



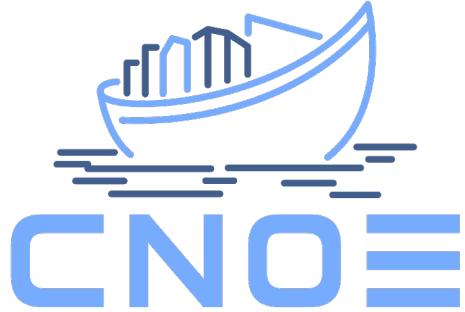
KCD New York

2024



Unveiling Cloud Native Operational Excellence (CNOE)

Pioneering the Future of IDPs



The New York Times



Speakers

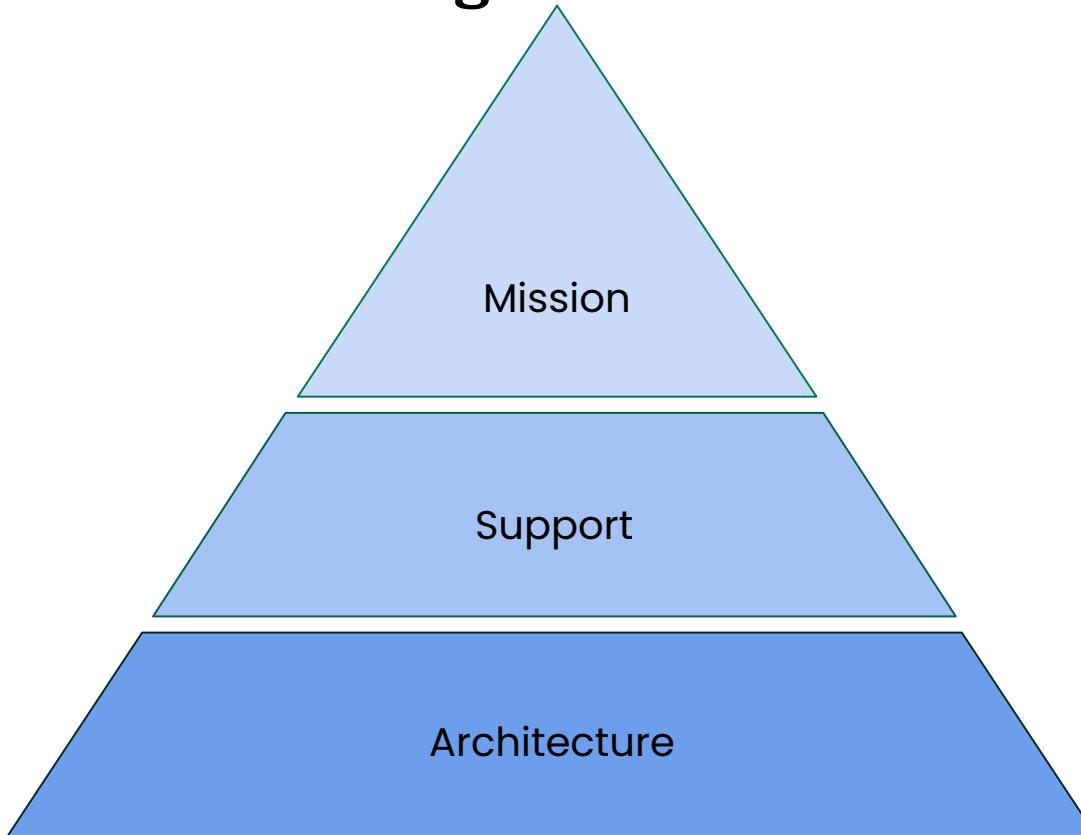


Tiara Sykes
Software Engineer



Luke Philips
Staff Software Engineer

Defining a “Platform”



Mission Statements



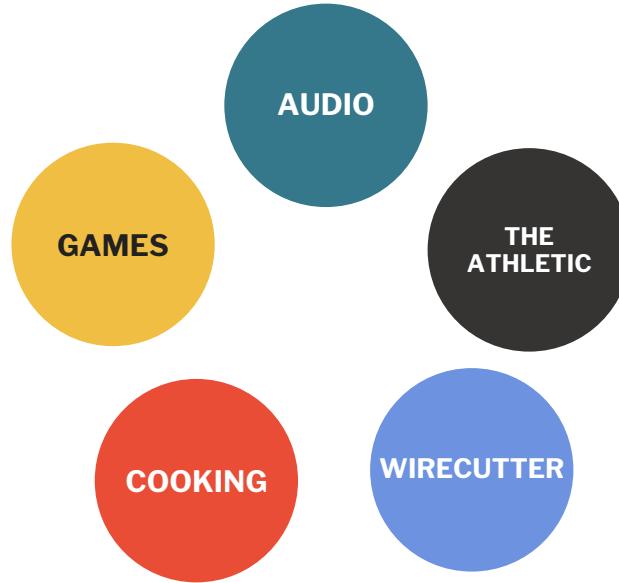
Mission
Support
Architecture

Mission

“We seek the truth and help people understand the world”



NEWS



The New York Times Engineering Mission

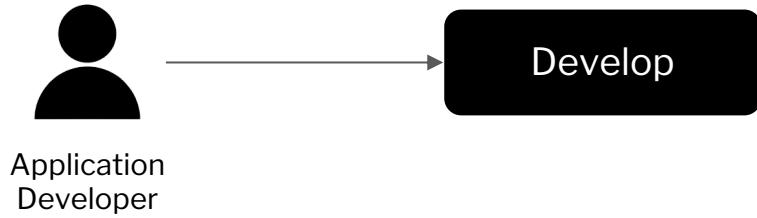
“To build high quality, technically excellent solutions that enable people to seek the truth and better understand the world in an increasingly diverse number of ways.”

