Honeywell

HONEYWELL FORGE GATEWAY

Onboarding Guide

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INTRODUCTION

The Forge Gateway device helps onboard site data to Honeywell Forge Cloud. It is used to collect the data from BACnet/Modbus devices available in the building. To establish the connection between site and gateway, you must configure BACnet/Modbus channels present in the building. You can access the gateway from your PC by using embedded web server within the gateway. Once you have access, you can collect the site data and synchronized it with the Honeywell Forge Cloud.

SETUP INTERNET AND DEVICE CONNECTIVITY

Refer to the below steps to setup the gateway:

1. To setup your device with gateway, the LAN1 port of gateway must be connected to the Internet, and the laptop should be connected to the same LAN to access the gateway.
2. The LAN2 port must be connected to the BACnet IP network.
3. For MODBUS devices, there are three RS485 channels available in the gateway. You can configure these channels and add the MODBUS devices accordingly. The Modbus devices can be various types, such as energy meters, water meters and so on.
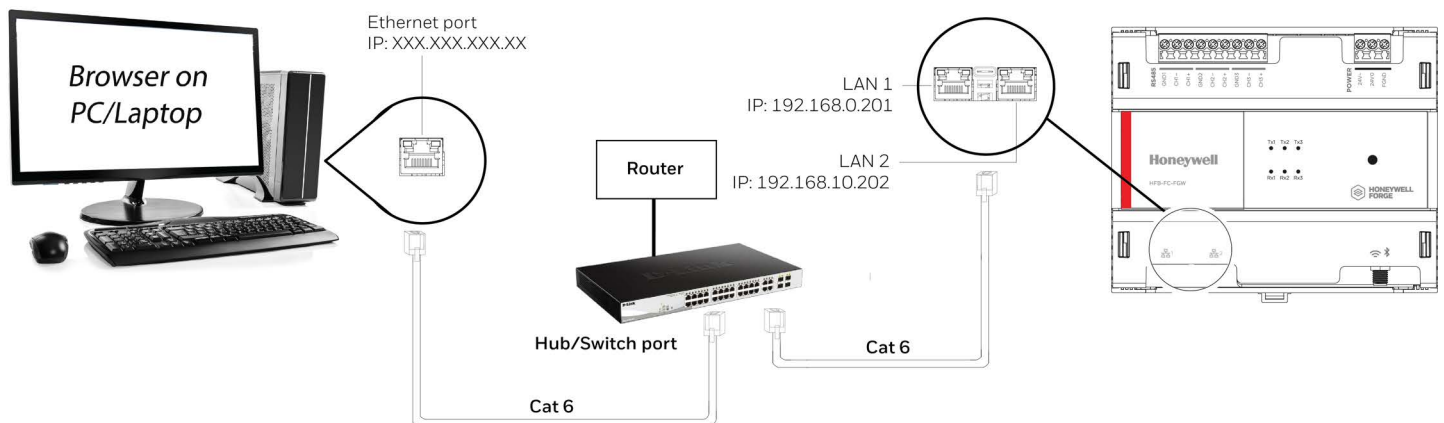
Fig. 1 Gateway Setup

LOGIN TO GATEWAY

The Forge gateway can be registered with Forge Cloud using the web application hosted in the gateway. This web application can be accessed from a browser by using the default IP address of the gateway, along with the default login ID and password.

Default IP Address:
- LAN1: 192.168.0.201
- LAN2: 192.168.10.202

Default Login Credentials:

> 📄 **NOTE:**
> These credentials are for first-time users only.

- Username: Admin
- Password: ForgeGW@123

WORKFLOW

By registering the Forge Gateway, you can onboard the site data into Honeywell Forge Cloud. The steps required to complete Forge Gateway Registration workflow are listed below:

- Register the gateway with Honeywell Forge cloud (Honeywell Forge Cloud Connection)
- Configure the BACnet/Modbus Channels and Collect BMS data (BMS Information Collection)
- Sync the collected data from BACnet/Modbus devices to cloud (Cloud Sync Data)
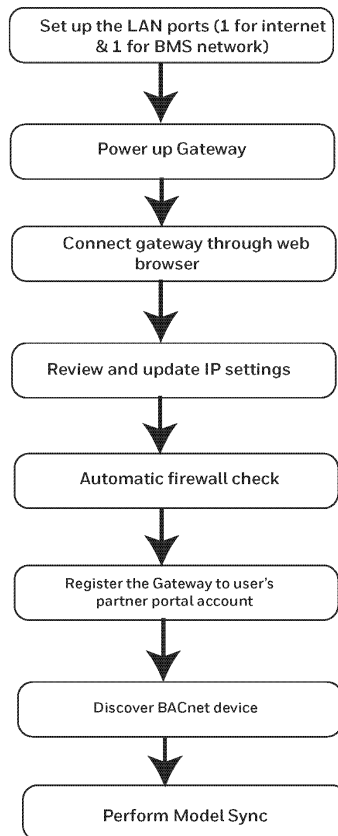
Fig. 2 Workflow

ONBOARDING STEPS FOR FORGE GATEWAY

Refer to the below steps to onboard BMS data using Forge Gateway:

Prerequisites

Ensure the following prerequisites are met to onboard the forge gateway:

1. Internet connectivity must be available to connect LAN1 port of gateway.
2. Installer should have Forge Login account and must be member of a Partner Organization.
3. The Installer's laptop must be connected to the same LAN network to which Gateway is connected. Ensure a port is available for laptop to connect.
4. The laptop must have Internet access.
5. URL Whitelisting: Ensure below listed URLs are whitelisted in the firewall:

Table 1. URL Whitelist

Function	US Region	EU Region	UAE Region	Port	Protocol
Gateway Registration – To establish trust between gateway and Forge Cloud (Gateway management / Gateway lifecycle management)	sc.honeywellforge.com	sc.eu.honeywellforge.com	sc.ae.honeywellforge.com	443	TCP/ HTTPS
Azure DPS Registration Endpoint – To establish trust between Gateway and DPS (Auto scaling, extra security, Scales, Recovery support)	global.azure-devicesprovisioning.net			443	TCP/ HTTPS
Azure IoT Hub – To send data like point history, events etc. to cloud	sentt01aprod v2.azure- devices.net	sentt02aprod v 2.azure- devices.net	fp-iot-prod- uaen-iot-01.azure- devices.net	443	TCP/ HTTPS

Login

To access the Forge Gateway, refer to the below steps:

1. Open the web browser from your laptop device and enter the default IP address of gateway in web browser. The Login window is displayed.
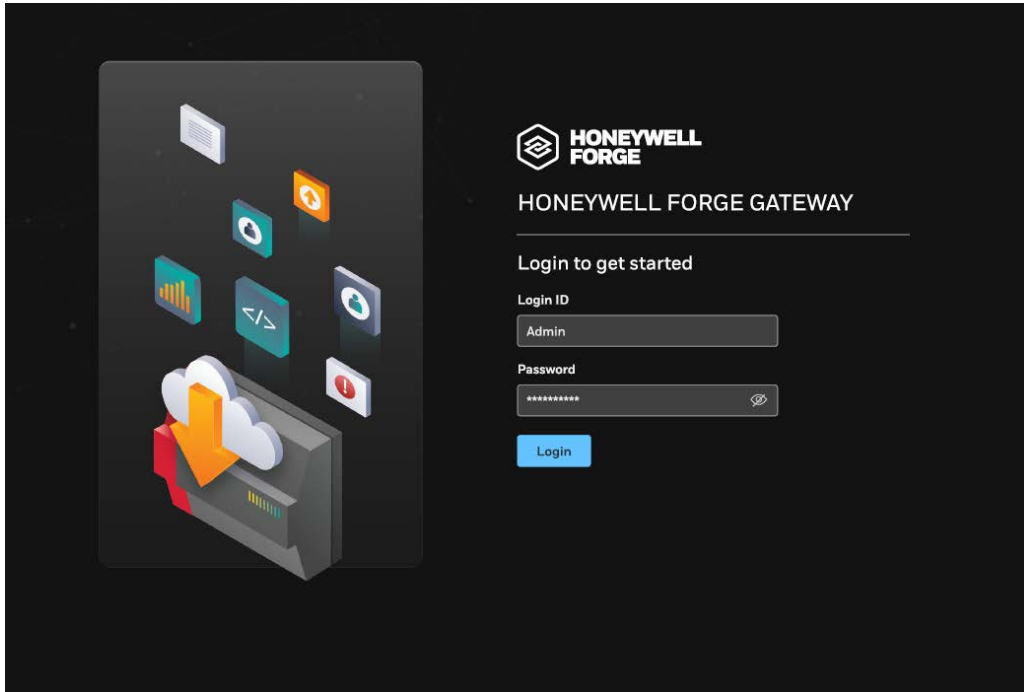

Fig. 3 Login Screen

2. Enter the default login credentials and click **Login**.

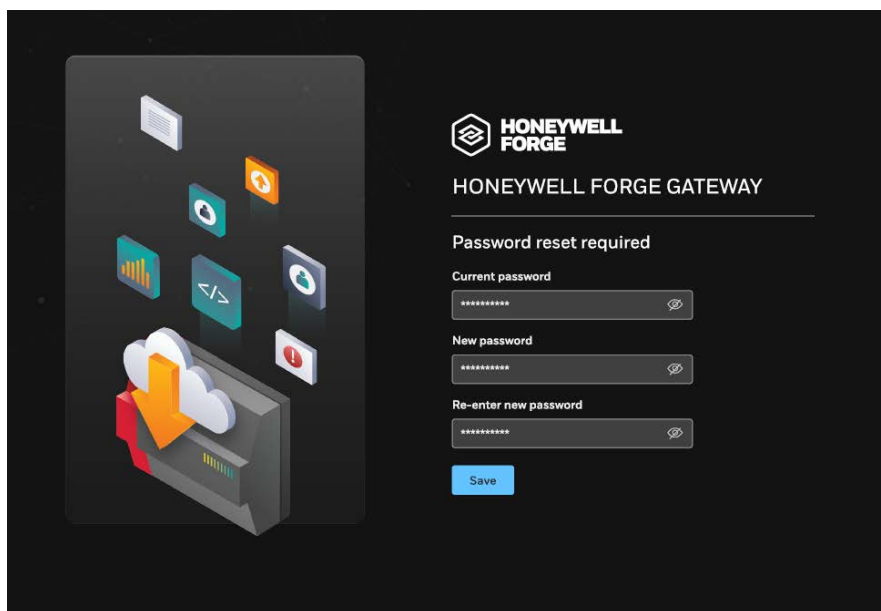3. For the first time users, you must set the password using Password reset screen.

