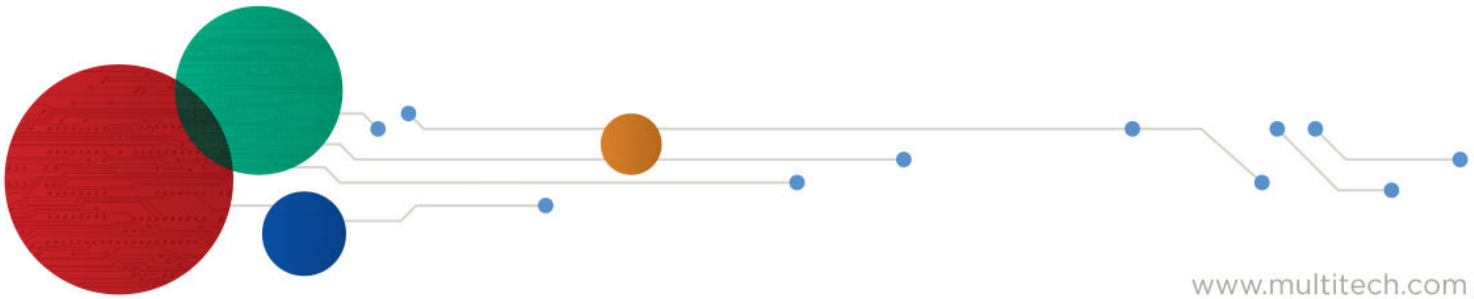
Integrating a LoRaWAN Sensor to BACnet

Reference Guide



Integrating a LoRaWAN Sensor to BACnet

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1 – Integrating a 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

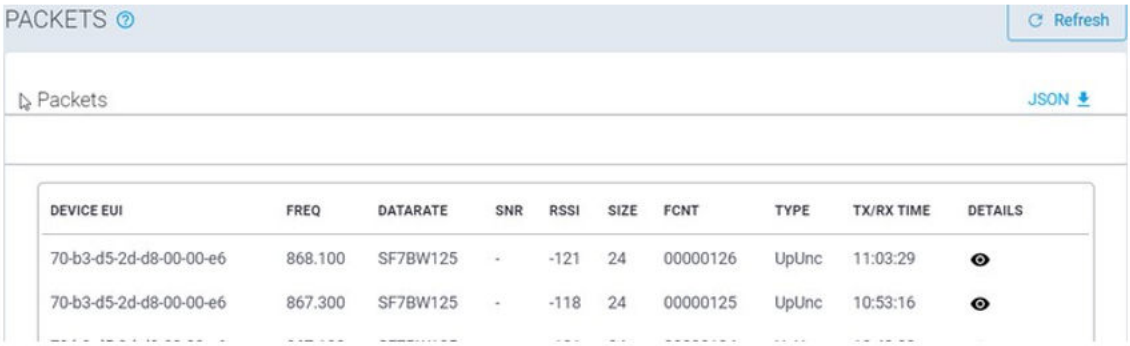
- MultiTech Conduit gateway running mPower OS 6.3.2 and higher with LoRaWAN BACnet Connector Payload Management License enabled
- LoRaWAN sensor
- BACnet client (Yet Another BACnet Explorer (YABE) is used for this document)

Configuring the LoRaWAN Network and Adding a Sensor

To configure the LoRaWAN Network and add a sensor:

1. Select **LoRaWAN > Network Settings**.
2. Set LoRaWAN Mode to **Network Server**.
3. Under Key Management, change the location to **Local Join Server**.
4. Click **Add New**.
5. Find your LoRaWAN sensor Extended Unique Identifier (EUI) and Key information and complete the ADD END-DEVICE KEY fields. Click **OK** when finished.

