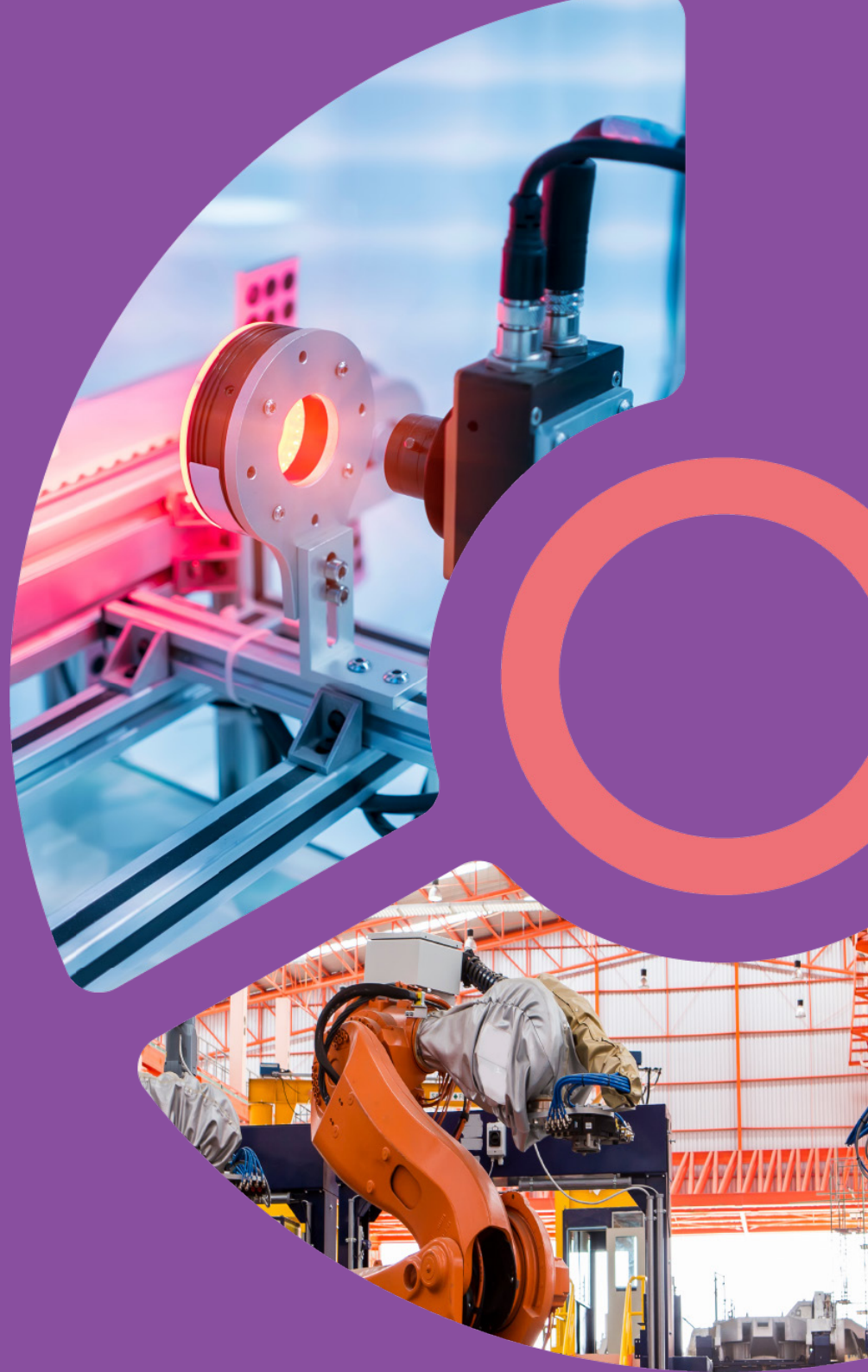




Edge Xpert

Openness, Flexibility and
Choice at the IoT Edge

Edge Xpert is a powerful and open edge software platform. It enables users to easily integrate their southbound OT devices and sensors with their edge decision making, analytics and northbound IT & Cloud systems.



