



# LoRaWAN Driver (Milesight) for Tridium Niagara 4 Technical Guide

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Revision 1.2

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## **INTRODUCTION**

The LoRaWAN Driver can be used to provide a fast and simple interface to a LoRaWAN based system of devices. The driver can be used from any Niagara Station (Web Sup / JACE / 3rd Party Controller) to a Mulesight LoRaWAN Gateway (such as UG65). This includes Mulesight Gateways on a local a LAN or via a remote cellular connection.

The driver is designed to simplify the integration of LoRaWAN networks into Niagara without having to manually setup and decode JSON payloads. The driver will support 'known' devices and also support new / unknown devices.

The connection to the LoRaWAN Gateway is bidirectional over a HTTP interface.

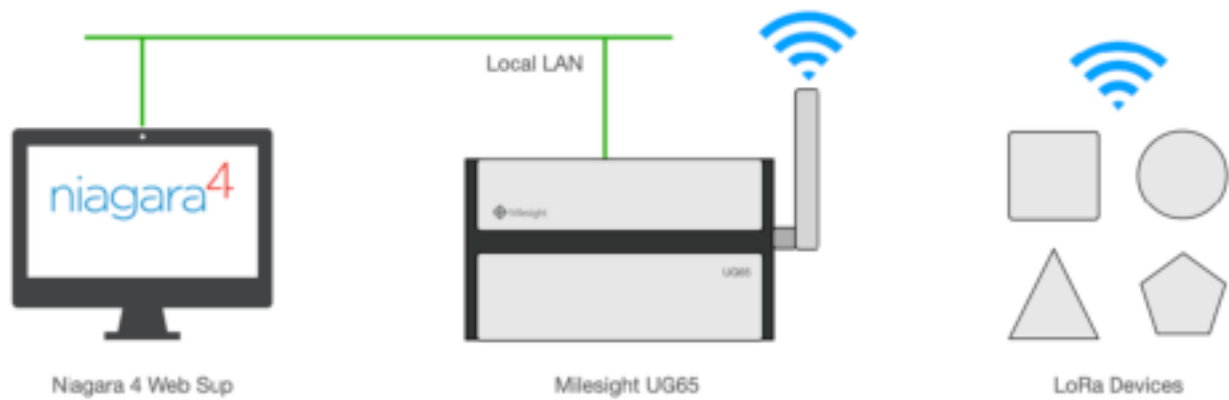
The Driver is compatible with all brands of Niagara 4 (Tridium / Centraline / Distech / Honeywell / JCI / Trend etc).

The LoRaWAN Driver can be used in several different scenarios on different Tridium Niagara based platforms via a Milesight Gateway:

- Web Supervisor
- JACE8000 / JACE9000
- Any 3rd Party Controller (IoT Controller / Lynxspring / iSMA MAC36 etc).

**Example 1**

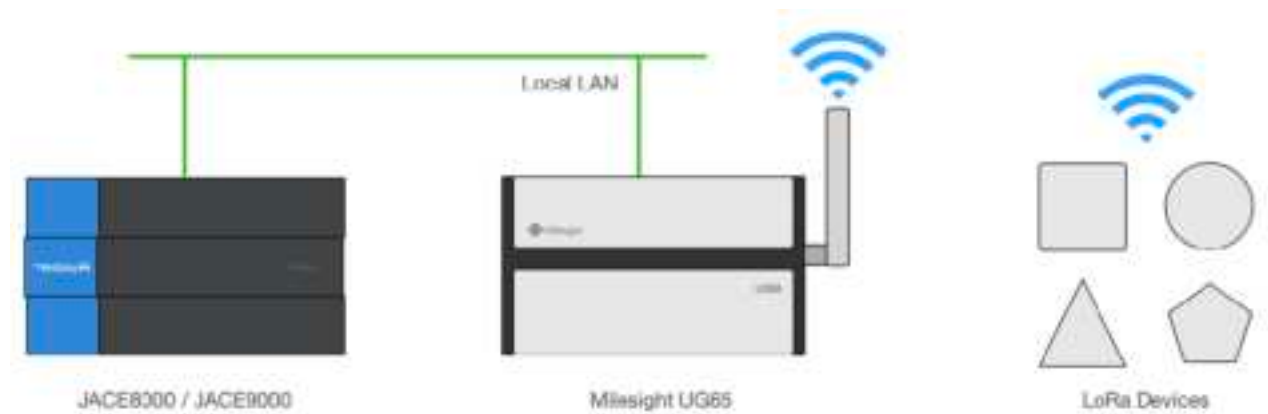
**Web Supervisor - Milesight UG65 Gateway (Local LAN)**



The Web Supervisor integrates directly to the local Milesight UG65 Gateway.

All configured LoRaWAN devices will be discoverable in the Niagara Station and their enclosed points will also be discoverable.

