

Building Kubernetes as a Service with Cluster-API and GitOps

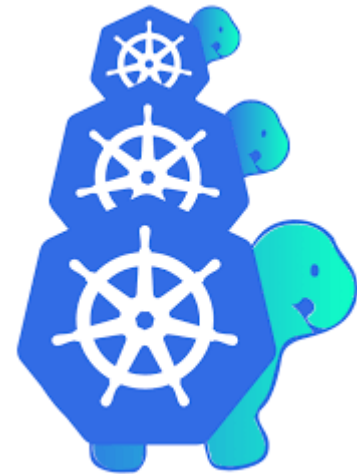


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About Martin

- I started to use Linux around 1996

- Compiling kernel



- Solving problems like

- ▣ Angry girlfriend 😊
- ▣ Diacritic (Ž, Č, ä)
- ▣ HW support (video/audio cards, printers)
- ▣ Floppy drives



About Martin - Strong Open Source Advocate



dNation: Sovereign Cloud Provider



✓ Sovereign: No vendor lock-in, no dependency on hyper-scalers

✓ Secure: Your data is yours, you decide where it is stored, who has access and how is it used

✓ Cost-effective: Use multiple clouds at the same time and save up to 30% on your cloud bill



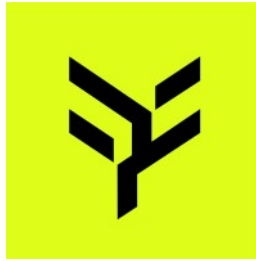
We are software **D**evelopers and **D**evOps Engineers

About the Project



- Yorizon - New EU based Sovereign Cloud Provider
- Competition to well established hyperscalers
- Fully Open Source - No vendor lock-in
- AGPL v3 License - Free as in Freedom

About the Project



- 46 datacenters in Europe
- Each datacenter has 1500 nodes
- First 5 datacenters being built right now



About the Project

Strong focus on sustainability, efficient water cooling



uView

The management interface for the Uhuru cloud platform, as well as the portal for the cloud user. Optimal addition to uMetal, uStack and uGarden.

uGarden

The PaaS Layer provided by GitOps and the cluster API can be used to create a Kubernetes platform for your application in a very short time. Optimal basis for every modern application.

uStack

Managed with Kubernetes operators, the OpenStack cloud platform provides a stable IaaS layer for your needs. Optimal basis for virtualization and uGarden.

