How to integrate LoRaWAN sensor to BACnet

Introduction

MultiTech Conduit can decode LoRaWAN sensor data and map that sensor data into BACnet Objects which can be integrated into BMS systems and BACnet devices.

Requirements

- MultiTech Conduit gateway running mPower OS 6.3.2+ with LoRaWAN BACnet Connector Payload Management License enabled
- LoRaWAN sensor
- BACnet Client (YABE will used for this document)

Configure LoRaWAN Network and add Sensor

1. Navigate to LoRaWAN → Network Settings
2. Set LoRa Mode to Network Server
3. Under Key Management change location to Local Join Server
4. Click Add New
5. Find your LoRaWAN sensor EUI and Key information and enter the fields below.

6. Check to see if the gateway is receiving packets under LoRaWAN → Packets
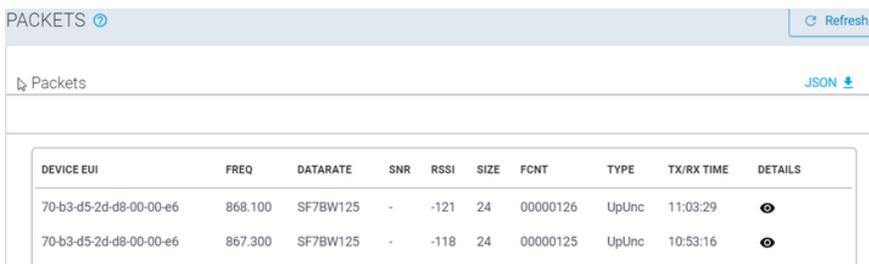
After verifying your sensors are receiving packets, we can move on to configuring BACnet.

Configure BACnet

1. Navigate to **Payload Management →BACnet Configuration**
2. Enable BACnet, Choose your BACnet Device Settings,
   - **Port**
   - **Device Object Identifier**
   - **Object Name**
   - **Device Description**
3. **Save and Apply**
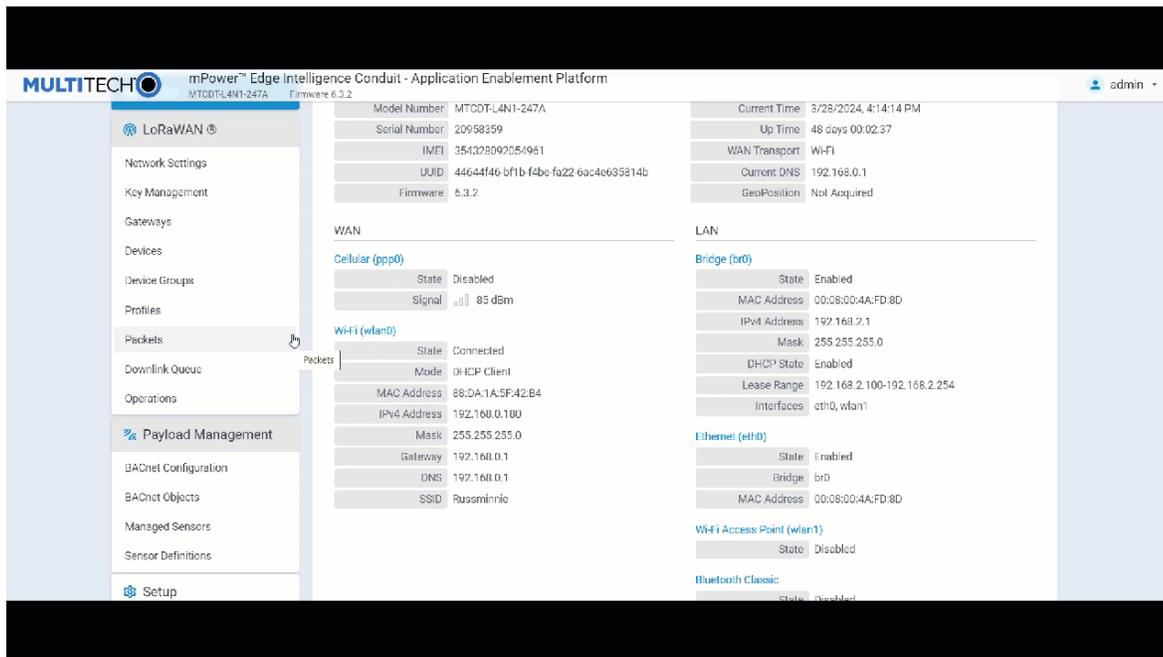
Add Sensors to BACnet

Before adding sensors to the payload management feature if you are using an Adenuis, Elysys or Radio Bridge move on to step 1a. For all other sensor manufacturers see the document (**How to Add a Custom Decoder and Sensor Definition to BACnet**) before returning to this section.