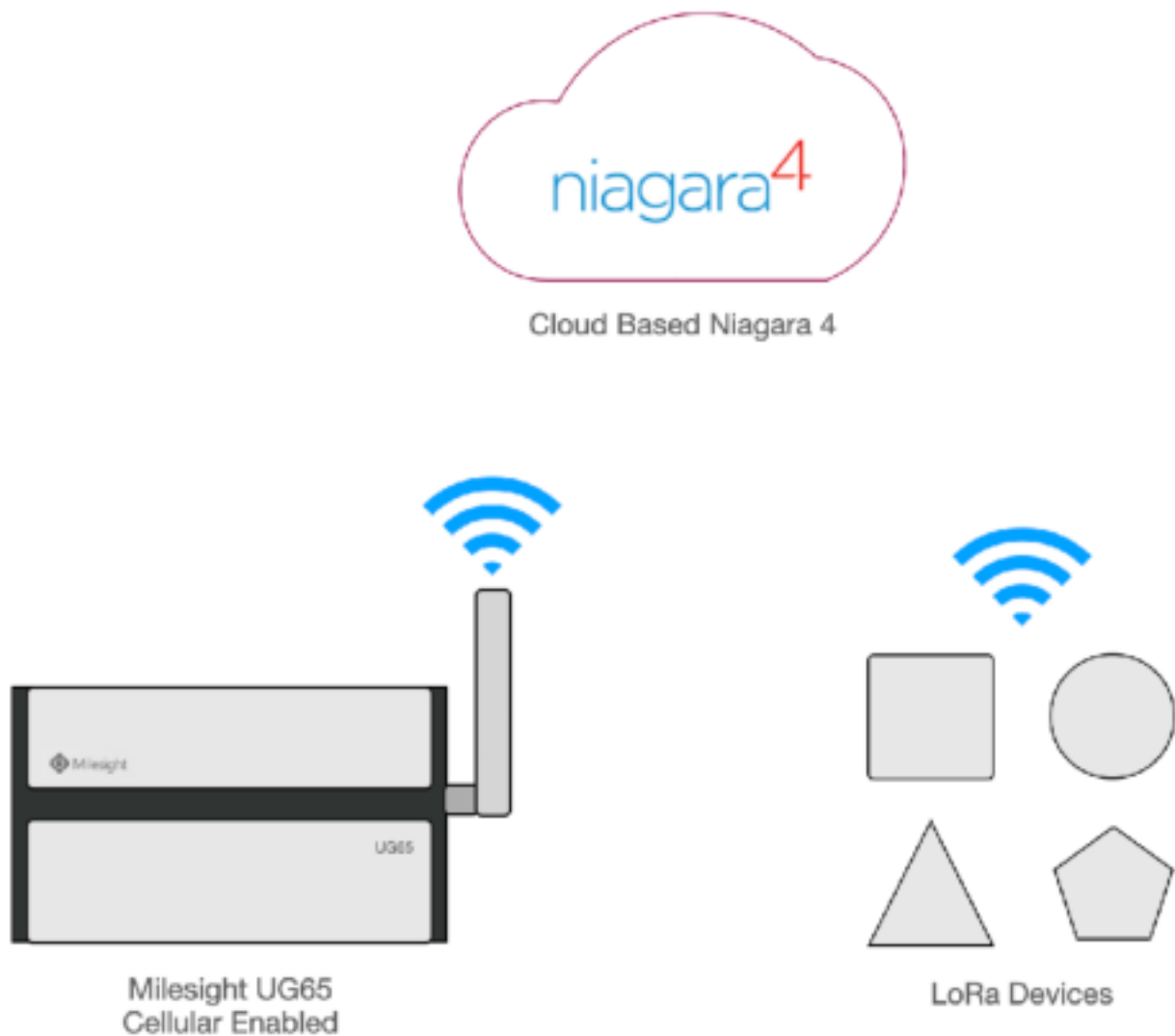
**Example 2:**  
**Niagara Enabled Controller - Milesight UG65 Gateway (Local LAN)**



The JACE8000 / 3rd Party Controller integrates directly to the local Milesight UG65 Gateway.

All configured LoRaWAN devices will be discoverable in the Niagara Station and their enclosed points will also be discoverable.

**Example 3:**  
**Cloud Based Niagara 4 - Remote Milesight UG65 Gateway (Cellular)**



The Web Supervisor integrates remotely to the remote Milesight UG65 Gateway (with integrated SIM card).

All configured LoRaWAN devices will be discoverable in the Niagara Station and their enclosed points will also be discoverable.

## **LICENSING & SOFTWARE MAINTENANCE**

The LoRaWAN driver is licensed based on points. Each LoRaWAN point will also consume one Global Capacity Point License.

You will need to provide your Niagara 4 Host ID as part of your purchase. If you are expanding your system in the future you will need to ensure that your LoRaWAN Driver has been expanded to cover the number of new points being added.

Once the license has been generated you can re-import your niagara license files from the Platform > License Manager providing you have an internet connection, alternatively you can be emailed a copy of the new license files.

The LoRaWAN Driver includes a software maintenance feature. Every new purchase of the driver will support the current release of Niagara 4 and the next release of Niagara 4, any subsequent upgrades will require a software maintenance license to be purchased.

As an example the current release of Niagara 4 is N4.13, a new driver purchase will cover you for N4.13 and a future upgrade to N4.14. Any further upgrades, for example to N4.15 or above, will require a software maintenance license to be updated. The software maintenance license would then cover you for the now current release of Niagara 4 (as an example N4.15). You can upgrade from any previous release with a single software maintenance purchase.

Ensure the target Host License Manager is up to date with a Tyrrell.license and Tyrrell.certifcate containing the required license features.

Any questions or queries in relation to this item should be sent to [sales@tyrrellproducts.com](mailto:sales@tyrrellproducts.com)

## TYRRELL PRODUCTS LTD

### LoRaWAN Driver License Packs:

| Product Code | Description                                                                        |
|--------------|------------------------------------------------------------------------------------|
| LoRaWAN 0025 | LoRaWAN Driver 25 Point License Pack<br>1x LoRaWAN Network<br>25x LoRaWAN Points   |
| LoRaWAN 0050 | LoRaWAN Driver 50 Point License Pack<br>1x LoRaWAN Network<br>50x LoRaWAN Points   |
| LoRaWAN 0100 | LoRaWAN Driver 100 Point License Pack<br>1x LoRaWAN Network<br>100x LoRaWAN Points |
| LoRaWAN 0250 | LoRaWAN Driver 250 Point License Pack<br>1x LoRaWAN Network<br>250x LoRaWAN Points |
| LoRaWAN 0500 | LoRaWAN Driver 500 Point License Pack<br>1x LoRaWAN Network<br>500x LoRaWAN Points |

### LoRaWAN Driver Upgrade Packs:

|              |                     |
|--------------|---------------------|
| LoRa0025-UPG | 25x LoRaWAN Points  |
| LoRa0050-UPG | 50x LoRaWAN Points  |
| LoRa0100-UPG | 100x LoRaWAN Points |
| LoRa0250-UPG | 250x LoRaWAN Points |
| LoRa0500-UPG | 500x LoRaWAN Points |

## **DRIVER INSTALLATION**

The LoRaWAN Driver supports Niagara 4.10 and above.

**NOTE:**

If your installation is running an older version of the Niagara software then it must be upgraded to meet the above requirements to run this service.

Any future updates to the LoRaWAN Service will be available for the current release and previous Niagara 4 release. All other releases will become legacy and unsupported.

**Niagara 4 Installation:**

You will need the version specific JAR files for your Niagara 4 installation. These can be downloaded from the Customer Portal or alternatively contact support.

To install the Service copy the below JARS to c:\niagara\niagara 4.x.xx\modules

- ▶ LoRaWAN-rt.jar
- ▶ LoRaWAN-wb.jar

Once the files have been put into the correct directory close your workbench, and relaunch. Any running Stations on the local machine will have to be re-started to make use of the LoRaWAN Driver.

