

# dN Kubernetes monitoring solution as a backend for the SCS observability platform



presentation for

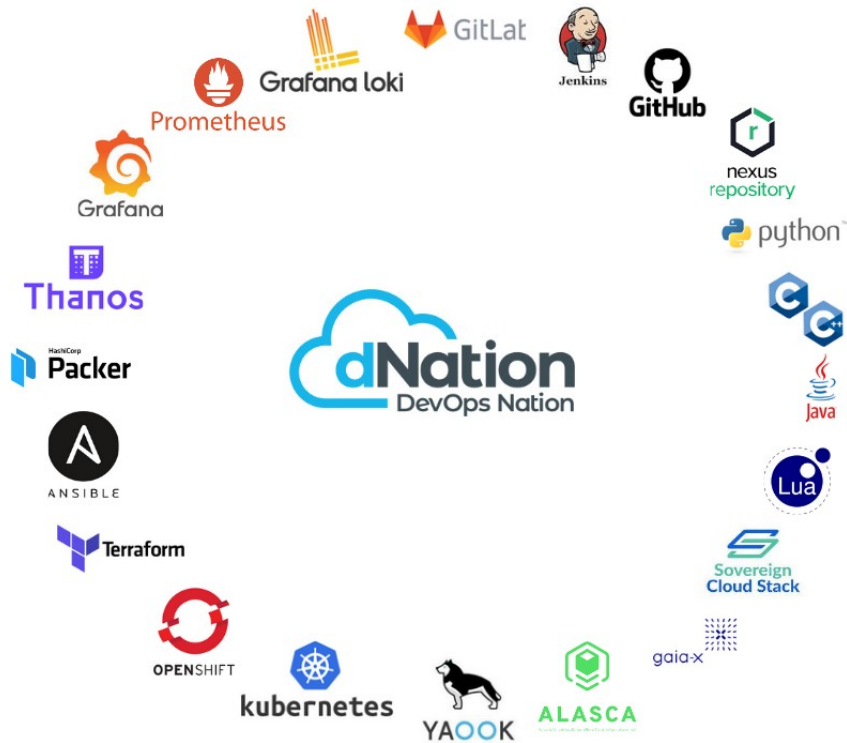
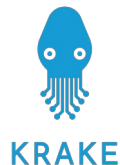


Canonical

[matej.feder@dnation.cloud](mailto:matej.feder@dnation.cloud)  
[www.dNation.cloud](http://www.dNation.cloud)



