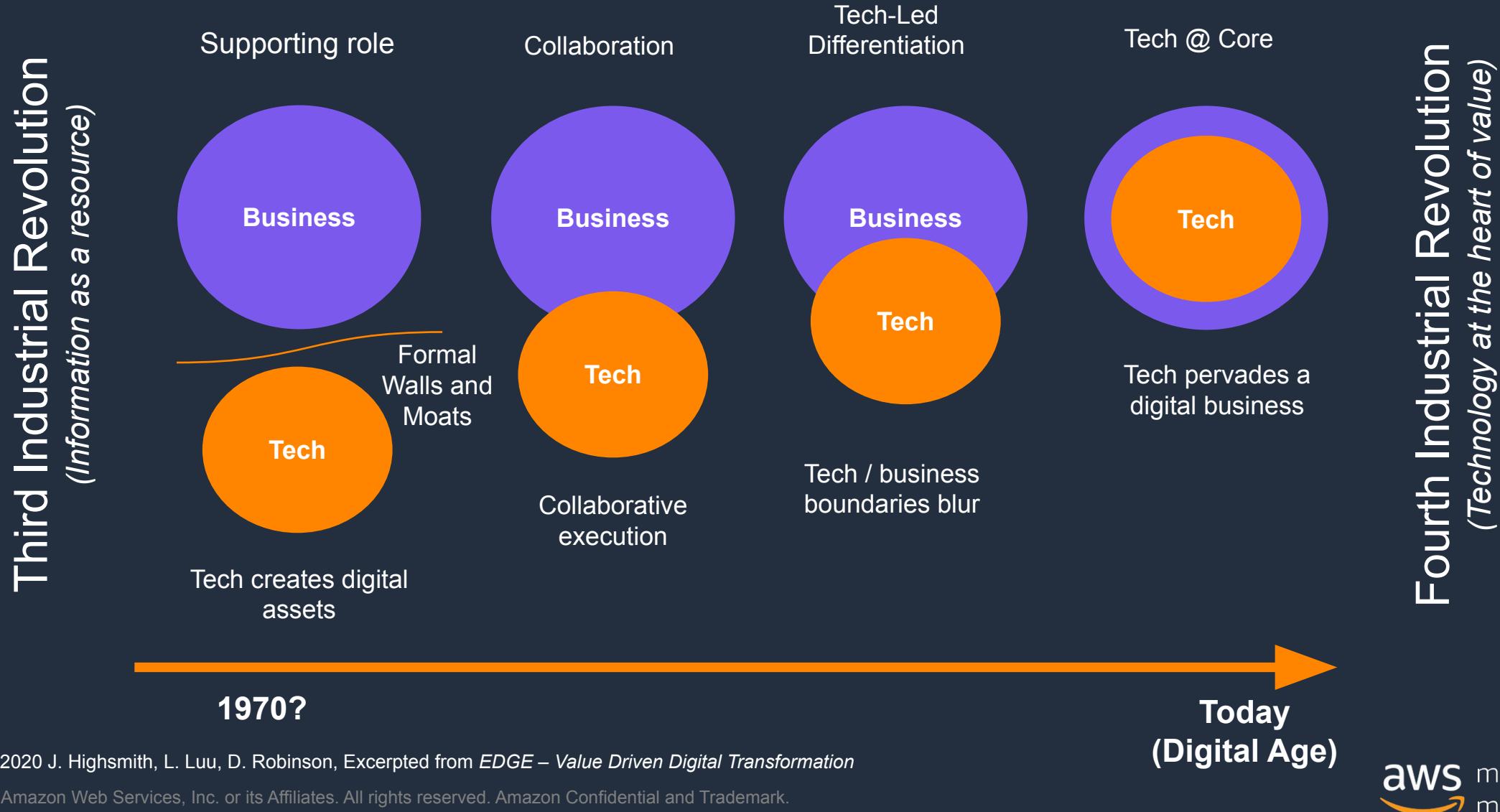
There are only three ways in which team should interact:

Collaboration: working together for a defined period of time to discover new things (APIs, practices, technologies, etc.)

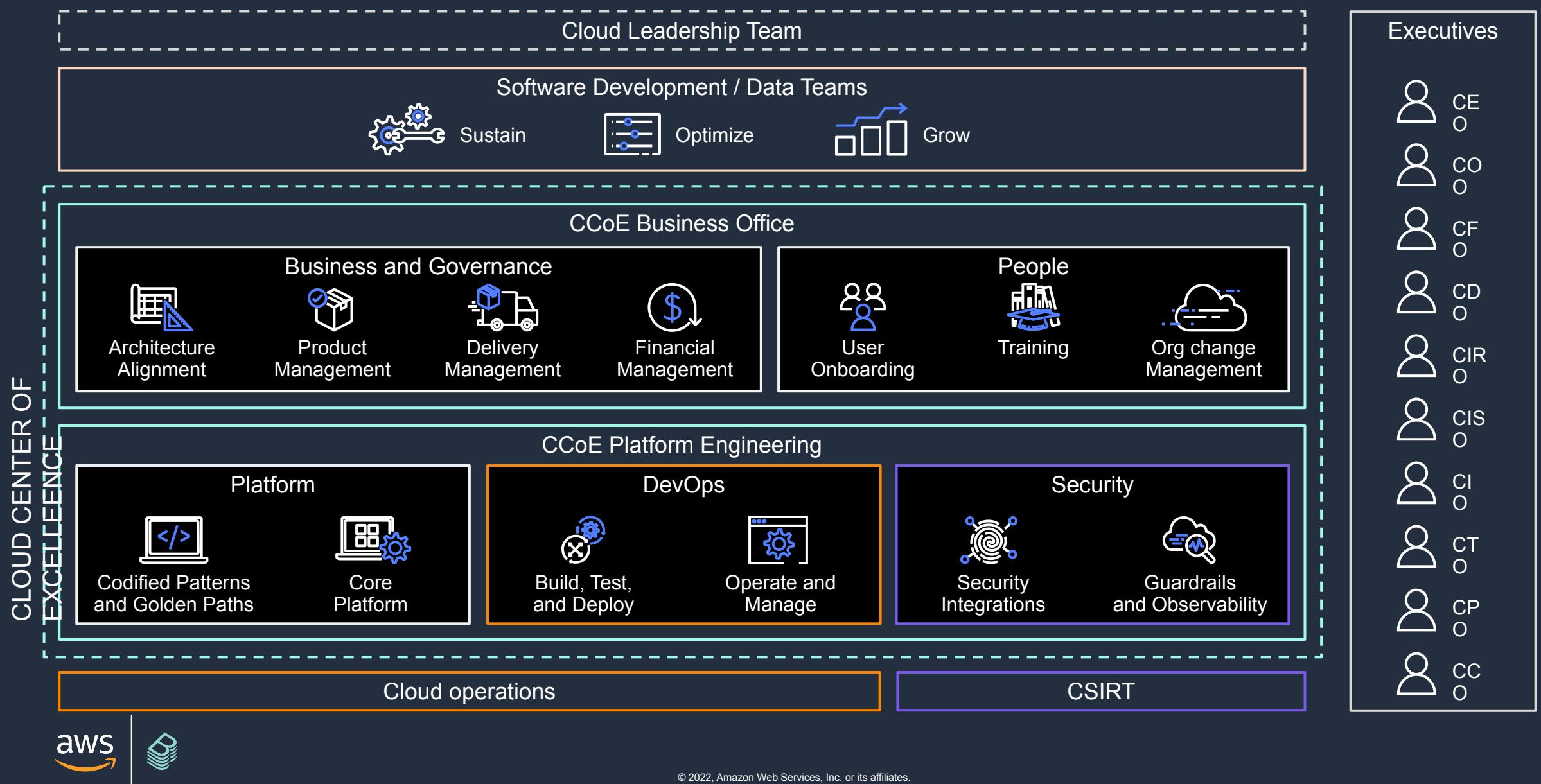
X-as-a-Service: one team provides and one team consumes something “as a Service”

Facilitation: one team helps and mentors another team

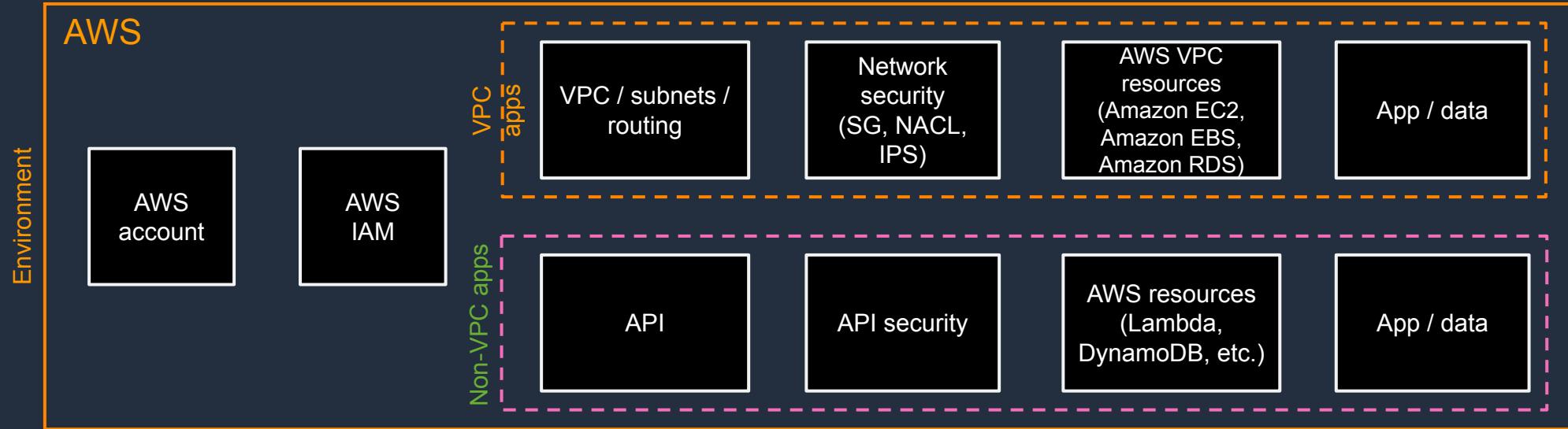
Tech is the Strategic Differentiator



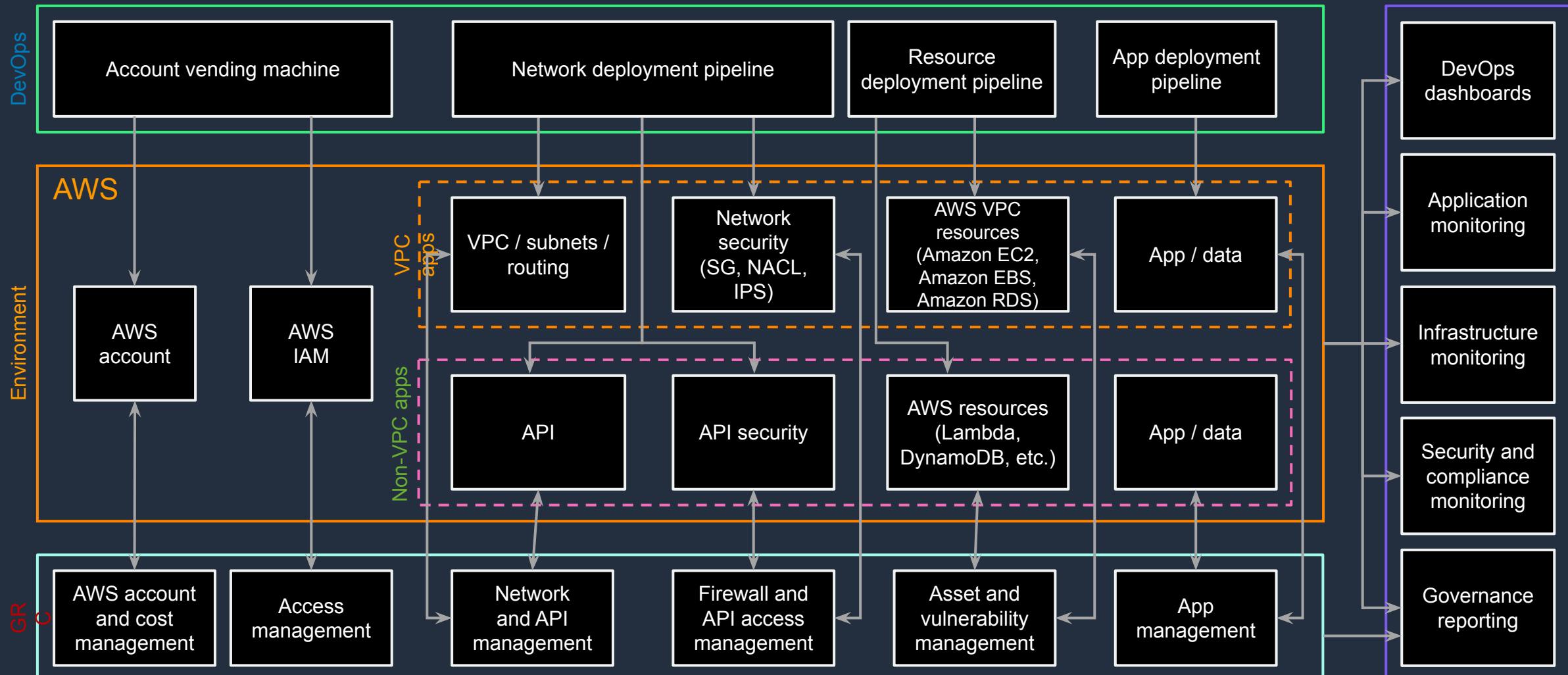
Organizing the Cloud Center of Excellence (CCoE)



