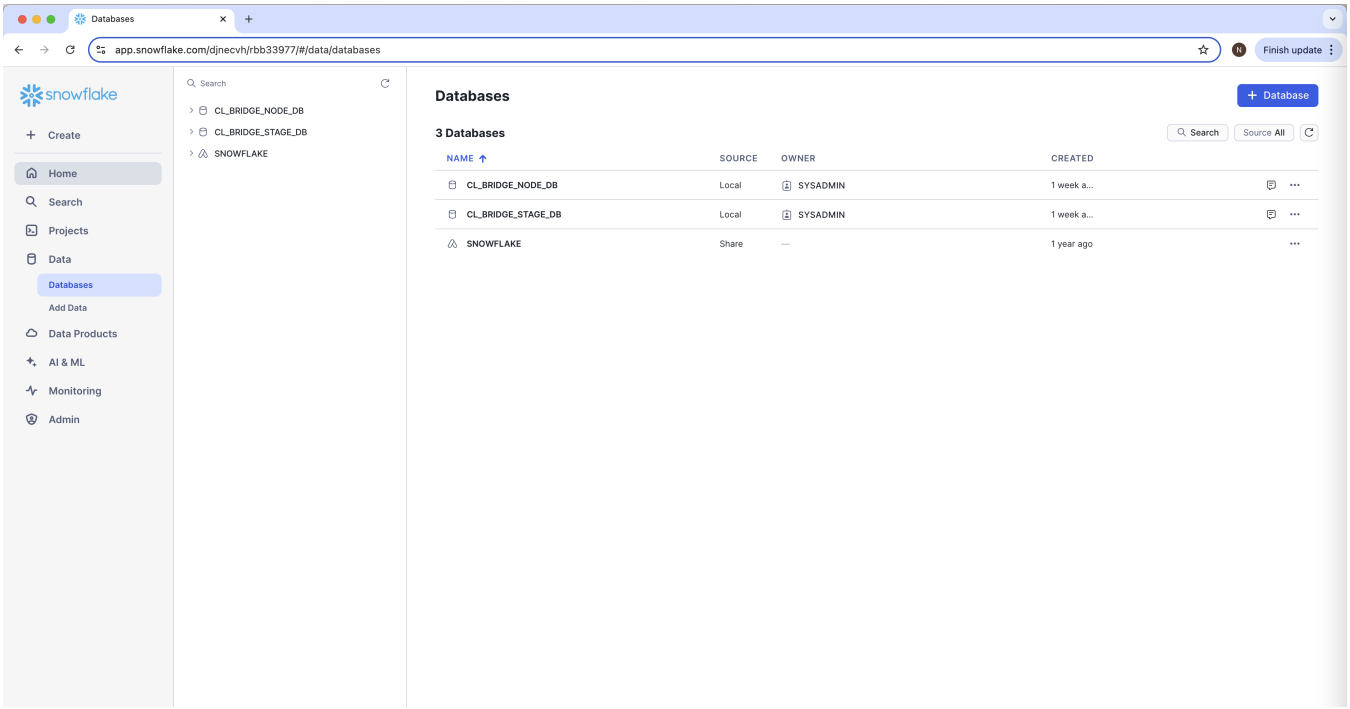
IBSNOW: Viewing the data in Snowflake

> **New IoT Bridge for Snowflake Available**
>
> This document covers v2.0.0 and older versions of IoT Bridge for Snowflake. It now ships as part of Chariot. To see the latest IoT Bridge for Snowflake documentation, go to IoT Bridge for Snowflake in Chariot.

Data can be view in the databases created by the Snowflake Setup Scripts during your initial setup:

- Staging database created by SQL Script 01 (e.g., CL_BRIDGE_STAGE_DB)
- Node database created by SQL Script 02 (e.g., CL_BRIDGE_NODE_DB)



