

TECH NOTE: Stream data from catman to InfluxDB Cloud

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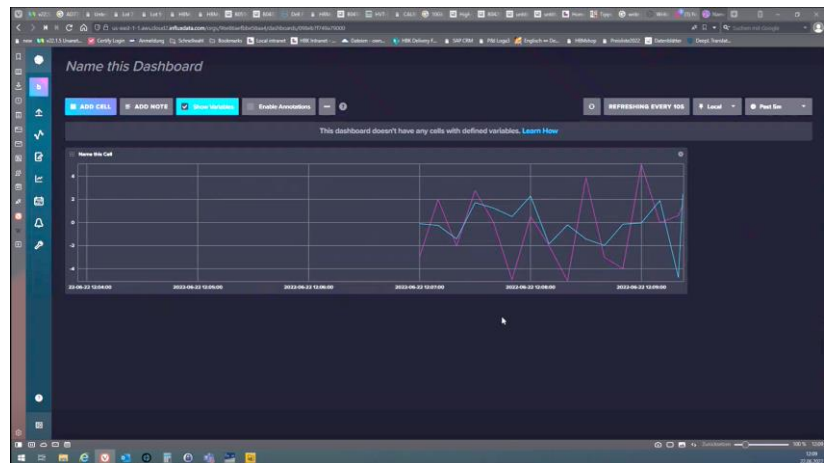
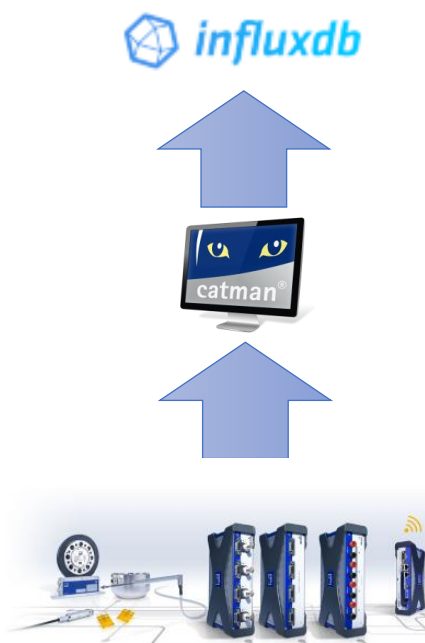
Abstract

This Tech Note describes how data can be streamed from catman to an InfluxDB database and visualization dashboard.

Intro

This TechNote describes how data acquired with catman DAQ software can be published in an InfluxDB dashboard. InfluxDB is one of the leading Time Series Database systems. A variety of dashboard visualization systems are capable to access data stored in an InfluxDB database. See <https://www.influxdata.com/> for details about the Influxdb databases.

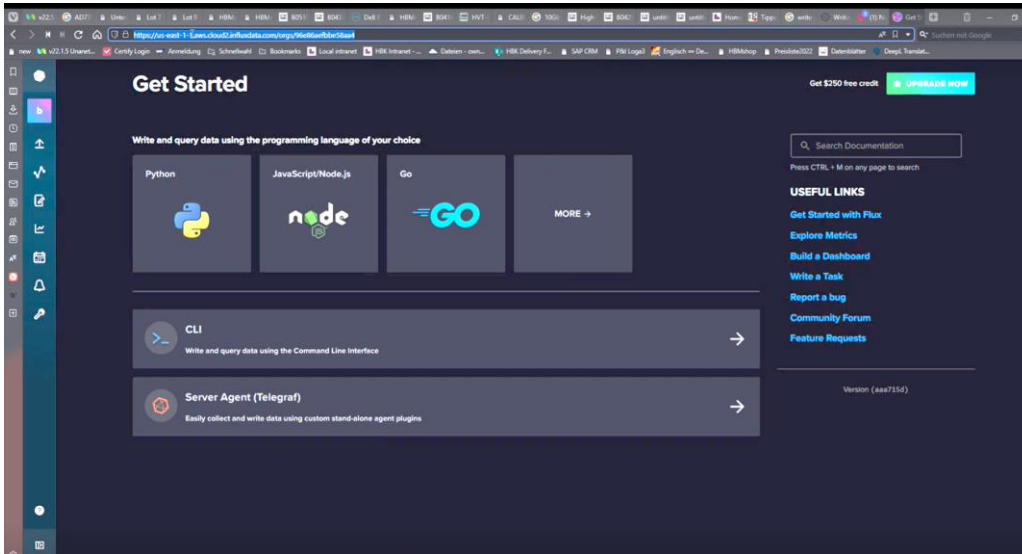
This Technote describes how data acquired with QuantumX, SomatXR or MGCplus can be visualized in InfluxDB in a web-based dashboard easily. A steady connection to reach the InfluxDB server is needed to continuously push data live to the database.



