

## Multi-Network Tracking, Telemetry, and Sensor Platform



The convergence of cellular, satellite, Wi-Fi, Bluetooth®, and GPS technologies enables intelligent asset monitoring and two-way communication across connected and remote environments. Lasso Technologies, LLC designs rugged industrial tracking and telemetry devices that operate seamlessly across multiple wireless networks to deliver reliable location, status, and sensor data.

The 2x2 supports Cellular (LTE-M), Satellite, Wi-Fi, GPS, and Bluetooth® communications with true two-way messaging. The device automatically selects the most efficient available communication path while maintaining connectivity.

The platform is intended for monitoring fixed and mobile assets such as intermediate bulk containers (IBCs), oil-field equipment, tanks, trailers, generators, vehicles, and remote infrastructure.

Typical applications include:

- Asset tracking and utilization monitoring
- Geofencing, asset utilization, and event detection
- Environmental sensing
- Remote configuration and diagnostics

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### Location, Reporting, and Two-Way Communication

The device reports GPS location, sensor data, and system status on scheduled intervals, during movement, or based on defined events. Reporting intervals and operating modes are configurable via the Lasso cloud platform or Bluetooth® application.

Two-way communication allows remote commands, configuration updates, and acknowledgements through cellular or satellite networks. Parameters such as reporting intervals, and device modes can be modified remotely without physical access.

Satellite communication is typically used for power-efficient location reporting. When needed and available, LTE-M provides efficient low-power data transmission. Wi-Fi scanning enhances location awareness when GPS signals are limited.

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### Bluetooth® Sensor Integration and Expansion

The RM200-based Lasso platform integrates external Bluetooth® Low Energy (BLE) sensors, enabling flexible sensing without physical wiring. Distributed sensors communicate with a single rugged communications gateway.

Supported sensor types include:

- Temperature and humidity
- Motion, vibration, movement, and tilt
- Magnetic and proximity sensors
- Discrete digital inputs
- Analog input sensors

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### Important Notices

- Not intended for applications where failure could result in injury, death, or significant loss.
- GPS features are not intended for theft recovery or loss prevention.
- Use subject to Terms and Conditions: <https://www.lasso.com/terms>
- Technical support: support@lasso.com | 866-392-0923
- Patent 10,290,203

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### Task Handler

The Task Handler is the internal control system that manages data collection, location determination, network communication, and remote command processing. It coordinates system functions to maximize reliability and battery efficiency without user intervention.

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### Core Functions

- Controls when data is collected and transmitted
- Selects optimal location method
- Chooses best communication path
- Manages two-way communication
- Applies remote configuration updates
- Sends confirmation and status responses
- Optimizes power usage
- Engine hours and external power option (this option is not Atex or IECEx)
- All decisions are performed automatically during operation.

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### Location Determination (GPS and Wi-Fi)

- GPS provides high-accuracy outdoor positioning.
- Wi-Fi location supports indoor or obstructed environments.

The Task Handler selects the most appropriate method based on environmental conditions and power considerations.

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### Communication Methods (Cellular and Satellite)

- Satellite two-way communication is utilized when valid GPS location data is available..
- Cellular two-way communication provides a fall-back path, using Wi-Fi-based location, when GPS is not available.

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Automatic path selection ensures reliable connectivity.

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### Remote Commands

Incoming messages from the web site are validated and applied automatically:

- Reporting intervals and thresholds updated remotely
- Operating modes adjusted without reboot
- Commands executed and acknowledged

### **Device Responses and Feedback**

After processing commands, the device:

- Generates confirmation or status messages
  - Sends responses via the active communication path
  - Provides visibility into device state and execution results
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### **Intelligent Fallback and Reliability**

- Alternate communication or location methods are used
  - Retry and backoff logic conserve power
  - Successful paths are prioritized
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### **Power-Efficient Operation**

- Tasks run only when required
  - Communication systems activate on demand
  - Low-power states are used when idle
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### **Summary**

The Task Handler integrates GPS, Wi-Fi, cellular, and satellite communication into a single intelligent system that enables remote configuration, reliable connectivity, and efficient power management across challenging deployment environments.

## Operation, Installation, Maintenance

### Marking & Equipment Information

The equipment is marked in accordance with applicable ATEX and IECEx certification requirements. Markings include the explosion protection marking, temperature class, equipment protection level (EPL), and certification numbers. Markings shall remain legible and shall not be altered, removed, or obscured.



### On-site Installation

Installation shall be carried out by suitably trained personnel in accordance with IEC 60079-14.

#### INSTALLATION

- Use Two screws or bolts to attach the 2X2 on your asset so that it faces the sky. Only bolt and screwdriver or wrench are required to fasten to your asset.
- Remove the on-off magnet on the 2X2 to turn it on. Safely store the magnet for future use to turn it off or reset.
- Use the Bluetooth APP or Lasso.com interface to configure the GPS reporting interval. These are described later.
- Observe results on the web page.

### Maintain enclosure integrity and sealing (IP rating)

- Avoid mechanical damage
- Ensure proper mounting and orientation
- Prevent electrostatic charge accumulation

**Only approved installation practices for hazardous locations shall be followed.**

### Parameter Setting & Configuration

The device GPS reporting intervals may be configured using Smartphone via Bluetooth interface or over the air using cellular or satellite commands as described later in this document.

### Use & Safe Operation

- The equipment shall be used only within the specified electrical, environmental, and temperature limits defined in the certification.
- The device is certified for use in hazardous areas under the protection concept and shall not be operated outside these conditions.

**Do not:**

- Modify the equipment
- Substitute components
- Operate outside rated parameters
- Failure to comply may invalidate certification and create a hazardous condition.

**Maintenance**

- Inspection and maintenance shall be carried out in accordance with IEC 60079-17. Discontinue use if the housing is damaged.
- Repairs affecting explosion protection shall only be performed by the manufacturer or in accordance with IEC 60079-19.

**Decommissioning**

- Before removal, ensure the equipment is de-energized and isolated by re-installing the magnet and moving the device out of the hazardous environment.
- Removal shall be conducted in accordance with site hazardous area procedures to prevent ignition risks.
- Contains Lithium batteries so Special shipping considerations are required.

**Warnings & Misuse**

- Do not modify or alter the equipment
- Enclosure is potted and is not user serviceable and should not be opened.
- Avoid conditions that may generate electrostatic charge

**Improper use may result in loss of explosion protection.**

## Core Concepts

Key terms used in this manual:

### Assets & devices

- **Asset** — What you monitor in the Web Site (tank, vehicle, equipment). It has a name, optional identifier, and is linked to a device by ESN (Electronic Serial Number).
- **ESN (Electronic Serial Number)** — Unique ID for the device. Used in search, Asset Details, and Create Asset. Identified by ESN which starts with 0-xxxxxx.

### Organization

- **Organization Unit (OU)** — Part of your company hierarchy. Scopes assets, users, and alerts. Used in Groups and filters.
- **Sub-Organization (sub-OU)** — A child OU. Used when moving assets or browsing the Groups page.
- **Group** — A collection of assets. Used to organize, scope alerts, and search by group on the map.

### Data & measurements

- **Breadcrumbs** — On the Locations tab, the path of positions over time showing where the asset has been.

### Map & alerts

- **Geofence** — A polygon on the map. Used for location alerts (enter/leave) and to mark Home Yard.
- **Home Yard** — A geofence type for company-owned locations (e.g. off-rent, non-billable).
- **Alert** — A rule that sends notifications (e.g. email) when a condition is met (threshold, geofence). Scoped to an asset or group.

### Communication

- **Two-Way Communication** — Send commands to the device and get a response. This is done to alter GPS reporting intervals.

## Web and Authentication

Access the Cloud Web Site at <https://cloud.lasso.com> by signing in with your email and password. The following flows are available: **sign in**, **forgot password**, **reset password**, and **change password** (when required after first login).

1. Open the Cloud Web Site in your browser.
2. Enter your email and password on the sign-in screen.
3. Click **Sign in**. If your password must be changed, you will be prompted to set a new one.

**LASSO**  
Technologies, LLC

# Log in

Email

Password

I agree to Lasso's [Terms of Service](#)

Log in

Having trouble logging in? [Reset password](#)

If you need help, contact us at 1-866-392-0932

*Sign-in screen with email and password fields*

If you forgot your password, use the **Forgot password** link on the sign-in page. You will receive an email with a link to reset your password.



## Reset your password

We'll email you a code to reset your password.

[Back to login](#)

*Forgot/Reset password screen*

After requesting a password reset, you will receive a verification code by email. Enter the code along with your new password and confirm it to complete the reset. If you did not receive the code, you can click [Resend code](#) to have it sent again.



## Reset your password

Enter the code sent to your email.

[Resend code](#)

*Reset password verification – enter the code sent to your email and set a new password*

Some organizations may use Single Sign-On (SSO). If your company has **SSO** enabled, you will see an SSO login option on the sign-in page.



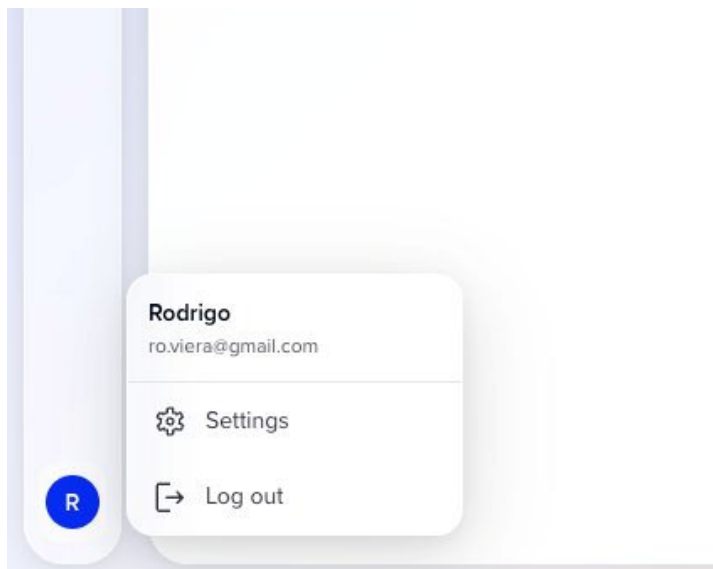
# Log in

Murphy Single Sign-On

If you need help, contact us at 1-866-392-0932

*SSO login page*

**Security:** Do not share your password. Use the official password reset flow if you need to change it.



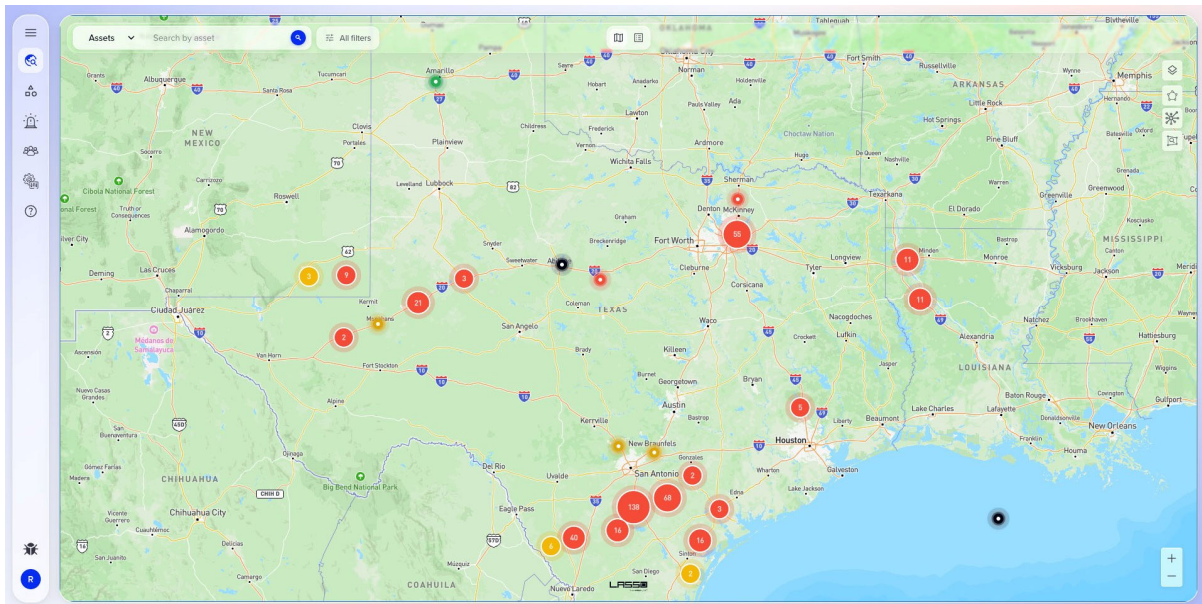
If you have access to more than one company or account, you can switch between them by clicking your profile avatar at the bottom-left of the sidebar, then selecting **Settings** from the menu to access the account and organization management pages where you can change the company or account.

*User profile menu showing Settings and Sign out options*

## Getting Started

After signing in, you land on the main application. The left sidebar provides navigation to **Assets** (Map or List), **Groups**, **Alerts**, **Users**, and **User Manual**. Use the profile area at the bottom of the sidebar to open **Settings** or **sign out**.

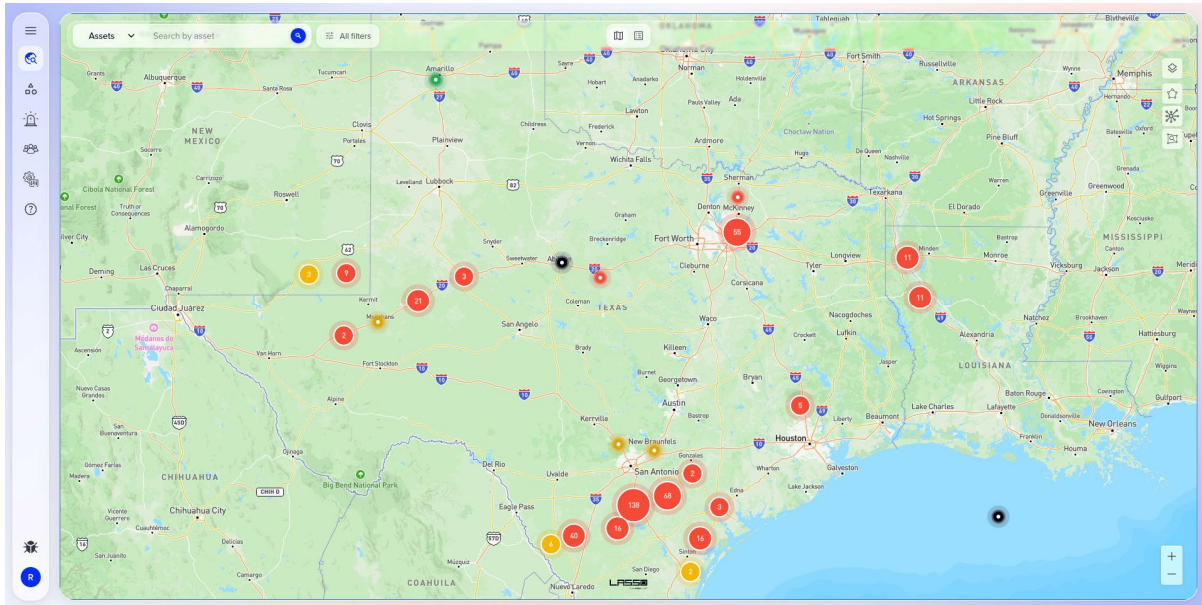
- **Assets (Map):** view assets on a map with search and filters. You can also view, create, edit, and delete geofences.
- **Assets (List):** view assets in a table with search, filters, sortable columns, export options, and the ability to add new assets.
- **Groups:** organize assets into groups and manage membership.
- **Alerts:** create and manage alert rules.
- **Users:** manage users and roles (admin/manager only).
- **Settings:** account, notification alerts, and organization management (where permitted).



*Main application with sidebar navigation and Map view visible*

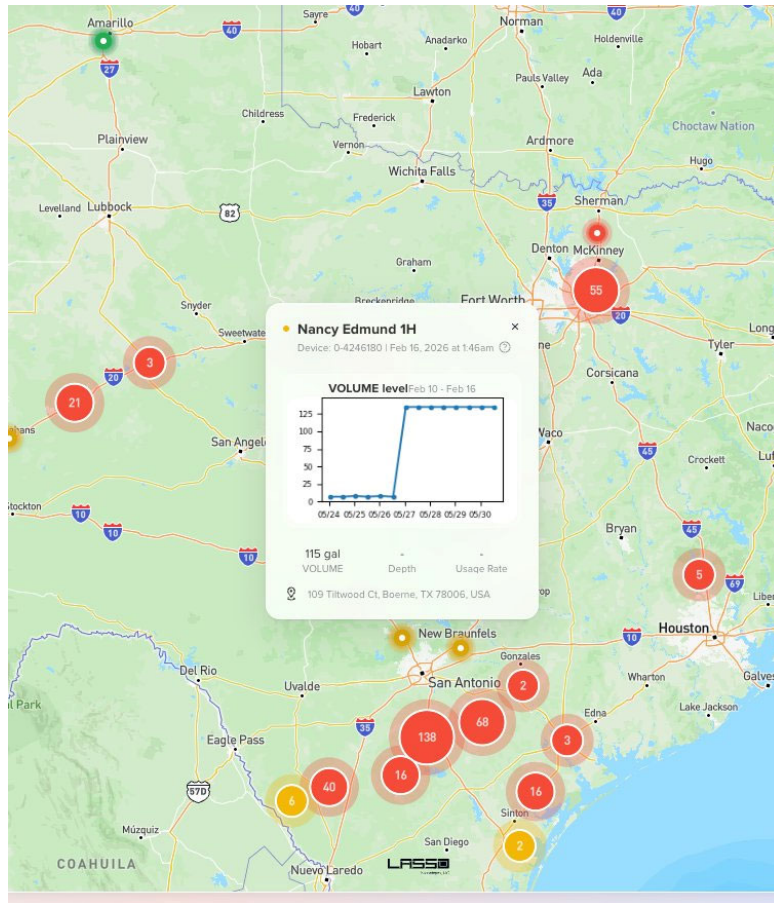
## Map View

The Map view (/assets/map) shows your assets on an interactive map. Assets and asset clusters are displayed as markers with color-coded status indicators: **green** (Ok), **yellow** (Warning), **red** (Alert/Issue), and **black** (No data or offline). **Clusters** show the number of assets grouped in that area — zoom in to see individual markers.