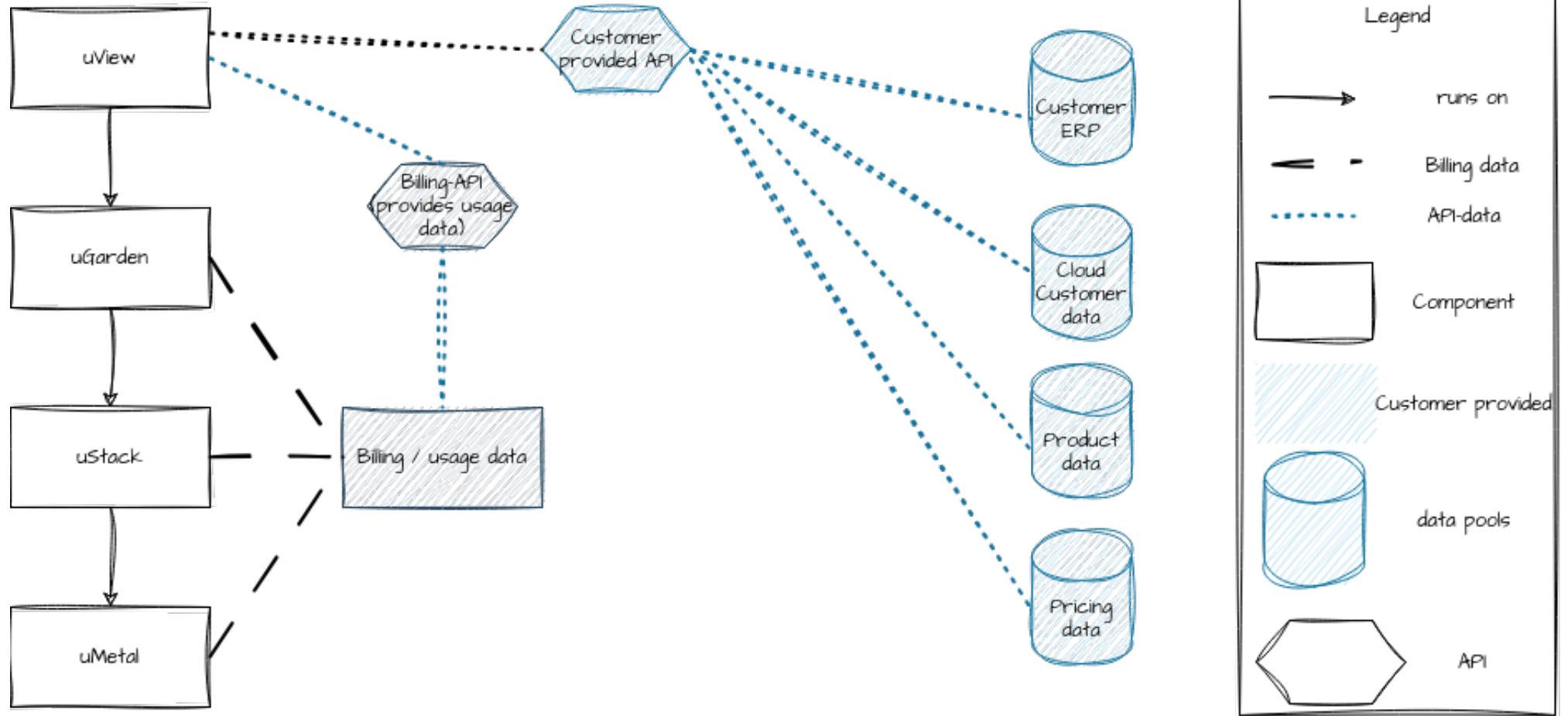


uMetal

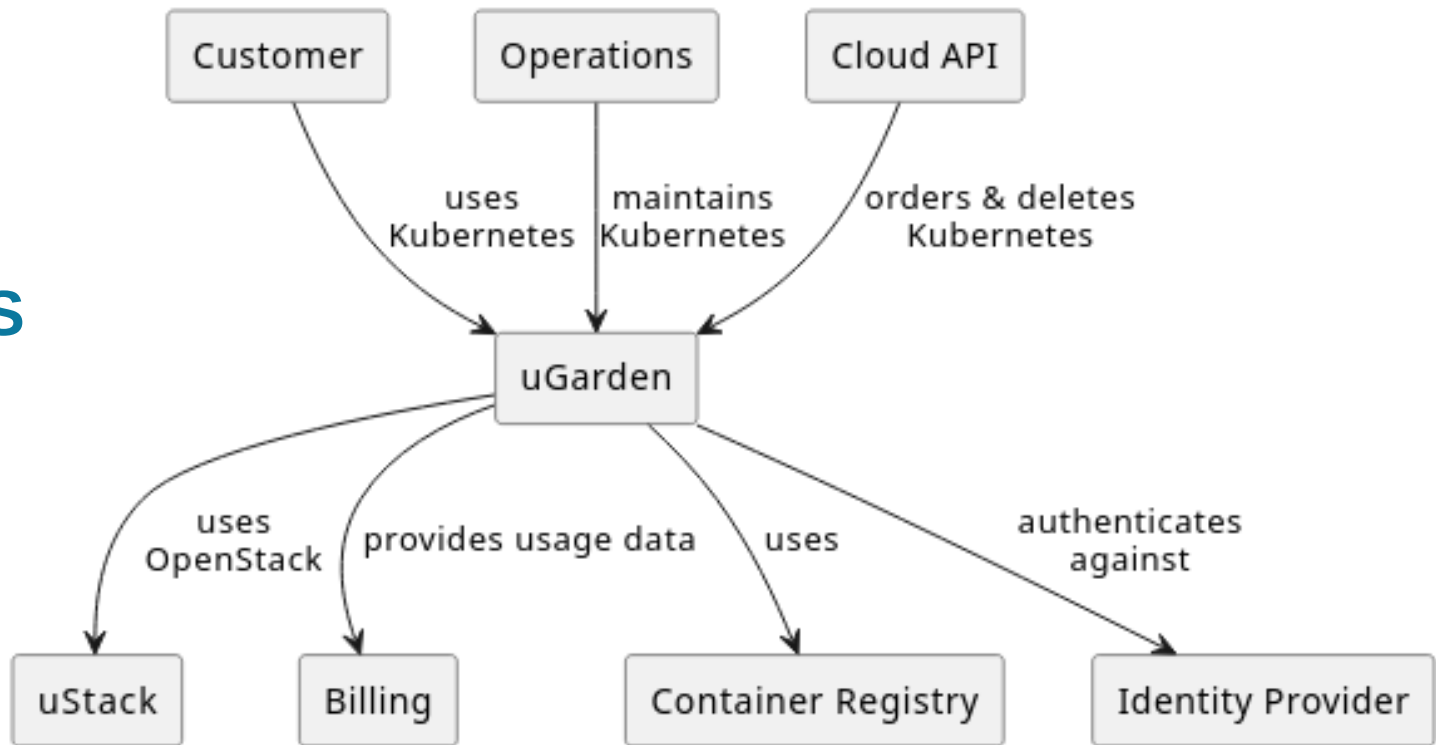
The fully automatic installation of the servers with Linux, container runtime and Kubernetes offers a baremetal-as-a-service solution. Optimal basis for KRITIS applications and uStack.



