User Guide

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DOCUMENT HISTORY

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1. What is Solum Gateways

SOLUM Gateway is a wireless access point that communicates with ESL labels. Users must configure the gateway after logging into the AIMS dashboard and creating a store. SOLUM offers two types of gateways:

- Newton Standard Gateway
- Newton USB Gateway

2. Newton Standard Gateway



2.1 Newton Gateway Physical Installation

Tools and Materials Needed:

- SOLUM Newton Gateway
- Mounting bracket
- Screws
- Ethernet cable (Not Included in the Package)
- Power supply

Prerequisites

- Ensure the device is powered off or disconnected from any power supply.
- Choose a suitable location, such as the center of the store, with good Wi-Fi or Ethernet connectivity.
- Ensure that the Newton Gateway is installed at a height of 2 meters from the ground. Maintain a 30 cm obstruction-free zone around the gateway for optimal functionality and accessibility.

No.	Description	Recommended	Variation
1	Gateway Height	4m	3.2m-6m
2	Distance between Shelf to Access	1.5m	0.8m-Max height
	point		
3	Distance between Wall to Access	7.5m	5m -15m
	point		
4	Distance between Ceiling to the	8cm	Using Brackets
	Access point		
5	Wi-Fi Access Point to Solum Access	5m	+3m
	Point		
6	Distance between Solum Access	30m	20-40m
	points		

Mounting the Gateway in your Store

- Place the mounting bracket on the selected place and mark the drill points
- Drill holes in the mounting surface according to the mounting bracket's dimensions and insert wall plugs.
- Use the provided screws to firmly attach the mounting bracket to the wall or ceiling.
- If needed drill additional holes for the gateway cables near to it.
- Slide the Gateway into the mounting bracket and ensure it is securely fastened.



Power Connection:

- Connect the Ethernet cable to the Gateway's Ethernet port.
- Connect the power adapter to the Gateway and switch it on.
- Observe the LED indicators. A steady green light indicates proper functioning.



2.2 Setting Up Gateway Launcher

Once the **Newton Gateway** is installed in the store, the next step is setting up the Gateway Launcher. Follow these steps to install and set up the **Gateway Launcher** on your computer.

Step 1: Download the Gateway Launcher

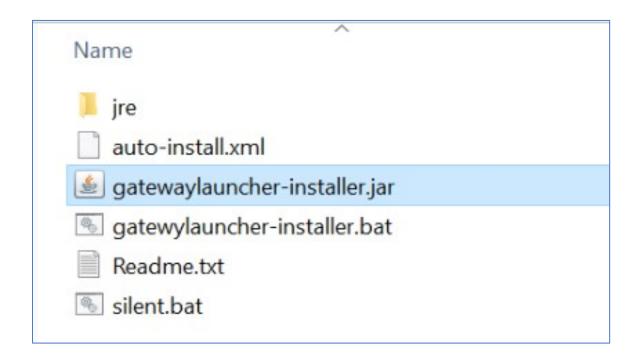
- Download **Gateway Launcher** from the Google Drive link provided along with your package.
- 2. After downloading, extract the folder where the file was saved.

Step 2: Start the Installation



1. If Java JRE is Installed:

 Double-click the file gatewaylauncher-installer.jar to start the installation.



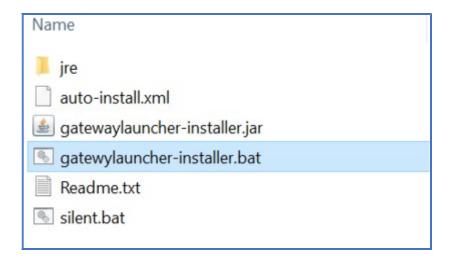
2. If Java JRE is Not Installed:

- Open Command Prompt (you may need administrator help).
- Navigate to the folder where you extracted the files.
- Type the following command and press Enter:

jre\bin\java.exe -jar gatewaylauncher-installer.jar

3. Alternative Method:

• In the extracted folder, double-click the gatewaylauncherinstaller.bat file to begin the installation.



When the installation begins, a window will pop up. Click **OK** to proceed with the installation.

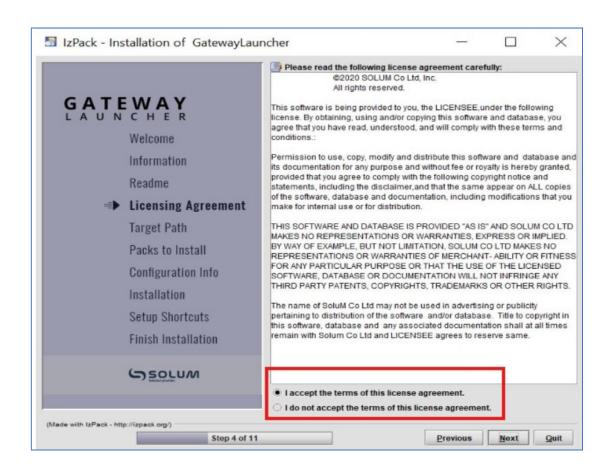


Step 3: Uninstall Older Version (If Any)

- If you've installed **Gateway Launcher** before, the system will ask if you want to uninstall the old version.
- Click **Yes** to remove the previous version, then proceed with the installation of the new version.