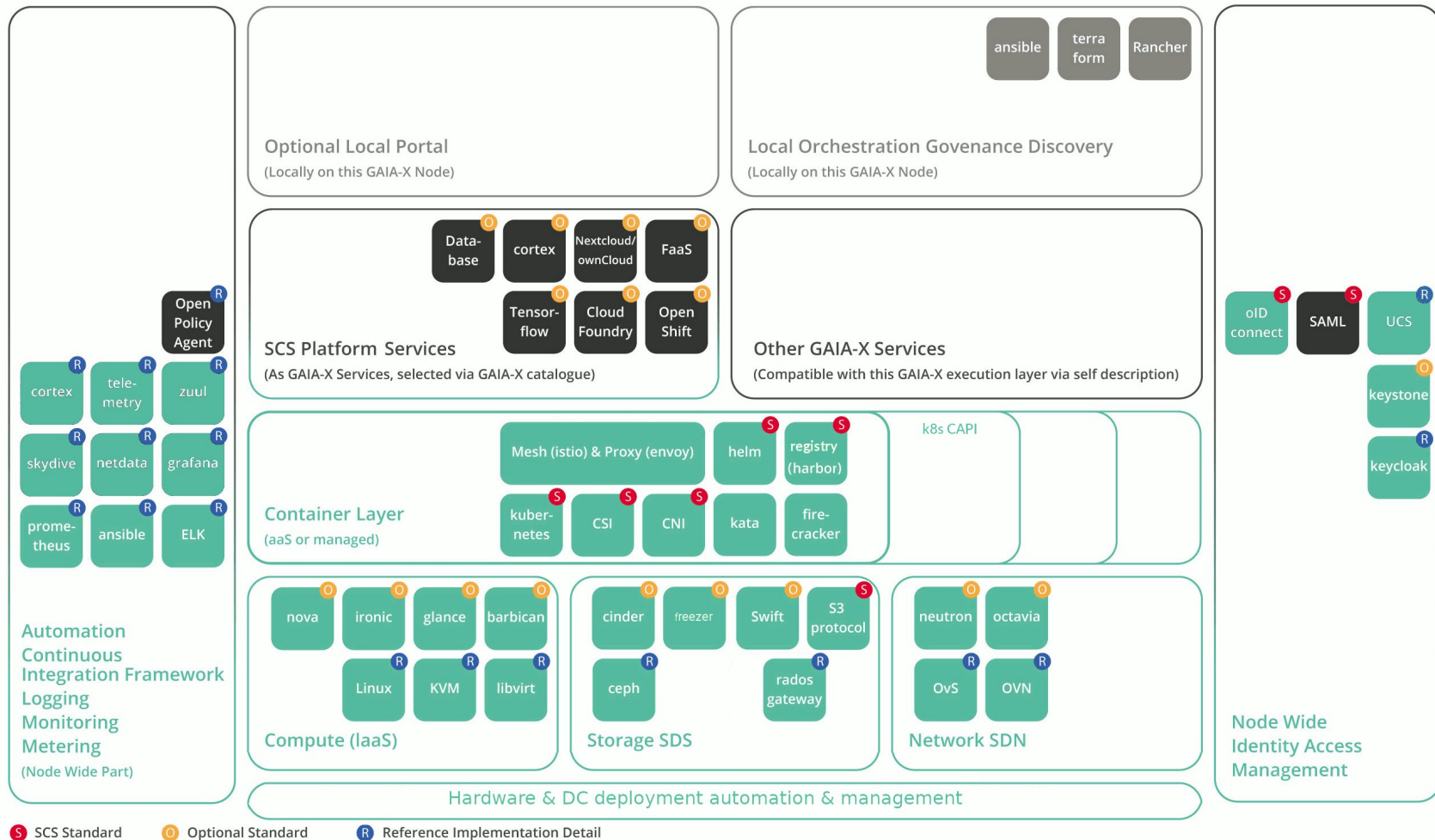
# About me



- [matej.feder@dnation.cloud](mailto:matej.feder@dnation.cloud)
- [www.dNation.cloud](http://www.dNation.cloud)
- CTO @ dNation

- Open-source
- Standardized
- Modular

# Mission – Observability platform for SCS



## Challenge – Observability platform for SCS

- High level requirements
  - Highly available
  - Scalable
  - Global view
  - Long term metrics and logs
  - Infrastructure layer monitoring
  - \*aaS layer monitoring
  - Various types of metrics (Prometheus, StatsD)
  - Highly modular
  - Highly extensible
  - Alerting
  - Matrix chat notifications



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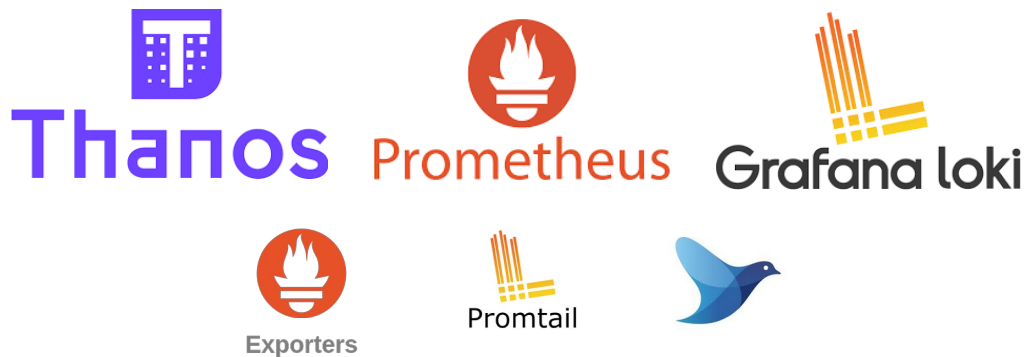
- Open-source
- Battle-tested
- Modular
- Extensible

## Project – dN Kubernetes monitoring stack

Visualization layer



Data layer





dN

# Project – dN Kubernetes monitoring

Basic design principles

- **Intuitive**
  - Green, orange and red colors signaling whether your action is needed
- **Relevant information only**
  - Provide only metrics relevant for area of interest, side-by-side with logs
- **Drill-down**
  - If you want details why something is green, orange or red, just click it





