

Cloud Native Network Observability

Treating Routers like Kubernetes Resources

Presented by: Florian Löhden, NetDevOps Engineer

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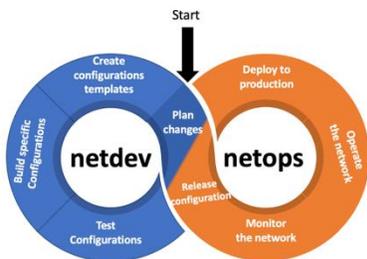
About me

NetDevOps
Engineer

Co-Founder of
NetAuto
Group

Masterstudies
in Computer
Science at H-
DA

Crossfit and
Running





Intelligent
Connectivity



Hybrid Cloud



Data & AI



Security



Digital Workspace



Smart Infrastructure
Engineering

Total Employees

600+

Revenue

350M+

Selection of our Key Alliances



Certifications



Contents

- ▶ **Background**
- ▶ **Solution**
- ▶ **Demo**
- ▶ **Outro**

Where are we coming from?

The "Pull" Bottleneck



Dangerous Blind Spots



Fragile Data Parsing



Static and Siloed Infrastructure



 Observability, that shows us in real time

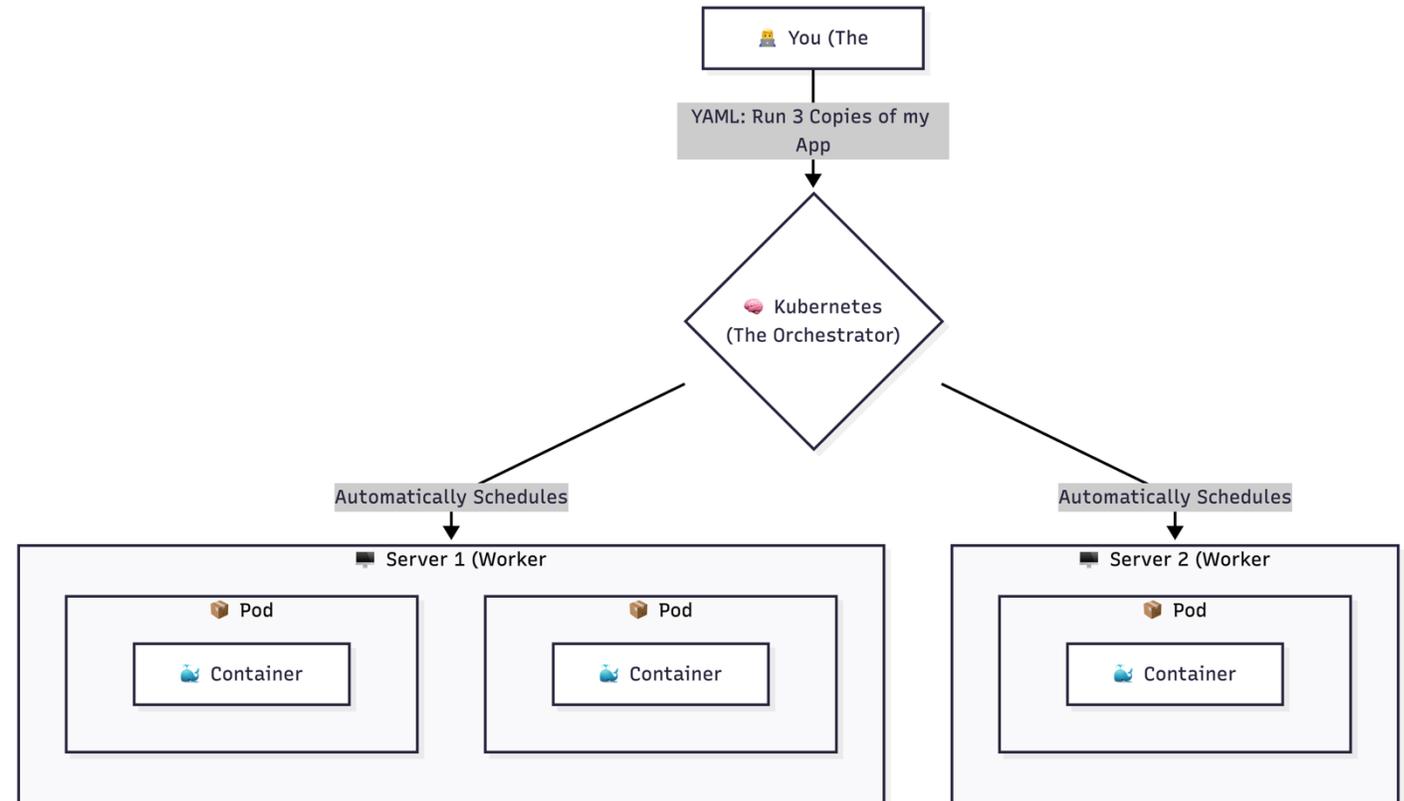
 Standardized Data Model

 Scalability

 Bridging the gap

What is Kubernetes?

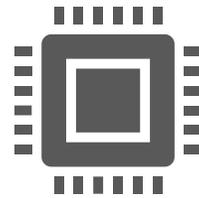
- ▶ **Declarative Configuration**
- ▶ **Self Healing**
- ▶ **Scalability**
- ▶ **Extendability**





Created in 1980

Grandfather of network monitoring



Pull model

Monitoring server asks the device every time
For example: What is the byte count on interface 1?



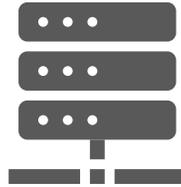
Data

Stored as MIBs(Management Information)
OID (Object Identifiers) like 1.3.6.1.2.1.2.2.1.10.1



Created in mid-2000s

Transitional
Designed to fix network configuration



SSH-Tunnel to securely send XML-encoded messages



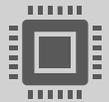
YANG Model

Data in human-readable standardized trees
interfaces/interface/state/counters/in-
octets



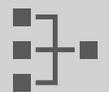
Developed by the
OpenConfig working group

heavily driven by Google



Uses gRPC (build on HTTP/2)

