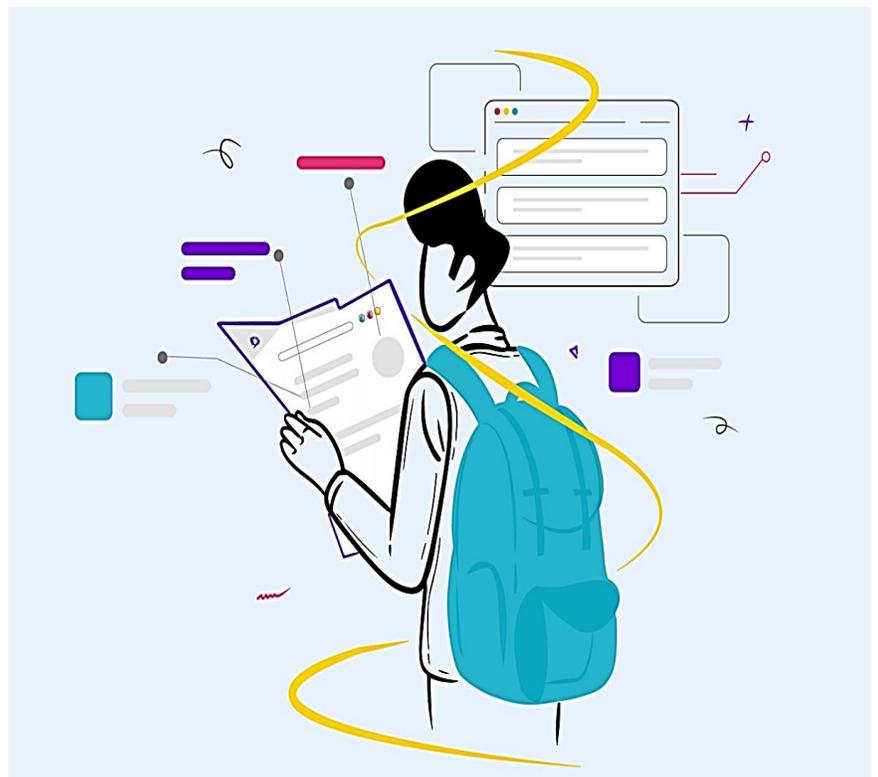# MQTT UI
User Manual

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Table of Contents

Overview about MQTT

Dashboard Overview

1. Configure New Connection

**2. Update Existing Configuration**

Overview about MQTT-

MQTT (Message Queuing Telemetry Transport) is a lightweight and efficient messaging protocol commonly used in IoT (Internet of Things) and various industrial applications. When integrated into a UI (User Interface) application with Modbus configuration, it becomes a powerful tool for setting up, controlling, and managing devices that communicate using the Modbus protocol.

The primary purpose of this MQTT-based UI application with Modbus configuration is to streamline the process of configuring Modbus-enabled devices. The application provides a user-friendly interface to manage various parameters necessary for communication and control using the Modbus protocol. The components within the application enable users to tailor the communication settings based on specific device requirements.
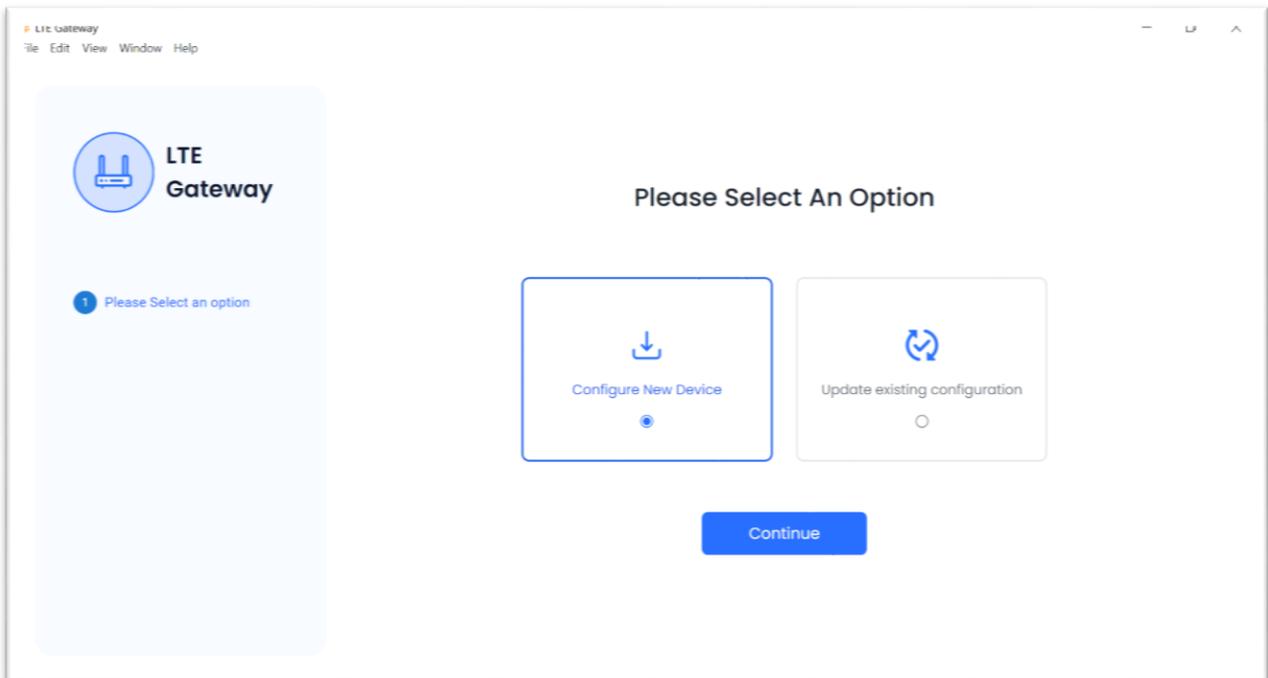
Dashboard Overview