*Map view – full screen showing assets and clusters with color-coded status markers (green = Ok, yellow = Warning, red = Alert, black = Offline)*

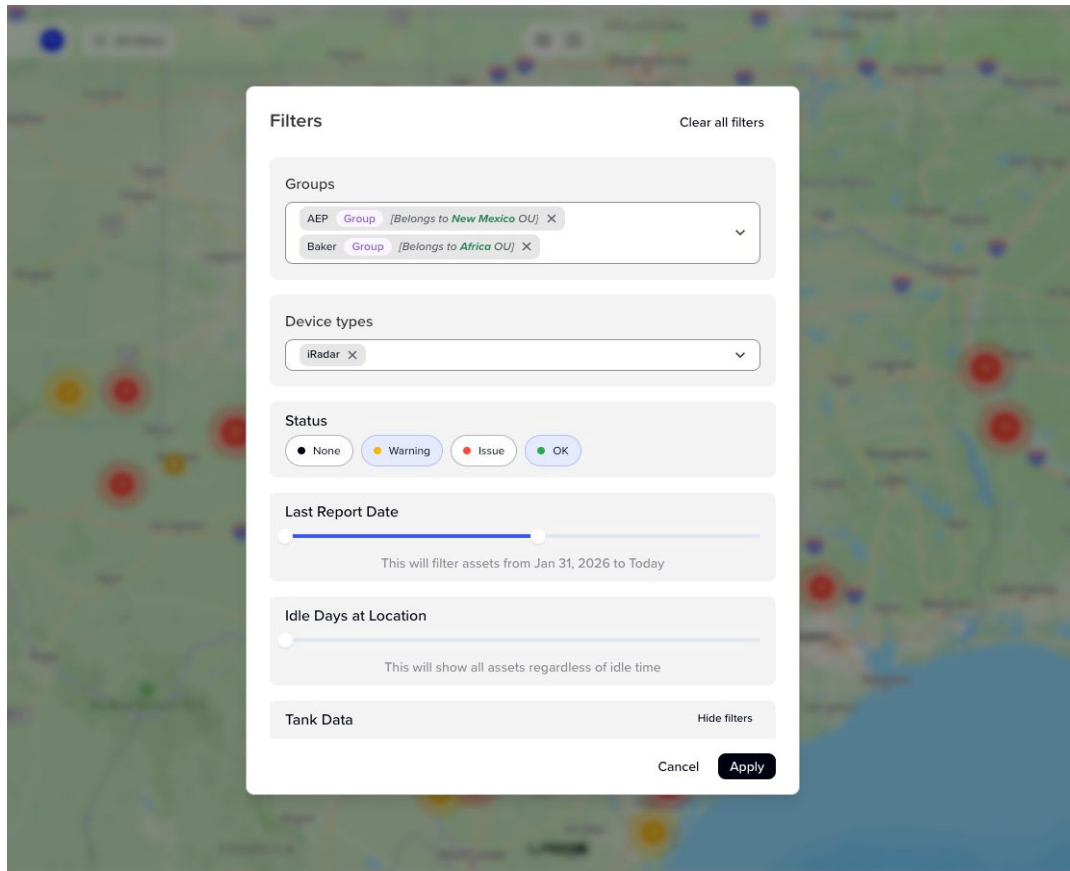
Click on an asset marker to open a popup showing relevant information about the asset, including its name, device ESN, status, last known location, and days at location. Click on the popup to navigate to the full Asset Details page where you can view detailed information, configuration, metrics, locations, and more.



*Asset popup – click a marker to see asset name, device, status, location, and days at location.*

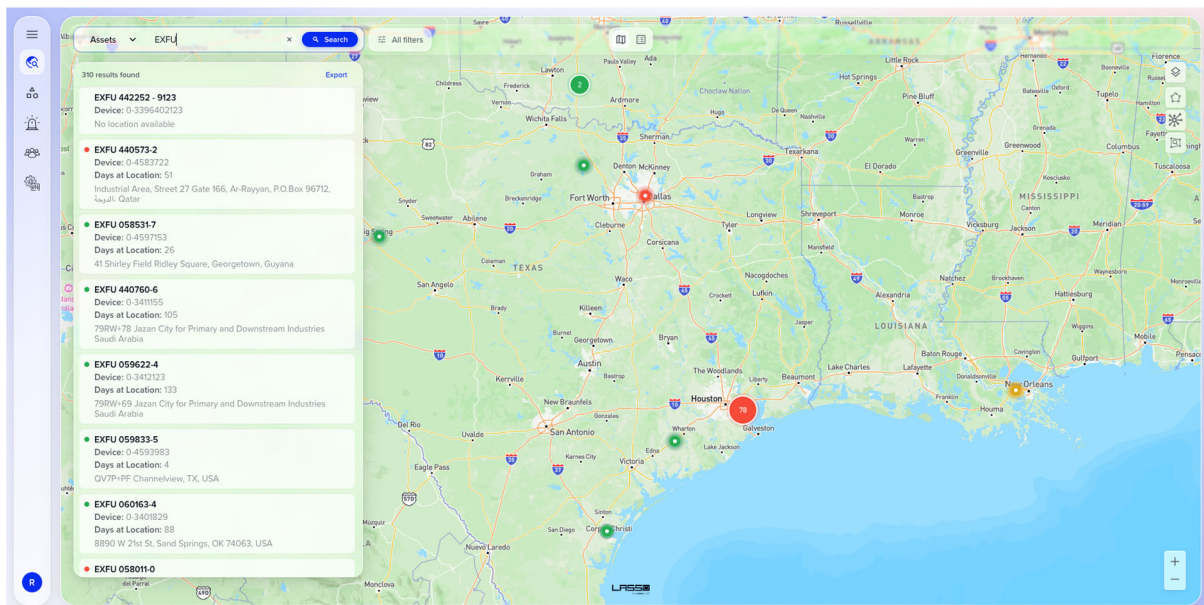
*Click the popup to open full Asset Details.*

Use the **All filters** button to open the filters panel. You can filter assets by status, organization unit, group, asset type, and other criteria to narrow down the assets displayed on the map.



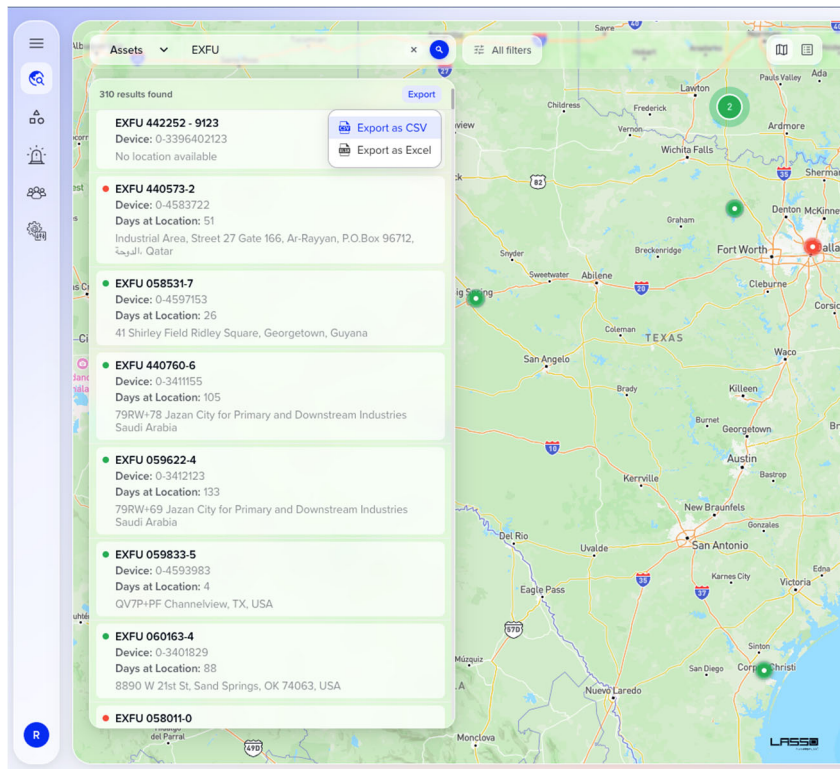
Filters panel – filter assets by status, organization, group, type, and other criteria on the map view

The **search bar** supports searching by **asset name** or **identifier**. Type a search term and press Search to find matching assets. The results are displayed in a list on the left side showing asset name, device ESN, days at location, and address. The map automatically updates to show only the matching results.



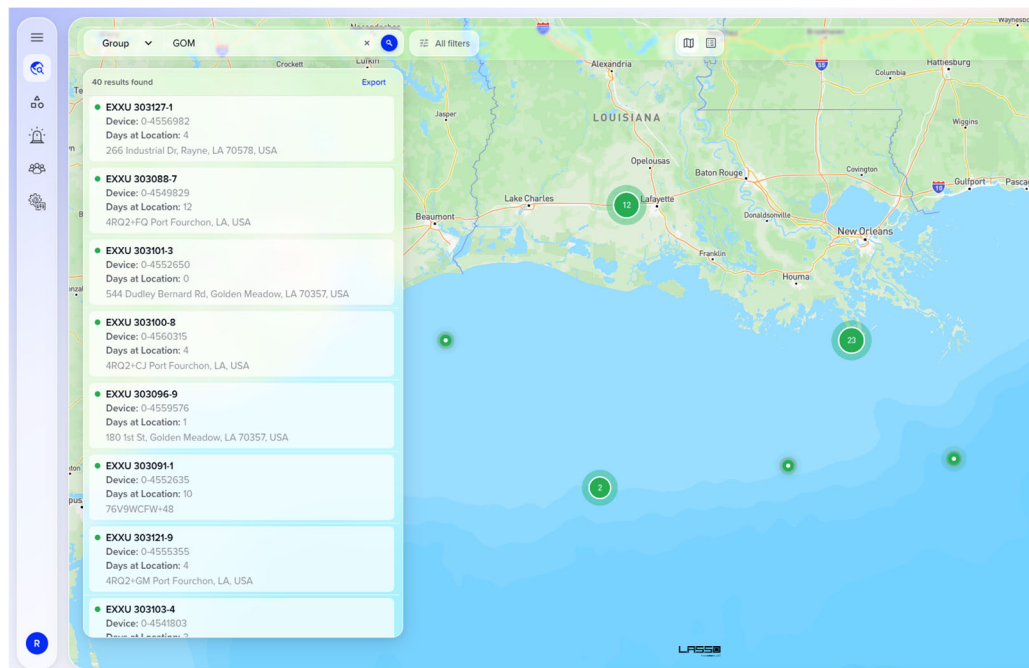
Search by Assets – results list showing matching assets with name, device, days at location, and address. The map filters to display only the search results.

The search results list includes an **Export** option that allows you to download the results as CSV or Excel. This is useful for generating reports of specific asset subsets.



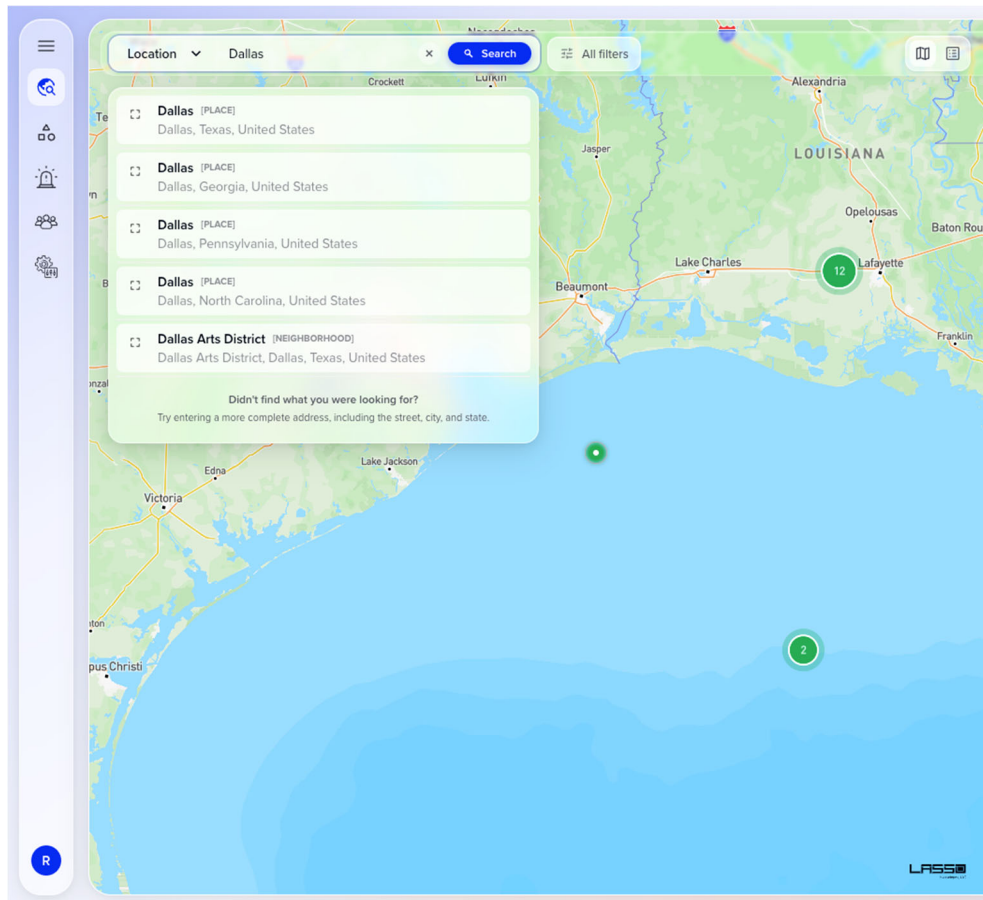
*Export search results – click Export to download the asset search results as CSV or Excel*

You can also search by Group. Switch the search dropdown to **Group** mode and type a group name. The results will show all assets belonging to that group, and the map will zoom to display them.



*Search by Group – type a group name to find and display all assets in that group on the map*

The **Location** search mode lets you search for geographic locations on the map. Type a city, state, zip code, address, country, or place name, and a dropdown will show matching results. Select a location to center the map on that area. This helps you quickly navigate to a specific region to see nearby assets.



*Search by Location – type a city, state, zip code, or address to navigate the map to that area. Results show matching places with type labels.*

## Map Tools

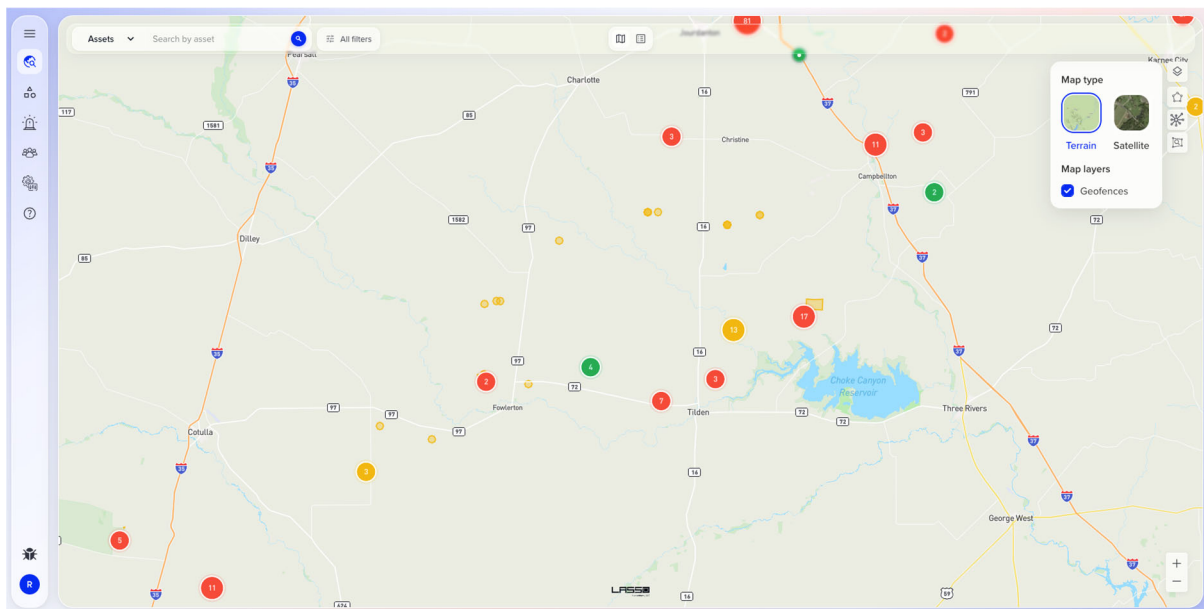
The map controls in the **top-right corner** provide tools to customize the map display and interact with assets and geofences. Click the **layers icon** to open the Map type and Map layers panel.

**Map type:** Switch between **Terrain** (street map) and **Satellite** (aerial imagery with labels).

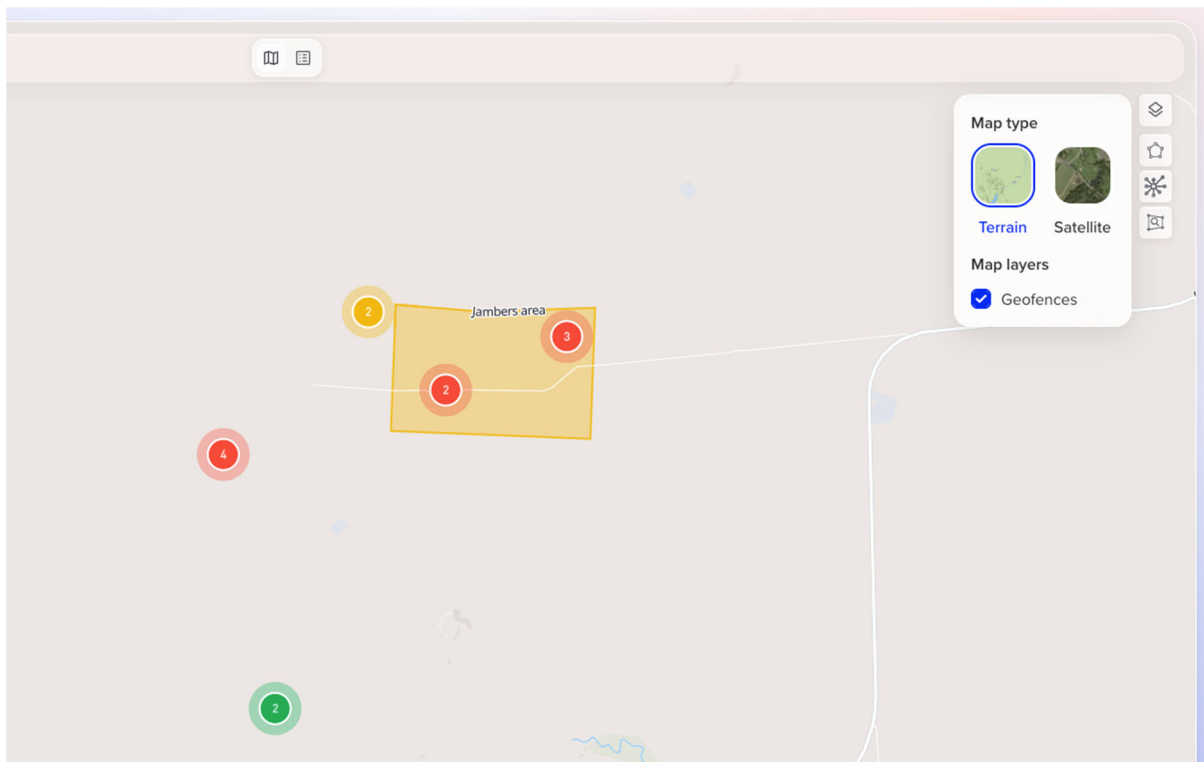
**Map layers:** Use the **Geofences** checkbox to show or hide geofence polygons. Below the layers panel: **Draw Geofence**, **Find Nearest**, and **Find in Box**. Cancel any active mode with **Escape** or the **Cancel** button.