1. Go to **Payload Management → Managed Sensors**
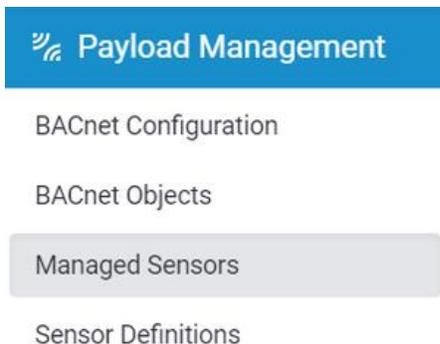
2. Click **Add Sensor**
3. Enter the **Device EUI** and choose the Device **Manufacturer** and **Model** from the drop-down menu.
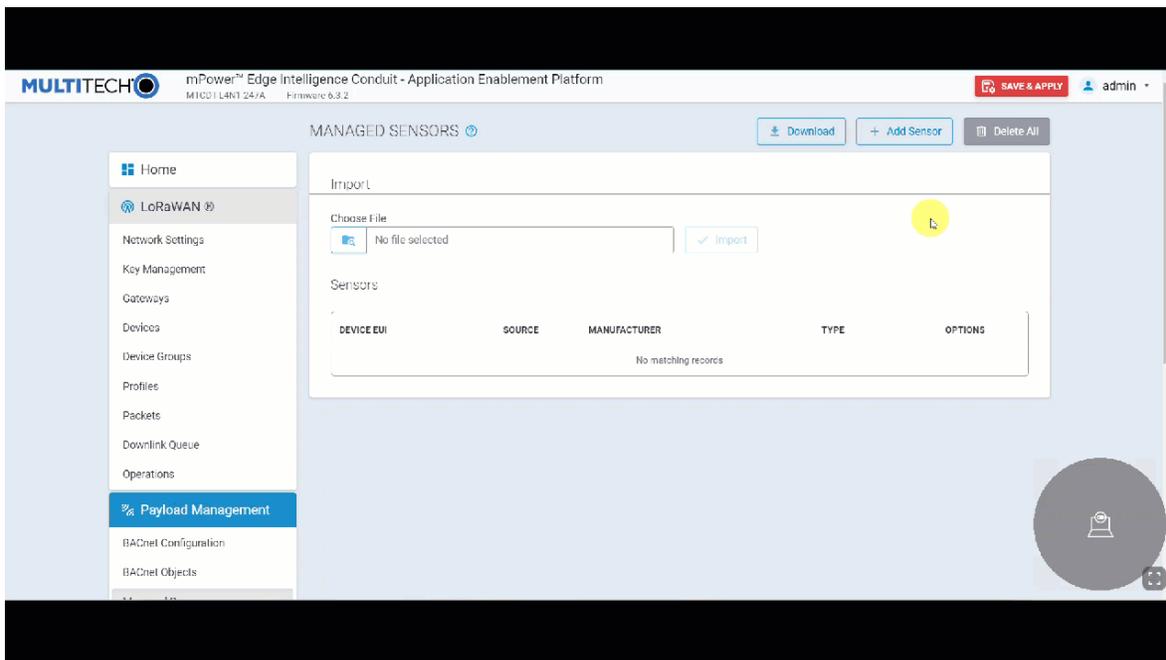
Add BACnet Objects

This section will instruct you how to add objects individually. Suppose you want to have all objects from the sensor definitions added automatically. Download the BACnet Objects App here. This application would add all available BACnet Objects from the sensor definitions file automatically when the sensor is added to the managed sensors page. If using the app move to the next section **Using BACnet Objects App**.