MQTT UI application appears to have a streamlined approach, offering users two primary options upon landing on the first page:
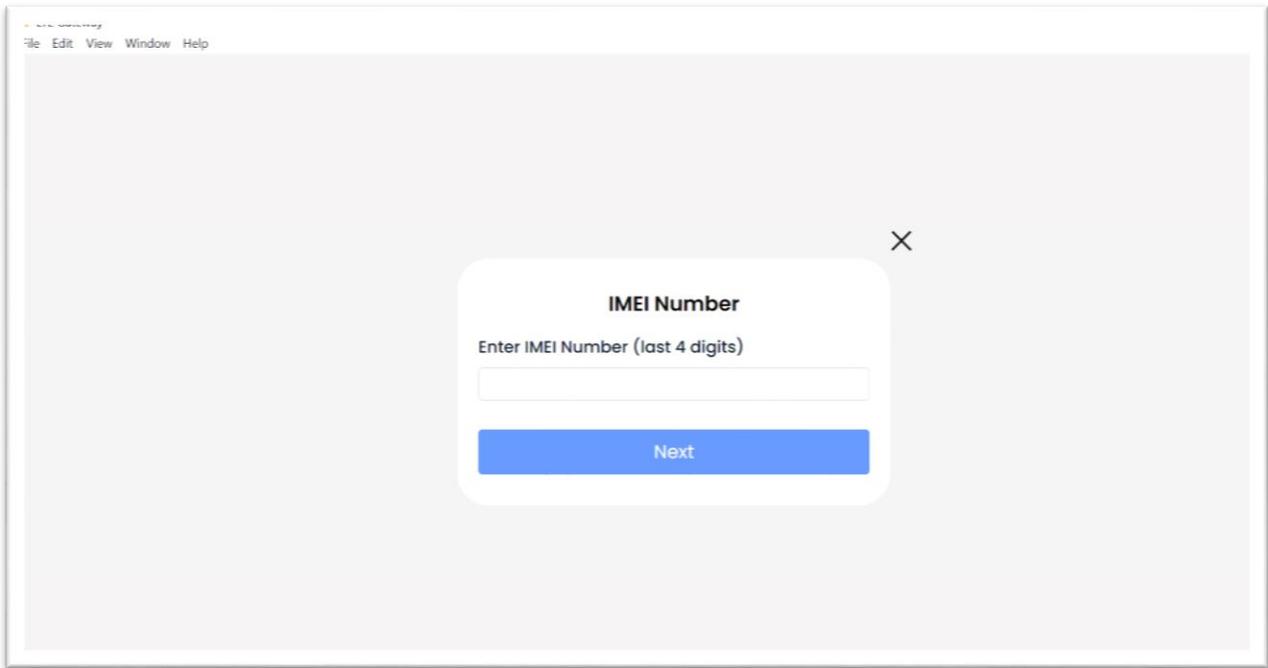
1. Configure New Device