DevOps, Observability, and Security for AWS



DevOps, Observability, and Security for AWS



Enabling cross-functional teams

DevOps

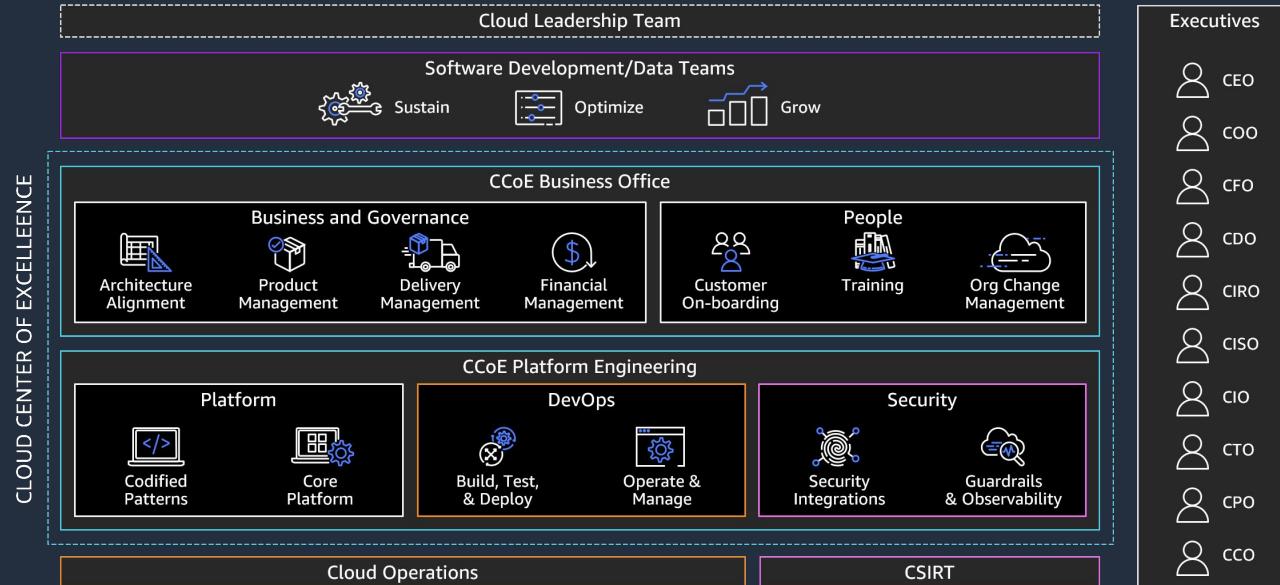
Account vending machine

Network deployment pipeline

Resource deployment pipeline

App deployment pipeline

DevOps dashboards



GR

AWS account and cost management

Access management

Network and API management

Firewall and API access management

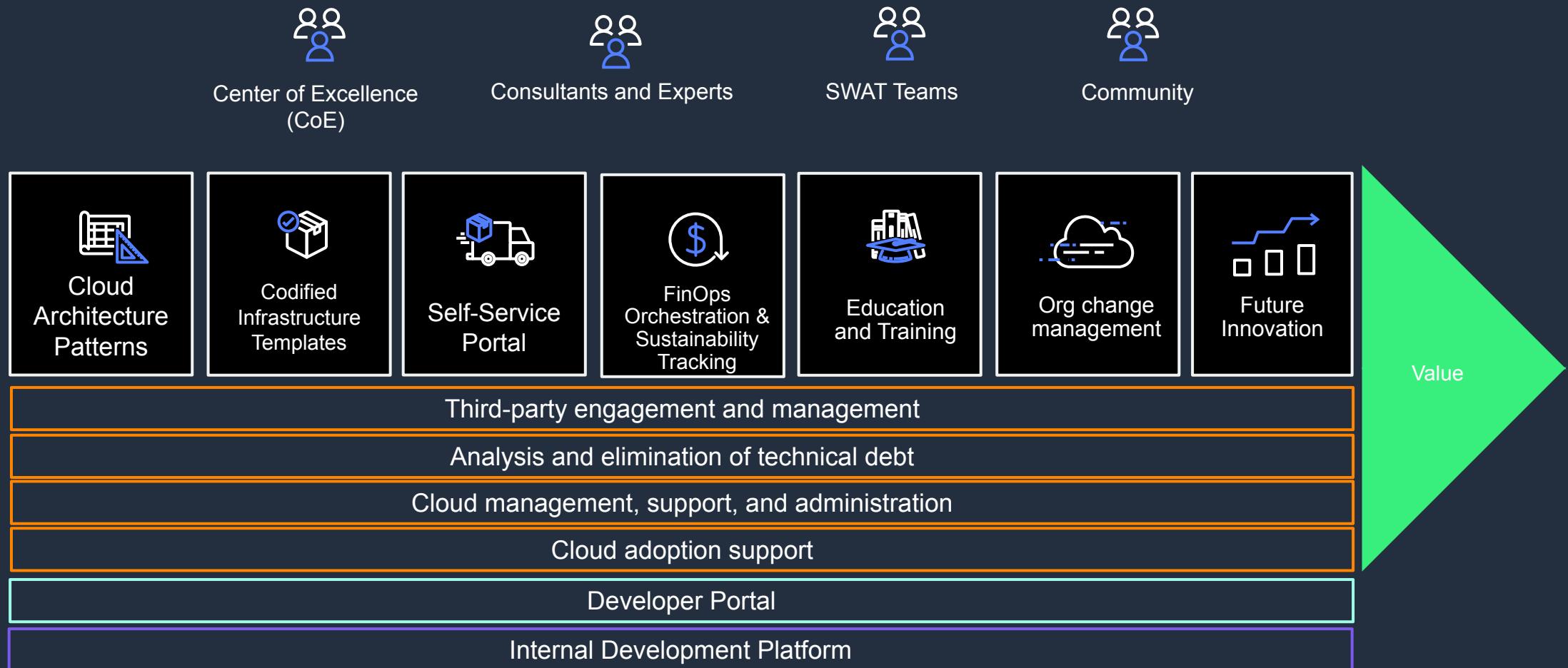
Asset and vulnerability management

App management

Governance reporting



Cloud Program



Enterprise DevOps



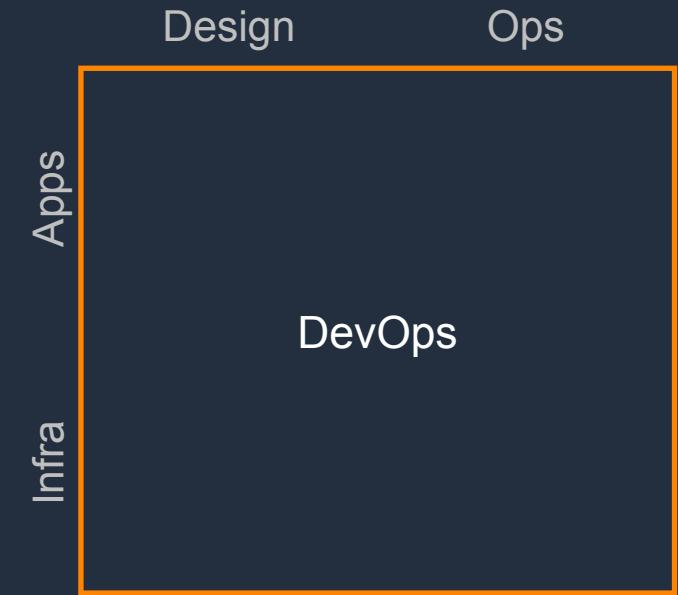
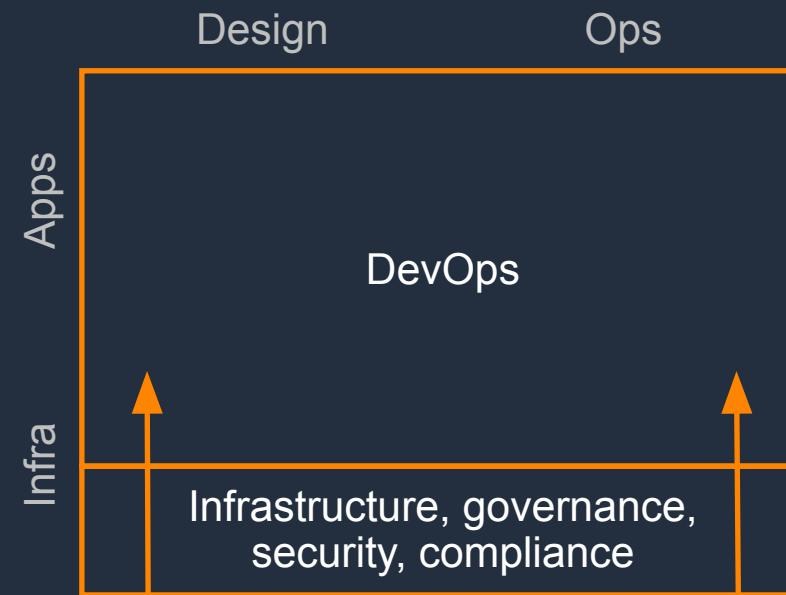
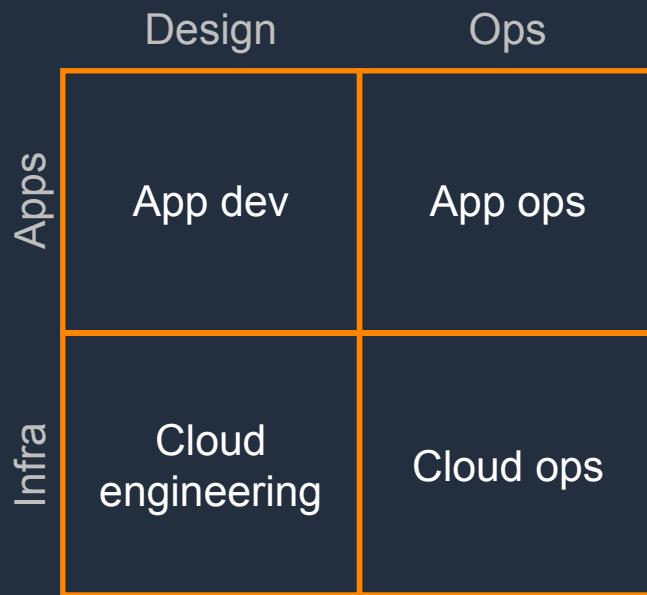
Traditional IT



Enterprise DevOps



DevOps (perception)