Platform Support

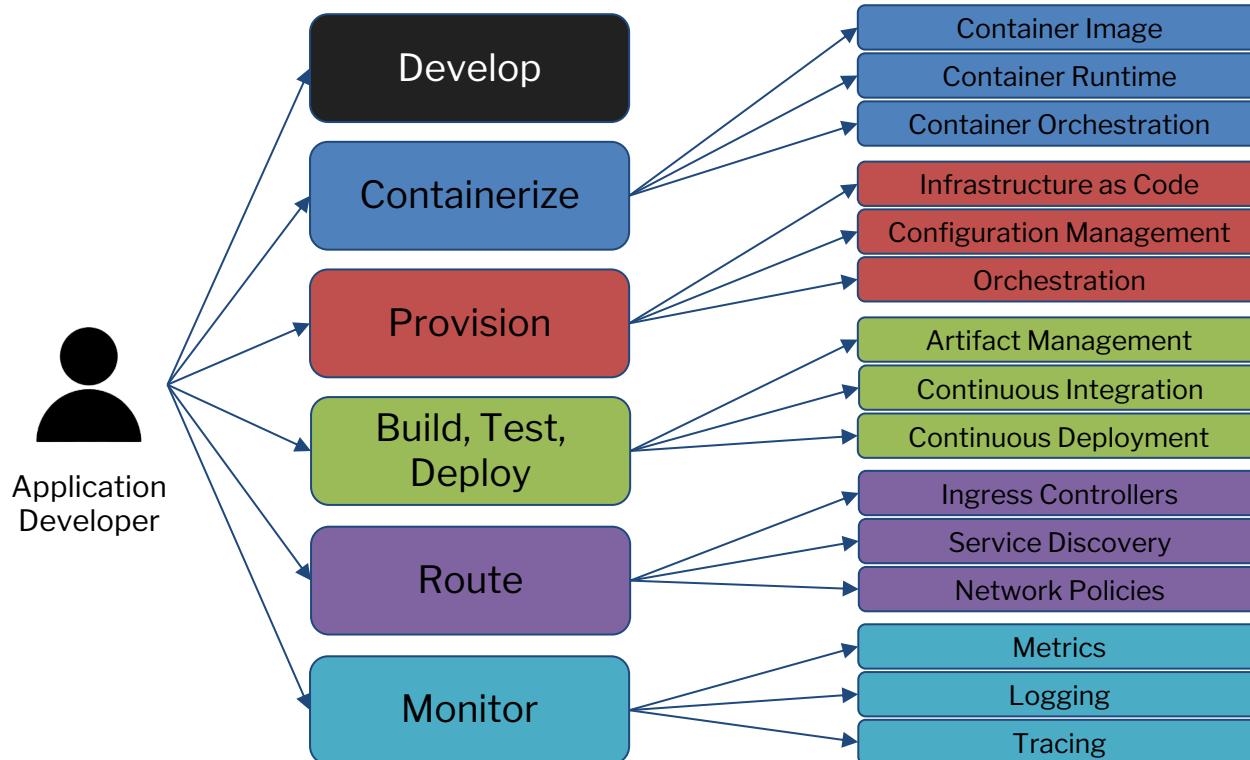


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Ideal State of Application Developer



Reality of Application Developer



What is an IDP?



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An **Internal Developer Platform** (IDP) is built by a platform team to build golden paths and enable developer self-service.

Application Configuration Management	Manage application configuration in a dynamic, scalable and reliable way.
Infrastructure Orchestration	Orchestrate your infrastructure in a dynamic and intelligent way depending on the context.
Environment Management	Enable developers to create new and fully provisioned environments whenever needed.
Deployment Management	Implement a delivery pipeline for Continuous Delivery or even Continuous Deployment (CD).
Role-Based Access Control	Manage who can do what in a scalable way.