2. Update Existing Device
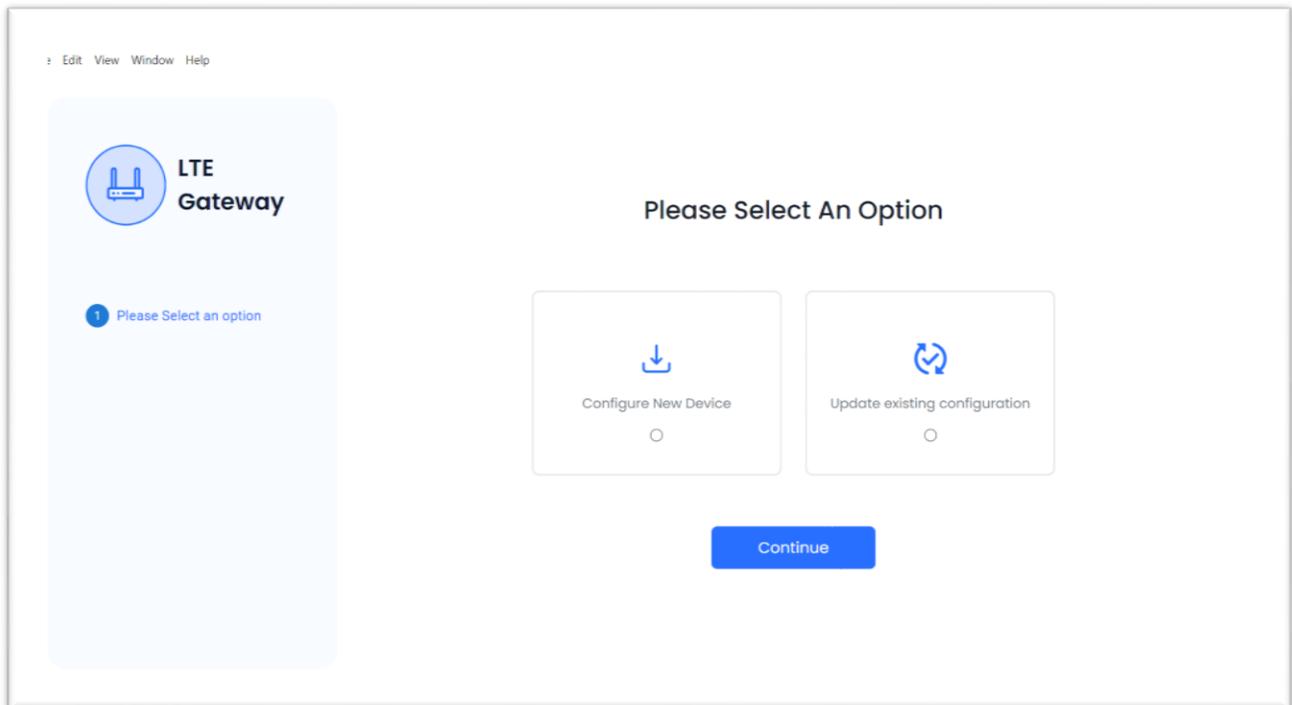
1. Configure New Connection Step By Step:

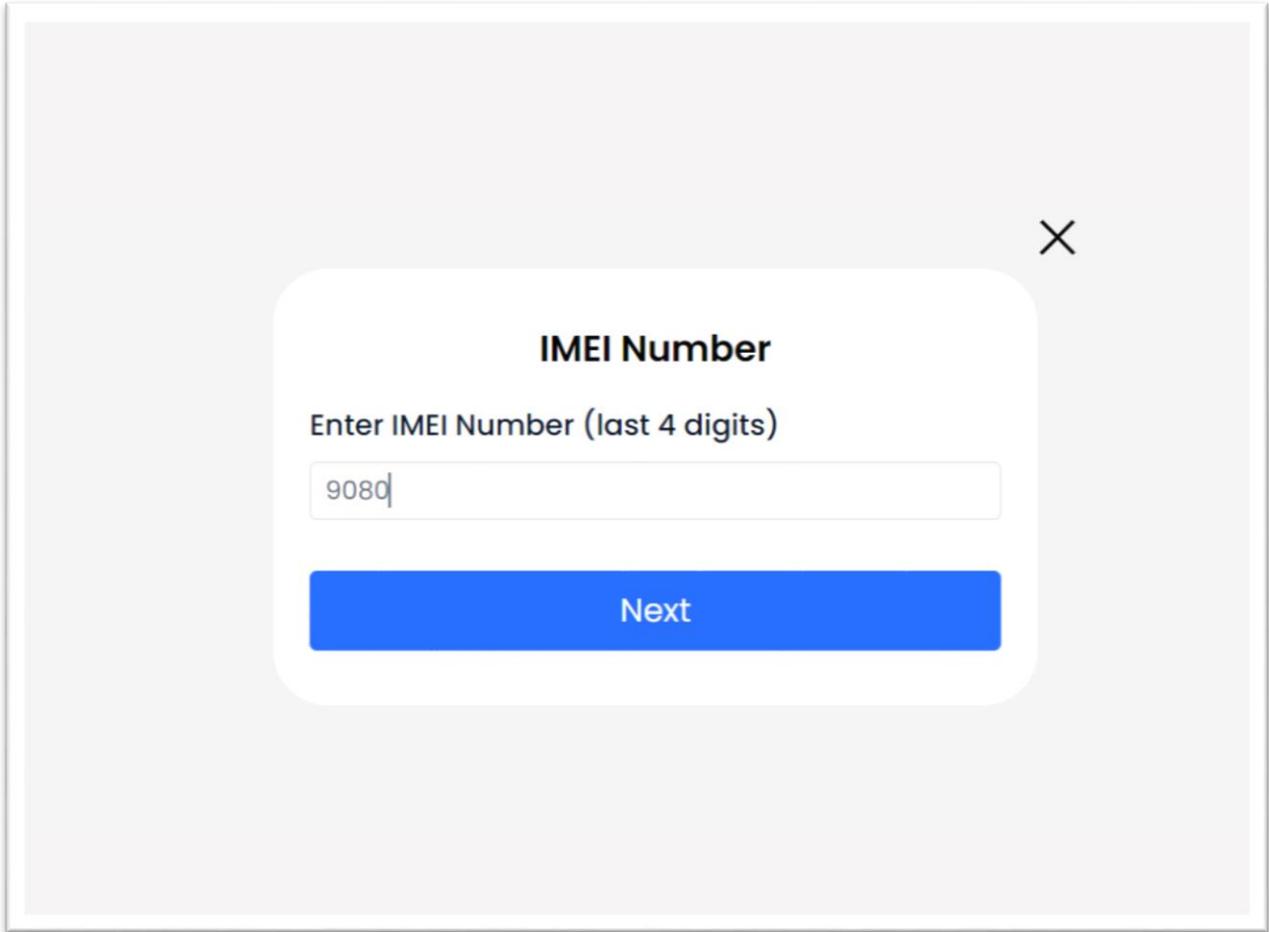**Step 1: Please select an option "*Configure New Device*"**

Step 2: Click on "*Continue*" Button.

After clicking on continue button a user move on new screen.

Step 3: Enter IMEI Number (last 4 digits)

The device has a distinct 15- or 17-digit IMEI number, we can only take the last four digits eg. 860987054309080.

