CRACI x OtaNix

Kubernetes Meets Nix Workshop

Veeti Poutsalo
Platform Engineer @ CRACI

Erika Marttinen
Software Engineer @ CRACI

CRACI x OtaNix Workshop 2026

Workshop Outline

- **Introductions and Getting Started**
  - What is CRACI?
  - What is Kubernetes?
  - Getting Access to Workshop Material
- **Workshop Outline**
  - Managing Remote NixOS Machines
  - Handling Secrets with Nix
  - Deploying Kubernetes on NixOS via k3s
  - Managing a Cluster with Nix-powered GitOps



$ whoarewe



Veeti Poutsalo

veeti.poutsalo@craci.com
github.com/Polychoronix
veeti-poutsalo



Erika Marttinen

erika.marttinen@craci.com
github.com/purkka
erika-marttinen
purkka@infosec.exchange

CRACI

- Cyber Resilience CI/CD Platform
- Bare Metal Kubernetes
- Nix is widely used in the company

→ Interested? Visit craci.com!

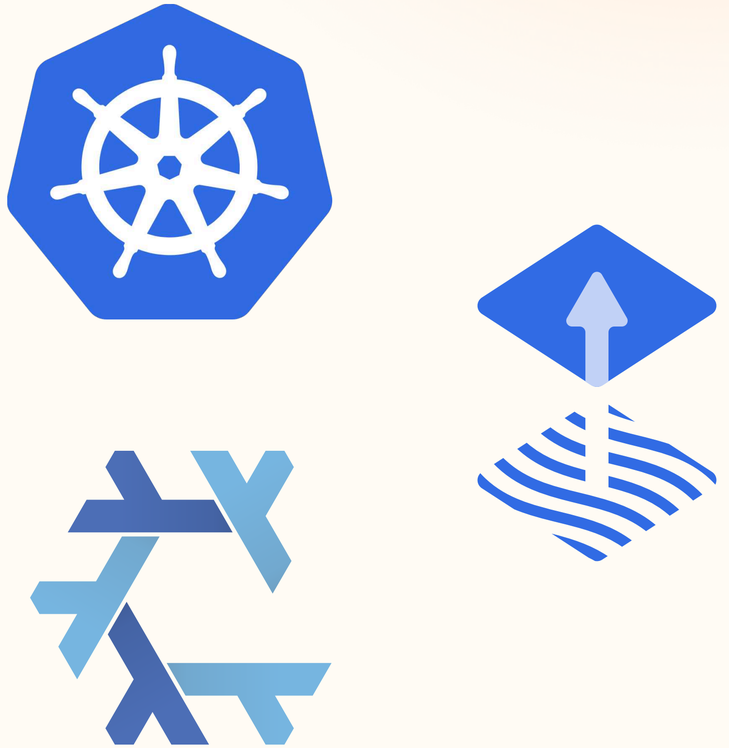


What is Kubernetes?

> *Kubernetes, also known as K8s, is an open-source container orchestration system for automating software deployment, scaling, and management. (Source: Wikipedia)*

Setup:

- You have an app that runs in units (e.g. containers)
- You have some amount of server capacity at your disposal
- You want to use the capacity effectively



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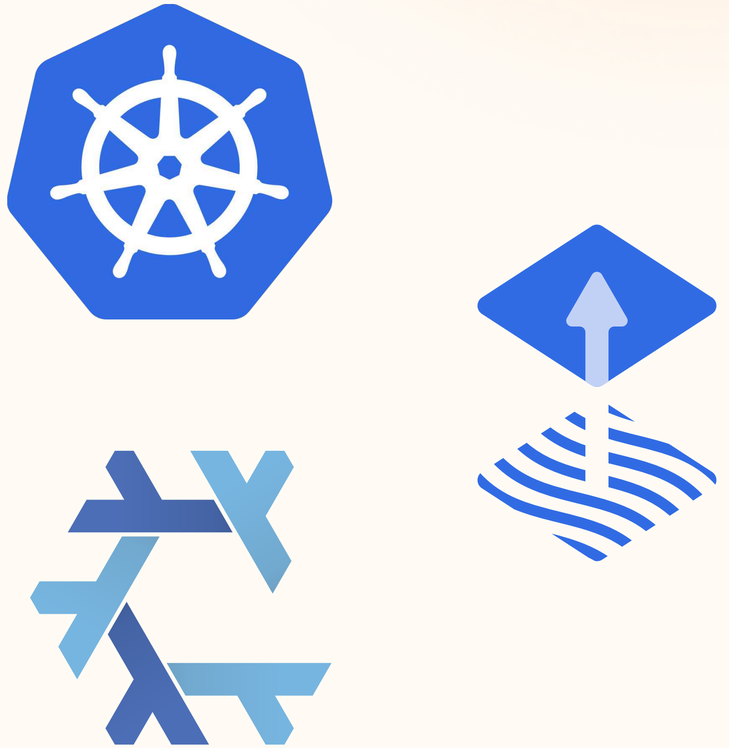
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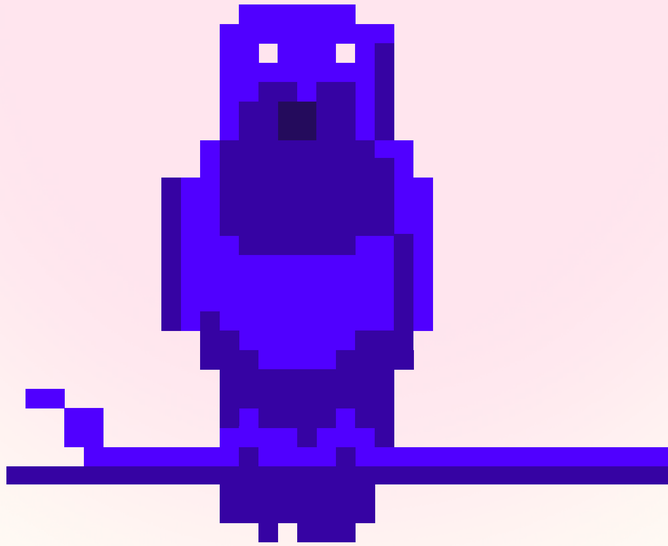
Solution:

