Edge Central Datasheet

The Open Edge Data Platform

Edge Central is the open, vendor-neutral edge data platform that allows users to easily integrate their southbound OT devices and sensors with their edge decision making, analytics and AI, and northbound IT/ Cloud systems.

Built on the Linux Foundation's EdgeX Foundry framework, it delivers a commercially supported, modular and futureproof solution for:

- **Connecting and managing devices at the edge**
- **Normalizing, processing and analyzing data close to where it's generated**
- **Integrating securely with any IT or cloud environment**

With Edge Central, organizations accelerate time-to-market, reduce integration effort, and lower the total cost of ownership for their industrial edge strategy.

Key Benefits

- **Open & Vendor-Neutral**
  Flexible platform with open APIs and SDKs for seamless integration and extensibility

- **Modular Microservices**
  Deploy the full solution or only the components that are required

- **Platform Independent**
  Works with any hardware and OS, and connects to any device and cloud environments

- **Standards-Based**
  Built on widely adopted industry standards to ensure interoperability and future readiness

- **Intelligent Data Management**
  Structures and delivers data for easy integration and faster time-to-insight

- **Best-of-Breed Integration**
  Incorporate third-party or custom applications for a tailored edge solution

Edge Central Architecture
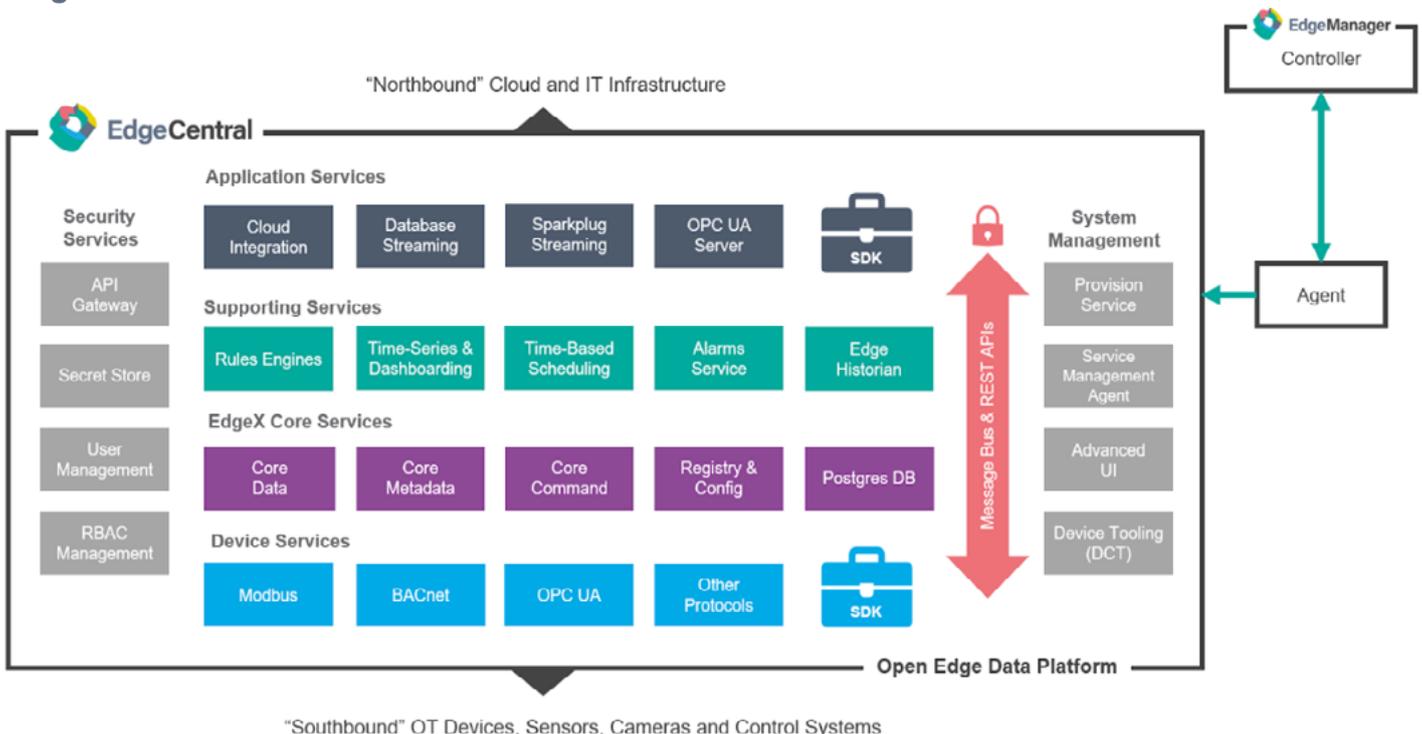
This data sheet outlines the product bundles that our customers can select to provide the best value and flexibility for each of their unique edge computing requirements.