## Geofences

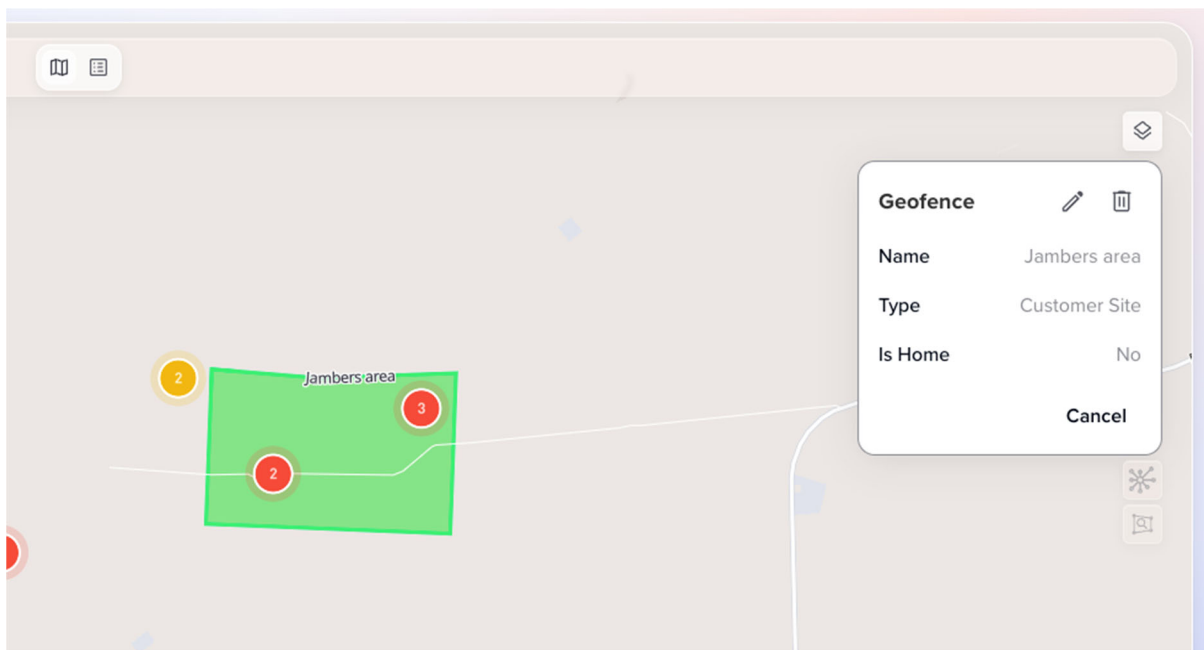
**Geofences** are geographic boundaries shown as polygon overlays. Enable the Geofences layer in the Map type dropdown to see them. Each geofence has **Name** (required), **Type**, and **Home Yard** (marks company-owned locations). Click a geofence to select it (turns green) and open a dialog to edit properties, reshape geometry, or delete.



*Map with geofences displayed as colored polygon overlays*



*Geofences on the map – boundaries and labels*



*Selected geofence in green with edit/delete dialog*

**Permissions:** Creating geofences requires the **Draw Geofence** permission. Editing and deleting require the appropriate geofence permissions.

## Draw Geofence

The **Draw Geofence** tool (polygon icon) creates new geofences by drawing a polygon. Requires **Draw Geofence** permission. Click the polygon icon, click on the map to add vertices, **double-click** the final vertex to complete, then fill Name (required) and optional Type/Home Yard and click **Save**. Press **Escape** or **Cancel** to abort.

## Find Nearest

**Find Nearest** (map point icon) finds assets closest to a point. Click the icon, then click a spot on the map. A marker appears and the asset list on the left shows nearest assets sorted by distance. Click an asset to view details or fly to it. Press **Escape** or **Cancel** to exit.

## Find in Box

**Find in Box** (map search icon) finds all assets inside a rectangle. Click the icon, click to set the first corner, move the mouse to expand, then click to set the opposite corner. The asset list updates with assets in the box. Press **Escape** or **Cancel** to exit.

## List View

The List view (/assets/list) shows assets in a table with sortable columns. You can search, filter, sort, configure visible columns, and access quick actions. Click any asset row to open its details.

ASSET NAME	GROUP	DEVICE ESN	DEVICE TYPE	DEVICE STATUS	MEASUREMENTS	GEOCODED ADDRESS	COORDINATES	LAST POSITION REPORT DATE	STATUS
Gilbert Unit 6H7HJASHA4H Boddien 4H	Murphy (Group)	0-4216062	iRadar	Position out of date	• Depth: 29.6 • Volume: 127 <a href="#">See more</a>	289 County Rd 304, Karnes City, TX 78118, USA	29.01, -97.82	May 14, 2024 at 6:27am	Issue
Tom CF - Tank #7 Stage 3 Compressor (Q)	Murphy (Group)	0-4240301	iRadar	• Position Out of Date • Level Out of Date	• Depth: 22.8 • Volume: 128 <a href="#">See more</a>	US 191, Falls City, TX 78113, USA	28.99, -98.03	Oct 08, 2024 at 11:44pm	Issue
Baker 0-4240380	Baker (Group)	0-4240380	iRadar	• Position Out of Date • Level Out of Date	• Depth: 43.6 • Volume: 122 <a href="#">See more</a>	QPK2-2P Campbellton, TX, USA	28.8, -98.3	Jul 05, 2024 at 9:49am	Ok
Kone 62H, 63H, 64H -Riser	Murphy (Group)	0-4240644	iRadar	• Position Out of Date • Level Out of Date	Distance to fluid: 64	94200 J-37, Pleasanton, TX 78064, USA	28.8, -98.34	Dec 10, 2024 at 3:31pm	Warning
Murphy	Murphy (Group)	0-4246354	iRadar	• Position Out of Date • Level Out of Date	• Depth: 41.7 • Volume: 116 <a href="#">See more</a>	495 Shala Rd, Pleasanton, TX 78064, USA	28.93, -98.48	Oct 13, 2024 at 11:36pm	Ok
Jag CF (Recycle Gas Fuel Gas Tank#1)	Murphy (Group)	0-4240307	iRadar	• Position Out of Date • Level Out of Date	• Depth: 47.5 • Volume: 275 <a href="#">See more</a>		0, 0	Mar 01, 2024 at 12:05pm	Ok
Tom CF - UF	Murphy (Group)	0-4240646	iRadar	• Position Out of Date • Level Out of Date	• Battery: 7.4 • Distance to fluid: 180	1112 Cedar St, Jourdanton, TX 78026, USA	28.93, -98.54	Dec 25, 2024 at 9:35pm	Warning
DK Facility Rig Receiver	Murphy (Group)	0-4240666	iRadar	• Position Out of Date • Level Out of Date	• Depth: 20 • Volume: 114 <a href="#">See more</a>	251 Private Rd 121 Ok, Jourdanton, TX 78026, USA	28.58, -98.48	Aug 20, 2025 at 10:37am	Ok

Assets list table view – full table showing asset name, group, device ESN, address, coordinates, last position report date, and status columns

The actions menu (three-dot icon at the top-right of the table) provides quick access to key actions: Add Asset to create a new asset, Manage Columns to customize which columns are displayed, and Export as CSV or Export as Excel to download the full asset list.

ADDRESS	COORDINATES	LAST POSITION REPORT DATE	
y Rd 304, y, TX 78118,	29.01, -97.82	May 14, 2024 at 6:27am	
alls City, TX IA	28.99, -98.03	Oct 08, 2024 at 11:44pm	Issue
Campbellton,	28.8, -98.3	Jul 05, 2024 at 9:49am	Ok

Table actions dropdown – Add Asset, Manage Columns, Export as CSV, and Export as Excel options

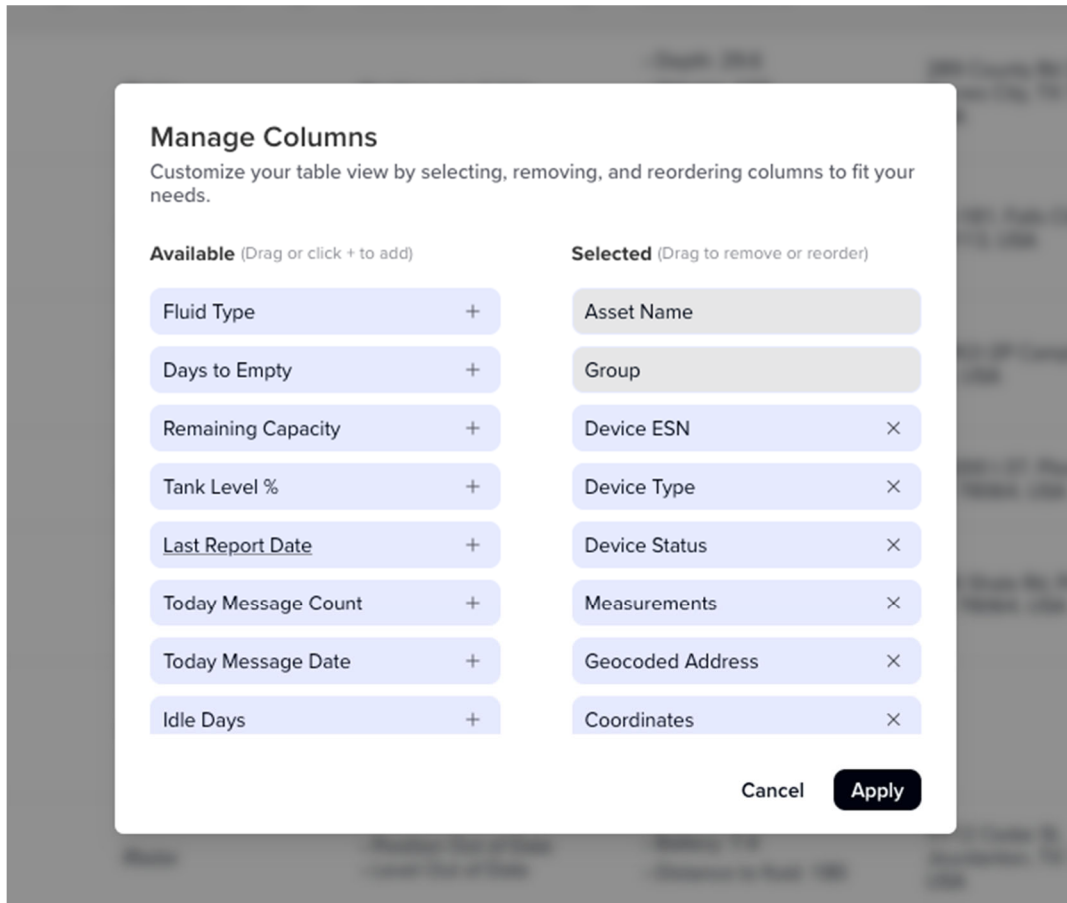
Selecting Add Asset from the actions menu opens the New Asset dialog (Step 1 of 2), where you enter asset details including Organization Unit, Device ESN, Asset type, Asset name, Internal identifier, Comments, and optional Customer Properties.

The screenshot shows a 'New Asset' dialog box with the following sections:

- New Asset**  
Step 1 of 2: Asset details  
Create an asset and assign a device to start monitoring.
- Main Properties**
  - Organization Unit \*  
Baker Radar (Change)
  - Device ESN \* (Select device ESN dropdown)
  - Asset type (Select asset type dropdown)
  - Asset name \* (Asset name text input)
  - Internal identifier \* (Internal identifier text input)
  - Comments (Comments text area)
- Customer Properties**  
Add properties and values to track additional information
  - Name (text input)
  - Value (text area)
  - + Add new property (button)
- Buttons: Cancel, Continue

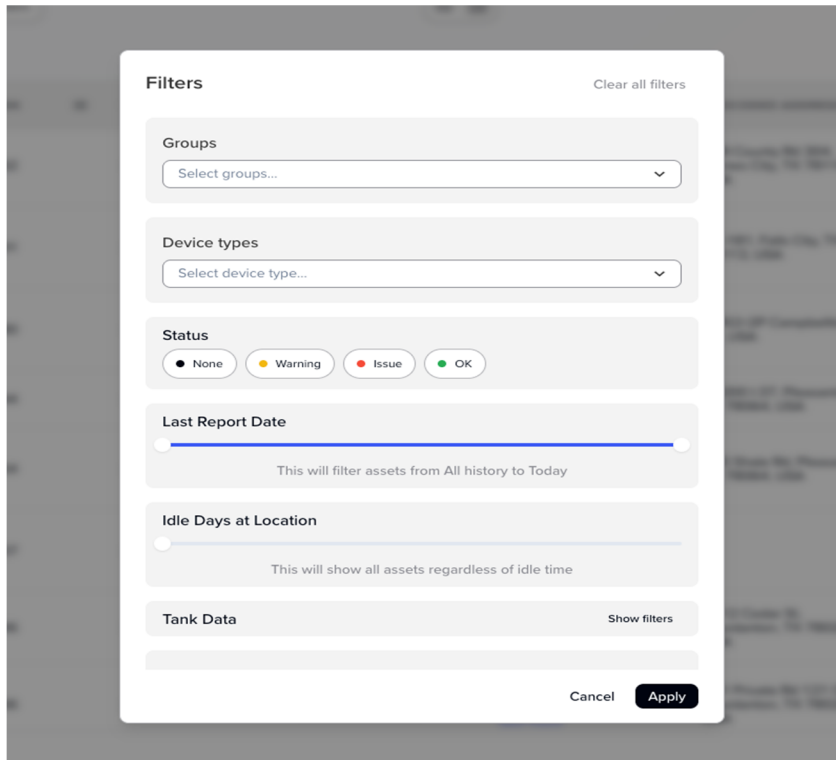
*New Asset dialog (Step 1 of 2) – configure Main Properties and Customer Properties to create a new asset*

Selecting Manage Columns lets you customize which columns are visible in the table. Toggle columns on or off to show only the information relevant to your workflow.



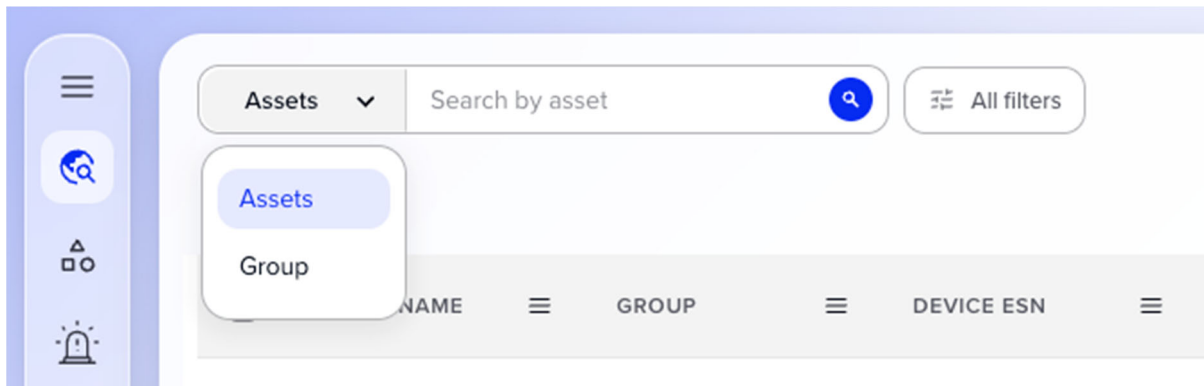
*Manage Columns modal – toggle visibility for each column in the assets table*

Use the All filters button to open the filters panel. You can filter assets by status, organization unit, group, asset type, and other criteria to narrow down the displayed results.

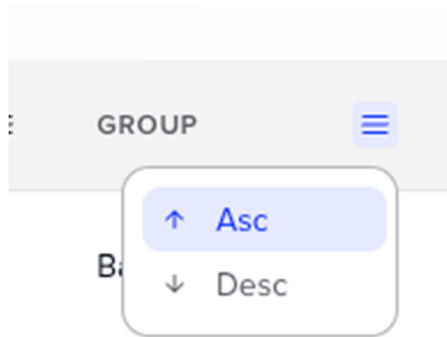


Filters modal – filter assets by status, organization, group, type, and other criteria

The search bar allows you to search for assets by name or by group. Click the dropdown next to the search field to switch between Assets and Group search modes.



Search dropdown – switch between searching by Assets (name) or by Group



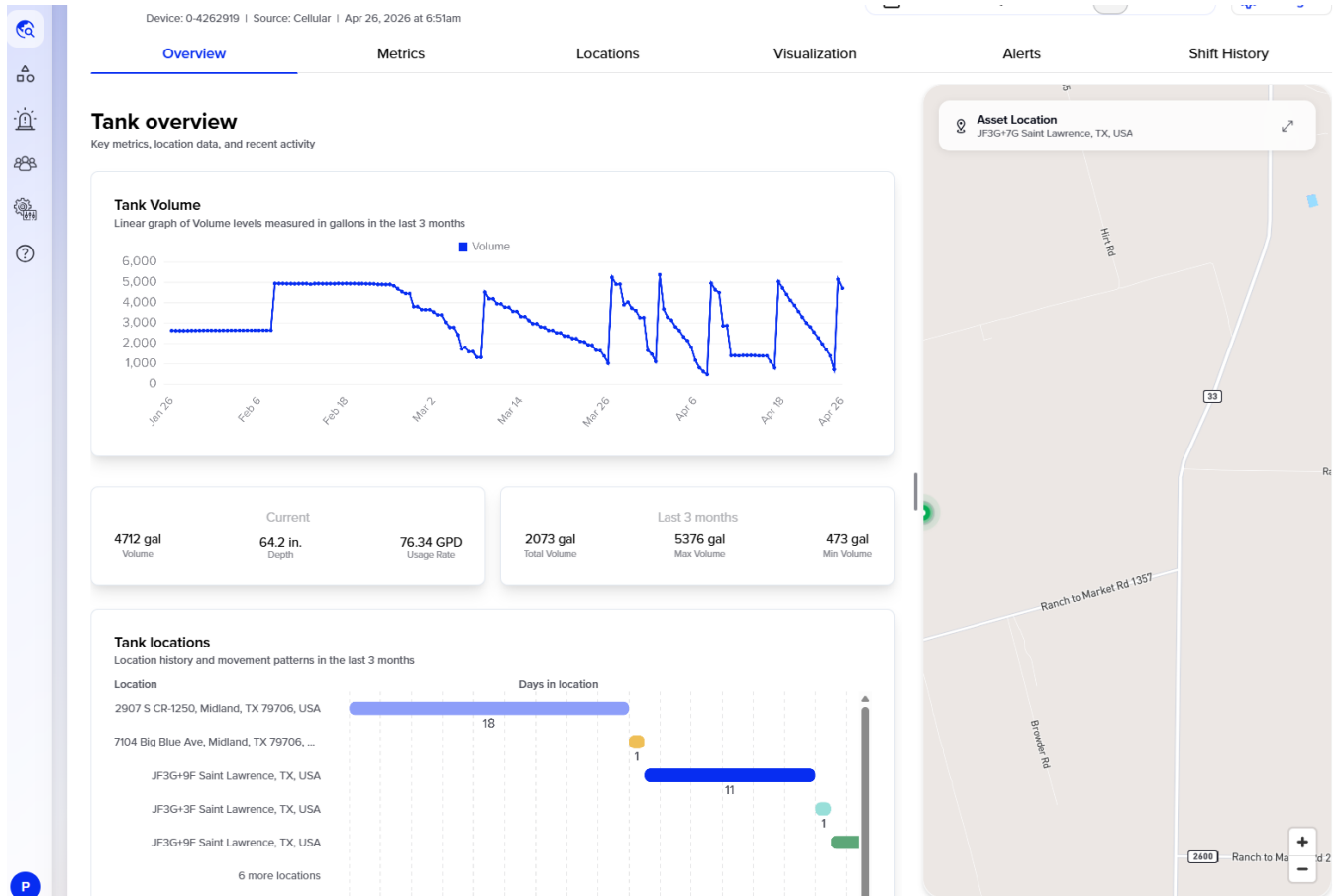
Each column header has a sort menu that allows you to sort the table in ascending (Asc) or descending (Desc) order. Click the column header icon to open the sort options.

