Unleash the Edge

Benson Hougland • VP Marketing & Product Strategy

Opto 22

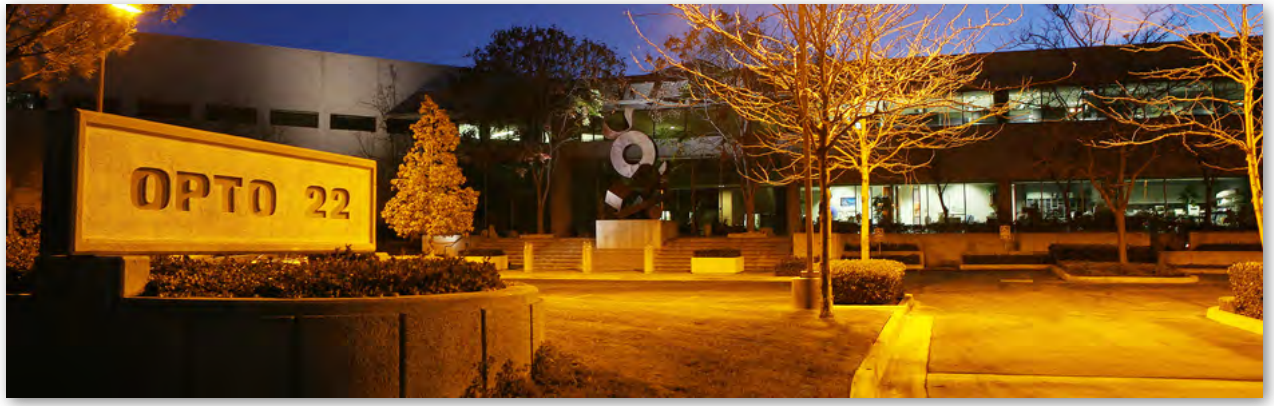
OPTO 22
The Future of Automation.

inductive automation | Ignition

About Opto 22

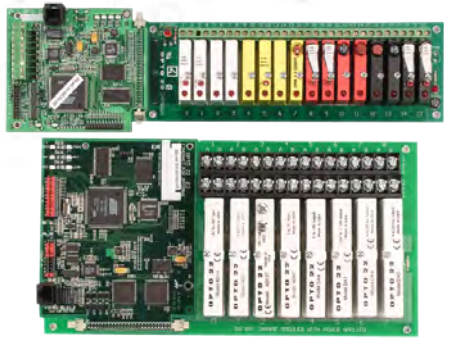
- 44 year technology innovator, from **SSRs** to **I/O**, **control systems**, **mobile**, & **IIoT**
- Market leader of intelligent, distributed I/O systems: over **100M I/O** at over **10K** global customers
- Worldwide reputation for quality and reliability backed by **lifetime warranty** on I/O
- Unique in industry to **combine capabilities in OT** – ruggedness, reliability, flexibility – **with IT** – networking, protocols, accessibility with open standards
- Many **firsts** in the industry…

MADE IN THE USA



Many Firsts

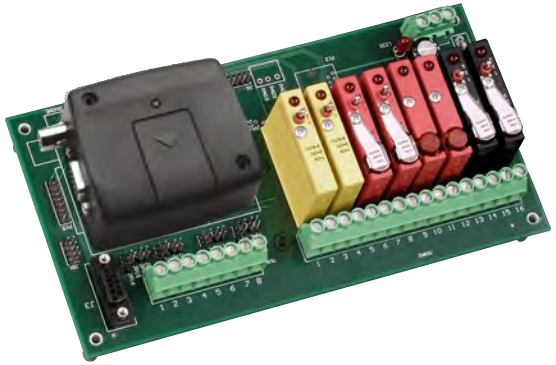
Plug-in I/O



Founding Member

Ethernet I/O

M2M



PACs

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Serendipity

Another first

- Opto 22 becomes the first Inductive Automation OEM to ship products with Ignition Edge Onboard

IgnitionEDGE! ONBOARD

Edge Computing with

Inductive Automation & Opto 22

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You have ideas.

Digital Transformation

IIoT Projects

Cloud Computing

Machine Learning

Artificial Intelligence

Reports & Analysis

Uh-oh.

Brownfield Devices

Firewalls

Security

IT Department

VPNs

Static IPs

Protocols

Data Access

How do we solve these problems?

Start at the edge.

What is the edge?

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Edge Computing Defined

Edge computing is a method of optimizing cloud computing systems "by taking the control of computing applications, data, and services away from some central nodes (the "core") to the other logical extreme (the "edge") of the Internet" which **makes contact with the physical world.**

Source: Wikipedia – Edge Computing

Inductive's Definition of Edge Computing

- Solution deployed at edge of network
- Polling close to the device, not polling from SCADA
- Migrate legacy infrastructure to MQTT
- End-to-end solution for the IIoT
- Local visibility

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- Solution deployed at edge of network
- Polling close to the device, not polling from SCADA
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- End-to-end solution for the IIoT
- Local visibility
- Embed Ignition onto hardware

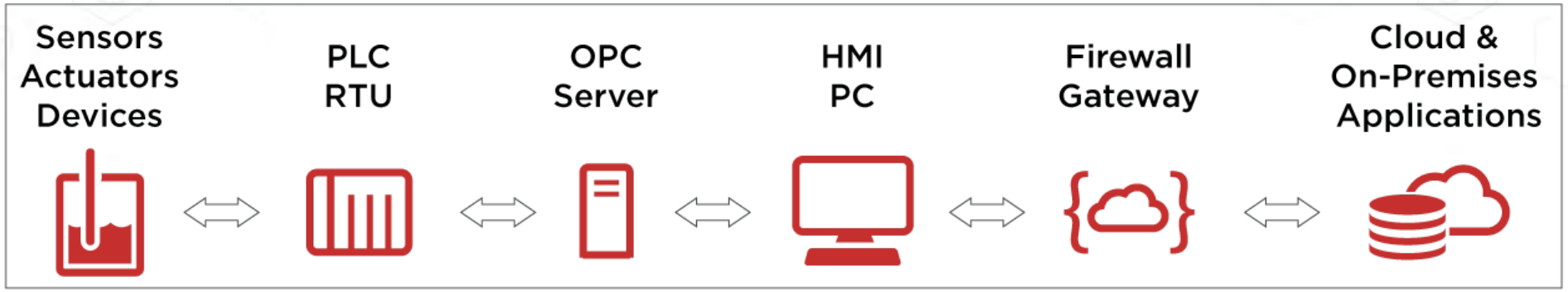
Ignition by inductive automation

Ignition EDGE by inductive automation

Tackling Industry Problems

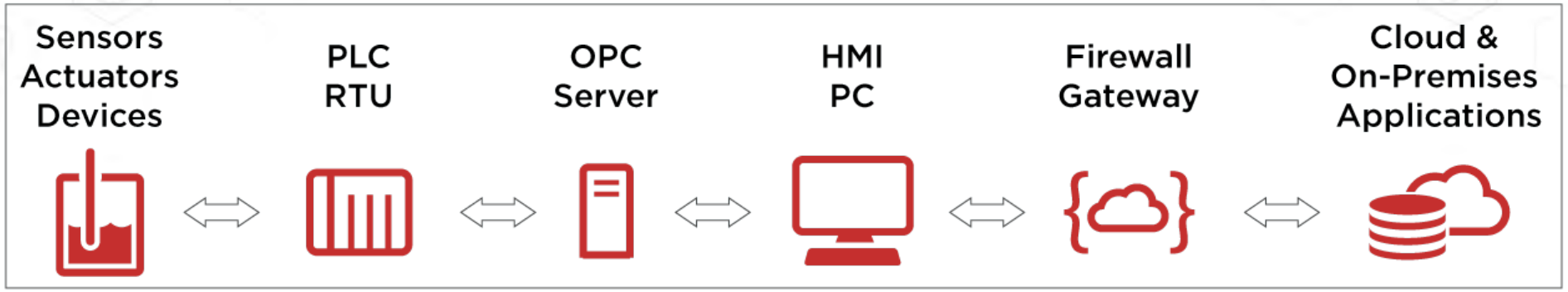
Existing systems are complex, costly, and difficult to secure and maintain