Terminology

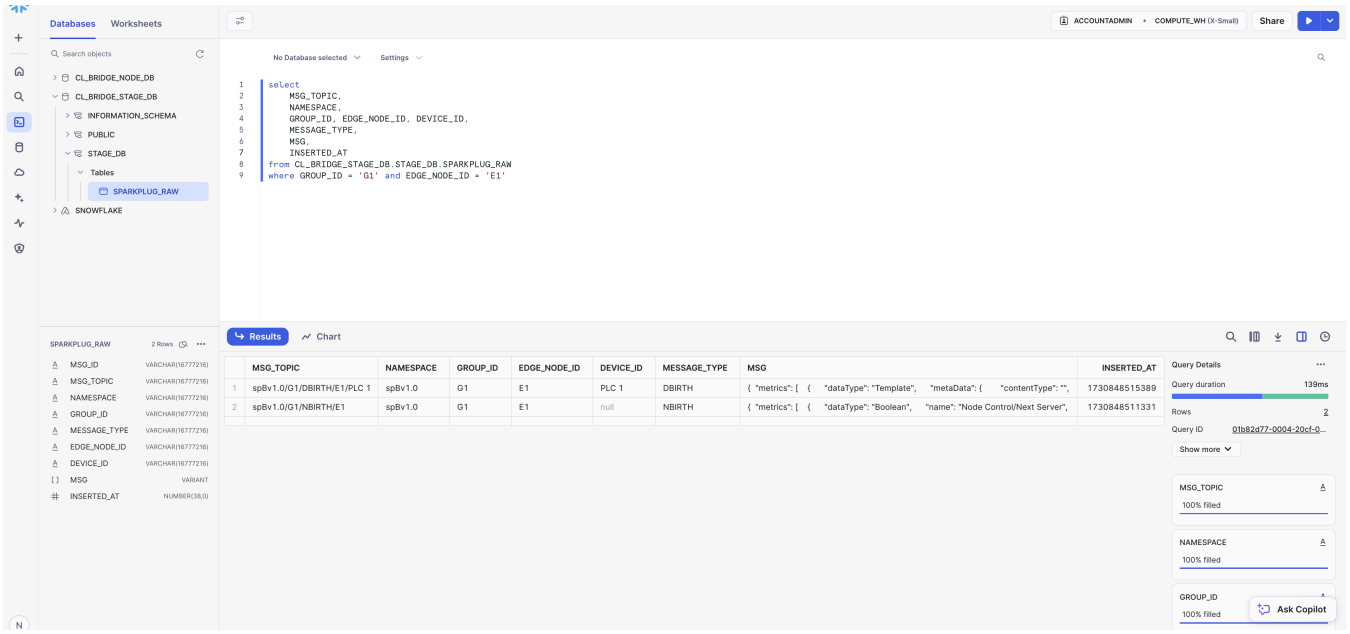
As the data moves from the Ignition Edge device through MQTT Sparkplug and into Snowflake different terminology will be used with the equivalence shown below:

Ignition Edge	MQTT Sparkplug	Snowflake	Snowflake tables/views
Ignition UDT Definition	Sparkplug Template	Model	Template_Reference
Ignition UDT Instance	Sparkplug Template Instance	Model Instance	Device_Name

Staging Database

The Staging database contains only a single table, SPARKPLUG_RAW. This table contains information derived from each Sparkplug message, like the Sparkplug IDs: GroupId, EdgenodeId and DeviceId, the message timestamp, the model / model instance, the raw message payload in JSON, etc.

