IOT/OPC USE CASES

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AGENDA

- **PTC / Kepware Intro and Value Propositions**

- IOT/OPC Use Cases

- OPC UA Roadmap

INDUSTRIAL CONNECTIVITY - PRODUCT PORTFOLIO

ptc

kepware® kepserverex®

Provides a single source of
industrial automation data to
all of your applications

kepware® redundancymaster®

Configures multiple
OPC servers into
redundant pairs

kepware® clientace®

Streamlines OPC
connectivity through the
Microsoft .NET API

kepware® linkmaster

Easily exchanges
data between
OPC DA servers

kepware®

INDUSTRIES SERVED

- Industries
  - Discrete Manufacturing
  - Automotive
  - Food and Beverage
  - Pulp and Paper
  - Machinery
  - Water and Waste Water
  - Energy – Wind, Solar, Power Plants
  - Oil and Gas
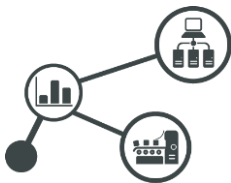 - Metals and Mining
  - Chemicals
  - Etc.

Manufacturing   Oil & Gas   Building Automation   Power   IT & Infrastructure

JOURNEY

ptc
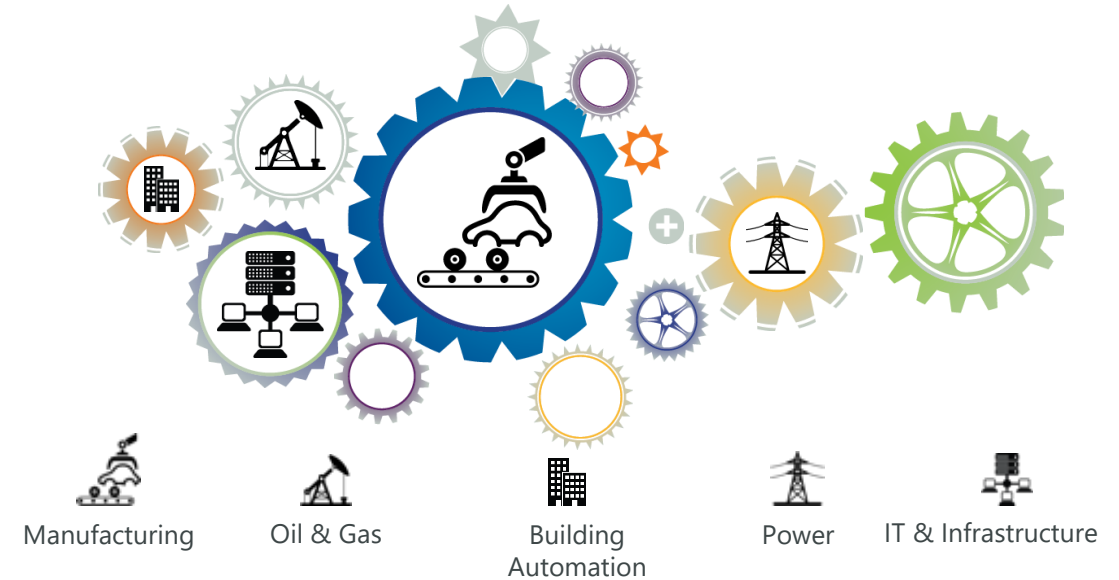
- from OPC Server to IOT Industrial Connectivity Platform

kepware® kepserverex®

Expanded product portfolio and industry reach

Expanded Internet of Things (IoT) offering

| 1995 | 1997 | 1999 | 2001 | 2004 | 2007 | 2009 | 2014 | 2015 | 2016 | 2017 | 2018 |