Column sort dropdown – sort in Ascending or Descending order

## Overview

When you open an asset from the map or list, the **Asset Details** view appears. The **header** displays: the **status indicator** (color-coded, to the left of the asset name), **asset name**, **Device ESN**, **measurement source** (Satellite or Cellular), and **last report date**. The **timeframe selector** (calendar bar) on the right lets you choose the date range (e.g. last 7 days, 30 days, or custom) to filter all tab data.

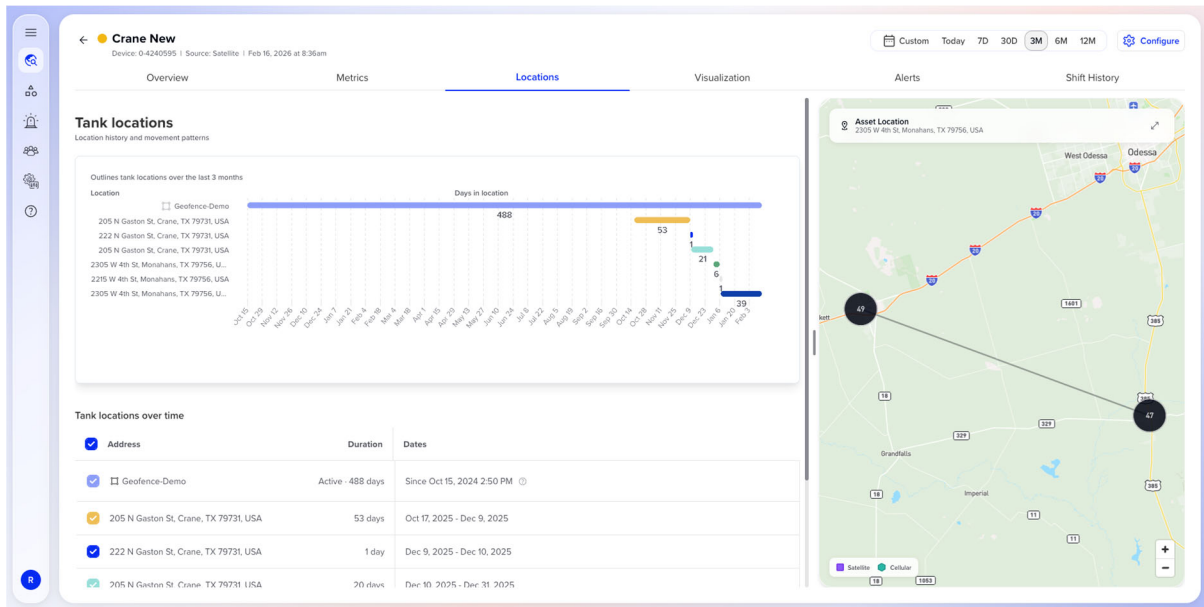
The **Overview** tab summarizes the asset for the selected period. It shows a metrics chart (primary measurement over time) and a locations chart (dwell time by location). For some layouts, a map panel may appear. Click the Metrics or Locations chart to jump to those tabs.



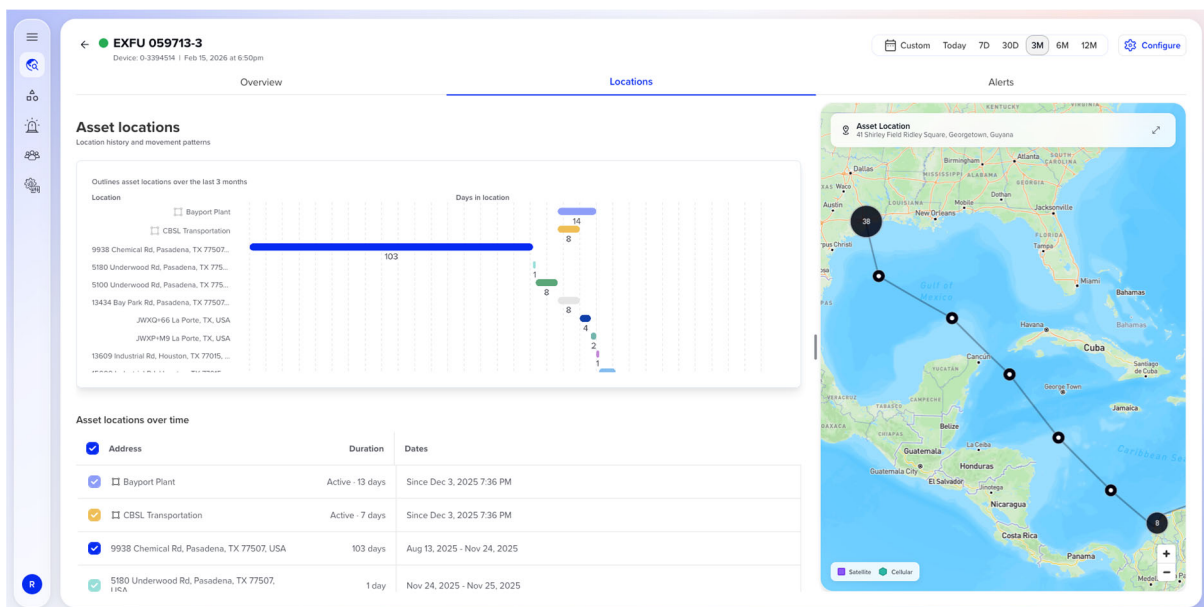
Asset Details – Overview tab with metrics chart, locations chart, and header showing status, ESN, source, date, and timeframe selector

## Locations

The **Locations** tab shows where the asset has been over the selected period. On the left, a bar chart and table list locations by dwell time (days at each stop). On the right, a map displays **breadcrumbs** — the sequence of **location positions over time** as a path. You can **open the map to full screen** for better visibility. **Click markers** on the map to view details for that location (address, date, dwell time).



*Asset Details – Locations tab with locations chart, table, and map*



*Locations tab – alternate layout with chart and map*

EXXU 303117-9  
Device: 0-4544023 | Feb 16, 2026 at 1:00pm

Overview **Locations** Alerts

**Asset locations**  
Location history and movement patterns

Outlines asset locations over the last 3 months

Location

- 23212-A 15
- 23212-B 15
- 55332 15
- 4RQ2+FM Port Fourchon, LA, USA 20
- 544 Dudley Bernard Rd, Golden Meado... 1
- 76WF4634+RH 1
- 76WF4634+HJ 14
- 76VCK35R+P2 1
- 544 Dudley Bernard Rd, Golden Meado... 2

Days in location

Asset locations over time

Address	Duration	Dates
<input checked="" type="checkbox"/> 23212-A	Active - 15 days	Since Dec 5, 2025 2:48 PM
<input checked="" type="checkbox"/> 23212-B	Active - 15 days	Since Dec 5, 2025 2:48 PM
<input checked="" type="checkbox"/> 55332	Active - 15 days	Since Dec 5, 2025 2:48 PM
<input checked="" type="checkbox"/> 4RQ2+FM Port Fourchon, LA, USA	20 days	Nov 14, 2025 - Dec 4, 2025

Asset Location  
76VCK35R+P2  
Time: Dec 01, 12:46 PM

Locations tab – view with location list and map panel

**Locations** Alerts

Days in location

- 14
- 8
- 1
- 8
- 8
- 4
- 2
- 1

Dec 3, 2025 7:36 PM

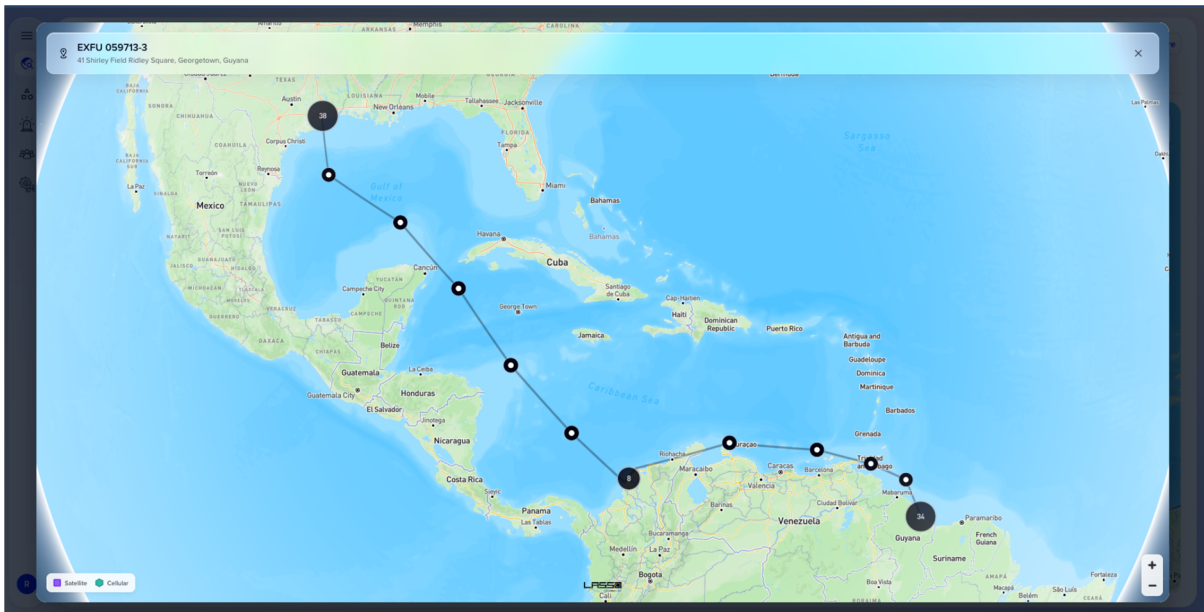
Dec 3, 2025 7:36 PM

, 2025 - Nov 24, 2025

l, 2025 - Nov 25, 2025

Asset Location  
41 Shirley Field Ridley Square, Georgetown, Guyana

Locations map with breadcrumbs showing the path of location positions over time



*Locations map in full screen with breadcrumbs*

## Alerts

The **Alerts** tab lists alert rules that apply to this asset. For each alert you can see its name, type, status (enabled or disabled), schedule, and scope (group or asset). Use this tab to review which alerts are active for the asset. To create or edit alerts globally, use the main **Alerts** page.

## Shift History

The **Shift History** tab appears when an asset has been moved between organizational units. It shows each shift with date, source OU, destination OU, and who performed the move. Use this for auditing and tracking asset reassignments.

**Crane New**  
Device: 0-4240595 | Source: Satellite | Feb 16, 2026 at 8:36am

Custom Today 7D 30D 3M 6M 12M Configure

Overview Metrics Locations Visualization Alerts **Shift History**

**Asset shift history**  
This asset has been shifted between organizational units. Below is the complete history of shifts.

DATE	FROM	TO	MEASUREMENTS	LOCATION	LAST REPORT
Jan 25, 2024 10:27am	DELETED	North Permian	Depth: 6.8 Volume: 312 Battery: 7 Distance_To_Fluid: 191	205 N Gaston St, Crane, TX 79731, USA	Jan 25, 2024 8:22am
Jan 25, 2024 10:27am	North Permian	N/A	Depth: 2.4 Volume: 113 Battery: 7 Distance_To_Fluid: 195	2305 W 4th St, Monahans, TX 79756, USA	Feb 16, 2026 8:36am
Jan 25, 2024 10:27am	DELETED	N/A	Depth: 6.8 Volume: 312 Battery: 7 Distance_To_Fluid: 191	205 N Gaston St, Crane, TX 79731, USA	Jan 25, 2024 8:22am
Jan 25, 2024 10:27am	North Permian	N/A	Depth: 2.4 Volume: 113 Battery: 7 Distance_To_Fluid: 195	2305 W 4th St, Monahans, TX 79756, USA	Feb 16, 2026 8:36am
Jan 25, 2024 10:27am	DELETED	N/A	Depth: 6.8 Volume: 312 Battery: 7 Distance_To_Fluid: 191	205 N Gaston St, Crane, TX 79731, USA	Jan 25, 2024 8:22am
Jan 25, 2024 10:27am	North Permian	N/A	Depth: 2.4 Volume: 113 Battery: 7 Distance_To_Fluid: 195	2305 W 4th St, Monahans, TX 79756, USA	Feb 16, 2026 8:36am
Jan 25, 2024 10:27am	DELETED	N/A	Depth: 6.8 Volume: 312 Battery: 7 Distance_To_Fluid: 191	205 N Gaston St, Crane, TX 79731, USA	Jan 25, 2024 8:22am

Asset Details – Shift History tab with shift records

## Two-Way Communication

You can **send commands** and **view communication logs** from the Two-Way Communication view. Open an asset and navigate to Two-Way (or use the commands link in the asset header).

The Two-Way Communication Configuration page lists all available command definitions. From here, administrators can **view**, **create**, **edit**, or **delete** command configurations that will be available for sending to assets.

The screenshot shows the 'Two-Way Communication' configuration interface. On the left, under 'AVAILABLE COMMANDS', the 'GPS' command is selected. Its description is 'Configures a fixed GPS reporting interval.' The format is 'GPS,day,hour,minute'. Parameters include 'Days' (set to 1), 'Hours' (set to 24), and 'Minutes' (set to 60). The command format is shown as '>GPS,day,hour,minute'. On the right, the 'COMMUNICATION LOG' shows a list of messages from the device, such as '[IN] 2026-02-01 18:54:55 | USER GS : GPS=0day 0hr 45min 2.5V' and '[OUT] 2026-02-02 16:28:21 | >TEST,4,7,double0range!'.

*Two-Way Communication Configuration – list of all configured commands with name, description, and command syntax*

- Open an asset that has two-way communication enabled.
- Go to the Two-Way Communication view (link in header or route /assets/:id/two-way).
- Select a command and fill in any parameters as required.
- Send the command and check the communication log for status and responses.

NAME	COMMAND	PARAMETERS	DESCRIPTION	ACTIONS
GPSHOUR	>GPSHOUR,hr1,hr2,hr3,hr4,hr5,hr6,hr7,hr8,hr9,hr10]	HR1 HR2 HR3 HR4 HR5 HR6 HR7 HR8 HR9 HR10	Schedules GPS wake-up times during the day (24h format). ...	<a href="#">+</a> Create command
GPS	>GPS,day,hour,minute]	DAY HOUR MINUTE	Configures a fixed GPS reporting interval. ...	<a href="#">+</a> Create command
TRACK	>TRACK,mode,m1n,max]	MODE MIN MAX	Configures GPS tracking behavior. ...	<a href="#">+</a> Create command

*Two-Way Communication view showing command history and communication logs*

*No need to alter this page*

## Two-Way Communication – GPS INTERVALS

3 commands can be sent to the 2X2.

- Transmit on the Hour.
- Transmit on an interval.
- Transmit on a change of location with varying reporting intervals when in motion.
- Only one of these 3 methods can be used at a time.
- More complex GPS and motion based responses are possible. Contact Lasso.

### ← Two-Way Communication

📄 2X2 Coi

#### AVAILABLE COMMANDS

Select a command, configure parameters if needed, and send it.

**GPSHOUR** ^

**DESCRIPTION**

Schedules GPS wake-up times during the day (24h format).  
Times are in GMT (approximately local time +6 hours).

Up to 10 hours can be configured.  
Use 0 for unused hours.

Format:  
GPSHOUR,hr1,hr2,hr3,hr4,hr5,hr6,hr7,hr8,hr9,hr10

Example:  
GPSHOUR,3,6,14,18,0,0,0,0,0,0

**COMMAND FORMAT**

GPSHOUR, hr1, hr2, hr3, hr4, hr5, hr6, hr7, hr8, hr9, hr10

**PARAMETERS**

Hour 1 <span>?</span>	Hour 2 <span>?</span>	Hour 3 <span>?</span>	Hour 4 <span>?</span>	Hour 5 <span>?</span>
<input type="text" value="..."/>	<input type="text" value="..."/>	<input type="text" value="..."/>	<input type="text" value="..."/>	<input type="text" value="..."/>
Min: 0 Max: 24	Min: 0 Max: 24	Min: 0 Max: 24	Min: 0 Max: 24	Min: 0 Max: 24
Hour 6 <span>?</span>	Hour 7 <span>?</span>	Hour 8 <span>?</span>	Hour 9 <span>?</span>	Hour 10 <span>?</span>
<input type="text" value="..."/>	<input type="text" value="..."/>	<input type="text" value="..."/>	<input type="text" value="..."/>	<input type="text" value="..."/>
Min: 0 Max: 24	Min: 0 Max: 24	Min: 0 Max: 24	Min: 0 Max: 24	Min: 0 Max: 24

**PREVIEW**

>GPSHOUR,,,,,,,,,]

📄
▶ Send

### GPS ^

**DESCRIPTION**  
Configures a fixed GPS reporting interval.

Format:  
GPS,day,hour,minute

Hour must be between 0-24.  
Minute must be between 0-60.

Example:  
GPS,0,4,10

**COMMAND FORMAT**

```
GPS,day,hour,minute
```

**PARAMETERS**

Days <span>?</span>	Hours <span>?</span>	Minutes <span>?</span>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="60"/>
Min: 0	Min: 0 Max: 24	Min: 0 Max: 60

**PREVIEW**

```
>GPS,0,0,60]
```

📄 ▶ Send

**TRACK** ^

**DESCRIPTION**  
Configures GPS tracking behavior.

**Mode:**  
1 = Normal (different update intervals when stationary and moving)  
2 = Change of Location

**Format:**  
TRACK,<mode>,<rest\_minutes>,<moving\_minutes>

**Example:**  
TRACK,1,360,10

**COMMAND FORMAT**

```
TRACK,mode,min,max
```

**PARAMETERS**

<p>Tracking Mode <span>?</span></p> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; display: flex; align-items: center;"><span>Select...</span><span style="margin-left: 10px;">▼</span></div> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; margin-top: 5px;"><p>Normal</p><p>Change of Location</p></div>	<p>Rest Update Interval (minutes) <span>?</span></p> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; display: flex; align-items: center;"><span>...</span></div> <p style="font-size: small; margin-top: 5px;">Min: 10 Max: 65535</p>	<p>Moving Update Interval (minutes) <span>?</span></p> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; display: flex; align-items: center;"><span>...</span></div> <p style="font-size: small; margin-top: 5px;">Min: 10 Max: 65535</p>
---	---	---

}

▶ Send

## Two-Way Communication – GPS CONFIRMATION

- A confirmation will be sent to you.
- You should do satellite testing with the device outside. Cellular will work inside.
- The Black [OUT] is the message sent by the 2X2 back to the web.
- The Blue [IN] is incoming messages by cell or GS satellite.
- Blue is an incoming message sent via cell or satellite.
- Messages are only checked when the device wakes and will use cellular or satellite depending upon what appears to be the better method at the time.
- The returned message confirms that your GPS interval change has been made.
- Change GPS configuration commands expire after 24 hours if not handled.
- USER:.....is an acknowledgement of your command.

```
[IN] 2026-01-08 08:04:00 | USER : GPSHOUR=7,8,9,10,11,12,13,14,15,
[IN] 2026-01-08 08:04:01 | USER : GPS7day 10hr 111min 4.1V
[IN] 2026-01-08 08:04:04 | USER : TRACK=mode1 22to33 4.0V>USER,10.
[IN] 2026-01-08 08:04:07 | USER : GPS0day 0hr 5min 4.1V
[OUT] 2026-01-08 14:57:18 | >TRACK,1,60,11]
[OUT] 2026-01-08 14:57:36 | >GPSHOUR,1,2,3,4,5,6,7,8,9,10]
[OUT] 2026-01-08 14:57:45 | >GPS,0,0,5]
[IN] 2026-01-08 15:02:10 | USER : TRACK=mode1 60to11 4.3V>USER,10.
[IN] 2026-01-08 15:02:24 | USER : GPS0day 0hr 5min 4.3V
[OUT] 2026-01-09 21:04:46 | >TRACK,1,10,111]
[OUT] 2026-01-09 21:04:52 | >GPSHOUR,7,8,9,10,11,12,13,14,15,16]
[OUT] 2026-01-09 21:05:05 | >GPS,0,0,15]
[IN] 2026-01-12 10:13:38 | USER : GPS0day 0hr 15min 4.1V
[OUT] 2026-01-12 10:14:18 | >TRACK,1,20,30]
[OUT] 2026-01-12 10:14:33 | >GPSHOUR,1,2,3,4,5,6,7,8,9,10]
[OUT] 2026-01-12 10:14:41 | >GPS,1,22,222]
[OUT] 2026-01-12 10:14:59 | >GPSHOUR,7,8,9,10,11,12,13,14,15,16]
[OUT] 2026-01-12 10:15:09 | >TRACK,3,10,11]
[OUT] 2026-01-12 10:15:35 | >TRACK,1,10,12]
[OUT] 2026-01-12 10:15:46 | >GPSHOUR,8,9,10,11,12,13,14,15,16,17]
[IN] 2026-01-12 10:16:07 | USER : TRACK=mode1 20to30 4.1V>LASSO5,1
[IN] 2026-01-12 10:16:59 | USER : GPS1day 22hr 222min 4.1V
[IN] 2026-01-12 10:18:06 | USER : GPSHOUR=7,8,9,10,11,12,13,14,15,
```

## Create Asset

Typically this is done at Lasso. Creating a new asset is done from the Add Asset flow. The process consists of two steps. In Step 1, you configure the asset details including **Main Properties** (Device ESN, Asset type, Asset name, Internal identifier, and Comments) and optional **Customer Properties** for tracking additional information.