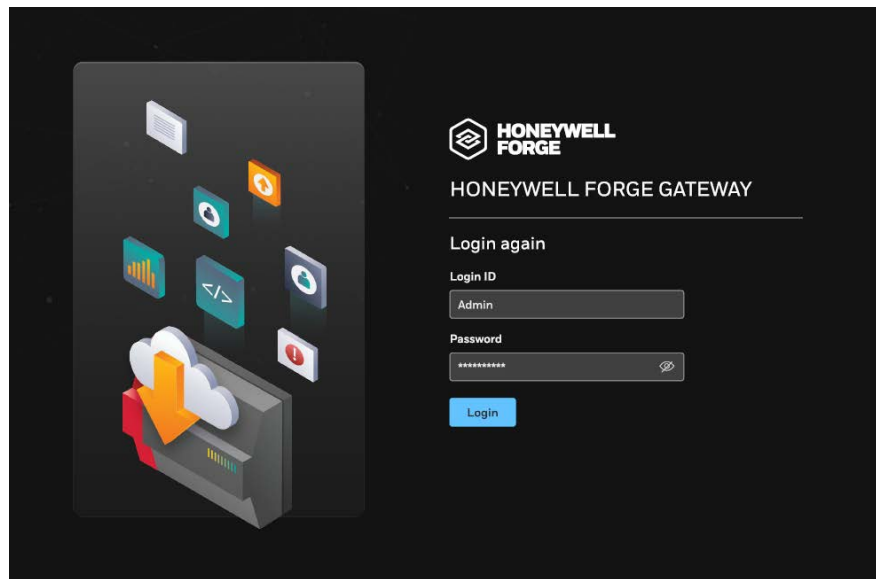**Fig. 4 Password Reset Screen**

4. Login with the created password.

Fig. 5 Login again

Register Gateway

To register the Forge Gateway for your site, refer to the below steps:

1. Once logged in, click **GET STARTED**.

> 📄 **NOTE:**
> **Pre-requisites** – You can click on Pre-requisites to learn more about the requirements for onboarding the gateway, including the URLs that need to be whitelisted.
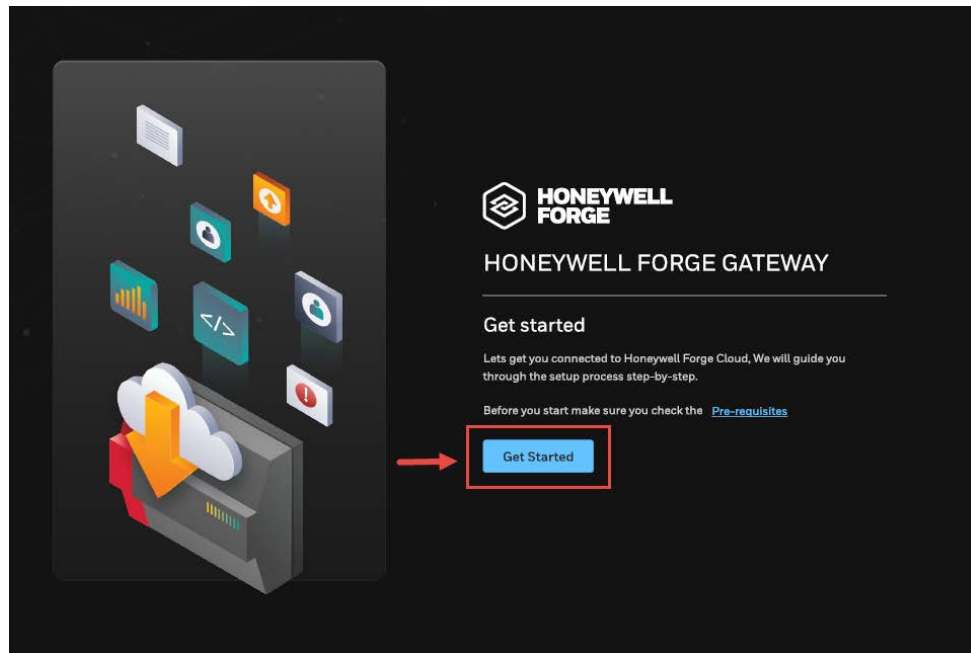
Fig. 6 Get Started

HONEYWELL FORGE GATEWAY window is displayed. It allows the user to register the gateway, collect BMS data, and synchronize the collected data to the cloud. The stages required to onboard the BMS data are listed below:

- HONEYWELL FORGE CLOUD CONNECTION
- BMS INFORMATION COLLECTION
- CLOUD SYNC DATA
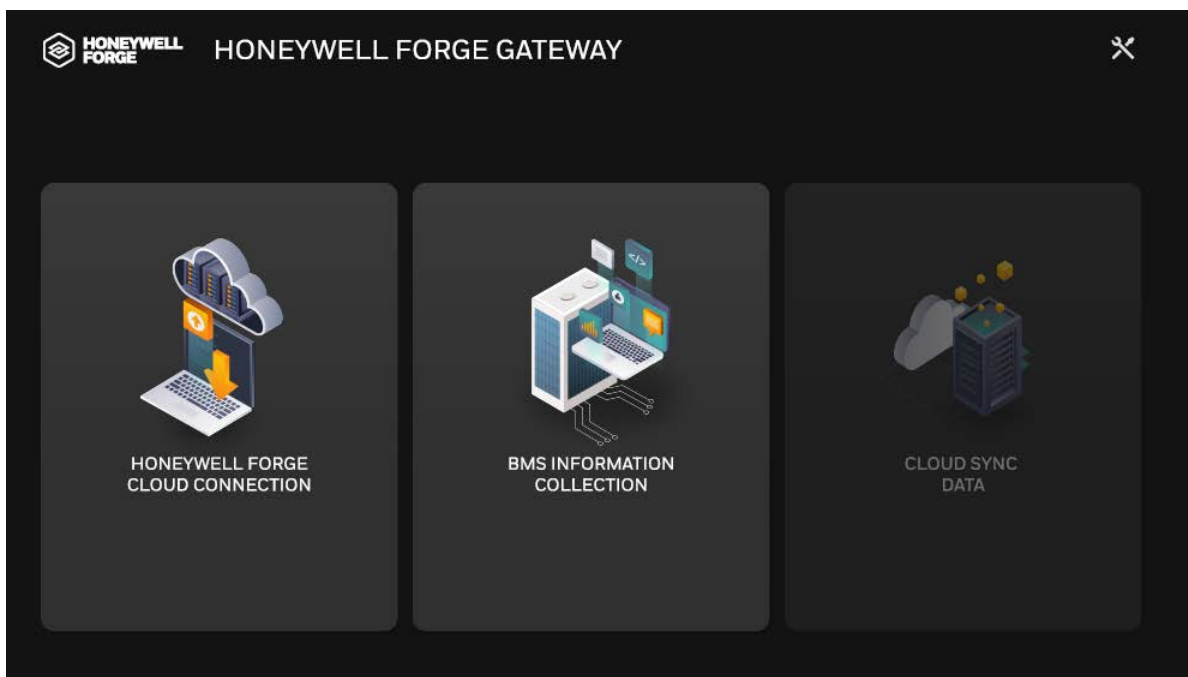
Fig. 7 Honeywell Forge Connection View

2. Click **HONEYWELL FORGE CLOUD CONNECTION**.
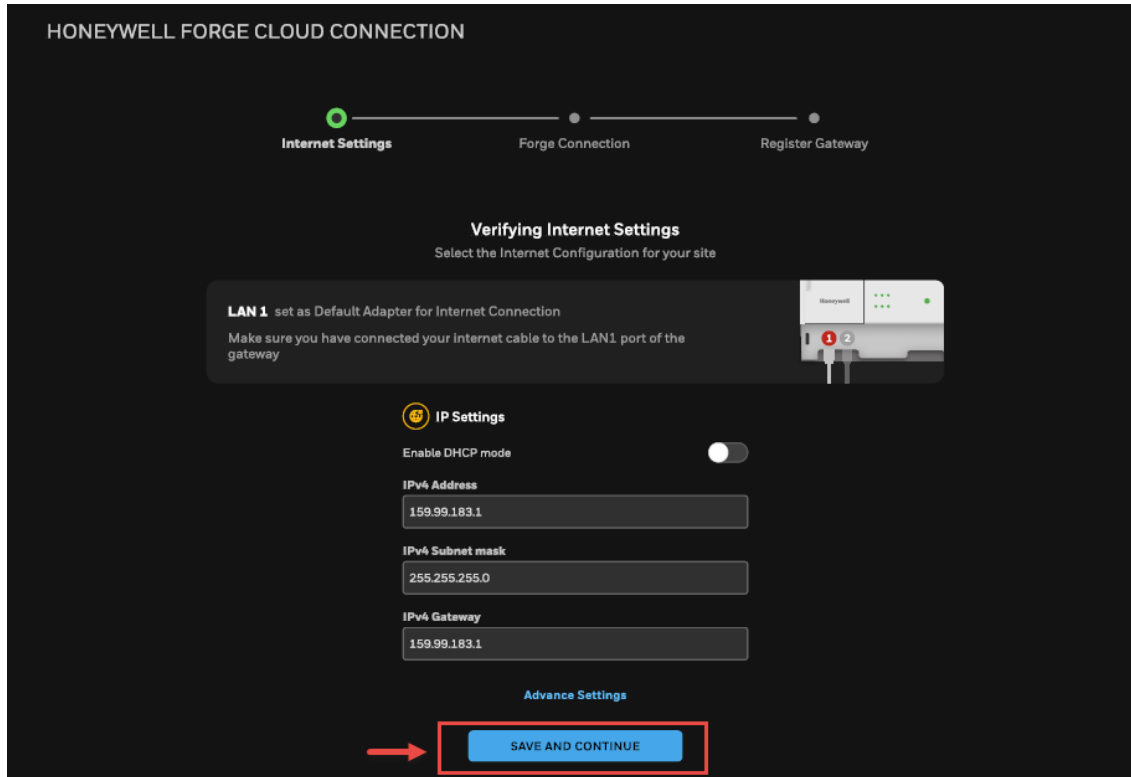
Fig. 8 Cloud Connection View

3. Configure the IP settings under Internet settings and click **SAVE AND CONTINUE**.

> 📄 **NOTE:**
>
> For IP settings, default values are displayed. To configure it manually, ensure to connect the LAN1 port of the gateway to your Internet cable or router. Also, the "Advance Settings" option will be available for the users to view DNS settings.
>
> If the IP address is changed, you will need to log in to the gateway again using the new IP address.