- **1995** Founded Focused on developing a low-cost HMI
- **1997** Released KEPServer
- **1999** Shifted focus to developing drivers to communicate with Programmable Logic Controllers (PLCs)
- **2001** Released LinkMaster for OPC Bridging
- **2004** Released RedundancyMaster® for OPC Redundancy
- **2007** Released ClientAce®, an OPC Client Toolkit
- **2009** Released the KEPServerEX® Connectivity Platform
- **2010: Released OPC UA Server & Client >>>**
- **2014** Released the Industrial Data Forwarder for Splunk
- **2015** Released the IoT Gateway Formed IoT Alliances
- **2016** Acquired by PTC Released KEPServerEX Version 6
- **2017** Release 4x new 6.x versions TW integration - TWIC
- **2018** Release 3x new 6.x versions

kepware®

KEPSERVEREX® INDUSTRIAL CONNECTIVITY PLATFORM

- Consolidates data and information from many sources into one industrial connectivity platform

- Offers a library of more than 150 device drivers, client drivers, and advanced plug-ins— supporting thousands of devices and other data sources

- Provides industrial operations data to:
  – Traditional Industrial Automation clients, via OPC and proprietary protocols
  – IOT Solutions, via MQTT, REST, ThingWorx AlwaysOn™, and IT-centric protocols

- Seamlessly integrates with ThingWorx and ThingWorx Manufacturing Apps, enabling quick time-to-value with industrial IoT solutions
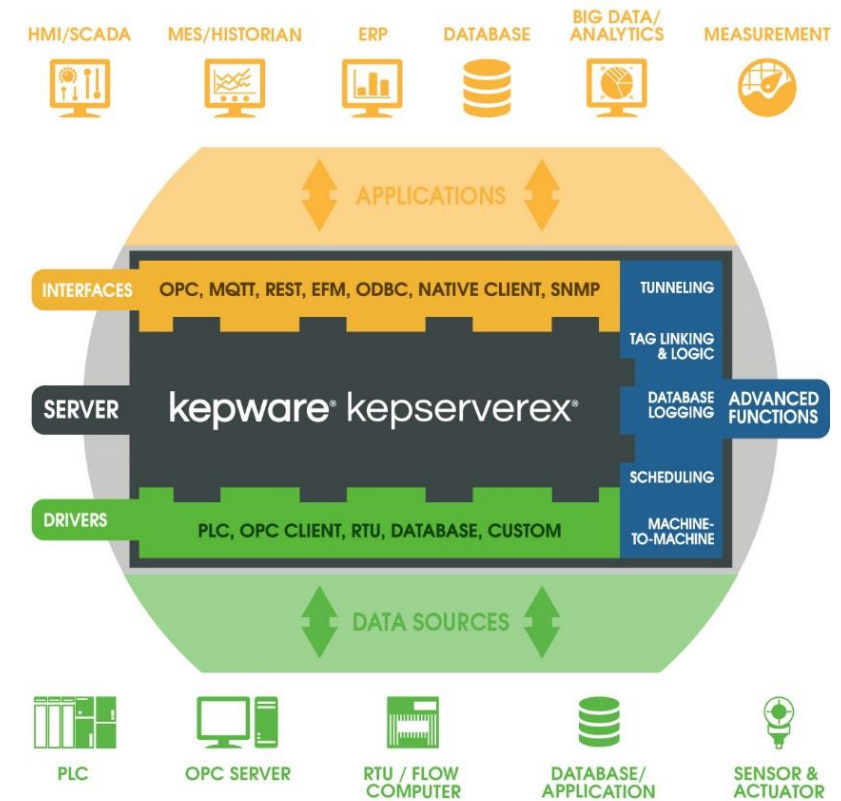
WHY KEPWARE?

Adding values as;

- Best in class Industrial Connectivity Platform
- Connectivity for the future and vendor independence
- Security & protecting your operational data
- Scalability – from SW/HW OEM to Enterprise
- Advantages and cost reductions by easy maintenance (single platform for all connectivity)

WHY KEPWARE?

Adding values cont';
- Continued updates and enhancement to meet market requirement
- Quality & reliability
- Seamless integration with ThingWorx Innovation Platform

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- OPC UA Roadmap

IOT/OPC USE CASES

A few of many Kepware Use Cases leveraging OPC/OPC UA and/or Pub/Sub data exchange technology

Challenge to share Enterprise customer Use Cases due to NDA restrictions!

