



CampbellCloud

Your Cloud-Based Solution for Managing
Environmental Monitoring Networks

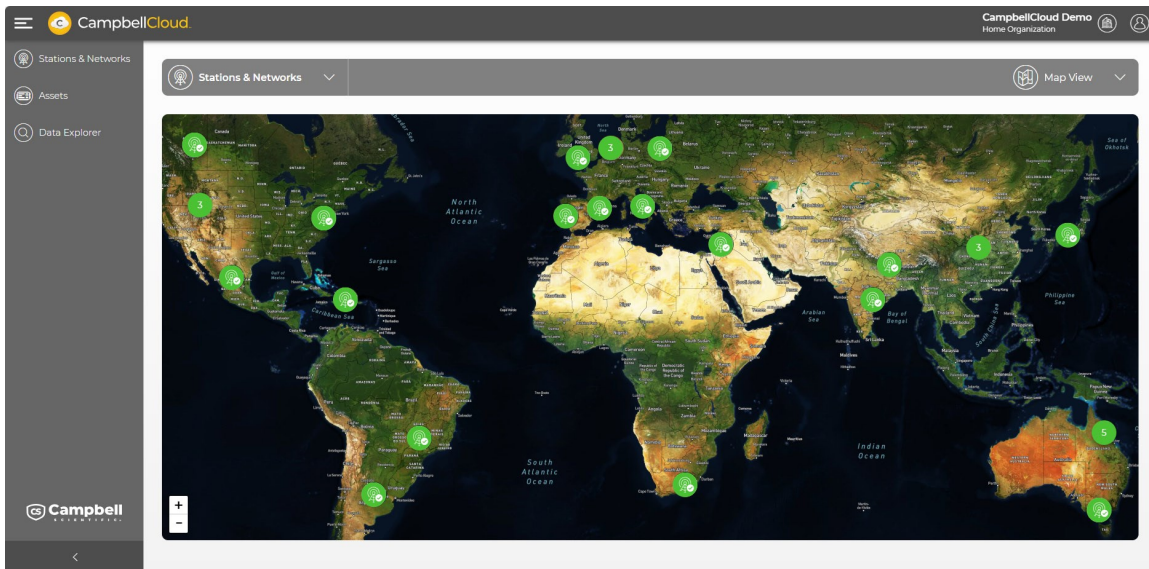


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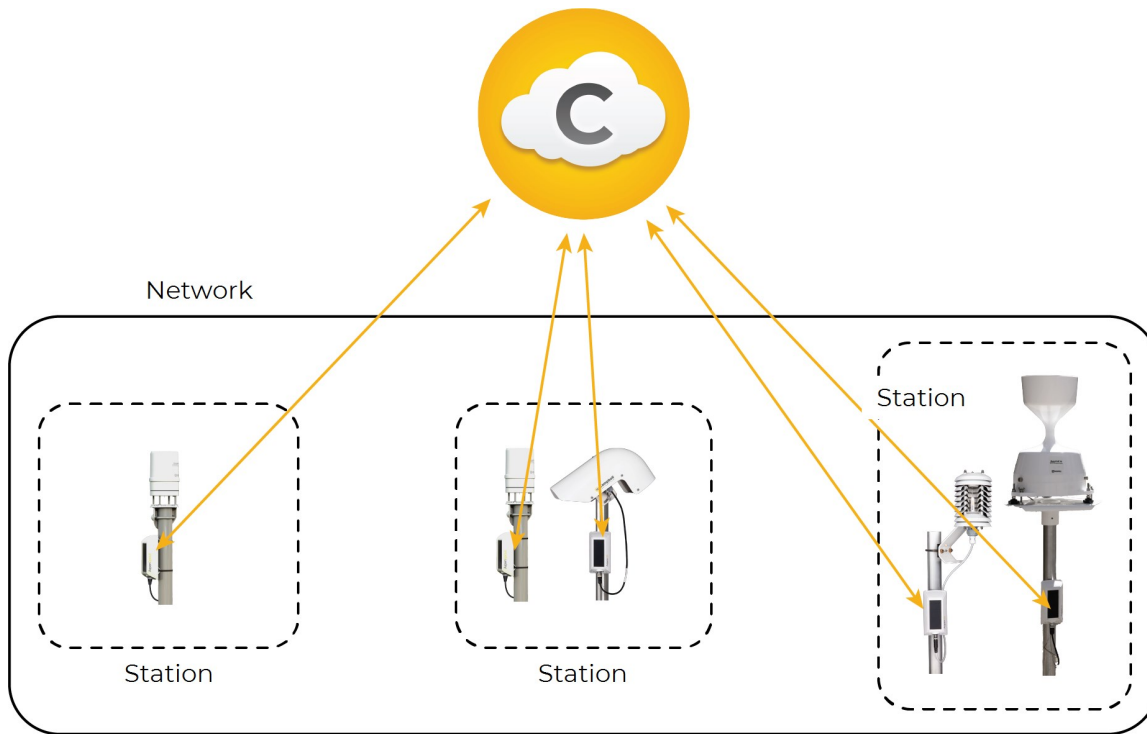
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1. Introduction

CampbellCloud (Cloud) provides a secure and resilient cloud-based service for remotely managing networks of environmental monitoring stations. With cross-browser compatibility and no software to install, CampbellCloud is accessible to everyone and provides a modern, user-friendly user interface (UI) with self-manage subscription capabilities that allow organizations to be up and running in minutes. This service is designed around the latest technologies to ensure data security and accessibility. It is structured to be cost-effective, offering a simple, low monthly subscription that scales according to the user's needs, whether it's for a single data logger or a large network of stations.



The following figure shows a network consisting of three stations. Each station has one or more assets associated with it.



2. Cloud administrator

In order to use CampbellCloud you must be associated with an organization account, either as the account administrator or as an account user. The account is free to set up.

The organization account administrator will be responsible for providing the subscription-management billing information. The account administrator may also be the owner, or a user with privileges.

NOTE:

In this context, an organization is an individual, business, or organization that uses CampbellCloud services to manage a network of stations.

Some administrator tasks are described in the following sections.

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2.1 Creating a CampbellCloud organization account

If you are not the account administrator but need to join an account as a user, an account administrator should invite you to join the account. The email invitation will be from *hello@campbell-cloud.com* and will include instructions to join the account as a user.


NOTE:

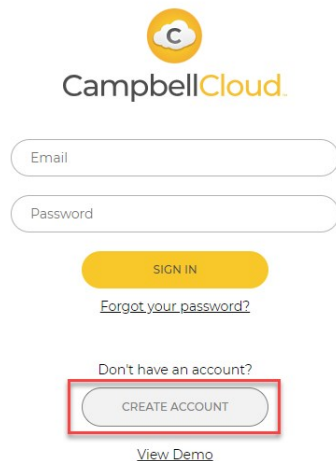
If you are not the account administrator, proceed to the [Become a CampbellCloud user](#) (p. 17) section.

CAUTION:

If you or your organization already has a *CampbellCloud* organization account, do not create another one.

If you are the administrator, follow these steps to create an account:

1. Using a web browser go to <https://iot.campbell-cloud.com> .
2. Click **REGISTER**.
3. Click **CREATE ACCOUNT**.



- If you are the person who will be responsible for the organization account, click **CONTINUE TO SIGN UP**.



Existing Organization Account

If your organization already has a CampbellCloud account, click "CANCEL SIGN UP" and contact your account administrator to be invited to that account.

CANCEL SIGN UP

New Organization Account

Create a new CampbellCloud account for your organization with you as the owner. Creating an account is free.* No payment details are required when signing up.

CONTINUE TO SIGN UP

- Fill out the form.



Create an Account for Your Organization

Your Organization Details

Organization Name *

Billing Street Address *

Billing City *

Billing Province/State *

Billing Postal/Zip Code *

Billing Country * ▼

Billing Email *

Your User Details (account owner)

First Name *

Last Name *

Email *

Password *

Confirm Password *

I have read and agree to the [CampbellCloud Organization Terms of Use](#)

I have read and agree to the [CampbellCloud End User Terms of Use](#)

CANCEL


CREATE ACCOUNT

- Read and select the check box for each agreement.

7. Click **CREATE ACCOUNT**.
8. You should receive an email confirmation from *hello@campbell-cloud.com*.
9. Click **Verify your email**. A new browser tab will open.
10. Click **SIGN IN** and proceed to CampbellCloud.

NOTE:

Your user name is the email you signed up with.

For more information on creating a CampbellCloud organization account, watch an instructional video at: <https://www.campbellsci.com/videos/cloud02> .

2.2 Changing default organization settings

Organization settings can be adjusted to tailor data views to specific organizational needs. These settings will affect all users in the organization.

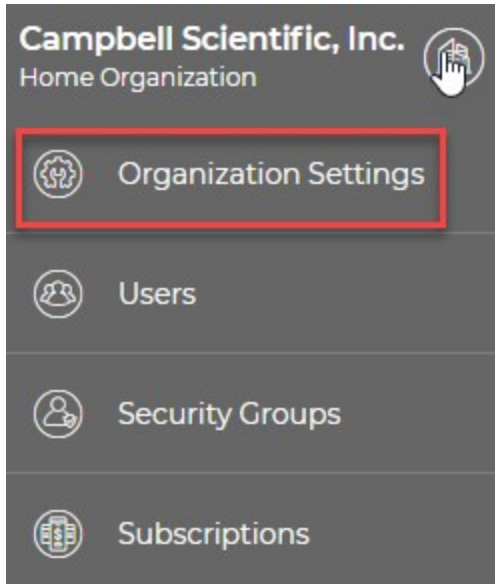
NOTE:

To control a specific user's settings see: [Configuring user settings](#) (p. 14).

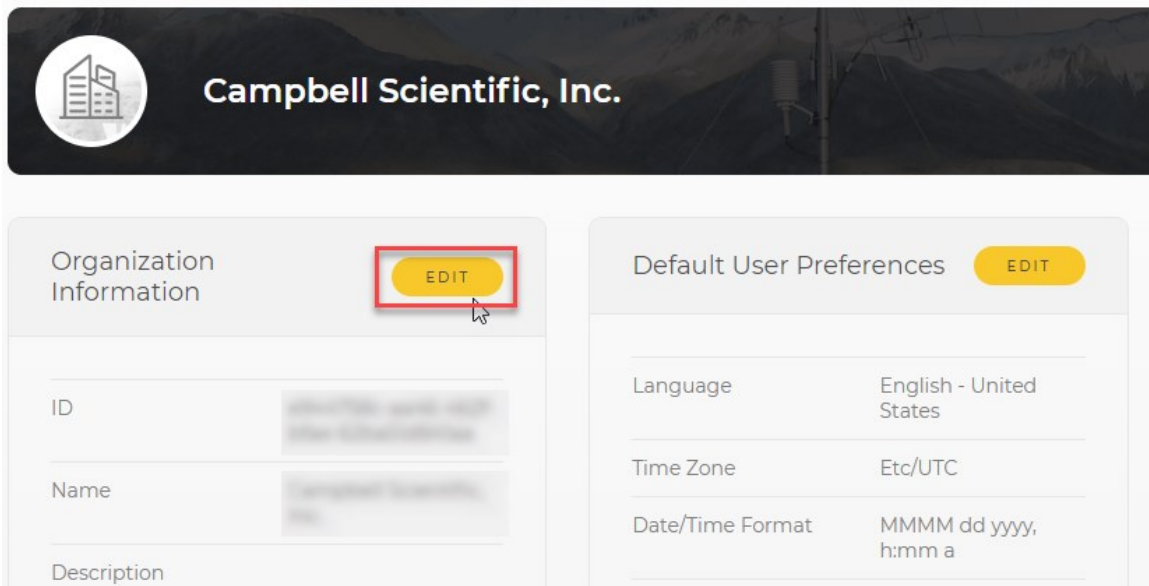
1. On the CampbellCloud home page, click on the organization name in the upper right corner.



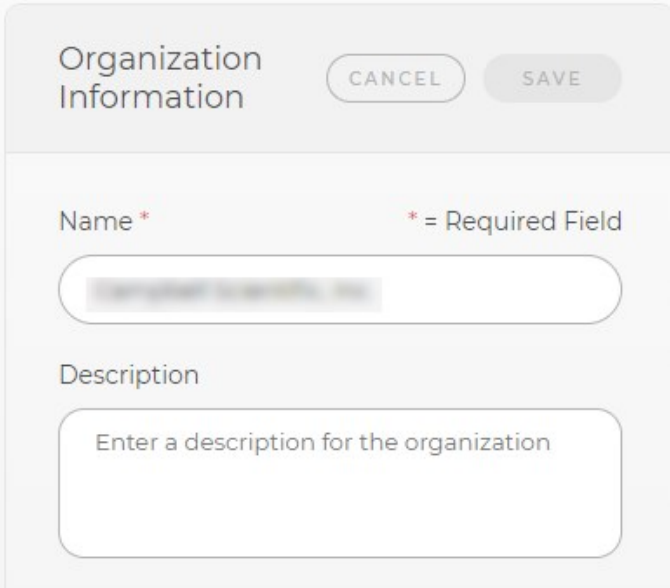
2. Select **Organization Settings**.



3. A new page appears with **Organization Information** and **Default User Preferences** sections. The organization name was assigned when setting up the organization account. To change the organization name or add a description of the organization, click **EDIT** next to **Organization Information**.



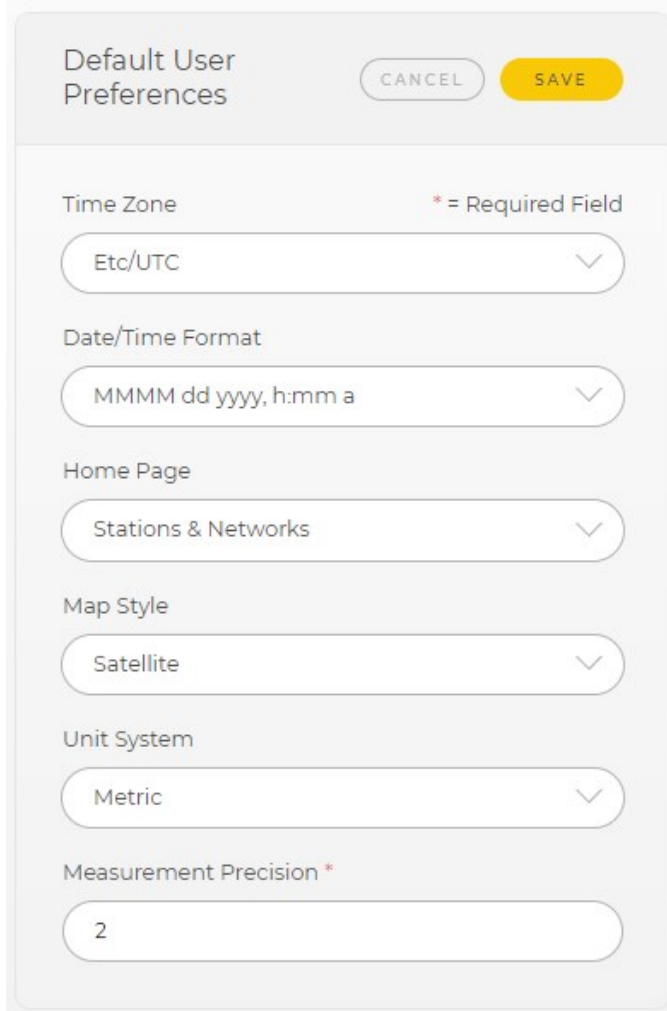
- 4. An organization name is required, but a description is optional. Click **SAVE** to save changes and return to the **Organization Settings** screen.



The image shows a form titled "Organization Information". At the top right of the form are two buttons: "CANCEL" and "SAVE". Below the title, there are two input fields. The first is labeled "Name *" and has a red asterisk next to it. To the right of the label, it says "* = Required Field". The input field contains the text "CampbellCloud, Inc.". The second input field is labeled "Description" and contains the placeholder text "Enter a description for the organization".


5. An account administrator can set default user preferences for all individuals in their organization. That way, every user will have a similar experience. Individual users may be given permission to edit their own settings. See [Changing default user settings](#) (p. 30).

To change the default user preferences, click **EDIT** next to **Default User Preferences**. This screen allows modifications to time zones, date/time format, home page displayed, map style, unit system, and measurement precision. Click **SAVE** to save changes and return to the **Organization Settings**.



The screenshot shows a 'Default User Preferences' dialog box. At the top left is the title 'Default User Preferences'. To its right are two buttons: 'CANCEL' (grey) and 'SAVE' (yellow). Below the title bar, there are several settings, each with a label and a dropdown menu:

- Time Zone**: Labeled with '* = Required Field'. The dropdown shows 'Etc/UTC'.
- Date/Time Format**: The dropdown shows 'MMMM dd yyyy, h:mm a'.
- Home Page**: The dropdown shows 'Stations & Networks'.
- Map Style**: The dropdown shows 'Satellite'.
- Unit System**: The dropdown shows 'Metric'.
- Measurement Precision ***: A text input field containing the number '2'.

For more information on changing default organization settings, watch an instructional video at: <https://www.campbellsci.com/videos/cloud01> .

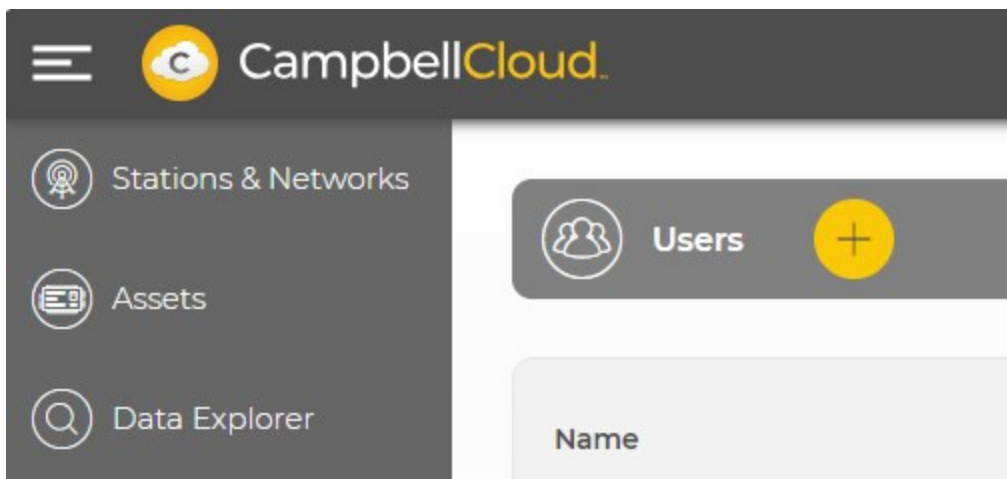
2.3 Adding users

Most organizations will have several, or many, users associated with their organization. Account administrators can invite users to join their organization.

1. On the CampbellCloud home page, click on the organization name in the upper right corner.




2. Select **Users**.
3. Click .



4. Enter the new user's details. Click **NEXT**.

The screenshot shows a web form titled "Add User" with a sub-header "User Details". Below the header, there is a prompt: "Please enter the new user's name and email." The form contains three input fields: "First Name *" (with a red asterisk and a legend "* = Required Field" to its right), "Last Name *" (with a red asterisk), and "Email". At the bottom of the form, there are two buttons: "CANCEL" (a light gray button) and "NEXT" (a yellow button).

5. If Security Groups have already been set up you can add the user to specific groups. If not, click **FINISH**.

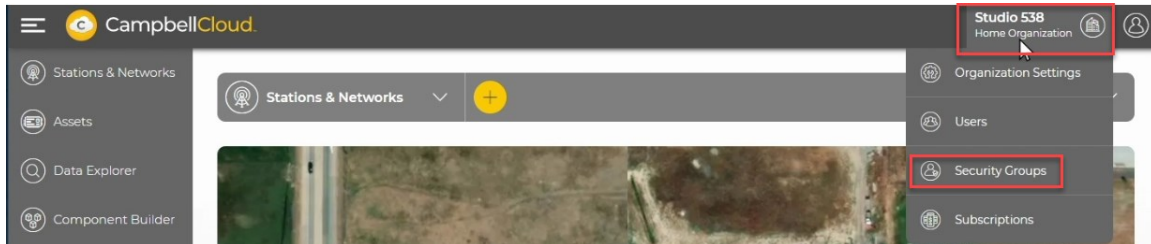
For more information on adding a new user, watch an instructional video at: <https://www.campbellsci.com/videos/cloud03> .