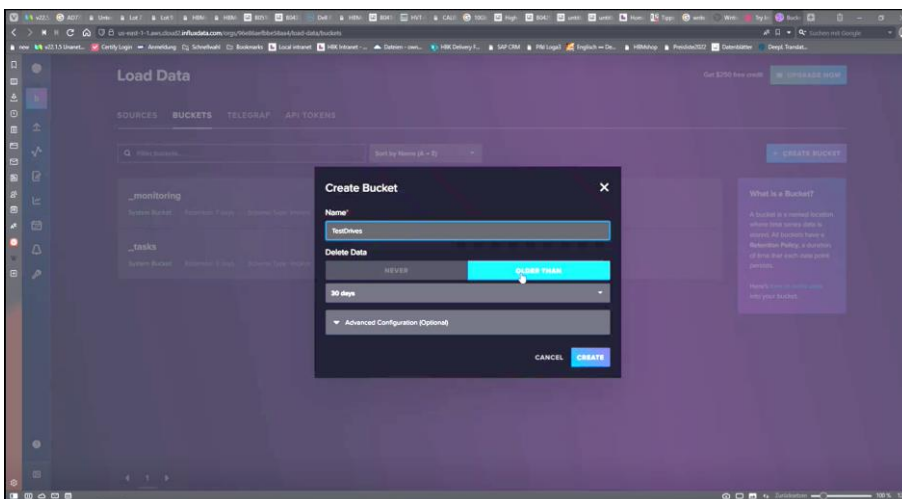
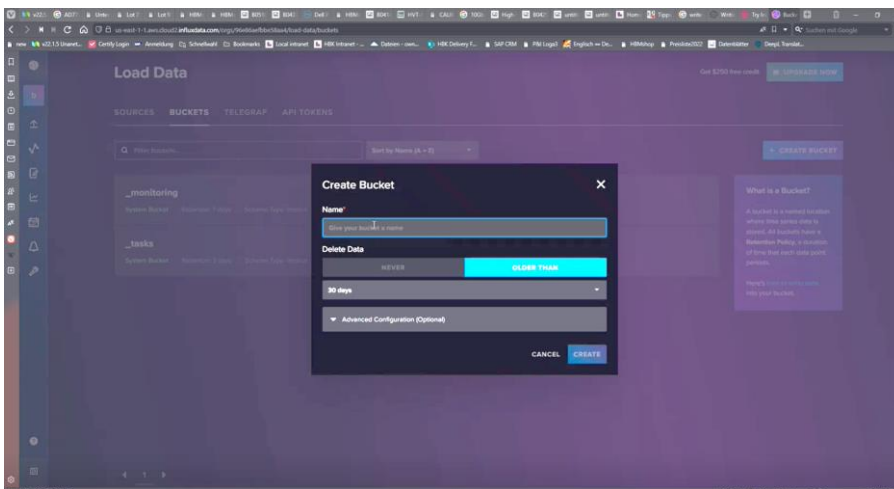
In the next section we will explain the necessary steps in catman to initiate a data transfer to an InfluxDB database. If you want to use an InfluxDB server in your local network download it from this site.

1. Setup InfluxDB

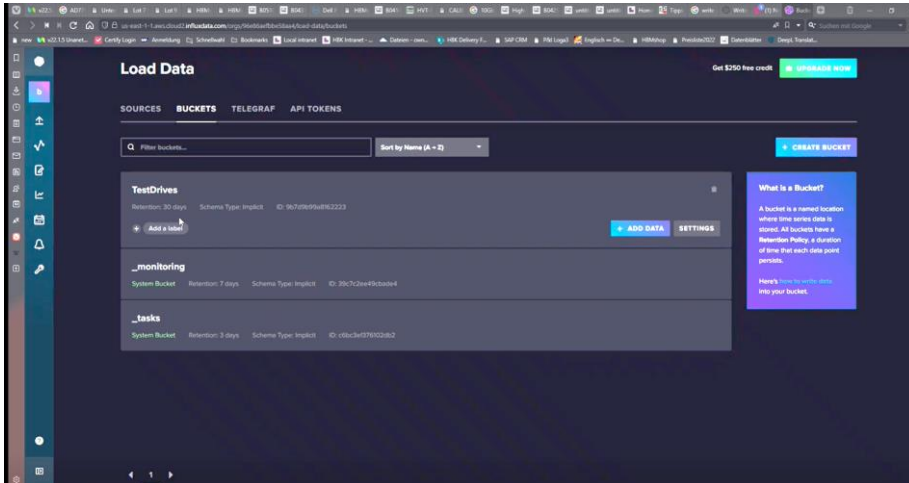
For the demo we are using the free InfluxDB Cloud.



First create a bucket and give the bucket a meaningful name:



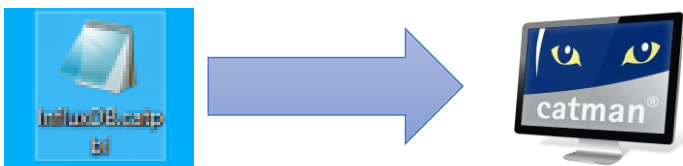
In the exmple we created a bucket called “TestDrives”



2. Create configuration file

To enable catman to send data to InfluxDB the right configuration settings are required. It is possible to send the data encrypted via SSL using HTTPS (from catman 5.6.1 version) or non-encrypted via HTTP. In case if the data need to be sent encrypted some additional information need to be added to the configuration file. Therefor the simplest way is to open an editor and add the required configuration information. The configuration file is read by catman software at a later point of time.