# Project – dN Kubernetes monitoring

Layer 0

Layer 1

Layer 2

Layer 3

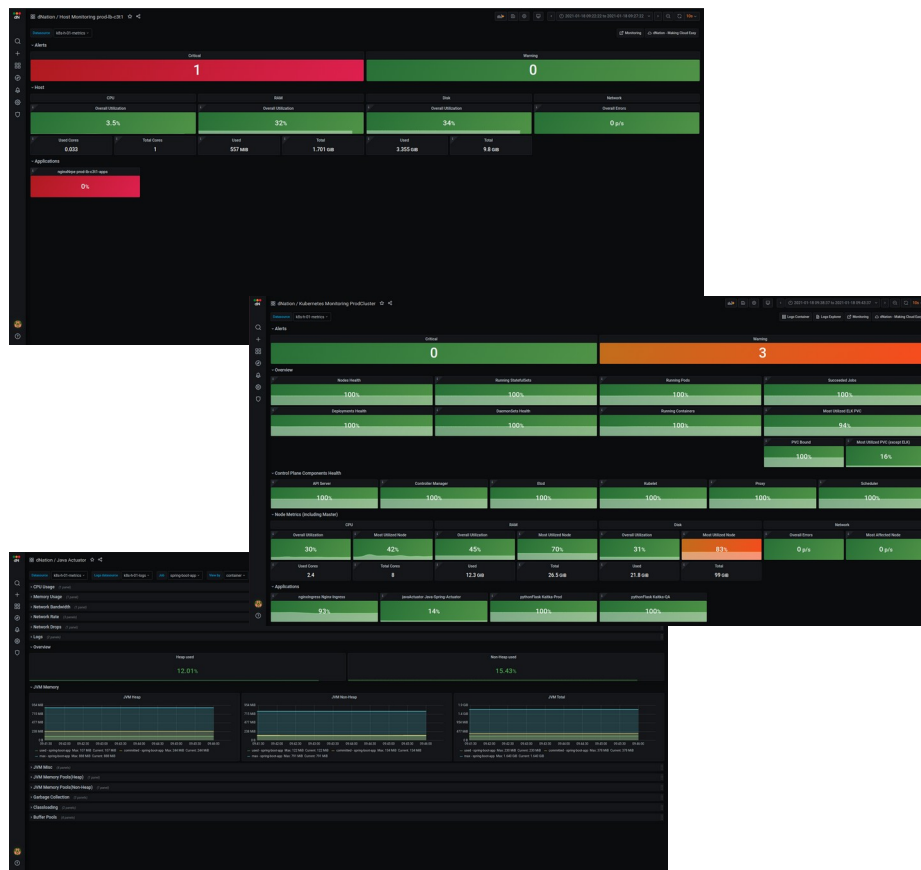
Drill-down



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# Project – dN Kubernetes monitoring

- Kubernetes, K3s, OpenShift
- Hosts
- 20+ Build-in apps
  - Apache
  - Nginx
  - Harbor
  - Mysql
  - Redis
  - JVM
  - Python-Flask
  - PHP
  - ...
- Highly extensible
  - OpenStack
  - Ceph
  - Zuul
  - Zookeeper
  - ...



clusterMonitoring:  
enabled: true  
clusters:  
- name: management  
description: Mgmt cluster  
apps:  
- name: container-registry  
description: Harbor  
templates:  
harbor:  
enabled: true  
serviceMonitor:  
jobLabel: app  
namespaceSelector:  
matchNames:  
- harbor  
selector:  
matchLabels:  
app: harbor  
endpoints:  
- port: http-metrics  
interval: 30s  
path: /metrics