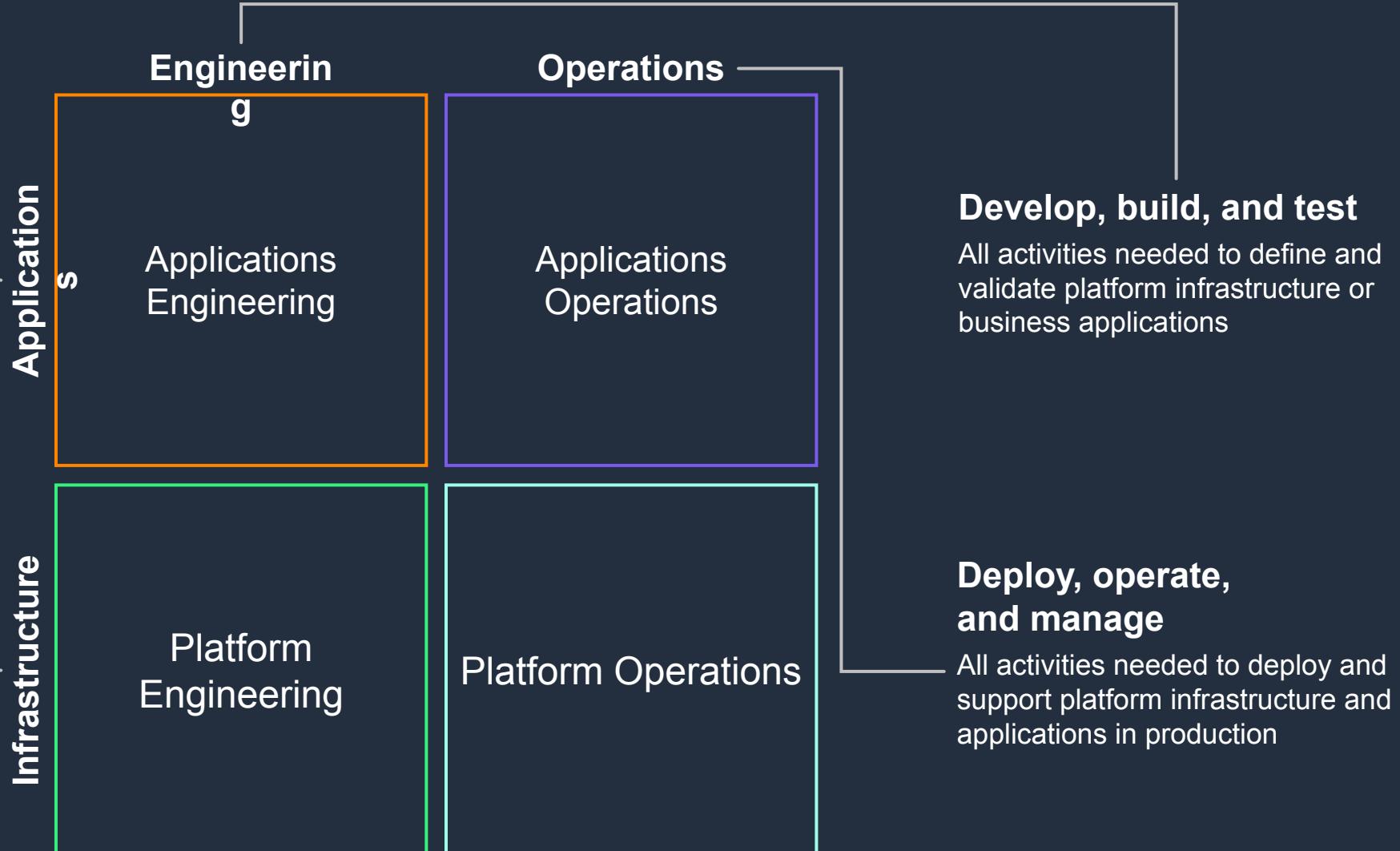
Traditional Operating Model – simplified

Business software

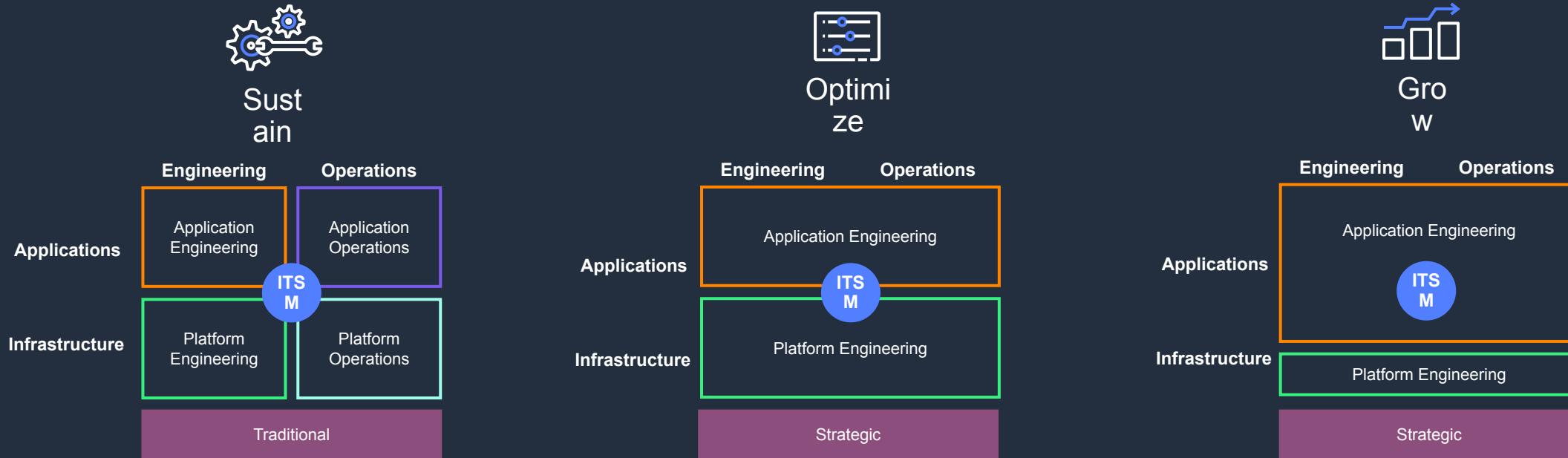
Custom developed or commercial off-the-shelf

Infrastructure

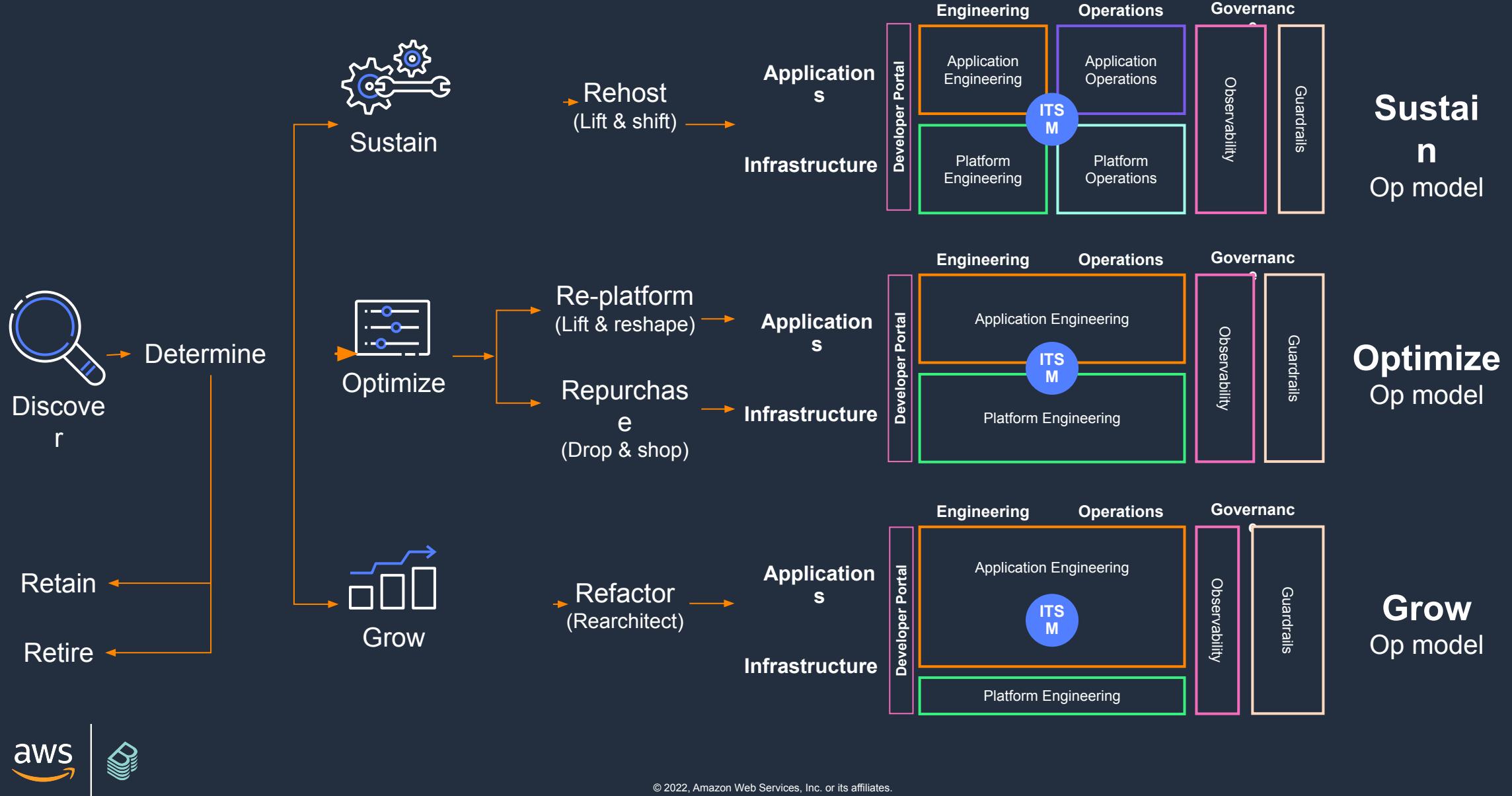
Compute	Runtime
Network	Data
Storage	Operations
Middleware	Security

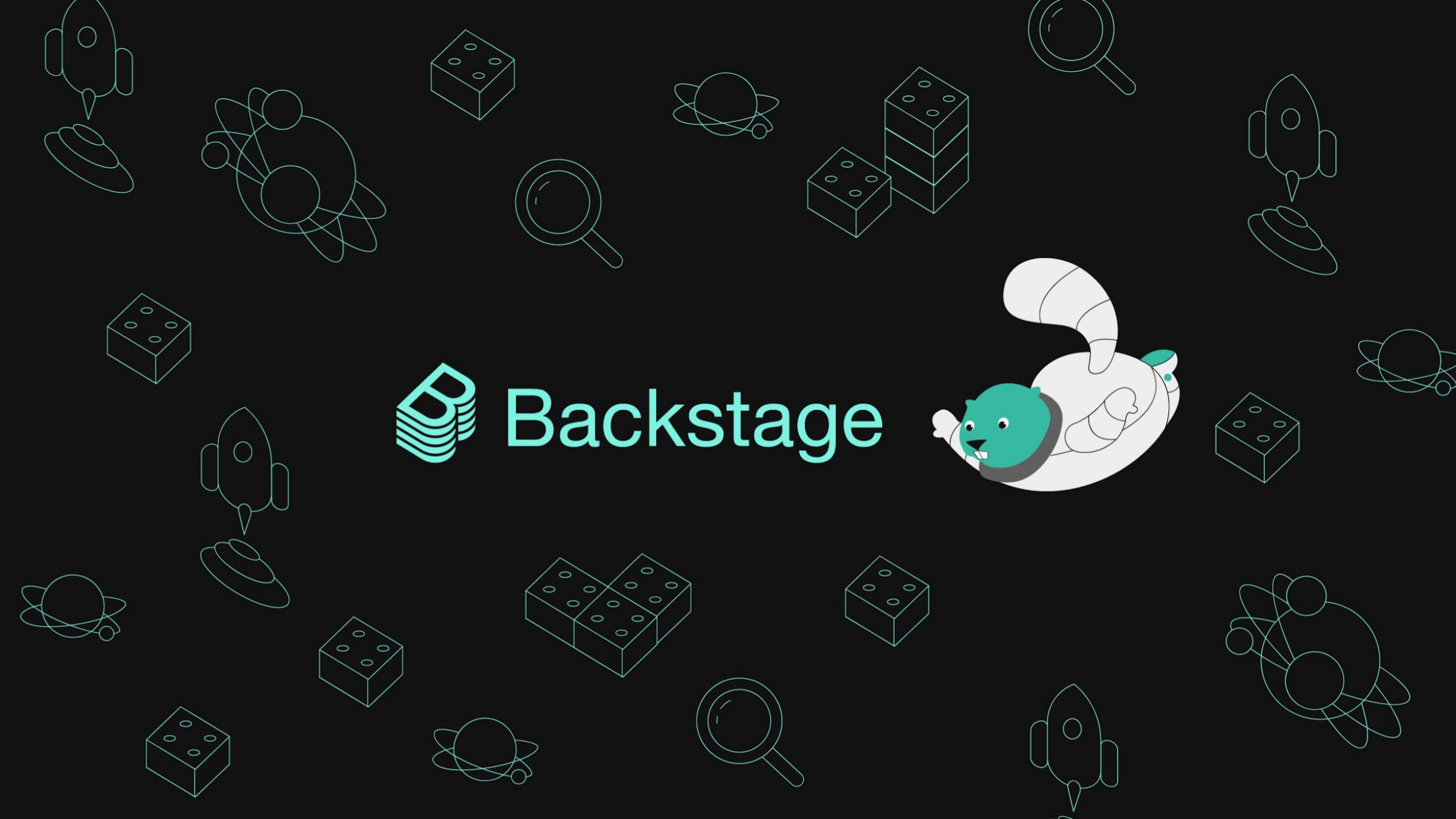


Journey to full DevOps

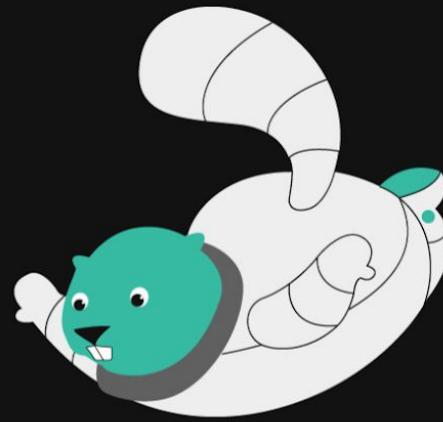


How does this impact cloud adoption?