IDP @ The New York Times

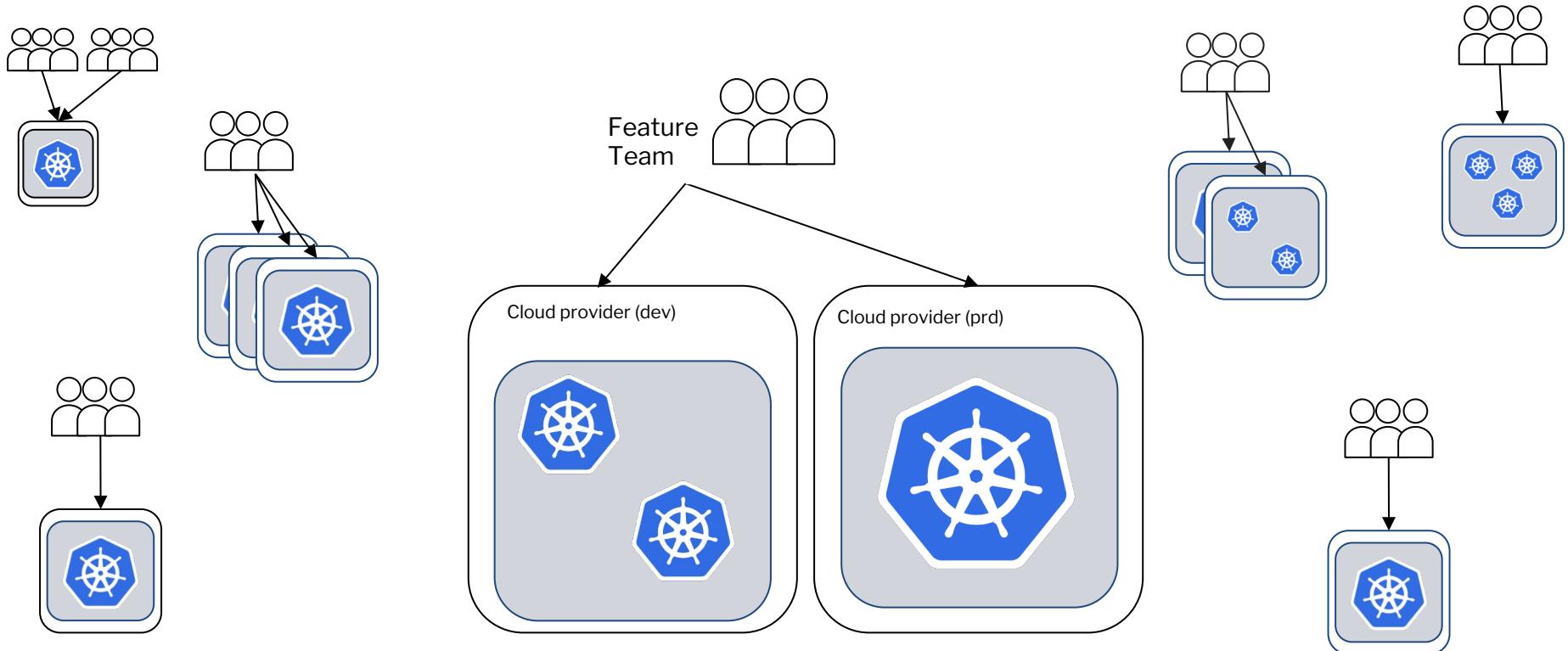
The Delivery Engineering Shared Platform (DVSP) is designed to create a set of tools and capabilities that any developer at The New York Times can use to accelerate work. This aligns with The Times' enterprise goal of “**Use technology and data to propel our growth.**”

Platform Architecture



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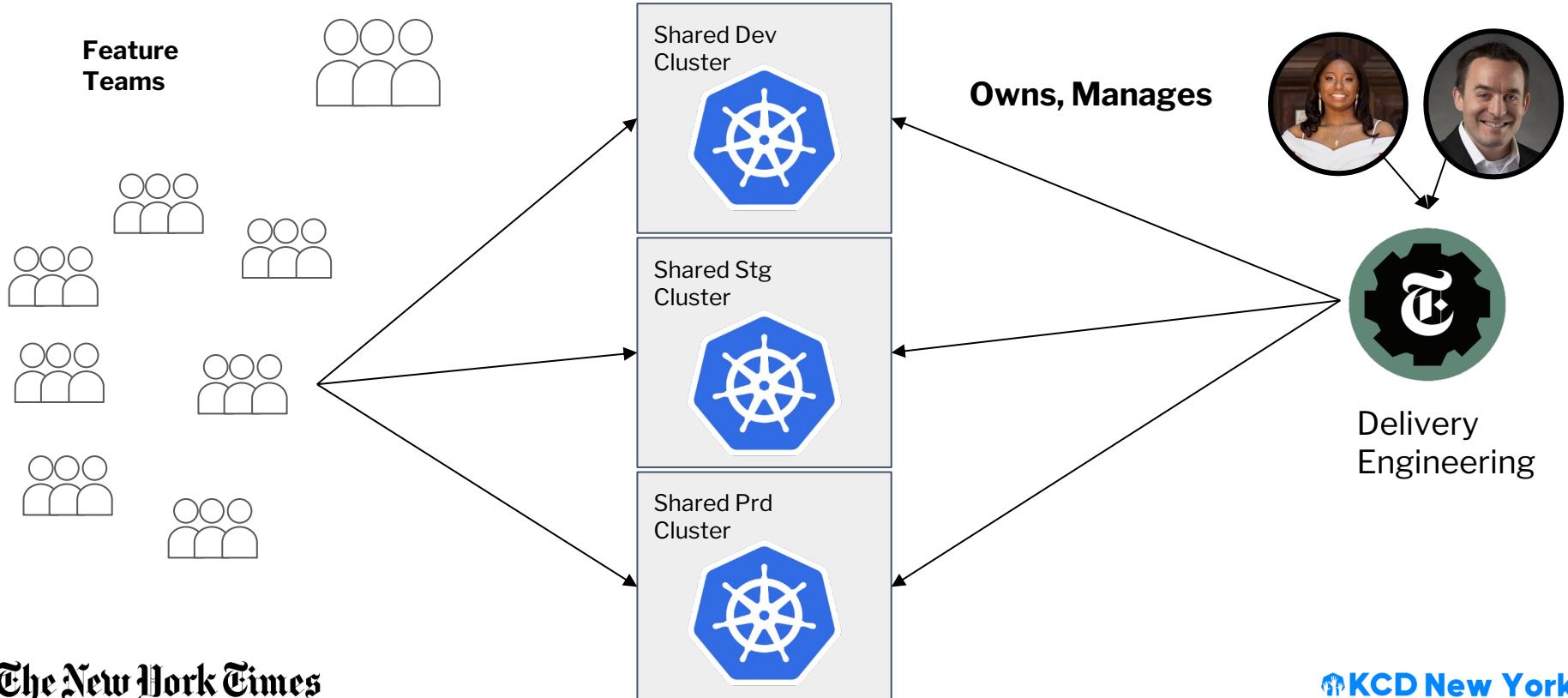
Internal Developer Platform