PROBLEM



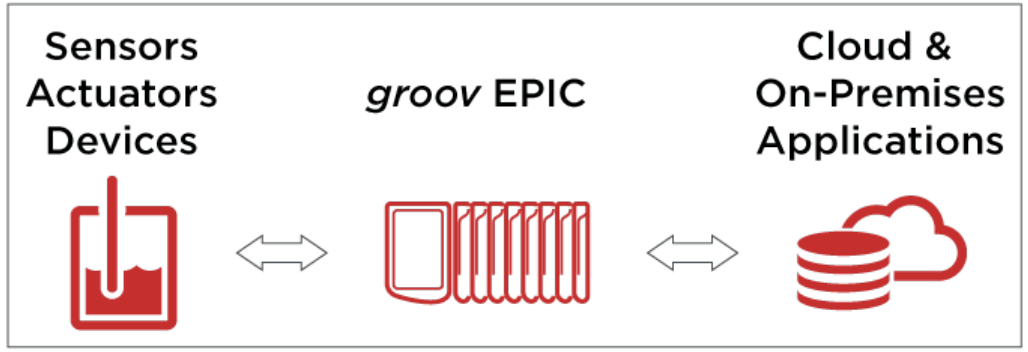
Tackling Industry Problems

Existing systems are complex, costly, and difficult to secure and maintain



New edge systems are simpler, more secure, and easier to maintain

SOLUTION



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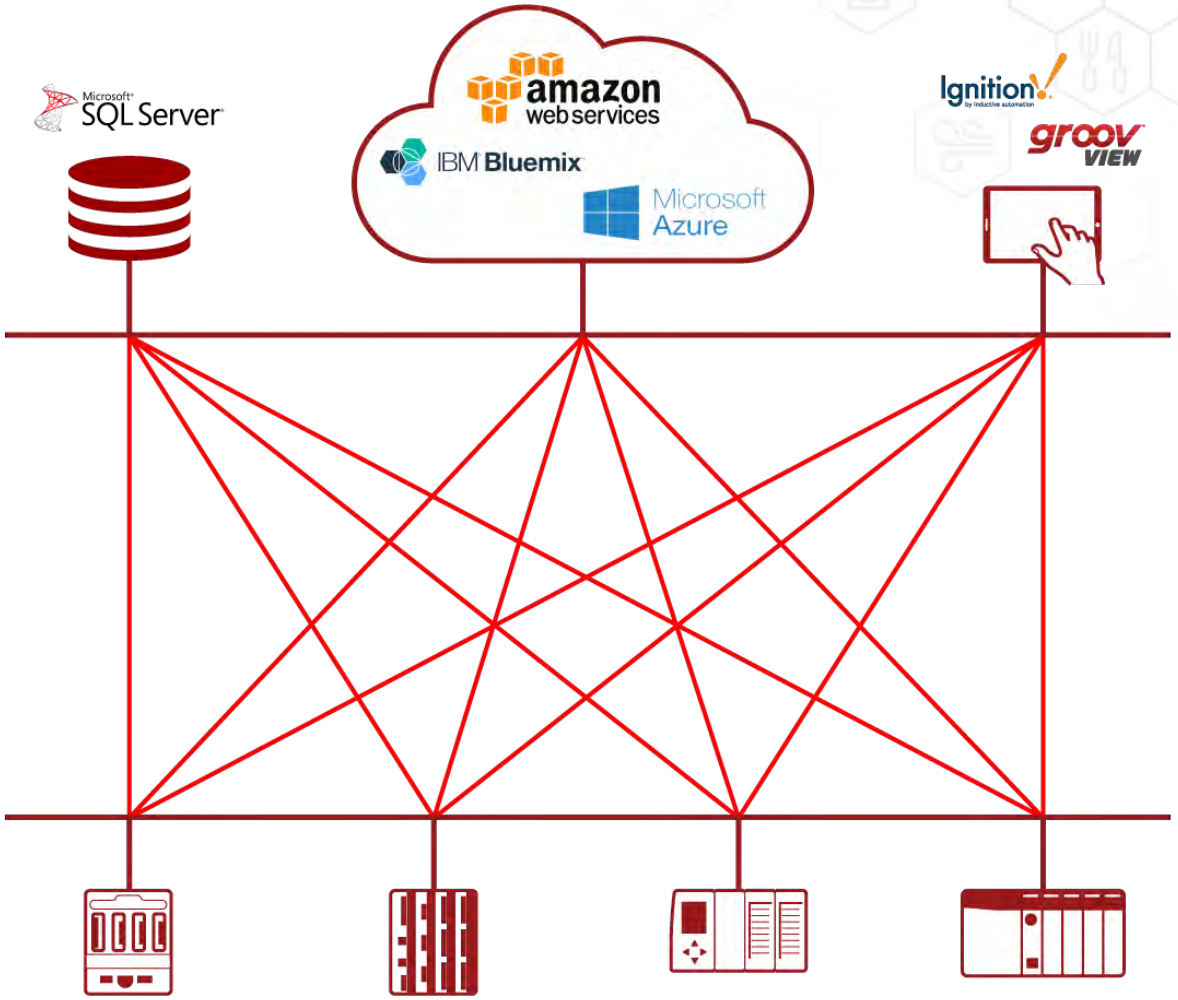
Tackling Industry Problems

PROBLEM

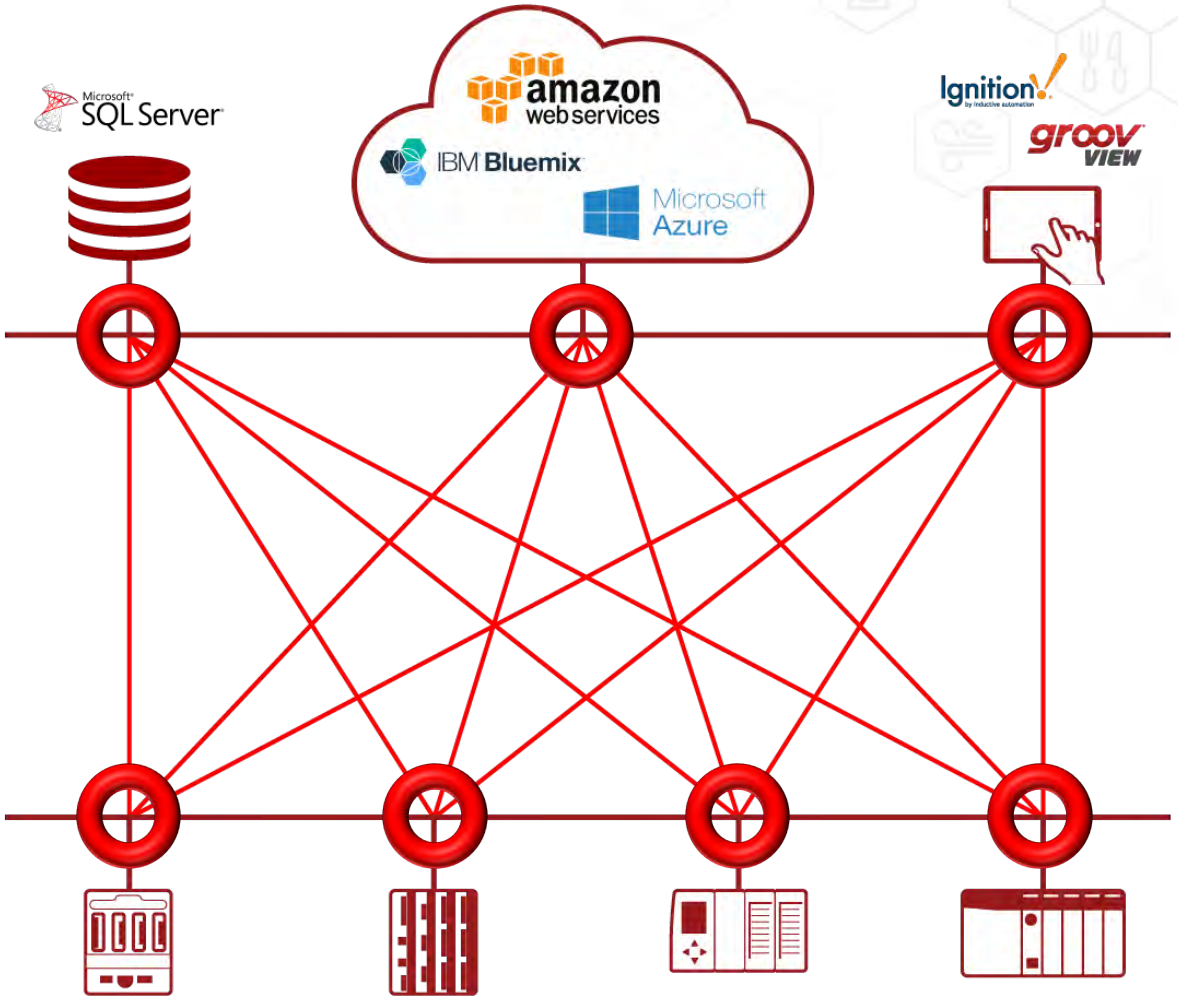
Applications Tightly Coupled to Devices

- Direct connections required
- Inefficient poll-response
- Multiple, insecure open ports
- Unencrypted traffic
- Difficult to manage & maintain
- Complex architecture
- Shifts responsibility to IT



PROBLEM

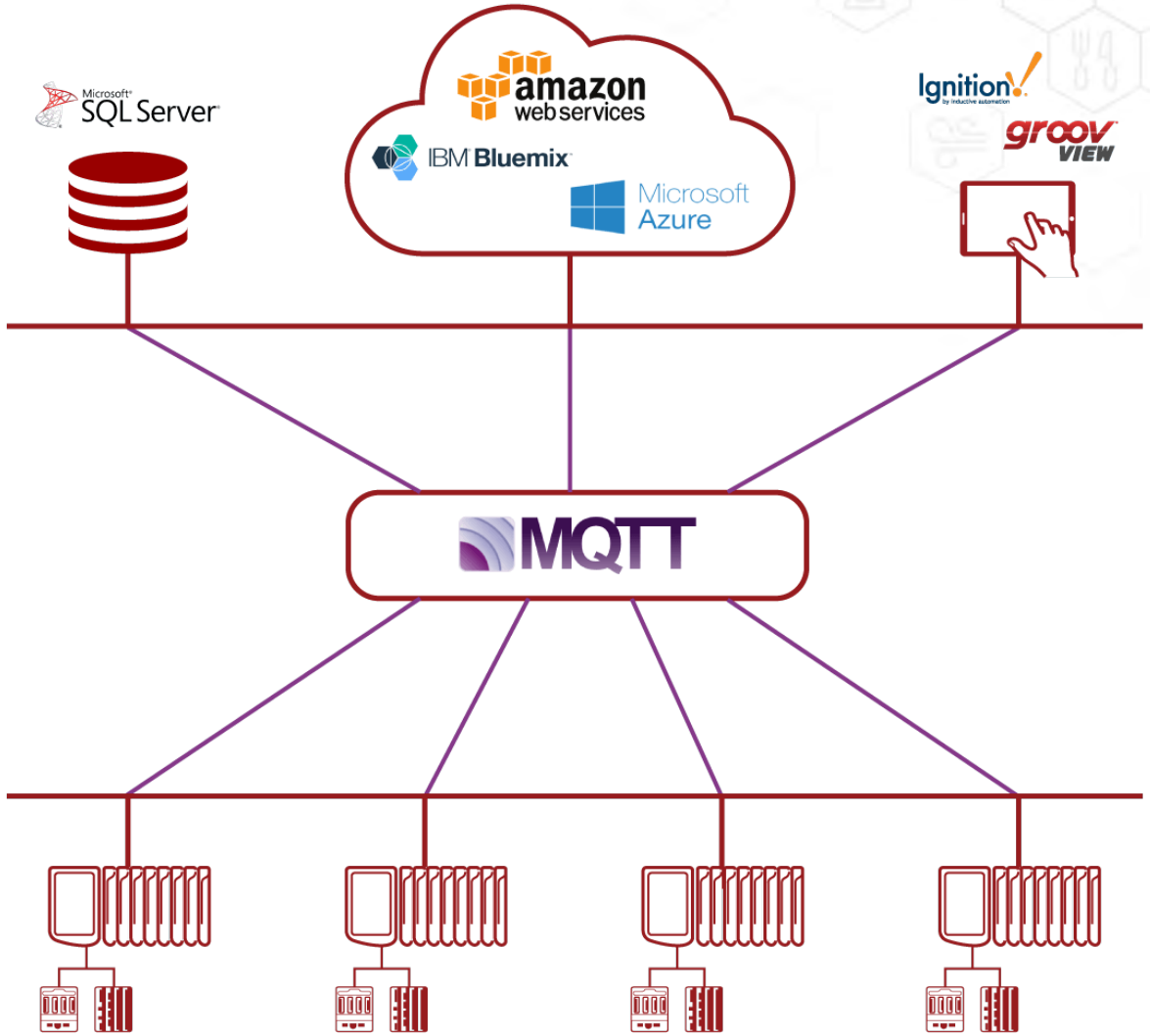
Numerous security vulnerabilities and points of access to manage



SOLUTION

Applications Decoupled from Devices

- Efficient
  - Publish-subscribe, bi-directional
- High performance
  - Data transmit only on change