2.4 Adding a security group to an organization account

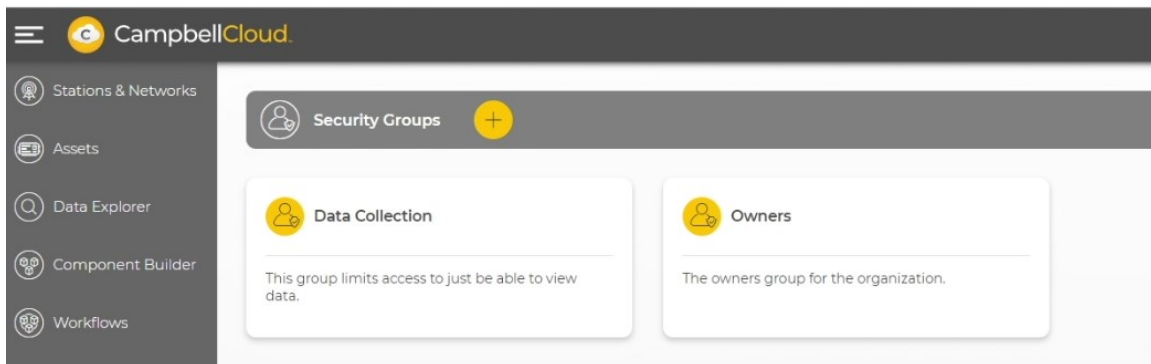
Security groups can be set up in CampbellCloud to restrict specific users' access to certain applications, data, or locations. This ensures that unauthorized users cannot modify network or station settings. For more information about specific applications, see [Applications](#) (p. 20).

Follow these steps to add a new security group:

1. Go to the **CampbellCloud** home page and click on the organization name in the upper, right corner.
2. Click **Security Groups**.



3. A list of existing security groups appears. Click on  at the top of the page to add a new security group.



4. Enter a name and optional description for the new security group, then click **NEXT**.

Add Group

Group Details

Please enter a name for the new security group. You can also enter an optional description.

Name * * = Required Field

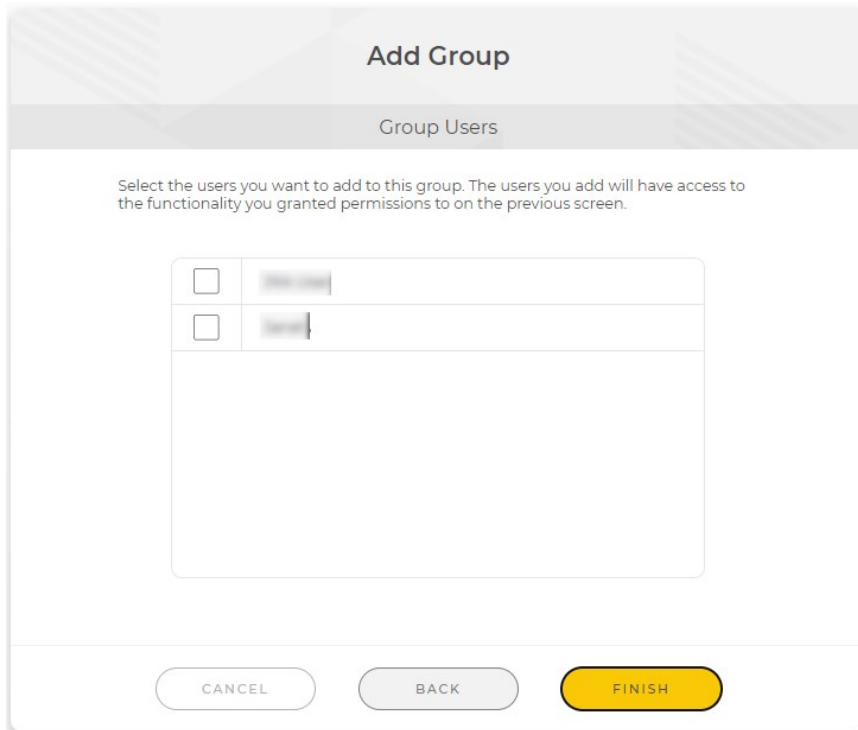
Description

5. A new page appears with a list of applications that users could have access to. Select the applications you want to grant access to for this group. Scroll down in this same window to see a list of permissions. These permissions allow administrators more granular control of which application settings users have access to. For example, selecting **Users** as the application, and then selecting **User-update** allows users to update their own settings, such as preferred time zone, when logged into CampbellCloud.

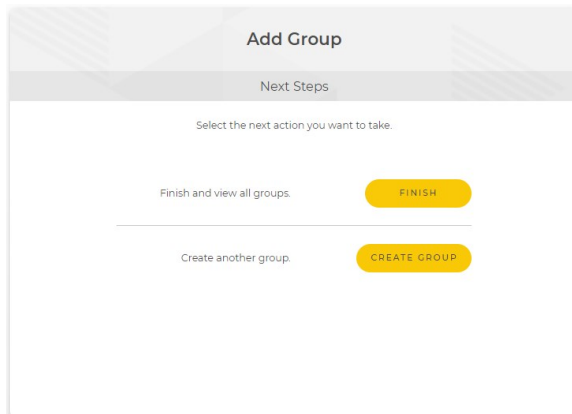
The screenshot shows a mobile interface for adding a group. The title is 'Add Group' and the section is 'Group Permissions'. A message states: 'Select the permissions you want to grant to this group. "Applications" provide access to different parts of the software. "Permissions" grant access to more granular functionality.' Below this is a 'Permissions' section with a dropdown menu currently set to 'Users' and a 'Filter Permissions' input field. A list of permissions is shown with checkboxes: 'Group - update' (unchecked), 'User - create' (unchecked), 'User - delete' (unchecked), and 'User - update' (checked). At the bottom are three buttons: 'CANCEL', 'BACK', and 'NEXT'.

6. Click **NEXT**.

7. Select which users in your organization you want to add to this new security group.



8. Click **FINISH**. A new page appears. Click **FINISH** to proceed, or **CREATE GROUP** to create another security group.



For more information on adding a new security group, watch an instructional video at: <https://www.campbellsci.com/videos/cloud04> .

2.5 Configuring user settings

A CampbellCloud account administrator has the option to configure individual user settings.

NOTE:


This is different than configuring the organization settings. See [Changing default organization settings](#) (p. 5).

Follow these steps to configure one user's settings.

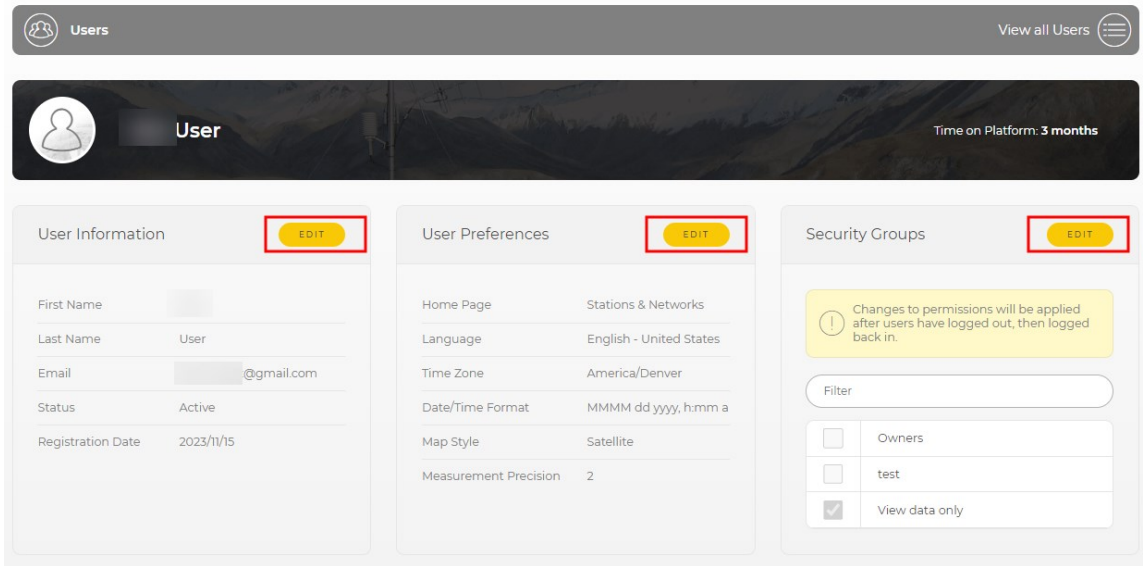
1. On the CampbellCloud home page, click on the organization name in the upper right corner.



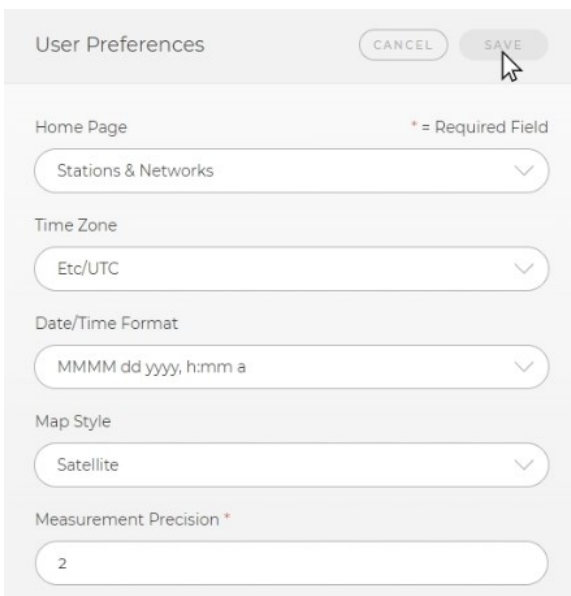
2. Select **Users**. A list of users in the organization appears.
3. Click on the user name.

Name	Account Email	Status	Created
 User	@gmail.com	Active	2023/11/15
 [Blurred]	@campbellsci.com	Active	2023/08/30

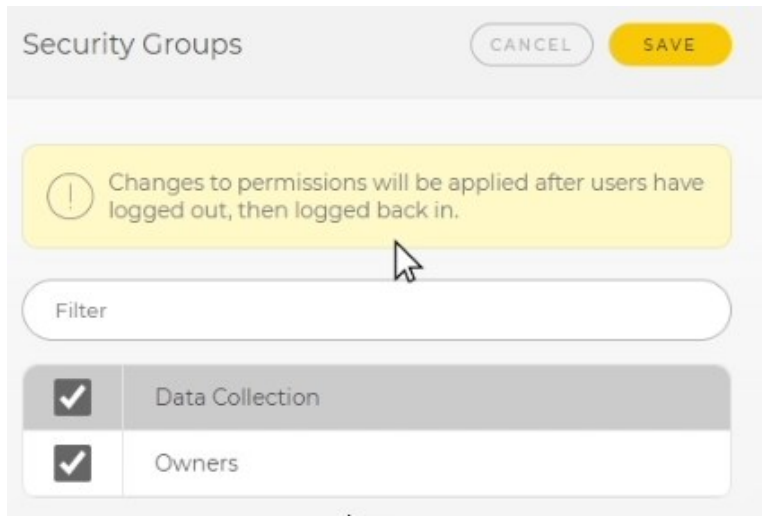
- A new page opens. Click **EDIT** next to **User Information**, **User Preferences**, or **Security Groups**.



- User Preferences** include default home page, language, time zone, date/time format, map style, and measurement precision.



6. **Security Groups** determine which groups a user has access to when using CampbellCloud.



7. **SAVE** any changes before leaving.

For more information on an account administrator changing an individual user's preferences, watch an instructional video at: <https://www.campbellsci.com/videos/cloud06> .

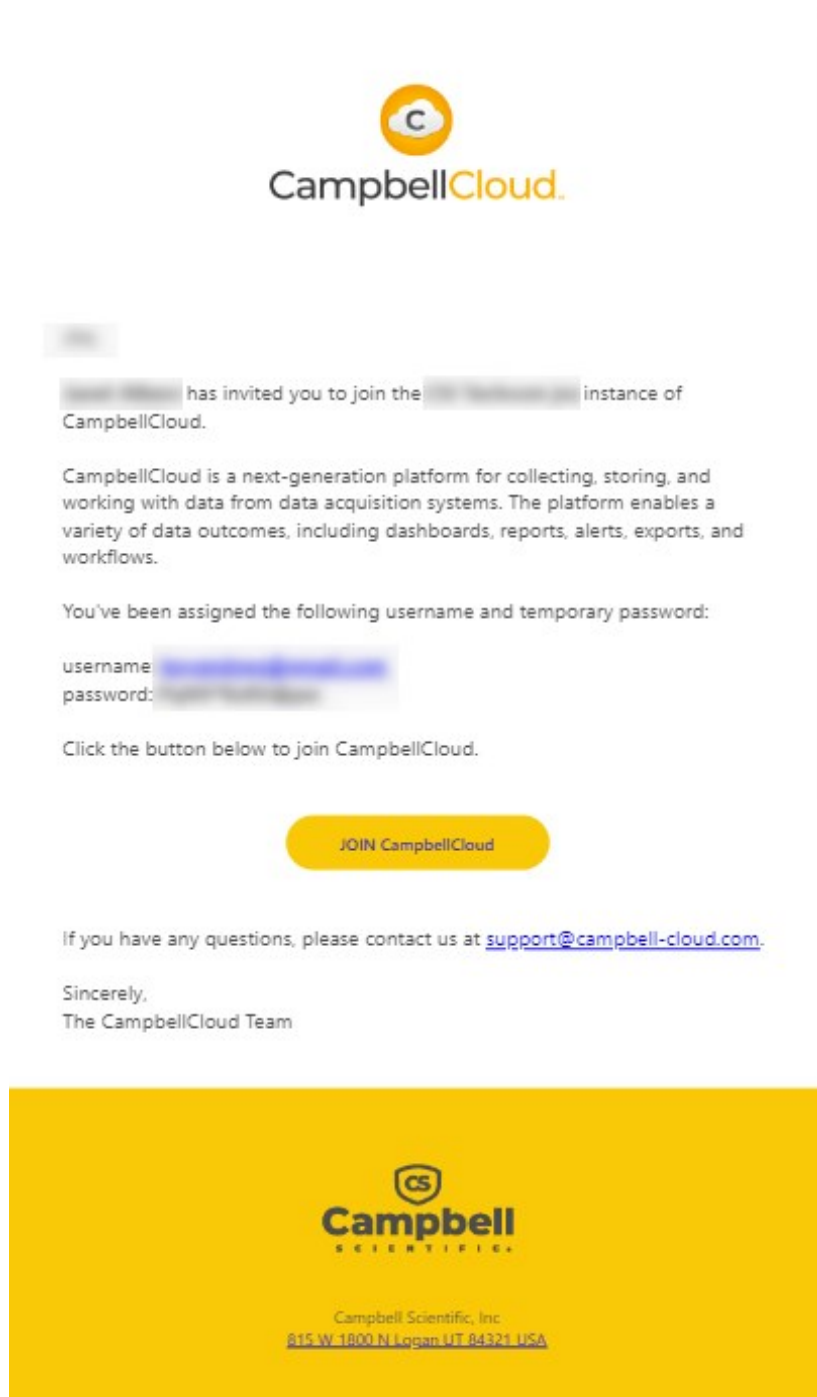
3. Become a CampbellCloud user

Every CampbellCloud user must be associated with an organization. Your organization administrator should invite you to be a member. Shortly thereafter you will receive an email from *hello@campbell-cloud.com*.

NOTE:

Organization owners are automatically set up as users. If you are the owner and need to set up the organization see [Creating a CampbellCloud organization account](#) (p. 3)

The email you receive should look similar to the following:



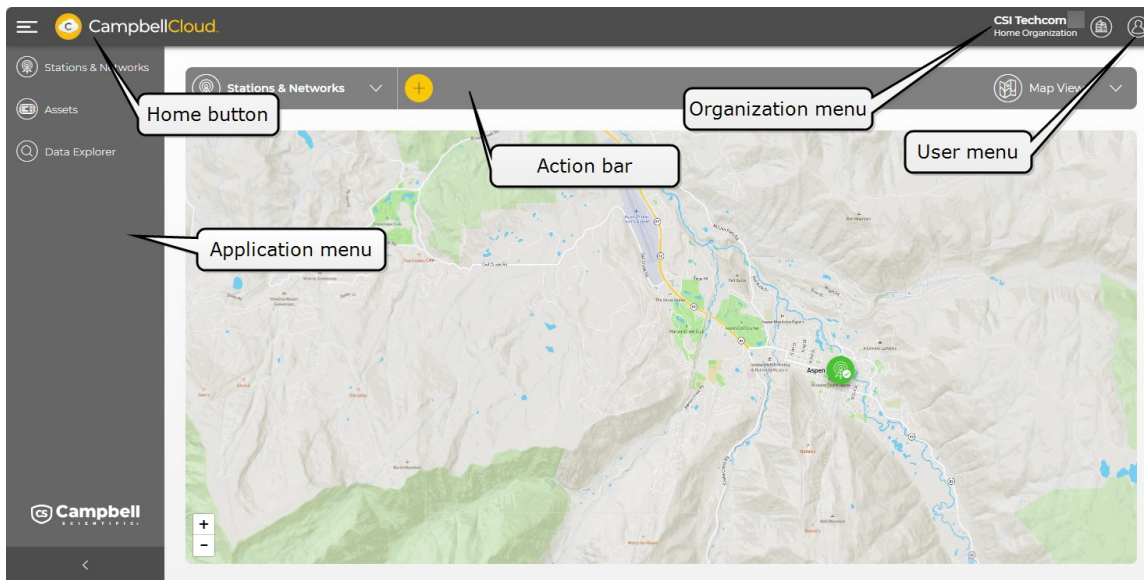
Click **JOIN CampbellCloud**.

Your organization administrator assigned you to one or more security groups. Each security group has a defined set of permissions. Contact your organization administrator for more information.

For more information on becoming a CampbellCloud user, watch an instructional video at: <https://www.campbellsci.com/videos/cloud03> .

4. CampbellCloud UI

Once signed in to CampbellCloud, a screen similar to this appears:



Application menu – displays specific applications. Expand and collapse the menu using the > at the bottom.


Action bar – used to perform actions within an application, such as adding and deleting stations in the **Stations & Networks** application, for example.

Organization menu – a dropdown menu which contains the **Organization Settings**, **Users**, **Security Groups**, and **Subscriptions** applications.

User menu – a dropdown menu which contains the **My Settings** application, the **Sign out** button, and options for submitting **Feedback**, a **Bug**, and **Support** requests.

NOTE:

Users are automatically signed out after being inactive for 40 minutes.

Home button – the CampbellCloud icon  acts as your home button. Select this to navigate back to your home screen. Users with correct permissions can change their default home screen via the **My Settings** application.

5. Applications

Applications (Apps) in CampbellCloud provide grouped functionality to enable users to perform specific tasks. Apps are accessed via the left-hand **Application** menu or the **Organization** dropdown menu on the top menu bar, depending on the specific application required.

Security groups can be set up by account administrators to restrict specific users' access to certain applications, data, or locations. For more information, see [Adding a security group to an organization account](#) (p. 10).

The following sections describe some Cloud apps.