Adding Objects Individually

1. Go to **Payload Management → BACnet Objects**
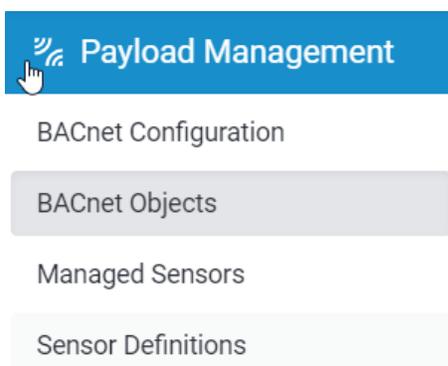
2. Click the **Add Object** tab
   1. **Device EUI**: Select the EUI from the drop-down menu. These will include sensors added from the previous section in Added Sensors
   2. **Property:** Select the value from the sensor definitions
   3. **Object Name:** Give the object a name
   4. **Object Type:** Select the BACnet data type
   5. *Object Description:* Description of the data, *optional*
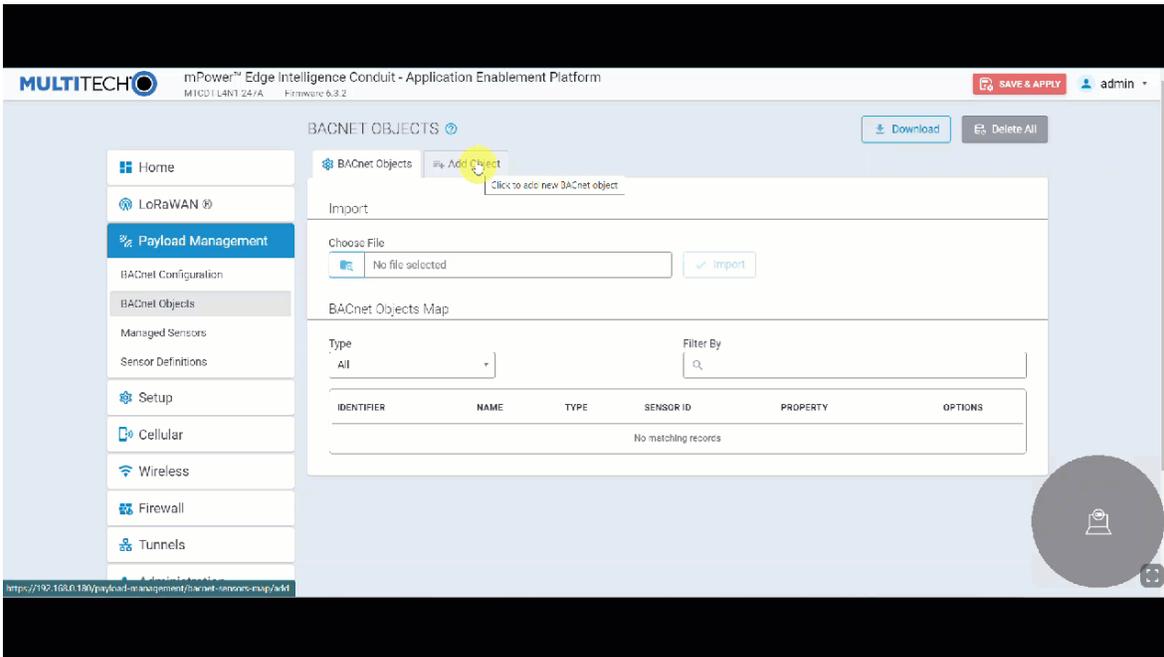
3. **Submit** or **Submit and Add New Object**
4. The objects will now appear in the **BACnet Objects** tab
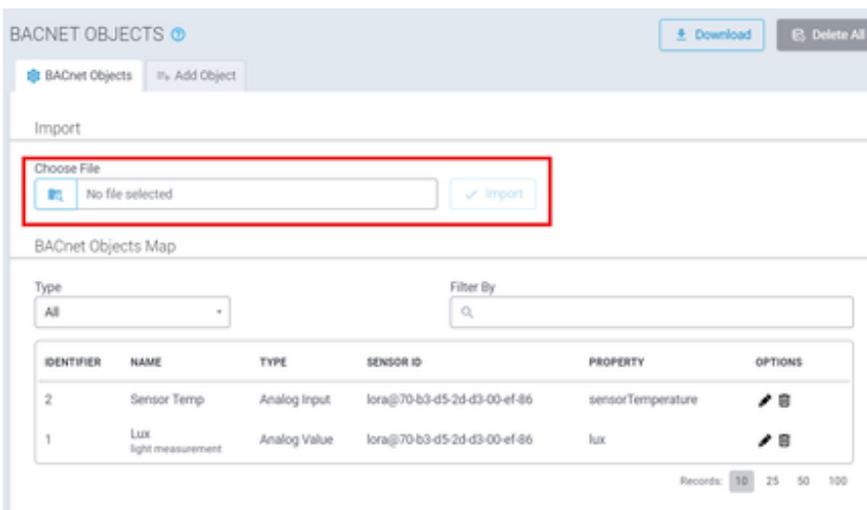
5. **Save and Apply**