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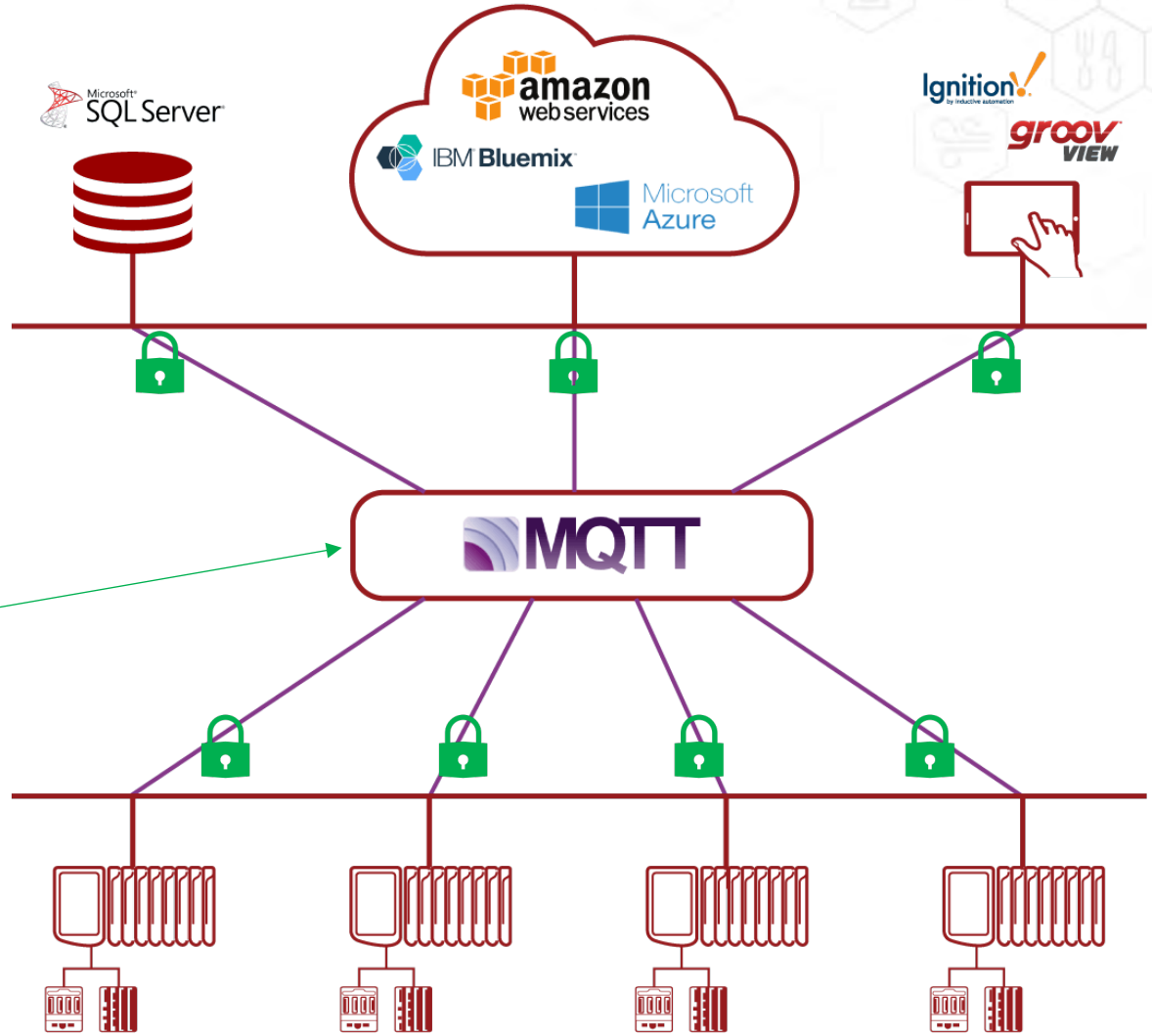
SOLUTION

Applications Decoupled from Devices

- Efficient
  - Publish-subscribe, bi-directional
- High performance
  - Data transmit only on change
- Secure
  - Only ONE secure open port
  - Only ONE place to manage & maintain user and data access



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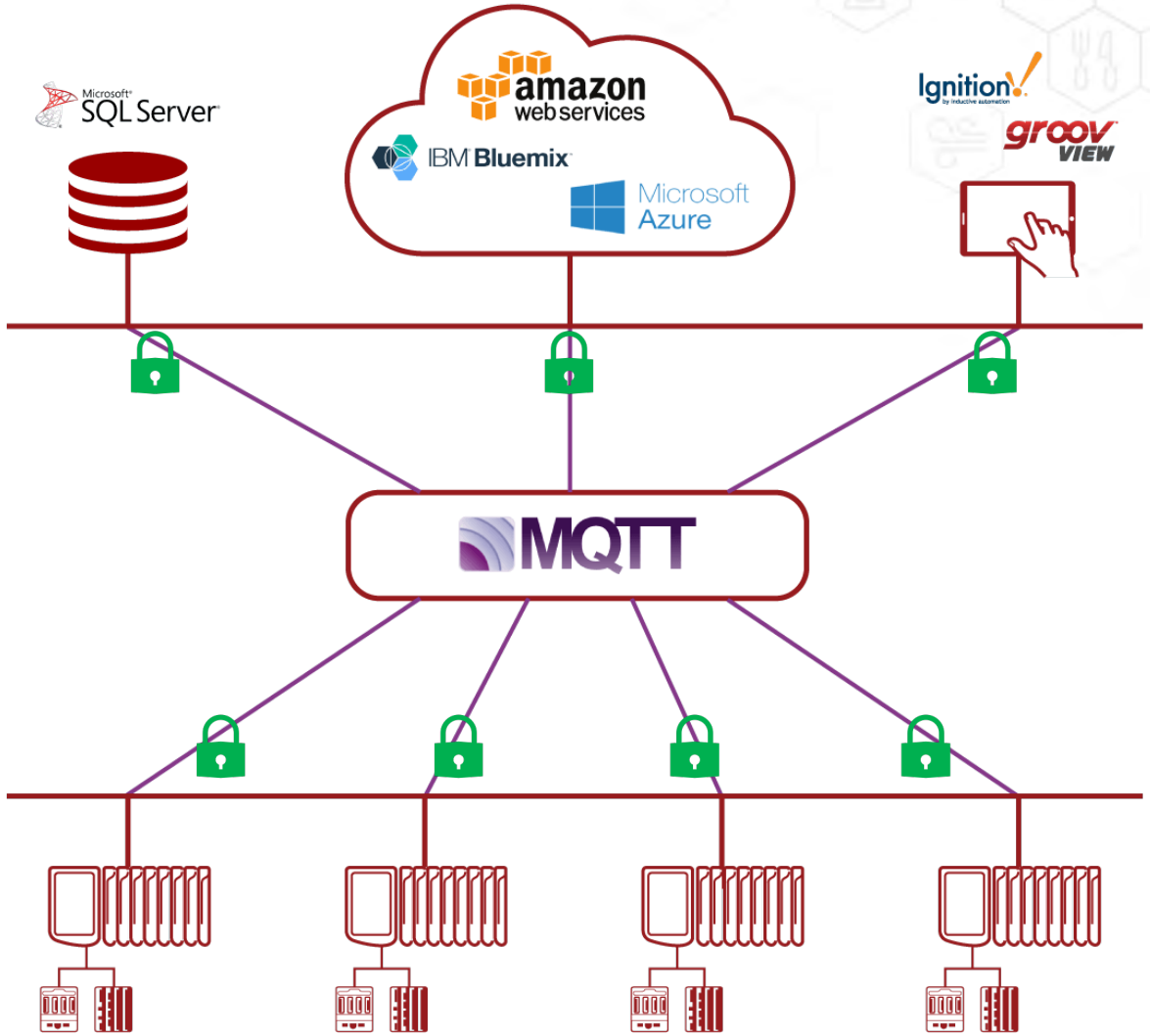
SOLUTION

Applications Decoupled from Devices

- Efficient
  - Publish-subscribe, bi-directional
- High performance
  - Data transmit only on change
- Secure
  - Only ONE secure open port
  - Only ONE place to manage & maintain user and data access
- Simpler to manage & maintain
  - All tags available with no re-entry of tags
  - Single source of truth on tags



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Tackling Industry Problems

- What if we could combine:
  - **E**dge processing
  - **P**rogramming options
  - **I**ndustrially hardness
  - **C**ontrol and I/O

The *groov* EPIC Automation System

- So, we named it EPIC:
  - Edge
  - Programmable
  - Industrial
  - Controller

groov EPIC

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Open, high performance industrial controller

- Industrial Quad-core ARM processor
- Real-time Linux OS
- 2GB RAM
- 6GB useable SSD
- Power-fail safe file system
- Dual Gigabit Ethernet
- Dual USB
- Rated -20 to 70°C

Integrated color touchscreen display

- High-resolution color touchscreen display
- Displays *groov* Manage pages
  - Configure networking and users
  - Configure processor and modules
  - Troubleshoot I/O
  - Module specifications & wiring diagrams
- Displays *groov* View HTML5 screens
- Future support for Ignition Perspective
- HDMI port for external display

The *groov* EPIC Automation System

- Broad selection of intelligent, hot-swappable I/O
  - Analog
  - Digital
  - Serial
  - Temperature
  - Guaranteed for Life
- Agency Approvals
  - UL Hazardous Locations
  - Class 1 Div 2
  - CE approved
  - ATEX Compliant

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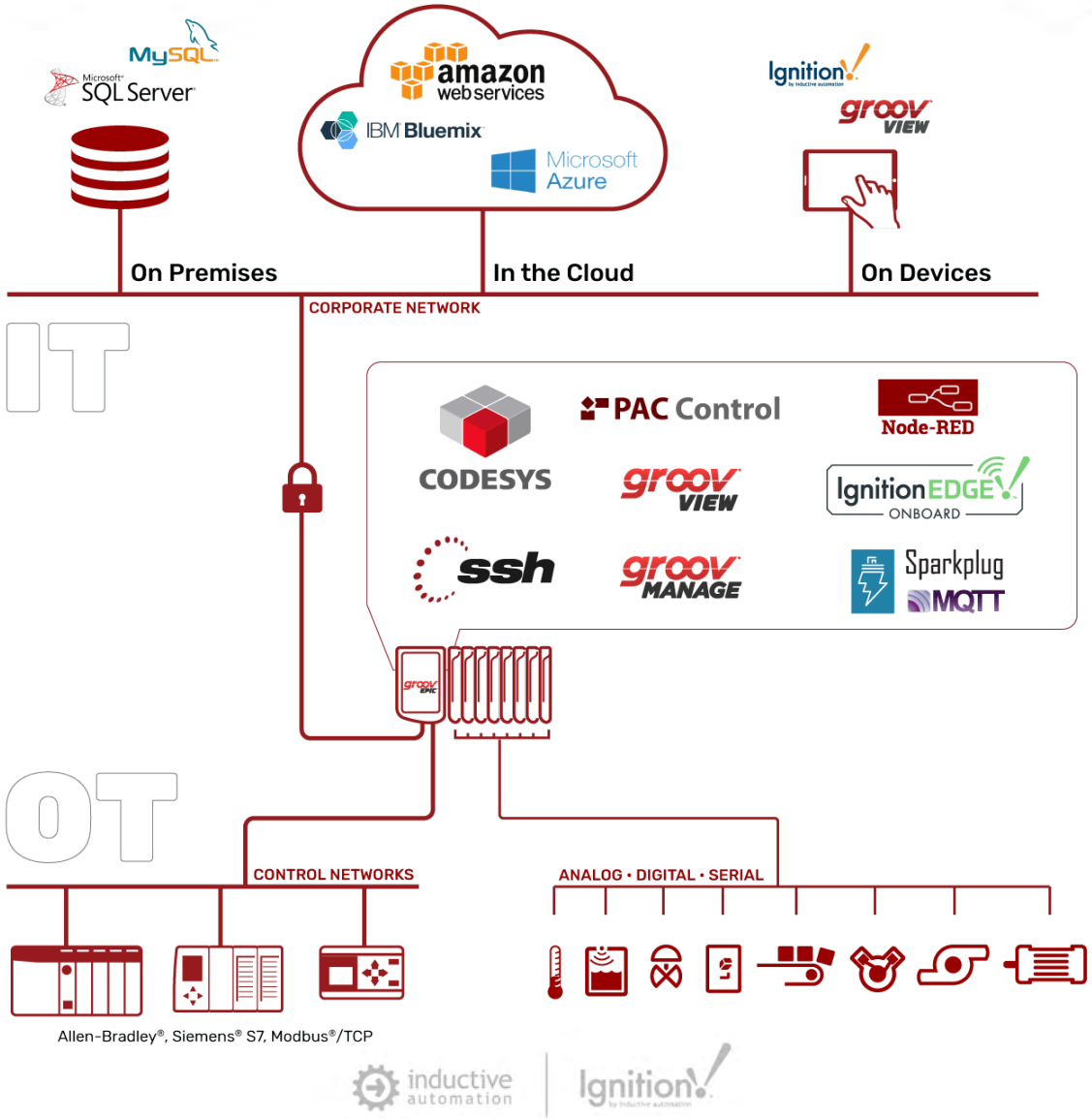
System Architecture



