Live Webinar • Thursday, Aug 1st, 2024, 10 AM PST

Automating Previewing GitOps Environments with Argo CD and vCluster

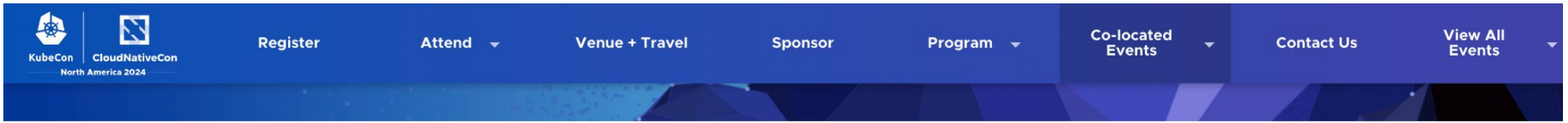
Christian Hernandez
Head of Community, Akuity

Mike Petersen,
Platform Advocate, Loft

argo

vCluster made by loft

Before we Start… ArgoCon!



About

Call For Proposals

Registration Details

Sponsor the Event

ABOUT

ArgoCon
NORTH AMERICA

NOVEMBER 12, 2024

SALT LAKE CITY, UTAH

#ArgoCon

ArgoCon is designed to foster collaboration, discussion, and knowledge sharing on the Argo Project, which consists of four projects: Argo CD, Argo Workflows, Argo Rollouts and Argo Events.

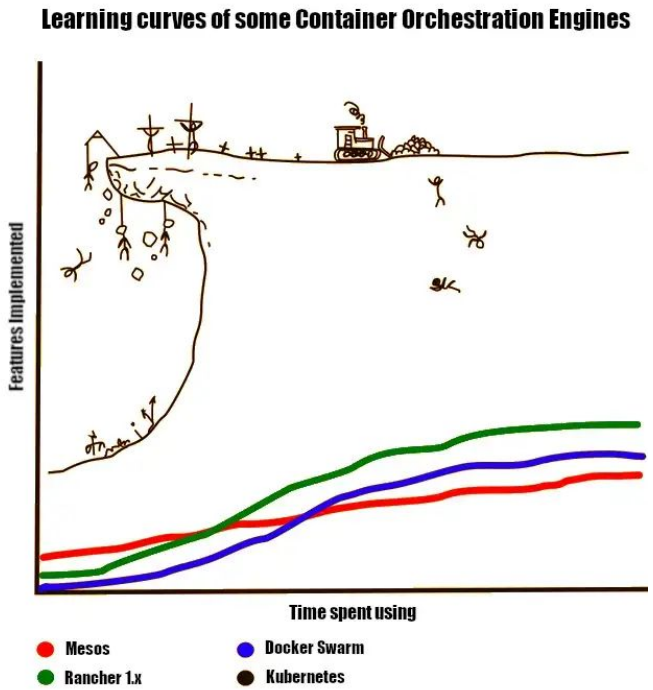
The Argo Project is a suite of open source tools for deploying and running applications and workloads on Kubernetes. It extends the Kubernetes APIs and unlocks new and powerful capabilities in application deployment, container orchestration, event automation, progressive delivery, and more.

Connect with others that are passionate about Argo and interact with project maintainers. Learn from practitioners about pitfalls to avoid and best practices on how to adopt Argo in your cloud-native environment. Get inspired by

Kubernetes – The Game Changer

AKUITY

- Kubernetes changed the game and caused disruption
- Docker/Containerization deserves more credit
- Kubernetes + Containers: Cloud agnostic immutable infra
- Declarative Design
- Wasn't Built for Developers though!



GitOps – The Game is Changed Again

AKUITY

- Imperative process for a Declarative platform 👎
- Take lessons from IaC and DevOps and formalize them 💡
- GitOps Principles 📜
  - Declarative
  - Versioned and Immutable
  - Pulled Automatically
  - Continuously Reconciled
- TL;DR – Store your K8S YAML and have a controller reconcile them

OpenGitOps

https://opengitops.dev

Argo CD – A Better Way to GitOps

AKUITY

- Argo Project was created by Applatix/Intuit
- UX was a big missing piece when working with Kubernetes
- Argo CD can be seen as an early attempt at an IDP
- Abstract K8S primitives and focus on Applications
- Make Kubernetes accessible for Administrators and Developers