6. Check to see if the gateway is receiving packets under **LoRaWAN > Packets**.

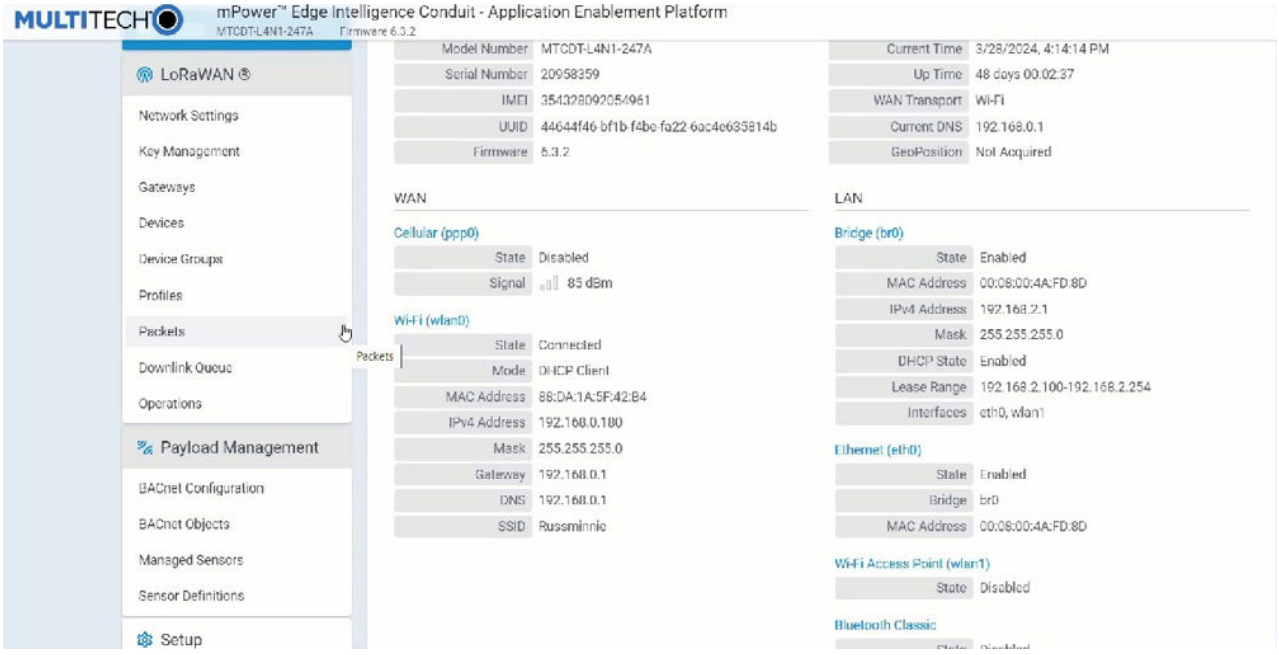


7. Complete the steps under Configuring BACnet.

Configuring BACnet

To configure BACnet:

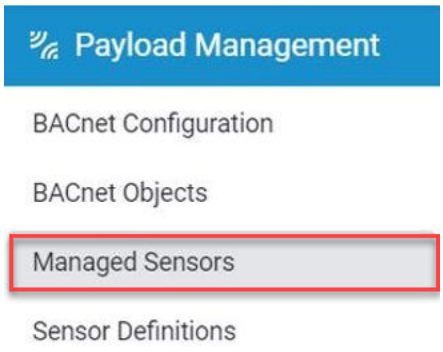
1. Select **Payload Management** > **BACnet Configuration**.
2. Enable BACnet and choose your BACnet device settings:
   - Port
   - Device object identifier
   - Object name
   - Device description
3. Click **Save** and **Apply**.



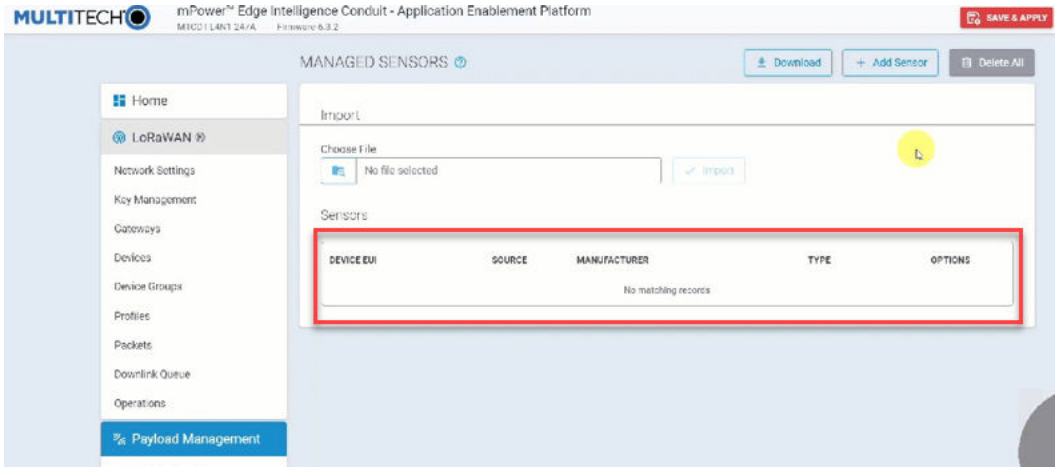
Adding Sensors to BACnet

Note: Before adding sensors to the payload management feature, if you are using an Adenuis, Elysys, or Radio Bridge, you can begin with step 1. For all other sensor manufacturers go to before you begin step 1.

