

ONLINE WORKSHOP

How to Achieve Data-Driven Manufacturing:

A Live Demonstration of Building a Unified Namespace with MQTT Sparkplug



Kudzai Manditereza



Benson Houglan



David Schultz



José Granero Nueda

Hosted By  **HIVEMQ**

In Collaboration with

OPTO 22

SPRUIK

& **N3uron**

Speakers



Kudzai Manditereza

Developer Advocate,
HiveMQ



Benson Houglund

Vice President, Marketing
and Product Strategy,
Opto 22



David Schultz

Principal Consultant,
Spruik

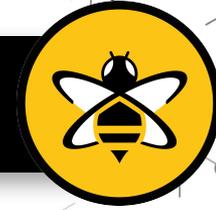


Jose Granero

Head of Customer
Success and Sales
Engineering, N3uron
Connectivity Systems



Introduction to HiveMQ



- **Founded in 2012**, headquartered in **Landshut, Germany**, near Munich.
- For **manufacturing**, we **connect** data from different equipment sources and **aggregate** them in a **secure** and **reliable** way to enable **Industry 4.0** and Factory modernization
- **130+ customers** trust our solution to enable their digitization journey
- Raised **€49.3 million** in seed and series A funding



SIEMENS

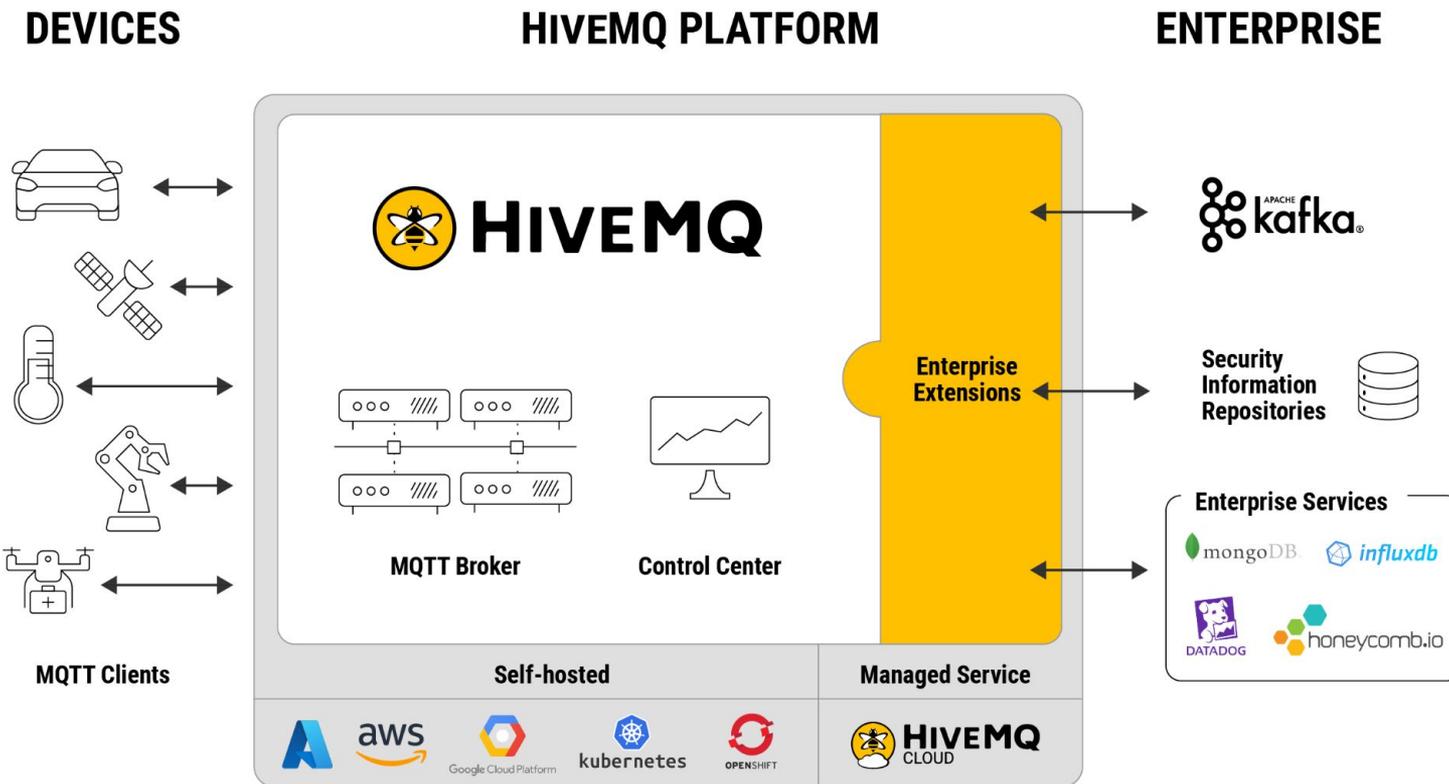


LIBERTY GLOBAL

DAIMLER



HiveMQ Enterprise MQTT Platform



About Opto 22

49-year technology innovator, from **SSRs** to **I/O, control systems, mobile, & IIoT**

All products **designed, built, and supported** in Temecula, California

Unique in industry to **combine capabilities in OT** – ruggedness & reliability – **with IT** – networking, protocols, edge processing

Flagship products include **groov** EPIC, **groov** RIO, and **groov** RIO EMU



 **MADE IN THE USA**



About *groov* EPIC

Real-time Linux-based gateway, controller & I/O

- PR1 – **2GB** RAM, **6GB** Industrial SSD
- PR2 – **4GB** RAM, **26GB** Industrial SSD