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5.1 Stations & Networks

The **Stations & Networks** application is used for managing stations and networks. Its key functions include the following:

- Creating and viewing networks and stations
- Monitoring network status and station alerts through summary maps
- Viewing the latest data through station summaries
- Reviewing detailed station health and status information

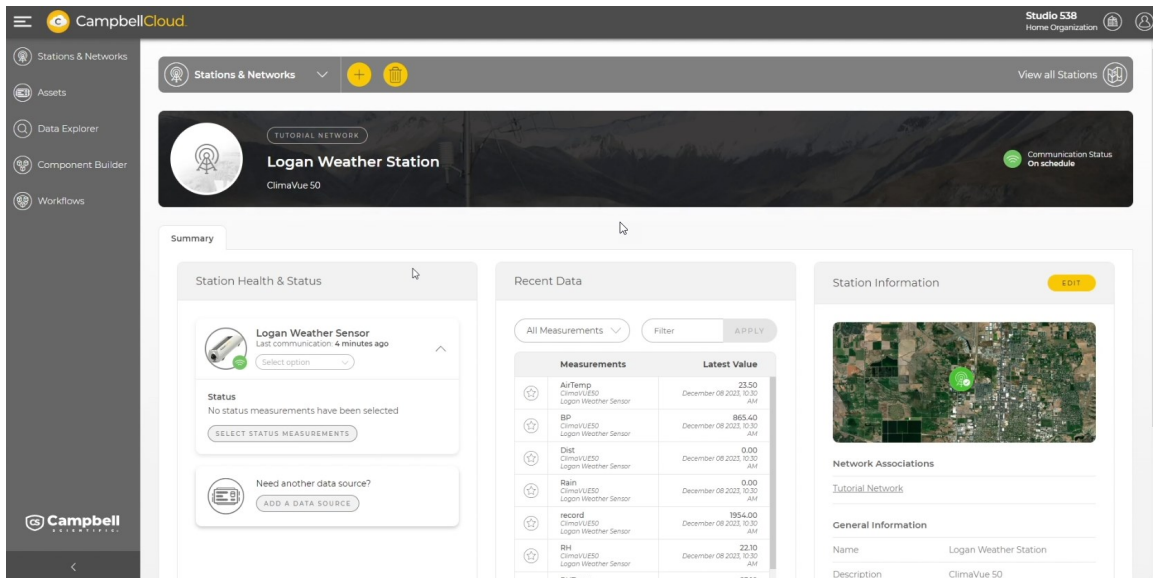
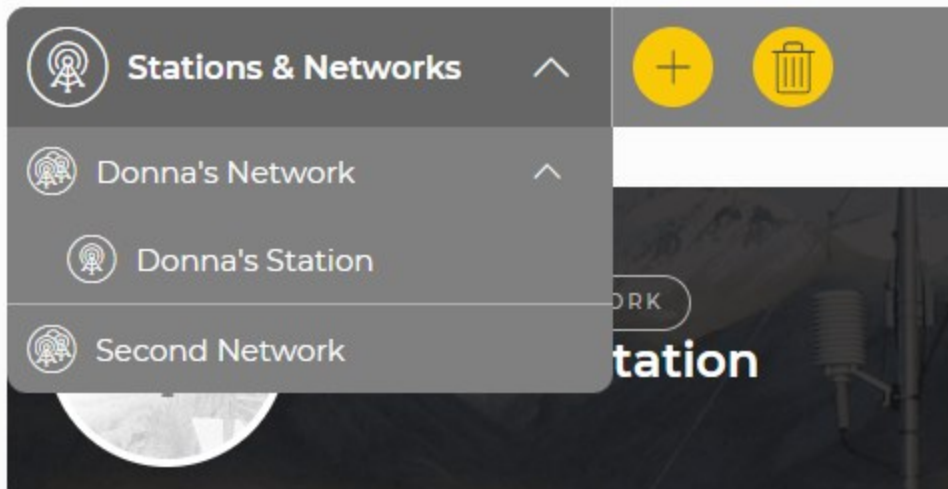


Figure 5-1. CampbellCloud Station Summary

5.1.1 Navigating Stations & Networks

Select which network or specific station to view from the **Stations & Networks** dropdown menu.



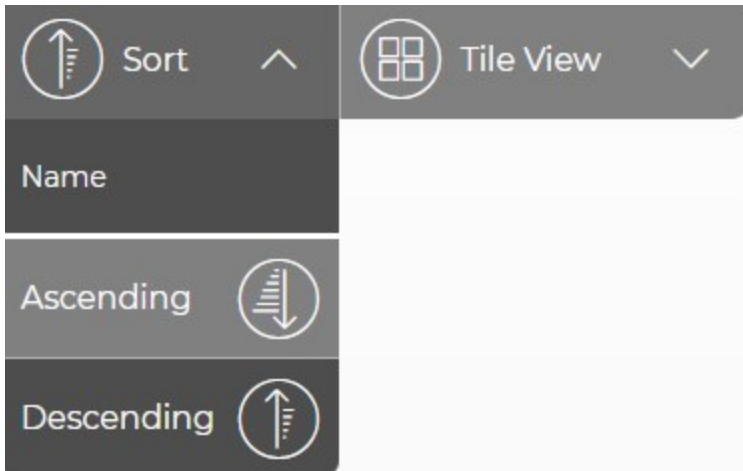
Use the dropdown menu in the upper right to select the format to view your stations:

- **Map** – displays the stations on a map. Click on the station icon to display the favorite measurements.
- **Tile** – displays a tile providing overview information for each station.

- **Small Tile** – displays a small tile for each station showing only the station name and network.
- **Table** – displays the stations as lines in a table which provides the station name, most recent data, last communication, description, and when the station was created.



For all options except **Map**, use the **Sort** dropdown menu to specify whether to sort in **Ascending** or **Descending** order.



5.1.2 Station summary






Selecting a station in any view will switch your view to that station summary as shown in [Figure 5-1](#) (p. 21).


Favorite measurements are set in the **Recent Data** section. This affects which measurements are shown for the station when in **Map** (see [Figure 5-2](#) [p. 24]), **Table**, and **Tile** views.

Recent Data

All Measurements ▾

Filter APPLY

	Measurements	Latest Value
	AirTemp ClimaVUESO <small>Report ID: 123</small>	6.80 2024/01/22 16:00:00
	BP ClimaVUESO <small>Report ID: 123</small>	806.80 2024/01/22 16:00:00
	Dist ClimaVUESO <small>Report ID: 123</small>	0.00 2024/01/22 16:00:00
	Rain ClimaVUESO <small>Report ID: 123</small>	0.00 2024/01/22 16:00:00
	TiltNS ClimaVUESO <small>Report ID: 123</small>	-0.50 2024/01/22 16:00:00

Click  to "favorite" a measurement

15 measurements

VIEW IN DATA EXPLORER

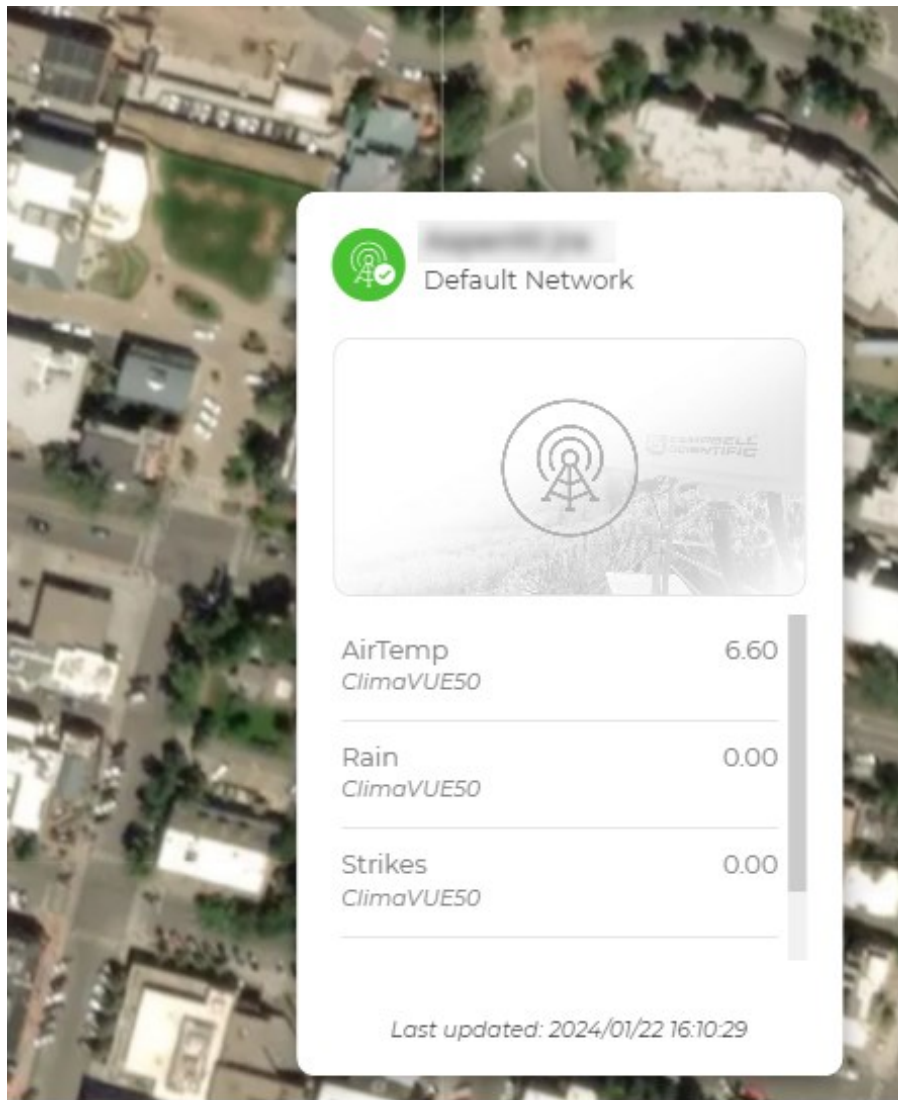



Figure 5-2. Network map view showing station favorites

5.2 Assets

The **Assets** application is used to manage assets (data sources such as the Aspen 10, or other hardware). Assets, once onboarded, will appear in a tabular view.

Click on the asset name to see its details.

Asset Name	Model	Serial	UID	Status	Station
 Aspen10	Aspen10			Active	Station Aspen CO

On the main **Assets** page, click the name of the asset to view its health and status **Summary**, **Asset Properties**, **Measurement Properties**, and **Subscription** information.

Summary | Asset Properties | Measurement Properties | Subscriptions

Asset Health and Status

Status
Timestamp: December 27 2023, 1:40 PM
BattVoltage: 3.54
CellSigStrength: -112.00
MqttSuccessRate: 100.00

[SELECT STATUS MEASUREMENTS](#)

Recent Data

Filter [APPLY](#)

Measurements	Latest Value
AirTemp ClimaVueE50	23.30 December 27 2023, 1:40 PM
BP ClimaVueE50	873.50 December 27 2023, 1:40 PM
Dist ClimaVueE50	0.00 December 27 2023, 1:40 PM
Rain ClimaVueE50	0.00 December 27 2023, 1:40 PM
record ClimaVueE50	5514.00 December 27 2023, 1:40 PM

Asset Information [EDIT](#)

Associations

Station [Test Station](#)

General Information

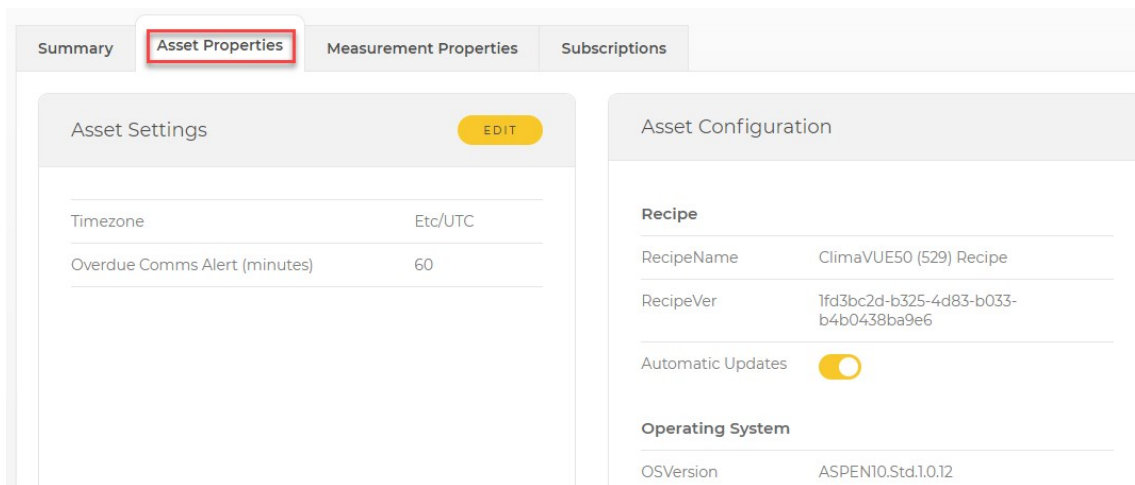
Name Aspen 10
Description ClimaVue 10
Model ASPEN10
Serial Number 621

The **Asset Properties** tab provides access to the overdue communications alert time setting. Additionally, **Asset Configuration** information, such as recipe name and version, operating system version, and cellular version are shown.

NOTE:

Changes made to an asset affect all users who have access to that asset.

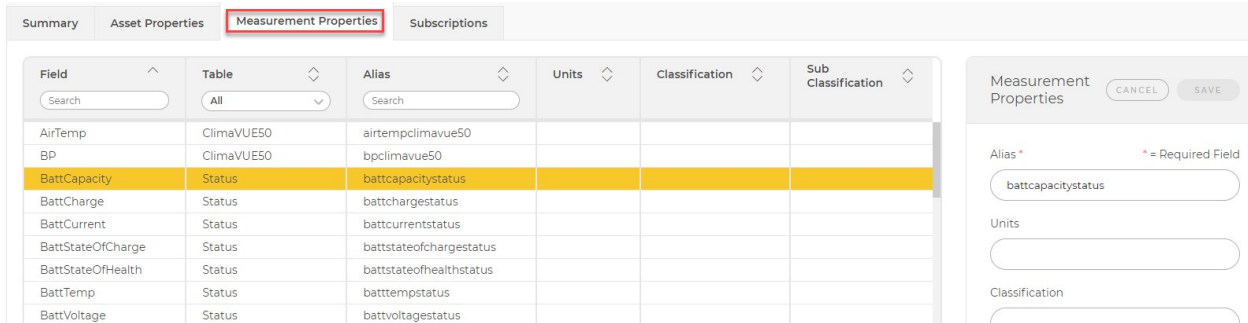
Click the toggle switch to turn on or off the recipe and operating system automatic updates. A yellow switch indicates that automatic updates are on.



The **Measurement Properties** tab provides a list of measurements. Clicking on an individual measurement opens a measurement properties window that can be used to configure measurement alias (alternate) names, units, data types, and more.

Use measurement **Classifications** and **Subclassifications** in conjunction with **My Settings > Unit Preferences** to affect how your measurements are displayed throughout Cloud.

See [Changing default user settings](#) (p. 30).



NOTE:

Adding measurement units may reduce the number of measurements that can be displayed at one time on a **Data Explorer** graph. See [Data Explorer](#) (p. 26)

For detailed instructions on adding an asset to CampbellCloud, see [Adding an asset](#) (p. 49).

5.3 Data Explorer

The **Data Explorer** application allows rapid exploration of your stored Cloud data through table, chart, and map views. It features a menu with a structured hierarchy of Network > Station >

Measurements and includes a quick search filter. Users can apply time-based filters for efficient navigation and visualization of data over selected time frames. Additionally, there is an option to export the displayed data to comma-separated values (CSV) files. See [Viewing historical data using Data Explorer](#) (p. 57) for details.

NOTE:

Up to 15,000 data points per measurement can be displayed.

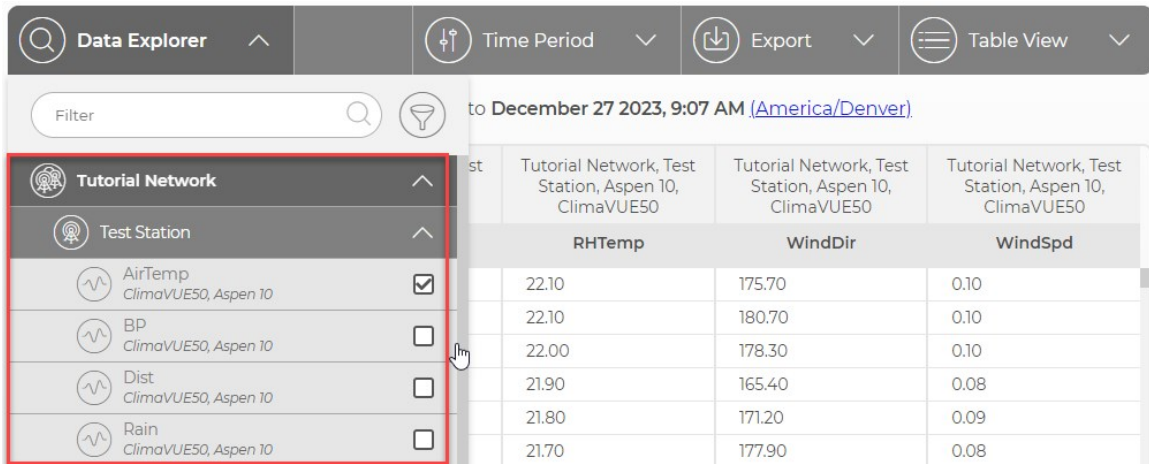


Figure 5-3. Data Explorer application menu

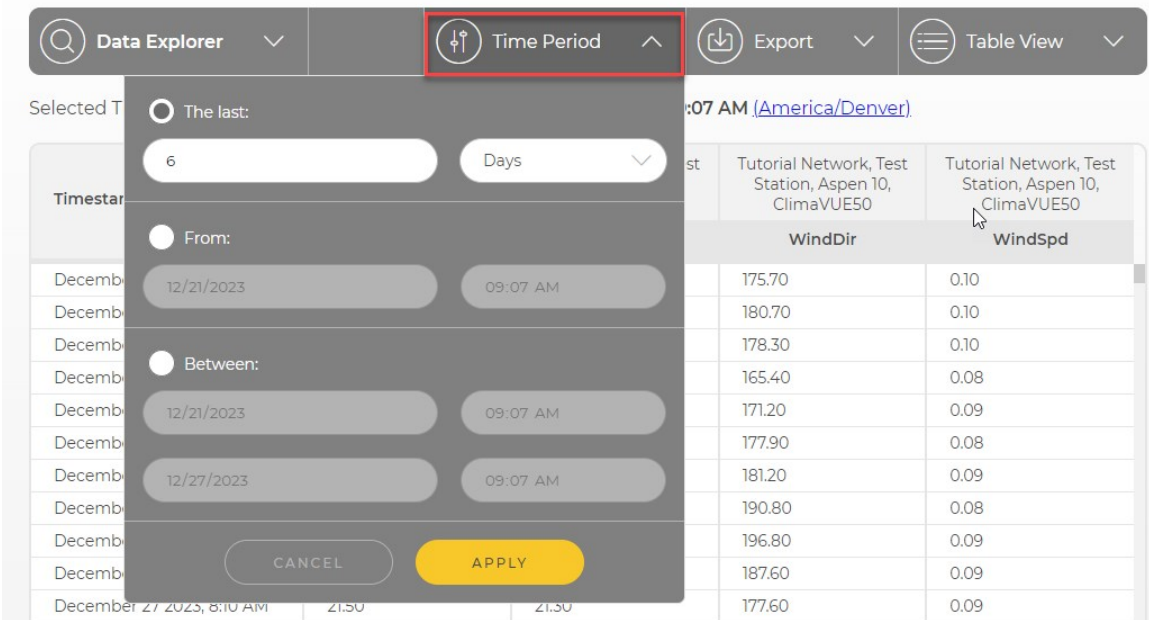


Figure 5-4. Data Explorer application - time-based filters

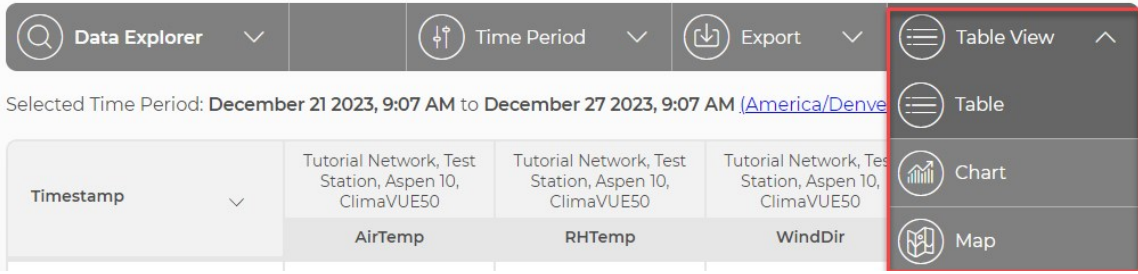


Figure 5-5. Data Explorer view options menu

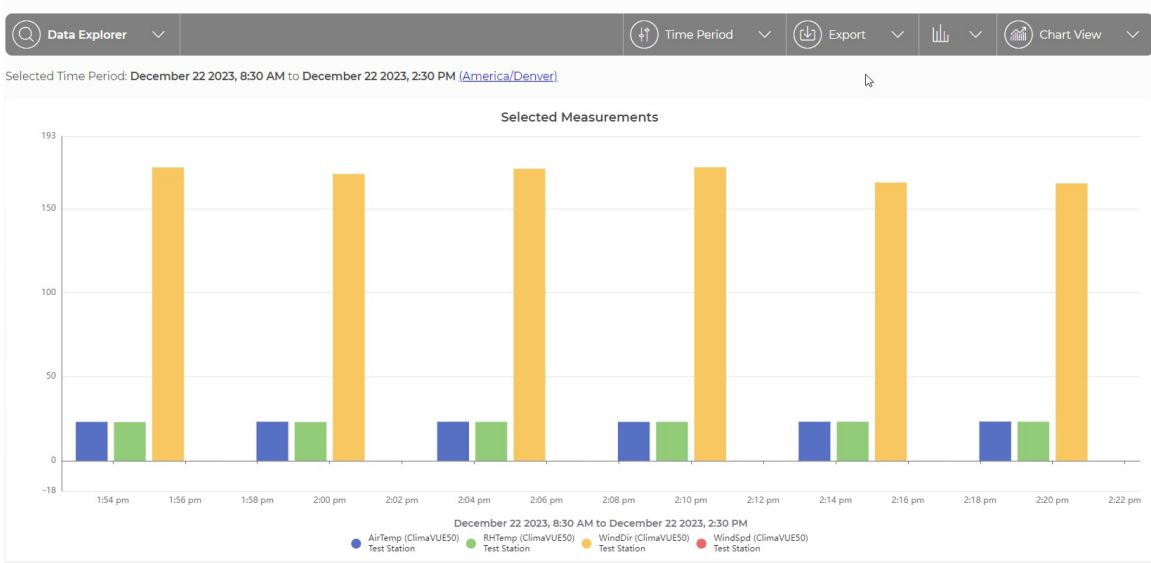


Figure 5-6. Data Explorer application - chart view

Selected Time Period: December 08 2023, 9:37 AM to December 08 2023, 3:37 PM (America/Denver)