The LoRaWAN Driver is now ready to use in a local station or to commission / update a JACE. To install the driver on a JACE use the Commissioning Wizard on the platform of the target device.

## **MILESIGHT SETUP**

The Milesight Gateway will need to have a specific configuration applied:

- Create An Application(s)
- Assign LoRaWAN Devices to the Application(s)

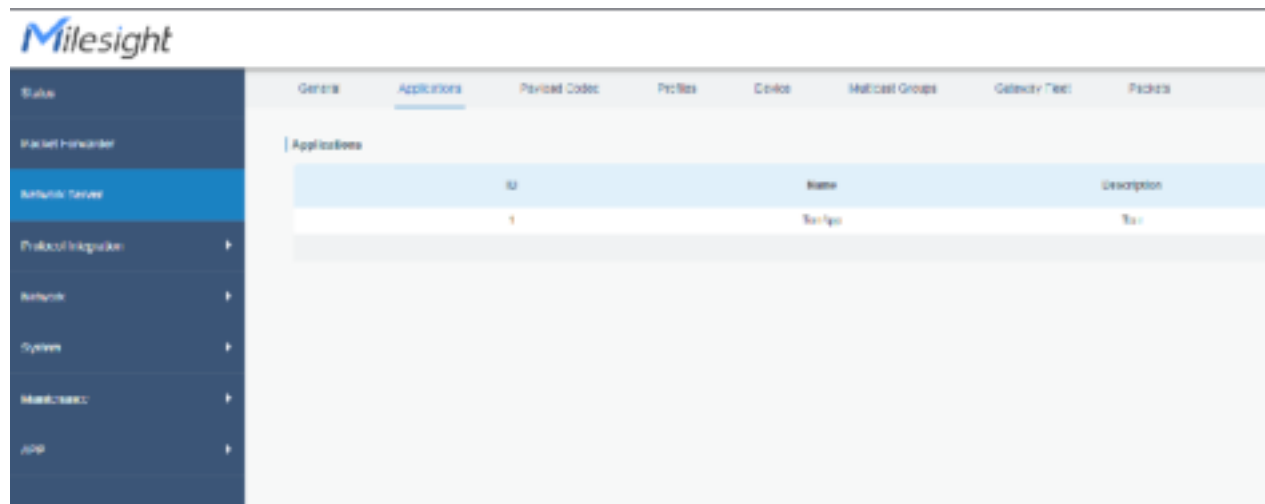
The integration between Niagara 4 and Milesight gateway will support HTTP connections only. This is a current limitation of the Milesight Gateways.

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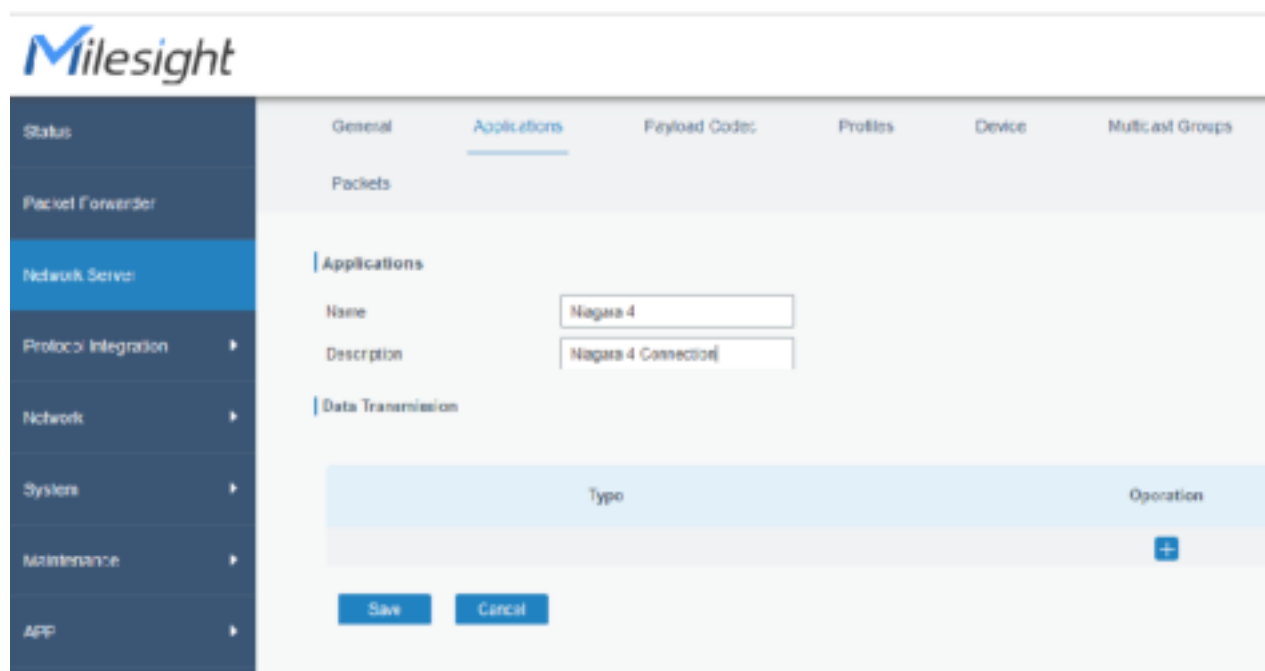
### MILESIGHT APPLICATIONS

Login to your Milesight Gateway (the default details are printed on the rear of the unit).

Navigate to **Network Server > Applications**



Create a new **Application** and save it.



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Re-edit the Application and a new **Operation - HTTP**

Edit the **Uplink Data** field to be *http://IPADDRESS/lorawan/noAuthListener/uplink*.

Where *IPADDRESS* is the address of your Niagara 4 Station. Example:

**http://192.168.23.10/lorawan/noAuthListener/uplink**

The screenshot shows the Milesight web interface. On the left is a dark blue sidebar with the Milesight logo at the top and a list of menu items: DMR, Product Forwarder, Network Service (highlighted in blue), Virtual Integration, Gateway, System, Standard, and API. The main content area has a light gray header with tabs: General, Application (selected), Keychain Codes, Profiles, General, Master and Groups, Gateway Profile, and Station. Below the tabs, the 'Application' section is active. It contains a form with the following fields: 'Name' (Niagara4), 'Description' (Niagara4 Application), 'Data Transmission' (expanded), 'Type' (HTTP), and 'HTTP Header' (expanded). The 'HTTP Header' section has a table with columns: Header Name, Header Value, and Operation. Below this is a 'URL' section with a table that has columns: Data Type and URL. The 'Data Type' is set to 'Uplink data' and the 'URL' is 'http://192.168.23.10/lorawan/...'.

| Header Name | Header Value | Operation |
|-------------|--------------|-----------|
|             |              |           |

| Data Type   | URL                              |
|-------------|----------------------------------|
| Uplink data | http://192.168.23.10/lorawan/... |

Save both the Operation and Application, then return to the main menu.