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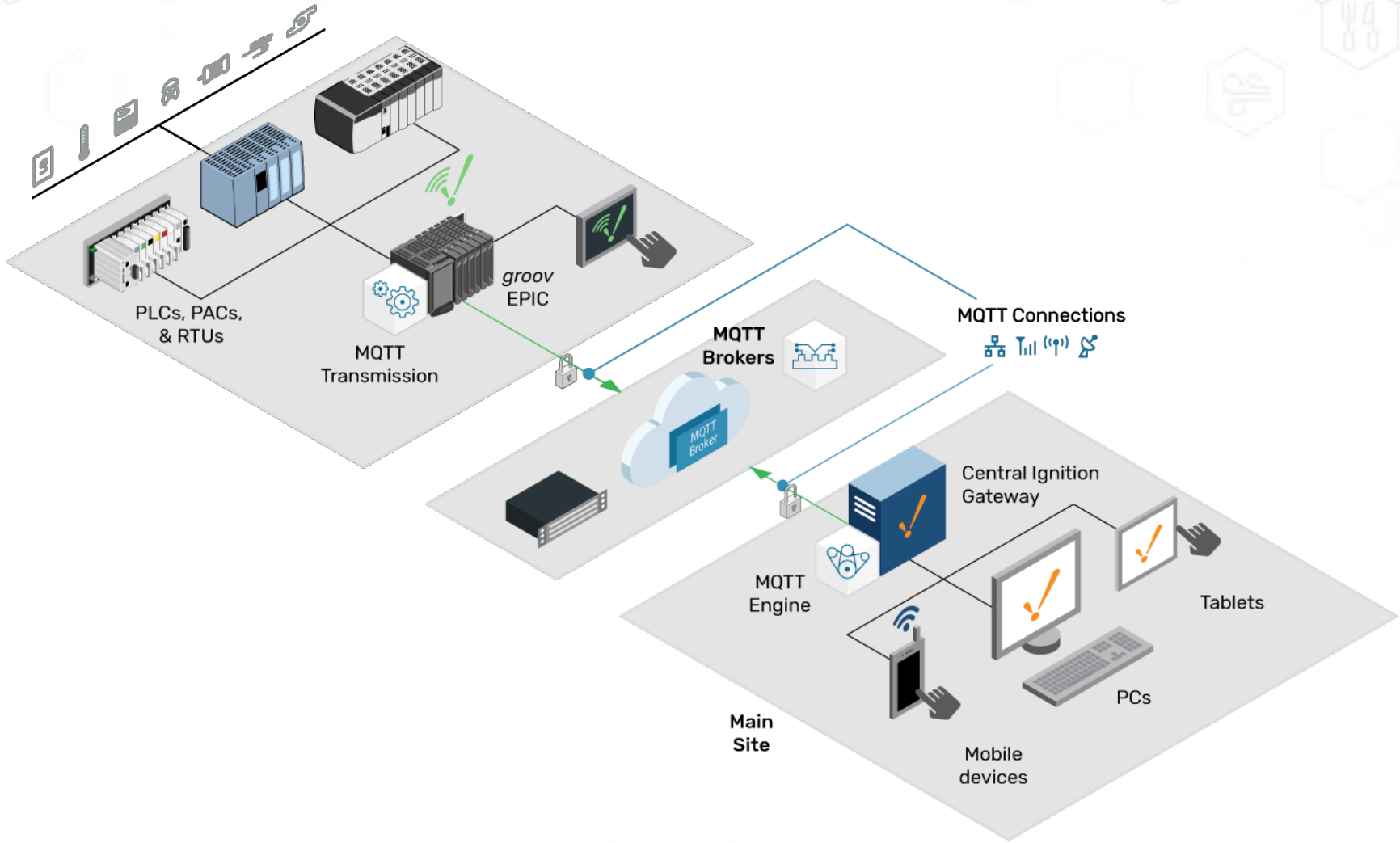
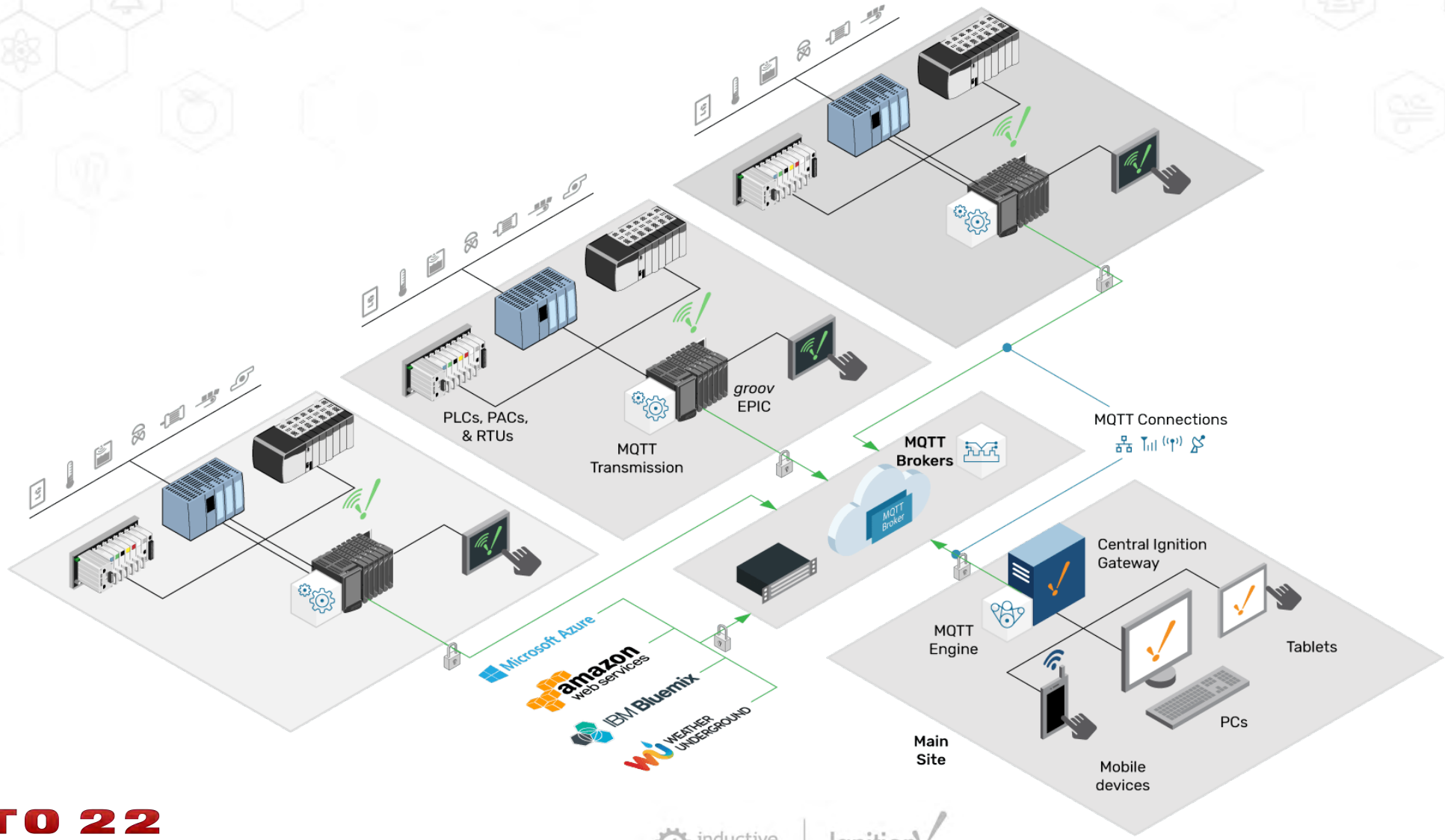
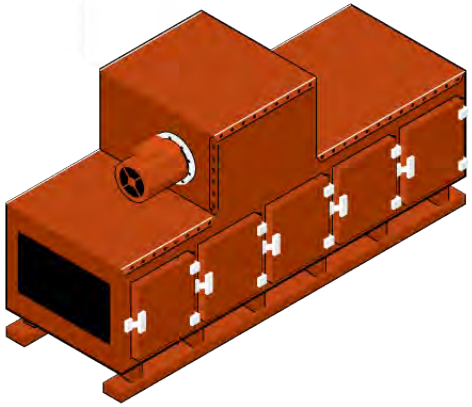
System Build



