

Webinar

Zero to OEE in an Hour

Hosted By  **HIVEMQ** In Collaboration with **RIVERON** &



Speakers



James Burnand
CEO at 4IR Solutions



Joe Dolivo
CTO at 4IR Solutions



Remus Pop
Director – Intelligent Manufacturing Solutions at Riveron



Ravi Subramanian
Director of Industry Solutions, Manufacturing at HiveMQ

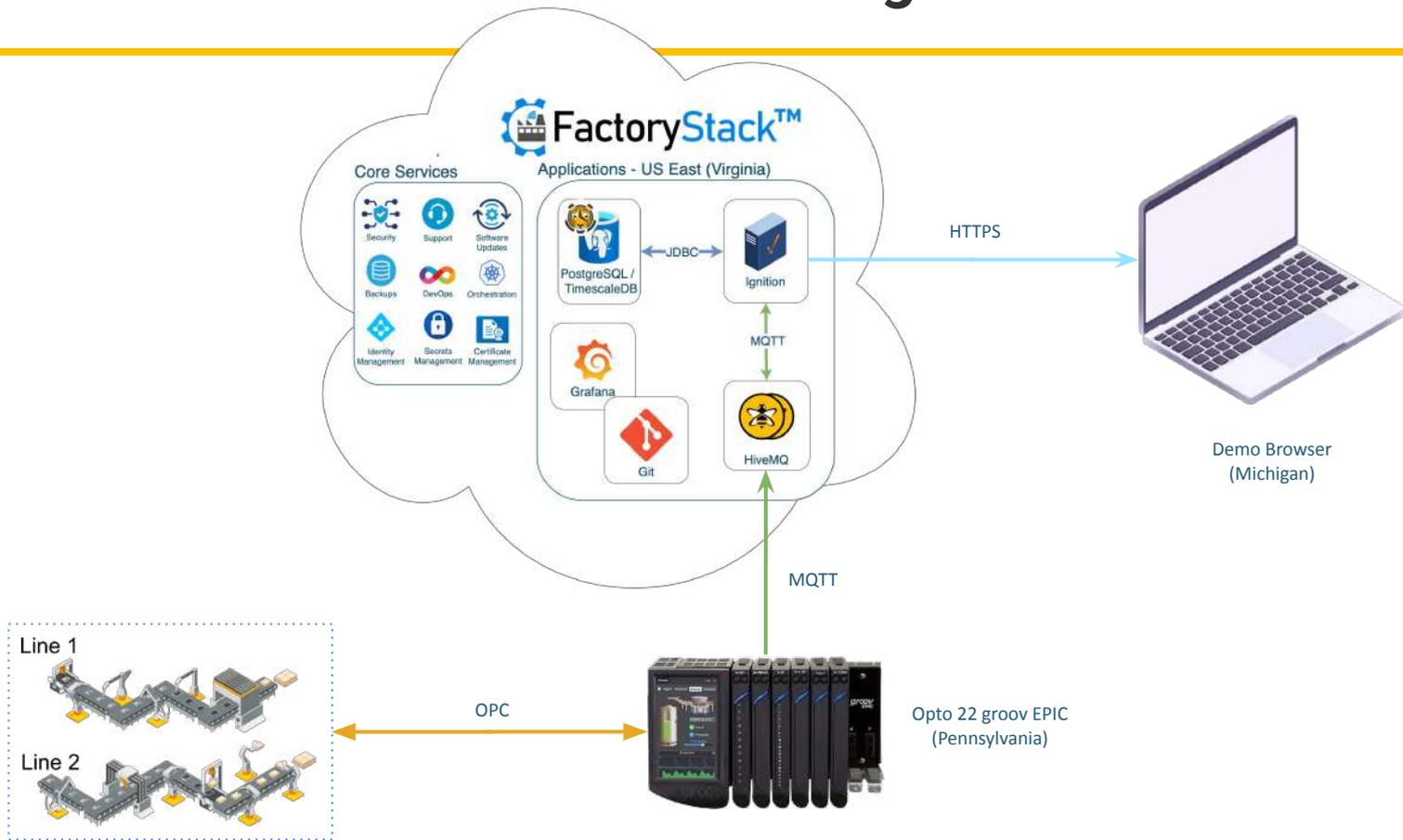


Ryan Dussiaume
Solution Engineer at HiveMQ

AGENDA

- "OEE in an hour" demo provisioning in real-time
- How is OEE calculated and why is it important?
- How do Riveron, 4IR and HiveMQ work together in an Industry 4.0 architecture?
- OEE application demo
- Q&A