Timestamp	Tutorial Network, Logan Weather Station, Logan Weather Sensor, ClimaVUE50
	AirTemp
December 08 2023, 3:30 PM	23.60
December 08 2023, 3:25 PM	23.60
December 08 2023, 3:20 PM	23.70
December 08 2023, 3:15 PM	23.70
December 08 2023, 3:10 PM	23.60
December 08 2023, 3:05 PM	23.60
December 08 2023, 3:00 PM	23.60
December 08 2023, 2:55 PM	23.70

Figure 5-7. Data Explorer application - Table View

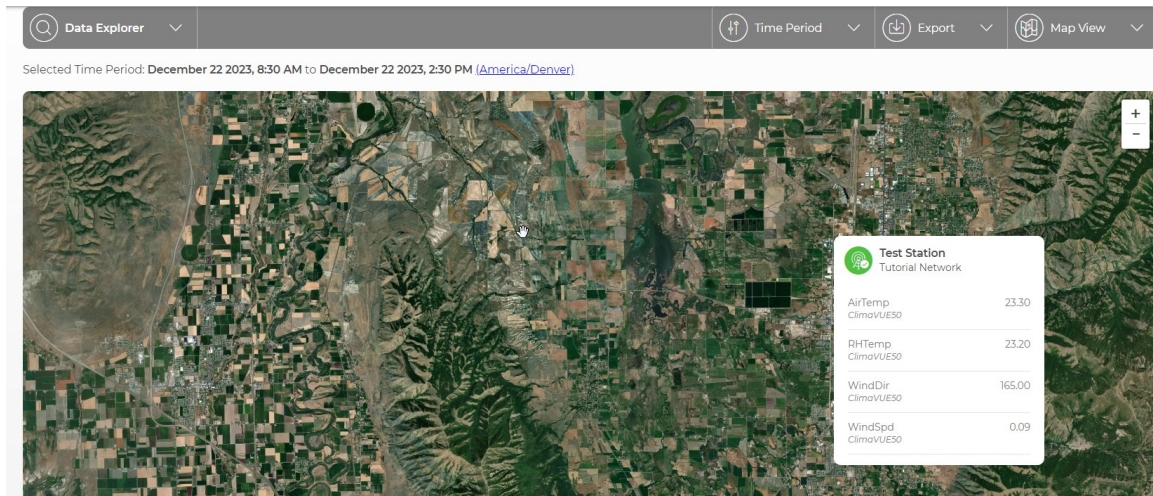


Figure 5-8. Data Explorer application - Map View

See [Viewing historical data using Data Explorer](#) (p. 57) for more details.

5.4 Security groups

Security groups can be created to control user access to CampbellCloud applications. By creating and configuring these groups, administrators can limit the access of certain users, ensuring that sensitive data or critical areas of the network or station remain secure and are not modified by unauthorized personnel. Each group can have specific permissions and access rights. Users are then assigned to these groups based on their role, responsibility, and the level of access they require. For instructions on adding and configuring security groups, refer to [Adding a security group to an organization account](#) (p. 10).

6. CampbellCloud tasks

Access to applications, and features of those applications, is controlled by Security Groups. Contact your organization administrator for details about your specific permissions.

Some typical tasks are described in the following sections.

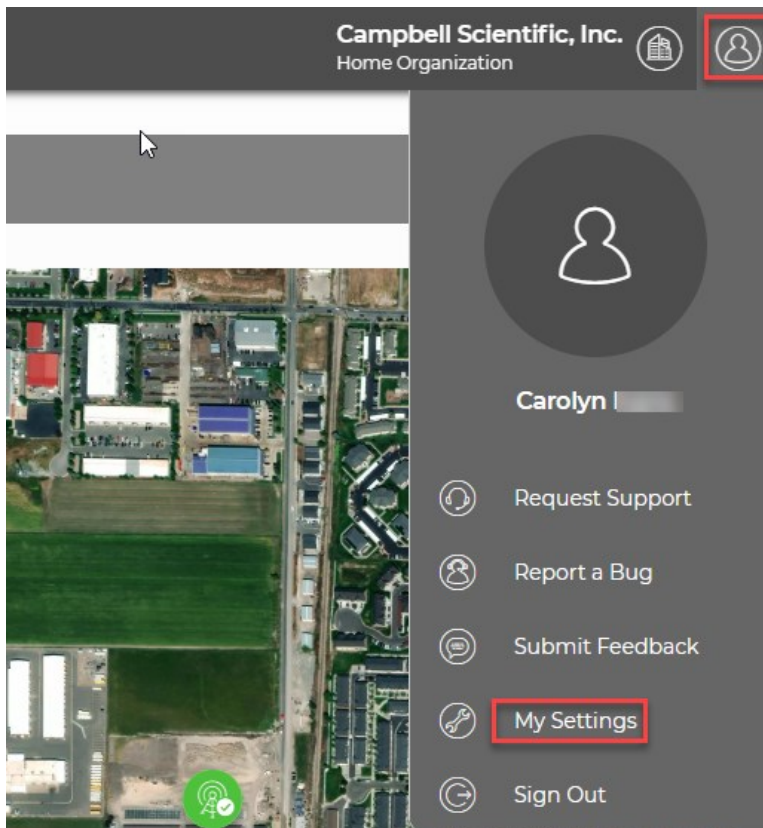
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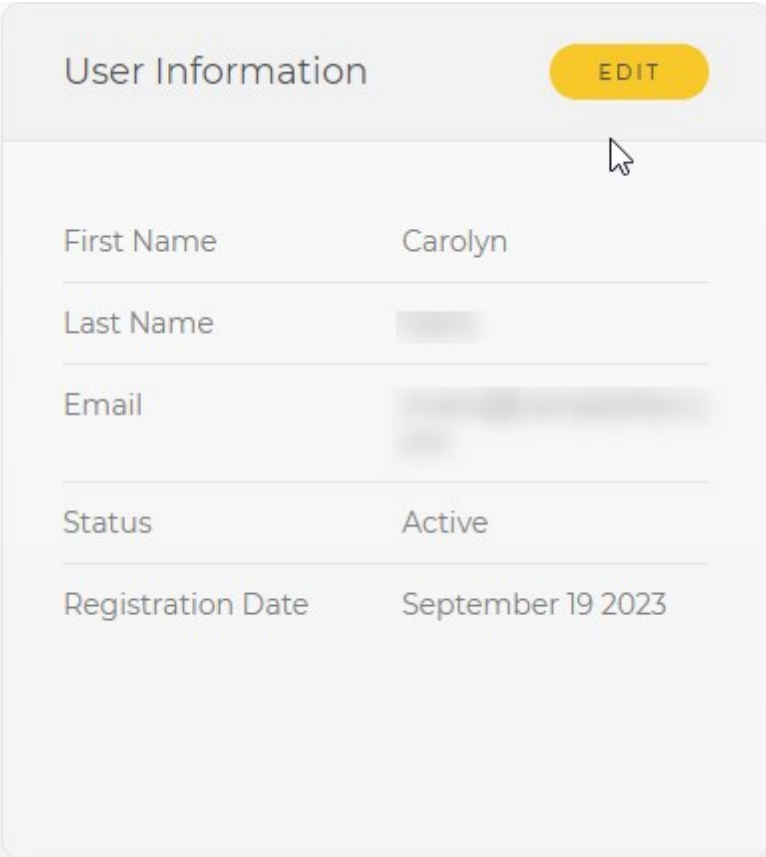
6.1 Changing default user settings

Provided a Cloud administrator has granted the required permissions, individuals within an organization can modify their own user settings based on individual preferences.

1. After logging into CampbellCloud, click the user icon in the upper-right corner of the screen (User menu) and select **My Settings**.



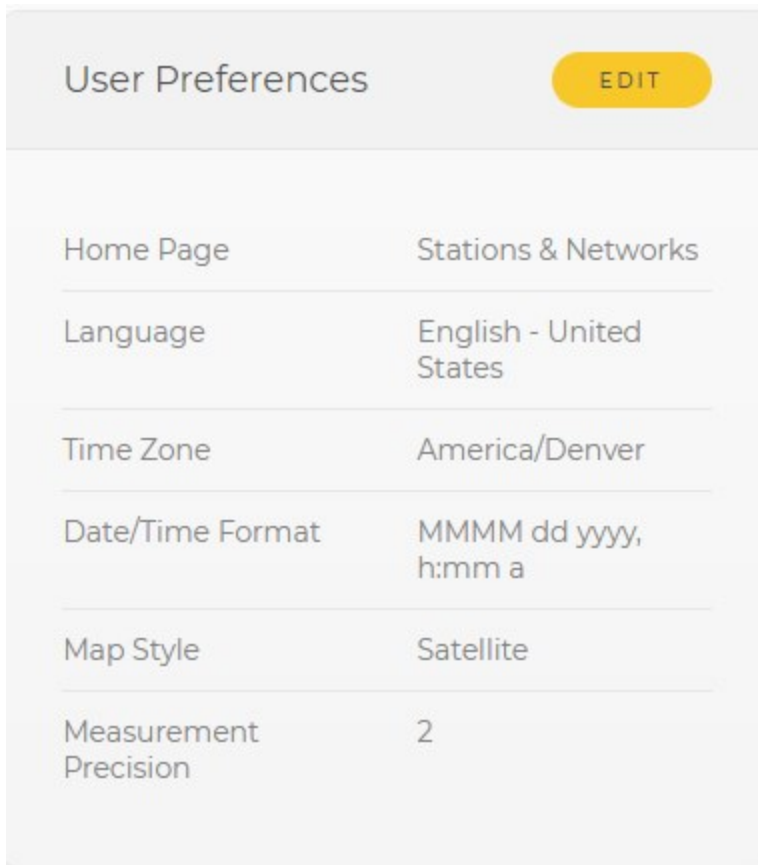
2. Click **EDIT** next to **User Information** to change the user name. Click **CANCEL**, or **SAVE** if a change was made.



The image shows a 'User Information' form with a yellow 'EDIT' button in the top right corner. A mouse cursor is hovering over the 'EDIT' button. The form contains the following fields:

First Name	Carolyn
Last Name	[REDACTED]
Email	[REDACTED]
Status	Active
Registration Date	September 19 2023

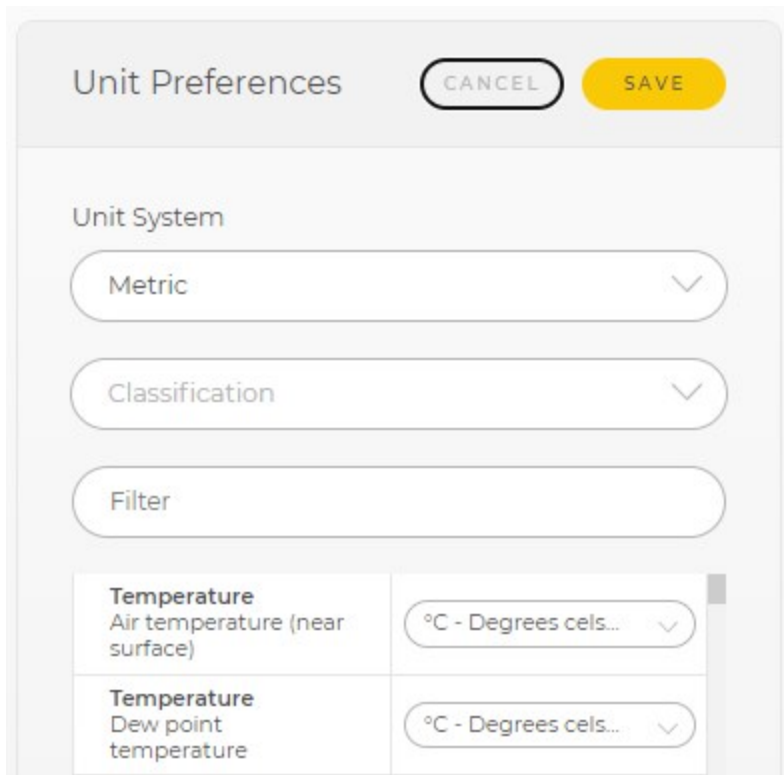
3. Click **EDIT** next to **User Preferences**. Set which page will become your home page, time zone, and more.





User Preferences		EDIT
Home Page	Stations & Networks	
Language	English - United States	
Time Zone	America/Denver	
Date/Time Format	MMMM dd yyyy, h:mm a	
Map Style	Satellite	
Measurement Precision	2	

4. Click **CANCEL**, or **SAVE** if a change was made. CampbellCloud will now use those preferred settings while you are logged into CampbellCloud.

5. Click **EDIT** next to **Unit Preferences**. Select **Metric**, **Metric (British)**, or **US Customary** for the **Unit System**. This setting works in conjunction with measurement classifications. See [Assets](#) (p. 24).



6. Click **CANCEL**, or **SAVE** if a change was made.
7. Click the home button  or any app in the left column (Application menu) to exit.

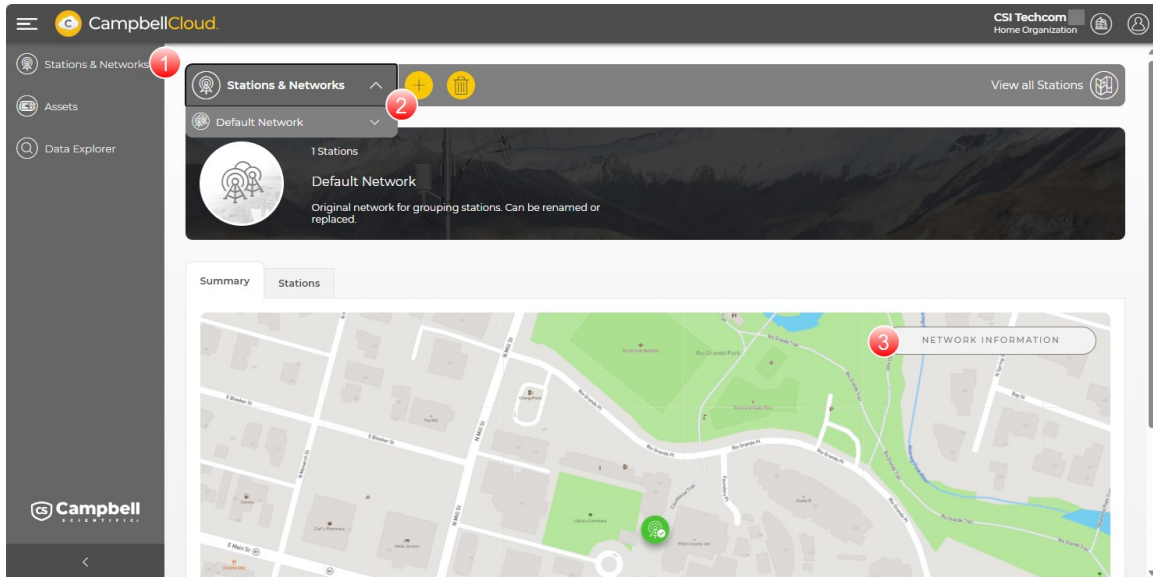
For more information on an individual changing their preferences, watch an instructional video at: <https://www.campbellsci.com/videos/cloud07> .

6.2 Renaming the default network

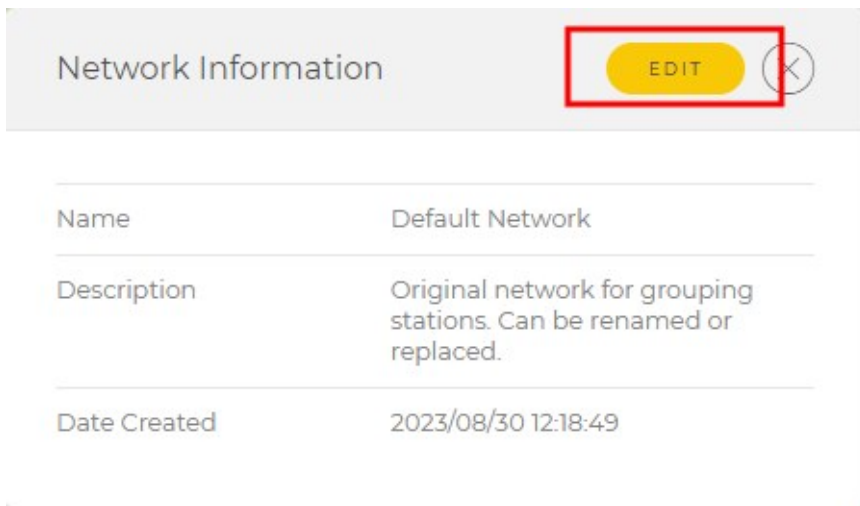
When an account is created, a default network is automatically associated with the account. Best practice is to rename the default network with a name that is meaningful to the organization. The following procedure demonstrates renaming the default network.

1. Select **Stations & Networks** from the application menu on the left.
2. In the **Stations & Networks** dropdown menu, select **Default Network**.

3. Click **Network Information**.



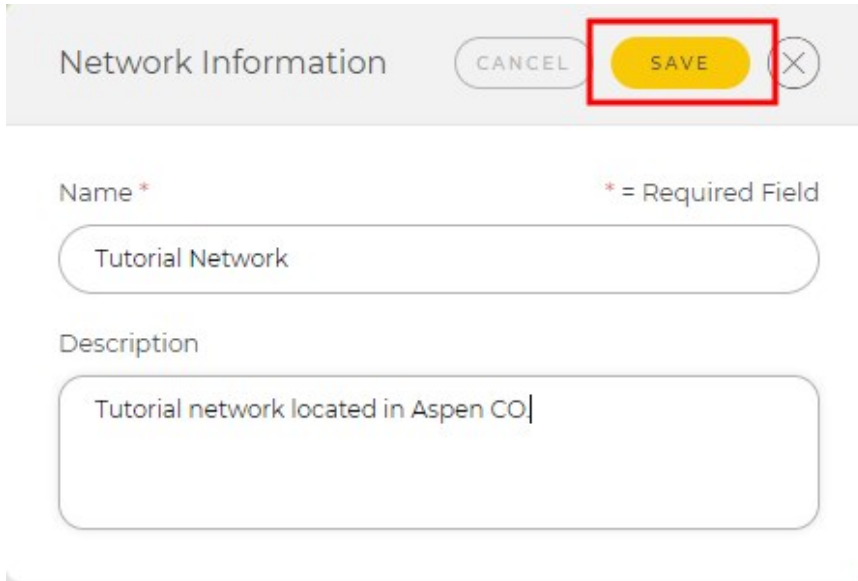
4. Click **EDIT**.