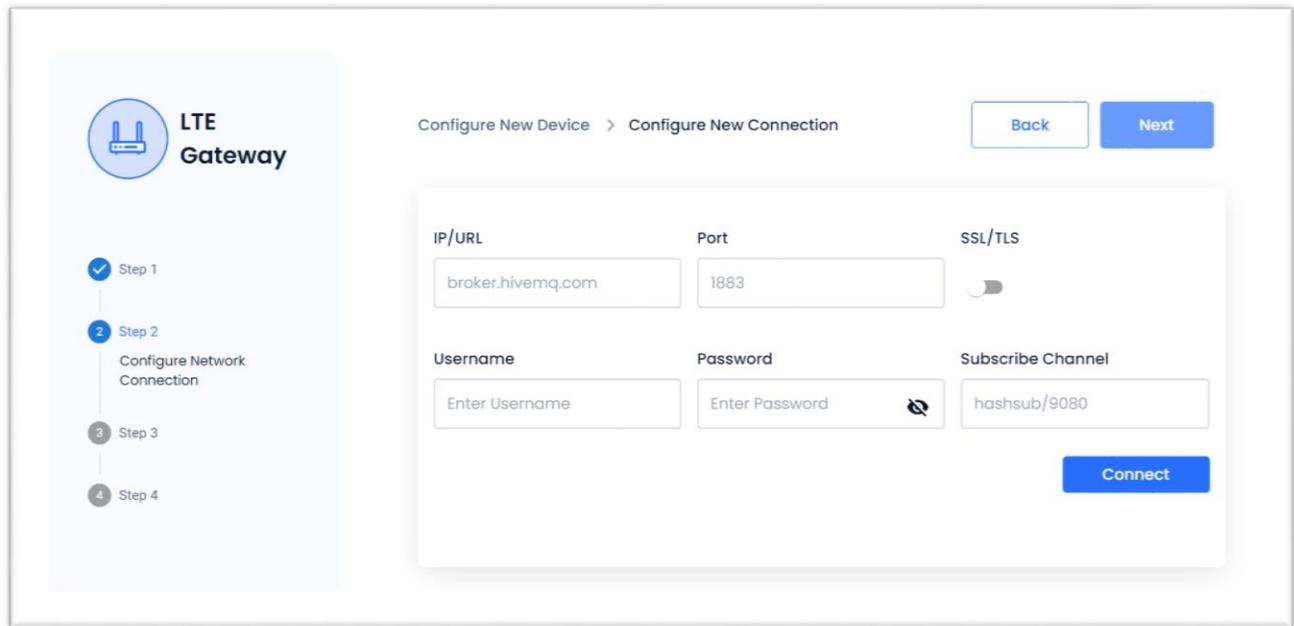## Step 4: Click on "*Next*" Button.

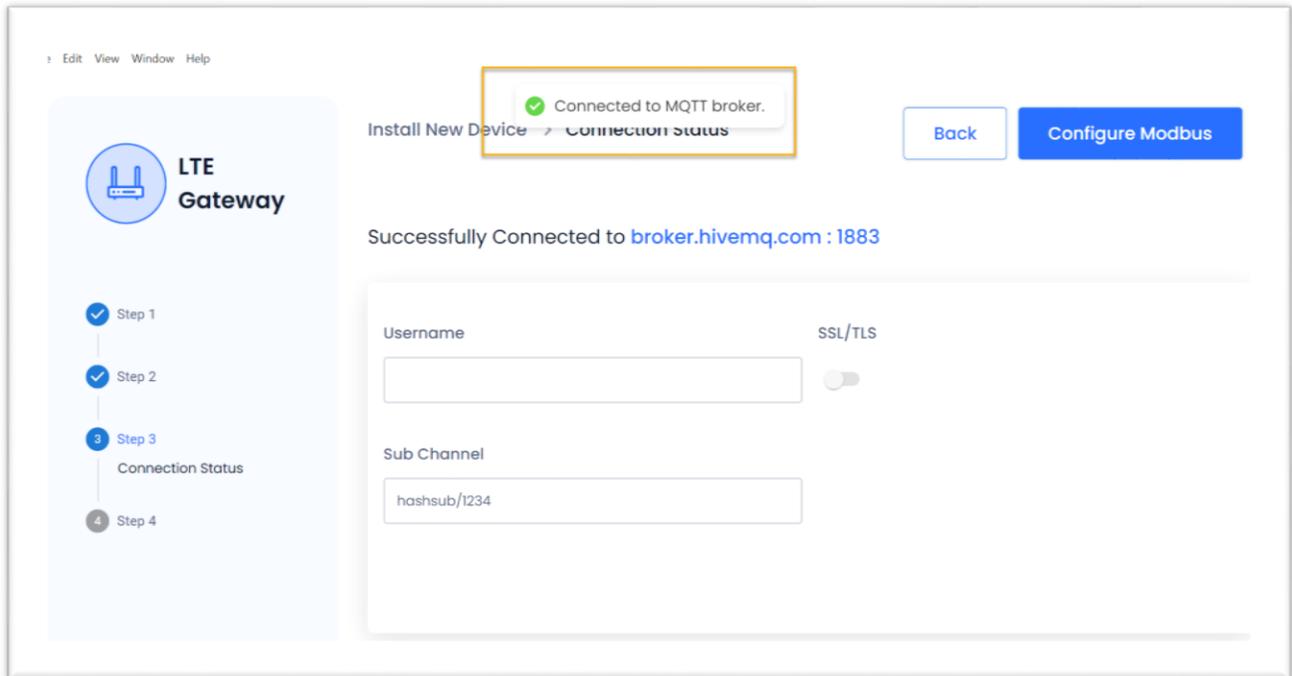*After clicking on Next button a user will navigate on new screen*

Step 5: Enter the data inside the field.