Important: If the file does not exist, create a new text file and save it with the file ending “.catpbi”



The configuration file must have a specific structure and contain the red marked keywords.

Type	Example code
Non-encrypted	<pre>SERVER=INFLUXDB \$endpoint = "http://localhost:8086/api/v2/write?org=max.mustermann@hbkworld.com&bucket=TestDrives&precision=ns" \$measurement = Demo_1 \$token = Bfp0ziNxBNtKgjO4Lco_fG6yd5n7rby_hw4KTYI0wudbzQ1iLjFXDOEYHdMQ8OhCJBDZZ5xQPcG2-GxwyknvHxQ==</pre>
Encrypted via SSL	<pre>SERVER=INFLUXDB \$endpoint = "https://europe-west1-1.gcp.cloud2.influxdata.com/api/v2/write?org=max.mustermann@hbkworld.com&bucket=TestDrives&precision=ns" \$measurement = Demo_1 \$token = Bfp0ziNxBNtKgjO4Lco_fG6yd5n7rby_hw4KTYI0wudbzQ1iLjFXDOEYHdMQ8OhCJBDZZ5xQPcG2-GxwyknvHxQ==</pre>

Example of how a configuration file can look like in an editor

The **measurement** is a subset name that can then be selected in InfluxDB to display data

The **endpoint** needs to be specified and is the address provided by InfluxDB

The **organisation (org)** is the e-mail account

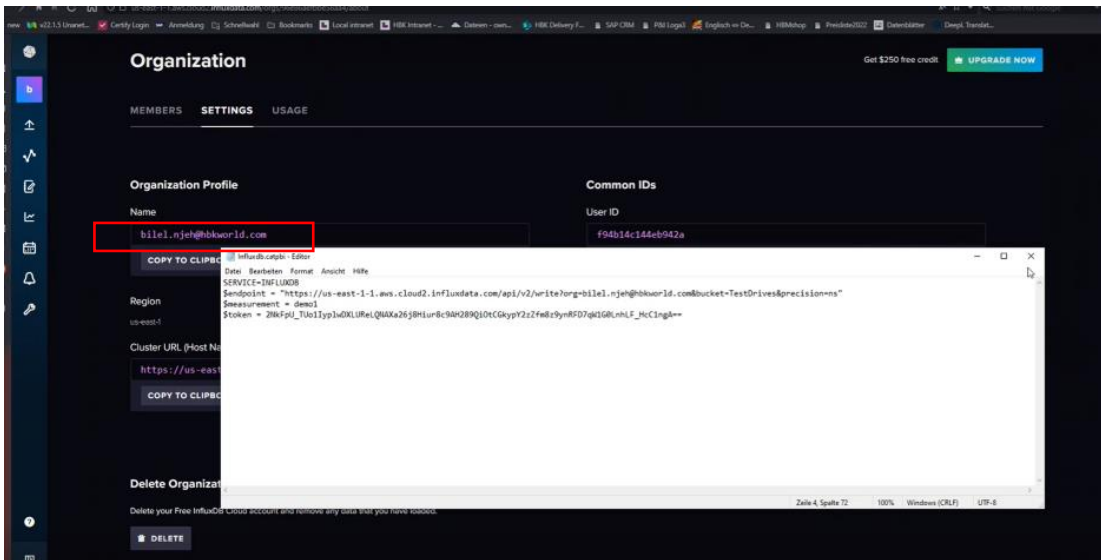
The **token** needs to be created within InfluxDB and needs to be copied into the configuration file

The **bucket** needs to have the same name as the bucket in InfluxDB

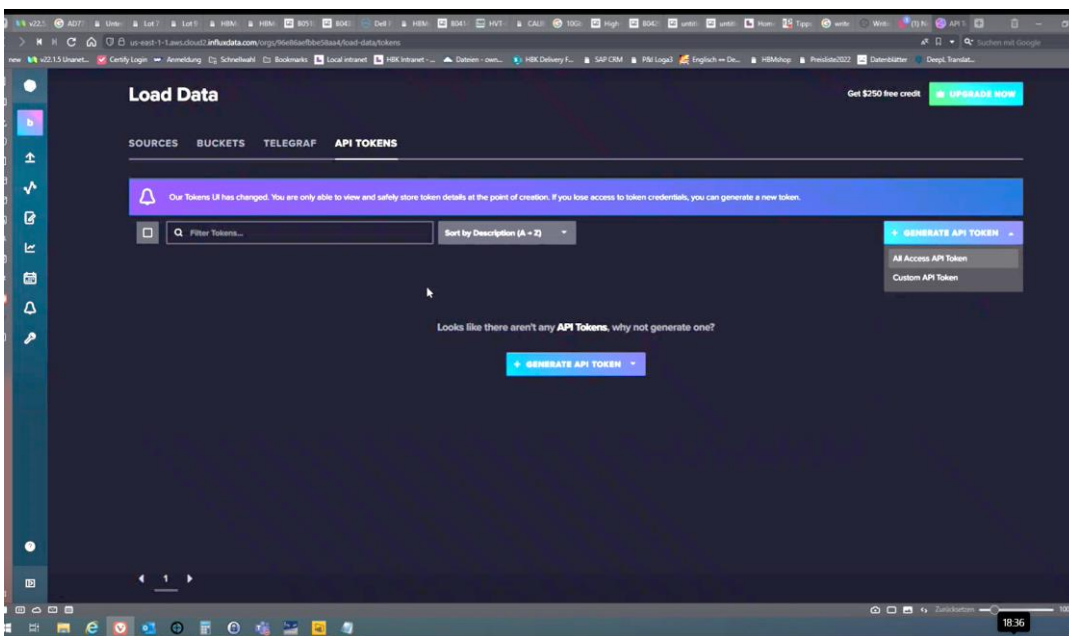
Endpoint:

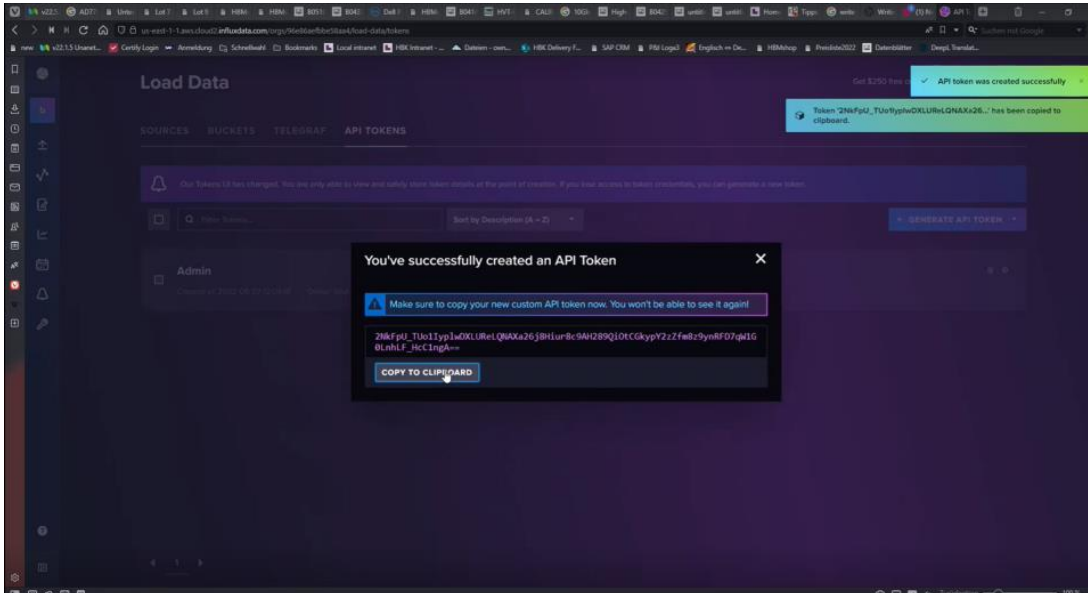
Can be extracted from InfluxDB under “Cluster URL”

Organization (org):
Can be extracted from InfluxDB under "Name"



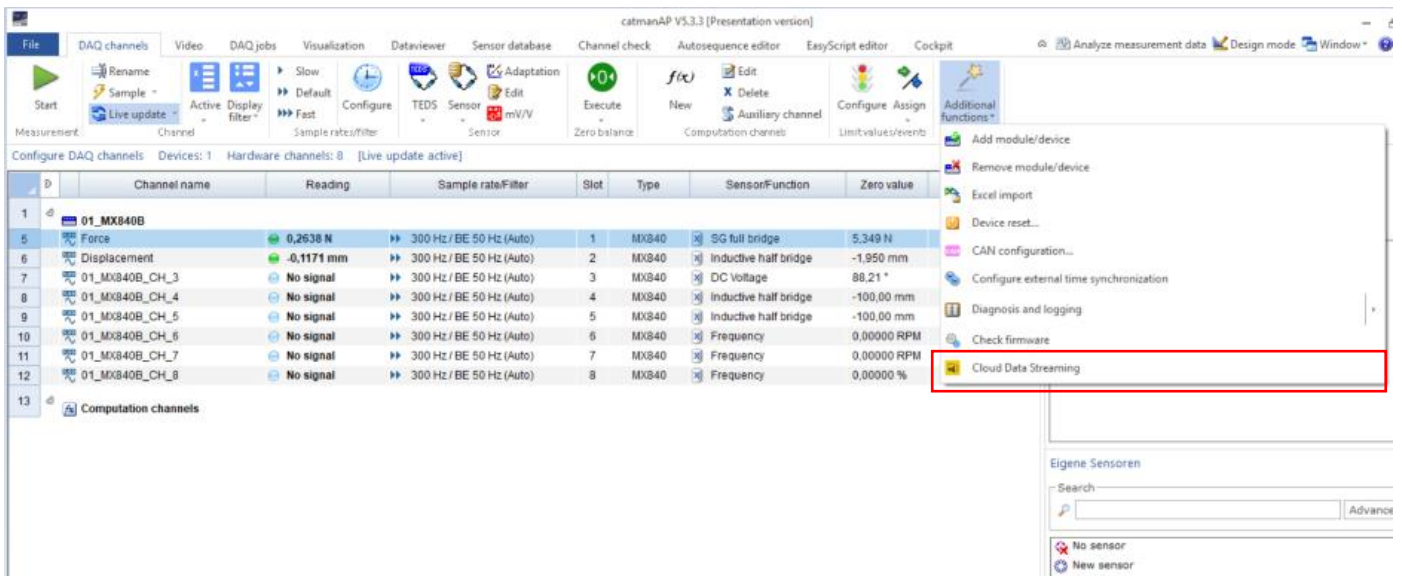
API Tokens:
It is needed to get the right to write data in the database (Bucket).



