The 10th Annual Ignition Community Conference

ICCX

XPERIENCE & XPLORE

Unlocking the Power of the Edge with Ignition on *groov* EPIC & RIO

OPTO 22
Your Edge in Automation.™

ICC 2022

Benson Hougland

VP Product Strategy & Marketing

Garrick Reichert

Senior Application Engineer

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LIVE
DEMO
OPTO 22
HDMI
groov
EPIC
Live from
OptoDemo Studios

About Opto 22

- 48-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

Agenda

What we'll cover

- Brief introduction to ***groov*** **RIO** & ***groov*** **EPIC**
- 4 architectures with ***groov*** and Ignition ONBOARD or Ignition EDGE ONBOARD
- Live demonstrations

groov RIO Overview

groov RIOs and groov RIO EMU

- RIO **MM1** & **MM2** Remote I/O
  - MM1 - Universal I/O – up to **200K** variations
  - MM2 – I/O + Ignition EDGE on-board
- RIO **EMU** Power & Energy Monitoring
  - Up to 3-phases
  - Up to 600V Class III
- **MQTT** Sparkplug B & **OPC UA** server
- **PoE** or line powered
- **Cybersecure** out-of-the-box
- Web-based, **OT**-managed, **IT**-approved

RIO MM1
Universal I/O

RIO MM2
Universal I/O
with Ignition

Ignition EDGE ONBOARD

RIO EMU
Energy
Monitoring

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groov EPIC Overview

groov EPIC combines:

- **Real-time** Linux-based gateway, controller & I/O
  - PR1 – **2GB** RAM, **6GB** Industrial SSD
  - PR2 – **4GB** RAM, **26GB** Industrial SSD
- **Ignition** or **Ignition Edge** Onboard
- **Gateway** functions
  - **Multiple** network interfaces
  - VPN, zoning & conduits
- Zero-trust **cybersecure** out-of-the-box
  - Accounts, firewalls, TLS certificates
- **Web**-based, **OT**-managed, **IT**-approved

