eagle.io documentation

2023

Bentley Systems, Incorporated

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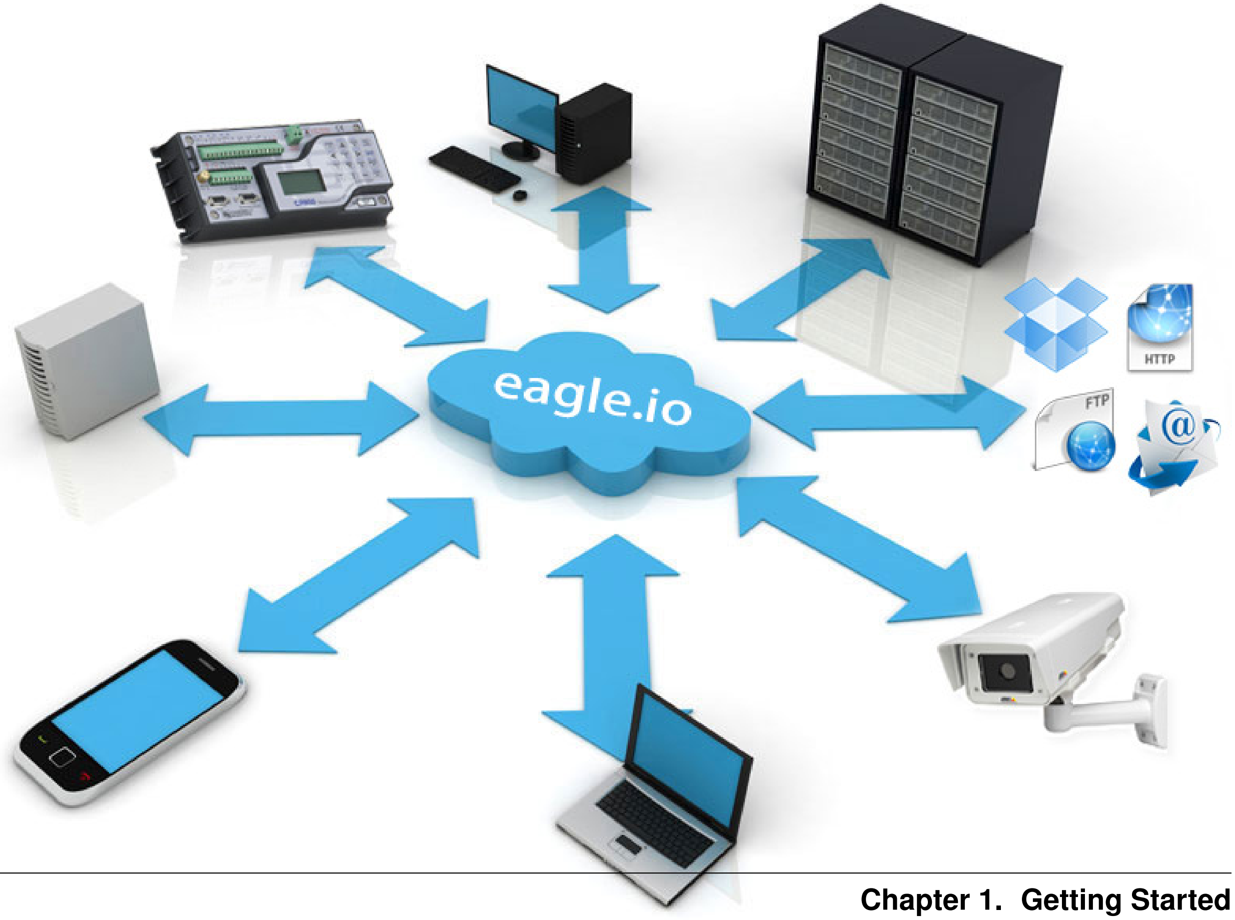
CHAPTER 1

Getting Started

1.1 Introducing eagle.io (https://eagle.io)

1.1.1 Connect, configure and control your monitoring fleet from the cloud



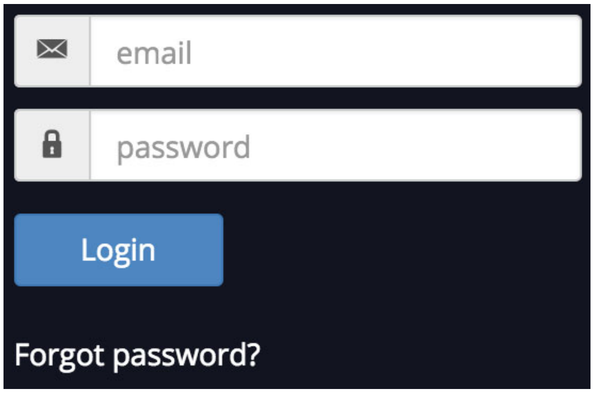
Introducing eagle.io (https://eagle.io), the secure, reliable, easy to use cloud-based data monitoring service. Whether you're working with simple data files or managing a fleet of *data loggers*, eagle.io has you covered.

With real-time communications, collaboration and instant updates built into the core eagle.io has everything you've always wanted and more. The lightning fast interface has been designed to work across all modern phones and computing devices with no software to install and no page reloads.

1.1.2 Log in to eagle.io

You will need a user profile to log in. This requires you to sign up (https://eagle.io/trial) for an account or receive a *Workspace Sharing* (page 220) invitation from a registered user.

Login form

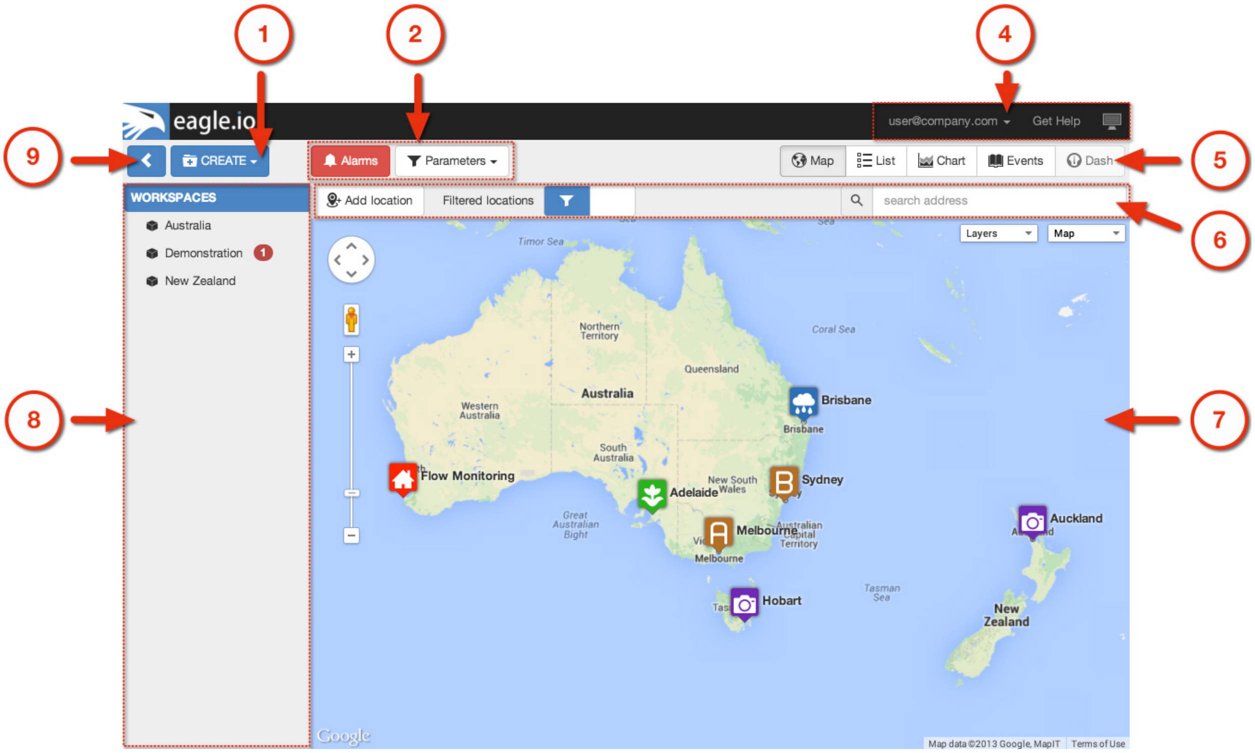


Enter your *email* address & *password* to login. If you have forgotten your password, simply click the *forgot password* link to reset it.

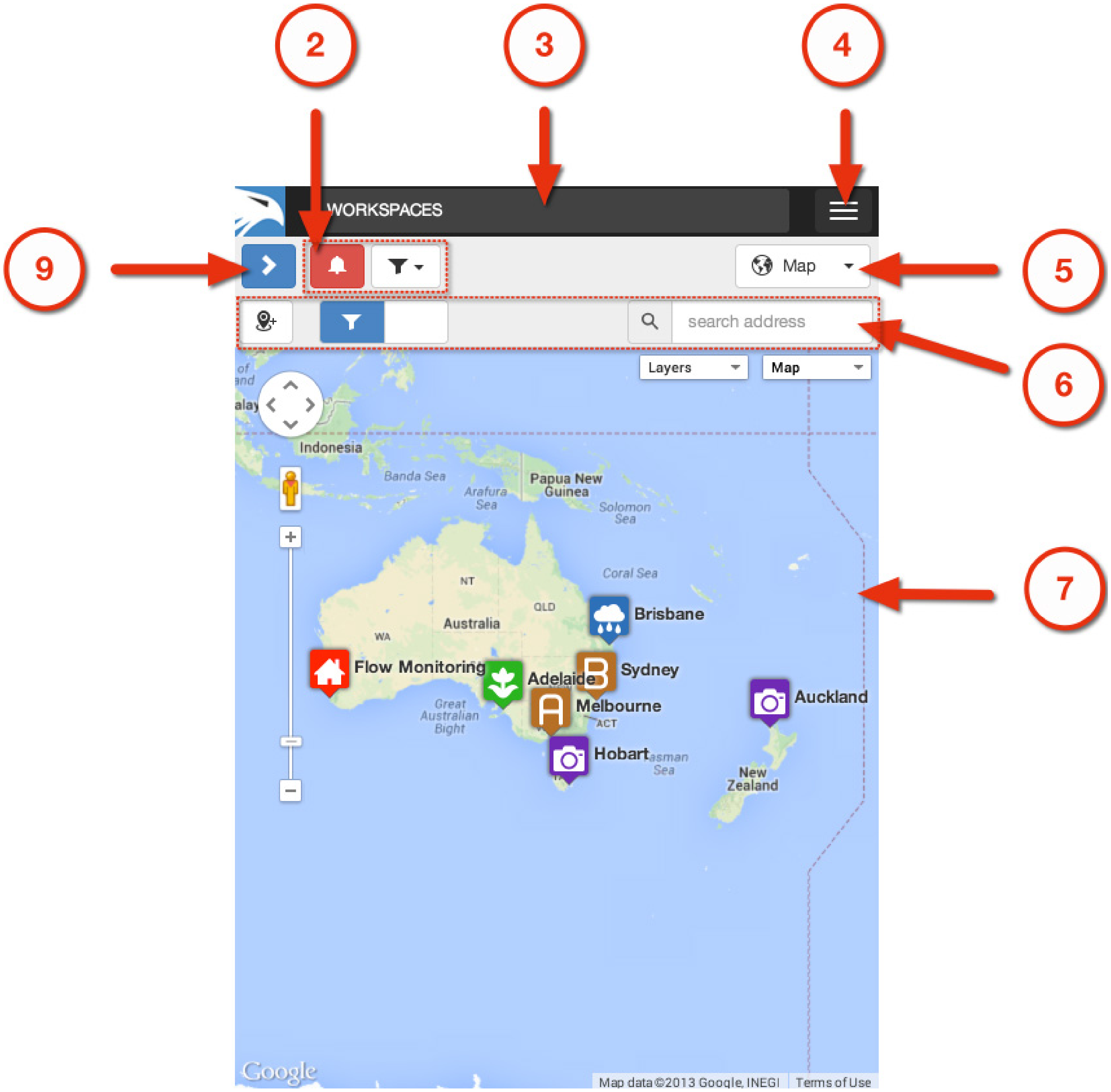
1.1.3 Layout and Navigation

The user interface is divided into sections which group similar functionality and content. The layout of these sections will vary depending on the screen size of your device including its orientation (portrait or landscape). The figures below highlight the Main features of the interface as displayed on different devices.

Desktop layout


1
2
4
9
5
6
8
7
eagle.io
CREATE
Alarms
Parameters
user@company.com
Get Help
Map
List
Chart
Events
Dash
WORKSPACES
Australia
Demonstration
1
New Zealand
Add location
Filtered locations
search address
Layers
Map
Flow Monitoring
Brisbane
Sydney
Adelaide
Melbourne
Hobart
Auckland
Map data ©2013 Google, MapIT
Terms of Use

Phone and Tablet layout


2
3
4
9
5
6
7
WORKSPACES
Map
search address
Layers
Map
Indonesia
Banda Sea
Arafura Sea
Papua New Guinea
Solomon Sea
Coral Sea
NT
QLD
WA
Australia
Brisbane
Flow Monitoring
Adelaide
Sydney
Melbourne
ACT
Auckland
Great Australian Bight
Hobart
Tasman Sea
New Zealand
Google
Map data ©2013 Google, INEGI
Terms of Use

Main features

1. Create Menu
2. Filters
3. Status Bar
4. User Menu, Messages, Help and Fullscreen mode
5. View Selector
6. Toolbar
7. Content Area
8. Workspaces Tree

9. Workspaces Tree show/hide button

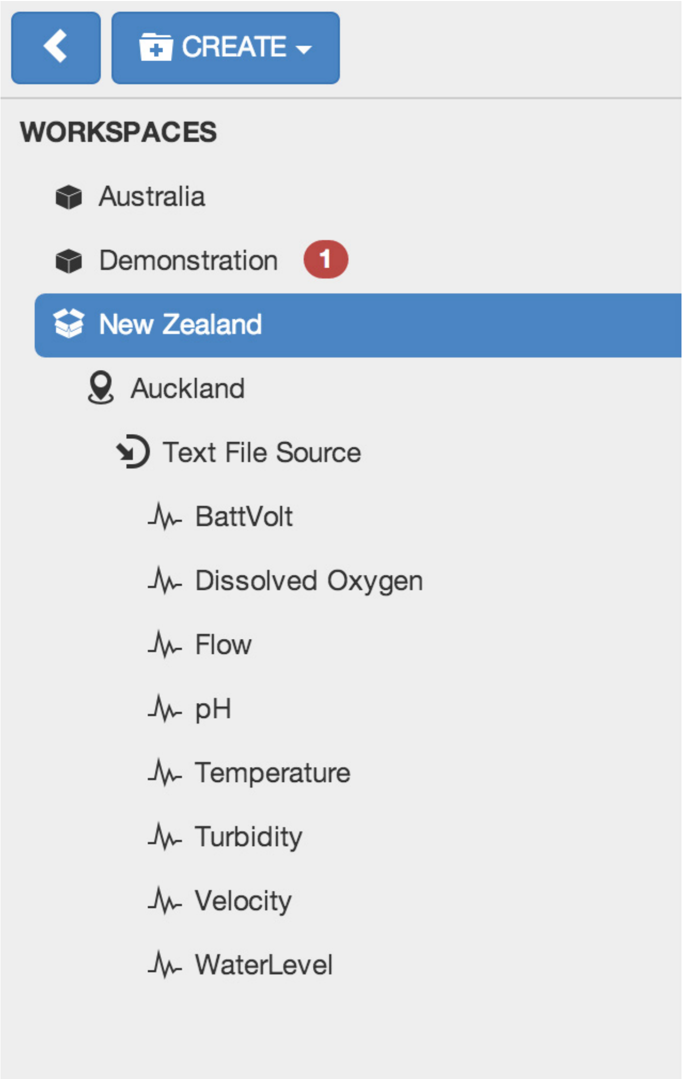
Selecting Nodes in the Workspaces Tree

The Workspaces Tree displays all the Workspaces and associated content you have access to. Each item in this menu is called a Node. The highlighted item is referred to as the Selected Node.

Most Nodes are hierarchical and may also contain Nodes themselves. The *Workspaces* label is the best example of this as its referred to as the Base Node and contains all the Workspace Nodes.

If you have access to more than one Workspace you may notice some of the Workspaces are *GRAYED* out when you first login. Select the Workspace to load its assets.

Example Workspaces Tree showing hierarchy


CREATE
WORKSPACES
Australia
Demonstration
1
New Zealand
Auckland
Text File Source
BattVolt
Dissolved Oxygen
Flow
pH
Temperature
Turbidity
Velocity
WaterLevel

Change the Selected Node by clicking or touching on another Node. You will notice that container Nodes will automatically expand and collapse to show and hide their contained Nodes on selection.

Selecting a Node focuses your View. Only the selected Node and the Nodes it contains will be available in the Content Area.

You can easily show all content by selecting the Base Node.

Note: The Workspaces Tree will be hidden by default when displayed on small screens. You can see the Selected Node displayed in the Status Bar. Double-click or Double-tap the status bar to quickly reveal the Workspaces Tree. Alternatively you can use the Workspaces Tree show/hide button.

Most common types of Nodes:

Workspace Workspaces are special container Nodes that can be shared with other users. All other Nodes are created within the Workspace. Workspaces can only be created by the Account Owner or Administrators.

Folder Folders *(previously Groups)* are simple nodes that provide structure to your Workspaces. You may choose to group related content into folders by geography or related purpose. Folders can be created inside Workspaces, Locations and other Folders.

Location Locations are special containers used to associate data with a geographical location. Locations can be created inside Workspaces and Groups.

Chart Create various types of charts with customized functionality and appearance including historic charts with multiple y-axes and wind rose charts with configurable ranges.

Dashboard Dashboards allow users to create customized views of their data in visually appealing layouts using animated gauges, charts, lists, maps and other graphical controls.

Data Source Data Sources automatically acquire or receive timeseries data using a variety of different transport options. Connect to a *data logger* or collect data from files. Data Sources can be created inside Locations only.

Parameter Parameters are managed by and contained within Data Sources. Parameters store the individual timeseries acquired by its Data Source. There are a few different types of parameters but essentially they support Monitoring or Controlling of values.

Review the full list of *Node types* (page 49).

Changing the View

The Selected Node (including any Nodes it contains) can be displayed in a variety of Views. Use the View Selector to change the View. You will notice the Content Area and Toolbar change.

Content Views

Map Map provides a fully featured interactive interface for displaying location based data.

List Intuitive categorised lists provide quick access to the data for your most important Nodes: Locations, Sources, Parameters, Attachments.

Chart Use the Chart View for reviewing your timeseries data in highly interactive charts. Choose to group data on charts by Location or Parameter type. You can also setup custom charts for full customization over functionality and appearance.

Events Every interaction (user and system generated) is recorded in the Events log. Use the Events View to quickly audit the system, a user or history of alarms.

Dash The Dash is for viewing the customized graphical dashboards and also provides an overview of all dashboard nodes available based on the Selected Node in the Workspaces Tree.

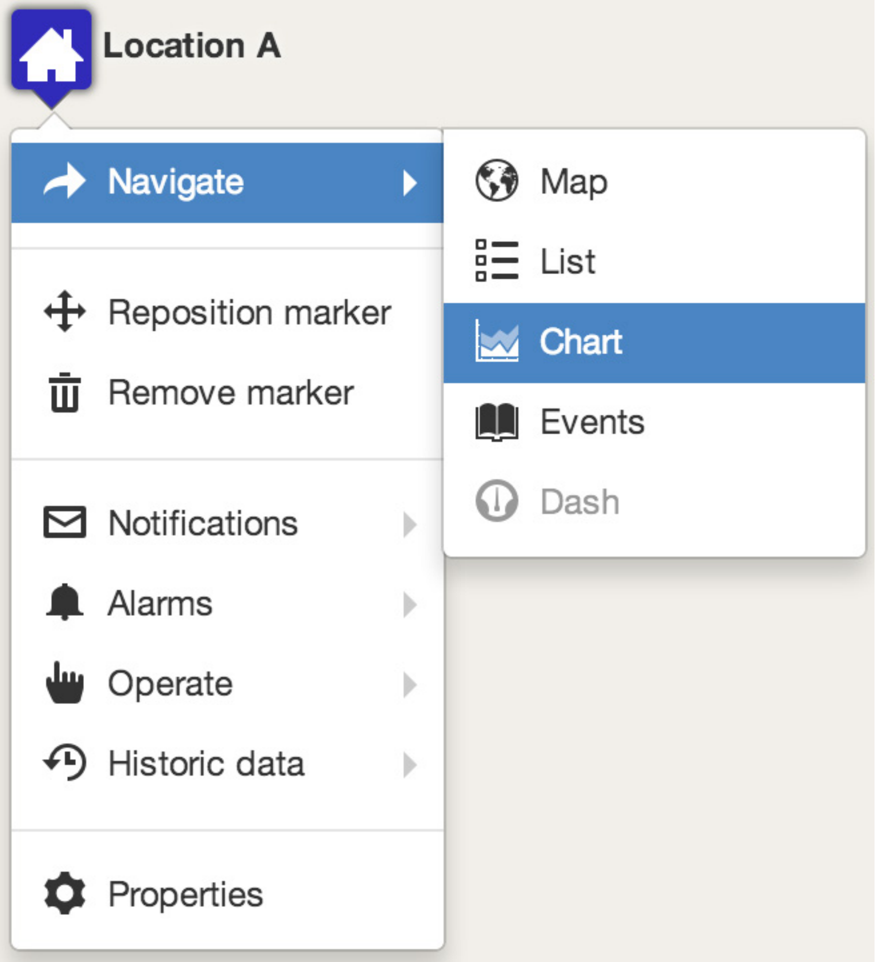
User Menu

The User Menu provides quick access to the User Profile, Account Settings, Log out and Help.

Context Menus

Context menus are built into the interface and provide quick access to navigation, operations and configuration for their associated elements. Right-click or long-press on a Node in the Workspaces Tree or an item in the Content Area (ie. Map marker, List item, etc.) to display it's associated context menu.

Example Context menu shown for Map marker


Location A
Navigate
Reposition marker
Remove marker
Notifications
Alarms
Operate
Historic data
Properties
Map
List
Chart
Events
Dash

Note: Context menus display only the items relevant to the associated Node or content the menu is displayed for. Context menu items are also dependant on User permissions. If there are no available options then no context menu will be displayed.

Click, Touch, Tap, What?

The user interface has been designed to work seemlessly across all modern computing devices including desktop computers, tablets and phones which means it has built-in support for Touch devices.

Throughout this documentation you will notice the following terms:

Click, Touch, Tap Use a mouse to select an item or touch the screen (touch device only) momentarily where the item is displayed.

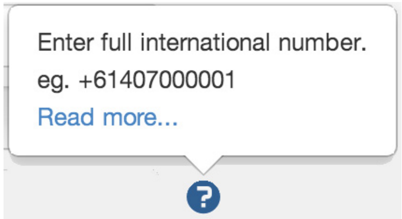
Double-click, Double-tap Click the item twice in quick succession with a mouse, or Tap the item twice with a touch device.

Right-click, Long-press Using a dual button mouse, use the alternate button to Click. When using a single button mouse or touch device you need to click (or touch) and hold without releasing for a few seconds.

1.1.4 Inline help

Help is available throughout the interface - wherever you see the help icon. You can hover, click or touch the help icon to show the help popup - many of which have quick links back to the relevant section in this documentation.

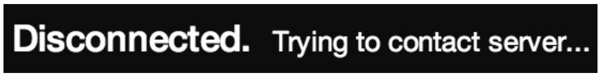
Inline help example



Enter full international number.
eg. +61407000001
Read more...

1.1.5 Offline use

An internet connection is required. If the connection to eagle.io has failed a disconnected notice will be displayed. Normal operation will resume once the connection has been re-established.



Disconnected. Trying to contact server...

Note: You may notice the app refresh after the connection is re-established after a long timeout or when updates have been released.

1.2 Tutorials

1.2.1 Basics of Navigation

Watch this tutorial at: https://www.youtube.com/watch?v=EiRFV6kzhSw

1.2.2 Create a Text File Source

Watch this tutorial at: https://www.youtube.com/watch?v=1TeD9AneNI8

1.2.3 Create a Dashboard

Watch this tutorial at: https://www.youtube.com/watch?v=2r6DazwRd6M

1.2.4 Chart Customization

Watch this tutorial at: https://www.youtube.com/watch?v=Q39nSTJfcKM

CHAPTER 2

Using eagle.io

Introductions to all the key parts of eagle.io (https://eagle.io) you'll need to know:

2.1 Workspaces Tree

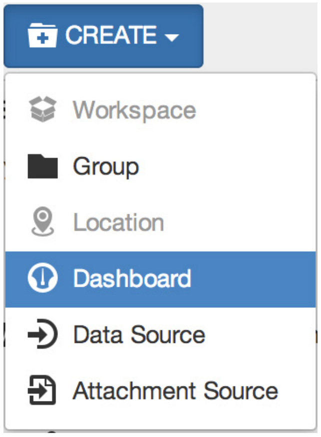
The Workspaces Tree is the place to go for organising, configuring and managing your Nodes. This sections provides an overview of the common Workspaces Tree functions. Depending on the Selected Node type and your security permissions, not all options may be available.

Note: Most operations require you to display the Context Menu. Right-click or long-press on a Node in the Workspace Menu to display its Context Menu.

2.1.1 Create

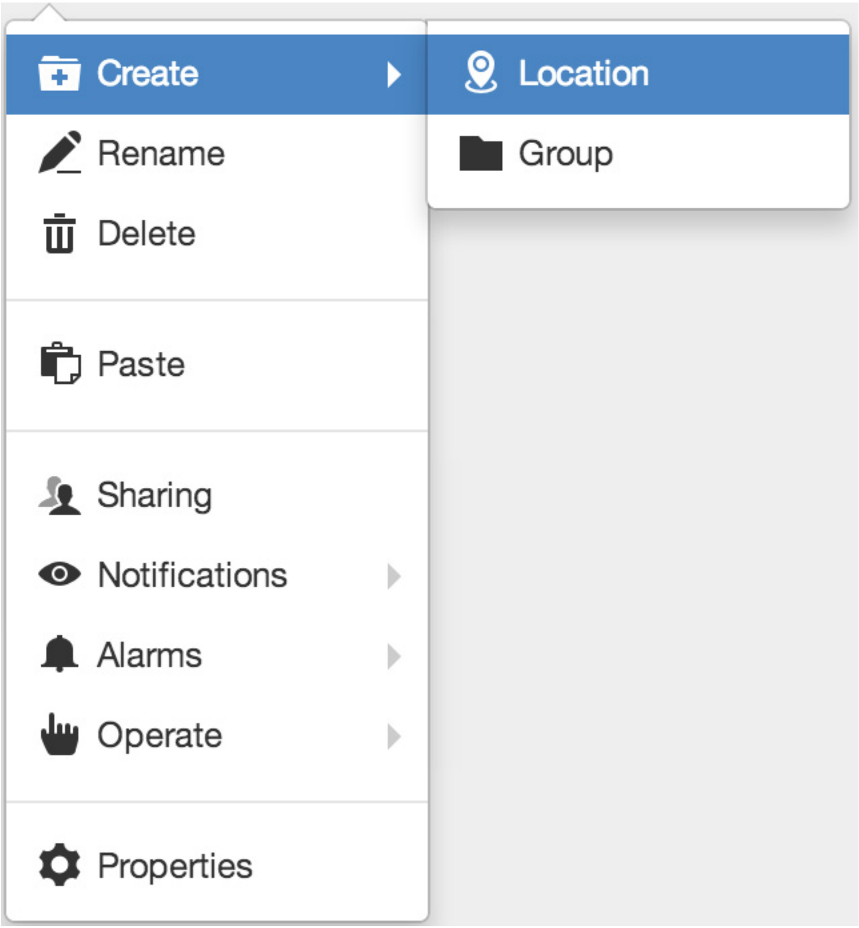
New Nodes can be created using the *Create Menu* or from the *Context Menu*.

Create Menu


CREATE
Workspace
Group
Location
Dashboard
Data Source
Attachment Source

The Create Menu displays a list of the types of Nodes that can be created inside the currently Selected Node. Items that are disabled can not be created inside the Selected Node - either a restriction on the type of Node or you do not have the required security permissions.

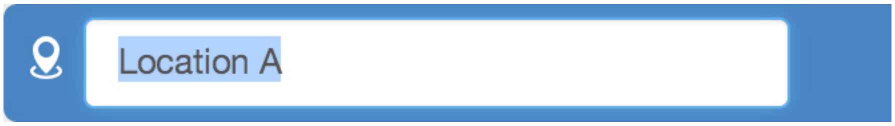
Create using Context Menu


Create
Rename
Delete
Paste
Sharing
Notifications
Alarms
Operate
Properties
Location
Group

The Context Menu has a Create submenu which offers the same options as the Create Menu.

2.1.2 Rename

Rename a Node from the context menu or press the *F2* key after selecting a Node.

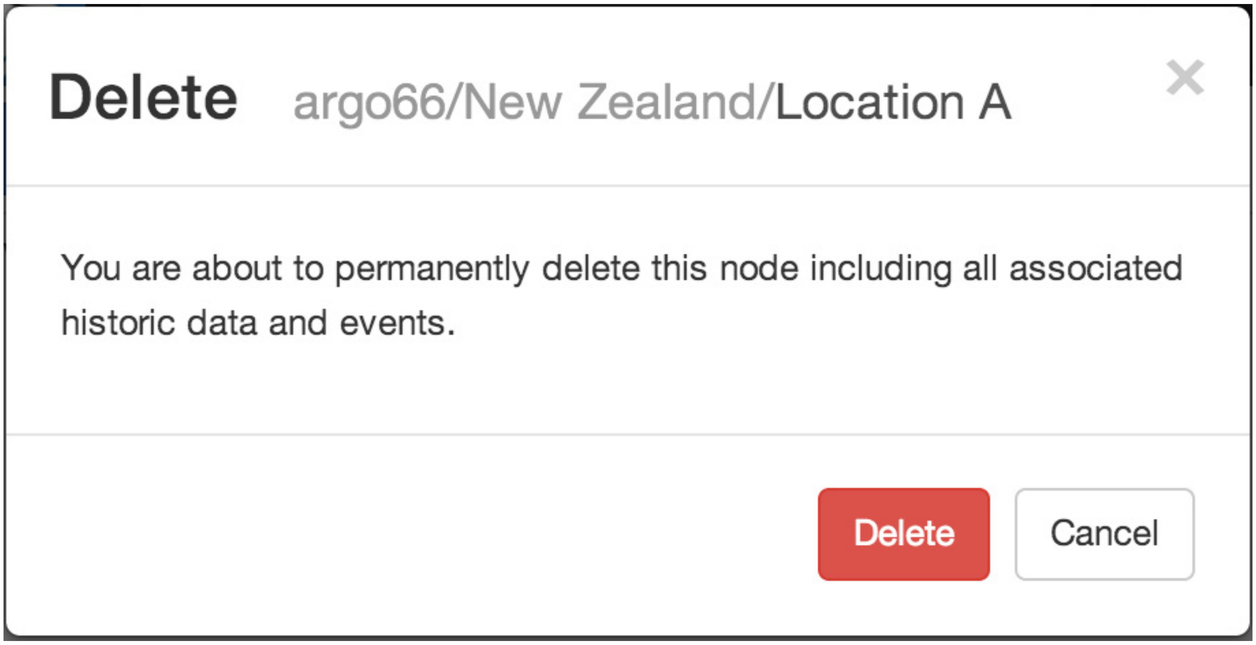


The Node will be selected and you can type in a new name and press enter/return or click anywhere outside the Node to apply.

Note: Nodes must be uniquely named within the current container Node and must not exceed 120 characters in length. Restricted characters include forward slash '/', underscore '_', semicolon ';' and curly braces '{' and '}'.

2.1.3 Delete

Permanently delete a Node using the Context menu or press the *delete* key after selecting the Node. A confirmation message will be displayed.



Delete argo66/New Zealand/Location A

You are about to permanently delete this node including all associated historic data and events.

Note: Deleting a Node will also delete any of the Nodes it contains including any associated historic data, events, attachments and configuration. This operation is NOT reversible.

2.1.4 Copy and Paste

Copy *(Ctrl+C)* and Paste *(Ctrl+V)* is the quickest and easiest way to duplicate a Node including all Nodes it contains. You must have configuration permission for the Node you intend to copy and the destination Node where you intend to paste.

Copy a Node

Paste a Node anywhere in the Workspaces Tree that accepts the copied Node type.

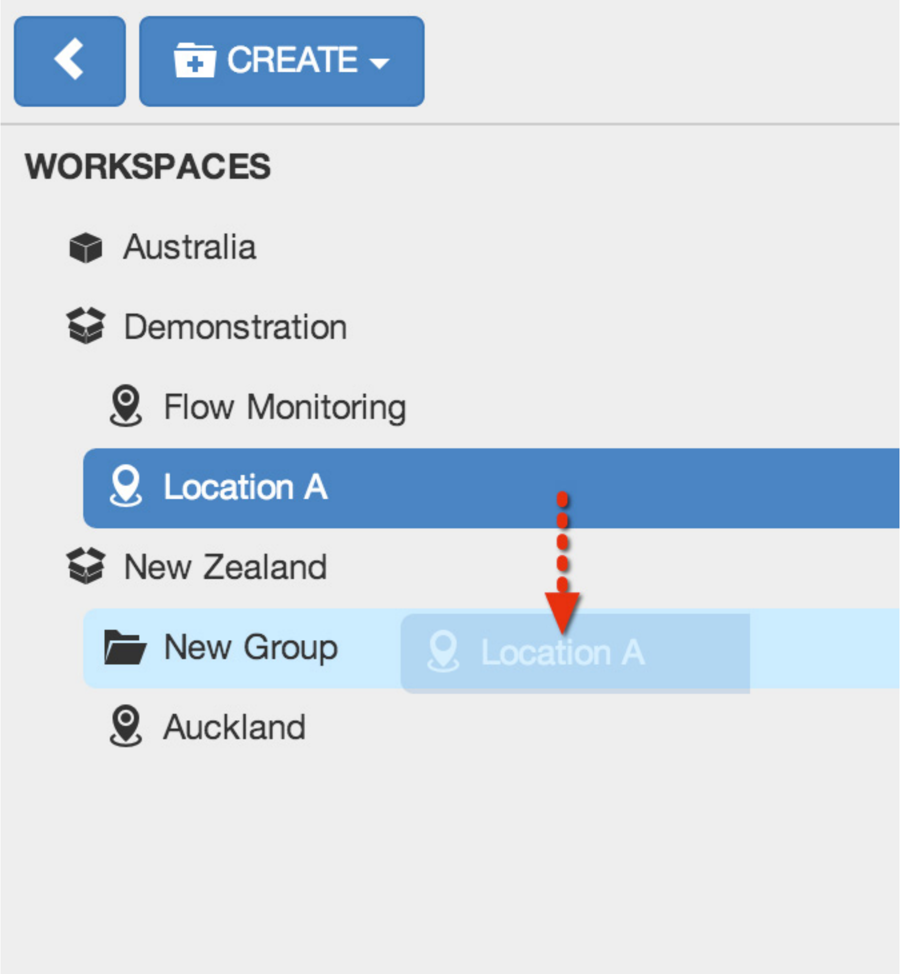
Note: The copy operation is done at the time of pasting. The original Node being copied must exist or the paste operation will be aborted.

2.1.5 Move

✥ Move a Node (including all Nodes it contains) within a Workspace or between Workspaces. You can also move Workspaces between accounts that you have permission to access.

Select *Move* from the Context Menu to open the *Move dialog* and select a destination node for the move operation.

Alternatively *Click and Drag* a Node in the Workspaces Tree to the destination Node and release the mouse button when you see the destination node highlighted. Nodes will automatically expand when hovered.

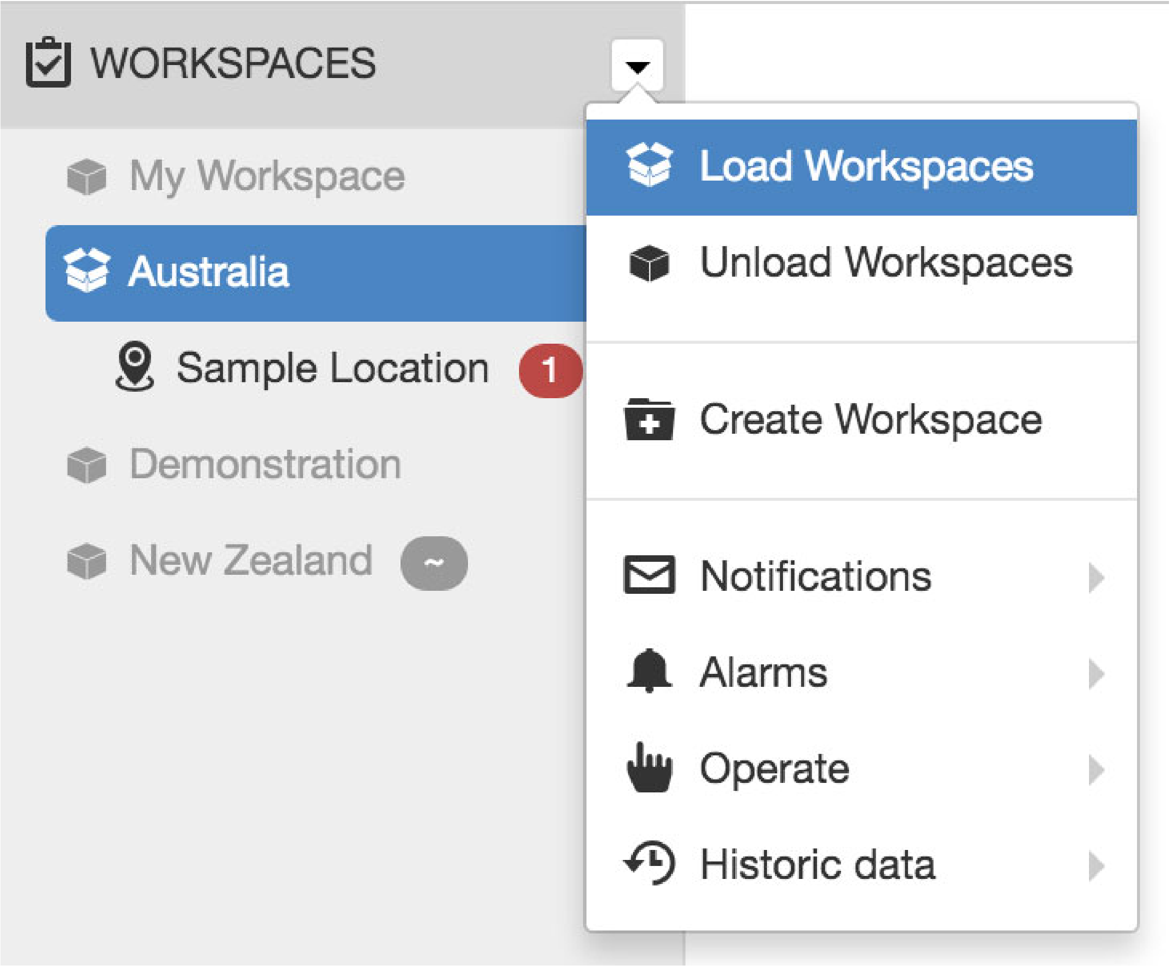

CREATE
WORKSPACES
Australia
Demonstration
Flow Monitoring
Location A
New Zealand
New Group
Location A
Auckland

2.1.6 Workspace Loading On-demand

If you have access to more than one Workspace you may notice some of the Workspaces are *GRAYED* out in the Workspaces Tree when you first login. Click on the Workspace or select *Load Workspace* from the

Workspace context menu to load its assets.

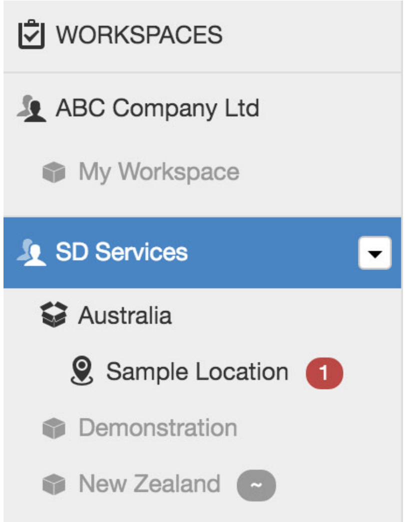
You can load all Workspaces by selecting *Load Workspaces* from the top-level *WORKSPACES* context menu.


WORKSPACES
My Workspace
Australia
Sample Location
1
Demonstration
New Zealand
~
Load Workspaces
Unload Workspaces
Create Workspace
Notifications
Alarms
Operate
Historic data

2.1.7 Workspace Grouping by Account

If you have access to more than one account you will notice Workspaces are automatically grouped under the associated account in the Workspaces Tree.

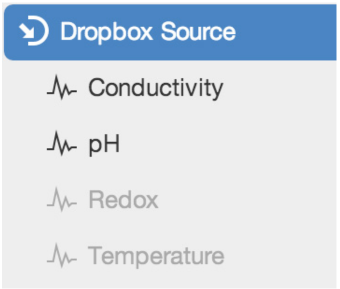
Selecting an account will display content related to all *Loaded Workspaces* you have access to for that account.


WORKSPACES
ABC Company Ltd
My Workspace
SD Services
Australia
Sample Location
1
Demonstration
New Zealand
~

2.1.8 Disabled Nodes

You may notice *GREY* Nodes within a Workspace.

Sources being configured for the first time will be shown as disabled until they have been fully configured. Parameters that had been created and then unchecked (or unavailable) for collection will also be shown as disabled in the Workspaces Tree, List and Map Views.


Dropbox Source
Conductivity
pH
Redox
Temperature

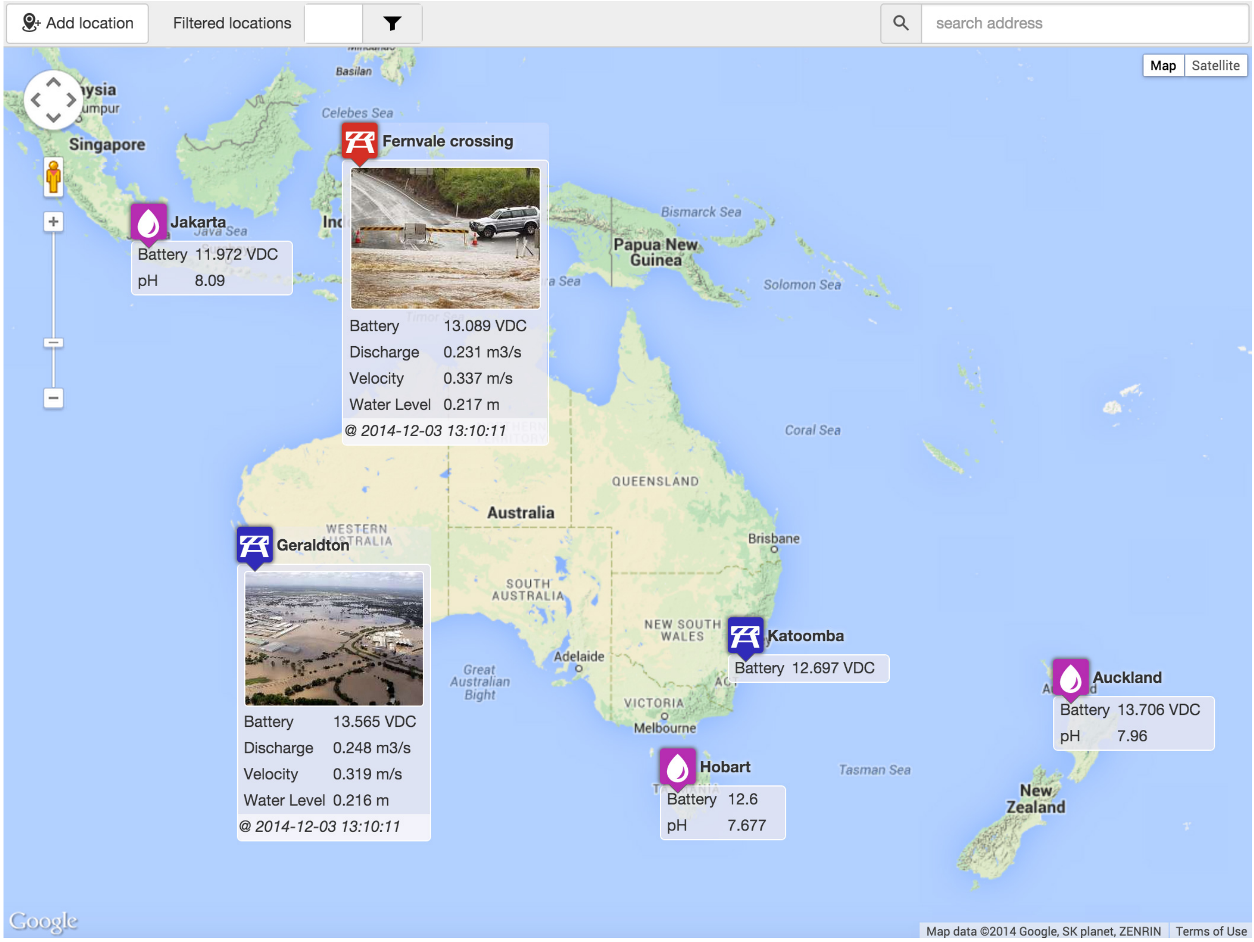
2.2 Content Views

Overview and Guide to using the available Content Views:

2.2.1 Map

Map provides a fully featured interactive interface for displaying location based data.

Note: The view displays content based on the Selected Node in the Workspaces Tree. Use filters to quickly target specific parameters or review alarms.


Add location
Filtered locations
search address
Map
Satellite
Singapore
Basilan
Celebes Sea
Java Sea
Bismarck Sea
Papua New Guinea
Solomon Sea
Coral Sea
QUEENSLAND
Australia
WESTERN AUSTRALIA
SOUTH AUSTRALIA
NEW SOUTH WALES
Brisbane
Adelaide
Great Australian Bight
VICTORIA
Melbourne
Tasman Sea
New Zealand
Google
Map data ©2014 Google, SK planet, ZENRIN
Terms of Use

Jakarta
Battery 11.972 VDC
pH 8.09

Fernvale crossing
Battery 13.089 VDC
Discharge 0.231 m3/s
Velocity 0.337 m/s
Water Level 0.217 m
@ 2014-12-03 13:10:11

Geraldton
Battery 13.565 VDC
Discharge 0.248 m3/s
Velocity 0.319 m/s
Water Level 0.216 m
@ 2014-12-03 13:10:11

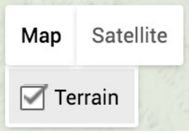
Katoomba
Battery 12.697 VDC

Auckland
Battery 13.706 VDC
pH 7.96

Hobart
Battery 12.6
pH 7.677

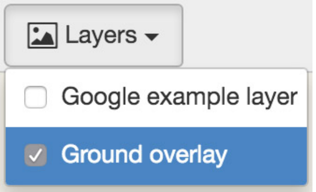
Map styles

Use the style controls in the top-left corner of the map to change the map appearance. Toggle between Map, Satellite and Terrain styles.

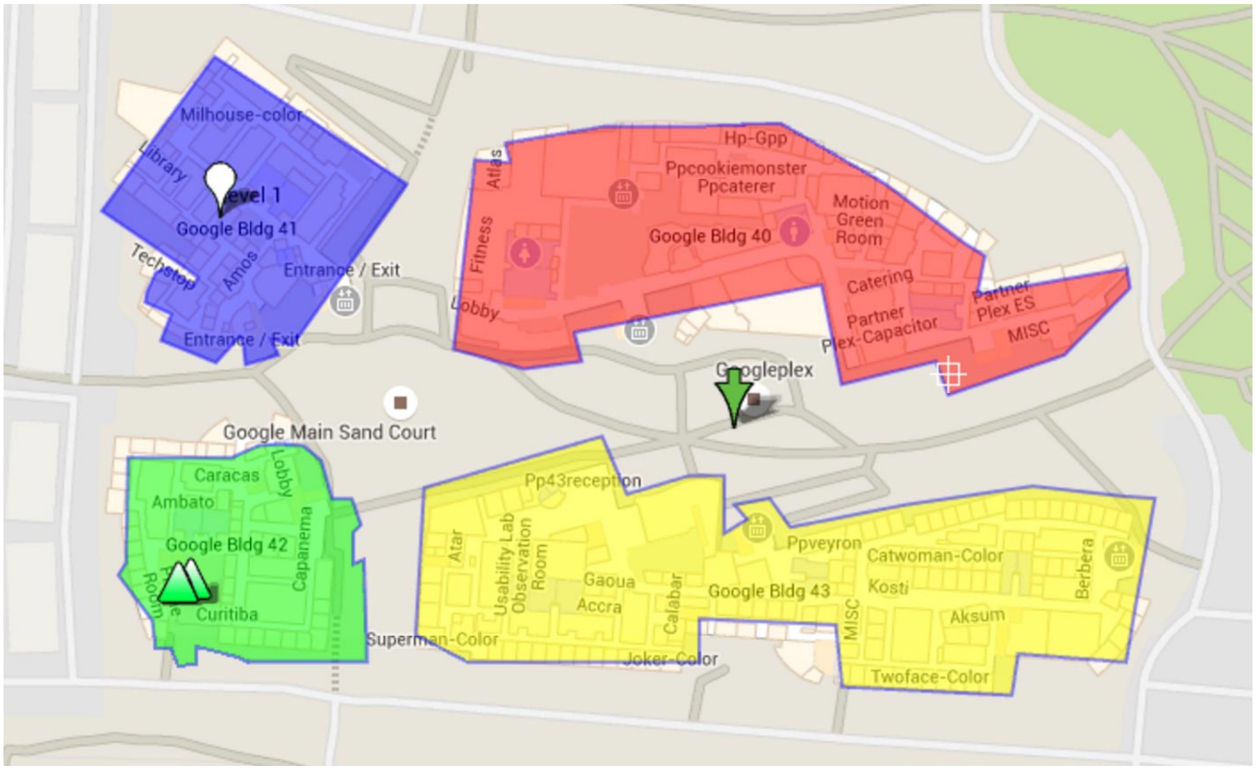

Map
Satellite
☑ Terrain

Map layers

Use the Map layers toolbar menu to quickly show or hide KML (and KMZ) files that have been associated with Workspace(s). The menu will display layers based on your current selection in the *Workspaces Tree* (page 13). Refer to *Workspaces configuration* (page 52) for help with adding or removing map layers.


Layers
☐ Google example layer
☑ Ground overlay

Example KML layer displayed on map:


Milhouse-color
Library
Level 1
Google Bldg 41
Techstop
Amos
Entrance / Exit
Entrance / Exit
Hp-Gpp
Ppcookiemonster
Ppcaterer
Atlas
Fitness
Google Bldg 40
Motion
Green
Room
Lobby
Catering
Partner
Plex-Capacitor
Partner
Plex ES
MISC
Googleplex
Google Main Sand Court
Caracas
Ambato
Lobby
Google Bldg 42
Capanema
Room
Curitiba
Pp43reception
Atar
Usability Lab
Observation
Room
Gaoua
Accra
Calabar
Superman-Color
Joker-Color
Ppveyron
Google Bldg 43
Catwoman-Color
Kosti
MISC
Aksum
Berbera
Twoface-Color

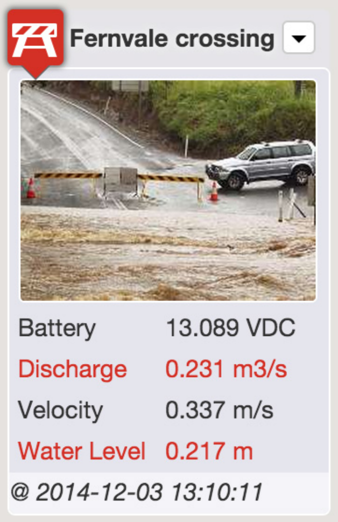
Note: A maximum of 10 unique layers can be shown on the map at any one time. Additional layers can be shown only after another layer has been hidden. Remote layers are automatically refreshed every 5 minutes.

Zoom and Pan

Use the standard Google Map controls to Zoom/Pan or enter Street View. You can also use your mouse wheel or pinch gestures to zoom. The appearance and layout of the map controls many vary depending on the type of device you are using.

Click and Hover

Hover over a Location icon with a mouse to quickly show its parameters. Click or Touch the Location to pin the parameters list open or closed.



Fernvale crossing

Battery	13.089 VDC
Discharge	0.231 m3/s
Velocity	0.337 m/s
Water Level	0.217 m

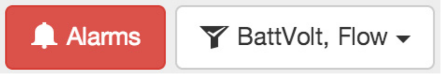
@ 2014-12-03 13:10:11

Filters

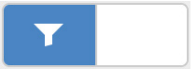
Use filters to quickly show locations of interest.

Alarms Filter will show only the Locations within the Selected Node that are currently in alarm or acknowledged state (including any contained Nodes).

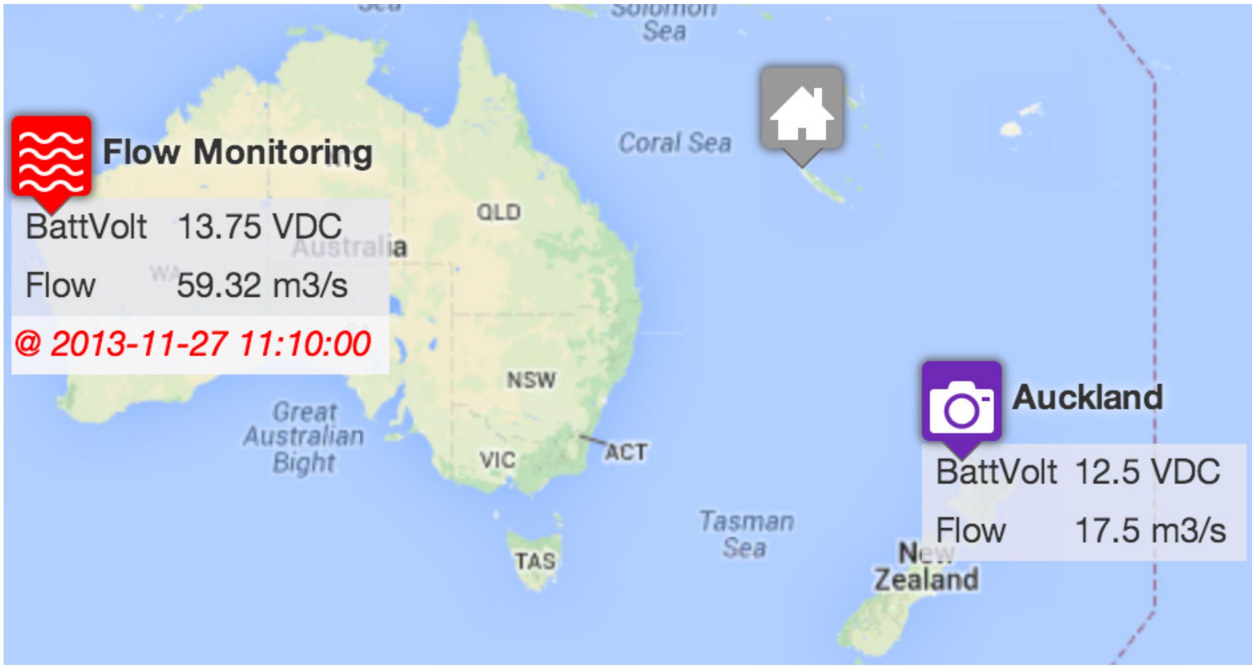
Parameter Filters will show only the Locations within the Selected Node that contain parameters matching the filter name(s). Both Alarms and Parameter Filters can be combined.



The show/hide filtered locations button found in the toolbar can be used to toggle the display of filtered locations. When active you will notice any filters locations are displayed with just a *GREY* marker and no label. You can still hover or click these filtered locations to display the parameters list.



Map with filters applied



Flow Monitoring

BattVolt 13.75 VDC

Flow 59.32 m3/s

@ 2013-11-27 11:10:00

Auckland

BattVolt 12.5 VDC

Flow 17.5 m3/s

Solomon Sea
Coral Sea
QLD
Australia
WA
NSW
ACT
VIC
TAS
Great Australian Bight
Tasman Sea
New Zealand

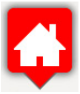
When parameter filters are applied, the corresponding parameters for each applicable Location are automatically displayed. Hover or Click the locations to display all parameters.

Locations containing alarms will have their marker displayed in *RED* If all alarms within a location have been acknowledged the marker will be displayed in *ORANGE*.

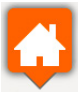
Reserved marker colors

These reserved marker colors temporarily overwrite the normal marker color:

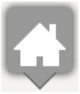
Active Alarm



Acknowledged Alarm



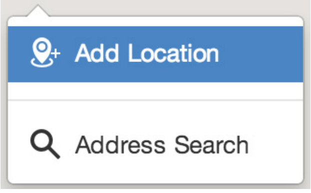
Filtered



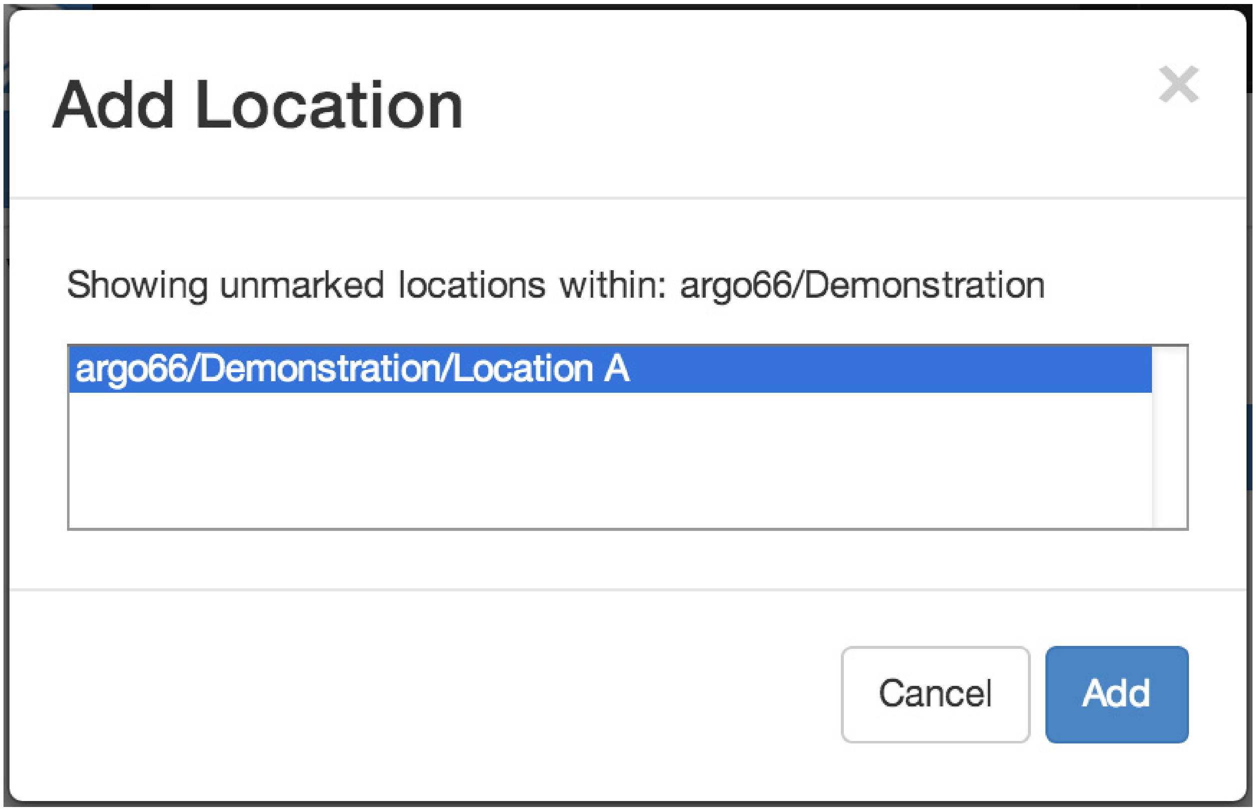
Adding a new Location marker

Use the *Add Location* button in the toolbar or from the map context menu with a right-click or long-press on the map. The Add Location dialog will be displayed showing all locations within the Selected Node that have not been assigned coordinates.

Map context menu


Add Location
Address Search

Add Location dialog

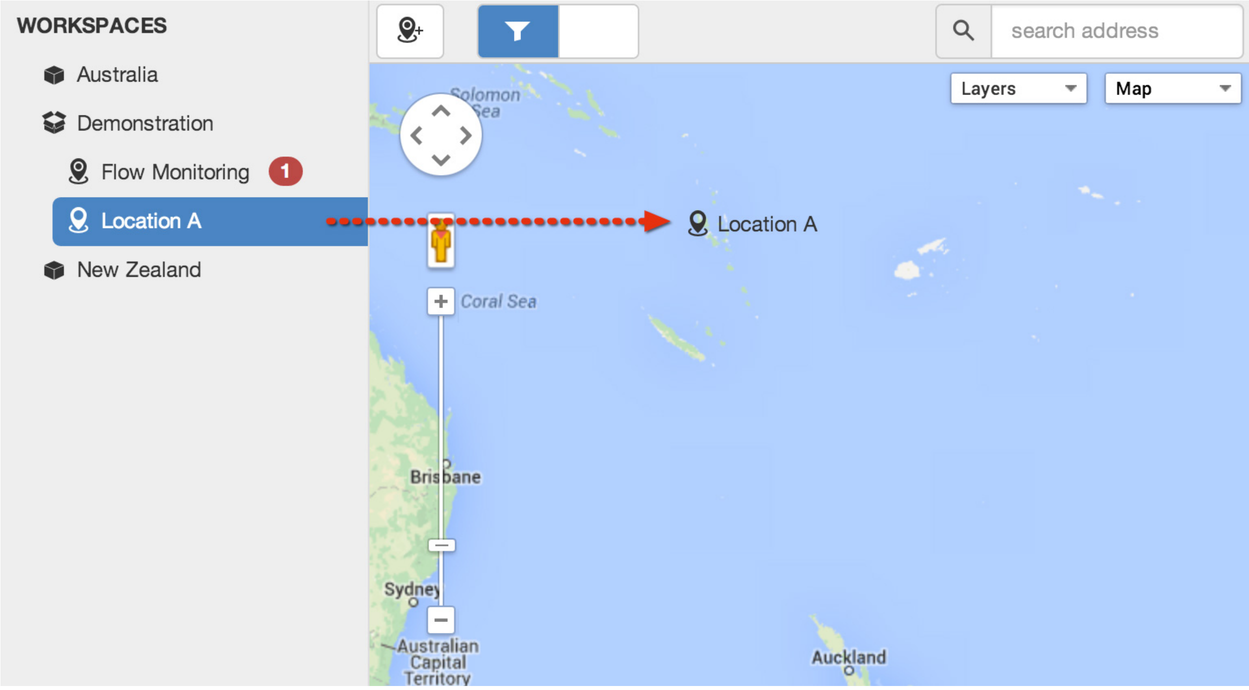

Add Location
×

Showing unmarked locations within: argo66/Demonstration

argo66/Demonstration/Location A

Cancel
Add

Drag and Drop Locations directly from the Workspaces Tree (not supported on touch devices).


WORKSPACES
Australia
Demonstration
Flow Monitoring
1
Location A
New Zealand
search address
Layers
Map
Location A
Solomon Sea
Coral Sea
Brisbane
Sydney
Australian Capital Territory
Auckland

Reposition marker

✥ Select *Reposition marker* from the map marker context menu to enter reposition mode. The marker will be shown with a bouncing effect while in reposition mode. Drag and drop the marker and pan/zoom the map until the marker is in the correct position. click or touch on the map background to apply the new coordinates.

Remove marker

🗑 Select *Remove marker* from the map marker context menu to remove the marker from the map. This operation resets the location coordinates only. It will not delete the Location Node or any historic data.

Note: The Location must use Fixed Coordinates and you must have *configure* permission for the Workspace to Add, Reposition or Remove the marker. Locations with Dynamic Coordinates will automatically be added, repositioned and removed as the Source receives updates.

2.2.2 List

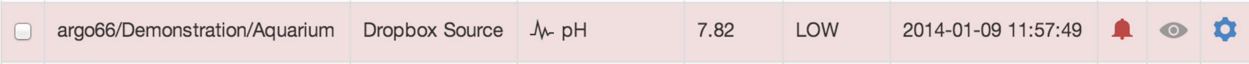
Intuitive categorised lists provide quick access to the data for your most important Nodes: Locations, Sources, Parameters and Attachments.

Note: The view displays content based on the Selected Node in the Workspaces Tree. Use filters to quickly target specific parameters or review alarms.

Sort rows in the list by clicking on column headers.

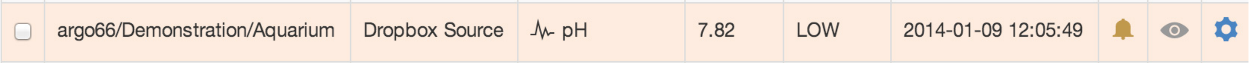
List rows are temporarily highlighted immedietly following an update. Rows will be shown with a *RED* background to indicate active alarms on the Node or one of its contained Nodes. Rows with acknowledged alarms will be shown with an *ORANGE* background. Rows will be shown in *GREY* if the corresponding node configuration has not been finalised (Sources) or the parameter is not linked to the Data Source for automatic collection (Parameters).

Active Alarm



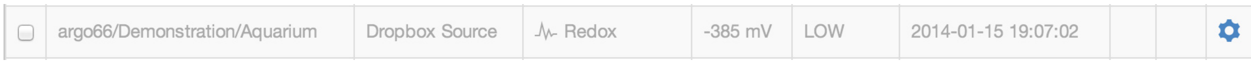
☐	argo66/Demonstration/Aquarium	Dropbox Source	pH	7.82	LOW	2014-01-09 11:57:49			

Acknowledged Alarm



☐	argo66/Demonstration/Aquarium	Dropbox Source	pH	7.82	LOW	2014-01-09 12:05:49			

Disabled

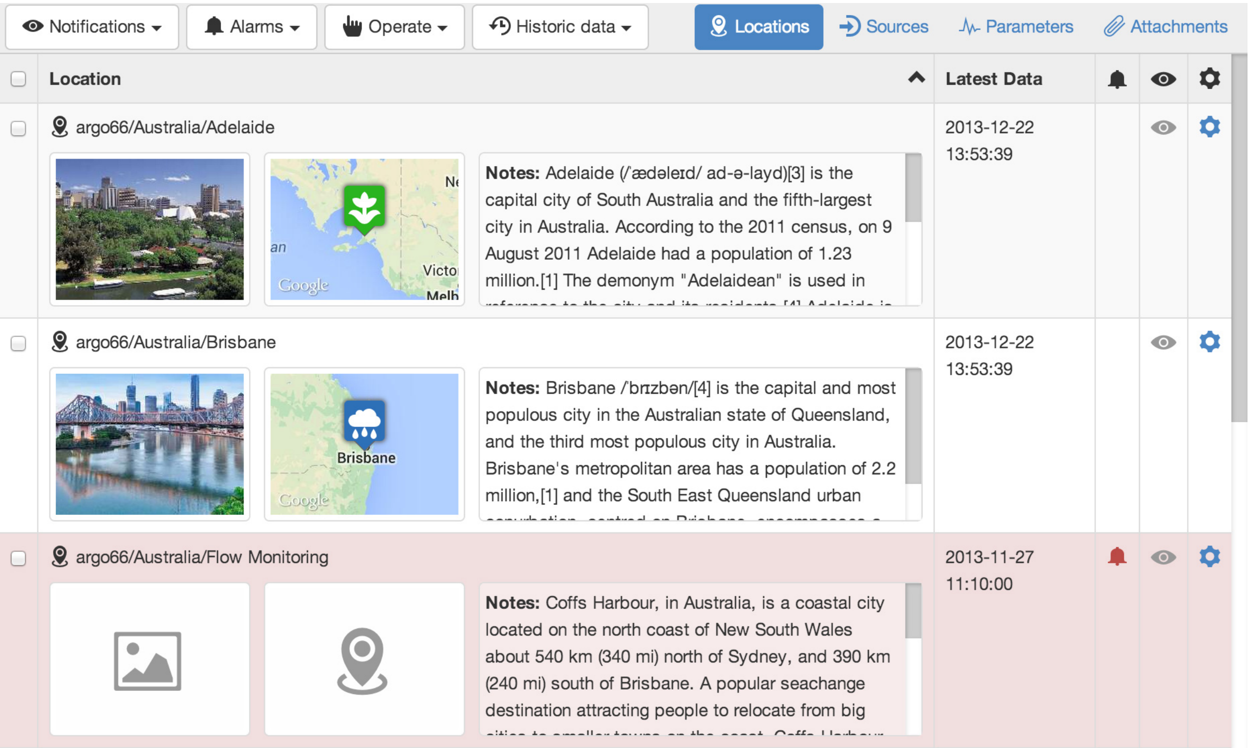


☐ argo66/Demonstration/Aquarium	Dropbox Source	Redox	-385 mV	LOW	2014-01-15 19:07:02

Subviews

Locations

Locations Subview displays an overview of Location Nodes.



☐ Location	Latest Data
☐ argo66/Australia/Adelaide **Notes:** Adelaide (/ˈædəleɪd/ ad-ə-layd)[3] is the capital city of South Australia and the fifth-largest city in Australia. According to the 2011 census, on 9 August 2011 Adelaide had a population of 1.23 million.[1] The demonym "Adelaidean" is used in	2013-12-22 13:53:39
☐ argo66/Australia/Brisbane **Notes:** Brisbane /ˈbrɪzbən/[4] is the capital and most populous city in the Australian state of Queensland, and the third most populous city in Australia. Brisbane's metropolitan area has a population of 2.2 million,[1] and the South East Queensland urban	2013-12-22 13:53:39
☐ argo66/Australia/Flow Monitoring **Notes:** Coffs Harbour, in Australia, is a coastal city located on the north coast of New South Wales about 540 km (340 mi) north of Sydney, and 390 km (240 mi) south of Brisbane. A popular seachange destination attracting people to relocate from big	2013-11-27 11:10:00

Location Location name with path, including a preview image, map thumbnail and any configured location metadata.

Latest Data Timestamp of the most recent data from all Sources contained within the Location.

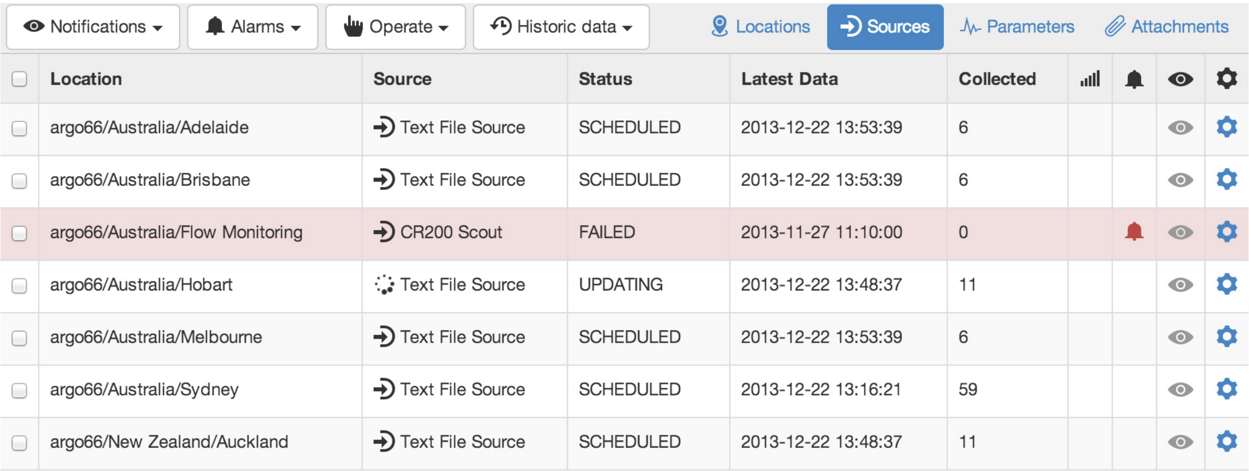
Alarms An alarm icon will be shown if there are any active or acknowledged alarms on or within the Location. Click or touch the alarm icon to display the Alarm Panel.

Subscribe Click or touch the subscribe icon to subscribe to the Nodes you would like to receive notifications for. You must have *subscribe notifications* permission for the Workspace. If the Location contains Sources, the Subscription Panel will be displayed so you can toggle your subscription preferences indiviually or all together.

Properties Show the Node properties dialog.

Sources

Sources Subview displays a list of all Data and Attachment Sources.



☐	Location	Source	Status	Latest Data	Collected	📶	🔔	👁	⚙
☐	argo66/Australia/Adelaide	Text File Source	SCHEDULED	2013-12-22 13:53:39	6			👁	⚙
☐	argo66/Australia/Brisbane	Text File Source	SCHEDULED	2013-12-22 13:53:39	6			👁	⚙
☐	argo66/Australia/Flow Monitoring	CR200 Scout	FAILED	2013-11-27 11:10:00	0		🔔	👁	⚙
☐	argo66/Australia/Hobart	Text File Source	UPDATING	2013-12-22 13:48:37	11			👁	⚙
☐	argo66/Australia/Melbourne	Text File Source	SCHEDULED	2013-12-22 13:53:39	6			👁	⚙
☐	argo66/Australia/Sydney	Text File Source	SCHEDULED	2013-12-22 13:16:21	59			👁	⚙
☐	argo66/New Zealand/Auckland	Text File Source	SCHEDULED	2013-12-22 13:48:37	11			👁	⚙

Location Location name with path.

Source Name of Source including relative path within Location

Status Current status of the Source:

- **DISABLED** The Source has been disabled by a user and will not be updated.
- **IDLE** The Source is enabled for communication but has no collection scheduled.
- **SCHEDULED** The Source is enabled for communication and has collection scheduled.
- **QUEUED** The Source is queued for communication.
- **CONNECTING** Attempting to connect to the Source.
- **CONTROLLING** Control operations are being performed on the connected Source.
- **DOWNLOADING** Data is currently being downloaded from the connected Source.
- **RETRYING** Acquisition, Control or Configure operations have failed so a retry attempt has been scheduled.
- **FAILED** Acquisition, Control or Configure operations have failed (after retry attempts exceeded).
- **PROCESSING** Data is being processed after being downloaded from the connected Source.
- **CONFIGURING** Sending configuration to the Source.
- **REMOTE** Remote access is enabled and a client is connected. Acquisition, Control and Configure operations will not be available during this time.

Latest Data Timestamp of the most recent data from the Source.

Collected Displays number of records collected for a Data Source during last collection or number of files processed for an Attachment Source.

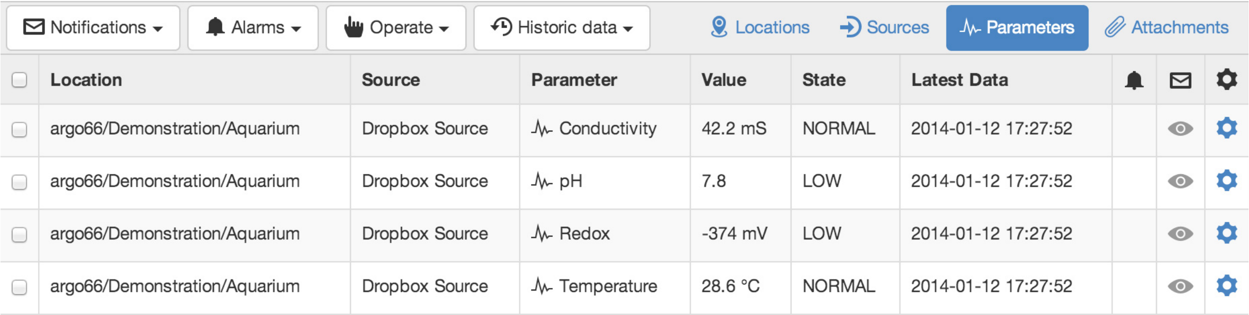
Alarms An alarm icon will be shown if there are any active or acknowledged alarms on or within the Source. Click or touch the alarm icon to display the Alarm Panel.

