



CNCF Project Focus

Episode #1

Knative

Vendor-Neutral Serverless on Kubernetes



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You are paying for idle time

Your Kubernetes pods run 24/7. But your APIs are **idle** nights and weekends.

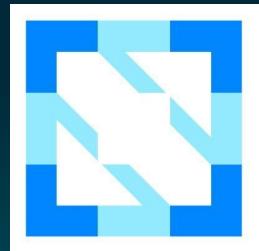
You're paying for servers that do **NOTHING** most of the time.

Knative fixes this. Scale to zero = \$0 when idle

And it runs **ANYWHERE**

- AWS, Azure, GCP, on-premise ...
- No vendor lock-in

CNCF Graduated September 2025

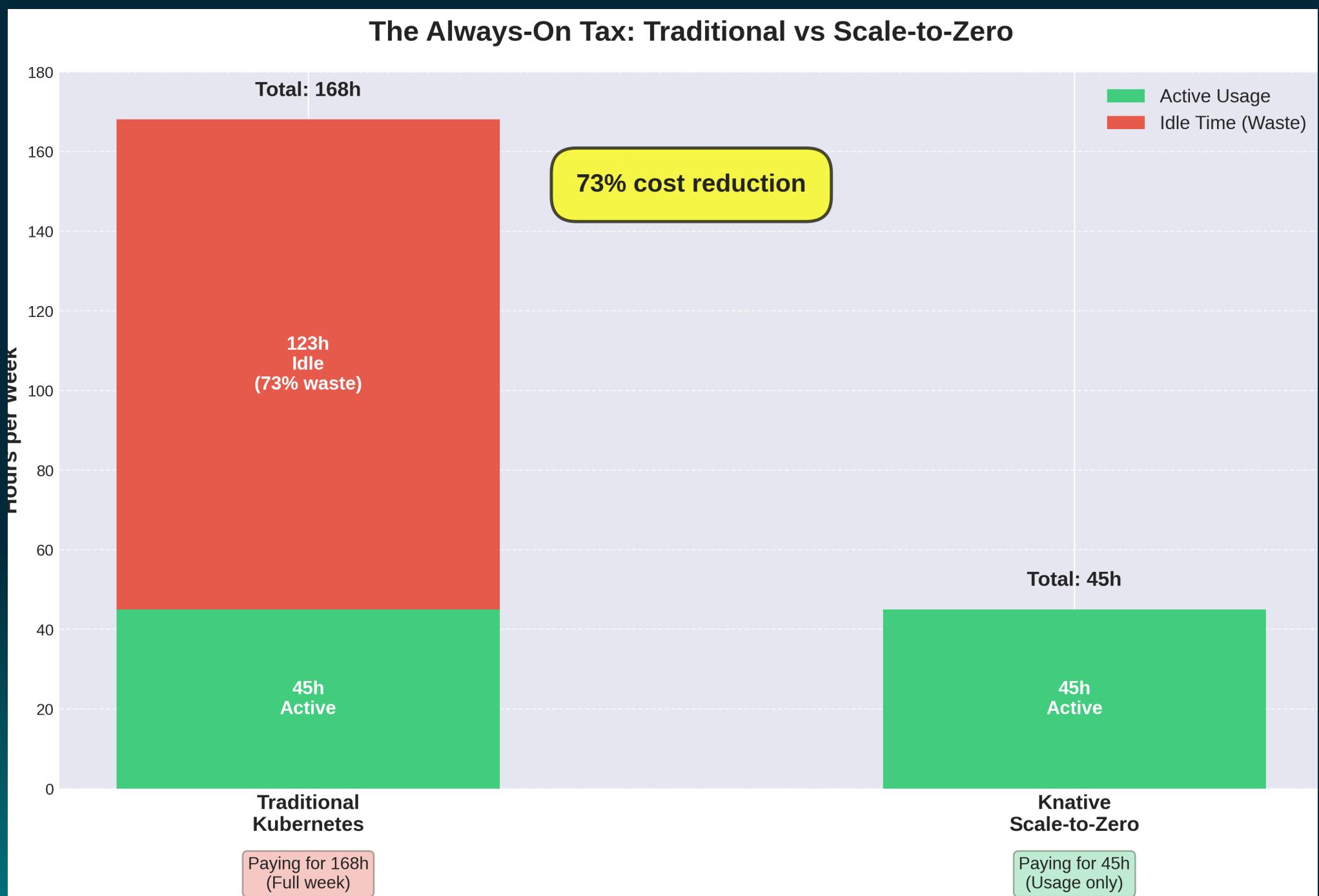


Example: traditional K8s Deployment

- Minimum replicas: 3 pods
- Running 24/7/365 even when:
 - 2 AM: Zero traffic
 - Weekends: Zero users
 - Holidays: Zero requests
- Most business APIs are idle outside working hours
- Development environments: used < 40 hours/week, billed 168h
- You pay for capacity "just in case"

Example: Trading API

Trading APIs active 9h-18h weekdays
= 45 hours used / 168 hours billed



Knative: vendor neutral serverless

» What is Knative?

CNCF Graduated **serverless platform** for **YOUR** Kubernetes cluster.