Ignition ONBOARD

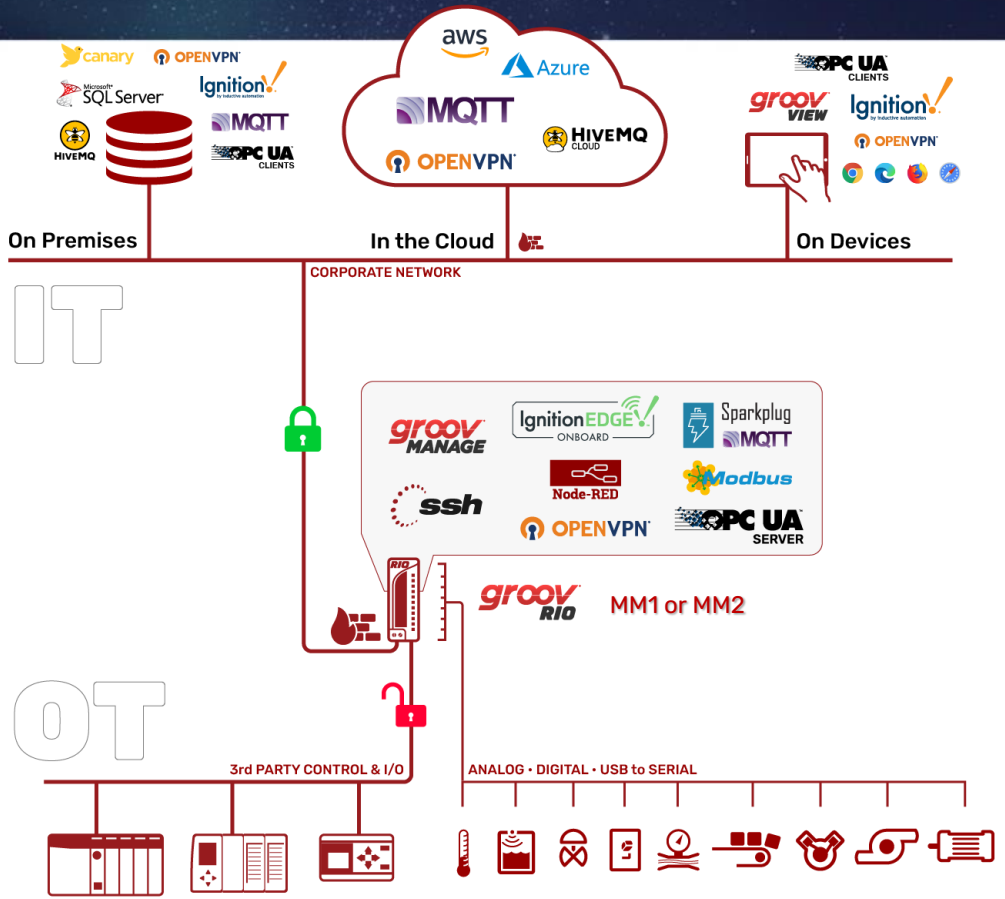
Ignition EDGE ONBOARD

4 Edge-based Architectures

groov RIO System Architecture – All options

Full *groov* RIO IT/OT Architecture

- ***groov*** RIO MM1 or MM2
- Ignition EDGE on MM2
- Node-RED
- OpenVPN
- OPC UA
- MQTT/SparkplugB
- SSH



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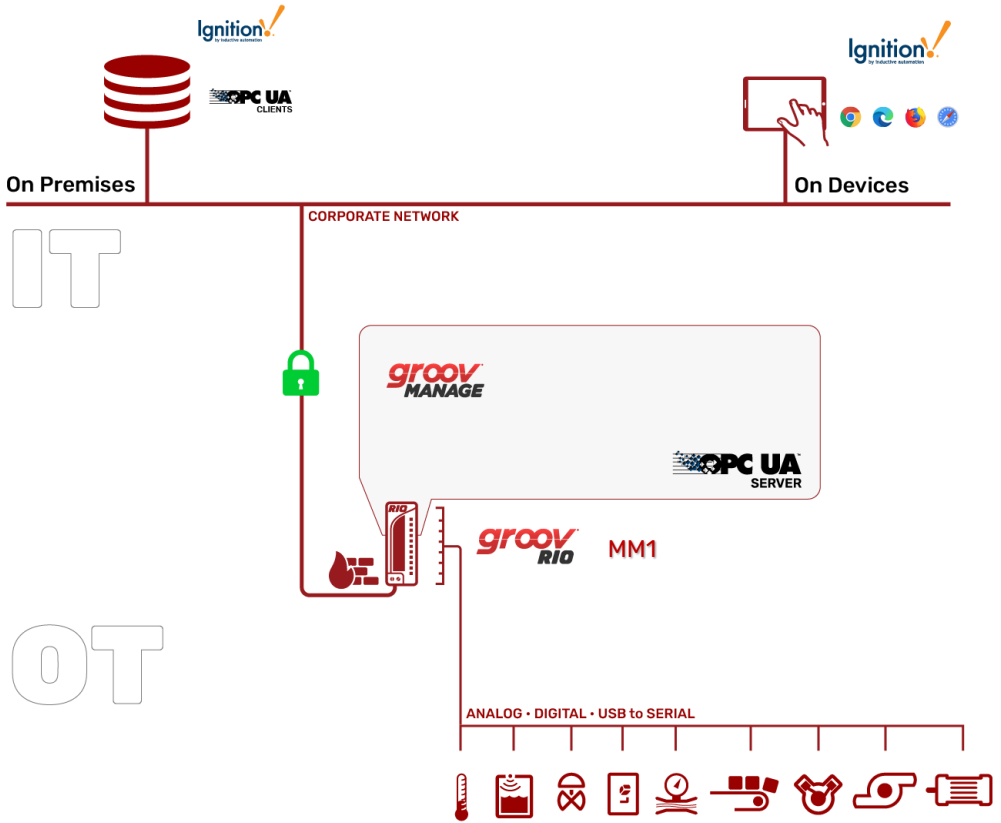
groov RIO System Architecture – #1 (Ignition I/O)