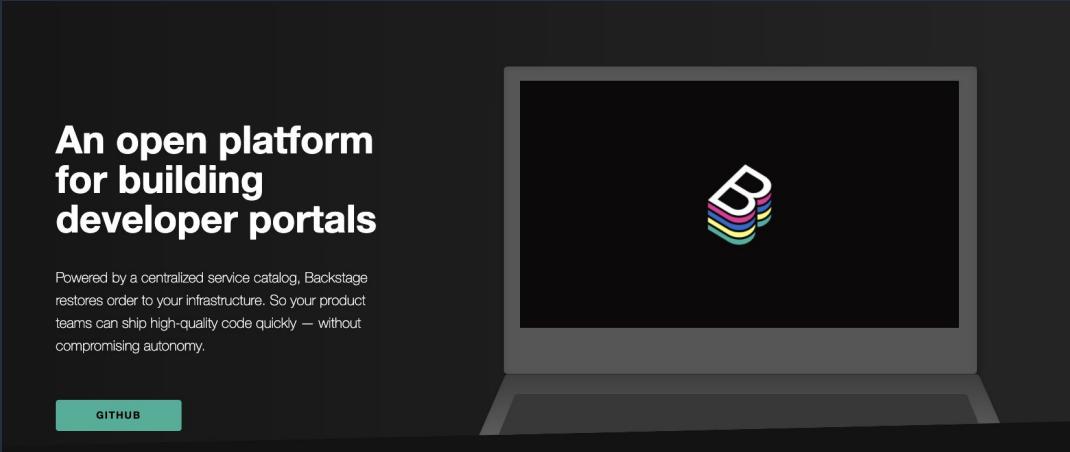




B Backstage



Backstage is an open platform for building developer portals.



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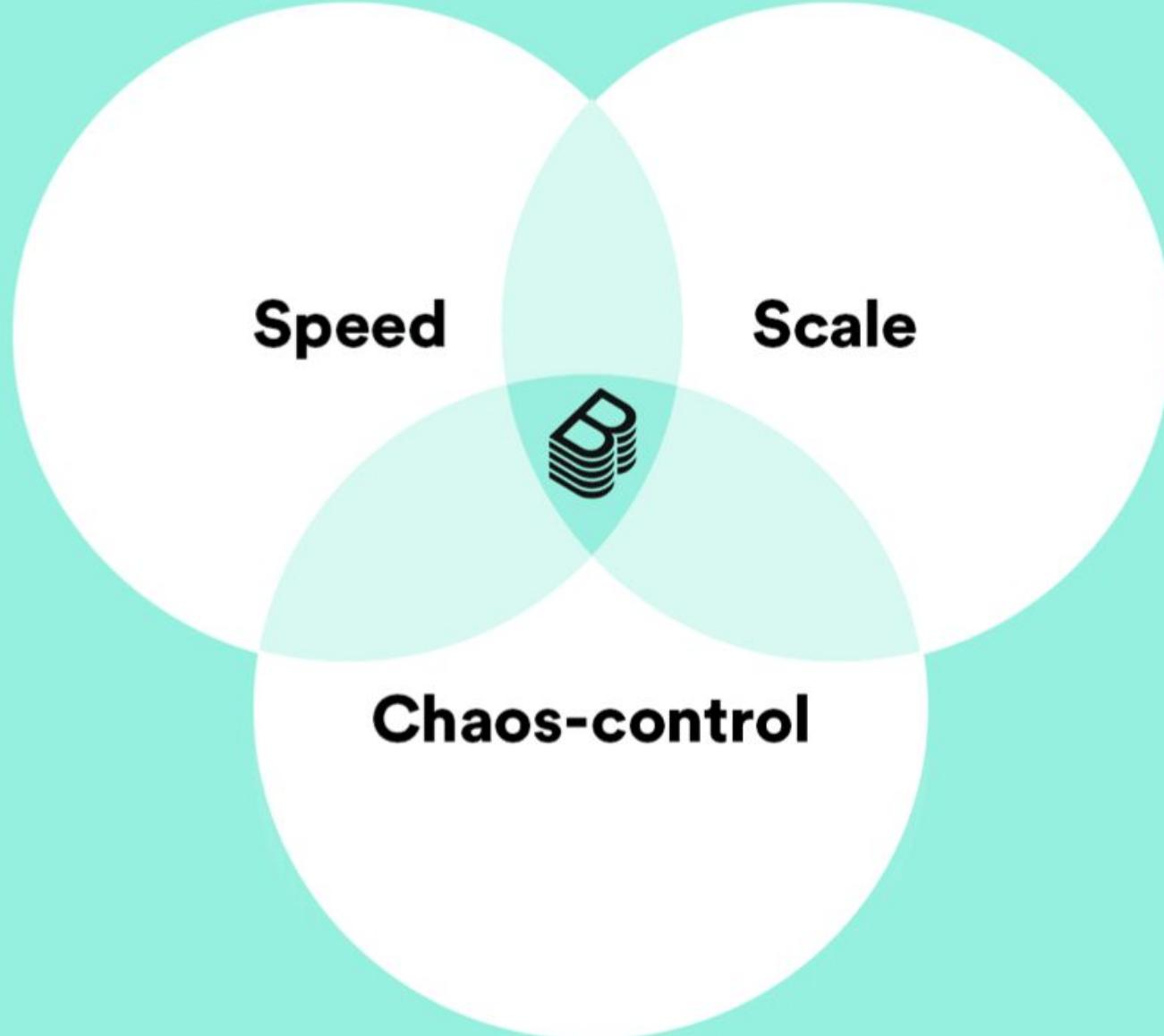
21k Stars on GitHub

2400+ Evaluating Companies

1500+ Contributors (+10 per week)

440+ Adopting Companies

- Create** new software in seconds, aligned to your best practices
- Manage** all the software they own in one centralized location
- Explore** the entire software ecosystem, enabling collaboration across your org



Backstage

Search

Explore

Manage

Experiment

Data

ML

Docs

Create

More

Add Shortcuts

Web Golden P...

backstage-gat...

Unpin Sidebar



Search Backstage

Quick access

RECENTLY VISITED

Service backstage-gateway

Documentation web

Documentation imaginary-goats

Documentation web-infra-adrs

Project tastebudz-spotify



Toolbox

GENERAL



Spotify Start



Code Search



Cloud Search



Stack Overflow



Skill Exchange



PagerDuty



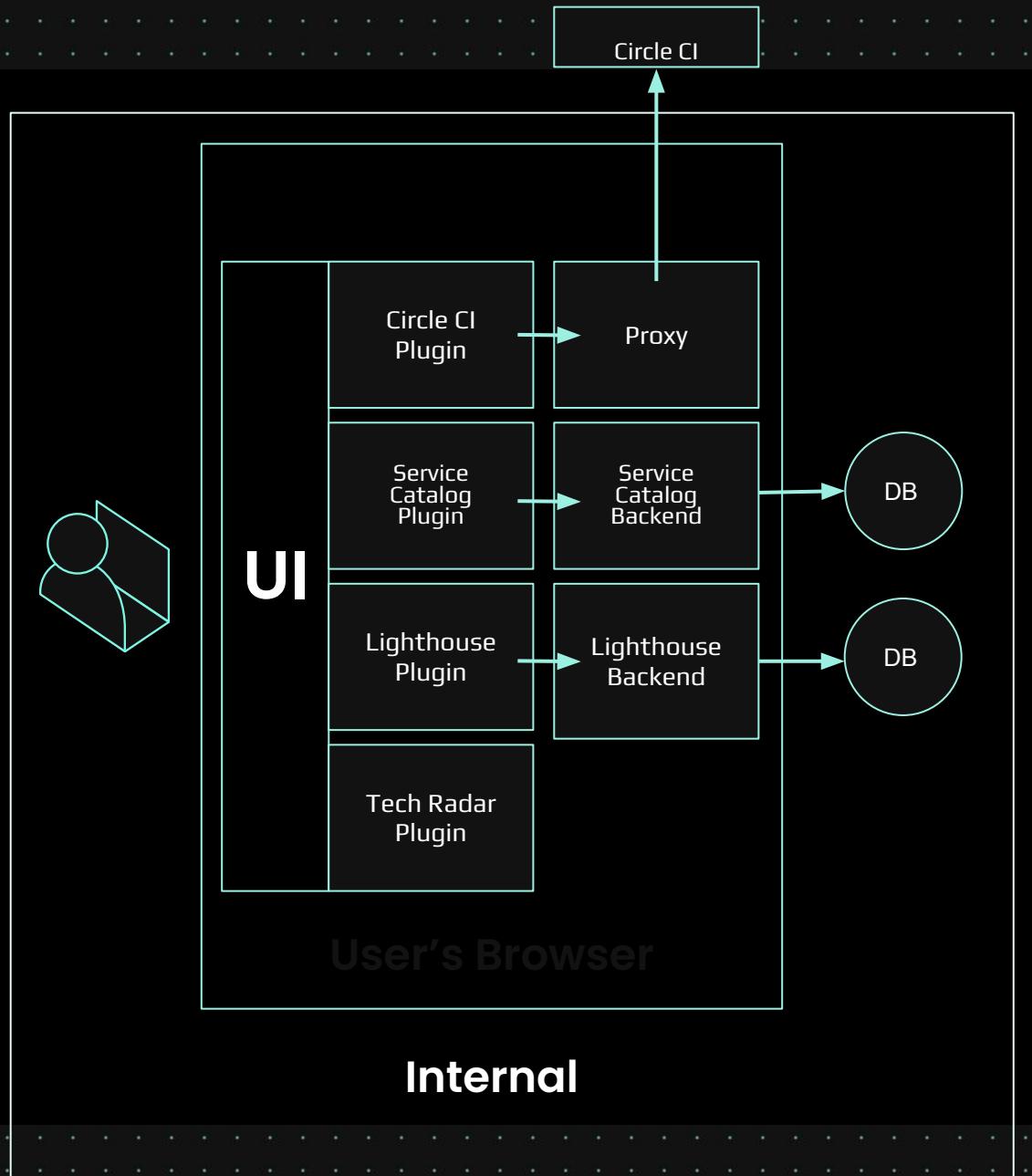
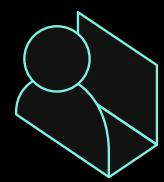
Tech Insights



Groups

FREQUENTLY VISITED





A true platform, inside and out

- ❑ A small team maintains the core features of the Backstage app
- ❑ Different platform teams build and maintain all the other plugins
- ❑ Feature teams use the plugins to build and maintain their software (and provide feedback directly to the plugin owners)

Backstage's 6 Key Features

Software Catalog: This feature helps find metadata and ownership information of software, using a catalog based on YAML metadata files. It offers a central location to manage code and track third-party software.

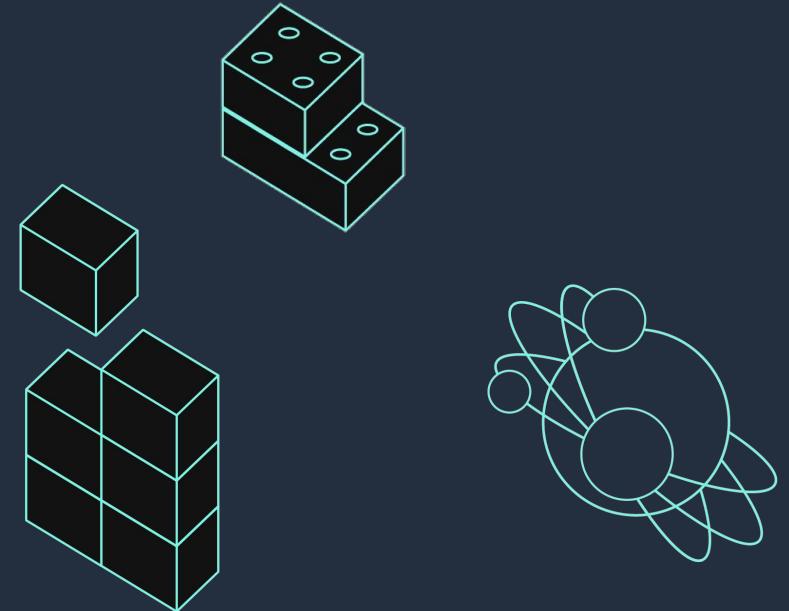
Software Templates: This tool allows organizations to create projects from predefined reference templates, which can be filled out by the team. The templates standardize tooling for new projects and can include onboarding guides and best practices. They can be shared on GitHub or GitLab.

Search: The Backstage search bar saves time by allowing teams to search for information from multiple sources in one place. It can be customized to specific needs using modular components and can integrate with plugins, wiki, or Stack Overflow. All results appear on one screen.

TechDocs: This feature locates documentation with the project source code, making it easier for both developers and consumers to access. It saves time by reducing the need to search for documentation.

Discoverability: Helps builders discover and understand all the company's software, services, docs, APIs, and tools.

Plugins: Plugins are the best way to get the full value from Backstage. The open-source community is constantly developing plugins for all organizations using Backstage. They are made of React components and optional Node.js microservices, and organizations can also build their own.