Demo Provisioning



Importance of OEE as a KPI in Manufacturing



- OEE stands of **Overall Equipment Effectiveness**
- OEE is a **Key Performance Indicator (KPI)** that helps manufacturers determine machine potential in their factory or production lines.
- Manufacturers face issues like **labor shortages** and **machine downtime**
- OEE allows manufacturers to **ship products on time** and at the **quoted price** despite these issues

How is OEE Calculated?

Key Performance Indicators



- Simplest way to calculate is as ratio of Fully Productive Time to Planned Production Time.
 - **Simple OEE = (Goods Count × Ideal Cycle Time) / Planned Production Time**
- Although simple calculation is good it does not provide information about factors like Availability, Performance, and Quality which is preferred
 - **Preferred OEE = Availability x Performance x Quality**

OEE and Effective Production



OEE: 100%

Viewed as Perfect Production



OEE: 85%

Viewed as World-Class



OEE: 60%

Viewed as Common



OEE: 40%

Viewed as Low But Unusual

- **Tight correlation** between **effective production** and **OEE**
- **Perfect Production score:** Only producing high-quality components as rapidly as possible with no downtime
- For discrete manufacturers, **world class score** is a long-term objective.
- **Common score** is typical for discrete manufacturers, indicating that there is still a lot of opportunity for development.
- **Low score** is considered poor, but it's not unusual for manufacturers that are just getting started with performance tracking and improvement.

Key Benefits of OEE



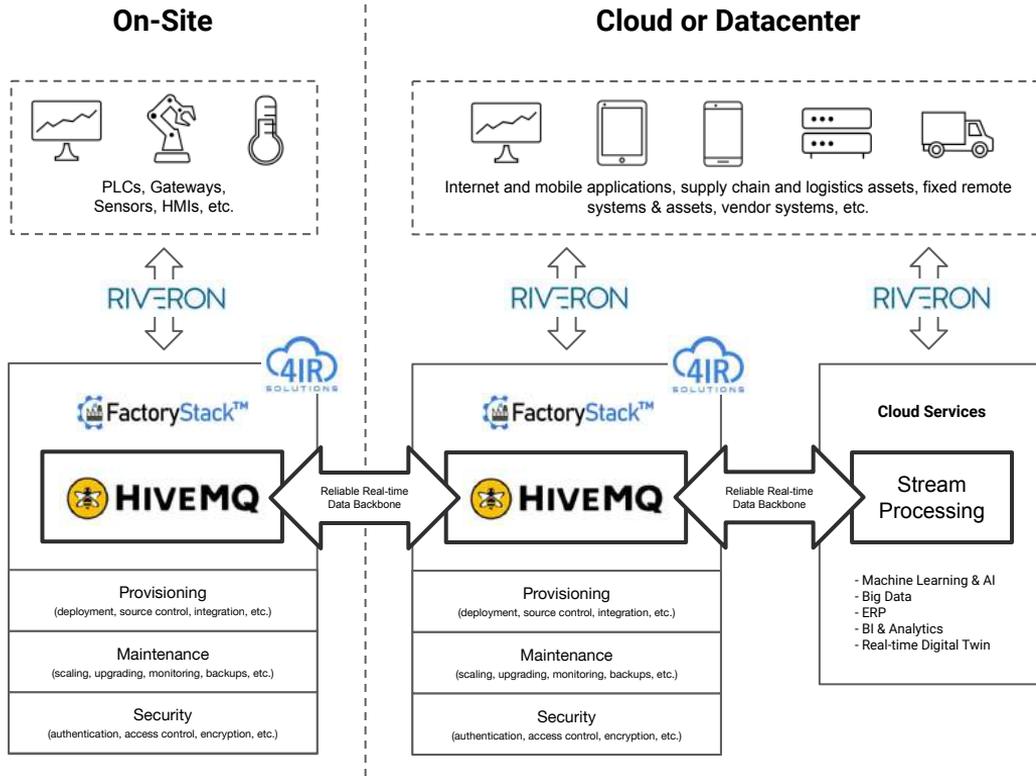
- **Return of Investment (ROI):** Significant impact on company's bottom line by producing more products on the same equipment at the same time.
- **Maximize Workforce Productivity:** Help companies figure out why they experience operator downtimes, provide productivity statistics, and highlight delayed changeovers or setup times.
- **Easily Visualize Performances:** Visualize production difficulties rather than relying on best estimates.