RIO Universal I/O to Ignition Gateway via OPC UA

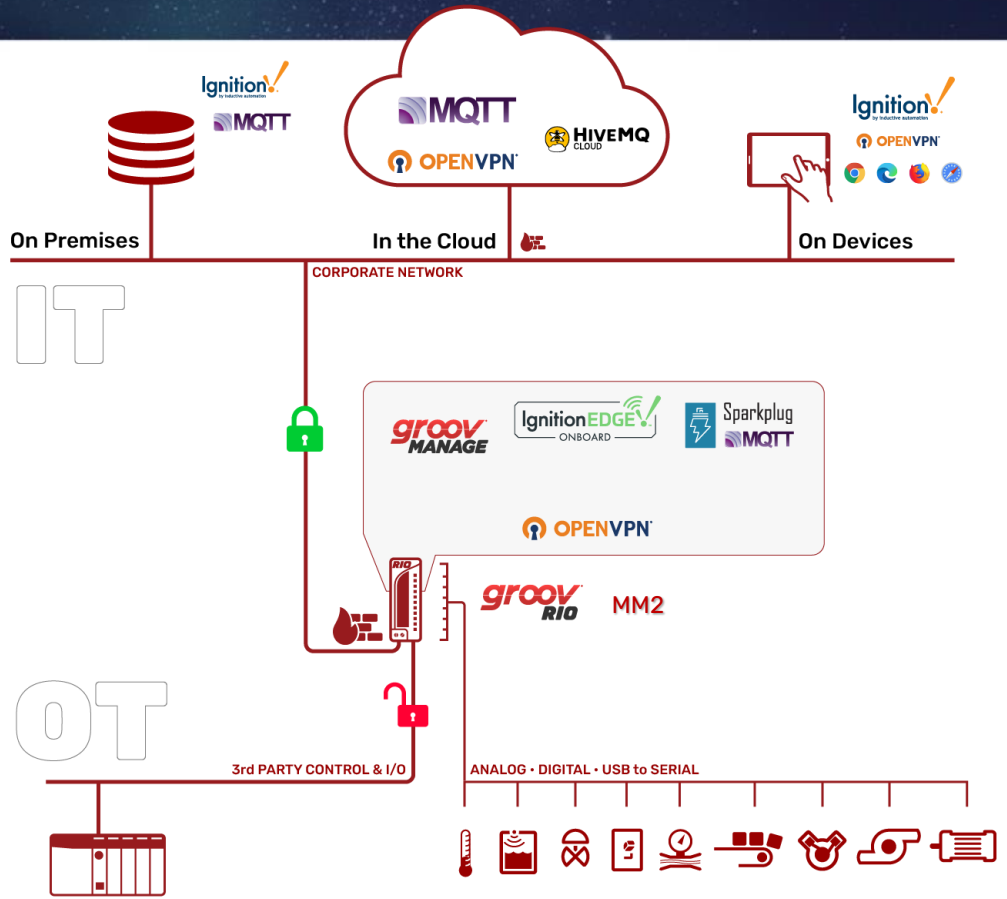
- ***groov*** RIO
- Ignition on local PC
- OPC UA



groov RIO System Architecture – #2 (I/O + PLC)

RIO Universal I/O with Ignition EDGE + PLC to Ignition Server via MQTT/Sparkplug

- *groov* RIO
- AB L24E PLC
- Ignition EDGE
- Device driver
- MQTT/SparkplugB
- Ignition on Server
- Perspective client