Shared Clusters



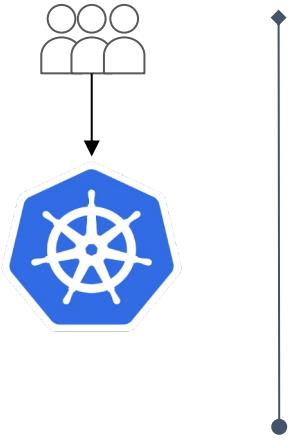
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How it Started



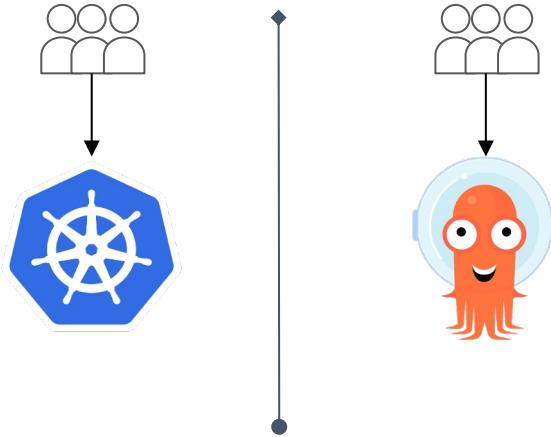
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How it started - GitOps all the things



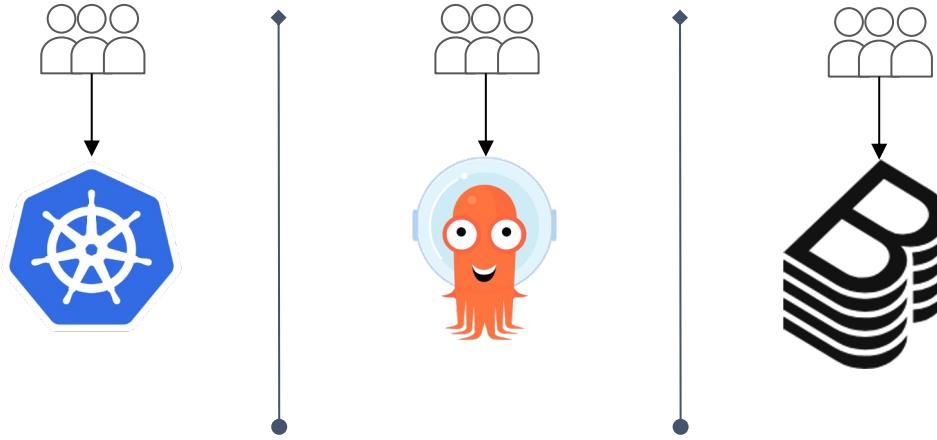
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How it started - Backstage!



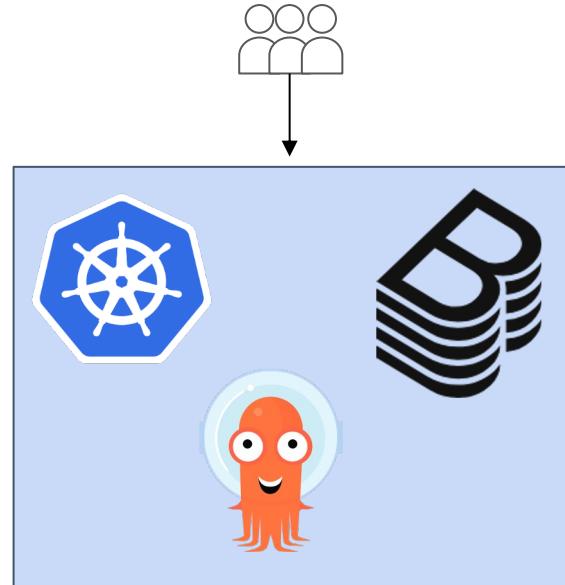
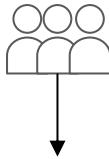
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Platform Development



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Platform Architecture as a distribution

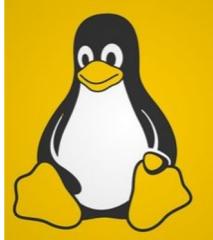


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What is a Distribution?



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A **Linux distro**

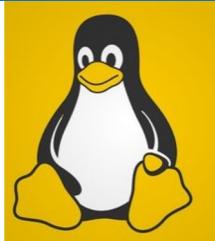
is an operating system made from a software collection that is based upon **the Linux kernel** and, often, a package management system.

What is a Distribution?



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A Linux distro

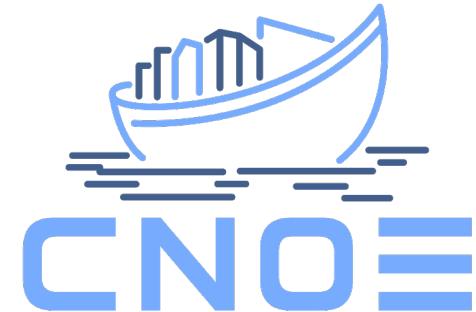


is an operating system made from a software collection that is based upon **the Linux kernel** and, often, a package management system.

An IDP Distribution

is a developer platform made from a software collection that is based upon **Kubernetes**, as well as a package management system.

CNOE is an internal developer platform (IDP) *distribution* built in the open in collaboration with the user community to help with delivering a platform powered by CNCF technologies



Why does building a Distribution matter?



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- It gets us past technology choices

Why does building a Distribution matter?



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- It gets us past technology choices
- The focus shifts on improving technologies used

Why does building a Distribution matter?