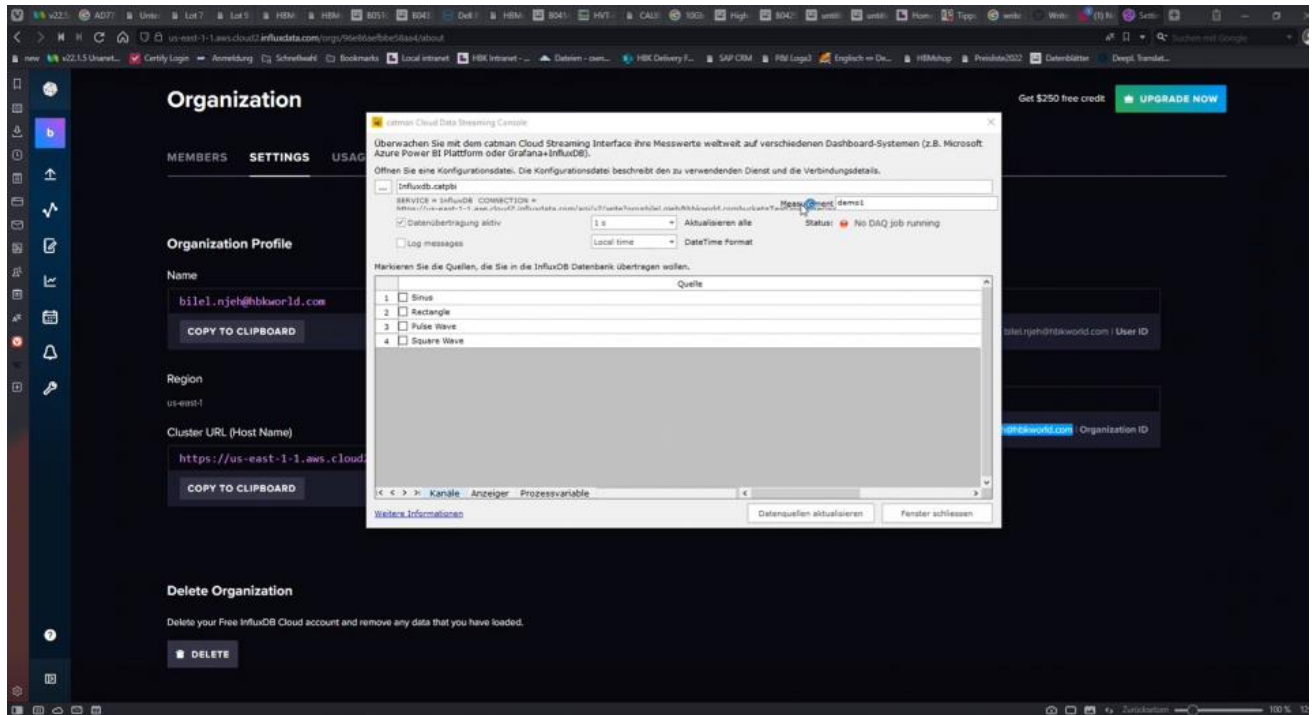


3. Prepare catman DAQ software for data streaming to InfluxDB

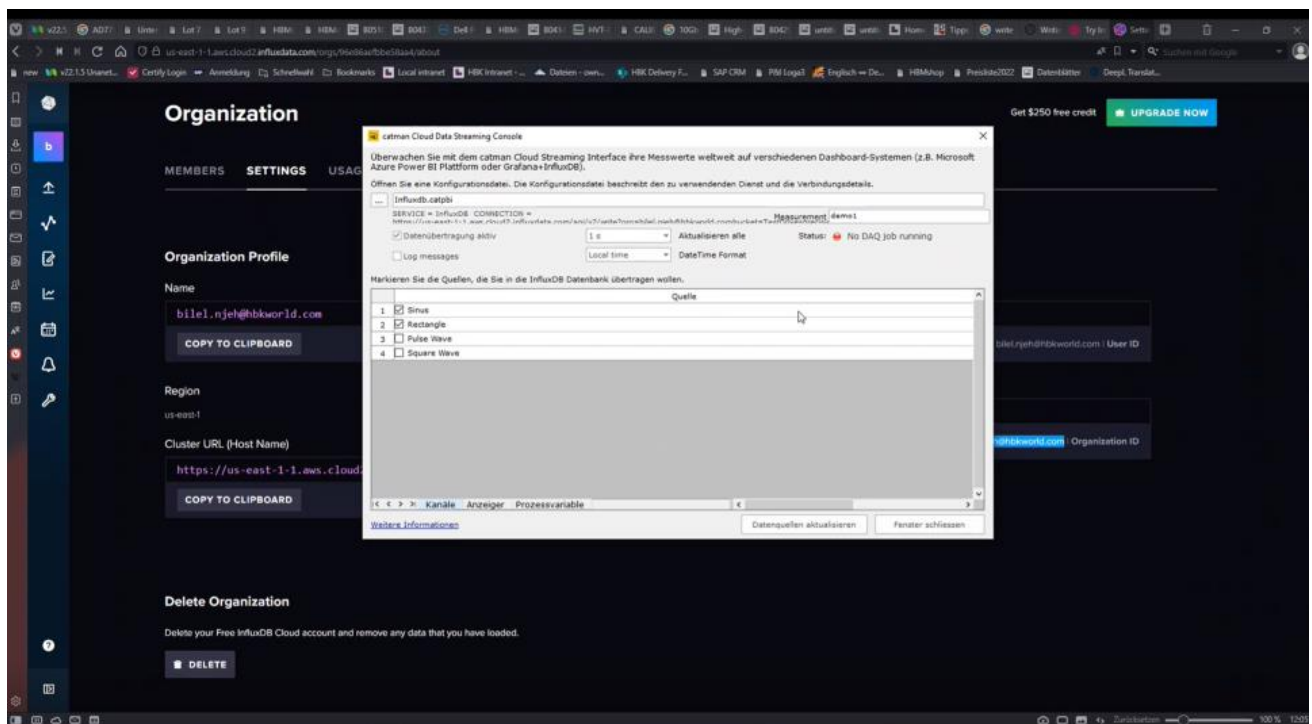
Open the Cloud Data Streaming console from the "Additional functions" group of the channel list ribbon.



Select the configuration file (.catpbi) containing the InfluxDB server address and all additional information as described in the section how to setup the configuration file. You can imagine the "Measurement" as a kind of sub-section in the database. You can also edit this name in the cloud data streaming console! If it does not yet exist it will be automatically created by the Influxdb server.



Select the channels you want to transmit by clicking the checkbox symbol left of the channel name. Hardware channels as well as math channels can be transferred.