The screenshot shows the Backstage application's "Plugin marketplace" section. At the top, there's a navigation bar with links for GITHUB, DOCS, PLUGINS (which is highlighted in green), BLOG, DEMOS, and NEWSLETTER, along with a search bar. Below the navigation is a heading "Plugin marketplace" and a sub-instruction "Open source plugins that you can add to your Backstage deployment. Learn how to build a plugin." To the right of this heading is a button labeled "Add to marketplace". The main area contains a 4x3 grid of plugin cards. Each card includes the plugin name, developer, a small icon, a brief description, and a "Explore" button. The cards are arranged in four rows and three columns. The visible plugins are: API Docs (by SDA SE, Discovery), CircleCI (by Spotify, CI), Cost Insights (by Spotify, Discovery), GitHub Actions (by Spotify, CI), GitHub Pull Requests (by roadie.io, CI), GitOps Clusters (by Weaveworks, Kubernetes), GraphQL (by Spotify, Debugging), Jenkins (by @tmja, CI), Lighthouse (by Spotify), New Relic (by @timrajkumar), Rollbar (by @danielauthenstiel), and Sentry (by Spotify).

Arratsalde on, Stefan
Thanks for taking care of 51 components and 19 projects

NYC 10:18 AM UTC 03:18 PM LON 03:18 PM STO 04:18 PM

Overview Services Websites Libraries ^B Workflows Data Endpoints App Features GCP Projects Storage Other

Squad Metrics

The scores are an aggregate across all your squads ([tools](#)). Click on the About link and drill down to your squad to see the details.

Test Certified	Cloud Cost	Security Issues	Incidents	Cycle Time
 24%		16 Number of issues	 10 days Since last incident	
About Test Certs	View more	View more	View more	View more

Squad Ownership

All the things you own across all your squads

24 Services → 3 Websites → 9 Data Endpoints → 7 Workflows → 5 Libraries

Platform Upgrades & Migrations

The scores are an aggregate across all your squads ([tools](#)). Click on the About link and drill down to your squad to see the details.

Python 3 Scio Gabito Bionic Java 11

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Buongiorno, Kat



Answer me: Does 'SPTDebugLog' emit logs on iOS test runs?

NYC
08:30 AM

UTC
12:30 PM

LON
12:30 PM

STO
01:30



Favorites

Manage



stack_overflow.questions - Metrics



tpm-contacts.BasicRnDEmployeeData.bq - Overview



Explore the Spotify ecosystem - Platforms



sciencebox-cloud-notebook-creator - Code Coverage



Recently Visited

stack_overflow.questions

sciencebox-cloud-notebook-creator

tpm-contacts.BasicRnDEmployeeData.bq

backstage-data.DocPageProfiles

backstage-frontend

backstage-backend

events.SearchAPIExposureEvent.gcs



Explore the Ecosystem

Discover data, apps, platforms and more

Manage & Maintain

Take care of the things you own

Docs

Find out how Spotify Tech works

HUB

Data Home >

HUB

Apps >

TOOL

Tech Insights >

News and Updates



Listen Up! Spotify Has Exciting Plans For An End-To-End Mu...

2020-03-15

In the next few years there will be more voice controlled devices than smartp...



Today we announce that Playback together with SDK are pr...

2020-03-02

But it does not have to stop there. We think that there are other uses too and ...

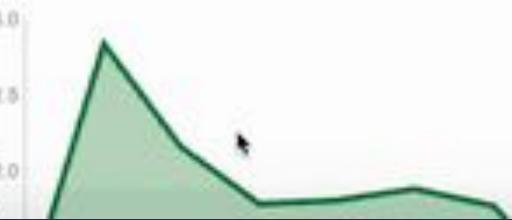


Improving discovery of internal platforms through Backstage

2020-03-11

Cycle Time

avg days



Use Cases: Self-service Catalog

The image shows a self-service catalog interface with three main sections: a left sidebar, a central search bar, and a right panel displaying available templates.

Left Sidebar: Contains icons for Home, APIs, Docs, Create..., Tech Radar, and a search bar.

Central Search Bar: A search bar with a magnifying glass icon and a clear button.

Right Panel: Displays "Available Templates" under "Templates".

Available Templates:

- PERSONAL**: Documentation Template (Pink Card)
 - DESCRIPTION: Create a new standalone documentation project
 - OWNER: backstage/techdocs-core
 - TAGS: recommended, techdocs, mkdocs
- MY COMPANY**: React SSR Template (Blue Card)
 - DESCRIPTION: Create a website powered with Next.js
 - OWNER: web@example.com
 - TAGS: recommended, react
- service**: Spring Boot gRPC Service (Dark Blue Card)
 - DESCRIPTION: Create a simple microservice using gRPC and Spring Boot Java
 - OWNER: service@example.com
 - TAGS: recommended, java, grpc

Application Feature #client-dev-support

- client-build Android SDK (Orange Card)
 - DESCRIPTION: Template for Android client SDKs. Includes support for deploying to Google Play (optional) or your own package.
 - CHOOSE
- client-build iOS SDK (Orange Card)
 - DESCRIPTION: Template for iOS libraries/SDKs. Builds on Tingle.
 - CHOOSE
- gemini Swift Package (Orange Card)
 - DESCRIPTION: Template for Swift package. Builds on Tingle.
 - CHOOSE

Data Science Tool #data-support

- science-box Science Box (Dark Brown Card)
 - DESCRIPTION: Cookiecutter template for creating Dockerized, reproducible data science projects.
 - Golden Path
- core-x-insights Core X Insights AB Test Notebook Template (Dark Brown Card)
 - DESCRIPTION: Cookiecutter template, extending Science box, for AB test template notebooks for Core X Insights.
 - Experimental
- picasso Qlik Sense (beta) (Dark Brown Card)
 - DESCRIPTION: Cookiecutter template for creating Qlik Sense apps from the BigQuery Mirror Template.
- picasso Dashboard Runner (Dark Brown Card)
 - DESCRIPTION: The Dashboard Runner help you setup a workflow to refresh your Tableau or Qlik Sense dashboard based on if one or more bigquery partition exist or not. Once the partition in your BigQuery table(s) have been created, the Dashboard Runner will trigger a refresh of your dashboard! This form will help you create the first workflow in the repo, later you can add more dependencies directly in the data-
 - Experimental

Bottom Left: AWS and BigCommerce logos.

Bottom Center: © 2020

boker tov, Stefan

Thanks for taking care of 51 components and 19 projects

NYC 10:57 AM UTC 10:57 AM LON 10:57 AM STO 10:57 AM

Overview Services Websites Libraries Workflows Data Endpoints App Features GCP Projects Storage Other

CREATE NEW SERVICE SUPPORT

Search...

ID	SYSTEM	TEST CERTIFIED	EFFICIENCY	INSTANCES	LIFECYCLE
backstage-lib	backstage	Not certified	▲ 42	6	production
backstage-proxy	backstage	Not certified	■ 60	5	production
backstage-search	backstage	Not certified	■ 62	3	production
dashd	backstage	Not certified	● 97		production
demo-again-perhaps	demo-again-perhaps	Not certified			experimental
gcp-project-creator	steel-bridge	● 1	● 94	1	production
green	backstage	Not certified	■ 70		experimental
google-sheets-reader	google-sheets-reader	● 1	▲ 23		experimental
graphql-aggregator	graphql-aggregator	● 1	▲ 14		experimental
javis	backstage	Not certified	■ 63		production
lisa-golden-path-tutorial	lisa-golden-path-tutorial	● 1			experimental
mvn-docker-maven	mvn-docker-maven	Not certified			experimental

Use Cases: Software Microservices Catalog

Kaliméra, Stefan
Answer me: Unable to load Spotify checkstyle rules into Android St...

Favorites

backstage-data.DocVisits - Overview	★
Spotify Engineering Handbook - Incidents	★
Backstage Frontend	★
Icons - Current Set	★
apollo - Overview	★
backstage-backend - Overview	★
Sysmodel Sanitizer - Orphaned components (1294)	★
backstage-frontend - CI/CD	★

Recently Visited

stefaaaaaa
stefannnnnn
tech-insights
searchrank
my-spring-demo
my-dem-app
aluuuuu

Explore the Ecosystem
Discover data, apps, platforms and more

Manage & Maintain
Take care of the things you own

HUB Data Endpoints > HUB Apps > TOOL Tech Insights > PLATFORM Machine Learning >

News and Updates

- Data-driven iOS developer experience** 2020-03-25
At Foundation, a squad in the Client Platform tribe, we take care of the developer experien...
- Ok.... 4 practice lemons and three attempts later. Here it is.... #backstag...** 2020-03-25
- In the calm before the storm, 31 people took the challenge of expanding ...** 2020-03-25
Mar 2-6 2020, NYC, BE201 Intro to Backend at Spotify
- Show off your WFH Normal.... Tuesday, March 24th** 2020-03-24
Theme: #OFOTD : Outfit Of The Day

tech-insights

SERVICE

Overview ☆

Backend service for Tech Insights

Service Advisor

Service Level Objectives

- ApolloVersionCheck green
- Regional Provisioning green
- Metadata red
- Rightsizing Check green
- Podlinks green

→ Go to Service Advisor

Metadata

system	tech-insights
id	tech-insights
lifecycle	production

Cycle Time

Date	Avg open time (avg days)
2020-03-25	1.7
2020-03-26	2.1
2020-03-27	2.2
2020-03-28	1.9
2020-03-29	1.6
2020-03-30	2.0
2020-03-31	1.8
2020-04-01	2.3
2020-04-02	2.1

COMPONENT — SERVICE

user-preferences-service ☆

OVERVIEW QUALITY API CI/CD

About

[VIEW SOURCE](#) [VIEW TECHDOCS](#) [VIEW API](#)

DESCRIPTION
A service that stores user preferences so that they are available on different devices.

OWNER group/team-moneypenny **SYSTEM** user-preferences **TYPE** service

LIFECYCLE production **TAGS** business

Links

No links defined for this entity. You can add links to your entity YAML as shown in the highlighted example below:

```
1 metadata:
2   name: example
3   links:
4     - url: https://dashboard.example,
5       title: My Dashboard
6       icon: dashboard
```

Latest master build

Status	Completed
Build	SDA SE Builds and Deployments (Projects k-z) » user-preferences-service » master 0.1.4
Latest Run	20 days ago
Duration	10 minutes
Link	View logs

B. Let's get this party started!

my-component

OVERVIEW DEPLOYMENTS CONFIGURATION

About

[Confluence Wiki](#) [Tech Docs](#) [Source Code](#)

Description
Ea et dolor sint. Officilis soluta qui. Voluptas sit sed nisi ea sequi assumenda autem. Et possimus natus. Exercitationem quod dicta voluptas.

Deployments

View All →

Environments	Development	Production	Staging
development	development	development	development
...deploying	Clone Environment	Edit Secrets	Deployed
	View Logs	Manage Releases	

aws | B

Source: © 2020 J. Highsmith, L.

Use Cases: TechDocs

TechDocs Overview

Discover documentation across the Spotify software ecosystem

Search for docs... 

TECHDOCS

Getting Started
New to TechDocs? It's simple — there are two ways: either create a system documentation repository in one-click through Backstage, or add TechDocs to your existing GitHub code repository.

ARCHITECTURE

Tech Radar
See a visual, concise summary of technologies in use at Spotify across all disciplines.

ARCHITECTURE

Engineering Handbook
This living document combines general principles and pragmatic advice that promote engineering speed and quality

PRIVACY

Privacy @ Spotify
Here is where you can find useful information relating to the way in which we manage privacy within the organisation and resources to help you with your privacy queries.

TECHDOCS

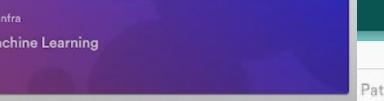
TechDocs FAQ
Did you run into a problem that didn't work as expected? Check our frequently asked questions.

GET STARTED **GO TO TECH RADAR** **READ MORE** **READ MORE**

Golden Paths
Get started at Spotify

core-infra-tribe Backend 

client-platform Client 

ml-infra Machine Learning 

Component backend-golden-path Site Owner pulp-fiction Page Owner fabric Last Updated a month ago Top Contributors 

Path

Introduction 

This tutorial is the first in the Backend Golden Path series which covers the development and operation of our server-side infrastructure. Along the way you'll meet many of the tools we use in our everyday work.

The tutorial shows you how to set up your local environment for backend development and how to get access to the tools you'll need when developing Spotify backend services.

We strongly recommend that you complete this tutorial before continuing with other tutorials in the series; we have extensively tested our tutorials on clean machines that have been set up by exactly following the instructions given here.

Operating System Variations

These tutorials are written for Apple machines running MacOS. If you have a Linux or Windows machine, you may find alternative instructions in callouts like this one, if someone has added them. Feel free to help out by offering alternative commands in document feedback.

Prerequisites

Before starting this tutorial, make sure you have:

- A Google account (so that you can access Gmail and Google Drive)
- An Internal Services account (so that you can log in to the Spotify wifi)

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Stack Overflow

#backend #apollo #tingle
#golden-path

No questions found for this tag.