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- It gets us past technology choices
- The focus shifts on improving technologies used
- We shift to defining best practices

Platform Architecture Capabilities

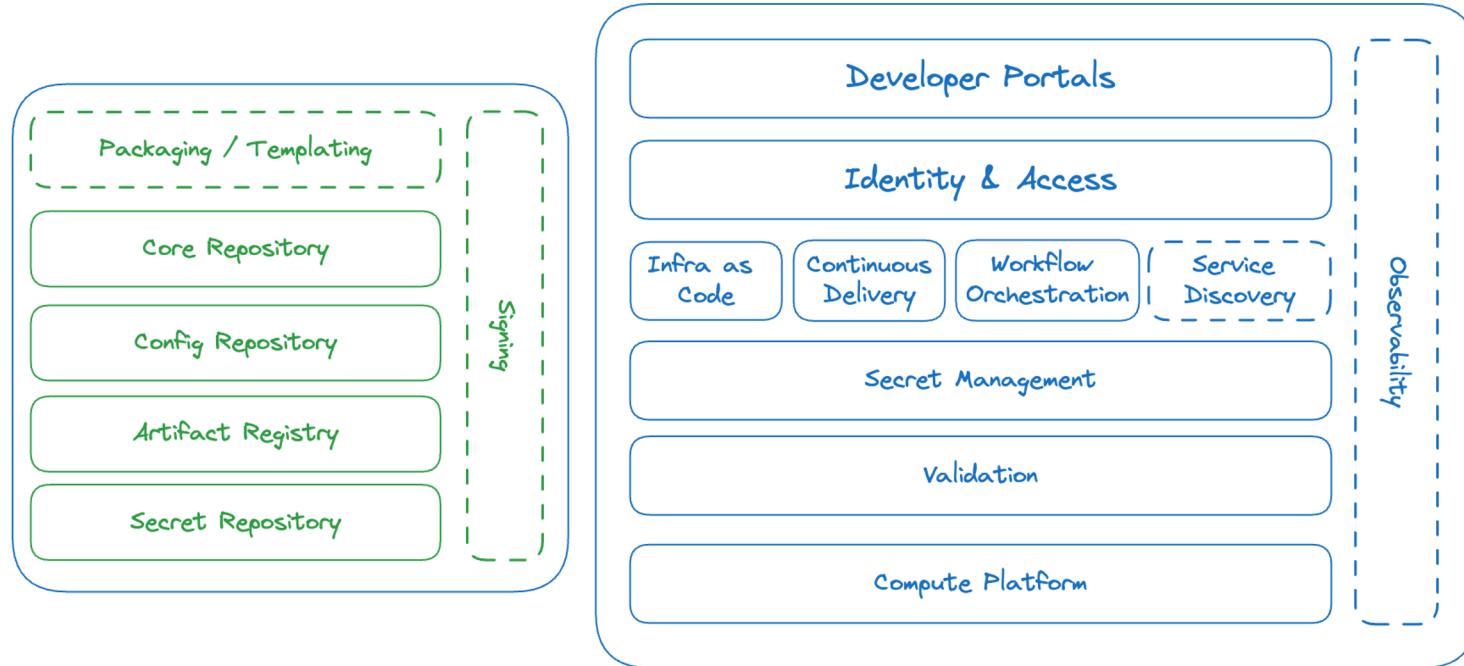


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Internal Developer Platform - Capabilities



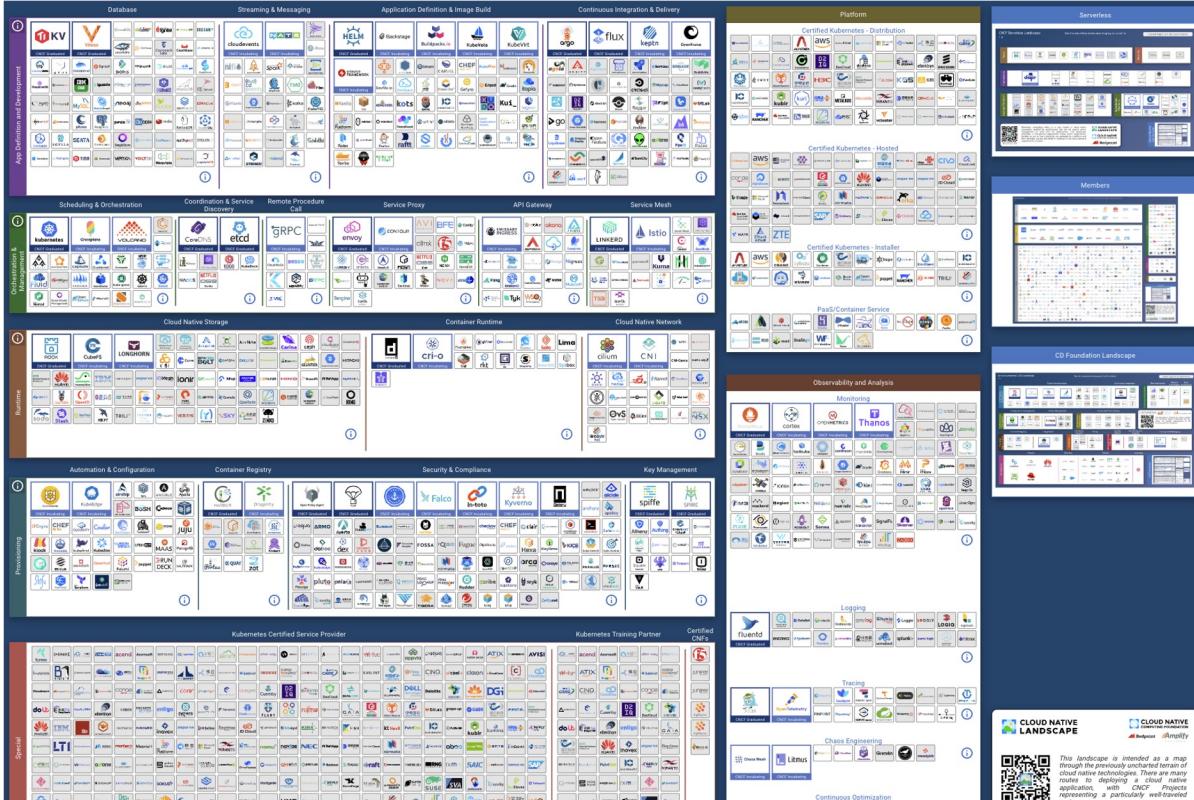
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Cloud Native Landscape



