

Towards Standardized Platforms

How the CNOE Project Can Help

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Who is Using Internal Platforms at Work?

80% of Engineering Organizations

will establish Platform Engineering teams by 2026, according to Gartner.¹

~ \$ whois daniel-bodky

- Platform Advocate at [NWS](#)
- Ex Systems Engineer, Consultant
- Focus on Kubernetes, Platforms, and GitOps

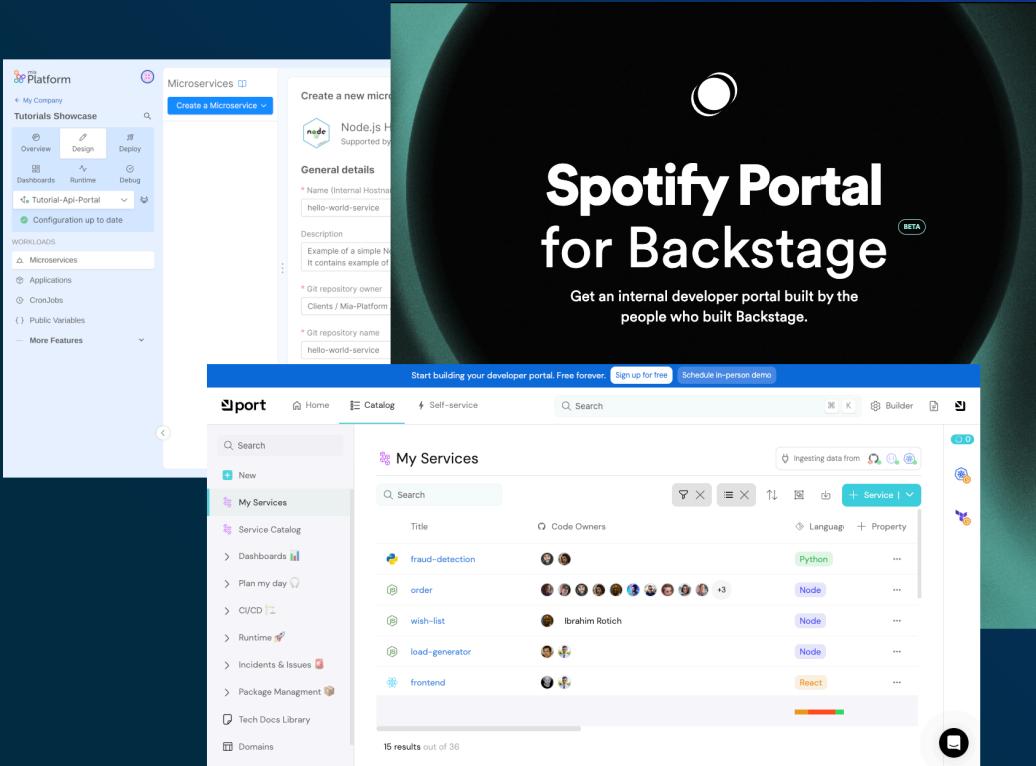


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So What *is* a Platform?

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Some product I buy off the shelf?



The image displays a composite view of a developer portal. On the left, a screenshot shows a dashboard for managing microservices, with tabs for Overview, Design, and Deploy. A modal window is open, titled "Create a new microservice", showing fields for "Name (Internal Hostname)" (set to "Hello-world-service"), "Description" (example of a simple Node.js application), "Git repository owner" (Clients / Mia-Platform), and "Git repository name" (Hello-world-service). On the right, a large circular graphic features the text "Spotify Portal for Backstage" with a "BETA" badge. Below this, it says "Get an internal developer portal built by the people who built Backstage." The overall theme is Spotify's branding.

So What *is* a Platform?

Some fever dream I built
myself?



So What *is* a Platform?



This?