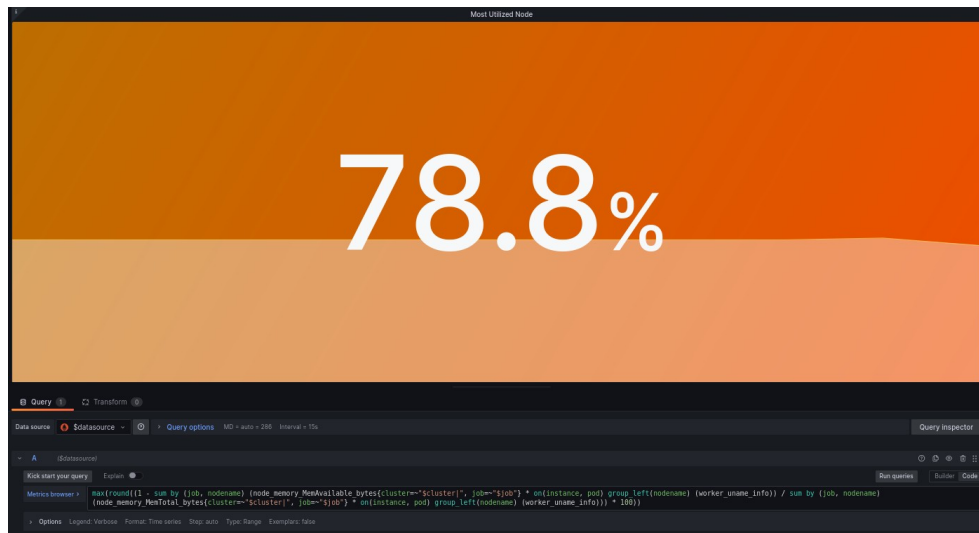


dN

# Project – dN Kubernetes monitoring



- Dashboards and Alerts
  - Written in Jsonnet
  - Deployed by Helm
  - Translated to Json by dN-Jsonnet Translator
- Highly customizable
  - Override default thresholds
  - Override colors and styles
  - Override or extend default dashboards
  - Add new dashboards and alerts
  - ...



templates:

L1:

k8s:

*# Override default k8s templates*

mostUtilizedMasterNodeRAM:

panel:

thresholds:

critical: 95

warning: 90

alert:

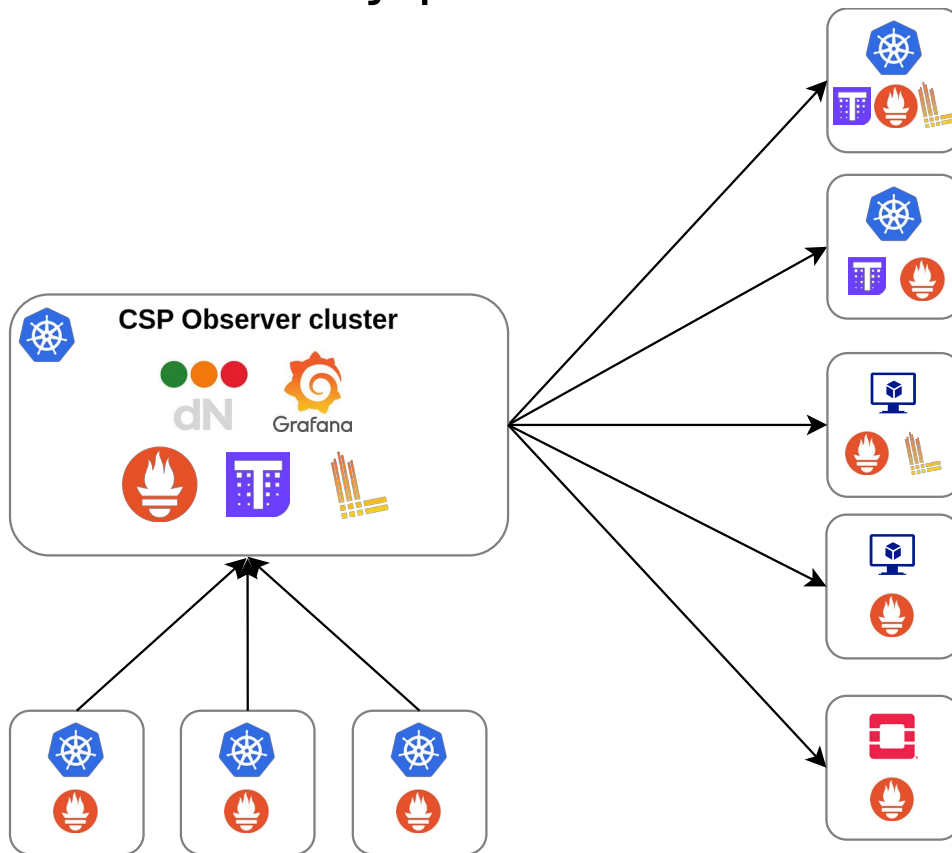
thresholds:

critical: 95

warning: 90

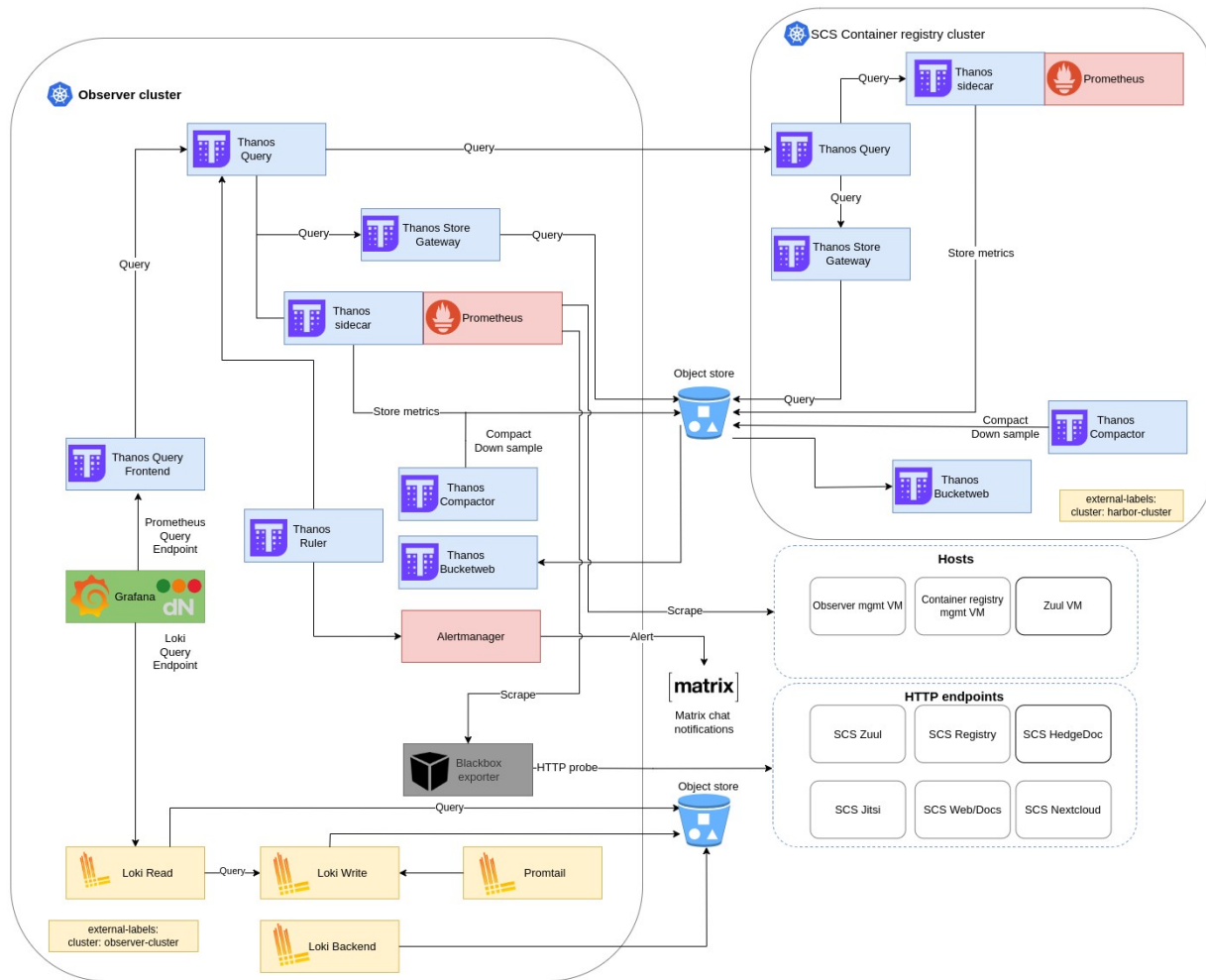
# Solution – dN Monitoring as a backend for the SCS observability platform

- Global view
- Long term metrics
- Logs
- Highly available
- SCS extensions
  - K3s support
  - IaaS monitoring – Tech preview (OpenStack, Ceph)
  - KaaS monitoring – PoC (Thanos receiver)
  - Zuul monitoring
  - Matrix chat notifications
  - OAUTH
  - Traces – Experimental



