Industrial Connectivity for Oil & Gas

Proven Technology for Rigorous Communications Standards

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KEPServerEX® is a flexible, scalable, and affordable connectivity platform for monitoring, controlling, and managing diverse automation devices and software applications across multiple telemetry options, including all Radio and Modem types, Ethernet TCP/IP, Serial Multi-Drop, and Satellite. Communications are managed through a robust software platform that provides multiple failover, redundancy, and high availability options.

KEPServerEX supports an array of client interfaces, including OPC, Electronic Flow Measurement (EFM), REST, MQTT, proprietary communication protocols, and APIs. It enables improved operations and decision making by streaming real-time data to SCADA systems and other enterprise applications, as well as providing EFM output to validation and accounting systems.
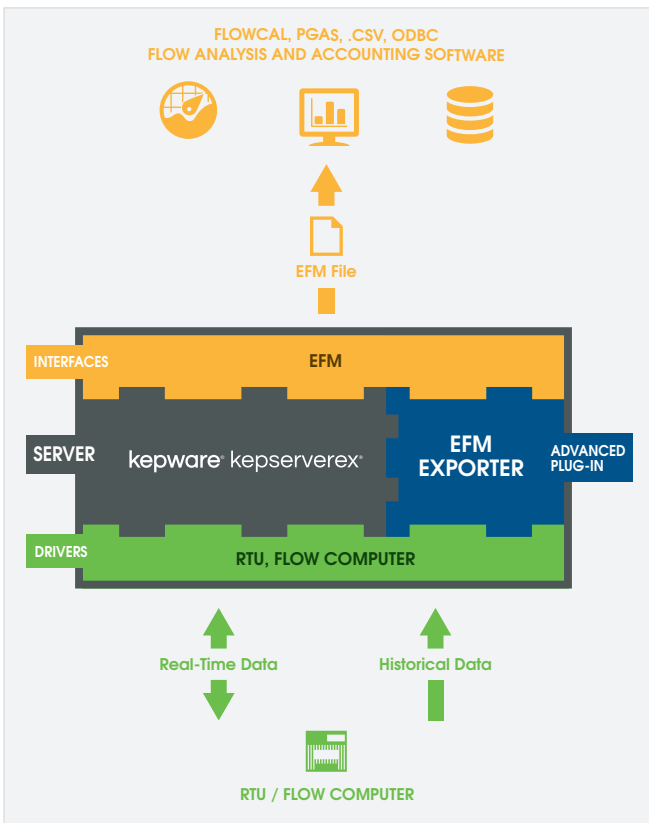
Library of Drivers

Information is interpreted and translated through the KEPServerEX connectivity platform's vast library of communication protocols and interfaces, enabling information to flow seamlessly between automation and enterprise systems. KEPServerEX provides drivers for open standards and industry-leading automation equipment, spanning more than 300 protocols.

Connectivity to Internet of Things (IoT)

The IoT Gateway advanced plug-in for KEPServerEX streams real-time tag data directly into IoT, Big Data, and analytic applications via a REST, MQTT, and ThingWorx® interface. This seamless bridge between Operations Technology (OT) and Information Technology (IT) enables data correlation across the enterprise and eliminates data silos.
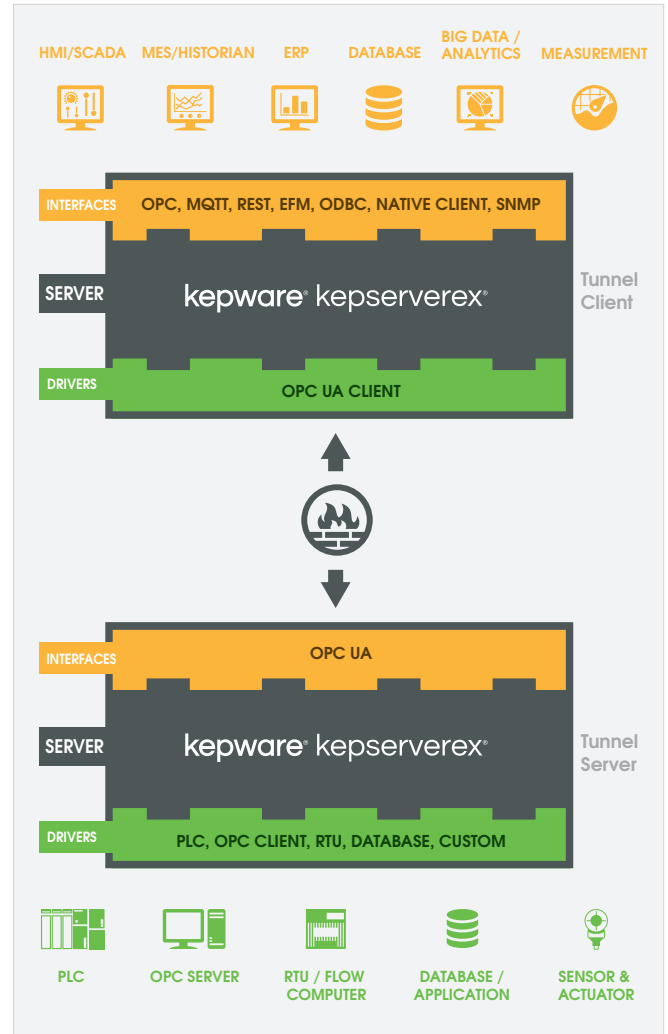
Electronic Flow Measurement (EFM) Support