- Kubernetes packages app units in **Pods**
- Kubernetes' **Scheduler** places Pods on available capacity
- Built-in **Controllers** start, replace, and scale Pods
- **Operators** extend this model for application-specific needs
  - This is handled via **CustomResourceDefinition**s (CRDs)



Getting Access to Workshop Material

1. **Shortly, you will get an e-mail with the workshop material**
   - The material is sent to the e-mail address you have provided when signing up to the workshop
   - This includes the workshop flake template and slides
2. **Please provide us with your SSH public key, if you intend to use machines provided by us**
   - If you intend to use your own machine, skip this step
3. **We continue once everyone is done with these steps**
   - In the meantime, familiarize yourself with the template repo



WiFi: Founders House
Password: Wave1234

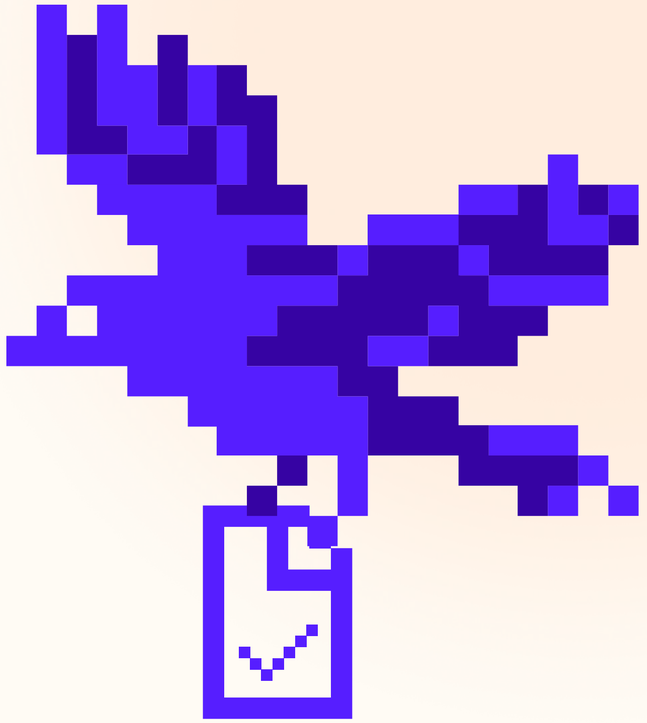
The Workshop

Read the Template README, which includes

- an overview of the template repository structure,
- an introduction to the technologies used,
  - including Colmena, k3s, agenix, Nixidy, Flux, and
- a list of workshop steps and their respective tasks.

Workshop Outline

1. Provisioning NixOS hosts
2. Managing remote hosts with Colmena
3. Deploying Kubernetes on NixOS via k3s
4. Deploying a multi-node cluster
5. Handling secrets with agenix
6. Managing Kubernetes objects with Nixidy and Flux



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To Conclude

- **We've learned how to manage Kubernetes using Nix**
  - This is exactly what we do at CRACI
- **Had fun? Come work with us!**
  - Chat any of us up

Learn more!



Veeti Poutsalo

veeti.poutsalo@craci.com
github.com/Polychoronix
veeti-poutsalo



Erika Marttinen

erika.marttinen@craci.com
github.com/purkka
erika-marttinen
purkka@infosec.exchange