System Build – Multiple Sites



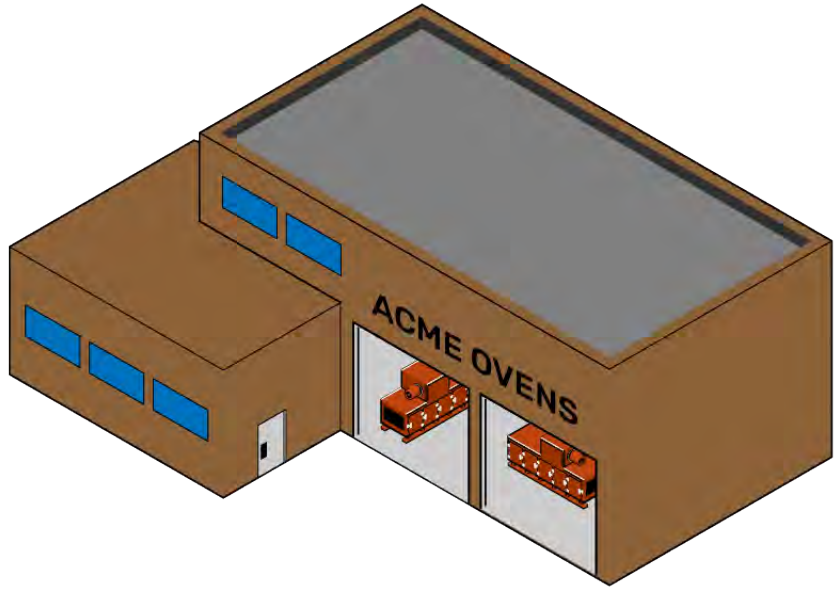
Problem Solving Scenarios - OEM



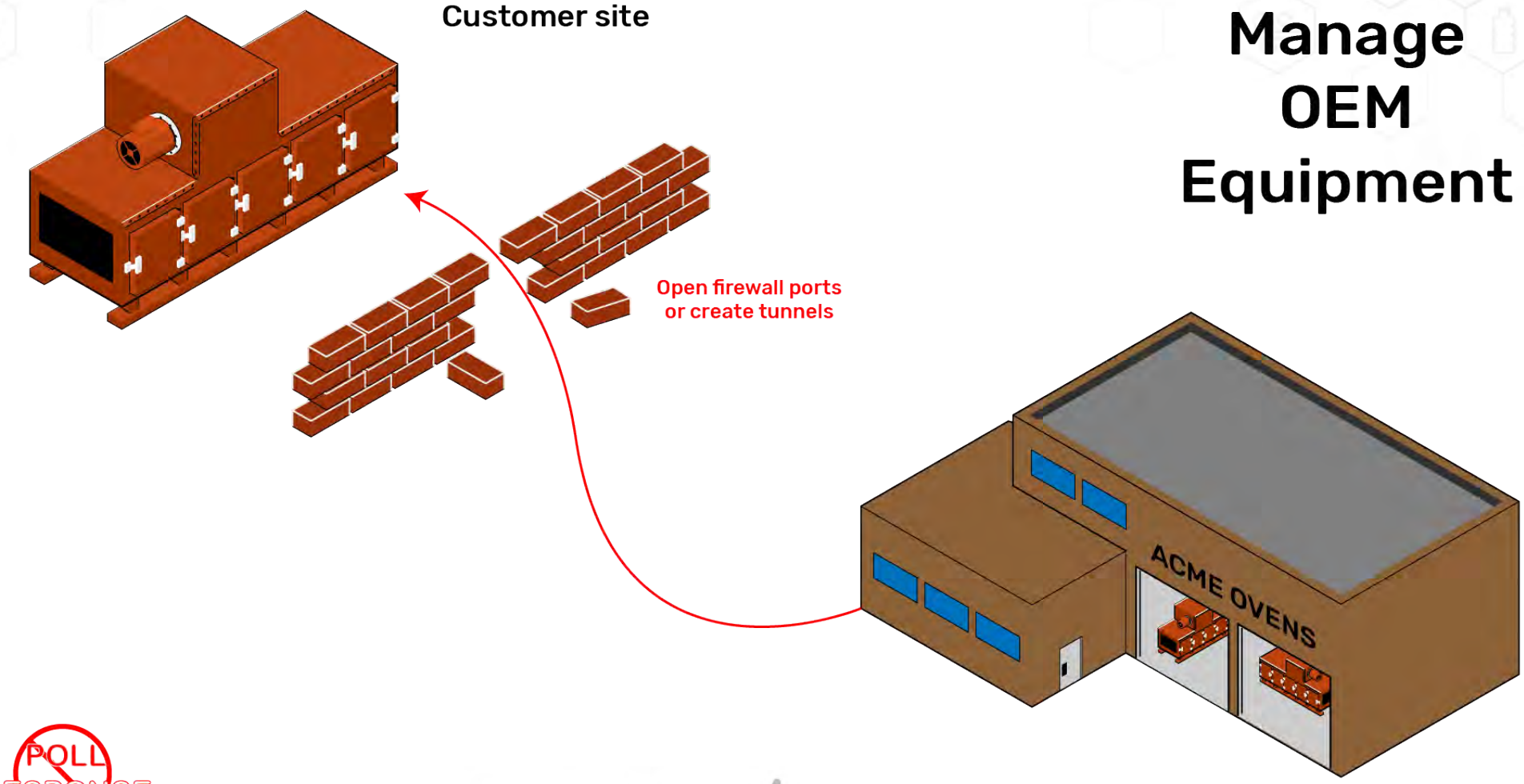
Customer site

Manage OEM Equipment

SCENARIO



Problem Solving Scenarios - OEM

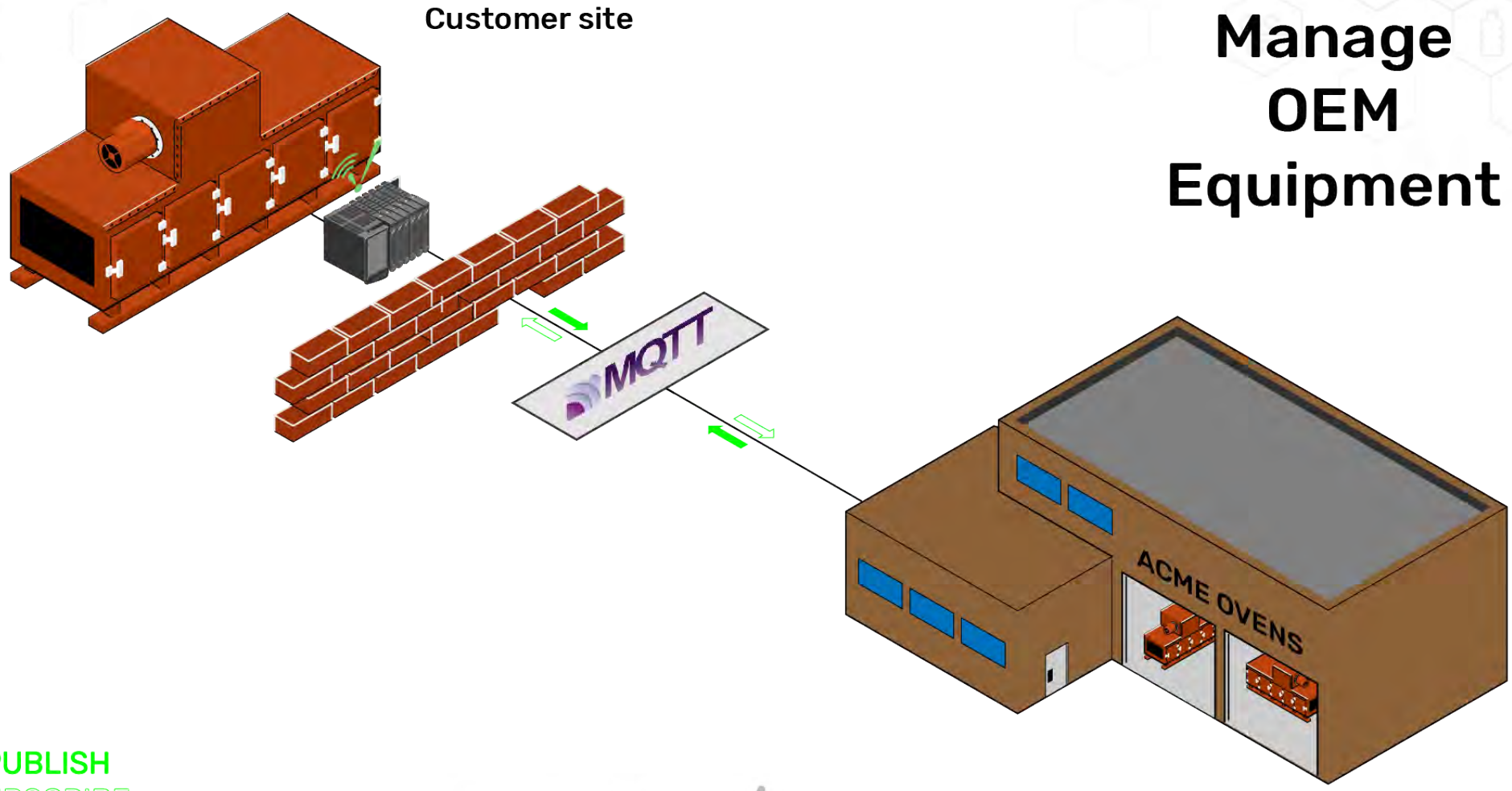


PROBLEM

Problem Solving Scenarios - OEM

Manage OEM Equipment

SOLUTION



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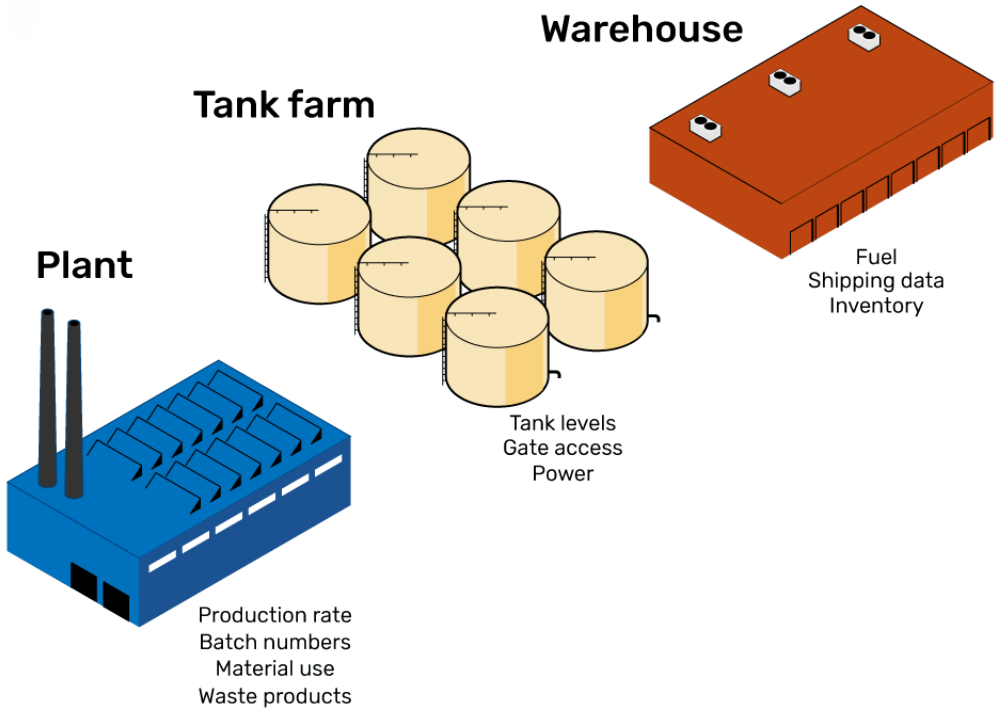
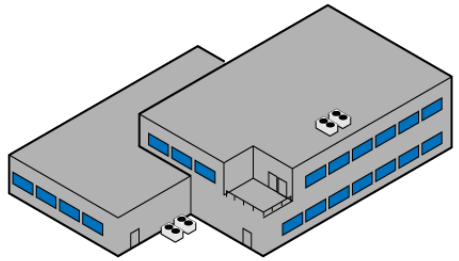
Problem Solving Scenarios – Multiple Plants