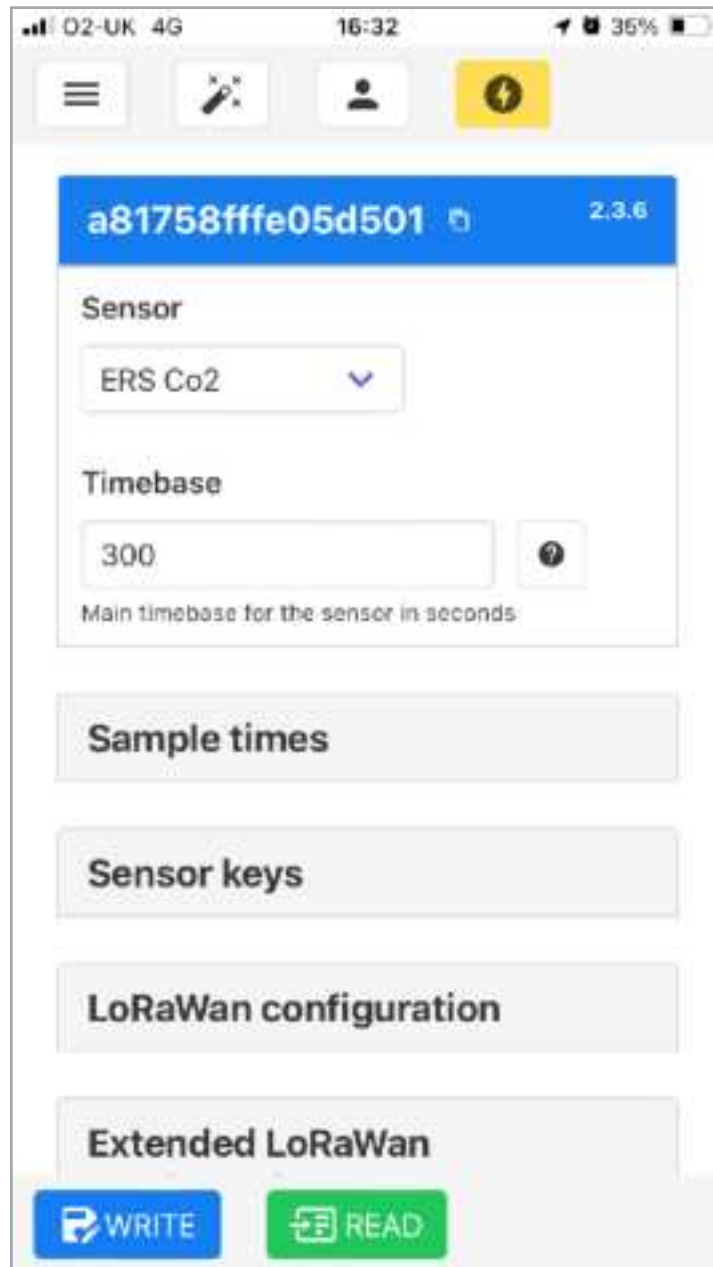
### LORAWAN SENSORS

Before configuring the Niagara Station you will need to ensure that your Milesight Gateway is paired with at least one LoRaWAN Device.

You may require a dedicate Mobile Phone App to configure the sensor, the guide will demonstrate an Elsys sensor.

Download the Sensor App onto your Mobile Device.

Note: Your mobile device must be fitted with a NFC chip to work.



Make note of the Sensor UID (**a81758fffe05d501**)

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In the Milesight Gateway navigate to **Network Server > Device**

Add a new Device

|                          |                             |
|--------------------------|-----------------------------|
| Device Name              | Elsys 3in1                  |
| Description              | Technicals Desk             |
| Device EUI               | a81758ffe05d501             |
| Device-Profile           | ClassA-OTAA ▾               |
| Application              | Niagara4 ▾                  |
| Payload Codec            | None ▾                      |
| fPort                    | 1                           |
| Frame-counter Validation | <input type="checkbox"/>    |
| Application Key          | 328d1a19bd244d3b129ba1514fd |
| Device Address           |                             |
| Network Session Key      |                             |
| Application Session Key  |                             |
| Uplink Frame-counter     | 0                           |
| Downlink Frame-counter   | 0                           |

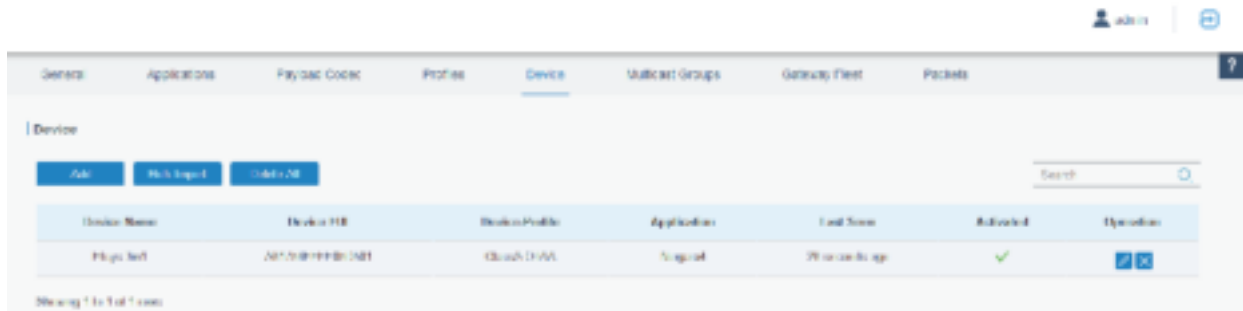
| Setting        | Description                                                                       |
|----------------|-----------------------------------------------------------------------------------|
| Device Name    | Unique Name of the Device                                                         |
| Description    | User Friendly Description                                                         |
| Device EUI     | From the Sensors App                                                              |
| Device Profile | From Spec Sheet Of Device                                                         |
| Application    | Your Custom Application in the previous step                                      |
| Payload Codec  | None By Default<br>Can be changed for new / unknown devices (see later section)   |
| App Key        | From the Sensors App<br>Milesight Default is:<br>5572404c696e6b4c6f52613230313823 |

A

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Once you have added a device ensure it is active and sending data before proceeding.