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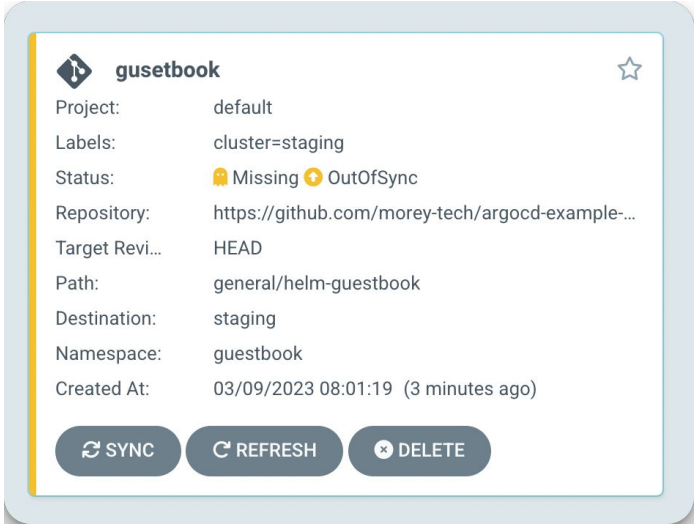
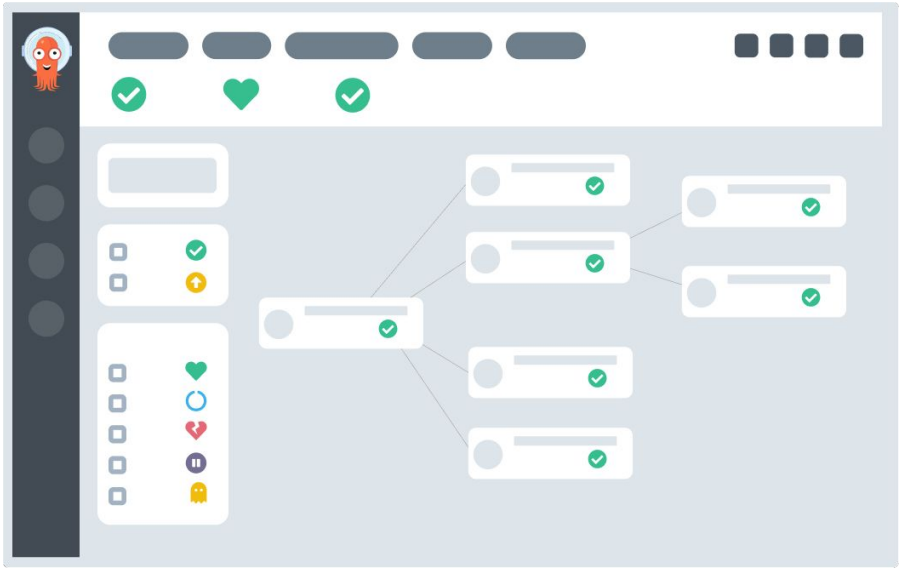
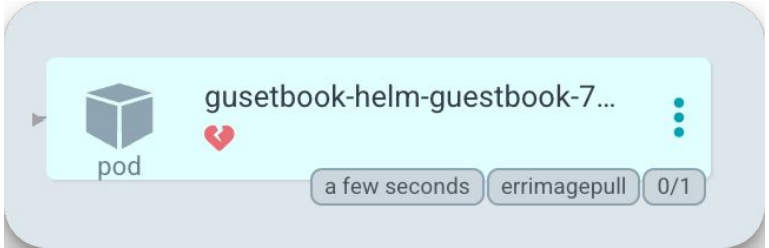
Argo CD – UX Centric

- Top-level health of Application.
- Based on tracked resources.
- Built-in & custom health checks.