Step 4: License Agreement

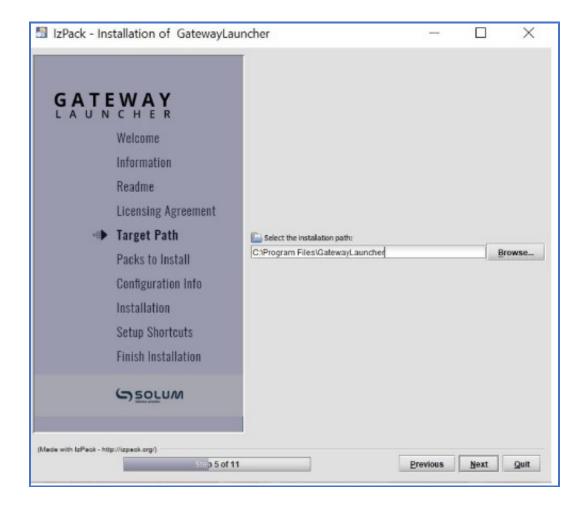
- Click Next to continue until the License agreement window.
- You'll be asked to accept the terms of the license agreement.
- Click the box that says "I Accept the terms of this license agreement" and then click Next.





Step 5: Choose Installation Folder

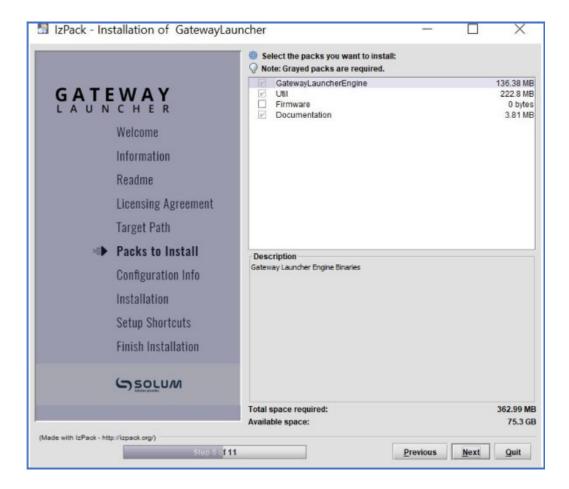
- The next step asks where you want to install **Gateway Launcher**.
- It's best to keep the default folder (recommended).
- Click **Next**.





Step 6: Choose Which Components to Install

- By default, all necessary parts of the **Gateway Launcher** are selected.
- If you want, you can uncheck any extra options you don't need.
- Click **Next** to continue.





Step 7: Set Configuration Options

 The setup will show you a few options such as the browser type and port number.

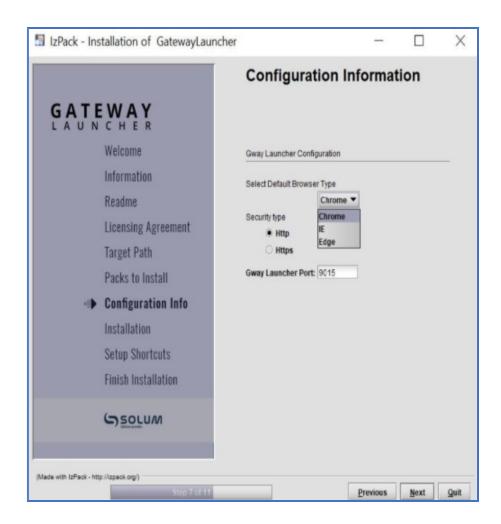
Browser Type: Chrome (default)

Security Type: HTTP (default)

Port Number: 9015 (default)

You can leave these settings as they are or adjust them if needed.

Once ready, click Next.



Step 8: Complete Installation

• Click **Next** to finish the installation.

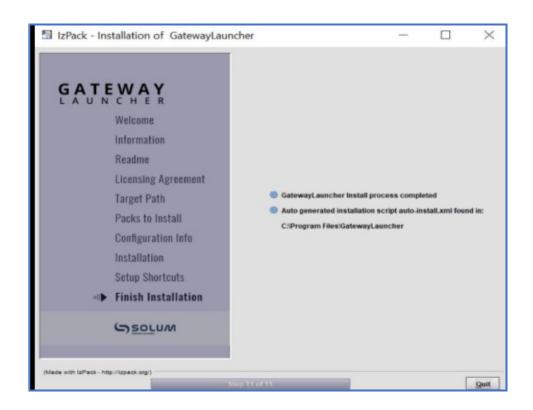
Step 9: Create a Shortcut

- You will be given the option to create a shortcut on your desktop for easy access to Gateway Launcher.
- Click **Next** to confirm.

Step 10: Auto Installation Script

An automatic installation file will be created in this folder:
 C:\Program Files\GatewayLauncher.