- *URL: It comes pre-filled with a default URL, "broker.hivemq.com," which users can modify based on the broker they want to connect.*
- *Port: Users can specify the port number associated with the MQTT broker. The default port number is set as 1883.*
- *SSL/TLS: This option allows users to enable or disable SSL/TLS encryption for secure communication*
- *Username: Enter Username for authentication*
- *Password: Enter Password for authentication.*
- *Subscribe Channel: This field is pre-filled with a default topic name, "hashsub/IMEI no's last 4 digits," which seems to be generated based on the device's IMEI number. Users can customize this topic if needed*
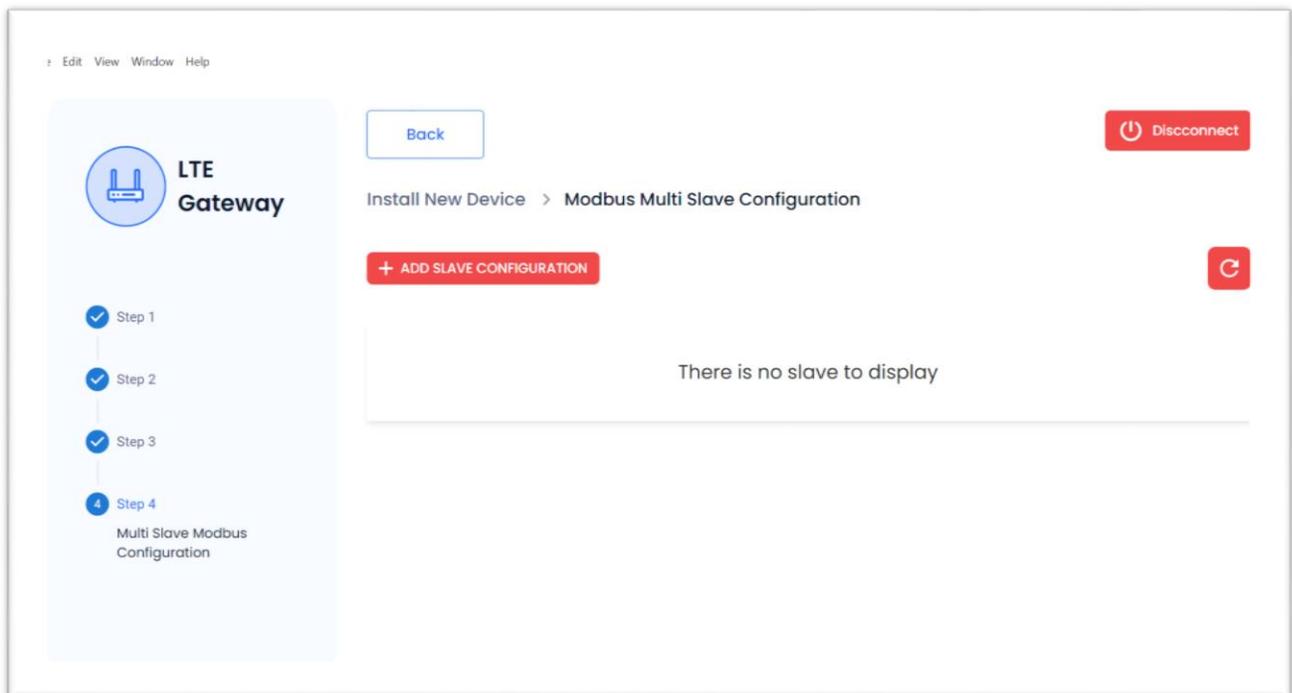
Step 6: Click on "*Connect*" Button.

*After clicking on Connect button MQTT UI application serves as a dashboard reflecting the current status and details of the established connection. After successful configuration and connection to the MQTT broker move on next Page with message "**Connected to MQTT Broker**".*

Step 7: Click on "*Configure Modbus*" Button.

Upon clicking on Configure Modbus button a user will navigate on new screen

Step 8 : Click on "*ADD SLAVE CONFIGURATION*" Button.

Step 9: Enter all the details inside the fields

- *Slave Name: This field allows users to assign a name or label to the Modbus slave device for easier identification (eg. Hash Test)*
- *Slave Id: Enter numeric value which define on the device.(eg. 2)*
- *Baudrate: Choose the same value from the dropdown where the value is defined on the device (eg. 300)*
- *Frame Format: Select the value from the dropdown (eg. 8E1)*
- *Pub Topic: Enter any name where you want to receive the data (eg. HashTopic)*
- *Slave Number: Select the value from the dropdown (eg. 4)*

Step 10: Click on "*Add Register*" button.

Upon clicking on Add Register button a page will expand with new fields for register as shown in image.

Step 11: Enter all the required details for registers inside the fields.