- Open the Add Asset flow from the Groups page or the List view actions menu.
- Step 1 – Asset Details: Select the Device ESN, choose an Asset type, enter the Asset name and Internal identifier. Optionally add comments and customer properties.
- Click Continue to proceed to Step 2.
- Step 2 – Asset Properties: Configure properties specific to the selected asset type (Tank, Engine, or Equipment).
- Click Create to finish. The new asset will appear on the map and list views.

*Create Asset – Step 1: Asset Details form showing Main Properties (Device ESN, Asset type, Asset name, Internal identifier, Comments) and Customer Properties section*

- **Equipment (GPS-only) type:** Configure basic GPS tracking properties.

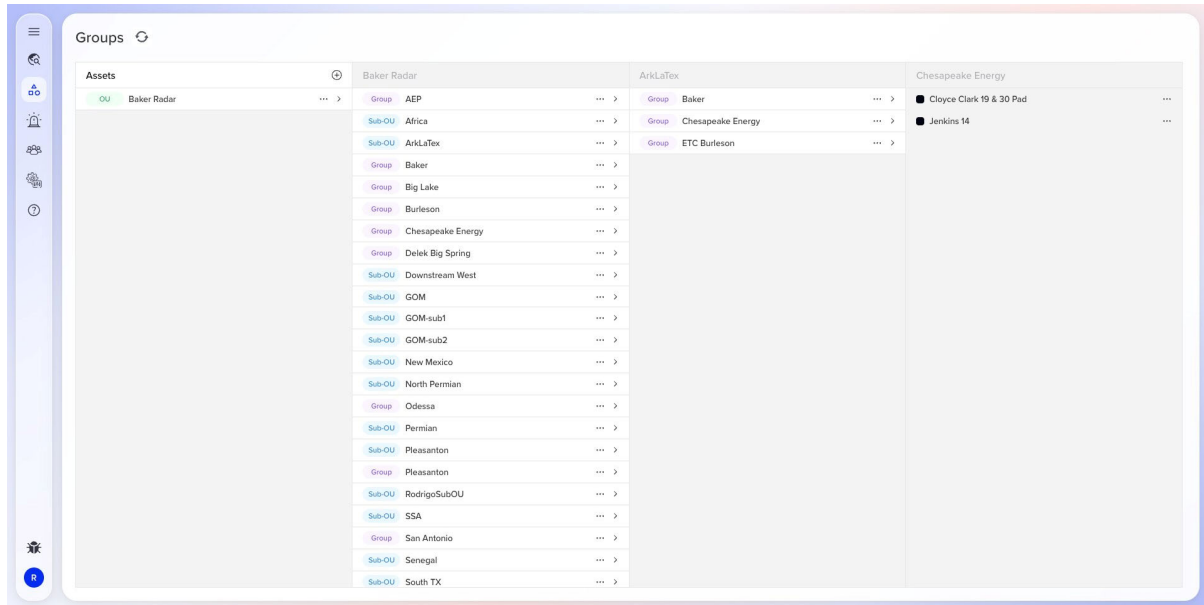
Create Asset – Step 2 for Tank type: Tank Configuration, Measurements Configuration, and Status Calculation Configuration

The screenshot shows a two-step process for creating an asset. Step 1, 'Asset details', is completed and marked with a green checkmark. Step 2, 'Equipment properties', is the current active step. It includes a sub-section 'Equipment Configuration' with a message: 'This is a GPS-only device. Location tracking is the main metric. No additional properties need to be configured for Equipment assets.' Below this is a 'Primary Measurement' dropdown menu with the text 'Select primary measurement' and a downward arrow. A note below the dropdown states 'Channels configured for the selected asset type are listed here.' At the bottom of the step are 'Back' and 'Add' buttons.

Create Asset – Step 2 for Equipment (GPS-only) type: basic GPS tracking properties configuration

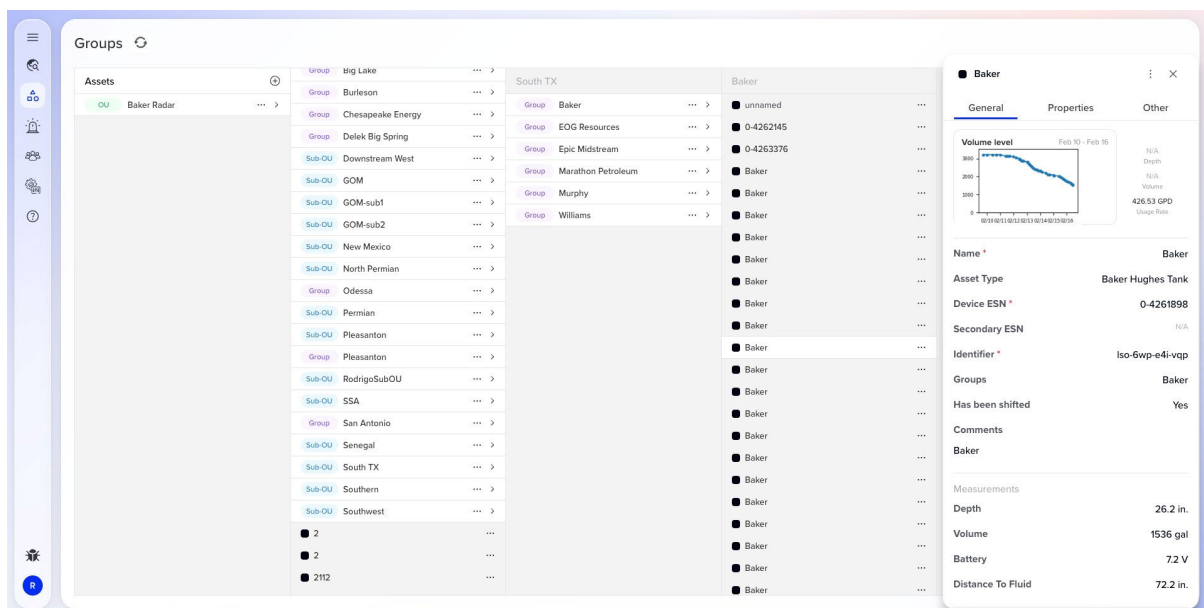
## Groups

Groups let you organize assets into logical collections within your organization hierarchy. The Groups page displays a **multi-column browser** where you can navigate through **Organization Units (OUs)**, **Sub-OUs**, and **Groups** to find and manage your assets.



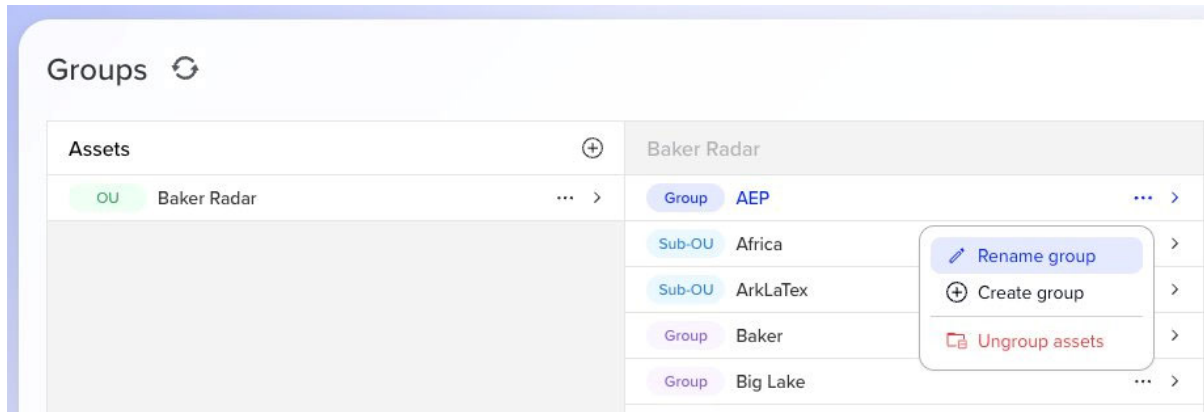
Groups page – multi-column browser showing Organization Units, Sub-OUs, Groups, and assets organized in a hierarchical structure

When you select an asset in the Groups view, a **details drawer** opens on the right side showing the asset's general information, including name, asset type, device ESN, identifier, group assignment.



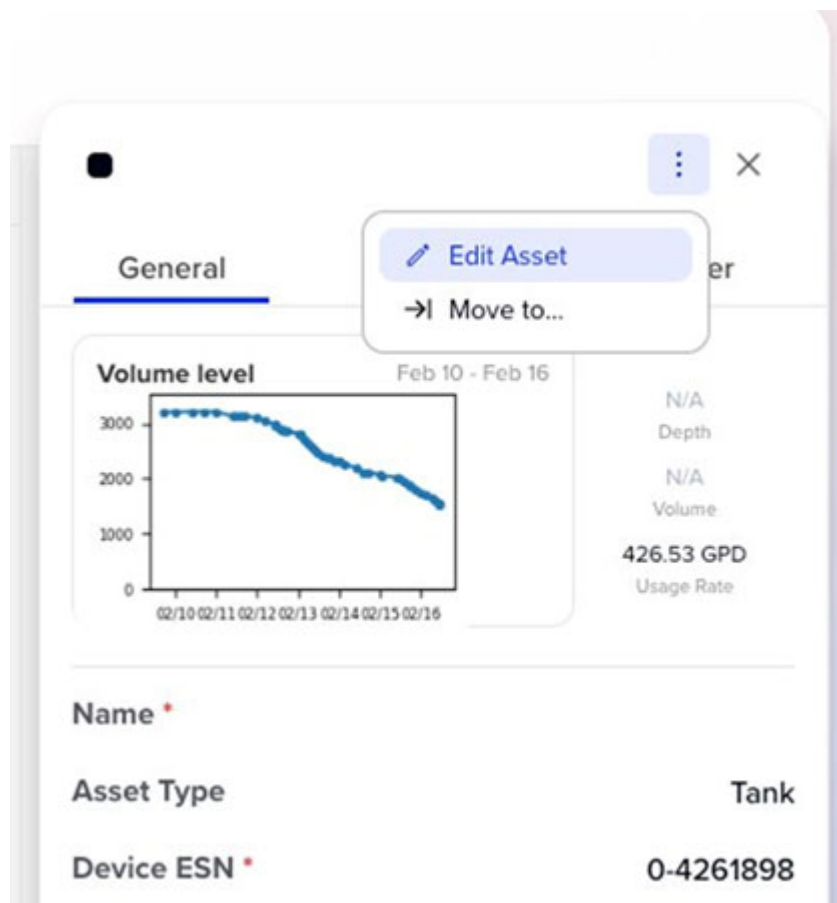
Asset details drawer – shows general information (name, type, ESN, identifier, group), a volume level chart, and current measurements for the selected asset

Each group and Sub-OU has a context menu (accessible via the ... button) with actions to manage the group structure. You can **rename a group**, **create a new nested group** inside it, or **ungroup all assets** contained in the group.



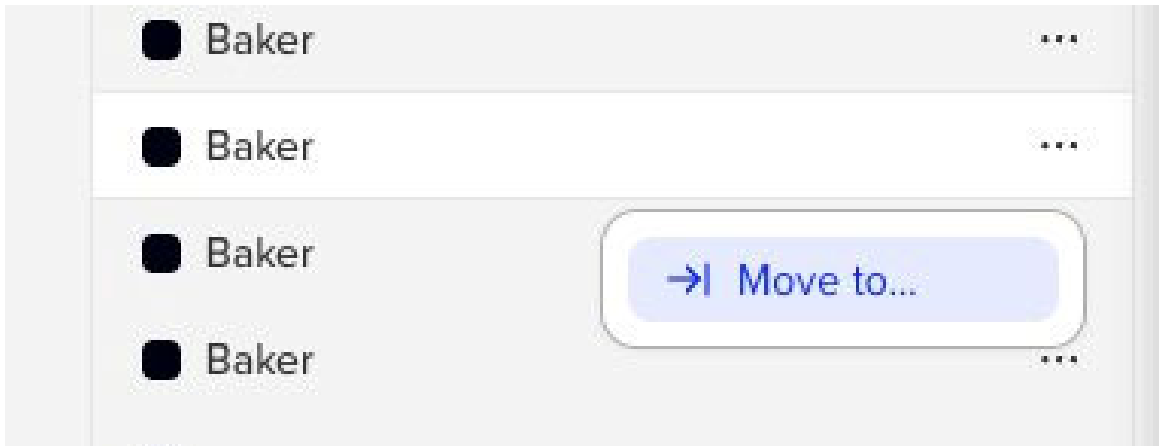
Group context menu – options to Rename group, Create group (nested), and Ungroup assets

From the asset details drawer, you can perform actions on the selected asset by clicking the three-dot menu at the top-right corner. The available actions include **Edit Asset** to update the asset information, and **Move to...** to transfer the asset to a different group or sub-organization.



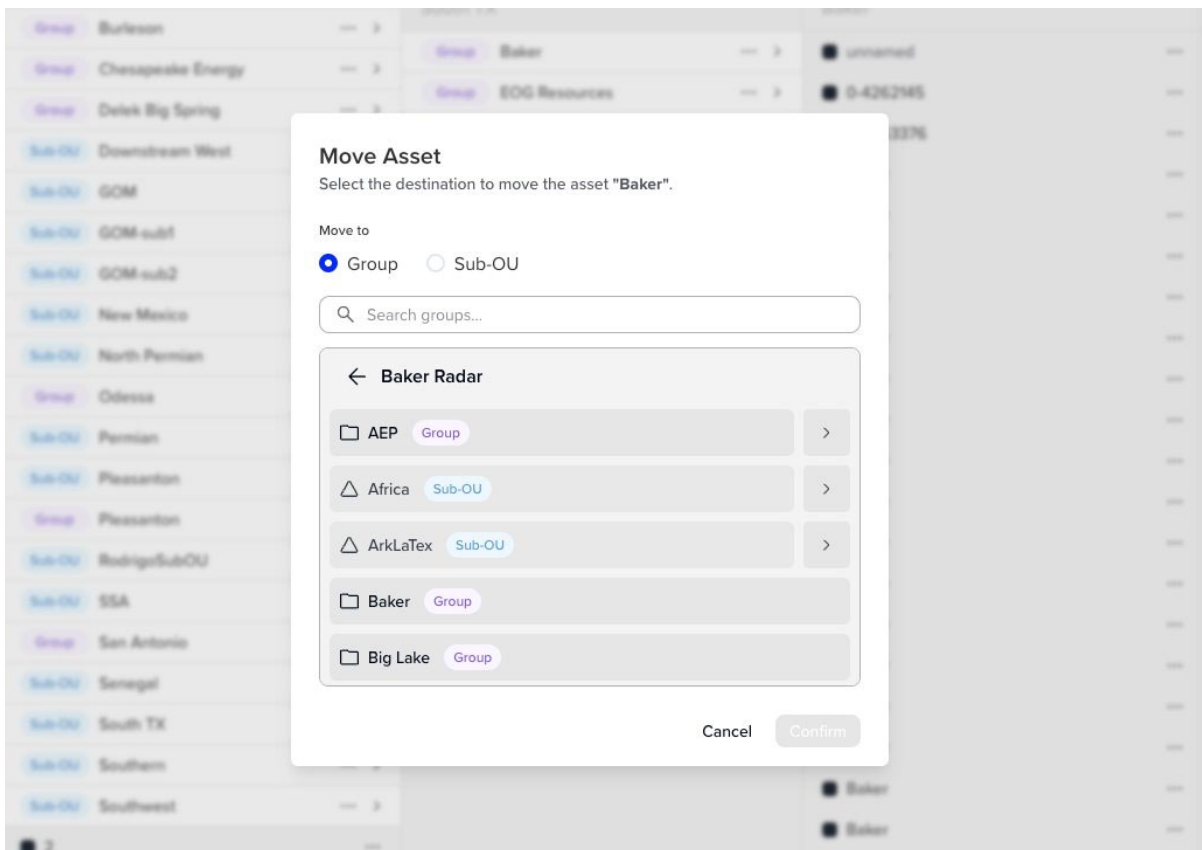
Asset details drawer – three-dot menu showing Edit Asset and Move to... actions for the selected asset

You can also move assets directly from the list view. Click the ... menu on an asset row to access the Move to... option without opening the details drawer.

