CLOUD & HEAT

JORIS BAUM

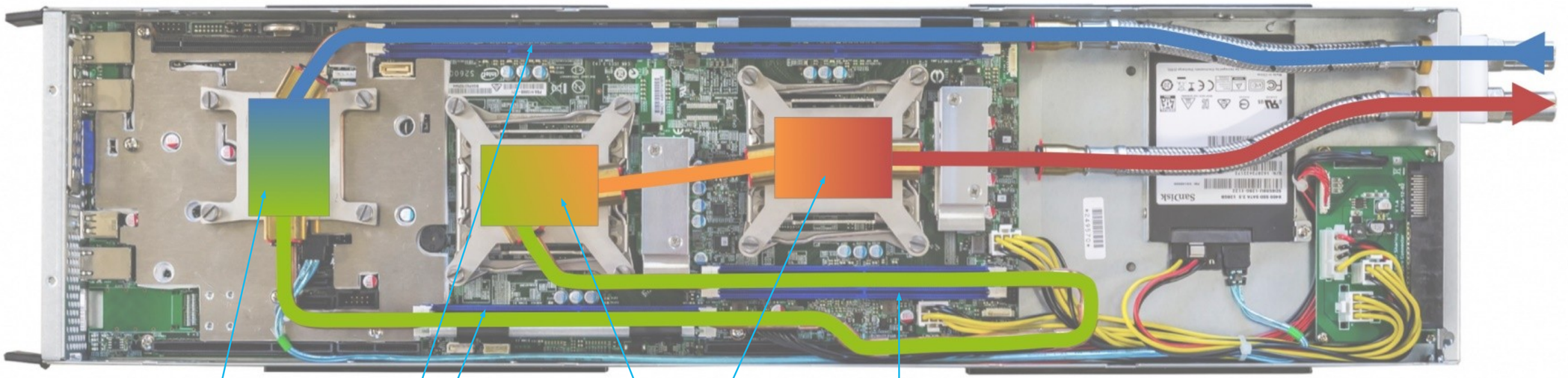
FROM BASEMENT TO SKYSCRAPER - MONITORING DISTRIBUTED MICRO-DCS

OUR TECHNOLOGY

DIRECT HOT WATER COOLING

CAPTURING 90% OF THE EMITTED HEAT

Collect Pressure, Temp, Flow,...

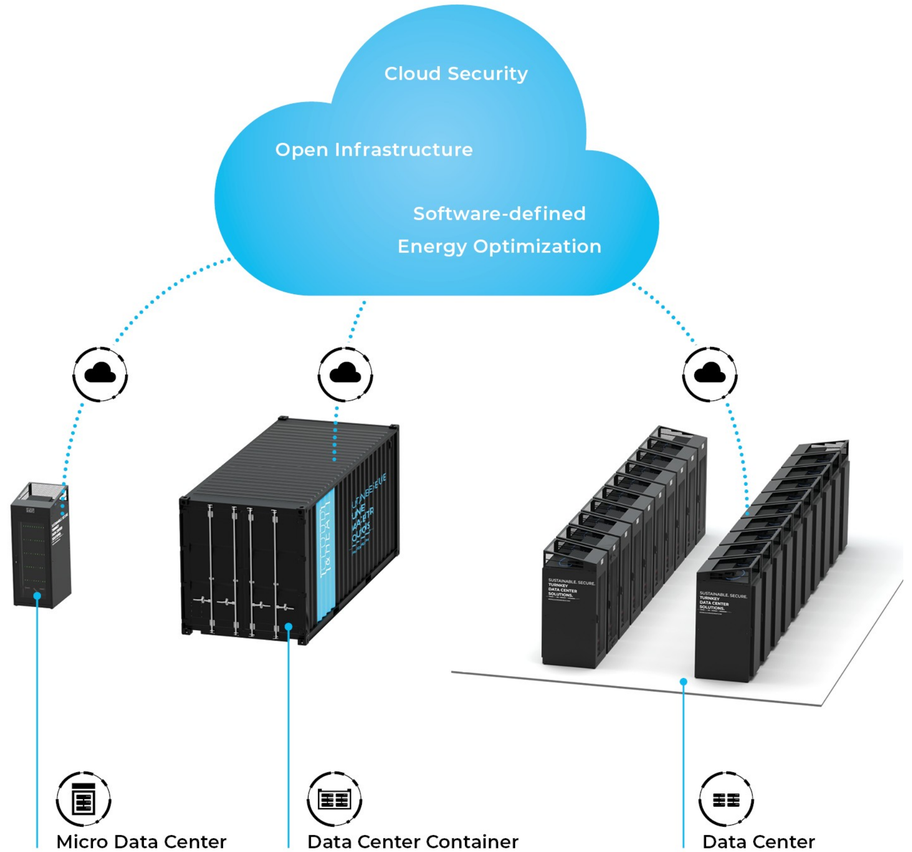


Collect Temp, Usage, ...

