



# Kubernetes Configuration - Auditing for Enterprise Best Practices Through Open Source Tooling


# Your Speakers

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@packetfodder



**John Wynkoop**


*CTO, IGNW*

Serving as IGNW's Cloud CTO, John is responsible for helping customers build and execute strategies to speed time to market through adoption of hybrid cloud and cloud native technologies. He is especially passionate about building scalable distributed systems and leading customers in digital transformation, infrastructure automation, and application modernization through adoption of SRE practices.  **@packetfodder**



**Kendall Miller**

*President, Fairwinds*

Kendall was one of the first hires at Fairwinds and has spent the past 5 years making the dream of disrupting infrastructure a reality, while keeping his finger on the pulse of changing demands in the market and valuable partnership opportunities.  **@blatanterror**

# About



IGNW is a services-only, full stack systems integrator focused on helping customer ship features faster.

We offer professional services and technical staffing focused on:

- Application Modernization
- Hybrid and Multi-Cloud
- Data Analytics and AI/ML
- DevOps and Automation

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# About Fairwinds



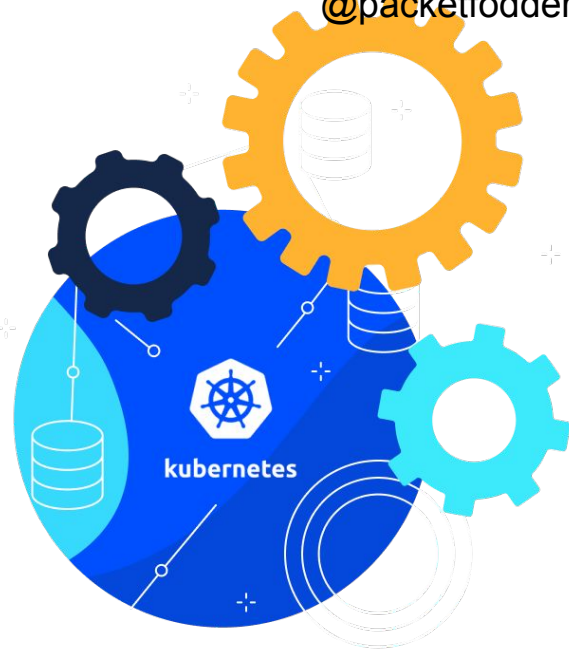
- Fairwinds offers a **Kubernetes Enablement Platform** consisting of services, open source and software to build and maintain secure, reliable and scalable Kubernetes infrastructure.
  - Services - expertly managed cloud-native infrastructure leveraging containers and Kubernetes.
  - Open source - open source projects to address problems that exist with Kubernetes.
  - Software - policy-driven configuration validation of containers and Kubernetes from CI/CD through production.



# What is new and hard about Kubernetes

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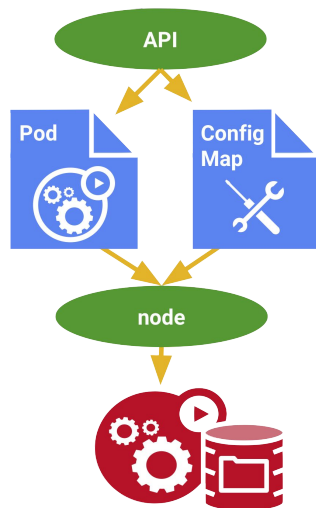
- A new paradigm
- Everything Ephemeral
- Uniform APIs across clouds, rather than cloud-service-specific APIs



# Manually managing config

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- Why it appears convenient (but is actually terrible)
- People as SPOFs
- Scale Panic



# GitOps via Flux

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- What it solves
- What it doesn't
- IaC is a DevOps best practice, GitOps is a IaC best practice

# Flux

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*Flux is a tool that automates the deployment of containers to Kubernetes. It fills the automation void that exists between building and monitoring.*

## Flux Does

- Deploy helm charts, kustomizations, or bare k8s manifests
- Keep your clusters synchronized with an IaC codebase

## Flux Doesn't

- Report on best practices violations
- Enforce “platform” level policies
- Perform validation as part of the CI/CD process



# Demo

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<https://fluxcd.io/>

# Polaris

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- Why Polaris Was Born
- Architectural Overview
- Demo of Polaris

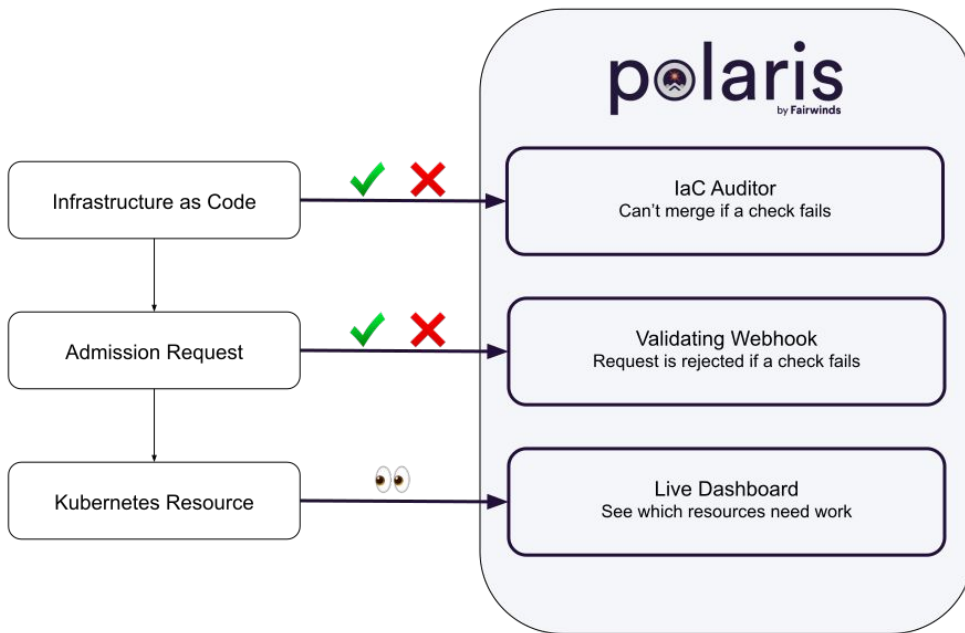
# Polaris

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*Polaris is an open source project that identifies Kubernetes deployment configuration errors. Polaris runs over a dozen different checks to help users discover Kubernetes misconfigurations that frequently cause security vulnerabilities, outages, scaling limitations and more. Using Polaris, you can avoid problems and ensure you're using Kubernetes best practices.*

## Simply put, Polaris improves Kubernetes deployments

# Polaris At a Glance



# Demo

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<https://github.com/FairwindsOps/polaris>

# How do I get involved

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<https://github.com/FairwindsOps/polaris>

- Install Polaris
- File issues, give feedback
- PRs actually (like for reals) welcome