Edge Xpert is a comprehensive yet open and extensible edge computing platform that will greatly decrease OT and IT integration effort, reduce time to market and lower your total cost and business risk.



Openness, Flexibility and Choice at the IoT Edge

What is Edge Xpert?

Edge Xpert is a powerful open edge software platform that enables users to easily integrate their southbound OT devices and sensors with their edge decision making, analytics and northbound IT/Cloud systems. The platform is targeted at IoT edge gateway and server devices, and addresses key business challenges where, until now, it has been difficult to integrate OT and IT systems. The open, vendor-neutral approach of Edge Xpert greatly simplifies that OT and IT integration effort, reduces time to market and lowers the total cost of ownership of an edge IoT strategy.

Leveraging the EdgeX Foundry

Edge Xpert productizes and enhances the latest stable release of the Linux Foundation's open-source EdgeX Foundry platform to provide a commercially-supported solution for Industrial IoT Edge applications. This approach minimizes any risk of open source adoption and is key to users deploying in mission- and business-critical systems. In addition, Edge Xpert includes a range of value add features to provide a complete IoT Edge solution that greatly reduces time-to-market for new projects.

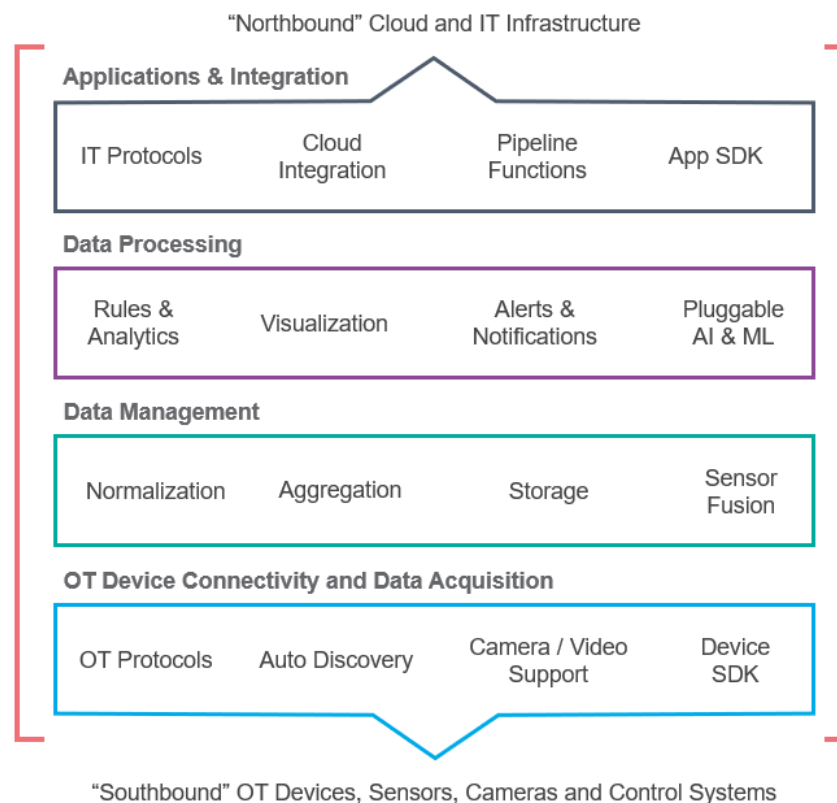
EDGE X FOUNDRY™



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Key Edge Xpert Features

- Complete IoT Edge software platform not tied to hardware, operating system, device or cloud provider
- Modern API-based microservices architecture allowing functionality to be easily enhanced or replaced as needed
- Advanced OT device connectivity with protocol support for Modbus, BACnet, OPC UA, BLE, Siemens S7, EtherNet/IP and many others
- IP camera control and connectivity services to support computer vision AI/ML use cases
- Enterprise IT and Cloud connectivity with integration support for AWS, Microsoft, Google and IBM Cloud platforms
- Edge services to produce business insight including rules, analytics, time series storage, dashboarding and AI/ML
- Advanced graphical tooling to support fast project development and easy operator deployment
- Open SDKs for users to add their own OT and IT connectivity if required
- Available as easy-to-deploy Docker containers for Linux and Windows
- Based on open source EdgeX Foundry project that brings with it an active community ecosystem