4. Post verification of Internet connection, **Verify Forge Connection** window is displayed. Select the required data center region from drop-down and time zone to add date and time of the gateway. Click **VERIFY CONNECTION.**
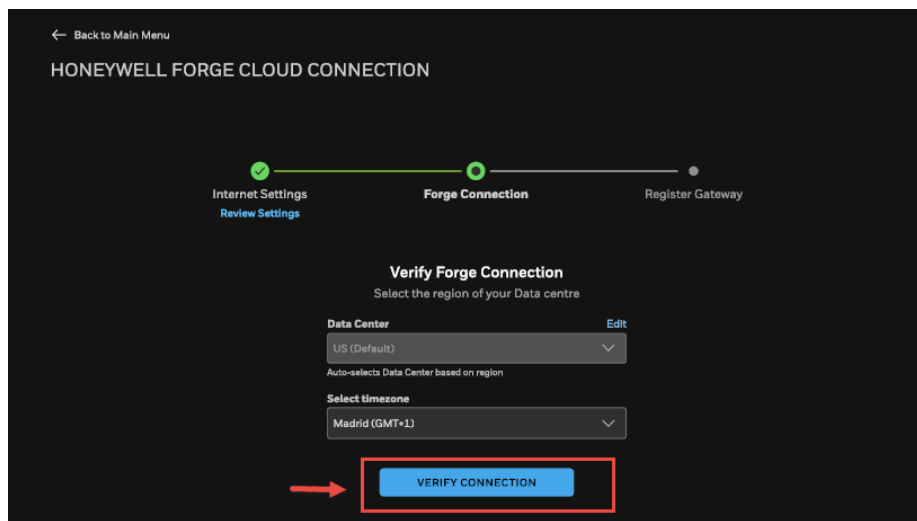
Fig. 9 Verify Forge Connection

5. If there is any error while verifying the connection, error log is displayed. User can fix the error as per the given error log and click **RETRY**.
6. Once the error is fixed, popup is displayed for verified forge access.
7. After successful verification of cloud connection, the "Gateway Registration" window is displayed to register your gateway with cloud. Click **Register Gateway**.
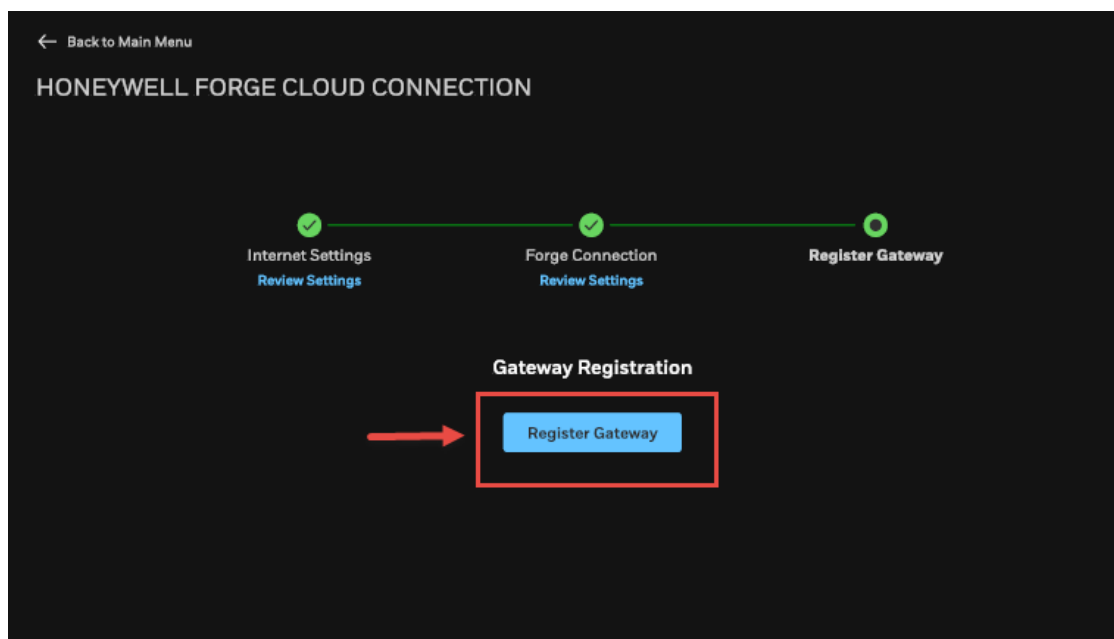

Fig. 10 Gateway Registration View

The **Gateway Setup** window is displayed with the steps to complete the gateway registration process.
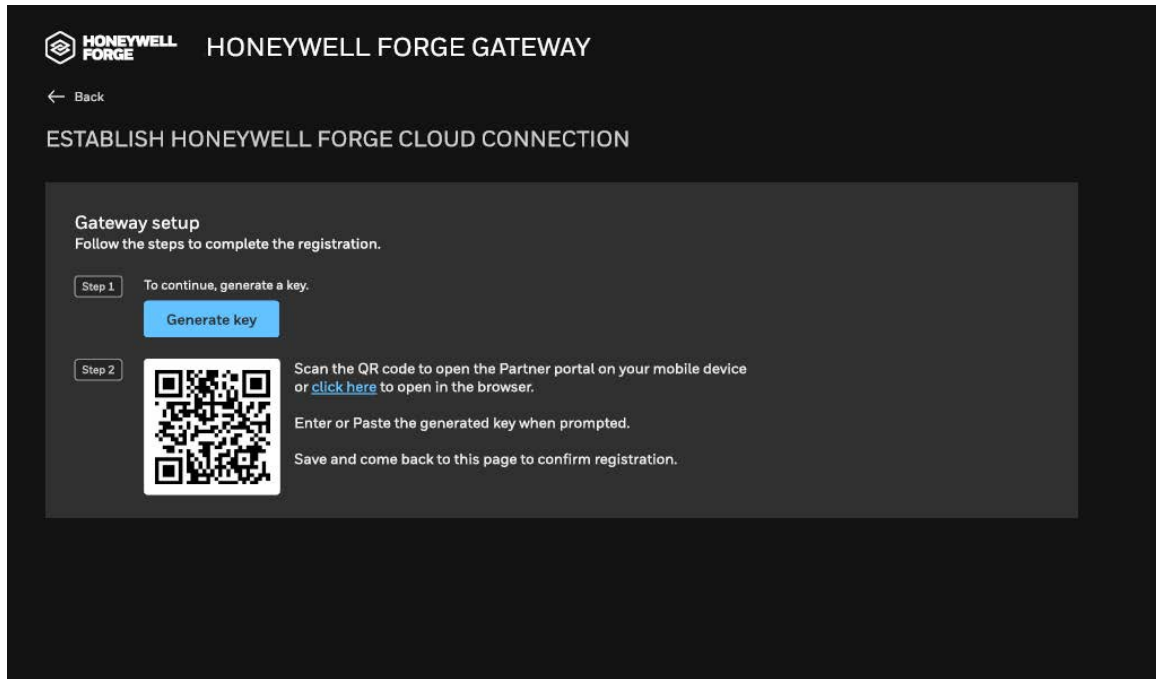
Fig. 11 Gateway Setup Screen

8. To continue with the registration, click **Generate Key**. The generated key is required to create new gateway in the Onboarding Partner Portal.

> 📄 **NOTE:**
> It may take approximately 20 to 30 seconds for the registration key to be generated.
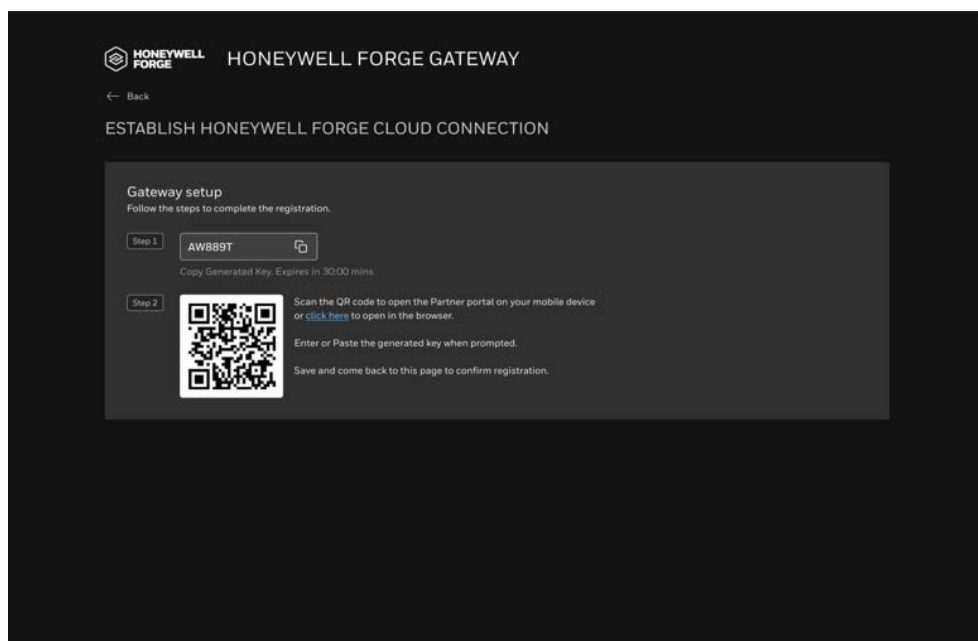
Fig. 12 Generated Key

> 📄 **NOTE:**
> Generated Key is used to authenticate the gateway to be added in the forge account. This key is valid for 30 minutes.