- *S no.: It is prefilled fata*
- *Function: Select the function appropriate Modbus function associated with the register.*
- *Starting Address: Enter the starting address for the register. The address is within the allowable range of 0 to 65635, as specified by the Modbus protocol.*
- *Number of Registers: Enter the quantity of consecutive registers to be accessed,*
- *Data Type : Select the data types associated with the registers.*
- *Shift Byte: It allows users to choose whether to enable or disable shifting of bytes. Shifting bytes.*
- *Remove Button: To reset all the register details.*
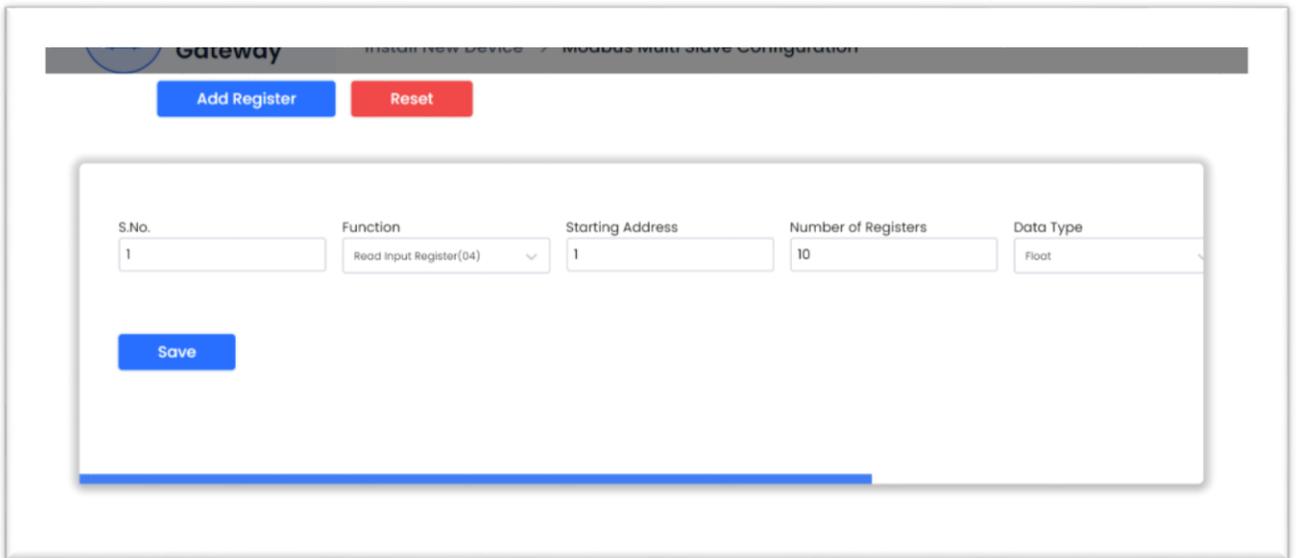
Step 12: Click on "*Save*" Button.

Upon clicking on Save button a Popup will display with the message " Do you want to save the configuration?"