Subscribe Click or touch the subscribe icon to subscribe to the Nodes you would like to receive notifications for. You must have *subscribe notifications* permission for the Workspace. If the Source contains parameters, a subscription panel will be displayed so you can toggle your subscription preferences indiviually or all together.

Properties Show the Node properties dialog.

Parameters

Parameters Subview displays a list of all parameters.



☐	Location	Source	Parameter	Value	State	Latest Data	🔔	✉	⚙
☐	argo66/Demonstration/Aquarium	Dropbox Source	Conductivity	42.2 mS	NORMAL	2014-01-12 17:27:52		👁	⚙
☐	argo66/Demonstration/Aquarium	Dropbox Source	pH	7.8	LOW	2014-01-12 17:27:52		👁	⚙
☐	argo66/Demonstration/Aquarium	Dropbox Source	Redox	-374 mV	LOW	2014-01-12 17:27:52		👁	⚙
☐	argo66/Demonstration/Aquarium	Dropbox Source	Temperature	28.6 °C	NORMAL	2014-01-12 17:27:52		👁	⚙

Location Location name with path.

Source Name of Source including relative path within Location.

Parameter Name of parameter.

Value Value of the parameter at the time indicated by the Latest Data column.

State State associated with current parameter value. An indicator will be displayed if the parameter has non-default states configured.

Latest Data Timestamp of the most recent data for the parameter.

Alarms An alarm icon will be shown if there are any active or acknowledged alarms for the parameter. Click or touch the alarm icon to display the Alarm Panel.

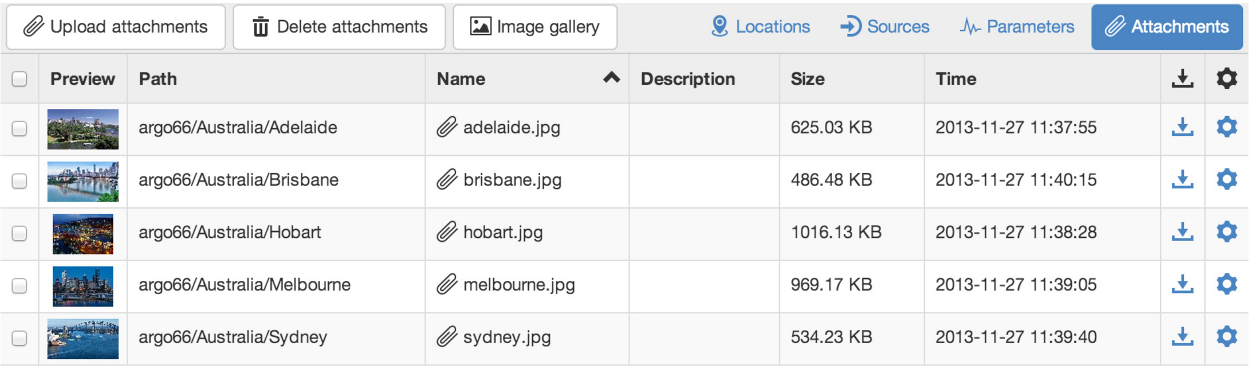
Subscribe Click or touch the subscribe icon to subscribe to the Nodes you would like to receive notifications for. You must have *subscribe notifications* permission for the Workspace.

Properties Show the Node properties dialog.

Control parameters can be controlled inline in the parameters list. Click the control icon and set the new value or cancel. Requires *operate* permission for the Workspace. See *Operate and Control* (page 182) for full details.

Attachments

Attachments subview displays a list of all file *attachments* (page 105).



☐	Preview	Path	Name	Description	Size	Time
☐		argo66/Australia/Adelaide	adelaide.jpg		625.03 KB	2013-11-27 11:37:55
☐		argo66/Australia/Brisbane	brisbane.jpg		486.48 KB	2013-11-27 11:40:15
☐		argo66/Australia/Hobart	hobart.jpg		1016.13 KB	2013-11-27 11:38:28
☐		argo66/Australia/Melbourne	melbourne.jpg		969.17 KB	2013-11-27 11:39:05
☐		argo66/Australia/Sydney	sydney.jpg		534.23 KB	2013-11-27 11:39:40

Preview Thumbnail image or file icon. Images can be clicked or touched to be shown in the media gallery.

Container Path of the container Node where the attachment is located.

Name Name of the attachment.

Description User defined description of attachment.

Size Size of the attachment.

Time Time of the attachment upload.

Download Download the attachment.

Properties Show the Node properties dialog.

Note: You must have the *read attachments* permission for the Workspace to see attachments in the list.

Toolbar Controls

Toolbar controls should be used in combination with the row selection checkboxes to perform the selected operation on multiple Nodes at once. The same options are also available via the context menu for each row item.

Notifications

✉ Subscribe or Unsubscribe from receiving *notifications* (page 179) for the checked Nodes including all contained Nodes.

Alarms

🔔 Acknowledge alarms with or without a comment, or Clear the alarms for the checked Nodes. Refer the section on *Alarms* (page 170) for more info.

Operate

☝ Acquire or Control the checked nodes. See *Operate and Control* (page 182) for more info.

Historic Data

⟲ View data as a Table of values or graphically on a Chart. You can also export the historic data for the checked Nodes. See *Historic Data* (page 188) for full details.

Delete

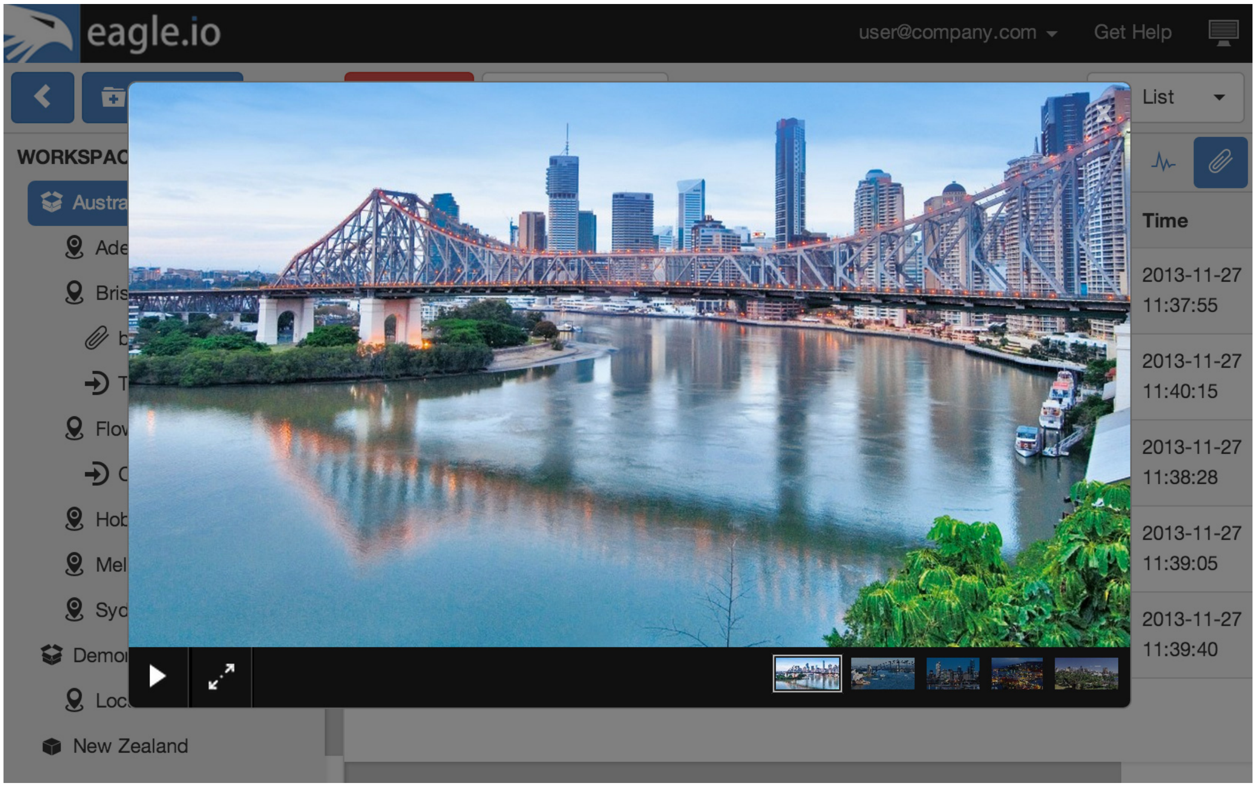
🗑 Permantently delete the selected Nodes. This operation is not reversible!

Upload files

Upload files as attachments of the selected Workspace Node. You can also drag and drop new attachments direcly onto any of the content views. Requires configure permission. Ensure the selected Workspace Node accepts attachments.

Media Gallery

Displays images and supported video attachments in the gallery view. If no attachments are checked then all attachments will be available in the gallery.


eagle.io
user@company.com
Get Help
List
WORKSPAC
Austra
Ade
Bris
Flov
Hob
Mel
Syc
Demo
Loc
New Zealand
Time
2013-11-27 11:37:55
2013-11-27 11:40:15
2013-11-27 11:38:28
2013-11-27 11:39:05
2013-11-27 11:39:40

2.2.3 Chart

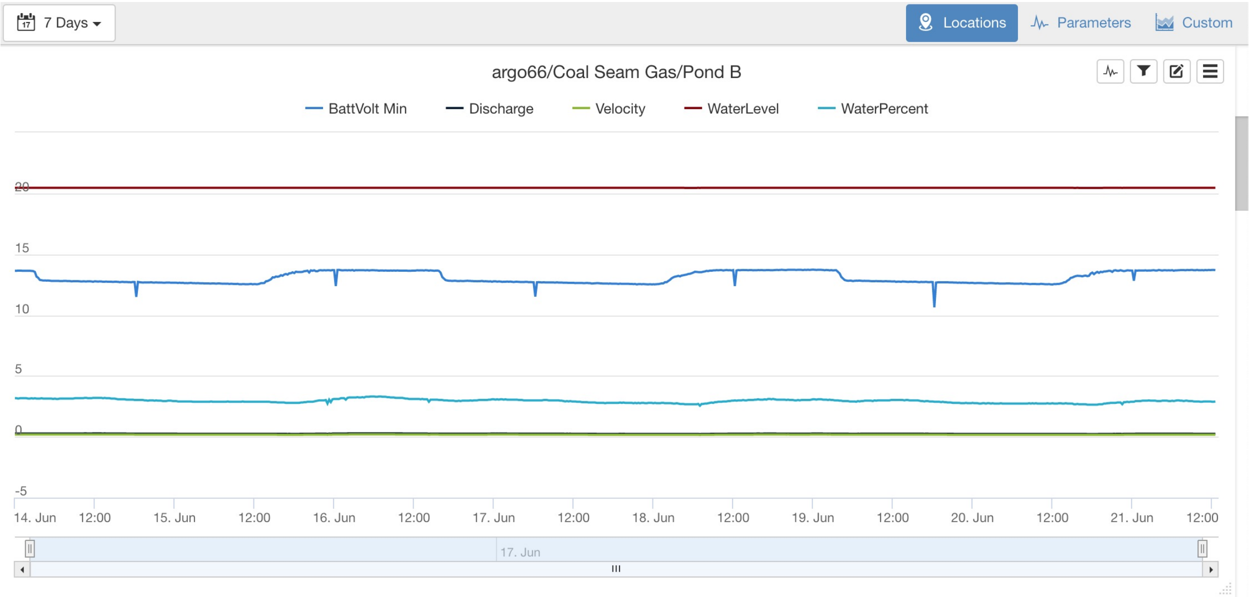
Use the Chart View for reviewing your timeseries data as highly interactive charts. Choose to group data on charts by Location or Parameter type. Charts are displayed using the settings configured for each individual parameter. See *Parameter configuration* (page 147) for full details.

Note: The view displays content based on the Selected Node in the Workspaces Tree. Use filters to quickly target specific parameters or review alarms.

Subviews

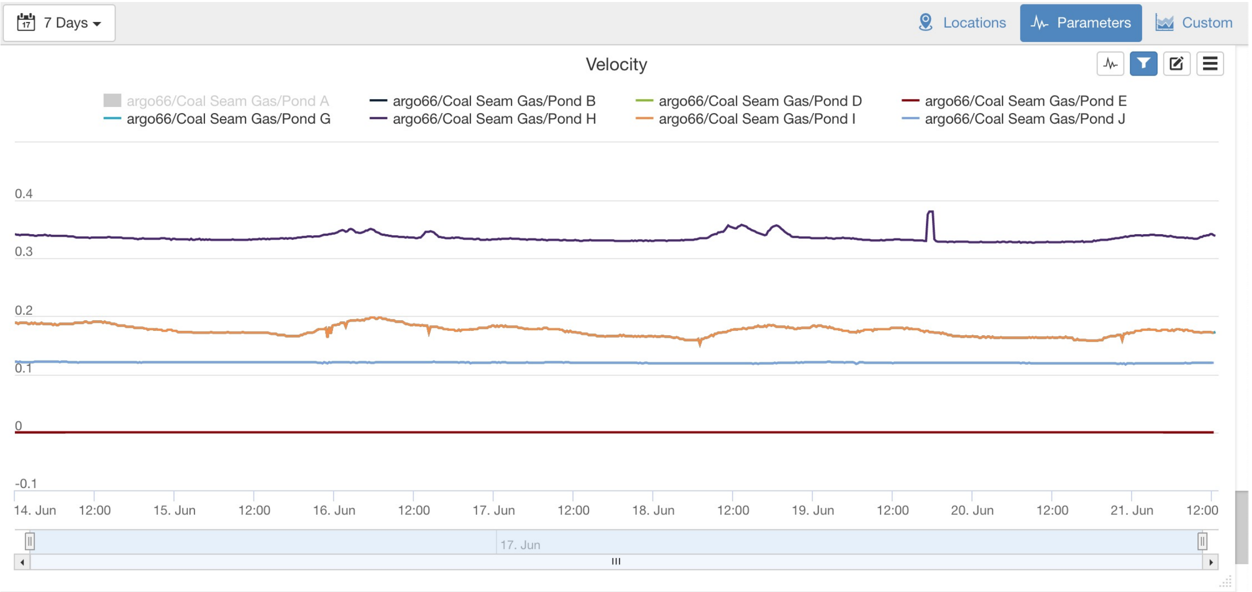
Locations

Locations Subview displays a chart per Location. Any Parameters contained within the Location will be displayed on the same chart. If a Location does not contain any Parameters (or the Parameters have been filtered), no chart will be displayed.


7 Days
Locations
Parameters
Custom
argo66/Coal Seam Gas/Pond B
BattVolt Min
Discharge
Velocity
WaterLevel
WaterPercent
20
15
10
5
0
-5
14. Jun
12:00
15. Jun
12:00
16. Jun
12:00
17. Jun
12:00
18. Jun
12:00
19. Jun
12:00
20. Jun
12:00
21. Jun
12:00
17. Jun

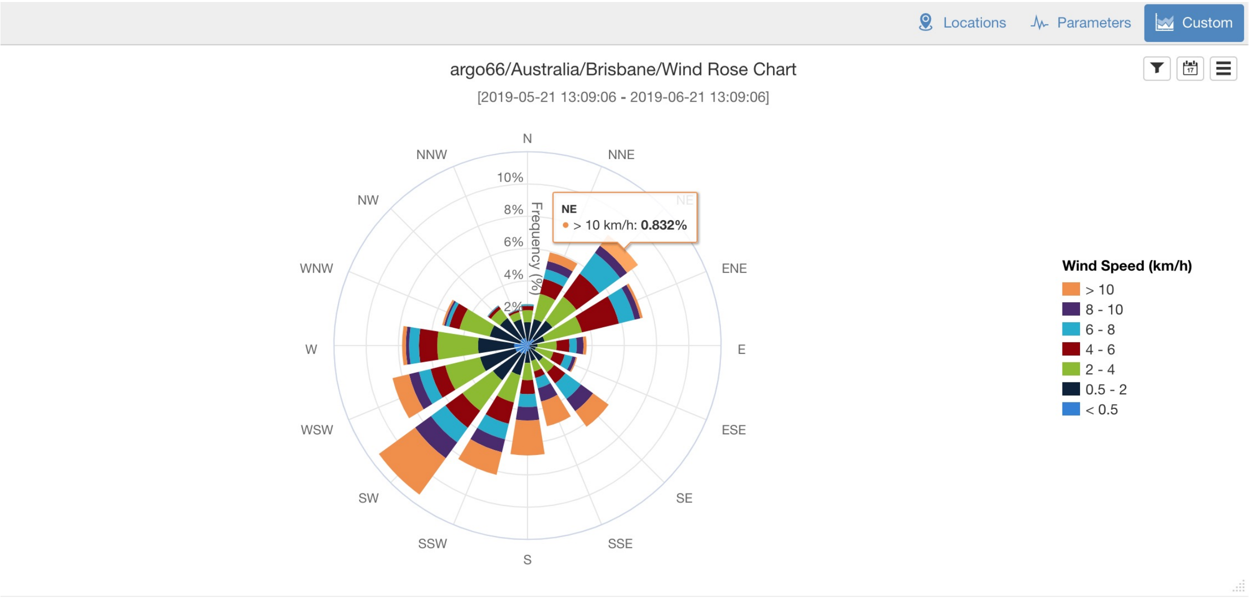
Parameters

Parameters Subview displays a chart per Parameter (based on Parameter name). Useful for comparing Parameters of the same type across multiple Locations. Filters can be applied to reduce the number of charts and/or Parameters being displayed.


7 Days
Locations
Parameters
Custom
Velocity
argo66/Coal Seam Gas/Pond A
argo66/Coal Seam Gas/Pond B
argo66/Coal Seam Gas/Pond D
argo66/Coal Seam Gas/Pond E
argo66/Coal Seam Gas/Pond G
argo66/Coal Seam Gas/Pond H
argo66/Coal Seam Gas/Pond I
argo66/Coal Seam Gas/Pond J
0.4
0.3
0.2
0.1
0
-0.1
14. Jun
12:00
15. Jun
12:00
16. Jun
12:00
17. Jun
12:00
18. Jun
12:00
19. Jun
12:00
20. Jun
12:00
21. Jun
12:00
17. Jun

Custom

Custom Subview displays a list of pre-configured *custom charts* (page 66).


Locations
Parameters
Custom
argo66/Australia/Brisbane/Wind Rose Chart
[2019-05-21 13:09:06 - 2019-06-21 13:09:06]
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
10%
8%
6%
4%
2%
Frequency (%)
NE
● > 10 km/h: 0.832%
Wind Speed (km/h)
> 10
8 - 10
6 - 8
4 - 6
2 - 4
0.5 - 2
< 0.5

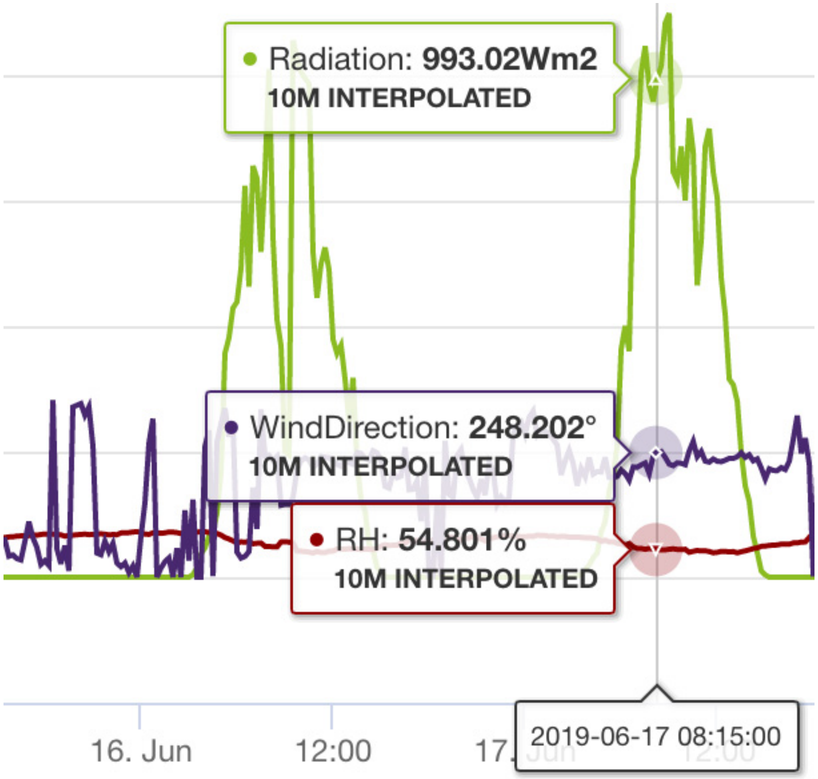
Working with charts

Parameter Values

Hover over a chart with the mouse cursor or touch part of the display area of a chart to display the value of the Parameters corresponding with the time on the x-axis.

Parameter values may be shown with aggregation applied - indicated with a duration and aggregate name. Aggregation is based on the date range of the chart data and the Parameter configuration settings. See *Parameter configuration* (page 147) for full details.

If you have assigned *quality codes* (page 577) to the data, the associated quality code and color is displayed on hover.



Adjust Height

Use the grab handle in the bottom right corner of the chart to increase or decrease its height. This option is currently not available on touch devices.

Zoom

Click and Drag (or pinch on touch devices) over the main chart area to zoom. As you zoom into the chart, higher resolution data is loaded for the selected period (depending on the parameter configuration settings).

Use the navigator located directly under the main chart area to pan the chart or zoom in/out. After zooming in on a section of the chart the *zoom out* icon is displayed in the chart toolbar to reset the zoom range.

Chart area selected for zoom

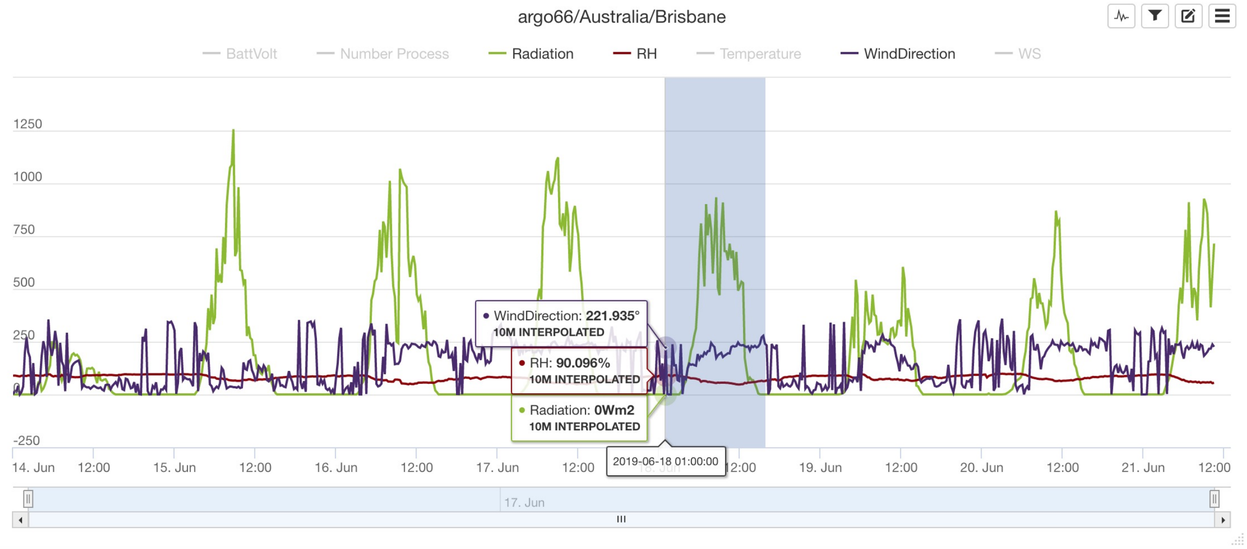
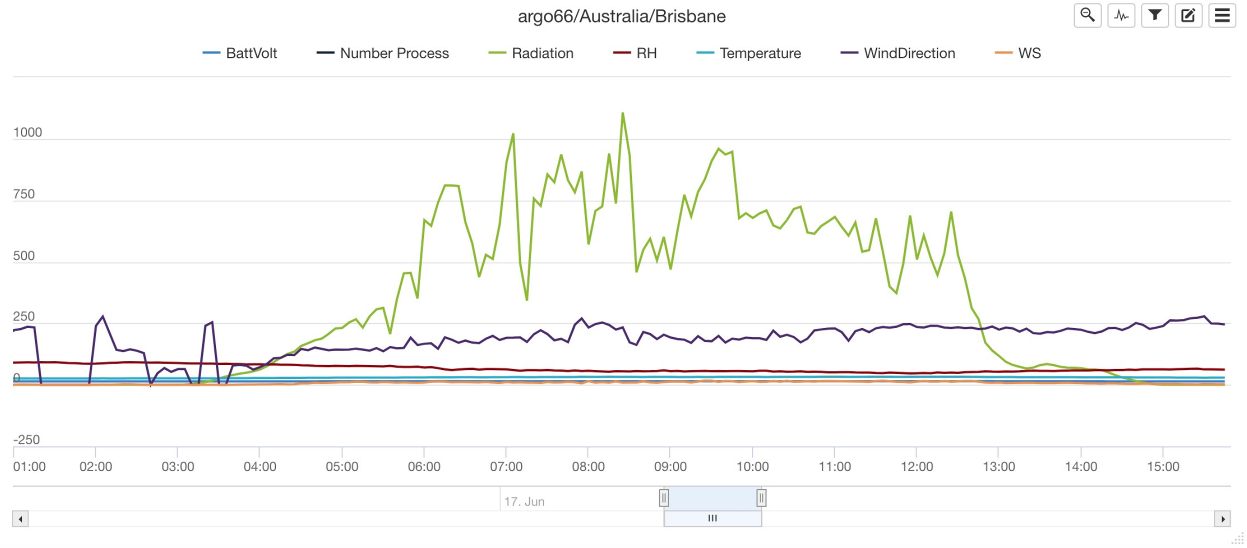
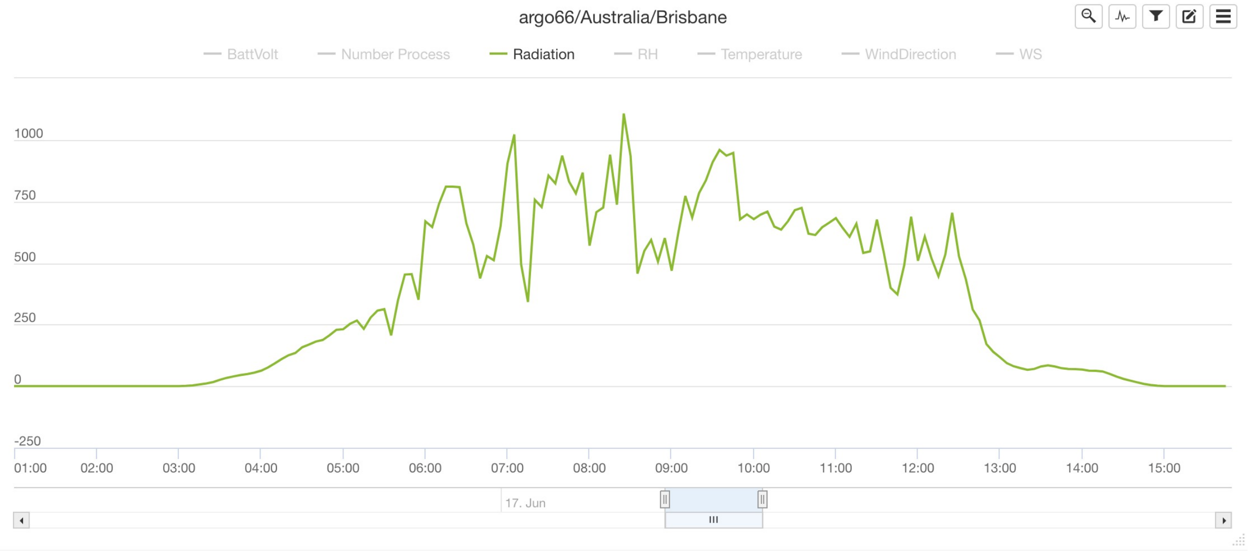

argo66/Australia/Brisbane
BattVolt
Number Process
Radiation
RH
Temperature
WindDirection
WS
1250
1000
750
500
250
0
-250
WindDirection: 221.935°
10M INTERPOLATED
RH: 90.096%
10M INTERPOLATED
Radiation: 0Wm2
10M INTERPOLATED
2019-06-18 01:00:00
14. Jun
12:00
15. Jun
12:00
16. Jun
12:00
17. Jun
12:00
12:00
19. Jun
12:00
20. Jun
12:00
21. Jun
12:00
17. Jun

Chart after zoom


argo66/Australia/Brisbane
BattVolt
Number Process
Radiation
RH
Temperature
WindDirection
WS
1000
750
500
250
0
-250
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
17. Jun

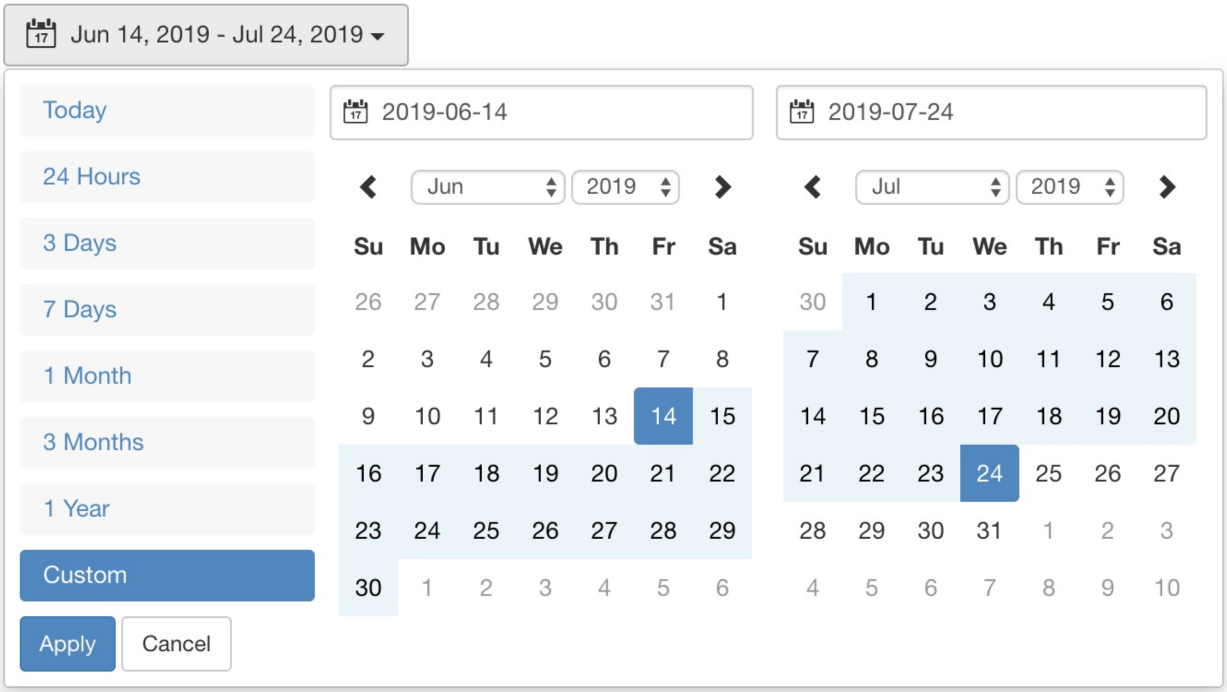
Toggle Parameter display

Click the parameter icon to quickly toggle the visibility of all parameters. Click parameters in the chart legend to toggle the visibility of individual parameters.


argo66/Australia/Brisbane
BattVolt
Number Process
Radiation
RH
Temperature
WindDirection
WS
1000
750
500
250
0
-250
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
17. Jun

Change date range

Date range selector is used to quickly adjust the date range being shown on all charts. You can always zoom in on individual charts, but you cannot zoom out past the range set by this selector. Use Custom Range to select precise start/end dates.



Jun 14, 2019 - Jul 24, 2019

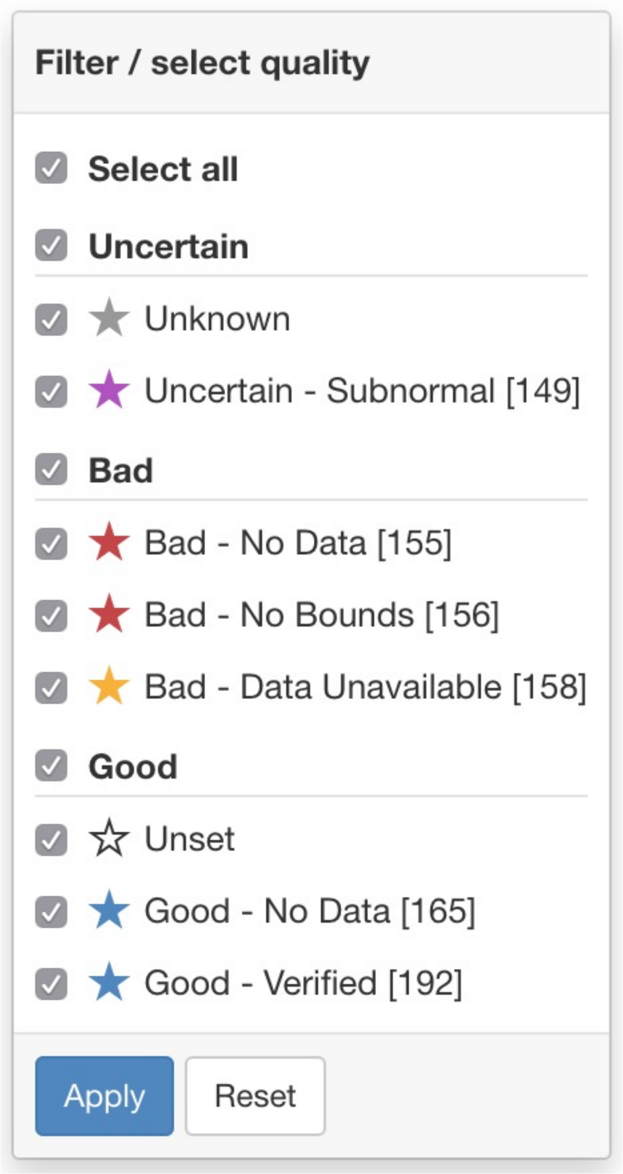
2019-06-14

2019-07-24

Today
24 Hours
3 Days
7 Days
1 Month
3 Months
1 Year
Custom
Apply
Cancel
Jun
2019
Jul
2019
Su Mo Tu We Th Fr Sa
Su Mo Tu We Th Fr Sa

Filter data on quality

Filter the dataset by selecting *quality codes* (page 577) associated with the data points that you want to include. While editing data, *apply* filters to automatically select associated data points and temporarily hide filtered data points to prevent modification.



Filter / select quality

☑ **Select all**

☑ **Uncertain**

☑ ★ Unknown

☑ ★ Uncertain - Subnormal [149]

☑ **Bad**

☑ ★ Bad - No Data [155]

☑ ★ Bad - No Bounds [156]

☑ ★ Bad - Data Unavailable [158]

☑ **Good**

☑ ☆ Unset

☑ ★ Good - No Data [165]

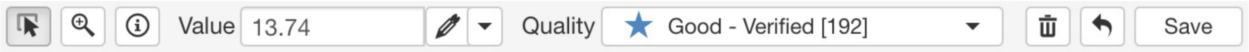
☑ ★ Good - Verified [192]

Print or save chart as image

☰ The dropdown menu allows you to print or save the chart as an image.

Edit chart data

Use this feature to toggle into data editing mode and display the data editing toolbar. Please refer to the *data editing* (page 205) documentation for further details.



Value 13.74

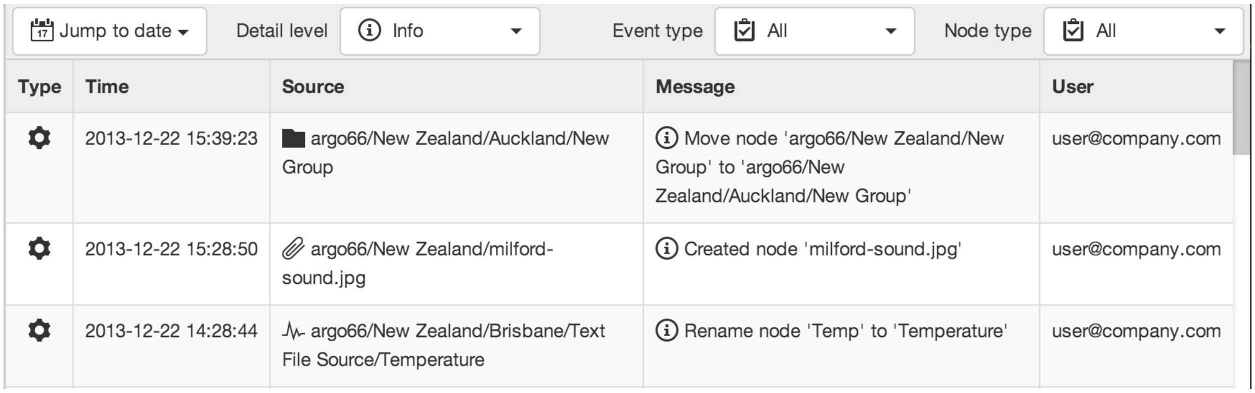
Quality ★ Good - Verified [192]

2.2.4 Events

Every interaction (user and system generated) is recorded in the Events log. Use the Events View to quickly audit the system, a user or history of alarms.

Note: The view displays content based on the Selected Node in the Workspaces Tree. Use filters to quickly target specific parameters or review alarms.

The events list is live updating and always displayed in reverse chronological order. New events are automatically added to the top of the list. Scroll down the list to view older events.



Detail level: Info

Event type: All

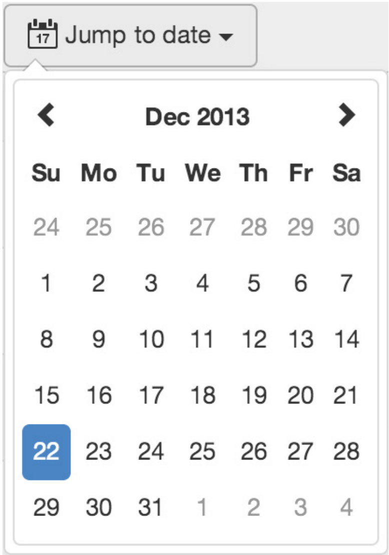
Node type: All

Type	Time	Source	Message	User
⚙	2013-12-22 15:39:23	argo66/New Zealand/Auckland/New Group	ⓘ Move node 'argo66/New Zealand/New Group' to 'argo66/New Zealand/Auckland/New Group'	user@company.com
⚙	2013-12-22 15:28:50	argo66/New Zealand/milford-sound.jpg	ⓘ Created node 'milford-sound.jpg'	user@company.com
⚙	2013-12-22 14:28:44	argo66/New Zealand/Brisbane/Text File Source/Temperature	ⓘ Rename node 'Temp' to 'Temperature'	user@company.com

Searching the Event Log

Jump to Date

Use the Jump to date control to jump to a specific date. After scrolling down, you can scroll back up to show more recent events.



Su	Mo	Tu	We	Th	Fr	Sa
24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Detail Level

Select the Detail level of the event log. Debug is the lowest level and will show all events, select a higher detail level to filter out the less important events. For example Info includes Warning and Error events (but not Debug events). The available detail levels include:

🐞 Debug

ⓘ Info

⚠ Warning

⊗ Error

Note: Debug level events are automatically purged from the event log after 30 days.

Event Type

Filter events by Event type. Use this drop down to quickly find events related to a certain type of action. For example you can quickly display all Notifications that have been sent for the Selected Node. The available event types include:

	Event Node Type	Event Trigger Action
📥 Acquisition	Source	- User operate action - Scheduled collection - Device connection - File received - API
⚙ Configuration	All	- User configuration change - User or Group subscription change - API
🔀 State Change	Parameter	- Data acquisition
✉ Notification	Source, Parameter, Report	- Alarm raised/cleared - Report generated on schedule
➔ Control	Control Parameter	- User operate action - API
🔑 Security	All	- User security change - User login/logout - API

Node Type

By default events will be displayed for the Selected Node and all Nodes it contains. You can use the Node type drop down to filter on a specific *type of node* (page 49). For example select Attachment to display all events related to attachments within the Selected Node.

☑ All

Account

Workspace

Folder

Location

Chart

Dashboard

Source

Parameter

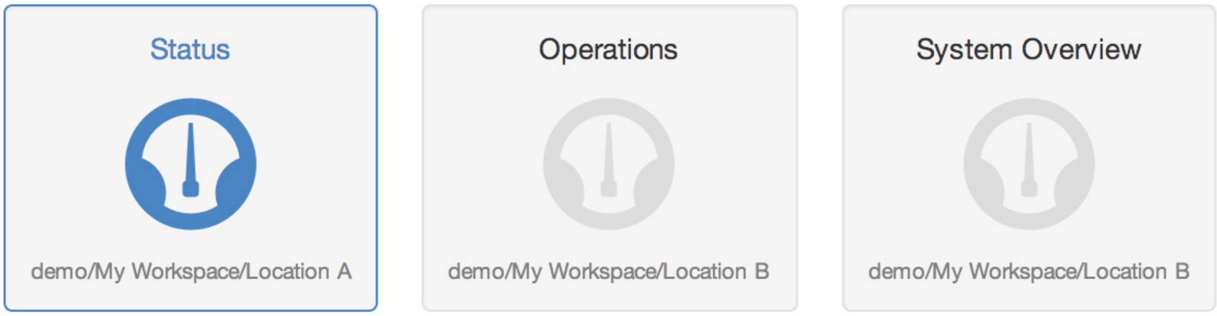
Attachment

2.2.5 Dash

The Dash is for selecting and viewing the customized graphical *dashboards* (page 96).

Overview

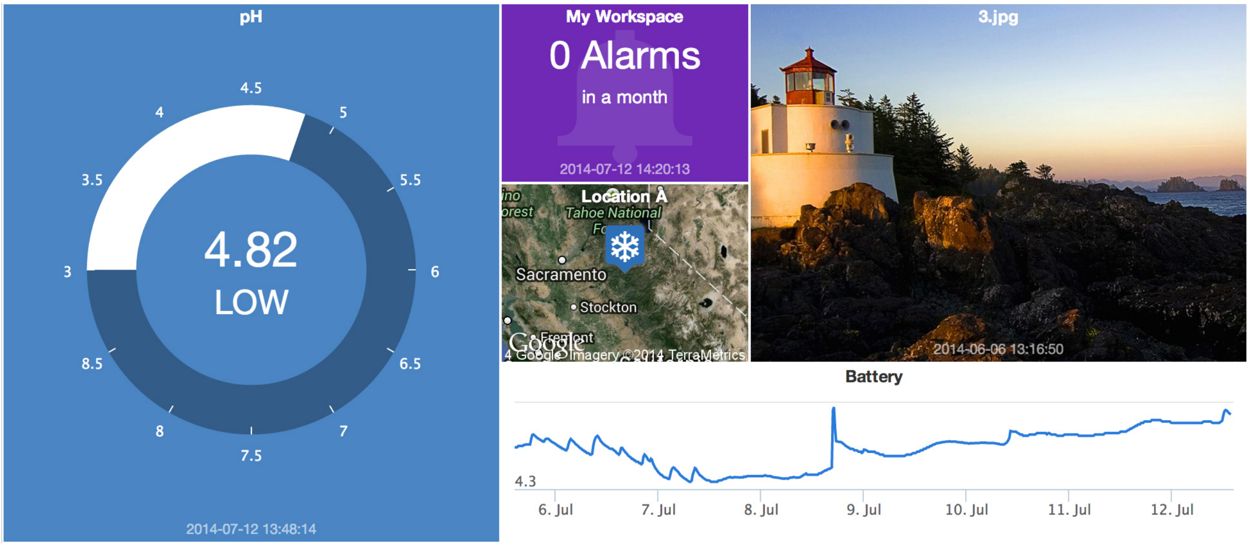
The dashboards overview is displayed when a container Node is selected in the Workspaces Tree. All dashboard Nodes within the Selected Node are shown. Click on a dashboard to select it for display. When viewing an individual Dashboard you can click the Overview button to get back to this view.


Status
demo/My Workspace/Location A
Operations
demo/My Workspace/Location B
System Overview
demo/My Workspace/Location B

Dashboard view

Dashboards contain user configurable tiles which can be linked to Nodes to display your important data in real-time with live updates. Tile layout is automatically adjusted on mobile devices.

Refer to *Dashboard configuration* (page 96) for Creating and working with Dashboards.


pH
4.5
4
5
3.5
5.5
3
6
8.5
6.5
8
7
7.5
4.82
LOW
2014-07-12 13:48:14
My Workspace
0 Alarms
in a month
2014-07-12 14:20:13
Location A
Tahoe National
Sacramento
Stockton
Fremont
Google
Imagery ©2014 TerraMetrics
3.jpg
2014-06-06 13:16:50
Battery
4.3
6. Jul
7. Jul
8. Jul
9. Jul
10. Jul
11. Jul
12. Jul

2.3 Nodes and Configuration

Nodes are the container objects that store all data and configuration for your projects. The following types of Nodes are available:

Workspaces *Workspaces* (page 52) are special container Nodes that can be shared with other users. All other Nodes are created within the Workspace. Workspaces can only be created by the Account Owner or Administrators.

Folder Folders are simple nodes that provide structure to your Workspaces. You may choose to group related content into folders by geography or related purpose. Folders can be created inside Workspaces, Locations and other Folders.

Location *Locations* (page 56) are special containers used to associate data with a geographical location. Locations can be created inside Workspaces and Groups.

Template *Templates* (page 60) are special container Nodes that are used to define consistent structure and configuration. They can be referenced as instances in other Workspaces to speed up automated configuration for large deployments.

Chart Create various types of *charts* (page 66) with customized functionality and appearance including historic charts with multiple y-axes and wind rose charts with configurable ranges.

Dashboard *Dashboards* (page 96) allow users to create customized views of their data in visually appealing layouts using animated gauges, charts, lists, maps and other graphical controls.

Attachment *Attachments* (page 105) include images, documents and other files stored in eagle.io. New attachments can be uploaded manually by a user or acquired via an Attachment Source. Attachments can be added inside Workspaces, Locations, Groups and Attachment Sources.

Attachment Source *Attachment Sources* (page 109) have the ability to automatically acquire or receive Attachments. Attachment Sources can be created inside Locations only.

Data Source *Data Sources* (page 134) automatically acquire or receive timeseries data using a variety of different transport options. Connect to a *data logger* or collect data from files. Data Sources can be created inside Locations only.

Processor *Processors* (page 224) are a type of Data Source containing a process that generates multiple output values, which are stored as new Parameters. Processors can be created inside Locations only.

Report *Reports* (page 161) generate PDFs and can be scheduled for delivery to subscribed users and groups via email.

Number Parameter Number *Parameters* (page 147) store historic time series data in numeric format. By default they display the current or historic value(s). Parameters are managed by and are always contained in Data Sources.

Number Parameter (State variation) Number *Parameters* (page 147) can also be set to display the current or historic state rather than value. This is useful for Boolean or Discrete state data.

Number Control Parameter Number Control *Parameters* (page 147) are similar to Number Parameters however the value can be controlled by the user. Historic data represents the user control operations.

Number Control Parameter (State variation) Number Control *Parameters* (page 147) can also be set to display the current or historic state(s)

Number Process Parameter Number *Process Parameters* (page 223) are similar to Number Parameters however the value is generated by a process.

Number Process Parameter (State variation) Number *Process Parameters* (page 223) can also be set to display the current or historic state rather than value. This is useful for Boolean or Discrete state data.

Rating Parameter *Rating Parameters* (page 156) are similar to Number Parameters however the value is generated by a rating.

Rating Parameter (State variation) *Rating Parameters* (page 156) can also be set to display the current or historic state rather than value. This is useful for Boolean or Discrete state data.

Text Parameter Text *Parameters* (page 147) store historic time series data in text format. They are useful when trying to capture events from log files or text-based data files.

Text Control Parameter Text Control *Parameters* (page 147) are similar to Text Parameters however the value can be controlled by the user. Historic data represents the user control operations. Please note: Text Control Parameters for Campbell Scientific data loggers currently do not support Control operations.

Text Process Parameter Text *Process Parameters* (page 223) are similar to Text Parameters however the value is generated by a process.

Time Parameter Time *Parameters* (page 147) store historic time series data as timestamps. Note: Time Parameters can not be displayed on charts.

Time Control Parameter Time Control *Parameters* (page 147) are similar to Time Parameters however the value can be controlled by the user. Historic data represents the user control operations. Note: Time Parameters can not be displayed on charts.

Time Process Parameter Time *Process Parameters* (page 223) are similar to Time Parameters however the value is generated by a process.

2.3.1 Workspace

Workspaces are special container Nodes that can be shared with other users. All other Nodes are created within the Workspace. Workspaces can only be created by the Account Owner or Administrators.

Properties

Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

Map layers

Use the *Map layers* section to add or remove KML (or KMZ) files to be *displayed on the map* (page 21) when this workspace is selected in the *Workspaces Tree* (page 13). Click the *Edit* button to show and modify the configuration for each layer. Use the *Add layer* button to add a new layer to the list. The following configuration options are available:

Type **Local KML** allows you to upload a file from your computer.

Remote KML should be used when the file is located on a publically accessible web server. Remote KML files will be automatically reloaded every 5 minutes.

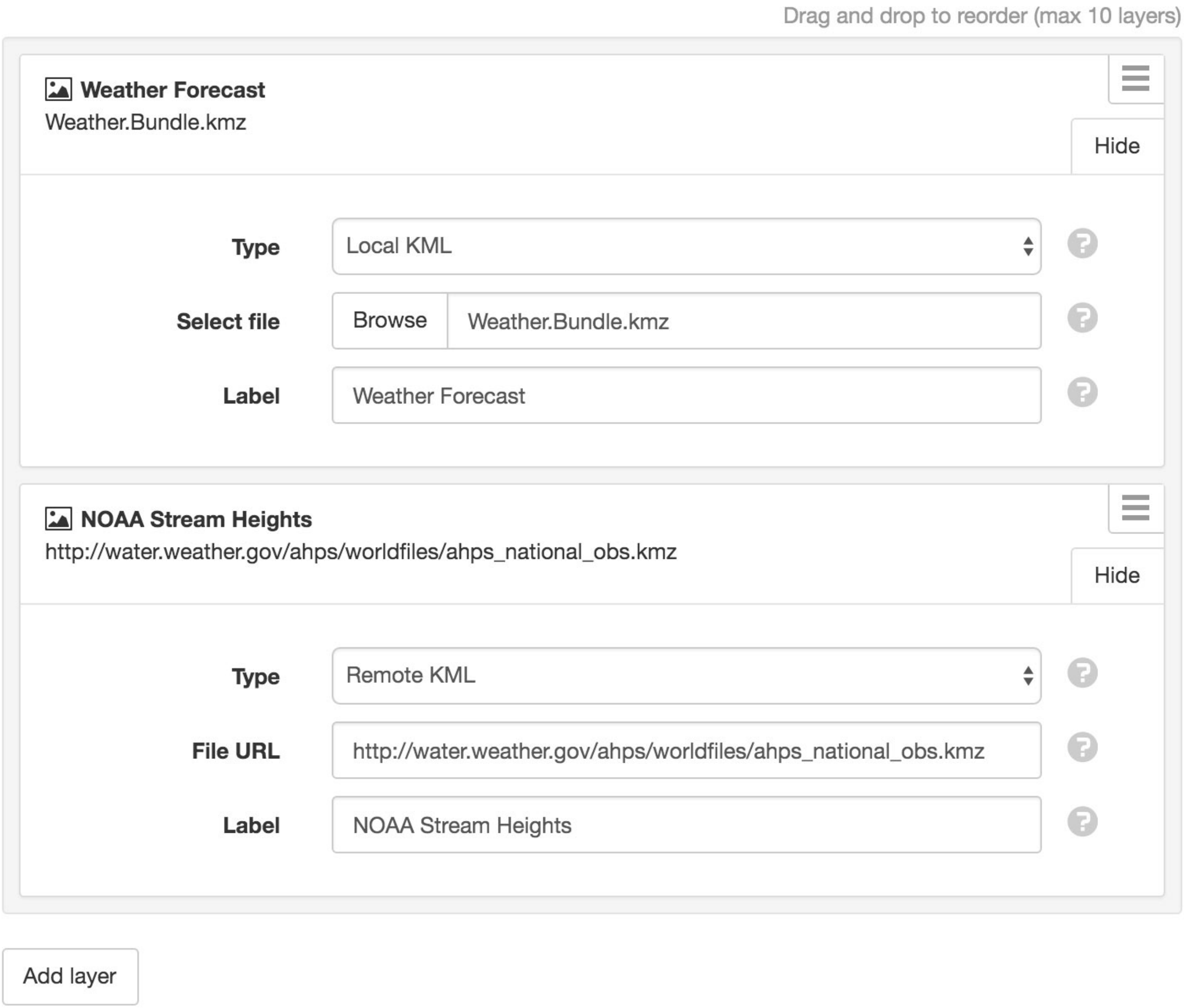
Select file / File URL Select a file to upload or enter the full HTTP(S) URL to the file.

Label The label is displayed in the layers menu on the map toolbar.

Layers can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the layer item).

Drag and drop layers in the list (or use the dropdown menu) to change their display order on the map.

```
Example URL: https://volcano.si.edu/ge/GVPWorldVolcanoes.kml
```



Weather Forecast
Weather.Bundle.kmz

Type: Local KML
Select file: Weather.Bundle.kmz
Label: Weather Forecast

NOAA Stream Heights
http://water.weather.gov/ahps/worldfiles/ahps_national_obs.kmz

Type: Remote KML
File URL: http://water.weather.gov/ahps/worldfiles/ahps_national_obs.kmz
Label: NOAA Stream Heights

Note: Restrictions apply to map layers:

- Maximum fetched file size (raw KML compressed KMZ): 3MB
- Maximum uncompressed KML file size: 10MB
- Maximum number of Network Links: 10
- Maximum number of total document-wide features: 1,000
- Remote layers will be automatically refreshed every 5 minutes

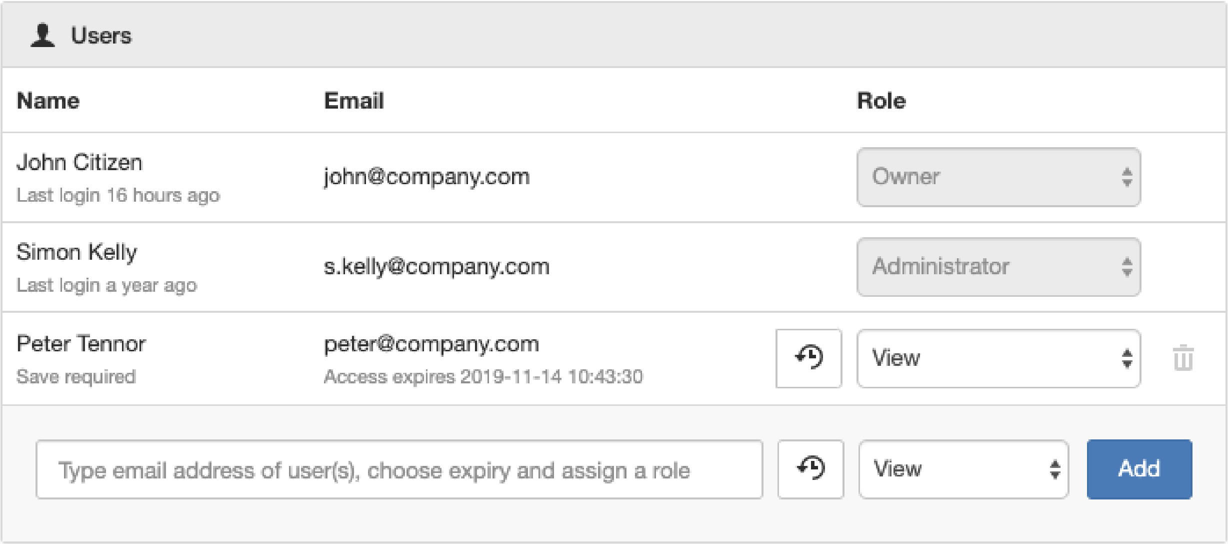
Refer to the google developer documentation (https://developers.google.com/maps/documentation/javascript/kmllayer?csw= for a complete list of restrictions and supported KML elements.

Security

The Security section allows a user with *security* permission to share the Workspace with other users individually or as a group.

Note: Workspace permissions do not expire by default. Temporary permissions can be granted by choosing an optional expiry time (this only applies to non-administrative users and groups).

Users can be individually added to the workspace by entering the email address of the new users (separate multiple email addresses with a comma), choosing an optional expiry time, assigning a security *role* (page 270) and clicking *Add*. You can remove or modify security roles for existing Workspace users. You can also modify the expiry time for existing Workspace users. Click *Save* when complete.

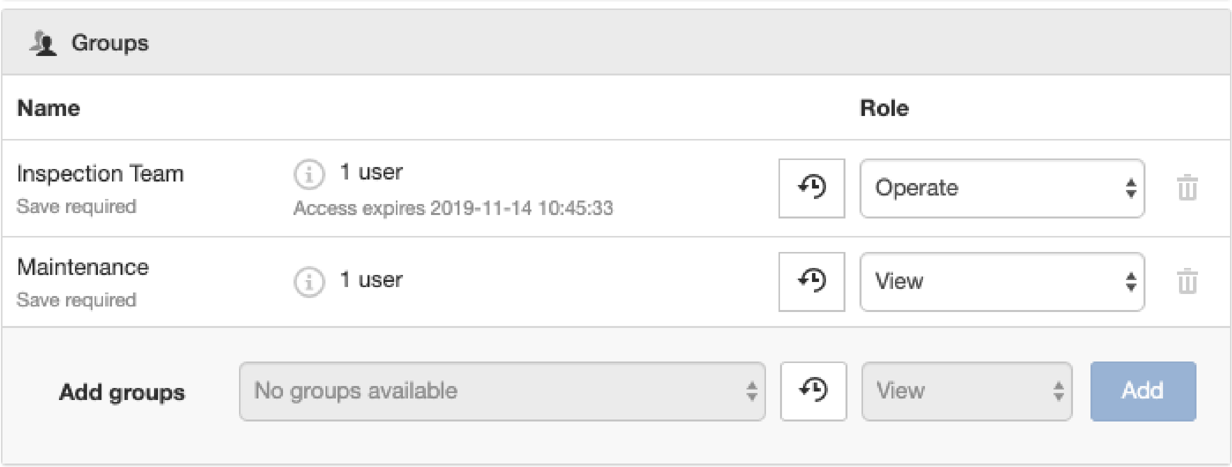


Users

Name	Email	Role
John Citizen Last login 16 hours ago	john@company.com	Owner
Simon Kelly Last login a year ago	s.kelly@company.com	Administrator
Peter Tennor Save required	peter@company.com Access expires 2019-11-14 10:43:30	View

Type email address of user(s), choose expiry and assign a role
View
Add

You can also *Add* a pre-configured *group* (page 269) of users to the Workspace, choose an optional expiry time, and assign a security *role* (page 270) which will be applied to all users in that group. The *Add groups* dropdown displays a list of all groups that have been configured in the account. To add a new group or assign users to the group refer to the section on *group security* (page 269).



Groups

Name		Role
Inspection Team Save required	1 user Access expires 2019-11-14 10:45:33	Operate
Maintenance Save required	1 user	View

Add groups: No groups available — View

An email notification will be sent to users when they are added or removed from the Workspace or when their security role is changed. New users will need to follow the instructions in the email to configure their user profile and log in. Existing users who are currently logged in and viewing the interface will notice the new settings take affect immediately.

You can restrict user/group access to any Node in the Workspace by opening the corresponding *Node Security* (page 58) dialog.

Note: Administrators automatically receive unrestricted access to all Workspaces in the account.

2.3.2 Location

Locations are special containers used to associate data with a geographical location. Locations can be created inside Workspaces and Groups.

Properties

Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

General

Coordinates Locations require coordinates for them to be displayed in Map View. The coordinates drop down displays a list of Sources (within the Location) that can be used to dynamically update the Location latitude and longitude. Select *Fixed Location* for manual positioning of the location on the map.

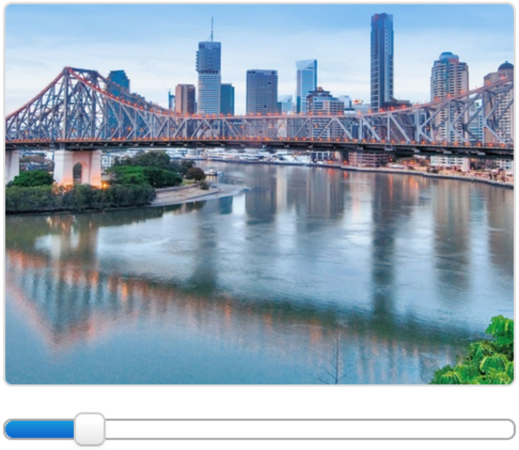
Fixed Location

Map Marker Select the color and style of the marker displayed on the map. Click the icon to reveal a drop down menu.

Image Locations can have an image associated with them. The image can be static (uploaded by user), or dynamically updated with an Attachment Source (within the Location). Select *Fixed Image* to upload an image or choose an existing image attachment (within the Location).

Fixed Image

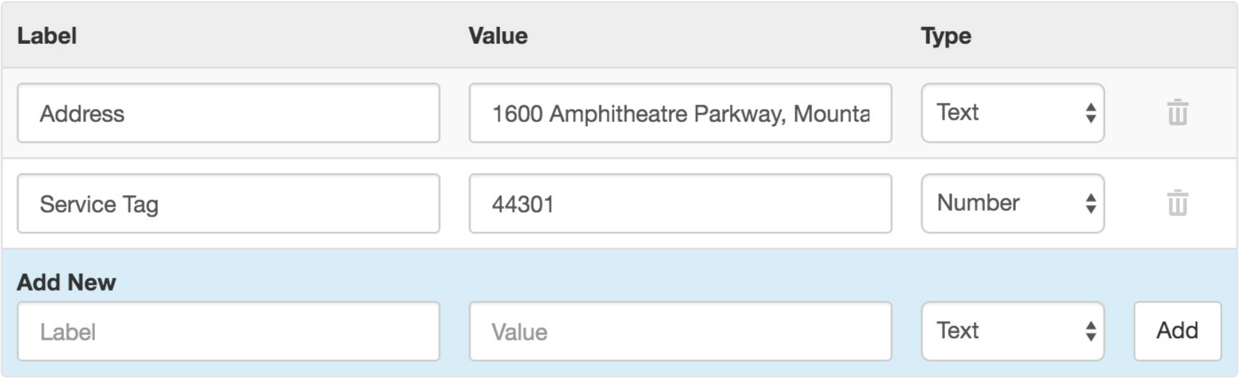
Image zoom/pan Fixed images can be zoomed and panned as required. Use the zoom slider to quickly zoom in/out and click or touch the image and drag around the preview container to pan.



Quality Alarm See *Alarms and Notifications* (page 174).

Metadata

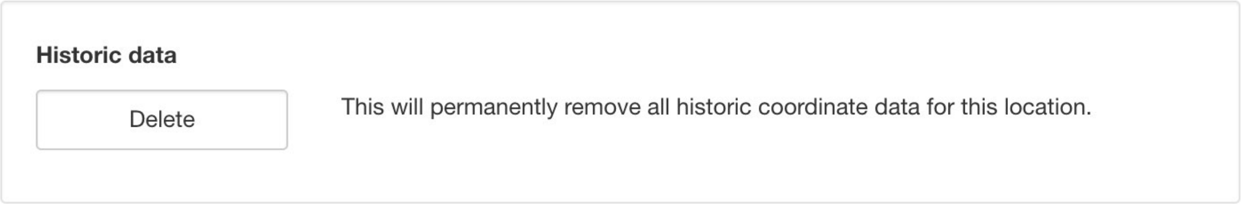
Metadata provides a simple key/value data structure that can be used to store static information about the location. Values can be saved as Number or Text and are displayed in the Locations List View.



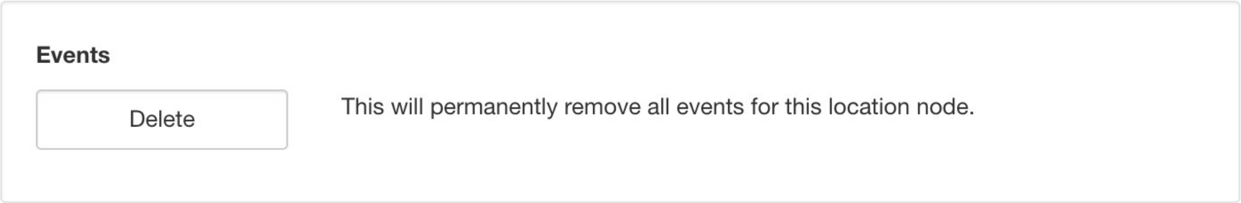
Label	Value	Type	
Address	1600 Amphitheatre Parkway, Mounta	Text	🗑
Service Tag	44301	Number	🗑
Add New			
Label	Value	Text	Add

Historic

Click the *Delete* buttons and save to permanently remove all *historic coordinate data* or *events* for this Location node. Alternatively use the *Source Historic* (page 121) section to delete historic data or events for a Data Source and its Parameters.


Historic data

This will permanently remove all historic coordinate data for this location.

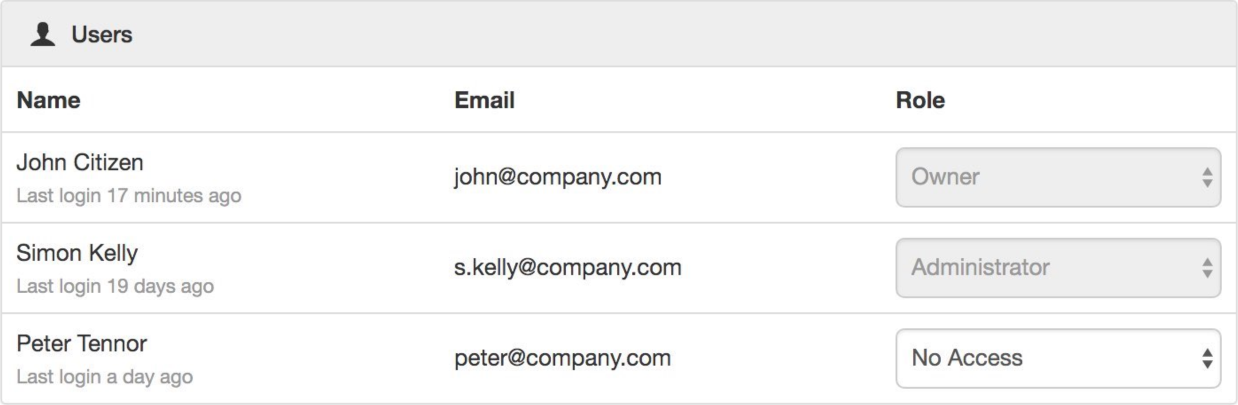

Events

This will permanently remove all events for this location node.

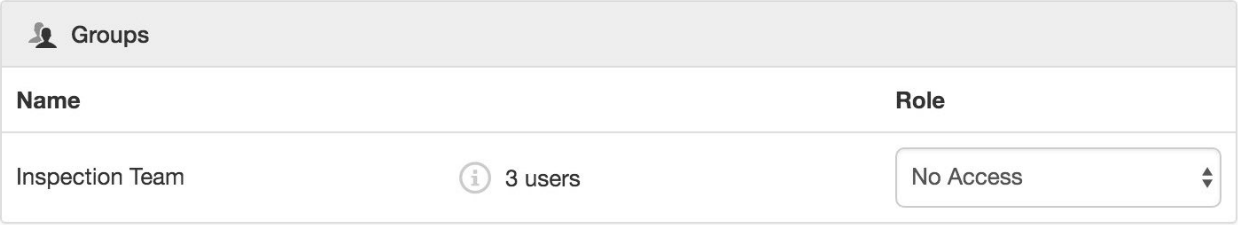
Security

The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.


Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access

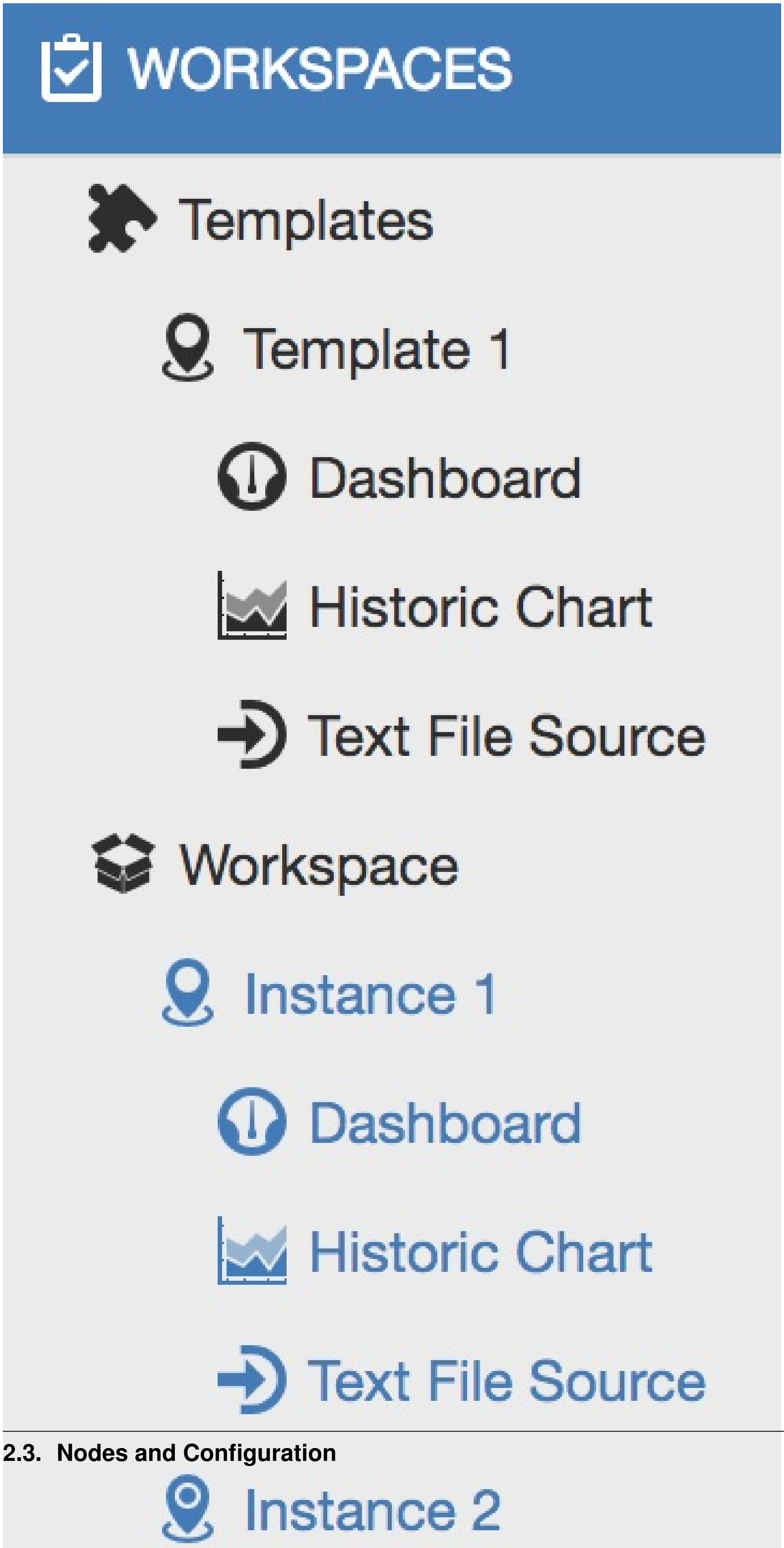

Groups

Name		Role
Inspection Team	3 users	No Access

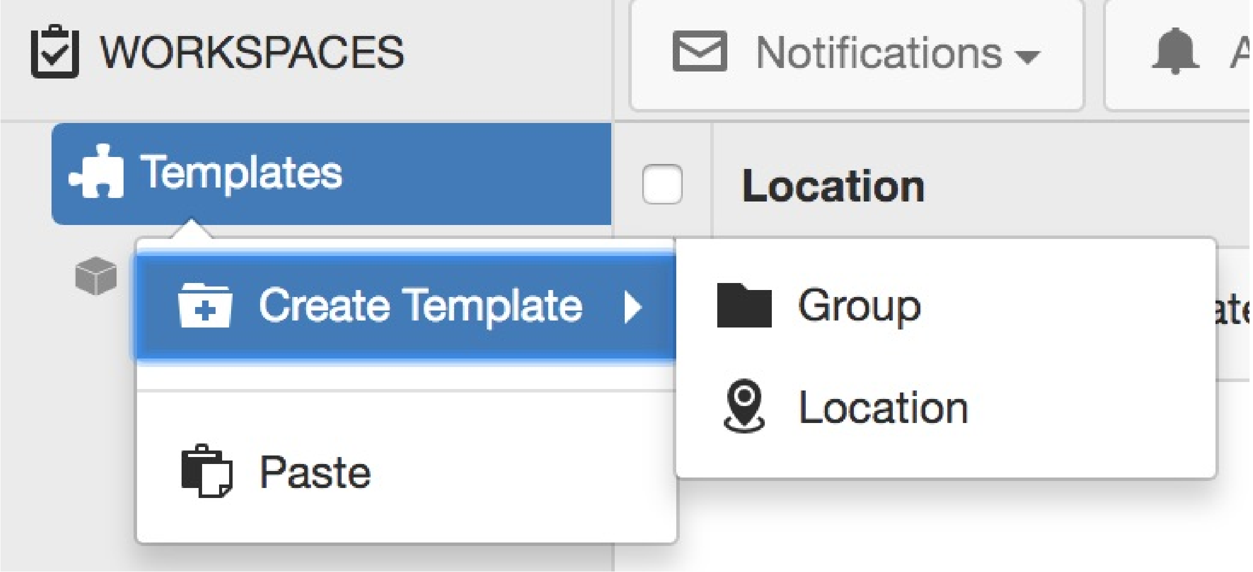
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

2.3.3 Template

Templates are special container Nodes that allow a hierarchy of configuration to be defined once and replicated to any number of *Instances* (page 62). This reduces configuration time and ensures consistency for large deployments, while allowing individual attributes to be customised.


WORKSPACES
Templates
Template 1
Dashboard
Historic Chart
Text File Source
Workspace
Instance 1
Dashboard
Historic Chart
Text File Source
Instance 2

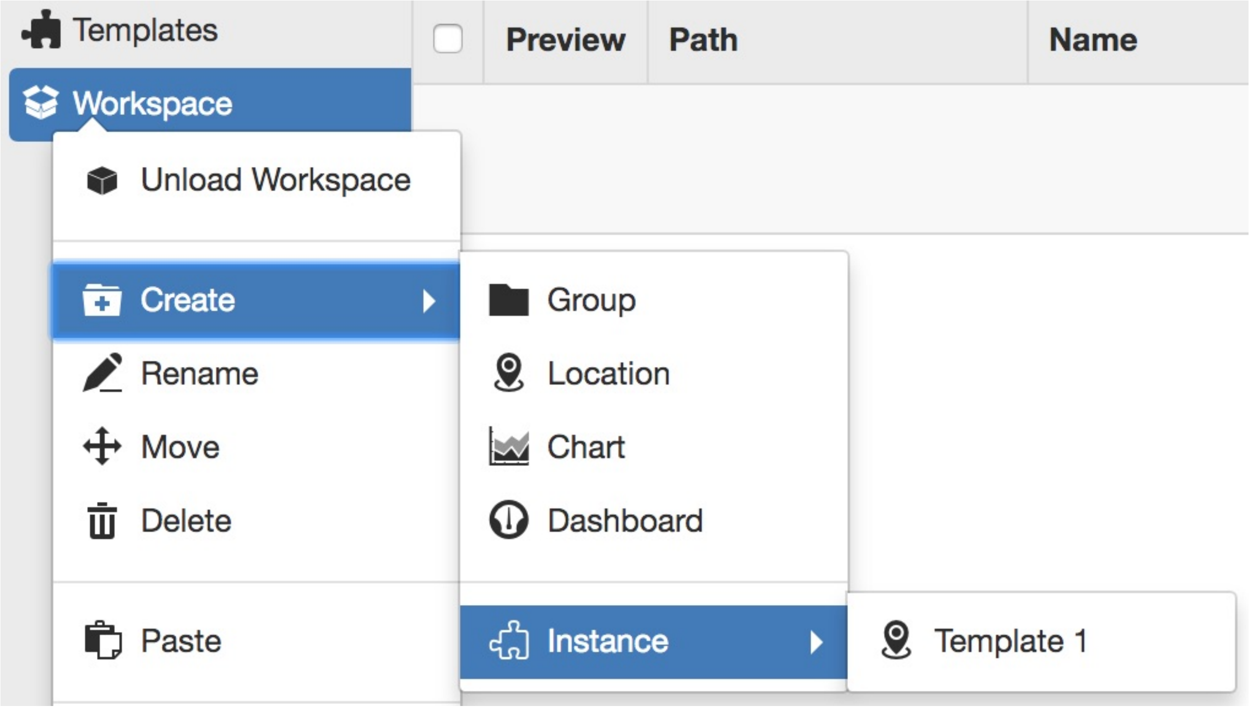
The *Templates* Node always appears at the top of the Workspaces Tree and is identified by the puzzle icon. A new Template begins as a Group or Location, and is then populated with any number of Nodes. Changes to an existing Template (or Node therein) will be immediately reflected in all Instances referring to that Template. These changes can include the addition or removal of Nodes, or any configuration change within the Template.