Challenges Collecting Data for OEE



- **Human errors and delays:** Work pressures can create room for error, as operators are overworked
- **Connectivity and Bandwidth challenges:** Factory networks are constrained for connectivity and bandwidth
- **Cybersecurity concerns:** Hackers can get access to sensitive data as factories don't have proper digital security measures.
- **Lack of scalability:** Data collection systems are not scalable to accommodate business growth and diversification.
- **Incomplete analysis:** Data sampling may impair predictions and the ability to identify changes in production tolerances.
- **Data Variety support:** Machine data comes in different intervals, volumes, data collection methods don't account for that

Increasing OEE in the Enterprise



1. Simplify the provisioning, maintenance and security of your software stack

1. Power your software and services with reliable real-time data

1. Leverage your software and services to increase OEE



Partnerships



HIVEMQ



Microsoft Partner



RIVERON



inductive automation.



Solution Partner



aws PARTNER aws Qualified Software

OPTO 22
OPTO PARTNER



IoT CERTIFIED

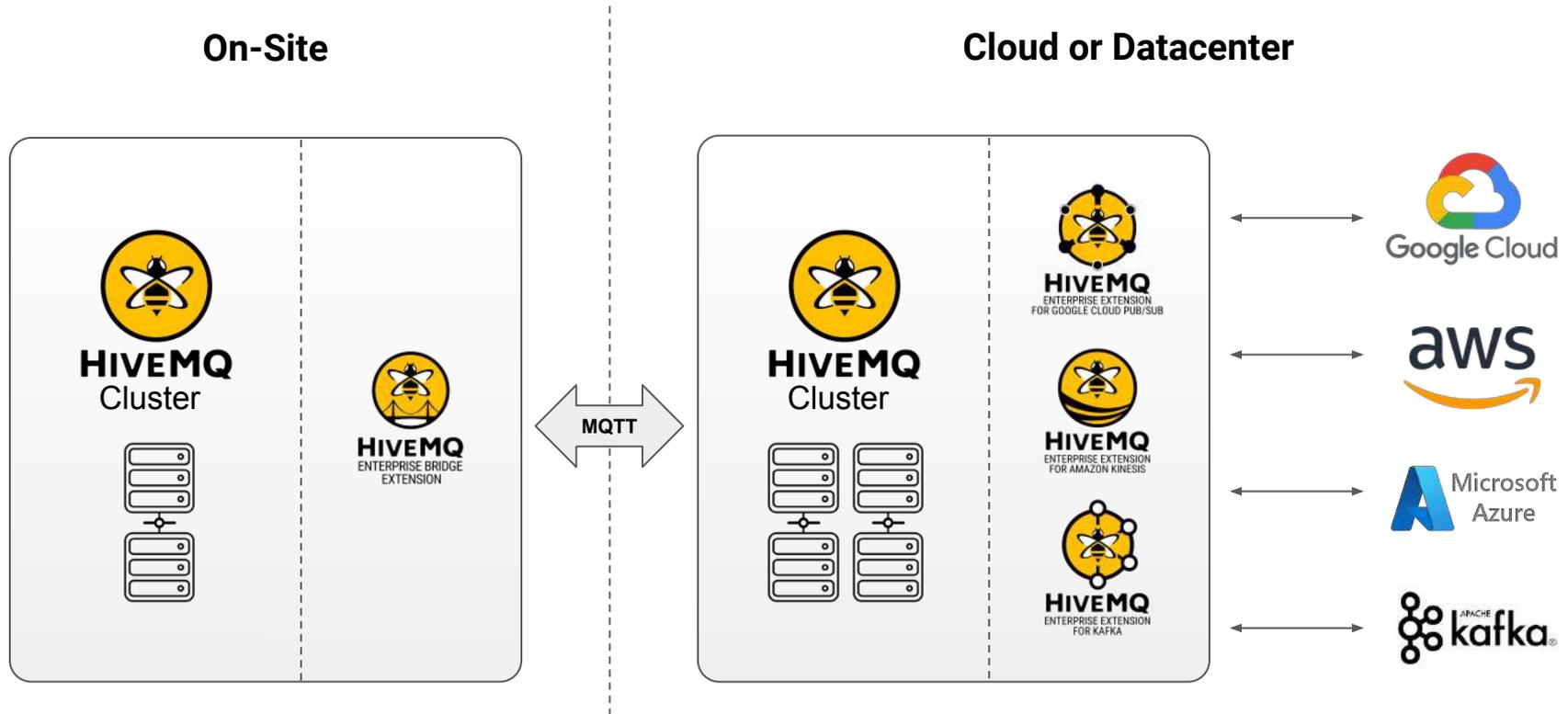


IT/OT Consulting