Developer Portal

 **Quicklinks**

- GitLab 
- Jenkins 
- Prometheus 
- Grafana 

 **Tickets**

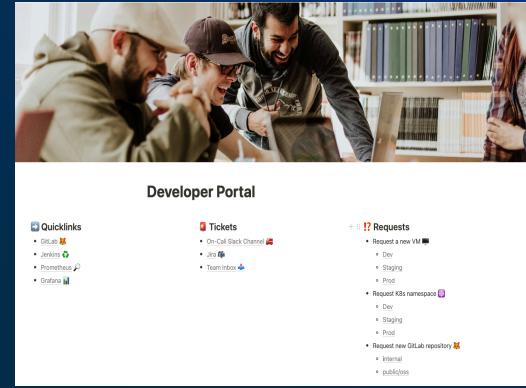
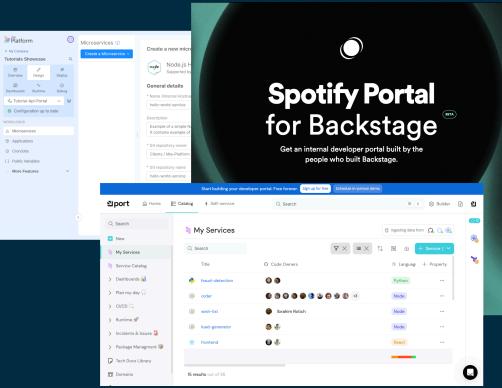
- On-Call Slack Channel 
- Jira 
- Team Inbox 

 **Requests**

- Request a new VM 
 - Dev
 - Staging
 - Prod
- Request K8s namespace 
 - Dev
 - Staging
 - Prod
- Request new GitLab repository 
 - internal
 - public/oss

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So What *is* a Platform?



Any of these!

A platform [...] is an integrated collection of capabilities defined and presented according to the needs of the platform's users.

- CNCF Platforms White Paper ²

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In Other Words...

Platforms need to...

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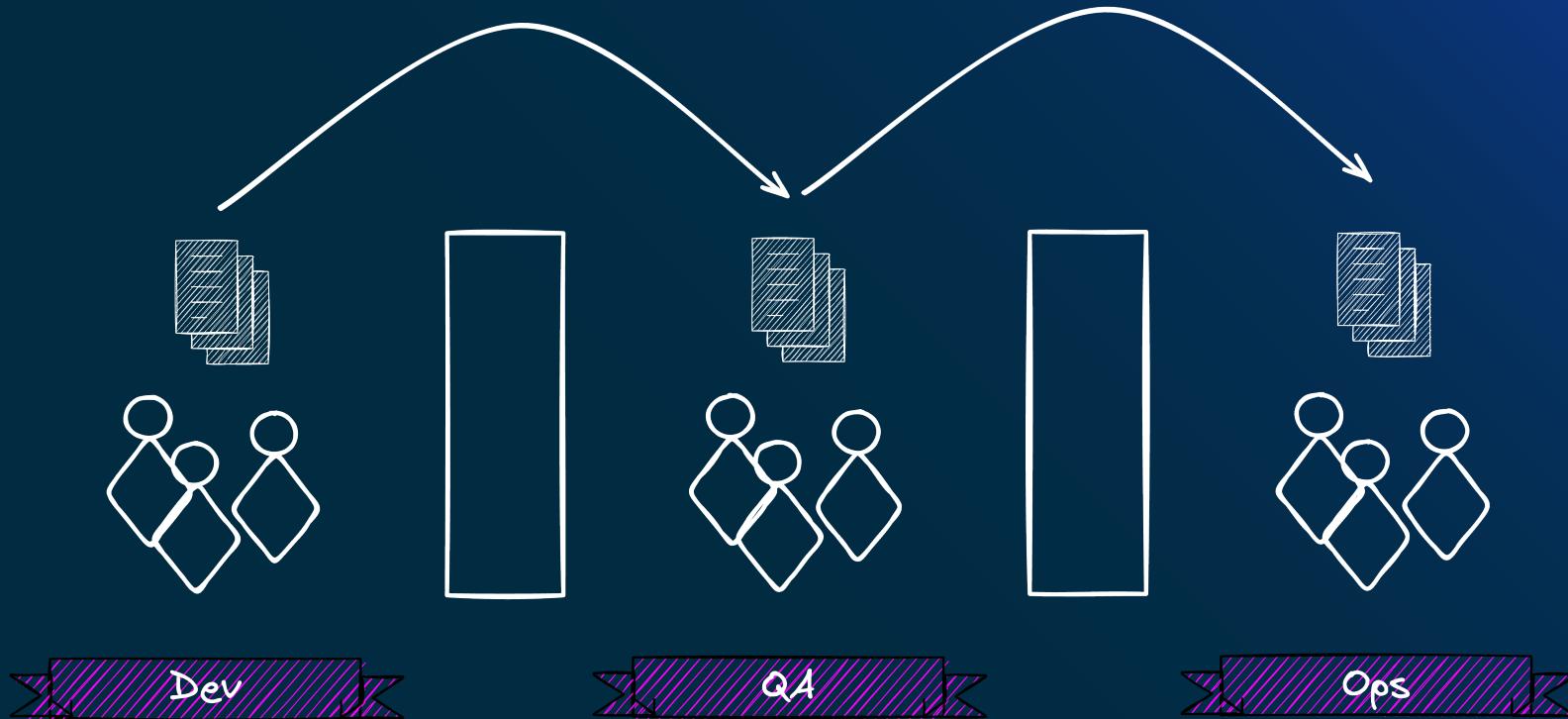
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...throughout your engineering organization **as a whole!**