SCENARIO



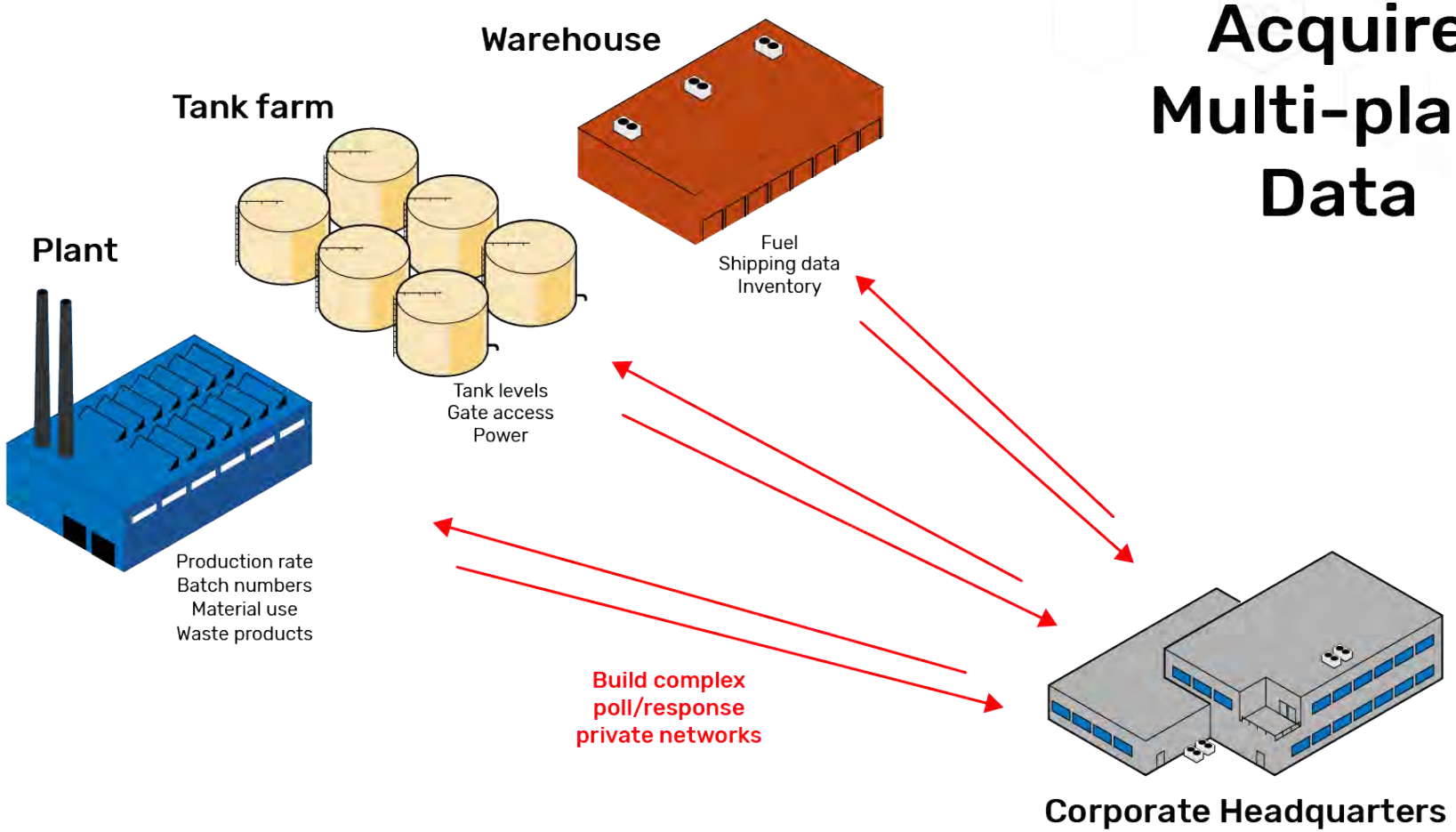
Acquire Multi-plant Data



Corporate Headquarters

Problem Solving Scenarios – Multiple Plants

PROBLEM



Acquire Multi-plant Data

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POLL RESPONSE

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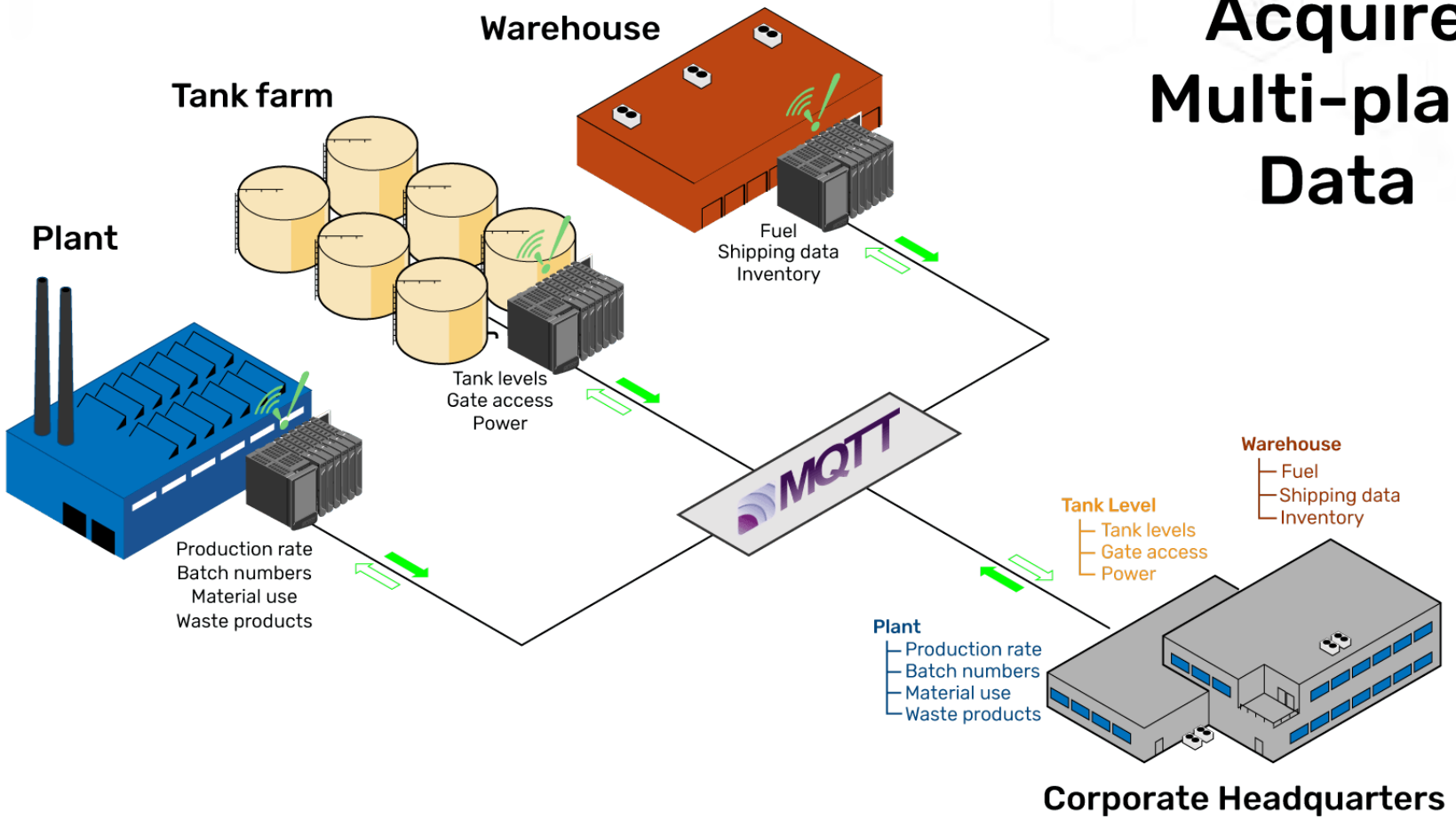
Problem Solving Scenarios – Multiple Plants

SOLUTION



Acquire Multi-plant Data

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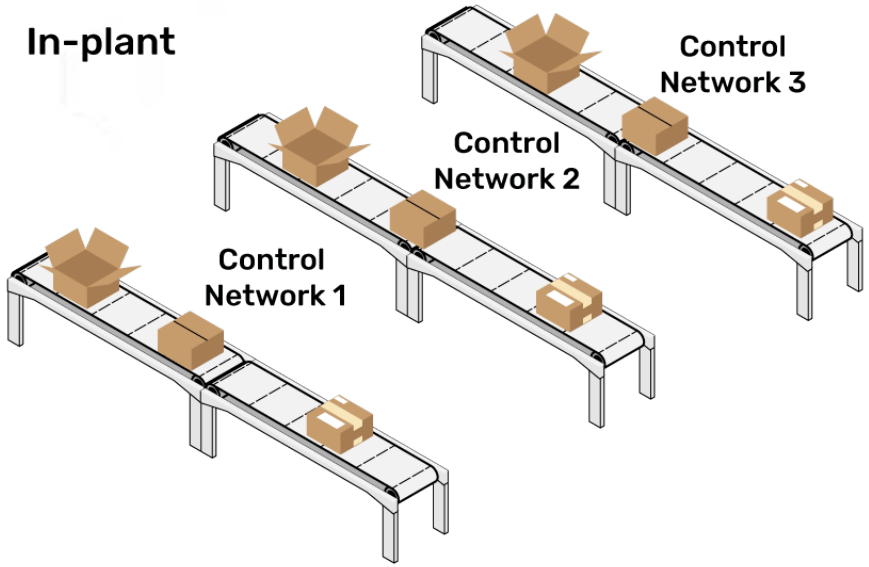
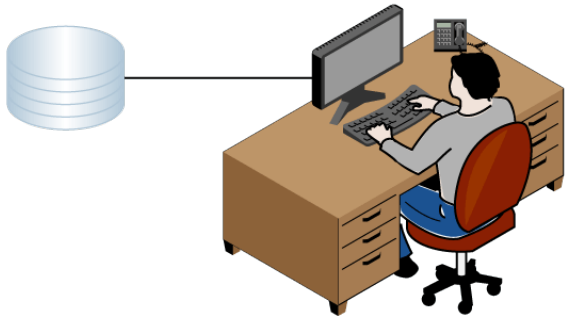
Problem Solving Scenarios – In Plant