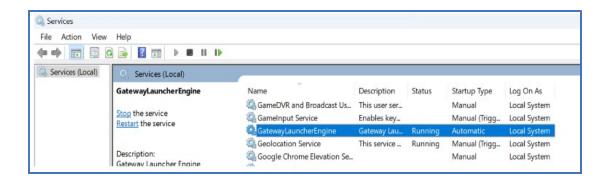
Step 11: Click **Quit** to finish the setup.





Step 12: Check Gateway Launcher Service

- Open the Services window by typing services.msc in the Windows search bar and press Enter
- Find GatewayLauncherEngine in the window opened to ensure it is running correctly.



Step 13: Launch Gateway Launcher

- You should now see a **Gateway Launcher** shortcut on your desktop.
- Or press the Windows key on your keyboard and search for Gateway
 Launcher
- Double-click the icon to open the Gateway Launcher Dashboard and start using the application.



Note: When accessing the **Gateway Launcher** for the first time, use the following default credentials:

• **Username**: si

Password: si

2.3 Register Your Newton Gateway in SaaS

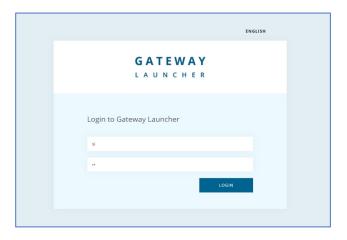
After installing the Gateway Launcher on your system, the next step is to register the Newton Gateway in the SaaS Dashboard. Follow these steps to complete the registration:

- **Step 1:** Enable **DHCP** (Refer to Enabling/Disabling DHCP in Your System) in your system's network configuration.
- **Step 2:** Connect the Gateway directly to the router using an Ethernet cable.
- **Step 3:** Open the Command Prompt and run the ipconfig command. (To open the Command Prompt, press **Windows Key** on the keyboard and type **cmd** on the search field.)
- **Step 4:** Note the IP address range of your current network (e.g., 192.168.x.x).

```
\Users\Solum1>ipconfig
    ws IP Configuration
thernet adapter Ethernet:
    dia State . . . . . . . . . : Media disconnected
nnection-specific DNS Suffix . :
      t adapter vEthernet (Default Switch):
 fe80::8d97:eb78:1161:91ee%61
172.19.16.1
255.255.240.0
reless LAN adapter Local Area Connection* 1:
 Media State . . . . . . . . : Media disconnected Connection-specific DNS Suffix . :
reless LAN adapter Local Area Connection* 2:
 Media State . . . . . . . . . : Media disconnected Connection—specific DNS Suffix . :
    net adapter Ethernet 2:
 Media State . . . . . . . . . . . . . . . Media disconnected
reless LAN adapter Wi-Fi:
    :
:: fe80::307b:ad16:5f1a:72f6%9
:: 192.168.1.138
:: 255.255.255.0
:: 192.168.1.1
```

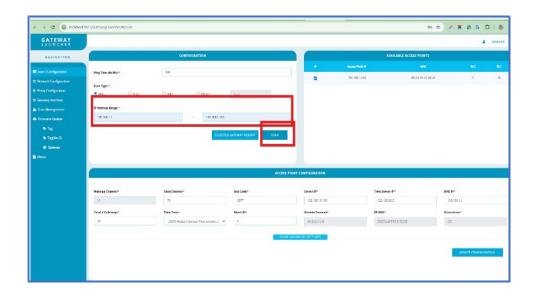
Note: If DHCP is disabled, configure a static IP address on your computer and repeat the same steps to set up the Newton Gateway. (Please Refer to "Steps to Enable or Disable DHCP")

Step 5: Open the **Gateway Launcher** application. Enter the username and password. By default, they are set to "**si**."



Step 6: Navigate to the **Scan/Configuration** tab.

Step7: Enter your network's IP address range (e.g., from x.x.x.1 to x.x.x.255) and click **Scan.**





Step 8: In the **Available Access Point** tab of the Gateway Launcher, your Gateway will be listed.

Step 9: Copy the **MAC ID** of your Newton Gateway.

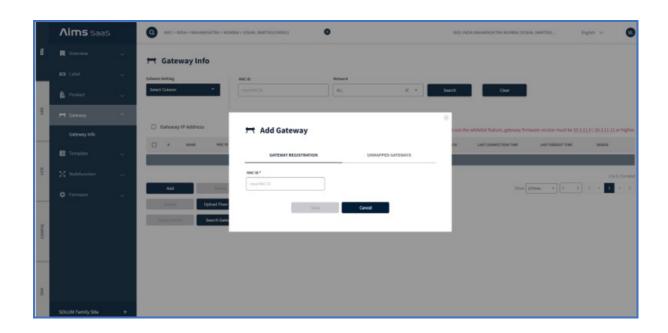
Note: Once the Newton gateway is connected and online, check which firmware version is installed.

Normal Gateway: The firmware version should display as N10.X.0.0.

USB Gateway: The Firmware version should display as **N10.X.11.10**.