Multiple **programming** options

- CODESYS, PAC Control, C++, Python

Built-in, web-based **HMI** with **HDMI** support

Ignition, **Node-RED** pre-installed

Gateway functions

- **Multiple** NICs, VPN, zoning & conduits

Zero-trust **cybersecure** out-of-the-box

- Accounts, firewalls, TLS certificates

Web-based, **OT**-managed, **IT**-approved



Operating Temperature: **-20 to 70° C**

UL/cUL (Class 1 Div. 2), CE, ATEX, RoHS, DFARS, UKCA

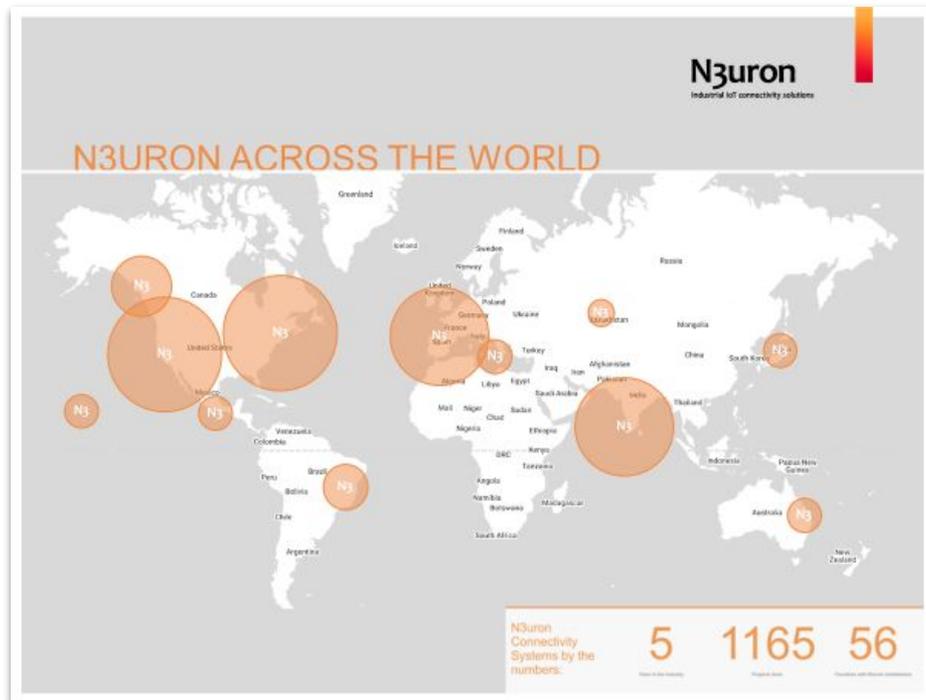


About N3uron Connectivity Systems

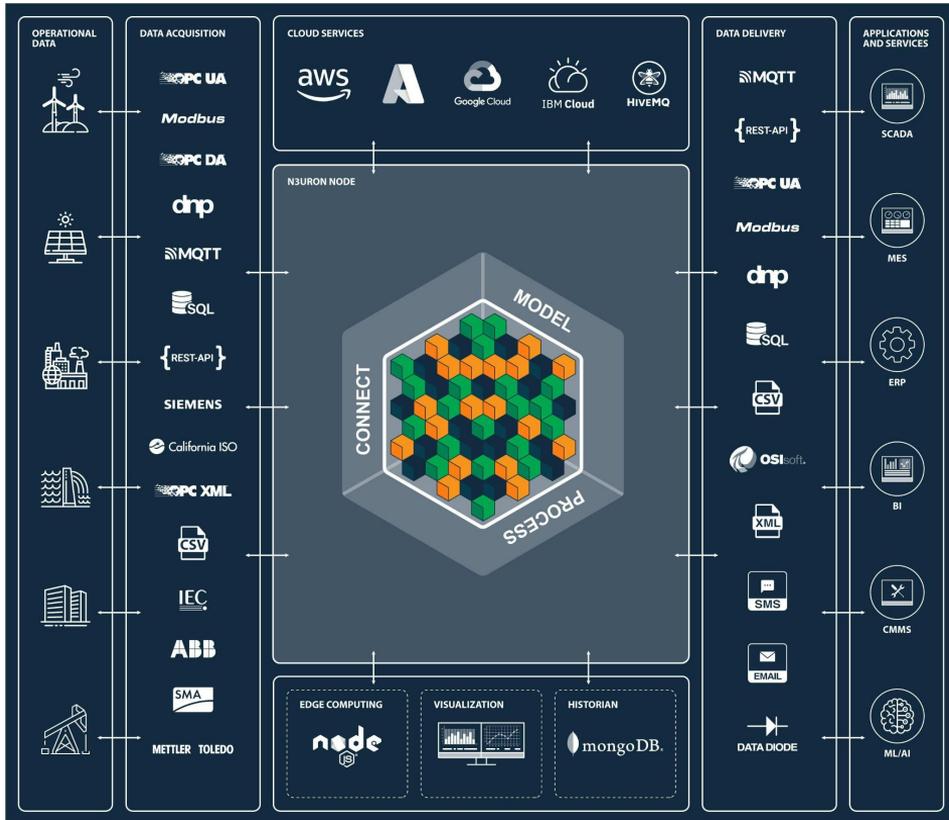


N3uron Connectivity Systems

- Founded in 2018 by System Integrators.
- Product: **N3uron** the Industrial Edge Platform for DataOps.
- Service: **Fleet Manager**.
- Used in 50+ countries.
- 50% average annual growth rate since 2018.



N3uron: Industrial Edge Platform for DataOps



Unmatched Connectivity, Data Modeling & Edge Computing Capabilities:

- Modular configurability.
- Cross-platform.
- Unlimited license.
- Web-based.
- Rapid deployment and development.
- Extremely efficient.
- Scalable and versatile architecture.