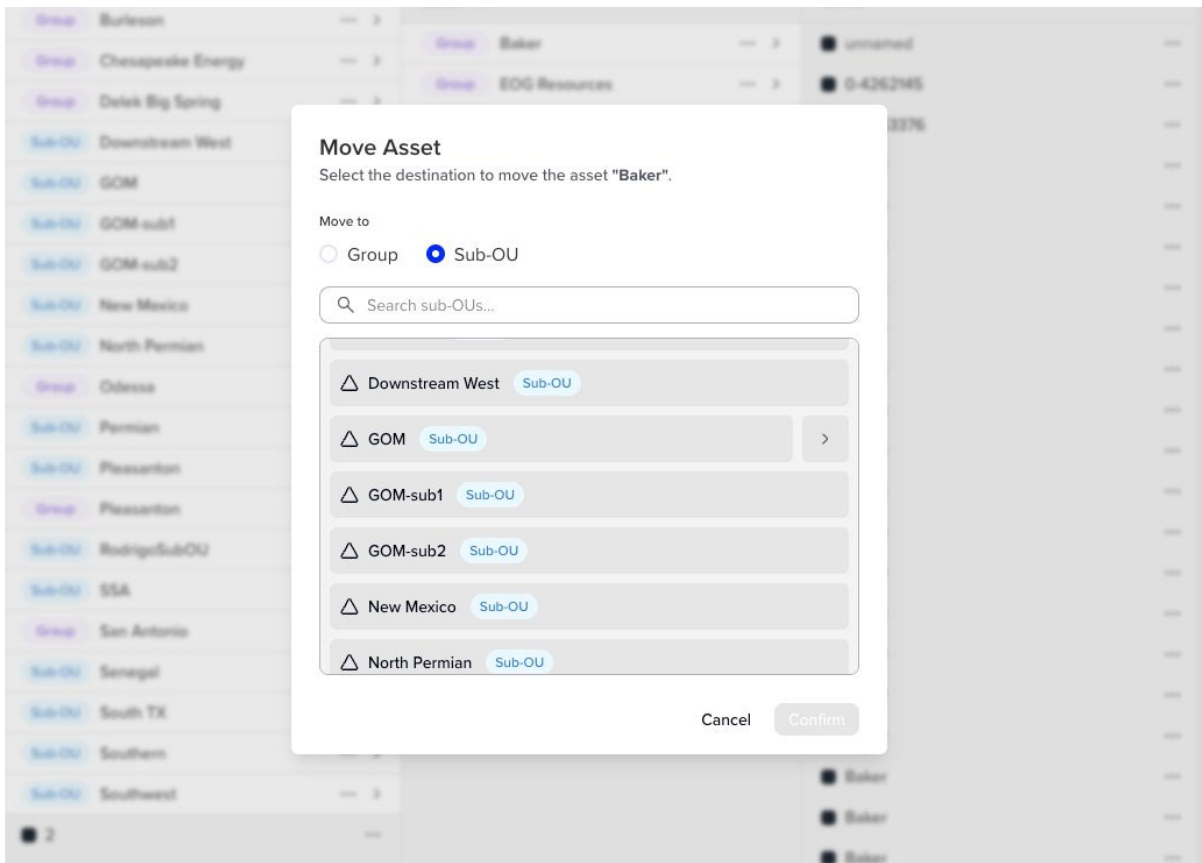


*Asset context menu in list view – Move to... option to transfer the asset to another location*

The Move Asset dialog allows you to choose whether to move the asset to a **Group** or a **Sub-OU**. When moving to a Group, you can search and browse available groups within your organization. When moving to a Sub-OU, the dialog shows the Sub-OU hierarchy for you to select the destination.



*Move Asset dialog – select destination Group or Sub-OU with search and hierarchical navigation*



*Move Asset dialog (Sub-OU mode) – browse and select a Sub-OU destination from the organization hierarchy*

## Alerts

The Alerts page lists alert rules for your organization. You can create, edit, and delete alerts. Alert types include **days idle**. Each alert can be scoped to groups or assets and can send notifications (e.g. email).

DESCRIPTION	TYPE	METRIC TYPE	GROUP / ASSET	EMAIL	SCHEDULE	STATUS	ACTION
When OMTEST Falls below 10 ? within a 1h timeframe, notify to te1@lasso.com	Rate of Change	Measurement	Sigma 10.82.208.4 - 0-4262589 Asset	te1@lasso.com	Always	Enabled	
When ANY GEOFENCE Enter, notify to user@example.com	Threshold Breach	Geofence	Generic Tank Asset Asset	user@example.com	Weekly	Enabled	
When asset idle at one location for 12 days, notify to lala@mail.com	Idle Location Alert	Idle days	—	lala@mail.com	Always	Enabled	
When Volume < 1 gal, notify to pepe@mail.com	Threshold Breach	Measurement	2 Asset	pepe@mail.com	Always	Enabled	
When asset idle at one location for 33 days, notify to kk@mail.com	Idle Location Alert	Idle days	Burleson Group	kk@mail.com	Always	Disabled	
When Volume < 1 gal, notify to	Threshold Breach	Measurement	Uninstalled Group		Specific day	Enabled	
When asset idle at one location for 12 days, notify to la@mail.com	Idle Location Alert	Idle days	Dos Hermanos Asset	la@mail.com	Always	Enabled	
When Volume < 10 gal, notify to lala@mail.com	Threshold Breach	Measurement	Baker Radar OU	lala@mail.com	Weekly	Enabled	
When Volume < 1 gal, notify to ro.viera@gmail.com	Threshold Breach	Measurement	Murphy Group	ro.viera@gmail.com	Always	Enabled	
When asset idle at one location for 97 days, notify to rac@mail.com	Idle Location Alert	Idle days	—	rac@mail.com	Always	Enabled	
When DEPTH > 100 in., notify to admin@example.com	Threshold Breach	Measurement	Generic Tank Asset Asset	admin@example.com	Always	Enabled	
When asset idle at one location for 13 days, notify to la@mail.com	Idle Location Alert	Idle days	—	la@mail.com	Always	Enabled	

Alerts page – list of all configured alerts showing name, type, asset/group scope, schedule, status (Enabled/Disabled), and action icons

To create a new alert, click the **Create Alert** button. Choose the alert type and configure conditions, schedule, recipients, and the assets or groups the alert applies to.

### New Asset Alert

It will send an email alert using the following criteria.

**Alert Type**

Threshold Breach ×

**Metric Type**

Measurement ×

Measurement	Operator	Value
Volume (BakerHughes ... <span style="float: right;">×</span>	Less than <span style="float: right;">×</span>	10

**Group / Asset**

Baker Radar

! This alert will only be applied if the selected group contains assets of type "BakerHughes Tank". Otherwise, the alert will have no effect.

**Alert Schedule**

Weekly ×

**Weekly Schedule**

Sun
  Mon
  Tue
  Wed
  Thu
  Fri
  Sat

---

**Schedule Timing**

Start Time:  ⌄

End Time:  ⌄

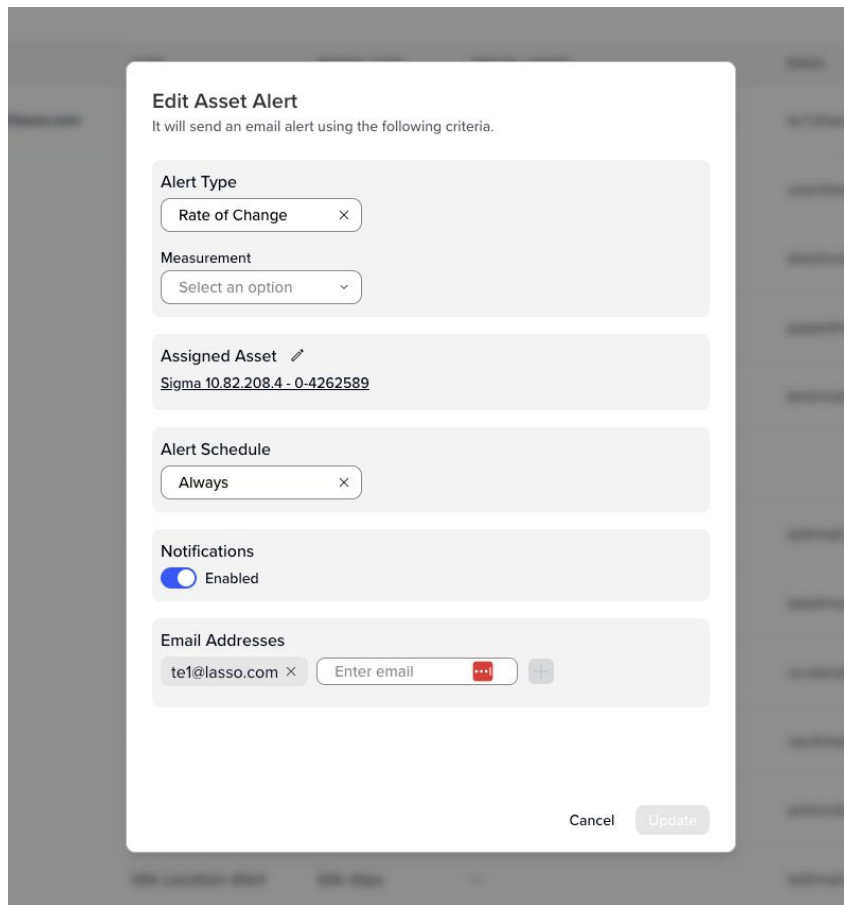
**Email Addresses**

...
+

Cancel
Create

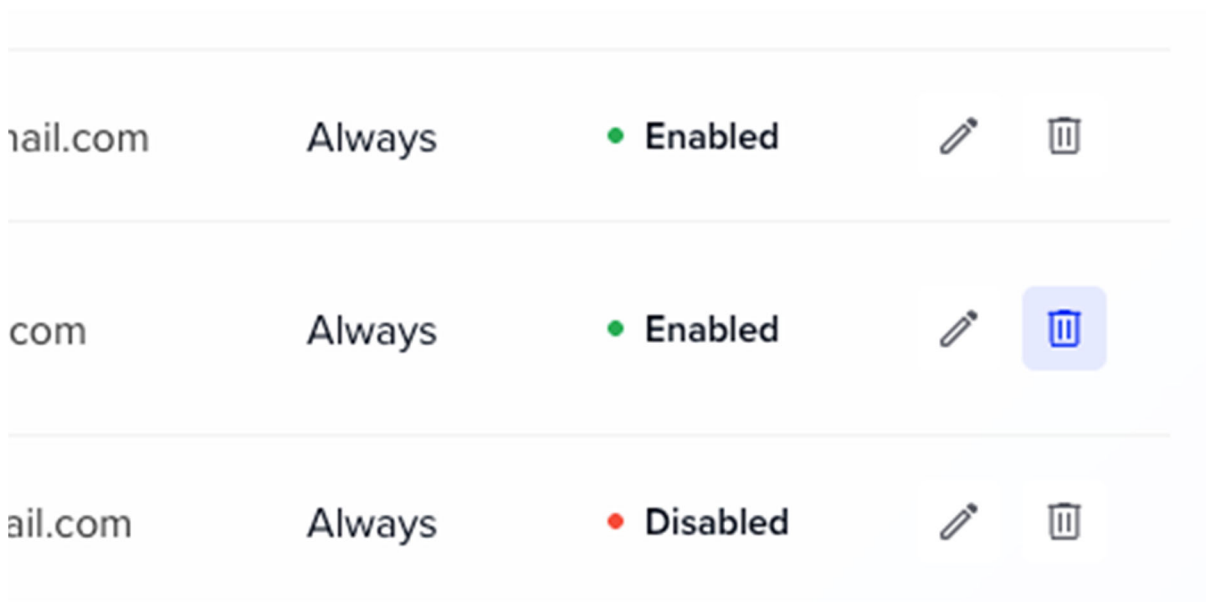
*Create Alert dialog – select alert type, configure conditions, schedule, and recipients*

To edit an existing alert, click the **edit** (pencil) icon on the alert row. The edit dialog allows you to update all alert parameters including type, conditions, schedule, and recipients.

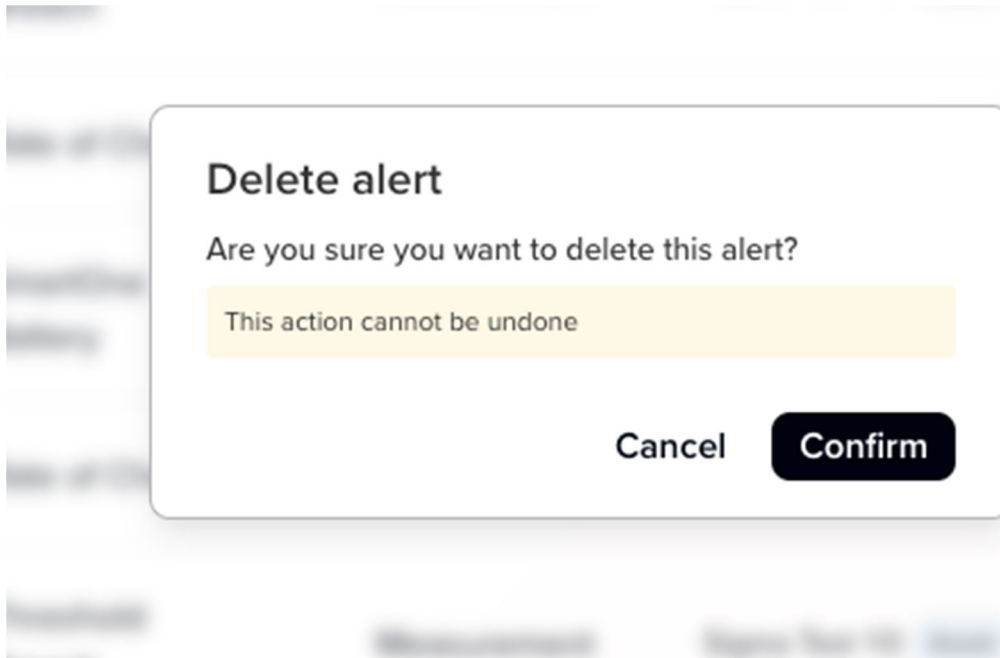


*Edit Alert dialog – update alert configuration for an existing alert rule*

To delete an alert, click the **delete** (trash) icon on the alert row. A confirmation dialog will appear warning that this action cannot be undone. You must confirm the deletion before the alert rule is permanently removed.



*Delete alert action – click the trash icon on an alert row to initiate deletion*



*Delete alert confirmation – warning that the action cannot be undone with Cancel and Confirm options*

## Users and Roles

The Users page allows admins to manage users and their roles. Roles include **Viewer**, **Manager**, and **Admin**. Each role has different permissions (e.g. view only, edit assets, manage users). Additional roles may exist depending on your organization configuration. Users can be assigned to organization units to scope their access.

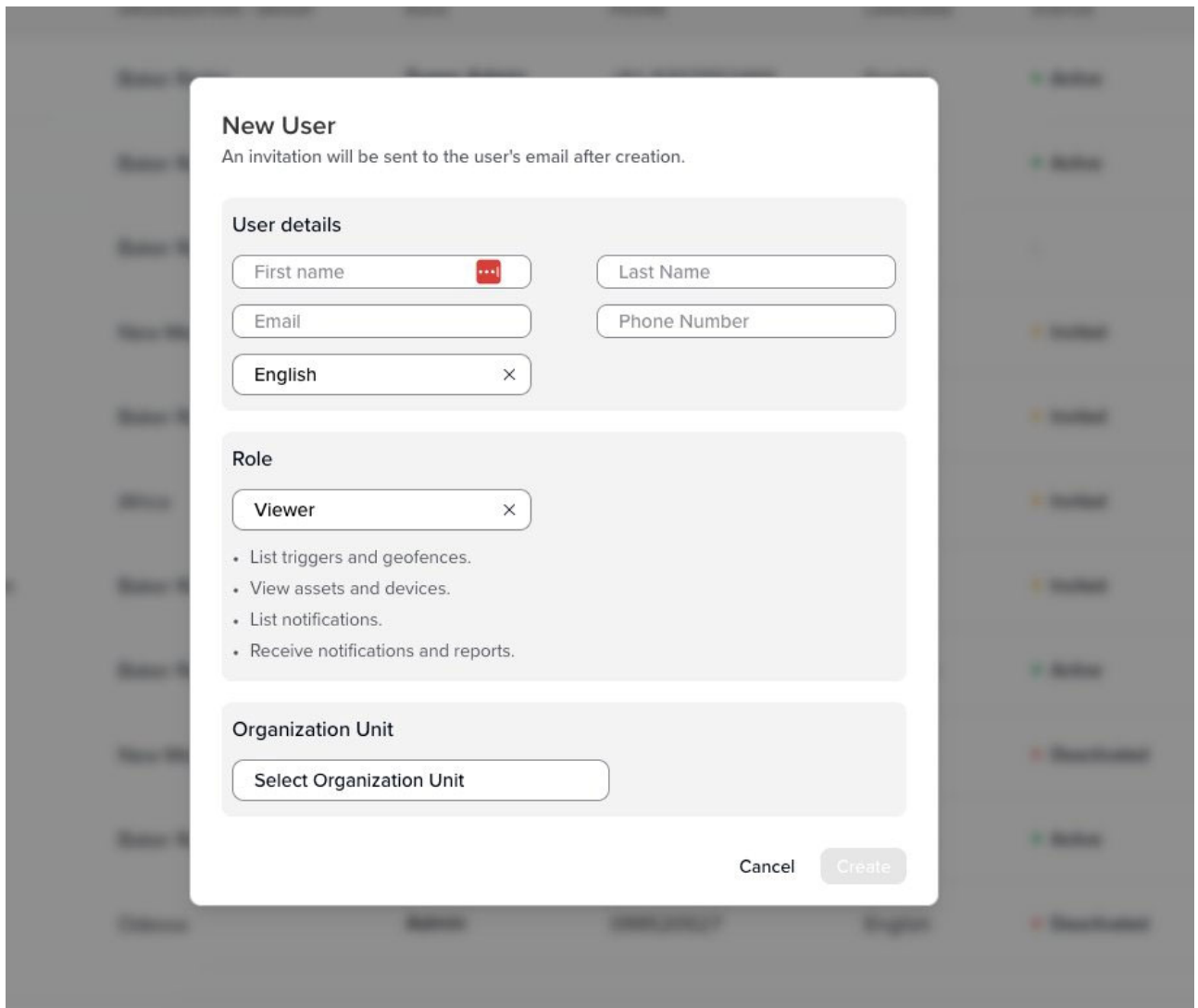
- **Viewer:** view assets, groups, alerts, and users (read-only). Can list triggers and geofences, view assets and devices, list and receive notifications and reports.
- **Manager:** view and edit assets, groups, and alerts; limited user management.
- **Admin:** full access within their organization unit.