Practically we have 50+ Enterprise Customer implementations over the last 24 month where **both** OPC UA and IOT GW MQTT Pub/Sub functionality were key requirements!

GENERAL MOTORS

About

Organization
General Motors is one of the big automotive manufactures. The have 50 vehicle assembly and 30 powertrain assembly operations worldwide.

Each plant include 100's of Programmable Logic Controllers (PLC) controlling unique distributed production cell operations.

Industry
Automotive

Solutions
KEPServerEX®
- OPC UA Server

Device Connectivity
- Allen-Bradley
- Modbus
- Siemens

Client Connectivity
- Business Enterprise Systems
- Local SCADA Servers

Challenge

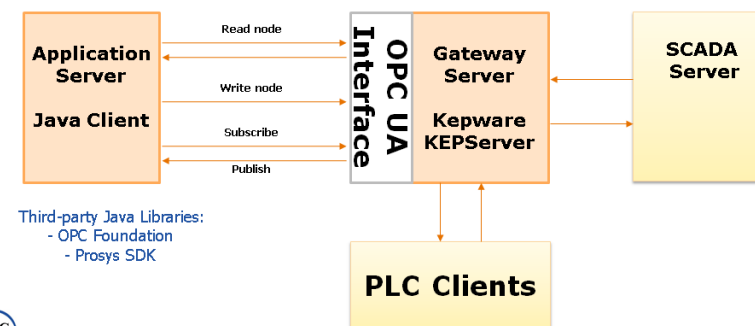Implementing the IoT Gateway for KEPServerEX enabled Faurecia to:
- New custom MES system.
- Common integration methods for all plant floor client communications.
  Improve availability.
- Maximize investment in existing plant floor devices and communications
- Minimize changes to PLC logic
- Improve communications performance

Results

- Streamlined technical architecture by leveraging an OPC platform with a single user interface
- Enabled remote login and shutdown via VNC monitors
- Improved operational insight through analysis of production data
- Bridged legacy equipment with modern technology
- Provided scalability for future growth and acquisitions
- Increased production quality and OEE

OPC UA Configuration

- Application Server hosts enterprise systems provide business functions
- Application Server extends functions as OPC UA client web services
- Gateway Server as OPC UA server (Kepware)
- SCADA Server acts as monitoring client
- PLC Clients support manufacturing conveyors, robots, welding, fluid fill

Application Server		OPC UA Interface	Gateway Server	SCADA Server
	Read node		Kepware KEPServer	
Java Client	Write node			
	Subscribe			
	Publish			

Third-party Java Libraries:
- OPC Foundation
- Prosys SDK

PLC Clients

ARC Advisory Group

VISION, EXPERIENCE, ANSWERS FOR INDUSTRY

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End User

TEEL PLASTICS, INC.

About

Organization
Teel Plastics, Inc. specializes in custom extruded plastic tubing and profiles. With highly-skilled employees and unique extrusion manufacturing techniques, Teel Plastics has built a reputation of exceptional made-to-order plastic tubing, cores, and profiles.

Industry
Manufacturing

Solutions
* IoT Gateway for KEPServerEX®
* Manufacturing Suite incl. OPC UA Client

Learn More
Teel Plastics Reduces Human Error with IoT strategy Powered by Kepware

Challenge

Teel Plastics has ten manufacturing lines at its facility in Baraboo, Wisconsin that produce different products at various times throughout the day. Each line requires a custom recipe for every product. These recipes include different material inputs, equipment, heating components, and other variables, and can change several times in one day. All these variables quickly caused instances where human error deviated the recipes. These deviations inspired Teel Plastics to find a solution that would allow operators to control all pieces electronically and reduce human error.