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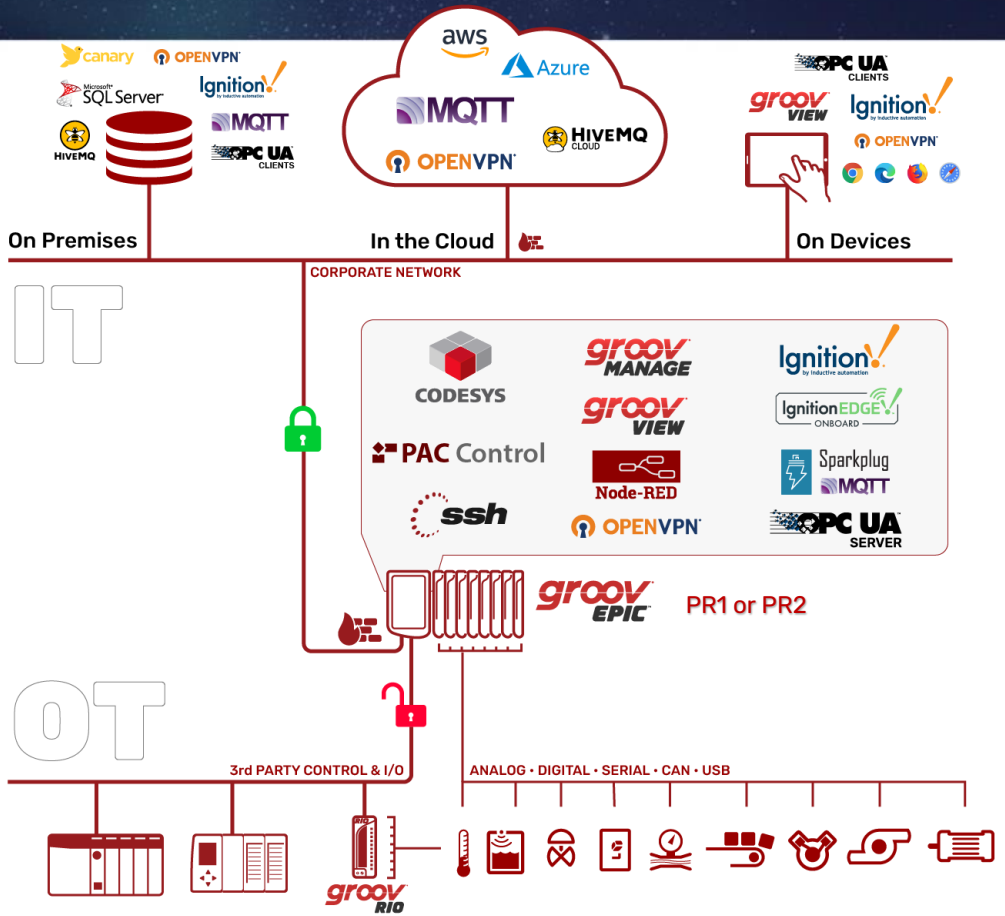
2 EPIC-based Edge Architectures

groov EPIC System Architecture – All options

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



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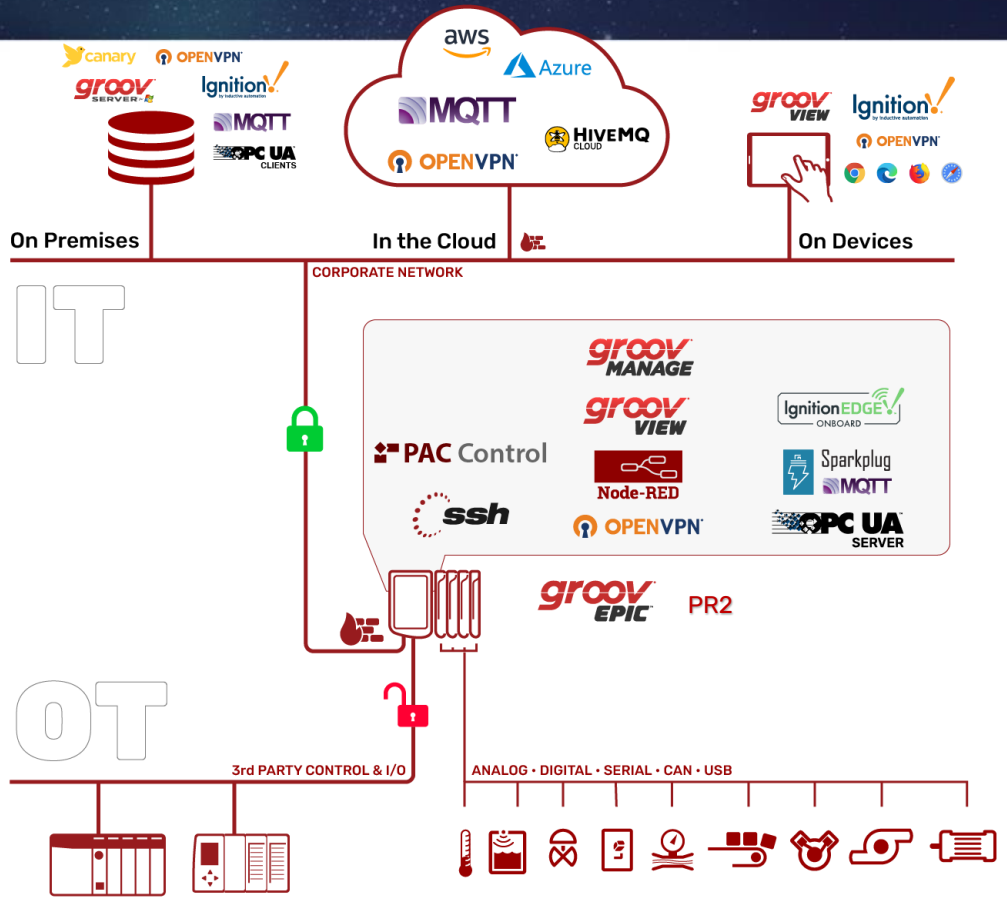
groov EPIC System Architecture – #3 (OptoTurbine)

