

IoT Bridge for Snowflake

Snowflake's platform architecturally scales compute separate from storage to deliver a truly elastic, performant, flexible, and affordable solution. IoT Bridge for Snowflake delivers a tool, purpose-built for Snowflake, that connects manufacturing and OT data utilizing the open standard MQTT Sparkplug integrating modeled data making it available in a no code easy to implement solution, transforming that data for organizations to derive insights.

IoT Bridge for Snowflake is an application that is deployed as a standalone application running on Windows or Linux, via AWS Marketplace as a launchable Amazon Machine Image (AMI) in AWS EC2, or via Microsoft Azure as a virtual machine. It connects to an MQTT Server (such as [Cirrus Link's Chariot MQTT Server](#) or [MQTT Distributor](#)) and consumes MQTT Sparkplug messages from Edge devices. After receiving messages that are properly formatted using Sparkplug Templates, it then pushes that data into Snowflake in a form that it can consume. This model continues Cirrus Link's vision of 'one source of truth' at the Edge that can be pushed from the OT networks to IT networks without complex data transformations or manipulation as it flows from one system to the next.

IoT Bridge can be deployed in the environment shown below without the need for any custom code to be written. Using [Inductive Automation's Ignition platform](#) at the Edge with Cirrus Link's MQTT Transmission module, a wide range of information can be automatically gathered and published. This includes but is not limited to [Inductive Automation's OPC modules](#) and [Cirrus Link's EFM modules](#). Through configuration with these tools, data is automatically captured and published as Sparkplug based MQTT messages to an MQTT Server. From there, IoT Bridge consumes this data and again automatically pushes that data to Snowflake. It automatically consumes the data, attaches attributes and metadata, and updates values as new Sparkplug MQTT messages flow through the system. Again, this is done without being required to write any code at either the Edge or in the Cloud.

IoT Bridge performs the following functions.

- Connects to an MQTT Server to be able to receive MQTT Sparkplug messages from the Edge devices
- Connects to Snowflake to do the following
 - Self-learning and auto-creation of data models and assets in Snowflake
 - Automatically pushes data to Snowflake and updates measurements in real time as messages flow through the MQTT Server