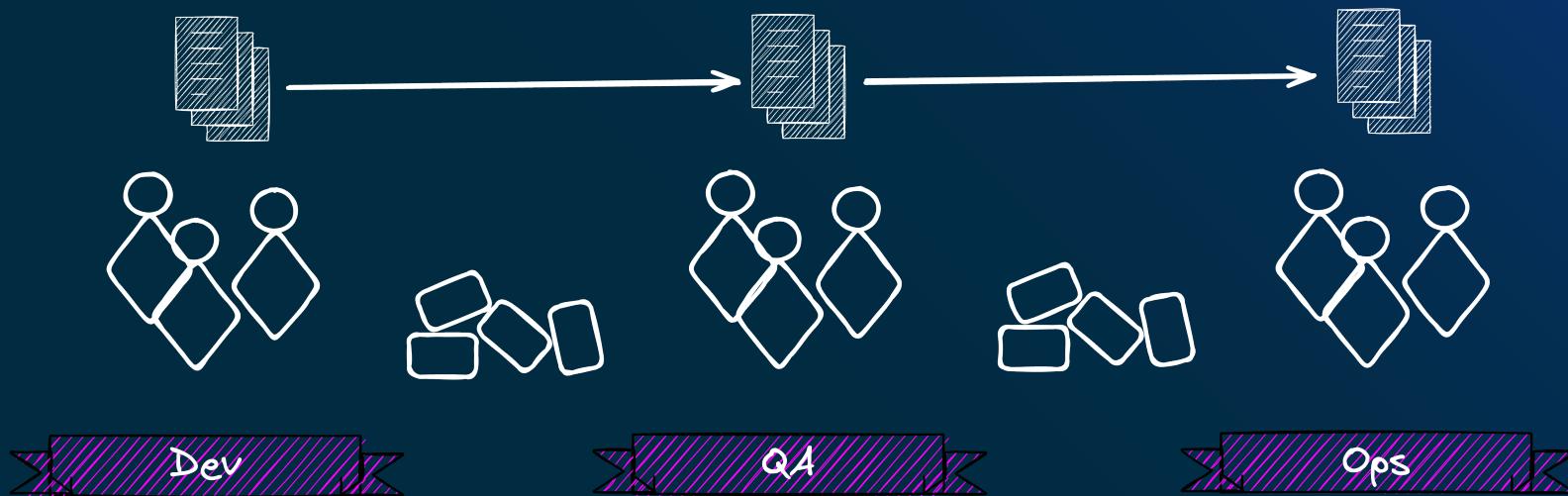
But Why Would You Want a Platform?

Remember DevOps?