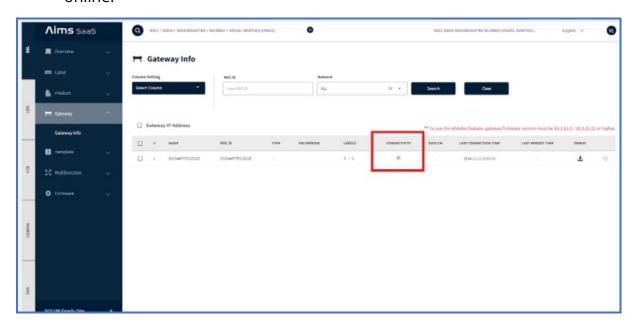
Step 10: Register the Gateway in the SaaS Dashboard.

- 1. Log in to your SaaS Dashboard and select the store you want to register the gateway.
- 2. Navigate to the **ESL** tab and select **Gateway**, then Click **Gateway Info**.
- 3. Click the **Add** button and paste the MAC ID of your Newton Gateway.
- 4. Click **Save** to complete the registration.





5. Wait 5-7 mins, Connectivity will be in **Blue**, once the gateway comes online.



Note: If the Gateway is connected to the server and the configuration is correct, the **CONNECTIVITY** of the gateway will update to Online • (Blue) in a few minutes. If it does not go Online, check your network settings for internet connectivity. If it continues to stay Not Ready • (Orange) or Offline • (Red) for longer than five consecutive minutes, contact SOLUM.

3. Newton USB Gateway

3.1 Installing Newton USB Gateway Driver

1. Download the Driver

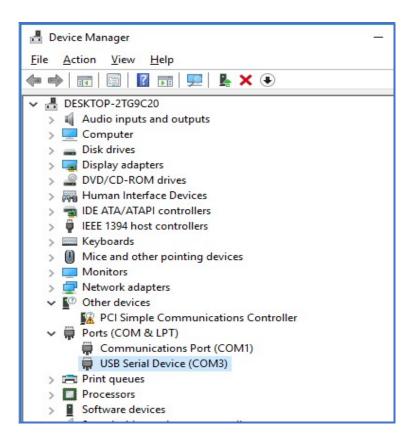
Download the latest driver provided along with the package. Save the file and extract it to a folder on your computer.

2. Connect the USB Gateway

Plug the Newton USB Gateway into an available USB port on your computer. If space is tight, you can use a USB extension cable.

3. Open Device Manager

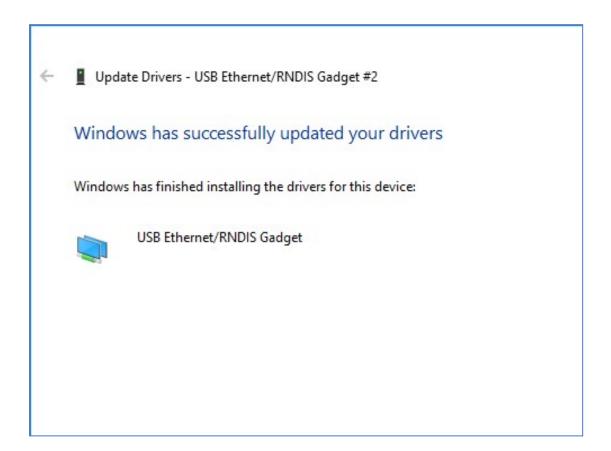
- Press the **Windows key**, type Device Manager, and open it.
- Look for USB Serial Device (COM3) under PORTS.





4. Update USB Gateway Driver

- Right-click USB Serial Device (COM3) and choose Update
 Driver.
- Select Browse My Computer for drivers and navigate to the folder where you extracted the driver files.
- Click **Next** to install.



5. **Confirm Installation**

- Once the driver is successfully installed, close the window.
- In Device Manager, check under Network Adapters for USB Ethernet/RNDIS Gadget. If it's listed, the driver is installed properly.





3.2 Network Configuration for USB Gateway

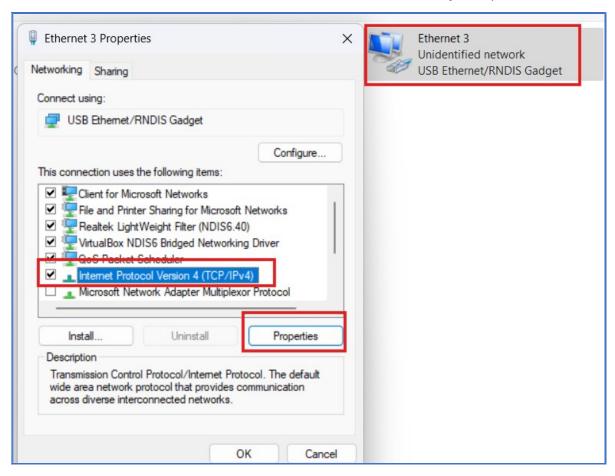
1. Open Network Connections

 Press the Windows key, type View Network Connections, and open it.

2. Find the USB Gateway Ethernet Connection

- Look for the USB Gateway in the list (usually labeled as Ethernet or RNDIS).
- Right-click it and select **Properties**.



