Road to Kubernetes

Through tears and laughter

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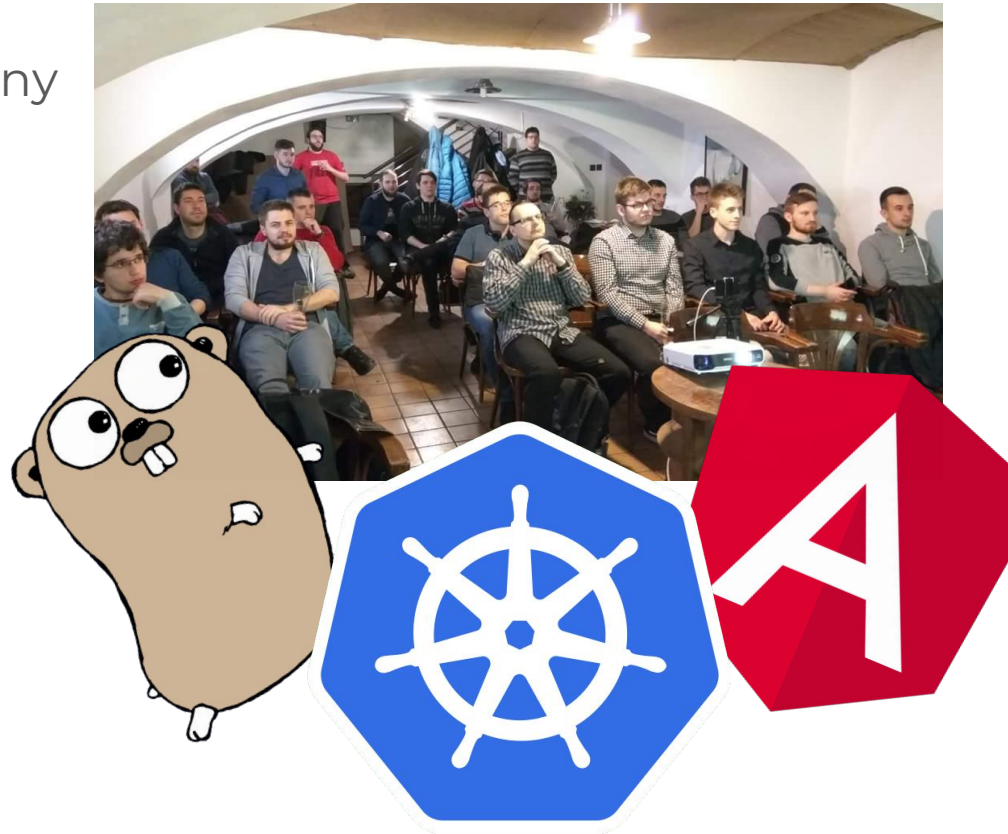
- Software development company
- 25 people
- Fintech, E-commerce, IoT, IS
- Cloud solutions (GCP)
- On Premise solutions
- Golang, Python, Angular
- Microservice Environment
- “Automating everything”