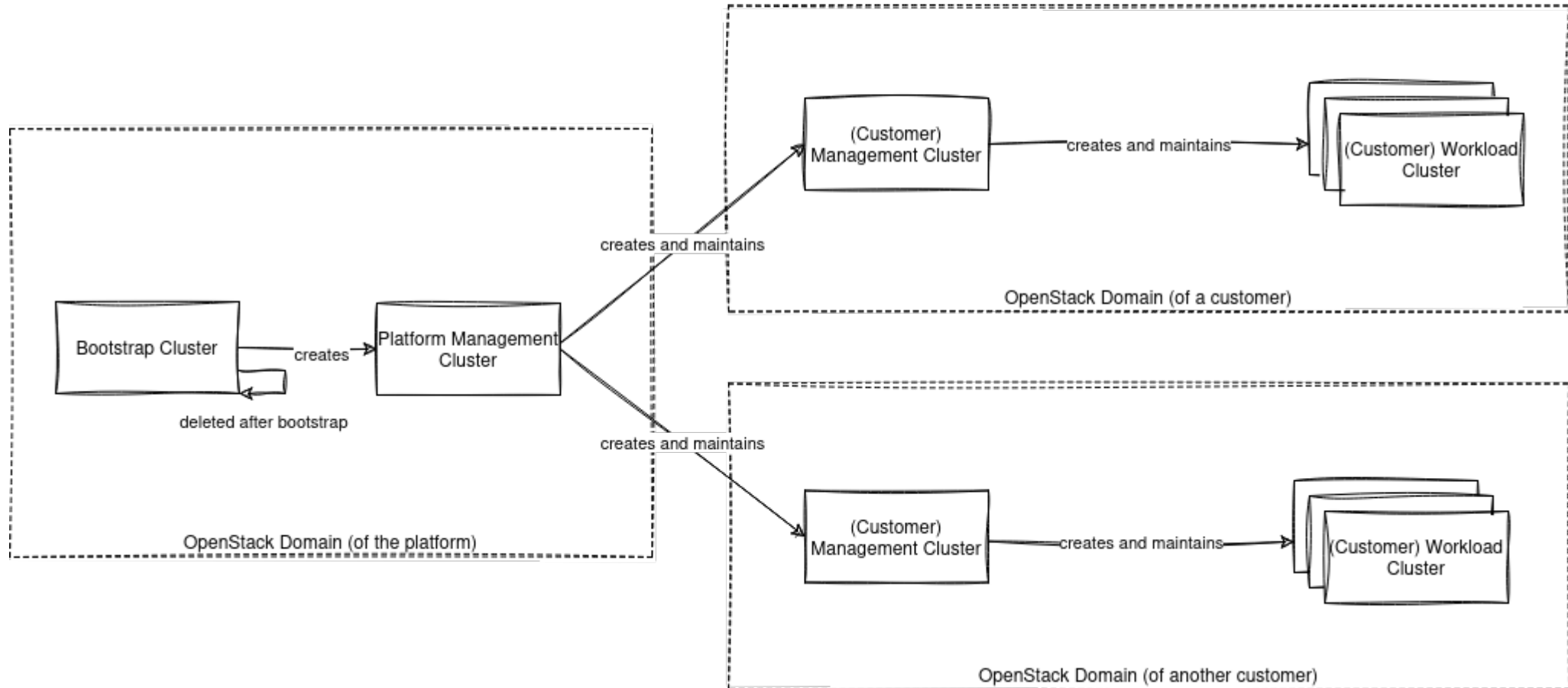
uCloud - Platform Architecture

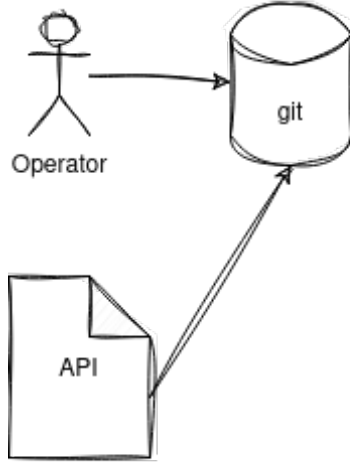


uGarden KaaS

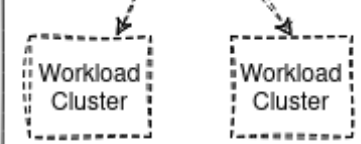
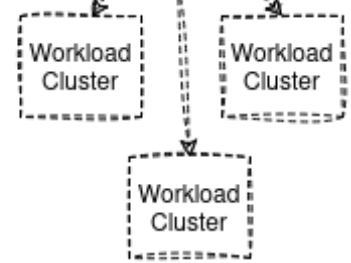
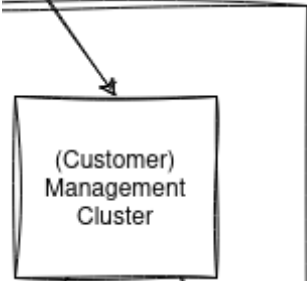
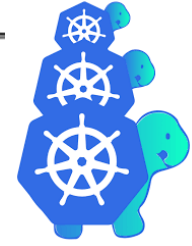
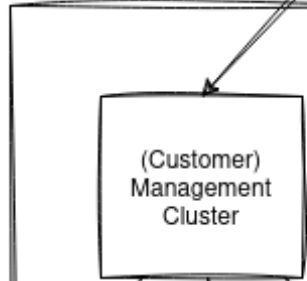


uGarden KaaS - Platform Architecture





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uGarden KaaS
GitOps Approach
CAPI Approach

uGarden KaaS - Platform Stack