Using the BACnet Objects App

1. Upload the app to the UI.
   a. Choose a numerical **app id**
   b. Name the application **BACnet Objects**
   c. Choose the file on your machine.
   d. Wait for the application to finish uploading.

Once the application is finished downloading it will appear like the screenshot below.
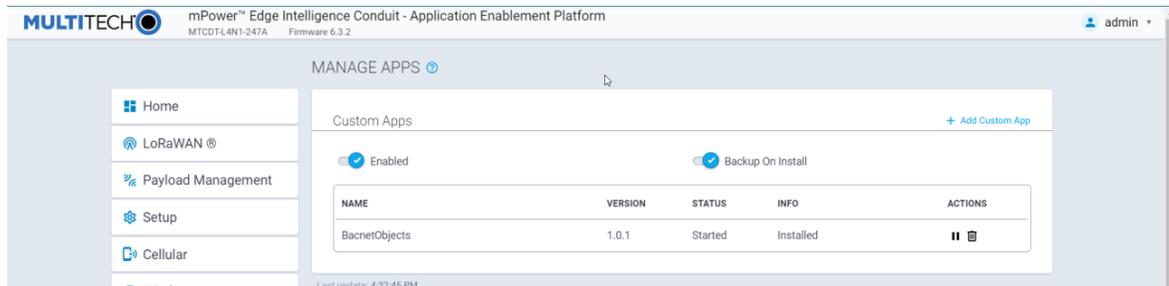
2. With the app installed, every time you add a new BACnet Sensors, all the properties will populate.
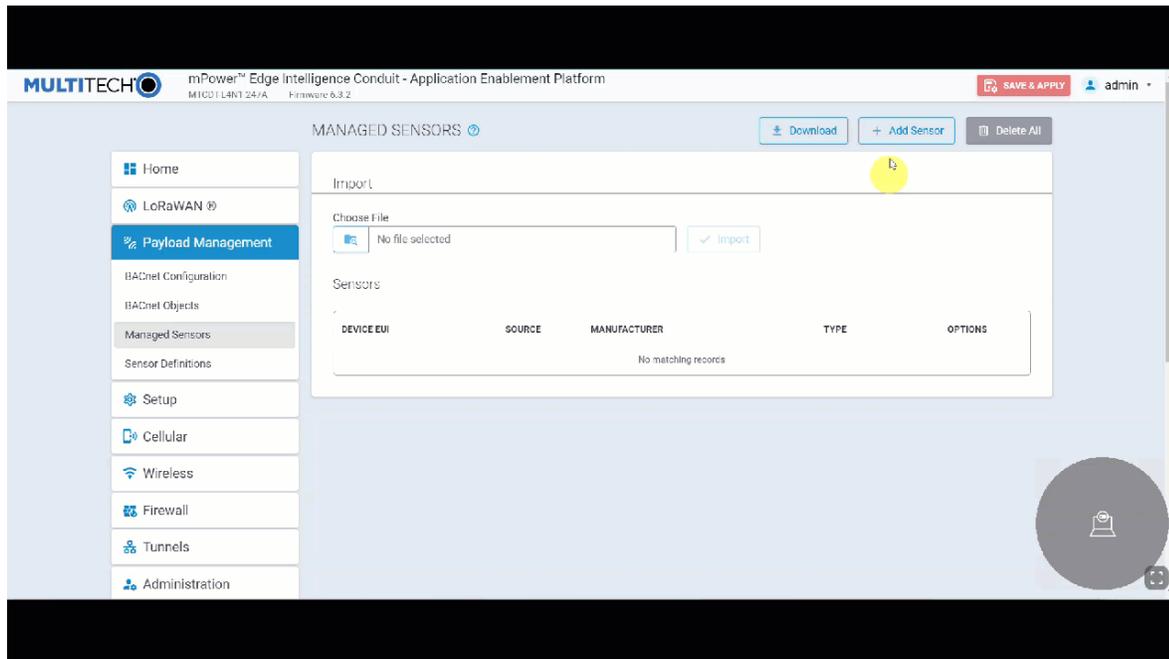
Check BACnet Client

