MQTT in zenon

Enhancing reliable and secure connectivity while enabling Industrial IoT

MQTT (Message Queuing Telemetry Transport) integration in zenon enables industrial automation and energy professionals to establish reliable and secure communication systems.

MQTT

ADVANTAGES FOR CUSTOMERS WHO USE MQTT IN ZENON

Users can benefit from zenon's seamless integration in industrial automation and the energy industry such as:

▸ MQTT is a flexible, scalable, and reliable solution for remote IoT sensors due to its low overhead and bandwidth consumption. The zenon Software Platform allows for centralized operational data storage, enabling continuous data transfer from fieldbus levels to the cloud within one system, ensuring high reliability and scalability in IoT applications.

▸ The zenon Software Platform with MQTT offers benefits for 3rd party applications and is advantageous for messaging systems allowing business to make informed decisions based on valuable process insights. MQTT ensures fast and efficient message delivery with minimal power consumption, making it suitable for wireless networks with varying latency levels.

ENHANCED INTEROPERABILITY AND FLEXIBILITY

Transparent payload descriptions in MQTT are crucial for interoperability and flexibility. MQTT is data-agnostic and can handle various data formats such as JSON, Text, XML, and Binary. Application-specific payloads can be used as long as destination clients understand them. The MQTT payload format is flexible, containing any data or information a client wants to send.

THE SECURITY BENEFITS OF MQTT

zenon Service Engine requires outgoing connections to connect to the MQTT broker for online data. MQTT connection security can be achieved using username and password, with TLS and digital certificates for enhanced security.

BEGINNING OF THE MQTT JOURNEY WITH ZENON:

MQTT is an important way for communication and data exchange between zenon and third-party systems. zenon offers multiple alternatives for MQTT communication, in order to present the best solution to users fitting their connectivity and project requirements. Integrating MQTT within zenon expands the platform's capabilities, enhancing flexibility, openness, and interoperability across heterogeneous production facilities.

.NET DRIVER

The .NET driver allows users to implement protocols not supported by the platform. The flexible and non-standardized nature of MQTT communication make .NET driver an alternative solution for connecting with MQTT-based applications.

COPA-DATA offers a .NET drivers Github repository (https://github.com/COPA-DATA/DriverExtensions) for demonstrating the integration possibilities of custom protocols, offering sample codes and documentation for MQTT-based applications.

ADD-IN FRAMEWORK

zenon offers an Add-In Framework for developers to extend software functionality by creating custom add-ins that integrate MQTT communication. This allows for MQTT connections, subscriptions, and message publishing. The Add-In framework is a suitable option for the developers having the understanding of the framework and programming concepts.

MQTT IN ZENON LOGIC

zenon Logic offers function blocks for manual implementation of MQTT communication, providing customization and control. It supports MQTT version 3.1 and 3.1.1 via TCP/IP and optionally also with TLS. The decision should be based on the project's needs, the expertise of the development team, and the availability of resources. The IEC61131-3 programming languages like Structured text might be easier for automation engineers' knowledge.

THE BIGGER PICTURE IN SERVICE INNOVATION: ZENON IIOT SERVICES

If you have needs that go beyond MQTT, you'll need a reliable and resilient platform like zenon IIoT Services. zenon IIoT Services relieve operational burdens and enable you to better focus on strategic initiatives to redefine connection in the context of continuing digital transformation. This, in itself, is an out-of-the-box system with no programming required. With maintenance by the COPA-DATA team, efficiencies are met.

FAST FACTS

▸ MQTT is specifically designed for IoT applications in low bandwidth and unstable network environments.
▸ MQTT's publish-subscribe model enables real-time data exchange in zenon, enabling timely decision-making and predictive maintenance.
▸ zenon optimizes production facilities using MQTT communication, collecting real-time data for detecting inefficiencies and improving productivity.
▸ zenon IIoT Services, in addition to MQTT, offer a secure and comprehensive solution for connecting industrial networks to web and cloud services, facilitating data exchange and simplifying data management and integration with third-party systems, making it an essential tool for industrial automation.