AKUITY

Business Success Starts With Great Developer Experience

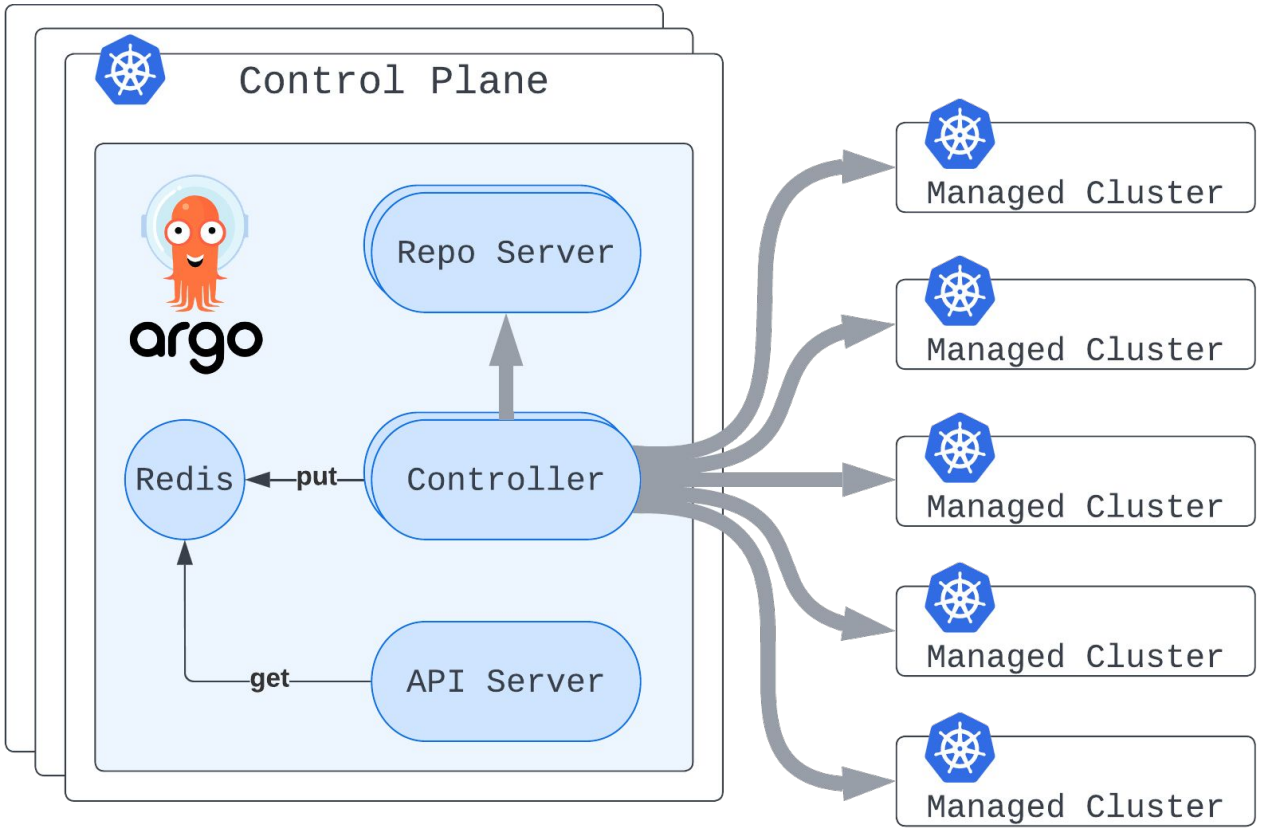
Argo CD - OSS Architecture

AKUITY

- $ Expensive traffic
- $ Maintenance cost

- 📣 Requires VPN or public ip

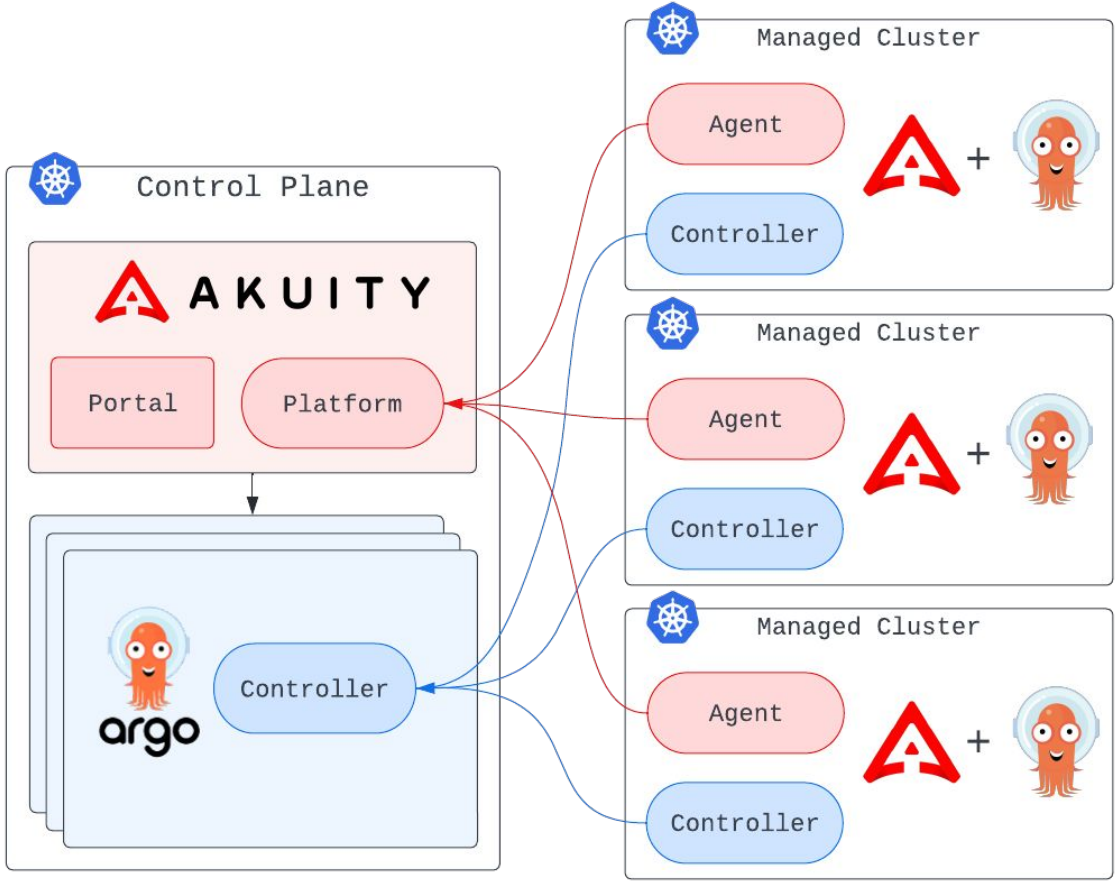
- 👓 Scaling challenges
- 👓 Multiple control planes