PROMETHEUS NEEDS TO COPE WITH

HETEROGENEOUS INFRASTRUCTURE

- Different DC Types: Legacy, state-of-the-art or Mining container
- Number of Racks: 1 – 8 per data center
- Security-hardened or Vanilla OpenStack
- We deploy with Chef on bare-metal and VMs



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HETEROGENEOUS INFRASTRUCTURE

PATH TO A WORKING PROMETHEUS

Write Exporters for..

Heating:
- OPC Unified Architecture
- DigiENERGY
- Heat Controller

Disk: S.M.A.R.T [Link]

Network: NIC Speed

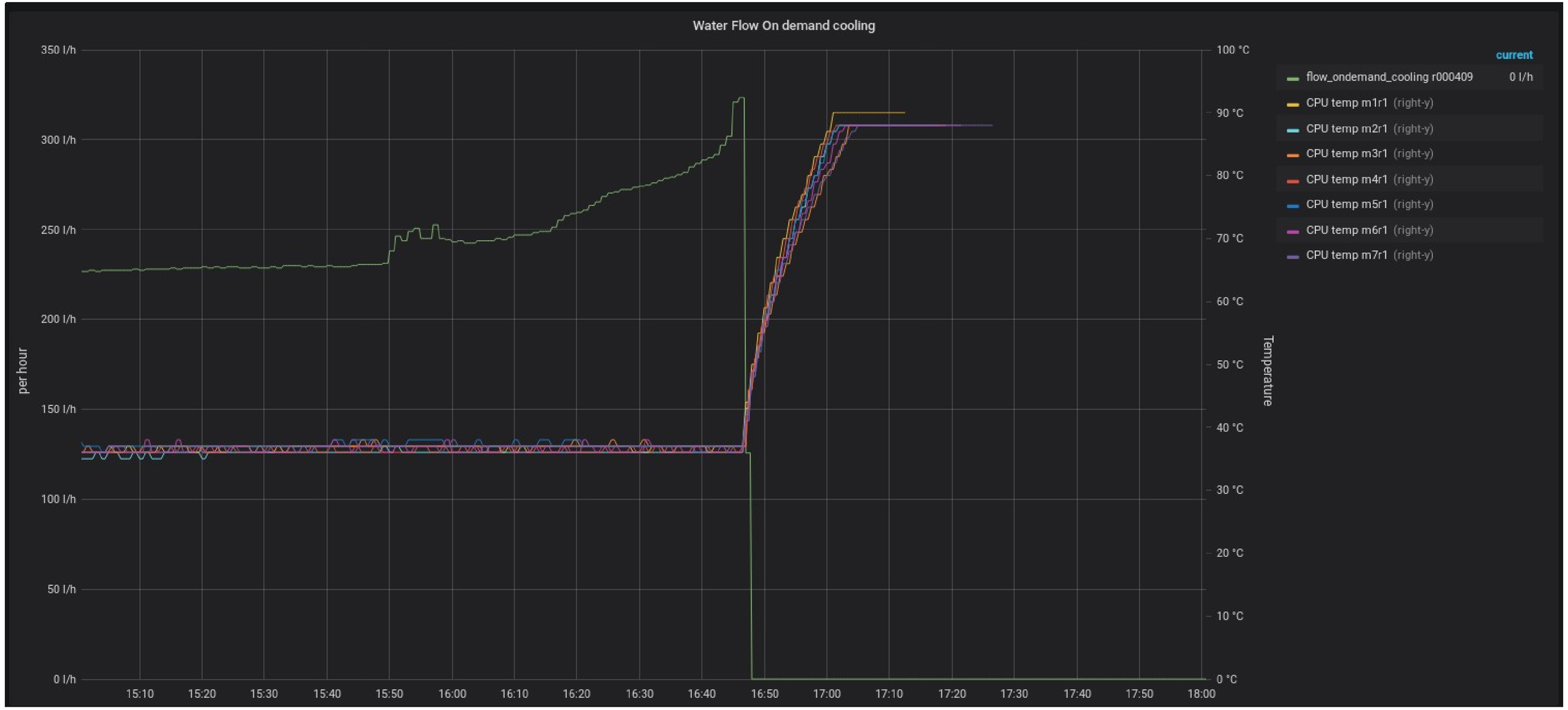
Configuration Management takes care of:

- Targets
- Rules

Deploy

HETEROGENEOUS INFRASTRUCTURE

GRAFANA IS ALSO CONVENIENT



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PROMETHEUS

STILL UP AND RUNNING

- **Running**: In-use since 2017
- Collects 1.5 M metrics/minute across all data centers
- **Up:** Rare Issues (mostly when disk space runs full) → Yes, we are working on using Thanos
- Krake [Link] orchestrator that uses Prometheus to collect metrics for scheduling decisions

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LINKS

- Krake

  https://gitlab.com/rak-n-rok/krake

- S.M.A.R.T. Exporter

  https://github.com/CloudAndHeat/prometheus_smart_exporter