9. Copy the Generated key. It will be used to onboard the gateway in the partner portal.
10. For registering the gateway, you can either click on the "click here" link or scan the "QR code" to open the partner portal on your mobile device.

> 📄 **NOTE:**
> Within the site network, if you've no restriction of firewall rules, use the "click here" link to open registration page to add the gateway.
>
> If your site has firewall restrictions, you can scan the QR code in your mobile device to add the gateway.

11. The Forge login page is displayed. You can login with forge credentials.

Fig. 13 Login Window

12. In the "Create New Gateway" window, enter the gateway name, generated key, and click **Save**.

Fig. 14 Create New Gateway

13. Once saved, the popup is displayed confirming that the gateway is registered successfully.

📄 **NOTE:**
It can take several seconds (up to a minute) before the registration is completed. Please wait for confirmation message to be displayed.
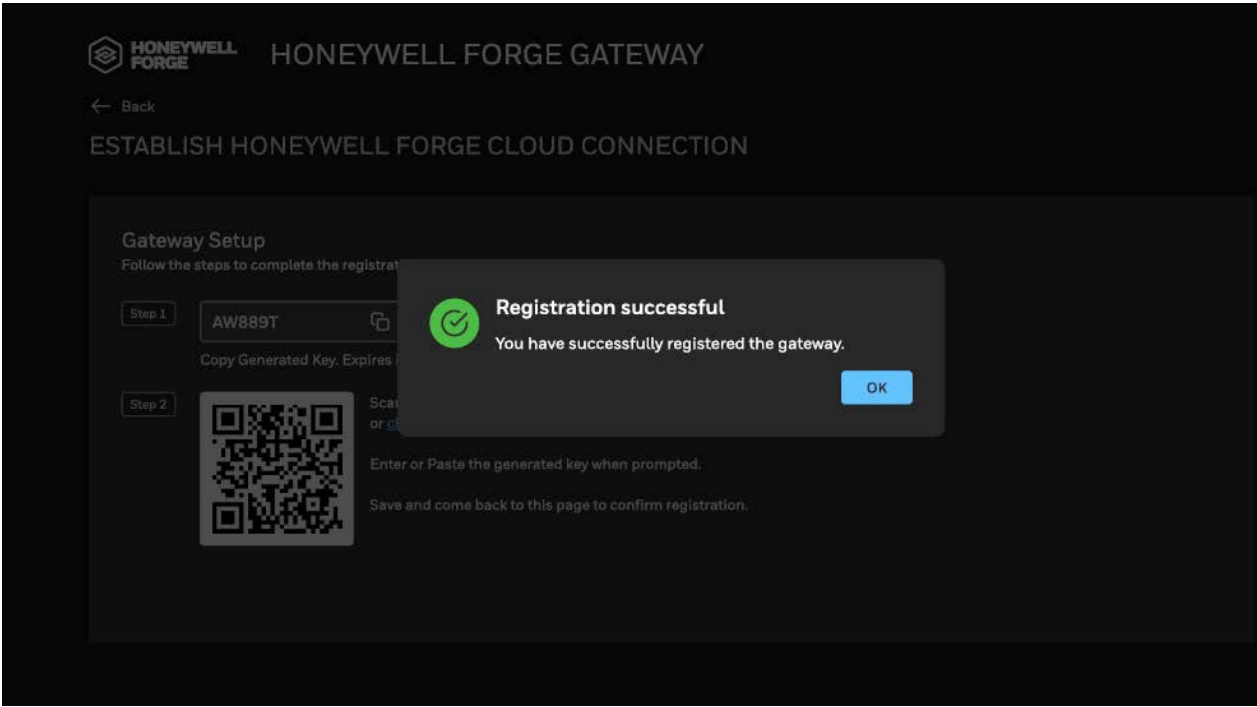
Fig. 15 Registration successful

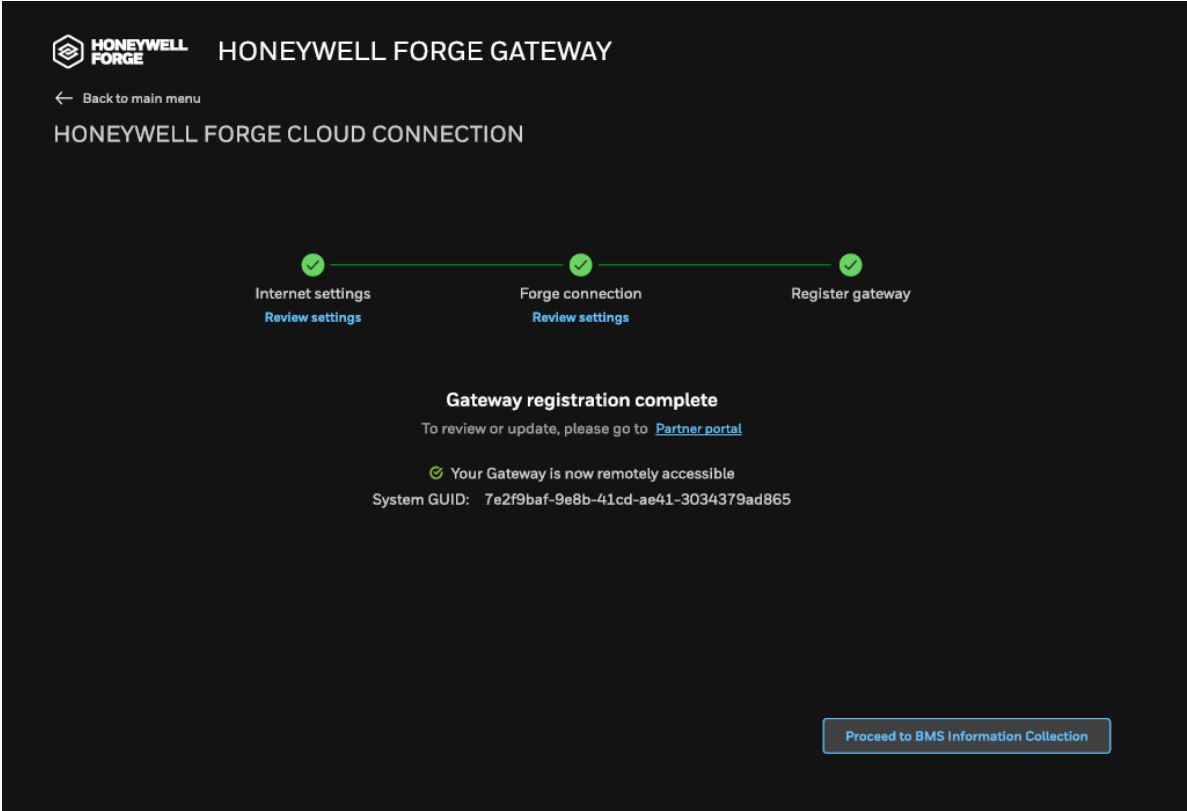The window is displayed for successful Gateway Registration.

Fig. 16 Cloud Connection Window

14. If the user wants to modify or customize the existing settings, the **Review settings** is enabled to review or modify the existing settings.

BMS INFORMATION COLLECTION

The **BMS INFORMATION COLLECTION** screen helps configure BACnet and Modbus channels to collect the list of devices available on the site.

You can configure BACnet/Modbus channels in the following cases:

1. If your site is using BACnet devices, collection of data is done after configuring BACnet channel settings of gateway.
2. If your site is using MODBUS devices, collection of data is done after configuring Modbus channel settings of gateway.
3. If your site is using both devices, collection of data is done after configuring BACnet and Modbus channels.

To view the "BMS INFORMATION COLLECTION" screen, refer to the below steps:

1. Once the registration of Forge Gateway is successful, click **Proceed to BMS Information Collection**.
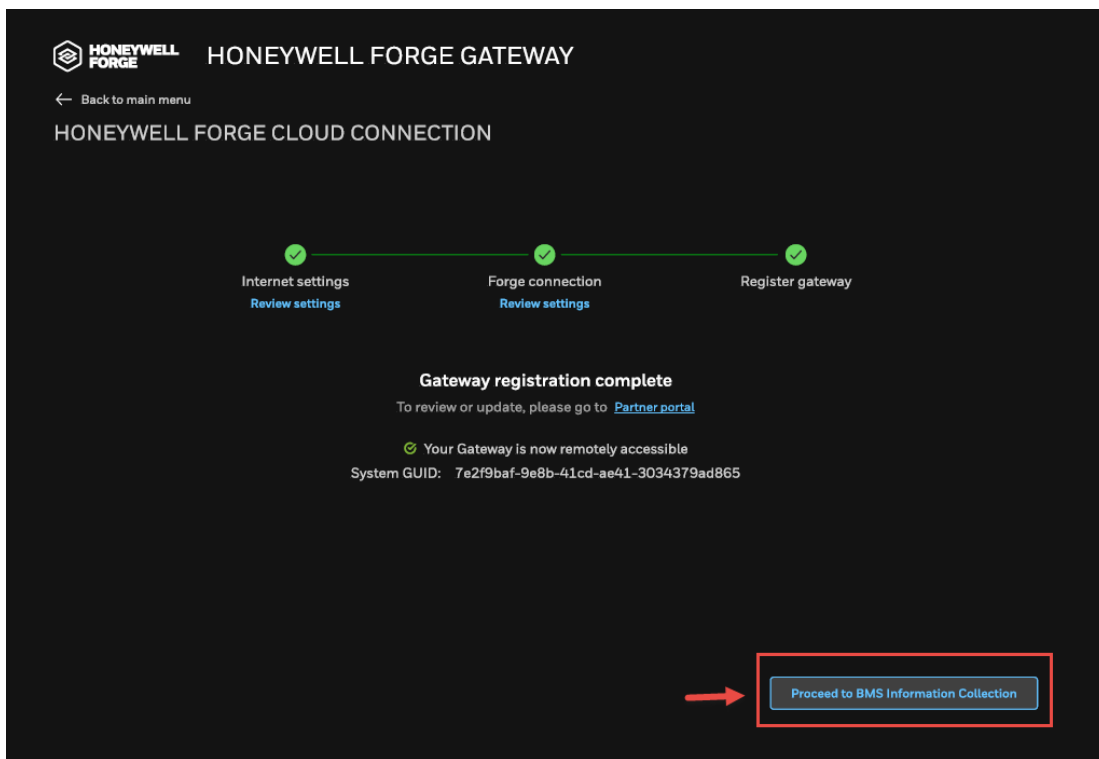
Fig. 17 Proceed to BMS Information Collection