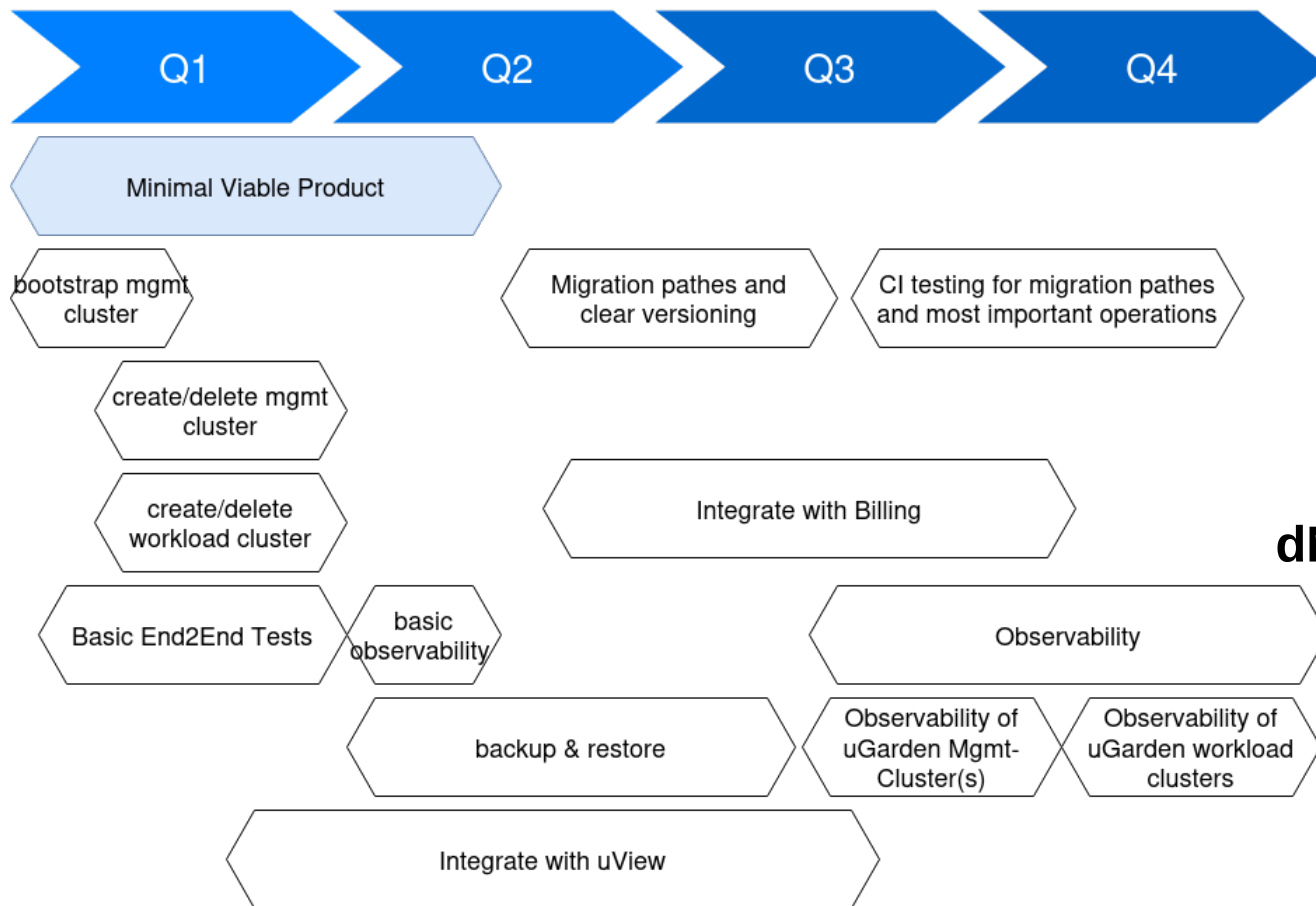
- Cluster API Operator - lifecycle of Cluster API providers
- Flux - GitOps
- Cluster API Add-on Provider for Helm - packaging in Kubernetes
- Kyverno - Policy-as-Code (PaC) for Kubernetes
- Kamaji - shared Kubernetes Control Plane
- Kubernetes External Secrets Operator - integrates external secret management systems, like AWS Secrets Manager
- Openstack Resource Controller - declarative management of resources
- LOT of custom Go code within Kubernetes Operators