Table of contents

Prerequisites
Support

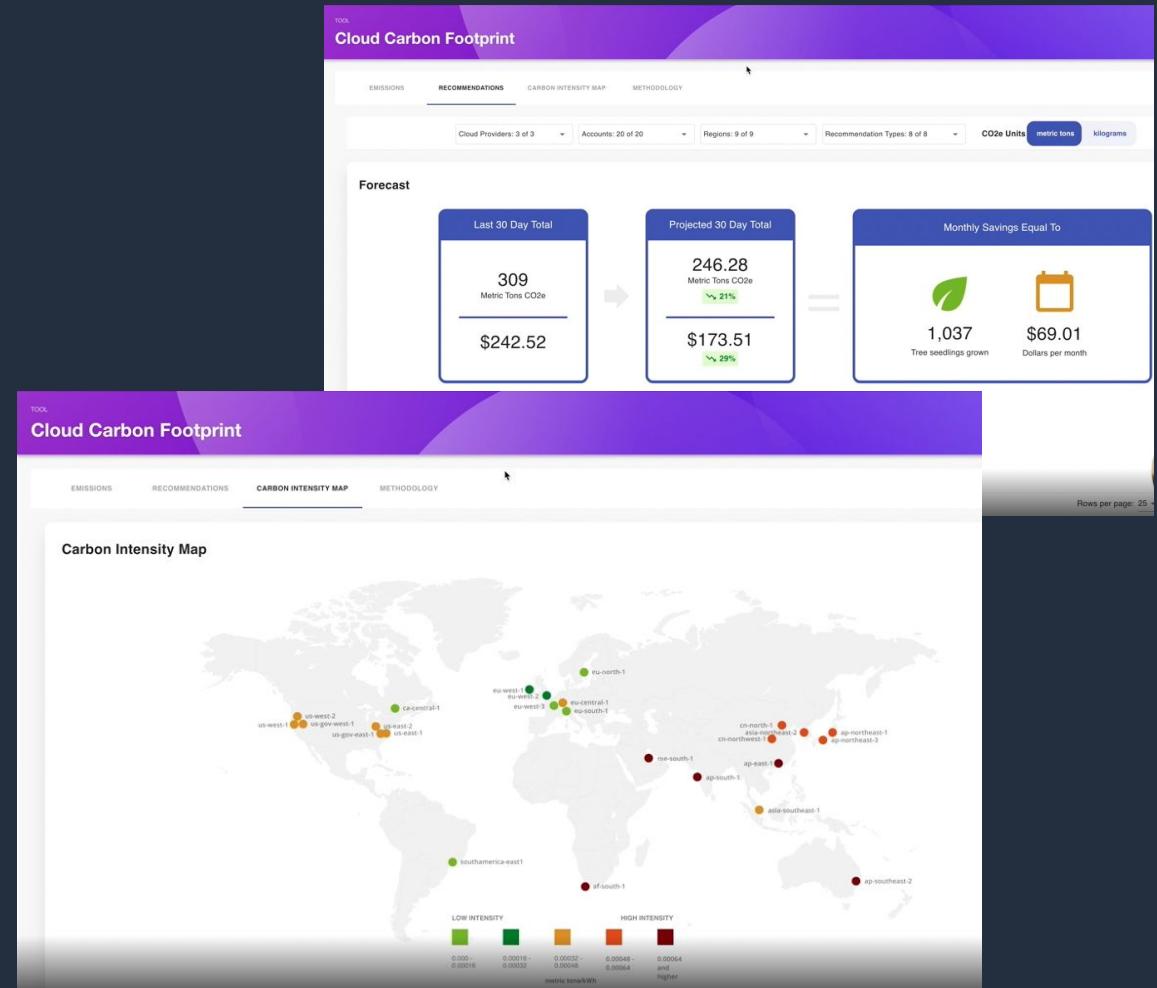
Use Cases: FinOps & Sustainability Tracking

Scenario

Summary Analyzed Period: 2018-02-14 → 2018-03-14

AWS EC2

Provisioned	Recommended	Saved	Saved in %			
4414 CPUs	3011 CPUs	1403 CPUs	31.79%			
17.7GB RAM	10.2GB RAM	7.5GB RAM	42.33%			
\$138,999.62 Internal Costs	\$250,704.72 AWS Costs Provided	\$143,187.70 AWS Costs Recommended	\$107,517.02 AWS Costs Saved			
Download CSV						
Details	OS	Provisioned	Recommended	Saved	AWS Recommended	AWS Saved
AHR-Intranet		CPU 4 RAM 4GB DSK 1TB Internal costs \$12,598	CPU 1 RAM 4GB	CPU 3 RAM -	Type t2.nano Costs \$6.19	\$208.73
AHR-Intranet		CPU 4 RAM 4GB DSK 1TB Internal costs \$12,598	CPU 1 RAM 4GB	CPU 3 RAM -	Type t2.nano Costs \$6.19	\$32.34
AHR-Intranet		CPU 4 RAM 4GB DSK 1TB Internal costs \$12,598	CPU 1 RAM 4GB	CPU 3 RAM -	Type t2.nano Costs \$6.19	\$260.45



Customer Examples



Discover

The “paved road” knits together netflix products and solutions into supported workflows

Unifying the Netflix engineering experience

The Paved Road is a platform designed to unify Netflix's engineering experience by providing a federated platform console. It features a sidebar for navigating products categorized by Capability, SDLC Stage, Primary Role, Organizations, and All Products. The main content area displays a grid of various products, each with a brief description and a link to its details.

The Paved Road

Netflix's Software Engineering Ecosystem

All Products

API

Data Platform API
Data Edge (Data Platform)

GraphQL API that offers a single interface to many of the Data Platform's services.

gRPC
Java Platform, Node.js ...

General purpose, schema driven, high performance RPC framework

Java DGS GraphQL...
Develop Experiences (P...)

A framework to easily build GraphQL services with Spring Boot

Kragle
Data Edge (Data Platform)

Library for programmatic access to the Data Platform

Netflix WebClient
Java Platform (Product...)

REST client for SpringBoot Netflix and Governor/Guice, based on Spring WebClient

ONI Node.js HTTP ...
Node.js Platform team (...)

Node.js HTTP client API providing the recommended IPC components & integrations with Netflix ecosystem

+ Add Product

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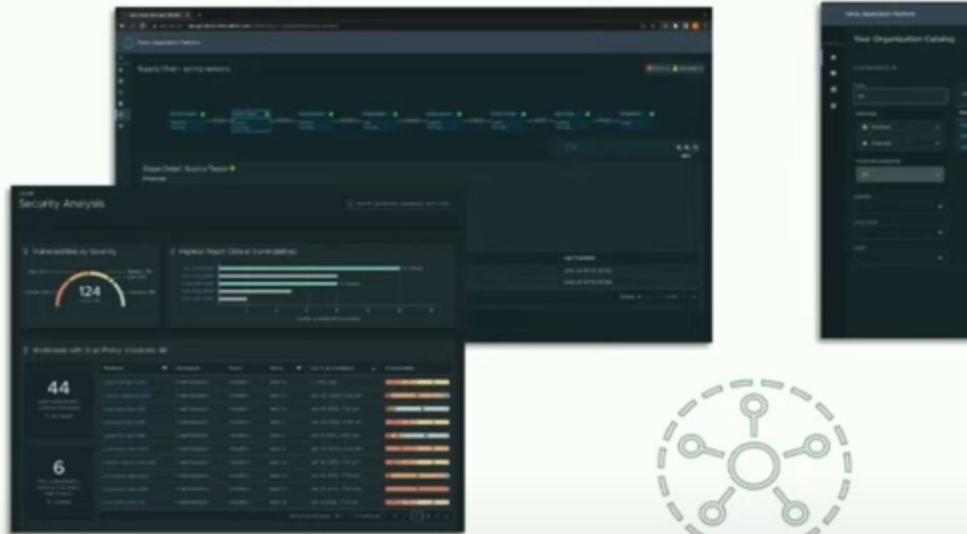
Source: "How Netflix unified their engineering experience with a federated platform console", Brian Leathem, Senior Software Engineer at Netflix
<https://platformengineering.org/talks-library/netflix-platform-console-to-unify-engineering-experience>



VMware Tanzu Application Platform

Better Together

Backstage | con
NORTH AMERICA



 Backstage powers



VMware Tanzu Application Platform



 Backstage | con
NORTH AMERICA





Welcome to Sunrise!

Your daily starting point



SEARCH



LOG IN



OVERVIEW



MONITORING



USERS



NOTIFICATIONS



CALENDAR



PEOPLE



REPORTS



IDEAS



CREATE



HELP



SETTINGS



SYNC

Take Action

Pipeline Activity

Merge pull request #422 from engineering-community.

succeeded

[VIEW](#)

New endpoint for Application Info (#187)

succeeded

[VIEW](#)

Merge pull request #41 from developer-productivity.

succeeded

[VIEW](#)

[See all pipelines →](#)

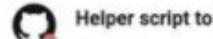
Open Pull Requests



[WIP]

review requested

[VIEW](#)



Helper script to

authored developer-productivity

15 days ago by hjacobs

[VIEW](#)



Remove

authored

by hjacobs

[VIEW](#)

[See all pull requests →](#)

Open GHE Issues

Health & Performance Indicators

Software Delivery (last week)

STUPS-BUILD STUPS PLATFORM

Metrics	This Team	Target
Deployment Frequency	2 deploy days	5 deploy days
Lead Time	Coming Soon!	

[Learn More →](#)

What's new

Updates about the Platform

Check out the recording of the Welcome Demo for an overview of the current features and vision for Sunrise. [VIEW](#)

See what problems and improvements the team building Sunrise is planning to tackle next on the Sunrise Product Roadmap. [VIEW](#)

Interested in contributing to and collaborating on extending Sunrise? The Sunrise docs are a great place to start. [VIEW](#)

Collaborating to build a plugin on Sunrise? Join the Building Sunrise chat to share ideas, get feedback, and share your pull requests for review. [VIEW](#)



Source: "Sunrise - Zalando's Internal Developer Platform", Henning Jacobs, Executive Principal Engineer, Zalando SE <https://platformengineering.org/talks-library/sunrise-zalandos-internal-developer-platform>



Practices
Practices
API First
Capacity Planning
Continuous Delivery
Continuous Integration
Dependency Discovery
Experimentation
Feature Flags
Libraries
Migrations
Observability
Playbooks
Postmortems
Contribution models
Inner Source and Contribution Models
Open Source
Reviews
API Reviews
Architecture Reviews

Continuous Delivery

Continuous Delivery (CD) is a software engineering approach in which teams produce software in short cycles, ensuring that the software can be **reliably released at any time** and, when releasing the software, without doing so manually. It aims at building, testing, and releasing software with greater speed and frequency. The approach helps **reduce the cost, time, and risk** of delivering changes by allowing for more **incremental updates to applications in production**.¹

Continuous Delivery vs Continuous Integration

While Continuous Delivery is about releasing software, **Continuous Integration** is the necessary practice to frequently integrate changes from different contributors. Both practices are often just abbreviated as "CI/CD".

Zalando's **Continuous Delivery Platform (CDP)** provides the capabilities to implement Continuous Delivery:

- code is authored, committed, and pushed to a short-lived branch on GitHub Enterprise
- a Pull Request (PR) is opened to merge the short-lived branch to the main branch
- CDP runs automated tests and deploys the PR changes to a test/preview environment
- the PR is merged after verifying that changes are correct
- CDP automatically deploys the updated main branch to production

The above workflow should ensure that the main branch always reflects the latest state of what is deployed in production. Therefore, any new merged change is an incremental automated update to the application in production. This reduces risks and is the essence of Continuous Delivery.

Continuous Delivery vs Continuous Deployment

With Continuous Delivery, you can release changes at any time, but the trigger ("deploy to production") can be manual. With **Continuous Deployment**, you automatically trigger the entire process from code commit to production. Code changes are pushed live once they receive validation and pass all tests. This means customers can

Table of contents

Good Practices
If it hurts, do it more often
Limit work-in-progress (WIP)
Measure Software Delivery Performance
Community Forums
Further Reading





Filters:

Organizations (5/532)

Repositories

Event type (All)



Latest pipeline run	Time	Status	Action
master-85 ➔ master A ↗ 02119c	7m ago 3m, 51s	BUILD DEPLOY-TEST-STAGING DEPLOY-STAGING DEPLOY-LIVE	
pr-132-3 ➔ A ↗ 132 → db9ddf	8m ago 3m, 40s	BUILD STAGING-DEP... STAGING-DEP... STAGING-DEP... STAGING-DEP... LIVE-DEPLOY- LIVE-DEPLOY...	
SIZING /	19m ago	BUILD VISUAL-TEST DEPLOY-PR S-100 DEPLOY-LIVE L-100	
master-129 ➔ master A ↗ 182e29			
CEP, CEP/GH#268 moved	19m ago 2m, 33s	BUILD DEPLOY-STAG... TRAFFIC-100... DEPLOY-PROD... TRAFFIC-10-P... TRAFFIC-50-P... TRAFFIC-100...	
pr-270-1 ➔ A ↗ 270 → 9f39e5			
SIZING /	19m ago	TEST BUILD-PR BUILD-PR... DEPLOY-... TRAFFIC-... DEPLOY-... PROD-TR... PROD-TR... PROD-TR...	
Adjust ➔ A ↗ 113 → ef86fd			
SIZING /	22m ago 16m, 51s	Q... Q... D... D... D... D... D... D... N... S... P... S... P... S... P... P... P...	
#269: Clean up ➔ A ↗ 358 → c0ded			
	27m ago	BUILD DEPLOY-TEST TESTING DEPLOY-PROD TRAFFIC-10-P... TRAFFIC-50-P... TRAFFIC-100...	