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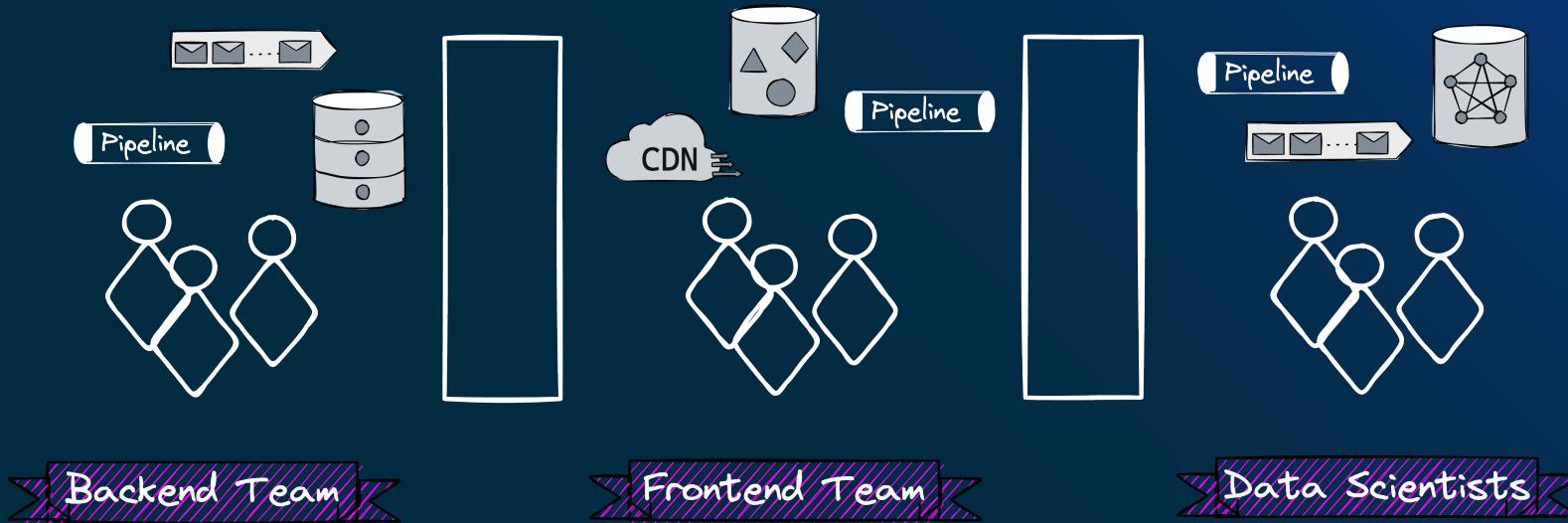


Remember DevOps?

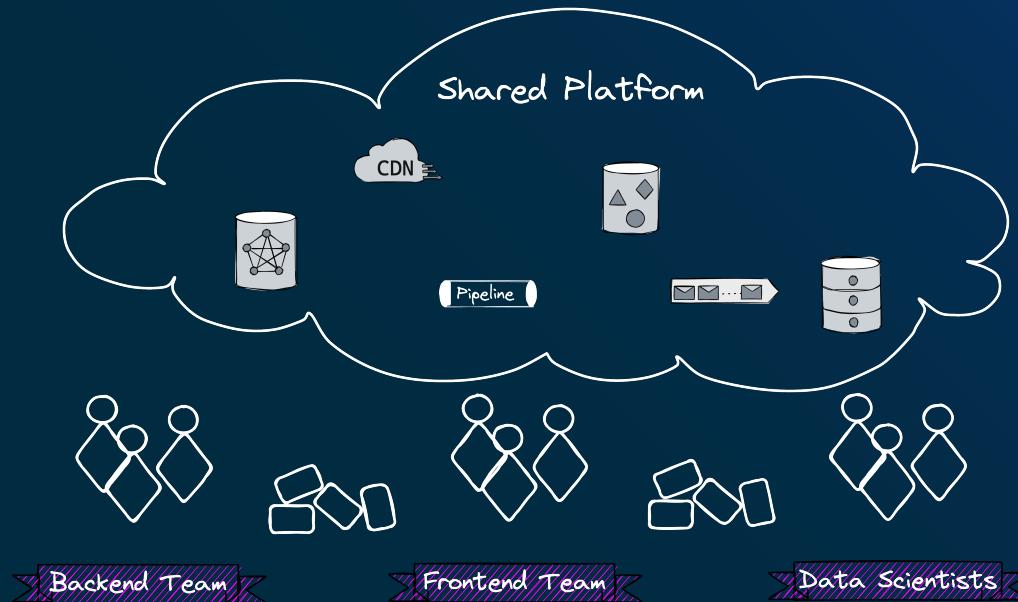


Platform Engineering Is Similar!

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Platform Engineering Is Similar!



Platforms Can Help Your Engineering Teams

- Improved productivity and efficiency
 - through curated self-service(s)
- Reduced operational overhead
 - through centralized infrastructure capabilities
- Faster TTM for products, features, and patches
 - through streamlined procedures
- Consistency and standards across your organization
 - through consistent look and feel on the platform

So How Do I Build A Platform?

Internal Developer Platforms are a strategic commitment. Share learnings & build in the open.

- from the CNOE project's website ³

Don't Reinvent When You Can Reuse and Adapt

[@horovits](#), KCD Munich 2024

CNOE (Cloud Native Operational Excellence)

A framework for bringing together enterprises to...