Subscribes to data path in case, instead of asking for it all the time



YANG model

Like NETCONF, but uses Protocolbuffers or JSON to transport data



Why gNMI Wins the Telemetry War

Speed

- *Pull* → **Push (Streaming)**

Encoding

- *Text/XML* → **Binary (Protobuf)**

Transport

- *Single-thread* → **HTTP/2 Multiplexed**

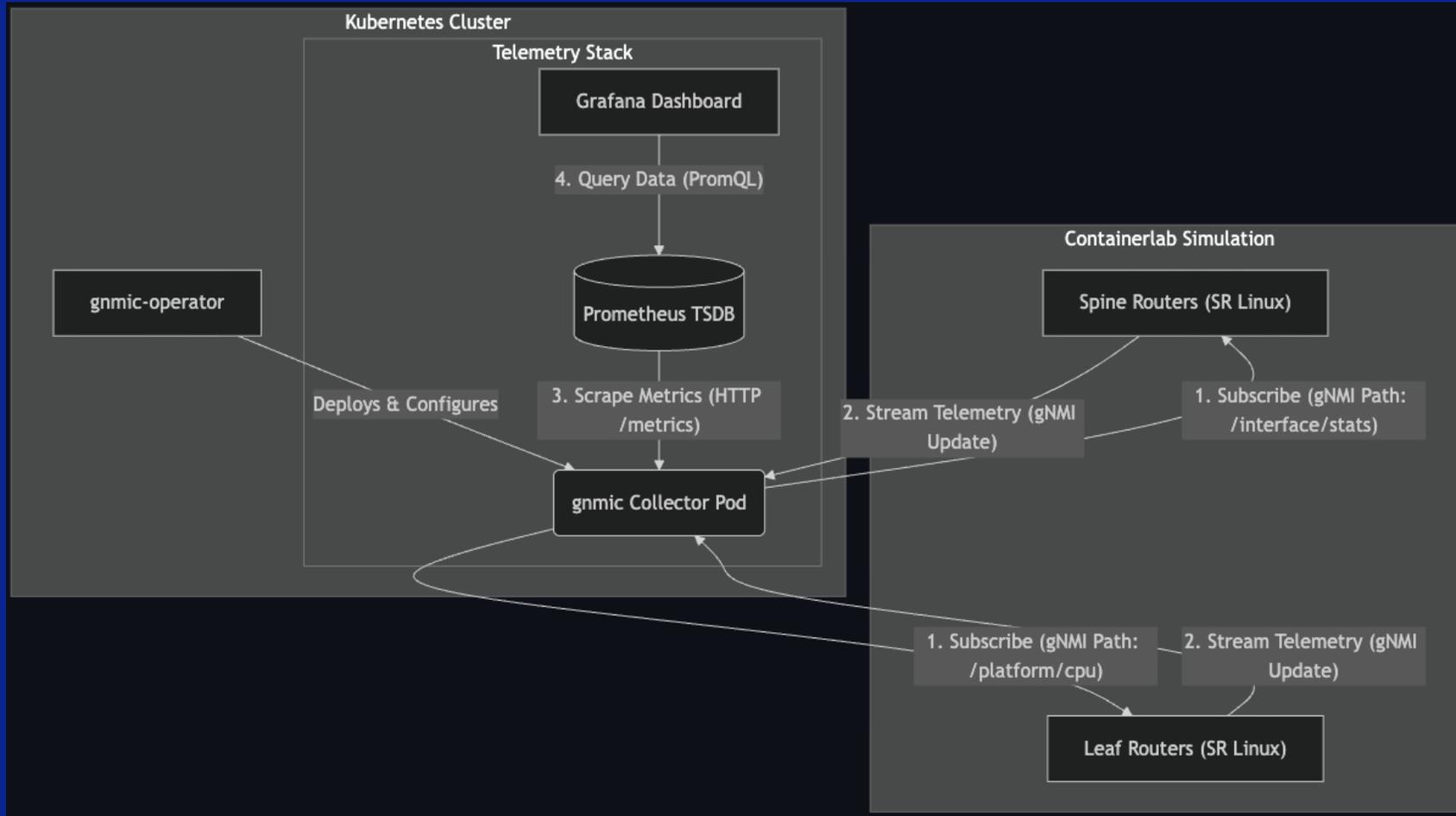
Ecosystem

- *Siloed VMs* → **Kubernetes Native**