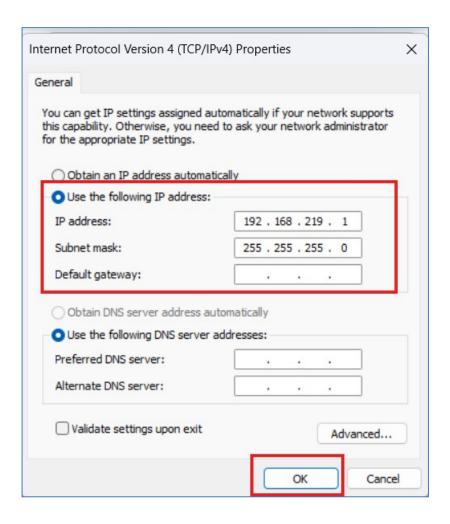


3. Set IP Address

- In the Properties window, scroll to Internet Protocol Version 4
 (TCP/IPv4) and select it, then click Properties.
- Choose **Use the following IP address** and enter:

IP Address: 192.168.219.1

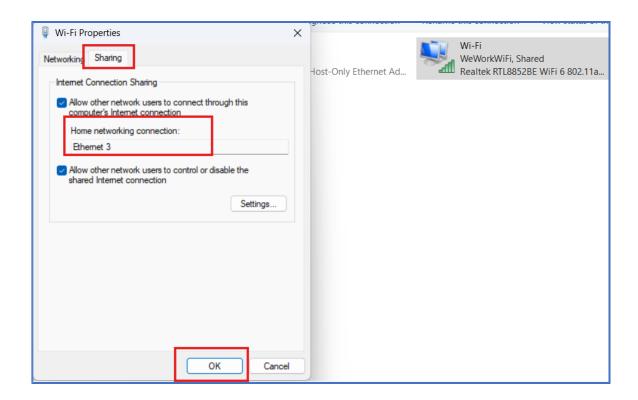
Subnet Mask: 255.255.255.0



4. Enable Network Sharing

- Go back to the **View Network Connections** window.
- Right-click your Wi-Fi or Network connection and select
 Properties.
- Go to the Sharing tab and check Allow other network users to connect through this computer's Internet connection.

In the Home Networking Connection field, select the USB
 Gateway Ethernet connection. Click OK.



5. Restore Default Gateway IP (if needed)

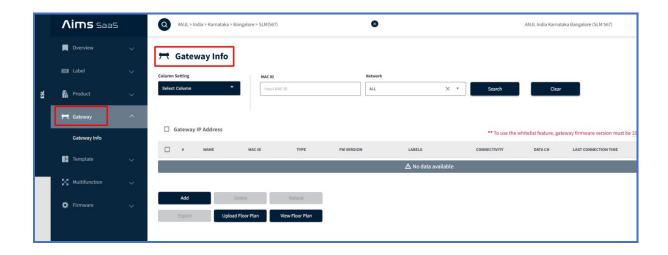
If the USB Gateway's IP address has changed, reset it to the default:

- Right-click the USB Gateway connection again, select **Properties**,
 and go to **IPv4 Properties**.
- Set the IP Address back to 192.168.219.1 and Subnet Mask to 255.255.255.0.

Once your Newton USB Gateway is installed and configured, you can register it in the AIMS SaaS dashboard using the **Gateway Launcher**. Refer to <u>Gateway Launcher</u> for Registering the USB gateway in the AIMS SaaS dashboard. The process is the same for Newton's standard gateway and USB gateway.

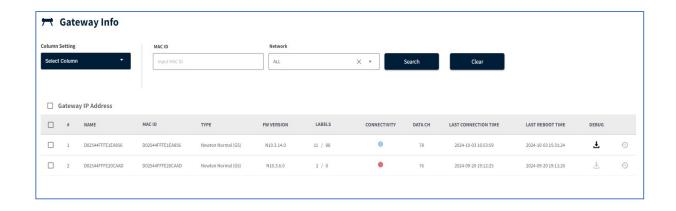
4. Managing Your Gateways in SaaS

- 1. Navigate to the **ESL** tab on the left and Click **Gateway** in the AIMS SaaS dashboard.
- 2. **Gateway Info** will provide the details of all the Gateways connected within a store. All Gateways are registered, managed, and monitored from this page.



4.1 View Gateway Details

The Gateway list displays vital information about all Gateways registered to a store.



NAME

Description of Gateway name.

MAC ID

Unique MAC ID of the Gateway. Users can find the MAC ID of the Gateway from the sticker label on the backside of the Newton gateway.

TYPE

Gateway Type: Newton Normal gateway or Newton USB.

FIRMWARE

The firmware version of the Gateway.

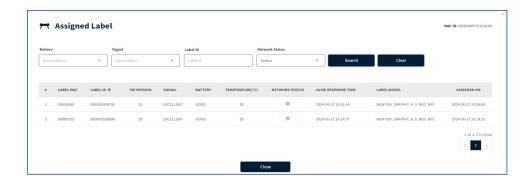
LABELS

The number of Assigned Labels / Unassigned Labels associated with the Gateway.