Results

Implementing the IoT Gateway for KEPServerEX enabled Teel Plastics to:
* Increase visibility into the granular details of the manufacturing process
* Increase product output and quality through more informed decision making and reduced downtime
* Remove the risk of human error in manual tasks
* Gain a future-ready manufacturing system with a scalable solution for evolving processes/challenges
* Reduce stress and improve ease of mind for operators
* Provide data that proved customers' requests were being met
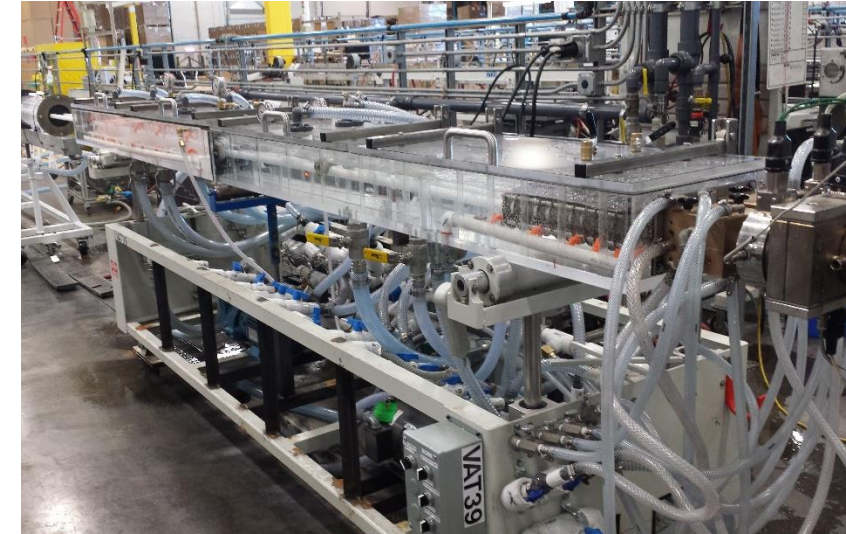
"By incorporating the IoT throughout our shop floor, we've been able to take something that previously required memorization and 30 to 40 clicks and bring it down to a single click of a button. Working with the IoT Gateway is seamless. We're able to trust that as our recipes evolve, KEPServerEX will be able to take on anything and everything that we throw at it."

Owen Gwynne, Senior Programmer, Teel Plastics

End User

HIROTEC AMERICA

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About

Organization
HIROTEC AMERICA is part of the HIROTEC Group Companies that have worldwide sales in excess of 1.6 billion dollars and 26 facilities across 9 countries. For over 30 years, HIROTEC AMERICA has been providing innovative and highly flexible closure manufacturing solutions.

Industry
Manufacturing - Automotive

Solutions
KEPServerEX®
• IoT Gateway Advanced Plug-In
• Manufacturing Suite incl. OPC UA Client
ThingWorx® IoT Platform

Learn More
Automotive Parts Supplier Launches IoT Initiative in Six-Week Sprints Powered by Industrial Data from Kepware

Challenge

HIROTEC had volumes of industrial data from a diverse set of sensors and machines stored across multiple sources that was inaccessible to collective and systematic analysis. In order to improve quality, reduce downtime, and optimize production schedules, HIROTEC needed to implement a modern, automated solution that could gather maintenance and operational information into one source and offer actionable recommendations to its quality professionals.