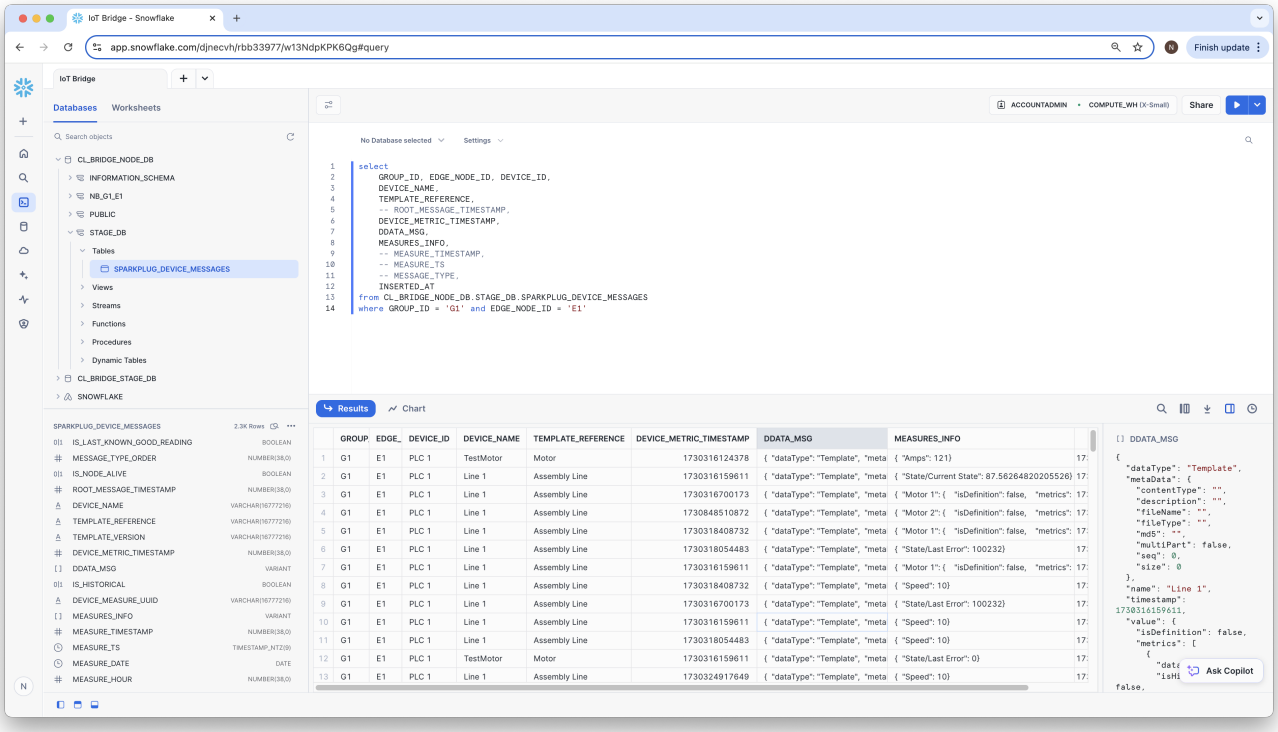
The table is populated by the Snowflake Snowpipe Streaming API as data is streamed in by the IoT bridge.