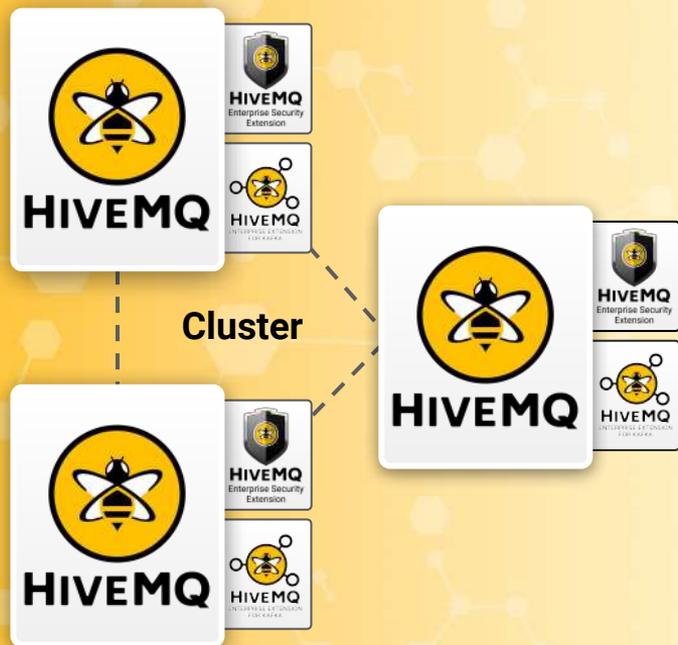


Industrial Cloud Readiness Assessment

Reliable Real-Time Data Backbone



HiveMQ Clustering



- **Redundancy**
Replicate data in motion before confirming receipt for true QoS
- **Persistence**
Support redundancy at scale and maintain reliability in longer outages
- **Protection**
Connection limiting, cluster overload protection, automatic throttling
- **Performance**
Data is referenced with consistent hashing for linear scalability

RIVERON AT-A-GLANCE

WHO WE ARE

Riveron is a business advisory firm specializing in accounting, finance, restructuring and turnaround, technology, supply chain & operations and digital manufacturing. We partner with our clients and their stakeholders to elevate performance and expand possibilities across the business lifecycle in both healthy and distressed environments.

700+

advisory
experts &
industry SMEs

12

offices across
the country

70%

of business from
repeat clients

WHAT WE DO

Accounting Advisory • Accounting & Finance
Operations • Capital Markets & Divestitures • ESG
& Strategic Communications • Supply Chain •
**Industry 4.0 • Performance Improvement •
Manufacturing Transformation** • Restructuring
& Turnaround • Tax • Technology • Transactions