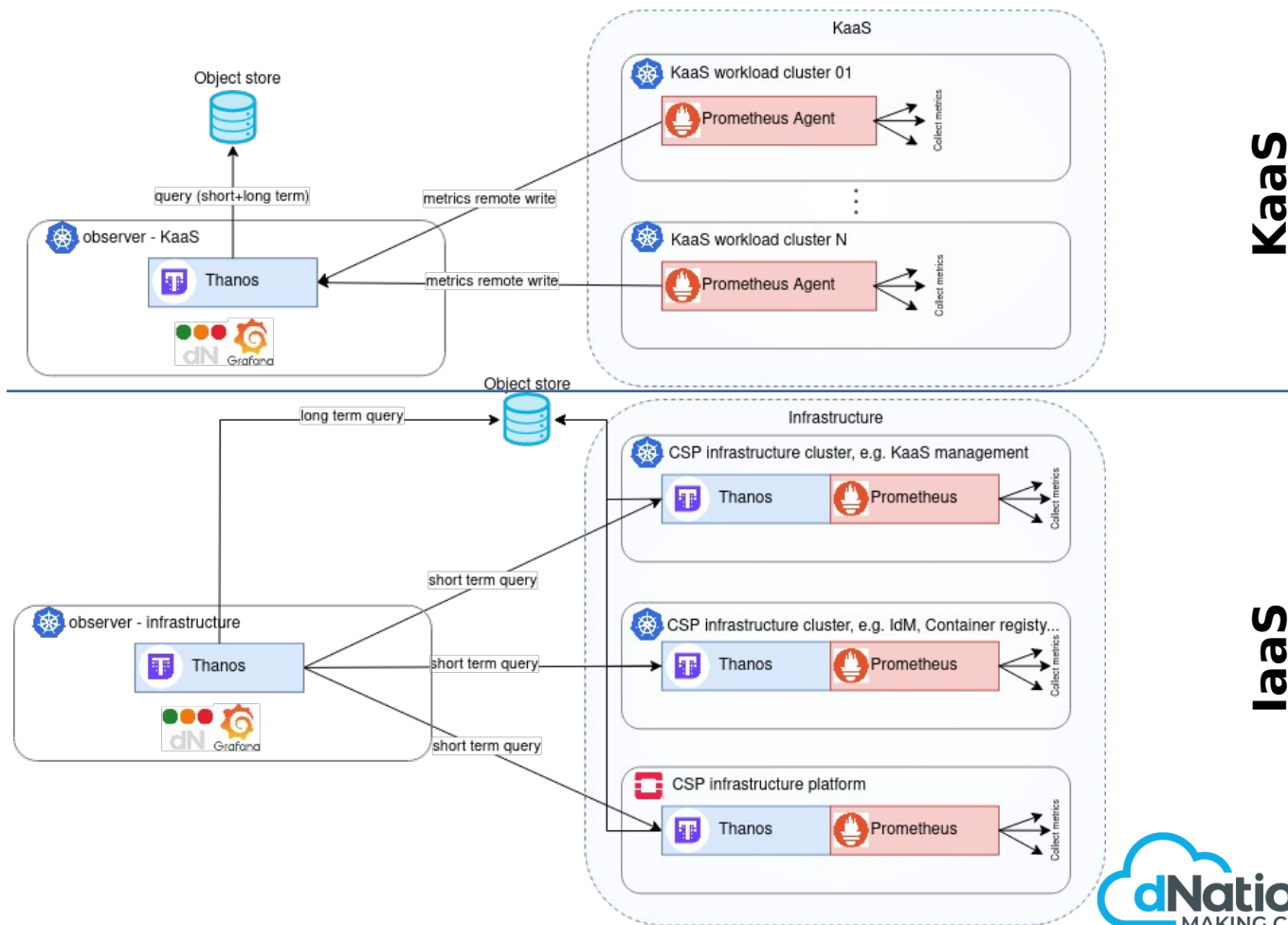
# Solution – dN Monitoring as a backend for the SCS observability platform

- SCS live deployment
  - <https://monitoring.scs.community>
  - 3 Kubernetes clusters
  - 2 Hosts
  - 7 Endpoints



# Solution – dN Monitoring as a backend for the SCS observability platform

- PoC/Tech. Preview
- KaaS monitoring
  - Push based architecture
  - Prometheus agent
  - Thanos receiver
- IaaS monitoring
  - OpenStack exporter
  - Openstack dashboards
  - Ceph exporter and dash.



# Thank you!

Links:

[General info about dNation Monitoring](#)  
[SCS monitoring documentation](#)

[dNationCloud / kubernetes-monitoring](#)  
[dNationCloud / kubernetes-monitoring-stack](#)