NAME	EMAIL	ORGANIZATION / GROUP	ROLE	PHONE	LANGUAGE	STATUS	LAST LOGIN	ACTION
Aditya Rokade	aditya@lasso.com	Baker Radar	Super Admin	+91-9307952466	English	Active	Jan 30, 2026 at 2:40pm	[edit] [delete]
Omkar	omkar@lasso.com	Baker Radar	Super Admin	-	English	Active	Feb 05, 2026 at 10:49am	[edit] [delete]
Omkar More	ommor524@gmail.com	Baker Radar	Admin	+918623081523	English	-	-	[edit] [delete]
Rodrigo Viera	ro.viera+demotest@gmail.com	New Mexico	Manager	099520527	English	Invited	-	[edit] [delete] [invite]
Rodrigo Viera	ro.viera+nov14@gmail.com	Baker Radar	Viewer	099520527	English	Invited	-	[edit] [delete] [invite]
Rodrigo Viera	ro.viera+nov16@gmail.com	Africa	Viewer	099520527	English	Invited	-	[edit] [delete] [invite]
Rodrigo Viera	ro.viera+testaugust25@gmail.com	Baker Radar	Viewer	099520527	English	Invited	-	[edit] [delete] [invite]
Rodrigo Viera	ro.viera+testcloud@gmail.com	Baker Radar	Viewer	099520527	Spanish	Active	Sep 12, 2025 at 10:45am	[edit] [delete]
Rodrigo Viera	ro.viera@gmail.com	New Mexico	Super Admin	099520527	English	Deactivated	-	[edit] [delete]
Rodrigo Viera	ro.viera@gmail.com	Baker Radar	Super Admin	123-456-7890	English	Active	Feb 13, 2026 at 12:49pm	[edit] [delete]
Rodrigo Viera	rodrigo+demo@lasso.com	Odessa	Admin	099520527	English	Deactivated	-	[edit] [delete]

Rows per page: 20 | 1 - 14 of 14

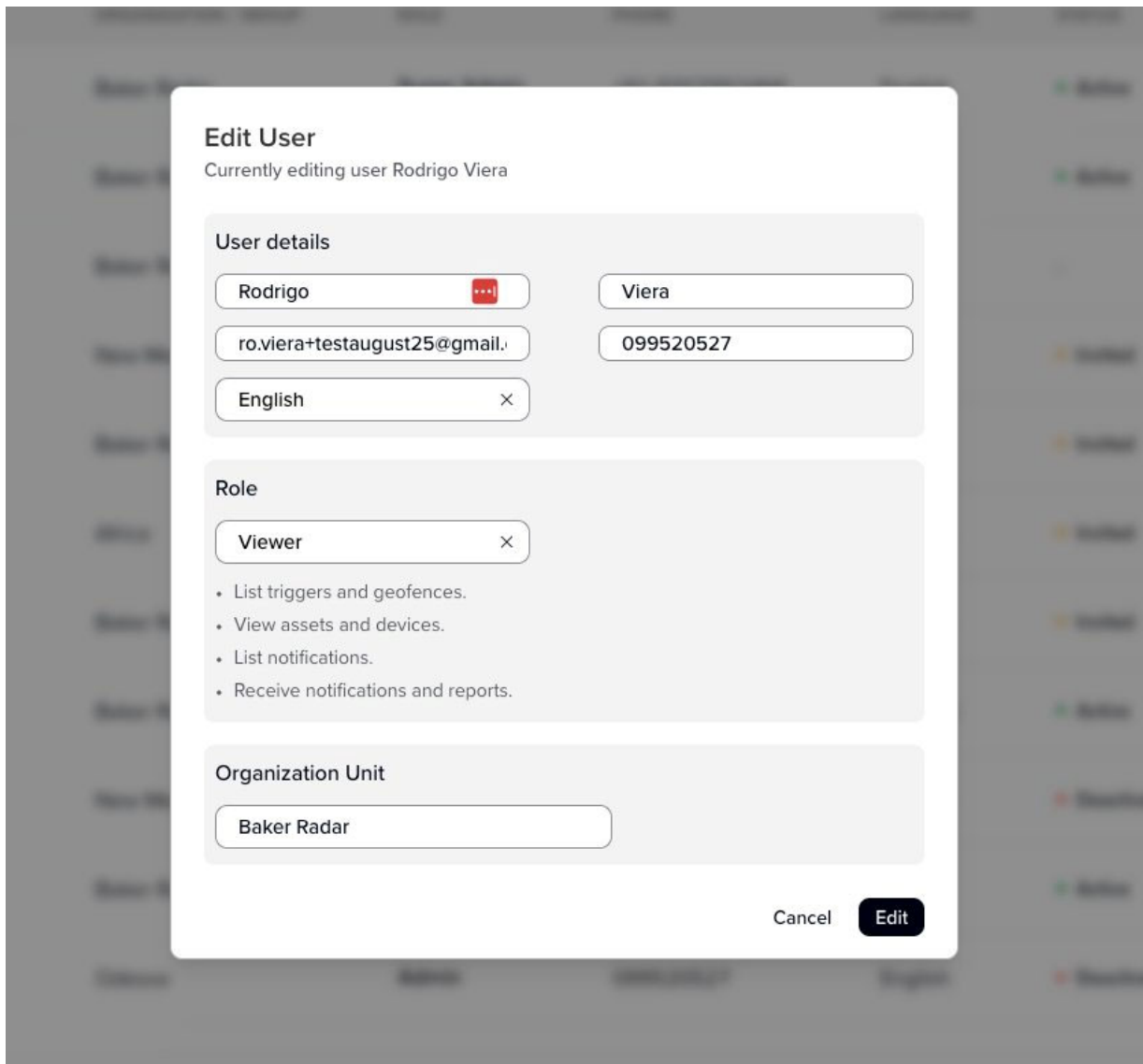
*Users page – list of all users showing name, email, phone, role, organization unit, status, and last activity date*

To create a new user, click the **Create User** button. Fill in the user details (first name, last name, email, phone, language), select a role, and assign the user to an organization unit. The role description shows what permissions the user will have.



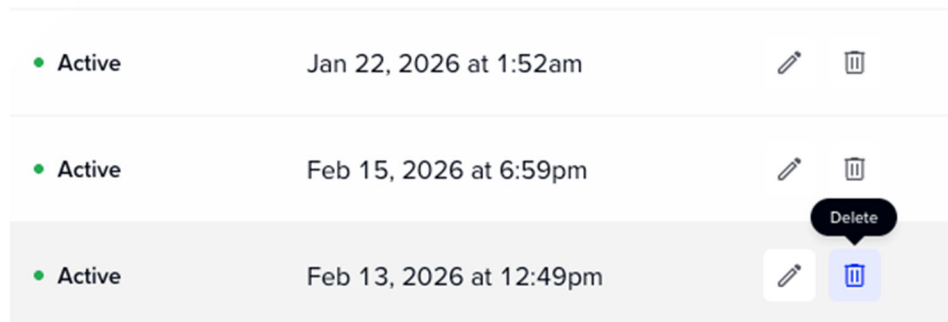
*Create User dialog – enter user details, select role and organization unit*

To edit an existing user, click the edit (pencil) icon on the user row. The edit dialog allows you to update user details, change the role, and reassign the organization unit.

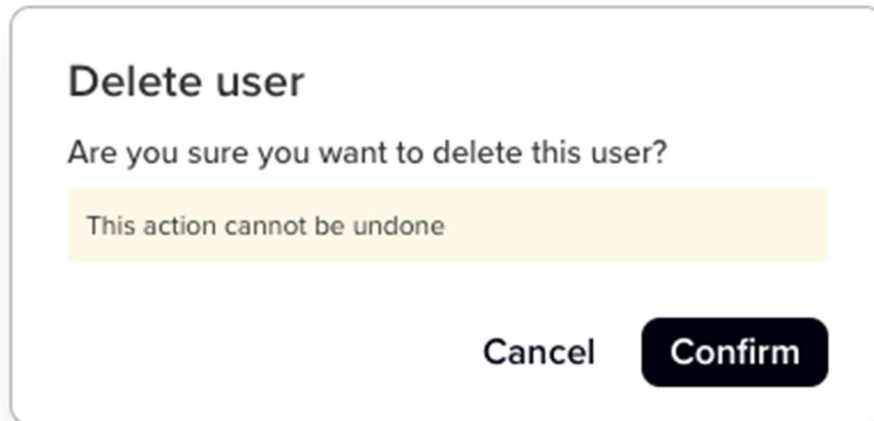


*Edit User dialog – update user details, role, and organization unit for an existing user*

To delete a user, click the delete (trash) icon on the user row. A confirmation dialog will appear warning that this action cannot be undone. You must confirm the deletion before the user is permanently removed.

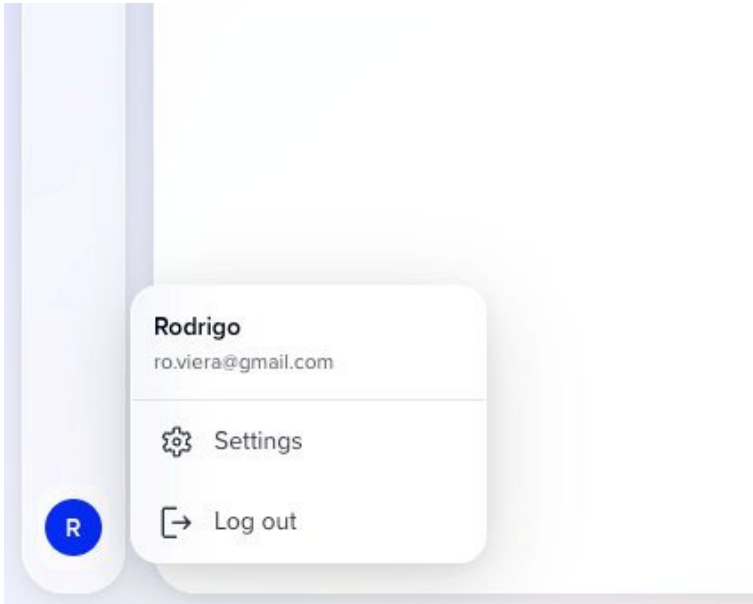


*Delete user action – click the trash icon on a user row to initiate deletion*



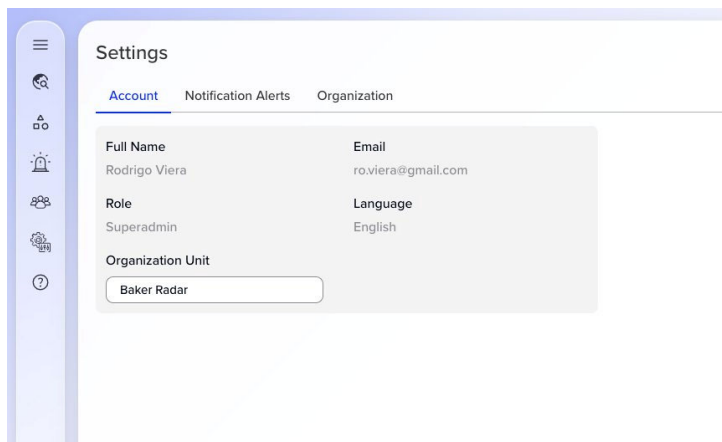
*Delete user confirmation – warning that the action cannot be undone with Cancel and Confirm options*

## Settings – Account



To access Settings, click your profile avatar at the bottom-left of the sidebar. A menu will appear with options to open Settings or Sign out. Click **Settings** to navigate to the account and organization management pages.

*User profile menu showing Settings and Sign out options*



Under Settings, the **Account** tab lets you view and update your profile (e.g. name, language). Password change may also be available from here or after sign-in when required.

*Settings – Account tab with user details*

## Settings – Notification Alerts

The **Notification Alerts** section in Settings lets you manage how you receive alert notifications (e.g. email addresses, preferences). This is where you configure where system alerts are sent for your account or group.

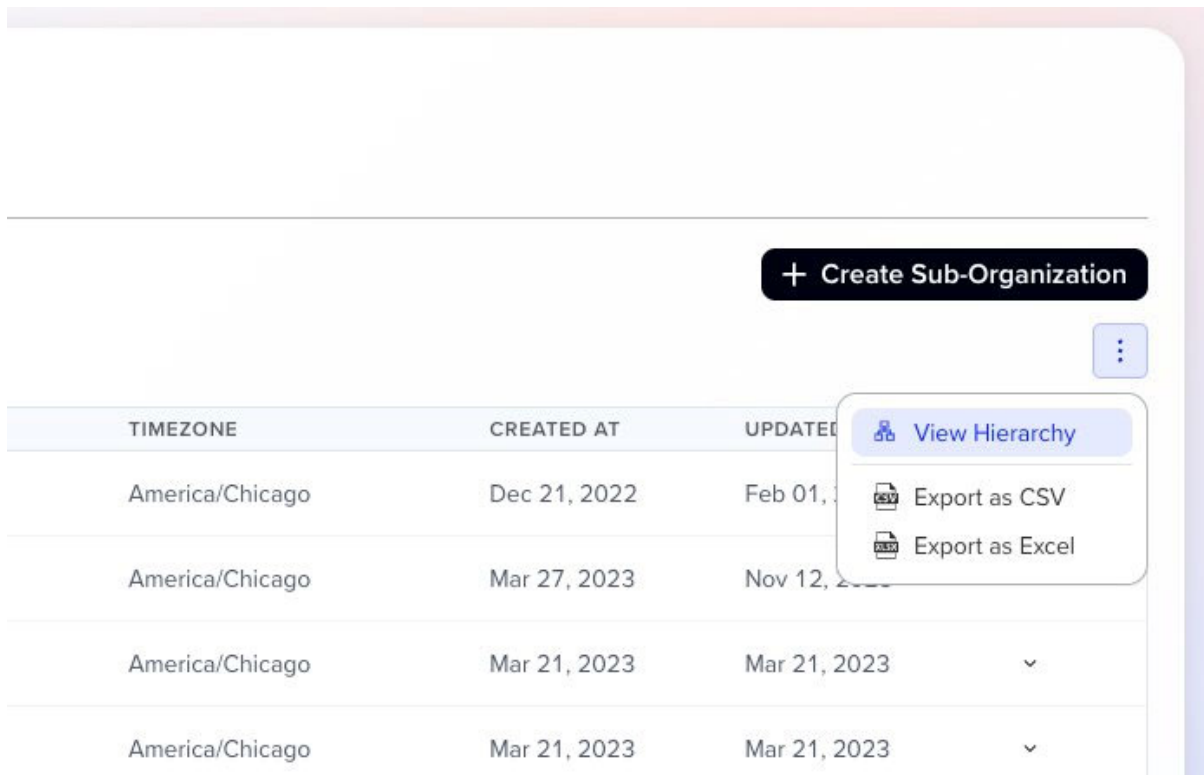
## Settings – Organization Management

Users with organization management permission can view and manage **organization units (OUs)** and their hierarchy. You can create sub-organizations and assign users or assets to OUs. This is typically used by admins.

NAME	TYPE	OU PATH	PARENT ORGANIZATION	EMAIL	TIMEZONE	CREATED AT	UPDATED AT	ACTION
Baker Radar	Primary OU	OU-224	N/A	bakeradar@lasso.com	America/Chicago	Dec 21, 2022	Feb 01, 2023	⌵
Africa	Sub-OU	OU-224-321	Baker Radar	bakerafrika@lasso.com	America/Chicago	Mar 27, 2023	Nov 12, 2025	⌵
ArkLaTex	Sub-OU	OU-224-312-316	Baker Radar	bakereastarklatex@lasso.com	America/Chicago	Mar 21, 2023	Mar 21, 2023	⌵
Downstream West	Sub-OU	OU-224-313	Baker Radar	bakerdntstmwst@lasso.com	America/Chicago	Mar 21, 2023	Mar 21, 2023	⌵
GOM	Sub-OU	OU-224-407	Baker Radar	bakeradar_gom@lasso.com	America/Chicago	Jun 07, 2025	Jun 07, 2025	⌵
GOM-3	Sub-OU	OU-224-407-C421	GOM	pepe@mail.com	America/Chicago	Nov 21, 2025	Nov 21, 2025	⌵
GOM-sub1	Sub-OU	OU-224-C419	Baker Radar	pepe@mail.com	America/Los_Angeles	Nov 21, 2025	Nov 21, 2025	⌵
GOM-sub2	Sub-OU	OU-224-407-C420	Baker Radar	pepe@mail.com	America/Chicago	Nov 21, 2025	Nov 21, 2025	⌵
New Mexico	Sub-OU	OU-224-311-314	Baker Radar	bakerpermiannm@lasso.com	America/Chicago	Mar 21, 2023	Mar 21, 2023	⌵
North Permian	Sub-OU	OU-224-311-315	Baker Radar	bakerpermiannorth@lasso.com	America/Chicago	Mar 21, 2023	Mar 21, 2023	⌵
Permian	Sub-OU	OU-224-311	Baker Radar	bakerpermian@lasso.com	America/Chicago	Mar 21, 2023	Mar 21, 2023	⌵
Pleasanton	Sub-OU	OU-224-302	Baker Radar	bakerpl@lasso.com	America/Chicago	Dec 21, 2022	Mar 31, 2023	⌵
RodrigoSubOU	Sub-OU	OU-224-RodrigoSubOU	Baker Radar	rodrigo@lasso.com	America/Los_Angeles	Nov 12, 2025	Nov 12, 2025	⌵
SSA	Sub-OU	OU-224-321-322	Baker Radar	bakersenegal@lasso.com	America/Chicago	Mar 27, 2023	Apr 22, 2024	⌵

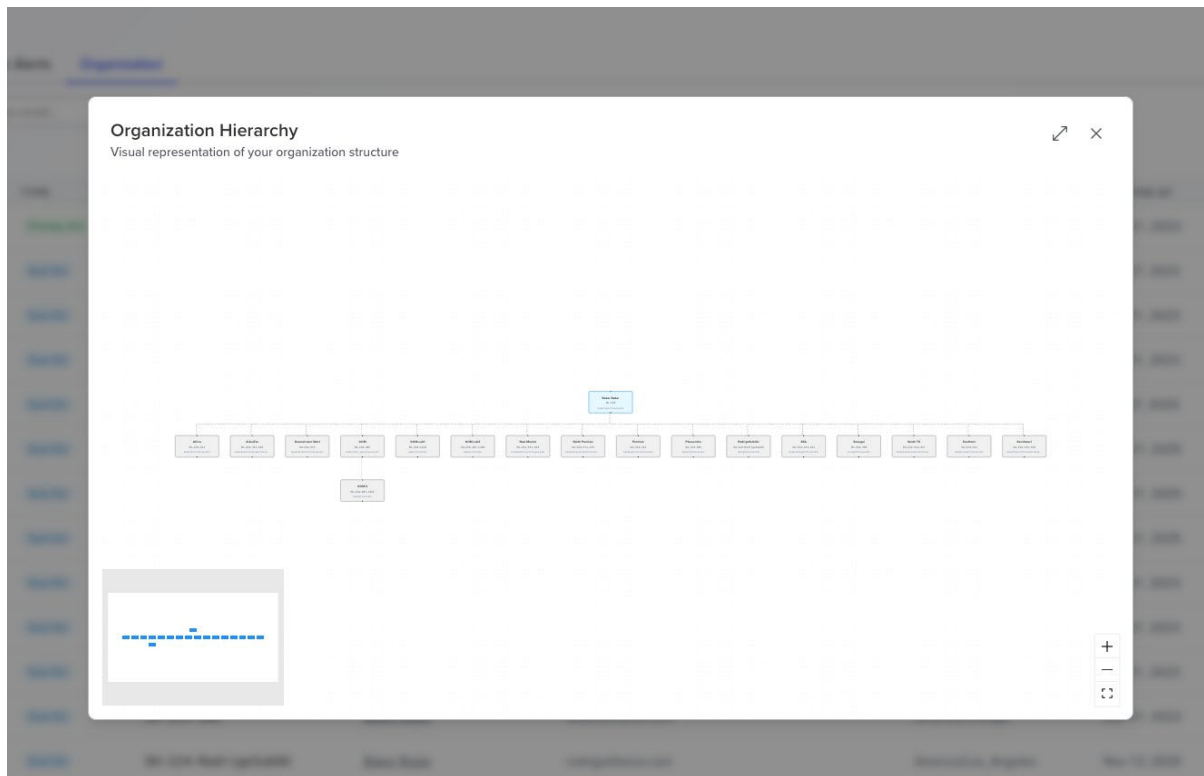
Organization list – full view showing all organizations with their parent, email, timezone, and creation date

From the organization list, you can export the data or view the organization hierarchy. Click the options menu to access export formats (CSV, Excel) or switch to the hierarchy view.



Organization export options menu – export the list or switch to hierarchy view

The hierarchy view displays the organization structure as a tree, showing parent-child relationships between organizations and sub-organizations.



Organization hierarchy view – tree structure showing parent-child relationships

To create a new sub-organization, click the **Create Sub-Organization** button. Fill in the organization details including name, email, and timezone, then select the parent organization.