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Full Edge Platform Solution

Edge Xpert is comprised of a comprehensive suite of microservices that form a complete IoT Edge Platform. The microservices communicate via standard APIs allowing the services to be easily replaced with new or third party implementations if needed. The delivered microservices include:

- **Device Services** - the real-time device connectivity layer that enables IoT edge devices, sensors and actuators to be connected to the platform. Supports a large number of industrial protocols with SDKs available to create additional connectors if required
- **Core Services** - the core functionality that supports the connection between the northbound and southbound interfaces. Core Services include a centralized persistence facility that enables data to be stored until it can be forwarded northbound
- **Supporting Services** - the set of value-add services that provide business insight at the edge. Includes rules, analytics, dashboarding and alerts plus open integration to other AI & ML packages
- **Application Services** - for connecting the platform to Cloud and IT systems. Includes two-way integration with cloud platforms like AWS, Microsoft, Google and IBM with control of how the data flows. An SDK is provided to help create additional northbound services

- **Security** - services that allow the platform to be used within a secure architecture. Includes a security store to provide a safe storage of private information and a reverse proxy to restrict remote access to the platform's microservice APIs
- **System Management** – services and tooling that support remote administration and facilitate the deployment, configuration and lifecycle management of the platform

Computer Vision

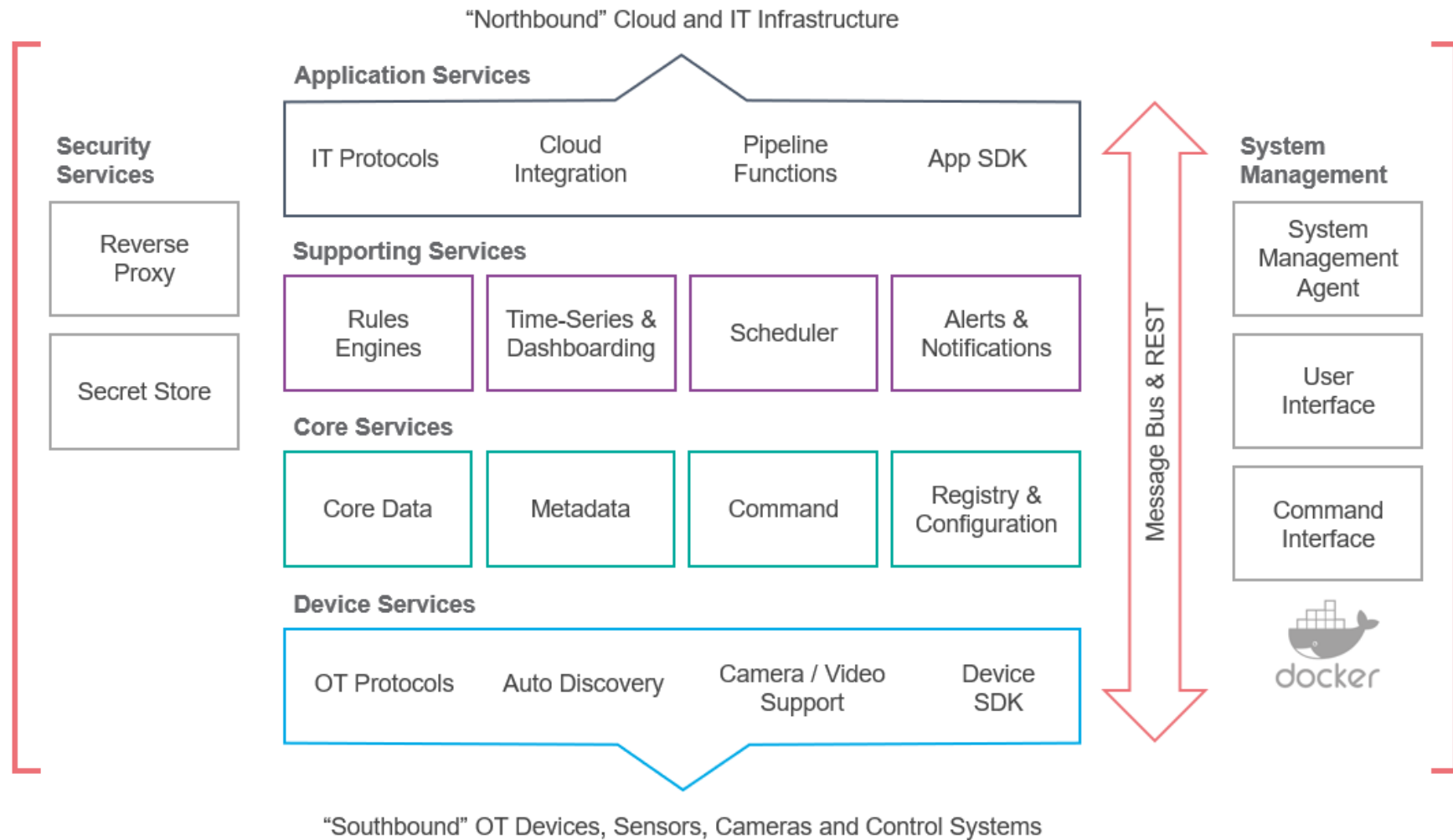
IOTech recognizes that vision inference and AI are emerging as exciting technologies for enabling a whole range of new operational behaviors at the edge. The open nature of Edge Xpert allows users to deploy their choice of vision-based workloads alongside the regular Edge Xpert microservice platform.