Note: Catman can not only transfer channel data but also the values of indicators (digital, bar, meter) or process variables. Since indicators can not only show the current value but Min/Max/RMS

instead, they are particularly useful if you want to transfer min-max values into the InfluxDB database. Select the update rate at which data will be sent to InfluxDB. Default is once per second.

Script programmers can always force an immediate transfer via the `EA_Job.TriggerPowerBIDataTransfer` method. Finally check "Enable data transfer" checkbox. As soon as the catman DAQ job starts data will be transferred. Without a running DAQ job no data will be transferred!

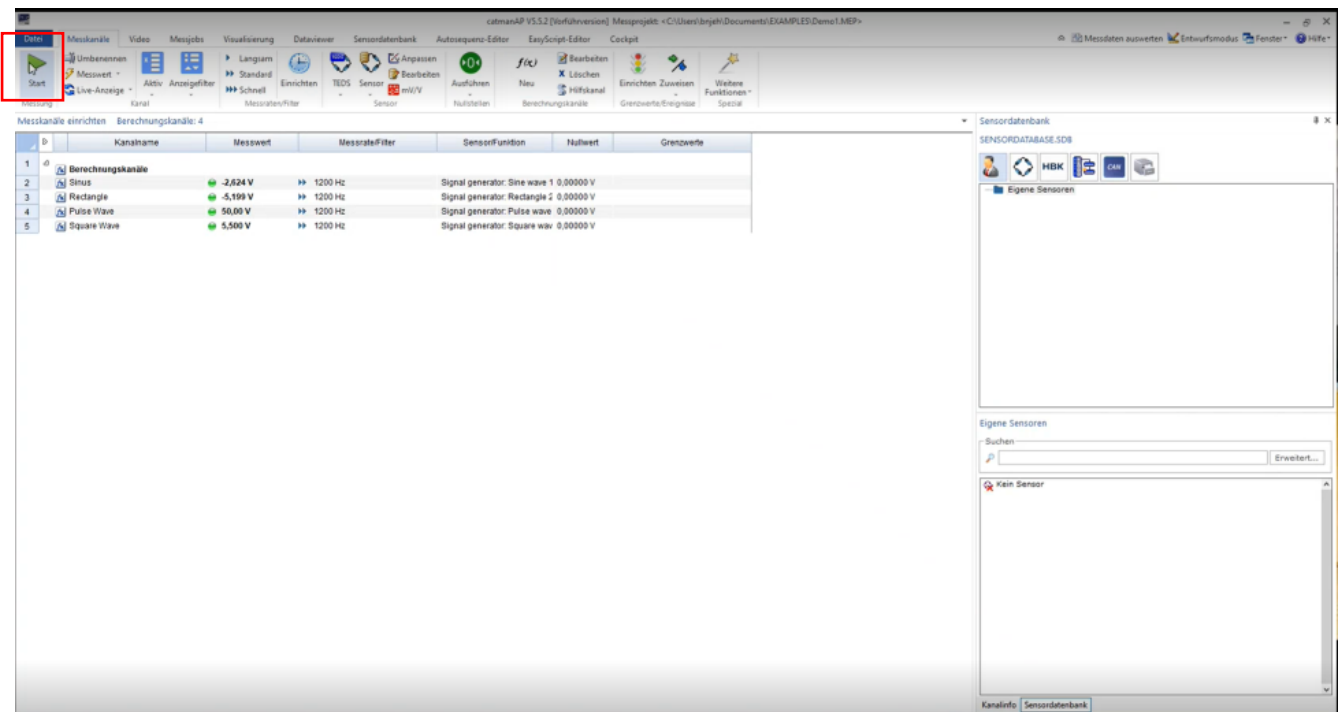
Observe that in addition to the catman Power BI console you can use EasyScript to transfer data into an Influxdb database. See the EasyScript reference for `EA_Comm.INFLUX_.....` methods!