Managed Argo CD - Agent based hybrid architecture

AKUITY

- 💲 Minimal traffic reduces cost
- 💲 Maintenance is included
- 🔒 No external cluster access
- 🔒 No cluster credentials
- 👓 Greatly improved scalability
- 👓 Single control plane



Akuity – The Enterprise ArgoCD Company

AKUITY

Akuity Benefits

1. Agent based architecture
    - Pull model
    - Better security posture
    - Easy to scale
    - Better performance
2. Removes Operational Burden
    - No complex networking, VPNs, Service mesh etc.
    - Easy to incorporate Chargeback mechanisms (Pricing is based on # of Applications)
    - Easy to configure through UI, CLI or declaratively
3. Enterprise features
    - Audit Logs
    - DORA Metrics
    - SSO/RBAC
4. SaaS or Self Hosted
    - SaaS has a lower cost, easier to maintain, and does not touch sensitive information
5. Argo CD Maintainers and Contributors
    - Helping your enterprise

GitOps – The Big Question(s)

AKUITY

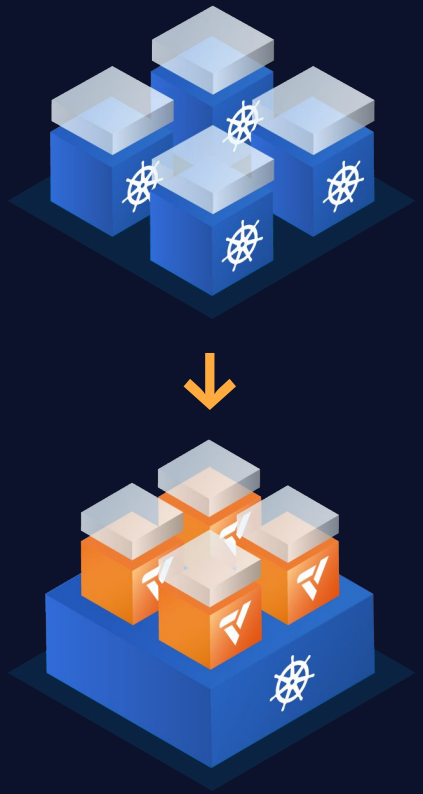
- What if I want to see my changes before they're merged?
- Do I need to create a K8S Cluster every time I want to test something?
- What if I need more flexibility in my deployments?
- It seems like a waste managing all these test instances using GitOps