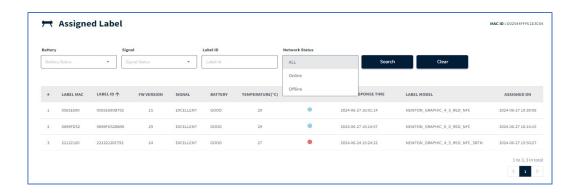
Assigned labels are labels that are linked with a product to the Gateway, and Unassigned labels are powered on labels that are not linked with a Gateway. Both Assigned & Unassigned label details will be shown in the respective pattern: Assigned labels/Unassigned labels under the "Labels" column.

To check the details of the assigned labels, click "**Assigned Labels**". This selection will pop out a list of the assigned labels with detailed information. By default, it will display the labels that have network status as **online**.

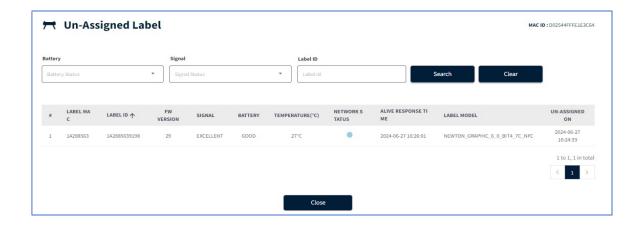




Users can filter the results using the provided search options.



To check the details of Unassigned Labels, Click "Unassigned Labels",
This selection will pop out a list of the unassigned labels with detailed
information. This will display the labels that have network status as online.



Users can filter the results using the provided search options.

CONNECTIVITY

Gateway connectivity status: Online / Not Ready / Offline

Online

A blue dot indicates the gateway is connected and communicating with the server without any issues.

Not Ready

An orange dot indicates gateway initializing after power up. If the Gateway is in a **Not Ready** state for longer than five minutes, reboot the Gateway. If the status continues to stay **Not Ready** for another 5 minutes, contact SOLUM for assistance.

Offline

A red dot indicates the gateway is not communicating with the Server. Check that GATEWAY has a proper network setting. Gateway requires an internet connection and if there is a firewall, whitelisting must be properly applied. If the status continues to stay **Offline**, contact SOLUM for assistance.

DATA CH

The Data Channel is the RF channel used to send updates from a gateway to the label. Avoiding interference with data channels is vital to the system. Every gateway within the same physical location should have a different data channel setting. Data channels can be different based on installed locations and RF environment. But in most cases, the following channels can be used with



minimum interference: [4, 22, 24, 28, 47, 49, 51, 53, 72, 74, 76, 82]. For more information, contact SOLUM.

LAST CONNECTION TIME

The last timestamp AIMS received an update from GATEWAY.

LAST REBOOT TIME

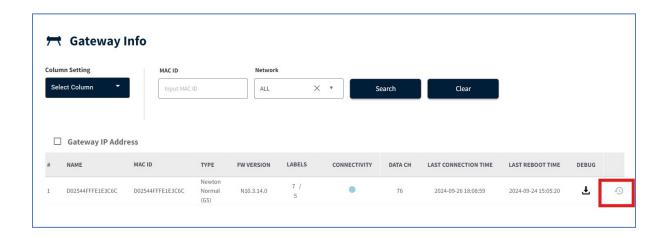
The timestamp of the last time the GATEWAY power cycled.

DEBUG

Download debug configuration info. This should only be used as requested by the SOLUM admin.

Gateway Status Overview:

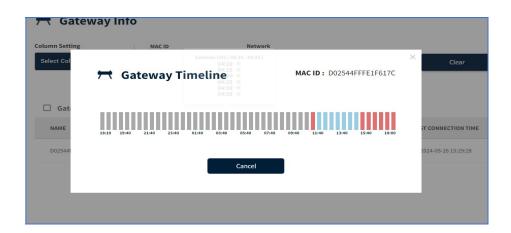
The gateway status of the last 24 hours.



To view the gateway status, Click the **History icon** under any gateway from the available list as shown earlier. This popup contains a graphical bar representing the gateway's status:

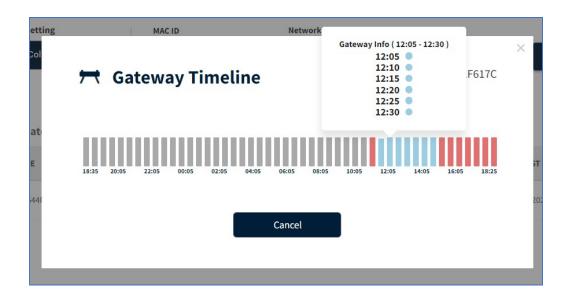


- Red indicates offline periods
- Blue indicates online periods
- Grey shows when the gateway is not connected.



Each bar represents the status of a 30-minute segment, indicated by red, blue, or grey circles.