A significant number of RTUs and flow computers have the ability to collect raw flow measurement data, perform calculations on this data, and store it locally until retrieved. KEPServerEX drivers with EFM capabilities retrieve this data on a configurable interval basis, and the EFM Exporter creates appropriately formatted output files for upload into flow analysis/accounting software (such as Flow-Cal, PGAS, custom spreadsheets and database applications, and more) for custody transfer purposes.

EFM Exporter Architecture

Communications Tunneling

The KEPServerEX real-time data tunneling solution uses a client/server architecture and secure socket layer (SSL) technology to transfer data securely over the Internet, WAN, or LAN. It connects through firewalls and complements existing internal OPC DA connectivity for secure, user-friendly, and reliable real-time data tunneling.

OPC Tunneling Solution Architecture

Data Request Scheduling

The Scheduler advanced plug-in for KEPServerEX enables users to move the scheduling of data requests from the client to the server to optimize client communications across networks with limited bandwidth. It can define polling schedules for specific tags from multiple devices by the time of day or frequency. It also enables users to define exceptions for periods of time when polling is undesirable. Each schedule can be configured with its own priority to determine which schedule is serviced first when a conflict arises; the server will update clients with data once it is available.

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KEPServerEX is key in overcoming connectivity and scalability challenges in the Oil & Gas Industry.

With a single user interface, KEPServerEX establishes a communications buffer where additional features and advanced plug-ins can be installed on an as-needed basis — providing the scalability and interoperability needed to monitor and control petroleum, natural gas, and pipeline process installations.

UPSTREAM: Improve Project Success with Faster, Better Decisions

Seizing opportunities in oil and natural gas exploration and production requires quick, strategic action based on informed decisions. You need immediate and easy access to complex project data and information from multiple geographic sites, including offshore drilling platforms, onshore rigs, and wellsites. KEPServerEX can help you manage data from disparate sources and make better business decisions faster by providing:

- A single source of integrated data for operational, production, geologic, and asset management

- Better visibility of onshore, offshore, and field data for easier data sharing with all stakeholders

MIDSTREAM: Monitor Complex Infrastructures for Performance and Compliance Requirements

Managing diverse assets and pipeline infrastructures, staying compliant with multiple regulatory mandates, providing custody transfer data visibility, monitoring and managing flow and leak detection, and ensuring reliable product transmission and distribution throughout the supply chain—doing business in the midstream sector is exceptionally complex. KEPServerEX can help you streamline many aspects of your midstream operations by providing:
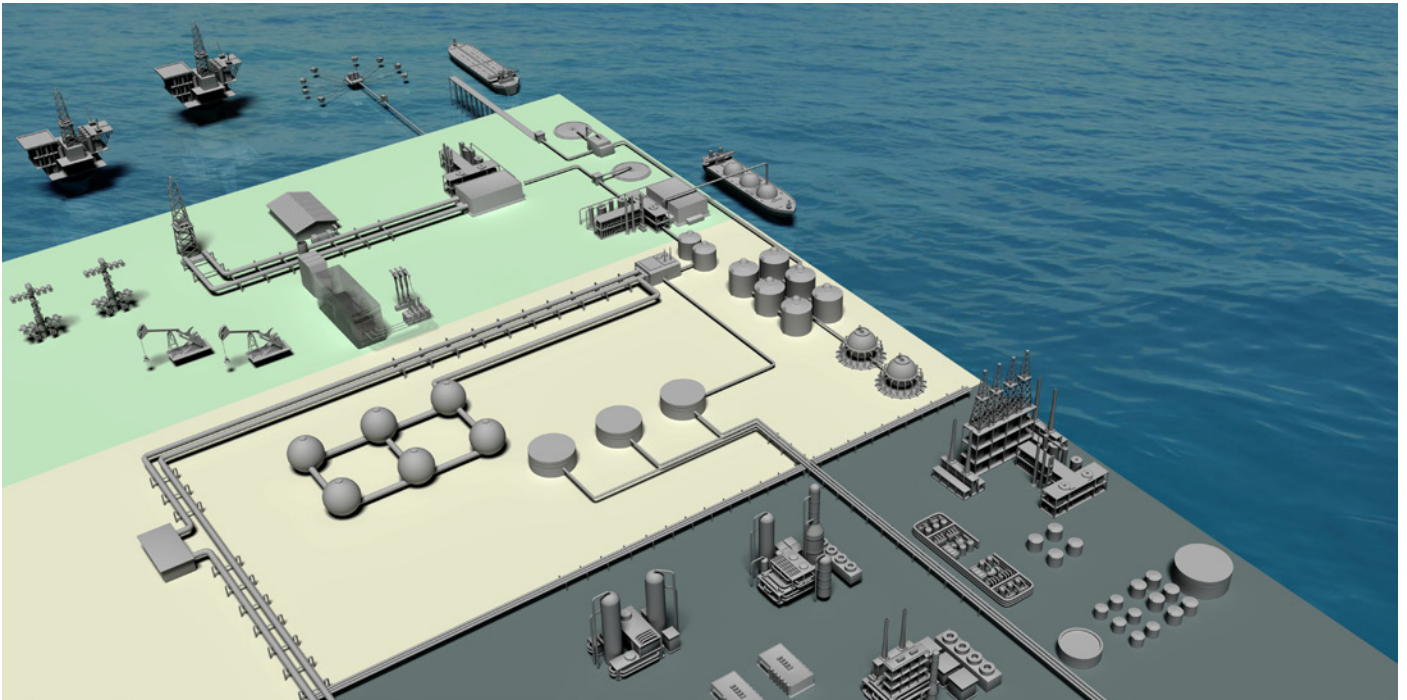
- Greater visibility into pipeline performance data across multiple geographic areas