vCluster
made by loft

vCluster

Reduce Kubernetes cost and sprawl with virtual K8s clusters

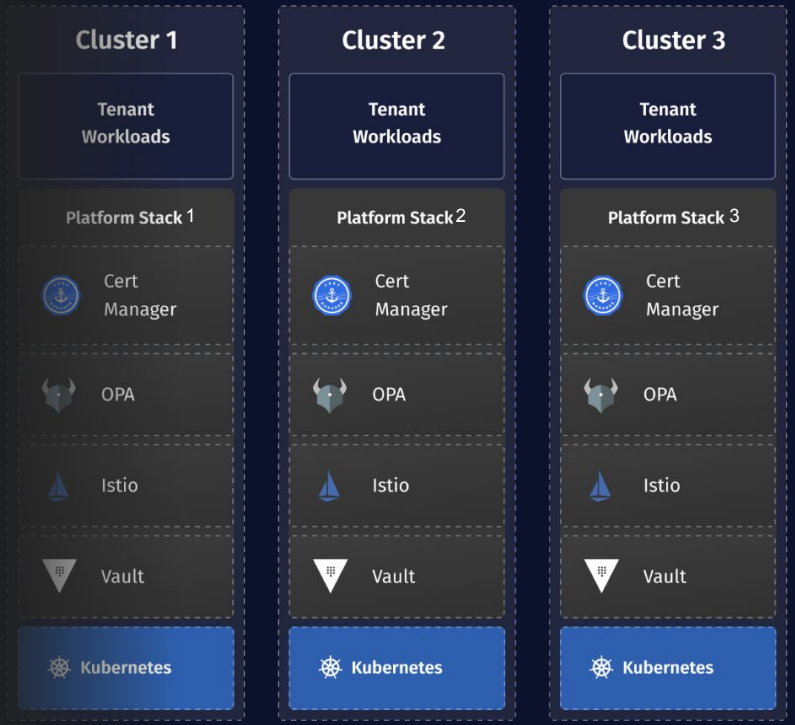
Introducing vCluster made by Loft Labs



40 Million+
Virtual Clusters

5,000+
GitHub Stars

Companies create a lot of Kubernetes clusters



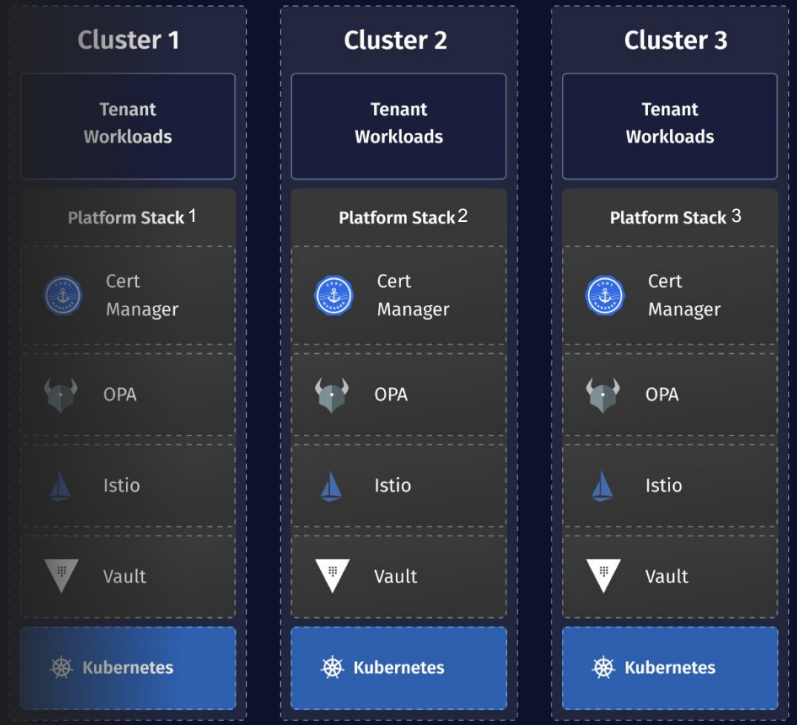
A separate cluster...