- **Bar Height**: Adjusts based on data count; if the count is below 30, the bar height decreases.
- **Offline Status**: If any 5-minute interval within the 30-minute segment is offline, the entire bar turns red.





Gateway IP Address

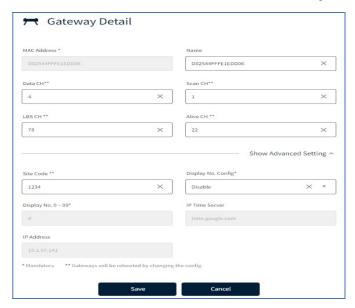
When the Gateway IP Address checkbox is checked, users can obtain all the IP addresses of the gateways registered in a store.



4.2 Gateway Configuration Settings

When a gateway is selected from the list, a detailed configuration settings panel appears. Users can update these settings as needed for optimal performance.

Note: Certain settings should not be modified without consulting SOLUM. Please review the provided guidelines carefully.



Fields marked with an asterisk (*) are mandatory. Fields marked with double asterisks (**) are also mandatory and will trigger a gateway reboot when changed.

Important: Perform reboot-required changes during downtime to prevent delays in updates.

MAC Address

Unique MAC ID of the GATEWAY. MAC ID is what is used to register a GATEWAY to a store.

Name

GATEWAY Name description.

Data CH

The Data Channel is the RF channel used to send updates from a GATEWAY to the label. Avoiding interference with data channels is vital to the system. Every GATEWAY within the same physical location should have a different data channel setting. Data channels can be different based on installed locations RF environment, but in most cases, the following channels can be used with minimum interference: [4, 22, 24, 28, 47, 49, 51, 53, 72, 74, 76, 82]. For more information, contact SOLUM.



Scan CH

Scan Channel is the RF channel used for labels to scan for and associated with a GATEWAY. This channel should be kept as 1 for all Gateways. Changes to this channel should be made after consulting with SOLUM.

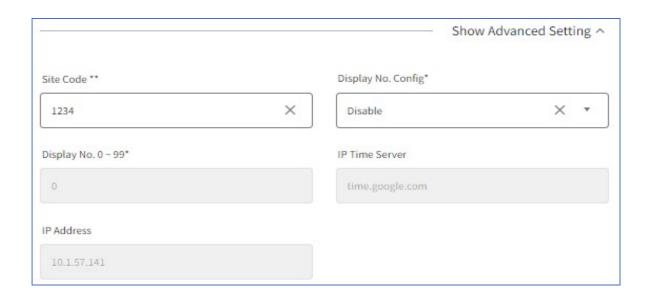
LBS CH

The LBS (Location Based Service) Channel is the RF channel used for LBS operation. This channel should be kept as 78 for all Gateways. Changes to this channel should be made after consulting with SOLUM.

Alive CH

Alive Channel is the RF channel used for labels to send daily heartbeats. This channel should be kept as 72 for all Gateways. Changes to this channel should be made after consulting with SOLUM.

4.2.1 Gateway Advanced Settings



Site Code

Site Code used for communication between Gateway and label. This value should not be changed without consulting with SOLUM.

Display No. Config

Enable or disable the LED display on the physical GATEWAY. This is used to visually identify Gateway.

Display No.0 ~ 99

Input number to display on the GATEWAY LED. The value must be input in a two-digit format. Ie. 09

IP Time Server

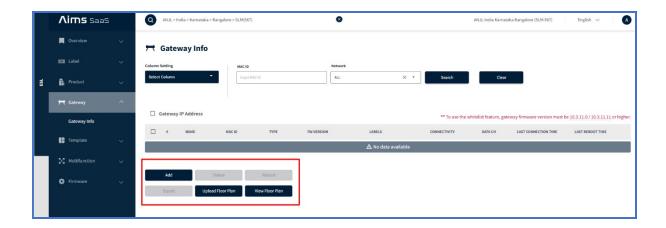
The time Server is being used for time sync. Time Server is defaulted to time.google.com unless otherwise set in the Store's Advanced Settings.

IP Address

IP Address of the GATEWAY.

4.3 Additional Gateway Functions

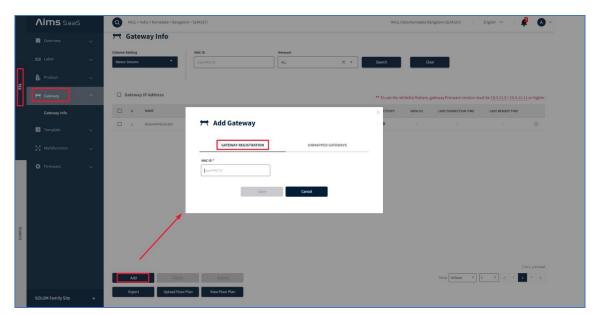
Users can delete, reboot the gateway, and export the list in Excel.