Results

• Gained better visibility into the processes of the CNC shop and deeper insight into operations
• Added the ability to leverage real-time data from the shop floor and tie it to the scheduling ERP system, optimizing the scheduling of parts to CNC modules
• Increased productivity and ROI by gaining greater insight into asset and resource allocation
• Improved collaboration between Operations and Information Technology, reducing downtime and enabling efficient responses to IT jobs
• Reduced costs, effort, and development time by selecting proven, interoperable technologies
• Provided quick proof-of-concept into the value of IoT via short, six-week Agile sprints
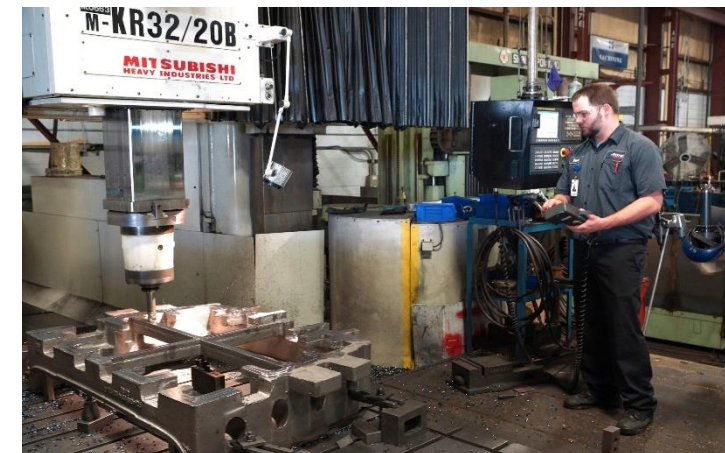
"When first embarking on our IoT journey, HIROTEC's core objective was to remain flexible in our ability to connect things. The offerings and expertise by Kepware and PTC have enabled us to stay true to our goal by effortlessly adapting to our business processes and developing the right IoT strategy for our teams. The IoT Gateway's ability to seamlessly put data into ThingWorx to generate real-time insight into operations fuels our sprint framework and allows us to stay nimble in our decision making."

Justin Hester, Senior Researcher, HIROTEC

End User HIROTEC AMERICA

FAURECIA

About

Organization
Faurecia is one of the world's largest automotive equipment suppliers in Automotive Seating, Emissions Control Technologies, Interior Systems, and Automotive Exteriors. At December 31, 2014, Faurecia employed 100,000 people in 34 countries at 330 sites and 30 R&D centers. Faurecia is listed on the NYSE Euronext Paris stock exchange and trades in the U.S. over-the-counter (OTC) market.

Industry
Automotive

Solutions
KEPServerEX®
- IoT Gateway
Device Connectivity
- Allen-Bradley
- Modbus
- Siemens
- OPC UA Client
Client Connectivity
- IJ Core (Faurecia's proprietary MES)

Learn More
[Kepware's IoT Gateway Provides Faurecia with Data to Improve Traceability for Top Automotive Customers](#)

Challenge

A preferred partner of the world's largest automakers, Faurecia needed to provide its customers traceability for the parts it was producing. The automotive OEMs expected Faurecia to be able to both track the process of operations and production and to make that information available on demand.

Results

Implementing the IoT Gateway for KEPServerEX enabled Faurecia to:
- Improve parts traceability throughout the entire manufacturing process, satisfying internal Faurecia stakeholders and the company's customers
- Improve connectivity and speed of communication between factory floor machines and IJ Core
- Improve parts production quality
- Reduce development time, effort, and training
- Enable smarter, more nimble decision making across the organization

"We're seeing benefits from this implementation from the boardroom down to the shop floor, and only expect them to increase as more locations utilize it. We're able to be smarter and more nimble in our decision making, which leads to better products and services for our customers."

Rafael Unruh, Competence Center Manager, Faurecia

End User

AGENDA

- Kepware Intro and Values

- PTC/Kepware strategy

- **OPC UA Roadmap**

OPC UA ROADMAP

ptc

Market demands? – We are Use Case driven!

2019 and forward

Additional OPC UA functionality;
- OPC UA over HTTPS
- OPC UA Complex data
- OPC UA PubSub
- OPC UA HA
- OPC UA AC
- OPC UA Collaborations IMs

Contains forward-looking information subject to change without notice. Does not imply future commitment.

CONNECT WITH US

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Kepware official Preferred Distributor
in the Nordics and Benelux

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- info@novotek.fi

www.kepware.com

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- sales@kepware.com

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- training@kepware.com

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Social Media
Find product news, industry updates, event coverage,
and more

kepware®

THANK YOU!

Thanks to;

OPC Foundation

Finnish Society of Automation

Valmet

&

our regional Kepware Preferred Distributor

that we could join this event!