for every team
for every customer
for every environment

= 100s of clusters

vCluster

Companies create a lot of Kubernetes clusters

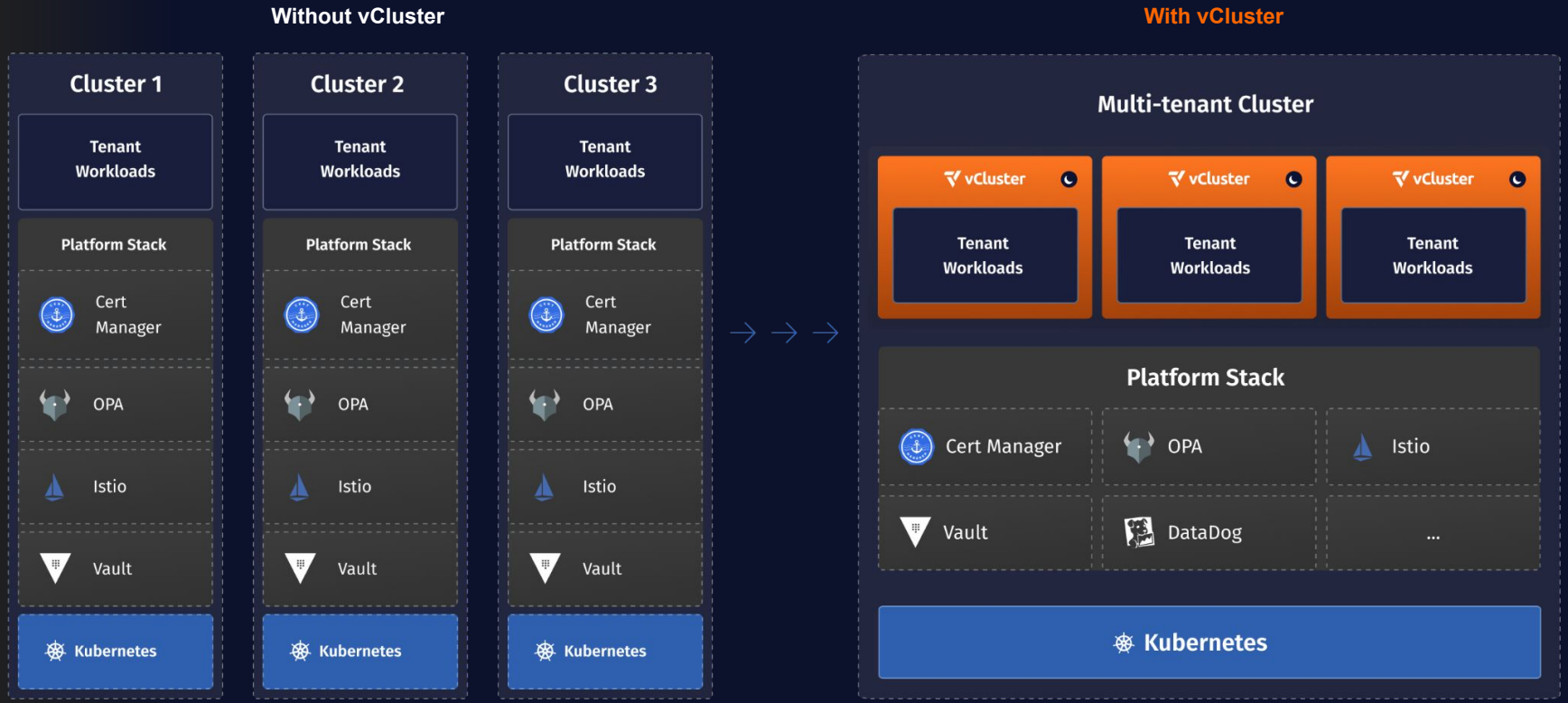


$876 Cluster Fee **x 100 Clusters**
EKS/GKE/AKS List Price

$$$ Platform Stack **x 100 Clusters**
Runs in each cluster

vCluster

Optimize your Kubernetes infra with virtual clusters



vCluster

What are virtual clusters?

Virtual clusters are a Kubernetes concept that enables isolated clusters to be run within a single physical Kubernetes cluster.

+50%

Cost Savings

Sleep Mode

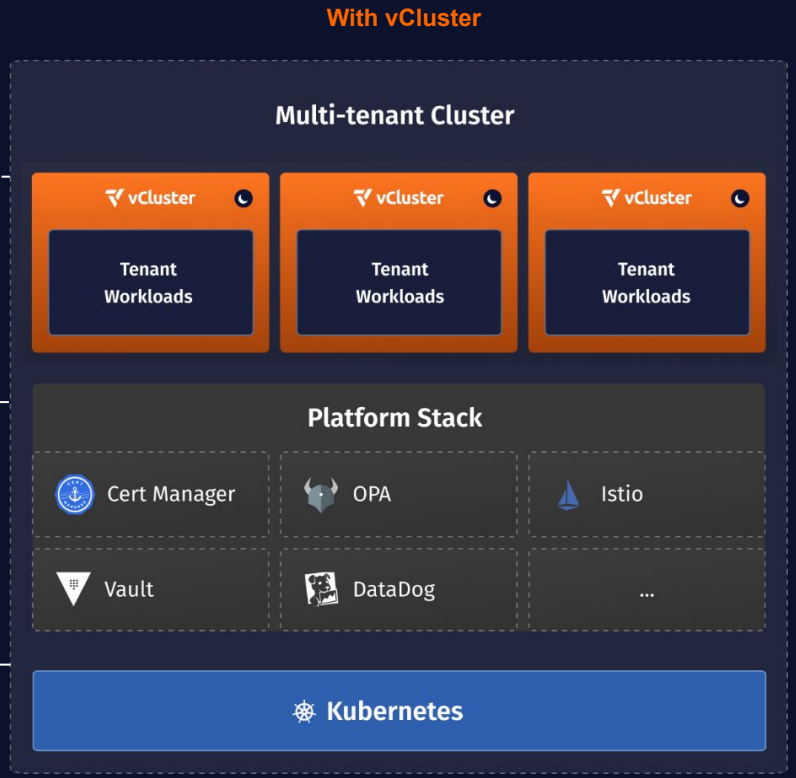
Reduce idle workloads cost by putting clusters to sleep when not in use.