1. Select **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

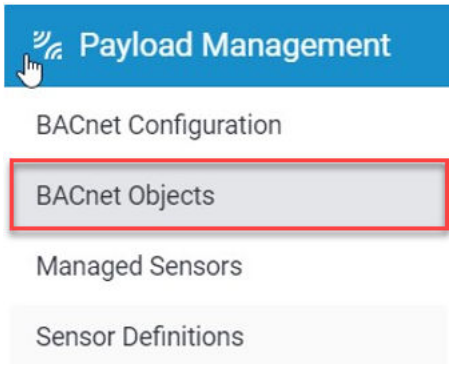
There are two ways to add BACnet objects:

- Add objects individually.
- Automatically add all sensor object definitions using the BACnet Objects App (must download the BACnet Objects App first).

Adding Objects Individually

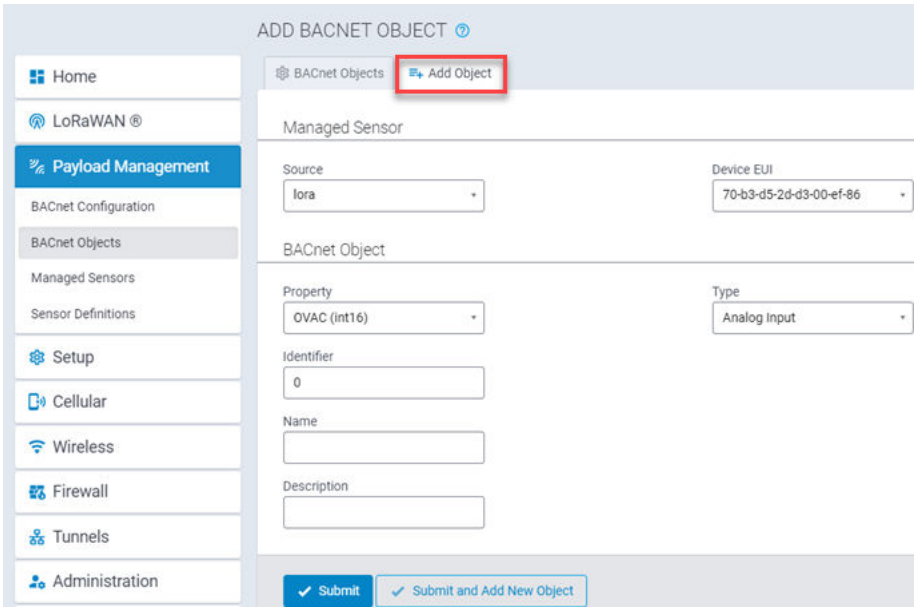
To add objects individually:

1. Select **Payload Management** > **BACnet Objects**.



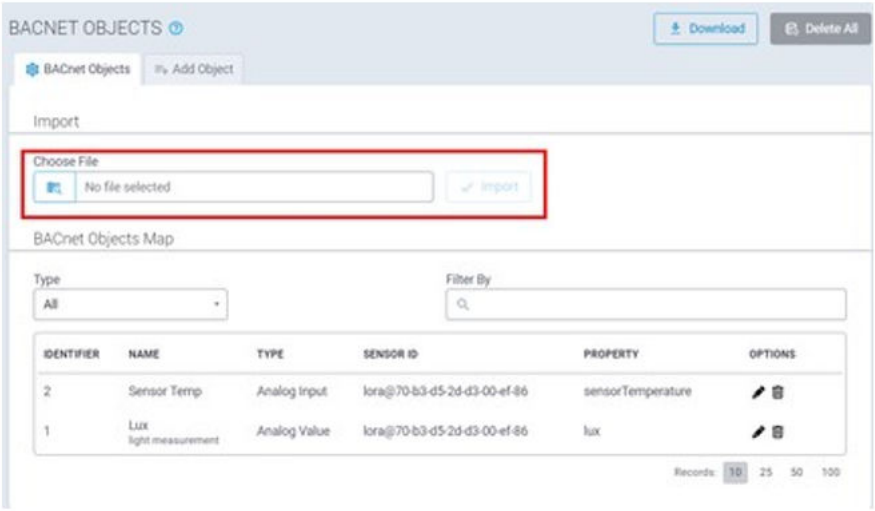
2. Go to the **Add Object** tab and complete the following settings:

   a. **Device EUI**: Select the EUI from the drop-down menu. These include previously-added sensors.
   b. **Property:** Select the value from the sensor definitions.
   c. **BACnet Object Name:** Give the object a name.
   d. **BACnet Object Type:** Select the BACnet data type.
   e. **BACnet Object Description:** Description of the data, *optional*.