Warning: Removing a Template will also remove all Instances linked to the Template.

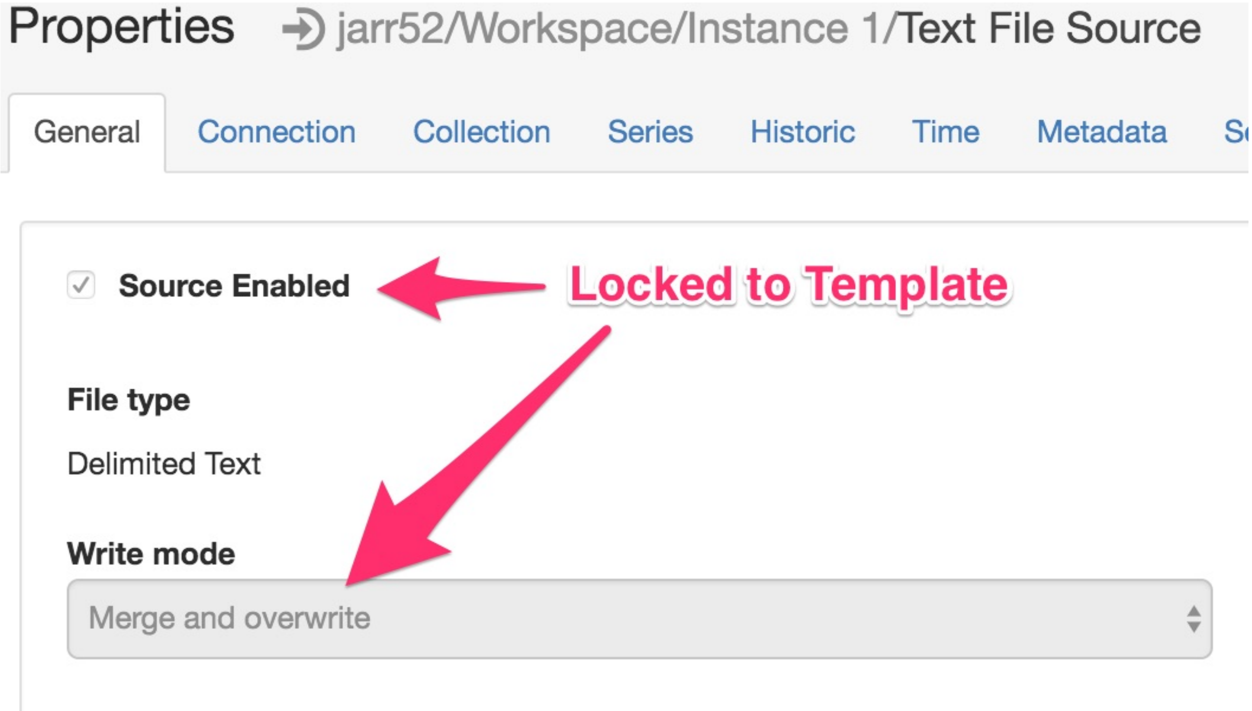
Instances

Instances can be created in any of your Workspaces and must refer to one of the Templates you have already created. Each Instance may be renamed but all additional configuration items will be locked to the Template.


Templates
Workspace
☐
Preview
Path
Name
Unload Workspace
Create
Rename
Move
Delete
Paste
Group
Location
Chart
Dashboard
Instance
Template 1

Note: An Instance can only be created directly under a Workspace or Folder.

By default, Instance configuration attributes are locked to the Template and cannot be modified. In this way, locked attributes ensure consistency across all Instances that refer to the same Template.



Properties jarr52/Workspace/Instance 1/Text File Source

☑ Source Enabled

Locked to Template

File type

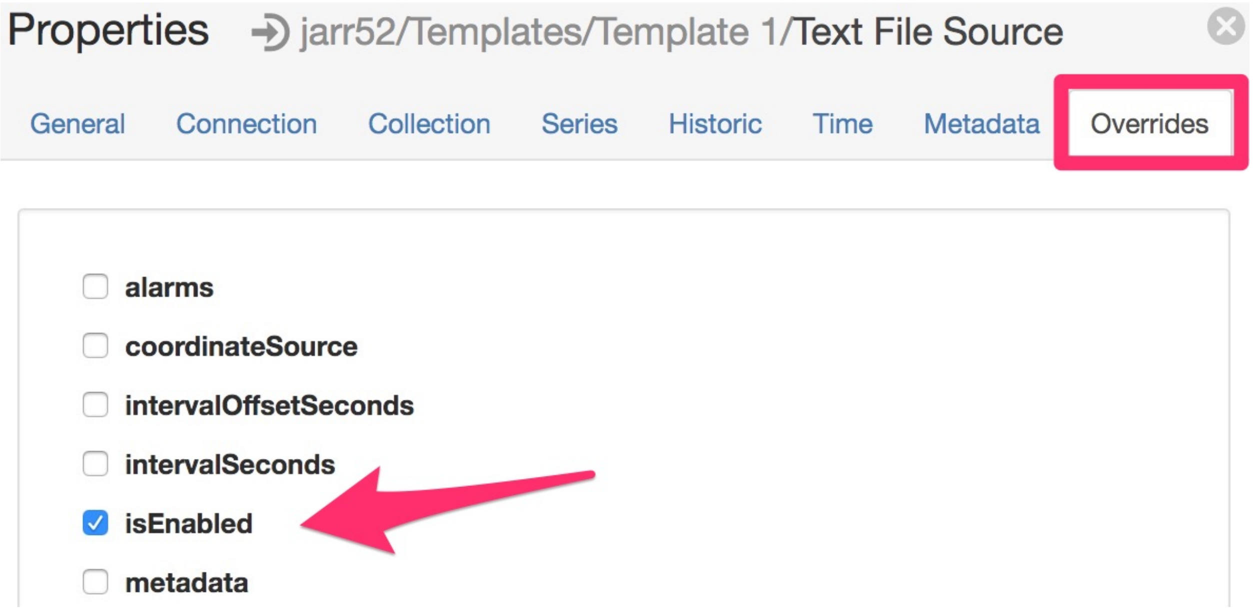
Delimited Text

Write mode

Merge and overwrite

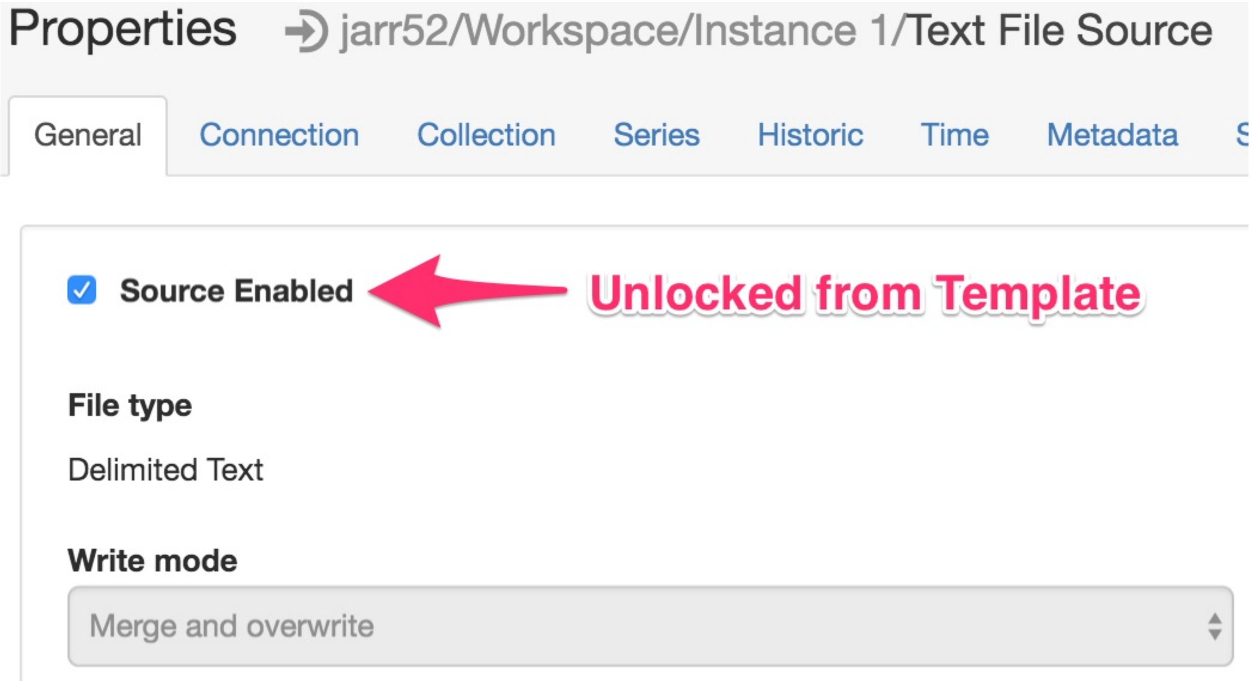
Overrides

Overrides allow you to select attributes in a Template that may be individually customised in the corresponding instance Nodes. Each type of Template Node will expose a different list of available attributes. Any attributes that have not been selected as overrides in the Template will be shown as locked in the Instance configuration, indicating that they cannot be changed.


Properties
jarr52/Templates/Template 1/Text File Source
General
Connection
Collection
Series
Historic
Time
Metadata
Overrides

☐ alarms
☐ coordinateSource
☐ intervalOffsetSeconds
☐ intervalSeconds
☑ isEnabled
☐ metadata

Once an override has been added in the Template configuration, the attribute will become modifiable in every Instance.


Properties
jarr52/Workspace/Instance 1/Text File Source
General
Connection
Collection
Series
Historic
Time
Metadata
Unlocked from Template

☑ Source Enabled

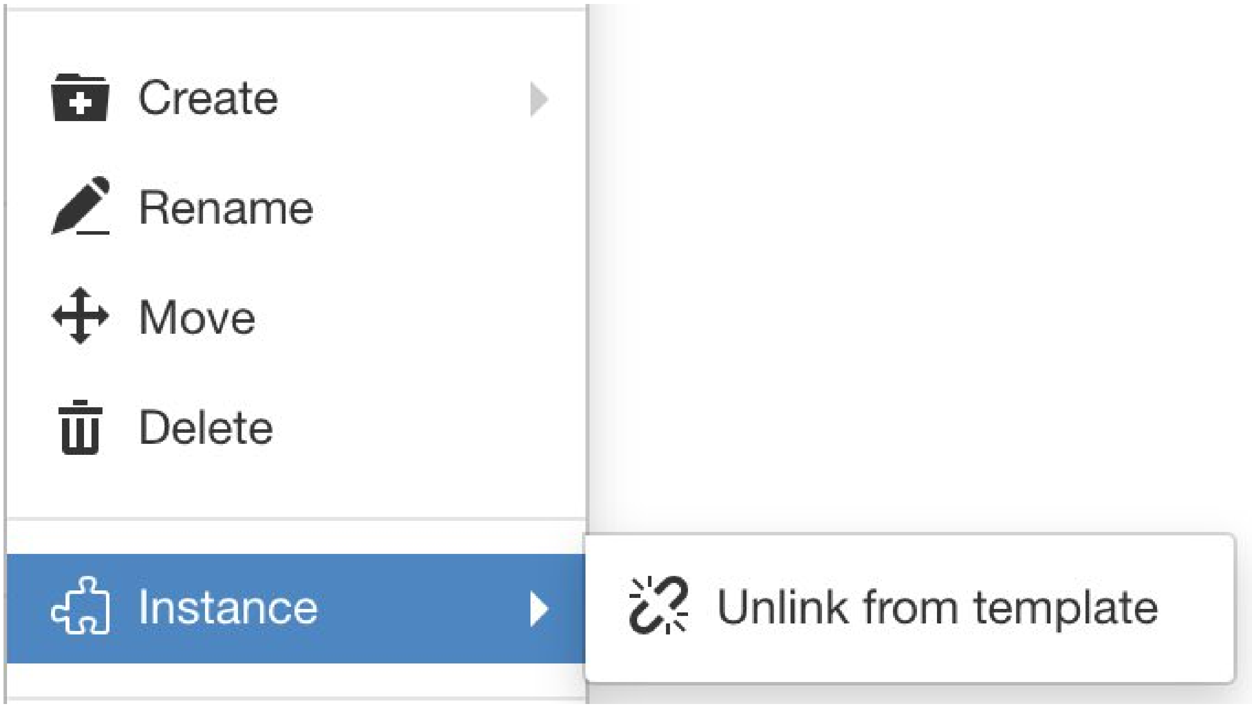
File type
Delimited Text

Write mode
Merge and overwrite

Warning: Removing an override in a Template will reset that attribute in the corresponding Instance Nodes back to the templated value.

Instance operations

The Instance context-menu accessible via the Workspaces Tree contains instance operations.



Unlink from Template

Unlinking an Instance will permanently disassociate it from the Template. The instance (and its decendants) will be converted to standard nodes. Configuration, events and historic data will remain intact.

2.3.4 Chart

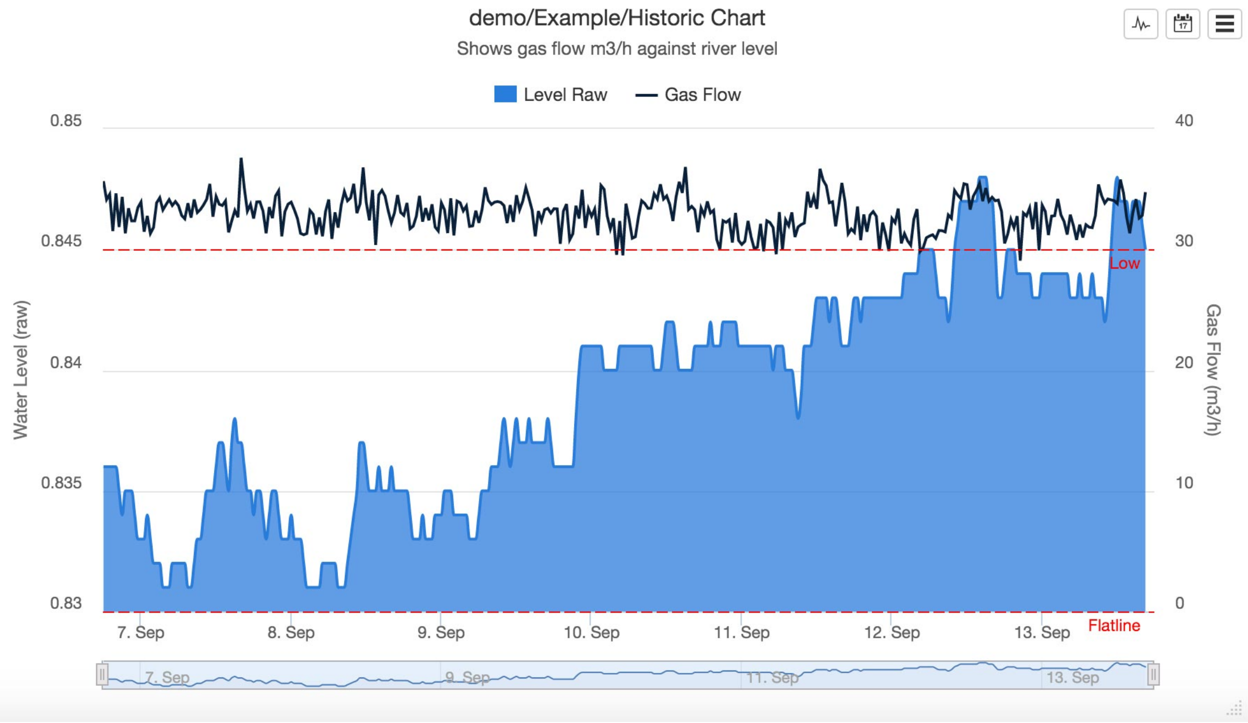
Create various types of charts with customized functionality and appearance including historic charts with multiple y-axes, displacement charts and wind rose charts with configurable ranges.

To view custom charts navigate to *Chart View* → *Custom*. You will see a list of all custom charts under the selected Node in the Workspaces Tree. You can also display any pre-configured charts as a *Custom chart* tile on a *Dashboard* (page 96).

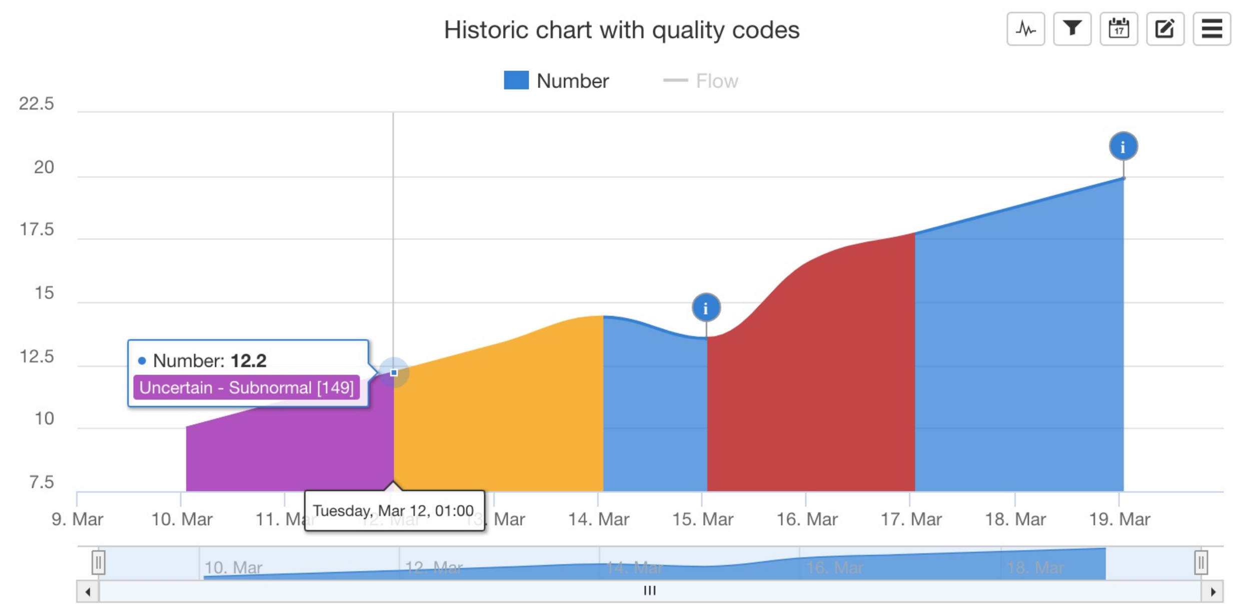
Types of charts available:

Historic

Historic charts allow for more customization over the default *Location* and *Parameter* charts available in *Chart View* (page 35). You can create multiple y-axes with fixed or automatic scaling, change the data aggregation and styles of individual parameters and preset the default time range.



You can customize the chart to visually indicate assigned *quality codes* (page 577) via associated quality colors. Refer to *Quality style* in *Parameter chart configuration* (page 152).

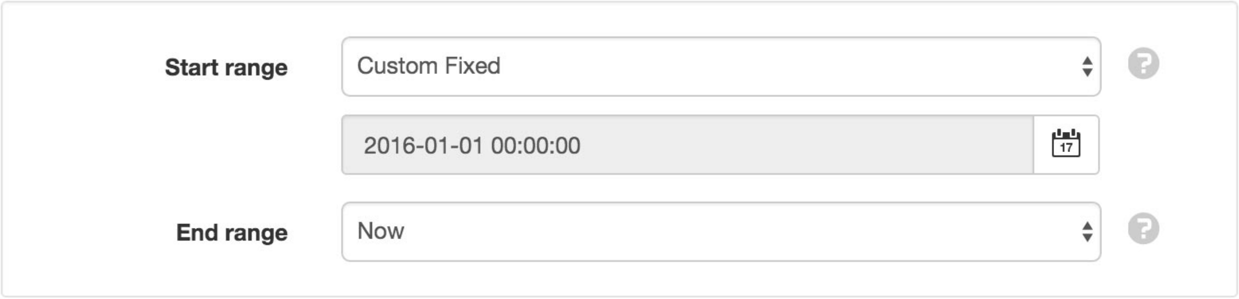


Properties

Configure properties via the Workspaces Tree' context menu. Requires *configure* permission.

General

The General section allows a default *Start range* and *End range* to be set. This range will be used when the chart is initially displayed. Choose a preset or *Custom OPC* for *relative time* (page 585). Select *Custom Fixed* for absolute time.

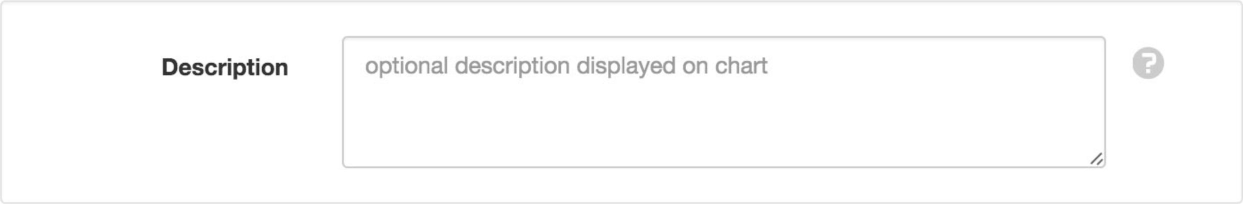


Start range: Custom Fixed

2016-01-01 00:00:00

End range: Now

Optionally enter a description to be displayed on the chart below the title.

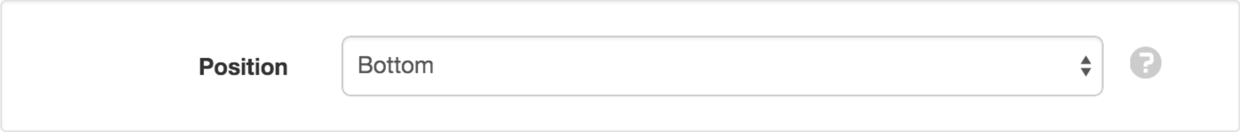


Axes

The Axes section allows you to customize the style and functionality of the X-axis and Y-axes of the chart.

X Axis

Set the position of the x-axis (time) to display on the *Top* or *Bottom* of the chart.


Position: Bottom

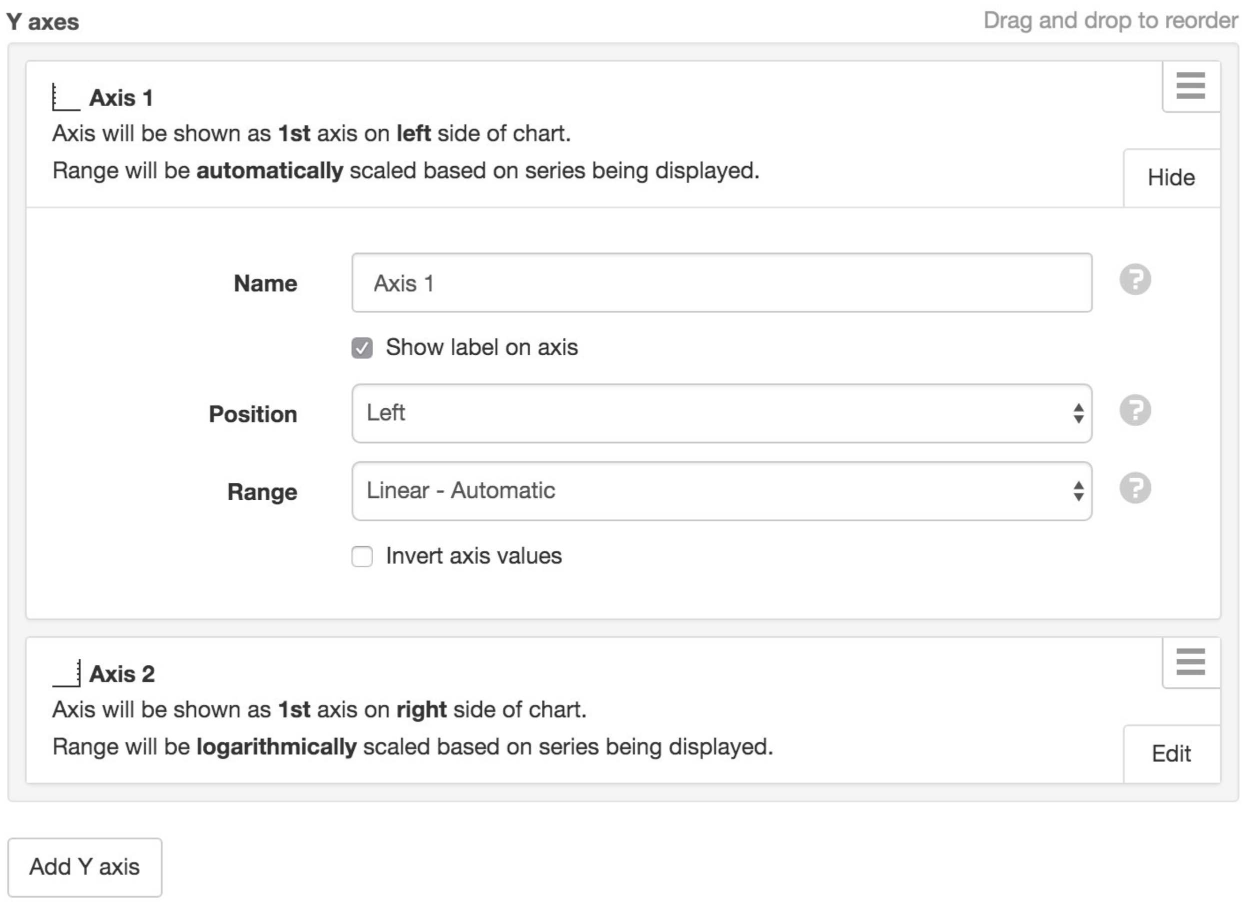
Y Axes

You can create unlimited y-axes to be displayed on the chart.

Click the *Edit* button to show and modify the configuration for each y-axes. Use the *Add Y axis* button to create a new axis. Axes can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the axis item).

Y-axes can be *linear* with *automatic* or *fixed* minimum and maximum ranges or displayed with *logarithmic* scaling.

Drag and drop axes in the list to change their display order on the chart.



Y axes

Axis 1

Axis will be shown as **1st** axis on **left** side of chart.

Range will be **automatically** scaled based on series being displayed.

Name Axis 1

☑ Show label on axis

Position Left

Range Linear - Automatic

☐ Invert axis values

Axis 2

Axis will be shown as **1st** axis on **right** side of chart.

Range will be **logarithmically** scaled based on series being displayed.

Note: By default, links are automatically assigned to the first y-axis. You need to *Edit* each link and specify a *Y axis*.

Links

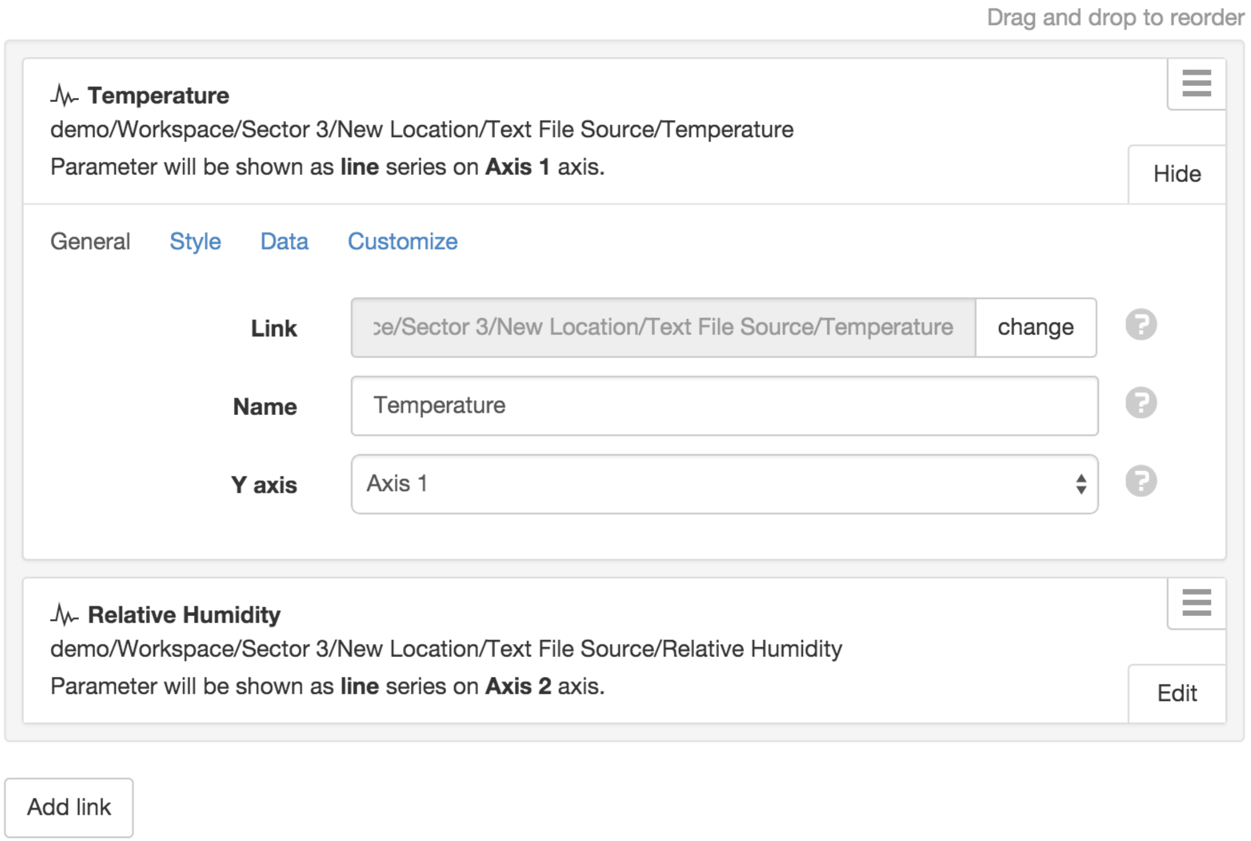
Links assign Nodes in the Workspaces Tree to the chart so the corresponding data can be displayed and updated live.

Click the *Edit* button to show and modify the configuration for each link. Use the *Add link* button to display the Workspaces Tree and select a new Node to link. Links can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the link item).

Charts can not have links to Nodes in different Workspace and currently do not support the same nodes being linked more than once to the same chart.

Drag and drop links in the list to change their display order on the chart.

Refer to *Parameter chart configuration* (page 152) for a description of all available settings.



Drag and drop to reorder

Temperature
demo/Workspace/Sector 3/New Location/Text File Source/Temperature
Parameter will be shown as **line** series on **Axis 1** axis.

General Style Data Customize

Link ɔe/Sector 3/New Location/Text File Source/Temperature

Name Temperature

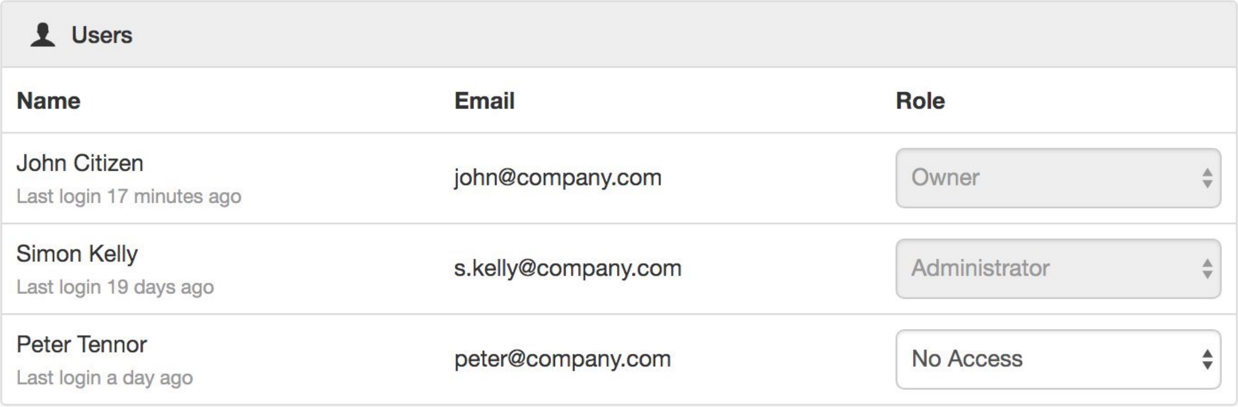
Y axis Axis 1

Relative Humidity
demo/Workspace/Sector 3/New Location/Text File Source/Relative Humidity
Parameter will be shown as **line** series on **Axis 2** axis.

Security

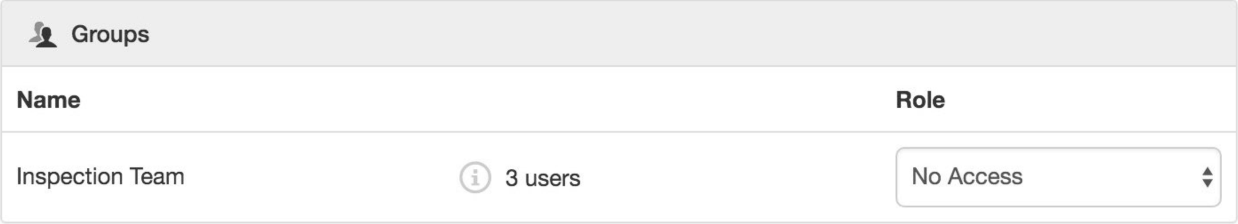
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Groups

Name		Role
Inspection Team	3 users	No Access

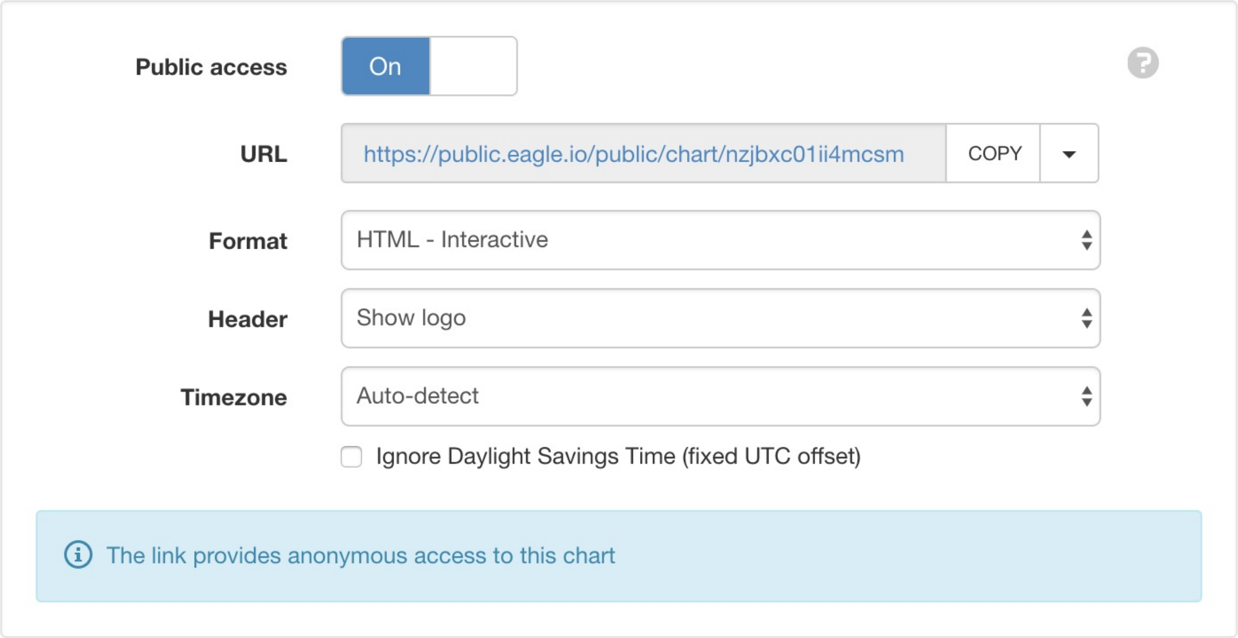
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public Access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access On

URL https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format HTML - Interactive

Header Show logo

Timezone Auto-detect

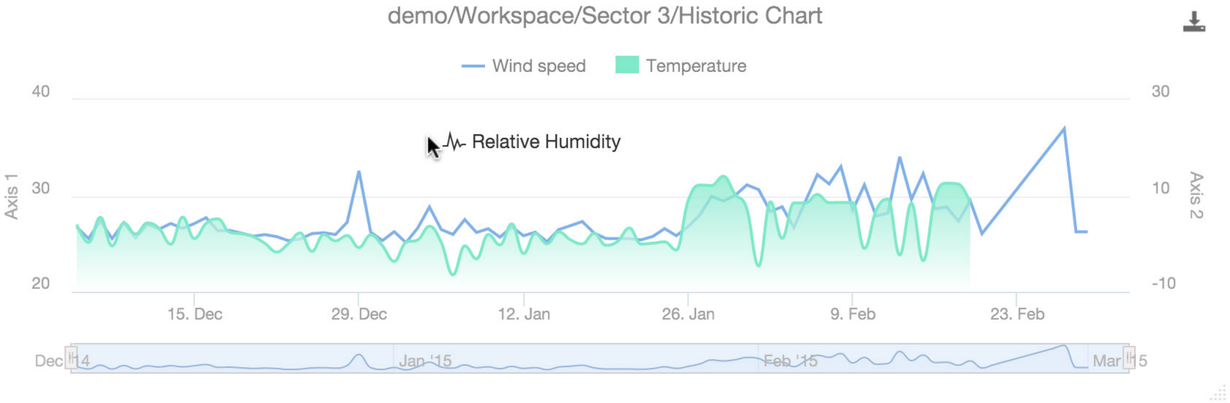
☐ Ignore Daylight Savings Time (fixed UTC offset)

The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

Drag and Drop Links

Nodes can be dragged with a mouse directly from the Workspaces Tree and dropped onto applicable charts (indicated with drop-accept and drop-blocked mouse cursor icons).



demo/Workspace/Sector 3/Historic Chart
Wind speed
Temperature
Relative Humidity
Axis 1
40
30
20
Axis 2
30
10
-10
15. Dec
29. Dec
12. Jan
26. Jan
9. Feb
23. Feb
Dec '14
Jan '15
Feb '15
Mar '15

Copy/Paste Charts

Copy/Paste operations can be performed from the Workspaces Tree to quickly duplicate one or more charts. Links are automatically re-assigned to corresponding Nodes relative to the chart if they exist at the destination. ie. You can copy/paste complete Locations containing charts without manually re-assigning all Links.

Move Charts

Moving a chart within a Workspace will keep existing links. Moving a chart between Workspaces will invalidate any Link where the linked node is not available in the destination Workspace.

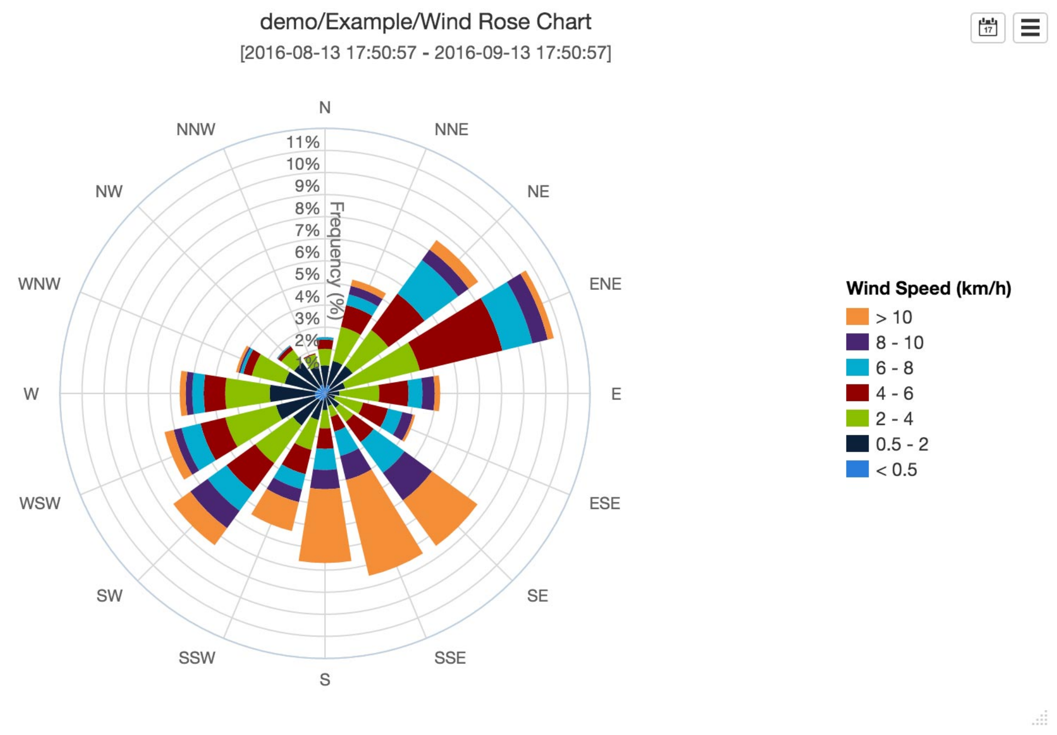
Link error

If a linked Node is removed or not accessible after a copy/paste or move operation then the chart will display the Link error icon to indicate a problem with one or more Links. Links can be removed or reconfigured from the Links section in the chart properties dialog.

Wind Rose

Wind Rose charts provide a view of how wind speed and direction are typlically distributed at a particular location.

Using a polar coordinate system of gridding, the frequency of winds over a time period is plotted by wind direction, with color bands showing wind speed ranges. The direction of the longest spoke shows the wind direction with the greatest frequency.

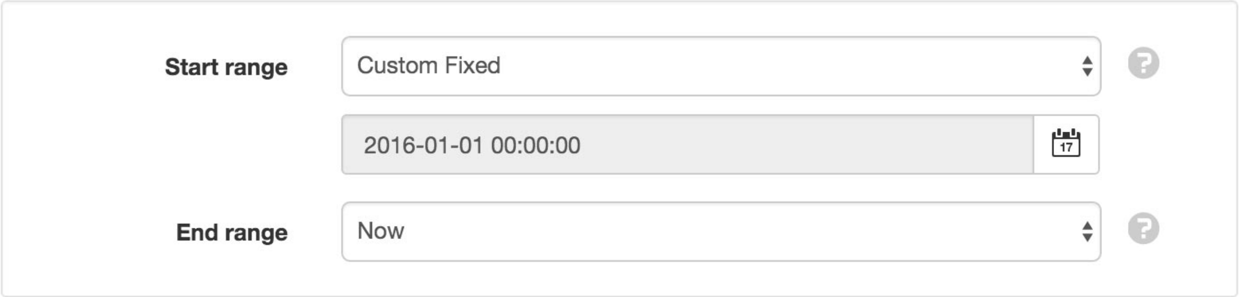


Properties

Configure properties via the Workspaces Tree' context menu. Requires *configure* permission.

General

The General section allows a default *Start range* and *End range* to be set. This range will be used when the chart is initially displayed. Choose a preset or *Custom OPC* for *relative time* (page 585). Select *Custom Fixed* for absolute time.

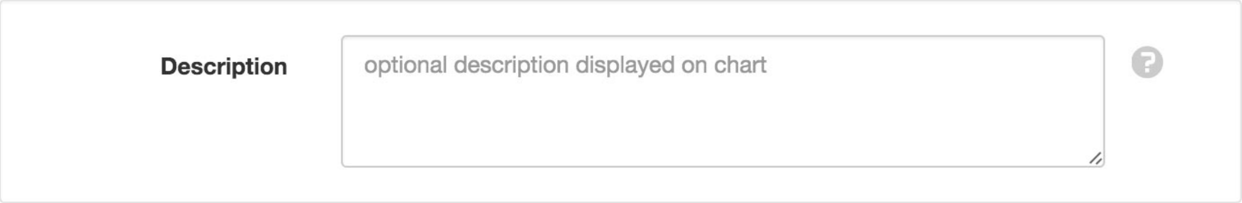


Start range Custom Fixed

2016-01-01 00:00:00

End range Now

Optionally enter a description to be displayed on the chart below the title.



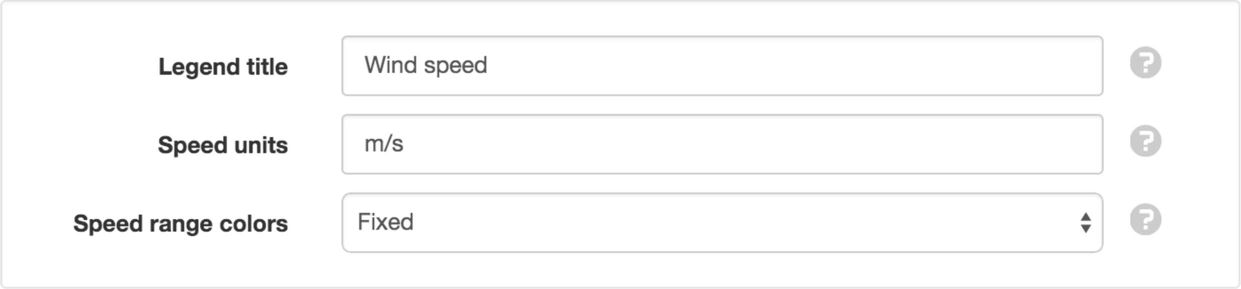
Description: optional description displayed on chart

Axes

The Axes section allows you to customize the style and functionality of the chart including *Speed* and *Speed Ranges*.

Speed

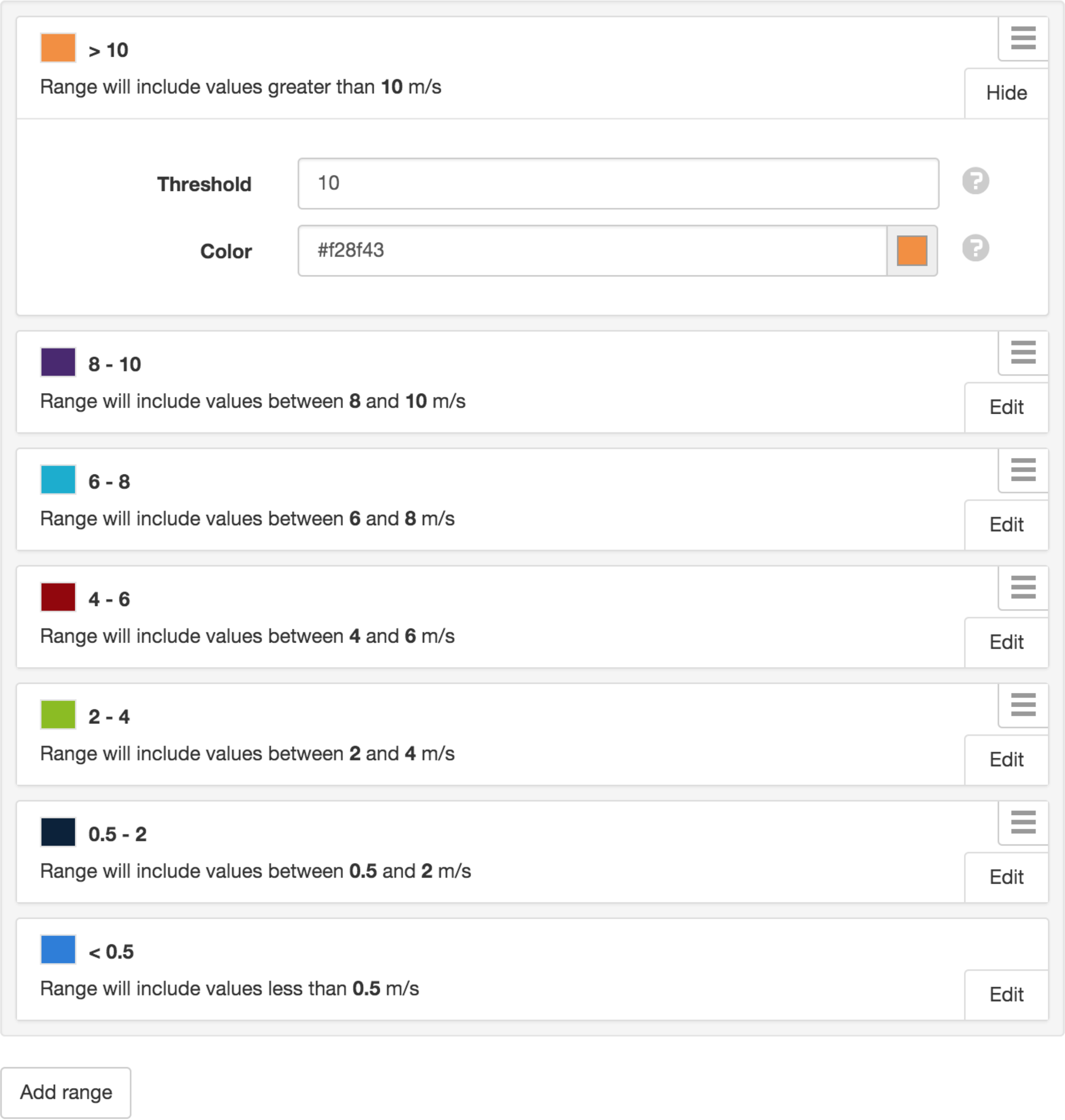
Set the *legend title* and *speed units* to be displayed on the chart and tooltips. *Speed range colors* is set to *Automatic* by default. If you would like to overwrite colors for speed ranges you should select *Fixed* and *Edit* the specific ranges that require changes.



Legend title: Wind speed
Speed units: m/s
Speed range colors: Fixed

Speed ranges

Click the *Edit* button to show and modify the configuration for each speed range including its lowest threshold limit. Use the *Add range* button to create new ranges. Ranges can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the range item).



🟧 **> 10**
Range will include values greater than **10** m/s

Threshold 10

Color #f28f43

🟪 **8 - 10**
Range will include values between **8** and **10** m/s

🟦 **6 - 8**
Range will include values between **6** and **8** m/s

🟥 **4 - 6**
Range will include values between **4** and **6** m/s

🟩 **2 - 4**
Range will include values between **2** and **4** m/s

⬛ **0.5 - 2**
Range will include values between **0.5** and **2** m/s

🟦 **< 0.5**
Range will include values less than **0.5** m/s

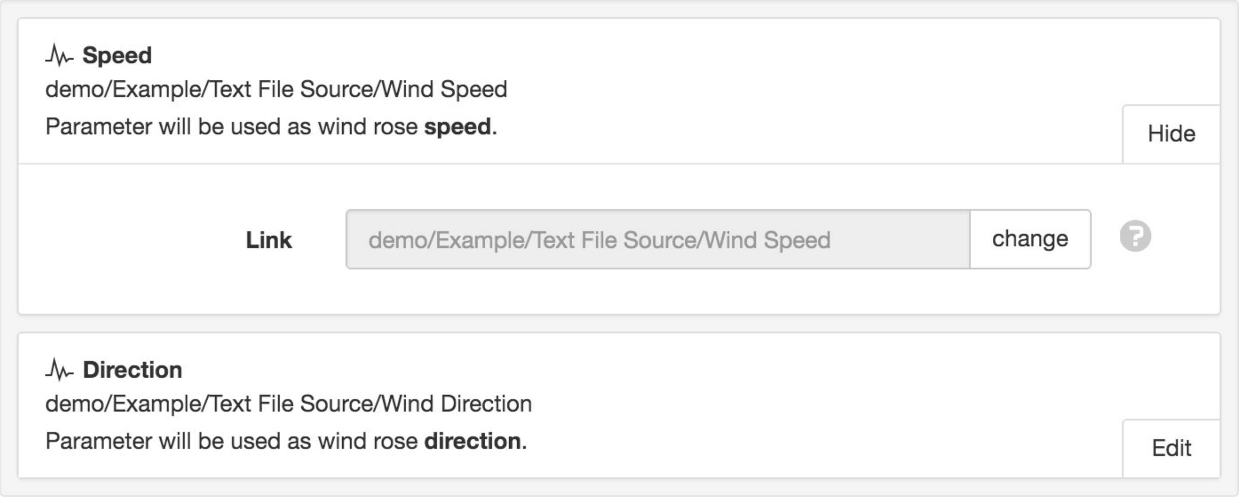
Note: Range items are automatically reordered based on threshold value.

Links

Links assign Nodes in the Workspaces Tree to the chart so the corresponding data can be displayed and updated live. Wind Rose charts require both *speed* and *direction* parameters (direction should contain numeric values between 0-360).

Click the *Edit* button to show and modify the configuration for each link. Use the *change* button to display the Workspaces Tree and select a new Node to link.

Charts can not have links to Nodes in different Workspace and currently do not support the same nodes being linked more than once to the same chart.



Speed
demo/Example/Text File Source/Wind Speed
Parameter will be used as wind rose **speed**.

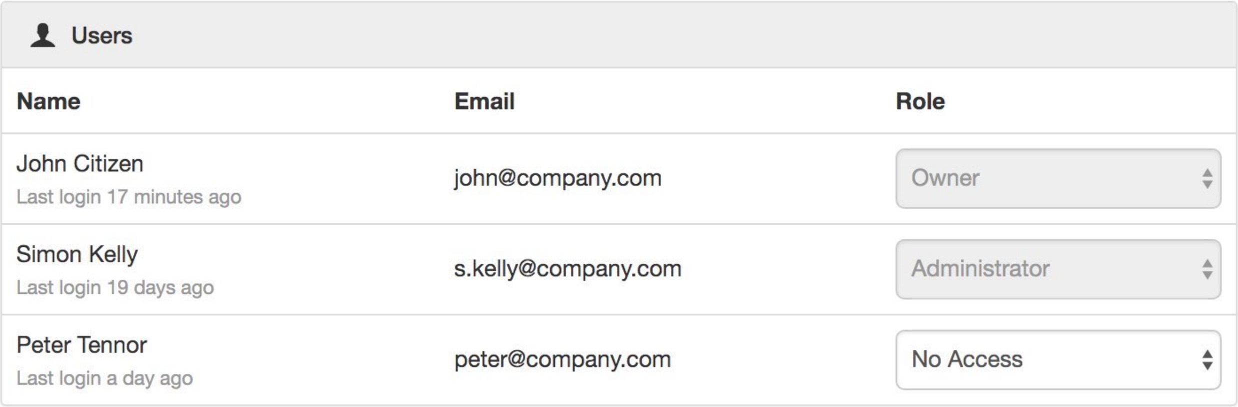
Link demo/Example/Text File Source/Wind Speed

Direction
demo/Example/Text File Source/Wind Direction
Parameter will be used as wind rose **direction**.

Security

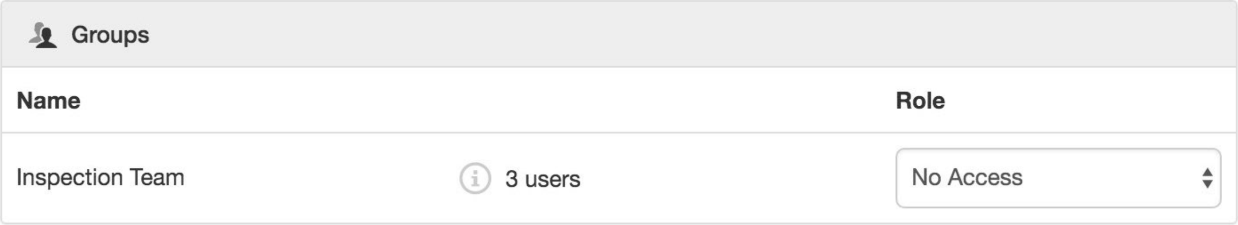
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Name		Role
Inspection Team	3 users	No Access

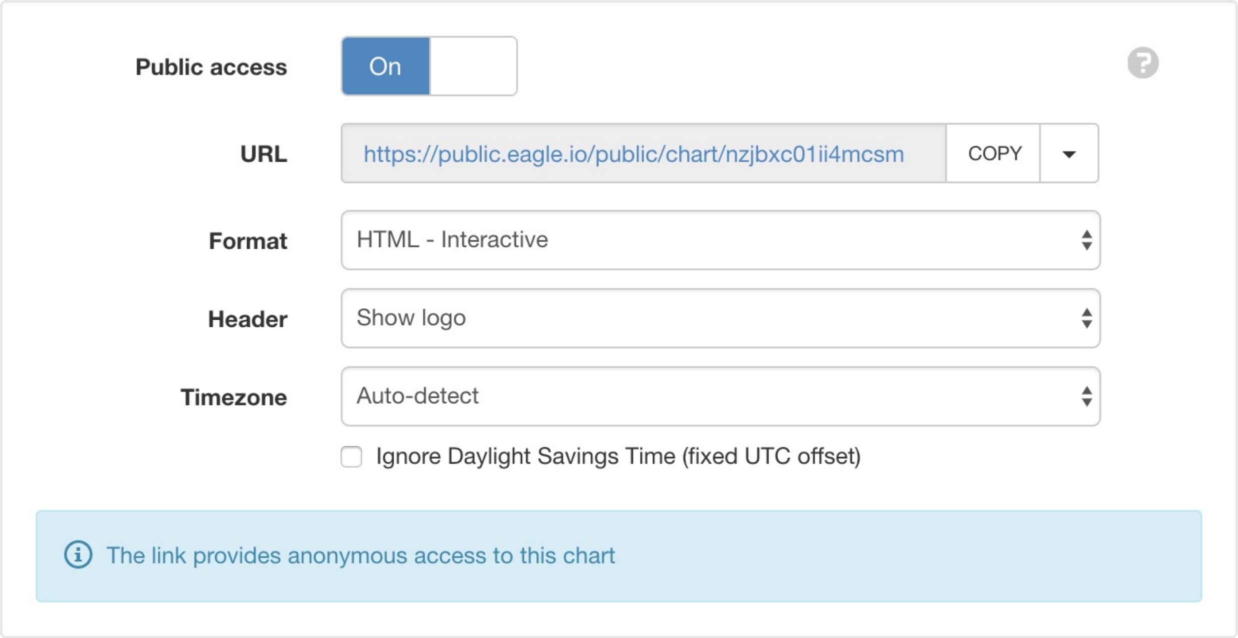
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public Access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access: On

URL: https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format: HTML - Interactive

Header: Show logo

Timezone: Auto-detect

☐ Ignore Daylight Savings Time (fixed UTC offset)

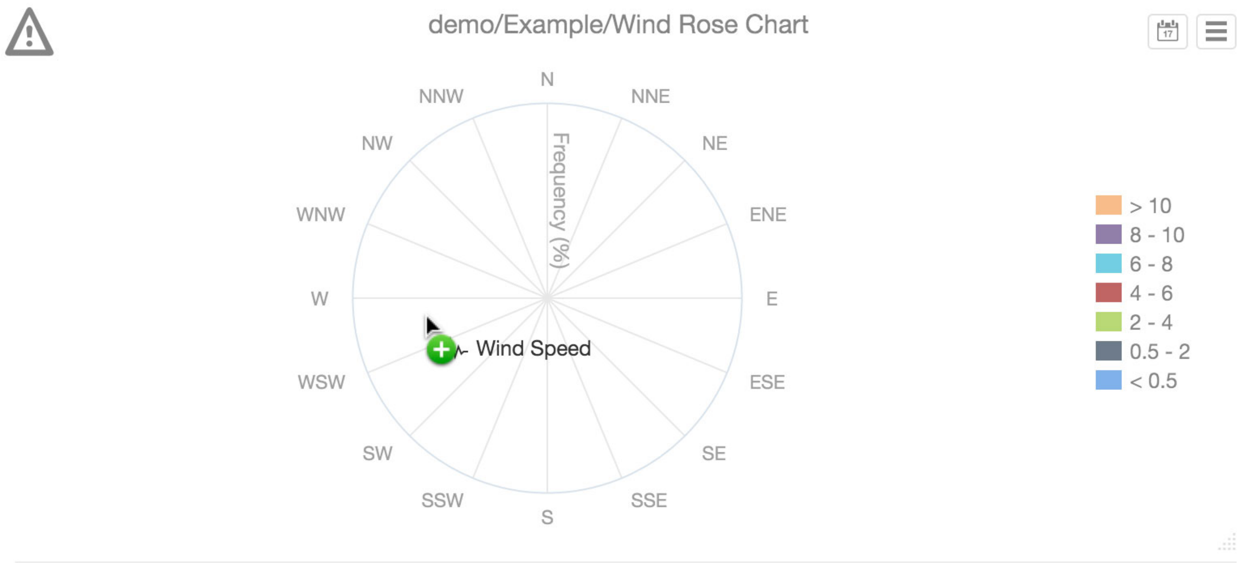
The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

Drag and Drop Links

Nodes can be dragged with a mouse directly from the Workspaces Tree and dropped onto applicable charts (indicated with drop-accept and drop-blocked mouse cursor icons).

Note: Parameters will be automatically assigned as either *speed* or *direction* based on parameter names. However you should review the *links* from the properties dialog to ensure correct assignment.



Copy/Paste Charts

Copy/Paste operations can be performed from the Workspaces Tree to quickly duplicate one or more charts. Links are automatically re-assigned to corresponding Nodes relative to the Chart if they exist at the destination. ie. You can copy/paste complete Locations containing charts without manually re-assigning all links.

Move Charts

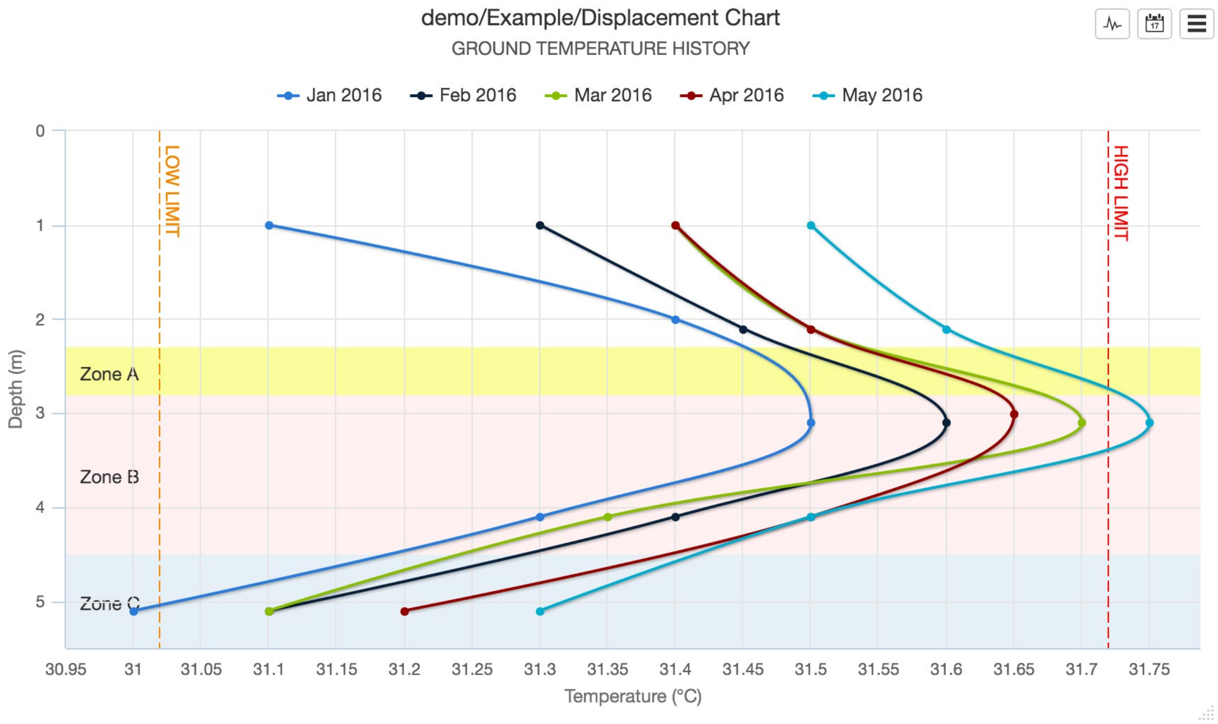
Moving a chart within a Workspace will keep existing links. Moving a chart between Workspaces will invalidate any Link where the linked node is not available in the destination Workspace.

Link error

⚠ If a linked Node is removed or not accessible after a copy/paste or move operation then the chart will display the Link error icon to indicate a problem with one or more Links. Links can be removed or reconfigured from the Links section in the chart properties dialog.

Displacement

Displacement charts allow you to visualize *vertical* or *horizontal* measurement displacement over time. Typically, instruments that require displacement charts are on a string along a line, either down a borehole, along a structure or underneath embankments.

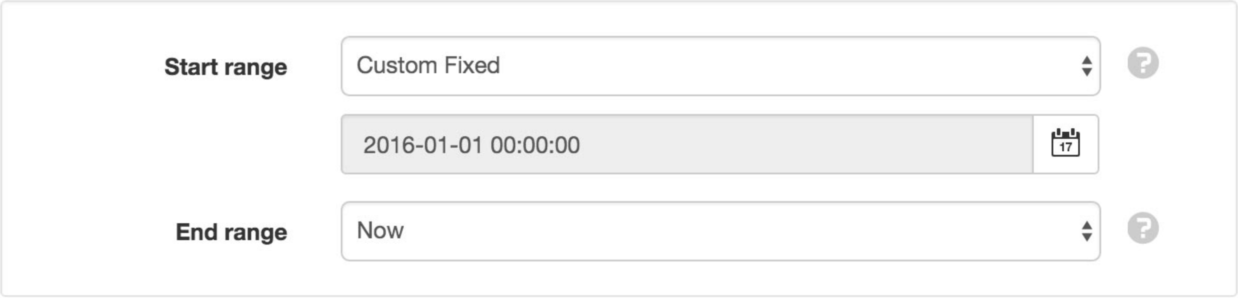


Properties

Configure properties via the Workspaces Tree' context menu. Requires *configure* permission.

General

The General section allows a default *Start range* and *End range* to be set. This range will be used when the chart is initially displayed. Choose a preset or *Custom OPC* for *relative time* (page 585). Select *Custom Fixed* for absolute time. The *None* option can be used to read forward or back through the time series data until the *Maximum series* limit is reached.

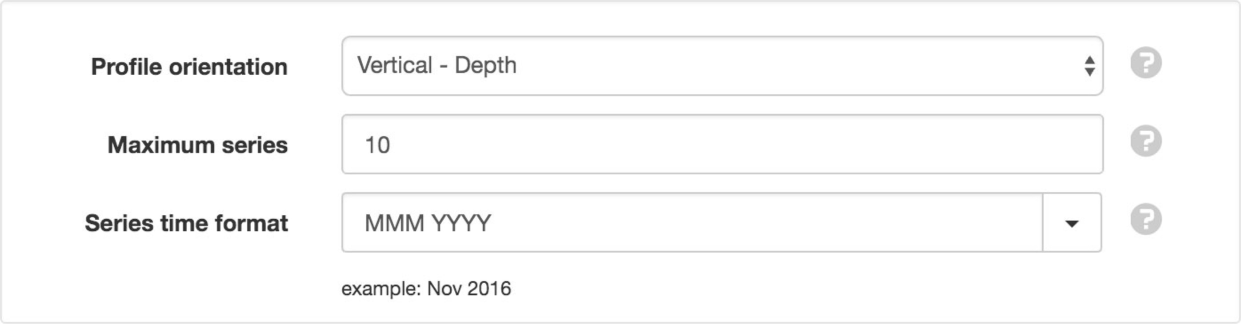


Start range: Custom Fixed

2016-01-01 00:00:00

End range: Now

You can customize the chart with a number of other general settings:

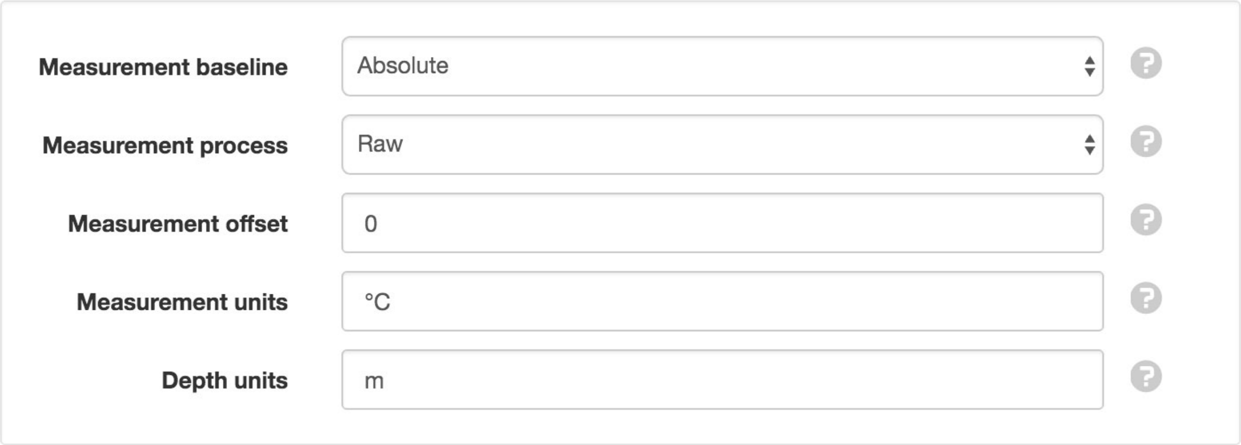


Profile orientation: Vertical - Depth

Maximum series: 10

Series time format: MMM YYYY

example: Nov 2016



Measurement baseline: Absolute

Measurement process: Raw

Measurement offset: 0

Measurement units: °C

Depth units: m

Profile orientation *Vertical* displays depth on Y-Axis and measurement on X-Axis. *Horizontal* displays distance on X-Axis and measurement on Y-Axis.

Maximum series The maximum number of series to display on the chart (between 1 and 15).

Series time format Select a preset display format from the drop down list or specify a custom format using *time format tokens* (page 583).

Measurement baseline *Absolute:* Measurements are not modified.

Relative to first value in range: Measurements from first series in requested range are subtracted from all subsequent series.

Relative to first recorded value: Measurements from first series in parameter history are subtracted from all subsquent series.

Relative to fixed time: Measurements from series at a user-defined time are subtracted from all subsquent series. Select the time from the control below this option.

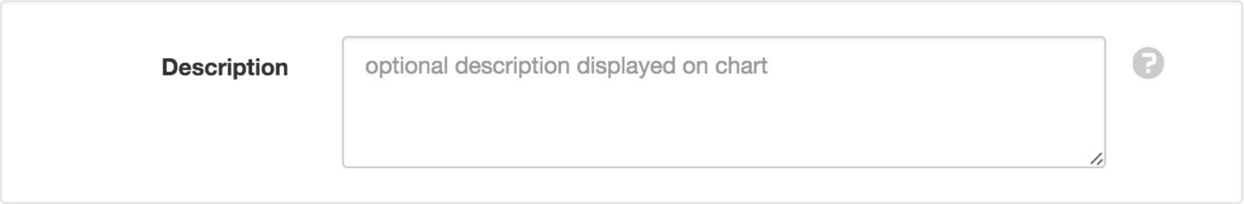
Measurement process Processing to apply to all measurement values. *Raw* will not apply any processing. *Sum from Start* and *Sum from End* will totalise measurement values.

Measurement offset Numeric value to add/subtract from each measurement value.

Measurement units Suffix to display with measurement values.

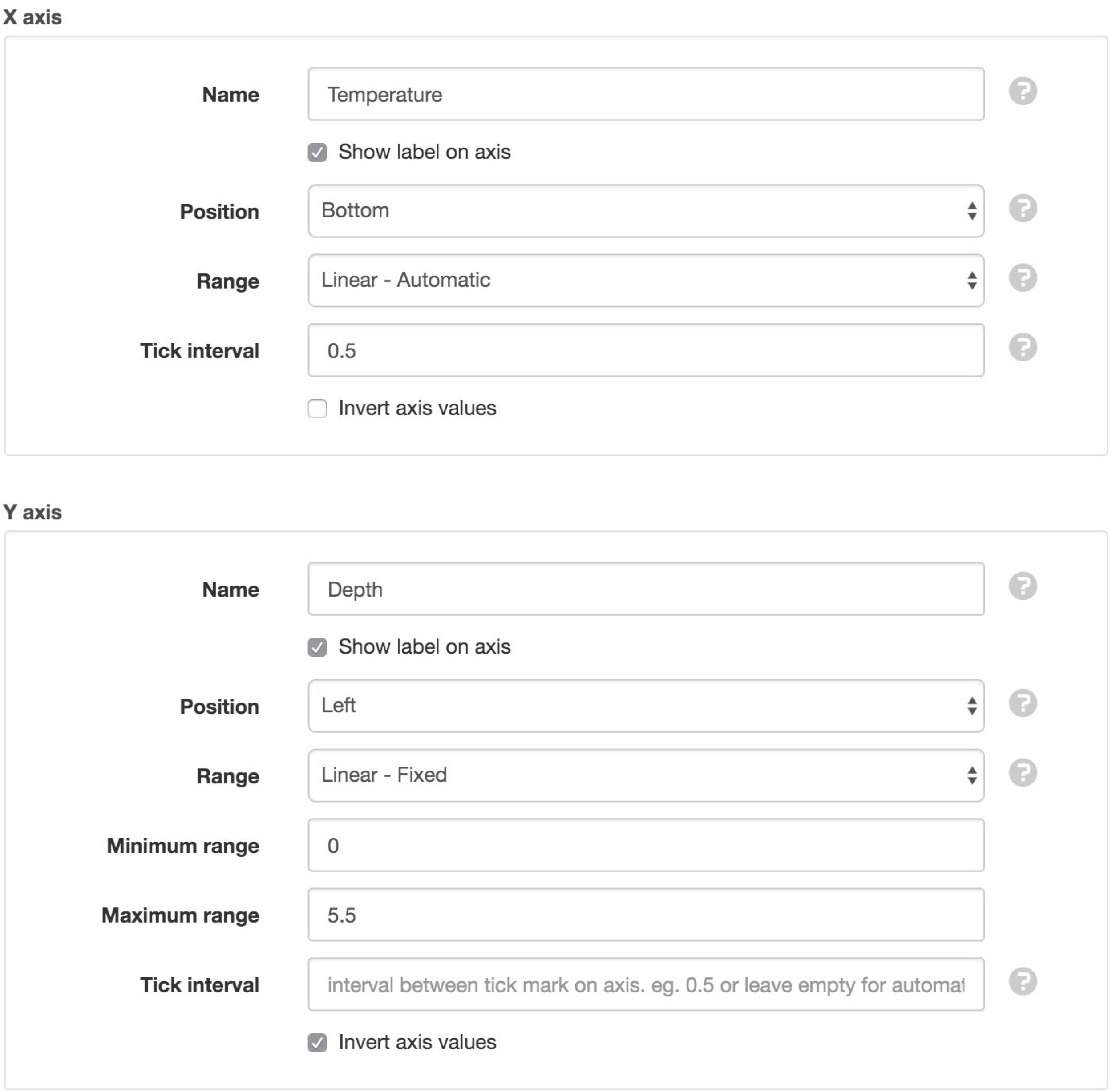
Depth/Distance units Suffix to display with the depth/distance values.