WHO WE WORK WITH

CORPORATIONS

PRIVATE EQUITY

LENDERS &
BORROWERS

PARTNERS

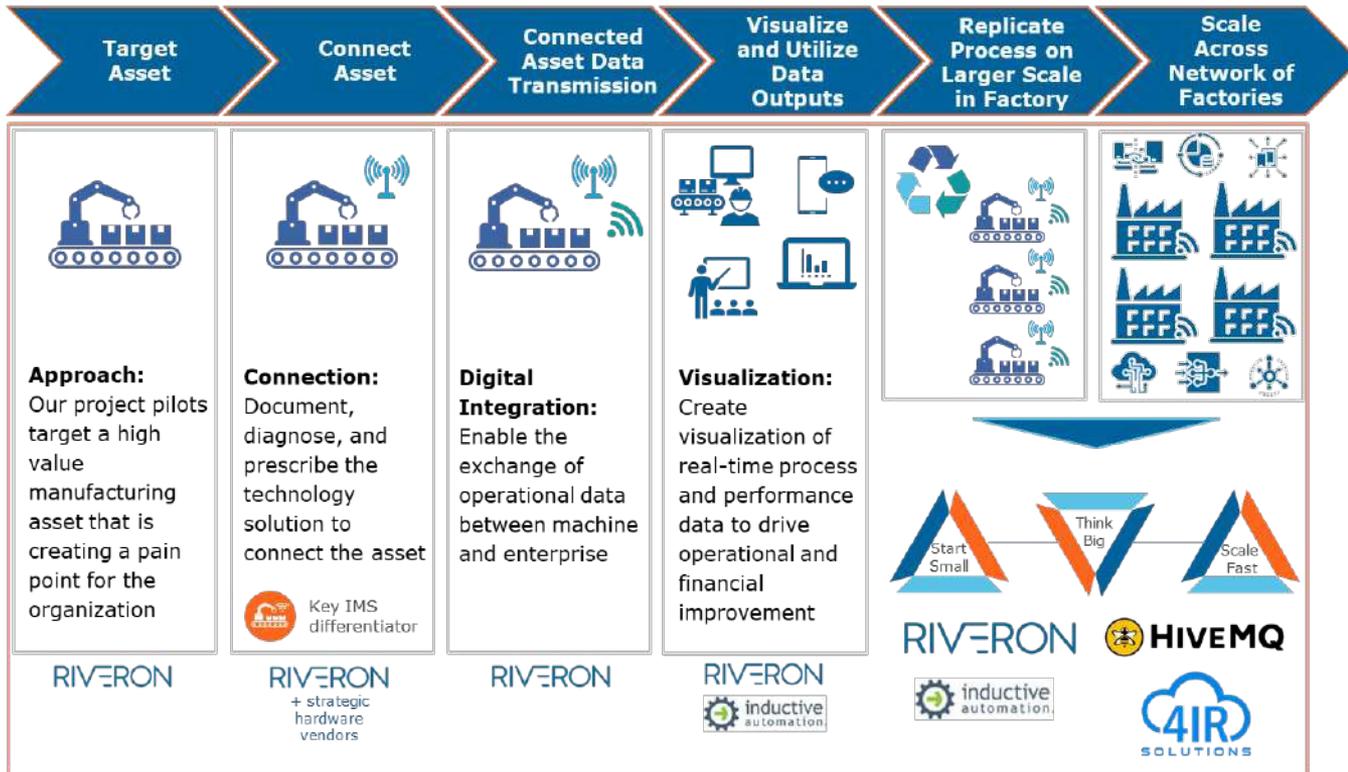
WHY WE'RE DIFFERENT

We work alongside our clients to understand their business at every level and generate insightful solutions, with:

- ▶ Disciplined, best-in-class analysis of the business and financial fundamentals that underpin success and create opportunity
- ▶ Thoughtfully integrated teams with deep functional and industry expertise
- ▶ Experience-based creativity and perspective to address unique needs
- ▶ Commitment to treating our client's business as our own and working seamlessly as an extension of the organization