Once working the **Last Seen** and **Activated** fields will update.



| Device                                                  |                |                |             |                |           |                                                              |
|---------------------------------------------------------|----------------|----------------|-------------|----------------|-----------|--------------------------------------------------------------|
| <div>Add Bulk Import Delete All</div> <div>Search</div> |                |                |             |                |           |                                                              |
| Device Name                                             | Device ID      | Device Profile | Application | Last Seen      | Activated | Operations                                                   |
| Pkg: test                                               | 20170809180181 | Cloud DVR      | Analog      | 20 minutes ago | checked   | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Showing 1 of 1 of 1 rows

## NIAGARA WEB SERVICE

Connect to your Niagara 4 Station.

Navigate to **Station > Services > Web Service**.

Set the **HTTP** option to **TRUE** and Ensure **HTTPS ONLY** is set to **FALSE**.

| WebService (Web Service) |                                         |
|--------------------------|-----------------------------------------|
| Status                   | {ok}                                    |
| Fault Cause              |                                         |
| Enabled                  | <input checked="" type="radio"/> true ▼ |
| ▶ Http Port              | 80 tcp                                  |
| Http Enabled             | <input checked="" type="radio"/> true ▼ |
| ▶ Https Port             | 443 tcp                                 |
| Https Enabled            | <input checked="" type="radio"/> true ▼ |
| Https Only               | <input type="radio"/> false ▼           |

## LORAWAN DRIVER

Navigate to Station > Config > Drivers and add a new LoRaWAN Driver.

Navigate to the AX Property Sheet view of the Network.

| LoRaWANNetwork (LoRaWAN Network) |                                                     |
|----------------------------------|-----------------------------------------------------|
| Status                           | { down }                                            |
| Enabled                          | <input checked="" type="radio"/> true ▼             |
| Fault Cause                      |                                                     |
| ▶ Health                         | Fail [11-Jan-24 5:09 PM GMT] No data received re... |
| ▶ Alarm Source Info              | Alarm Source Info                                   |
| ▶ Monitor                        | LoRaWAN Ping Monitor                                |
| ▶ Tuning Policies                | Tuning Policy Map                                   |
| Network Server Type              | None ▼                                              |
| Network Server                   | Null Network Server                                 |

Change the **Network Server** Type to **Milesight UG65**

## NETWORK SERVER

Expand the **Network Server** Section

Property Sheet

LoRaWANNetwork (LoRaWAN Network)

|                     |                                                     |
|---------------------|-----------------------------------------------------|
| Status              | {down}                                              |
| Enabled             | <input checked="" type="radio"/> true               |
| Fault Cause         |                                                     |
| Health              | Fail [11-Jan-24 5:09 PM GMT] No data received re... |
| Alarm Source Info   | Alarm Source Info                                   |
| Monitor             | LoRaWAN Ping Monitor                                |
| Tuning Policies     | Tuning Policy Map                                   |
| Network Server Type | Milesight UG65                                      |
| Network Server      | Milesight UG65 Network Server                       |
| Url                 |                                                     |
| Username            |                                                     |
| Password            |                                                     |

Note: The user account **MUST** be the admin account.

| Setting  | Description                                          |
|----------|------------------------------------------------------|
| URL      | IP of the Milesight Gateway<br>http://192.168.23.150 |
| Username | admin                                                |
| Password | Admin account password                               |

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## DEVICE MANAGER

Navigate to the **LoRaWAN Driver > Device Manager** and press **Discover**.

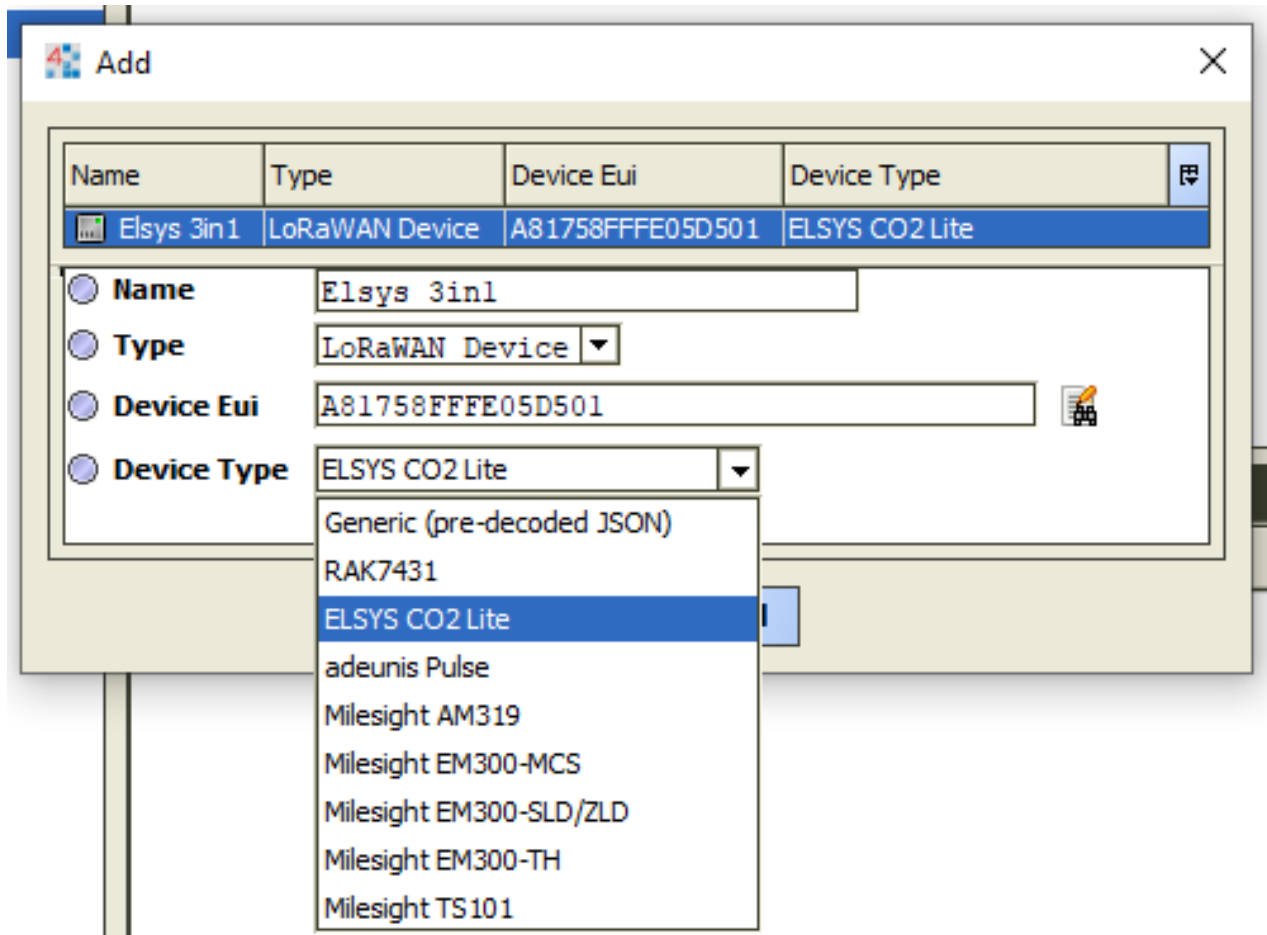
The driver will then discover all available devices from the Milesight Gateway