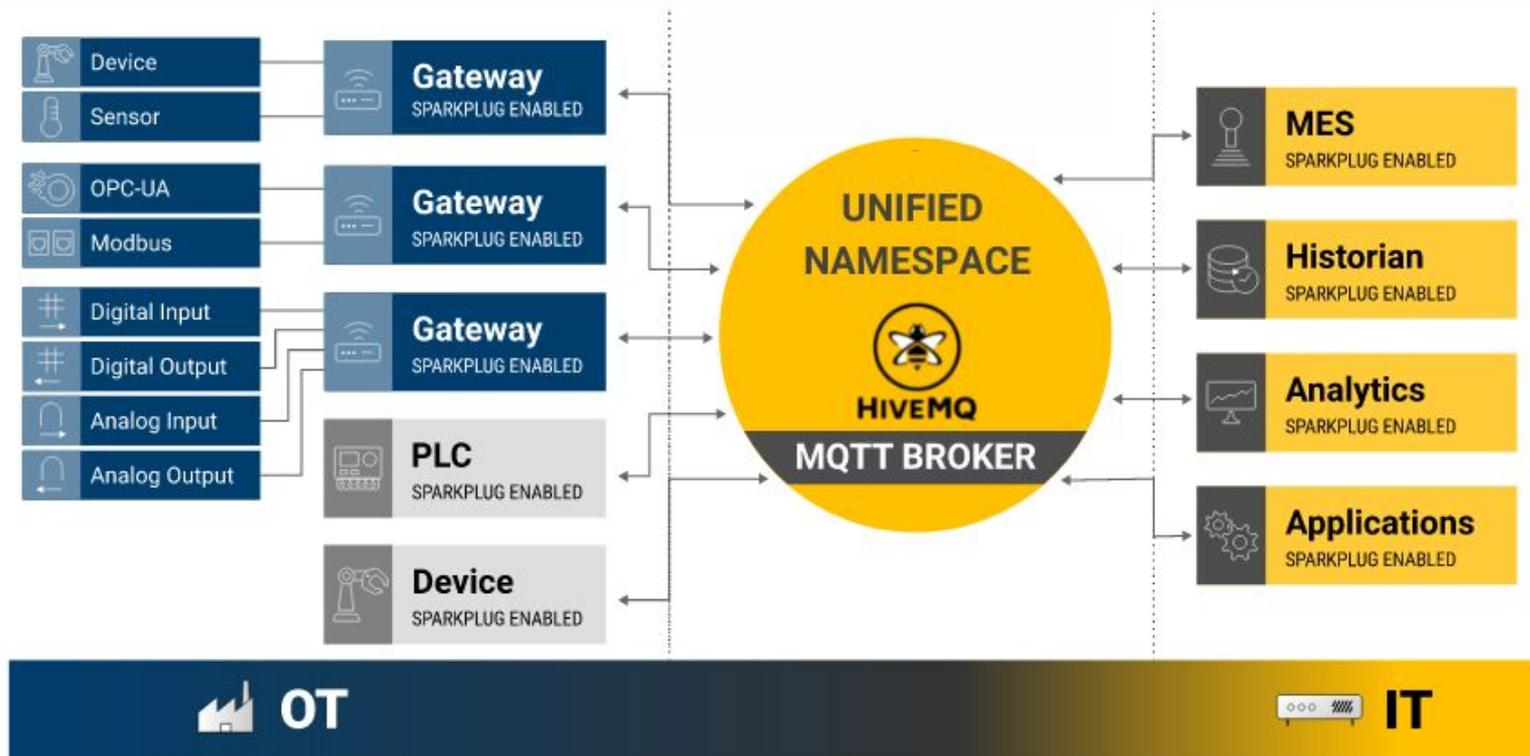
About Spruik Technologies

The logo for Spruik Technologies features the word "SPRUİK" in a stylized, orange, sans-serif font. The letter 'I' is replaced by a 'i' with two dots above it. The logo is set against a light gray background.

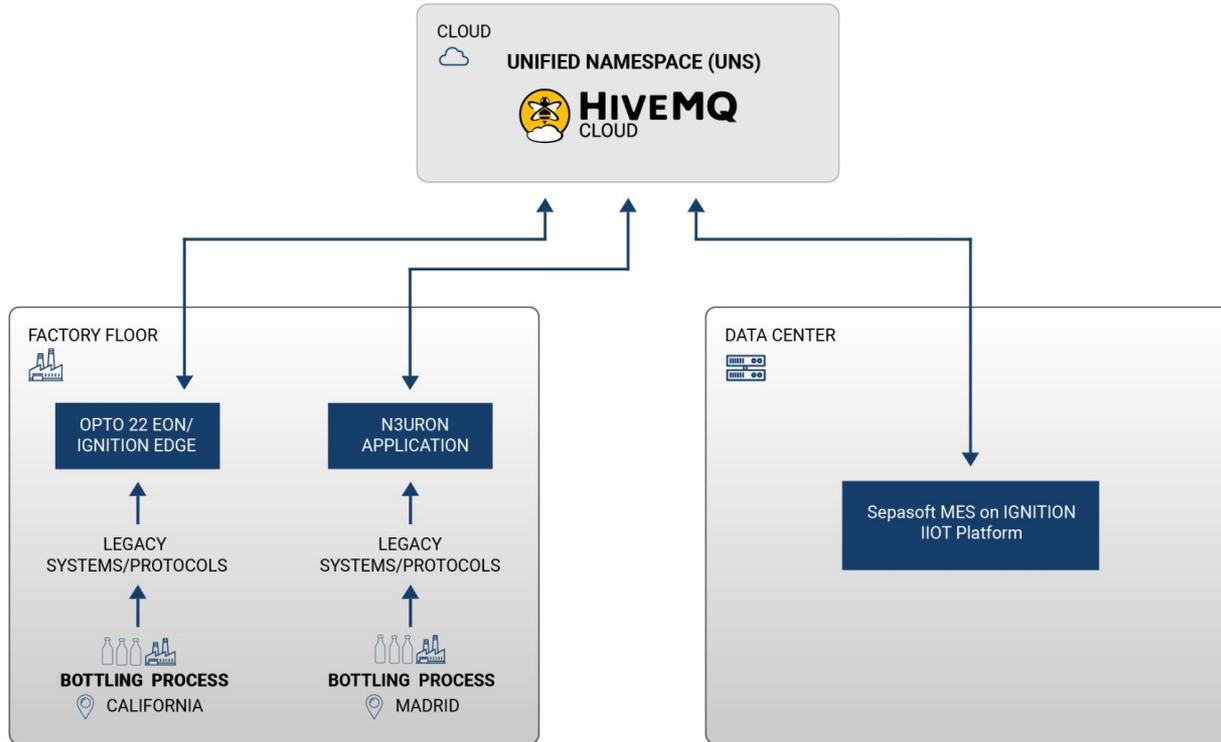
- Founded in 2017 for the purpose of promoting modern technology and processes in manufacturing software.
- Offices in the US, UK and Australia, with 20+ employees. Virtual “headquarters” in Minneapolis.
- Expert consulting and implementation in all areas of Industry 4.0 Digital Transformation.