2. **BMS INFORMATION COLLECTION** window is displayed. You can collect BMS data based on the availability of BACnet/Modbus devices in the site.
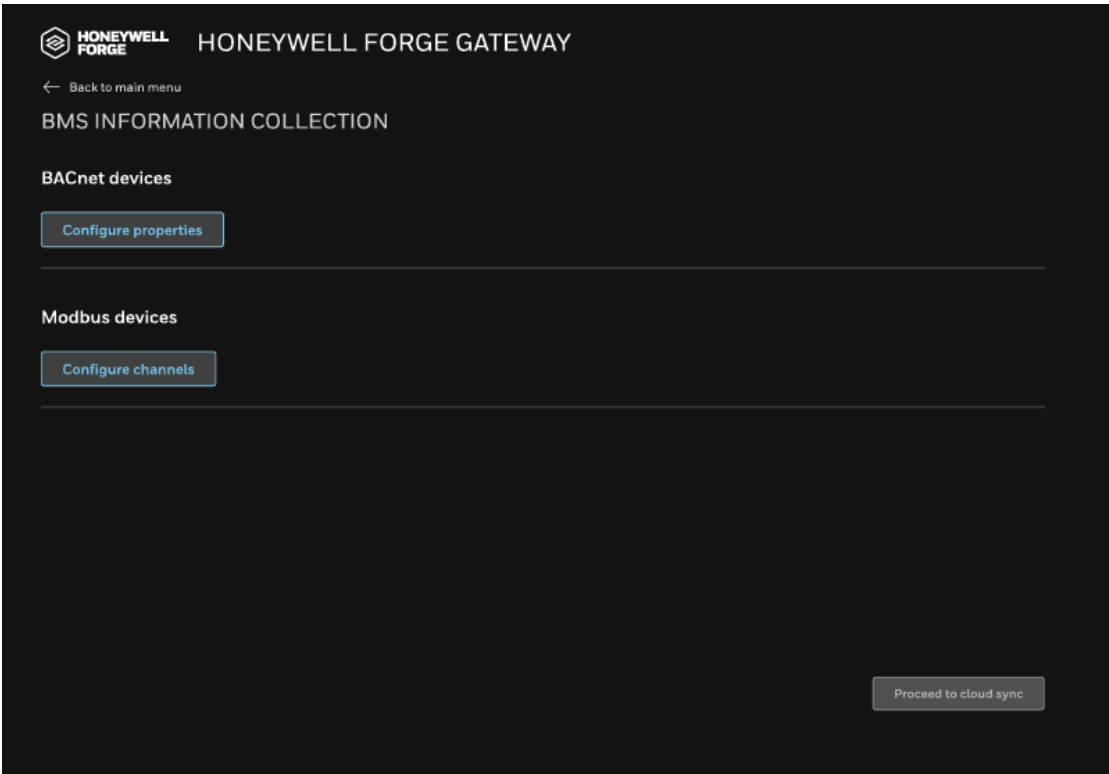
Fig. 18 BMS Information Collection Window

BACNET Properties Configuration

If the site has BACnet devices, you can collect the devices data available on the site after configuring BACnet properties. To onboard the site data through BACnet channel, refer to the below steps:

1. To configure BACnet Channel settings of the gateway, click **Configure properties** under the BACnet Devices. The **BACNET PROPERTIES CONFIGURATIONS** window is displayed. For BACnet device, LAN 2 ethernet port is used.

> 📄 **NOTE:**
> Ensure the BACnet devices of your site are connected to LAN2 port of the gateway.

Fig. 19 BACNET Properties Configuration Window

2. In the "BACNET PROPERTIES CONFIGURATION" window, default IP settings are displayed. You can also configure IP settings manually. To save the IP settings, click **Save and continue**. The **Collect data** option is displayed to collect the data through BACnet devices.

> 📄 **NOTE:**
> The BACnet settings "Discovery timeout" and "Who is interval" are intended for future use and are not currently used by the gateway.
> A controller restart is required if the UDP port is updated.
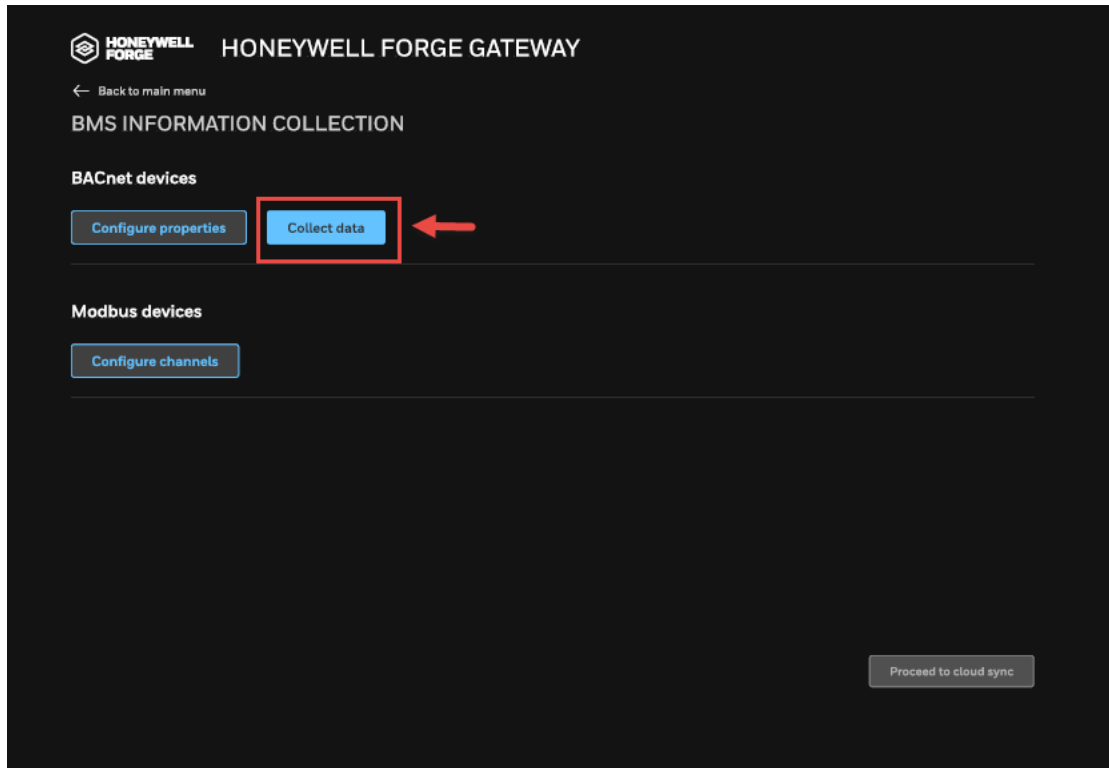
Fig. 20 Collect Data BACnet

3. Click **Collect data**. The system will start collecting the list of devices available on the site. It displays the list of devices, points, and schedules available on site.
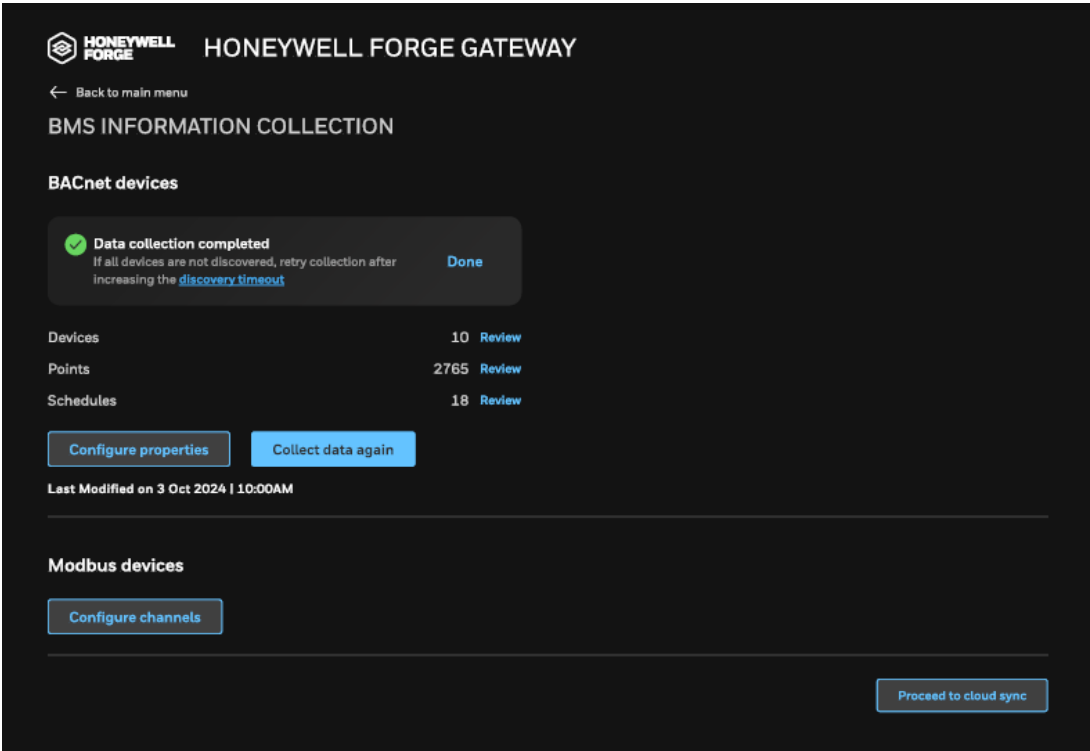
Fig. 21 Data Collection for BACnet

Modbus Channel Configuration

If the site has Modbus devices, you can collect the devices data available on the site after configuring Modbus channels. To onboard the site data through Modbus channel, refer to the below steps:

1. To configure Modbus Channels, click **Configure channels** under the Modbus Devices. The **MODBUS CHANNEL CONFIGURATIONS** window is displayed. For Modbus device, there are three RS485 channels available in the gateway. You can enable/disable channel configuration based on availability of channels in respective site.