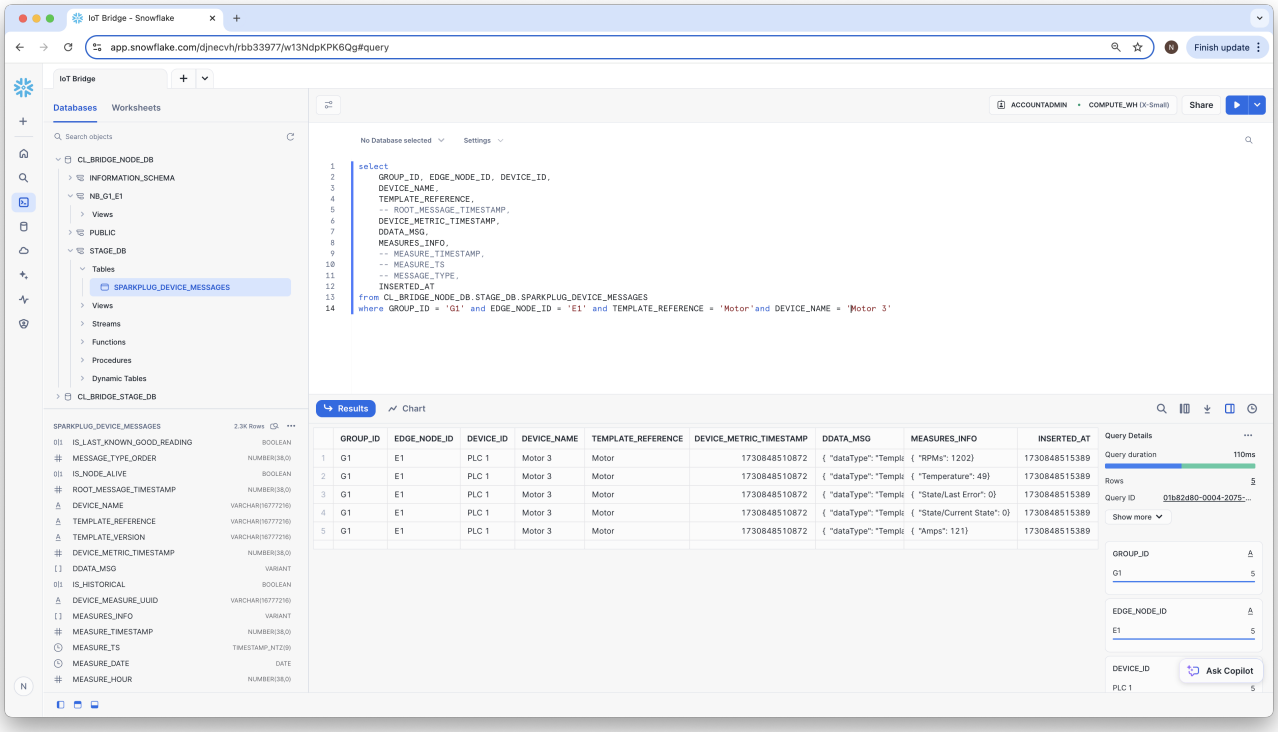


Node Database

The Node database also contains only a single table, SPARKPLUG_DEVICE_MESSAGES, but also has additional views, user defined functions, store procedures, streams, etc.

The SPARKPLUG_DEVICE_MESSAGES table contains partially processed data where each row in the table is a single message containing data for each model instance (aka. Device Name). This data is sourced from SPARKPLUG_RAW table and is inserted by the synch_device_messages() stored procedure. The synch_device_messages() stored procedure is executed on demand by the IoT Bridge for Snowflake.



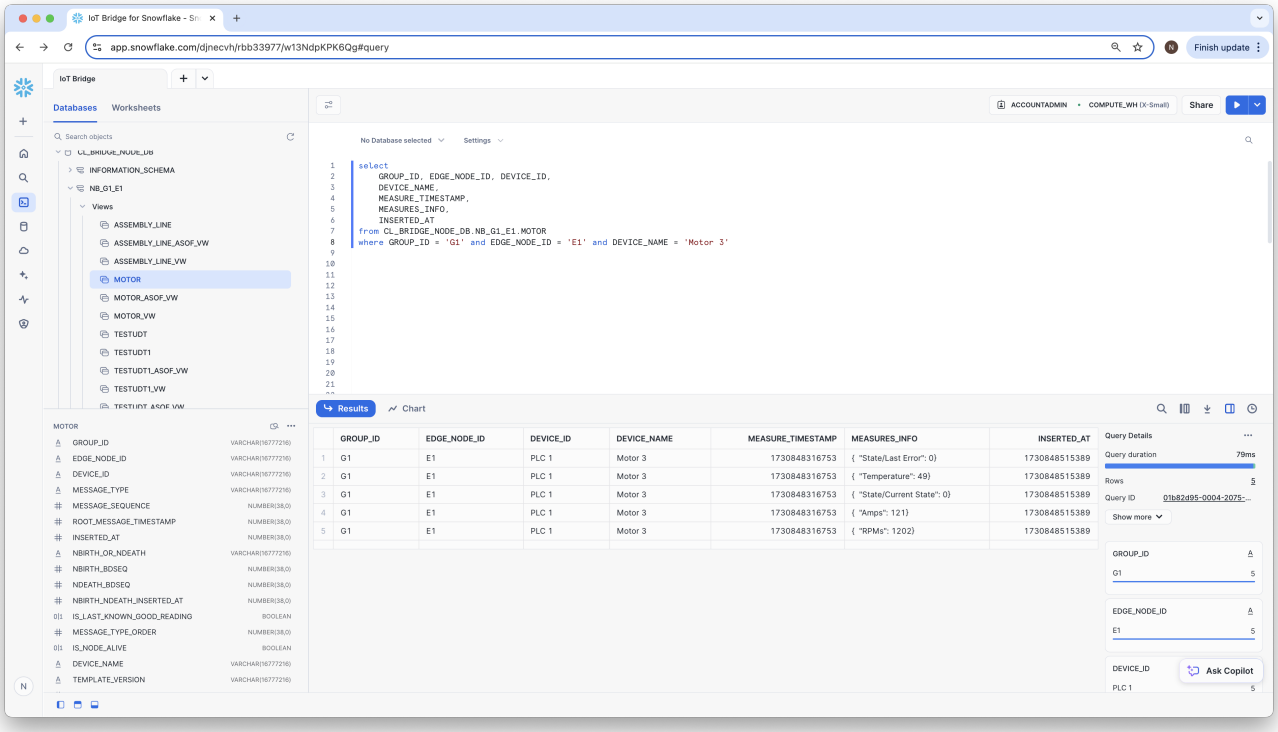


The IoT Bridge for Snowflake will automatically create a new schema in its “Node” database for every Sparkplug edge node it finds. The Bridge will then create Views within this schema for each model found in the Sparkplug edge node data ingested via the bridge . There are three views per model:

Base View

This view contains the model instance tag data where each row is a single tag change per model instance. Tag change values are still encoded in JSON in the MEASURES_INFO and DDATA_MSG columns.