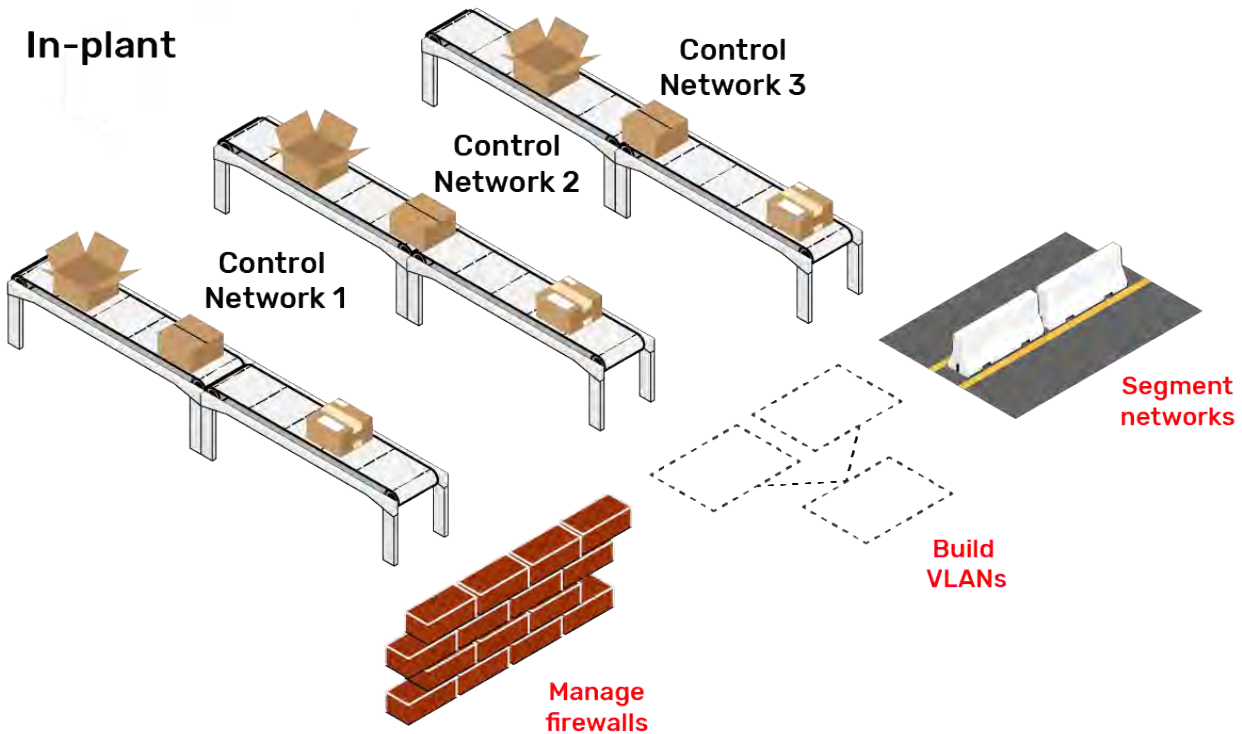


Collect MES & OEE Data

SCENARIO



Problem Solving Scenarios – In Plant



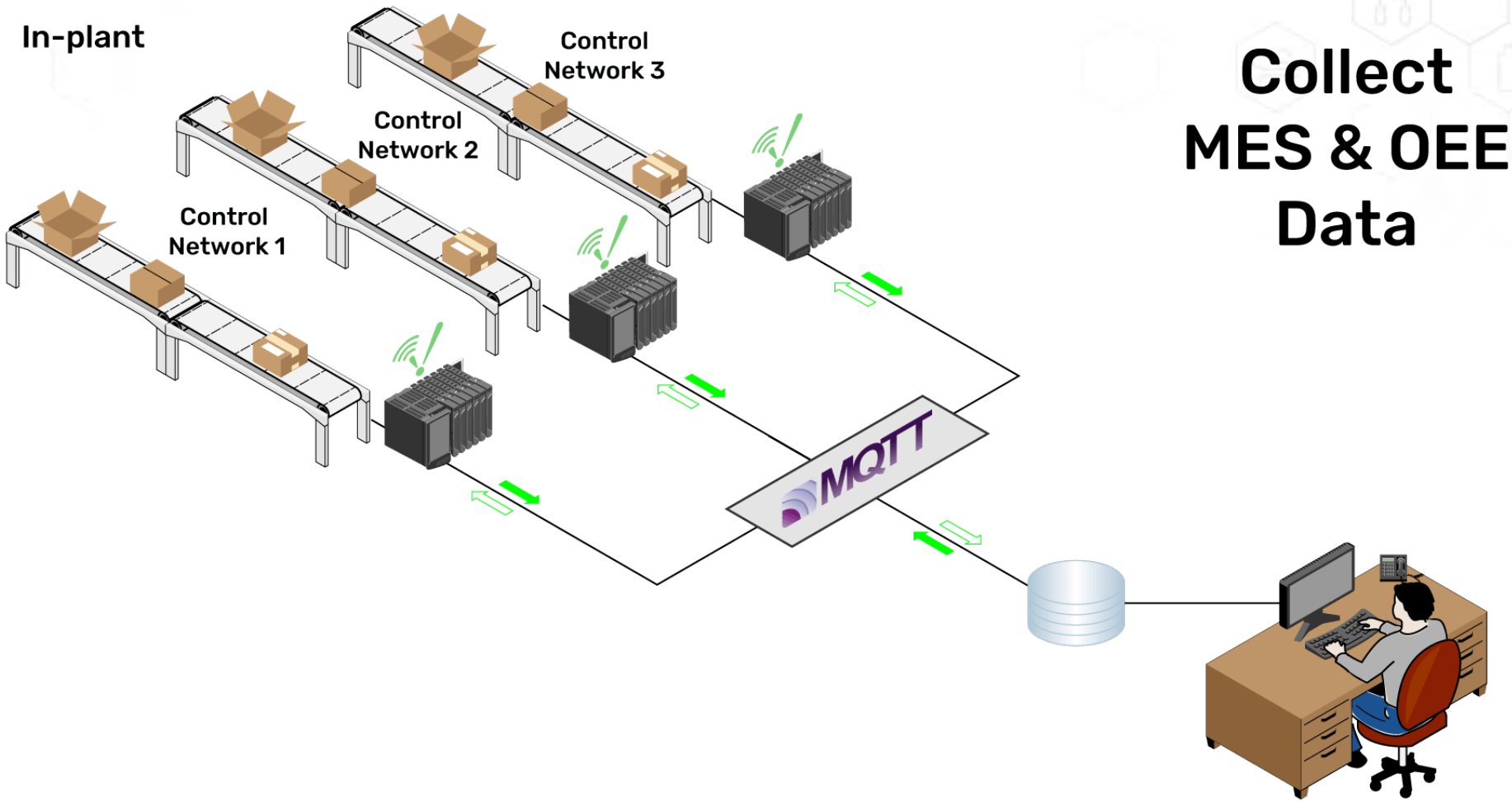
Collect MES & OEE Data

PROBLEM

Problem Solving Scenarios – In Plant

Collect MES & OEE Data

SOLUTION



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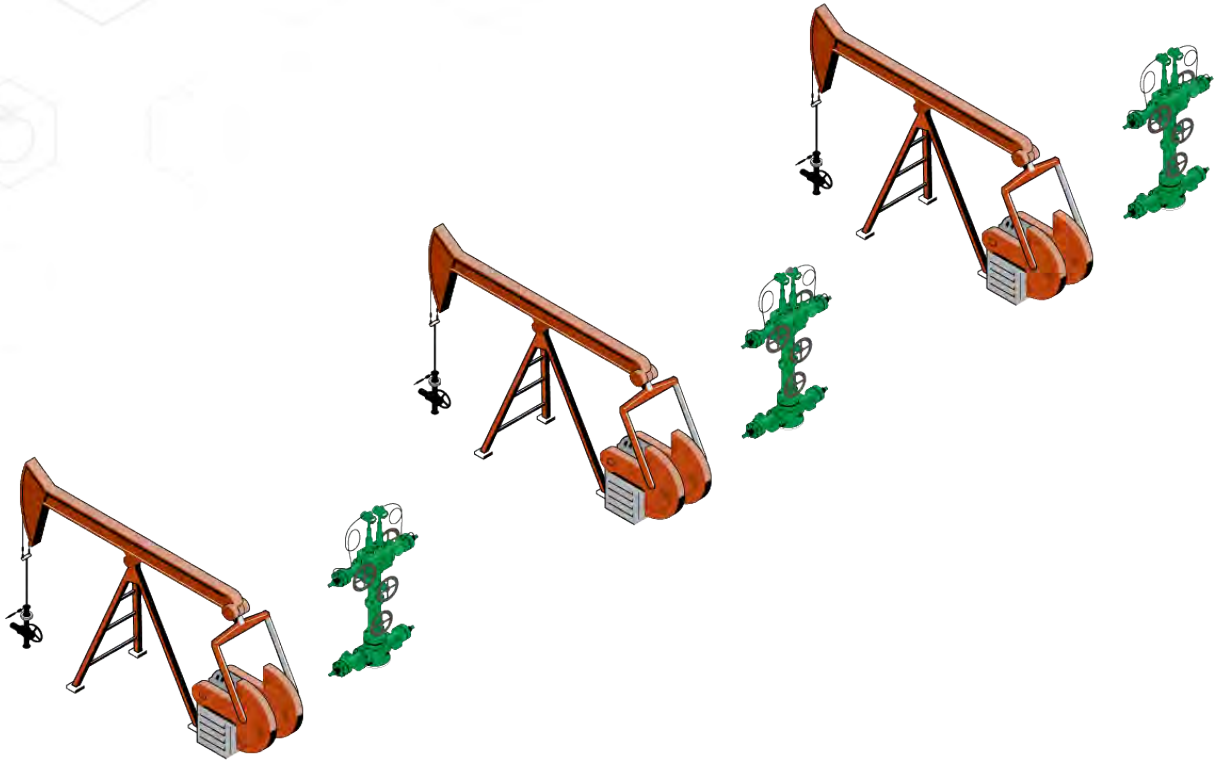
Problem Solving Scenarios – SCADA