Source: "Sunrise - Zalando's Internal Developer Platform", Henning Jacobs, Executive Principal Engineer, Zalando SE <https://platformengineering.org/talks-library/sunrise-zalandos-internal-developer-platform>

The screenshot shows the "Create a Python FastAPI" wizard in the AWS Lambda console. The left sidebar contains navigation links: Home, Catalog, Catalog Import, My Applications, Create, Access Control, APIGEE, DASH, Infrastructure, InnerSource, Runway Contr..., Documentation, v4.44.2, GitHub.com, and Settings.

The main area displays the "Properties" step of the wizard. It includes the following fields:

- Component id***: khtest20210502
- New GitHub repo name**: (empty)
- Description**: (empty)
- New GitHub repo description**: (empty)
- containerName***: (empty)
- containerTag***: (empty)
- containerPort***: (empty)
- auto_trigger_first_release**: A dropdown menu showing "yes" selected.

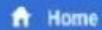
A "NEXT" button is located at the bottom of the form.



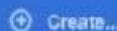
Box.com Catalog



SEARCH



Home



Create...



Tech Radar



Workflows



Feedback



Settings

Components

[CREATE COMPONENT](#)[SUPPORT](#)

TYPE

All

PERSONAL

Owned 0

Starred 2

BOX.COM

All 5

OWNER

LIFECYCLE

TAGS

All (5)

NAME	OWNER	LIFECYCLE	GHE	DESCRIPTION	ACTIONS
box-governance	governance-dev-team	production		Manage document retention and di...	
box-keysafe	keysafe-dev-team	production		Maintain complete, independent co...	
box-shield	shield-dev-team	production		Prevent data breaches with classifi...	
box-sign	sign-dev-team	production	S		
box-zones	zones-dev-team	production		Address data residency obligations...	

[Filter](#)[X](#)

Home

Catalogue

Explore Reusable entities like API's, Components, Libraries and More...

Tech Docs

Discover Architecture Documents (ASR|ADR|BluePrints) and More...

Explore

Explore Information Radars, Taxonomies and KPIs

Register

Register a new ReUsable Entity in DbCatalogue

streamyard.com is sharing your screen.



Taxonomy-based asset view

SUPPORT

FUNCTIONAL TAXONOMY ASSET CLASSIFICATION PB CAPABILITY MAP TECHNOLOGY FUNCTION I&C CAPABILITY MAP

Search

UI Entities (0)

UI

- Frameworks
- Controls
- Libraries

Data Science

- Code
- Data Models
- Workflow
- Security
- Services
- Monitoring
- Content Management
- Automation
- Reusable Implementations
- Unclassified

NAME	OWNER	TYPE	LIFECYCLE	TAGS
------	-------	------	-----------	------

streamyard.com is sharing your screen. Stop sharing Hide

No records to display.



Source: "SoundCloud Echo: Next-Level Humane Registry with Backstage", Julio Zynger <https://developers.soundcloud.com/blog/soundcloud-echo-next-level-backstage>

GROUP — TEAM
beep-team ★

OVERVIEW MEMBERS PULL REQUESTS DEBT

beep-team

For team-only communication, alerts, repository updates, etc.

engineering

Ownership

Direct Relations Aggregated Relations

Category	Count
OTHER	19
ORGANIZATIONAL_SERVICES	18
TOOLS	10
LIBRARIES	9
CONTAINERS	4
GRPCS	3

Links

Confluence Space Shared Google Drive Knowledge Sharing

Announcements Inbox

Since you last visited, new announcements have been posted! Check them out:

- Eng-Doc will be replaced by a printed book.
- Decommissioning of mothership scheduled to the end of 2022. Read more on the link.
- We are moving our datacenter to the Polar Circle. Please buy warm coats.

GOT IT. DON'T NOTIFY ME ABOUT THESE AGAIN.

example-service This is a placeholder

README

The team builds workflows and tooling to ensure backend developers are shielded from the evolving complexities of the underlying infrastructure effortlessly at every stage of the development cycle. The BEEP team enables developer self-service across the organization.

BEEP owns the CI/CD area, being holder of our Cloud Strategy vision, provides tools, creates and maintains shared libraries for backend teams software capabilities available effortlessly to engineering teams. Runtime capabilities like traffic shaping, rate limiting, fault tolerance, graceful degradation are examples that should not be reinvented for every new system, just like build-time ones, e.g. documentation, testing, API publishing, etc.

BEEP promotes architectural best practices, and helps ensure consistency to drive a clearer mental model for engineers while speeding up onboarding. In order to do so, BEEP works closely with Backend Leads and Collective to gather qualitative and quantitative input to drive its prioritization according to its mission.

Gabito
Upgraded event registrations

71%

[View more](#)

Bionic
Migrated components

97%

[View more](#)

Java 11
Migrated components

98%

Python 3
Migrated components

50%



Open pull requests  REVIEW REQUIRED

backstage	dependabot	
chore(deps): bump async from 2.6.3 to 2.6.4		
Created at: 3 months ago	Last update: 3 months ago	

turning-red	meiLee	
feat: add 4Town package		
Created at: 3 months ago	Last update: 3 months ago	

templates	cappuccino	
feat: New email template added		
Created at: 2 months ago	Last update: 3 months ago	

 REVIEW IN PROGRESS

rms	最好的同事	
feat: init React project		
Created at: 3 months ago	Last update: 3 months ago	

turning-red	gregorytalita	
feat: Migrate workflow		
Created at: 2 months ago	Last update: 3 months ago	

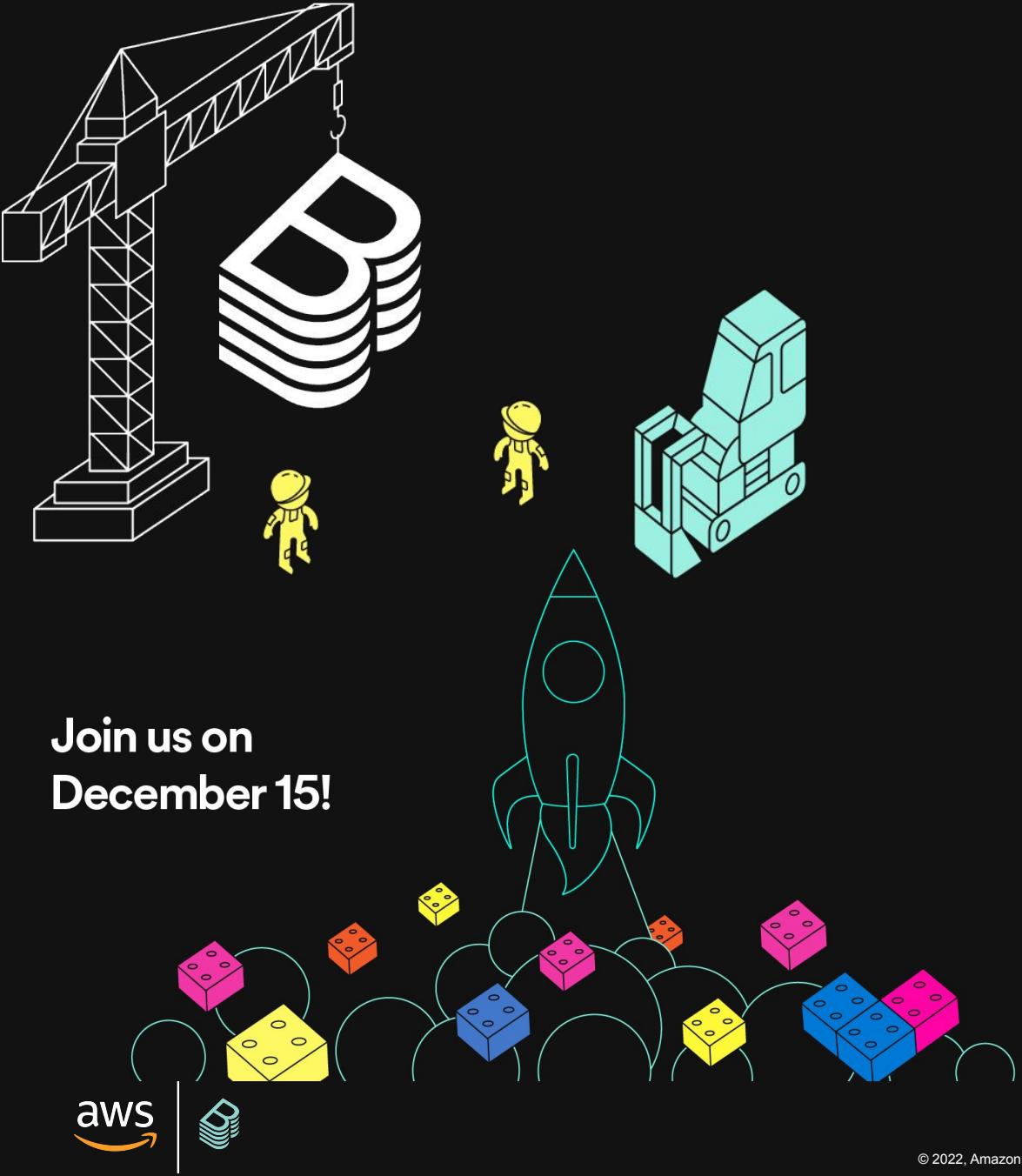
templates	migliorMentore	
feat: New email template added		
Created at: 2 months ago	Last update: 3 months ago	

 APPROVED

landing-page	dependabot	
chore(deps): bump async from 2.6.3 to 2.6.4		
Created at: 3 months ago	Last update: 3 months ago	

backstage	crivetechie	
feat: Upgrade Backstage to 1.1.0		
Created at: 3 months ago	Last update: 3 months ago	

backstage	najkepsiMentor	
feat: Upgrade Backstage to 1.1.0		
Created at: 3 months ago	Last update: 3 months ago	



Join us on
December 15!



Spotify's Plugins for Backstage

- ❑ **Soundcheck** Ensure quality, reliability and alignment of software architecture throughout your org
- ❑ **RBAC** Use roles to control access to actions and data in Backstage
- ❑ **Skill Exchange** Build a marketplace for short-term learning and growth opportunities in R&D
- ❑ **Pulse** Track metrics that matter and identify gaps in your engineering practices and tools
- ❑ **Insights** Measure usage of Backstage in your organization

Spotify Paid Plugins: SoundCheck

The screenshot displays the Spotify SoundCheck interface, which provides a detailed overview of software components and their testing status across various levels (L1, L2, L3) and categories.

queue-proxy (Starred)

SOUNDCHECK tab selected.

TEST CERTIFIED badge (Golden State for Web).

LEVEL 1 tests:

- Tests run on CI (Passed, 19 minutes ago)
- Coverage is known (Passed, 19 minutes ago)
- Static analysis performed (Passed, 19 minutes ago)
- SLIs are defined (Passed, 19 minutes ago)

LEVEL 2 tests:

- Tests passed on CI (Passed, 19 minutes ago)
- Coverage is healthy (Failed, 19 minutes ago)
- Static analysis has no warnings (Passed, 19 minutes ago)
- Continuous delivery is in place (Passed, 19 minutes ago)
- Has component lifecycle defined (Failed, 19 minutes ago)

LEVEL 3 tests:

- Continuous deployment is in place (Passed, 19 minutes ago)
- Alerting is configured (Passed, 19 minutes ago)
- Has health check (Passed, 19 minutes ago)
- No flaky tests (Passed, 19 minutes ago)

queue-proxy (Starred)

SOUNDCHECK tab selected.

TEST CERTIFIED badge (Golden State for Web).

LEVEL 1 tests (highlighted in a green box):

- Tests run on CI (Check passed)

Description: Indicates whether your system is set up correctly to run!