Why Unified Namespace?



Demo Architecture



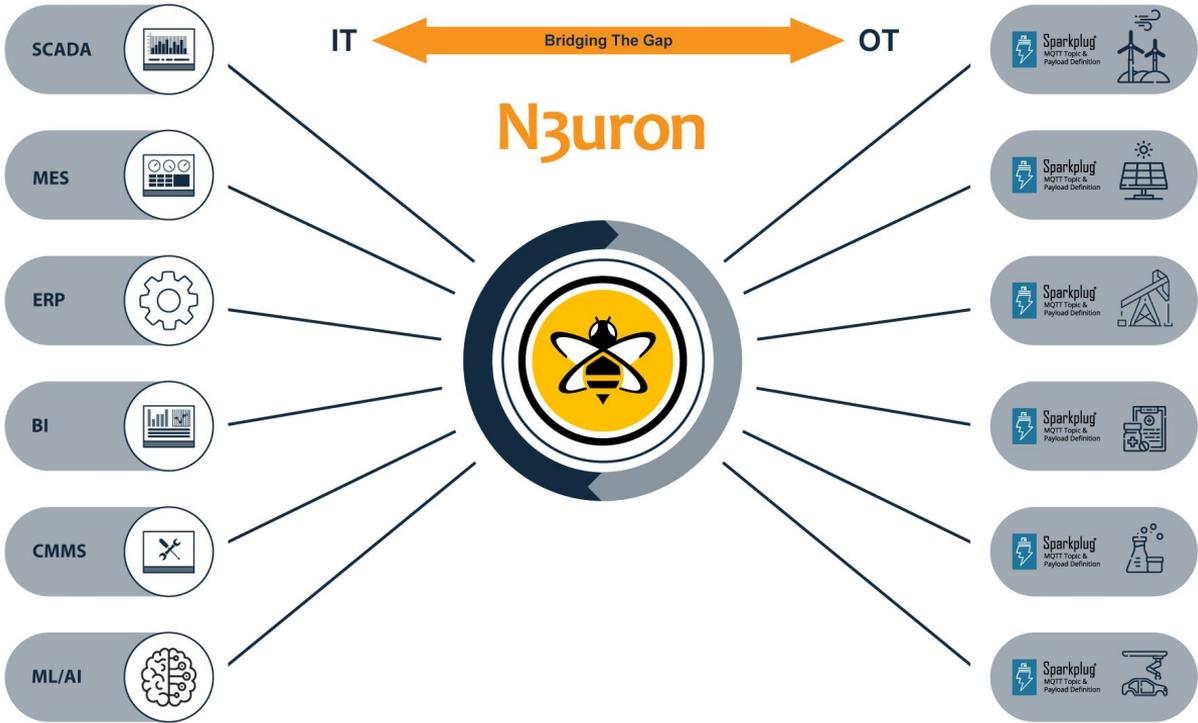
Why is N3uron well-suited for UNS?