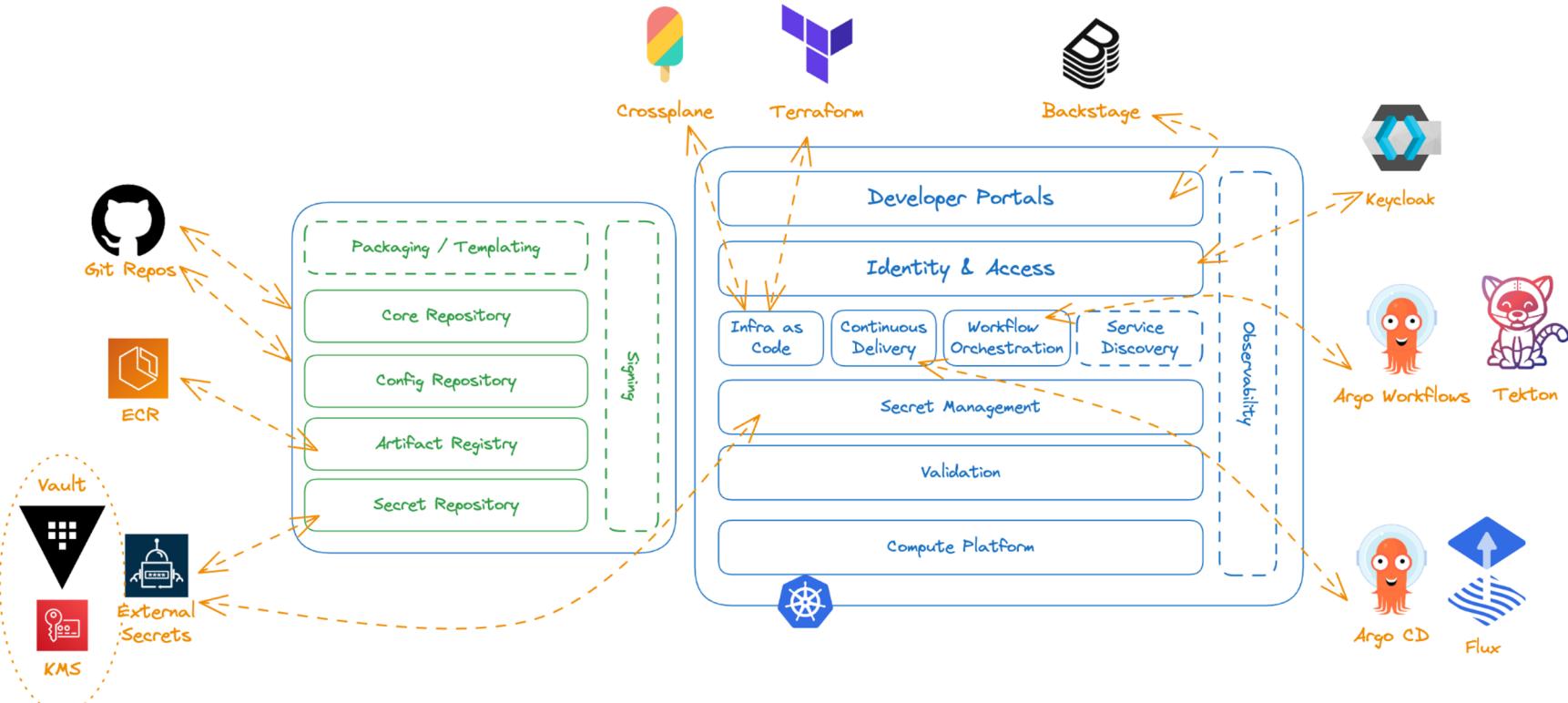
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The New York Times

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2024

Reduce Technology Choices



Standardization vs. Autonomy: The Platform Engineering Balance



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Accelerate Building Your IDP



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Accelerate Building Your IDP



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Screenshot of the CNOE GitHub organization profile:

Overview | **Repositories 20** | **Projects 1** | **Packages** | **People**

CNOE
CNOE GitHub org
168 followers | https://cnoe.io | cnoe-steering@googlegroups.com

Unfollow

README.md

CNOE (short for Cloud Native Operational Excellence) is an open source organization comprised of enterprise companies, sharing best practices on building, testing, and deploying internal developer platforms (IDPs) at enterprise scale.

- To start with a developer platform in a development environment, start with the [idpBuilder tool](#).
- For testing purposes, you can launch the [idpBuilder tool](#) in [AWS Cloud9](#), [DevPods](#), or [GitHub Codespaces](#).
- To run the CNOE IDP stack on an Amazon account, check the [AWS reference implementation](#).
- To see the latest list of CNOE members, know more about the CNOE IDP stack, or learn about [supported capabilities](#), check the [CNOE.io website](#).
- To engage with us and ask questions or to report issues, join us on the CNCF slack channel for [#cnoe-interest](#).

People
This organization has no public members.
You must be a member to see who's a part of this organization.