groov EPIC turbine control + PLCs with Ignition EDGE, MQTT,

- ***groov*** EPIC PR2
- PAC Control
- Ignition EDGE
- ***groov*** View to local HDMI
- Device drivers for AB/Siemens
- MQTT/SparkplugB
- Node-RED
- OpenVPN



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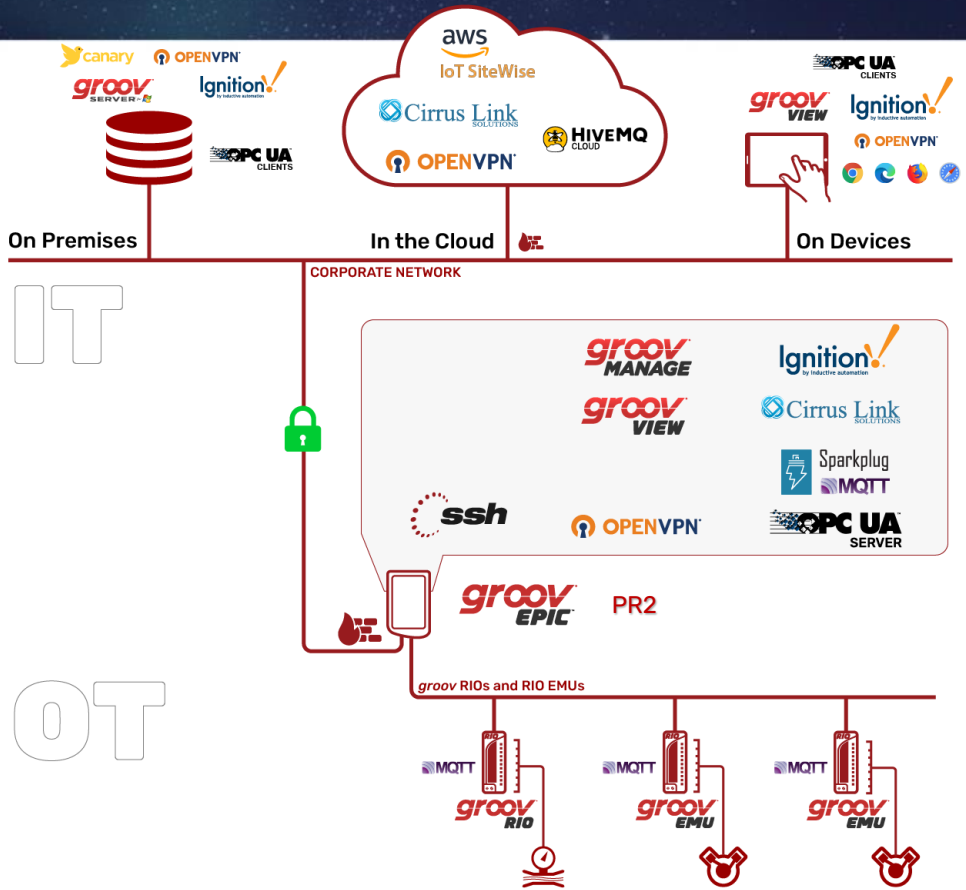
groov EPIC System Architecture – #4 (Energy)

groov Energy Monitoring with Ignition, UDTs, MQTT, and AWS SiteWise

- ***groov*** EPIC
- ***groov*** RIO & ***groov*** EMUs
- Full Ignition
- ***groov*** View to local HDMI
- MQTT/SparkplugB
- OpenVPN



Live Demo!