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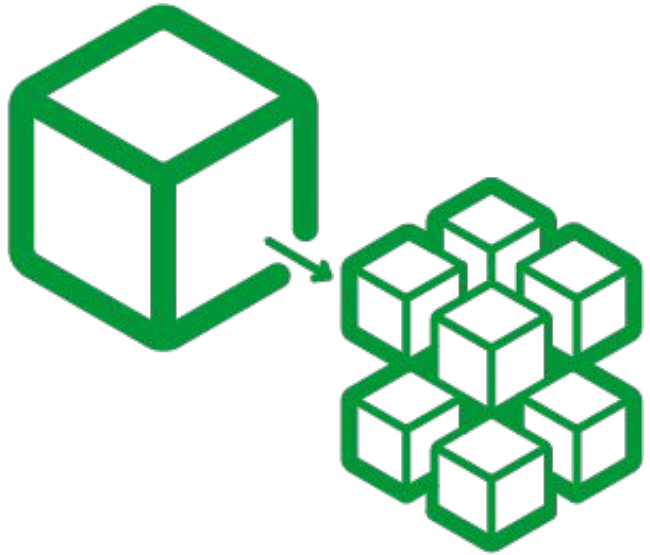
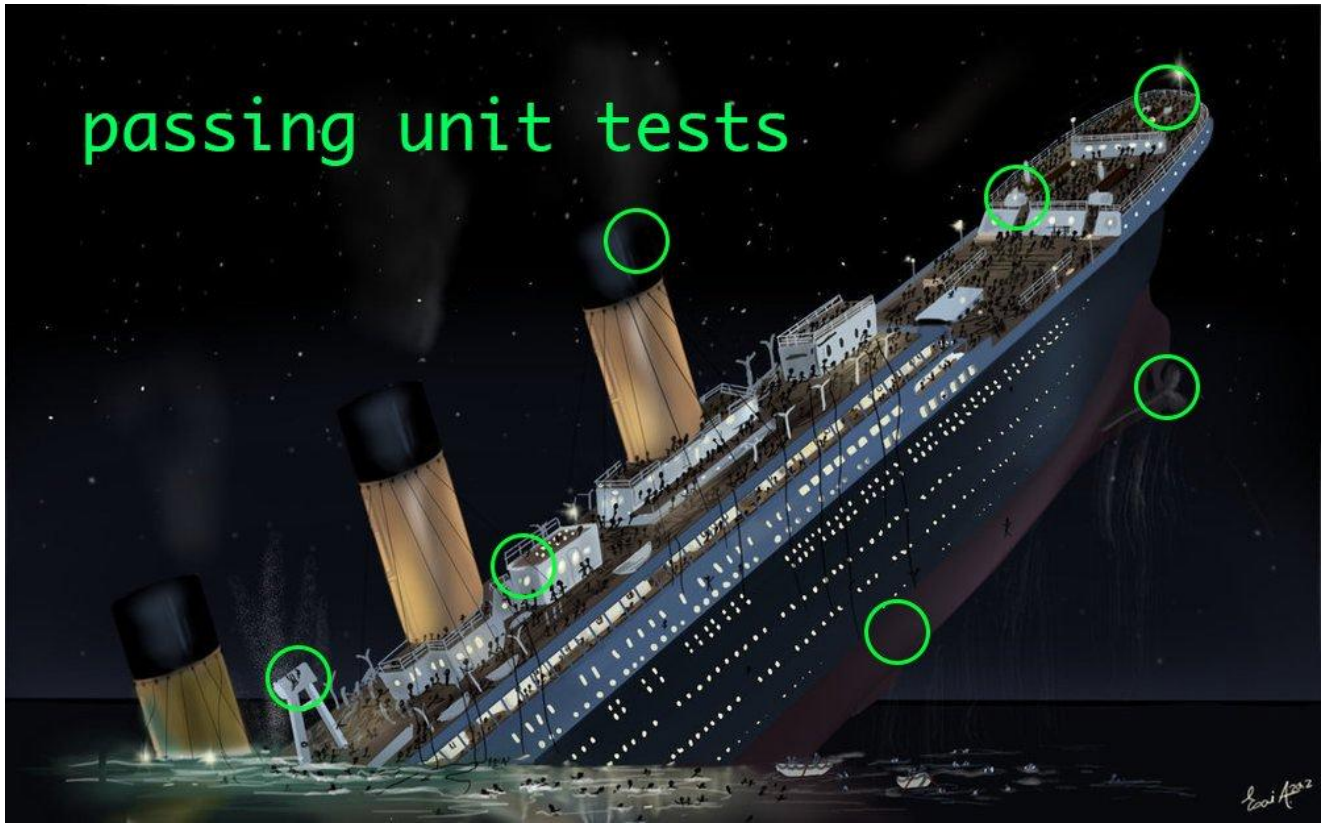
Why Microservices

- Easier onboarding and maintenance
- Physical structure and APIs
- Scaling and monitoring tools
- Fast startup times
- Failover mechanisms
- Faster software development iterations




passing unit tests

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Why Kubernetes?