- Easier, faster data collection and consolidation for audits

- Automated data consolidation and distribution between gathering plants, pipelines, and refineries

DOWNSTREAM: Gain Visibility and Control to Improve business Decisions and Operational Excellence

In today's competitive global market, the ability to immediately see and act on events within the industrial process is critical to improving business operations and long-term success. As refineries look to increase profitability, throughput, safety, and reliability, many are turning to automation and leveraging the vast amount of data it provides. KEPServerEX enables refiners to improve their operational performance by providing:

- Real-time visibility into process data and information

- Alarm and event notification of potential safety or environmental hazards

- Tracking of production irregularities in real time

- Equipment health and network asset monitoring

KEPServerEX can be easily configured for upstream, midstream, and downstream companies to help them connect, monitor, manage, and control diverse automation devices and software applications across multiple telemetry options.

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UPSTREAM: Exploration and Production

- Wellsite Information Transfer Specification (Level 0)

- Lufkin
- Weatherford

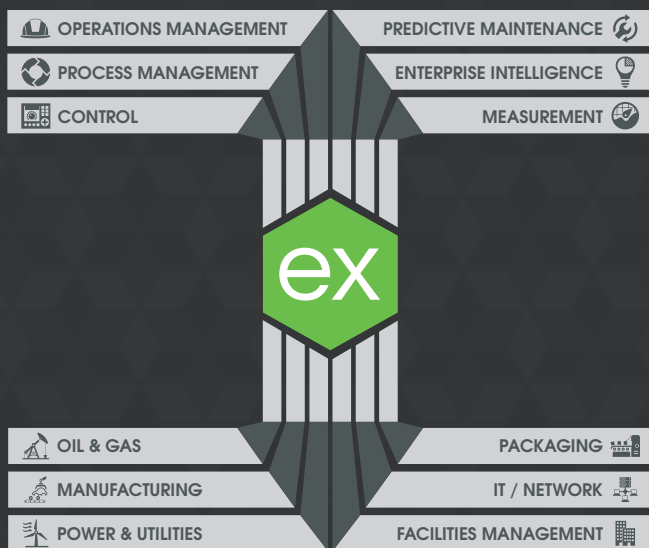## MIDSTREAM: Pipeline, Pump Station, and Monitoring

- ABB Totalflow (EFM)
- Bristol/IP
- Daniel Modbus
- Dynamic Modbus
- Enron Modbus (EFM)

- Fisher ROC/ROC+ (EFM)
- Modbus RTU
- Modbus Ethernet
- OMNI Flow Computers (EFM)
- EFM Exporter (Flow-Cal, PGAS, CSV, and database)

DOWNSTREAM: Refinery and Distribution

- Allen-Bradley PLCs / controllers
- GE Intelligent Platforms PLCS and PACs
- Honeywell controllers and DCS
- Mitsubishi PLCS
- Modbus devices

- Omron controllers
- Siemens PLCs / controllers
- SIXNET RTUs / controllers
- Yokogawa data recorders
- ...and many more

About KEPServerEX

KEPServerEX is the industry's leading connectivity platform that leverages OPC and IT-centric communication protocols to provide a single source of industrial automation data to all of your applications. The platform design allows users to connect, manage, monitor, and control diverse automation devices and software applications through one intuitive user interface.

To get started, simply download KEPServerEX and then select from Kepware's library of more than 150 device drivers, client drivers, and advanced plug-ins to fit your unique industrial control system requirements. For your free trial, visit kepware.com/download/.

About Kepware

Kepware is a software development business of PTC Inc. located in Portland, Maine. Kepware provides a portfolio of software solutions to help businesses connect diverse automation devices and software applications and enable the Industrial Internet of Things. From plant floor to wellsite to windfarm, Kepware serves a wide range of customers in a variety of vertical markets including Manufacturing, Oil & Gas, Building Automation, Power & Utilities, and more. Established in 1995 and now distributed in more than 100 countries, Kepware's software solutions help thousands of businesses improve operations and decision making. Learn more at kepware.com.

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