Shared Platform Stack

Run fewer duplicates of tools like Istio, Cert Manager, OPA, Datadog and Vault.

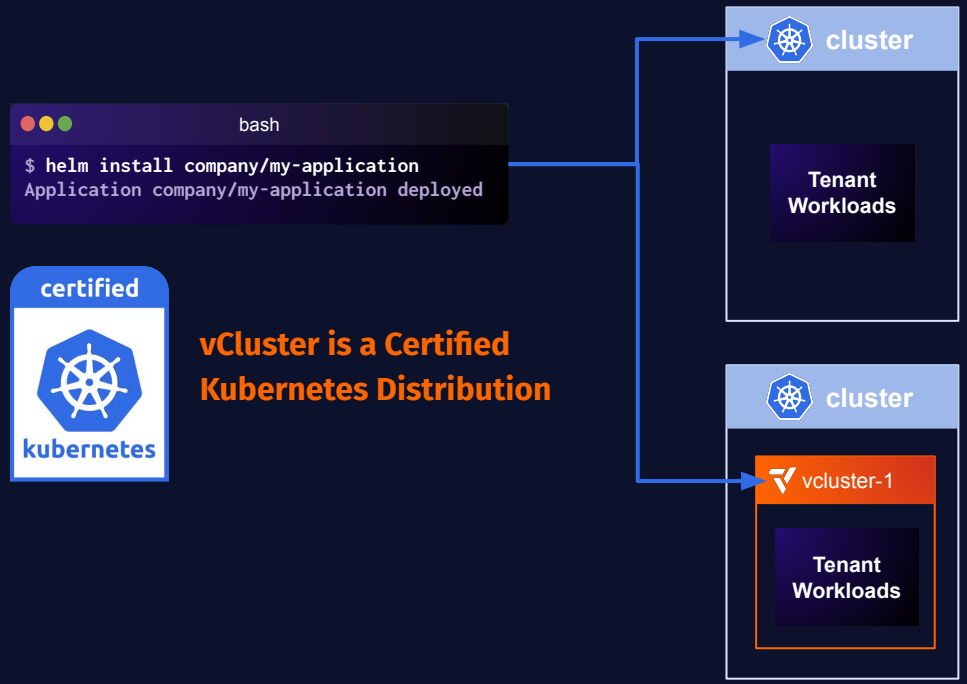
Multi-Tenant Clusters

Run fewer clusters by isolating multiple tenant workloads within a single cluster.