3. Click **Submit** or **Submit and Add New Object**.

   The objects appear in the BACnet Objects tab:



4. Click **Save** and **Apply**.

Using the BACnet Objects App

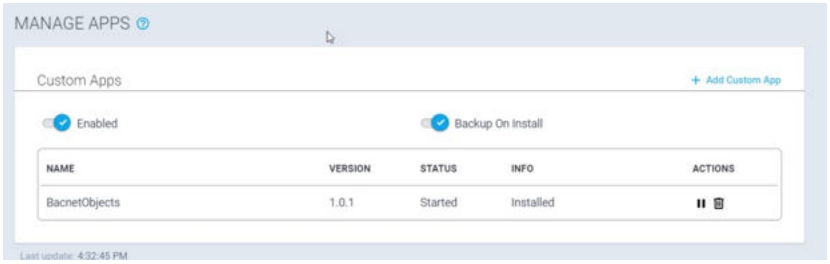
To have all objects from the sensor definitions added automatically, first download the BACnet Objects app. This application automatically adds all available BACnet objects from the sensor definitions file when the sensor is added to the Managed Sensors page.

To use the BACnet Objects app:

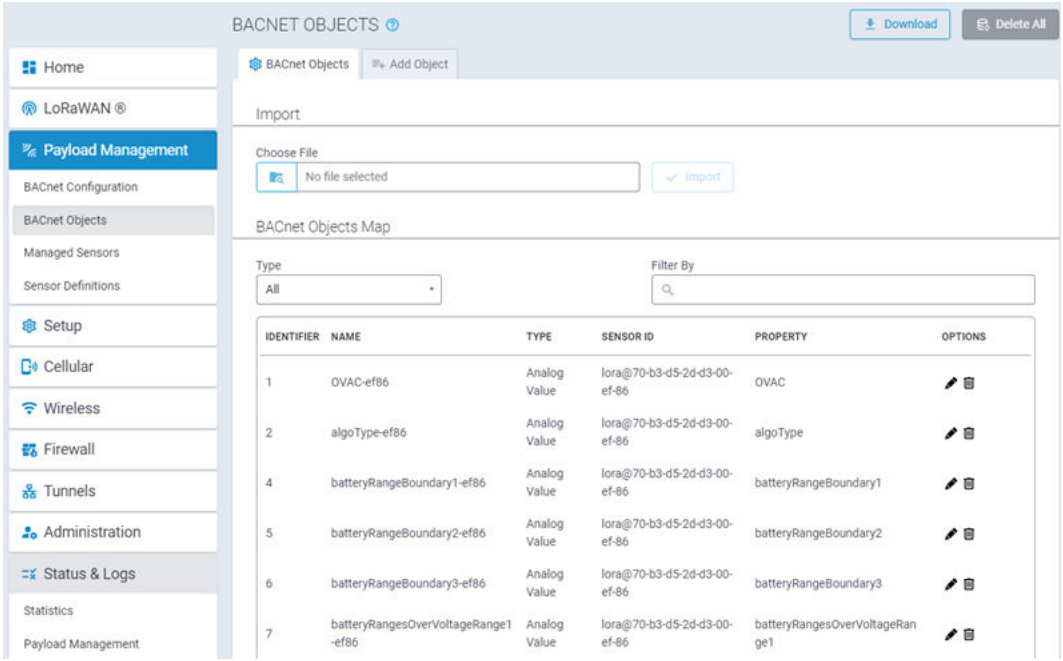
1. Upload the BACnet Objects app to the UI:

   a. Choose a numerical App ID.
   b. Name the application **BACnetObjects**.
   c. Choose the file on your machine.
   d. Wait for the application to finish uploading.

   Once the application is finished uploading it appears as this image shows:



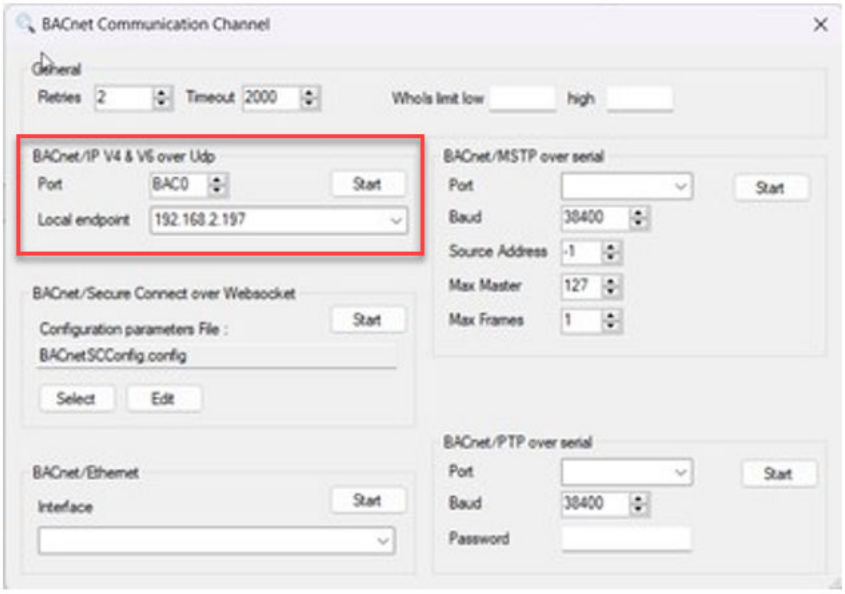
2. With the app installed, all properties populate every time you add a new BACnet sensor.



Checking the BACnet Client

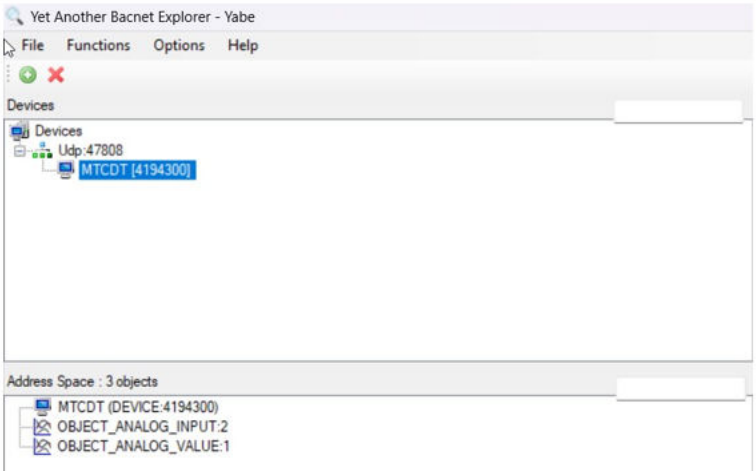
To check the BACnet client:

1. Open a YABE BACnet client tool.
2. Click **Add Device**.
3. Since this example uses Ethernet, under BACnet/IP V4 & V6 over Udp choose the Ethernet port IP address and click **Start**.



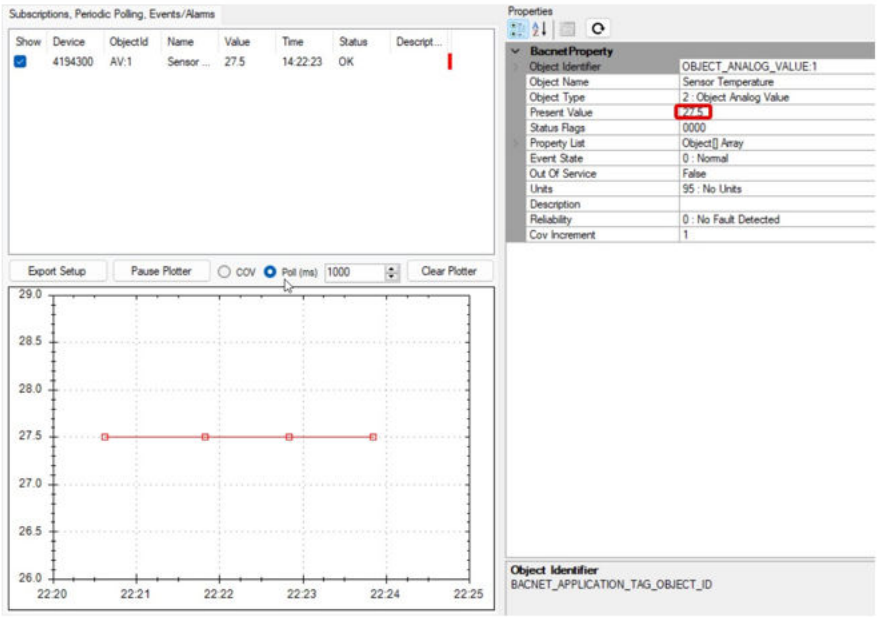
4. *(Optional)* If using Windows, a screen may pop up asking you to allow access to YABE. Click all checkboxes and accept.

   The Conduit appears with the objects previously entered:



5. Click the name of the object.

   The decoded values appear under **Present Value** in the dialog box on the right.



2 – Revision History

Revision Number	Description
1.0	Initial release. June 2024