Fig. 22 Modbus Channel Configuration

2. Once you set up the channel configuration, click **Save and Continue**. The **Collect data** option is displayed to collect the data through Modbus channel.
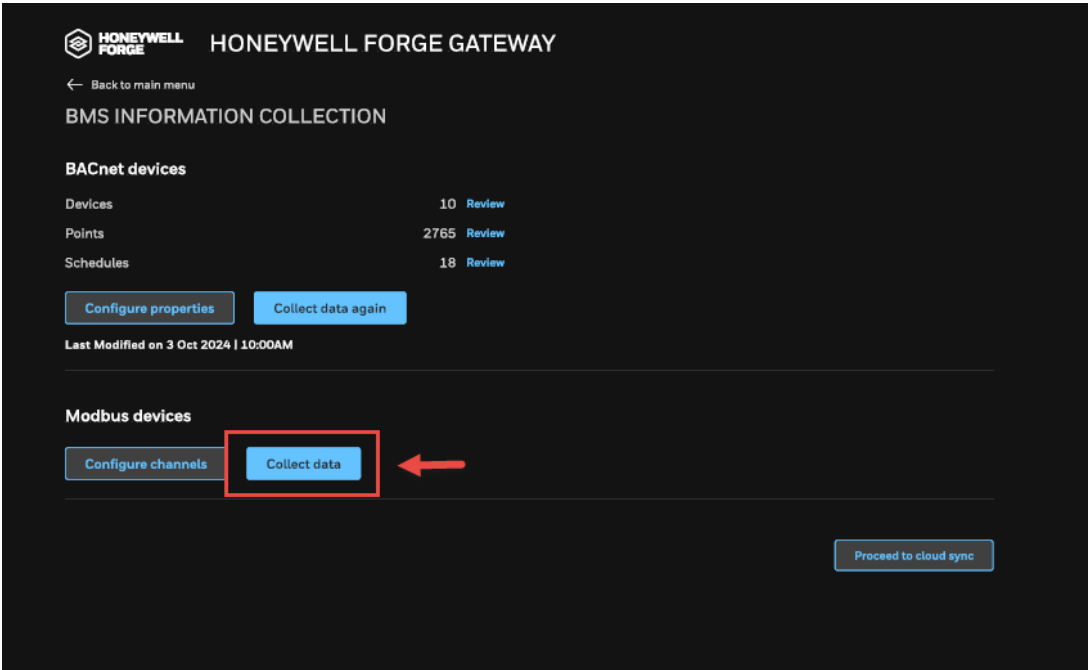
Fig. 23 Collect Data Modbus

3. Click **Collect data**. The **COLLECT MODBUS DEVICES** window is displayed.
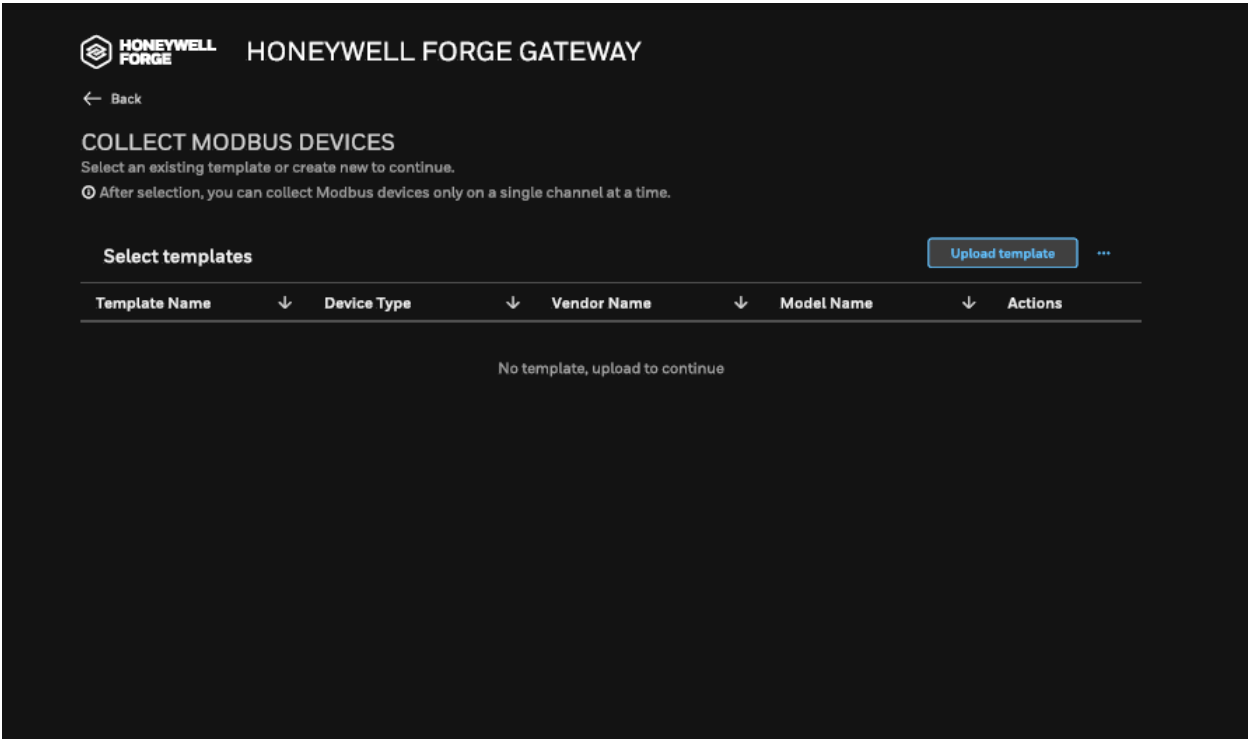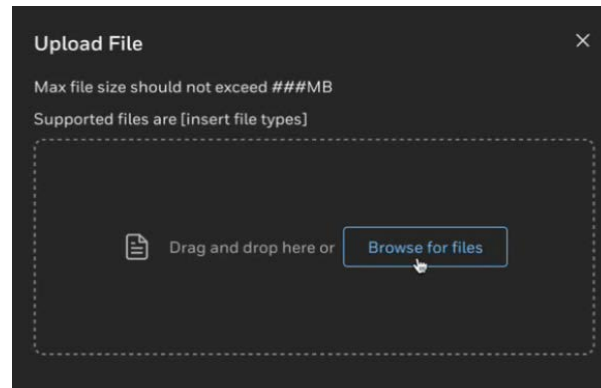

Fig. 24 Collect Modbus Devices
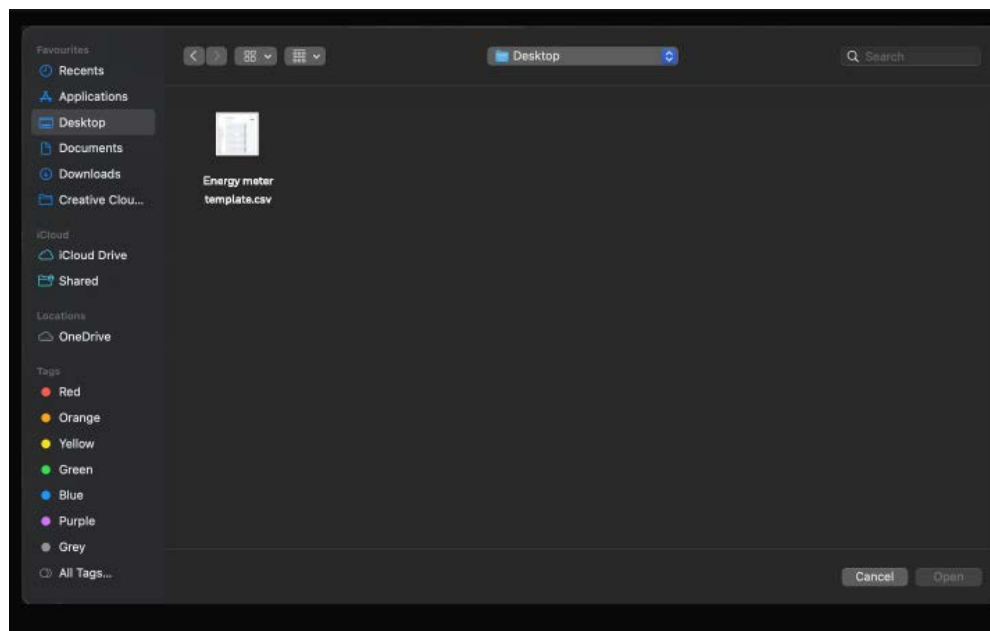
> 📄 **NOTE:**
> If you are a new user, you can upload the predefined template whereas the existing users can select already available templates.