Unmatched Connectivity, Data Modeling & Edge Computing Capabilities:

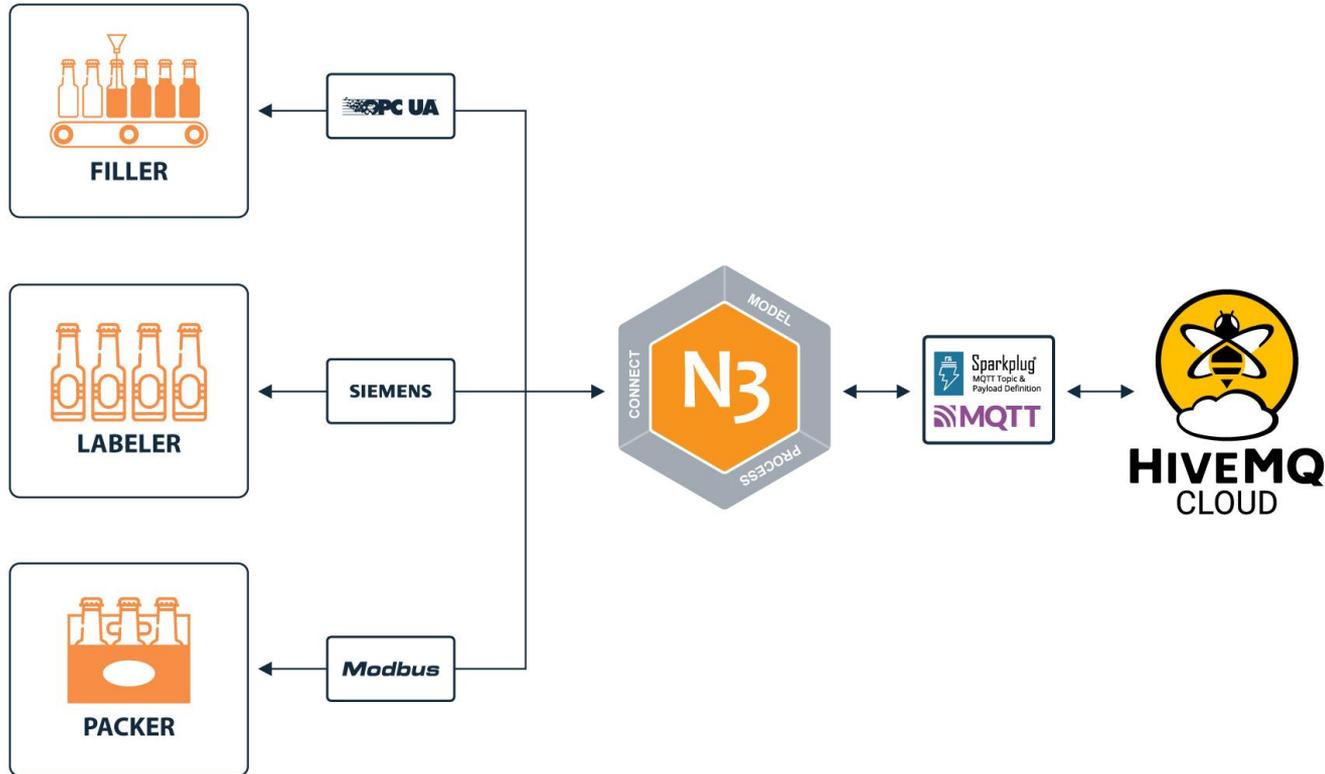
- **Edge native:** Connect and exchange data with a large variety of data sources on the plant floor using OT & IT protocols.
- **Consolidate** all the data in a single application and build **consistent** and **standardized** data models you can **replicate** → Templates.
- Flat **MQTT** and **Sparkplug** client modules.
- Other Delivery modules for data consumers that do not support MQTT (REST API Server, SQL, OPC UA Server, etc)
- **Open Architecture**, Highly Scalable & Secure