ILLUSTRATION: IMS DIGITIZATION - WHAT WE DO

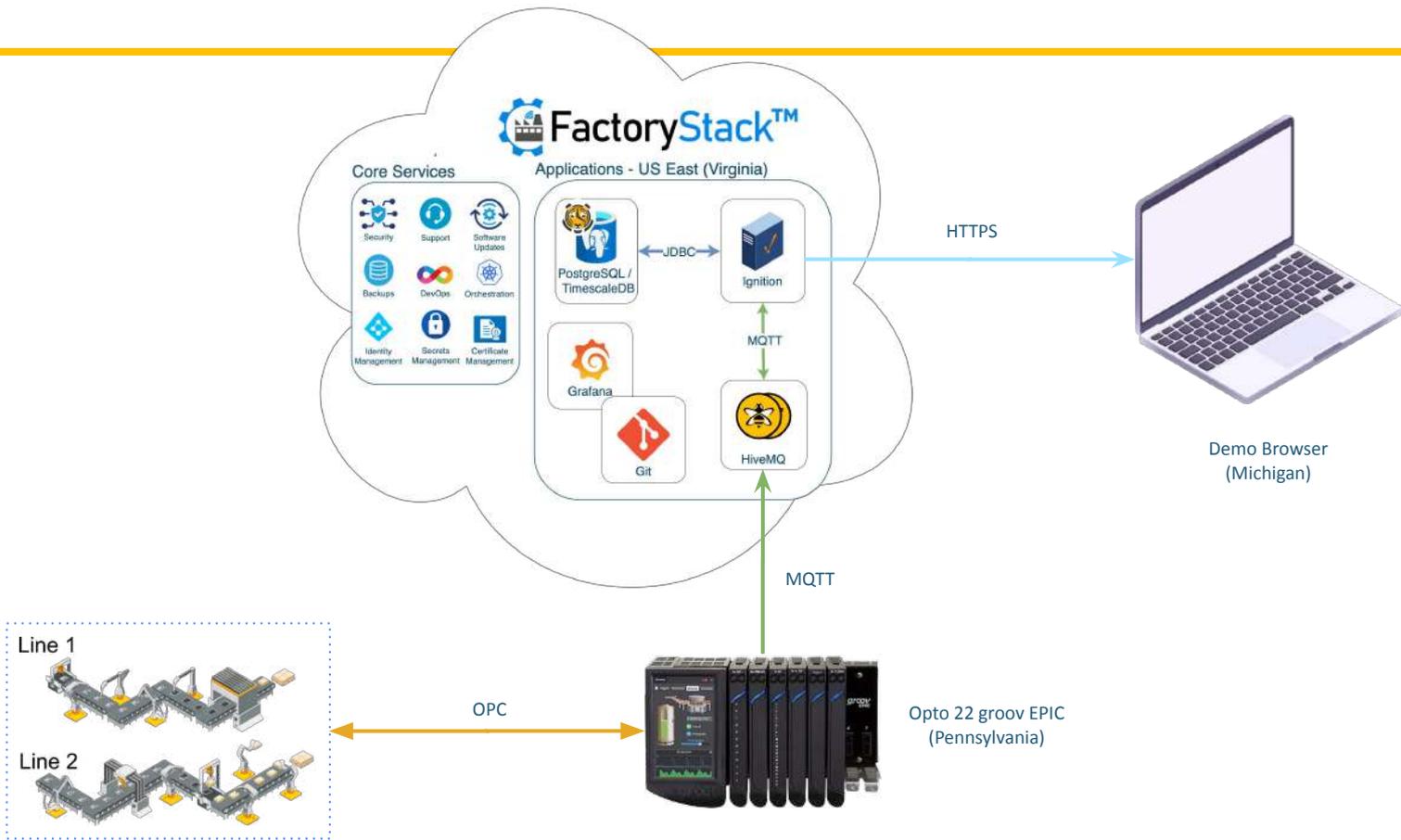
IMS DIGITIZATION IS THE APPLICATION OF TECHNOLOGIES TO FACILITATE THE AUTOMATED EXCHANGE OF DATA THAT DRIVES PERFORMANCE IMPROVEMENT



Demo



Demo



**ANY
QUESTIONS?**



Resources



[Why is Overall Equipment Effectiveness \(OEE\) an Important KPI for Industrial Processes?](#)



[5 Ways MQTT Sparkplug Helps Improve Overall Equipment Effectiveness \(OEE\) in Industrial Processes](#)



RIVERON

THANK YOU

Contact Details

James Burnand

✉ james.burnand@4ir.cloud

 <https://www.linkedin.com/in/burnand/>

Joseph Dolivo

✉ joseph.dolivo@4ir.cloud

 <https://www.linkedin.com/in/josephdolivo/>

Remus Pop

✉ Remus.Pop@riveron.com

 <https://www.linkedin.com/in/remus-pop-13250524/>

Ravi Subramanyan

✉ ravi.subramanyan@hivemq.com

 <https://www.linkedin.com/in/ravisubra/>

Ryan Dussiaume

✉ ryan.dussiaume@hivemq.com

 <https://www.linkedin.com/in/ryan-dussiaume-7105854/>