- Microservices gave us **hard** time
- Manual deployment is **hard**
- Progress is **hard** with manual things
- Visibility is **crucial**
- Speed of recovery is **crucial**
- Open Source

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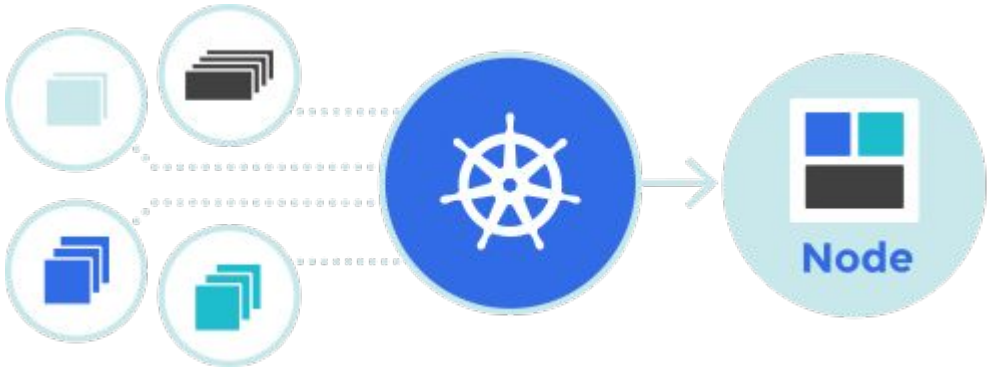
Kubernetes

- Container Platform
- Supports extremely **Diverse** variety of workloads
- Workload organization
- **Declarative** configuration
- Visibility and auto-repair
- Big deal for **Automation**



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The first steps

- GCP GKE (Google Kubernetes Engine)
- Easy cluster setup

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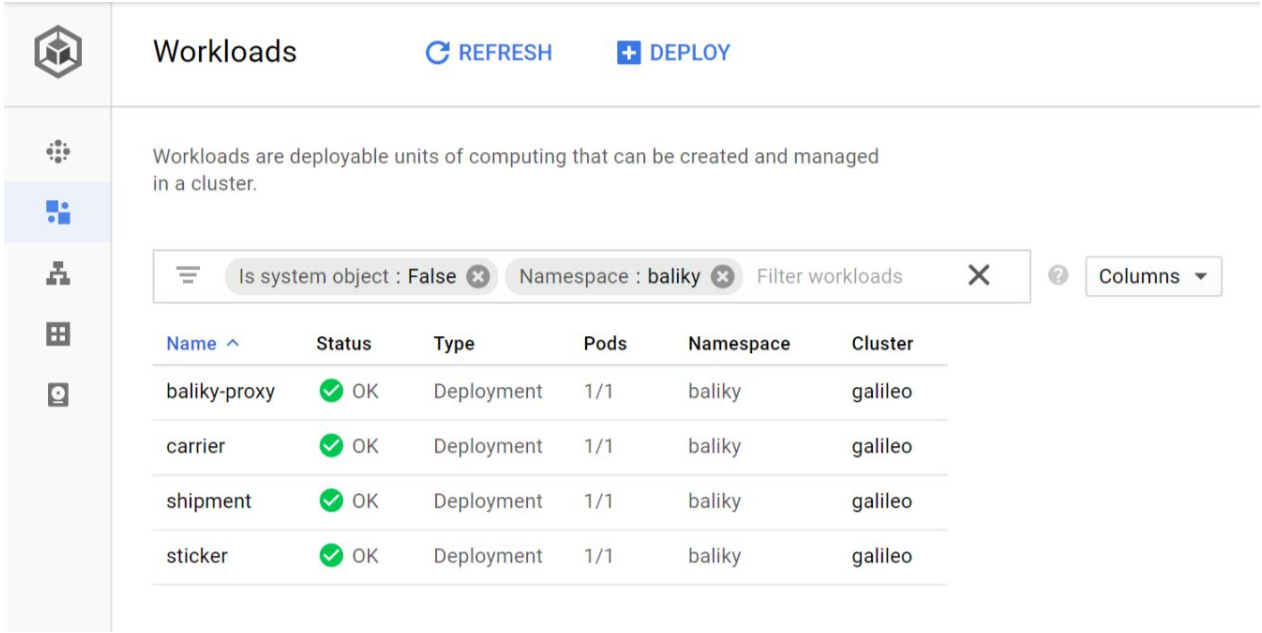
First deployed project



