

# Enlighted Edge Gateway

A bridge for faster IoT data sharing and integration



**5M**

Sensors installed

Up to **90%**

Lighting energy savings

**1000+**

Customer installations

**60**

Countries and counting

**2M**

Tons of total CO<sub>2</sub> reduction

## Overcoming the challenge of complex data and system integrations

Facility operations leaders face continuous issues around communications between and across disparate systems that comprise their building operations. Different protocols, schedules, and platforms can make these integrations especially difficult, even for the most sophisticated teams. Add the need to adhere to strict security standards and the result is often delays in important business functions.

## Unlocking the potential of smart buildings

The Enlighted Edge Gateway plays a pivotal role in unlocking the full potential of smart buildings by laying the foundation for building automation, energy management, security, and a range of other building applications. Commercial building owners can now achieve increased operational efficiency, ease the effort of application integrations, and make intelligent decisions at the local level. The distributed architecture of Edge

### Benefits

- Facilitates a standard-based, secured communication protocol between building systems using MQTT, DTDL, UDMI protocols, and BACnet/IP
- Enables real-time monitoring, analysis, and control of building systems
- Improves overall building performance
- Reduces reliance on constant cloud connectivity
- Seamlessly integrates with Siemens and third-party building management systems via BACnet/IP
- Improves lighting controls, seamlessly synchronizing switch and motion groups across gateways

Gateway ensures system functionality even during network disruptions or latency, reducing reliance on constant cloud connectivity.

## Standards-based communication

The Enlighted Edge Gateway offers seamless integration with Siemens and third-party systems through BACnet/IP, allowing for multi-protocol communication. It also facilitates streaming sensor data via standard protocols. MQTT (Message Queuing Telemetry Transport), a lightweight messaging protocol designed for IoT, employs a publish-subscribe model for efficient data transmission.

The Enlighted Edge Gateway's Agents publish MQTT Topic messages, which are then received by MQTT brokers and subscribed to by interested clients. These MQTT data streams consist of concise messages containing a topic and a payload, ensuring fast and efficient communication between devices.



**A frictionless and more stable way to integrate disparate systems for better real estate decisions. Maximize savings, reduce inefficiency, and easily manage data communications.**



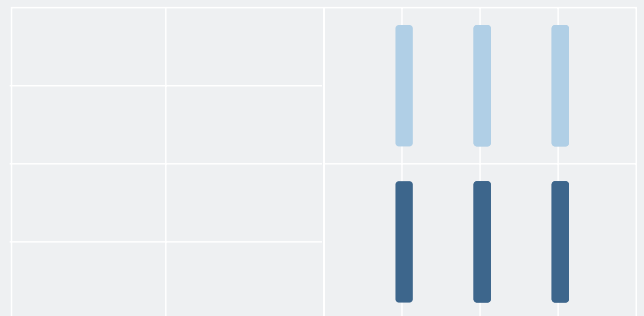
**COLM NEE**

Head of Product, Enlighted



## Harness real-time data insights

- Power your building portfolio with Enlighted's real-time MQTT data stream
- Localized data processing, reducing latency, and enabling real-time decision-making
- Enhanced security and privacy by keeping sensitive data local and minimizing the risk of data breaches
- Protected by industry-leading security with encryption



## Enlighted Edge Gateway architecture

The Enlighted Edge Gateway can enable multiple Agents as communication portals to other application software and switch hardware to serve various integration purposes. The agent types today fall into three categories:

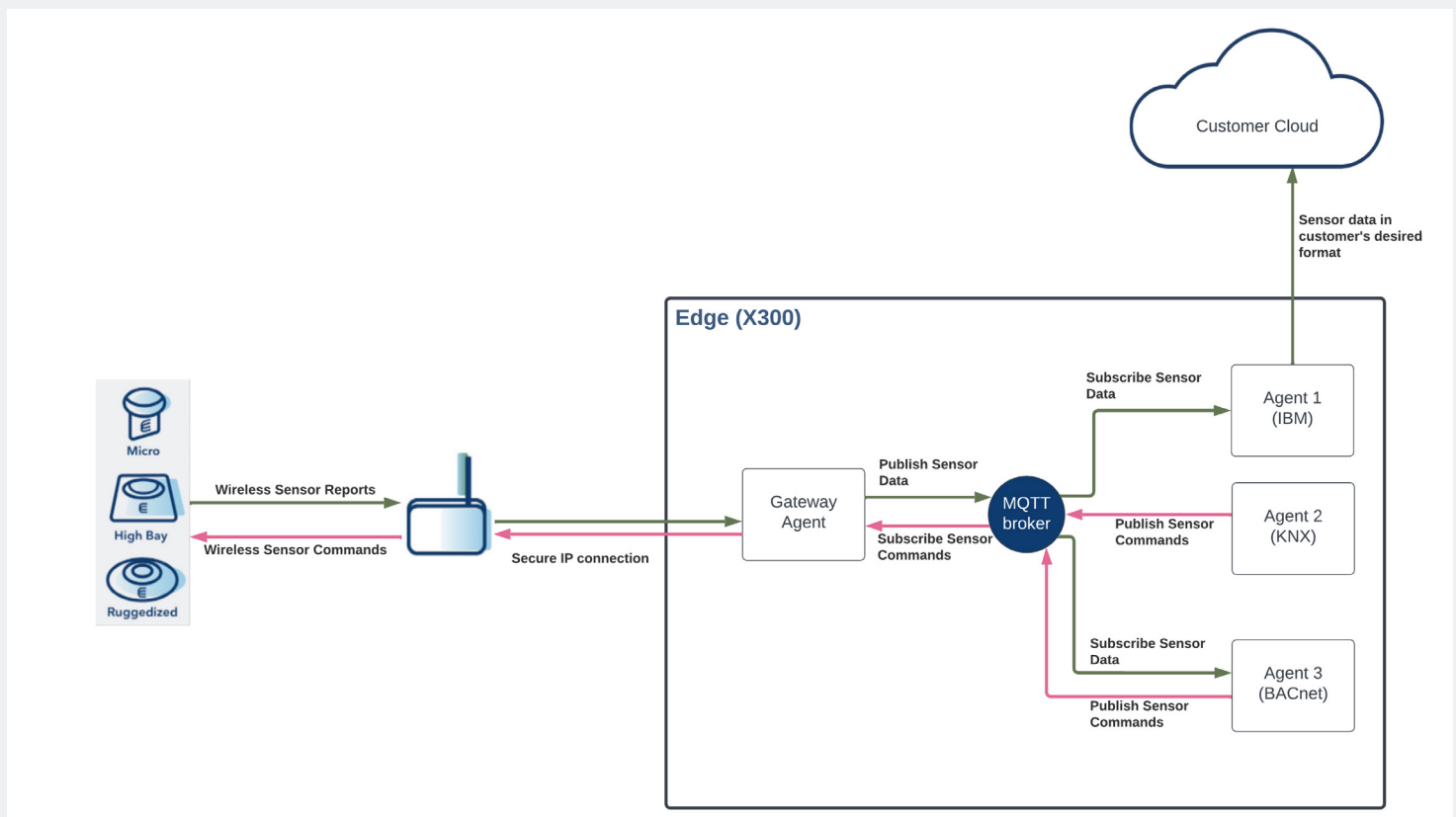
- Agent 1**

The proliferation of applications that use smart IoT building data is on the rise. However, gaining easy access to this sensor IoT data is not always easy or even possible. With Enlighted’s Lighting Solution, combined with the Edge Gateway’s Agent, multiple systems can now begin leveraging IoT data. These include IBM’s Tririga, BI reporting tools such as Tableau and a host of other new applications.
- Agent 2**

This future KNX Agent enables light switch commands from external KNX systems to override standard lighting settings (profiles) as established in the Enlighted Lighting Solution, allowing occupants to directly control for immediate lighting needs. Once a user specified time limit is reached, the lighting setting will return to the normal operating configuration.
- Agent 3**

This agent type facilitates communications between the Enlighted Lighting system (via Enlighted Manage), Enlighted Sensors and third-party BMS via BACnet/IP. IoT data is provided directly to the third-party BMS via BACnet/IP, such as Siemens Desigo, to perform occupancy-based HVAC control. Additionally, commands can be received from the third-party system to change the lighting mode for a user specified period of time, after which it will revert to the Enlighted Lighting configuration.