In conjunction with its camera connecting services, Edge Xpert can interface with leading computer vision engines and ingest their processing outcomes (e.g., object detection, people count information, etc) just like regular sensor data. Edge Xpert therefore allows users to “fuse” knowledge of the environment based on both physical sensor data and insights inferred from computer vision.



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Edge Xpert Platform Architecture



The functionality provided by the **Edge Xpert** platform enables users to accelerate their Edge IoT system development and bring their solutions to market more quickly.

Edge Xpert Value-Add



Edge Xpert Provides:

- Key value-add IP not available in the open-source EdgeX Foundry
- Full commercial grade support for trusted deployment in business critical applications

Business Benefits:

- Simplified Development Processes
- Faster Time To Market
- Reduced Risk
- Reduced Total Cost of Ownership

Southbound Device Connectivity		
Edge Device and Camera Connectivity	<div><div></div></div>	<div><div></div></div>
Industrial Control Connectivity		<div><div></div></div>
Device Configuration Tooling		<div><div></div></div>
Edge Decision-Making and Control		
Edge Rules	<div><div></div></div>	<div><div></div></div>
Edge Analytics		<div><div></div></div>
Time Series Data Storage		<div><div></div></div>
Dashboarding		<div><div></div></div>
Computer Vision Intergration		<div><div></div></div>
Northbound Enterprise Connectivity		
Cloud Vendor Integration	<div><div></div></div>	<div><div></div></div>
IoT Protocol Support	<div><div></div></div>	<div><div></div></div>
Application Functions SDK	<div><div></div></div>	<div><div></div></div>
Deployment-Ready Support		
Productization and Usability	<div><div></div></div>	<div><div></div></div>
Tooling and Management	<div><div></div></div>	<div><div></div></div>
Security	<div><div></div></div>	<div><div></div></div>
Technical Support Guarantees		<div><div></div></div>
Consultancy, Pilots and Training		<div><div></div></div>
Accelerated Roadmap Options		<div><div></div></div>



Openness, Flexibility and Choice at the IoT Edge

Industry Use Cases & Sample Deployments

IOTech's Edge Xpert platform is a key enabler of many industrial verticals where the integration and normalization of data from OT devices is a requirement for smooth business operations. Edge Xpert has successful deployments in many different verticals including Manufacturing, Building Automation, Smart Energy & Utilities, Oil & Gas, Retail and Transportation.