uGarden KaaS - Supported Infrastructures

- OpenStack
- Docker for Local Development and CI
- ... more coming soon



uGarden KaaS - Roadmap for 2025

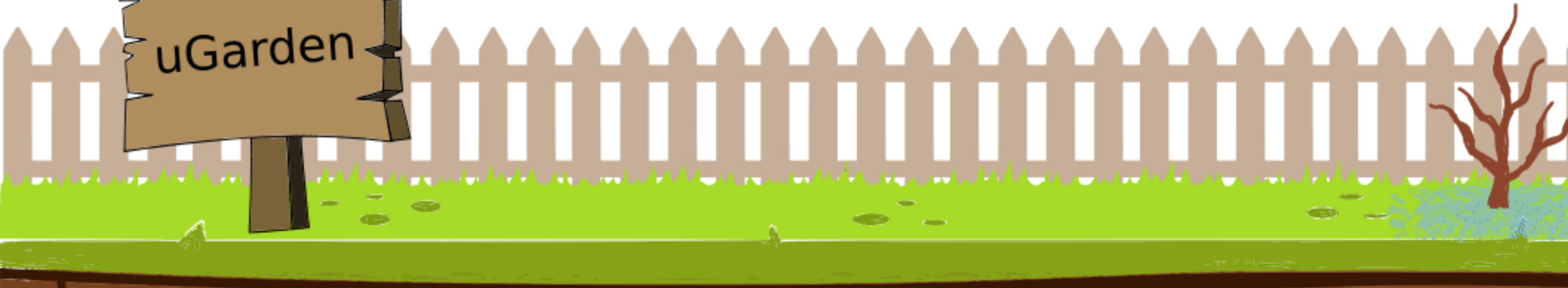


dNation Monitoring





- uGarden is fully compliant with the SCS KaaS standard
- Standard defined by the Sovereign Cloud Stack (SCS)
- SCS standard ensures inter-operability between various sovereign clouds



We are hiring!



- If named challenges sound interesting to you, talk to me after my presentation or write to careers@dNation.cloud
- LOT of DevOps challenges
- LOT of custom Go code within Kubernetes Operators

Thank you for your attention



cloud@dNation.cloud | www.dNation.cloud

Questions? Comments?

Don't hesitate to talk to me!

Martin Pilka, CEO, dNation

martin.pilka@dnation.cloud

We are hiring!