5. Enter a meaningful network **Name**.

6. (Optional) Enter a **Description** of the network.

7. Click **SAVE**.



Network Information


CANCEL SAVE

Name * * = Required Field

Tutorial Network

Description

Tutorial network located in Aspen CO

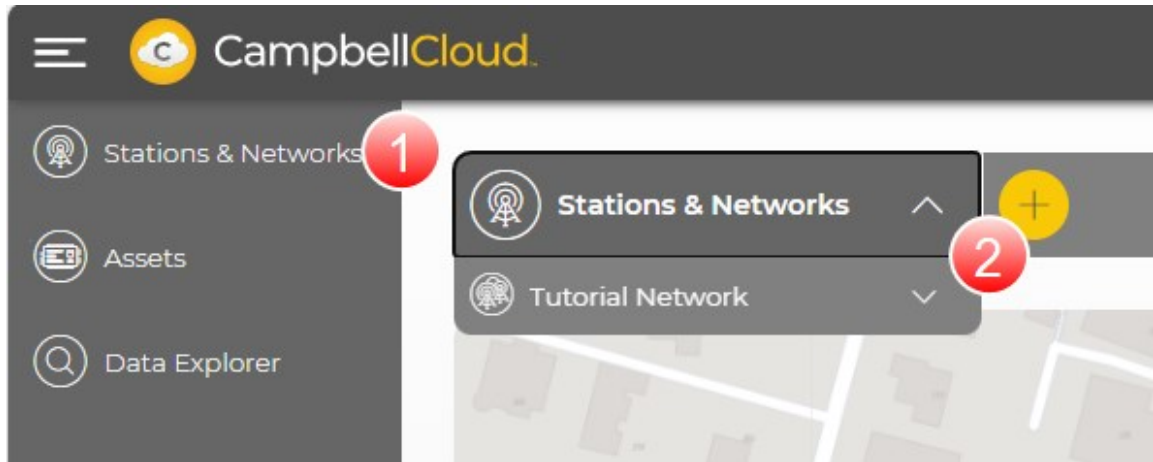
8. A message **Network saved successfully** appears to confirm the name change. Click the home button  or any app in the left column (Application menu) to exit.

For more information on renaming the default network in CampbellCloud, watch an instructional video at: <https://www.campbellsci.com/videos/cloud08> .

6.3 Adding a station to a network

A network collects data from stations contained in the network. In this example, a station named *Tutorial Station* is added to a network named *Tutorial Network*.

1. Select **Stations & Networks** from the application menu on the left.
2. In the **Stations & Networks** dropdown menu, select the renamed default network (see [Renaming the default network](#) [p. 33]). In this example the default network was renamed *Tutorial Network*.



3. **No Stations Found** appears. Click **ADD A STATION**.
4. Enter a **Name** for the station.
5. (Optional) Enter a **Description** of this station. This could include a description of the sensor (s) at the station, the station location, or other meaningful information.

6. Click **NEXT**.

Add Station

General Information

Enter a name for your station. You can also enter an optional description.

Name * * = Required Field

Description

7. Enter the location of the station, including elevation (meters); or drag and drop the pin on the map to the desired location. Click **FINISH**.

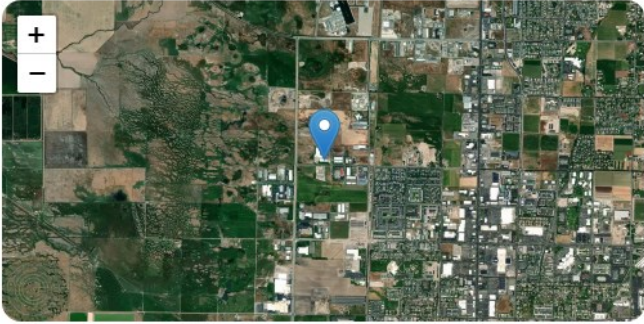
NOTE:

For the pin to be visible on the map, browser permissions must be set to allow access to location. Stations without location information will appear under **Hidden Stations** on the network map.

Add Station

Location

Select the location of your station on the map below, or enter the latitude and longitude of your station in decimal degrees and elevation in meters. Stations created without location information will appear under Hidden Stations on the network map.



Latitude

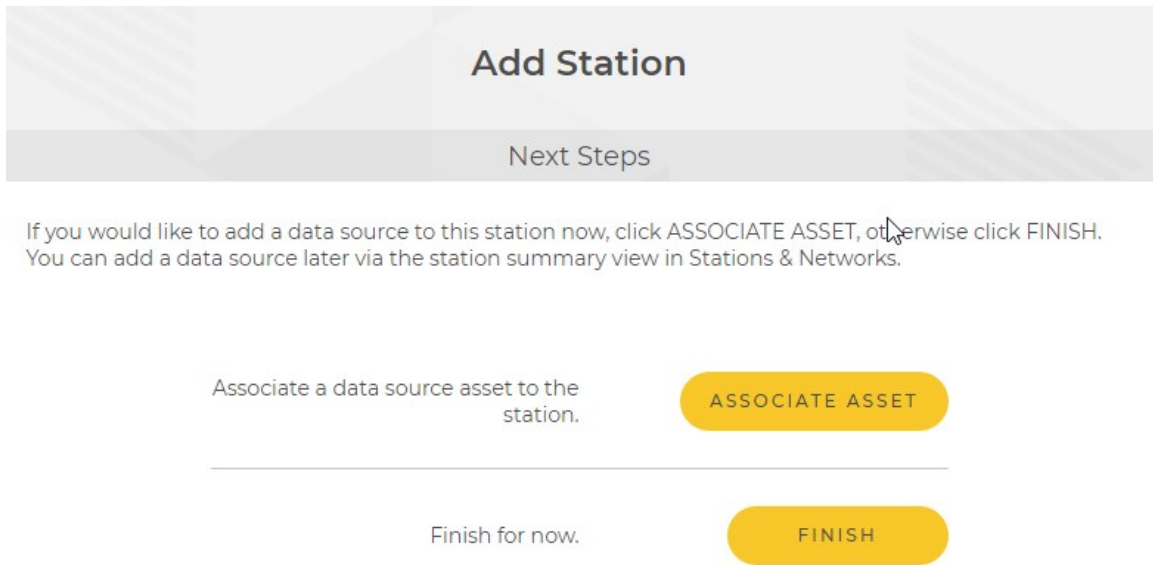
CANCELBACKFINISH

8. Select the network the station is being added to.

The screenshot shows a dialog box titled "Add Station" with a sub-header "Select Network". Below the sub-header, there is a text instruction: "Select an existing network from the list below that you would like to add this station into. To create a new network, select 'Add New'". A list of two options is displayed: "Add New" with an unselected radio button, and "Tutorial Network" with a selected radio button. The "Tutorial Network" option is highlighted with a grey background. At the bottom of the dialog, there are two buttons: "CANCEL" and "NEXT".

9. Click **NEXT**.

10. The station has been added to the network. You now have the option to associate an asset with the station or to finish later.

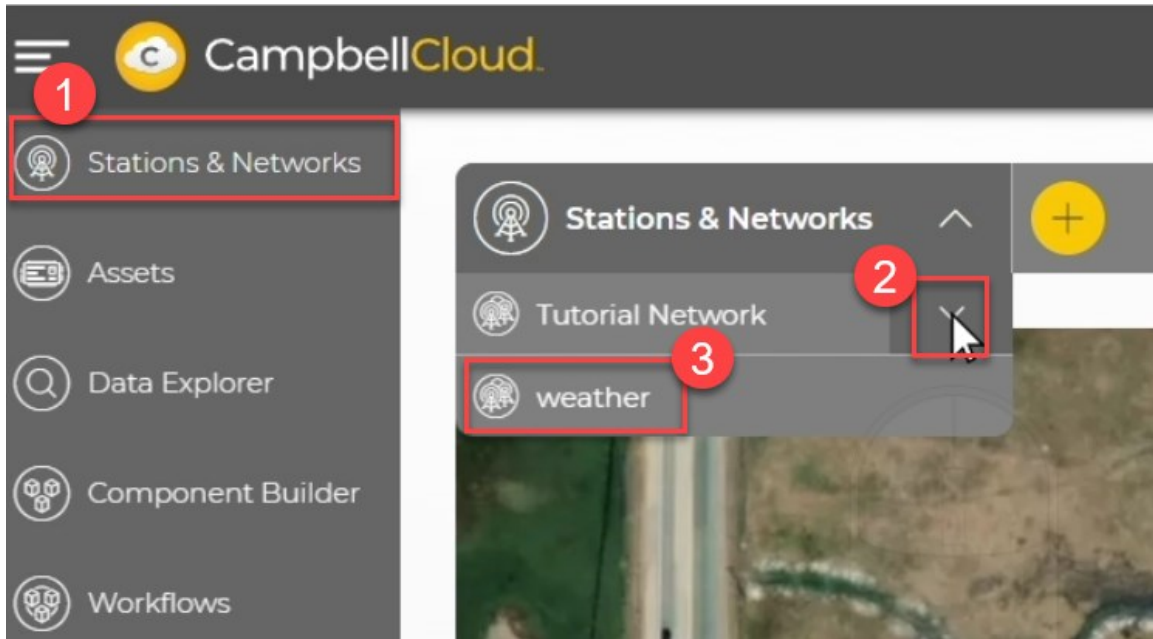


For more information on adding a station to a network, watch an instructional video at: <https://www.campbellsci.com/videos/cloud09> .

6.3.1 Adding an asset to a station

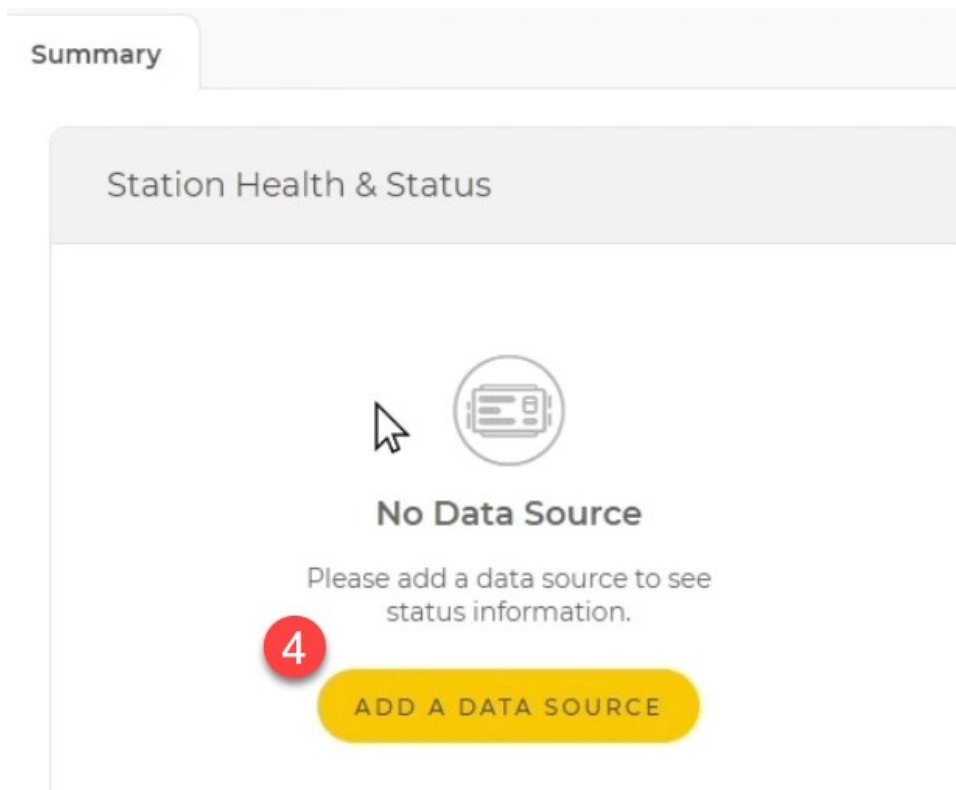
Data sources are provided through assets, such as the Aspen 10. Assets can be added to stations directly in CampbellCloud or through the CampbellGO app. The steps below demonstrate adding an asset to a station directly in CampbellCloud. In this example, an Aspen 10 asset is added to a station named *weather*.

1. On the CampbellCloud home screen, select **Stations & Networks** from the application menu.

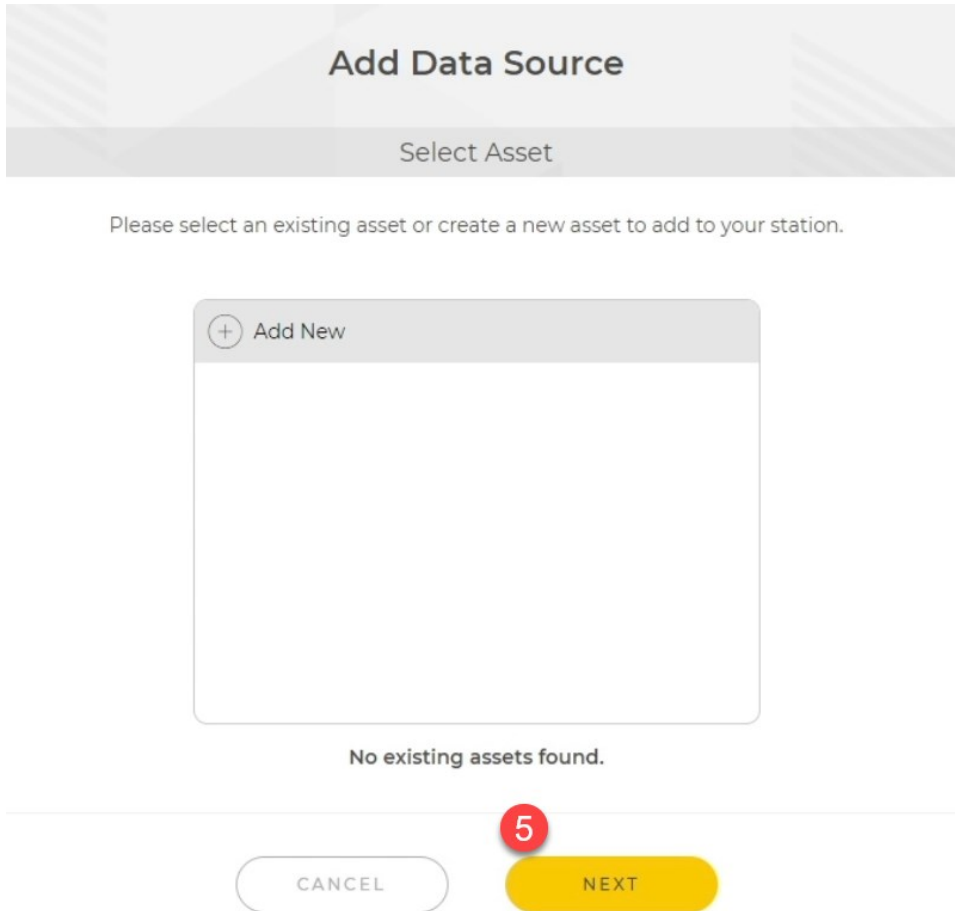


2. In the **Stations & Networks** dropdown menu, select the network you wish to add a data source to.
3. In the list of stations under the network, click on the name of the station.

4. If no data source exists for that station, you will be prompted to add a data source. Click **Add Data Source**.



5. The **Add Data Source** window opens. To add a new asset, select **Add New**, then click **NEXT**.



6. Enter the UID number of the Aspen 10. Click **NEXT**.


Add Data Source

Asset Identification

Please enter the UID of your asset. This is usually located on a white sticker on your device below a QR code.

Enter UID * * = Required Field

6





- CampbellCloud verifies that the asset has not already been added to another station. Click **NEXT**.

Add Data Source

Asset Identification

The system is verifying your asset.


 **ASPEN10**
Serial Number:
UID:



↩

8. Enter a **Name** and optional **Description** for the asset. Click **FINISH**.

The screenshot shows a web interface for adding a data source. At the top, there's a header 'Add Data Source' and a sub-header 'Asset Details'. Below this, a message says 'Please provide a name and a description for your asset.' The asset name is 'ASPENIO' with serial number '416' and UID 'CYQF-YALV-TWLX'. There are two input fields: 'Name *' with the value 'Logan Weather Sensor' and a note '* = Required Field', and 'Description' with the value 'ClimaVue 50'. At the bottom, there are 'CANCEL' and 'FINISH' buttons. A red circle with the number '8' is placed above the 'FINISH' button, and a mouse cursor is pointing at it.

For more information on adding a data source to a station, watch an instructional video at: <https://www.campbellsci.com/videos/cloud12> .

6.3.2 Setting favorite measurements on a station

Stations may have multiple data sources, and some sensors take multiple measurements rather than a single measurement. In these instances, certain measurements may be more important than others. CampbellCloud allows adding the measurements of most interest to a favorites list.

1. In the **Stations & Networks** app, choose your network and station on which to set favorite measurements.

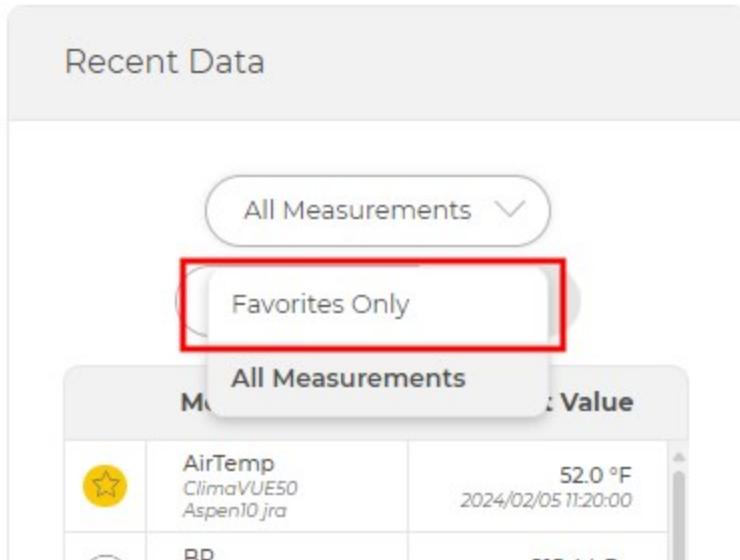


2. View the latest measurements in **Recent Data**, where each measurement is marked with a starred circle. Clicking the star toggles that measurement as a favorite or not.


The screenshot shows the 'Recent Data' section of the app. It includes a 'Station Health & Status' panel on the left, a 'Recent Data' table in the center, and a 'Station Information' panel on the right. The 'Recent Data' table has a 'Filter' button and an 'APPLY' button. The table lists various measurements with star icons in the first column. A red box highlights the first row of the table.


	Measurements	Latest Value
★	AirTemp ClimaVUES0 Aspen10 jra	52.0 °F 2024/02/05 11:20:00
☆	BP ClimaVUES0 Aspen10 jra	815.4 hPa 2024/02/05 11:20:00
☆	Dist ClimaVUES0 Aspen10 jra	0 mi 2024/02/05 11:20:00
★	Rain ClimaVUES0 Aspen10 jra	0.000 in 2024/02/05 11:20:00
☆	record ClimaVUES0 Aspen10 jra	27979.00 2024/02/05 11:20:00
☆	RH ClimaVUES0	48.7 % 2024/02/05 11:20:00

- Once favorites are selected, the Recent Data view can be filtered to show **All Measurements** or **Favorites Only**.




Measurements in the favorites list also appear in the **Stations & Networks** view when you view a station.