Optionally enter a description to be displayed on the chart below the title.



Axes

The Axes section allows you to customize the style and functionality of the chart axes.



X axis

Name	Temperature
	☑ Show label on axis
Position	Bottom
Range	Linear - Automatic
Tick interval	0.5
	☐ Invert axis values

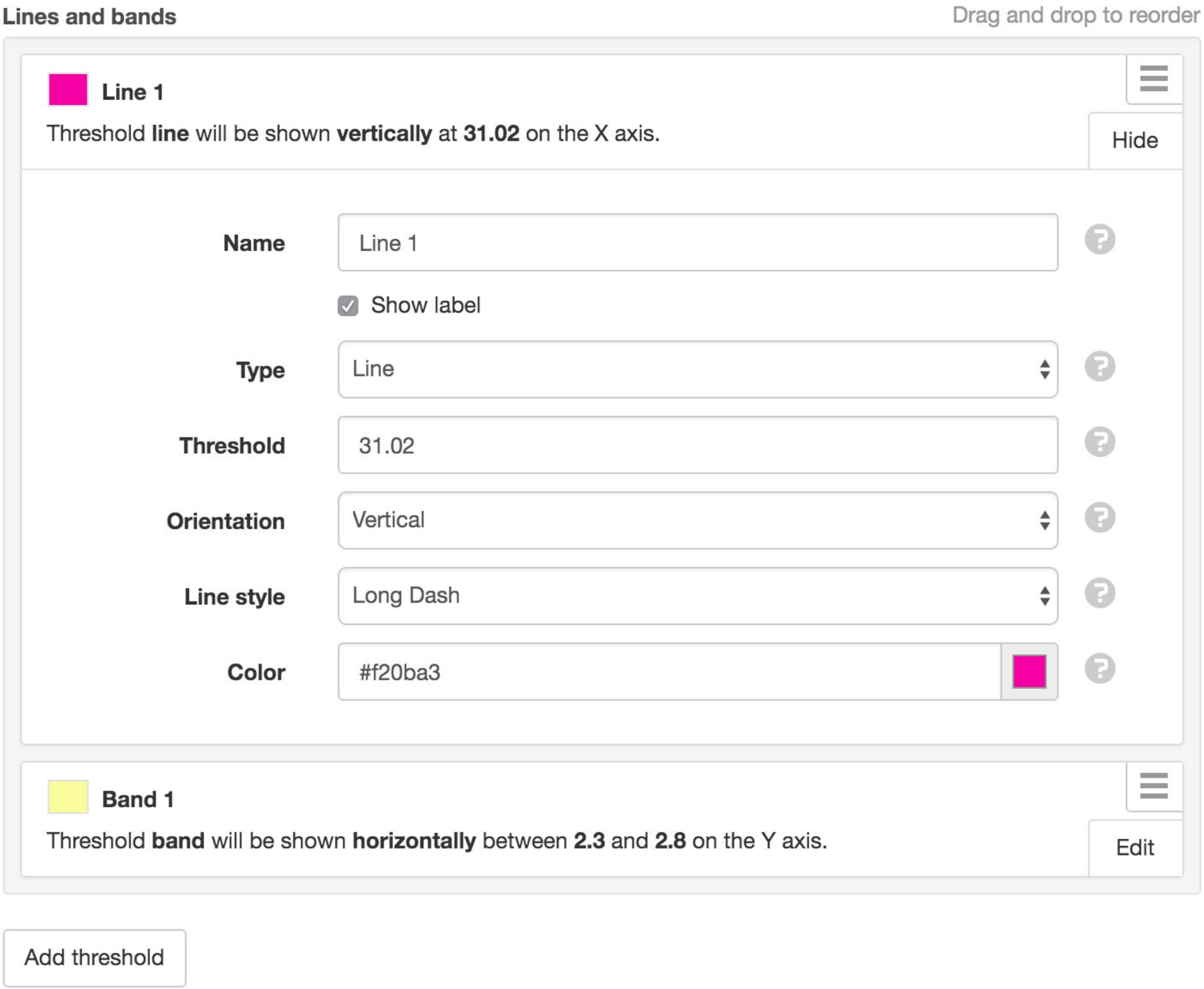
Y axis

Name	Depth
	☑ Show label on axis
Position	Left
Range	Linear - Fixed
Minimum range	0
Maximum range	5.5
Tick interval	interval between tick mark on axis. eg. 0.5 or leave empty for automat
	☑ Invert axis values

Thresholds

Threshold *lines* and *bands* can be added to the chart and displayed either horizontally or vertically. The *threshold* value for a line will determine where the line is placed on the axis. The *threshold start* and *threshold end* values for a band will determine the band position on the axis.

Drag and drop thresholds in the list to change their display order on the chart. Thresholds can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the threshold item).



Lines and bands

Drag and drop to reorder

Line 1

Threshold **line** will be shown **vertically** at **31.02** on the X axis.

Name Line 1

☑ Show label

Type Line

Threshold 31.02

Orientation Vertical

Line style Long Dash

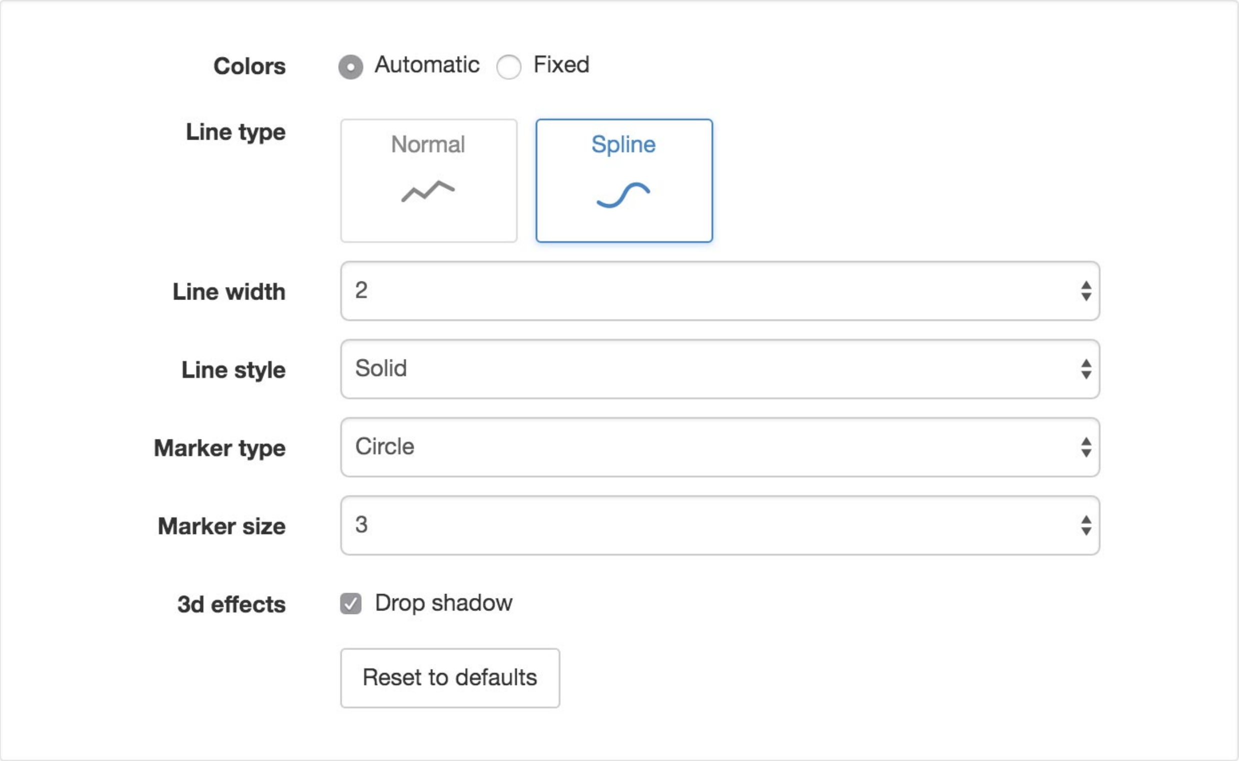
Color #f20ba3

Band 1

Threshold **band** will be shown **horizontally** between **2.3** and **2.8** on the Y axis.

Style

Use the style section to change the appearance of the chart series. Refer to *parameter chart configuration* (page 152) for a description of all available settings.


Colors ● Automatic ○ Fixed

Line type: Spline

Line width: 2

Line style: Solid

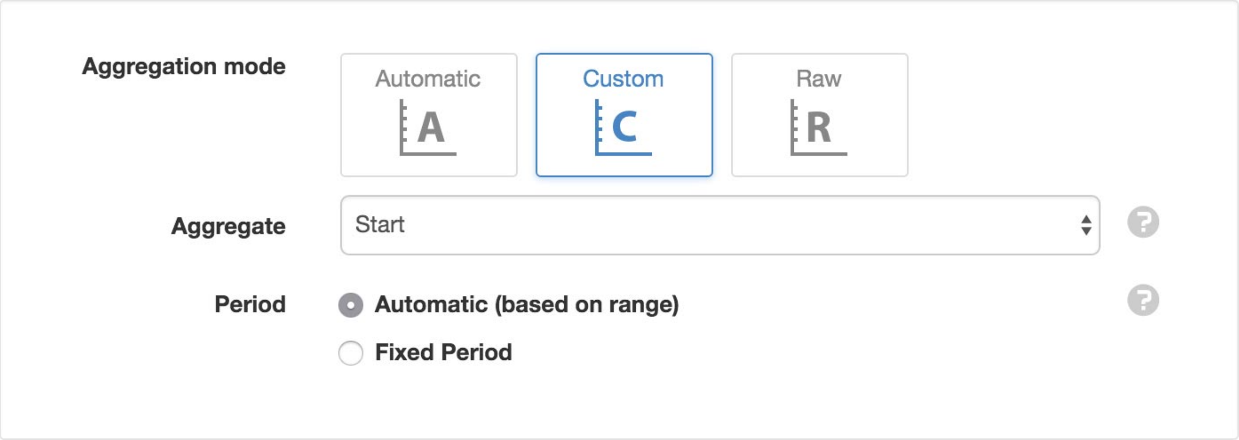
Marker type: Circle

Marker size: 3

3d effects ☑ Drop shadow

Data

Use the data section to set the aggregation mode for time series data to be displayed on the chart. The aggregation mode applies to the measurement data, while the aggregation period applies to the time ranges. Refer to *parameter chart configuration* (page 152) for a description of all available aggregation settings.



Aggregation mode: Custom

Aggregate: Start

Period
● Automatic (based on range)
○ Fixed Period

Automatic Automatic allows the chart to determine the most suitable period based on the chart range.

Custom Custom requires the choice of aggregate type (which will be applied to the measurement data) and period interval (which will determine the timestamp of each series).

Raw Raw uses the timestamps and measurements of the records directly as the series represented on the chart. However, as the maximum number of series that can be displayed on a chart is 15, while a typical data file could contain hundreds or thousands of individual timestamped records, some form of aggregation is generally recommended.

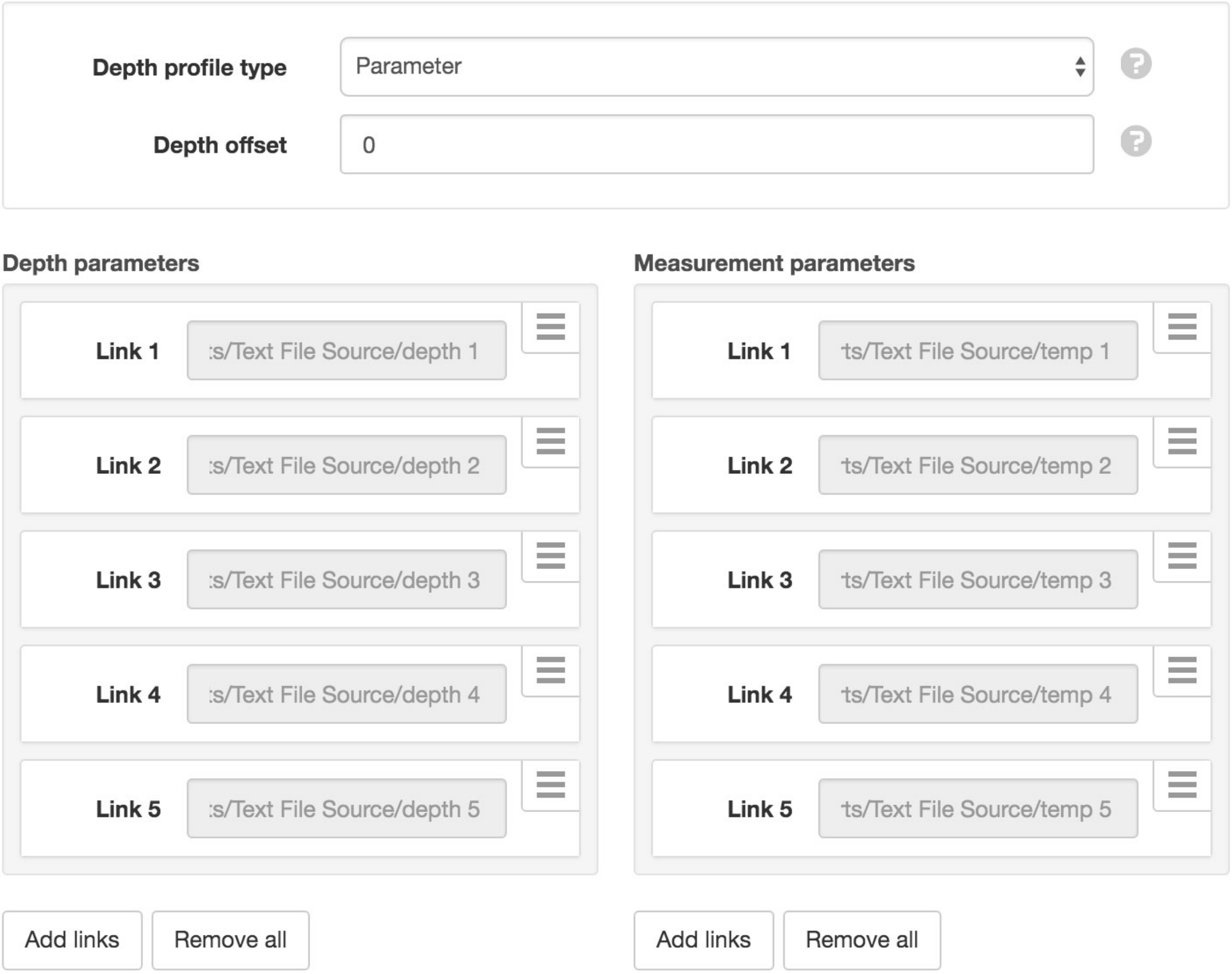
Profile & Links

Displacement charts require you to define a profile containing depths/distances with corresponding measurement parameters.

Choose from 3 *profile type* options:

Parameter

Set the *profile type* to *parameter* for dynamic depth/distance values based on time series data stored in linked parameters. Optionally specify a numeric *offset* to add or subtract from each depth/distance value.



Depth profile type	Parameter
Depth offset	0

Depth parameters

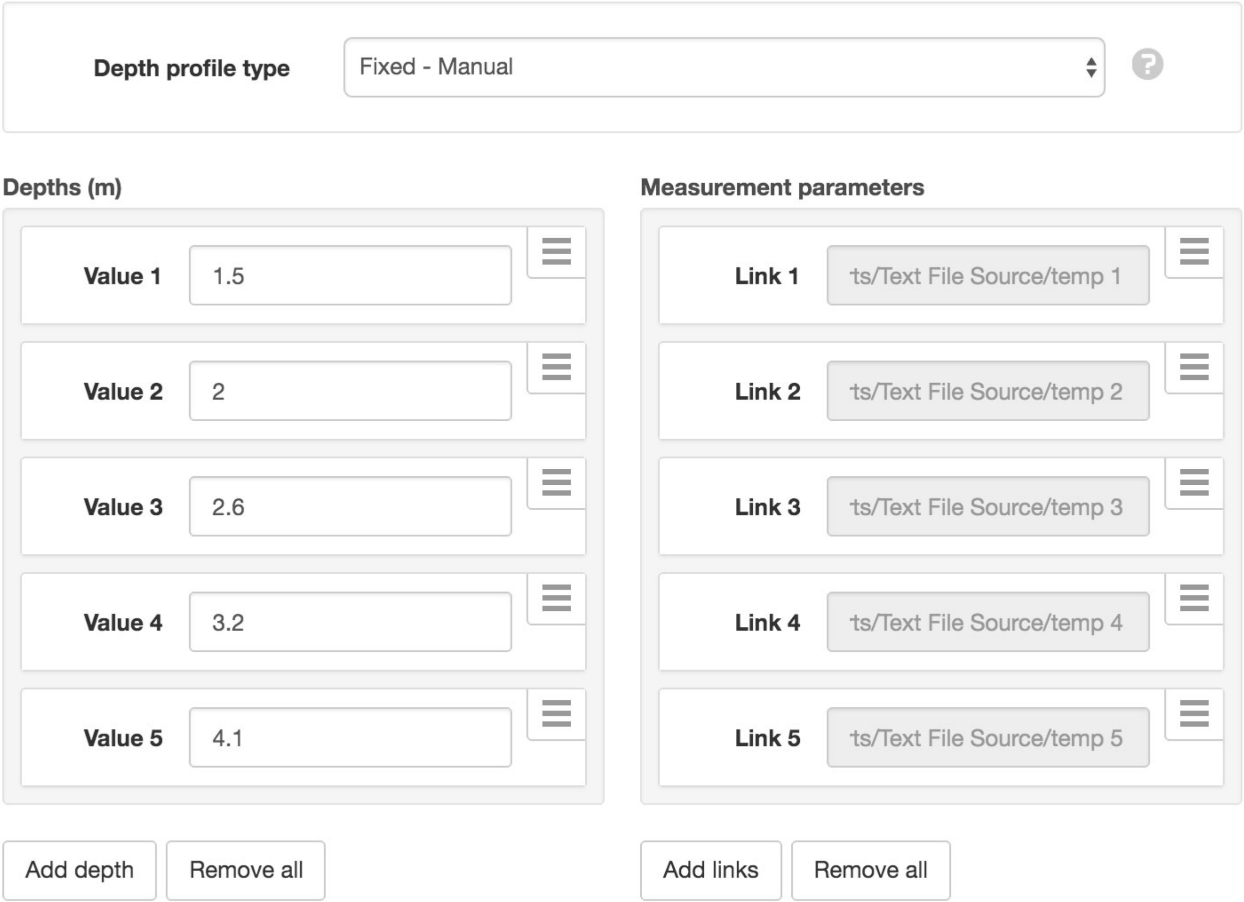
Link 1	:s/Text File Source/depth 1
Link 2	:s/Text File Source/depth 2
Link 3	:s/Text File Source/depth 3
Link 4	:s/Text File Source/depth 4
Link 5	:s/Text File Source/depth 5

Measurement parameters

Link 1	ts/Text File Source/temp 1
Link 2	ts/Text File Source/temp 2
Link 3	ts/Text File Source/temp 3
Link 4	ts/Text File Source/temp 4
Link 5	ts/Text File Source/temp 5

Fixed - Manual

Set the *profile type* to *fixed - manual* to manually define static depth/distance values.



Depth profile type Fixed - Manual

Depths (m)

Value 1 1.5

Value 2 2

Value 3 2.6

Value 4 3.2

Value 5 4.1

Measurement parameters

Link 1 ts/Text File Source/temp 1

Link 2 ts/Text File Source/temp 2

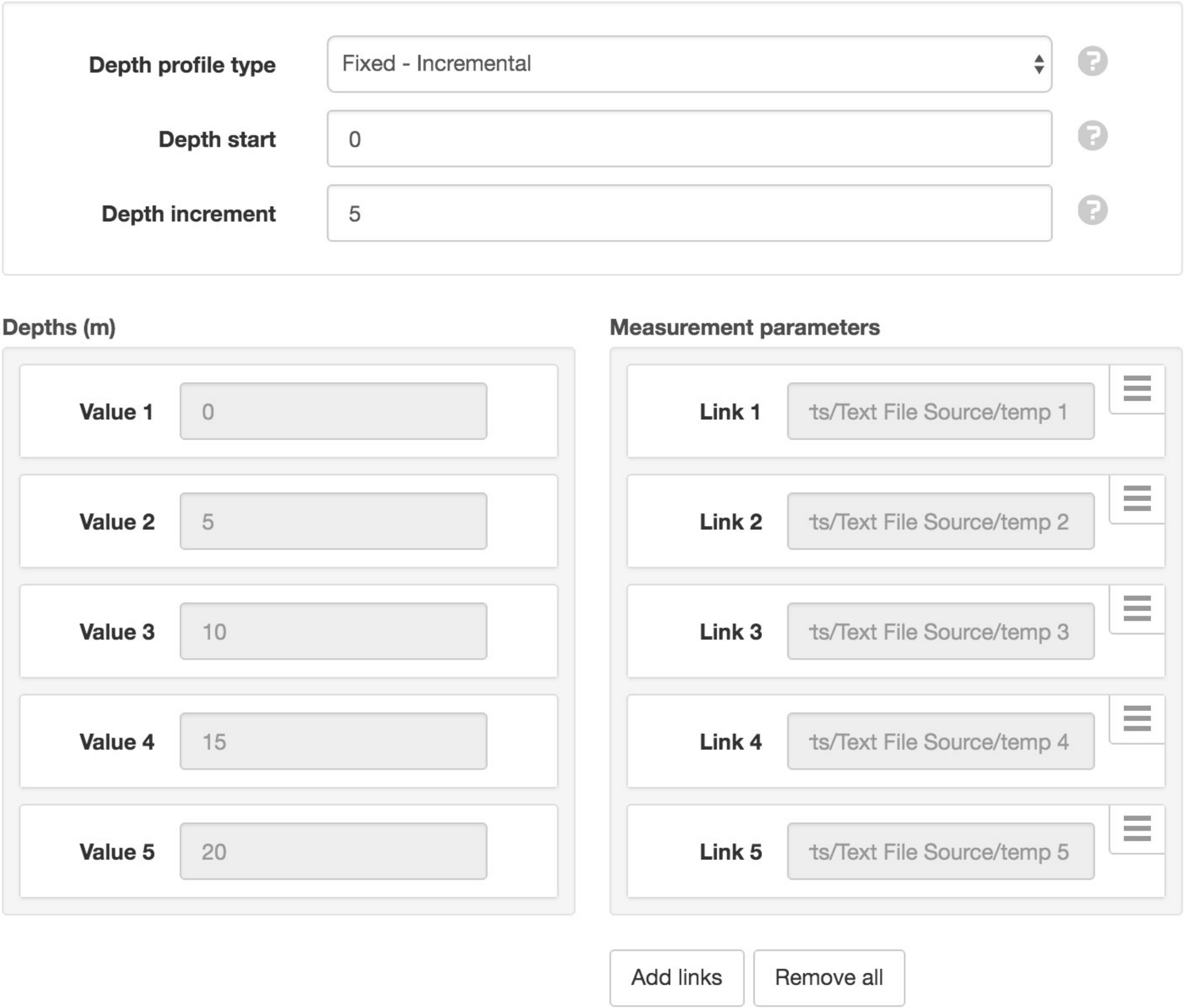
Link 3 ts/Text File Source/temp 3

Link 4 ts/Text File Source/temp 4

Link 5 ts/Text File Source/temp 5

Fixed - Incremental

Set the *profile type* to *fixed - incremental* to automatically generate depth/distance values using *start* and *increment* values.



Depth profile type: Fixed - Incremental

Depth start: 0

Depth increment: 5

Depths (m)

Value 1: 0

Value 2: 5

Value 3: 10

Value 4: 15

Value 5: 20

Measurement parameters

Link 1: ts/Text File Source/temp 1

Link 2: ts/Text File Source/temp 2

Link 3: ts/Text File Source/temp 3

Link 4: ts/Text File Source/temp 4

Link 5: ts/Text File Source/temp 5

Drag and drop items in each list to re-order. Links and Values can be updated or removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the item).

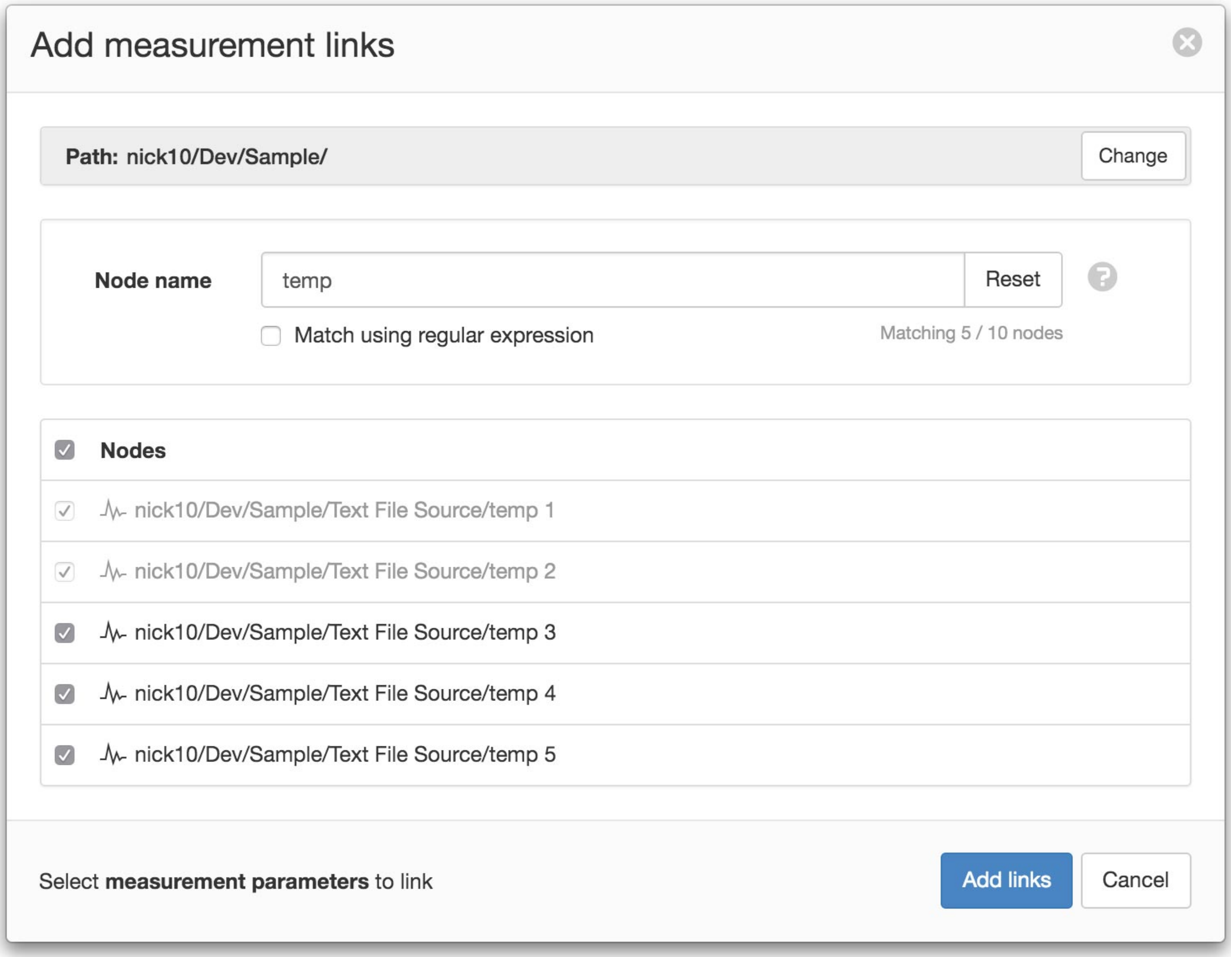
Charts can not have links to Nodes in different Workspace and currently do not support the same nodes being linked more than once to the same chart.

Note: You must ensure each depth/distance has a corresponding measurement in the correct order. eg. ‘Measurement Link 1’ is associated with ‘Depth Link 1’, etc.

Use the *Add links* button to link multiple parameters at once. The *Nodes* list will display all parameters under the current *Path*. Click the *Change* button next to the path to select an alternate (or higher) node in the current Workspace.

You can filter the list by typing part of a parameter name in the *Node name* search field. Parameters that have already been linked will be shown as disabled in the node list.

Use the checkboxes to select the parameters you would like to link and click *Add links*.



Add measurement links

Path: nick10/Dev/Sample/

Node name: temp

☐ Match using regular expression

Matching 5 / 10 nodes

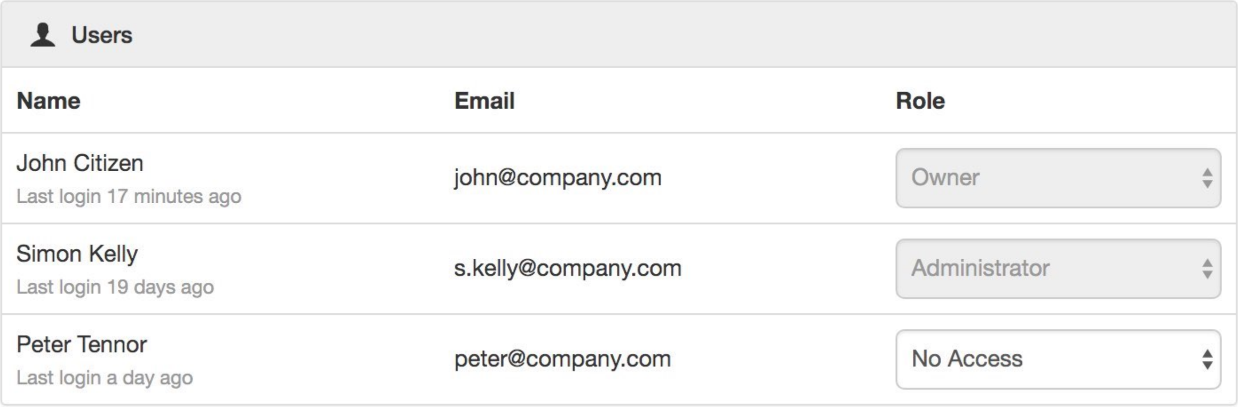
☑	Nodes
☑	nick10/Dev/Sample/Text File Source/temp 1
☑	nick10/Dev/Sample/Text File Source/temp 2
☑	nick10/Dev/Sample/Text File Source/temp 3
☑	nick10/Dev/Sample/Text File Source/temp 4
☑	nick10/Dev/Sample/Text File Source/temp 5

Select **measurement parameters** to link

Security

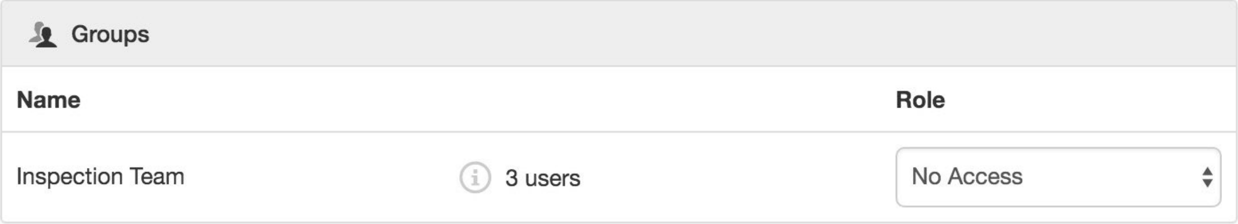
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Groups

Name		Role
Inspection Team	3 users	No Access

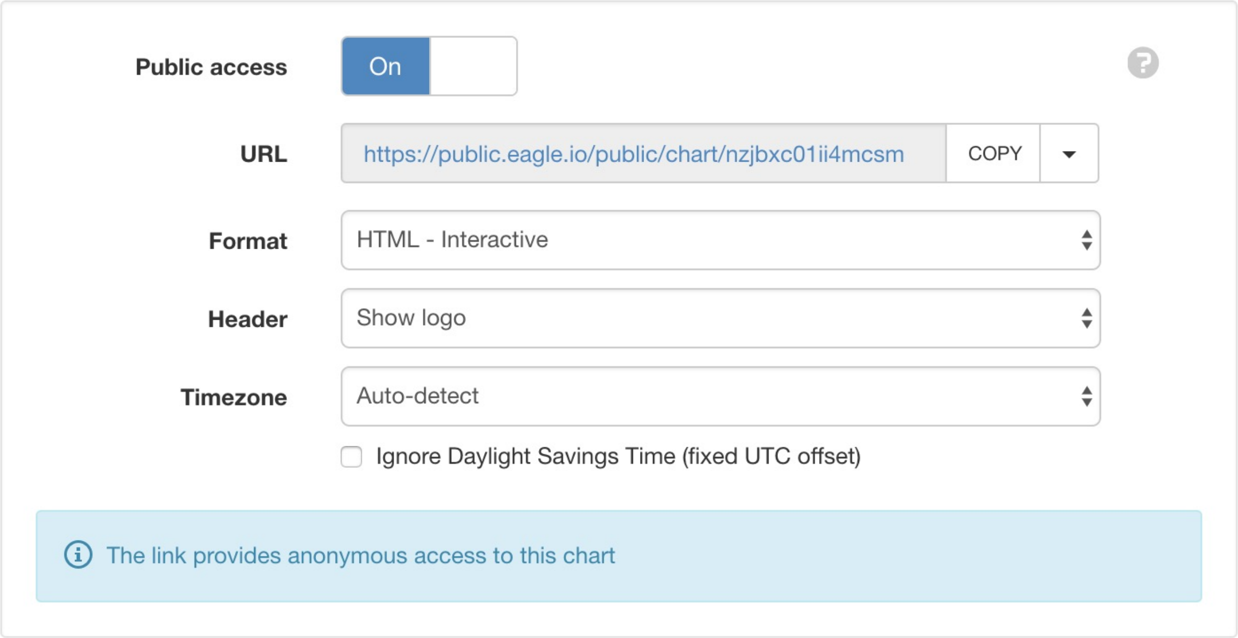
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public Access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access: On

URL: https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format: HTML - Interactive

Header: Show logo

Timezone: Auto-detect

☐ Ignore Daylight Savings Time (fixed UTC offset)

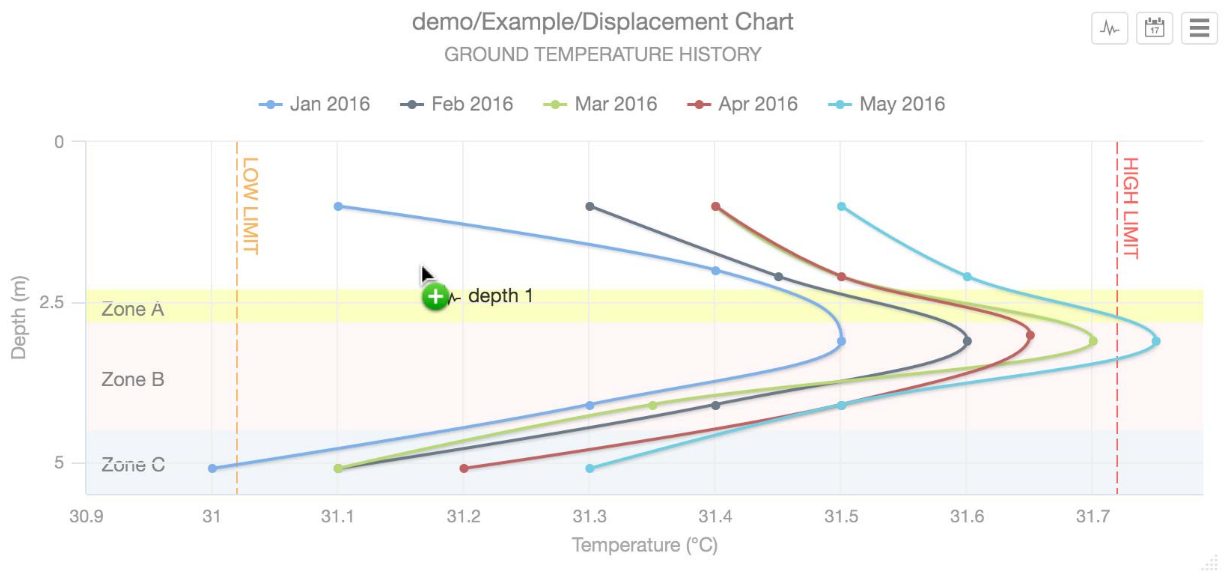
The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

Drag and Drop Links

Nodes can be dragged with a mouse directly from the Workspaces Tree and dropped onto applicable charts (indicated with drop-accept and drop-blocked mouse cursor icons).

Note: Parameters will be automatically assigned as either *depths/distances* or *measurements* based on parameter names. You should review the *profile & links* from the properties dialog to ensure correct assignment and ordering.


demo/Example/Displacement Chart
GROUND TEMPERATURE HISTORY
Jan 2016
Feb 2016
Mar 2016
Apr 2016
May 2016
LOW LIMIT
HIGH LIMIT
depth 1
Zone A
Zone B
Zone C
Depth (m)
0
2.5
5
30.9
31
31.1
31.2
31.3
31.4
31.5
31.6
31.7
Temperature (°C)

Copy/Paste Charts

Copy/Paste operations can be performed from the Workspaces Tree to quickly duplicate one or more charts. Links are automatically re-assigned to corresponding Nodes relative to the Chart if they exist at the destination. ie. You can copy/paste complete Locations containing charts without manually re-assigning all links.

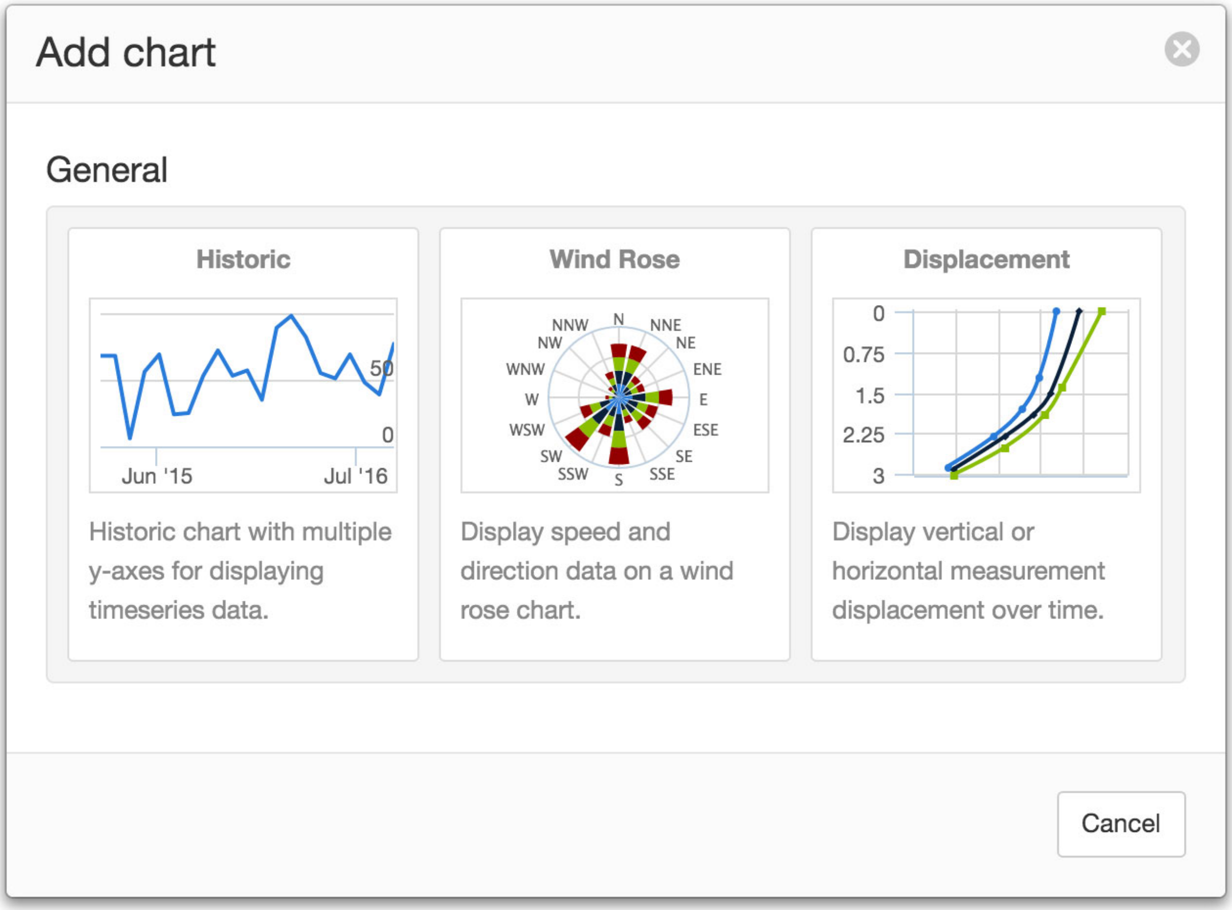
Move Charts

Moving a chart within a Workspace will keep existing links. Moving a chart between Workspaces will invalidate any Link where the linked node is not available in the destination Workspace.

Link error

⚠ If a linked Node is removed or not accessible after a copy/paste or move operation then the Chart will display the Link error icon to indicate a problem with one or more Links. Links can be removed or reconfigured from the Profile & Links section in the chart properties dialog.

Use the *Create* menu to add a new custom chart.


Add chart
General
Historic
50
0
Jun '15
Jul '16
Wind Rose
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
Displacement
0
0.75
1.5
2.25
3
Cancel

Historic chart with multiple y-axes for displaying timeseries data.

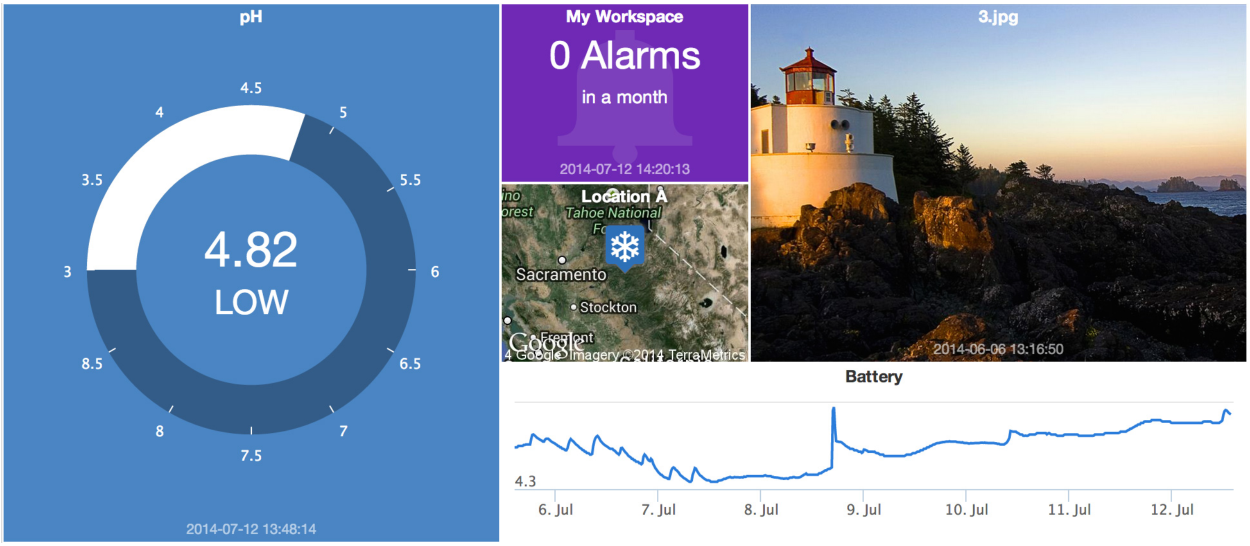
Display speed and direction data on a wind rose chart.

Display vertical or horizontal measurement displacement over time.

2.3.5 Dashboard

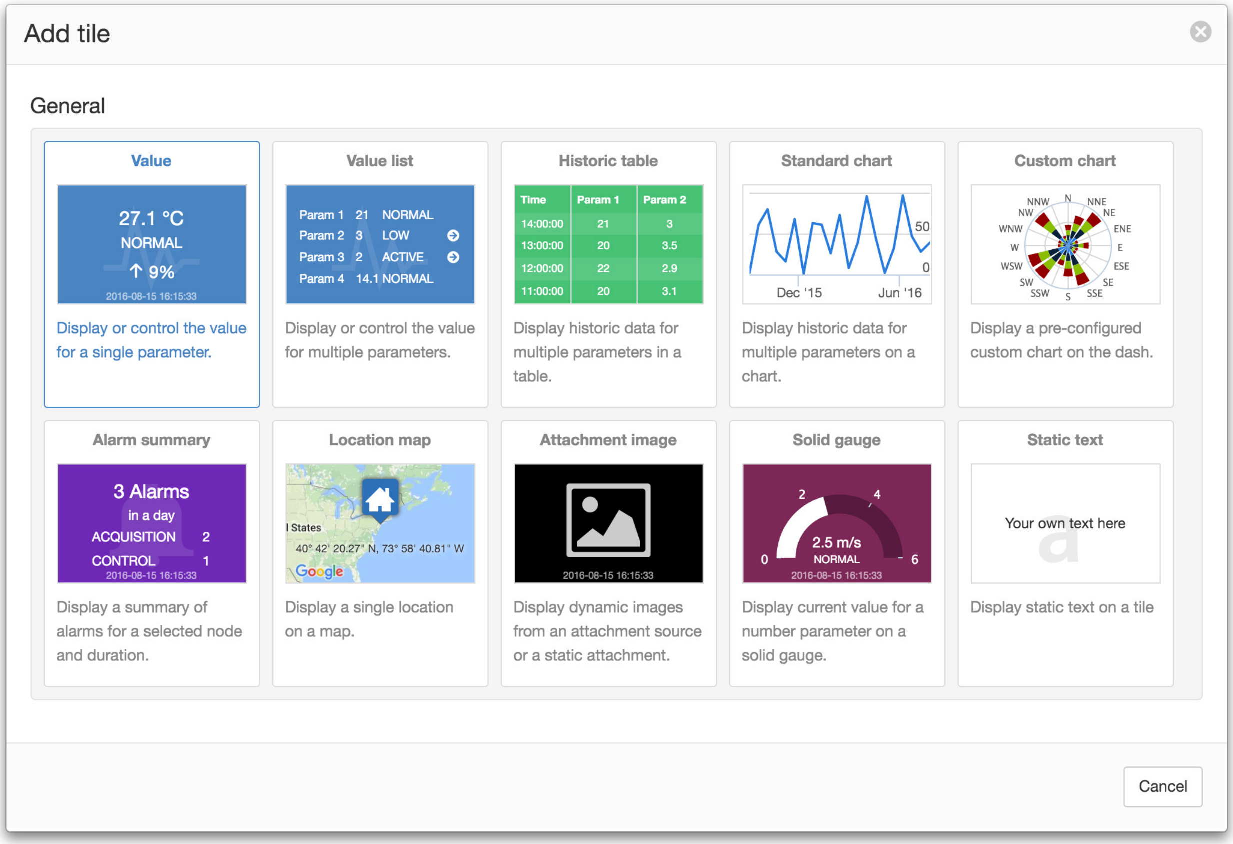
Dashboards allow users to create customized views of their data in visually appealing layouts using animated gauges, charts, lists, maps and other graphical controls.

Dashboards contain user configurable tiles which can be linked to Nodes to display your important data in real-time with live updates. Tile layout is automatically adjusted on mobile devices.


pH
4.5
4
5
3.5
5.5
3
6
8.5
6.5
8
7
7.5
4.82
LOW
2014-07-12 13:48:14
My Workspace
0 Alarms
in a month
2014-07-12 14:20:13
3.jpg
2014-06-06 13:16:50
Location A
Tahoe National
Sacramento
Stockton
Fremont
Google
Imagery ©2014 TerraMetrics
Battery
4.3
6. Jul
7. Jul
8. Jul
9. Jul
10. Jul
11. Jul
12. Jul

Add tile

Click the Add tile button from the Toolbar to open the Tile library. Select the type of Tile you would like to add from the presets or click cancel to close the dialog.



Add tile

General

Value: Display or control the value for a single parameter.

Value list: Display or control the value for multiple parameters.

Historic table: Display historic data for multiple parameters in a table.

Standard chart: Display historic data for multiple parameters on a chart.

Custom chart: Display a pre-configured custom chart on the dash.

Alarm summary: Display a summary of alarms for a selected node and duration.

Location map: Display a single location on a map.

Attachment image: Display dynamic images from an attachment source or a static attachment.

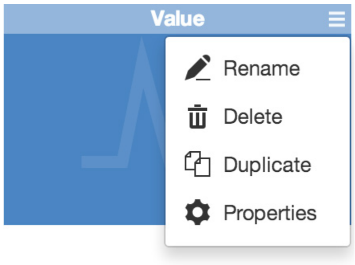
Solid gauge: Display current value for a number parameter on a solid gauge.

Static text: Display static text on a tile

27.1 °C
NORMAL
↑ 9%
2016-08-15 16:15:33
Param 1 21 NORMAL
Param 2 3 LOW
Param 3 2 ACTIVE
Param 4 14.1 NORMAL
Time
Param 1
Param 2
14:00:00 21 3
13:00:00 20 3.5
12:00:00 22 2.9
11:00:00 20 3.1
50
0
Dec '15
Jun '16
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
3 Alarms
in a day
ACQUISITION 2
CONTROL 1
2016-08-15 16:15:33
I States
40° 42' 20.27" N, 73° 58' 40.81" W
Google
2016-08-15 16:15:33
2
4
0
6
2.5 m/s
NORMAL
2016-08-15 16:15:33
Your own text here
Cancel

Tile operations

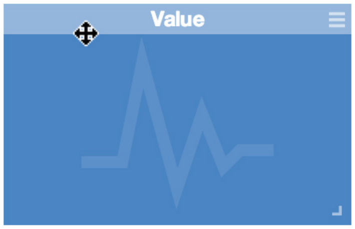
Moving the mouse over or touching a tile will show the title bar and menu button to users with *Configure* permission.



Value
Rename
Delete
Duplicate
Properties

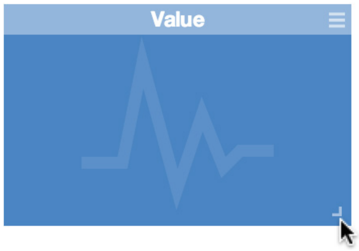
Reposition

Click or Touch, hold and drag the title bar to reposition the Tile on the Dashboard. Tile layout is automatically adjusted to suit the display device and tiles are always ordered in rows starting from the top left to bottom right of the screen. Requires *Configure* permission. **Note:** Reposition operation not available on small screen touch devices (width <820px).



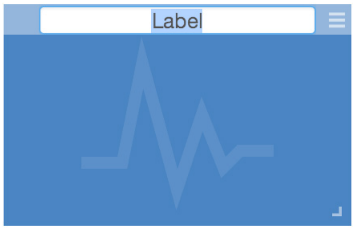
Resize

Click or Touch, hold and drag the resize handle to adjust the width and height of the Tile. Requires *Configure* permission. **Note:** Resize operation not available on small screen touch devices (width <820px).



Rename

Select *Rename* from the tile menu to update or remove the Tile label.



Delete

Delete the Tile from the Dashboard.

Duplicate

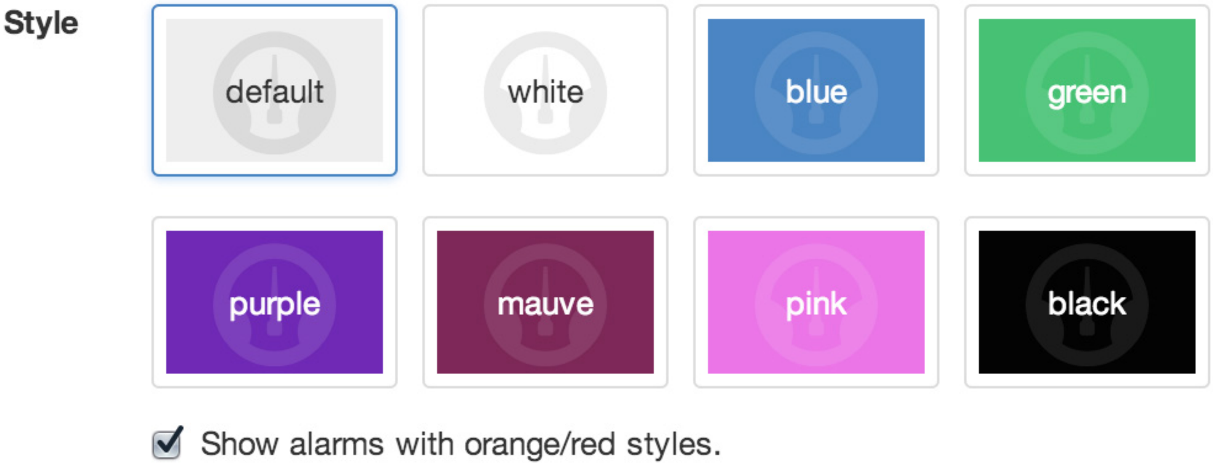
Duplicate the current Tile and its configuration.

Properties

Configure the Tile properties to change General display settings and Links.

General

The general section allows you to configure layout and display options for the Tile. Certain types of Tiles have specific options. For example the Historic Chart tile includes Period and Zoom settings while most other Tiles have selectable color styles and alarm options.



☑ Show alarms with orange/red styles.

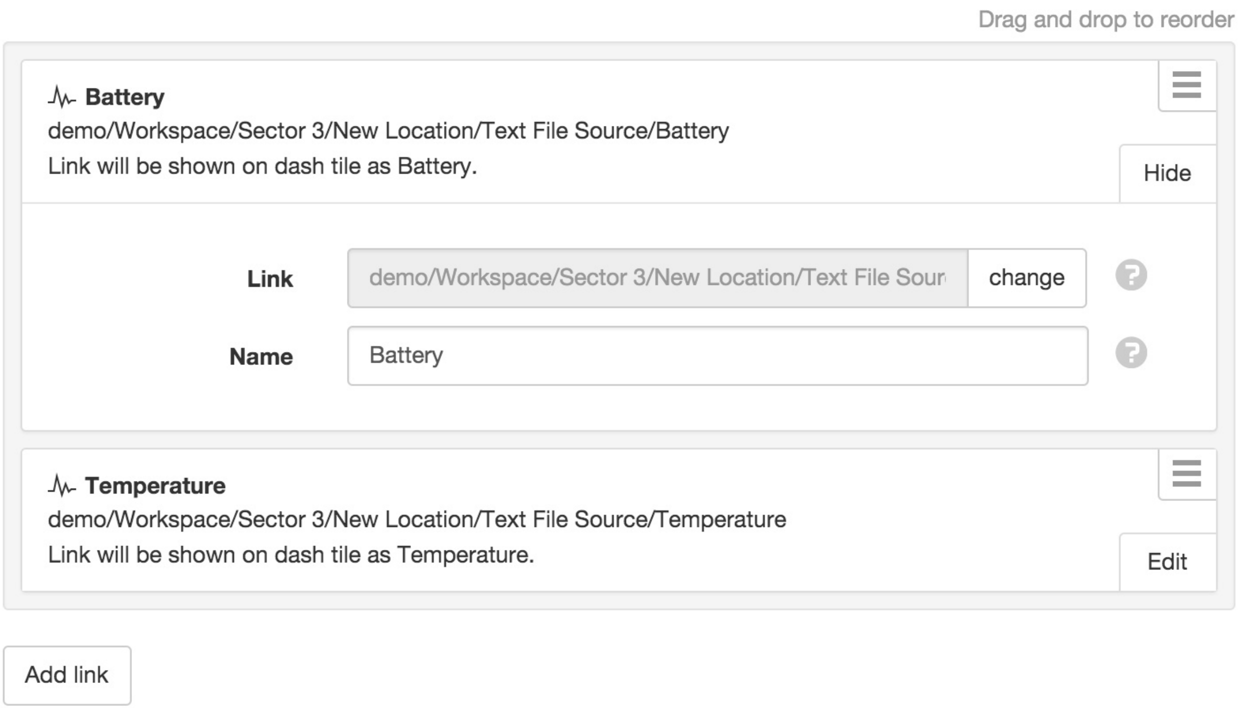
Links

Links assign Nodes in the Workspaces Tree to Tiles so the corresponding data can be displayed and updated live. Each type of Tile may enforce specific Link requirements. For example the Location map tile can only be linked to a single Location Node. Some tiles allow for multiple links to be assigned.

Click the *Edit* button to show and modify the configuration for each link. Use the *Add link* button to display the Workspaces Tree and select a new Node to link. Links can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the link item).

Dashboard tiles can not have links to Nodes in different Workspace and currently do not support the same nodes being linked more than once to the same tile.

Drag and drop links in the list to change their display order on the tile.



Drag and drop to reorder

Battery
demo/Workspace/Sector 3/New Location/Text File Source/Battery
Link will be shown on dash tile as Battery.

Link demo/Workspace/Sector 3/New Location/Text File Sour

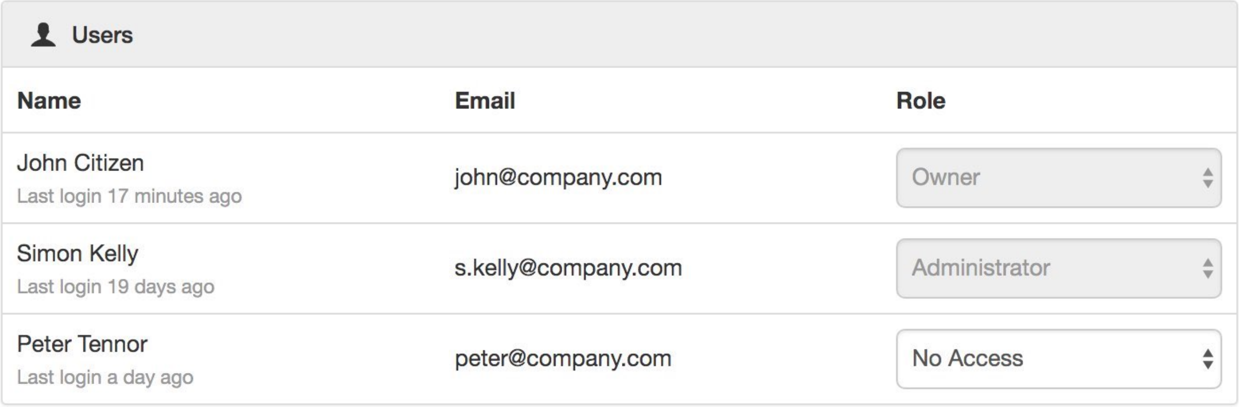
Name Battery

Temperature
demo/Workspace/Sector 3/New Location/Text File Source/Temperature
Link will be shown on dash tile as Temperature.

Security

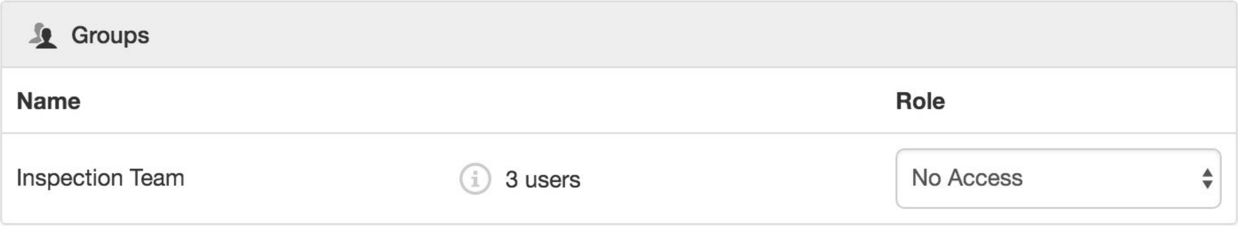
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Groups

Name		Role
Inspection Team	3 users	No Access

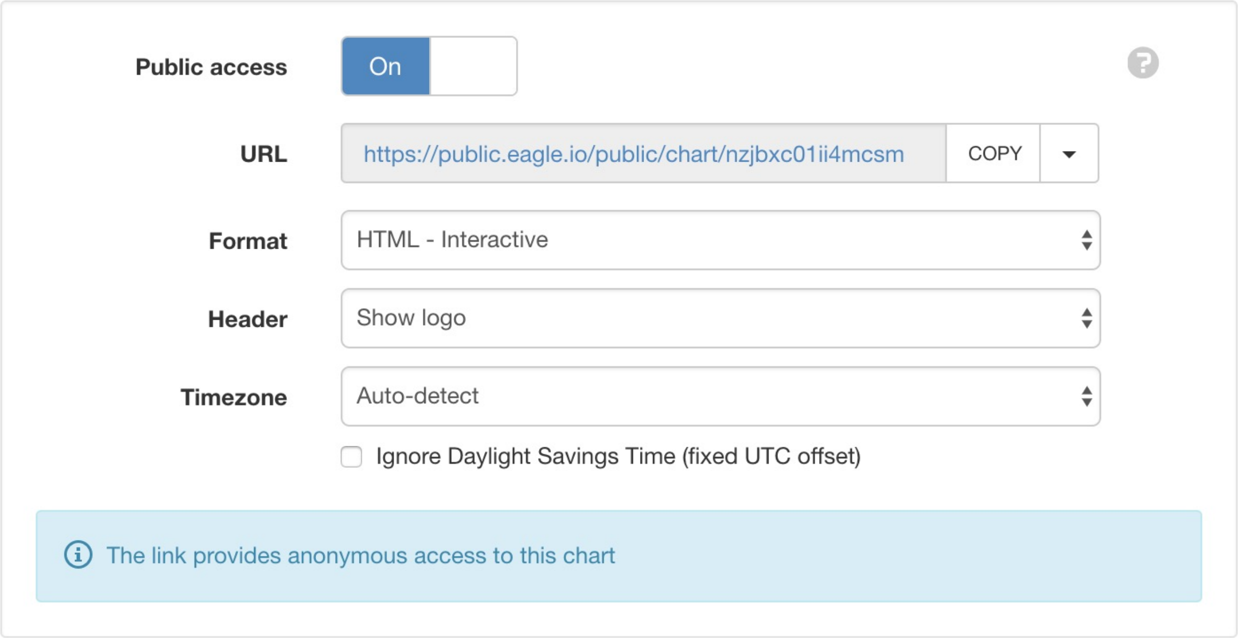
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access On

URL https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format HTML - Interactive

Header Show logo

Timezone Auto-detect

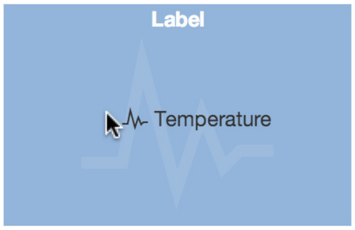
☐ Ignore Daylight Savings Time (fixed UTC offset)

ⓘ The link provides anonymous access to this chart

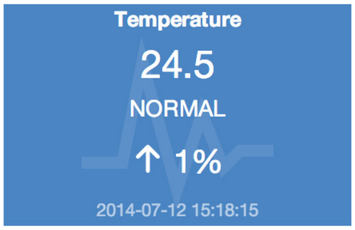
Note: This feature is not included in *Starter* accounts.

Drag and Drop Links

Nodes can be dragged with a mouse directly from the Workspaces Tree and dropped onto applicable Tiles (indicated with drop-accept and drop-blocked mouse cursor icons).



Label
Temperature



Temperature
24.5
NORMAL
↑ 1%
2014-07-12 15:18:15

Copy/Paste Dashboards

Copy/Paste operations can be performed from the Workspaces Tree to quickly duplicate one or more dashboards. Links are automatically re-assigned to corresponding Nodes relative to the Dashboard if they exists at the destination. ie. You can copy/paste complete Locations containing Dashboards without manually re-assigning all Links.

Move Dashboards

Moving a Dashboard within a Workspace will keep existing links. Moving a Dashboard between Workspaces will invalidate any Link where the linked node is not available in the destination Workspace.

Link error

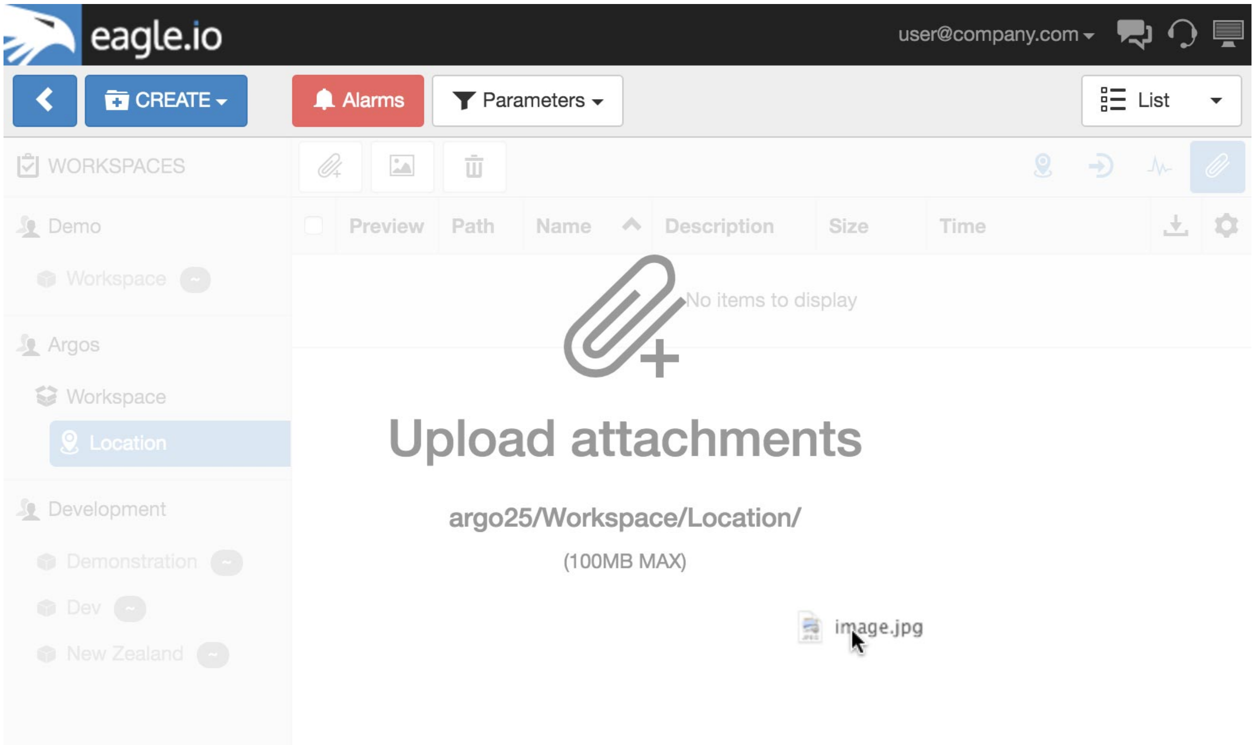
If a linked Node is removed or not accessible after a copy/paste or move operation then the Tile will display the Link error icon to indicate a problem with one or more Links. Links can be removed or reconfigured from the Links section in the Tile properties dialog.

2.3.6 Attachment

Attachments include images, documents and other files stored in eagle.io (https://eagle.io). New attachments can be manually uploaded by a user or acquired via an *Attachment Source* (page 109). Attachments can be added inside Workspaces, Locations, Groups and Attachment Sources.

To view attachments navigate to *List View* → *Attachments*. You will see a list of all attachments within the Selected Node. Requires *view attachments* permission.

To upload attachments click the *upload attachments* button from the *attachments list view* (page 32) toolbar or drag and drop files directly from your desktop into the browser. Attachments will be created in the currently Selected Node.


eagle.io
user@company.com
CREATE
Alarms
Parameters
List
WORKSPACES
Demo
Workspace
Argos
Workspace
Location
Development
Demonstration
Dev
New Zealand
Preview
Path
Name
Description
Size
Time
No items to display
Upload attachments
argo25/Workspace/Location/
(100MB MAX)
image.jpg

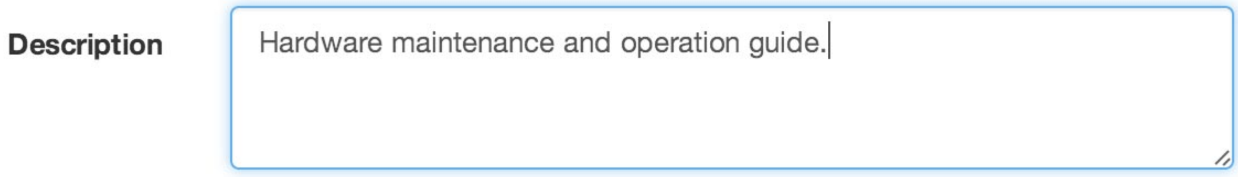
Note: Maximum file size for an attachment is 100MB. *Configure* permission is required to upload an attachment.

Properties

⚙ Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

General

The General section allows you to enter a *description* for the attachment which is displayed in List View.

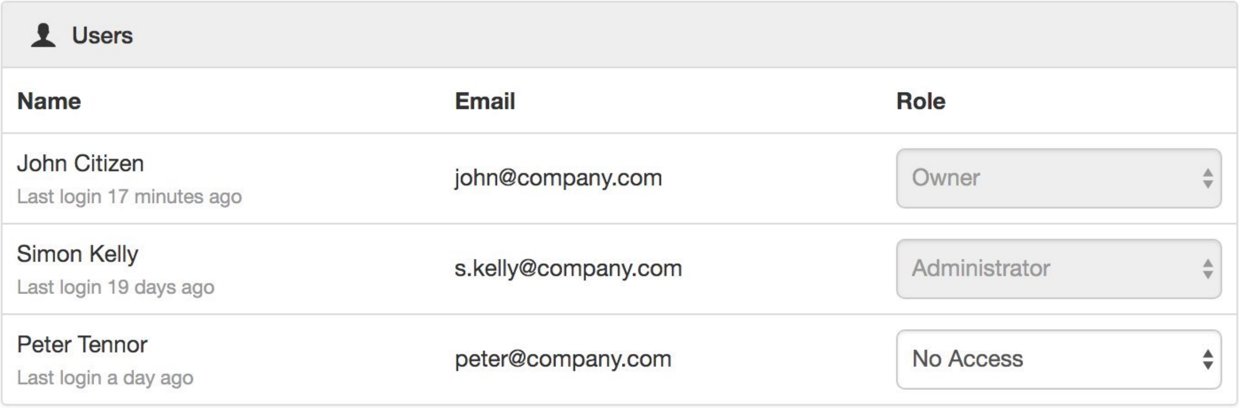


Description Hardware maintenance and operation guide.

Security

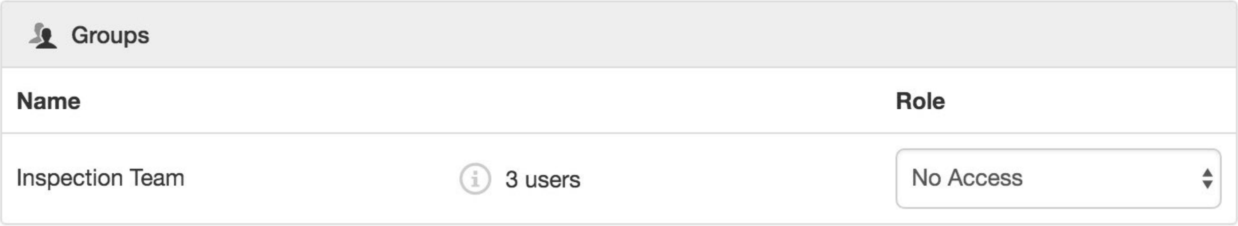
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Name		Role
Inspection Team	3 users	No Access

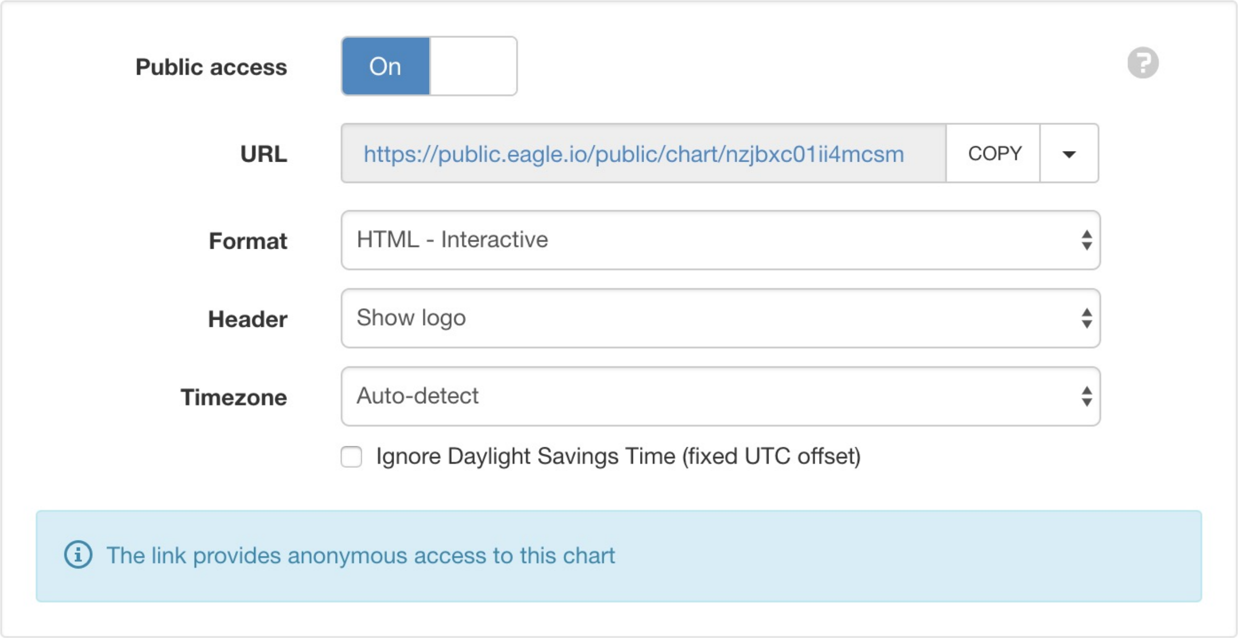
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access: On

URL: https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format: HTML - Interactive

Header: Show logo

Timezone: Auto-detect

☐ Ignore Daylight Savings Time (fixed UTC offset)

The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

2.3.7 Attachment Source

Attachment Sources have the ability to automatically acquire or receive *attachments* (page 105). Attachment Sources can be created inside Locations only.

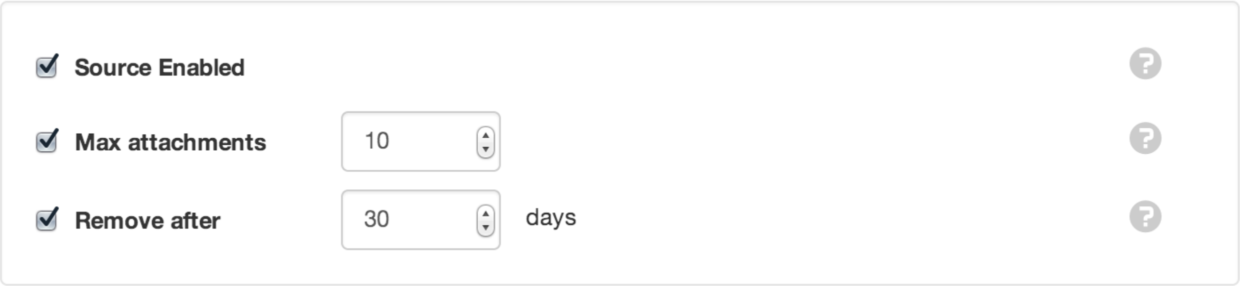
Note: There is a maximum limit of 150 files that can be received per Attachment Source per day. This equates to 1 file every 10 minutes. Each file can be up to 100MB in size. Exceeding this limit will trigger an *Overload Alarm* (page 173) on the Source.

Properties

Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

General

The general section allows you to specify attachment storage options.