[illegible]

Add the required device(s) to the Station database.

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When adding a device the **Add Window** will have a **Device Type** option. The driver has a pre-configured library of devices that will automatically 'work'. **New / Unknown** devices can still be added but need to be set with a '**Generic**' profile and the JSON payload decode. Refer to the section **Supported Devices** for more information.



The screenshot shows a window titled 'Add' with a close button (X) in the top right corner. Inside the window, there is a table with the following columns: Name, Type, Device Eui, and Device Type. The first row of the table is highlighted in blue and contains the following data: Name: Elsys 3in1, Type: LoRaWAN Device, Device Eui: A81758FFFE05D501, and Device Type: ELSYS CO2 Lite. Below the table, there are four radio buttons labeled Name, Type, Device Eui, and Device Type. The 'Device Type' radio button is selected. To the right of the 'Device Type' radio button, there is a dropdown menu. The dropdown menu is open, showing a list of device types: Generic (pre-decoded JSON), RAK7431, ELSYS CO2 Lite (highlighted in blue), adeunis Pulse, Milesight AM319, Milesight EM300-MCS, Milesight EM300-SLD/ZLD, Milesight EM300-TH, and Milesight TS101.

| Name       | Type           | Device Eui       | Device Type    |
|------------|----------------|------------------|----------------|
| Elsys 3in1 | LoRaWAN Device | A81758FFFE05D501 | ELSYS CO2 Lite |

**Name** Elsys 3in1

**Type** LoRaWAN Device

**Device Eui** A81758FFFE05D501

**Device Type** ELSYS CO2 Lite

- Generic (pre-decoded JSON)
- RAK7431
- ELSYS CO2 Lite
- adeunis Pulse
- Milesight AM319
- Milesight EM300-MCS
- Milesight EM300-SLD/ZLD
- Milesight EM300-TH
- Milesight TS101

Once the device has been added navigate to the **Points** container of the device.

## POINT DISCOVERY

In the Point Manager Window press the Discover button and all available points will be presented.

| Lorawan Discovery |              |                      |             |                       |                       |
|-------------------|--------------|----------------------|-------------|-----------------------|-----------------------|
| Discovered        |              |                      |             |                       |                       |
| Point Name        | Display Name | Point Type           | Json Field  | Device Facets         | Point Facets          |
| temperature       | Temperature  | control/NumericPoint | temperature | precision=1,units=°C  | precision=1,units=°C  |
| humidity          | Humidity     | control/NumericPoint | humidity    | precision=0,units=%   | precision=0,units=%   |
| co2               | CO2          | control/NumericPoint | co2         | precision=0,units=ppm | precision=0,units=ppm |
| vdd               | Battery      | control/NumericPoint | vdd         | precision=0,units=mV  | precision=0,units=mV  |

Add the required Points to the Station Database.

| Database    |               |                |         |                       |             |
|-------------|---------------|----------------|---------|-----------------------|-------------|
| Name        | Type          | Out            | Enabled | Device Facets         | Json Field  |
| temperature | Numeric Point | 0.0 °C {stale} | true    | precision=1,units=°C  | temperature |
| humidity    | Numeric Point | 0 % {stale}    | true    | precision=0,units=%   | humidity    |
| co2         | Numeric Point | 0 ppm {stale}  | true    | precision=0,units=ppm | co2         |
| vdd         | Numeric Point | 0 mV {stale}   | true    | precision=0,units=mV  | vdd         |

The Points will all remain STALE until the LoRaWAN sensor next reports to the Gateway. Check the device configuration and either way for the next publish cycle or change the devices config to report more frequently during setup.

| Database    |               |               |         |                       |             |
|-------------|---------------|---------------|---------|-----------------------|-------------|
| Name        | Type          | Out           | Enabled | Device Facets         | Json Field  |
| temperature | Numeric Point | 22.9 °C {ok}  | true    | precision=1,units=°C  | temperature |
| humidity    | Numeric Point | 39 % {ok}     | true    | precision=0,units=%   | humidity    |
| co2         | Numeric Point | 1669 ppm {ok} | true    | precision=0,units=ppm | co2         |
| vdd         | Numeric Point | 3627 mV {ok}  | true    | precision=0,units=mV  | vdd         |

The points will then only update their values when the LoRaWAN sensor reports to the LoRaWAN Gateway (for example every 5 mins).