 **Test Station**
Tutorial Network



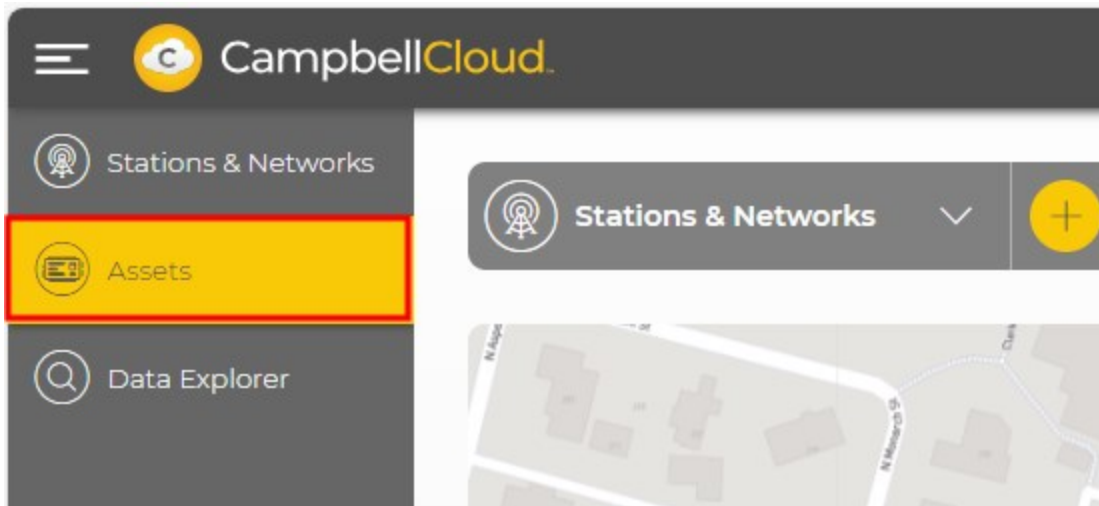
AirTemp <i>ClimaVUE50</i>	23.00
Rain <i>ClimaVUE50</i>	-
RHTemp <i>ClimaVUE50</i>	22.90

For more information on setting favorite measurements, watch an instructional video at: <https://www.campbellsci.com/videos/cloud13> .

6.4 Adding an asset

Data sources are provided through assets, such as the Aspen 10. Assets can be added to stations directly in CampbellCloud or through the CampbellGO app. The steps below demonstrate adding an asset directly in CampbellCloud.

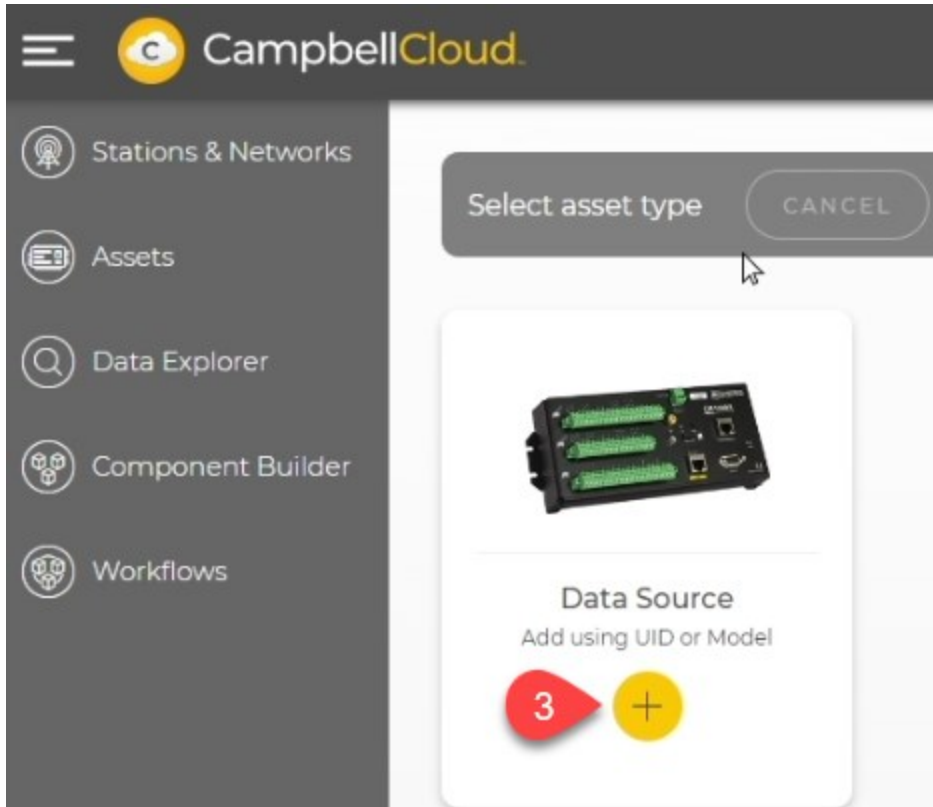
1. On the CampbellCloud home screen, select **Assets** from the application menu.



2. Click .



3. Click  below **Data Source**.



4. Enter the UID number off the Aspen 10. Click **NEXT**.

Add Data Source

Asset Identification

Please enter the UID of your asset. This is usually located on a white sticker on your device below a QR code.

Enter UID * * = Required Field

4

CANCELNEXT

5. CampbellCloud verifies that the asset has not already been added to another network. Click **NEXT**.

Add Data Source

Asset Identification

The system is verifying your asset.

 **ASPEN10**
Serial Number: 416



CANCEL **NEXT**



6. Enter a **Name** and optional **Description** for the asset. Click **FINISH**.

The screenshot shows a web interface for adding a data source. At the top, there is a header with the title "Add Data Source" and a sub-section "Asset Details". Below this, a message asks the user to provide a name and description. The asset name is "ASPEN10" with a serial number of "416". The "Name" field is a required field (indicated by an asterisk) and contains the text "Aspen 10". The "Description" field is optional and contains the text "ClimaVue 50". At the bottom, there are two buttons: "CANCEL" and "FINISH". A red circle with the number "6" is overlaid on the "FINISH" button, and a mouse cursor is pointing at it.

Add Data Source

Asset Details

Please provide a name and a description for your asset.

ASPEN10
Serial Number: 416

Name * * = Required Field

Aspen 10

Description

ClimaVue 50

CANCEL 6 FINISH

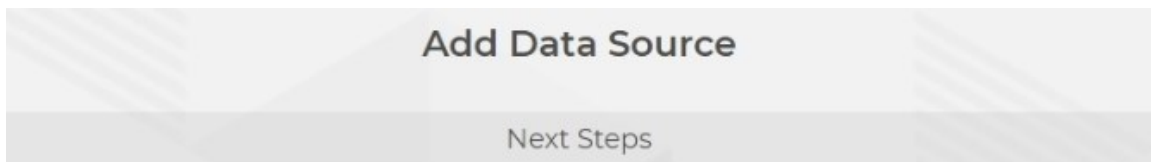
7. A message will appear indicating the asset was created.



Your new asset is being created.



8. Some assets require additional configuration. The Aspen 10 does not. Click **FINISH**.



Please select the next action you would like to take. You can configure your asset for data collection now or later.

Configure for data collection now.

CONFIGURE ASSET

Configure for data collection later.

FINISH

9. This data source is now available to add to a station.

For more information on adding an asset directly in CampbellCloud, watch an instructional video at: <https://www.campbellsci.com/videos/cloud10> .

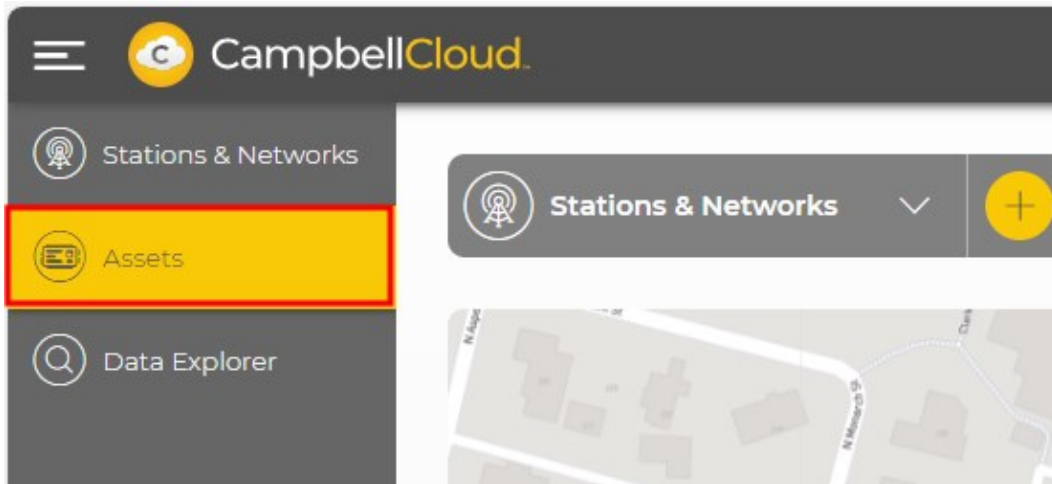
6.5 Changing the Overdue Comms Alert setting

Knowing when there is a communications or sensor problem that is preventing data from reaching Cloud is important to prevent data loss. In CampbellCloud, the amount of time that passes before notifying the user that communications are overdue can be customized.

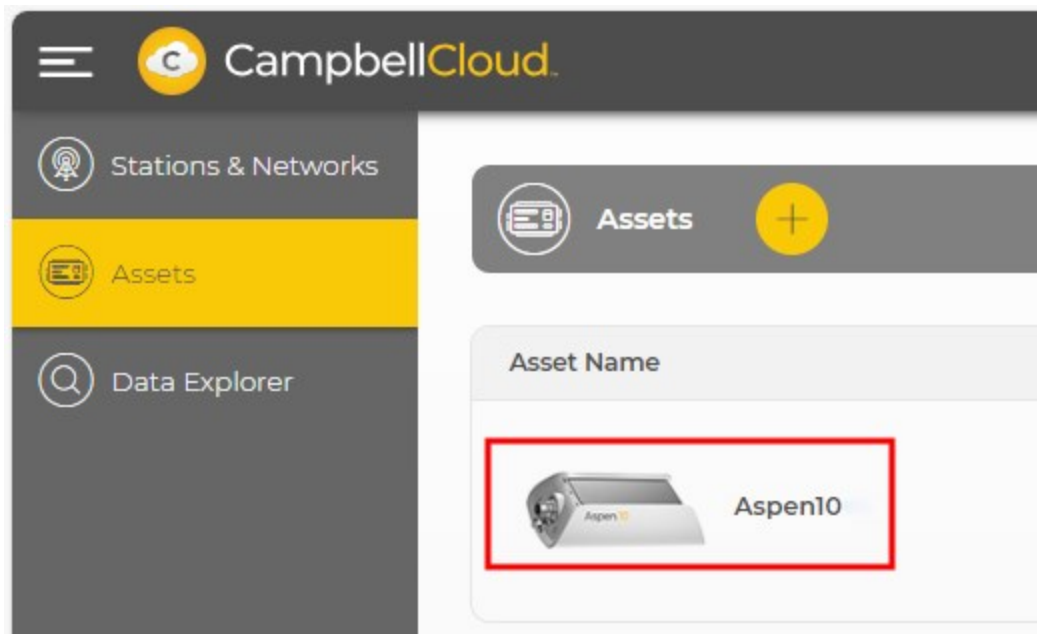
NOTE:

Changes made to an asset affect all users who have access to that asset.

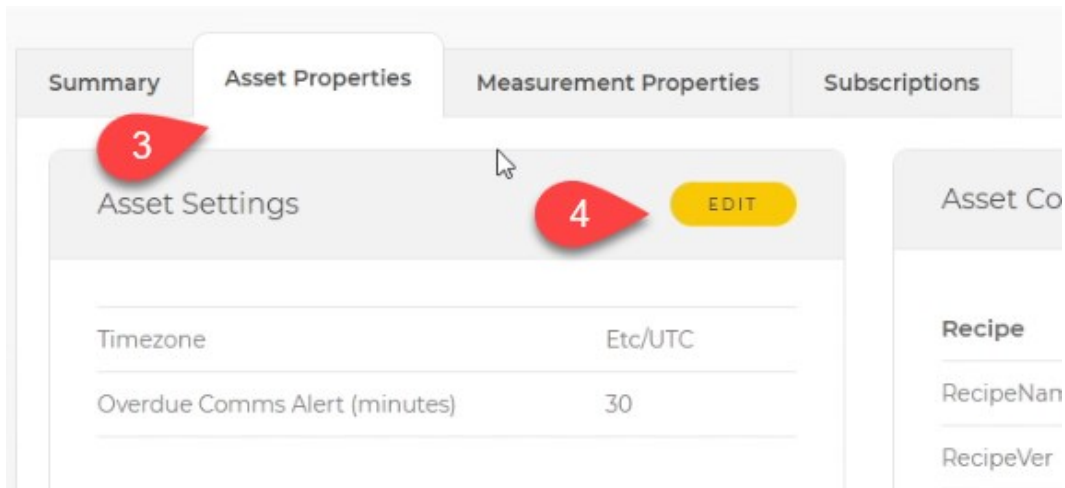
1. On the CampbellCloud home screen, select **Assets** from the application menu.



2. Select the asset for which you need to modify the overdue communications alert time.

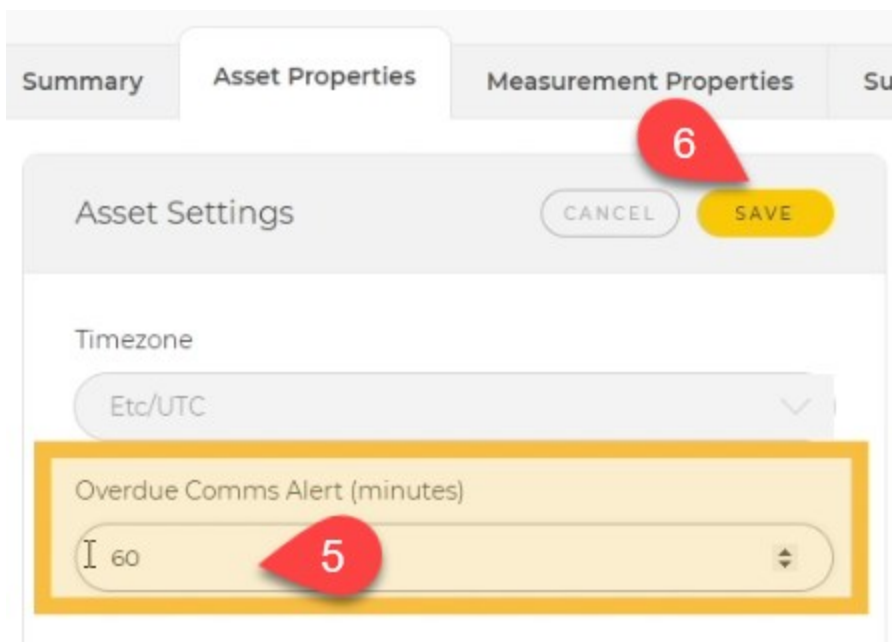


3. Select **Asset Properties**.




4. Click **EDIT** next to **Asset Settings**.

5. Change the **Overdue Comms Alert** to an appropriate amount of time to pass before reporting the station comms as overdue.



6. Click **SAVE** to save the new setting.

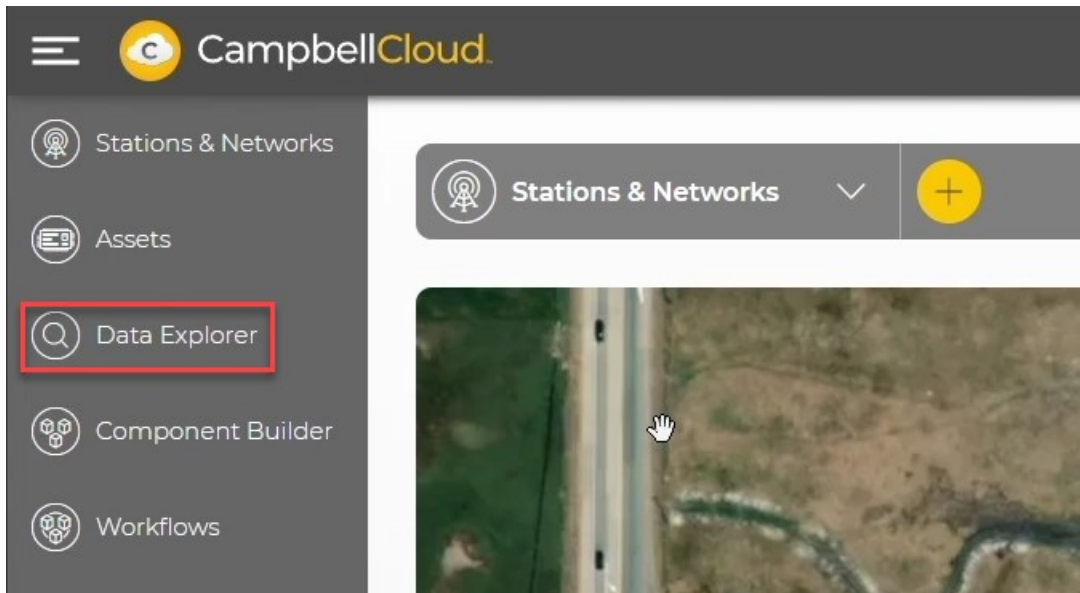
7. All data sources associated with a station have individual **Overdue Comms Alert** times. CampbellCloud will issue an overdue comms alert for the worst-case status. For example, if a station has two data-source assets, and one of these assets has a communications status of **On schedule**, and the other has a communications status of **Overdue**, **Overdue** will be shown at the station level.

For more information on changing the overdue comms alert time, watch an instructional video at: <https://www.campbellsci.com/videos/cloud05> .

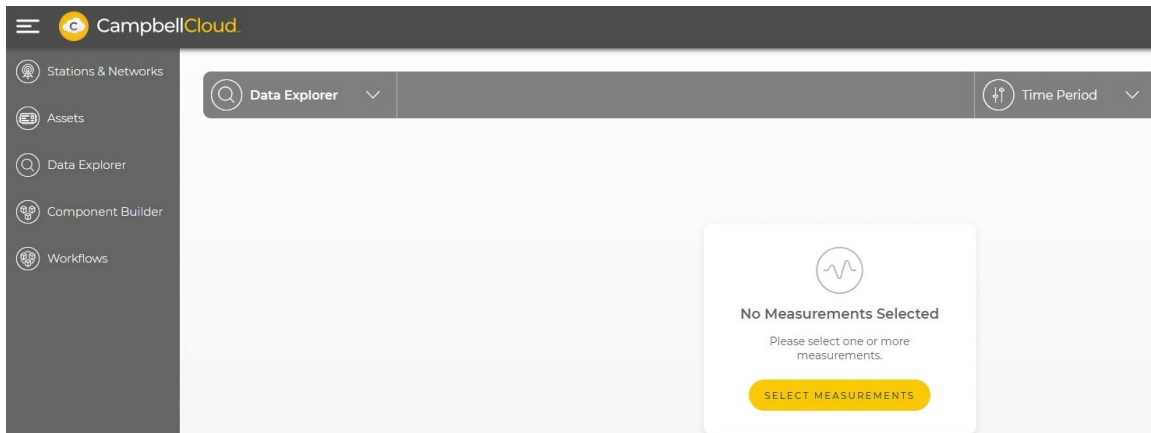
6.6 Viewing historical data using Data Explorer

Use the **Data Explorer** app in CampbellCloud to view historical data.

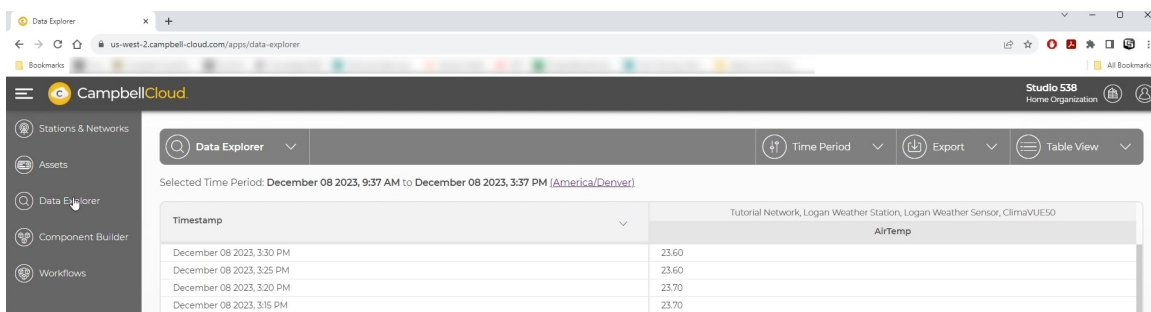
1. Click **Data Explorer** from the application menu.



- The display switches to **Data Explorer**. If a station has not previously been viewed, you will be prompted to **SELECT MEASUREMENTS**.