Edge Central	The following services are included as part of a standard Edge Central deployment
EdgeX Core Services: Data normalization, aggregation and storage at the edge	• **Core Data** Stores and manages readings collected from edge devices and sensors • **Core Metadata** Repository for device information and communication details • **Core Command** Provides control and actuation of devices on behalf of applications and services • **Core Keeper** Centralized registry and configuration management for platform services • **Database** Reliable data persistence layer, implemented with PostgreSQL • **Message Bus** High-performance, decoupled messaging backbone, implemented with Mosquitto
Supporting Services: Data processing and analytics at the edge	• **eKuiper (Rules Engine)** Lightweight SQL-based rules and stream processing engine for the edge • **Node-RED (Rules Engine)** Graphical flows engine for configurable decision making, analytics and control • **Scheduler** Executes key edge operations on a timed or interval basis • **Notifications** Delivers alerts and notifications about important platform events • **InfluxDB (Time Series Database)** High-performance time series database with reliable data streaming support • **Grafana (Dashboarding)** Visualization service that integrates with InfluxDB to create data-rich and customizable dashboards

Application Services:
 	
Exporting edge data to northbound IT and cloud systems
	• **Cloud and IT Integration**
	Pre-built connectors (simple configuration, no coding) to stream edge data to:
	  - Amazon IoT Core
	  - Amazon S3 Bucket
	  - Azure IoT Hub
	  - Azure Blob Store
	  - Azure Event Hub
	  - MQTT / MQTT over
	  - WebSocket
	  - HTTP / REST
	  - HTTP (with OAuth2 authentication)
	  - Kafka
	  - InfluxDB
	  - PostgreSQL
	
	• **Application Pipeline Functions**
	Built-in functions for streaming, filtering, transformation, batching, store-and-forward, compression, and security. All can be used in conjunction with the above exporters

Security Services: Keeping the system protected and running securely	• **Reverse Proxy API Gateway** Single, secure entry point for all traffic that prevents unauthorized user interaction. Implemented with Nginx • **Secret Store** Secure repository for managing the tokens, passwords and certificates for each microservice. Implemented using OpenBao • **User Management and RBAC** Supports user creation and management, and fine-grained Role-Based Access Control
System Management: Easy operation and administration of the platform	• **User Interface (UI)** Web-based tooling to administrate and monitor Edge Central on a node • **Command Line Interface (CLI)** Command line tool to start, stop and manage microservices on a node • **Provision Service** Streamlines the provisioning of devices and applications deployed as part of the platform • **System Management Agent (SMA)** Central point for external management systems to operate or manage Edge Central services

Edge Central Device Connectivity	Flexible southbound integration with your choice of device connectors
Device Connectors	Purchase exactly the device connectivity that you need from IOTech's extensive library of industrial edge device connectors. Supported protocols include Modbus, BACnet, OPC UA, camera technologies and many more. Full list available at: https://www.iotechsys.com/device-connectivity/industrial-connectors/
Device Configuration Tooling	The device connectors require simple configuration to specify how each physical device or sensor should be onboarded to the platform. To help design your device configurations with minimal time and effort, the connectors are supported by IOTech's advanced **Device Configuration Tool (DCT)**.

Edge Central Advanced Options	Enhance Edge Central with additional industrial-grade capabilities
OPC UA Server	Centralized, standards-based interface for SCADA and industrial systems to access aggregated device and sensor data. Includes IOTech's OPC UA Browser for exploring, visualizing, and interacting with the server's address space.
Edge Alarm Service	Robust, standards-based solution for normalizing, managing and delivering alarms across heterogeneous edge systems. Built on OPC UA Alarms and Conditions, it provides consistent and interoperable alarm handling — regardless of the source or underlying operational technology. https://www.iotechsys.com/products/edge-central/alarm-service/
Edge Historian Service	Scalable, industrial-grade solution for long-term telemetry and command data storage at the edge. Provides fast, reliable, and secure handling of high-volume, time-stamped data — even in offline or resource-constrained environments. https://www.iotechsys.com/products/edge-central/historian-service/

Edge Manager	*Centralized management for edge nodes and applications*
	IOTech Edge Manager provides a flexible, scalable solution for managing hardware nodes and their edge applications. It is specifically designed to simplify and streamline the deployment of Edge Central.
Key capabilities include:	• **Centralized Control** Manage edge nodes and applications from a single console • **Web-Based UI & Open APIs** Intuitive interface with integration and automation capabilities • **Flexible Workloads** Deploy both containerized and native applications across diverse devices • **Scalable & Resource-Efficient** Supports hundreds to thousands of nodes and runs on constrained hardware • **Automated Provisioning & Security** Streamlines onboarding while providing secure remote access • **Private Registry Support** Fast, secure delivery of container images with caching

Edge Central Developer License
For building and extending custom edge solutions

Edge Central is a comprehensive edge computing platform delivered with reference microservices and functionality ready to deploy. The microservices typically require only configuration in order to collect edge data, perform edge rules and analytics, and to stream data to IT and Cloud platforms.

An Edge Central developer license is required for software engineers and developers who are creating, testing and building their edge solutions with Edge Central. It is a per-developer license for lab use (not required for engineers, technicians or operators on the deployment site).

Includes availability of the Edge Central SDKs that enable creation of new southbound device service connectors (in Go-Lang or C) or new northbound application services (In Go-Lang or Python).

Platform Availability
Applies across all the above offerings

- **Architectures**
  Intel (64-bit) and ARM (32/64-bit)

- **Operating Systems**
  Linux, with installers available for Debian- and RPM-based systems

- **Deployment**
  Container-based deployment with Docker or Podman required

For more information, please email **info@iotechsys.com**, or visit our website **www.iotechsys.com**