## **SUPPORTED DEVICES**

The LoRaWAN driver automatically supports the following device types:

- Adonis Pulse Counter  
2x Configurable Pulse Counter Inputs
- B Meters RFM-LR1  
For pre-equipped single jet water meters
- ElSys CO2 Lite (3 in 1)  
Temp / Hum / CO<sub>2</sub>
- Milesight AM102L  
Temp / Hum
- Milesight AM103L  
Temp / Hum / CO<sub>2</sub>
- Milesight AM307  
7 in 1 Sensor  
Temp / Hum / Motion / Light / TVOC / Barometric Press / CO<sub>2</sub>
- Milesight AM308  
9 in 1 Sensor  
Temp / Hum / Motion / Light / TVOC / Pressure / CO<sub>2</sub> / PM2.5 / PM10
- Milesight AM319  
11 in 1 Sensor  
Temp / Hum / Motion / Light / TVOC / Pressure / CO<sub>2</sub> / PM2.5 / PM10 / (HCHO)<sup>2</sup> / (O<sub>3</sub>)<sup>2</sup>
- Milesight EM300 DI  
Temp / Hum / DI or Pulse Counter
- Milesight EM300 MCS  
Temp / Hum / Magnetic Switch
- Milesight EM300 SLD/ZLD  
Temp / Hum / Leak Detection
- Milesight EM300 TH  
Temp / Hum
- Milesight TS101  
Insertion Temp
- Milesight TS201  
Flying Lead Temperature Probe
- Milesight TS301  
1x Connector for PT100 Sensor OR Magnetic Switch

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- Milesight TS302  
2x Connector for PT100 Sensor OR Magnetic Switch
- Milesight UC300  
IO Controller  
4\* DI / 2\* DO / 2\* 4-20mA / 2\* 0-10v / 2\* PT100 Sensor  
\*RS485 NOT CURRENTLY SUPPORTED!
- Milesight VS350  
Passage People Counter
- Milesight WT101\* (*In Development*)  
*Smart Radiator Thermostat*

Other devices are supported in one of two ways:

- Use the 'Generic' profile and decode the incoming JSON
- For Sensor/Device Types that are not listed in the LoRaWAN Niagara driver, please ask Tyrrell Products Ltd about adding your LoRaWAN Device type to the driver's drop-down list.

This will greatly simplify the process of adding devices in the future.

### LORAWAN DEVICE PAYLOAD DE-CODING

New / unknown LoRaWAN device types can still be supported by using the “Generic (pre-decoded JSON)” Device Type drop-down list option in combination with some modifications to the device manufacturer supplied JavaScript “Payload Decoder Function”.

This example will cover a EM300-TH.

You will need the manufacturers decoder script.

As an example:

[https://github.com/Milesight-IoT/SensorDecoders/blob/main/EM\\_Series/EM300\\_Series/EM300-TH/EM300-TH\\_Chirpstack.js#L1](https://github.com/Milesight-IoT/SensorDecoders/blob/main/EM_Series/EM300_Series/EM300-TH/EM300-TH_Chirpstack.js#L1)

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```
/**
 * Payload Decoder for Milesight Network Server
 *
 * Copyright 2023 Milesight IoT
 *
 * @product EM300-TH
 */
function Decode(fPort, bytes) {
    return milesight(bytes);
}

function milesight(bytes) {
    var decoded = {};

    for (var i = 0; i < bytes.length; ) {
        var channel_id = bytes[i++];
        var channel_type = bytes[i++];

        // BATTERY
        if (channel_id === 0x01 && channel_type === 0x75) {
            decoded.battery = bytes[i];
            i += 1;
        }
        // TEMPERATURE
        else if (channel_id === 0x03 && channel_type === 0x67) {
            // °C
            decoded.temperature = readInt16LE(bytes.slice(i, i + 2)) / 10;
            i += 2;

            // °F
            // decoded.temperature = readInt16LE(bytes.slice(i, i + 2)) / 10 * 1.8 + 32;
            // i += 2;
        }
        // HUMIDITY
        else if (channel_id === 0x04 && channel_type === 0x68) {
            decoded.humidity = bytes[i] / 2;
            i += 1;
        }
        // TEMPERATURE & HUMIDITY HISTROY
        else if (channel_id === 0x20 && channel_type === 0xce) {
            var point = {};
            point.timestamp = readUInt32LE(bytes.slice(i, i + 4));
            point.temperature = readInt16LE(bytes.slice(i + 4, i + 6)) / 10;
            point.humidity = bytes[i + 6] / 2;

            decoded.history = decoded.history || [];
            decoded.history.push(point);
            i += 8;
        } else {
            break;
        }
    }
}
```

return decoded;

*More JSON That has been chopped for the sake of convenience.*

You will need to copy the whole of the JS to Notepad++ and modify the first part

### Original Example:

```
/**
 * Payload Decoder for Milesight Network Server
 *
 * Copyright 2023 Milesight IoT
 *
 * @product EM300-TH
 */
function Decode(fPort, bytes) {
    return milesight(bytes);
}

function milesight(bytes) {
    var decoded = {};
}
```

### Modified Example

```
/**
 * Payload Decoder for Milesight Network Server
 *
 * Copyright 2023 Milesight IoT
 *
 * @product EM300-TH
 */
function Decode(fPort, bytes) {
    var decoder = {};
    decoder.devEUI = LoRaObject.devEUI;
    decoder.dataJson = milesight(bytes);
    decoder.time = LoRaObject.time;
    return decoder;
}

function milesight(bytes) {
    var decoded = {};
}
```

### Information

The entry `decoder.dataJson = milesight(bytes);` must match up with the next section line `function milesight(bytes).`

Once modified copy with whole of JS to apse into the milesight gateway.

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Open the Milesight Web Server and login.

Navigate to **Network Server > Payload Codec**

Add a new **Custom Payload Codec**.



**Custom Payload Codes**

Name:

Description:

Template:

**Payload Decoder**

Payload Decoder Function:

```
1 /**
2  * Payload Decoder for Milesight Network Server
3  *
4  * Copyright 2023 Milesight IoT
5  *
6  * @product EM300-TH
7  */
8 function Decode(payload, bytes) {
9   // return milesight(bytes);
10   var decoder = {};
11   decoder.devID = parseInt(bytes);
12   decoder.dataLen = parseInt(bytes);
13   decoder.time = parseInt(bytes);
14   return decoder;
15 }
16
17 function milesight(bytes) {
18   var decoder = {};
```

Paste the modified JSON into the **Payload Decoder Field**

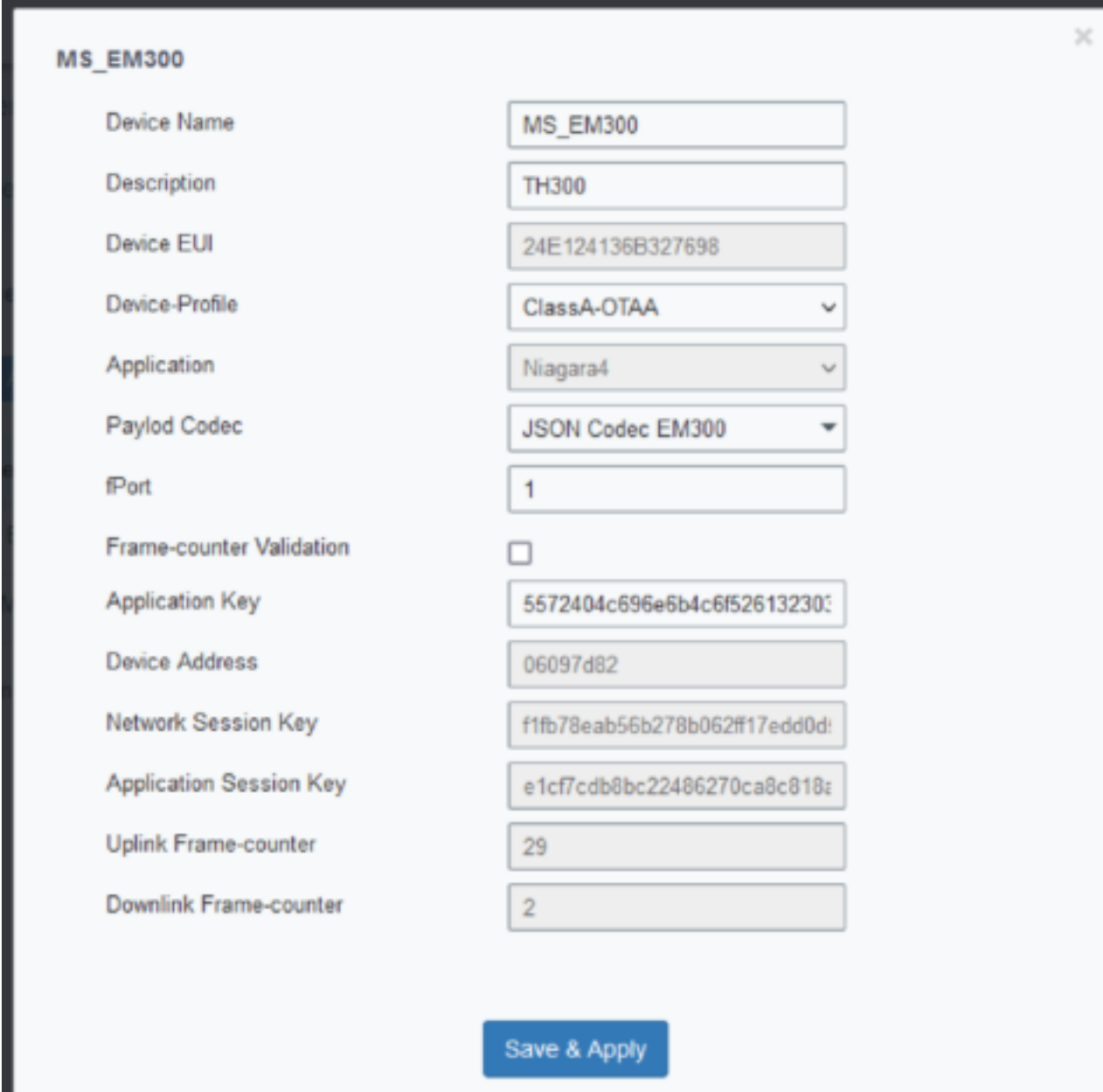
**Save** the custom codec.

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Navigate to **Network Server > Device**

**Edit** the Device in question

Change the **Payload Codec** from None to **JSON Codec EM300** (or appropriate Codec Name)



The screenshot shows a web-based configuration form for a device named 'MS\_EM300'. The form contains several fields for device identification and configuration, including Device Name, Description, Device EUI, Device-Profile, Application, Payload Codec, fPort, Frame-counter Validation, Application Key, Device Address, Network Session Key, Application Session Key, Uplink Frame-counter, and Downlink Frame-counter. The 'Payload Codec' field is set to 'JSON Codec EM300'. A 'Save & Apply' button is located at the bottom right of the form.

| Field                    | Value                         |
|--------------------------|-------------------------------|
| Device Name              | MS_EM300                      |
| Description              | TH300                         |
| Device EUI               | 24E124136B327698              |
| Device-Profile           | ClassA-OTAA                   |
| Application              | Niagara4                      |
| Payload Codec            | JSON Codec EM300              |
| fPort                    | 1                             |
| Frame-counter Validation | <input type="checkbox"/>      |
| Application Key          | 5572404c696e6b4c6f52613230:   |
| Device Address           | 06097d82                      |
| Network Session Key      | f1fb78eab56b278b062ff17edd0d: |
| Application Session Key  | e1cf7cdb8bc22486270ca8c818:   |
| Uplink Frame-counter     | 29                            |
| Downlink Frame-counter   | 2                             |

Save & Apply

Save and Apply the change.

### NIAGARA GENERIC JSON

Return to the Niagara Station and discover the LoRaWAN devices.

Add the target device handset the **Device Type** to **Generic (pre-coded JSON)**

The Point Discovery will **not** work and the points will have to be manually programmed based on their JSON payload names. These can all be obtained from the Payload Decoder.

| Name | Type          | Facets                                   | Fault Cause | Enabled | Device Facets | Tuning Policy Name | Read Value |
|------|---------------|------------------------------------------|-------------|---------|---------------|--------------------|------------|
| Temp | Numeric Point | units=null,precision=1,min=-inf,max=+inf |             | true    |               | defaultPolicy      | 24.40 [ok] |

|                    |                                          |
|--------------------|------------------------------------------|
| Name               | Temp                                     |
| Type               | Cannot edit                              |
| Facets             | units=null,precision=1,min=-inf,max=+inf |
| Fault Cause        |                                          |
| Enabled            | <input checked="" type="checkbox"/> true |
| Device Facets      |                                          |
| Tuning Policy Name | defaultPolicy                            |
| Read Value         | 24.40 [ok]                               |
| Write Value        | 0.00 [ok]                                |
| Json Field         | temperature                              |

In the above example the **JSON Field** is **temperature**.

The **Name** and **Facets** can be configured as required based on the point type.

The next time the LoRaWAN device reports to the Gateway the points will update their values.

## REVISION HISTORY

| REVISION | DESCRIPTION                                      |
|----------|--------------------------------------------------|
| 1.0      | Draft Release For Approval                       |
| 1.1      | General Update                                   |
| 1.2      | List of Automatically Supported Devices Expanded |