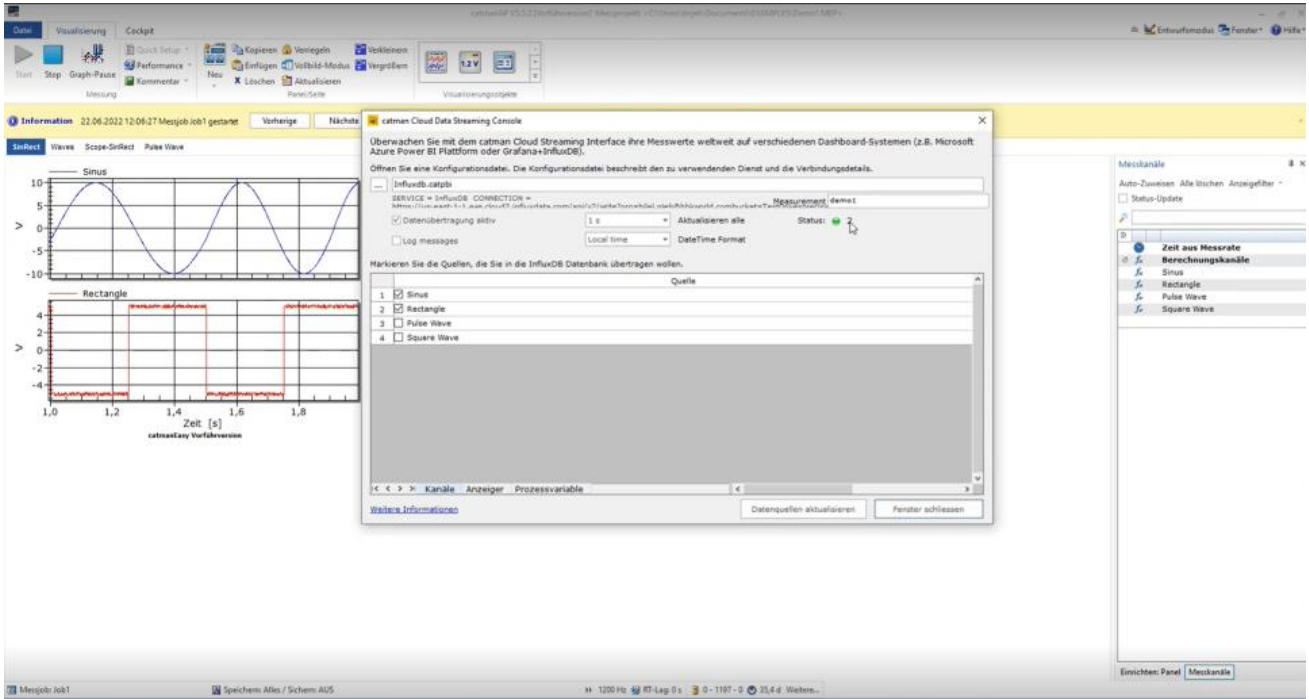
Important notes:

- catman only transmits data if a DAQ job is running!
- You may invoke the Cloud data streaming console even during a running DAQ job ("Power BI" button of the DAQ message bar) and change the configuration.
- The value type "TEXT" is currently not supported by Microsoft Power BI dashboard tiles