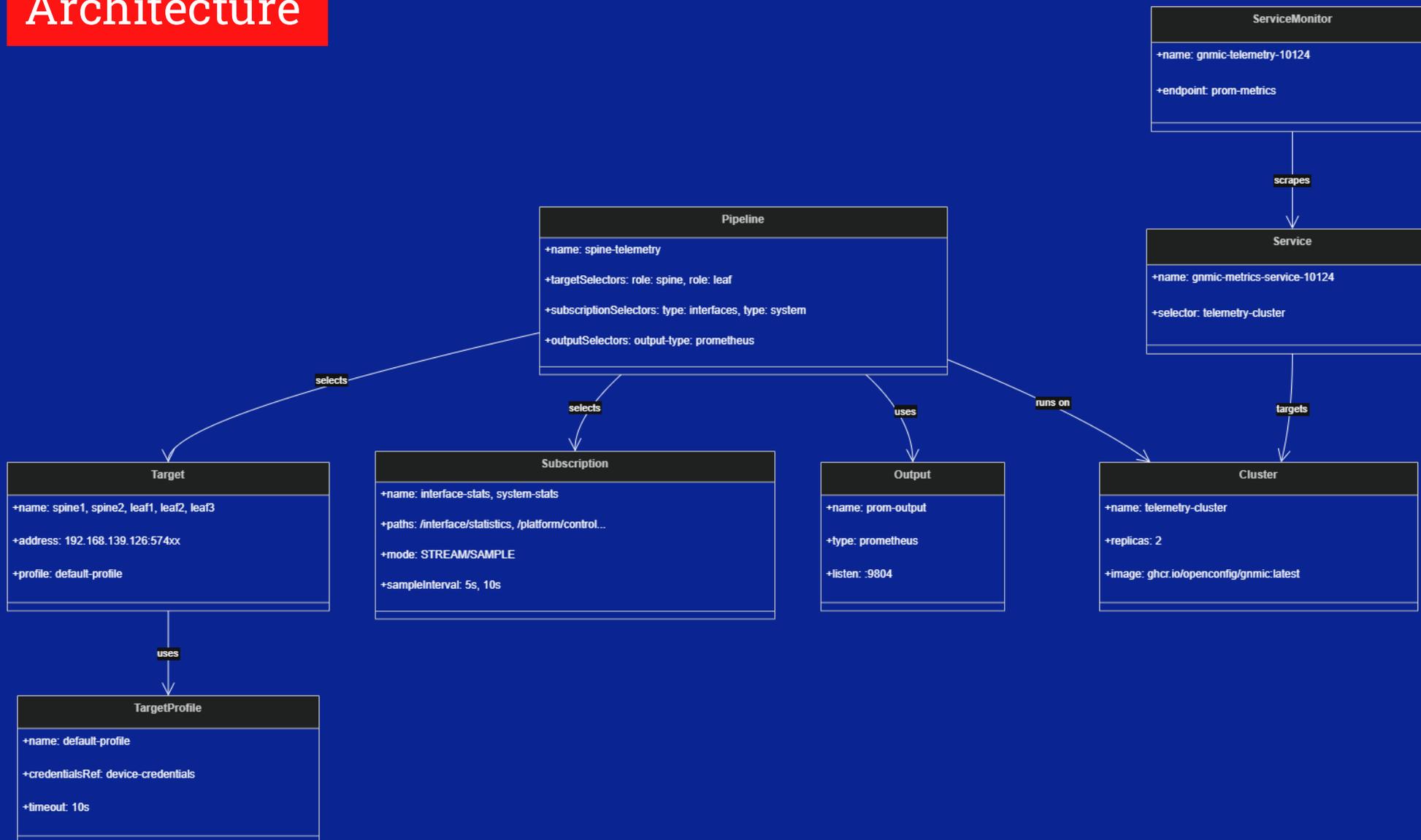


Solution

Setup



Architecture



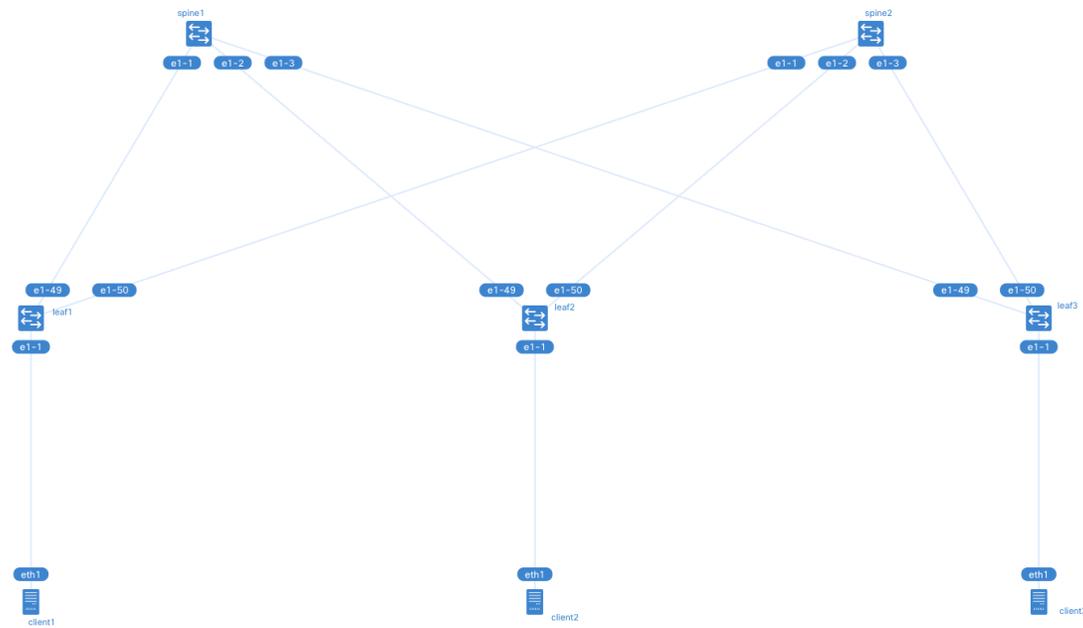


Demo

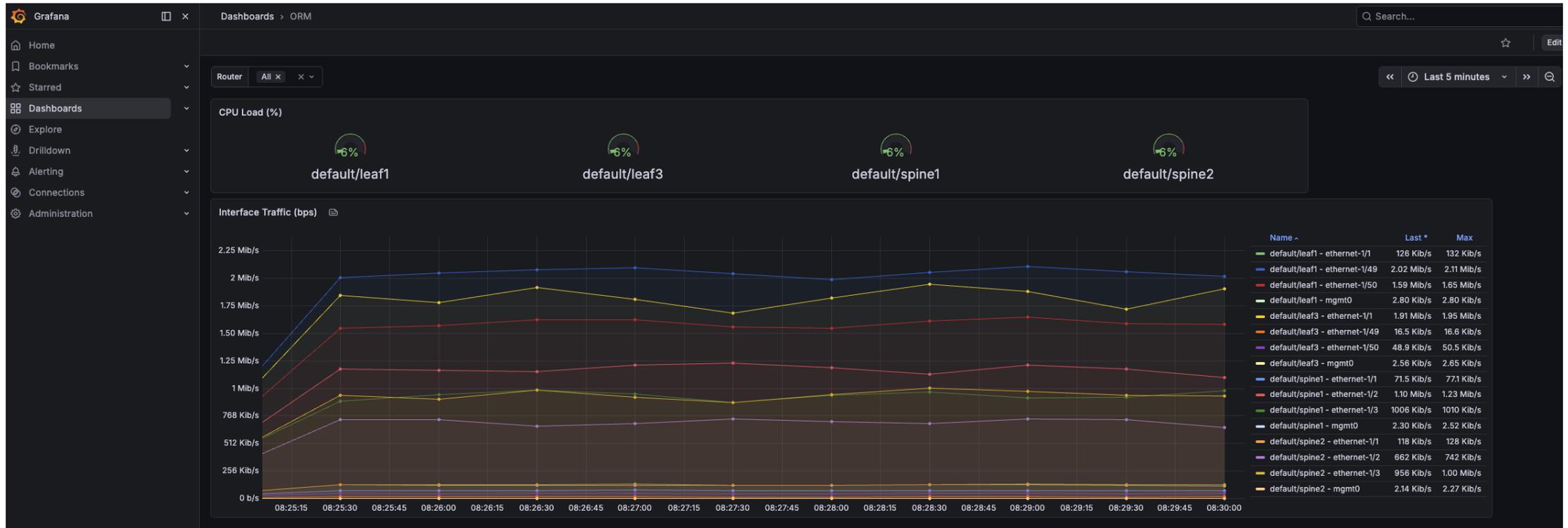
Topology

ContainerLab Topology ST

Horizontal Layout Vertical Layout



Dashboard



NetAuto Group

- Network Automation enthusiasts
- Meetup every two months
- Join us for more interesting topics!
- Next Meetup: 09.04.2026
- Location: Logicalis Office, Siemensstraße 10, Neu-Isenburg



Questions?

- ▶ Kubernetes as platform for Observability
 - I. Selfhealing
 - II. Scalable
 - III. Declaritive
- ▶ GNMIC-Operator for connecting to the devices



GitHub Repository
for the Talk

Thank You and Have a Great Day!

Let's stay connected!



de.logicalis.com



Join us on LinkedIn

CONTACT

florian.loehden@de.logicalis.com