☑ Source Enabled

☑ Max attachments 10

☑ Remove after 30 days

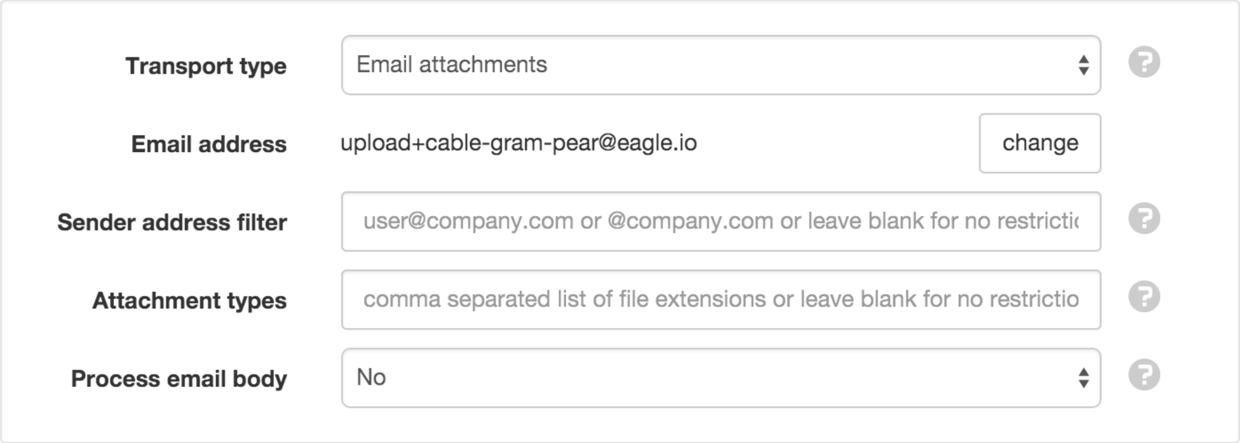
Source Enabled Uncheck the Source Enabled checkbox to stop collection and prevent alarms and notifications from triggering.

Max attachments Specify the maximum number of attachments allowed within this Source. When new attachments arrive and the limit is exceeded, the oldest attachments are removed first. The maximum limit that can be set is 100 attachments per Source.

Remove after Enable this setting to specify the maximum number of days that attachments will be stored within this Source. The expired attachments will only be removed when new attachments arrive.

Connection

Configure how you would like to connect to your attachments.



Transport type	Email attachments
Email address	upload+cable-gram-pear@eagle.io
Sender address filter	user@company.com or @company.com or leave blank for no restricti
Attachment types	comma separated list of file extensions or leave blank for no restrictio
Process email body	No

Transport type

Select the transport used to acquire attachments.

Email to eagle.io

Email attachments using the auto-generated address exactly as shown.

Note: The maximum accepted size per email (including all attachments) is 25MB.

Upload to ftp.eagle.io

FTP your files to ftp.eagle.io using the auto-generated user name exactly as shown. Password is optional. Use Tcp port 21 for standard Ftp and Tcp port 990 for implicit SSL.

Note: Only one concurrent ftp connection is allowed per Source. The maximum accepted size per file is 100MB.

Upload to sftp.eagle.io

SFTP your files to sftp.eagle.io using the auto-generated user name exactly as shown. Password is optional. Use Tcp port 22.

Note: Only one concurrent sftp connection is allowed per Source. The maximum accepted size per file is 100MB.

Email address Email your attachments to this address. Click *change* to generate a new email address.

Ftp user The user name to use to login to the Ftp server. Click *change* to generate a new Ftp user.

Sender address filter For added security you can filter attachments by sender email address. Restrict to a specific email address or to a specific domain. eg. user@company.com or @company.com. Leave blank for no restriction.

Attachment / File types Restrict which file(s) get processed as Attachments by specifying a comma separated list of file extensions. eg. *jpg, png, mp4* will process standard media files and ignore all other file types.

Process email body Specify if the email message body should also be processed:

No only the attachments will be processed.

Plain Text will store the text content of the email in addition to any attachments.

HTML will store the HTML content of the email in addition to any attachments.

Communications Alarm See *Alarms and Notifications* (page 170).

Collection

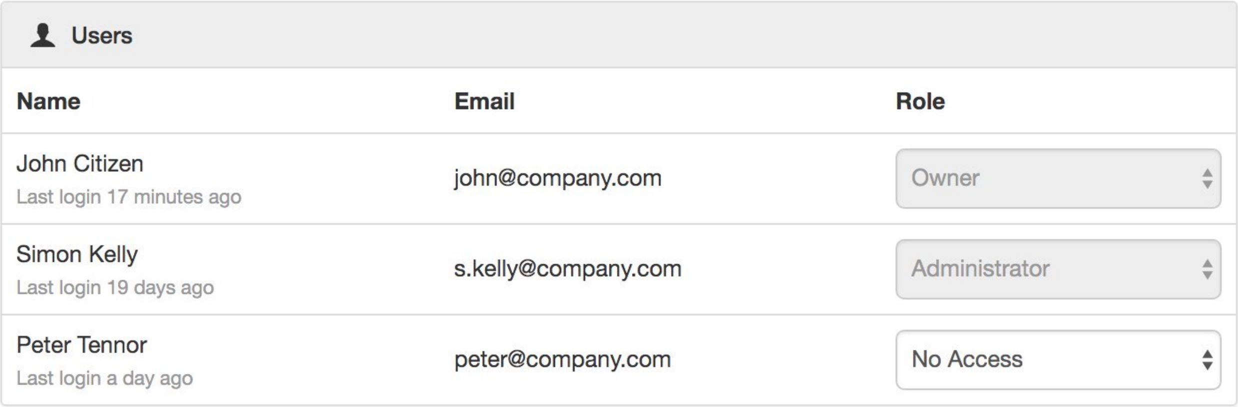
Outdated Alarm See *Alarms and Notifications* (page 172).

Overload Alarm See *Alarms and Notifications* (page 173).

Security

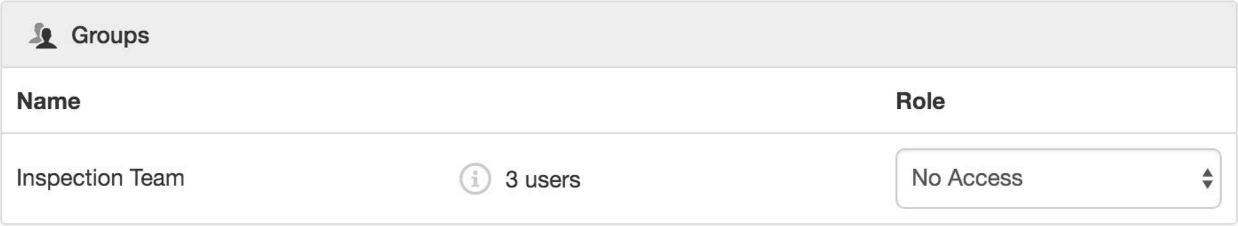
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Name		Role
Inspection Team	3 users	No Access

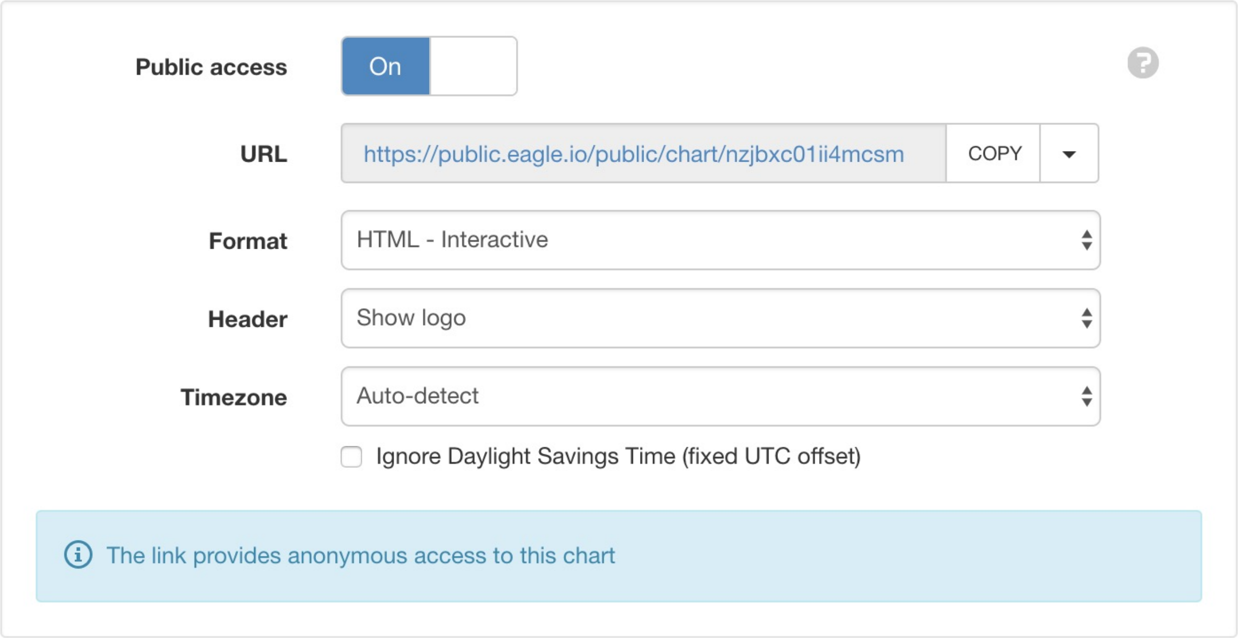
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access On

URL https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format HTML - Interactive

Header Show logo

Timezone Auto-detect

☐ Ignore Daylight Savings Time (fixed UTC offset)

The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

2.3.8 Data Source (file)

Data Sources automatically acquire or receive timeseries data using a variety of different transport options. Connect to a *data logger* or collect data from files. Data Sources can be created inside Locations only.

The type of Data Source (data logger or file) is selected at time of creation and cannot be changed. This section is specific to file Data Sources.

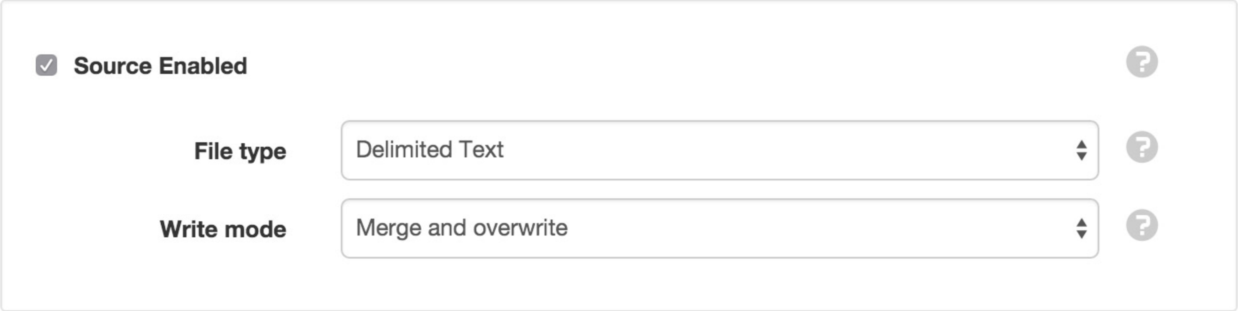
Note: Eagle.io supports the acquisition and storage of up to 20000 records per *Data Source* (page 134) per day. Exceeding this limit will trigger an *Overload Alarm* (page 173) on the Source. Refer to Historic Data *Limits* (page 579) for more information.

Properties

Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

General

The general section allows you to specify the type file(s) you would like to collect.



☑ **Source Enabled**

File type Delimited Text

Write mode Merge and overwrite

Source Enabled Uncheck the Source Enabled checkbox to stop collection and prevent alarms and notifications from triggering.

File type Select the type of file(s) you would like to collect. The file type must be selected during datasource creation and can not be changed.

Delimited Text

Data is transmitted as rows of values separated with a specific *delimiter* character.

JSON Time Series

Data is transmitted in the *JSON Time Series* (page 572) format. Note: JTS files to be acquired must contain a *columns* header that specifies *name* and *dataType* of each column included in the *data*.

Custom Format

Data is transmitted as binary or text data (in any format) and transformed by a Converter (https://github.com/eagle-io/converter) into *JSON Time Series* (page 572) format. A *Converter* can be constructed and submitted for approval via the Converter (https://github.com/eagle-io/converter) repository. Once accepted, your custom format will appear in the *File type* list. Note: the eagle.io team can assist with developing a *Converter* for your custom format.

Write mode Select how acquired data will be written:

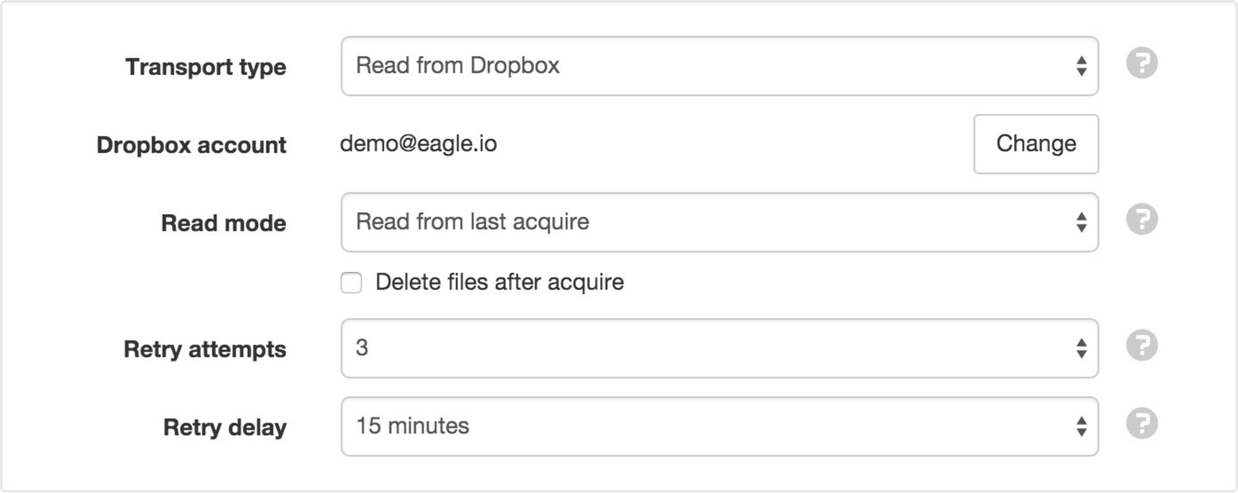
Merge and overwrite will insert the acquired data into the existing historic data and overwrite the existing values when timestamps match.

Merge and preserve will merge the acquired data into the existing historic data and will not overwrite existing values when timestamps match.

Replace existing will remove all existing historic data within the range of data being acquired.

Connection

Configure how you would like to connect to your file(s).



Transport type: Read from Dropbox

Dropbox account: demo@eagle.io

Read mode: Read from last acquire

☐ Delete files after acquire

Retry attempts: 3

Retry delay: 15 minutes

Transport type Select the transport used to acquire files:

None

Select this option when data will arrive exclusively via the *HTTP API* (page 433) or *manually imported* (page 216).

Download from FTP site

Connect to an external FTP Server to acquire data files. Note: FTP is supported in passive mode (http://en.wikipedia.org/wiki/File_Transfer_Protocol) only.

FTP host Host name or IP address of the FTP Server.

Port TCP Port to use for connection to the FTP Server. Default Port 21 for standard FTP/FTPS or 990 for FTP with Implicit SSL.

Mode FTP Secure connection options. Use *FTP* for standard connection or choose an available *FTPS* mode. Consult your network administrator to verify the settings required for connection to your FTP Server.

Remote path Specifiy the base remote path on the FTP Server that you have accesss to. You can retrieve files from sub-directories within this path.

User Specifiy the name of the user account for the system to use when connecting to the FTP Server. Enter *anonymous* if no user account is required.

Password Password for the associated user account (or leave blank for none).

Download via HTTP

No configuration required.

The File URL (when adding file) must start with *http://* or *https://*. Optionally specify the login username and password as part of the URL if HTTP Basic authentication is required. eg. *http://user:password@company.com/file.csv*.

Parts of the URL can be dynamically generated by including JavaScript expressions surrounded by double braces (`{{ expr }}`).

Processing & Logic *Global Variables* (page 226) can be referenced, along with the `T( expr )` function for time manipulation.

An example URL with expressions to request the most recently acquired data through till the most recently available:

```
http://data.com/?start={{T(SOURCE.currentLocalTime).format(
↪'YYYY.MM.DD')}}&end={{T(NOW).format('YYYY.MM.DD')}}
```

Outputs a URL similar to

```
http://data.com/?start=2015.01.01&end=2017.12.01
```

Upload via HTTP

Data can be submitted as an HTTP POST body to the automatically generated URL. Password is optional.

IP whitelist You can optionally restrict incoming connections to this source to a list of approved IP addresses specified using CIDR notation. eg. 192.168.7.52/32 Leave empty for no IP address restrictions.

Note: Please consider using the *API* (page 433) for more options uploading via HTTP.

Email to eagle.io

Email data using the auto-generated email address exactly as shown.

Sender address filter For added security you can filter by sender email address. Restrict to a specific email address or to a specific domain. eg. user@company.com or @company.com. Leave blank for no restriction.

Note: The maximum accepted size per email (including all data files) is 25MB.

Send SMS text message

Send a text message to one of our incoming SMS phone numbers:

Australia: +61 488 811 086

United States: +1 408 400 3928

Custom phone numbers: Please contact us to arrange a custom incoming SMS number to be exclusively associated with your account. This will allow you to choose your own Source Id.

SMS messages must contain exactly 2 lines with the following content:

- Source Id
- Data payload

Publish to mqtt.eagle.io

Publish data with MQTT using the following settings:

Broker address mqtt.eagle.io

Broker port Use port 1883 for standard connection or port 8883 for SSL.

Topic Use the auto-generated topic exactly as shown. eg. *io/eagle/source/fruit-honey-jacket*

MQTT Password Optional password (leave blank for none).

IP whitelist You can optionally restrict incoming connections to this source to a list of approved IP addresses specified using CIDR notation. eg. 192.168.7.52/32 Leave empty for no IP address restrictions.

Note: The maximum accepted size per mqtt message is 10MB.

Read from Amazon S3

Connect to an Amazon S3 bucket to acquire data files.

Bucket Unique S3 bucket name. eg. my.aws.bucket

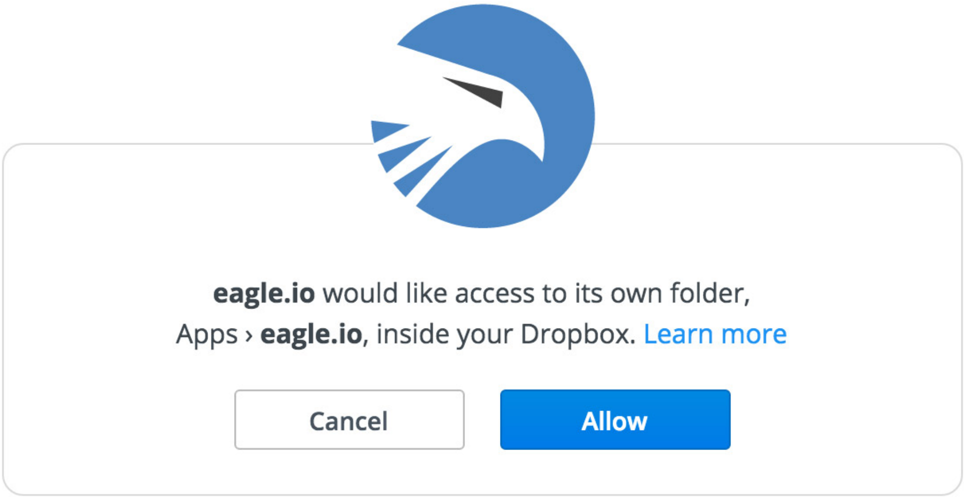
Access key Id User access key Id (generated from AWS Console).

Secret Secret token associated with access key.

Note: Matching files will be removed from S3 after acquire.

Read from Dropbox

Dropbox is used to connect to a Dropbox (http://dropbox.com) account. An *eagle.io* folder will be created in your Dropbox *Apps* directory where you can place files for collection.



eagle.io would like access to its own folder, Apps › **eagle.io**, inside your Dropbox. Learn more

When changing the account, a popup window will be displayed which allows you to login to Dropbox and authorise access as shown above.

Upload to ftp.eagle.io

FTP your files to ftp.eagle.io using the auto-generated user name exactly as shown. Password is optional. Use Tcp port 21 for standard Ftp and Tcp port 990 for Implicit SSL.

IP whitelist You can optionally restrict incoming connections to this source to a list of approved IP addresses specified using CIDR notation. eg. 192.168.7.52/32 Leave empty for no IP address restrictions.

Note: Only one concurrent ftp connection is allowed per Source. The maximum accepted size per file is 100MB.

Upload to sftp.eagle.io

SFTP your files to sftp.eagle.io using the auto-generated user name exactly as shown. Password is optional. Use Tcp port 22.

IP whitelist You can optionally restrict incoming connections to this source to a list of approved IP addresses specified using CIDR notation. eg. 192.168.7.52/32 Leave empty for no IP address restrictions.

Note: Only one concurrent sftp connection is allowed per Source. The maximum accepted size per file is 100MB.

Read mode Select how data should be read from the file:

Read all records will read in the entire file on each acquisition.

Read new records will only read new data added to the file since last acquisition.

Optionally delete files after acquire (not supported on all transports).

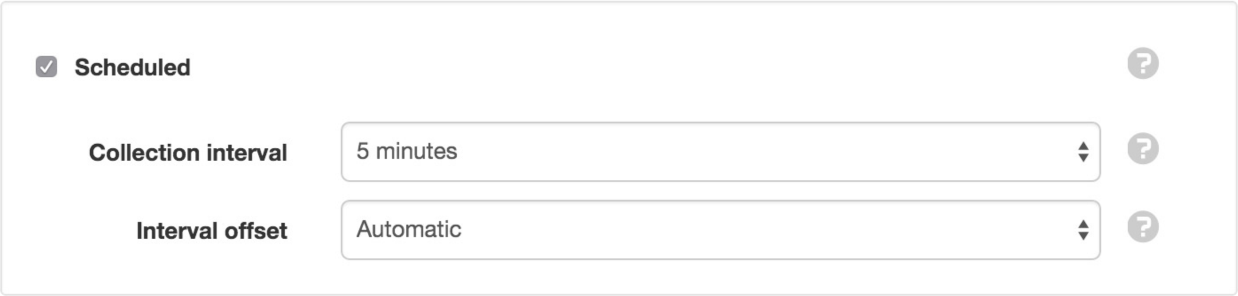
Retry attempts Select how many retry attempts are made during an acquisition or scheduled collection before the communications is considered failed.

Retry delay Select the delay between retry attempts. The retry attempts multiplied by the retry delay should not exceed the collection interval.

Communications Alarm See *Alarms and Notifications* (page 170).

Collection

Collection is used to specify if and when data should be automatically collected from the Source.



☑ Scheduled

Collection interval: 5 minutes

Interval offset: Automatic

Scheduled Enable the schedule for automatic data collection.

Collection interval Select the frequency of the collection.

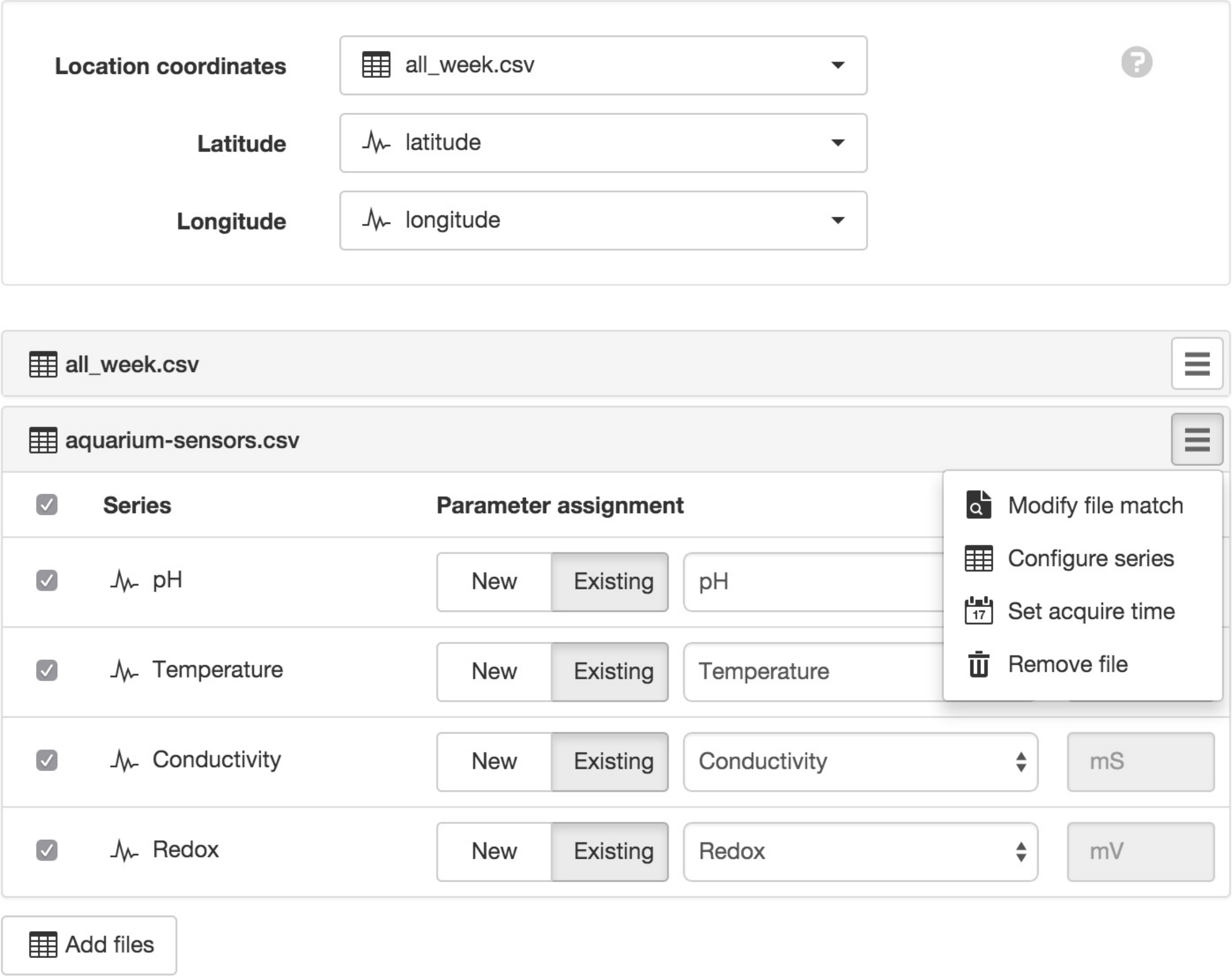
Interval offset Offset the collection interval to prevent collection occuring on the interval. eg. 1 hour collection interval will occur at 9am, 10am, etc. Set an interval offset of 5 minutes and the collection times will be 9:05am, 10:05am, etc.

Outdated Alarm See *Alarms and Notifications* (page 172).

Overload Alarm See *Alarms and Notifications* (page 173).

Series

The Series section allows you to assign Series from the Source to New or Existing Parameters.



Location coordinates: all_week.csv

Latitude: latitude

Longitude: longitude

all_week.csv

aquarium-sensors.csv

☑	Series	Parameter assignment		
☑	pH	New / Existing	pH	
☑	Temperature	New / Existing	Temperature	
☑	Conductivity	New / Existing	Conductivity	mS
☑	Redox	New / Existing	Redox	mV

Add Files Add new files to be acquired by the Source (10 files maximum). A list of files will be displayed which are available using the current connection options. Select the new files to be added. You will need to setup the parser configuration for each file added.

Location Coordinates The Source can optionally provide Location Coordinates from a coordinate series or a pair of numeric series (lat/lng). You need to configure the Location and select this Source to be used for its coordinates. Select the file and series to use from the drop down list.

Modify file match Modify the file configuration and matching criteria and select a sample file to use for configuring series. Some transport types such as Email or FTP/SFTP Server require you to upload a local sample file or alternatively *Skip or Reset sample file and retrieve on next acquisition*. The *file name match* should uniquely match the name of uploaded file(s). For example use *.csv* to match all files with a csv extension (case-insensitive). Enable the *Match using regular expression* option for advanced matching.

Configure series Setup or Update the parser configuration for the selected file. See *Text Parser Configuration* (page 123) for full details. If a sample data file has not been uploaded or acquired the Configure series menu item will be disabled.

Set acquire time 📅 Set or reset the collection pointer for the corresponding table to re-collect its data from the specified date using the Write mode option selected in the General tab.

Remove file 🗑 Select this option from the drop down table menu to remove this file from the Source. All parameters associated with the series from the file will be disabled.

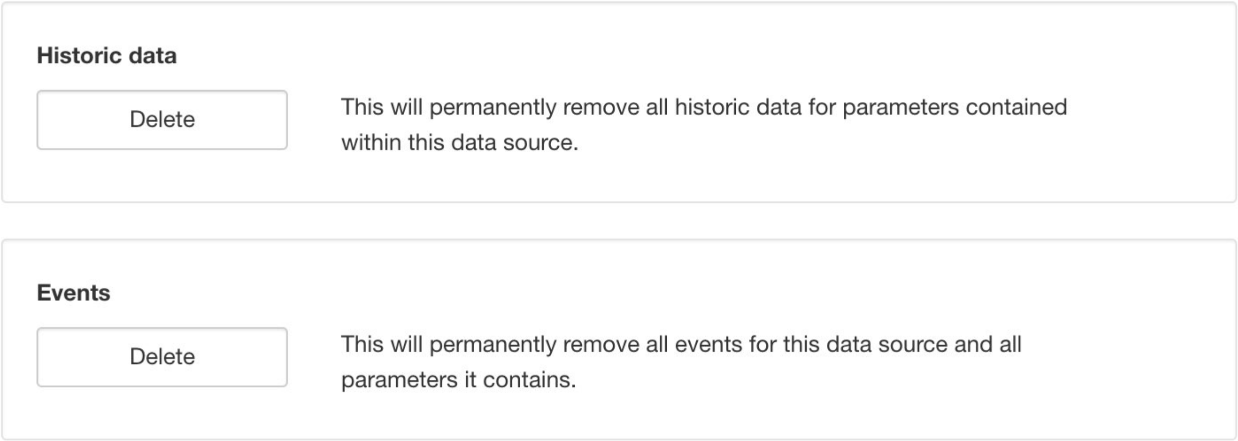
Parameter Assignment You must assign Series to New or Existing parameters and set the Series for collection by ensuring its checkbox is enabled. Any Parameters assigned to Series will be disabled when the Series is unchecked for collection.

Parameters can be re-assigned to new Series at any time without loosing existing historic data.

The series icon indicates the *type of parameter* (page 49) that will be created. Rename and Delete operations should be performed from the Workspaces Tree.

Historic

Click the *Delete* buttons and save to permanently remove all *historic data* or *events* for Parameters contained within this Data Source. Alternatively use the *Parameter Historic* (page 157) section to delete historic data or events for individual Parameters.



Historic data

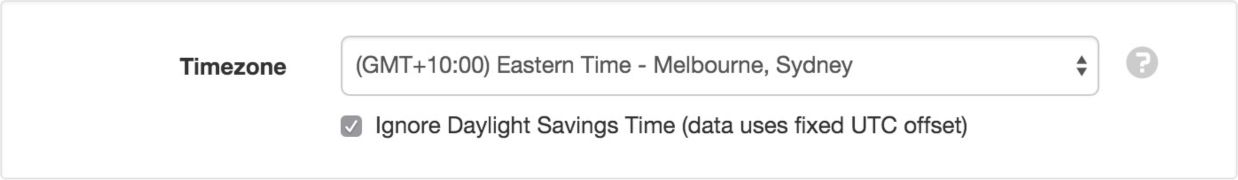
This will permanently remove all historic data for parameters contained within this data source.

Events

This will permanently remove all events for this data source and all parameters it contains.

Time

Time allows you to configure the timezone of the Source and associated options.



Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

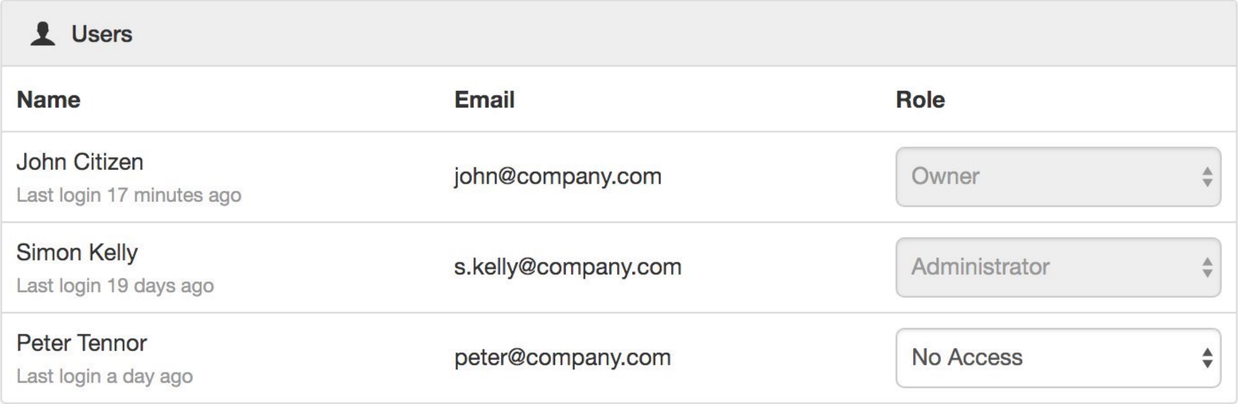
Timezone Select the timezone the Source uses for storing historic data. Choose *(GMT+00:00) UTC* if data timestamps are in UTC.

Ignore Daylight Savings Time Check this option if the Source does not offset the data timestamps to account for DST.

Security

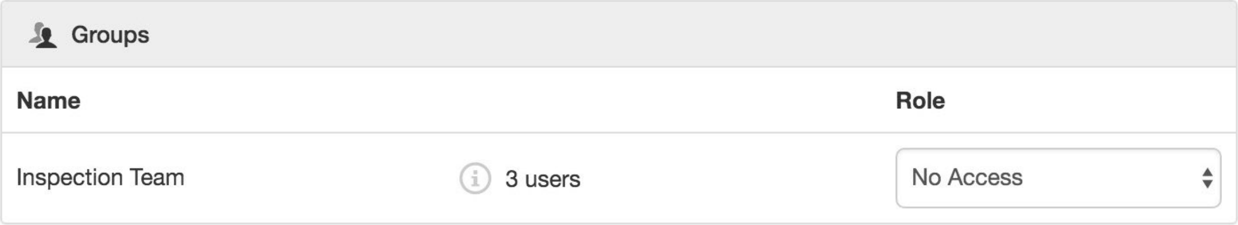
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



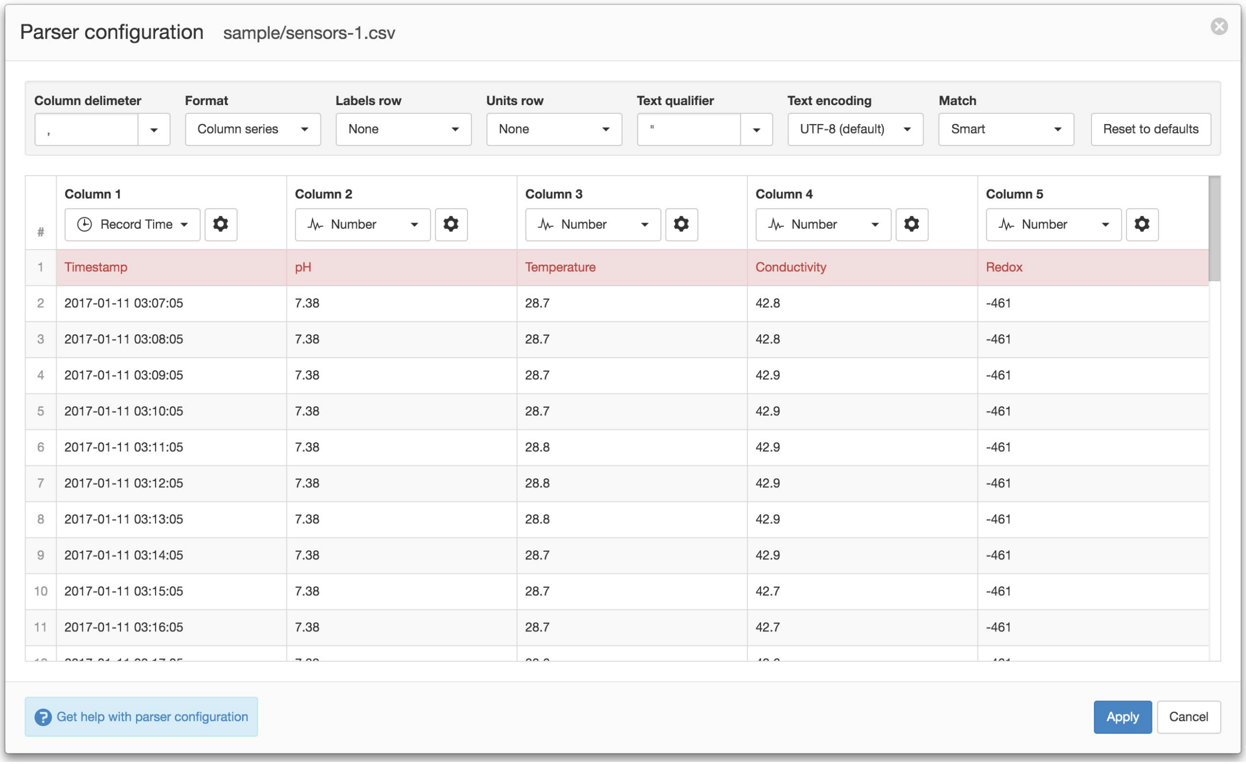
Groups

Name		Role
Inspection Team	3 users	No Access

Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Text Parser Configuration

The Text Parser allows you to define how a delimited text file should be processed by the system including defining series to be assigned to Parameters. All scheduled collection and user acquisition requests will use the saved parser configuration to process any new data that has been appended to the file since last collection.

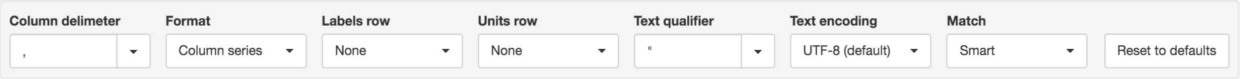

Parser configuration sample/sensors-1.csv

Column delimeter: ,
Format: Column series
Labels row: None
Units row: None
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart

#	Column 1 Record Time	Column 2 Number	Column 3 Number	Column 4 Number	Column 5 Number
1	Timestamp	pH	Temperature	Conductivity	Redox
2	2017-01-11 03:07:05	7.38	28.7	42.8	-461
3	2017-01-11 03:08:05	7.38	28.7	42.8	-461
4	2017-01-11 03:09:05	7.38	28.7	42.9	-461
5	2017-01-11 03:10:05	7.38	28.7	42.9	-461
6	2017-01-11 03:11:05	7.38	28.8	42.9	-461
7	2017-01-11 03:12:05	7.38	28.8	42.9	-461
8	2017-01-11 03:13:05	7.38	28.8	42.9	-461
9	2017-01-11 03:14:05	7.38	28.7	42.9	-461
10	2017-01-11 03:15:05	7.38	28.7	42.7	-461
11	2017-01-11 03:16:05	7.38	28.7	42.7	-461

General Settings

General settings are used to specify file format and encoding options.



Column delimeter: ,

Format: Column series

Labels row: None

Units row: None

Text qualifier: "

Text encoding: UTF-8 (default)

Match: Smart

Column delimiter Specify the *delimiter* used to separate values in each line of the file. Select a delimiter from the drop down or enter a custom character to use.

Format Select the record format of the file. *Column series* should be used when each column in the file represents a single series or sensor. *Row series* should be used when each row (line) in the file represents a single series or sensor.

Labels row If your file contains a labels header row you can specify the corresponding line number or click the row number in the Parser Preview. The corresponding row will be highlighted and the column values will be used as the column labels. Labels are shown for convenience, but you can assign any valid names to the parameters during or after creation.

Units row If your file contains a units header row (and your using *Column series* format) you can specify the corresponding line number or right-click the row number in the Parser Preview. The corresponding row will be highlighted and the associated column values will be used as the default units. You can change the units during or after parameter creation.

Text qualifier Specify the character used to surround text values. This character will be automatically stripped if it exists in a column. Select a qualifier from the drop down or enter a custom character to use.

Text encoding The encoding format of the text file. If you notice special characters displayed incorrectly in the Parser Preview, you may need to change this setting.

Match *Smart* match will intelligently extract any values from the field that matches the column data type. *Strict* will only extract a value from the field if the entire field contents matches the column data type.

Success required When parsing a file via its configured transport, a Data alarm will be raised on the Source (when enabled) if the number of records successfully parsed do not reach this percentage threshold. Defaults to None (0%). ie. do not raise any alarm.

Reset to defaults Resets parser configuration and joins to system defaults.

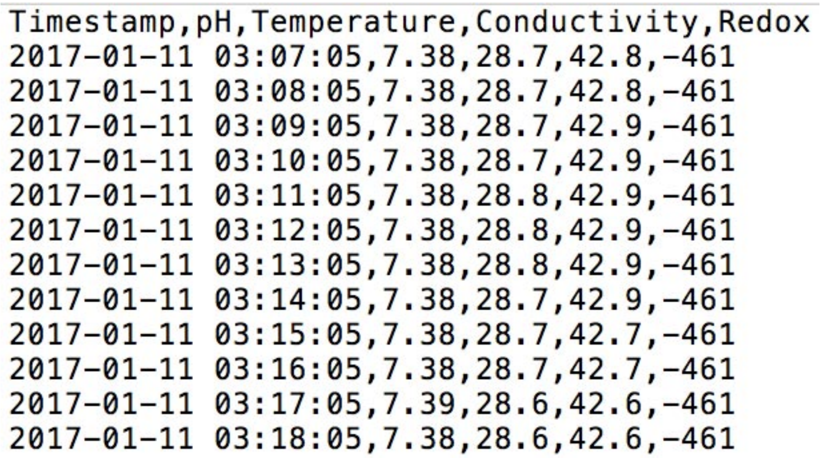
File Contents

The Parser extracts a sample from the beginning of the input text file and attempts to split the file into columns based on the current Column delimiter and Format.

Column Series Format

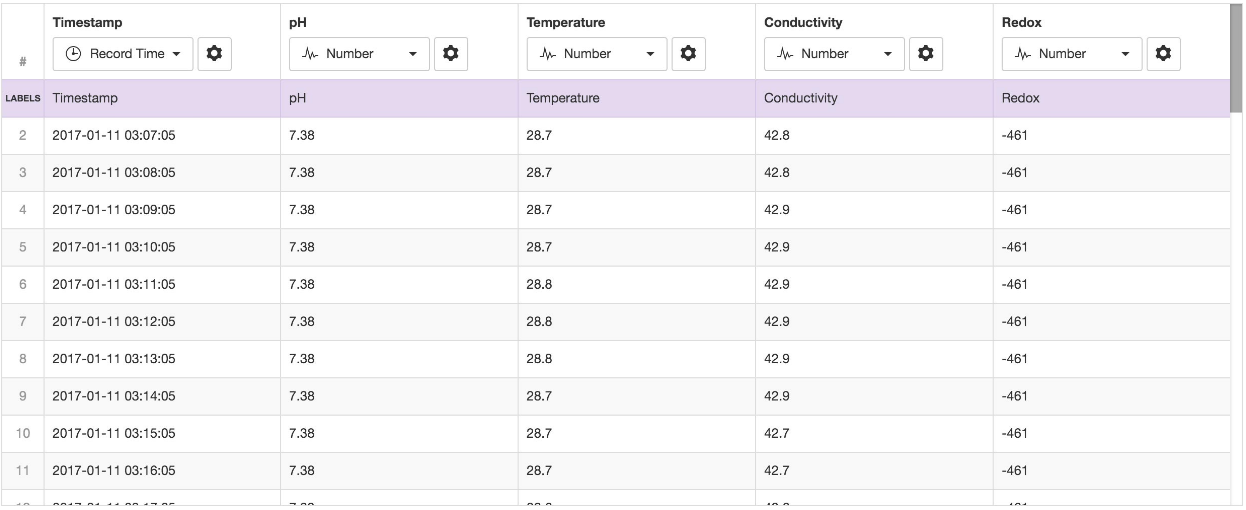
This format should be used when each column represents a single series or sensor. Every row is considered a record and must contain a timestamp.

Input Text File



```
Timestamp,pH,Temperature,Conductivity,Redox
2017-01-11 03:07:05,7.38,28.7,42.8,-461
2017-01-11 03:08:05,7.38,28.7,42.8,-461
2017-01-11 03:09:05,7.38,28.7,42.9,-461
2017-01-11 03:10:05,7.38,28.7,42.9,-461
2017-01-11 03:11:05,7.38,28.8,42.9,-461
2017-01-11 03:12:05,7.38,28.8,42.9,-461
2017-01-11 03:13:05,7.38,28.8,42.9,-461
2017-01-11 03:14:05,7.38,28.7,42.9,-461
2017-01-11 03:15:05,7.38,28.7,42.7,-461
2017-01-11 03:16:05,7.38,28.7,42.7,-461
2017-01-11 03:17:05,7.39,28.6,42.6,-461
2017-01-11 03:18:05,7.38,28.6,42.6,-461
```

Parser Preview

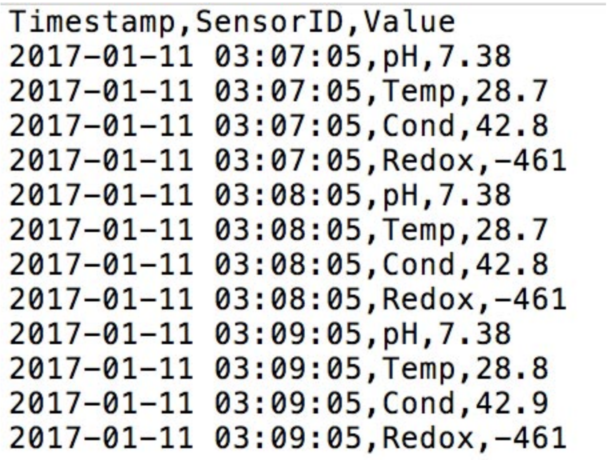


#	Timestamp Record Time	pH Number	Temperature Number	Conductivity Number	Redox Number
LABELS	Timestamp	pH	Temperature	Conductivity	Redox
2	2017-01-11 03:07:05	7.38	28.7	42.8	-461
3	2017-01-11 03:08:05	7.38	28.7	42.8	-461
4	2017-01-11 03:09:05	7.38	28.7	42.9	-461
5	2017-01-11 03:10:05	7.38	28.7	42.9	-461
6	2017-01-11 03:11:05	7.38	28.8	42.9	-461
7	2017-01-11 03:12:05	7.38	28.8	42.9	-461
8	2017-01-11 03:13:05	7.38	28.8	42.9	-461
9	2017-01-11 03:14:05	7.38	28.7	42.9	-461
10	2017-01-11 03:15:05	7.38	28.7	42.7	-461
11	2017-01-11 03:16:05	7.38	28.7	42.7	-461

Row Series Format

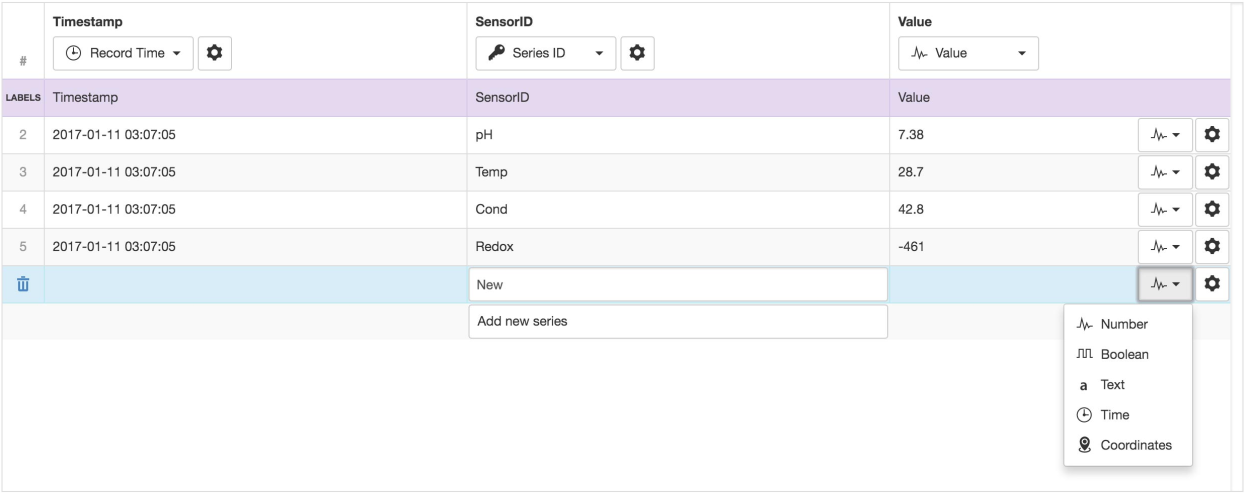
This format should be used when each row (line in file) represents a single series or sensor. Every row must contain a timestamp, unique identifier for the sensor (Series ID) and a value. The parser preview will only display rows with unique Series ID's. The sample input file may not contain all the possible Series ID's, so you can click the *Add new series* button and enter additional Series ID's as required. Ensure the correct data type is set for all series.

Input Text File



```
Timestamp,SensorID,Value
2017-01-11 03:07:05,pH,7.38
2017-01-11 03:07:05,Temp,28.7
2017-01-11 03:07:05,Cond,42.8
2017-01-11 03:07:05,Redox,-461
2017-01-11 03:08:05,pH,7.38
2017-01-11 03:08:05,Temp,28.7
2017-01-11 03:08:05,Cond,42.8
2017-01-11 03:08:05,Redox,-461
2017-01-11 03:09:05,pH,7.38
2017-01-11 03:09:05,Temp,28.8
2017-01-11 03:09:05,Cond,42.9
2017-01-11 03:09:05,Redox,-461
```

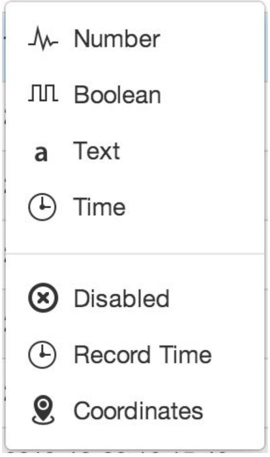
Parser Preview



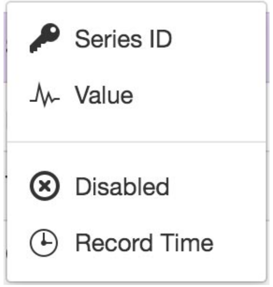
#	Timestamp Record Time	SensorID Series ID	Value Value
LABELS	Timestamp	SensorID	Value
2	2017-01-11 03:07:05	pH	7.38
3	2017-01-11 03:07:05	Temp	28.7
4	2017-01-11 03:07:05	Cond	42.8
5	2017-01-11 03:07:05	Redox	-461
		New	
		Add new series	

Columns and Data Type Selection

In *Column Series* format, columns are assigned a series data type which determines how they should be processed and the type of Parameter that will be available for creation.



In *Row Series* format, columns are assigned as *Record Time*, *Series ID*, *Value* or *Disabled*. The column that is assigned as the *Value* column has individual data types assigned per row.



Use the data type drop down menu in the column/row to select a data type from the available options. Individual cells that do not match the selected series data type are displayed in *RED*. Hover over a cell in the Parser Preview to display a tooltip (where valid) showing how the raw data will be interpreted by the parser.

Series Data Types

Number Interpret data as numeric. Can be created as a Number Parameter and suitable for both analog and digital data.

Boolean Interpret data as Boolean only. Can be created as a special Number Parameter with predefined states and accepts boolean data as text (TRUE or FALSE) or numberic (0 or 1).

Text Interpret data as Text. Create a Text Parameter from the column.

Time Interpret data as Time. You need to specify the time format using the Joins and Parser Configuration section. You can create a Time Parameter from the column.

Disabled The column will be *GREY* in the Parser Preview and will not be available for Parameter creation. Setting an unused column to Disabled is optional. It has been added for convenience when working with files with lots of columns.

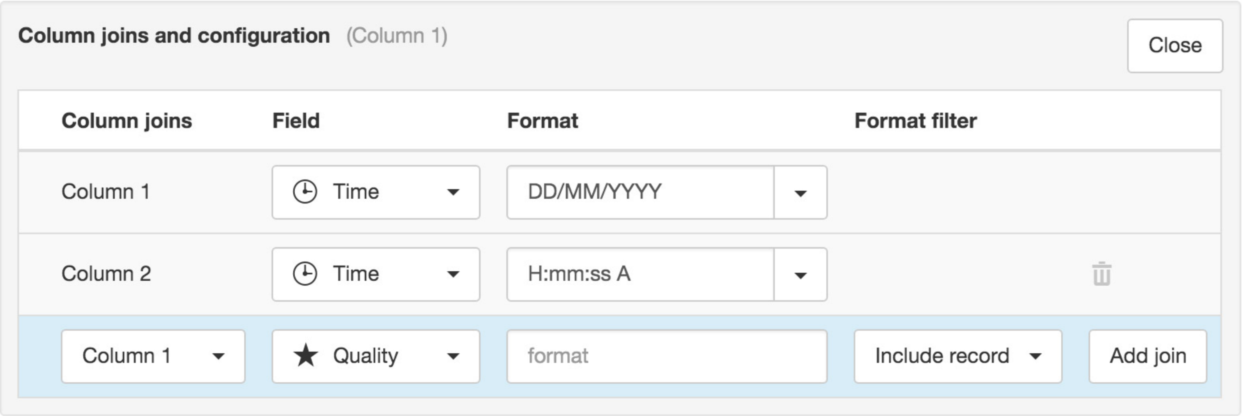
Record Time The column to use as the Record Time (timestamp for the line values). There must always be exactly one Record Time column defined. You need to specify the time format using the Joins and Parser Configuration section.

Coordinates Interpret column data as Coordinates (Latitude and Longitude). You can only specify one Coordinates column per file (but you can join data from other columns). Use the Joins and Parser Configuration section to specify the Latitude and Longitude fields. If Coordinates (latitude and longitude) are split over multiple columns, you can also just set the data type of the columns as Number and select the individual columns when configuring the Location Coordinates for the Source.

Joins and Parser Configuration

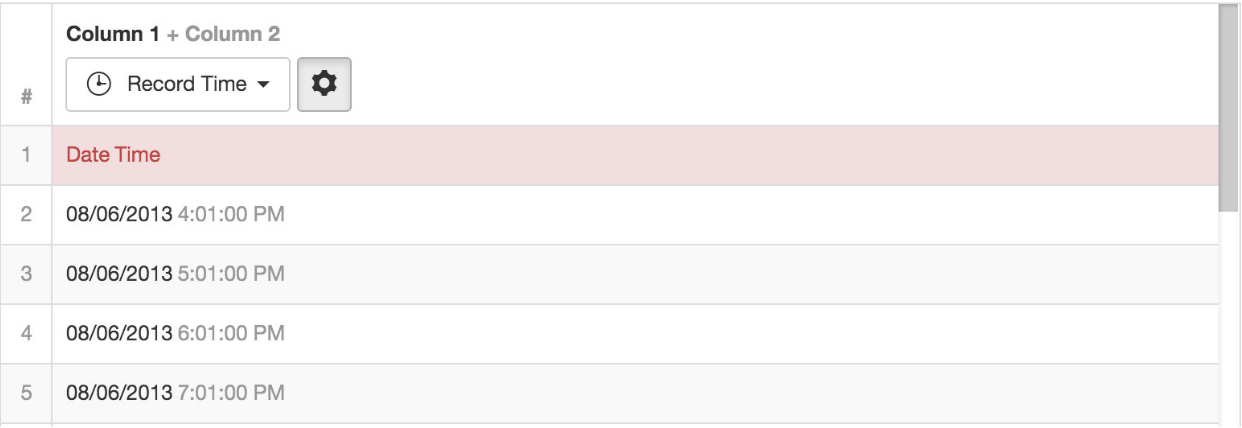
⚙ The Joins and Parser Configuration section (available from the properties icon at the top of each column or in each row of the Value column for Row Series format) is used to customize the parser for individual columns/series including joins, formatting and specifying quality.

Data values in input files are commonly split into separate fields and therefore will be shown as different columns in the Parser Preview. It is necessary to ensure each column you would like to use for Parameter creation has all joins/fields defined.



Column joins and configuration (Column 1)

Column joins	Field	Format	Format filter
Column 1	Time	DD/MM/YYYY	
Column 2	Time	H:mm:ss A	
Column 1	Quality	format	Include record



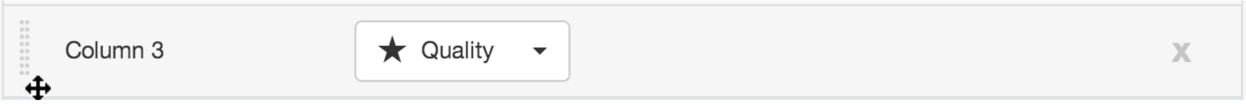
Column 1 + Column 2

Record Time

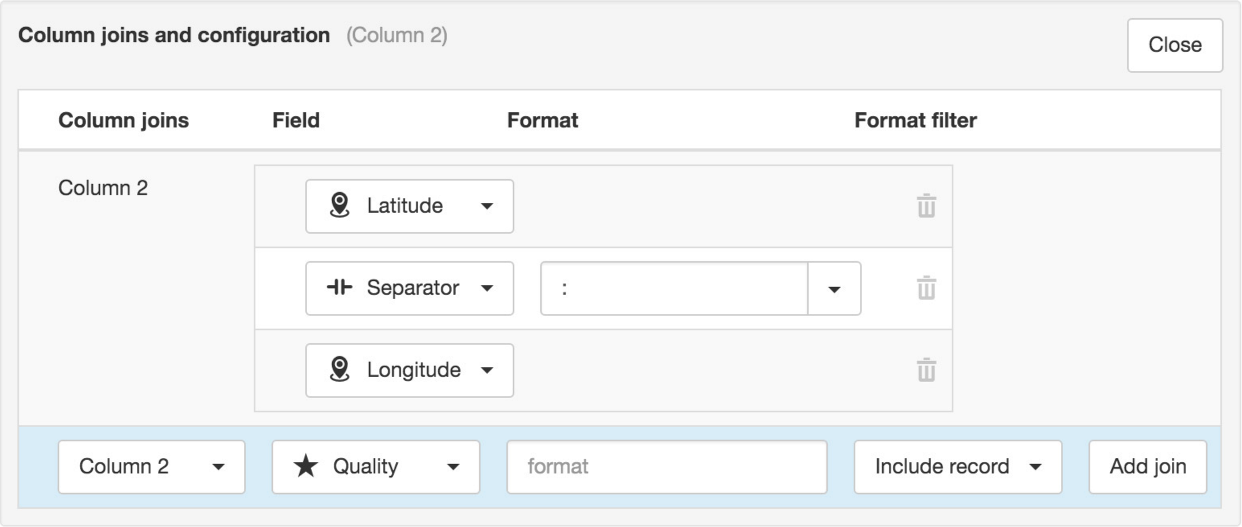
#	Column 1 + Column 2
1	Date Time
2	08/06/2013 4:01:00 PM
3	08/06/2013 5:01:00 PM
4	08/06/2013 6:01:00 PM
5	08/06/2013 7:01:00 PM

You can join additional columns via the *Add join* button. Select the column to join from the Joins drop down and the Field to be assigned. Columns are joined in the order they are displayed (top to bottom) and the result is shown in the Parser Preview.

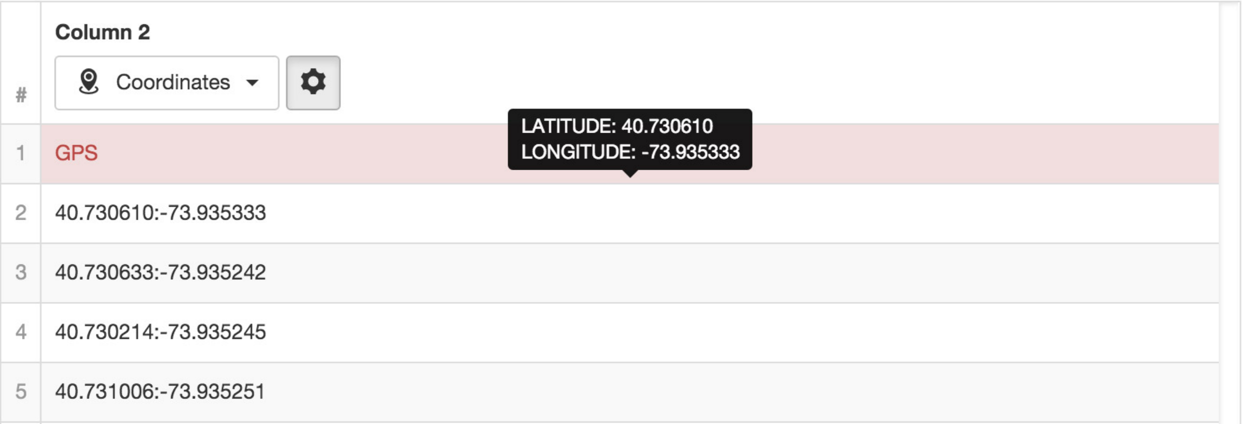
Re-order any join/field by hovering over the item with a mouse to reveal the grab handle. Click and drag the grab handle to reposition the item in the list.



You may need to split or exclude data within a single column. Add a Separator field and exclude specific text (as specified in the Separator format field).


Column joins and configuration (Column 2)
Close
Column 2
Quality
format
Include record
Add join

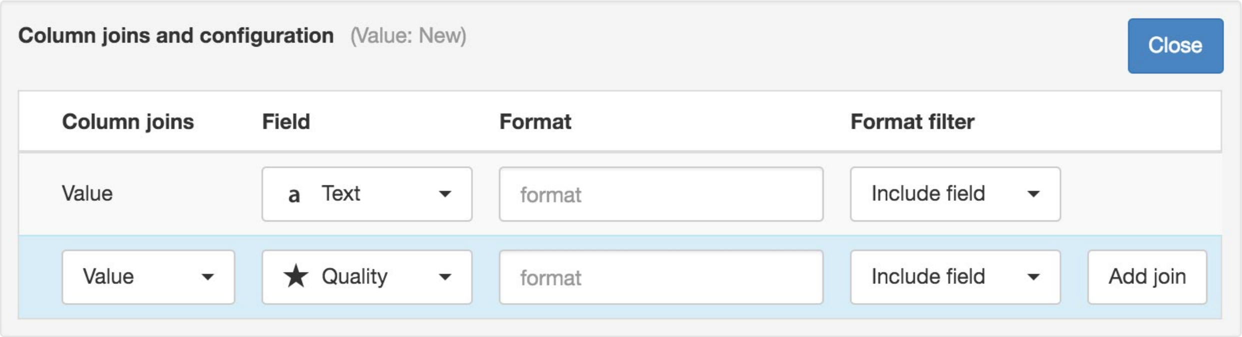
Column joins	Field	Format	Format filter
Column 2	Latitude		
	Separator	:	
	Longitude		


Coordinates

#	Column 2
1	GPS
2	40.730610:-73.935333
3	40.730633:-73.935242
4	40.730214:-73.935245
5	40.731006:-73.935251

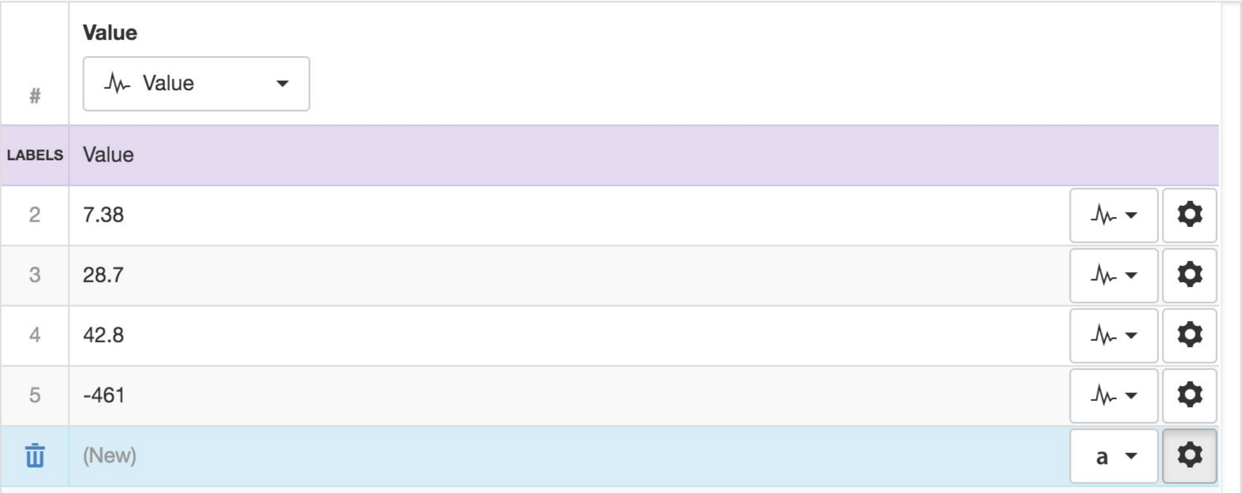
LATITUDE: 40.730610
LONGITUDE: -73.935333

When using *Row Series* format, column joins and data type for the *Value* column must be configured per series. Use the dropdown data type selector and properties toggle button for each series/row.



Column joins and configuration (Value: New)

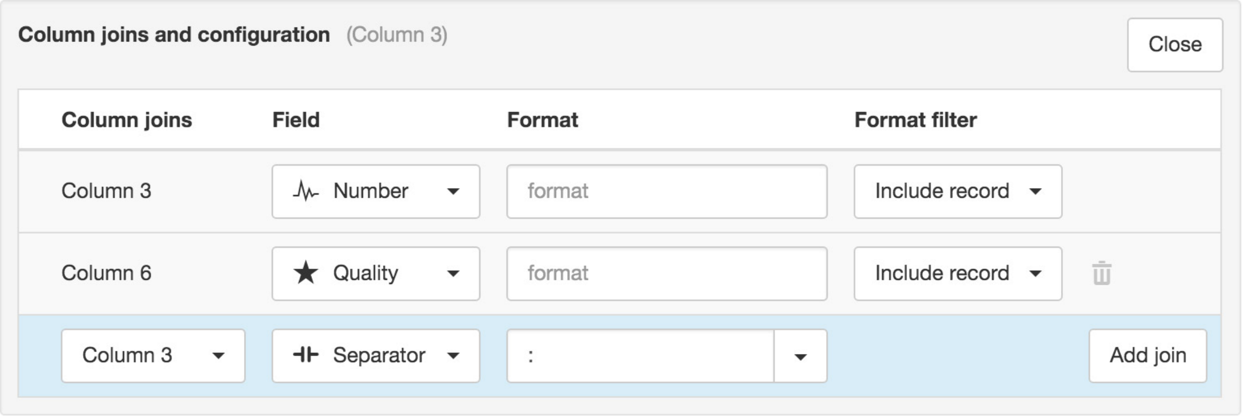
Column joins	Field	Format	Format filter	
Value	a Text	format	Include field	
Value	★ Quality	format	Include field	Add join



#	Value Value
LABELS	Value
2	7.38
3	28.7
4	42.8
5	-461
	(New)

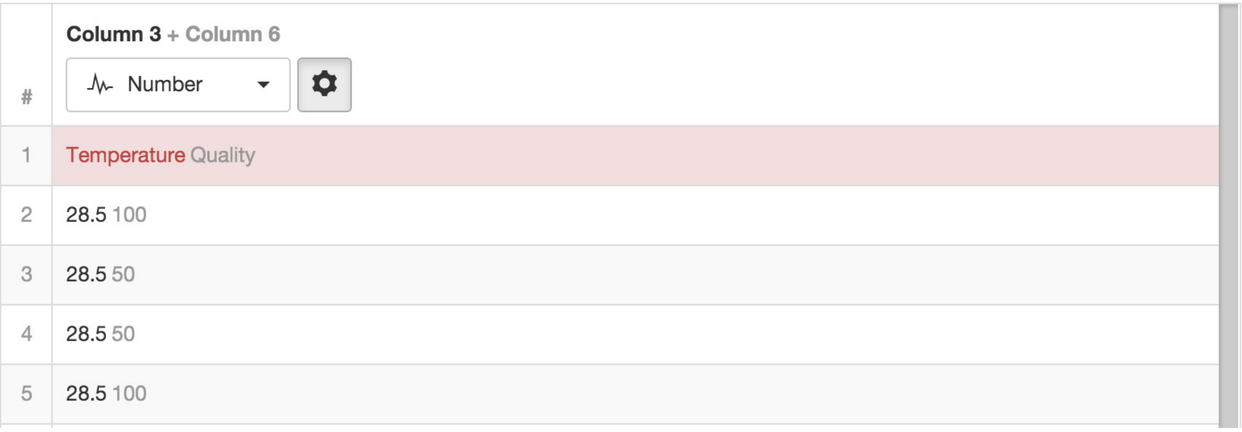
Quality codes can be associated with each column, either by splitting the column or joining an additional column containing the quality codes.

All columns can be re-used as joins on other columns. For example you can have multiple parameter columns that all share the same quality code value by adding the quality code column as a join on each parameter column.



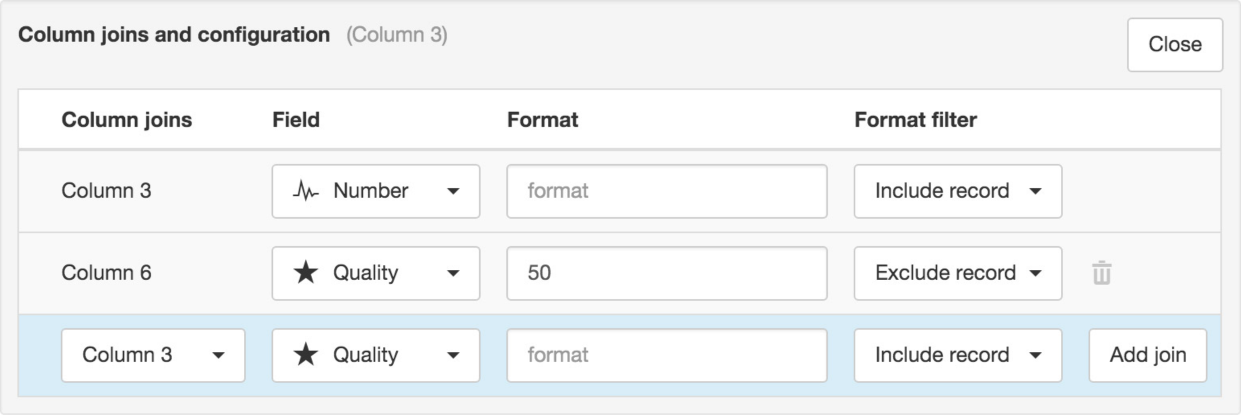
Column joins and configuration (Column 3)

Column joins	Field	Format	Format filter	
Column 3	Number	format	Include record	
Column 6	★ Quality	format	Include record	
Column 3	Separator	:		Add join



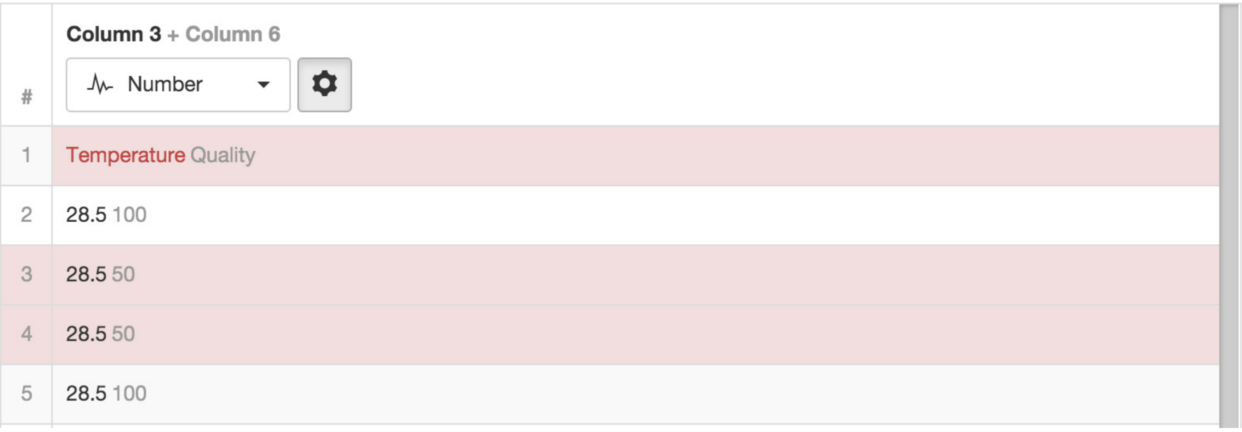
#	Column 3 + Column 6 Number
1	Temperature Quality
2	28.5 100
3	28.5 50
4	28.5 50
5	28.5 100

You can optionally specify a **format** and **format filter** to include or exclude the field or the entire record based on the data matching the specified format. In the example below all records will be excluded where the data in *Column 6 (Quality)* equals *50*.



Column joins and configuration (Column 3)

Column joins	Field	Format	Format filter	
Column 3	Number	format	Include record	
Column 6	★ Quality	50	Exclude record	
Column 3	★ Quality	format	Include record	Add join



#	**Column 3** + Column 6 Number
1	Temperature Quality
2	28.5 100
3	28.5 50
4	28.5 50
5	28.5 100

2.3.9 Data Source (data logger)

➔ Data Sources automatically acquire or receive timeseries data using a variety of different transport options. Connect to a *data logger* or collect data from files. Data Sources can be created inside Locations only.

The type of Data Source (data logger or file) is selected at time of creation and cannot be changed. This section is specific to data logger Data Sources.

Refer to the *Device configuration* (page 289) section for a quick guide to connecting a range of industry standard data loggers.

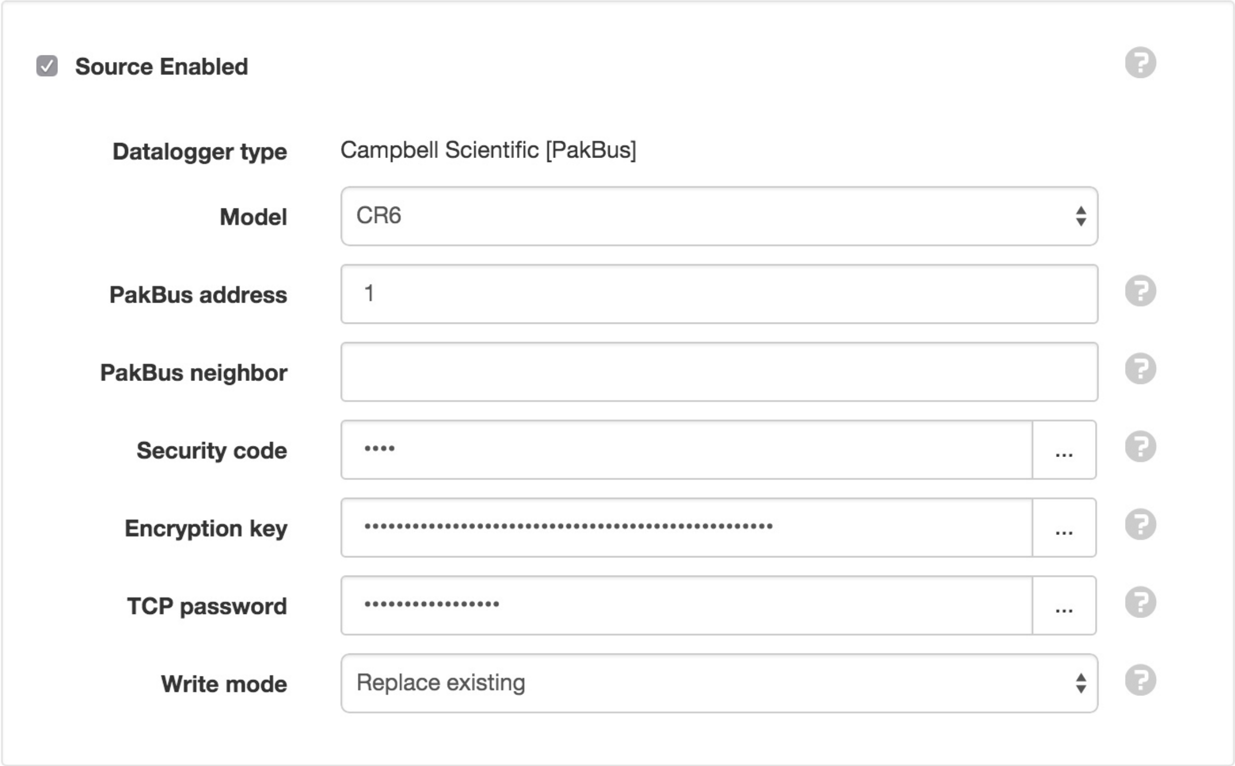
Note: Eagle.io supports the acquisition and storage of up to 20000 records per *Data Source* (page 134) per day. Exceeding this limit will trigger an *Overload Alarm* (page 173) on the Source. Refer to Historic Data *Limits* (page 579) for more information.