**New Sub-Organization**  
Create a new sub-organization under your organization

**Sub-Organization Details**

Parent Organization \*  
Baker Radar

Name \*  
Sub-organization name

Email  
contact@example.com

Timezone  
Central Time (America/Chicago)

Cancel Create

*Create Sub-Organization dialog – enter name, email, timezone, and select parent organization*

To edit an existing organization, click the edit action on the organization row. You can update the name, email, and timezone. The parent and root organization are shown for reference.

**Edit Organization**  
Update organization information

**Organization Details**

Parent Organization      Root Organization  
EXSIF      EXSIF

Name \*  
Bakergps

Email  
bakergps@lasso.com

Timezone  
Central Time (America/Chicago)

Cancel Save

*Edit Organization dialog – update name, email, and timezone for an existing organization*

## Troubleshooting & FAQ

This section links device-level conditions and Web Site behavior.

### 1. Asset shows Offline or No data (black status)

- **Web Site:** Asset marker or list row shows **black** status (No data or offline). Last report date may be old or missing.
- **Check on the device:** Ensure lid faces the sky for reliable transmission; power on and wiring secure.
- **Check on the Web Site:** Confirm the correct asset and device (ESN) are selected; check that you are in the right organization or sub-company if you have multiple; try a different date range in Asset Details.

### 2. No GPS positions / Breadcrumbs missing on Locations tab

- **Web Site:** Locations tab shows no or few points; breadcrumbs path is empty or very short for the selected period.
- **Check on the device:** GPS is motion-activated—moving the unit (e.g. in car windshield for a day) can help confirm. Ensure antenna has clear access to sky; satellite signal blocked by metal can prevent messages entirely. Lid must face the sky
- **Check on the Web Site:** Verify the date range includes when the asset was expected to move.

### 3. Alert not received (email)

- **Web Site:** You expected an alert (e.g. threshold, geofence) but did not get an email.
- **Check on the device:** No device check required for notification delivery; alert triggering depends on data reaching the Web Site,
- **Check on the Web Site: Alerts** page: confirm the alert **Status** is Enabled (not Disabled). **Settings** → **Notification Alerts:** ensure email addresses are entered and that the alert is enabled for your account. Ensure accurate email addresses are configured to avoid missed notifications; Alerts with a Disabled status will not trigger. Confirm the alert rule (type, threshold, schedule) matches when you expect the condition to occur.

### 4. Two-way command failed or no response

- **Web Site:** Command sent from Two-Way Communication view shows failed or no acknowledgment in the communication log.
- **Check on the device:** All communication is sent by Cell and Satellite for redundancy. Allow more time if you do not see a confirmation. Cellular data should be confirmed within a minute. Satellite confirmation can take hours since check in times can vary.
- **Check on the Web Site:** Confirm correct sub-company/account selected; check last report date and status for the asset.
- **Satellite messages are checked at least once per day.** Also, they are checked every time the 2X2 wakes up. Sent Messages expire after 1 day. Cellular messages are checked only if there has not been a good GPS lock in the last day.

## Specifications Summary

### General Description

Multi-network industrial telemetry and tracking device supporting satellite, cellular (LTE-M), Wi-Fi, GPS, and Bluetooth® communications with two-way messaging capability. Designed for operation in hazardous (Zone 0 / Class I Div 1) and non-hazardous environments.

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### Electrical Specifications

- Supply: 3.6 VDC lithium-thionyl chloride battery
  - Battery: Non-replaceable
  - Current Consumption:
    - Max: 0.3 A
  - Model: 70500
- 

### Mechanical Specifications

- Enclosure: Rugged sealed industrial, potted, enclosure
  - Ingress Protection: IP68
  - Dimensions: 3.8 X 1.8 X 8.8 *Refer to mechanical drawing*
  - Installation Height: Use < 2000 m
- 

### Operating Environment

- Ambient Temperature Range:  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$
  - Suitable for fixed and mobile industrial assets
- 

- Integrated 3-axis accelerometer with motion/orientation detection
- Extensive I/O interfaces (UART, USB, I2C, SPI, GPIO, analog inputs)
- Realm Cloud for device management and data monitoring

### Communication & Frequencies

#### Satellite

- Network: Globalstar LEO
- Bands: L-band / S-band

#### Cellular

- Technology: LTE-M (Cat-M1)

#### GNSS / GPS

- Multi-constellation (GPS, GLONASS, Galileo, BeiDou)

#### Wi-Fi

- 2.4 GHz band

#### Bluetooth®

- Bluetooth Low Energy (BLE) up to 10 sensor nodes

**Certifications & Compliance**

**Explosion Protection (ATEX / IECEx)**

- IECEx / Ex Marking: Ex ia IIB T4 Ga
- ATEX: II 1 G Ex ia IIB T4 Ga
- Equipment Protection Level (EPL): Ga
- Temperature Class: T4
- Ambient: -40°C to +50°C

**North America (UL / CSA Equivalent)**

- Class I Zone 0 AEx ia IIB Ga T4
- Class I Division 1 Groups C & D T4

**Radio Compliance**

- Contains FCC ID: L2V-RX200M
- Contains FCC ID: 2ATUB-WIZFI360PA
- Contains FCC ID: A8TBM78
- FCC Part 15 Compliant

**Functional Capabilities**

- Automatic network selection (satellite / cellular)
- Two-way communication and remote configuration
- Event-based, scheduled, and motion-based reporting
- Bluetooth sensor integration
- Power-optimized operation

**Important Notes**

- Battery is not field replaceable
- Device shall not be modified
- Installation and operation must comply with hazardous area requirements]

**Battery Life is calculated and can vary depending upon environment.**

**Life varies depending upon if Satellite or Cellular methods are used.**

**Battery**

<b>Life</b>	<b>UNITS</b>	4 SAT CALLS/DAY	4 CELL CALLS/DAY	1 SAT CALLS/DAY	1 CELL WIFI CALLS/DAY	12 SAT CALLS/DAY	12 CELL WIFI CALLS/DAY
<b>Operating lifetime</b>	days	4,391	2,025	8,741	5,527	1,887	753
<b>Operating lifetime</b>	years	12.0	5.5	23.9	15.1	5.2	2.1
<b>Hits in Lifetime</b>	calls	17,563	8,100	8,741	5,527	22,642	9,035

Practical life limit is 7 years max.

# 2X2 Cellular, Satellite, GPS, WiFi, Bluetooth

## Dual Communication Paths

- LTE and Satellite connectivity via Globalstar RM200 for true off-grid coverage
- Two-way programming and communication over Bluetooth®, Cellular, or Satellite

**Zero-Touch Provisioning** for automated, streamlined IoT device configuration

## Precision GPS Tracking

- Indoor/outdoor GPS using Google Location Services
- Integrated GNSS for highly accurate location reporting
- Flexible: configurable reporting intervals or event-driven updates

## Flexible Power Options

- Battery-powered for mobile deployments
- External power input (9–24V) for continuous operation or frequent reporting.

## Built-In Accelerometer

- 3-axis MEMS sensor
- ±2g, ±4g, ±8g, ±16g selectable ranges
- 6D orientation detection

## Third-Party Sensor Integration (Bluetooth®)

- BLE interface for connecting external sensors (e.g., tank levels, equipment status)
- Collects multi-sensor data from Bluetooth® beacons
- Supports custom data parsing for partner protocols

## Global Coverage & Rugged Design

- Connectivity via Globalstar satellites plus AT&T or Verizon cellular networks
- Compact, Mil-Spec rated enclosure for harsh environments
- Full software platform: reporting, alerts, geofencing, days-on-site, list views
- Integration into API, SCADA, ERP, or IoT dashboards with custom messaging support

## Long Battery Life

- 26,000 calls in lifetime if satellite only
- 13,000 calls in lifetime if cellular only

## Reading Bluetooth Wireless Sensors

- Automatically scans for nearby BLE sensor beacons
- Reads broadcasted sensor data packets without pairing requirements
- Supports secure connections for authenticated data exchange when required
- Aggregates data from multiple sensors into unified telemetry reports

# Markets

- **Industrial & Energy**

- Oil & Gas (tanks, compressors, generators, tubulars, trailers)
- Utilities & Power (transformers, reclosers, mobile substations)
- Mining & Quarry (light vehicles, pumps, explosives lockers)
- Renewables (wind spares, solar skids, battery containers)

- **Transportation & Logistics**

- Intermodal & Rail (reefers, chassis, boxcars)
- Trucking & Trailer Fleets (dry van, flatbed, tanker, LTL)
- Maritime & Ports (containers on barges, workboats, moorings)

- **Construction & Rental**

- Heavy Equipment & Yellow Iron (excavators, dozers, cranes)
- Small & Mid Equipment Rental (boom lifts, generators, compressors, light towers)

- **Agriculture & Environmental**

- Farm Equipment (tractors, sprayers, grain carts)
- Livestock & Range Assets (trailers, portable waterers)
- Environmental Monitoring (remote stations, pumps, hazmat bins)

- **Public Sector & Safety**

- Municipal Assets (snowplows, salt spreaders, signage trailers)
- Emergency Management (portable comms, field shelters, gensets)
- Defense & Homeland (deployable kits, secure containers)

- **Consumer/Prosumer & Specialty**

- Hybrid positioning with GPS + cell/wifi assists; last-known-location indoors.
- Lost / Under-Utilized Asset Recovery
- Geofencing, dwell-time alerts, inventory audits, yard checks, asset right-sizing.
- Customer Usage Billing (When In Use)
- Engine-on/IGN sense, motion hours, bill-by-use contracts.
- Operations & Maintenance (PM scheduling, uptime)

- **Condition & Health Monitoring**

- Battery status, temperature, vibration/shock, run hours for maintenance.
- Jobsite & Route Compliance
- Proof-of-service, arrival/departure times, detours, restricted-zone alerts.
- Remote/Off-Grid Operations

# Configuration APP

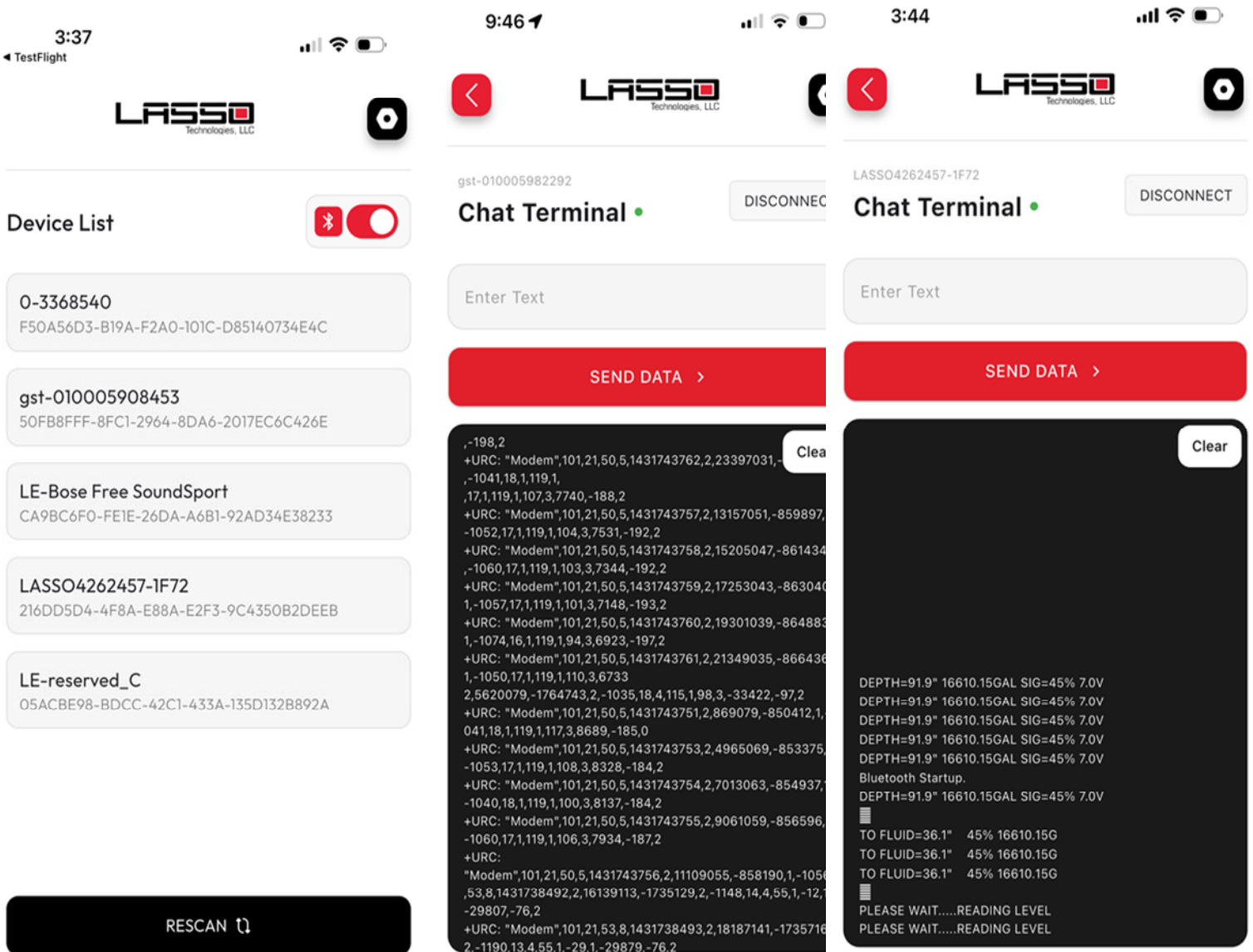
BLUETOOTH PROGRAMMING ONLY. No Login Required.

<https://play.google.com/store/apps/details?id=com.lasso.programmer>

<https://apps.apple.com/pk/app/lasso-technologies-programmer/id6745929475>

OR Search for **Lasso Technologies** in the APP store

Refer to the Bluetooth list of commands in the appendix



## 2X2 BLUETOOTH COMMANDS. USE THE LASSO APP

Typically, programming is done over the web using standard satellite or cellular commands.

You do not use any of these Bluetooth commands if you program everything from the Web.

Download the Lasso Bluetooth APP to send commands as described in the appendix.

Many commands can be sent. Below are an example of just a few. Contact Lasso for special needs.

Error codes will return if parameters are invalid.

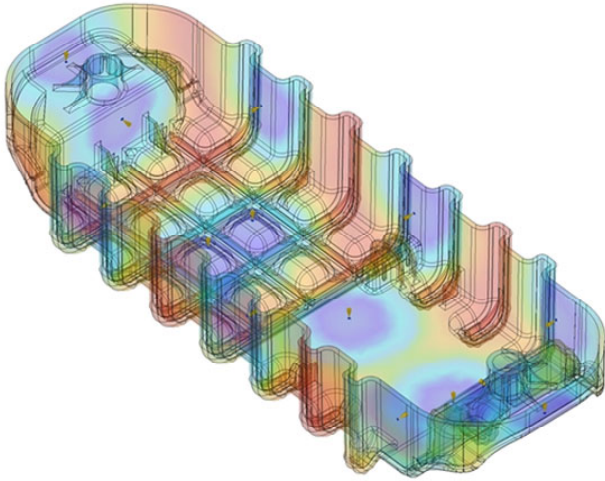
AT Command	Query Form	Purpose	Track Mode	How to Set / Example Command	Typical Query Response	Detailed Response Breakdown	Notes
AT+DLISTALL	N/A	Delete all active tracking and interval rules	N/A	AT+DLISTALL	N/A	Stops all interval modes immediately	Should be used before issuing a new ATODM or AIM command.
AT+CTRACK	N/A	Cancel all active tracking	N/A	AT+CTRACK	OK	Stops all tracking modes immediately	Should be used before issuing a new TRACK command.
AT+GSN?	AT+GSN?	Read Globalstar Electronic Serial Number	N/A	AT+GSN?	+GSN: 0-4982019 OK	Unique ESN used for provisioning and backend mapping	Required for onboarding and fleet management

## 2X2 BLUETOOTH COMMANDS. USE THE LASSO APP

AT+GUID?		Get Globalstar User ID	N/A		+GUID: 010008609413	Unique ID used for provisioning and backend mapping	Used in Globalstar servers
AT+COMMIT			N/A				Store values in Flash memory. Most changes are already stored automatically.
AT+TRACK=1,ms g_type,1,at_rest_min,1440,in_motion_min	AT+TRACK?	Read or configure device tracking behavior	Mode 1 – Normal Tracking	AT+TRACK=1,1,1,720,1440,30,0,0,0	TRACK: 1,1,1,720,1440,30,0,0,0	Mode=1 (Normal) At-Rest=720 min In-Motion=1440 min	GPS Intervals for at rest and moving as determined by accelerometer. Track is used when special conditions require different updates.
AT+TRACK=1,ms g_type,1,at_rest_min,1440,in_motion_min	AT+TRACK?	Read or configure device tracking behavior	Mode 2 – Change of Location (Dock Mode)	AT+TRACK=1,2,1,720,1440,30,0,0,0	TRACK: 1,2,1,720,1440,30,0,0,0	Mode=2 triggers transmission when device exits a 30meter location radius and is motion.	Used for containers or assets leaving a known area

## 2X2 BLUETOOTH COMMANDS. USE THE LASSO APP

AT+GPSLPOS	AT+GPSLPOS?	Configure GPS history depth	N/A	AT+GPSLPOS=6	+GPSLPOS: 6 OK	Retrieves last 6 GPS positions	GPS diagnostics
AT+AIM	AT+AIM?	Configure interval messaging	Interval – Every 5 Minutes	AT+AIM=0,0,0, day,hour, minute, second	AT+AIM=0,0,0, 0,3,50,0	Interval messaging enabled every 0 days, 3 hour, 50 minutes, 0 seconds	Standalone periodic reporting without motion logic
AT+ATODM=0,0,0,hour, minute, second GMT time	AT+TODML?	Configure GPS reporting by hour-of-day schedule. Keep adding new commands for more time of day.	N/A	AT+ATODM=0,0,0,3,0,0  AT+ATODM=0,0,0,12,15,0  AT+ATODM=0,0,0,15,30,0	0,0,0,0,3,0,0  1,0,0,0,12,15,0 2,0,0,0,15,30,0	report at 3:00  report at 12:15  report at 15:30	Used for fixed daily reporting times regardless of motion. Enter multiple commands. Cancel all with AT+DLISTALL
AT+GPSFIX?	AT+GPSFIX?			GPSFIX:0			Request if GPS has a lock
AT+GPSFAILS?	AT+GPSFAILS?			GPSFAILS: 8			Returns the total number of fix failures.
AT+GPSFTIMEST ATS=0	AT+GPSFTIMEST ATS=0			GPSFTIMESTATS: 23		What the average history has been. This example is 23 secons.	Average GPS satellite acquisition time
AT+GPSSTIME=4 0	AT+GPSSTIME?			GPSSTIME: 10			GPS stale time minutes



Remove magnet to turn on 2X2.  
 Keep in safe place if needed.  
 Re-insert to reboot.



**2 MOUNTING HOLES**



**NORDIC COMPUTER**

**WIFI**

**BLUETOOTH** 

**GPS**

**2 WAY SATELLITE MODEM**

**2 WAY LTE CELL MODEM**

**38AHr Battery. 3.4V**

**ACCELEROMETER**



- Mechanical skeletal design eliminates need for expensive protective metal cover.
- Internally potted for environmental and shock resistance.