1. Open a YABE BACnet client tool, Click Add Device, we are using ethernet so under **BACnet/IP V4 & V6 over Udp** choose the IP address of the ethernet port, click **Start**
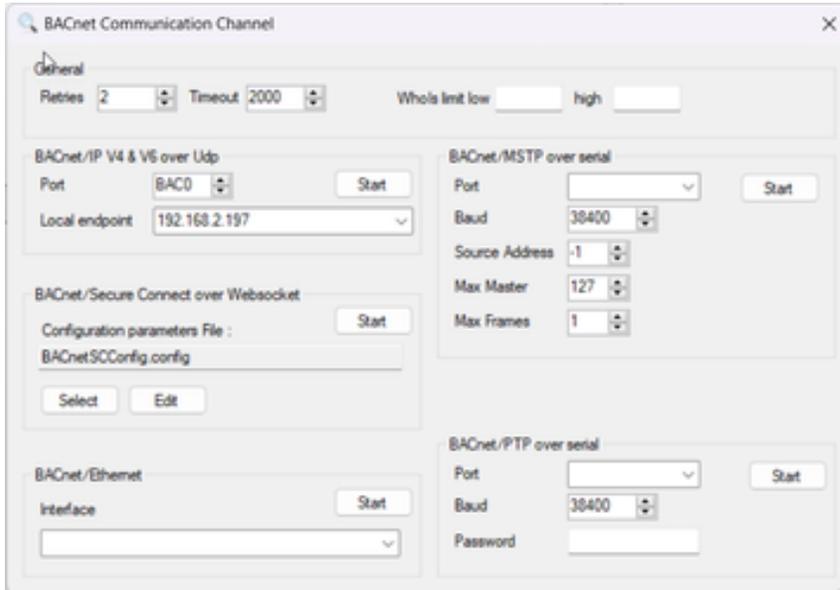
If using Windows a screen may pop up asking you to allow access to YABE, click all checkboxes, and accept.

- You should see the Conduit appear with the objects we entered earlier.
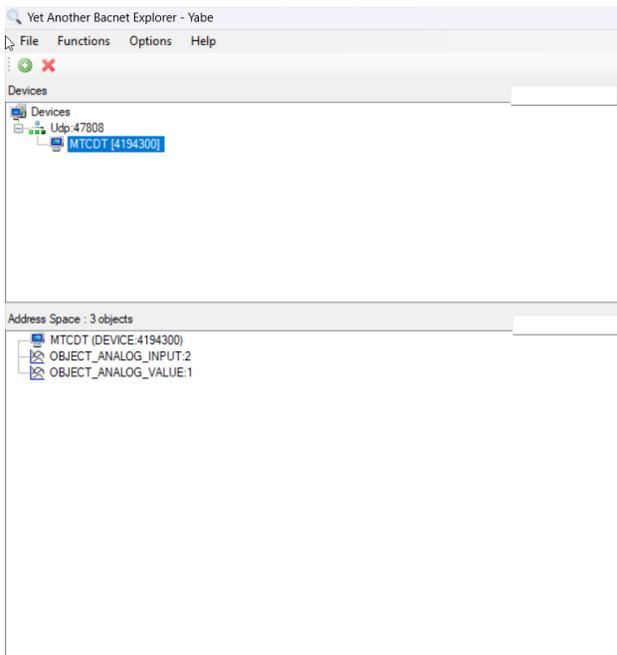
2. Click the name of the object and in the dialog box on the right, the decoded values will appear under **Present Value**