Test Certified matrix:

	L1	L2	L3
Tests run on CI	✓	✓	✓
Coverage is known	✓	✓	✓
Static analysis performed	✓	✗	✓
SLIs are defined	✓	✗	✓
Level 2			
Tests passed on CI	✓	✓	✓
Coverage is healthy	✗	✗	✓
Static analysis has no warnings	✗	✗	✓
Continuous delivery is in place	✓	✗	✓
Has component lifecycle defined	✓	✓	✗
Level 3			
Continuous deployment is in place	✓	✓	✓
Alerting is configured	✗	✓	✓
Has health check	✓	✓	✓
No flaky tests	✓	✓	✓

Component names listed at the bottom of the matrix:

- www-edge
- www-cache
- www-customer
- www-insights
- www-frontend
- www-load
- www-ingress-skills
- soundcheck
- queue-queue
- entity-overview
- backstage-cache
- customer-notification
- www-dns
- www-slackbot
- www-table
- artist-proxy
- www-public-cache
- www-react-frontend
- www-advisor
- customer-service



Spotify Paid Plugins: Skills Exchange

The screenshot displays the Spotify Backstage Skill Exchange interface, featuring several cards for different opportunities:

- Mentor and pair**: Looking for Product/Program Management mentors.
- Embeds**: Alf - Embed Opportunity Working with Kubernetes.
- Embed with Encore**: Interested in learning more about managing the 2nd largest GKE capacity in the world.
- Designer embed in Soundtrap**: Curious about Soundtrap? Get a feel for a "startup" and smaller design team.
- feedback**: Build a bot to get real-time feedback for meetings.
- Looking for members**: Various profiles looking for help with Backend, UX/Design, iOS, Web, etc.
- Activity-based playlist shelf on Home & in the Discover Hub**: Create activity-based playlists.
- Anonymous social discovery**: Imagine connecting with people who share the same music taste.

At the bottom, there are promotional banners for AWS and B2B.

So many great podcasts – in a language you don't understand! We want to help users find podcasts in their desired language – unlocking discovery and consumption beyond the primary market language.

Looking for members

Anywhere
Hack Week 2022



Looking For Help With
C/C++ TypeScript Web Managed build infrastructure
JavaScript Technical Writing

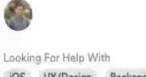
LEARN MORE

Activity-based playlist shelf on Home & in the Discover Hub

The Strategic Programming team creates activity-based playlists. Can we create a shelf that presents to users playlists based on their activity affinity, rather than artist-based?

Looking for members

Anywhere
Discovery Hack Week 2022



Looking For Help With
iOS UX/Design Backend

LEARN MORE

So many great podcasts – in a language you don't understand! We want to help users find podcasts in their desired language – unlocking discovery and consumption beyond the primary market language.

Looking for members

Anywhere
Discovery - Diversity & Belonging Hack Week 2022



Looking For Help With
iOS

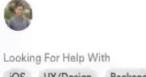
LEARN MORE

Anonymous social discovery

Imagine you're at a cafe or a park and you can anonymously see the favorite songs of other (random) people there. Wouldn't this be the new cool way of discovering music? Anonymous discovery!

Looking for members

Anywhere
Hack Week 2022



Looking For Help With
iOS UX/Design Backend

LEARN MORE

Spotify Paid Plugins: RBAC

Role Based Access Control

Role Based Access Control

RBAC Policies

Backstage policy
"Version 2"
Details
Published on 29 Nov 2022, 14:19:31
Published by user:default/joonpark13
DUPLICATE

Previous Versions

NAME	STATUS
Backstage policy	Inactive
Allow all	Inactive
Default policy	Inactive

Backstage policy - Draft

Details
Updated on 29 Nov 2022, 14:20:59

Role Based Access Control

Home / Version 4 / Catalog Read-Only

Version 4 | Catalog Read-Only

Home / Version 4 / Catalog Read-Only

Version 4 | Catalog Read-Only

New Permission Decision

CHOOSE A SPECIFIC PERMISSION

FILTER BY PERMISSION PROPERTIES

MATCH ALL PERMISSIONS

Resource type

catalog-entity

and

update

delete

Choose attributes

Members

Name

acme-corp

and

update

delete

Choose attributes

BACK TO POLICY

ALLOW

DENY

CONDITIONAL

SAVE

Permission Decisions

+ NEW

Reorder *i* Match by Decision

catalog.entity.read

Allow

catalog-entity

Conditional



Spotify Paid Plugins: Pulse

Pulse

HOME RESULTS

2022 Q4

314

Respondents

Complete your response →

FAQ

What is Pulse?

Good question! Pulse is a periodic survey we run within engineering practices and tools. The questions in this survey will help us understand engineering productivity and satisfaction, and have been designed to be quick and easy to answer.

With your help, we will be able to make data-informed decisions about how to improve engineering productivity and satisfaction in a way that works for you. In particular, no one-size-fits-all approach will work for everyone.

In the future, our ambition is to allow teams across engineering to participate in Pulse surveys, so that we can learn more about specific aspects of the developer experience as well.

You can view the results from previous surveys by clicking the links below.

Participants



Pulse Admin mode

HOME RESULTS

Survey Results

See results for all surveys or filter by individual surveys.

All

2022 Q1

2022 Q2

2022 Q3

Productivity

Overall satisfaction

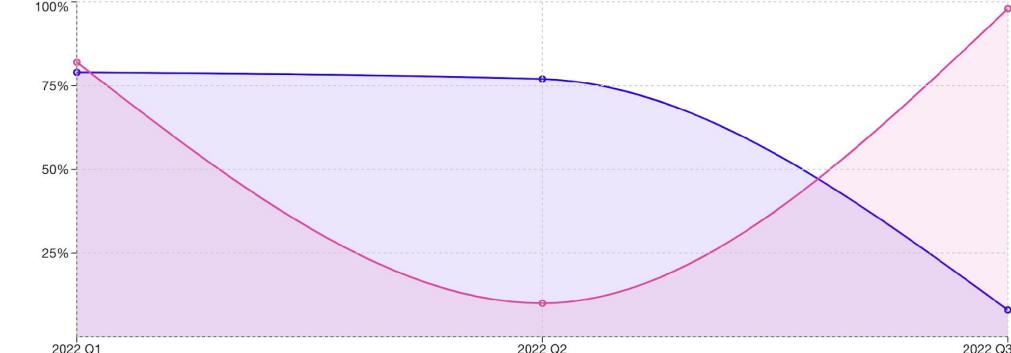
Achieving flow

Velocity

Tools and infrastructure

Documentation

Technical debt



- In general, how satisfied are you with the tasks you do at work?
→ How satisfied are you with the tools that are available for you to do your work?

Pulse

2022 Q4

This survey will ask general questions about your work in the engineering organization.

All submissions are anonymized and aggregated before results are shared. You can find results after the survey closes on the Pulse results page.

Please consider your last three months at the organization when responding to the survey.

In general, how would you rate your ability to be productive at work?



I feel very
unproductive



I feel somewhat
unproductive



Neutral



I feel somewhat
productive



I feel very
productive

In general, how satisfied are you with the tasks you do at work?

Spotify Paid Plugins: Insights

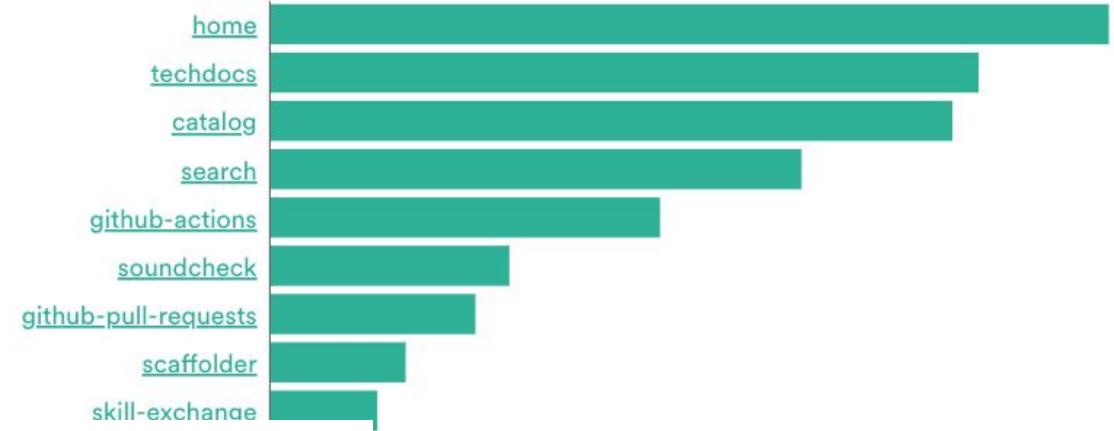
Weekly Active Users (WAU)

522 WAU

+53% since last week



Top Plugins by WAU



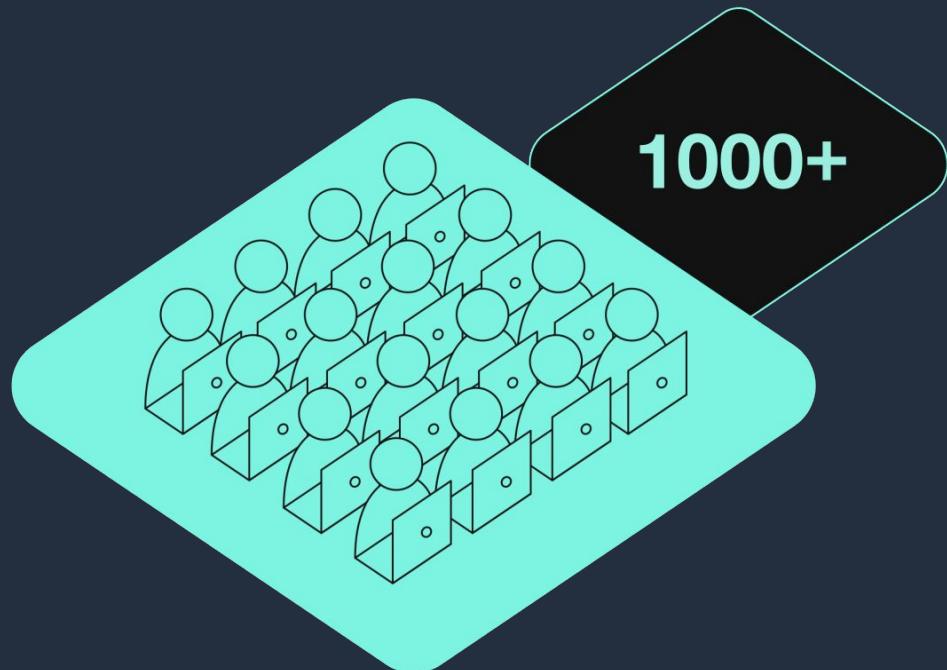
Daily Active Users (DAU)



All Plugins ▾

Where do I start? Lessons learned?

Gather momentum



- 1. Try it into your laptop**
Create your app and play around!

(Less than 1 hour)

- 2. Connect with your service**
This part requires development

(A few weeks by 2-5 devs)

- 3. Start small (but strategic) - Thinnest Viable Product**
Partner with a feature or core service team on a narrow but high-value use case

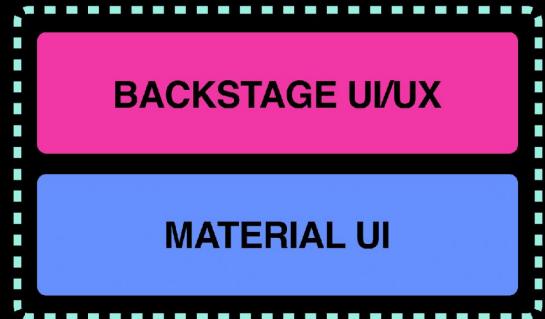
(1-2 quarters by 2-5 devs)

- 4. Spread the word!**
Evangelize and build your expansion/ adoption strategies

(Ongoing by 2-5 devs)

Successful Developer Portals & Platforms need Branding

BACKSTAGE DESIGN SYSTEM



CUSTOM THEMING FOR
YOUR OWN ORGANIZATION

A screenshot of a developer portal interface. On the left, a sidebar titled "Storybook" lists various UI components like "Plugin With Data", "Layout", "Navigation", and "Data Display". The main content area has a purple header with the word "Example" and the subtext "This is an example plugin". Below the header, there are tabs for "OVERVIEW", "CI/CD", "COST EFFICIENCY" (which is currently selected), "CODE COVERAGE", "TEST", and "COMPLIANCE ADVISOR". The "COST EFFICIENCY" section contains a chart titled "Cost Efficiency" showing a green line graph with an upward trend. There are also sections for "Trend" (with a green line graph) and "Additional Information" which includes a "Rightsize GKE deployment" note and a "What can I do?" section with instructions about HPA settings. At the bottom, there are tabs for "Controls", "Accessibility", "Actions", and "Story".

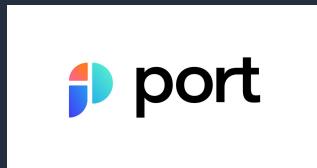


AWS IDP Partners and Open Source

Service Partners



Software Partners



Open Source Projects



External DNS



Grafana



Velero



Cert Manager



Prometheus



Calico



ArgoCD



CoreDNS



Nginx



Customers



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<https://github.com/backstage/backstage/blob/master/ADOPTERS.md>



Thank you!

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