



thingworx®

One Platform. Unlimited Innovation.

BUILD



CREATE AND DEPLOY FEATURE-RICH SOLUTIONS FOR
INDUSTRIAL IoT



ptc



For many industrial enterprises, an IoT strategy that incorporates access to real-time factory data will transform how they do business – enabling them to improve operational processes, drive productivity, make better-informed decisions, and gain competitive edge. But data access and visibility in an industrial setting is not without its challenges.

Factory operations are teeming with disparate or legacy devices that are unable to connect to each other or to business systems, and many organizations have developed ad hoc solutions that are near impossible to maintain. The resulting data may be old, incomplete, or of poor quality. Connectivity, communications, and security are unreliable – or nonexistent.

ThingWorx connects disparate devices, applications and data sources across the enterprise, providing a single source for collecting, aggregating, and enabling secure access to industrial operations data. Its platform design enables users to connect, manage, monitor, and control diverse automation devices and software applications through one intuitive user interface.

Powered by Kepware®, and with a library more than 150 device drivers, client drivers and advanced plug-ins, ThingWorx enables connectivity to thousands of devices and operations data sources.

PTC and Partners: Better Together

Microsoft Azure

ThingWorx provides a rich application enablement environment and seamless interaction with Microsoft Azure, speeding time to value for companies that choose to implement industrial IoT solutions on Azure. ThingWorx sources data from Azure that can be combined with IoT data and other digital content, including 3D models and engineering data, enabling the bi-directional communication with IoT assets.

- User-friendly interfaces enable quick creation of smart, connected solutions, speeding time to market
- Cloud delivery simplifies the deployment of industrial IoT applications
- Drag-and-drop tools eliminate the need for complex manual coding
- Global scalability accommodates existing and emerging needs



ThingWorx includes the following functionality:

Develop – ThingWorx includes a design and runtime engine that enables creation of applications that leverage real-time, bi-directional connectivity to “things.”. The interface uses visual application modeling and employs templates to increase efficiency and reuse, shortening development times. Drag-and-drop tools empower users to create a broad range of applications, such as analytics or augmented reality, without needing to be an expert in that technology.

Connect – Connection servers, device cloud adapters, out-of-the-box industrial connectivity, and integration framework connectors are all available to establish connectivity between devices and systems to ThingWorx IoT applications via the communication method and hardware best-suited for each scenario.

With ThingWorx, enterprises easily:

- Create and deploy industrial IoT solutions that speed time to market using model-driven application design
- Scale and adapt applications to meet evolving size and security requirements
- Substantially reduce time and complexity connecting third-party applications
- Extend the value of existing technology investments when used for solution deployment and integration

Deploy – The most open and extensible IoT platform available, ThingWorx can be deployed seamlessly on premise and/or in public or private clouds. Enterprises can customize deployment by leveraging existing cloud investments or combining multiple components from a range of cloud providers. Modern architecture enables enterprise-level scalability to millions of connected devices with hundreds of thousands of transactions per second.

Integrate – ThingWorx can readily interface with virtually any other application that supports a RESTful interface. Built-in capabilities substantially reduce the time to connect to third-party applications, such as CRM, ERP, PLM, and SCM. Once integrated, ThingWorx transparently exposes the data obtained from external sources through the ThingModel, making it accessible by all related tools and applications.





Security

The ThingWorx Platform was built from the ground up with security in mind. ThingWorx leverages PKI infrastructure for certificate validation, and its granular security model enables data isolation and service execution.. Key security capabilities include:

Security of Data in Motion	<ul style="list-style-type: none">Use standard protocols securely within strong, firewall-friendly architectureEliminate unauthorized access using secure, agent-initiated communicationsEncrypt communications in transit
Remote Device Visibility and Control	<ul style="list-style-type: none">Interrogate the state of remote devices and control operationsAuthenticate edge devicesDefeat devices outside administrative control
Software Content Management	<ul style="list-style-type: none">• Remotely update devices for security issues in the field• Quickly and easily apply security patches• Remain nimble to evolving threat landscape
Granular Authorization Control	<ul style="list-style-type: none">• Control read/write permissions via templates down to individual properties level• Define organizational construct
Existing Authentication Investments	<ul style="list-style-type: none">• Build on existing security infrastructure using pluggable authentication, including LDAP, active directory, and customized options• Use native authentication for small projects• Implement complex single sign-on that “plays nicely” with other SSO solutions
Accounting and Auditability	<ul style="list-style-type: none">• Log relevant events to support industry audit requirements with adaptable logging sub-system



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