4. To upload the predefined Modbus template, click **Upload template.**

Fig. 25 Upload File

5. Select the required file (.csv file) and click **Open**.

Fig. 26 CSV File

The template will be added in Select templates list.
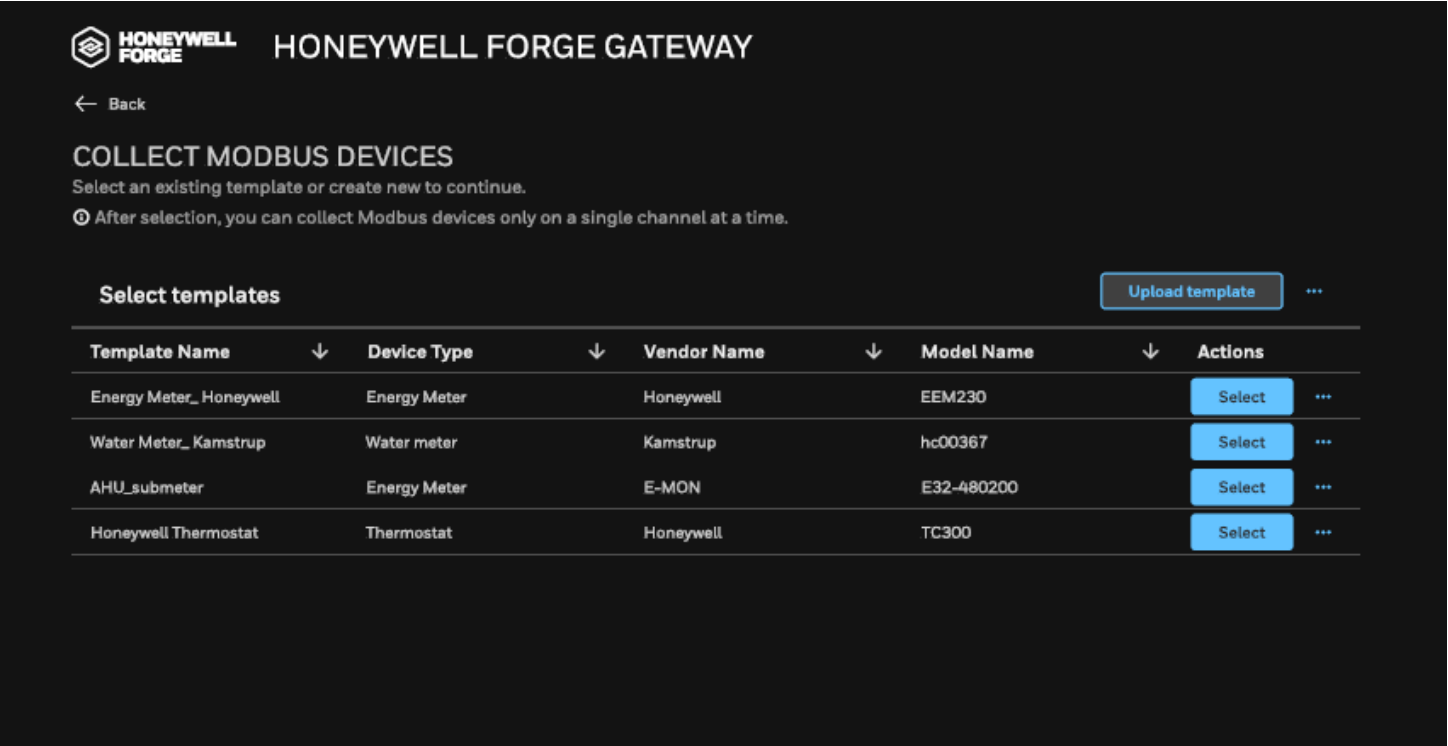
Fig. 27 Select templates

6. Click **Select** to choose any of the template with which you want to add a Modbus device. You can select the channel from drop-down, add device addresses, and Add Prefix.
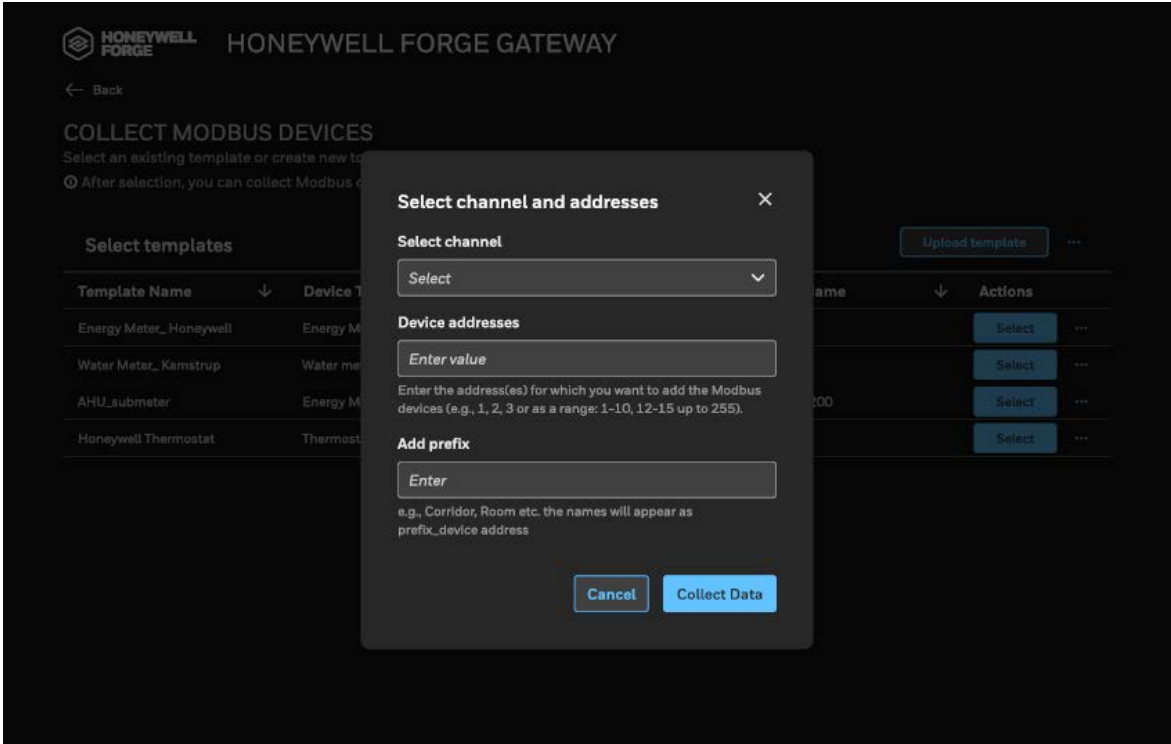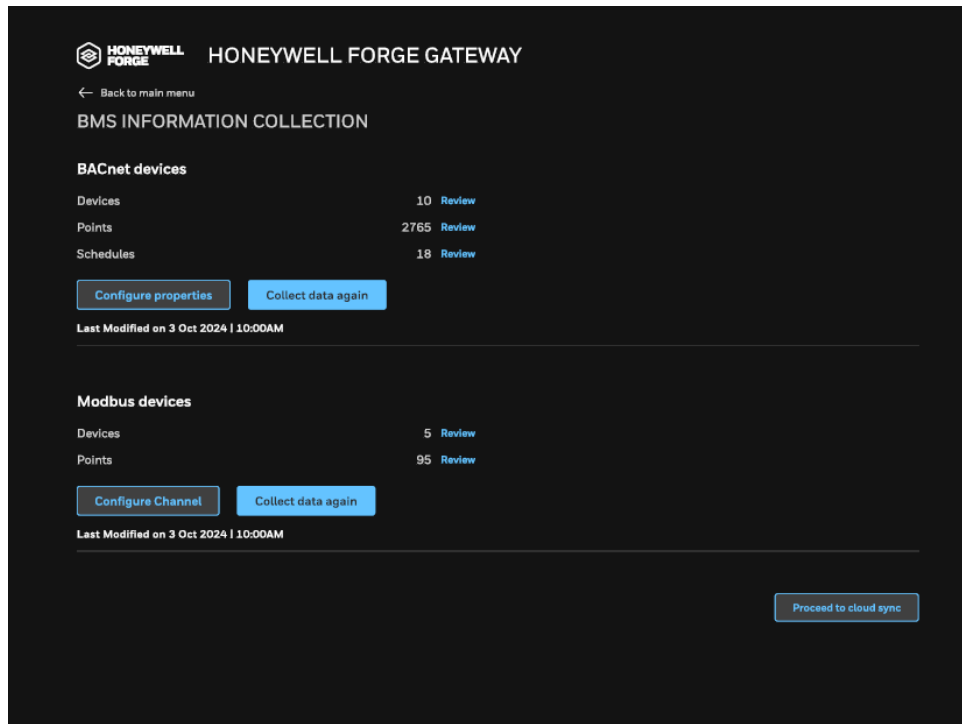

Fig. 28   Select channel and addresses

7. Click **Collect Data**. The system will start collecting the list of devices available on site. It displays the list of devices, points available on site.
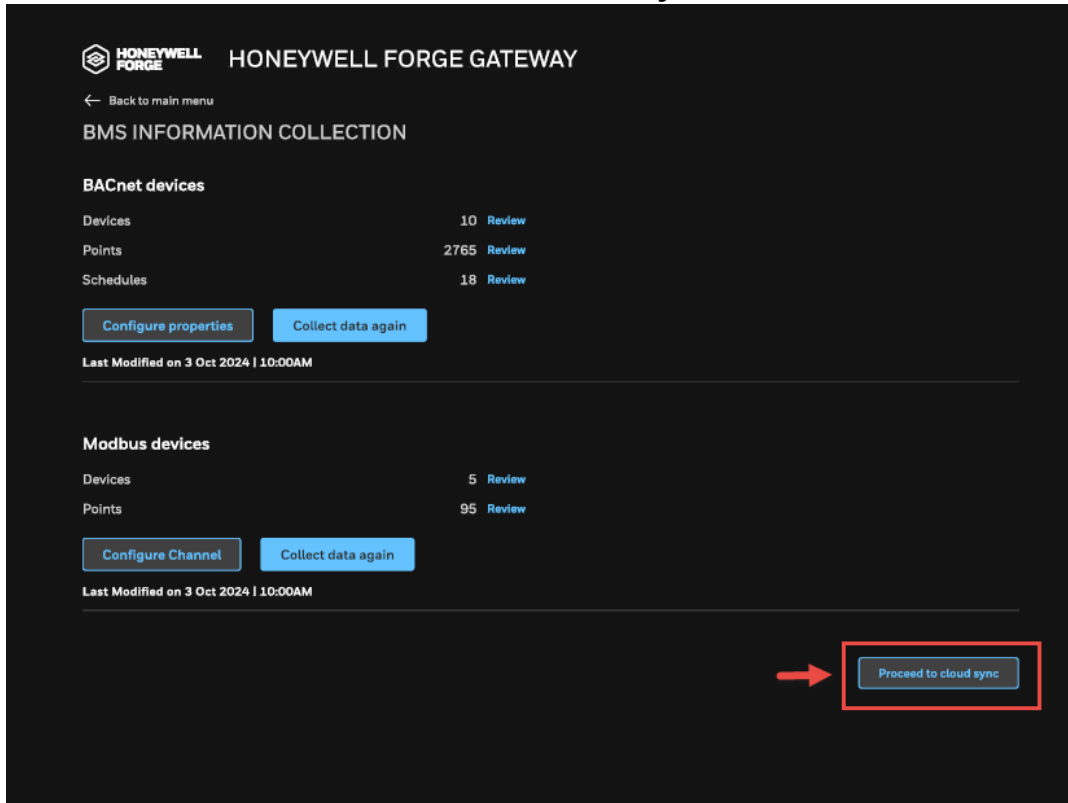