vCluster

Seamless shift to virtual clusters



➔ Deploy to a virtual cluster with the same tools and workflows

➔ No need for re-architecting any software or changing your deployment pipelines

What vCluster enables you to achieve

1

Reduced Kubernetes cost

atlan

$600k

reduction in Kubernetes spend

2

Self-service clusters for Dev, Test & QA

ada

10x

developer productivity

3

Multi-tenancy for production apps

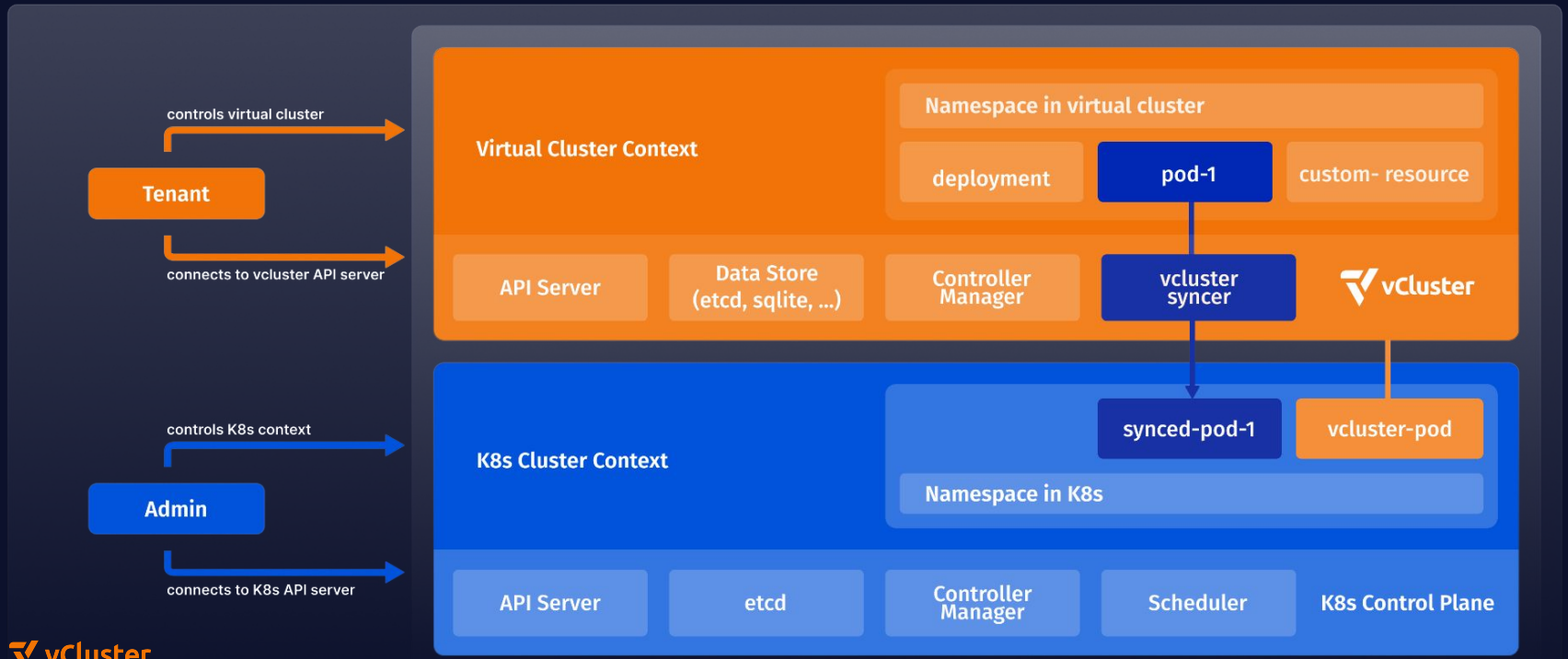
CoreWeave

100's

of customers in each Kubernetes cluster

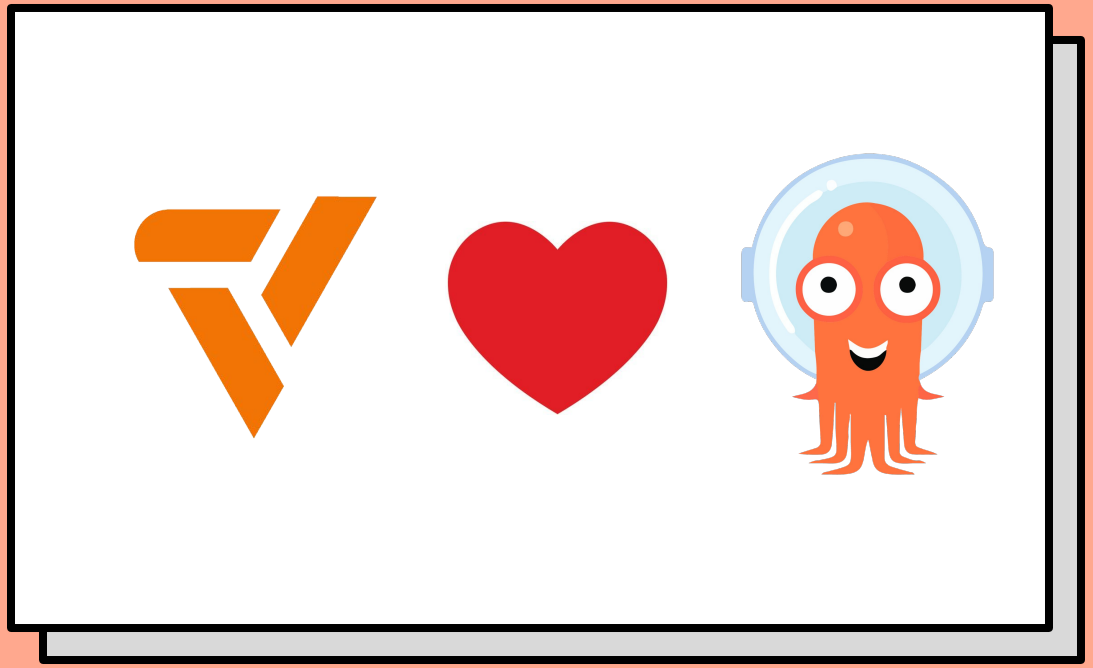
Virtual Cluster Architecture

Virtual Clusters are as lightweight and cheap as namespaces
but as securely isolated as real clusters.



vCluster

Better Together



DEMO TIME!

Questions?

Get in Touch

https://hubs.li/Q02HFqtc0