- *If you want to save the configuration click on "Yes" Button*
- *If you don't want to save button click on "No" Button.*
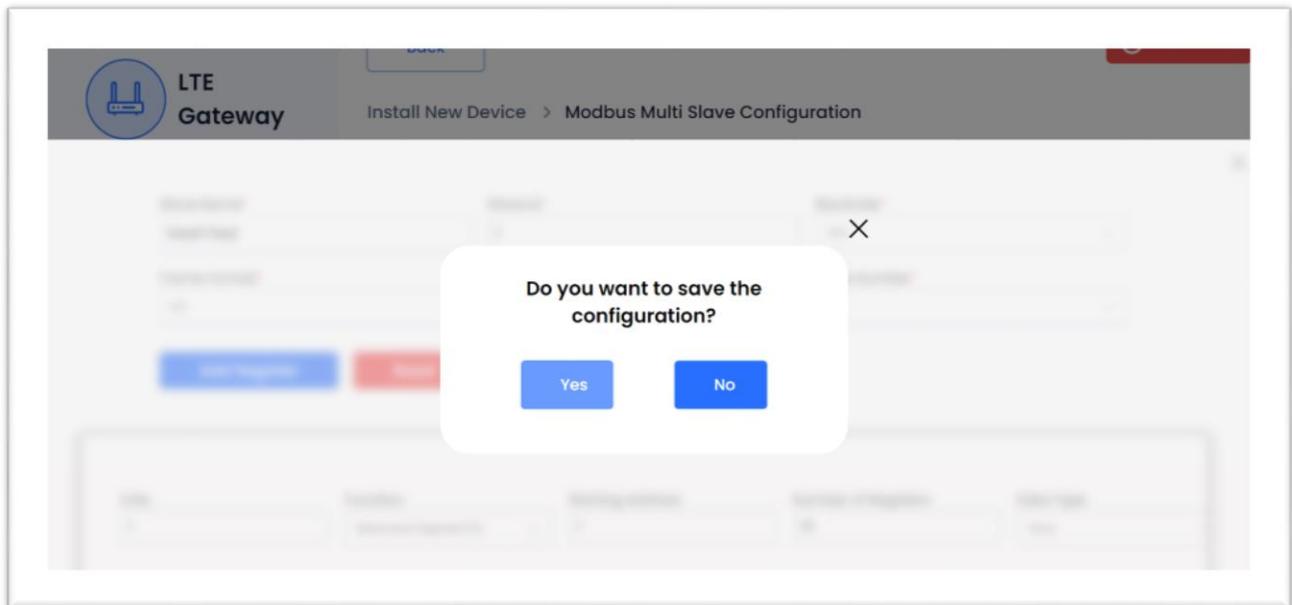
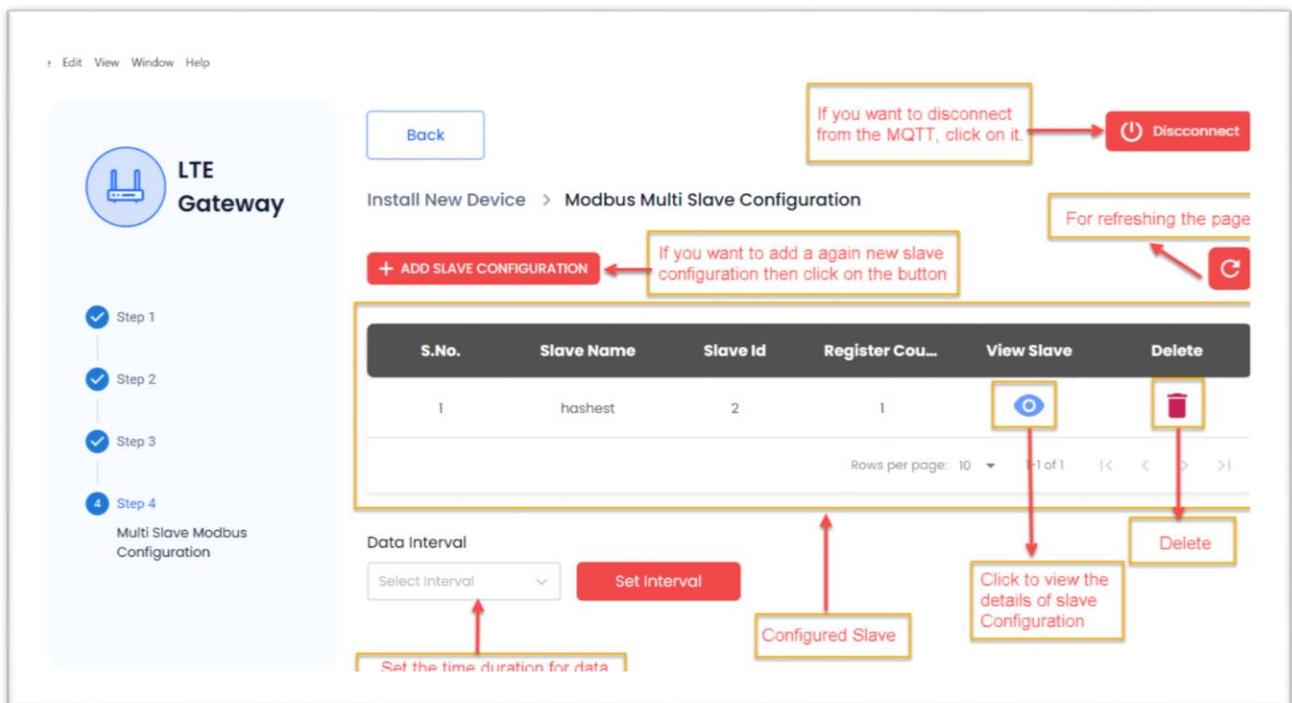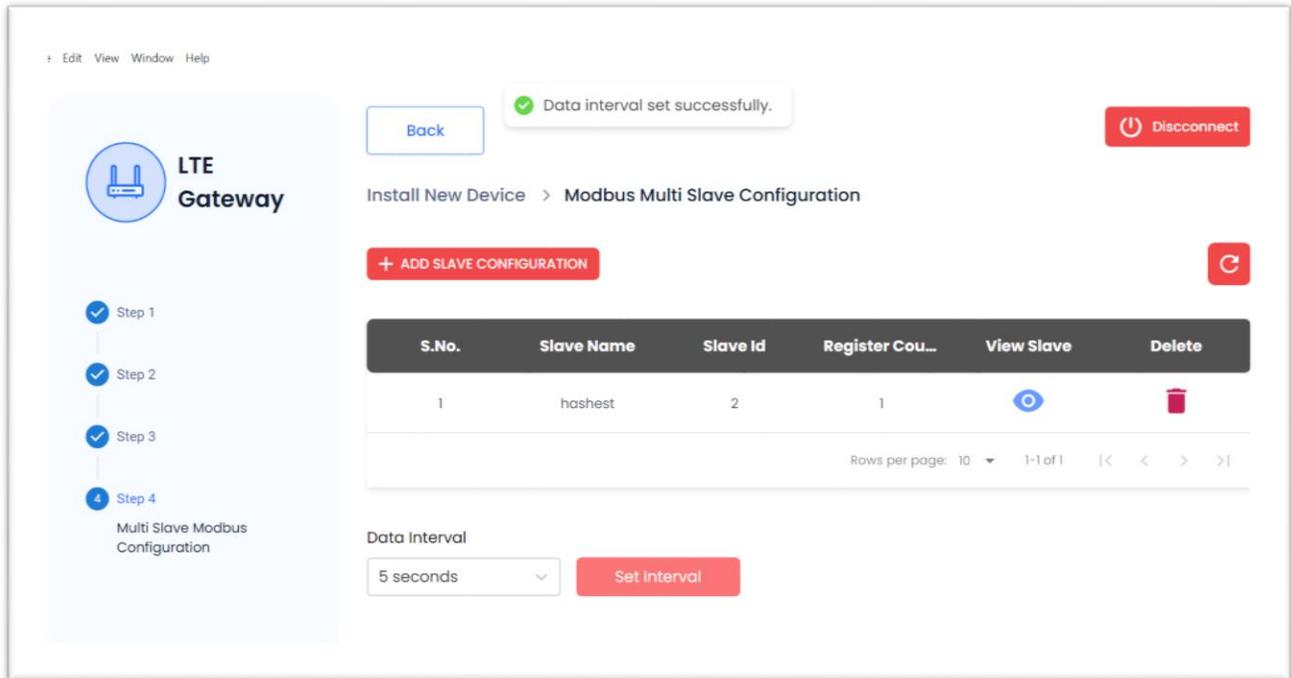*After clicking on **Yes** button. A new screen will come as shown in an image.*

Step 13: Choose data Interval time from the dropdown and then click on "*Set Interval*" Button.