Top languages
TypeScript, Go, JavaScript
HCL, Dockerfile

[Report abuse](#)

Popular repositories

idpbuilder Spin up a complete internal developer platform with only Docker required as a dependency. Go 125 44	reference-implementation-aws This is the reference implementation of CNOE and its toolings on AWS. HCL 40 20
plugin-argo-workflows Backstage plugin for Argo Workflows. TypeScript 11 1	website CNOE CLI. JavaScript 6 8
backstage-app TypeScript 5 7	cnoe-cli CNOE CLI. Go 4 3

Accelerate Building Your IDP



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<https://github.com/cnoe-io/idpbuilder>

Screenshot of the GitHub repository page for idpbuilder.

Code tab selected.

About section:

Spin up a complete internal developer platform with only Docker required as a dependency.

cloud-native.slack.com/archives/C05T...

Releases section:

- v0.4.1 (Latest) - 3 weeks ago
- + 4 releases

Packages section:

No packages published

Contributors section:

17 contributors (avatars shown)

Languages section:

- Go 96.7%
- Shell 1.8%
- Makefile 1.5%

IDP Builder section:

Internal development platform binary launcher.

README Apache-2.0 license

Using the idpbuilder

Basic usage

The most basic command which creates a Kubernetes Cluster (Kind cluster) with the core packages installed.

```
./idpbuilder create
```

► What are the core packages?

Once idpbuilder finishes provisioning cluster and packages, you can access GUIs by going to the following addresses in your browser.

- ArgoCD: <https://cnoe.localtest.me:8443/argocd/>
- Gitea: <https://cnoe.localtest.me:8443/gitea/>

You can obtain credentials for them by running the following command:

```
./idpbuilder get secrets
```

► The "get secrets" command

Example commands

For more advanced use cases, check out the [examples](#) directory.

You can specify the kubernetes version by using the `--kube-version` flag. Supported versions are available [here](#).

```
./idpbuilder create --kube-version v1.27.3
```

If you want to specify your own kind configuration file, use the `--kind-config` flag.

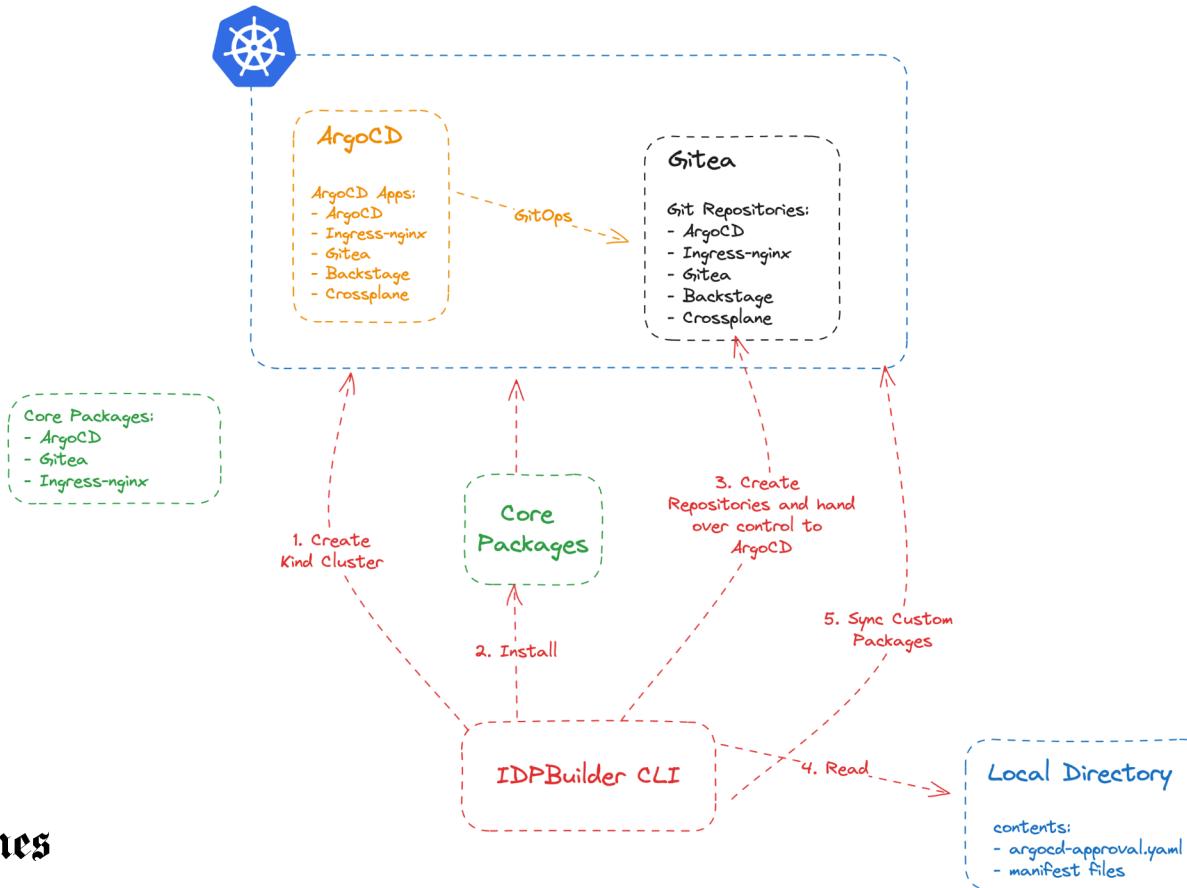
```
./idpbuilder create --build-name local --kind-config ./my-kind.yaml
```

If you want to specify ArgoCD configmap.