Properties

⚙ Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

General

The general section allows you to specify the type of data logger you would like to connect to.



☑ **Source Enabled**

Datalogger type	Campbell Scientific [PakBus]
Model	CR6
PakBus address	1
PakBus neighbor	
Security code	••••
Encryption key	••
TCP password	••••••••••••••••
Write mode	Replace existing

Source Enabled

Uncheck the Source Enabled checkbox to stop collection and prevent alarms and notifications from triggering.

Data logger type

Select the type of data logger you would like to connect to:

Campbell Scientific [PakBus]

Model Select the model of the data logger.

PakBus address Default value is 1.

PakBus neighbor PakBus neighbor address when using PakBus routing. Leave blank when connecting directly to the end device.

Security code Optional security code pre-conigured in the data logger. Leave blank for none.

Encryption key Optional PakBus encryption key pre-configured in data logger. Leave blank for none.

TCP password Optional PakBus TCP password pre-configured in data logger. Leave blank for none.

Libelium, *OTT netDL*, *SensorLog*, *WaterLog*

Model Select the model of the data logger.

Write mode

Select how acquired data will be written:

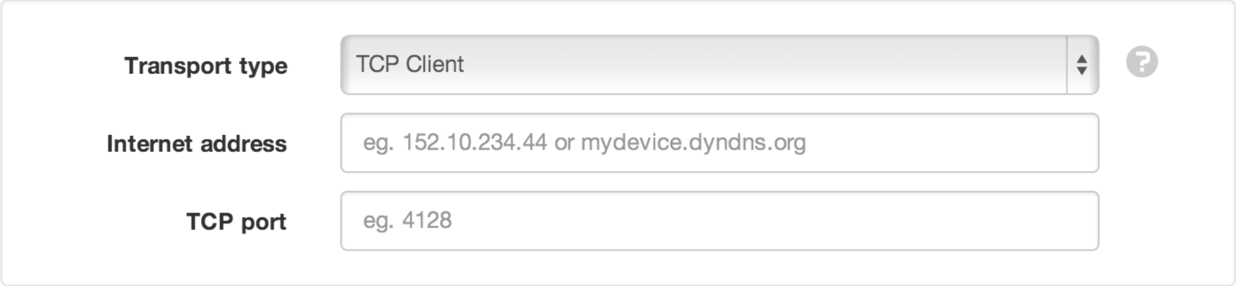
Merge and overwrite will insert the acquired data into the existing historic data and overwrite the existing values when timestamps match.

Merge and preserve will merge the acquired data into the existing historic data and will not overwrite existing values when timestamps match.

Replace existing will remove all existing historic data within the range of data being acquired.

Connection

Configure how you would like to connect to your data logger.



Transport type: TCP Client

Internet address: eg. 152.10.234.44 or mydevice.dyndns.org

TCP port: eg. 4128

Transport type

The following transports are available for certain data loggers:

TCP Client

TCP Client is used to establish an IP connection to a data logger connected to the internet.

Internet address IP address or Domain name where the device can be contacted.

TCP port TCP Port of the connected device.

TCP Server

TCP Server is for use with WaterLog Storm3 data loggers, SensorLog and Waspmotes. You should configure your logger to establish a TCP connection to **device.eagle.io**

- WaterLog Storm3 should use port **32213**
- SensorLog should use port **80**
- Waspmotes should use port **5566**

Site Id, Device Id, Waspmote Id The unique identification code generated by the system for this Source. You should configure your device with this Id.

TCP Callback

TCP Callback allows the remote device to establish an IP connection to eagle.io using a unique identifier. The device should connect to **device.eagle.io** port **4332**.

Device Id The unique identification number generated by the system for this Source. You can use an existing device id if it was previously assigned to a Data Source and no longer in use.

You can also assign any valid IMEI number from a modem not already assigned to a Source.

Upload to ftp.eagle.io

The OTT netDL range of loggers use FTP to upload files to ftp.eagle.io. When configuring the logger use the auto-generated user name exactly as shown. Password is optional. Use Tcp port 21 for standard Ftp and Tcp port 990 for Implicit SSL.

IP whitelist You can optionally restrict incoming connections to this source to a list of approved IP addresses specified using CIDR notation. eg. 192.168.7.52/32 Leave empty for no IP address restrictions.

Note: Only one concurrent ftp connection is allowed per Source. The maximum accepted size per file is 100MB.

Scout

Scout should be used with a *Scout modem* to enable all the device smart features.

Device Id The unique 15 digit IMEI number assigned to the *Scout modem*. Printed on the back of device.

Meshlium

Meshlium devices provide efficient routing of data collected from Waspmote devices in large Libelium sensor networks. The eagle.io application in the device needs to be started (and initial connection established with eagle.io) before it can be used as a transport.

Meshlium Id The unique serial number of the meshlium device.

Auth key Optional user specified authentication key configured in the eagle.io application running on the meshlium device.

Waspmote The Waspmote / Plug & Sense! device you would like to acquire data from.

Note: The same *Scout* or *TCPCallback* transport can be used with multiple data sources when using *PakBus neighbour* routing (and the remote data loggers can be reached). However all Data Sources sharing the transport must be configured in the same Workspace. Moving a Data Source will also move the associated device and invalidate any other Data Sources within the origin Workspace still configured to use the device.

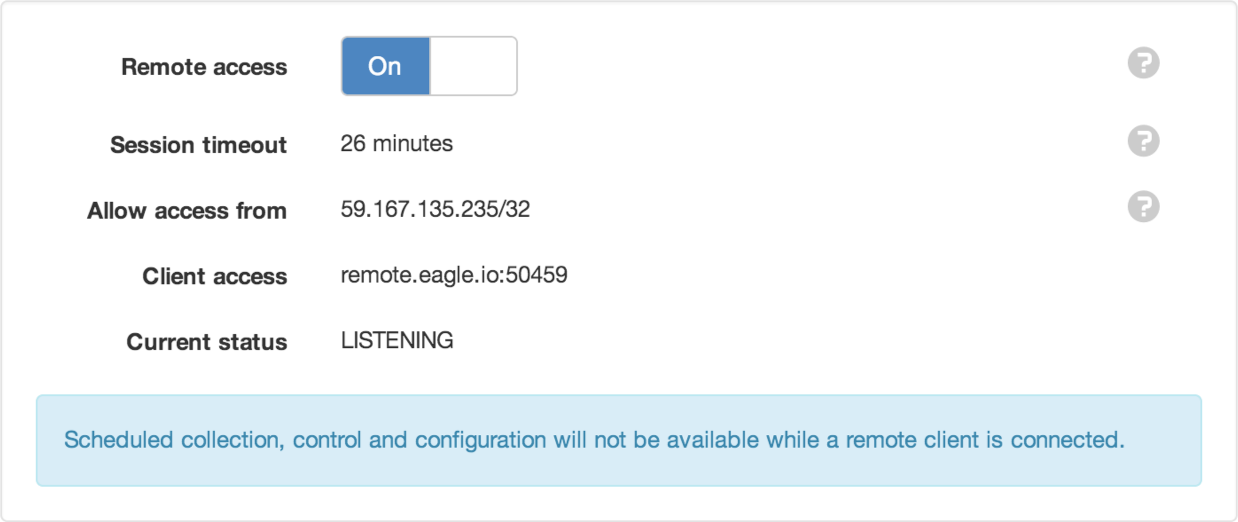
Remote access

Remote access allows you to connect directly to your data logger over TCP/IP (TCP Callback and Scout transport only). An Internet address and Port will be temporarily allocated when enabling remote access. Scheduled collection, control and configuration will not be available while a remote client is connected, and the Source status will show *REMOTE*.

Session timeout Select a duration for the session, after which the remote access connection will be automatically closed.

Allow acces from Restrict access to your data logger from your current IP address or a range of IP addresses specified using CIDR notation. Select *Anywhere* to allow connections from any Internet enabled device.

If the remote device is not connected or another client is already connected when you try to connect, a status message will be returned and remote access refused.



Remote access	On
Session timeout	26 minutes
Allow access from	59.167.135.235/32
Client access	remote.eagle.io:50459
Current status	LISTENING

Scheduled collection, control and configuration will not be available while a remote client is connected.

Retry attempts

Select how many retry attempts are made during an acquisition or scheduled collection before the communications is considered failed.

Retry delay

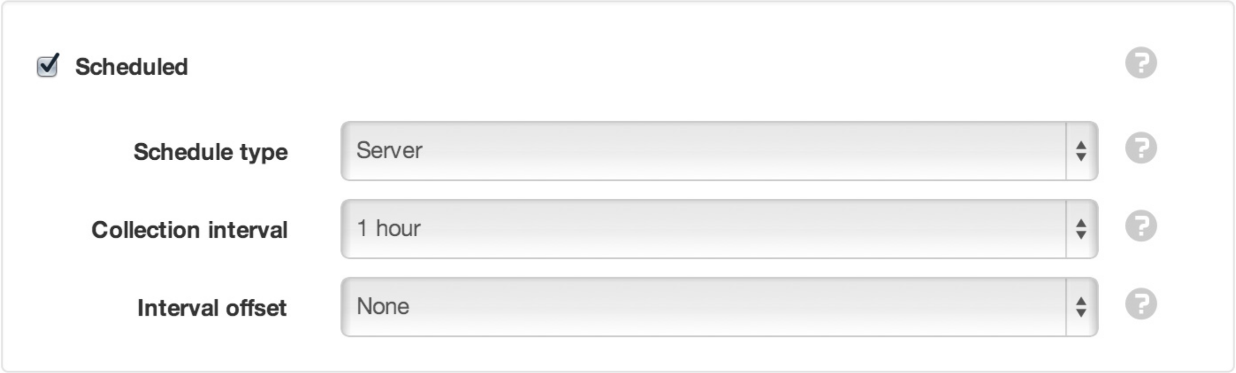
Select the delay between retry attempts. The retry attempts multiplied by the retry delay should not exceed the collection interval.

Communications Alarm

See *Alarms and Notifications* (page 170).

Collection

Collection is used to specify if and when data should be automatically collected from the Source. Not all connection transports will have a schedule.



☑ Scheduled

Schedule type: Server

Collection interval: 1 hour

Interval offset: None

Scheduled

Enable the schedule for automatic data collection. You should Disable the schedule when using the TCP Callback Transport for event based callbacks (ie. not permanently connected).

Schedule type

Server is the recommended option for always connected devices and allows easy schedule configuration.

Remote enables a *Scout modem* to maintain its own schedule allowing for low power mode and customized configuration.

Collection interval

Select the frequency of the collection.

Interval offset

Offset the collection interval to prevent collection occuring on the interval. eg. 1 hour collection interval will occur at 9am, 10am, etc. Set an interval offset of 5 minutes and the collection times will be 9:05am, 10:05am, etc.

Outdated Alarm See *Alarms and Notifications* (page 172).

Overload Alarm See *Alarms and Notifications* (page 173).

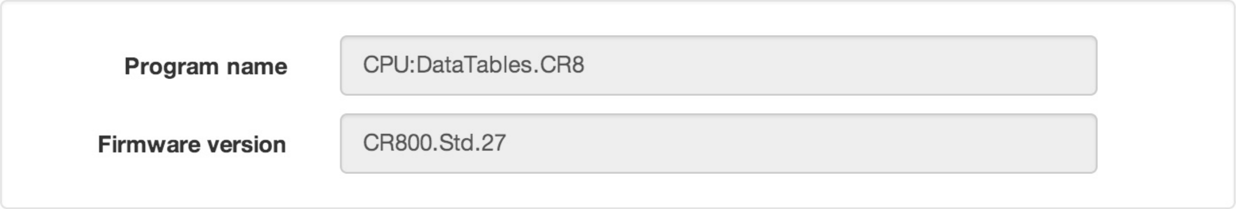
In-Sequence Collection

For *Campbell Scientific [PakBus]* dataloggers that share the same connection, data collection will automatically occur in sequence. The sequence is ordered from oldest to newest (the date the datalogger was created in eagle.io).

In-Sequence Collection for TCP Callback When using the *TCP Callback* transport, all dataloggers which have the same device id share the same connection, and these will also be collected in sequence whenever the device connects to eagle.io.

Configuration

Configuration displays configuration set in the remote data logger including program name, firmware, etc. To send new configuration to a supported logger, use the *Manage configuration* (page 185) dialog.



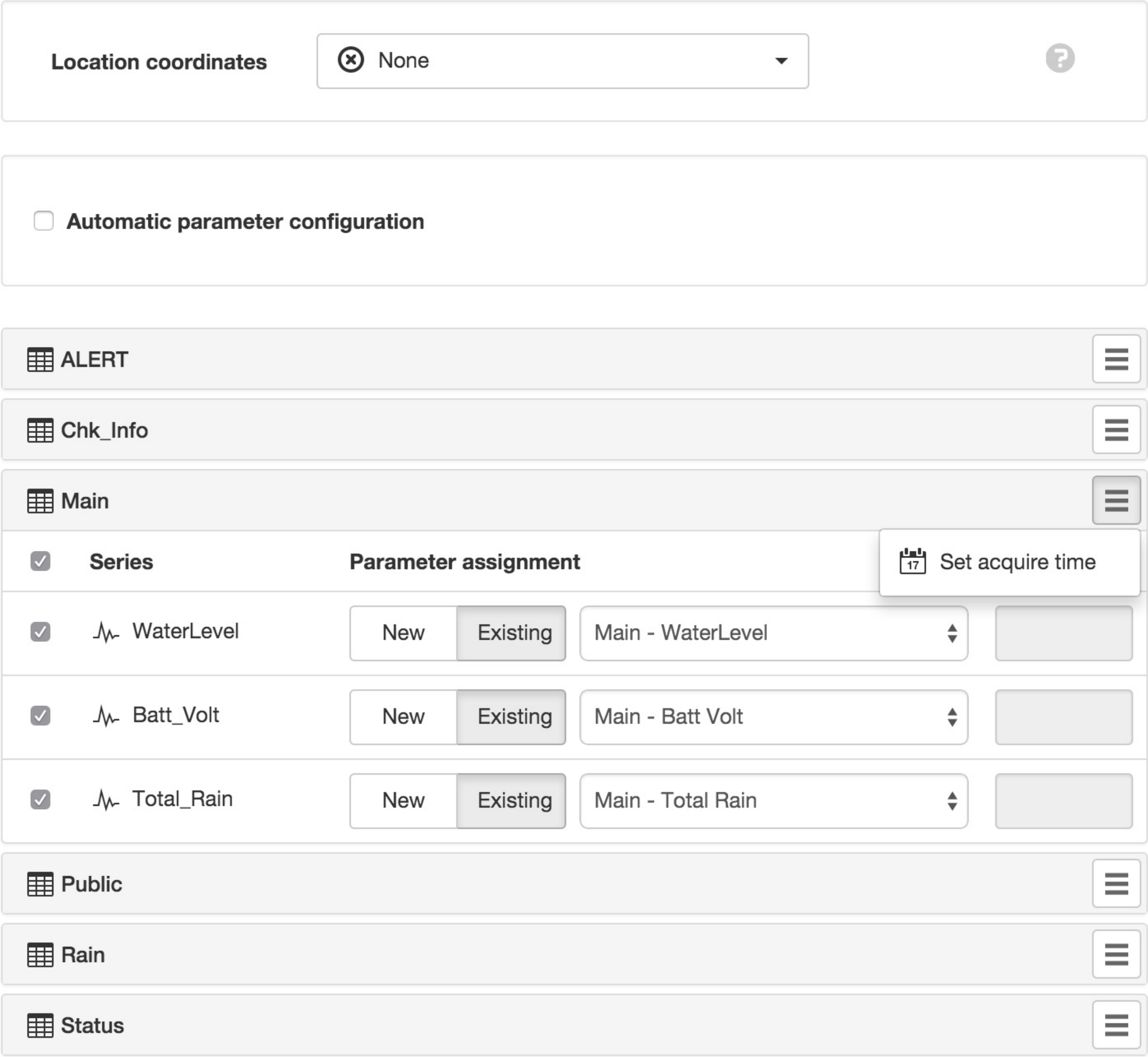
Program name: CPU:DataTables.CR8

Firmware version: CR800.Std.27

Configuration Alarm See *Alarms and Notifications* (page 171).

Series

The Series section allows you to assign Series from the Source to New or Existing Parameters. A list of available tables/series is shown (when not using Automatic parameter configuration) and automatically updated on every connection to the data logger.



Location coordinates ⊗ None

☐ **Automatic parameter configuration**

ALERT

Chk_Info

Main

☑	Series	Parameter assignment	
☑	WaterLevel	New / Existing	Main - WaterLevel
☑	Batt_Volt	New / Existing	Main - Batt Volt
☑	Total_Rain	New / Existing	Main - Total Rain

Public

Rain

Status

Automatic Parameter Configuration

Check this option to automatically create, update and disable parameters based on the tables defined in the data logger. When checked, the Source tables will not be displayed.

Note:

Campbell Scientific data logger program changes will trigger the following automatic parameter configuration:

- DataTable field names common between the old and new program will maintain existing parameter assignment
- DataTable field names absent from the new program will cause assigned parameters to be disabled (greyed out)

- DataTable field names newly defined will be associated with new parameters

---

Location Coordinates

The Source can optionally provide Location Coordinates from a coordinate series or a pair of numeric series (lat/lng). You need to configure the Location and select this Source to be used for its coordinates. Select the table and series to use from the drop down list.

Configure series

▦ Re-configure the series/sensors for specific data loggers only.

Set acquire time

17 Set or reset the collection pointer for the corresponding table to re-collect its data from the specified date using the Write mode option selected in the General tab.

Parameter Assignment

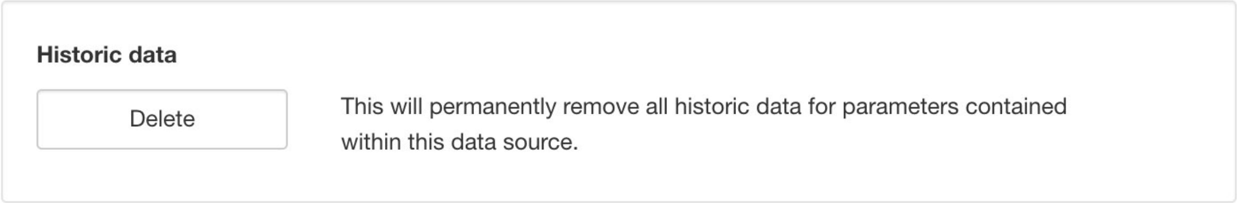
You must assign Series to New or Existing parameters and set the Series for collection by ensuring its checkbox is enabled. Any Parameters assigned to Series will be disabled when the Series is unchecked for collection.

Parameters can be re-assigned to new Series at any time without loosing existing historic data.

The series icon indicates the *type of Parameter* (page 49) that will be created. Rename and Delete operations should be performed from the Workspaces Tree.

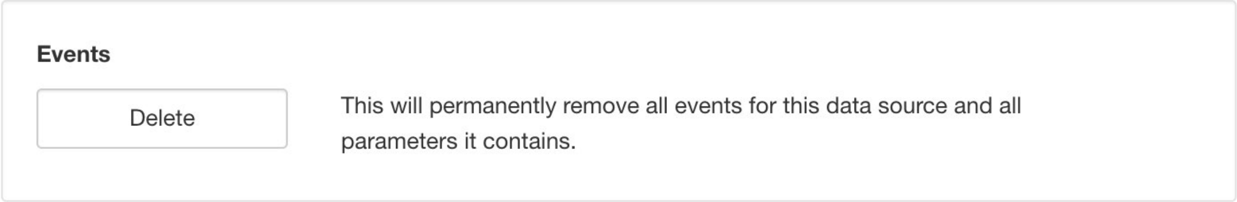
Historic

Click the *Delete* buttons and save to permanently remove all *historic data* or *events* for Parameters contained within this Data Source. Alternatively use the *Parameter Historic* (page 157) section to delete historic data or events for individual Parameters.



Historic data

This will permanently remove all historic data for parameters contained within this data source.

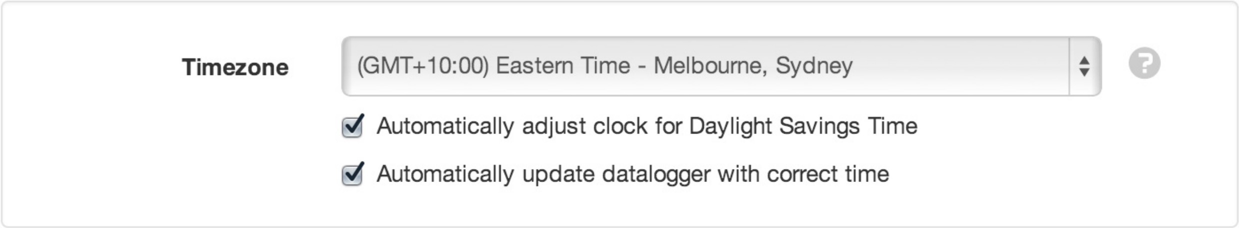


Events

This will permanently remove all events for this data source and all parameters it contains.

Time

Time allows you to configure the timezone of the Source and associated options.



Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Automatically adjust clock for Daylight Savings Time

☑ Automatically update datalogger with correct time

Timezone

Select the timezone the Source uses for storing historic data. Choose *(GMT+00:00) UTC* if data timestamps are in UTC.

Automatically adjust clock for Daylight Savings Time

Check this option if you would like to automatically update the data logger clock to account for DST in the selected timezone.

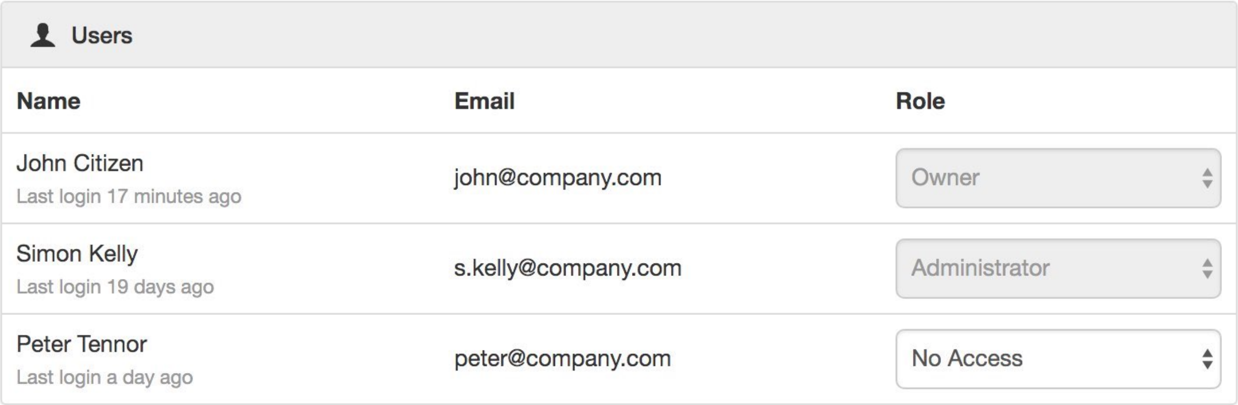
Automatically update data logger with correct time

Check this option if you would like to automatically update the data logger clock with the correct time based on the selected timezone.

Security

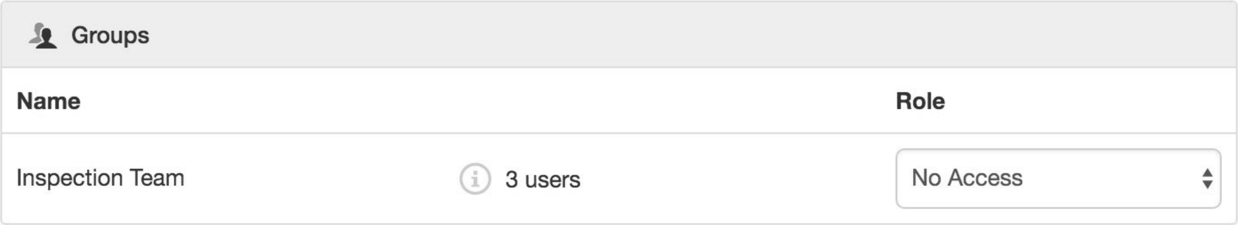
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Groups

Name		Role
Inspection Team	3 users	No Access

Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

2.3.10 Parameter

Parameters are managed by and contained within Data Sources. Parameters store the individual timeseries acquired by its Data Source. There are a few different types of parameters but essentially they support Monitoring or Controlling of values.

Types of Parameters

See *Nodes and Configuration* (page 49) for full list of Parameter types.

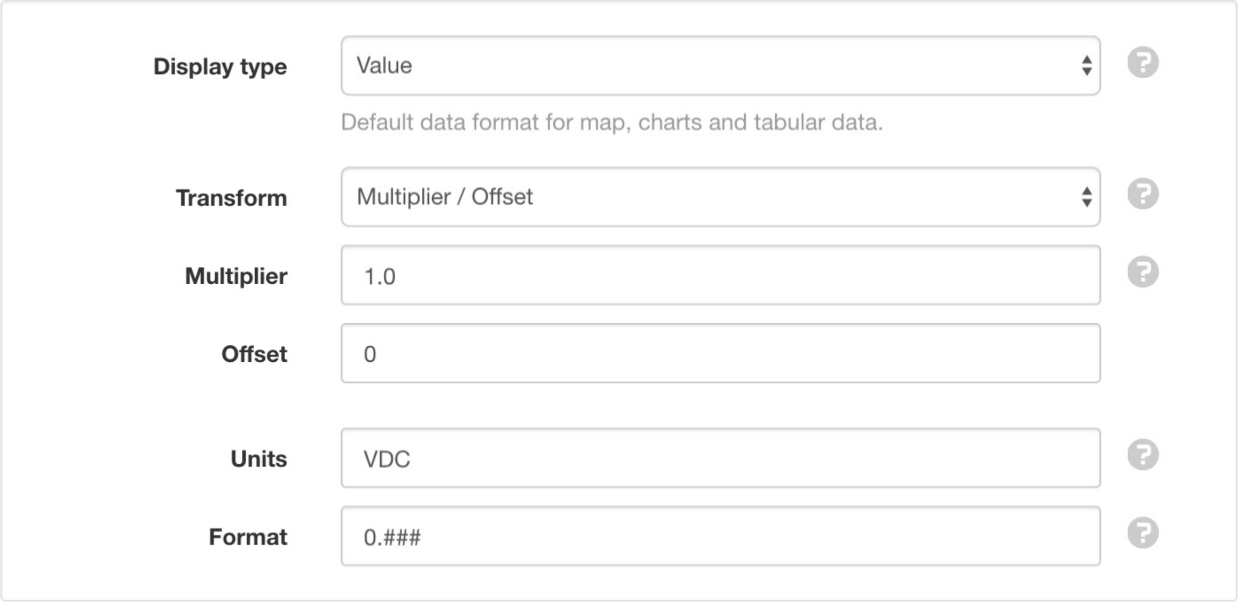
Properties

Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

Note: Available options will vary based on Parameter type.

General

The general section allows you to specifiy display settings for Number and Time Parameters.



Display type	Value Default data format for map, charts and tabular data.
Transform	Multiplier / Offset
Multiplier	1.0
Offset	0
Units	VDC
Format	0.###

Display type Select how this parameter should be displayed by default:

Value is the default display type for analog data.

State can be used for digital or discrete data and displays the state associated with the value (rather than the value).

Transform Optionally apply a Multiplier/Offset or Equation to the stored historic data for display, notifications and alarms.

Multiplier is applied to raw data for state evaluation and display.

Offset is a value applied to raw data for state evaluation and display. Note: Multiplier is always applied before offset.

Equation can be used to apply an advanced mathematical transformation of the value.

Units The units (suffix) to be displayed with the value or state.

Format Specify how the value should be formatted for display.

Number Parameters use this setting to set how many decimal places should be shown (leave empty to display the value with all included decimal places). *0* will always display a digit. *#* will only display a digit if it exists.

Time Parameters use this setting to determine the formatting of the timestamp (leave empty to display timestamps in your default user time format). Select a preset format from the drop down list or specify a custom format using *time format tokens* (page 583).

Quality Alarm See *Alarms and Notifications* (page 174).

States

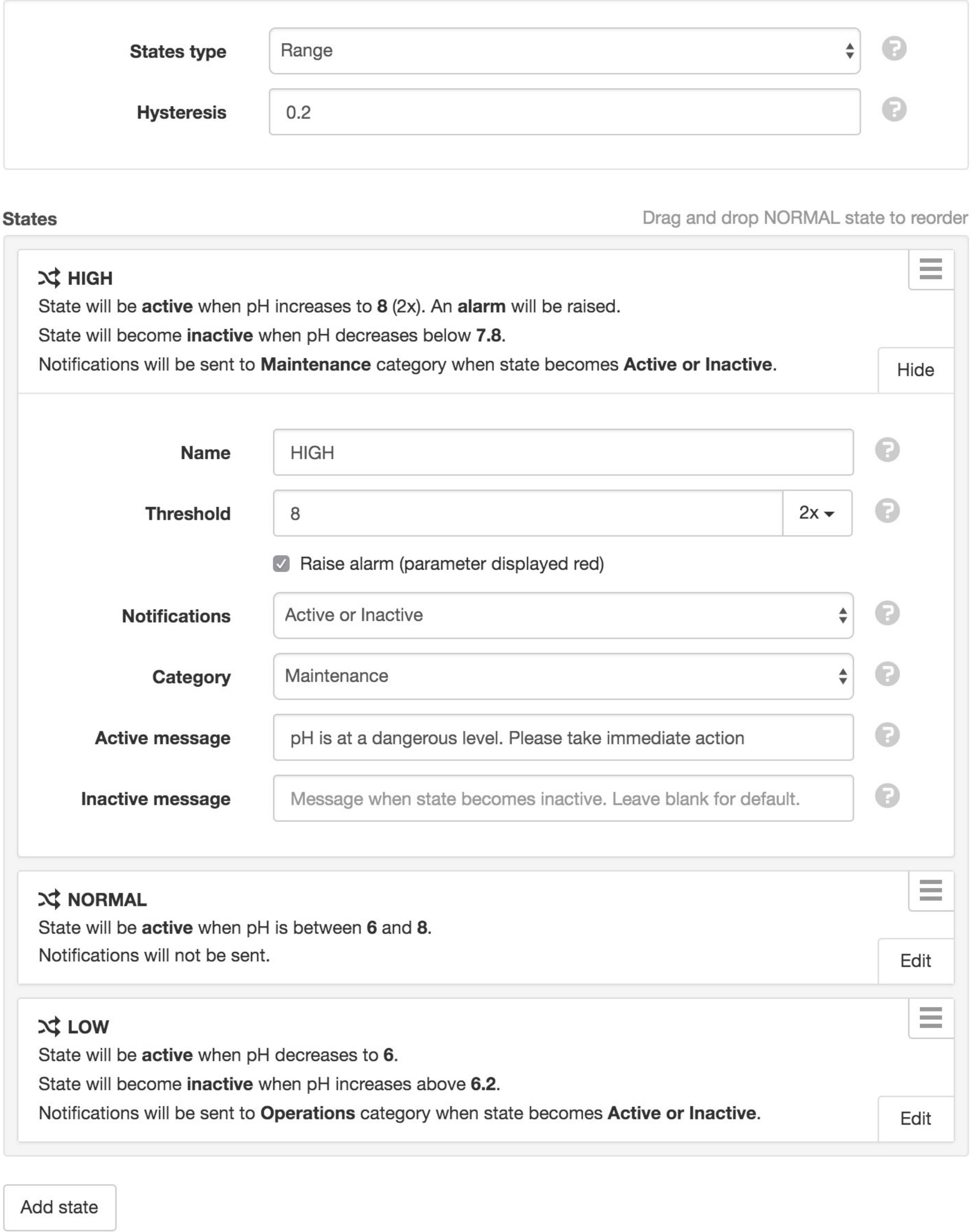
States allow you to define unlimited numbers of *Ranges* or *Discrete* thresholds that uniquely describe the current value of the parameter. Each state can optionally be configured to raise an alarm and/or send notifications.

Note: Number Parameters can use either Range or Discrete states. Text Parameters are limited to Discrete states only.

Click the Edit button to show and modify the configuration for each state. Use the *Add state* button to create a new state. States can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the state item).

Range States

Drag and drop the NORMAL state in the list to change its order. The NORMAL state must always exist and can not be removed. Position states above or below the NORMAL state to capture higher or lower than normal values respectively.



States type Range

Hysteresis 0.2

States

HIGH

State will be **active** when pH increases to **8** (2x). An **alarm** will be raised.

State will become **inactive** when pH decreases below **7.8**.

Notifications will be sent to **Maintenance** category when state becomes **Active or Inactive**.

Name HIGH

Threshold 8 2x

☑ Raise alarm (parameter displayed red)

Notifications Active or Inactive

Category Maintenance

Active message pH is at a dangerous level. Please take immediate action

Inactive message Message when state becomes inactive. Leave blank for default.

NORMAL

State will be **active** when pH is between **6** and **8**.

Notifications will not be sent.

LOW

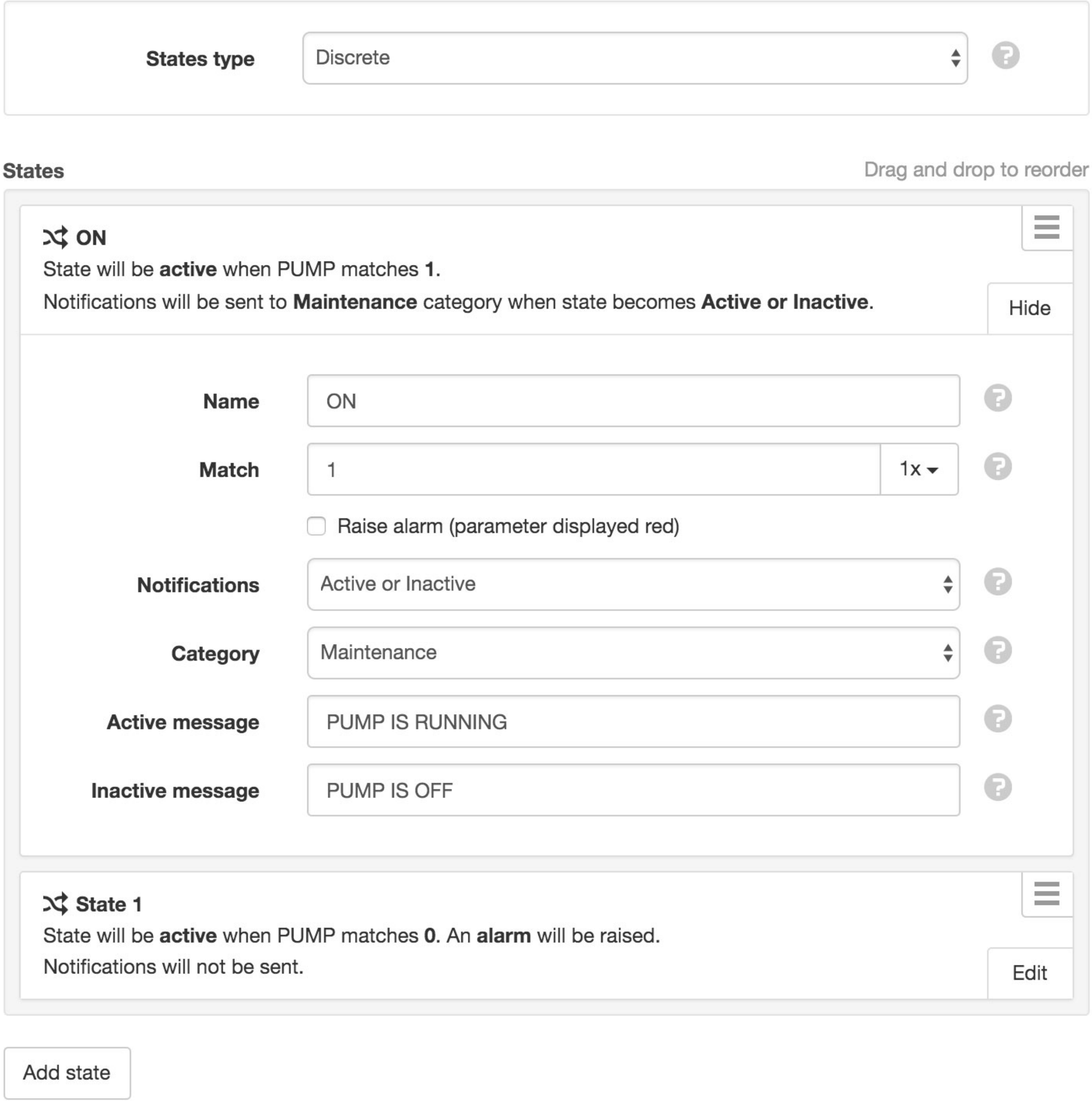
State will be **active** when pH decreases to **6**.

State will become **inactive** when pH increases above **6.2**.

Notifications will be sent to **Operations** category when state becomes **Active or Inactive**.

Discrete States

Drag and drop states in the list to change their display/evaluation order.



States type: Discrete

States — Drag and drop to reorder

ON
State will be **active** when PUMP matches **1**.
Notifications will be sent to **Maintenance** category when state becomes **Active or Inactive**.

Name: ON
Match: 1 (1x)
☐ Raise alarm (parameter displayed red)
Notifications: Active or Inactive
Category: Maintenance
Active message: PUMP IS RUNNING
Inactive message: PUMP IS OFF

State 1
State will be **active** when PUMP matches **0**. An **alarm** will be raised.
Notifications will not be sent.

States type Select the type of States most suitable for your data.

Range is the default option for most analog data and allows you to define a State that covers a range of values. eg. 1-10 = LOW

Discrete is most commonly used with digital data where a State represents a specific (or matching) value. eg. 0 = OFF, 1 = ON

Hysteresis Hysteresis is the amount the parameter value is required to decrease below the state threshold (states above *NORMAL*) or increase above the state threshold (states below *NORMAL*) for the active state to become inactive as it revert towards *NORMAL*. Hysteresis only applies to *Range States* and must be a number greater than or equal to 0.

Name Assign a unique name for each State. The *NORMAL* State (Range States) can not be renamed or removed.

Threshold States positioned above *NORMAL* will be active when the parameter value increases to this threshold. States positioned below *NORMAL* will be active when the parameter value decreases to this threshold. Optionally use the dropdown menu to specify the minimum number of **repeat values** at or beyond threshold required to trigger this state. Default *1x*.

Applies to *Range States* only.

Match

Number Parameters Specify the numeric value to match.

Text Parameters Specify text contained within the value, or alternatively a regular expression (https://en.wikipedia.org/wiki/Regular_expression) which must begin and end with *forward-slash*, e.g. `/^(?!message).*$/`

Optionally use the dropdown menu to specify the minimum number of matching **repeat values** required to trigger this state. Default *1x*.

Applies to *Discrete States* only.

Raise alarm Check this option to raise an *alarm* (page 170) when this state becomes active.

Quality Optionally select a *quality code* (page 266) to be applied to newly acquired data that matches this state.

Notifications Select when notifications should be sent.

Active or Inactive will send notifications when the state becomes active or inactive.

Active will only send notifications when the state becomes active.

Inactive will only send notifications when the state becomes inactive.

Never will not send notifications.

Category Select the category of subscribed users that will receive *notifications* (page 179) for this State.

Active message Enter a custom message to send when the state becomes active (may contain *expressions* (page 523)). Leave blank for a default message that includes the state name, value and timestamp.

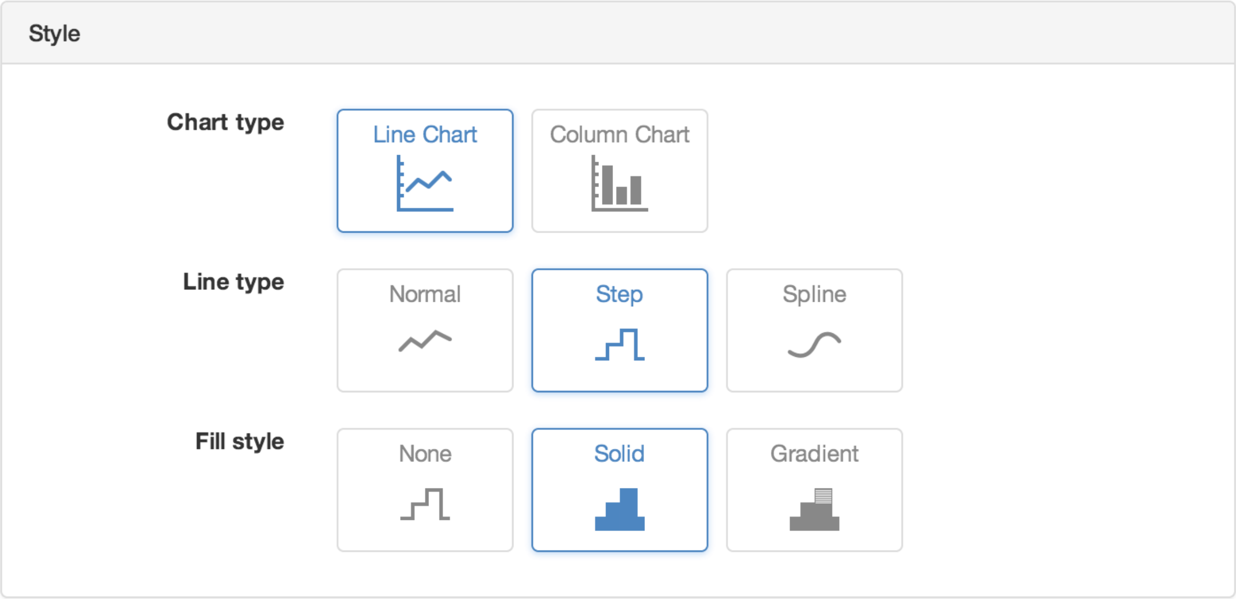
Inactive message Enter a custom message to send when the state becomes inactive (may contain *expressions* (page 523)). Leave blank for a default message that includes the state name, value and timestamp.

Chart

Charts section allows you to configure the display style and formatting of the parameter when displayed in the Charts View or shown on the adhoc Historic Chart.

Style

Select the chart type and display preferences.



Style

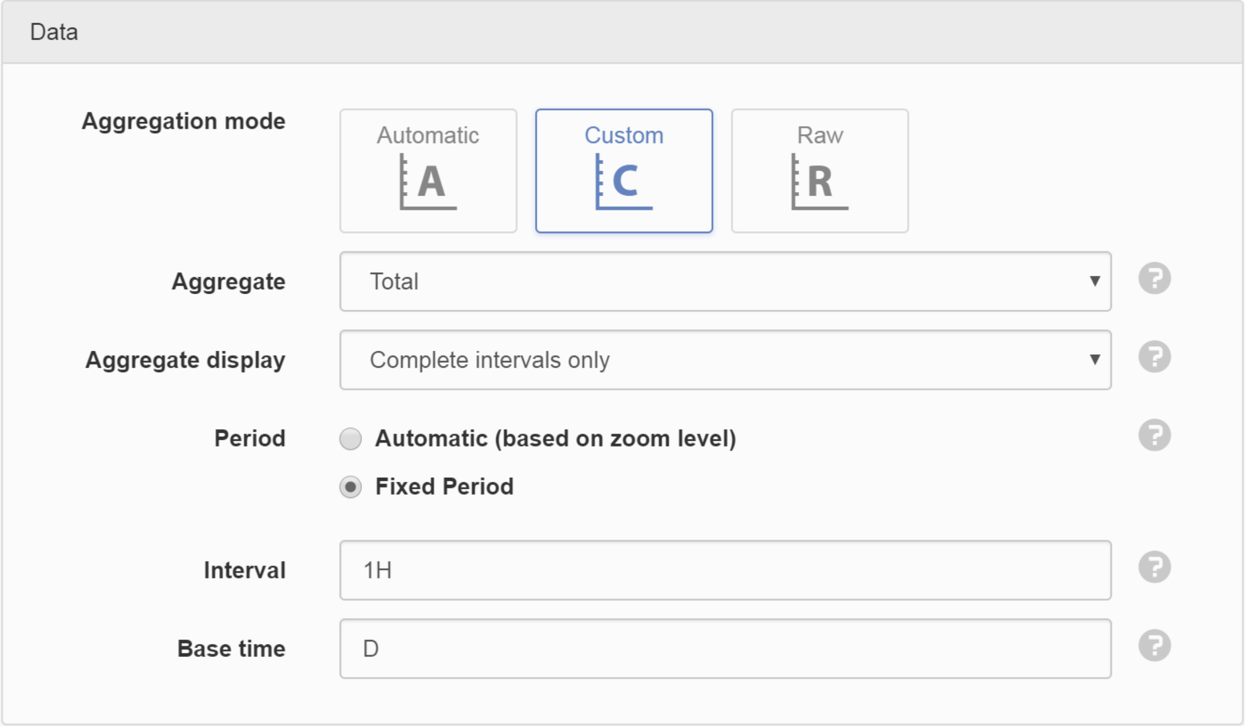
Chart type [✓ Line Chart] Column Chart

Line type Normal [✓ Step] Spline

Fill style None [✓ Solid] Gradient

Data

Select the data and processing to be used.



Data

Aggregation mode: Automatic | **Custom** | Raw

Aggregate: Total

Aggregate display: Complete intervals only

Period: ○ Automatic (based on zoom level) ● Fixed Period

Interval: 1H

Base time: D

Aggregation mode *Automatic*

Automatic is the recommended option for fast loading charts and uses *Interpolated* (or *Start* where Display type is State) aggregate and automatic period selection based on zoom level.

Custom

Custom allows you to specify exactly how data should be aggregated for display on the charts.

Aggregate Aggregates provide a method to resample raw data over a specified period. See the *list of available aggregates* (page 569) for full details. Select RAW to display the original raw data with no aggregation applied (Interval and Base time options will be hidden).

Aggregate display Determines if aggregated data will be show only after intervals are complete, or be shown during an aggregation interval when only partial data is available.

Period *Automatic* will change the period of the aggregate calculation based on the zoom level of the chart. *Fixed Period* lets you define a fixed Interval and Base time that will be applied regardless of the zoom level.

Interval Specify the data range that is included for each calculated value. Example *30M* will calculate a value for each 30 minute window of data.

Base time Base time is used to determine the start of the aggregate calculations. Example *D+9H* will start the calculations at 9am (start of current day + 9 hours). See *working with relative time* (page 585) for full details.

Raw

Raw does not perform any aggregation of data. This option should ONLY be used where you know the period to be displayed does not contain more than a thousand data points. Displaying high resolution raw data can impact on chart performance and in some cases may cause the chart to fail loading or have adverse affects on your web browser.

Baseline type (Custom Historic Charts only) *Absolute*

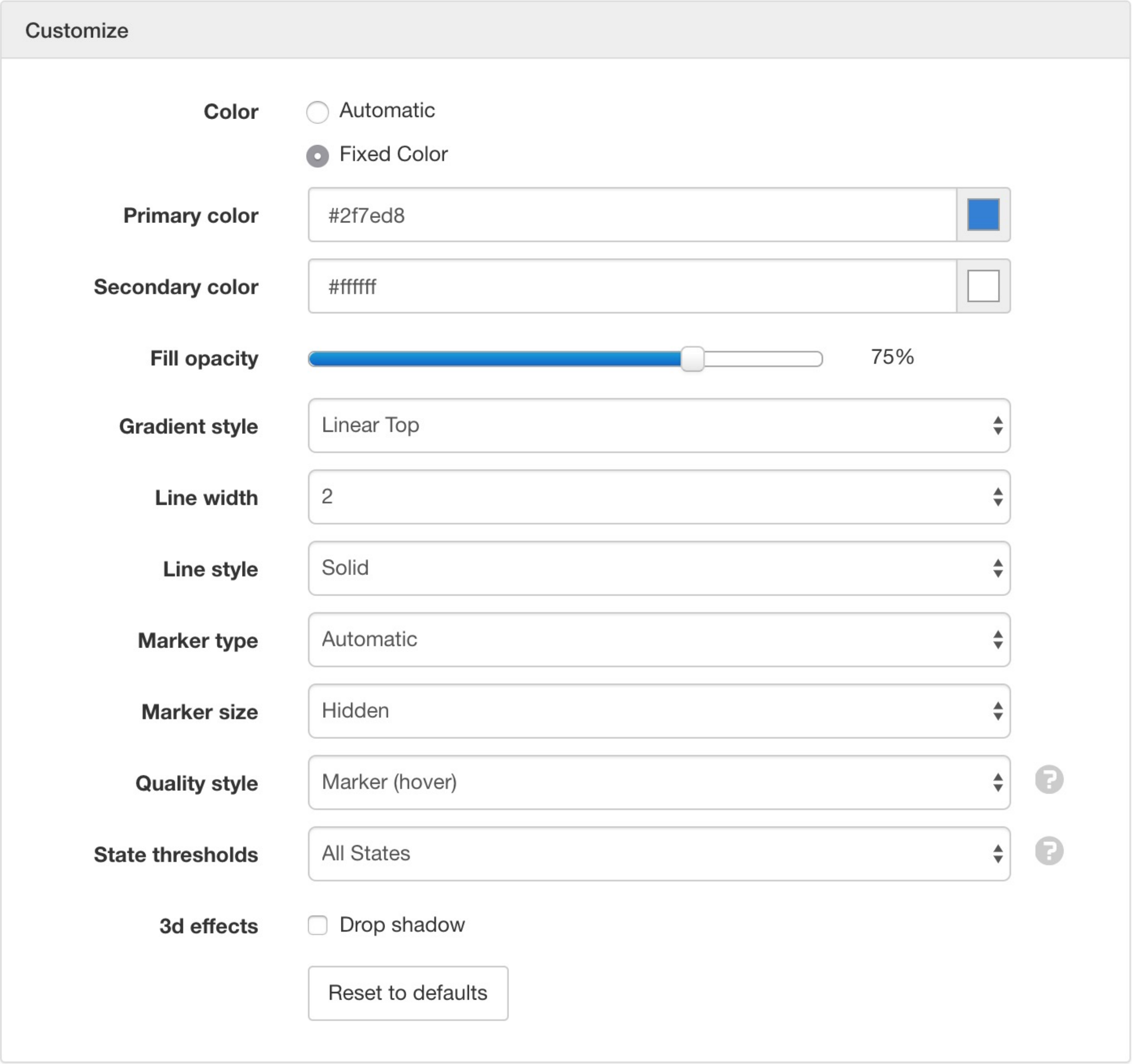
Data point values are not modified.

Relative

The first data point value in the requested time range is subtracted from all subsequent data point values.

Customize

Select customization options for chart appearance.



Customize

Color ○ Automatic ● Fixed Color

Primary color #2f7ed8

Secondary color #ffffff

Fill opacity 75%

Gradient style Linear Top

Line width 2

Line style Solid

Marker type Automatic

Marker size Hidden

Quality style Marker (hover)

State thresholds All States

3d effects ☐ Drop shadow

Settings of Interest

Color Select *Fixed Color* to specify a color(s) to use for this parameter or *Automatic* to have it auto-assigned. If the Chart Fill Style is set to *Gradient* then you can also set a Secondary color.

Line width Set to *Hidden* to hide the line completely. If the Fill Style is set to *NONE* then you should ensure the Marker size is set.

Marker position Step charts can be displayed with the marker Left, Center or Right of the step. Left is the default option.

Column placement Column Placement applies to Column Charts only and determine where the columns should be positioned in relation to the x-axis. Options include *On Ticks* and *Between Ticks*.

Marker size Data point markers are hidden by default (shown on hover), but can be set to always display by specifying a size between 1-6 (small-large).

Quality style Select how quality colors are displayed on the chart. By default chart markers will only show quality color on hover.

State thresholds Select which State thresholds should be displayed on the chart:

Hidden Hide all State thresholds.

All States Show all State thresholds.

Alarm States Only Show alarm State thresholds only.

Non-Alarm States Only Show non-alarm State thresholds only.

User Notification States Only Show thresholds for States that have a category assigned that the viewing user is subscribed to receive notifications from.

Process

See *Processing and logic* (page 223).

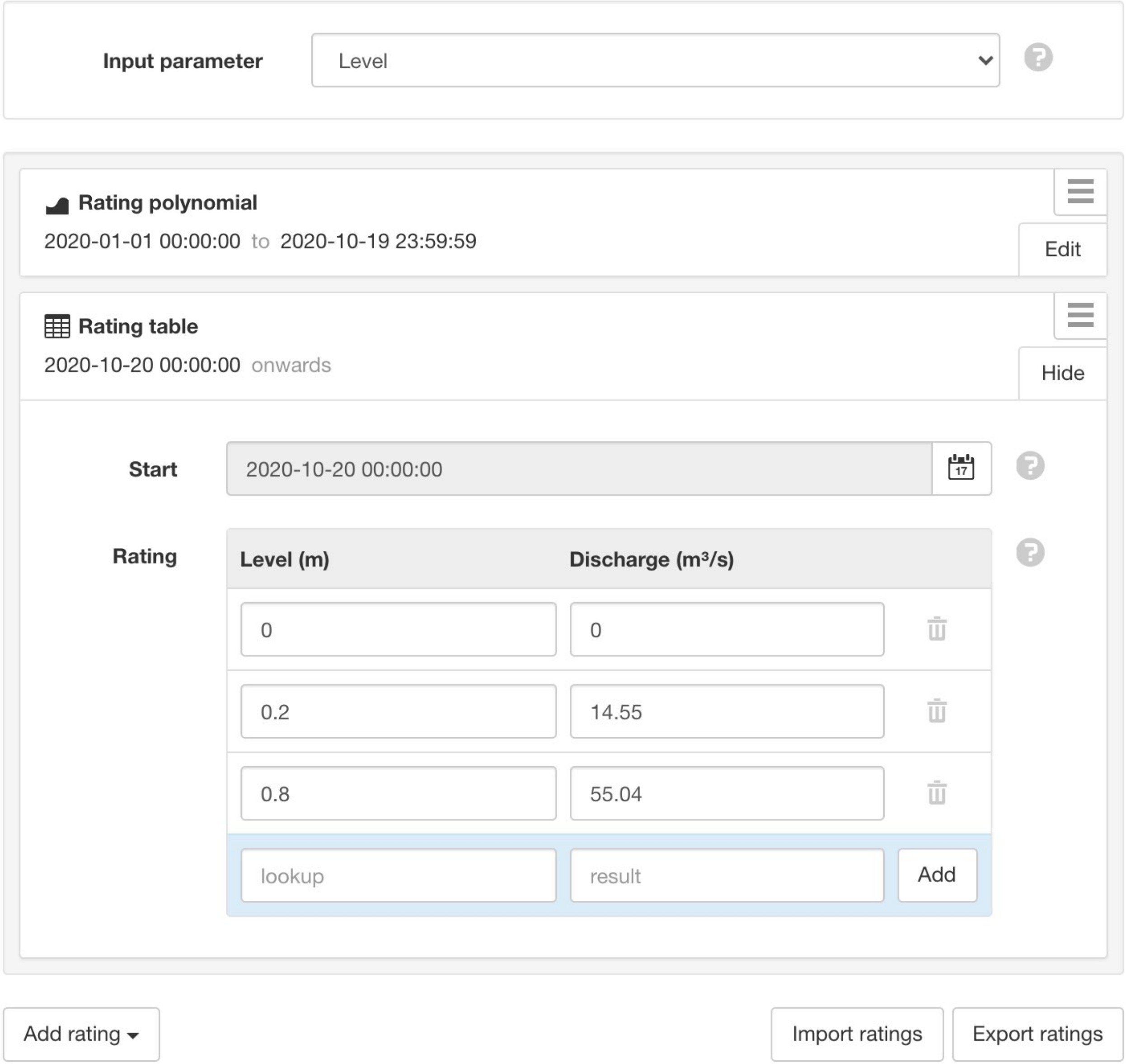
Rating

Rating parameters use an *Input parameter* and one or more ratings to caculate its data.

Rating tables should have multiple rows specifying an input *lookup* value and corresponding *result* value. Values that fall between each input lookup will be derived by linear interpolation.

Rating equations allow multiple coefficients to be defined which are used to calculate a value using a polynomial equation.

Multiple ratings can be added, with the *start* time used to determine the data range each rating will apply.



Input parameter: Level

Rating polynomial
2020-01-01 00:00:00 to 2020-10-19 23:59:59

Rating table
2020-10-20 00:00:00 onwards

Start: 2020-10-20 00:00:00

Rating

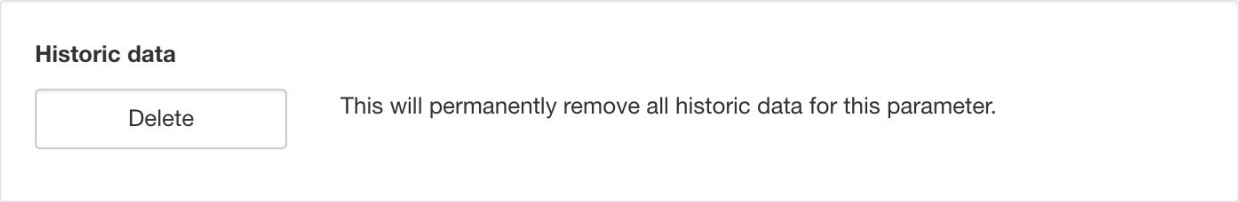
Level (m)	Discharge (m^3/s)
0	0
0.2	14.55
0.8	55.04
lookup	result

Ratings can be imported and exported using the fixed *ratings CSV* (page 521) format.

Note: Only Number parameters within the same Workspace (or *Template* (page 60)) can be used as the *Input parameter*.

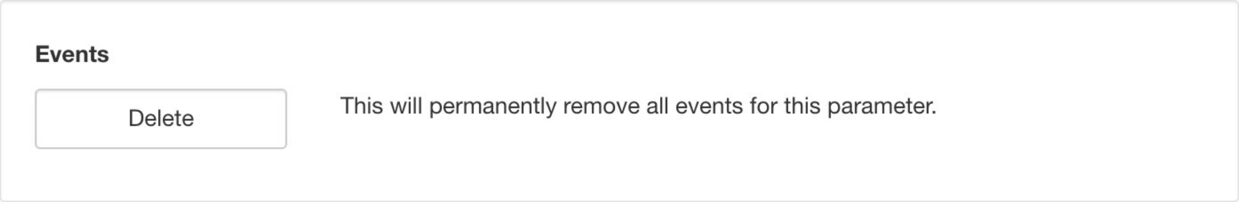
Historic

Click the *Delete* buttons and save to permanently remove all *historic data* or *events* for this Parameter.



Historic data

This will permanently remove all historic data for this parameter.

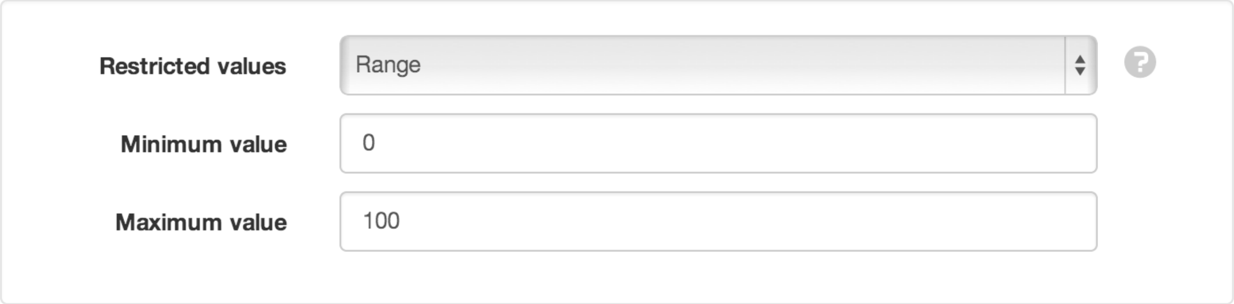


Events

This will permanently remove all events for this parameter.

Control

The control section allows you to configure control options for Control Parameters.



Restricted values: Range

Minimum value: 0

Maximum value: 100

Restricted values Select what values are acceptable for control operations:

None

None does not restrict the control value. User can enter any value of the same type as the parameter. eg. Number, Text, Time.

Range

Range restricts Number Parameter control values with a minimum and maximum value.

States

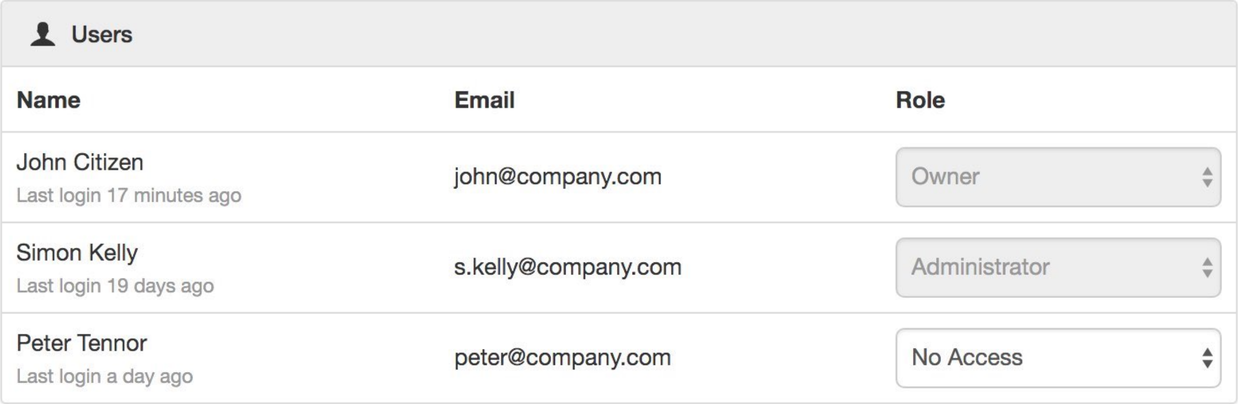
States restricts control values to the configured state threshold/match values. eg. ON / OFF.

Control Alarm See *Alarms and Notifications* (page 171).

Security

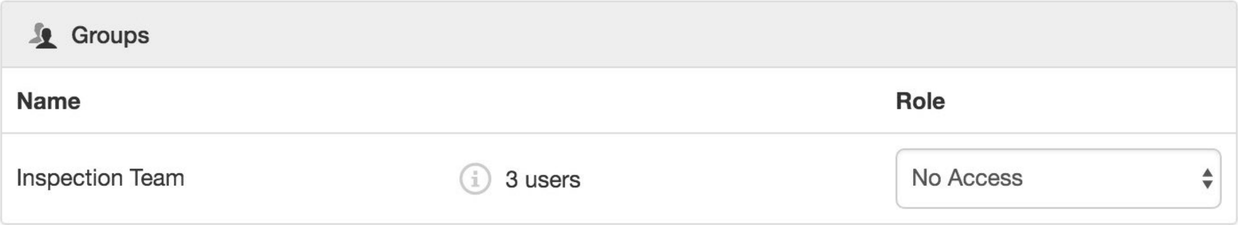
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Groups

Name		Role
Inspection Team	3 users	No Access

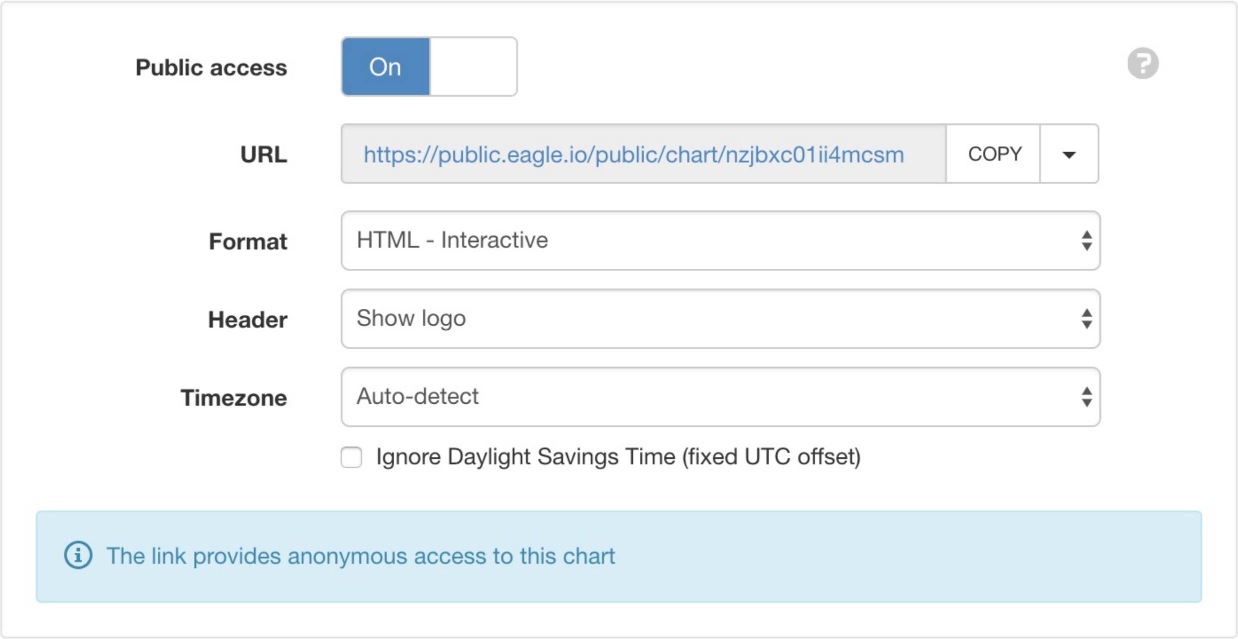
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access On

URL https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format HTML - Interactive

Header Show logo

Timezone Auto-detect

☐ Ignore Daylight Savings Time (fixed UTC offset)

The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

2.3.11 Report

Report nodes generate PDFs and can be scheduled for delivery to subscribed users and groups via email. Please refer to the *Reports* (page 234) documentation for a quick start guide on using the reporting feature.

Note: The reporting feature is currently a **pre-release** version that is subject to change without notice and is only available to limited accounts. This documentation will also be updated prior to final release to expand on reporting features with examples.

Properties

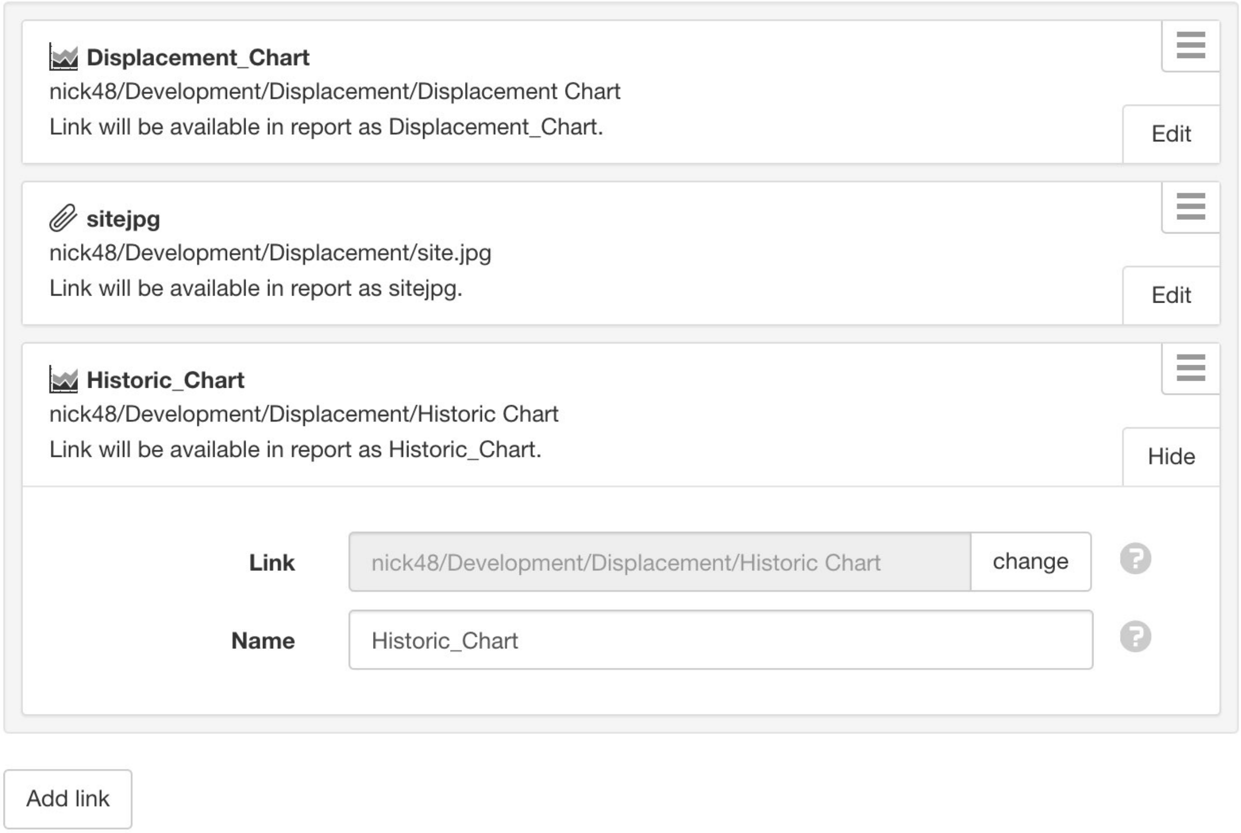
Configure properties via the Workspaces Tree context menu or List View properties icon. Requires *configure* permission.

Links

Links assign Nodes in the Workspaces Tree to the report. They will appear under the **Tags** menu in the report editor and can be used to insert content into the report.

Click the *Edit* button to show and modify the configuration for each link. Use the *Add link* button to display the Workspaces Tree and select a new Node to link. Links can be removed via the dropdown menu (accessible by clicking the menu button on the top-right corner of the link item).

Reports can not have links to Nodes in different Workspace.



Displacement_Chart
nick48/Development/Displacement/Displacement Chart
Link will be available in report as Displacement_Chart.

sitejpg
nick48/Development/Displacement/site.jpg
Link will be available in report as sitejpg.

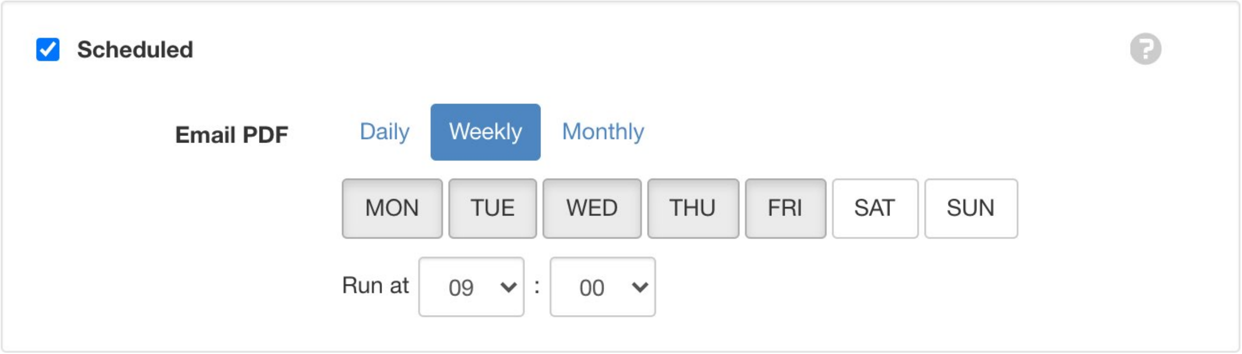
Historic_Chart
nick48/Development/Displacement/Historic Chart
Link will be available in report as Historic_Chart.

Link: nick48/Development/Displacement/Historic Chart
Name: Historic_Chart

Edit
Edit
Hide
change
Add link

Schedule

Enable a daily, weekly or monthly schedule for the report to be generated and delivered to subscribed users and groups via email.



☑ Scheduled

Email PDF: Weekly

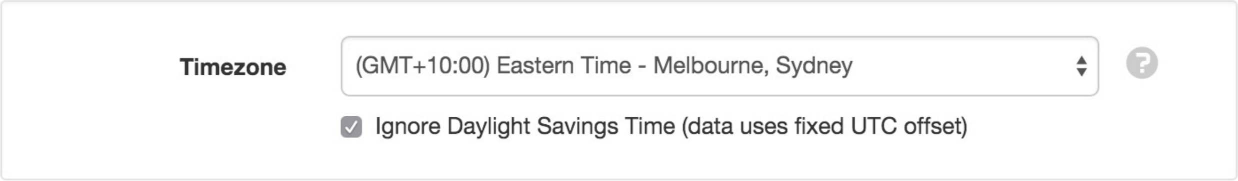
MON TUE WED THU FRI

Run at 09 : 00

Daily
Weekly
Monthly
MON
TUE
WED
THU
FRI
SAT
SUN

Time

Time allows you to configure the timezone the Source should use for rendering timestamps.



Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

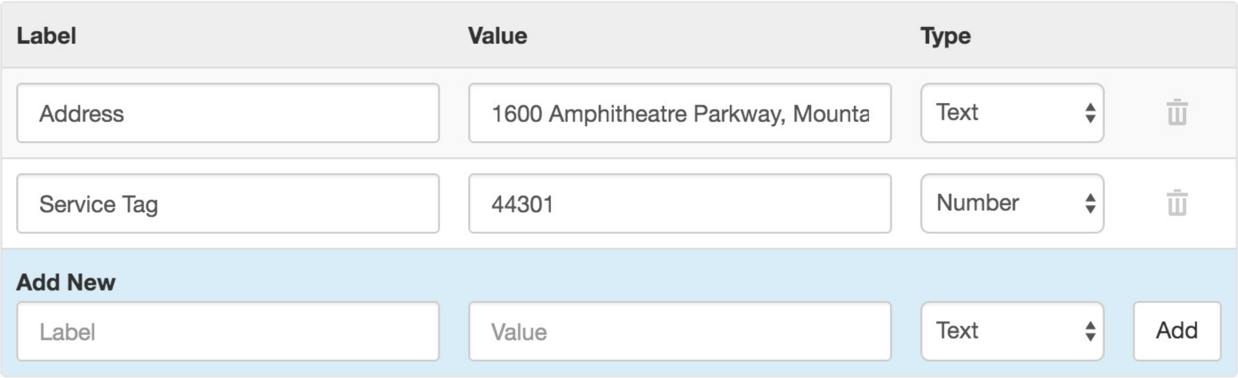
☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

Timezone Select the default timezone the Source should use for rendering timestamps.

Ignore Daylight Savings Time Check this option if the Source should not offset the timestamps to account for DST.

Metadata

Metadata provides a simple key/value data structure that can be used to store static information about the location. Values can be saved as Number or Text and are displayed in the Locations List View.