OT/ IT Interoperability



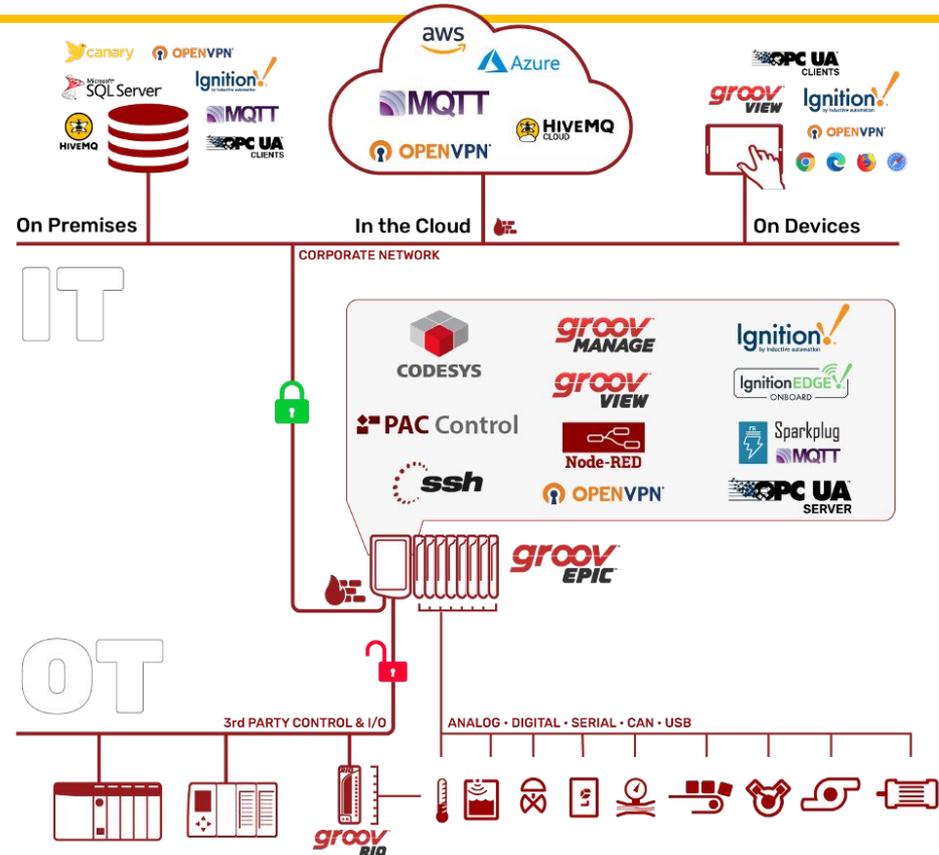
Demo Architecture



groov EPIC System Architecture

Full groov EPIC IT/OT Architecture

- groov EPIC PR1 or PR2
- CODESYS or PAC Control
- groov View HMI
- Ignition or Ignition EDGE
- Node-RED
- OpenVPN
- OPC UA
- MQTT/SparkplugB
- SSH



Demo

Watch the demo here.



Resources



HIVEMQ

[Get the HiveMQ MQTT Broker.](#)



[Learn more about Opto 22 Groov Epic](#)



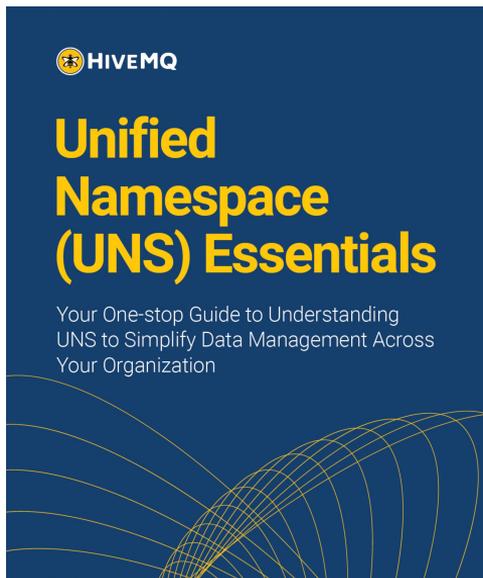
[Learn more about Spruik Technologies](#)



[Learn more about N3uron](#)



Additional Resources



[Get your copy of UNS Essentials guide now.](#)



THANK YOU

Contact Details

Kudzai Manditereza: kudzai.manditereza@hivemq.com | [linkedin.com/in/kudzaimanditereza/](https://www.linkedin.com/in/kudzaimanditereza/)

Benson Houglan: bensonh@opto22.com | [linkedin.com/in/bhouglan/](https://www.linkedin.com/in/bhouglan/)

David Schultz: dschultz@g5ces.com | [linkedin.com/in/thedavidschultz/](https://www.linkedin.com/in/thedavidschultz/)

Jose Granero: jose.granero@n3uron.com | [linkedin.com/in/josegraneronueda/](https://www.linkedin.com/in/josegraneronueda/)