Fig. 29 Data Collection Window

CLOUD SYNC

Once the data is collected from BACnet/Modbus devices, you need to sync the collected data to cloud. Refer to the below steps to sync the collected BMS data to cloud:

1. To sync the collected data with cloud, click **Proceed to cloud sync**.

Fig. 30 Cloud Sync

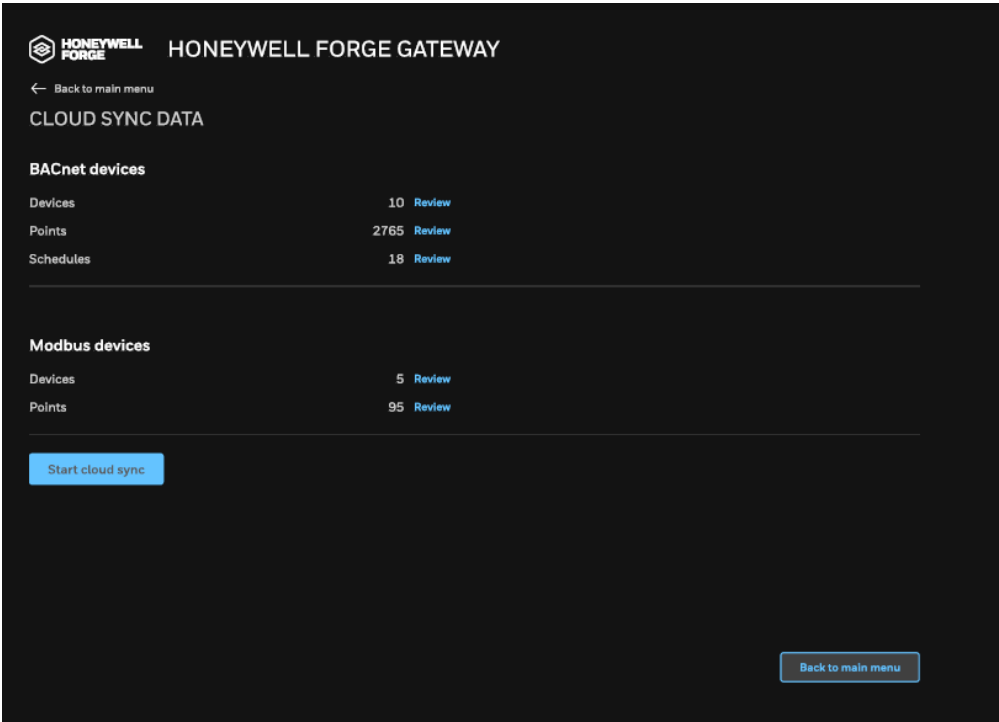2. In the "CLOUD SYNC DATA" window, click **Start cloud sync**. The data will get synced to the cloud.

Fig. 31 Start cloud sync

3. User must manually sync the data once new data is added to the BACnet/Modbus devices. To sync the data manually, click **Cloud sync again**.
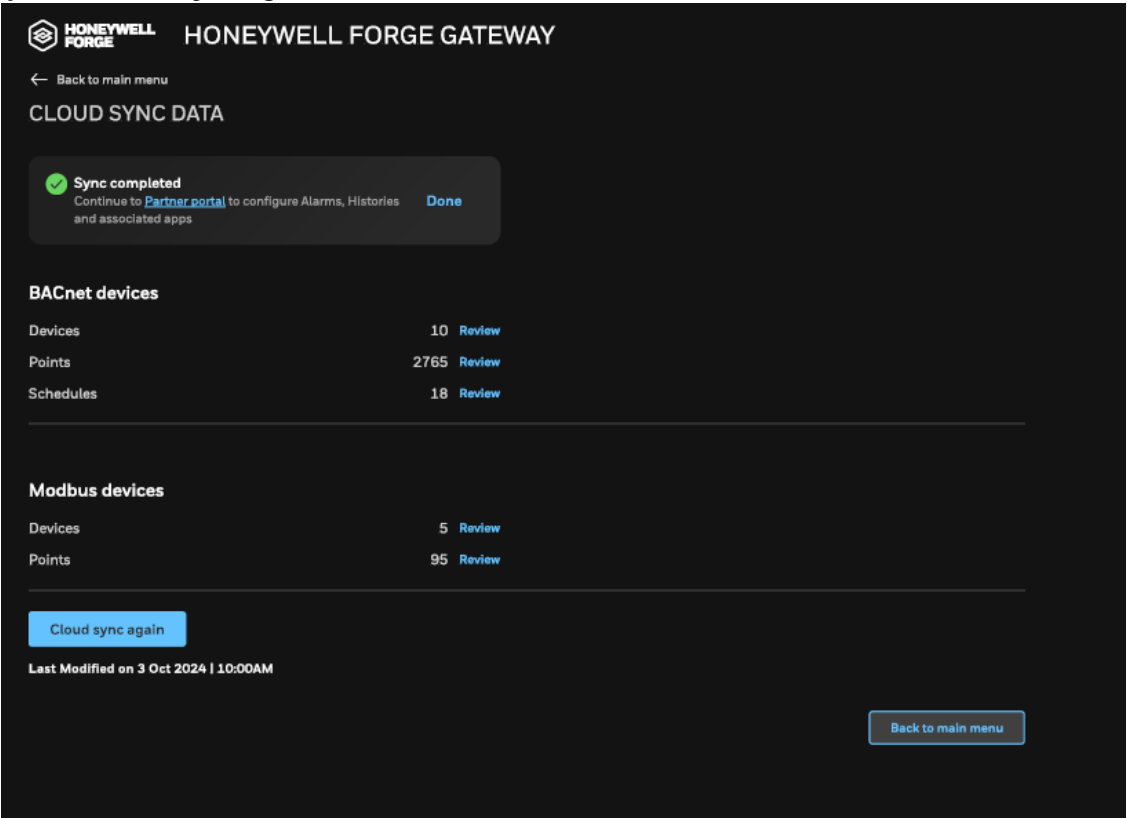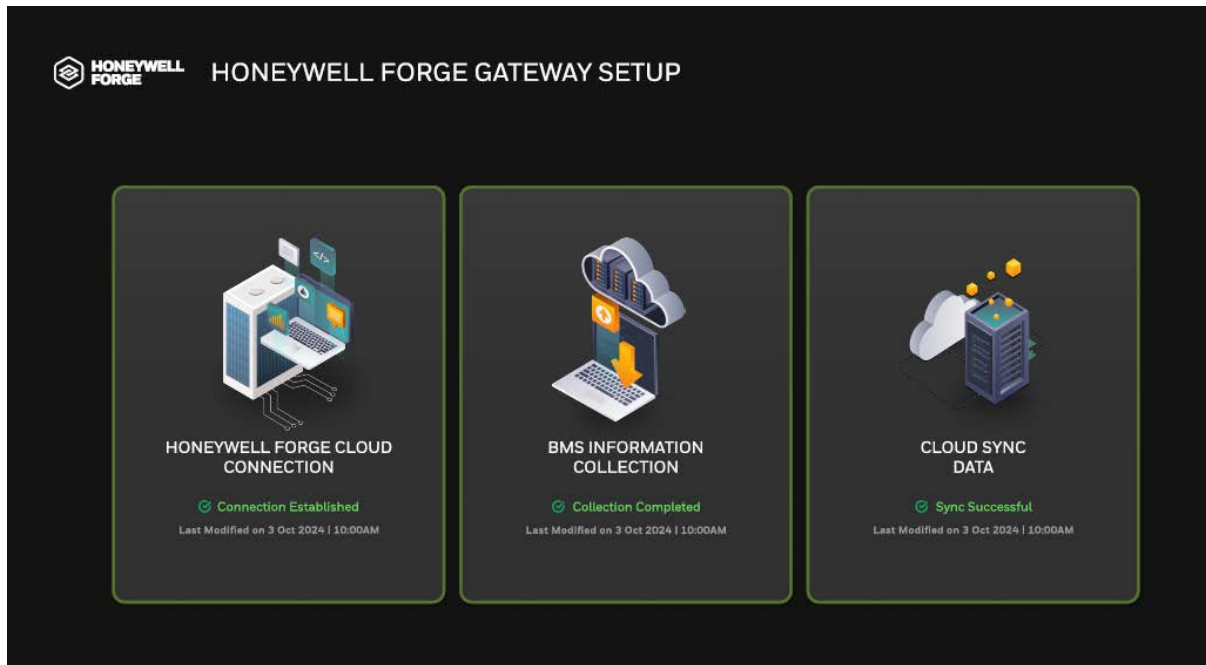

Fig. 32 Sync Again

4. Once the Cloud Sync is successful, click **Back to main menu** to navigate to the main screen. The status is displayed on landing page.

Fig. 33 Sync Successful

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