Remote Monitoring & Telemetry

Edge Xpert is reliably deployed into edge IoT systems that remotely monitor distributed assets in real time. It is a key factor in optimized flow control, accurate fault detection and cost-saving predictive maintenance.

Industrial assets are often supplied by different vendors and provide telemetry data using different edge protocols and data standards. Edge Xpert supports the ingestion and normalization of industrial protocols including Modbus, OPC UA and many others, and so provides a standard integration engine that allows the same business logic and analytics to be consistently deployed at each edge site. This greatly reduces the cost of developing, deploying and managing these complex telemetry systems.

Factory Automation

Many System Integrators and end users are deploying Edge Xpert to help automate and optimize their manufacturing sites. Edge Xpert helps turn vast data sets generated by industrial equipment into insightful and actionable data. It can read real-time data from equipment including sensors, alarms and motor drives used on the factory floor, enabling advanced data analytics and decision making to take place at the source of the data.

The requirement to collect and comprehend a large number of industrial OT protocols make Edge Xpert a clear choice for reducing integration effort and time-to-market. The modularity of the Edge Xpert platform makes it straightforward to deploy only the specific microservices that are required for each customer use case.



Edge Xpert brings key business insight by easily integrating devices, applications and services, across a wide range of Industrial IoT Edge use cases.



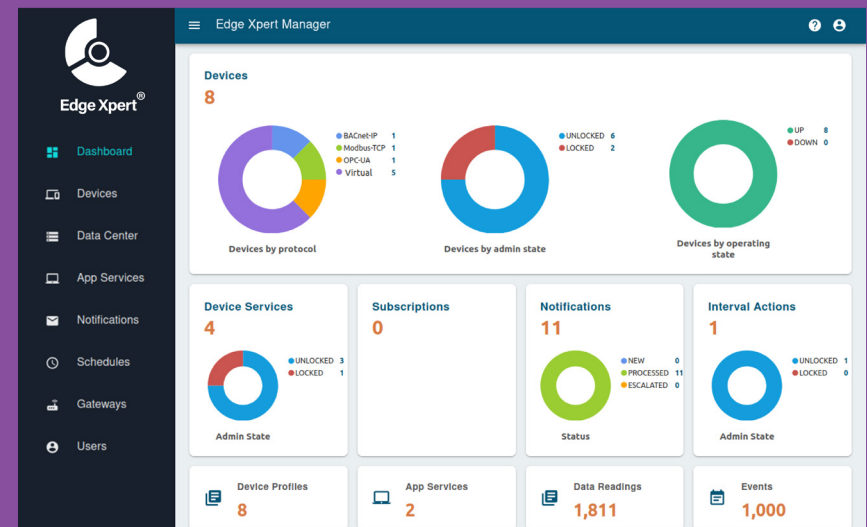
Edge Xpert allows users to realize the benefits of the open-source EdgeX technology but with the confidence that the software can be deployed in the most demanding business-critical systems.

Faster Time To Market

Ease of Use

As well as providing easy to use connectors to a number of OT device protocols and IT & Cloud platforms, Edge Xpert is delivered with key tooling designed to further reduce development effort and time to market

The Edge Xpert Management User Interface allows users to easily administer and interact with a running Edge Xpert system and includes onboarding wizards for configuring the OT and IT connectivity.



Industrial Grade Platform

Edge Xpert allows users to realize the benefits of the open-source EdgeX technology but with the confidence that the software can be deployed in the most demanding business-critical systems. We do this by delivering both the technical and commercial assurances that can only be provided by a professional software vendor.

Along with technical support guarantees, IOtech supplement Edge Xpert by offering professional services that optimize adoption of the technology including on-line training, technical workshops and bespoke consultancy, pilot projects and accelerated roadmap services.



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For additional information on Edge Xpert,
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Visit our website
www.iotechsys.com

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