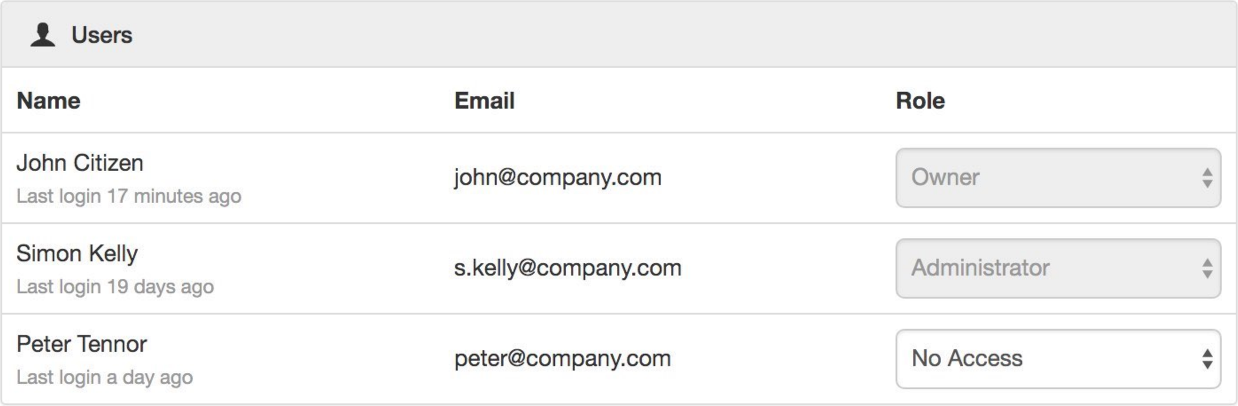


Label	Value	Type
Address	1600 Amphitheatre Parkway, Mounta	Text
Service Tag	44301	Number

Security

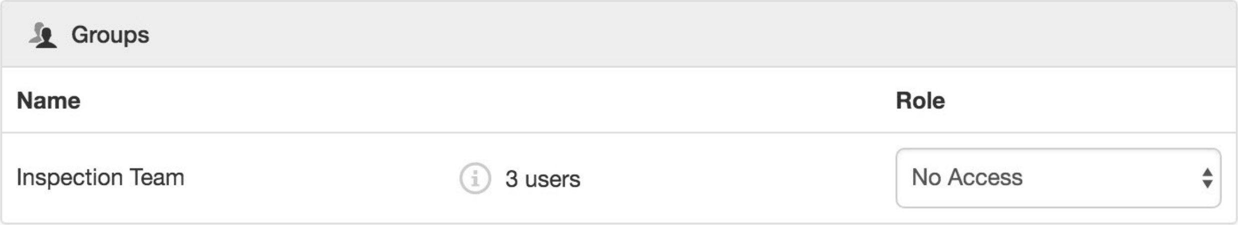
The Security section displays a list of all users and groups that have access to the Node. Users with *security* permission can restrict user and group access to the node and its descendants by assign the **No Access** role.

New users and groups must be added via the *Workspace Security* (page 54) section.



Users

Name	Email	Role
John Citizen Last login 17 minutes ago	john@company.com	Owner
Simon Kelly Last login 19 days ago	s.kelly@company.com	Administrator
Peter Tennor Last login a day ago	peter@company.com	No Access



Groups

Name		Role
Inspection Team	3 users	No Access

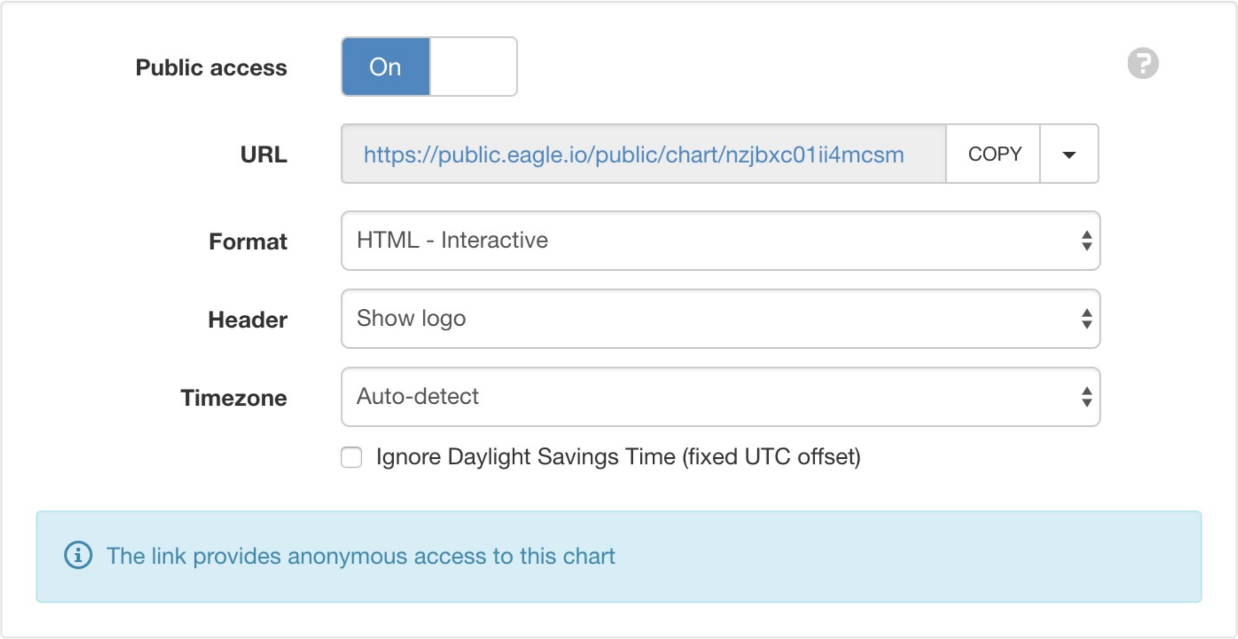
Note: The Account Owner, Administrators or Workspace users/groups that have been assigned a Workspace role with the *configure* permission can not be assigned the *No Access* role.

Public access

Enabling public access allows anyone to view the node (attachment, chart, dash, report or historic data) using the generated *URL*.

You can also embed charts and dashboards into your own website with basic HTML. Select *Copy embed HTML* from the URL dropdown menu for a generic code snippet (you will need to paste this in to your website). You can also revoke and replace the automatically assigned URL by selecting the *Generate new URL* option in the menu.

Use the available options to customize the URL based on your display preferences. These options are transient and you can use multiple variations of the URL at the same time.



Public access On

URL https://public.eagle.io/public/chart/nzjbxc01ii4mcsm

Format HTML - Interactive

Header Show logo

Timezone Auto-detect

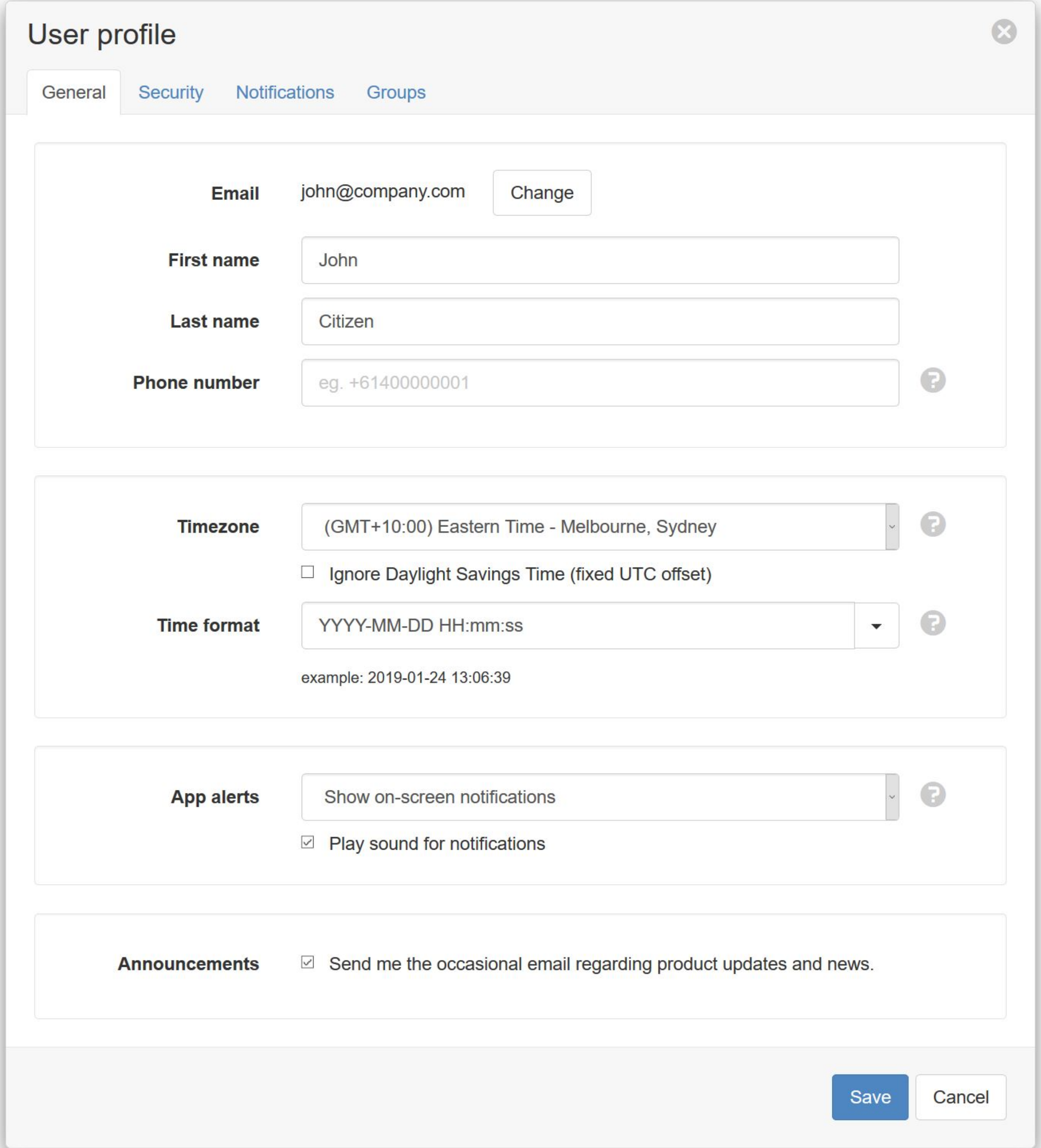
☐ Ignore Daylight Savings Time (fixed UTC offset)

The link provides anonymous access to this chart

Note: This feature is not included in *Starter* accounts.

2.4 User Preferences

User profile, accessible from the User Menu is where all your personal preferences are configured.



User profile
General
Security
Notifications
Groups

Email john@company.com

First name John

Last name Citizen

Phone number eg. +61400000001

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☐ Ignore Daylight Savings Time (fixed UTC offset)

Time format YYYY-MM-DD HH:mm:ss

example: 2019-01-24 13:06:39

App alerts Show on-screen notifications

☑ Play sound for notifications

Announcements ☑ Send me the occasional email regarding product updates and news.

Change
Save
Cancel

2.4.1 Change login email

Use the *Change* button to update your user profile email address. An email will be sent to the new address with a one-time verification link to confirm the change. Any re-sends or new address changes will invalidate previously generated links.

Users with *Single Sign-On* (page 274) configured for their domain can not change their email address.

2.4.2 Phone number

A valid phone number is required to receive SMS notifications. Please enter a fully qualified international phone number starting with '+'.

The account administrator(s) can optionally select to *Send SMS via email* from the *notifications* (page 276) section in account settings. When enabled, the phone number field indicates if an SMS email address is in-use for your user profile (after sending an initial SMS) and allows you to reset/retry if you change service providers.

2.4.3 Choose a Timezone and Time format

Select the *timezone* (page 581) you would like to use for displaying Workspace data. All data and notifications are displayed in your timezone regardless of the data's origin.

Time format is used to specify the default appearance of date & time information. Select a preset format from the drop down list or specify a custom format using *time format tokens* (page 583).

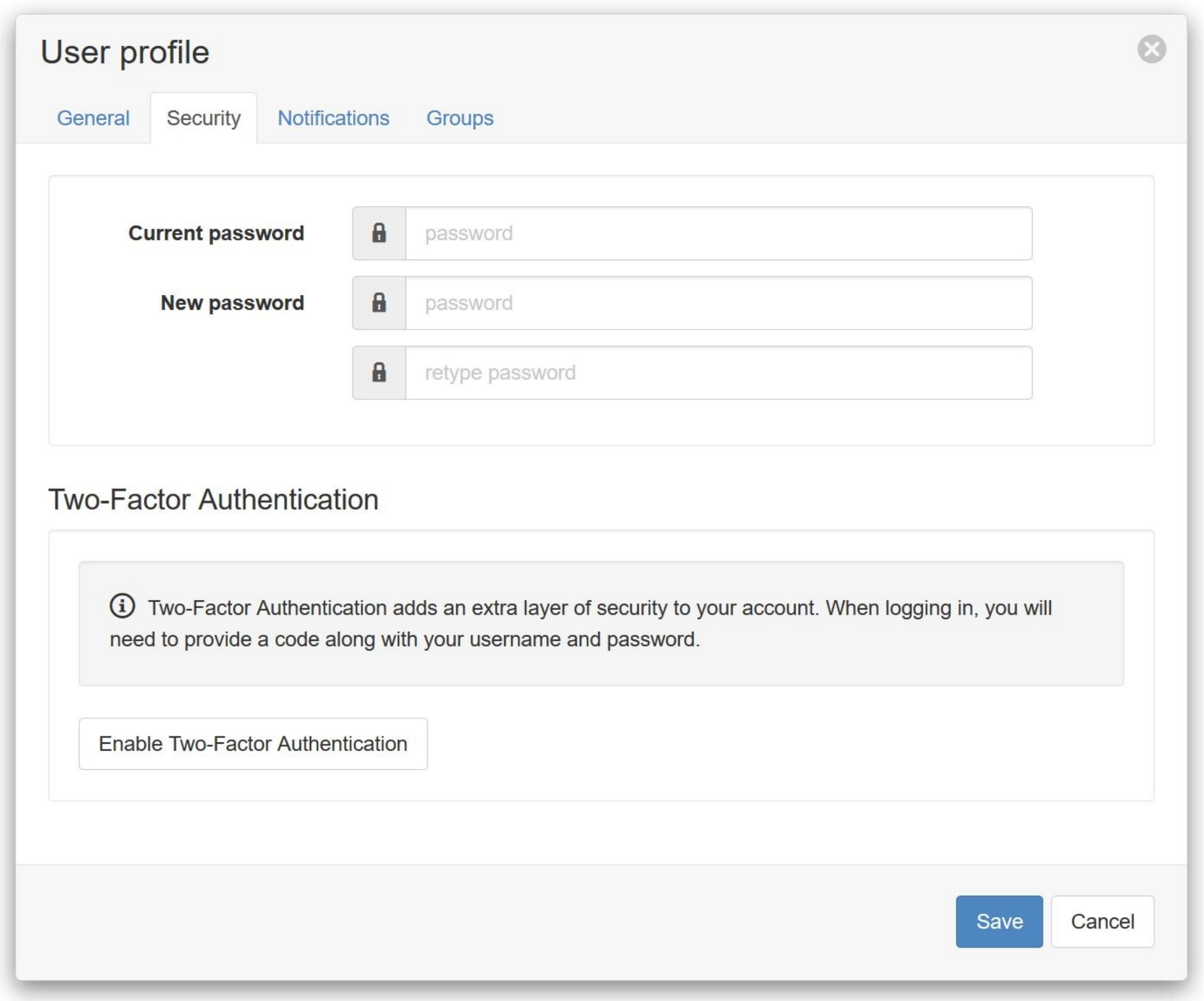
2.4.4 Security

The User profile has a *Security* section for immediate password changes and management of two-factor authentication. If you have forgotten your password you can use the *Forgot Password* link on the public site to send a reset link to your user profile email address.

Note: Users with *Single Sign-On* (page 274) configured for their domain will not have access to the security tab.

Two-Factor Authentication

Two-Factor authentication adds an extra layer of security to your account. This feature is optional, and can be enabled by clicking the *Enable Two-Factor Authentication* button:


User profile
General
Security
Notifications
Groups
Current password
password
New password
password
retype password
Two-Factor Authentication

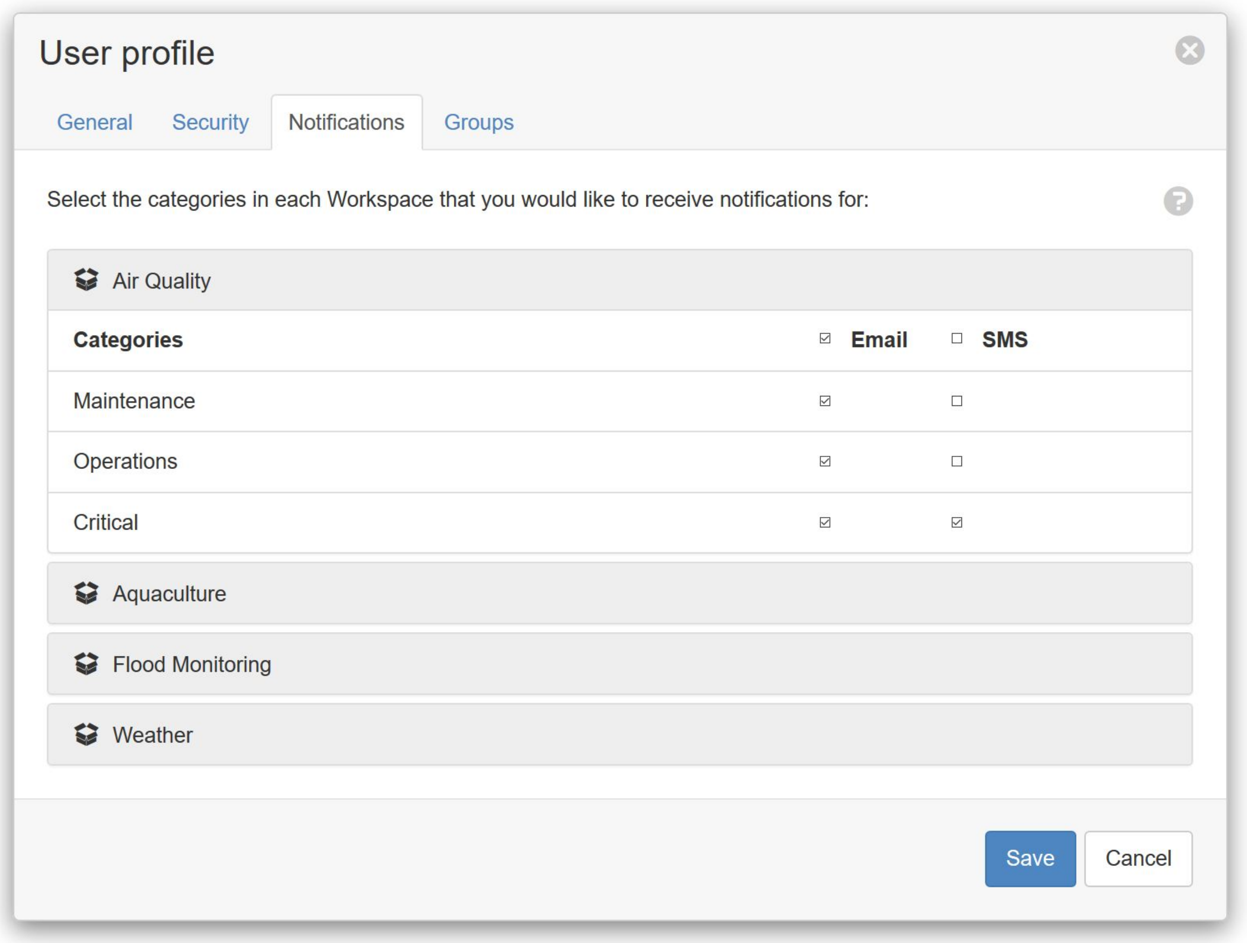
Two-Factor Authentication adds an extra layer of security to your account. When logging in, you will need to provide a code along with your username and password.

Enable Two-Factor Authentication
Save
Cancel

Once enabled, you will need to provide a code along with your username and password when logging in.

2.4.5 Notification preferences

The Notifications section contains a list of Workspaces that you have been given *subscribe notifications* permissions for. Click or touch the Workspace labels to display your preferences.



Select the categories in each Workspace that you would like to receive notifications for:

Air Quality

Categories	☑ Email	☐ SMS
Maintenance	☑	☐
Operations	☑	☐
Critical	☑	☑

Aquaculture

Flood Monitoring

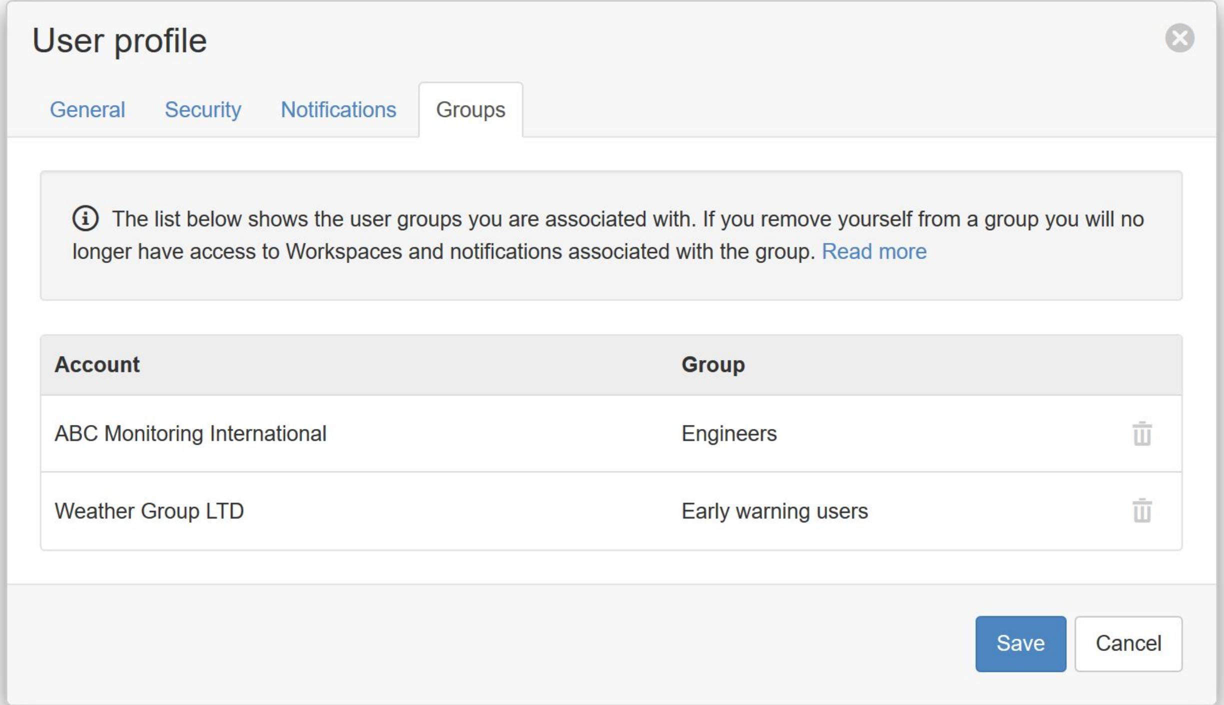
Weather

Within each Workspace, you will see a list of Notification Categories specific to the Workspace. Use the SMS and Email checkboxes to set your preferences on what types of notifications you would like to receive for each Category.

Note: You must also be subscribed to the individual Nodes you would like to receive the notifications for. See *Subscribe to Nodes* (page 179) for full details. A valid phone number must also be provided in order to receive SMS notifications.

2.4.6 Groups

The *Groups* section displays a list of user groups your user profile is associated with. You can removed yourself from a group but you will no longer have access to Workspaces and notifications associated with the group. Only account administrators can *add users to groups* (page 269).



The list below shows the user groups you are associated with. If you remove yourself from a group you will no longer have access to Workspaces and notifications associated with the group. Read more

Account	Group
ABC Monitoring International	Engineers
Weather Group LTD	Early warning users

2.5 Alarms

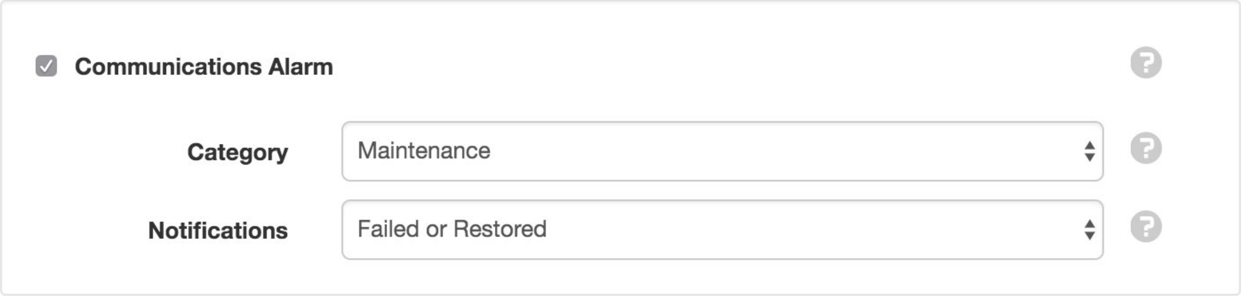
An alarm is an indication of an abnormal condition or problem detected by the system. Alarms are always associated with Nodes and are visually indicated throughout the interface using specific color coding. When an alarm is raised, you should typically acknowledge it so that other users do not attempt to investigate the same alarm condition.

2.5.1 Types of Alarms

There are different types of alarms which apply to specific Nodes. *Notifications* (page 179) can optionally be configured for Alarms and require a Category to be selected. The notification drop down is used to specify when notifications should be sent - when the alarm is raised and/or cleared. Learn more about *configuring nodes* (page 49).

Communications Alarm

Communications Alarms are specific to Sources and are triggered (if enabled) when communications to the Source has failed. If the communications attempt is not successful during a user acquisition or scheduled collection it will start retrying the communications at the frequency and duration set in the Source *Retry attempts* and *Retry delay* connection properties. Once failed, communications will not be attempted until the next user acquisition or scheduled *Collection interval*.



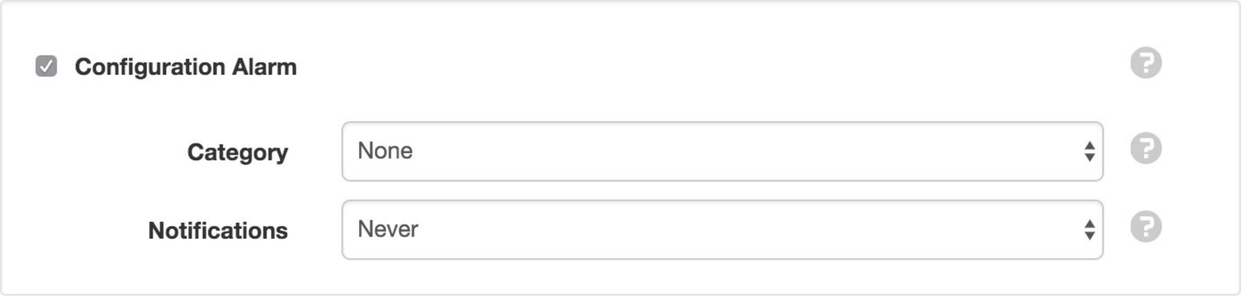
☑ Communications Alarm

Category: Maintenance

Notifications: Failed or Restored

Configuration Alarm

Configuration Alarms are specific to data logger Data Sources and are triggered (if enabled) when an error is encountered when applying the user-selected *configuration* (page 185) file(s).



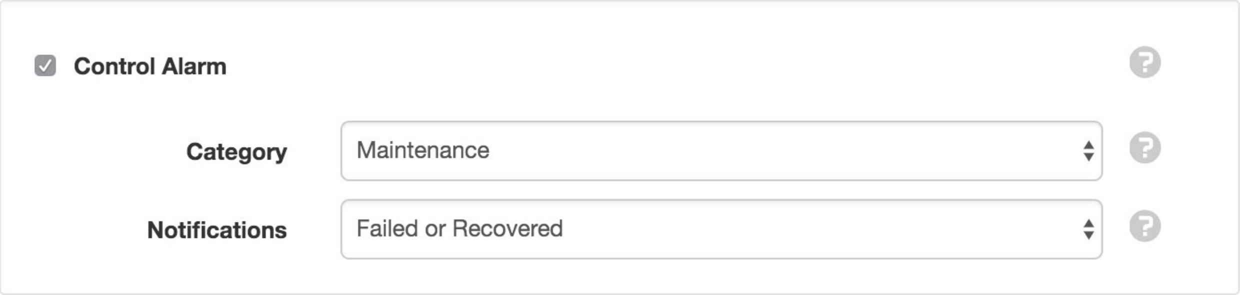
☑ Configuration Alarm

Category: None

Notifications: Never

Control Alarm

Control Alarms are specific to Control Parameters and are triggered (if enabled) when a control operation has failed for any reason other than a communications failure.



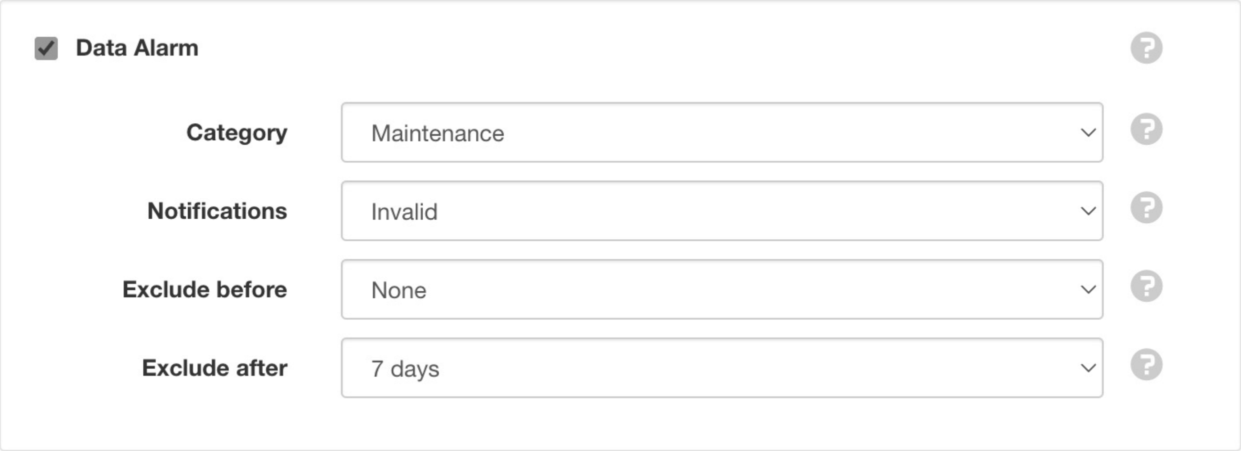
☑ **Control Alarm**

Category: Maintenance

Notifications: Failed or Recovered

Data Alarm

Data Alarms are specific to Sources and are triggered (if enabled) when an issue is detected with the historic data being ingested. Optionally specify an *Exclude before* and *Exclude after* time to reject (and raise an alarm) when records outside this range are detected.



☑ **Data Alarm**

Category: Maintenance

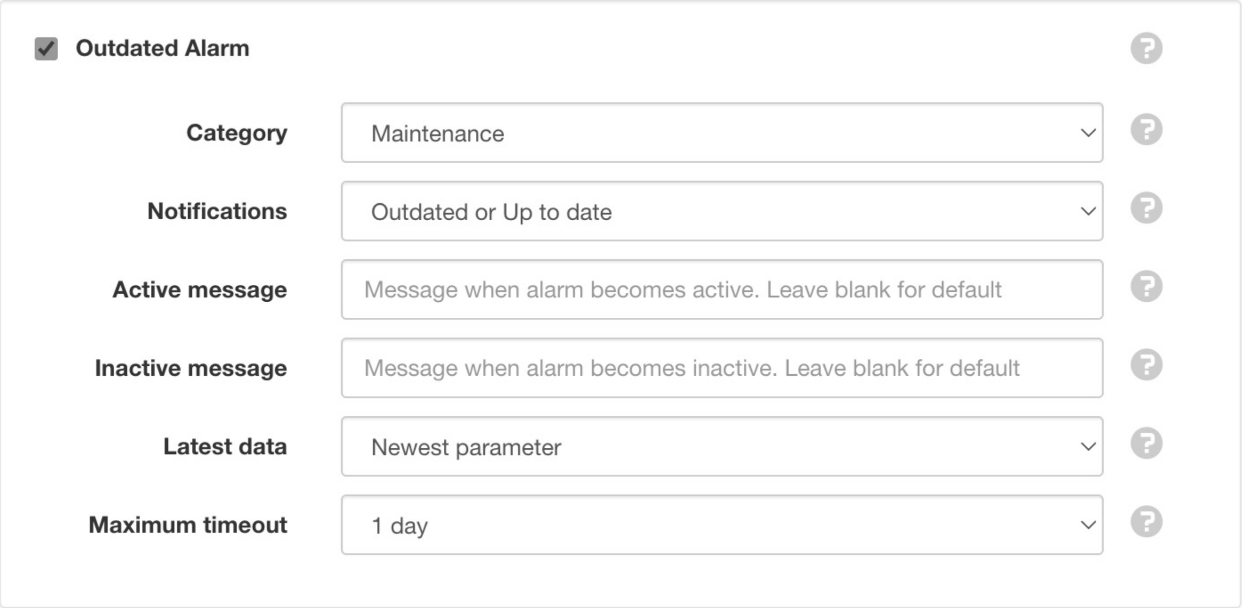
Notifications: Invalid

Exclude before: None

Exclude after: 7 days

Outdated Alarm

Outdated Alarms are specific to Sources and are triggered (if enabled) when no new data has been received by the Source after the specified *Maximum timeout*. Outdated alarms usually indicate a problem with the device or data transmission.



☑ Outdated Alarm

Category: Maintenance

Notifications: Outdated or Up to date

Active message: Message when alarm becomes active. Leave blank for default

Inactive message: Message when alarm becomes inactive. Leave blank for default

Latest data: Newest parameter

Maximum timeout: 1 day

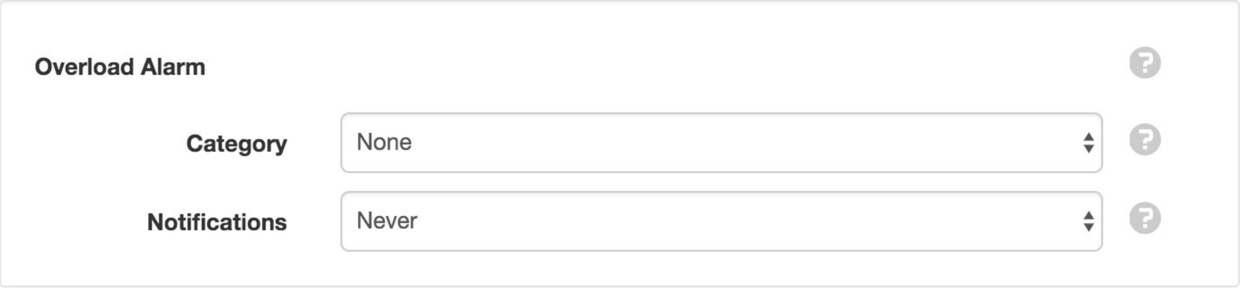
The message can be customised and may contain *expressions* (page 523). Leave blank for a default message that includes the time since last successful collection.

Overload Alarm

Overload Alarms are specific to Sources and are triggered when a Source has exceeded the allowable limits:

Attachment Source Maximum of 150 files received per *Attachment Source* (page 109) per day.

Data Source Acquisition and storage of up to 20000 records per *Data Source* (page 134) per day. Refer to Historic Data *Limits* (page 579) for more information.



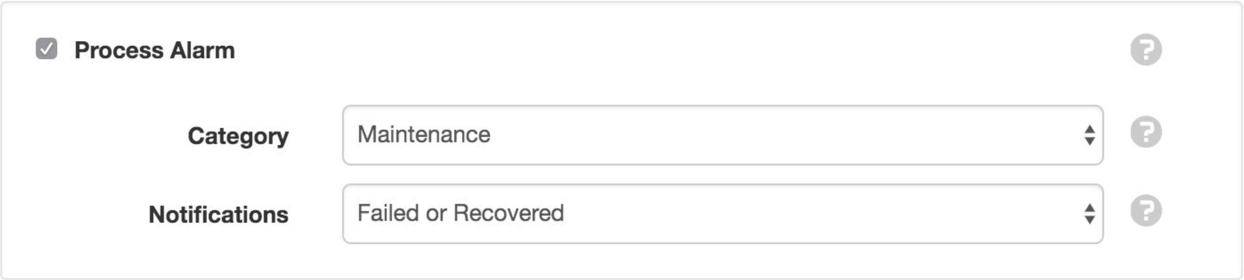
Overload Alarm

Category: None

Notifications: Never

Process Alarm

Process Alarms are specific to Processor Sources and Process Parameters. The alarm is triggered (if enabled) when execution of the user-defined process logic fails.

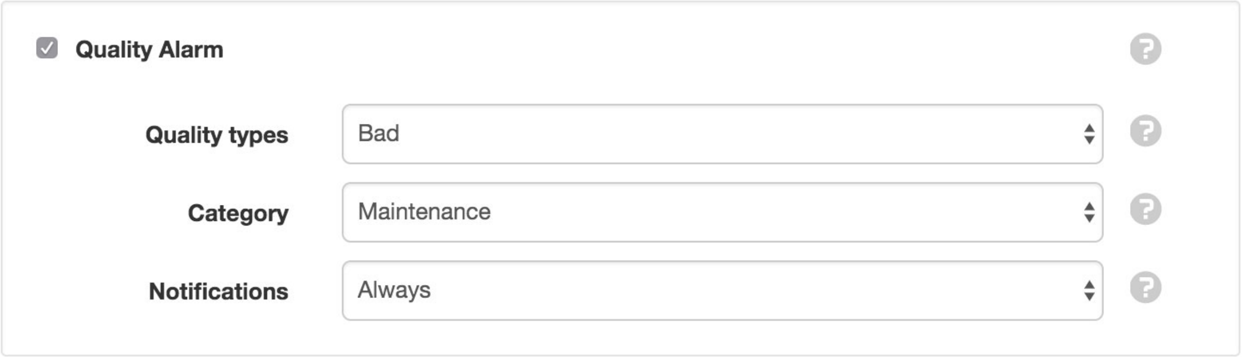


☑ Process Alarm

Category	Maintenance
Notifications	Failed or Recovered

Quality Alarm

Quality Alarms are specific to Parameters and Locations and are triggered (if enabled) when an acquired data point quality code matches one of the specified *quality types* (page 577).

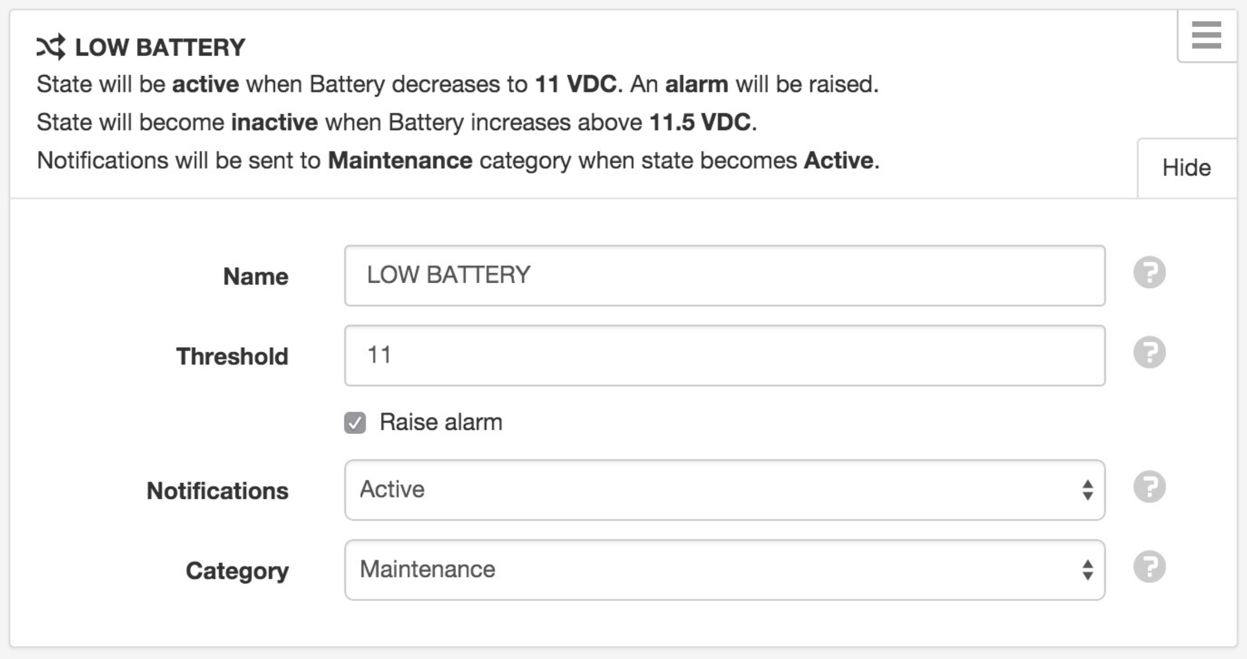


☑ Quality Alarm

Quality types	Bad
Category	Maintenance
Notifications	Always

State Alarm

State Alarms are defined in the *state configuration* (page 148) for individual Parameter Nodes. Each State can have individual alarm and *notification* (page 179) criteria.



LOW BATTERY

State will be **active** when Battery decreases to **11 VDC**. An **alarm** will be raised.

State will become **inactive** when Battery increases above **11.5 VDC**.

Notifications will be sent to **Maintenance** category when state becomes **Active**.

Name: LOW BATTERY

Threshold: 11

☑ Raise alarm

Notifications: Active

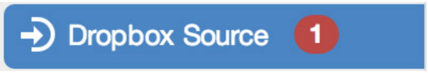
Category: Maintenance

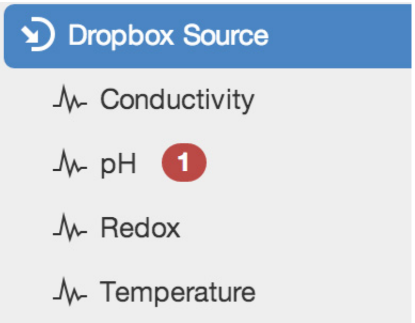
2.5.2 Alarm Indicators

Alarms are always shown in *RED*. When an alarm has been Acknowledged it will be shown in *ORANGE*. When the Alarm is Cleared (when the condition or problem has returned to normal, or when the user has manually cleared the alarm) the Node or Content is displayed with its normal color. See below for an example of alarm content.

Workspaces Tree

Alarms are shown in the Workspaces Tree as numbers indicating the total count of unacknowledged alarms on or within the Node. Expanding the Nodes will show the individual alarm counts next to each contained Node.

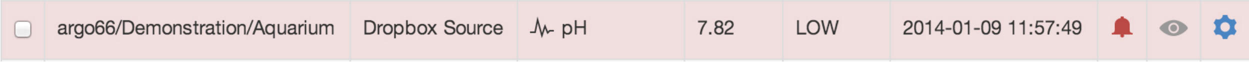




List View

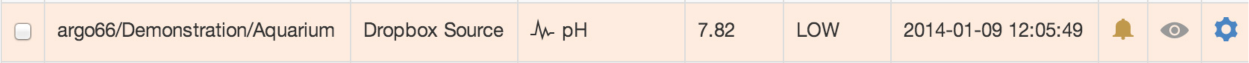
List View has an Alarm Icon which can be clicked or touched to reveal the Alarm Panel. The Alarm Panel displays a quick list of the currently active or acknowledged alarms for the corresponding Node.

Active Alarm



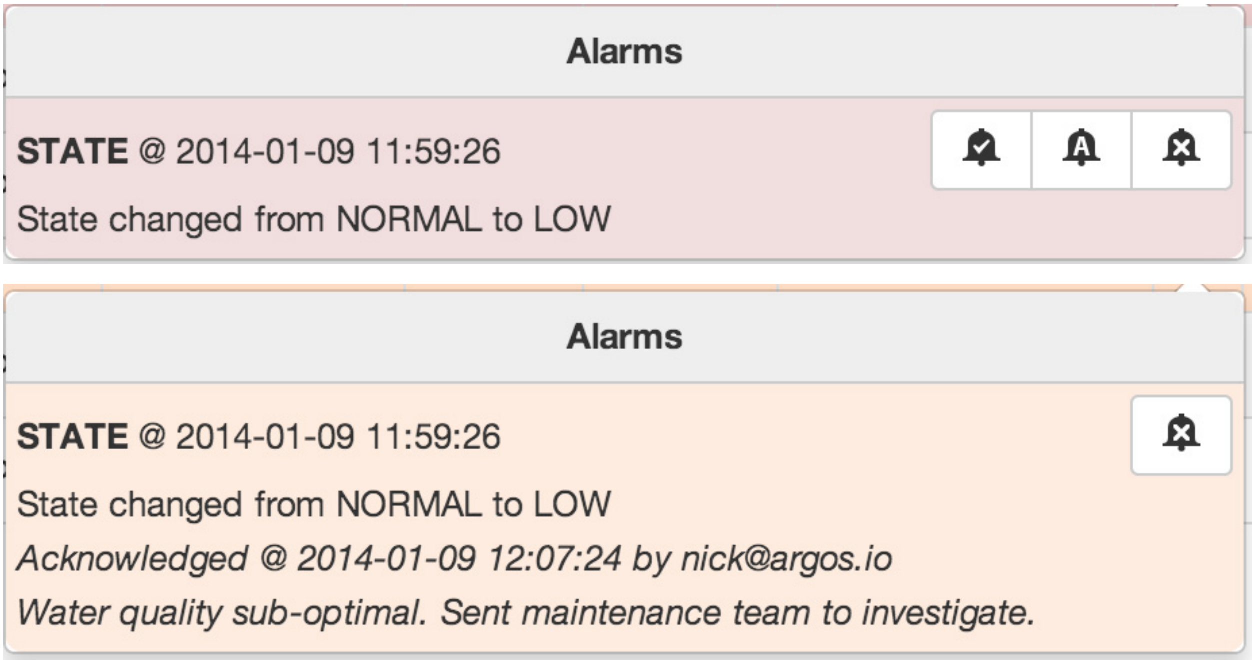
☐	argo66/Demonstration/Aquarium	Dropbox Source	pH	7.82	LOW	2014-01-09 11:57:49

Acknowledged Alarm



☐	argo66/Demonstration/Aquarium	Dropbox Source	pH	7.82	LOW	2014-01-09 12:05:49

Alarm Panel accessible from List View



Alarms

STATE @ 2014-01-09 11:59:26

State changed from NORMAL to LOW

Alarms

STATE @ 2014-01-09 11:59:26

State changed from NORMAL to LOW

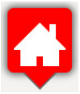
Acknowledged @ 2014-01-09 12:07:24 by nick@argos.io

Water quality sub-optimal. Sent maintenance team to investigate.

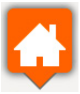
Map View

Map View applies the alarm color variations to the Location markers, temporarily overwriting the default marker color.

Active Alarm



Acknowledged Alarm



2.5.3 Alarm Operations

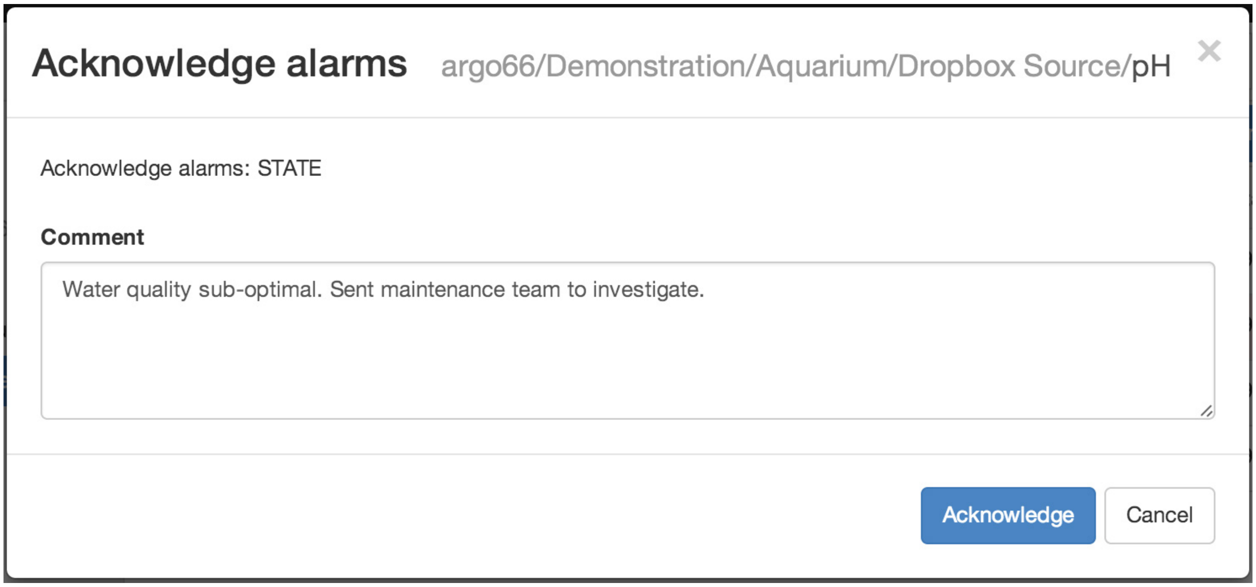
Alarm operations are accessible from the Node and View context menus, List View toolbar and Alarms Panel (accessible from List View). The following alarm operations are available:

Acknowledge

Acknowledge an alarm so other users do not attempt to investigate the same alarm condition. Requires *acknowledge alarms* permission.

Acknowledge with comment

Acknowledge an alarm and include a comment to indicate the cause or the action that is being taken to resolve the issue. The acknowledge alarms dialog will be displayed and you will be prompted to enter a comment for the acknowledgement. Requires *acknowledge alarms* permission.



Acknowledge alarms argo66/Demonstration/Aquarium/Dropbox Source/pH

Acknowledge alarms: STATE

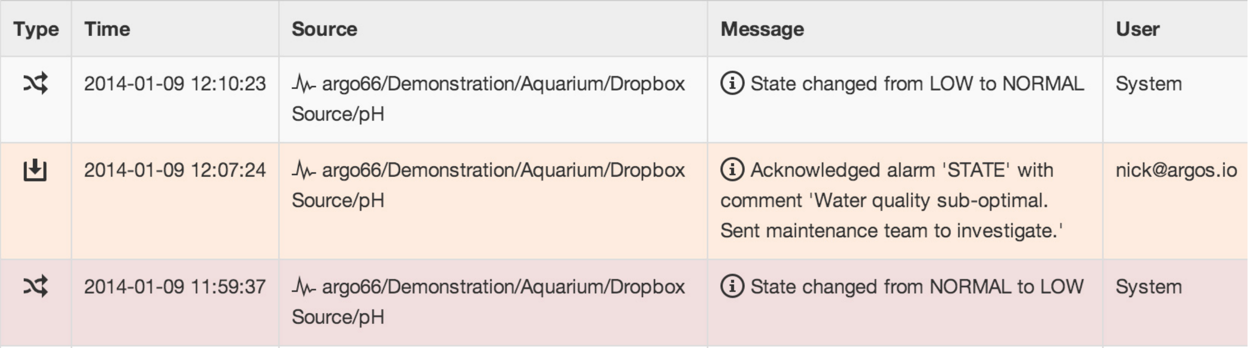
Comment: Water quality sub-optimal. Sent maintenance team to investigate.

Clear alarm

Clear alarms to reset any active or acknowledged alarms on the Node. Alarms are automatically cleared by the system when the condition or problem has returned to normal. You should only clear alarms if you have changed the alarm configuration for the Node after the alarm has occurred, otherwise there will no longer be any visual indication that the Node is in an abnormal condition until the alarm is raised again. Requires *edit states and alarms* permission.

2.5.4 Alarm History

Use the *Events View* (page 43) with the Alarm Filter enabled to review all Alarm events that have occurred for the Selected Node. Events are logged when an Alarm is raised (becomes active), Acknowledged and Cleared. All information including time, comments and user are logged with the event.



Type	Time	Source	Message	User
🔀	2014-01-09 12:10:23	∿ argo66/Demonstration/Aquarium/Dropbox Source/pH	ⓘ State changed from LOW to NORMAL	System
📥	2014-01-09 12:07:24	∿ argo66/Demonstration/Aquarium/Dropbox Source/pH	ⓘ Acknowledged alarm 'STATE' with comment 'Water quality sub-optimal. Sent maintenance team to investigate.'	nick@argos.io
🔀	2014-01-09 11:59:37	∿ argo66/Demonstration/Aquarium/Dropbox Source/pH	ⓘ State changed from NORMAL to LOW	System

2.6 Notifications

✉ Notifications are used to inform users and groups of an *alarm* (page 170) or other condition via Email and SMS. Users can personally subscribe to specific Nodes and specify their *notification preferences* (page 168) or you can *manage notifications* (page 180) on behalf of a user or group if you have *manage notifications* security permission.

There are 3 steps to configuring notifications:

1. *Configure the Node* (page 49) and set the Notification option and Category for an Alarm type or State.
2. Configure your user profile *notification preferences* (page 168).
3. *Subscribe to the Nodes* (page 179) you would like to receive notifications for. Alternatively use the *manage notifications* (page 180) dialog to subscribe other users/groups.

Account administrators can also define custom *notification limits and categories* (page 276).

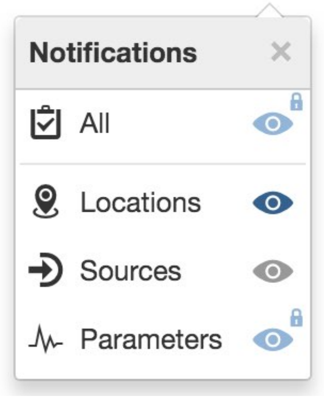
2.6.1 Subscribe to Nodes

👁 Subscribe to and Unsubscribe from Nodes via the Workspace Menu and View's context menus, List View toolbar or from the subscribe icon shown in the List View rows.

When changing subscription options from the toolbar or context menu the checked or chosen Nodes including all contained Nodes will have the new subscription options applied.

Click or touch the subscribe icon in the List View to toggle your subscription to the corresponding Node(s). If the Node contains other Nodes (ie. Location Node contains Source Node), the Notification Subscription Panel will be displayed to allow you to select which types of Nodes you would like to subscribe to or unsubscribe from. A partially colored subscription icon indicates that not all child Nodes have been subscribed to.

Notification Subscription Panel accessible from List View



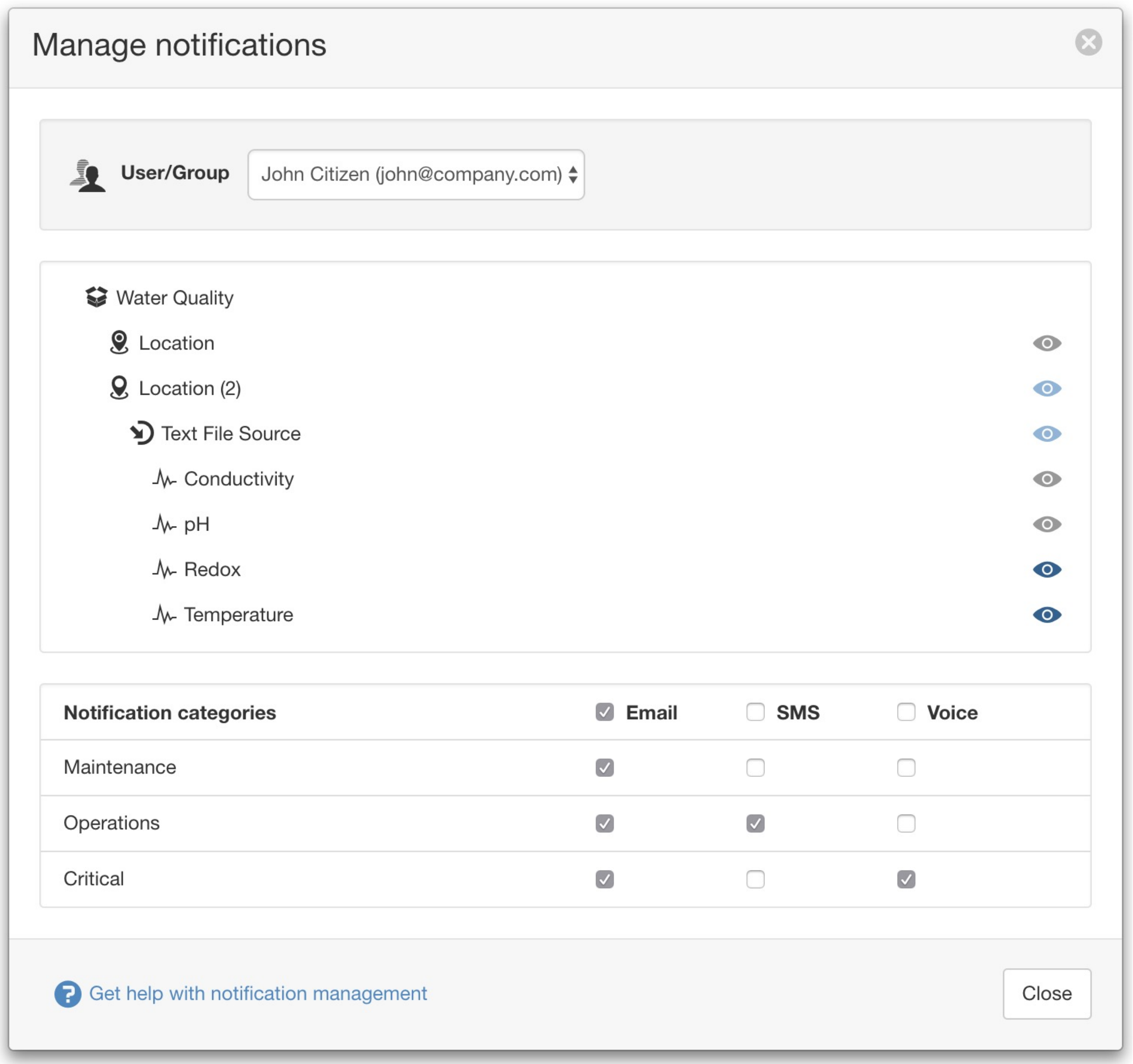
You may notice a *Lock* symbol next to the subscribe icon(s) if you do not have *subscribe notifications* permission or are included in a *group* (page 269) that has been subscribed to receive notifications. These locked notifications can only be unsubscribed via the *manage notifications* (page 180) dialog. However you can manage your personal *notification preferences* (page 168) or *remove yourself from a group* (page 169) via the user preferences dialog.

Note: Users require *subscribe notifications* permission to subscribe/unsubscribe to Nodes themselves. Refer to security *roles* (page 270) for more details.

2.6.2 Manage notifications

You can manage notification subscriptions on behalf of a user or group via the *manage notifications* dialog, accessible from the Workspace context menu. Select the user or group from the dropdown menu and *subscribe* (page 179) them to nodes. You can also also set *notification categories* (page 168) for individual users for the currently selected Workspace.

The dropdown menu only includes users and groups that have access to the Workspace.



Manage notifications

User/Group John Citizen (john@company.com)

- Water Quality
  - Location
  - Location (2)
    - Text File Source
      - Conductivity
      - pH
      - Redox
      - Temperature

Notification categories	☑ **Email**	☐ **SMS**	☐ **Voice**
Maintenance	☑	☐	☐
Operations	☑	☑	☐
Critical	☑	☐	☑

Note: Users require *manage notifications* permission to subscribe other users and groups to Nodes. Refer to security *roles* (page 270) for more details.

2.7 Operate and Control

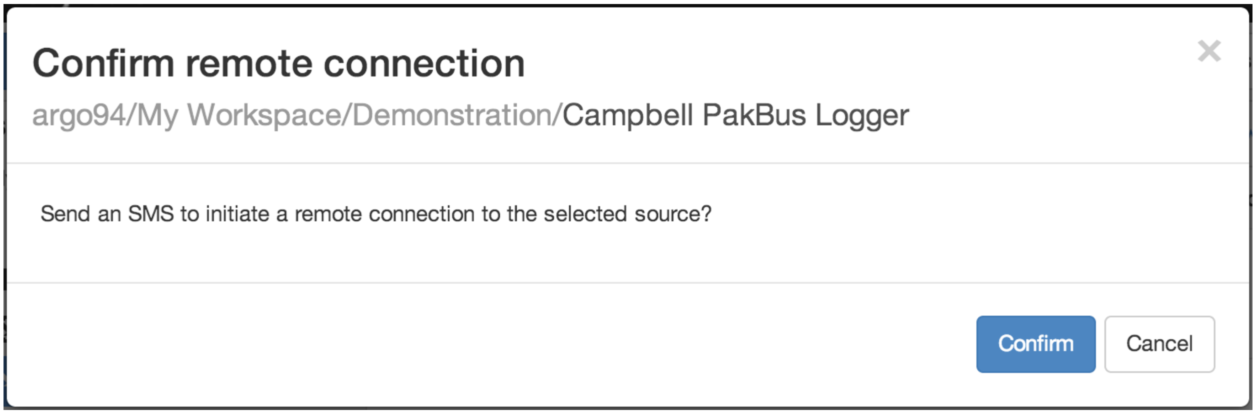
The Operate menu, available from the Node and Content context menus or List View toolbar provides access to the Acquire, Control and Manage configuration operations.

2.7.1 Acquire

Acquire performs a one-time collection on the Source(s) chosen. View the current operation status from the Source List View. Requires *operate* permission.

When acquiring from a Source that uses a *Scout modem* you may be prompted to confirm the remote connection. This occurs when the Source Schedule is *Disabled* or set to *Remote* (ie. device not permanently connected). An SMS will be sent to the *Scout modem* to initiate a callback. The account owner will be charged for the SMS at the standard SMS Notification rate applicable to their account type. Read more about *Scout configuration* (page 384).

Scout modem remote connection confirmation



Confirm remote connection

argo94/My Workspace/Demonstration/Campbell PakBus Logger

Send an SMS to initiate a remote connection to the selected source?

2.7.2 Control

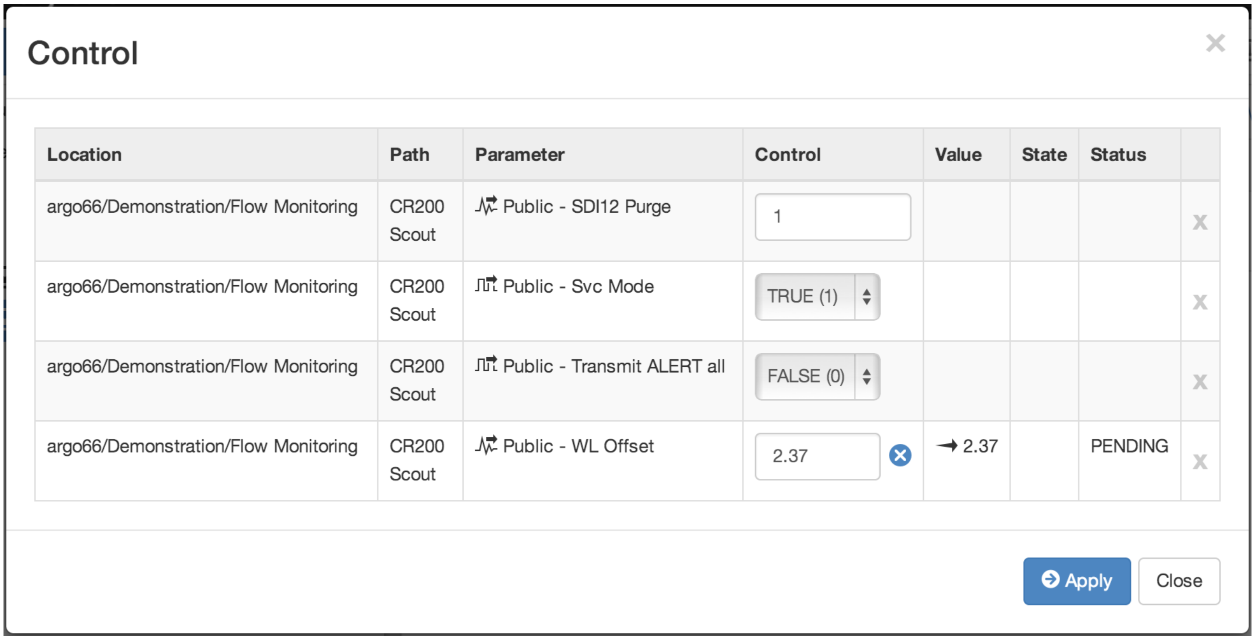
Control allows you to update or set values in a remote data logger. Control operations can only be performed on Control Parameters and requires *operate* permission. Read more about *Node types* (page 49).

The control operation will be attempted immediately upon applying or setting the control value. If a connection to the Source can not be established, the control value will be applied on the next successful connection. Any pending control values are indicated with an arrow.

Control Parameters store the history of the control values set by the user, not the value of the parameter in the data logger.

Control dialog

The Control dialog can be opened from the Operate menu. It displays a list of Control Parameters within the chosen Node. Set the control values and *Apply*. Cancel a pending control operation by clicking the ‘x’ next to the parameter control value. The current status of the operation is shown for each parameter being updated and the rows will turn green to indicate success or red to indicate failure.

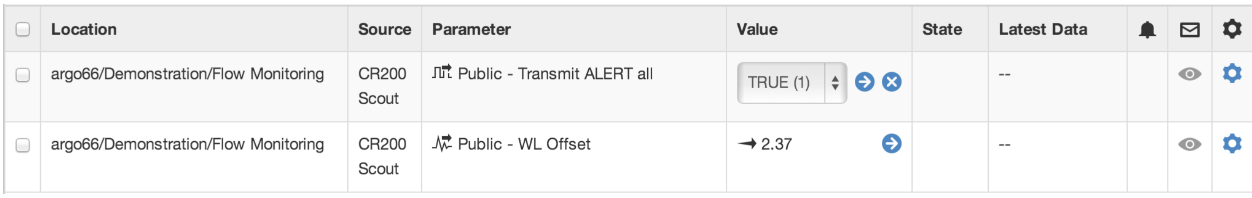


Control

Location	Path	Parameter	Control	Value	State	Status	
argo66/Demonstration/Flow Monitoring	CR200 Scout	Public - SDI12 Purge	1				x
argo66/Demonstration/Flow Monitoring	CR200 Scout	Public - Svc Mode	TRUE (1)				x
argo66/Demonstration/Flow Monitoring	CR200 Scout	Public - Transmit ALERT all	FALSE (0)				x
argo66/Demonstration/Flow Monitoring	CR200 Scout	Public - WL Offset	2.37	→ 2.37		PENDING	x

List View inline Control

Control parameters can have their control value set directly from the Parameters List View. Click or touch the control icon next to the value to update or set the control value. Click or touch the control icon again to apply the new value or cancel the control operation by clicking the ‘x’.



☐	Location	Source	Parameter	Value	State	Latest Data			
☐	argo66/Demonstration/Flow Monitoring	CR200 Scout	Public - Transmit ALERT all	TRUE (1)		--			
☐	argo66/Demonstration/Flow Monitoring	CR200 Scout	Public - WL Offset	→ 2.37		--			

Note: Control Parameters can be configured to restrict the user input for the control value. See *Configuring Parameters* (page 147) for full details.

2.7.3 Manage configuration

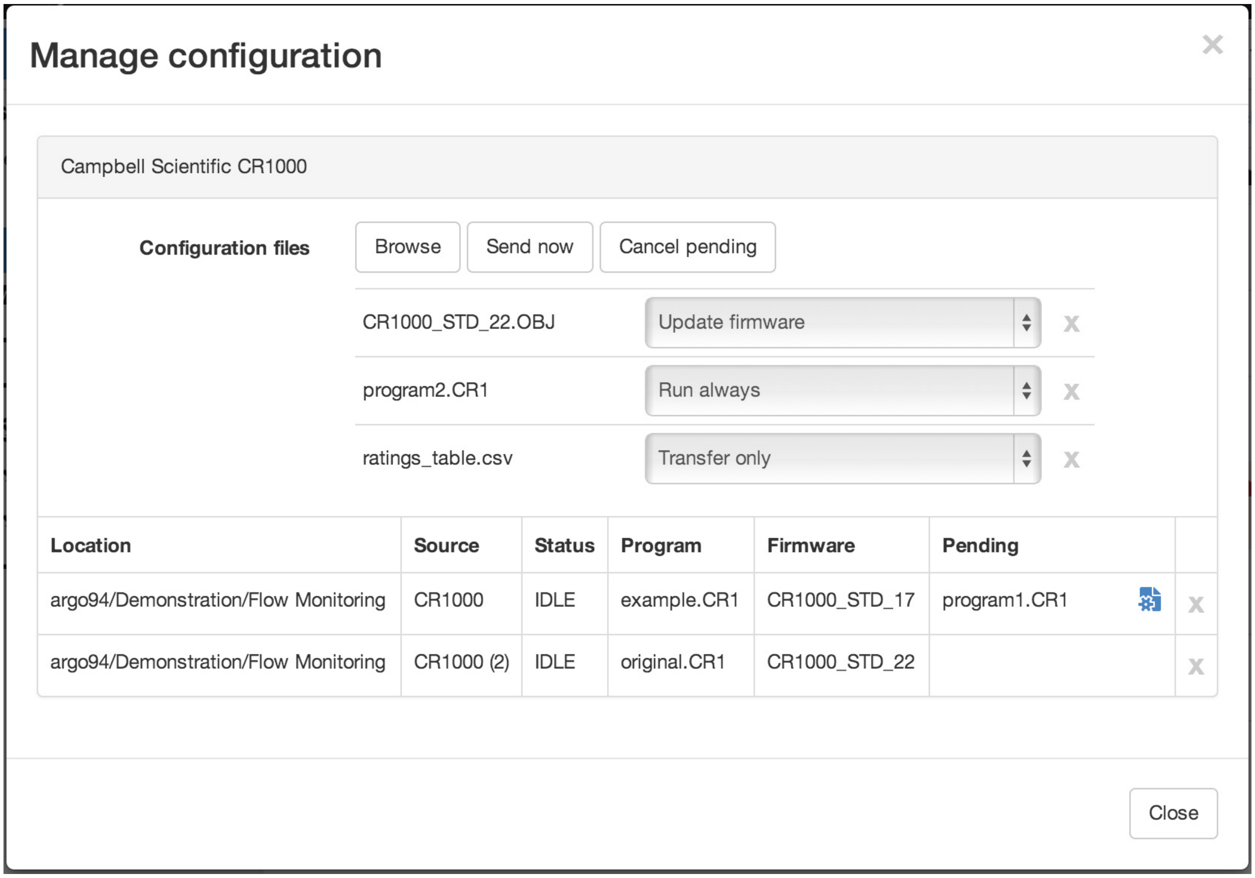
Manage the configuration for a single Data Source (data logger) or perform network-wide configuration updates. Configuration support varies between data loggers, including the ability to send programs, firmware and other files to the remote logger(s).

Manage configuration operations can only be performed on Data Sources (data logger) and requires *configure* permission. Read more about *Node types* (page 49).

Manage configuration dialog

The Manage configuration dialog can be opened from the Operate menu. It displays a list of Data Sources within the chosen Node that support managed configuration. Data Sources are grouped together based on data logger type/model. If you do not wish to apply the configuration to a Data Source already displayed in the dialog then you can remove the source by clicking its close ‘x’ button.

The current status of the operation is shown for each Data Source being configured and the associated list item will turn green to indicate success or red to indicate failure. If the configuration update fails, check the *Configuration alarm* message for the corresponding Source.



Campbell Scientific CR1000

Configuration files

CR1000_STD_22.OBJ	Update firmware	x
program2.CR1	Run always	x
ratings_table.csv	Transfer only	x

Location	Source	Status	Program	Firmware	Pending	
argo94/Demonstration/Flow Monitoring	CR1000	IDLE	example.CR1	CR1000_STD_17	program1.CR1	x
argo94/Demonstration/Flow Monitoring	CR1000 (2)	IDLE	original.CR1	CR1000_STD_22		x

Use the *Browse* button to select file(s) to upload. After the files have been selected you must assign a *configuration option* (page 187) to each file.

Click *Send now* to upload the file(s) and queue the configuration for each Data Source displayed in the immediate list.

Use the *Cancel pending* button to remove all pending configuration for each Data Source displayed in the immediate list.

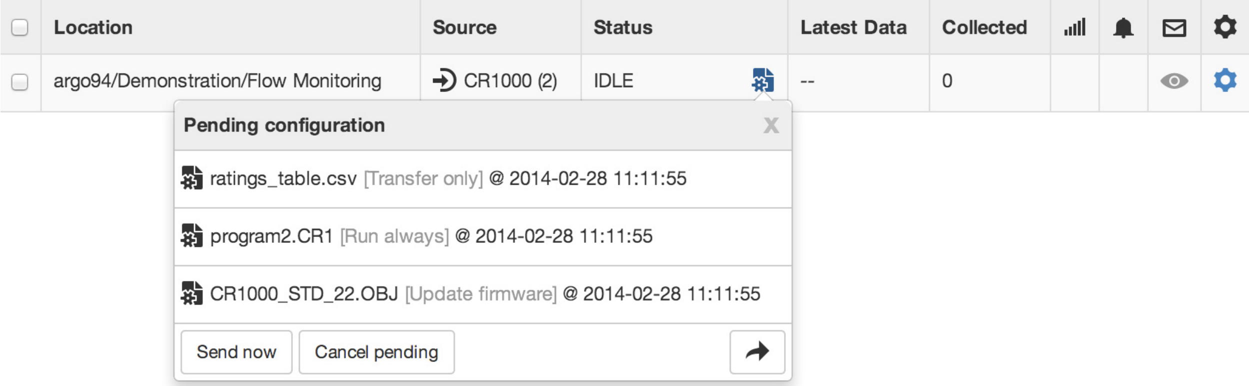
New configuration will be applied immediately where possible, otherwise it will be applied during the next communication with the Data Source.

Note: Sending new configuration files will automatically remove any pending configuration from the Data Source.

List View pending configuration

Data Sources with pending configuration will have a configuration icon displayed in the *status* column of the Sources list. You can quickly review any pending configuration files including the assigned *configuration option* and time of upload.

Use the *Send now* button to immediately trigger or retry a configuration update or *Cancel pending* will remove the pending configuration for an individual Source.



☐	Location	Source	Status	Latest Data	Collected
☐	argo94/Demonstration/Flow Monitoring	CR1000 (2)	IDLE	--	0

Pending configuration

ratings_table.csv [Transfer only] @ 2014-02-28 11:11:55

program2.CR1 [Run always] @ 2014-02-28 11:11:55

CR1000_STD_22.OBJ [Update firmware] @ 2014-02-28 11:11:55

Configuration options

Configuration options vary based on data logger type/model. See below for a list of options available for each supported logger type.

Campbell PakBus CR200

Run always Send a pre-compiled (.bin) CR200 program to the logger and run the program immediately and on startup.

Campbell PakBus CR300/CR800/CR1000/CR3000/CR6

Run always Send a CR300 (.cr300), CR800 (.cr8), CR1000 (.cr1), CR3000 (.cr3) or CR6 (.cr6) program (or pre-compiled .dld file) to the logger and run the program immediately and on startup.

Run always (preserve data) Send a program to the logger and run the program immediately and on startup. Data tables will not be reset if possible.

Run once Send a program to the logger and run the program immediately but not on startup.

Update firmware Send firmware/operating system (.obj) to the logger.

Transfer only Send raw files to the logger.

2.8 Historic Data

Historic data is stored in a raw unprocessed format with an optional *quality code* (page 577) and *annotation* (page 578). Display, edit and export data in variety of *tabular* (page 190) and *chart* (page 66) formats.

Apply *historic aggregates* (page 569) to process the raw data and apply specific calculations or use *processing and logic* (page 223) for advanced statistical analysis and decision making.

Use the eagle.io *HTTP API* (page 433) to automate importing or extracting data.

Data editing (page 188) can be performed in both *historic table* (page 195) and *historic chart* (page 205) formats.

Eagle.io supports the acquisition and storage of up to **20000 records per** *Data Source* (page 134) **per day**. Exceeding the limit will trigger an *Overload Alarm* (page 173) on the Source. Refer to Historic Data *Limits* (page 579) for more information.

2.8.1 Editing

Data editing allows for the modification of your historic data directly from the user interface in *historic table* (page 195) and *historic chart* (page 205) formats.