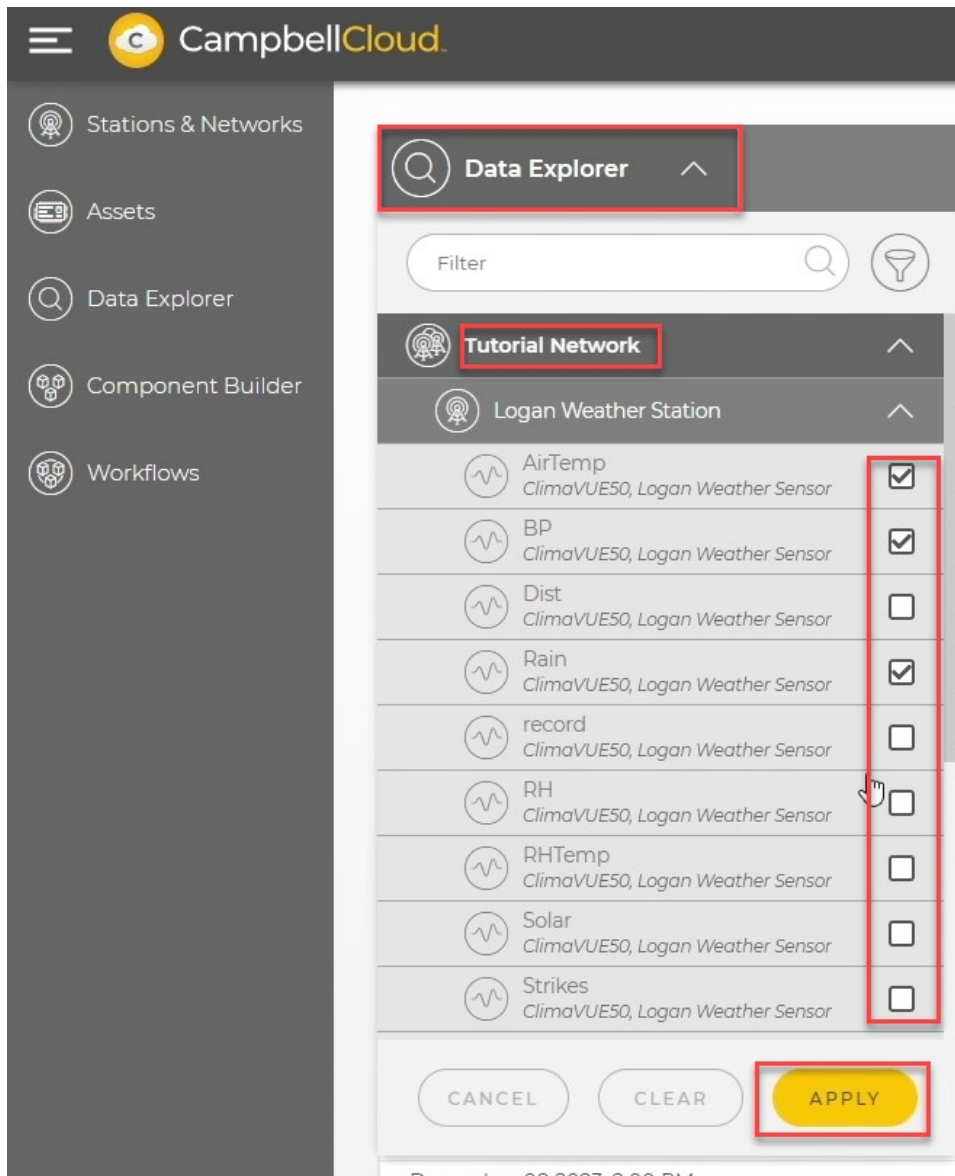
If you are viewing a station that has been previously viewed, the last measurements viewed from that station will be shown. In this example, the air temperature measurement from the ClimaVue™50 is displayed.



- To view additional measurements, click the dropdown menu for **Data Explorer**, then select the network and then the station. All the available measurements for the station are shown. Click the check box next to each measurement you wish to view and click **APPLY**.

NOTE:

Up to 15,000 data points per measurement can be displayed.



- By default, the most recent measurement is shown at the top. To show the oldest data first, click on the arrow next to **Timestamp**.

The screenshot shows the CampbellCloud interface. On the left is a navigation menu with options: Stations & Networks, Assets, Data Explorer, Component Builder, and Workflows. The main area is titled 'Data Explorer' and shows a selected time period: 'December 08 2023, 9:37 AM to December 08 2023, 3:37 PM (America/Denver)'. Below this is a table with columns for 'Timestamp', 'AirTemp', and 'BP'. A red box highlights an upward-pointing arrow icon in the 'Timestamp' column header, indicating the sort order.

Timestamp	Tutorial Network, Logan Weather Station, Logan Weather Sensor, ClimaVUE50	Tutorial Network, Logan Weather Station, Logan Weather Sensor, ClimaVUE50	Tutorial Network, Logan Weather Station, Logan Weather Sensor, ClimaVUE50
	AirTemp	BP	
December 08 2023, 9:40 AM	23.20	865.00	0.00
December 08 2023, 9:45 AM	23.20	865.10	0.00
December 08 2023, 9:50 AM	23.20	865.10	0.00
December 08 2023, 9:55 AM	23.30	865.20	0.00
December 08 2023, 10:00 AM	23.20	865.30	0.00
December 08 2023, 10:05 AM	23.20	865.40	0.00

- To switch from **Table** to **Chart** or **Map** view, click the down arrow next to your current view and select a different option.

The screenshot shows the CampbellCloud interface with a dropdown menu open for the view options. The menu includes 'Table View', 'Table', 'Chart', and 'Map'. A red box highlights the dropdown menu. The background shows a table with columns for 'AirTemp', 'RHTemp', and 'WindDir'.

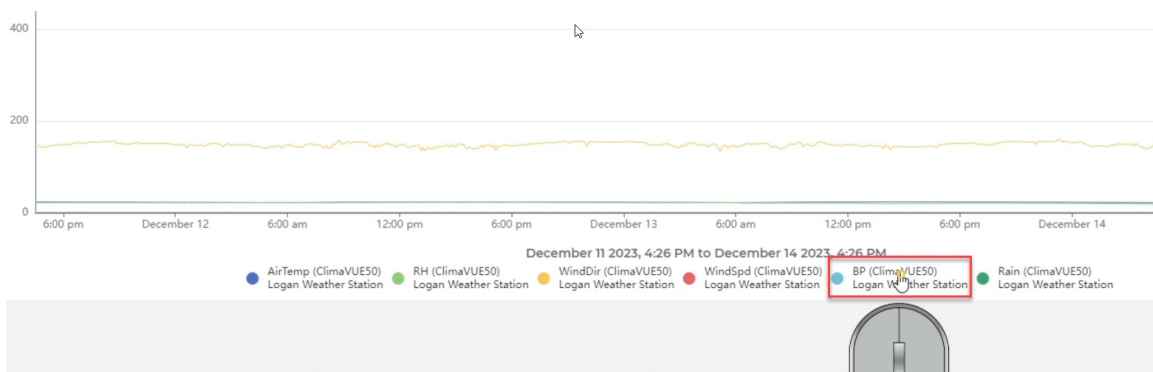
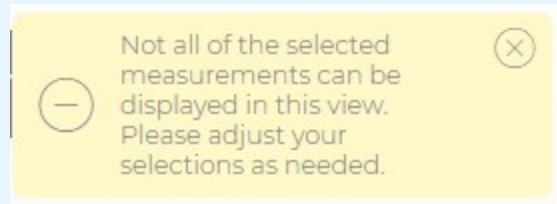
Timestamp	Tutorial Network, Test Station, Aspen 10, ClimaVUE50	Tutorial Network, Test Station, Aspen 10, ClimaVUE50	Tutorial Network, Test Station, Aspen 10, ClimaVUE50
	AirTemp	RHTemp	WindDir

6. In **Chart** view, clicking a measurement along the bottom will toggle that measurement on and off.

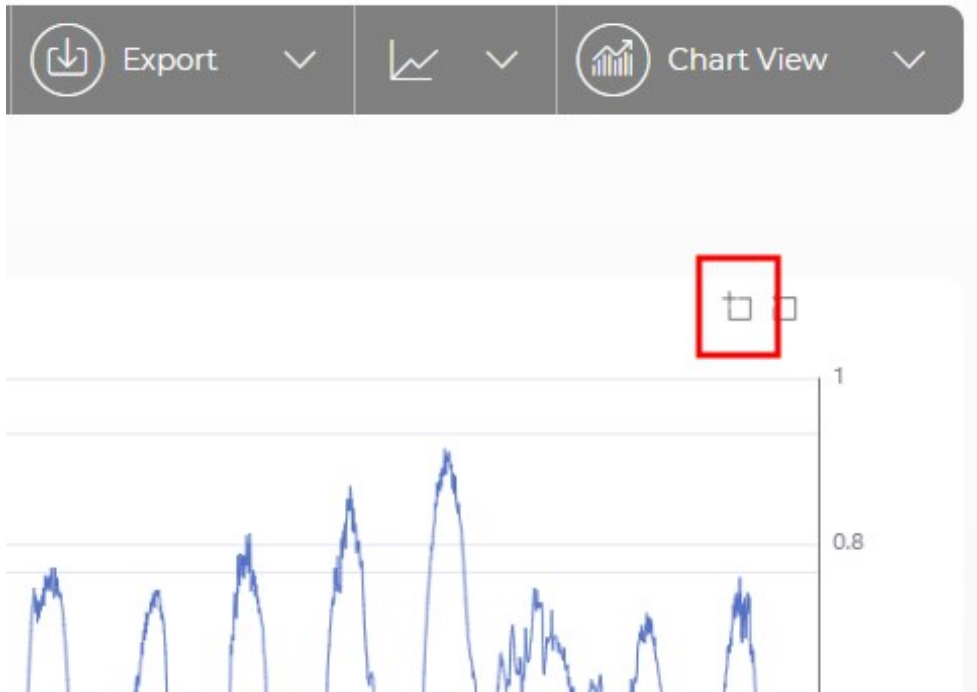
NOTE:

When units are assigned to measurements, they are displayed on the left and right axes. Only measurements with those specific units are charted at one time. For example, temperatures in °C and relative humidity in % can be displayed simultaneously. However, if rain in mm was selected, it would not be charted.

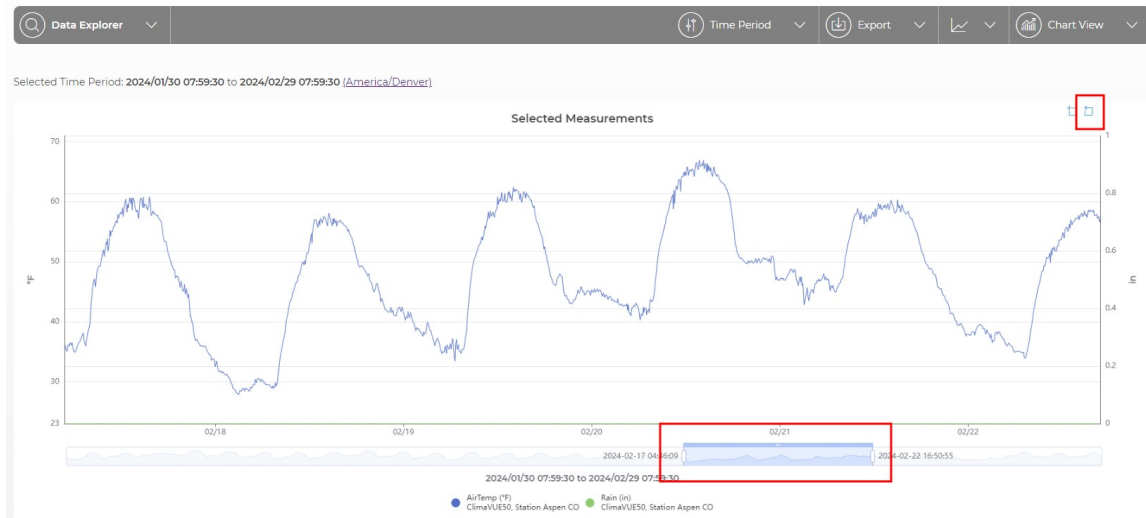
You may see the following error:



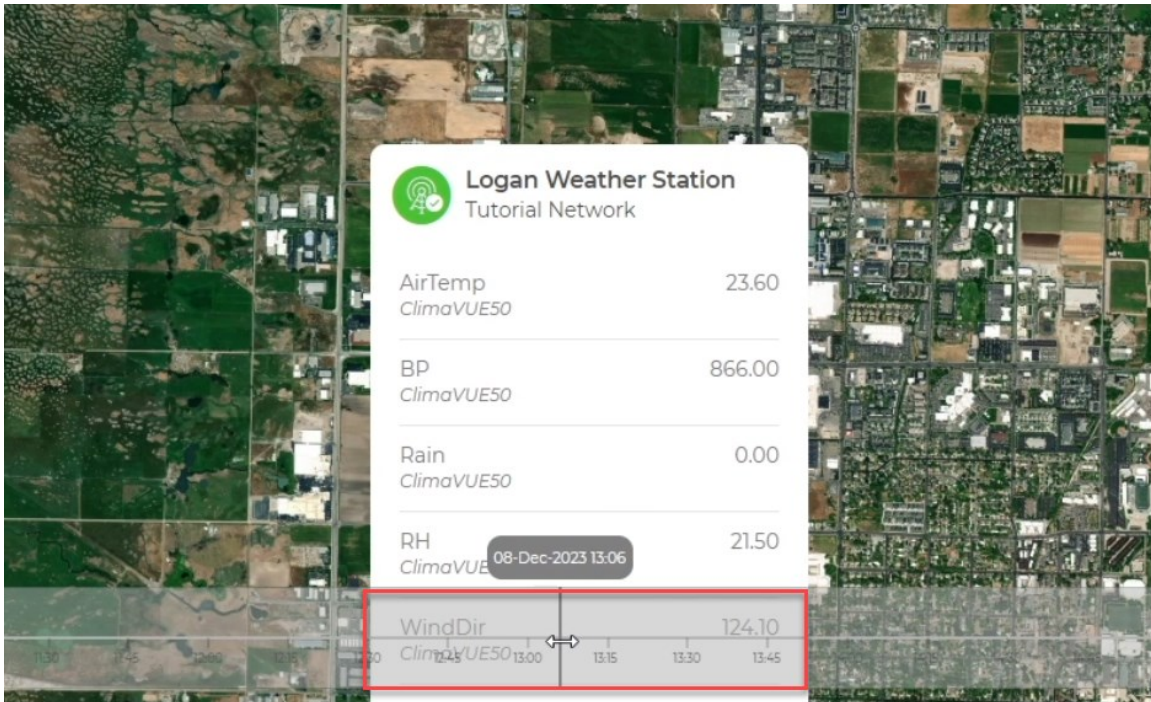
- Zoom in on specific data in **Chart** view by toggling the **Zoom** feature then using your mouse to select the specific time period.



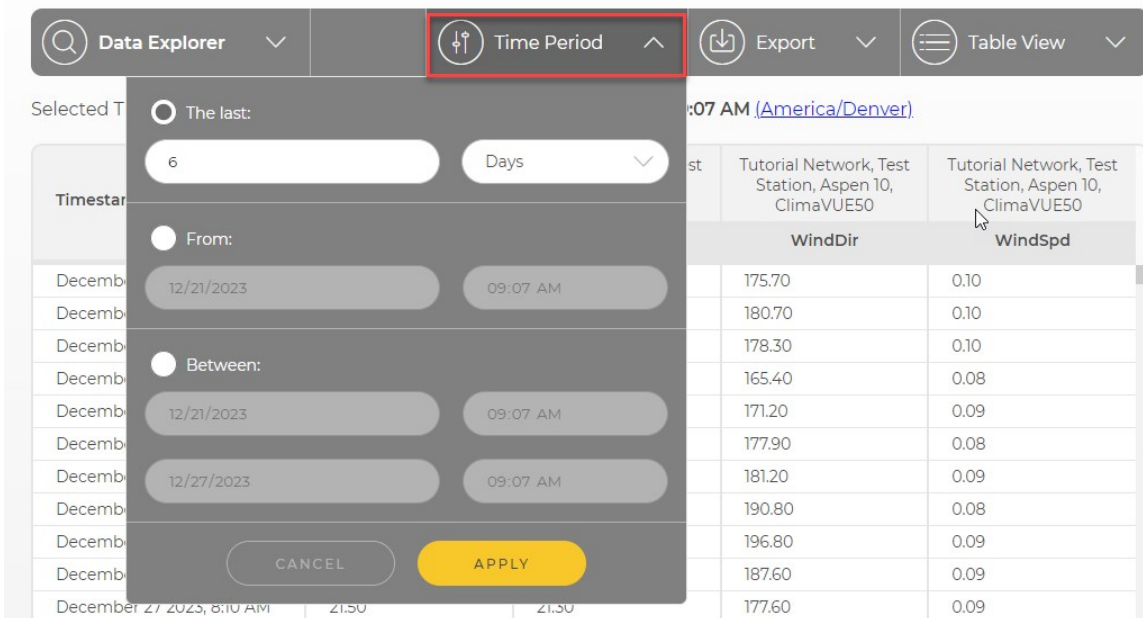
- Once zoomed in, drag the scroll bar at the bottom to view other locations of the graph at the current zoom level. Use **Zoom Reset** to return to previous zoom levels.



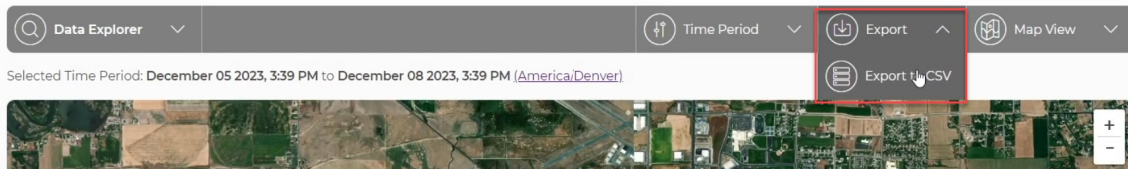
9. A slider bar along the bottom of the **Map** view allows scrolling through the data to show the measurements at different times.




10. Menus along the top of the screen also allow selection of the **Time Period** being displayed.



11. There is also an option to **Export** the data as a comma-separated values (CSV) file for further data processing.



For more information on viewing historical data using Data Explorer, watch an instructional video at: <https://www.campbellsci.com/videos/cloud15> .

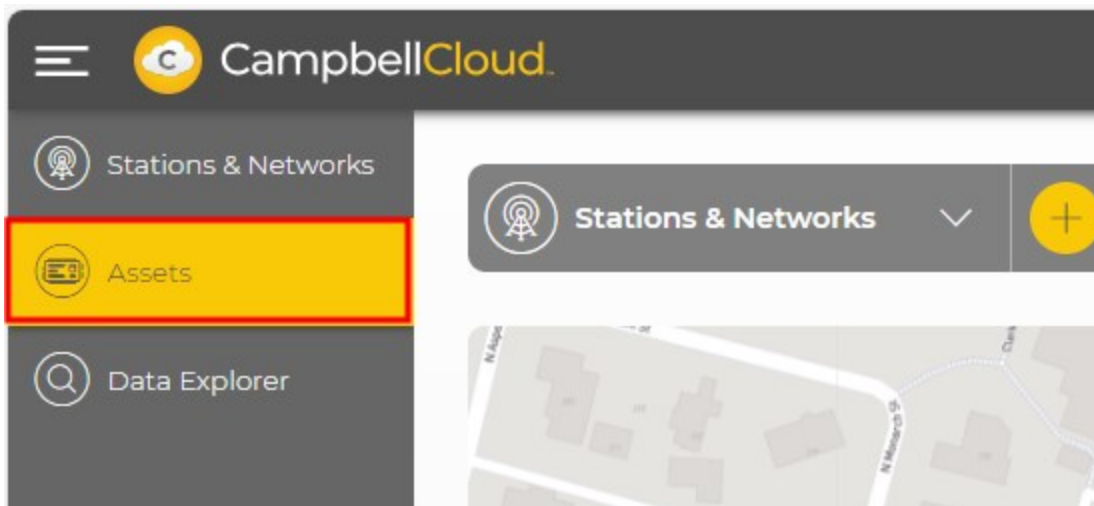
6.7 Viewing status information

The Status table contains data about the health of an asset including battery and cellular information. This information can be viewed in several Cloud apps.