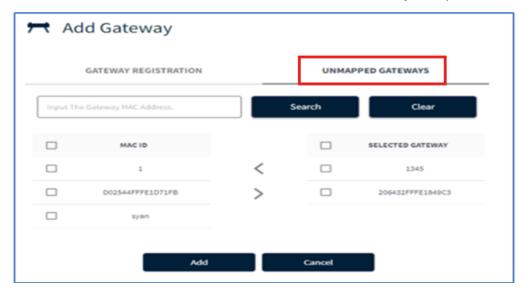


4.3.1 Adding a New Gateway in the SaaS Dashboard

- 1. Scroll to the bottom-left corner of the **Gateway Info** page and click **ADD**.
- 2. A new window titled **Add Gateway** will appear.
- 3. Enter the **MAC ID** of your gateway in the **Gateway Registration** tab and click **Save**.

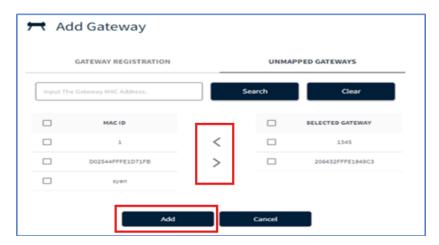


Previously registered gateways that have been deleted from a store can be found in the **Unmapped Gateway** list. This list shows gateways registered to the company but not currently assigned to a store. Navigate to the **Unmapped Gateways** tab in the **Add Gateway** Window to see the list.



Steps to Manage Gateways:

- 1. Review the Unmapped Gateway List: Identify the gateways to register.
- 2. Move Gateways:
- Click the **move icon (>)** to add a gateway to the register list.
- Click the **remove icon (<)** to remove a gateway from the register list.
- After finalizing the list, click Add to register the selected gateways to the store.



4.3.2 Delete a Gateway

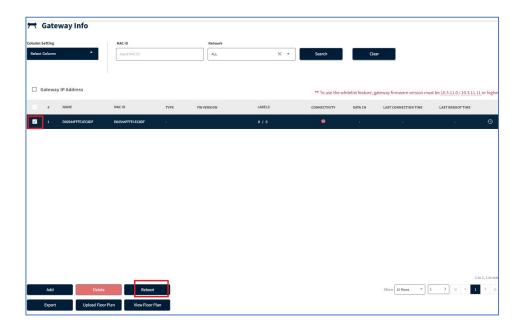
Selecting the gateway will enable the **Delete** button option. Click Delete and confirm to delete Gateway.

What Happens After Deletion:

- 1. **Label Scan Process**: Within a few minutes, the disconnected labels will start scanning for another gateway.
- 2. Automatic Reconnection:
- If a new gateway is found, the labels will automatically connect to it.
- If no gateway is found, the labels will stop receiving updates.

4.3.3 Reboot Gateway

1. Select the Gateway (Tick the Check box) to enable the **Reboot** button option.





Note:

- Reassociation Time: When rebooting the gateway, a large number of labels will take longer to process and update their statuses.
- Multiple Gateway Reboots: Perform reboots in phases to avoid highvolume bulk processing and ensure smoother operations.

4.3.4 Export Your Gateway List

Click Export to export the Gateway list connected to the store as an Excel file to the user's local machine.

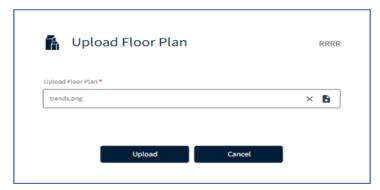
4.3.5 Upload Floor Plan

This option allows users to upload an image of the store's floor plan, showing the locations of installed gateways. This feature is for reference only and does not auto-detect gateway locations.

Steps to Upload the Floor Plan:

- Prepare the Image: Ensure the floor plan is in PNG or JPEG format and maintained by the user.
- 2. Upload Process:
- Click the **Browse** button.
- Select the image file from your system.
- Click Upload.





Notes:

- The uploaded image will overwrite any previously saved floor plan on the store's floor plan page.
- Keep the floor plan updated for accurate reference.

4.3.6 View Floor Plan

Click **View Floor Plan** to see the floor plan previously uploaded.



4.4 Gateway Factory Reset

The factory reset button is in the Newton standard gateway beside the USB port and power slot. Press and hold the button for 15 seconds to reset the device. Similarly, the reset button for the USB gateway is located between the Micro USB port and the Solum logo on the side of the gateway.

5. Appendix

Steps to Enable or Disable DHCP

- 1. Open Network Settings:
- Press the Windows key on your keyboard.
- Type Network Connections and Click it.
- 2. Find Your Internet Connection:
 - In the open window, you'll see your active internet connection (like Wi-Fi or Ethernet).
 - Right-click it and choose Properties.
- 3. Open IP Settings:
 - In the list of options, find Internet Protocol Version 4 (TCP/IPv4) and click it.
 - Then, click the Properties button.
- 4. Enable or Disable DHCP:
 - 1. To Enable DHCP:

Choose Obtain an IP address automatically and Obtain DNS server address automatically.

2. To Disable DHCP:

Choose Use the following IP address and type:

- IP Address of your network (Ex: 192.168.1.100).
- Subnet Mask (Ex:255.255.255.0).
- Click OK to save.



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