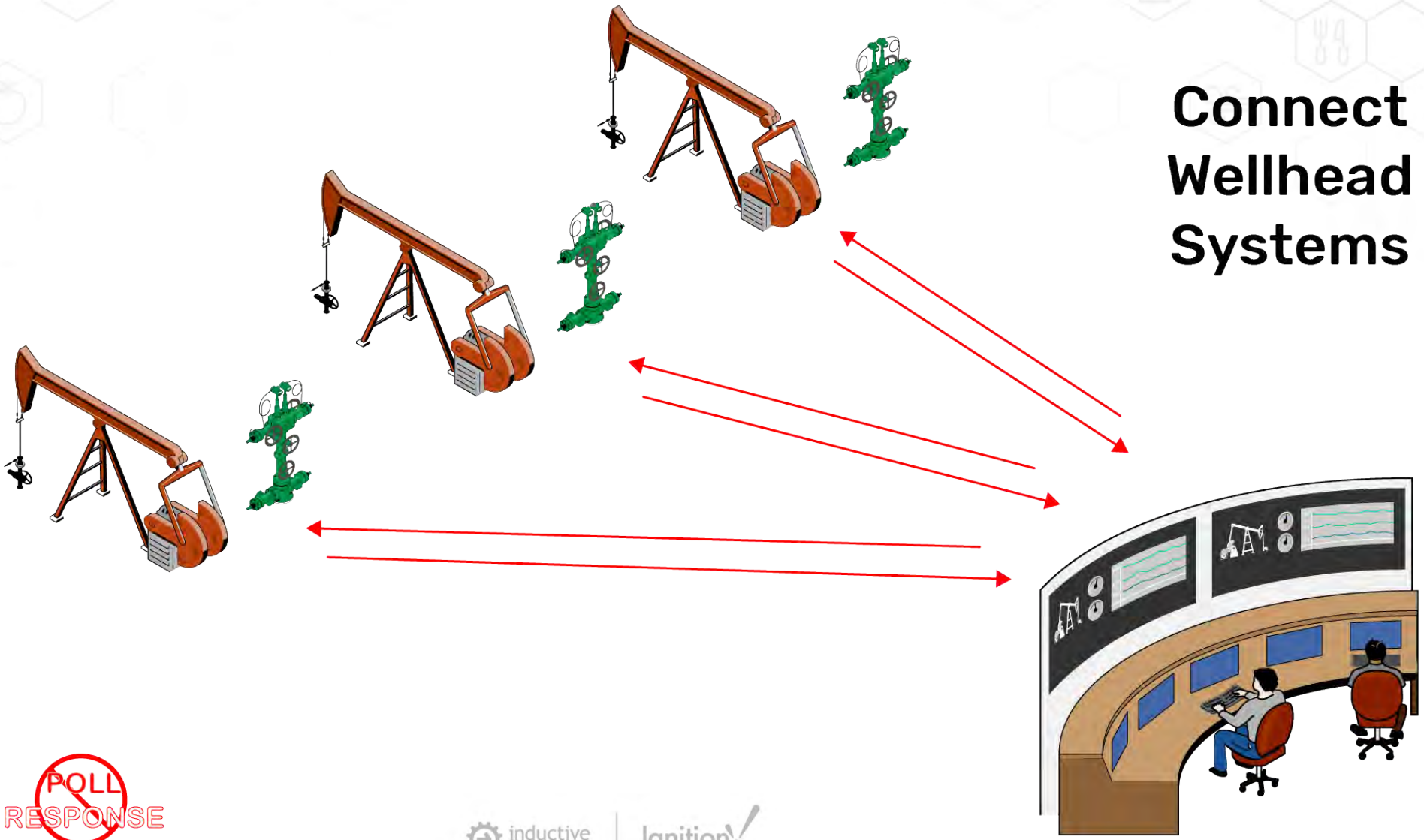
SCENARIO



Connect Wellhead Systems

Problem Solving Scenarios – SCADA

PROBLEM



Connect Wellhead Systems

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POLL RESPONSE

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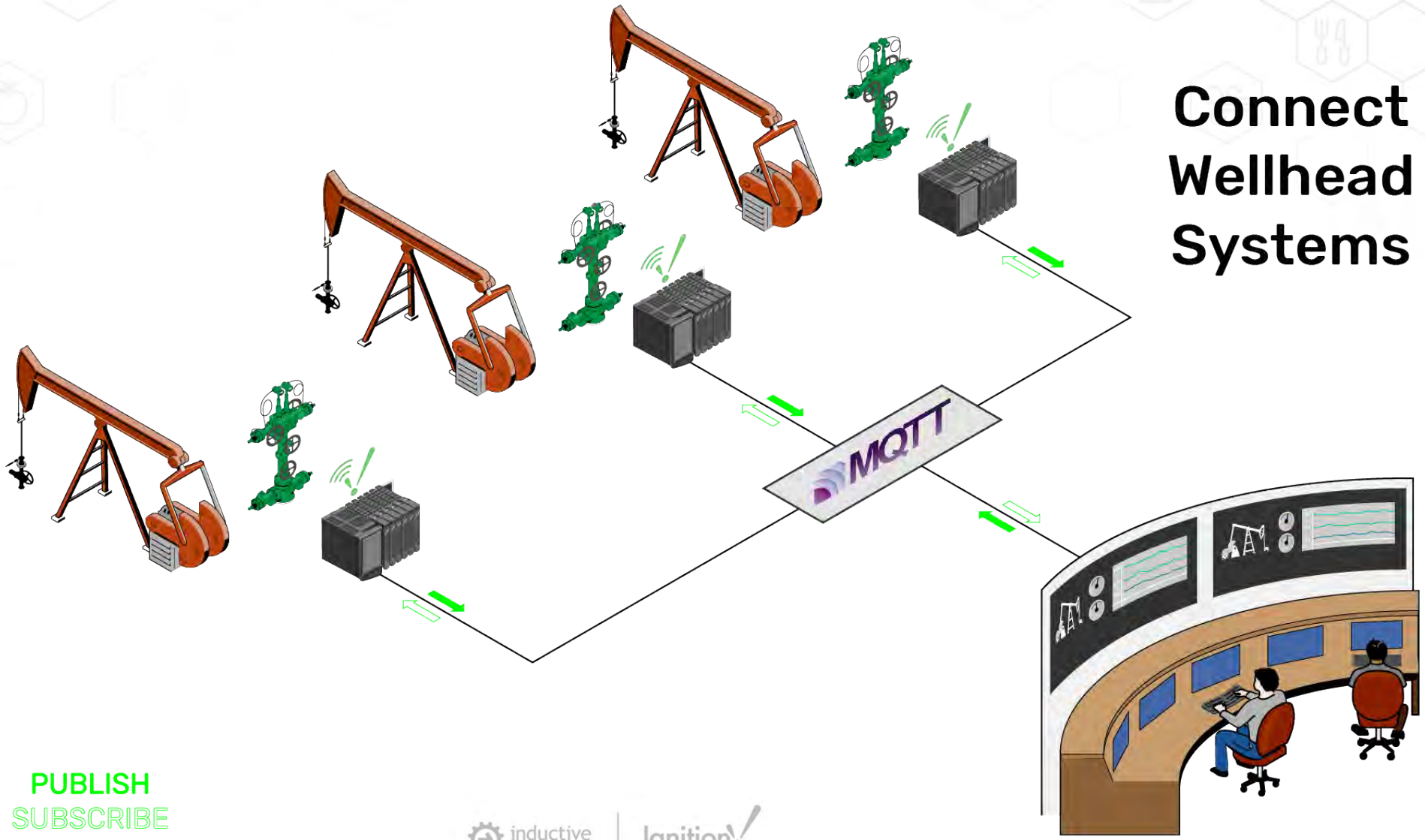
Problem Solving Scenarios – SCADA

SOLUTION



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In Summary

1. Simplify automation systems by offering key IIoT software tools on a **secure**, **open** platform with **visualization, real-time control, and industrial I/O**.

2. Build **efficient, secure** communications architectures by embedding **MQTT** transport and **Sparkplug** payload technologies at the network edge.

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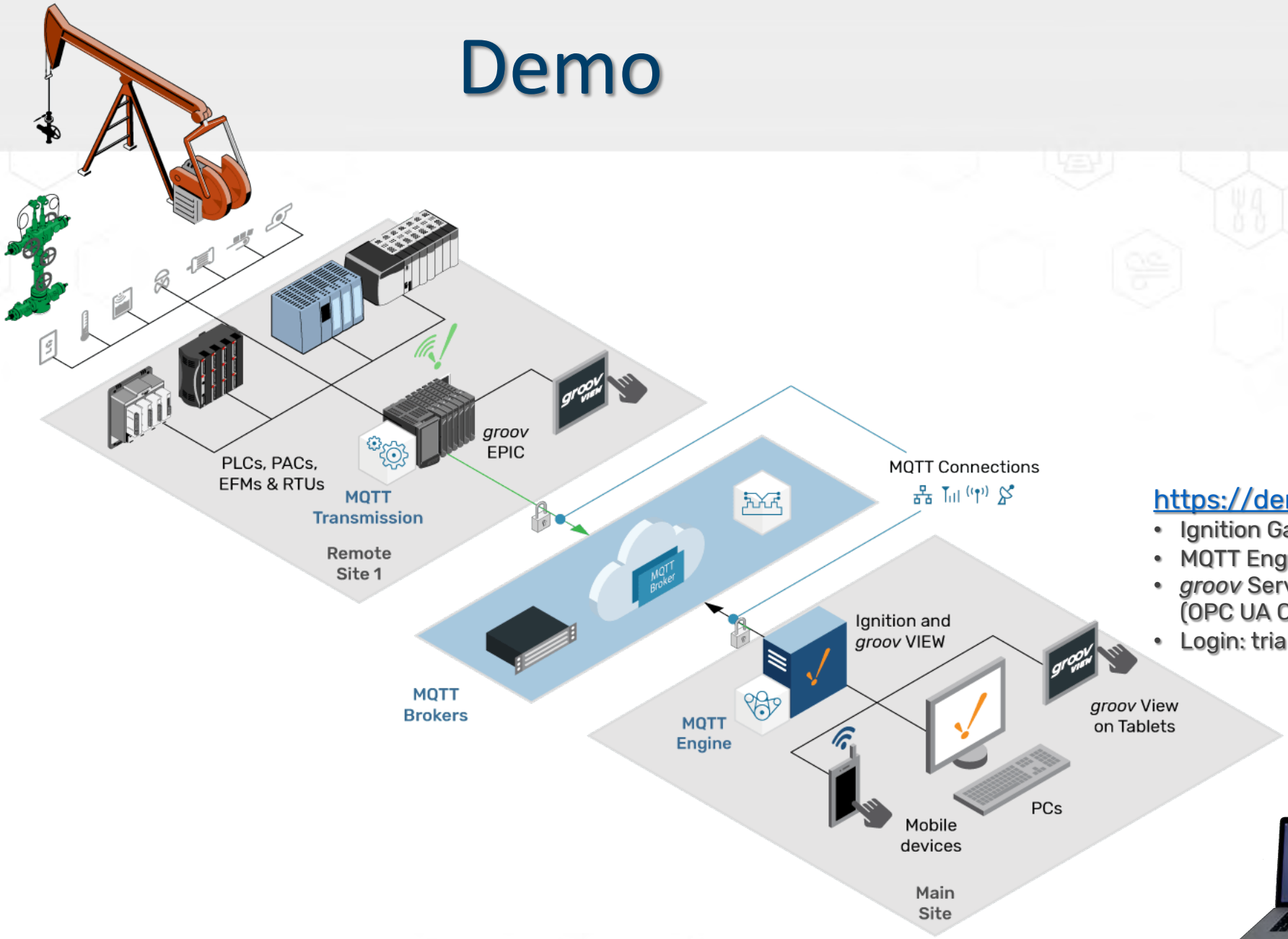
Demo



https://demo.groov.com

- Ignition Gateway
- MQTT Engine module
- *groov* Server for Windows (OPC UA Client)
- Login: trial/opto22

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Thank you!

Benson Hougland • VP Marketing & Product Strategy • Opto 22

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