Upon clicking on Save Interval Button. User will get the message "Data interval set successfully".

2. Update Existing Configuration

The "Update Existing Configuration" option on the first page of the MQTT UI application provides a pathway for users to modify and adjust the settings of previously configured Modbus devices and their associated register configurations. This option is specifically designed to enable users to make changes or updates to the existing configurations, ensuring that the application remains dynamic and adaptable to evolving requirements.
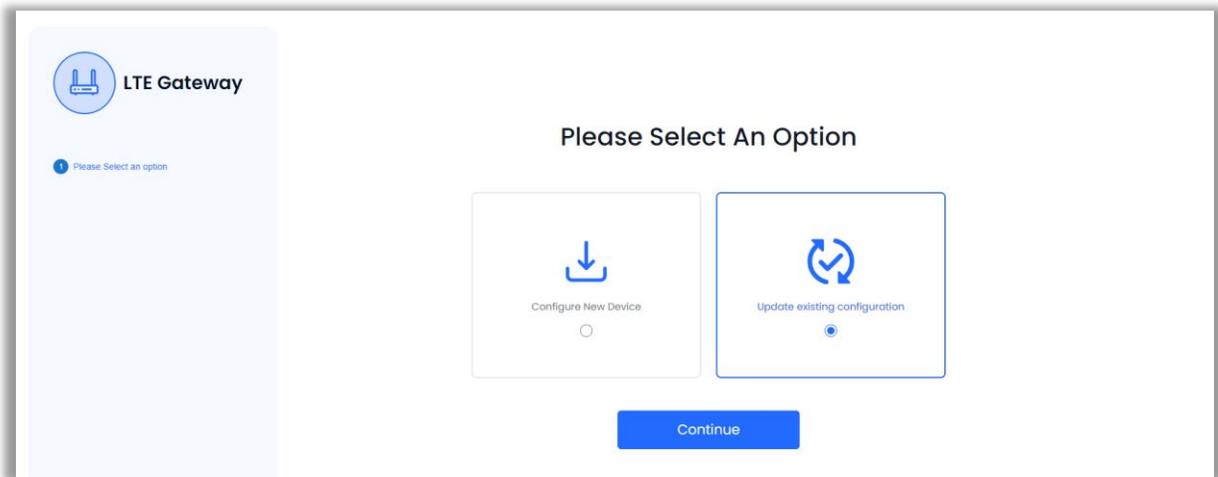
"*Update Existing Configuration*" option and entering the existing IMEI (International Mobile Equipment Identity) number, the subsequent page displays three distinct options for further modifications and viewing of the configurations related to the previously entered IMEI number:

2.1 Update MQTT Connection: This option allows users to update and modify the settings associated with the MQTT connection for the specified IMEI number. Users can make adjustments to the broker URL, port number, SSL/TLS settings, username, password, subscription channel, or any other details related to the connection settings.

2.2 Update Multi Slave Modbus Configuration: Users can modify and update the configurations associated with multiple Modbus slave devices connected under the specified IMEI number.

2.3 **View Multi Slave Modbus Configuration:** This option allows users to view the current configurations of multiple Modbus slave devices associated with the entered IMEI number
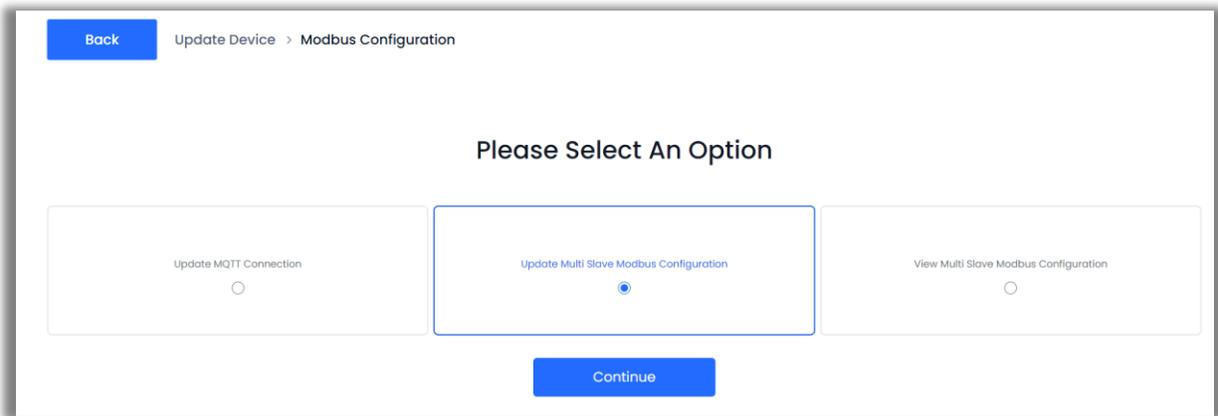
Follow the same procedures as when we configured the Multi Slave Modbus Configuration if you wish to Change/Modify it.