- ...navigate their operational technology decisions
- ...de-risk their tooling bets
- ...coordinate contributions
- ...offer guidance on available technologies



CNOE Tenets

summarized, from the CNOE project page ⁴

CNOE Tenets

1 - Open Source First

Open Source technologies are prioritized over proprietary technologies to allow alignment and coordination of contributions from many different participants.

CNOE Tenets

2 - Community Driven

Decisions on technologies, level of commitment and contributions are driven by the community and its governing body.

CNOE Tenets

3 - Tools and not Practices

The CNOE project offers suggestions on which tooling and configurations to use, not which practices to build.

CNOE Tenets

4 - Powered by, but not Limited to Kubernetes

CNOE tooling builds on top of Kubernetes and CNCF technologies while providing solutions to target virtually any compute platform.

summarized, from the CNOE project page ⁴

CNOE Tenets

5 - Standardized Infrastructure, Customizable by Users

CNOE tries to ensure best possible usability to its stakeholders by allowing customizations and reducing complexity of integrated tooling.

CNOE Tenets

6 - Built to be Shared

All CNOE development, e.g. its reference architecture and deployable packages, are developed out in the open and made available for anyone to use.

idpbuilder CLI

idpbuilder CLI

A command line tool for...

- ...bootstrapping...
- ...extending...
- ...developing...

...internal developer portals

The screenshot shows the GitHub repository page for 'idpbuilder' owned by 'cnoe-io'. The repository has 68 issues, 12 pull requests, and 140 stars. The description reads: "Spin up a complete internal developer platform with only Docker required as a dependency." Below the description are links to a Slack archive and the Apache-2.0 license. The repository is marked as a public custom property. The code tab is selected, showing a list of recent commits from 'csantanapr':

Commit	Message	Time Ago
.devcontainer	add bash-completion for devc...	2 months ago
.github/workflows	remove local issue templates f...	last week
api/v1alpha1	support app set (#266)	2 weeks ago
docs	update readme and add exempl...	6 months ago
examples	add email addresses to users i...	3 days ago
globals	install gitea (#39)	7 months ago

idpbuilder - Core Packages

idpbuilder - Core Packages

ArgoCD
Cloud-Native GitOps Engine



idpbuilder - Core Packages

Gitea
Lightweight SCM



idpbuilder - Core Packages

Backstage
Service Catalog & IDP Framework



idpbuilder - Core Packages

Crossplane

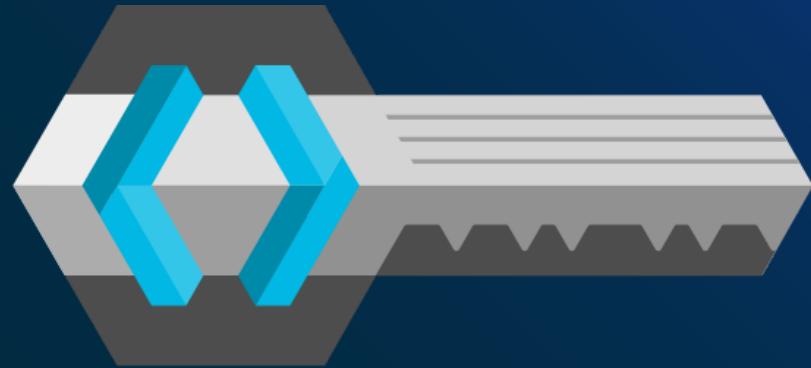
Cloud-Native Controlplane Framework



Crossplane

idpbuilder - Core Packages

Keycloak
Cloud-Native IAM Platform



KEYCLOAK

idpbuilder - Core Packages

External Secrets Operator

External Secret Management for Kubernetes



Demo

Summing It Up...

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- ...**platforms can enable** standardized, streamlined processes throughout your engineering organization
- ...**building platforms is about empathy** with your team(s) and strategic decisions regarding integrated technologies
- ...**the CNOE project defines and promotes** feasible, proven standard tooling for building customizable platforms
- ...**idpbuilder can help** by bootstrapping portable, demo-able, and customizable platforms

Thank you

for your time and interest!

Learn more here:

- [CNCF Platforms White Paper](#)
- [CNOE Project](#)
- [idpbuilder GitHub repository](#)
- [idpbuilder Reference Implementation](#)

[slides.dbodky.me/kcd-munich-2024]