Accelerate Building Your IDP



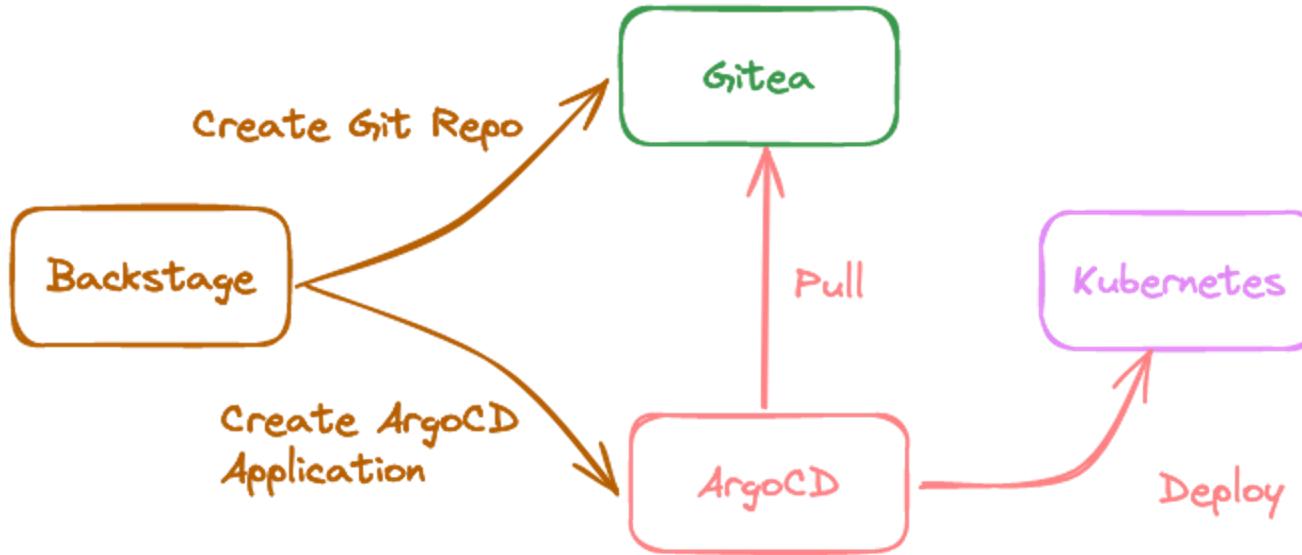
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~/Documents/Workspace/idpbuilder git:(main)±1



 Search Home APIs Docs Create... Tech Radar

Create a new component

Create new software components using standard templates in your organization

Deploy Resources

Deploy Resource to Kubernetes

1

Choose K8S Resources

2

Review

Select a K8S resource to add to your repository.

apiVersion

routing.dv.nyt.net/v1alpha1

APIVersion for the resource

routing.dv.nyt.net.NytiService configuration options

NytiServiceSpec defines the desired state of NytiService

auth

Specifies the Auth Options available to the service, eg. claims and policies.

apiKey

Specify the API key config. May be used to support API key auth and handle backwards compatibility with services that can't handle Oauth2 or JWTs API key is not recommended and should be avoided if possible

extauth*

How is CNOE progressing?



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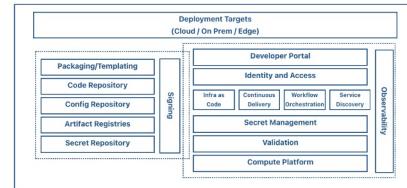
- The Governance Model
- Project Roadmap
- <https://cnoe.io>
- #cnoe-interest on CNCF slack

The screenshot shows the CNOE Governance document. At the top, it says "CNOE Governance" and "This document outlines the formal decision making processes which run the CNOE project." Below this is a section titled "Principles". Further down, there's a "CNOE Roadmap" section with four columns: "Backlog" (4 items), "Now" (1 item), "Done" (1 item), and "Later" (2 items). The "Now" item is "Service Templates v1". The "Done" item is "Internal Developer Portal Strategy Paper". The "Later" items are "Service Maturity Scoring with Backstage" and "Control Plane Strategy Paper". At the bottom of the screenshot, there's a "GitHub" link.

The screenshot shows the Backstage interface with a sidebar on the left. The main area is titled "Create a New Component" and "Available Templates". It lists several templates under the "CNOE" category:

- App with AWS Resources
- App with AWS Resources and workflows
- Create a EKS cluster with EKS blueprints

Each template has a "DESCRIPTION", "OWNER", and "GUIDE" section. There are "CHOOSE" buttons next to each template.



Conclusion



- Our platform journeys are similar
 - We're all navigating this CNCF landscape
- Understand your Principles, Support, and Architecture
- Start with a Reference Architecture and contrast to your needs
- Engage with the community
 - Improve the architecture
 - share experiences to improve for all

Thank You!



@tiara-sykes



@tiara-sykes-nyt



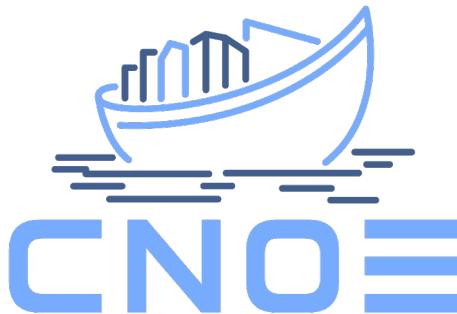
@lukephilips



@lukepatrick

Thanks to CNOE community in their support
for this talk

Jesse Sanford - Nima Kaviani - Carlos Santana -
Greg Haynes - Manabu McCloskey



The New York Times



The New York Times

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2024