💰 **Scale-to-Zero** = cost optimization

- 0 pods when idle = \$0 cost
- Auto-scale 0→N→0 based on traffic

🚩 **Vendor neutral** by Design

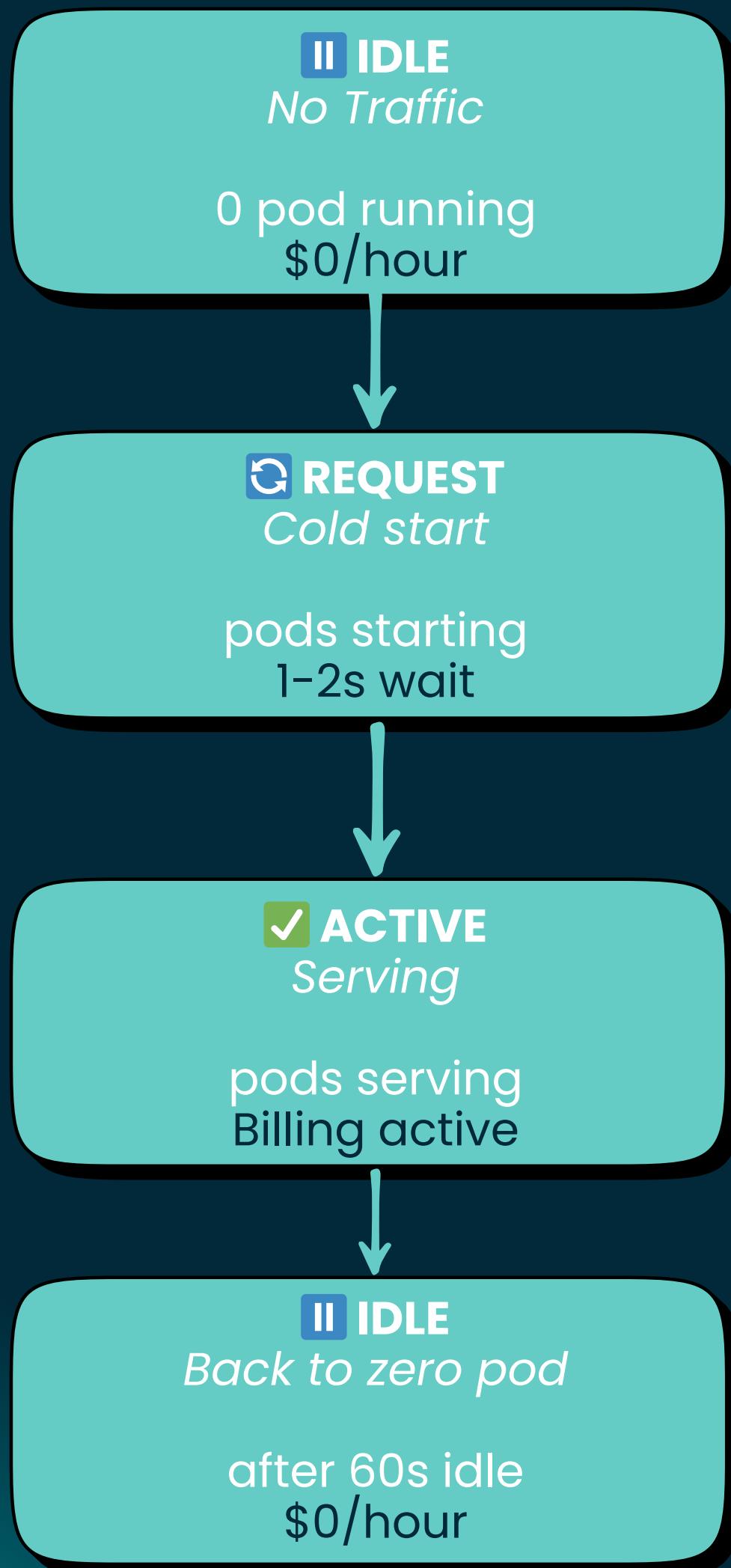
- Works on ANY Kubernetes (AWS, Azure, GCP, OpenShift...)
- Zero lock-in. Same API everywhere
- No proprietary serverless pricing

» Two core components

Serving: Auto-scaling HTTP workloads (0→N)

Eventing: CloudEvents-based event processing

How does the Scale-to-Zero work ?



Calculate YOUR savings

⚠ Knative is **FOR**:

- ✓ HTTP APIs (REST, webhooks)
- ✓ Event-driven functions
- ✓ Request/response workloads
- ✓ Services with idle periods
- ✓ Batch processing (scheduled jobs, ETL)

✗ Knative is **NOT** for:

- ✗ Databases (always-on, stateful)
- ✗ Message queues (persistent)
- ✗ WebSockets (long connections)
- ✗ Ultra-low latency (<100ms cold start)

Traditional Cost: services × replicas × 168 hours/week × cost

Knative Cost: services × replicas × usage hours × cost

Explore my learning toolkit



github.com/christian-dussol-cloud-native/knative/

Educational GitHub Repository

What's Inside:

- Cost calculator (Python)
- Demo examples
- Kyverno** governance policies
- Complete Knative setup scripts