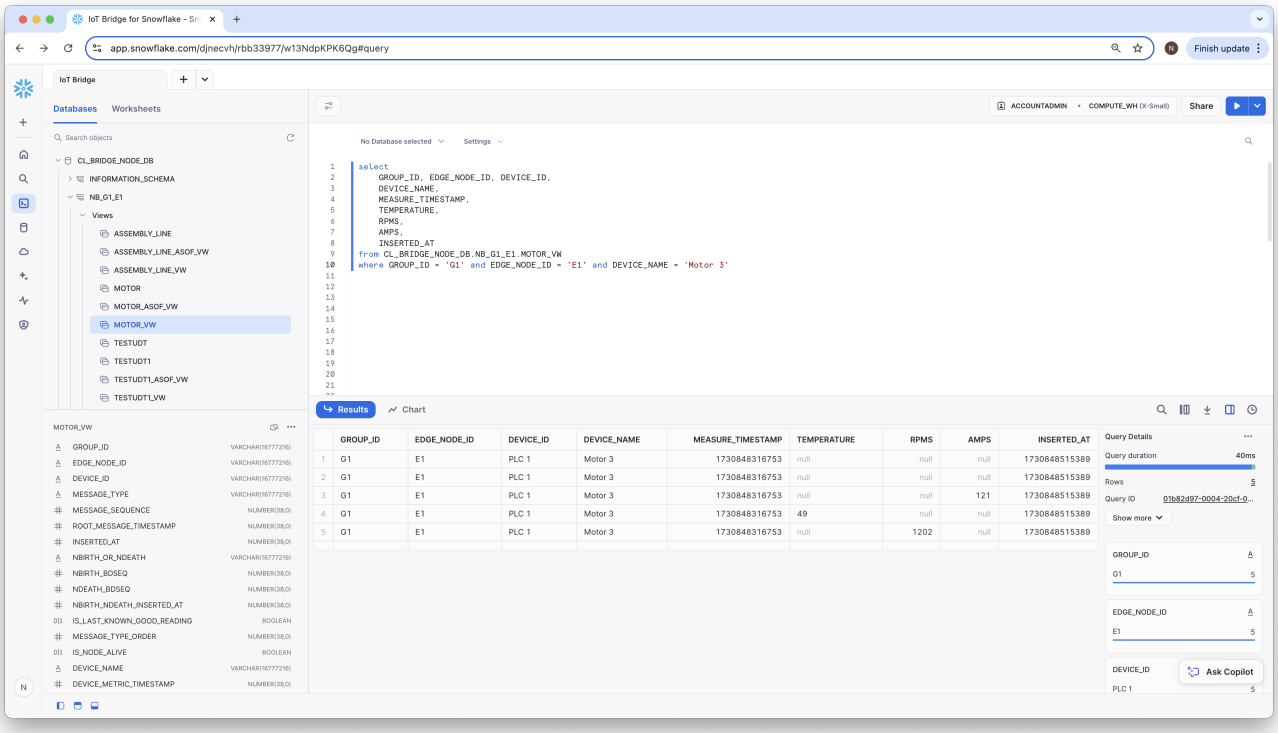
- Example: CL_BRIDGE_NODE_DB.NB_GROUP_EDGE.MOTOR



Intermediate View

This view contains the model instance tag data where each row is a single tag change per model instance. In this view, each model instance tag is separated out into its own column with their values. This view will show each individual model instance tag change and the tags that did not changed will be marked as null.

- Example: CL_BRIDGE_NODE_DB.NB_GROUP_EDGE.MOTOR_VW



Asof View

This view is basically the same as the Intermediate view - each model instance tag is separated out into its own column. However, each row in this view has the null values from the Intermediate views removed (unless the tag change really had a null value) and the last known good value for the model instance tag will be replicated in its column. Said another way, each row will have the last known good values for all model instance tags.

- Example: CL_BRIDGE_NODE_DB.NB_GROUP_EDGE.MOTOR_ASOF_VW