### Diagram shows integration of Enlighted Solutions with multiple Agent types

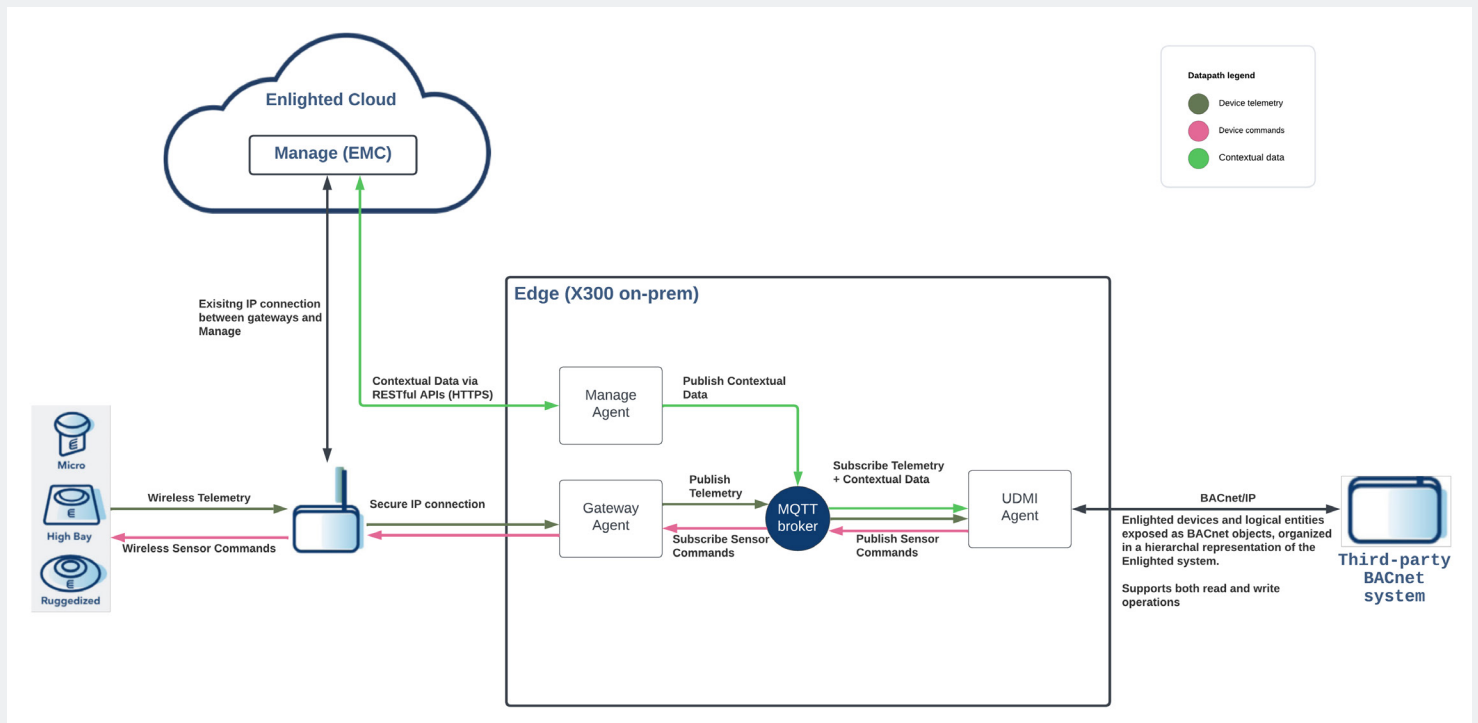


## Enlighted Edge Gateway architecture for BMS integration with the Enlighted Lighting Solution

One of the primary functions of the Enlighted Edge Gateway is to facilitate communications between the Enlighted Lighting system (via Enlighted Manage), Enlighted Sensors and third-party BMS via BACnet/IP. With this architecture:

- Building occupancy data can be transmitted directly via the Enlighted Edge Gateway to a third-party BMS system, such as Siemens Desigo, to enable occupancy-based HVAC control (purple line). The result of this integration can result in HVAC energy savings of up to 35 percent, helping customers achieve reduced costs and sustainability goals.
- Encrypted communication is facilitated via standards-based MQTT protocols.
- The Enlighted Edge Gateway can accept lighting override commands from third-party BMS systems or via occupant action to dim or brighten lights, based on user-defined configurations (red line).
- Commands are enabled for a specified period of time (user defined), at which point the original configuration from Enlighted Manage will be reapplied.

Diagram shows integration of Enlighted Sensors, Enlighted Manage, and third-party BMS via BACnet/IP



## Enlighted Edge Gateway features

### System functionality

- Provides MQTT telemetry data streams from Enlighted System to customer's data repositories
  - » Agents available for streaming telemetry data are IBM, UDMI, and DTDL software applications
  - » Building Management System (BMS) integration via BACnet/IP and the BACnet Agent
  - » Provides low-latency lighting control inputs from third-party systems, such as BACnet/IP and Dry Contact Closure devices
  - » Integrates with Siemens Desigo Room Automation system via BACnet/IP
- Cloud-based services and applications can be offered to on-premises Enlighted Manage customers in future releases
- Enables the migration of on-premises Manage installations to the Cloud-based Enlighted Manage in the Cloud (EMC) while maintaining support for on-premises BMS or other third-party systems
- Enhances the Enlighted Manage Lighting portfolio performance by providing low-latency local lighting control inputs and allowing for the use of cloud-based applications
- Enables cross-Gateway communication of Switch and Motion Groups
- Provides Enlighted system data for building optimization and data analytics

### Multi-protocol communication

Offers multi-protocol types of communication to Siemens and third-party systems via BACnet/IP, as well as streaming sensor data via MQTT, DTDL, and UDMI protocols

### Data security

TLS encryption for TCP/IP with the use of a 2048-bit certificate and SHA-256 Cipher enable the highest standards of Corporate Data Security requirements

### Flexible deployment

The Enlighted Edge Gateway can be deployed to any site, independent of Enlighted Manage on premises or in the cloud.



Building Robotics, Inc.,  
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### Turn Everyday Spaces into Extraordinary Places

Wherever space, people and work meet, Enlighted empowers organizations with the technology to transform real estate spaces into regenerative places that fuel positive impact for people, portfolio, and our planet.

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