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Load Balancing

- Service type=”LoadBalancer”
- 18$ per month
- Per region pricing for “First 5 forwarding rules”

Item	Price per Unit (USD)	Pricing Unit
First 5 forwarding rules	$0.025	Per Hour
Per additional forwarding rule	$0.010	Per Hour
Ingress data processed by load balancer	$0.008	Per GB

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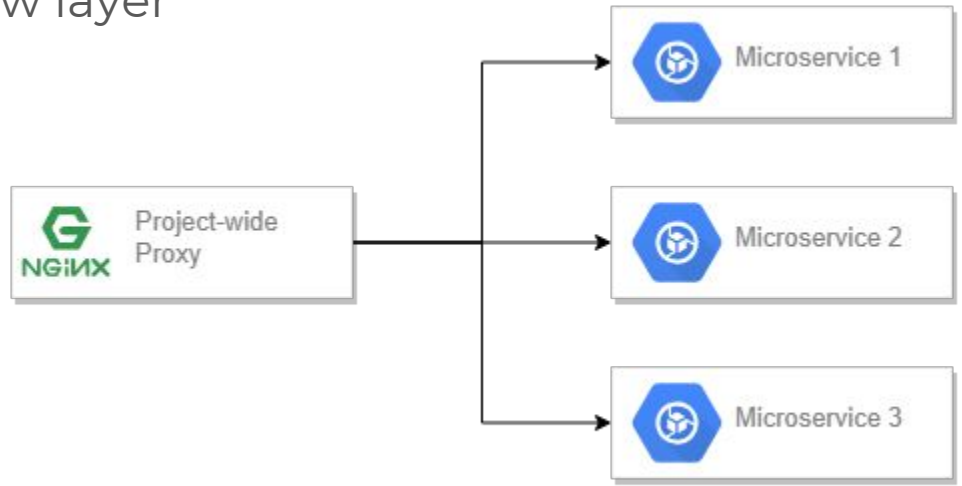
Overall Architecture

- Routing inside Ingress
- Separate view layer



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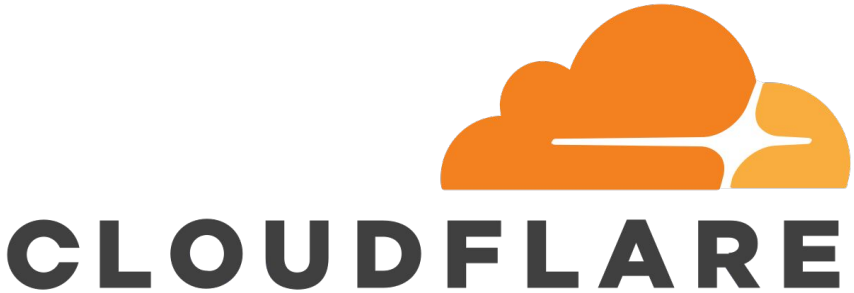
HTTPS & DNS