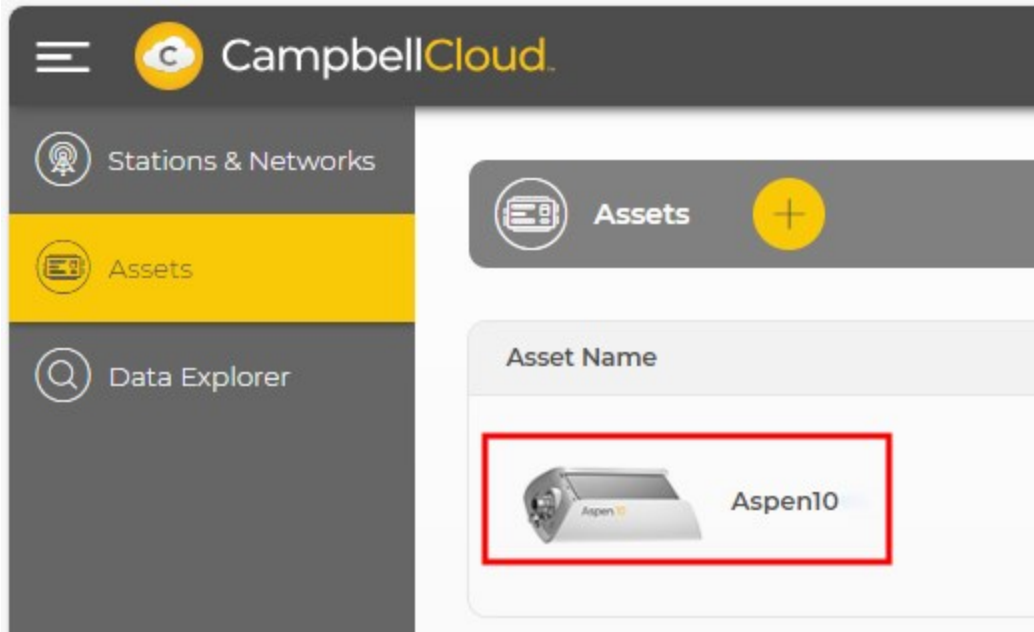
6.7.1 Viewing status information in Assets summary

Status table information can be displayed in the **Assets** app.

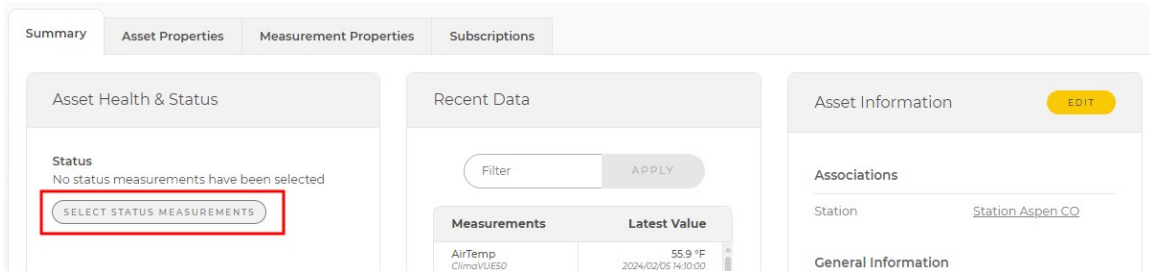
1. Select **Assets** from the applications menu.



2. Select the asset.



3. On the **Summary** tab, the first column is labeled **Asset Health and Status**. Currently, no status measurements are being displayed. Click **SELECT STATUS MEASUREMENTS**.



4. Every field in the status table is shown. Select the fields you want to have displayed on the summary tab by clicking the box to the left of each measurement. Click **UPDATE**.

The screenshot shows a web interface for configuring asset status measurements. At the top, there are three tabs: 'Summary' (selected), 'Asset Properties', and 'Measurement Properties'. Below the tabs is a section titled 'Asset Health & Status'. Underneath, there is a 'Status' section with the instruction 'Select one or more measurements to display.' A search box is provided. Below the search box is a list of measurements with checkboxes:

Measurement	Selected
CellOperator	<input type="checkbox"/>
CellSigQuality	<input checked="" type="checkbox"/>
CellSigStrength	<input checked="" type="checkbox"/>
GNSSNumSat	<input type="checkbox"/>
MqttSuccessRate	<input type="checkbox"/>

At the bottom of the list, there are two buttons: 'CANCEL' and 'UPDATE'.

5. The selected status measurements are shown. Add or remove status measurements at any time by clicking **SELECT STATUS MEASUREMENTS** again.

Asset Health and Status

Status

Timestamp: December 08 2023, 10:30 AM

BattCharge: 0.00

BattStateOfCharge: 94.00

BattVoltage: 3.32

CellOperator: Verizon Wireless

CellSigStrength: -73.00

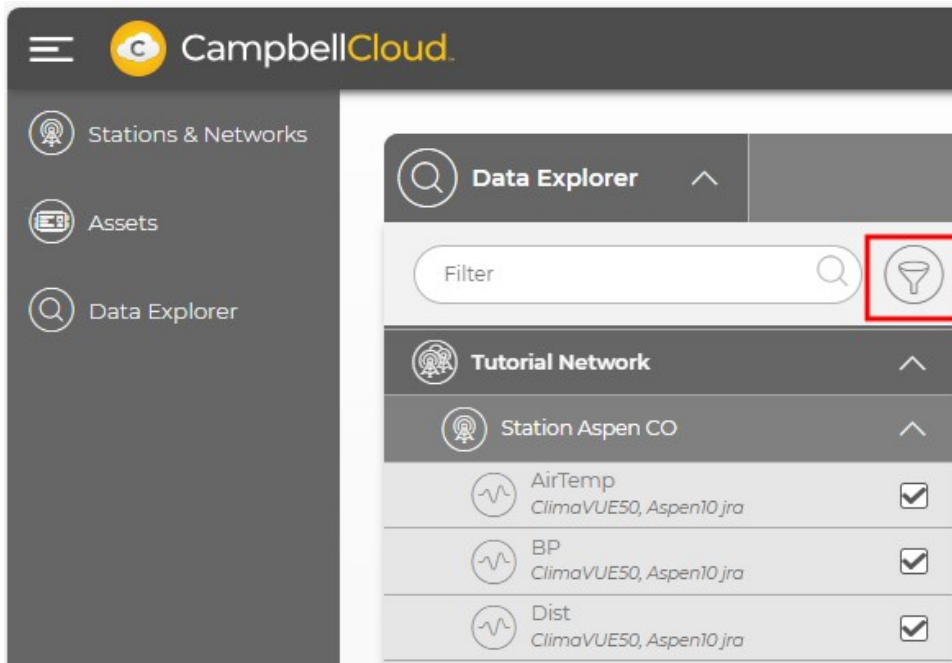
SELECT STATUS MEASUREMENTS



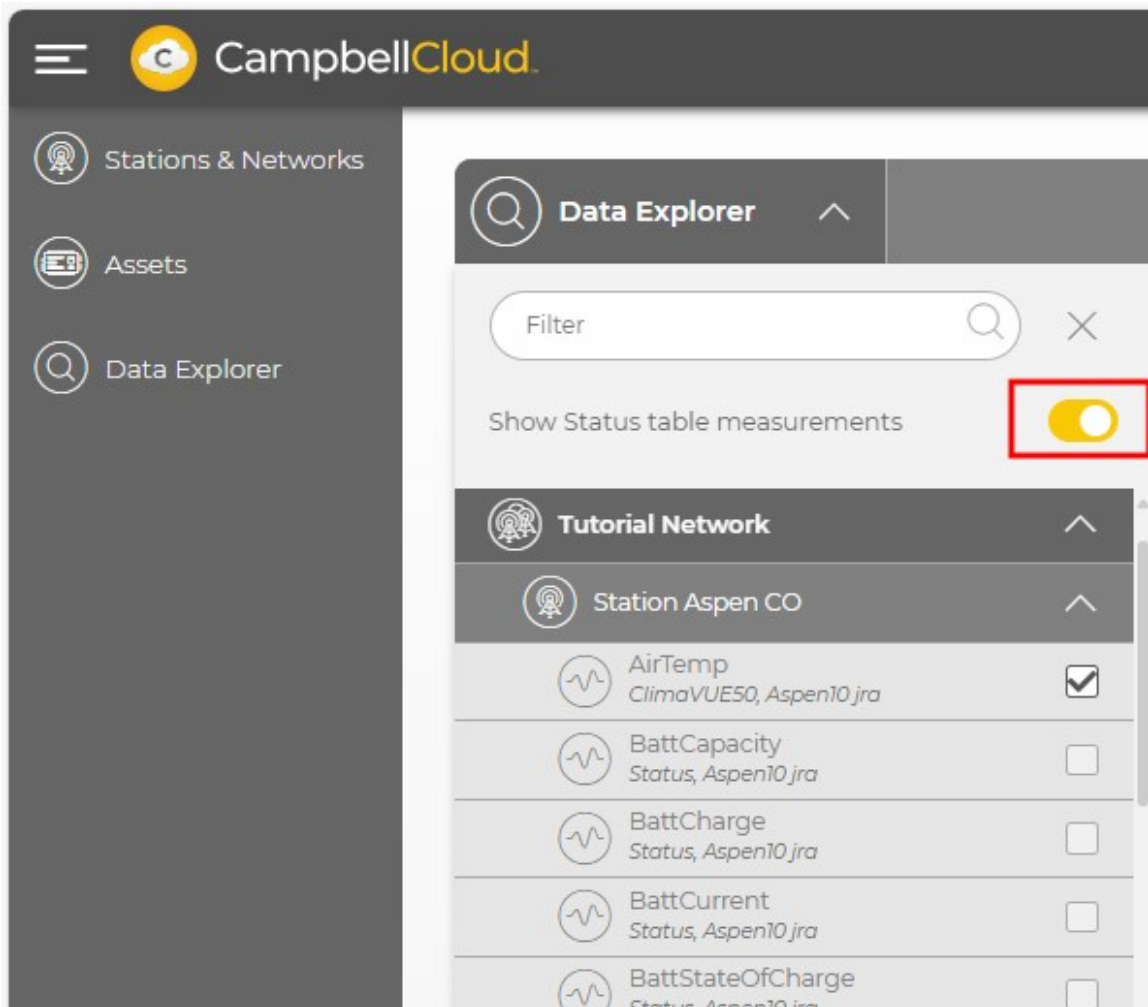
6.7.2 Viewing status information in Data Explorer

Status table information can also be displayed in Data Explorer.

1. Select **Data Explorer** from the applications menu and then select the network and station to display. In this case, *Tutorial Network*, followed by *Station Aspen CO*. To view Status data, click the funnel next to the network name.



2. Click the toggle switch next to **Show Status table measurements** to enable viewing Status measurements. A yellow switch indicates that Status table measurements are included in the list. Select which Status table measurements to display by clicking the check box next to the fields you want to view.



NOTE:
Up to ten sensor and status measurements at a time may be displayed in Data Explorer.

3. Click **APPLY**.

- In a **Data Explorer** table, columns for the Status table information are added to the right of sensor measurements.

The screenshot shows the Data Explorer interface with a table view. The table has columns for sensor measurements (Rain, RH, WindDir, WindSpd, BattCapacity, BattCharge, BattCurrent, BattStateOfCharge) and status information (Status). The Status column is highlighted with a red box. The table data is as follows:

Timestamp	Rain	RH	WindDir	WindSpd	BattCapacity	BattCharge	BattCurrent	BattStateOfCharge	Status
December 18 2023, 4:10 PM	-	-	-	-	5.52	1.02	0.27	82.00	-
December 18 2023, 4:10 PM	.00	19.00	142.80	0.08	-	-	-	-	-
December 18 2023, 4:05 PM	.00	18.80	147.80	0.08	-	-	-	-	-

NOTE:

Status measurements are often taken at different times than sensor measurements. In Table view you will notice what appear to be duplicate timestamps and missing measurements. These are neither; it is the nature of showing two time intervals in the same table.

- Toggle **Show status table measurements** again to remove Status table measurements from table view.

6. FAQs

Frequently asked questions

Is there an API?

CampbellCloud can be accessed through API calls. For more information see: <https://campbell-cloud.com/api/v1/docs/>

Is there a complete list of measurement classifications and subclassifications?

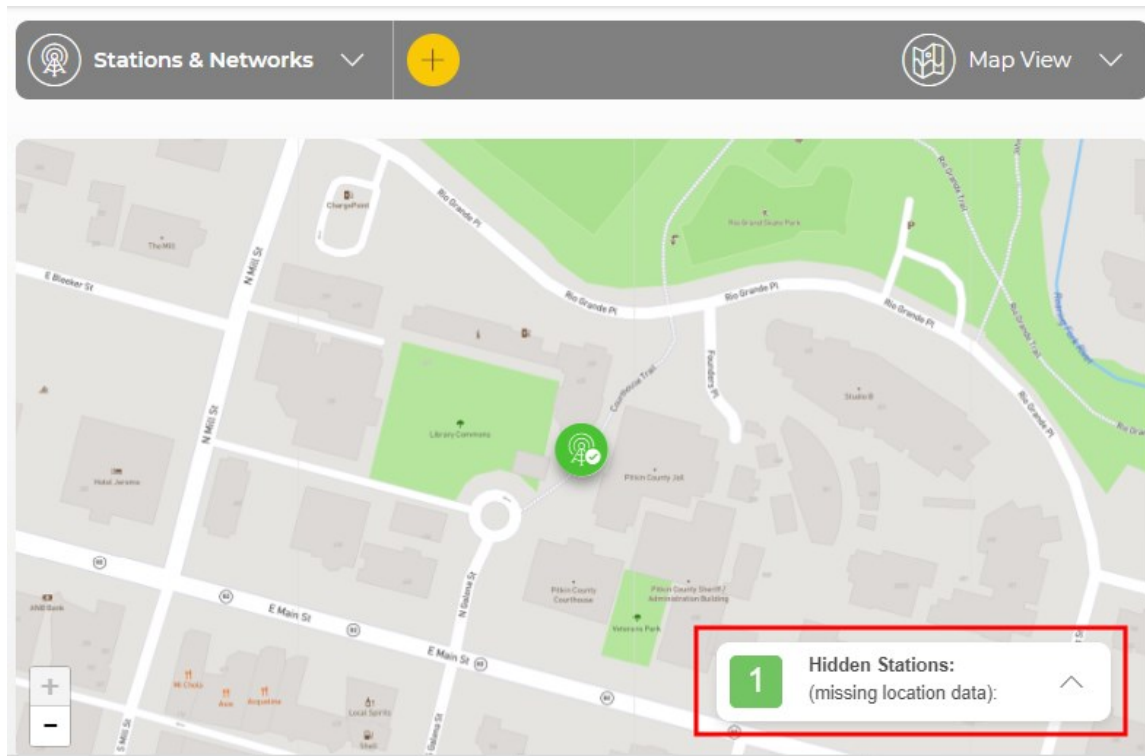
See: <https://campbell-cloud.com/classifications>

What is a hidden station?

Stations without location information will appear under **Hidden Stations** on the network map. See [Adding a station to a network](#) for more information.

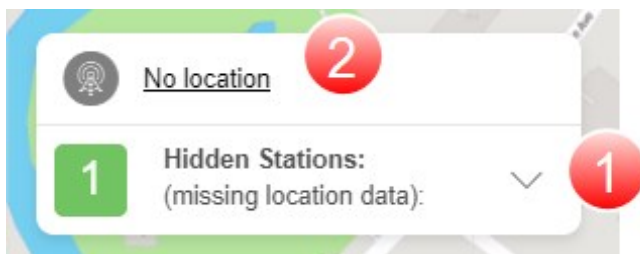
Why isn't my station showing up on the map?

Stations without location information will appear under **Hidden Stations** on the network map.

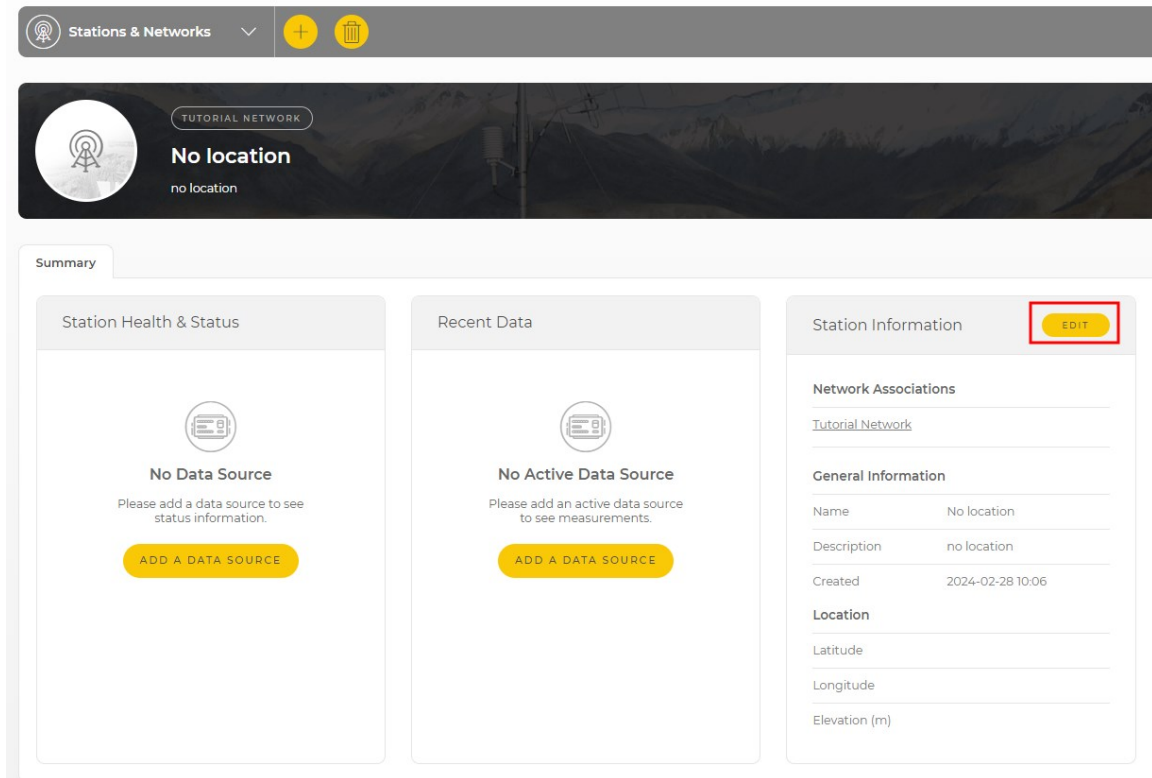


To add location information follow these steps:

1. Click the arrow to display stations without locations.
2. Select a station to edit. It is called *No location* in this example.



3. Click **EDIT**.



4. Enter the Station **Latitude**, **Longitude**, and **Elevation (m)**.
5. **SAVE** your changes.

See [Adding a station to a network](#) for more information.

7. Glossary

A

administrator

Administrators have access to all functionality across the range of applications in CampbellCloud. By default, an Owners security group is created with a new CampbellCloud Organization account. Users within the Owners group have all permissions enabled.

API

Application Programming Interface

application

Also called app for short. A group of functions for related tasks.

asset

Primarily this is a data source such as a data logger or Aspen 10. It can also be another piece of hardware.

C

CampbellGo

A companion mobile field app for CampbellCloud, available for iOS and Android

D

data source

An asset that sends data to CampbellCloud. This includes data loggers and the Aspen 10 edge device.

H

Hidden station

Stations that are missing location data. They cannot be geo-located on a map.

N

network

A group of one or more stations.

NFC

Near field communications

O

onboard

A collective term for the tasks that have to complete successfully in order for a data source asset to be correctly configured and send data to CampbellCloud. These tasks may be automated or require manual user input depending on the data source type. For data logger data sources, these tasks include asset claiming, automated sensor identification, cellular communications registration, secure CampbellCloud communications, program retrieval, successful sensor measurement, and confirmation that CampbellCloud received data.

organization

An entity (individual, business, or group) that uses CampbellCloud services to manage a network of stations owned by the entity. Every user must be associated with an organization.

Q

QR code

Quick response barcode

R

recipe

A set of files that include the Aspen 10 program, settings and configuration for a specific sensor and application.

S

security group

An application used to control user access to applications and their associated permissions. Users can be in more than one security group.

station

A group of one or more assets

U

UID

Unique identifier

user

Individuals who have been added to an organization account. Users are assigned permissions via the Security Groups application.

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A worldwide network to help meet your needs



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