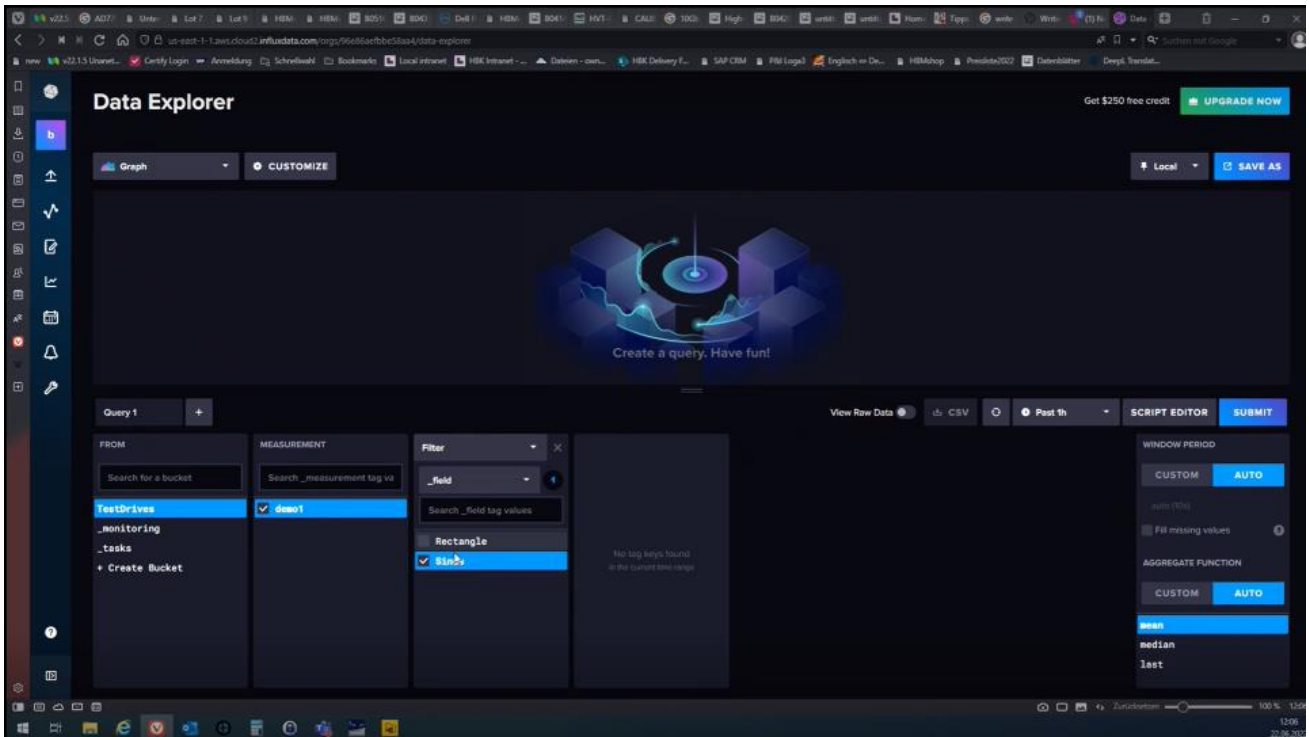
4. Stream data into InfluxDB

First of all start DAQ process in catman

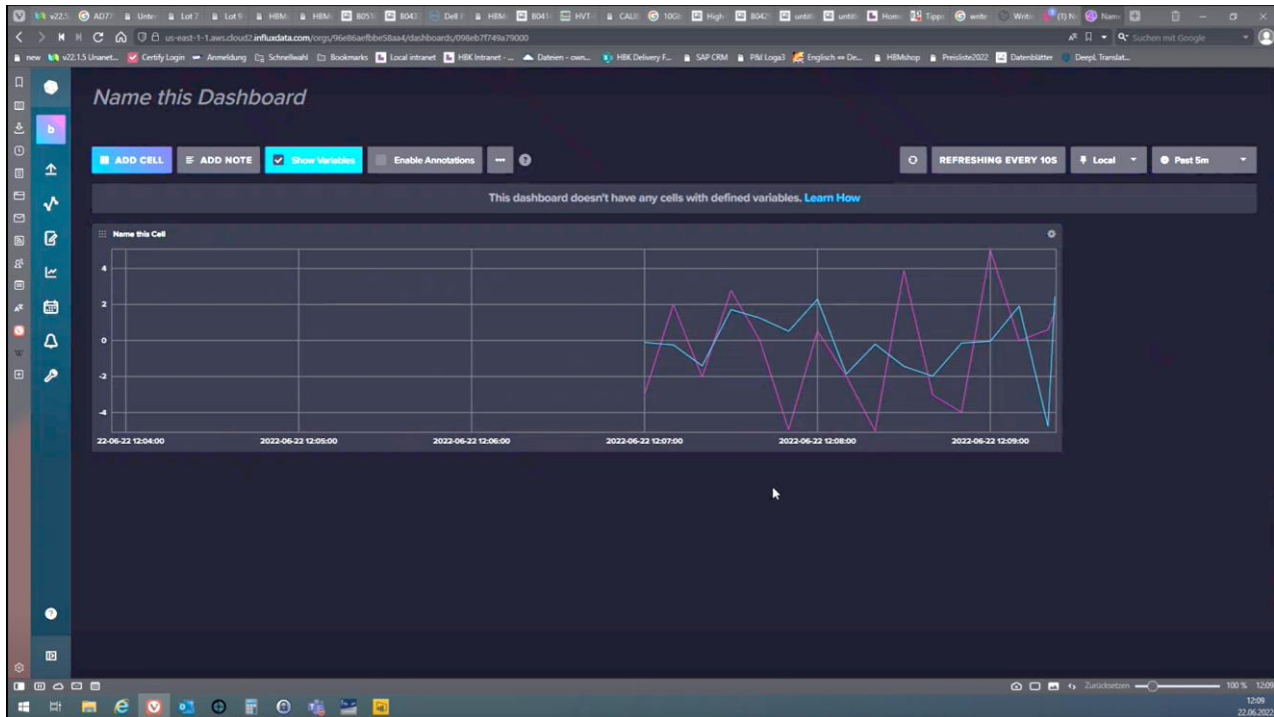




Navigate to InfluxDB and go to DataExplorer. Select “TestDrives” from the bucket list and the Measurement. Then select the signals that should be used for display



Create a dashboard



-- end

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