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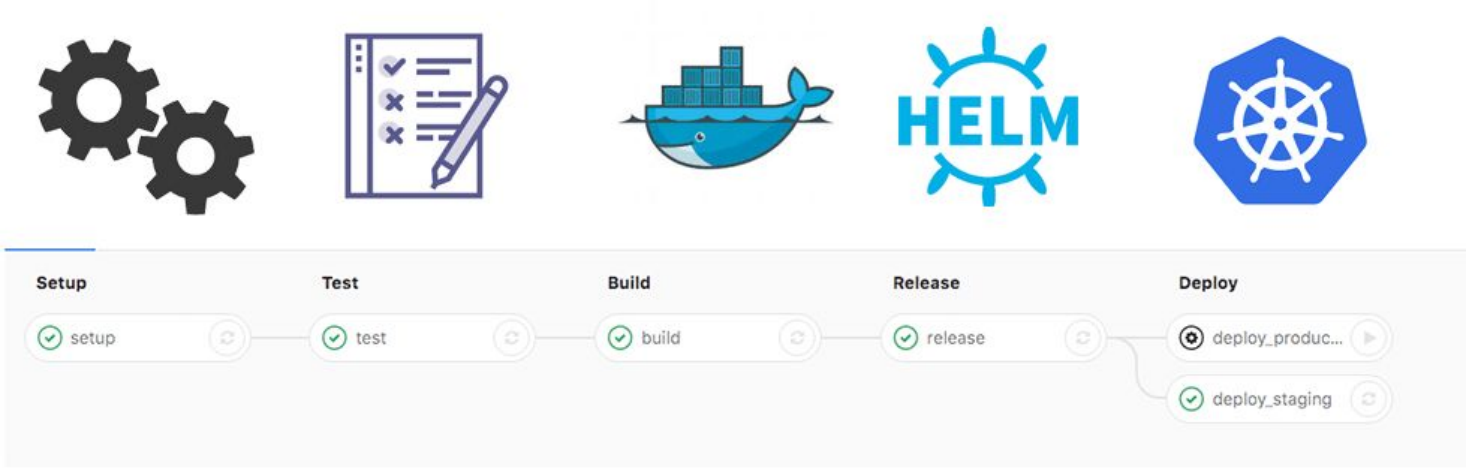
CI/CD & Automation

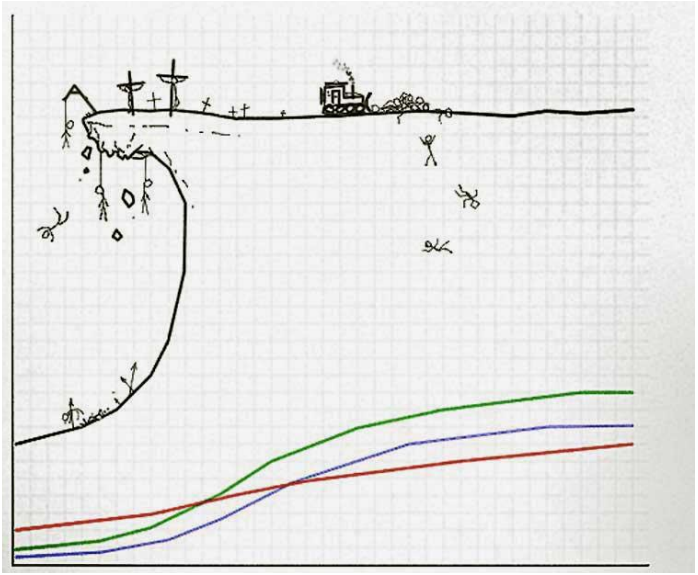


Calchas CI&CD Demo (internal tool)

Pros & Cons

+ Open Source
+ Ecosystem
+ Visibility
+ Logging & Monitoring
+ Autoscaling
+ Service Discovery
+ Preemptibility (providers)
+ Fast Progress

- Steep learning curve
- Time-consuming setup
- Fast Progress



Tooling

HELM

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Customers view

- They don’t care as long as their product lives without interruptions
- Open Source feels more transparent and stable

Starting your path

- GCP Trial (300$, 12 months)
- Qwiklabs

Thank you!

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GDG Brno

Peter Malina

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CTO **@flowup** , Gopher, Angularist, Kubee, Cloud lover

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References

- https://kubernetes.io/ - Kubernetes official page
- https://qwiklabs.com - Qwiklabs, hands on labs on GCP
- https://istio.io/ - Istio, the service mesh for Kubernetes