Historic data is always edited as raw unprocessed records without any *aggregate* (page 569) or *transform* (page 147) options applied. Records can be modified individually or as a selection including:

Value Record values can be adjusted to remove spikes or apply offsets.

☆ **Quality** *Quality codes* (page 577) can be assigned to validate data or *filter* (page 202) records from display.

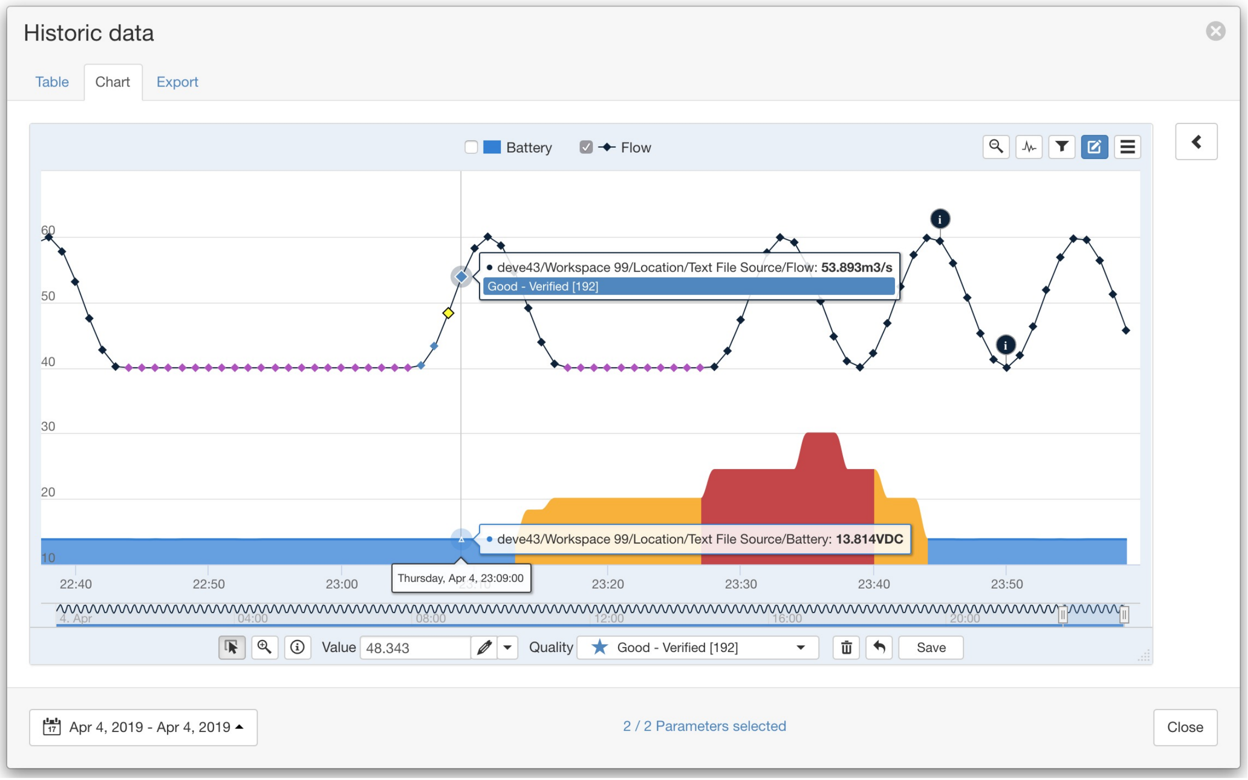
Annotation *Annotations* (page 578) can be added to provide context to specific events.

Users must have *edit data* or *edit quality & annotations* *permission* (page 270) for the parameters they are trying to edit. Data editing is not available on STARTER accounts. Record *limits* (page 580) apply when editing data in chart format.

Note: All saved changes are permanent. You should restrict access with the *edit data* user *permission* (page 270) and audit changes via the *events* (page 43) view.

Note: *Process Parameters* (page 223) cannot be edited, as the data is generated dynamically whenever the process code is changed.

Refer to the *historic chart* (page 205) documentation for data editing in chart format.



Historic data

• deve43/Workspace 99/Location/Text File Source/Flow: **53.893m3/s**
Good - Verified [192]

• deve43/Workspace 99/Location/Text File Source/Battery: **13.814VDC**

Thursday, Apr 4, 23:09:00

Value 48.343

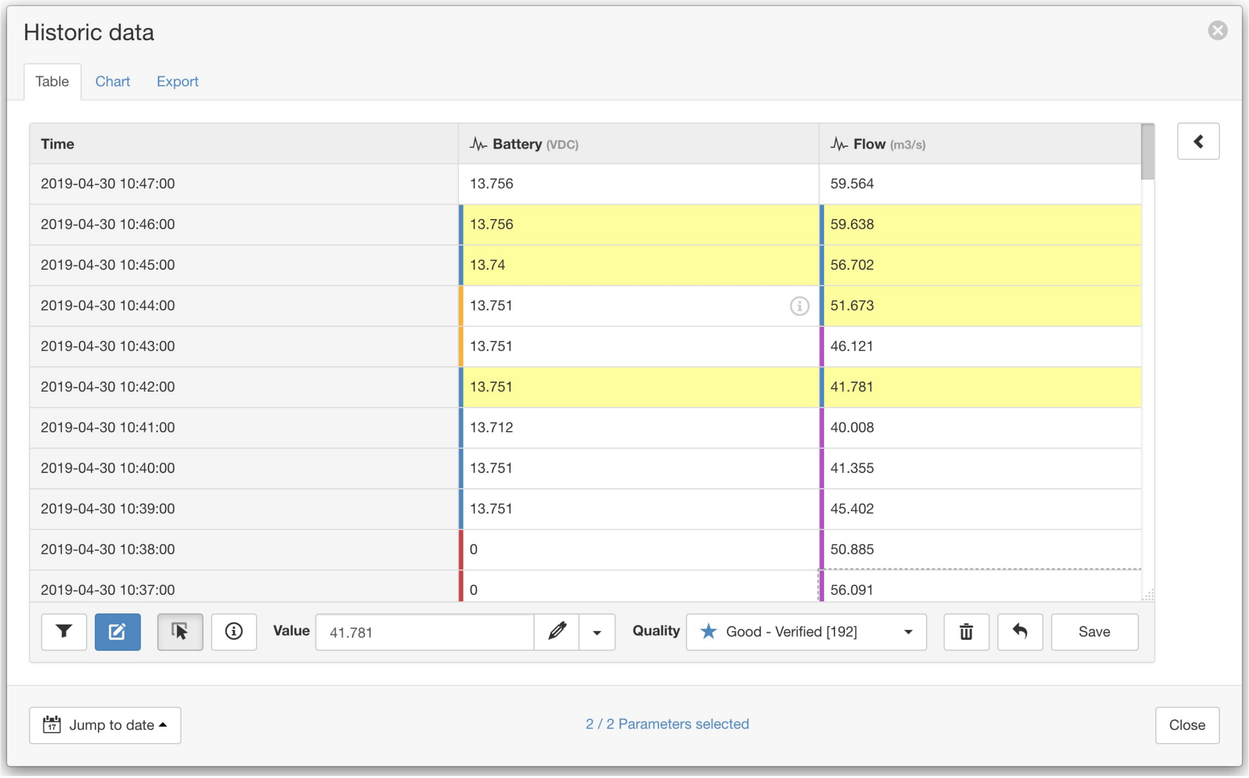
Quality ★ Good - Verified [192]

Apr 4, 2019 - Apr 4, 2019

2 / 2 Parameters selected

Table
Chart
Export
☐ Battery
☑ Flow
60
50
40
30
20
10
22:40
22:50
23:00
23:20
23:30
23:40
23:50
4. Apr
04:00
08:00
12:00
16:00
20:00
Save
Close

Refer to the *historic table* (page 195) documentation for data editing in tabular format.



Historic data

Time	Battery (VDC)	Flow (m3/s)
2019-04-30 10:47:00	13.756	59.564
2019-04-30 10:46:00	13.756	59.638
2019-04-30 10:45:00	13.74	56.702
2019-04-30 10:44:00	13.751	51.673
2019-04-30 10:43:00	13.751	46.121
2019-04-30 10:42:00	13.751	41.781
2019-04-30 10:41:00	13.712	40.008
2019-04-30 10:40:00	13.751	41.355
2019-04-30 10:39:00	13.751	45.402
2019-04-30 10:38:00	0	50.885
2019-04-30 10:37:00	0	56.091

Value 41.781

Quality ★ Good - Verified [192]

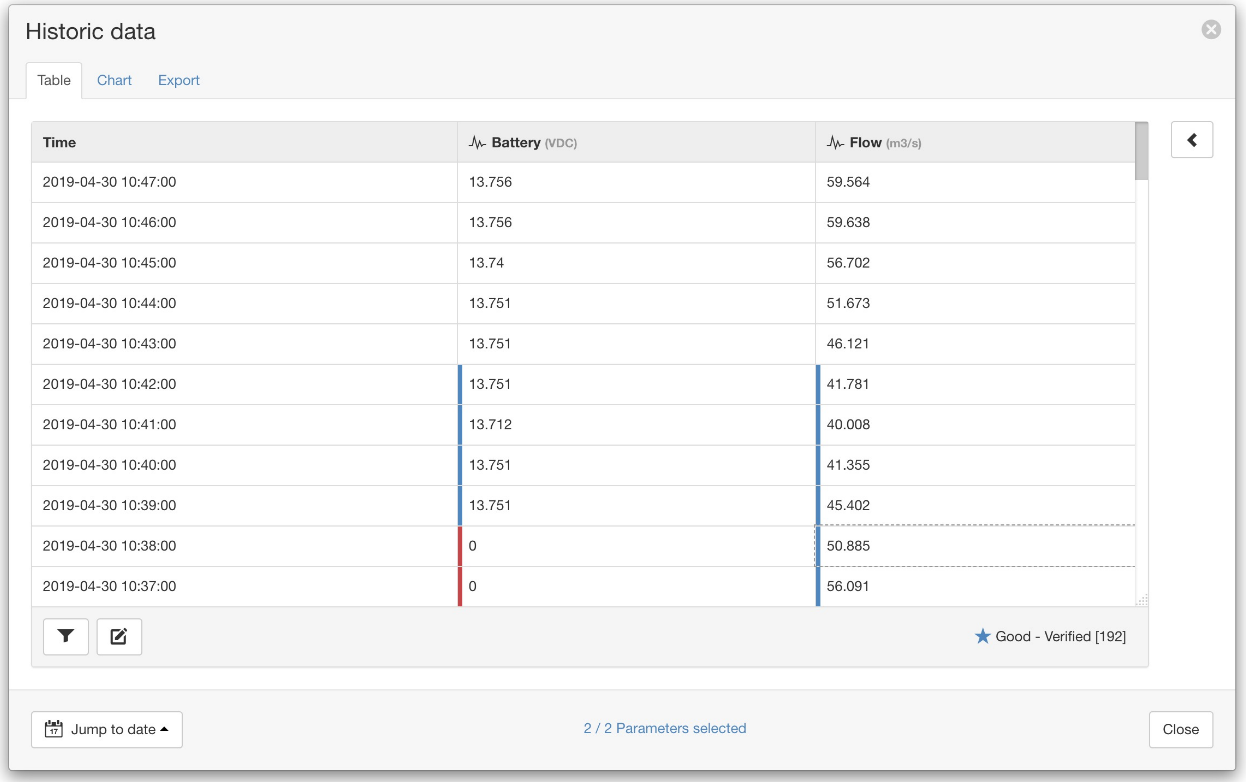
2 / 2 Parameters selected

2.8.2 Table

Historic table is accessible from the List View toolbar and Node context menus. The most recent data is always displayed first. Scroll down to automatically load older data or use the *Jump to date* control to quickly move to a specific date.

The *timestamps* are always displayed in your preferred timezone and time format. See configuring *user preferences* (page 166) for full details.

If you have assigned *quality codes* (page 577) to the data the associated quality color is displayed in the table cell(s). Move your mouse over a table cell to display its corresponding quality code and description in the toolbar.

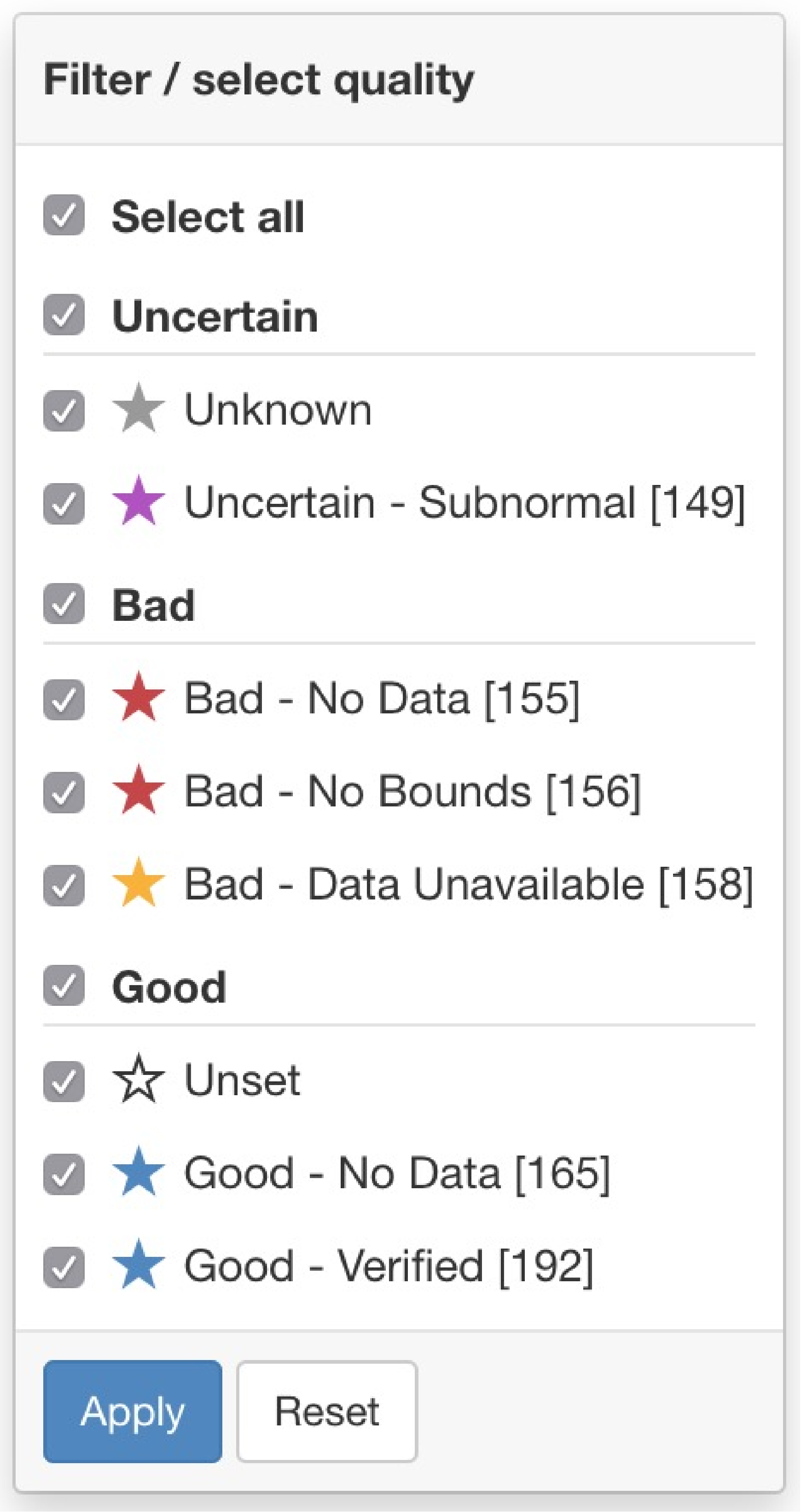


Time	Battery (VDC)	Flow (m3/s)
2019-04-30 10:47:00	13.756	59.564
2019-04-30 10:46:00	13.756	59.638
2019-04-30 10:45:00	13.74	56.702
2019-04-30 10:44:00	13.751	51.673
2019-04-30 10:43:00	13.751	46.121
2019-04-30 10:42:00	13.751	41.781
2019-04-30 10:41:00	13.712	40.008
2019-04-30 10:40:00	13.751	41.355
2019-04-30 10:39:00	13.751	45.402
2019-04-30 10:38:00	0	50.885
2019-04-30 10:37:00	0	56.091

Note: Historic data for all parameters being displayed is automatically interleaved, therefore you may notice empty cells where the parameter(s) do not have a value for the corresponding row timestamp.

Toolbar

Filters Filter the dataset by selecting *quality codes* (page 577) associated with the data points that you want to include. While editing data, *apply* filters to automatically select associated data points and temporarily disable filtered data point cells to prevent modification.



Filter / select quality

☑ **Select all**

☑ **Uncertain**

☑ ★ Unknown

☑ ★ Uncertain - Subnormal [149]

☑ **Bad**

☑ ★ Bad - No Data [155]

☑ ★ Bad - No Bounds [156]

☑ ★ Bad - Data Unavailable [158]

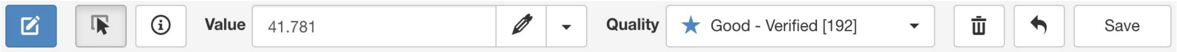
☑ **Good**

☑ ☆ Unset

☑ ★ Good - No Data [165]

☑ ★ Good - Verified [192]

Edit data Use this feature to toggle into *data editing* (page 195) mode and display the data editing toolbar.

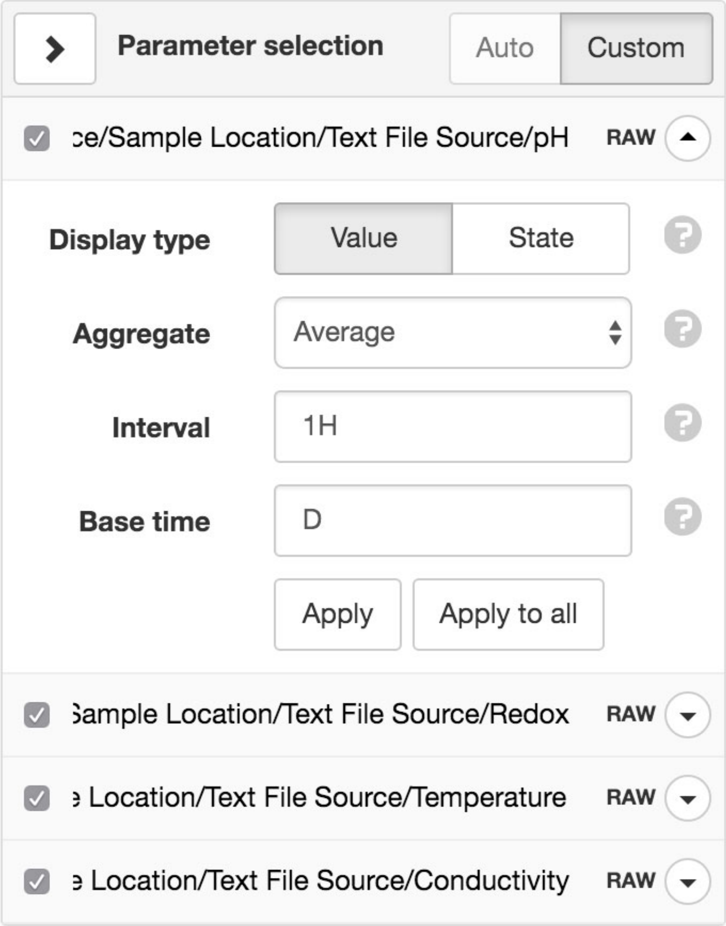

Value 41.781

Quality ★ Good - Verified [192]

Note: Users must have *edit data* or *edit quality & annotations* *permission* (page 270) for the parameters they are trying to edit. Data editing is not available on STARTER accounts.

Parameter selection

The historic data dialog will only display the first 15 selected parameters by default. Use the *Parameter selection* panel accessible via the arrow on the right to refine your selection and change how the data should be displayed, including any aggregate calculations to be applied.



☑ ce/Sample Location/Text File Source/pH RAW

Display type: Value

Aggregate: Average

Interval: 1H

Base time: D

☑ Sample Location/Text File Source/Redox RAW

☑ e Location/Text File Source/Temperature RAW

☑ e Location/Text File Source/Conductivity RAW

Display type *Value* displays the parameter values.

State displays the state name associated with each value.

Aggregate Aggregates provide a method to resample raw data over a specified period. See the *list of available aggregates* (page 569) for full details. Select RAW to display the original raw data with no aggregation applied (Interval and Base time options will be hidden).

Interval Specify the data range that is included for each calculated value. Example *30M* will calculate a value for each 30 minute window of data.

Base time Base time is used to determine the start of the aggregate calculations. Example *D+9H* will start the calculations at 9am (start of current day + 9 hours). See *working with relative time* (page 585) for full details.

Data editing

The *edit data* (page 192) button toggles into data editing mode.

Users must have *edit data* or *edit quality & annotations* *permission* (page 270) for the parameters they are trying to edit. Data editing is not available on STARTER accounts. Table cells or records with a light grey background can not be selected or modified.

Historic data is always edited as raw unprocessed records without any *aggregate* (page 569) or *transform* (page 147) options applied. Data editing can also be performed in *historic charts* (page 205).

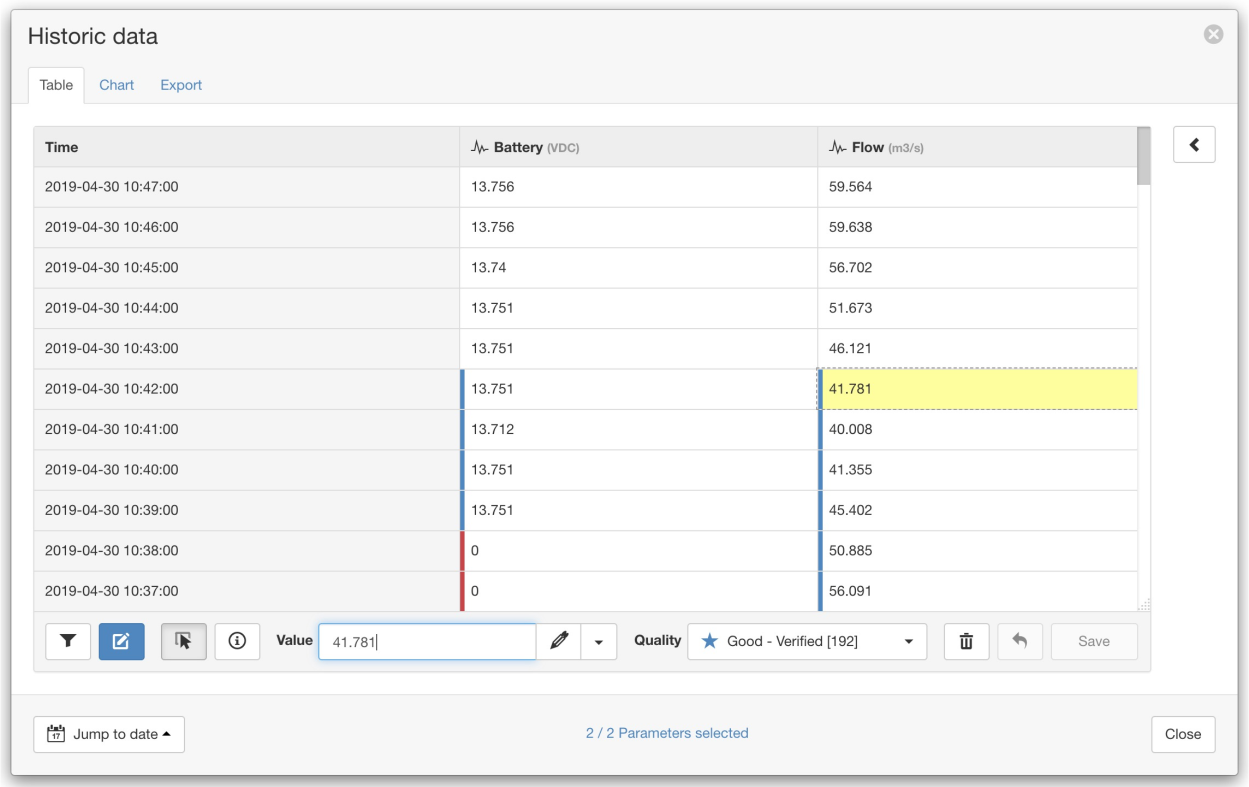
Note: All saved changes are permanent. You should restrict access with the *edit data* user *permission* (page 270) and audit changes via the *events* (page 43) view. *Limits* (page 580) apply when editing historic data.

Selecting records

Click a table cell to select an individual record or click a timestamp to select an entire row.

Selected cells are displayed with a yellow background when the user has both *edit data* and *edit quality & annotations* permissions for the parameter. Alternatively a dark grey background will be displayed when the user only has *edit quality & annotations* permission.

While selecting records, hold the **shift key to add** or **alt key to remove** from the current selection.

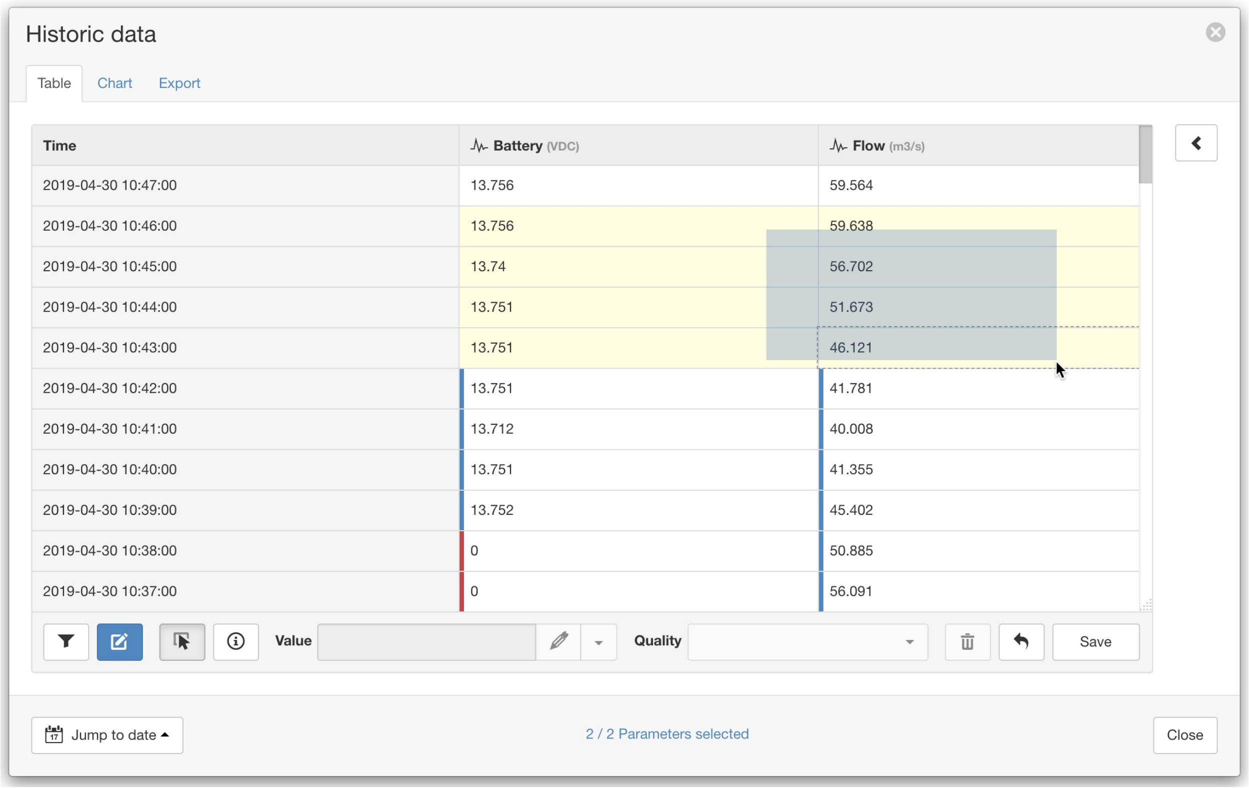

Historic data
Table
Chart
Export
Save
Jump to date
2 / 2 Parameters selected
Close

Time	Battery (VDC)	Flow (m3/s)
2019-04-30 10:47:00	13.756	59.564
2019-04-30 10:46:00	13.756	59.638
2019-04-30 10:45:00	13.74	56.702
2019-04-30 10:44:00	13.751	51.673
2019-04-30 10:43:00	13.751	46.121
2019-04-30 10:42:00	13.751	41.781
2019-04-30 10:41:00	13.712	40.008
2019-04-30 10:40:00	13.751	41.355
2019-04-30 10:39:00	13.751	45.402
2019-04-30 10:38:00	0	50.885
2019-04-30 10:37:00	0	56.091

Value 41.781

Quality ★ Good - Verified [192]

Click and drag over the table to quickly select multiple records.


Historic data
Table
Chart
Export

Time	Battery (VDC)	Flow (m3/s)
2019-04-30 10:47:00	13.756	59.564
2019-04-30 10:46:00	13.756	59.638
2019-04-30 10:45:00	13.74	56.702
2019-04-30 10:44:00	13.751	51.673
2019-04-30 10:43:00	13.751	46.121
2019-04-30 10:42:00	13.751	41.781
2019-04-30 10:41:00	13.712	40.008
2019-04-30 10:40:00	13.751	41.355
2019-04-30 10:39:00	13.752	45.402
2019-04-30 10:38:00	0	50.885
2019-04-30 10:37:00	0	56.091

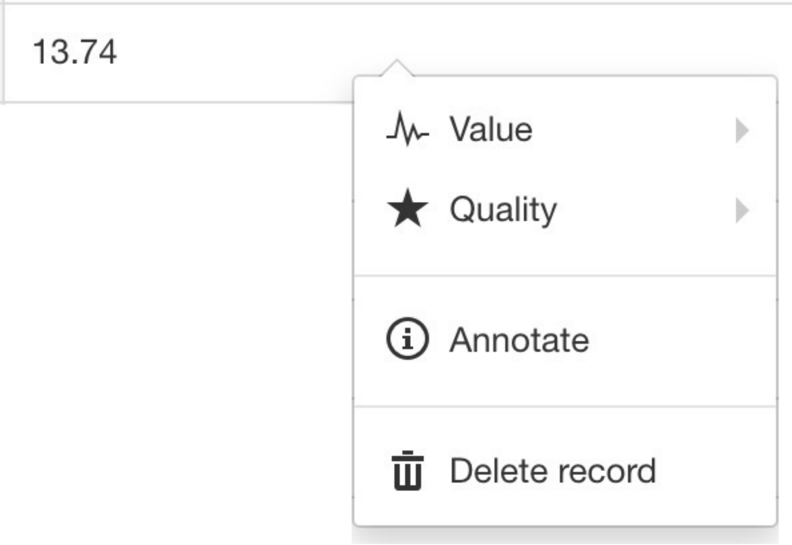
Value
Quality
Save
Jump to date
2 / 2 Parameters selected
Close

Apply *filters* (page 191) to select records based on quality.

Editing records

An individual record can include **value**, **quality** and **annotation**.

Right-click on an editable cell or selection of cells to quickly perform operations via the cell context-menu.


13.74
Value
Quality
Annotate
Delete record

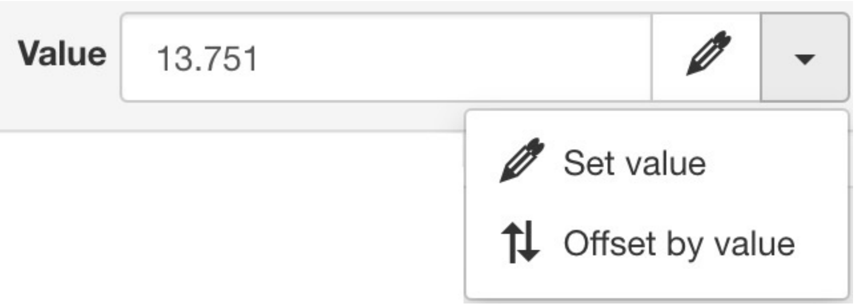
Set value

Enter a new value to be assigned to the selected cell(s) and press enter or click the *set value* icon. Change the functionality of the value input by selecting a value operation from the dropdown menu.

`Set value` assigns a specific value to selected records.

`Offset by value` adds a value to to selected records.

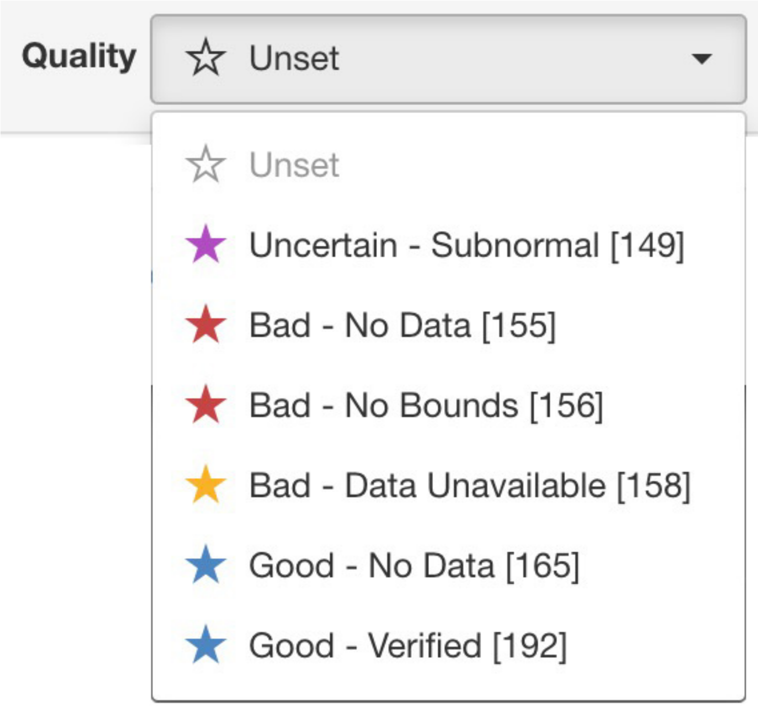
`Scale by value` multiplies selected records by a specific value.


Value
13.751
Set value
Offset by value

You can also use *set value* to unset a value (leave blank) which will result in historic charts showing a gap in the series when displaying RAW historic data.

Set quality

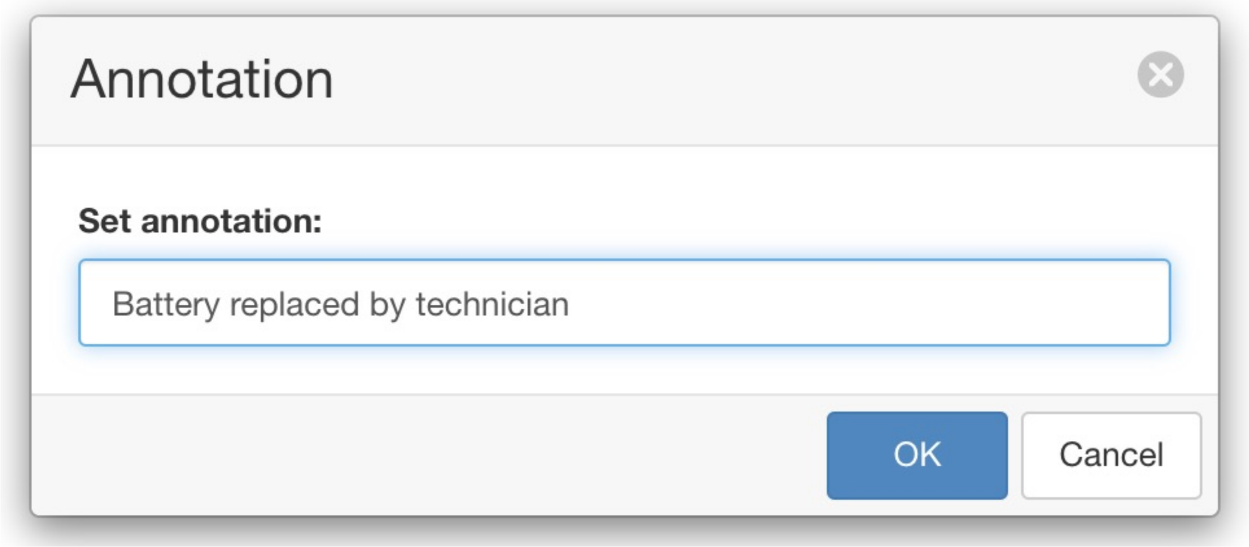
☆ Select a quality to be assigned to the selected cell(s) from the dropdown quality menu. You can only assign *quality codes* (page 577) that have been pre-configured in *account settings* (page 266).


Quality
☆ Unset
☆ Unset
★ Uncertain - Subnormal [149]
★ Bad - No Data [155]
★ Bad - No Bounds [156]
★ Bad - Data Unavailable [158]
★ Good - No Data [165]
★ Good - Verified [192]

Set annotation

ⓘ To set an *annotation* (page 578) for a single record either change to *annotate mode* from the edit toolbar and click on a cell or right-click on a cell and select *annotate* from the context menu.

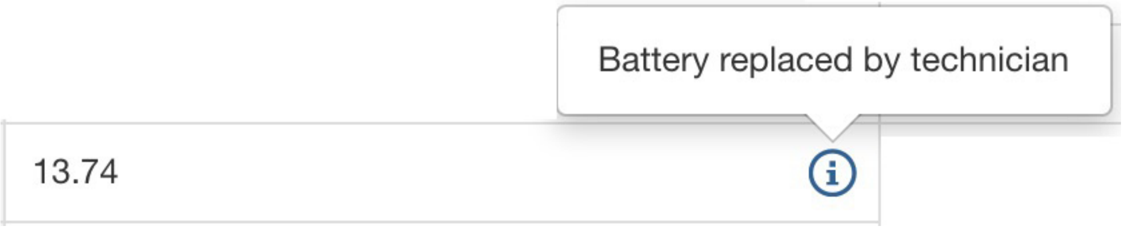
Annotations can be set on multiple cells at once by first selecting the cells then selecting *annotate* from the context menu.


Annotation
OK
Cancel

Set annotation:

Battery replaced by technician

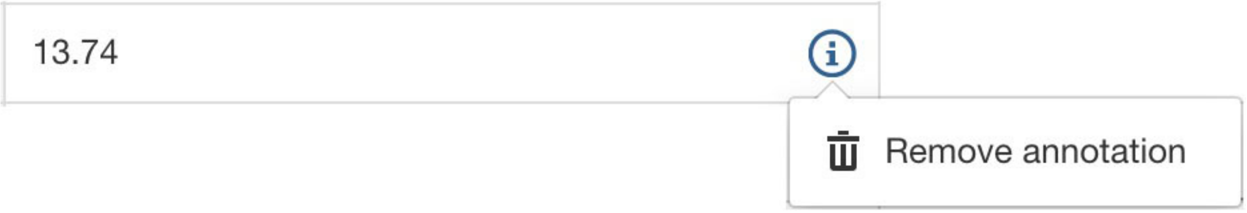
Hover or click the annotation icon to display the annotation text.



Battery replaced by technician

13.74

To remove an annotation clear the text in the annotation entry dialog or right-click on the cell annotation icon and select *remove annotation* from the context menu.


13.74
Remove annotation

Delete record

The delete operation permanently removes the selected records from the historic dataset.

Undo last edit

The *undo* command reverts the last edit operation. You can continue to *undo* all edit operations since the last save.

Save changes

Save all changes to the modified records.

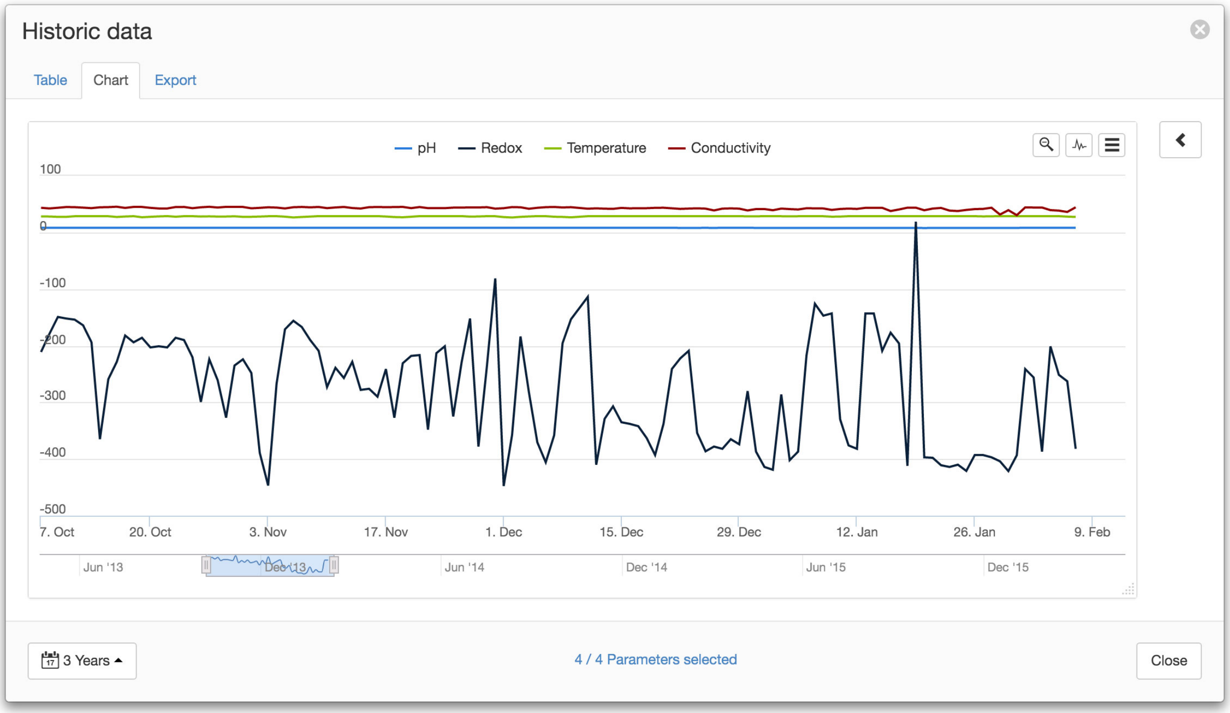
Note: All saved changes are permanent. You should restrict access with the *edit data* user *permission* (page 270) and audit changes via the *events* (page 43) view.

2.8.3 Chart

Historic chart is accessible from the List View toolbar and Node context menus. The Historic Chart provides the same functionality as the charts displayed in *Chart View* (page 35) but can be displayed directly from the Workspaces Tree, Map or List View without navigating away from your current view.

If you have assigned *quality codes* (page 577) to the data, the associated quality code and color is displayed on hover.

Refer to *working with charts* (page 37) for full details on chart interaction and functionality.


Historic data
Table
Chart
Export
pH
Redox
Temperature
Conductivity
100
0
-100
-200
-300
-400
-500
7. Oct
20. Oct
3. Nov
17. Nov
1. Dec
15. Dec
29. Dec
12. Jan
26. Jan
9. Feb
Jun '13
Dec '13
Jun '14
Dec '14
Jun '15
Dec '15
3 Years
4 / 4 Parameters selected
Close

Toolbar

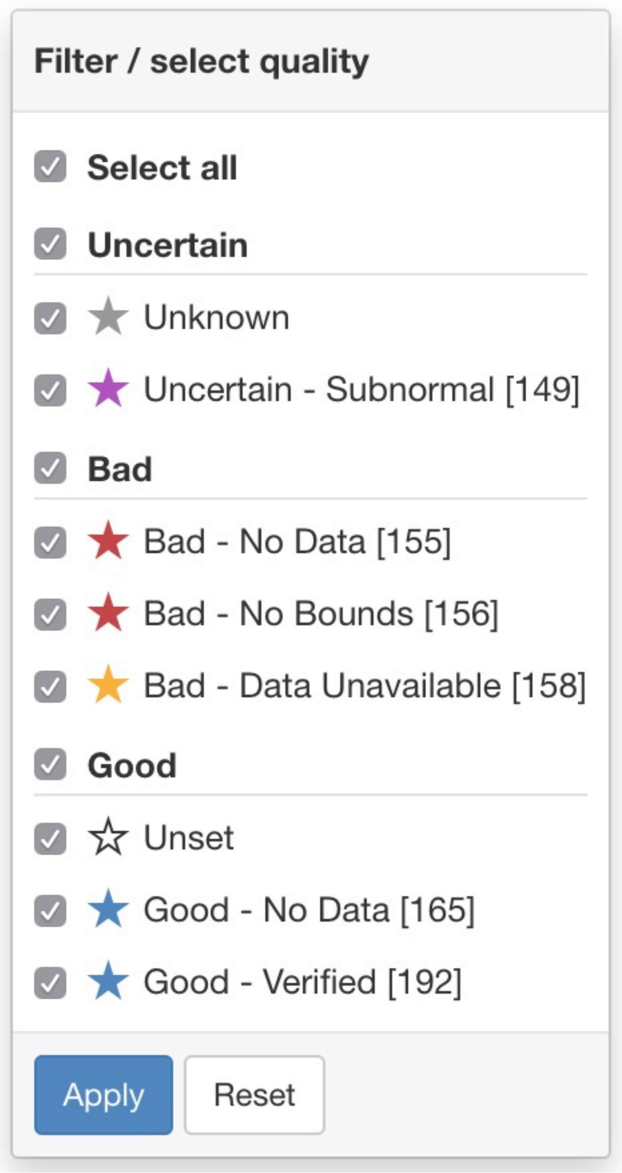
Range selector Use the range selector to adjust the date range being shown on the chart.

Zoom out After zooming in on a section of the chart the *zoom out* icon is displayed to reset the zoom range.

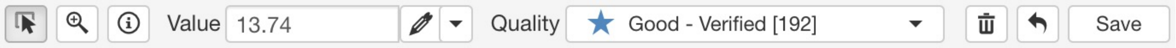
Toggle parameter visibility Click the parameter icon to quickly toggle the visibility of all parameters. Click parameters in the chart legend to toggle the visibility of individual parameters.

Toggle parameter editing After toggling *data editing* (page 205) mode, the toggle parameter editing button is shown. Click this button to quickly select/deselect all editable parameters for editing.

Filters Filter the dataset by selecting *quality codes* (page 577) associated with the data points that you want to include. While editing data, *apply* filters to automatically select associated data points and temporarily hide filtered data points to prevent modification.


Filter / select quality
☑ Select all
☑ Uncertain
☑ ★ Unknown
☑ ★ Uncertain - Subnormal [149]
☑ Bad
☑ ★ Bad - No Data [155]
☑ ★ Bad - No Bounds [156]
☑ ★ Bad - Data Unavailable [158]
☑ Good
☑ ☆ Unset
☑ ★ Good - No Data [165]
☑ ★ Good - Verified [192]
Apply
Reset

Edit data Use this feature to toggle into *data editing* (page 205) mode and display the data editing toolbar.


Value 13.74

Quality ★ Good - Verified [192]

Note: Users must have *edit data* or *edit quality & annotations permission* (page 270) for the parameters they are trying to edit. Data editing is not available on STARTER accounts.

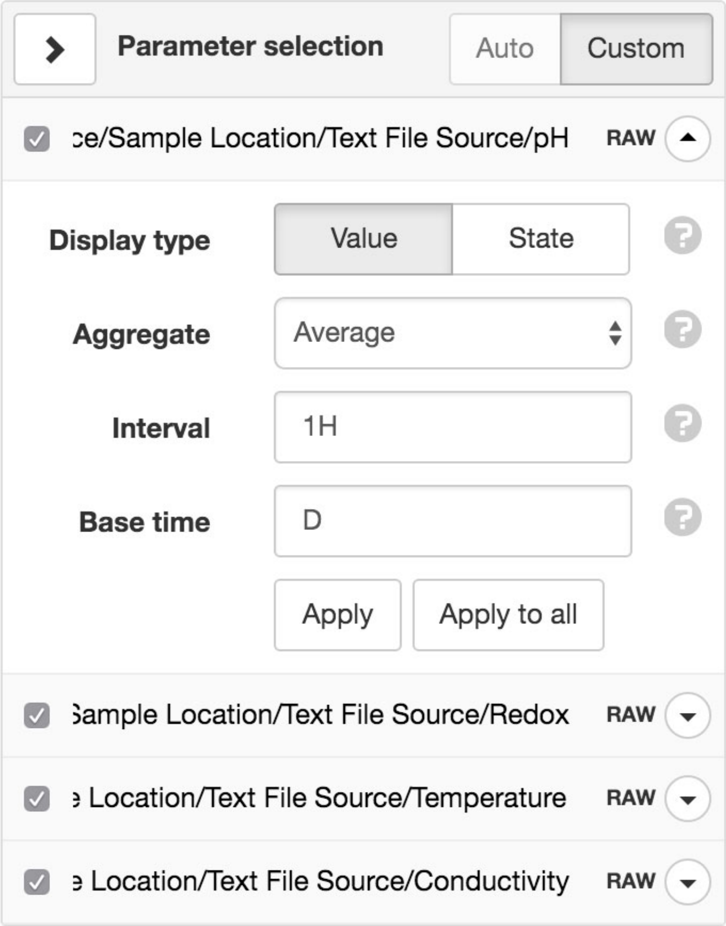
☰ **Menu** Export options can be found in the dropdown menu including:

Print the chart.

🖼 Save the chart as an image.

Parameter selection

The historic data dialog will only display the first 15 selected parameters by default. Use the *Parameter selection* panel accessible via the arrow on the right to refine your selection and change how the data should be displayed, including any aggregate calculations to be applied.



☑ ce/Sample Location/Text File Source/pH RAW

Display type: Value

Aggregate: Average

Interval: 1H

Base time: D

☑ Sample Location/Text File Source/Redox RAW

☑ e Location/Text File Source/Temperature RAW

☑ e Location/Text File Source/Conductivity RAW

Auto/Custom *Auto* will use the default chart options for each parameter (as configured in parameter properties).

Custom allows you to specify custom display settings for each parameter. These settings are shared between table and exports for convenience.

Display type *Value* displays the parameter values.

State displays the state name associated with each value.

Aggregate Aggregates provide a method to resample raw data over a specified period. See the *list of available aggregates* (page 569) for full details. Select RAW to display the original raw data with no aggregation applied (Interval and Base time options will be hidden).

Interval Specify the data range that is included for each calculated value. Example *30M* will calculate a value for each 30 minute window of data.

Base time Base time is used to determine the start of the aggregate calculations. Example *D+9H* will start the calculations at 9am (start of current day + 9 hours). See *working with relative time* (page 585) for full details.

Note: Please be aware that displaying RAW data for a large time range may be time consuming to retrieve and process.

Data editing

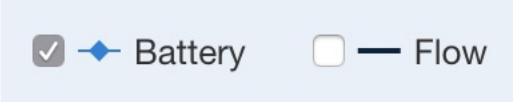
The *edit data* (page 203) button toggles into data editing mode.

Users must have *edit data* or *edit quality & annotations permission* (page 270) for the parameters they are trying to edit. Data editing is not available on STARTER accounts.

Historic data is always edited as raw unprocessed records without any *aggregate* (page 569) or *transform* (page 147) options applied. Data editing can also be performed in *tabular* (page 195) format.

Note: All saved changes are permanent. You should restrict access with the *edit data* user *permission* (page 270) and audit changes via the *events* (page 43) view. *Limits* (page 580) apply when editing historic data.

The chart legend automatically updates with checkboxes next to parameters than can be edited. Only the first parameter is initially checked for editing. Check additional parameters to edit concurrently or click the *Toggle parameter editing* toolbar button to quickly select/deselect all editable parameters.

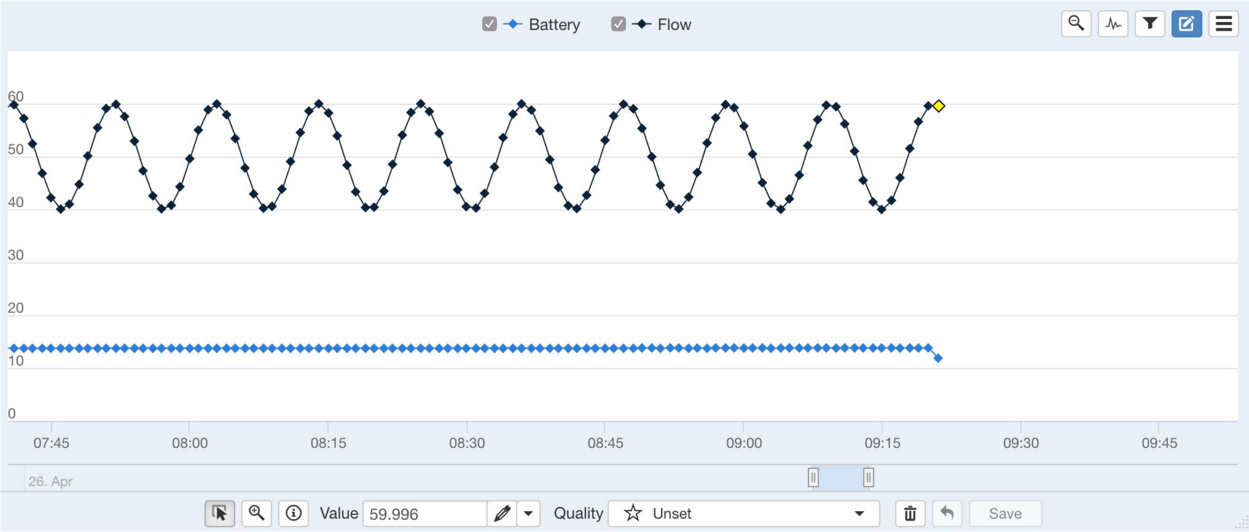

☑ Battery
☐ Flow

Selecting records

Click a series data point marker to select an individual record.

Selected data points are displayed with a yellow marker when the user has both *edit data* and *edit quality & annotations* permissions for the parameter. Alternatively a dark grey marker will be displayed when the user only has *edit quality & annotations* permission.

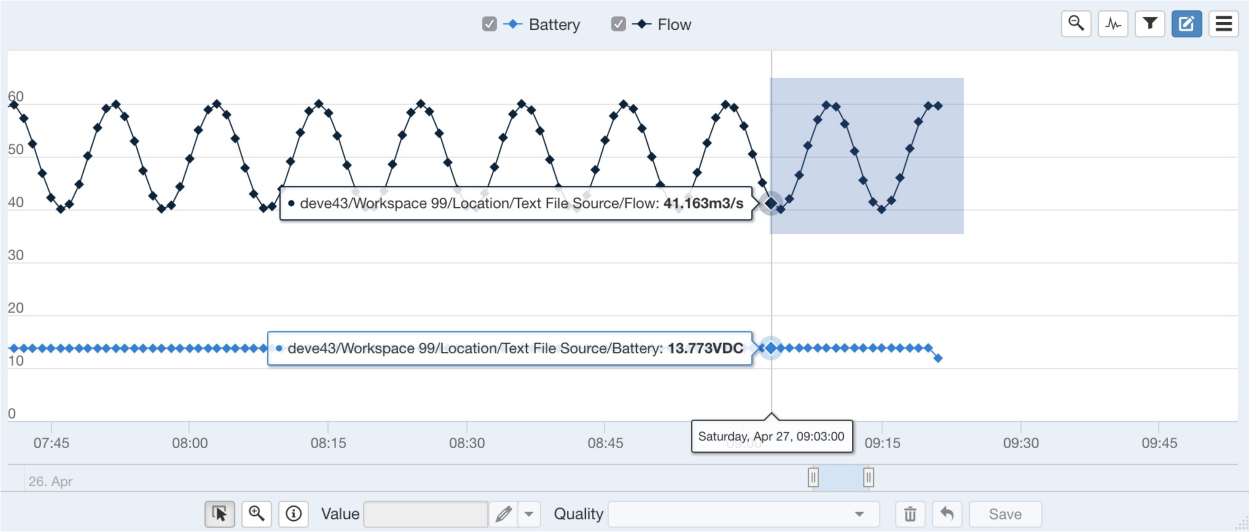
While selecting records, hold the **shift key to add** or **alt key to remove** from the current selection.

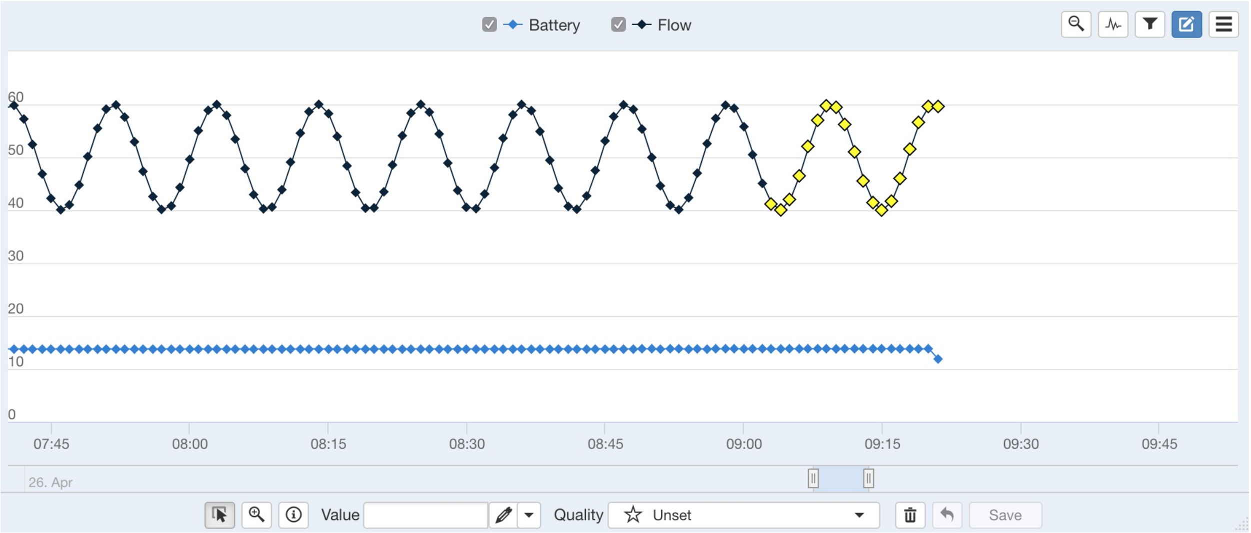

☑ Battery
☑ Flow
60
50
40
30
20
10
0
07:45
08:00
08:15
08:30
08:45
09:00
09:15
09:30
09:45
26. Apr
Save

Value 59.996

Quality ☆ Unset

Click and drag over the chart to quickly select multiple records.


☑ Battery
☑ Flow
60
50
40
30
20
10
0
• deve43/Workspace 99/Location/Text File Source/Flow: **41.163m3/s**
• deve43/Workspace 99/Location/Text File Source/Battery: **13.773VDC**
07:45
08:00
08:15
08:30
08:45
Saturday, Apr 27, 09:03:00
09:15
09:30
09:45
26. Apr
Value
Quality
Save

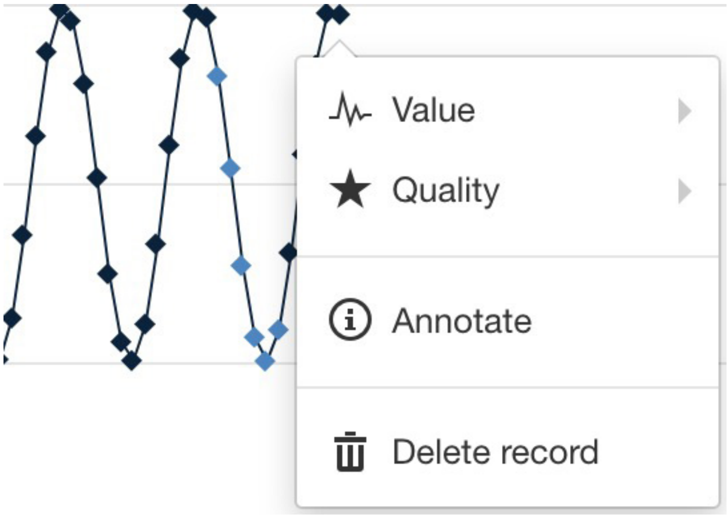

☑ Battery
☑ Flow
60
50
40
30
20
10
0
07:45
08:00
08:15
08:30
08:45
09:00
09:15
09:30
09:45
26. Apr
Value
Quality
☆ Unset
Save

Apply *filters* (page 202) to select records based on quality.

Editing records

An individual record can include **value**, **quality** and **annotation**.

Right-click on an editable data point or selection of data points to quickly perform operations via the chart context-menu.


Value
Quality
Annotate
Delete record

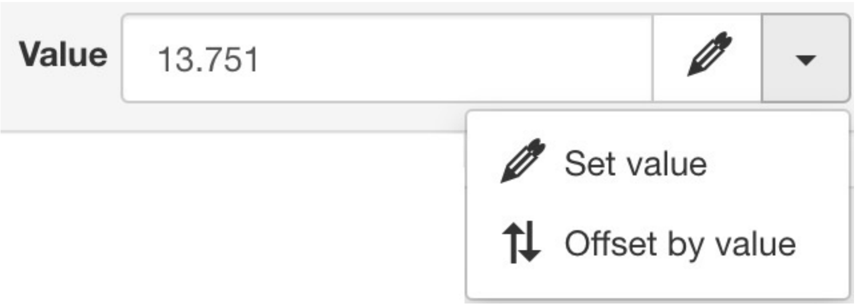
Set value

Enter a new value to be assigned to the selected data point(s) and press enter or click the *set value* icon. Change the functionality of the value input by selecting a value operation from the dropdown menu.

`Set value` assigns a specific value to selected records.

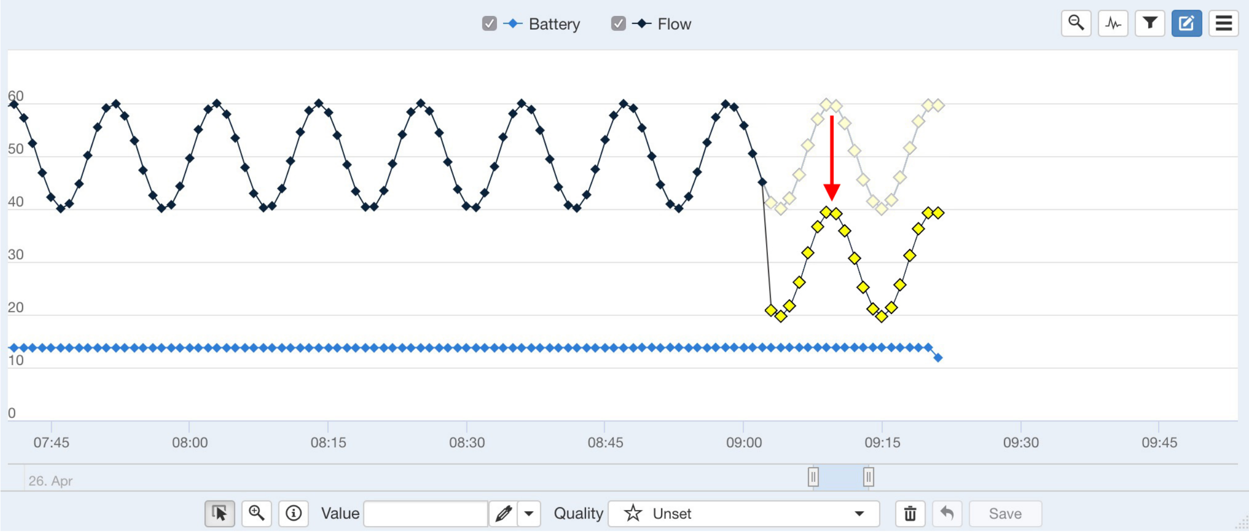
`Offset by value` adds a value to to selected records.

`Scale by value` multiplies selected records by a specific value.


Value
13.751
Set value
Offset by value

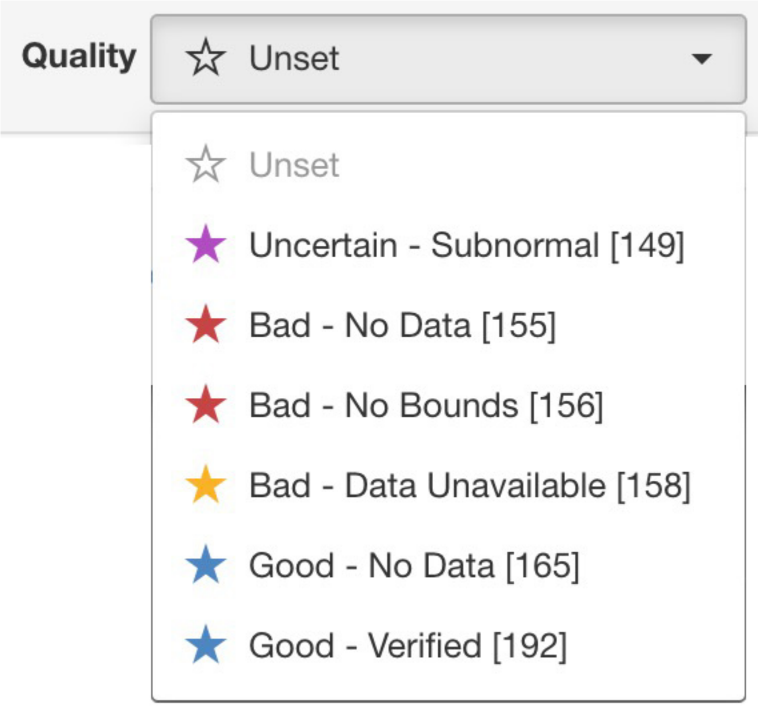
You can also use *set value* to unset a value (leave blank) which will result in historic charts showing a gap in the series when displaying RAW historic data.

Charts support *drag and drop* of selected data point(s) to free-hand edit record values.


☑ Battery
☑ Flow
60
50
40
30
20
10
0
07:45
08:00
08:15
08:30
08:45
09:00
09:15
09:30
09:45
26. Apr
Value
Quality
☆ Unset
Save

Set quality

☆ Select a quality to be assigned to the selected data point(s) from the dropdown quality menu. You can only assign *quality codes* (page 577) that have been pre-configured in *account settings* (page 266).

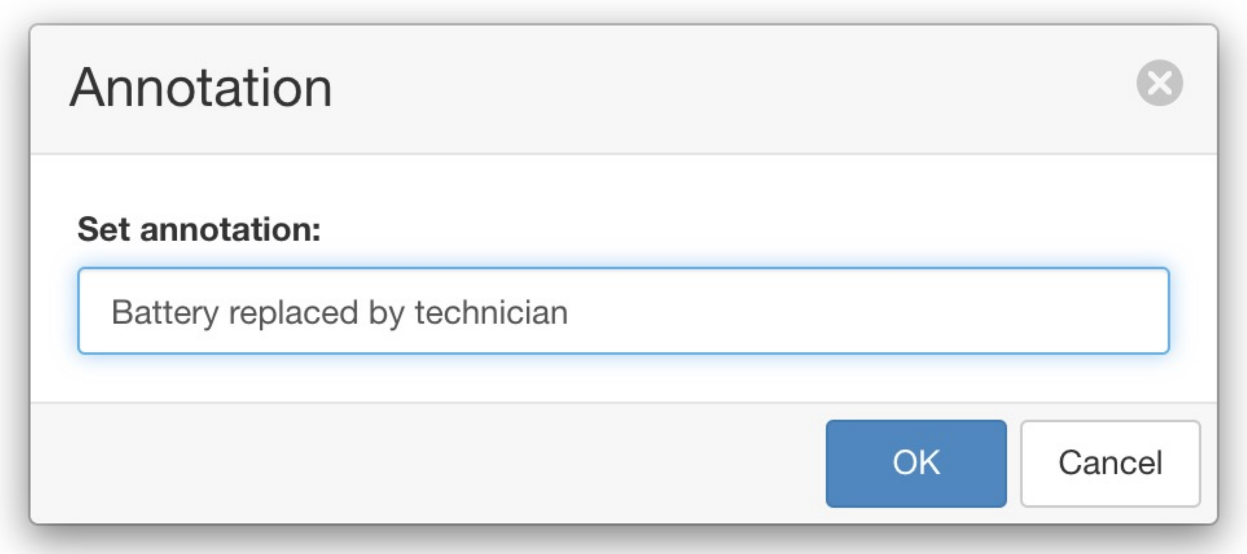


Quality
☆ Unset
☆ Unset
★ Uncertain - Subnormal [149]
★ Bad - No Data [155]
★ Bad - No Bounds [156]
★ Bad - Data Unavailable [158]
★ Good - No Data [165]
★ Good - Verified [192]

Set annotation

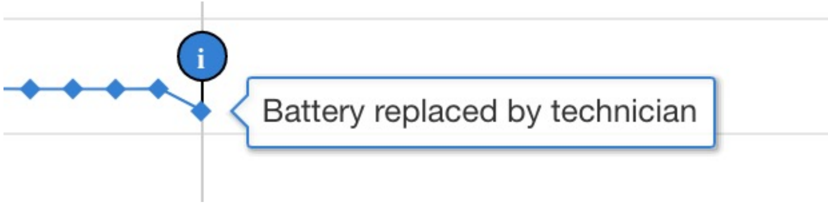
ⓘ To set an *annotation* (page 578) for a single record either change to *annotate mode* from the edit toolbar and click on a data point or right-click on a data point and select *annotate* from the context menu.

Annotations can be set on multiple data points at once by first selecting the data point then selecting *annotate* from the context menu.


Annotation
OK
Cancel

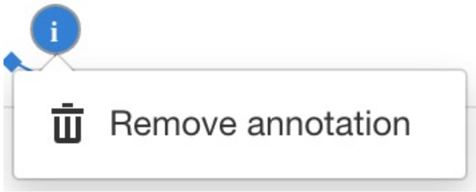
Set annotation: Battery replaced by technician

Hover or click the annotation icon to display the annotation text.



Battery replaced by technician

To remove an annotation clear the text in the annotation entry dialog or right-click on the annotation icon and select *remove annotation* from the context menu.


i
Remove annotation

Delete record

The delete operation permanently removes the selected records from the historic dataset.

Undo last edit

The *undo* command reverts the last edit operation. You can continue to *undo* all edit operations since the last save.

Save changes

Save all changes to the modified records.

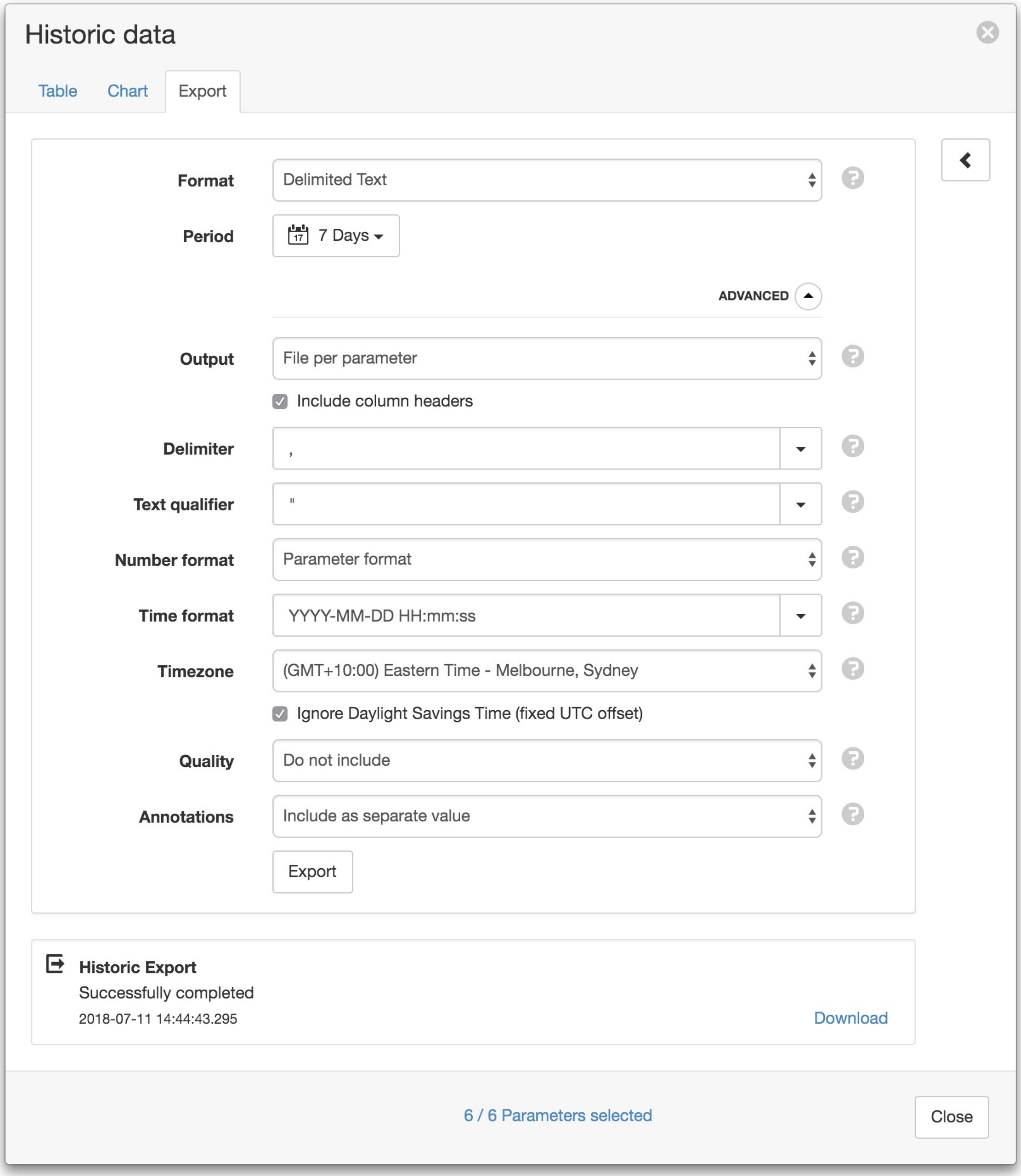
Note: All saved changes are permanent. You should restrict access with the *edit data* user *permission* (page 270) and audit changes via the *events* (page 43) view.

2.8.4 Export

Historic export is accessible from the List View toolbar and Node context menus. You can export all data in the system via the *Base Node* context menu or use filters and the List View for precision selection. Exporting historic data requires the *export data* permission.

The export process runs in the background so you can continue your work (including triggering additional exports) and you will be notified via *Messages* upon completion. Historic export data is always packaged into a compressed zip archive and available as a secure download. The exported files will automatically be removed from the server/messages after 12 hours.

Use the *Advanced* button to show/hide the advanced export options.



Format: Delimited Text

Period: 7 Days

Output: File per parameter

☑ Include column headers

Delimiter: ,

Text qualifier: "

Number format: Parameter format

Time format: YYYY-MM-DD HH:mm:ss

Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (fixed UTC offset)

Quality: Do not include

Annotations: Include as separate value

Historic Export
Successfully completed
2018-07-11 14:44:43.295
Download

6 / 6 Parameters selected

Period Select the date range for the data to be exported.

Format Select the export format of the file(s):

Delimited Text

Data is stored as rows of values separated with a specific *delimiter* character.

JSON Time Series

Data is stored in the *JSON Time Series* (page 572) format.

Output Select how the parameter data should be grouped:

File per parameter

Every parameter will be exported into a separate file.

Interleaved

All parameters will be exported into a single file with values interleaved on timestamp.

Optionally include header labels for each column.

Delimiter Specify the *delimiter* character to use for separating the values.

Text qualifier Specify a character to use for surrounding text values.

Number format Specify how number parameters should format values:

Parameter format Use the format configured in each parameter.

Full resolution Will ouput the value with all available decimal places.

Custom Specify a custom *format* (page 147) to be used.

Time format Specify the output format for timestamps. Select a preset format from the drop down list or specify a custom format using *time format tokens* (page 583).

Timezone Select the *timezone* (page 581) to use for the exported data.

Optionally ignore Daylight Savings Time if the data should use a fixed UTC offset.

Quality Specify how quality information should be exported:

Do not include Quality is ignored.

Include with value Quality code will be included in the same column as the value, separated with a Quality delimiter.

Include as separate value Quality code will be included as a separate column in the file.

Quality delimiter Specify the *delimiter* character to use for separating the value and quality code when *Include with value* is specified for the *Quality* export option.

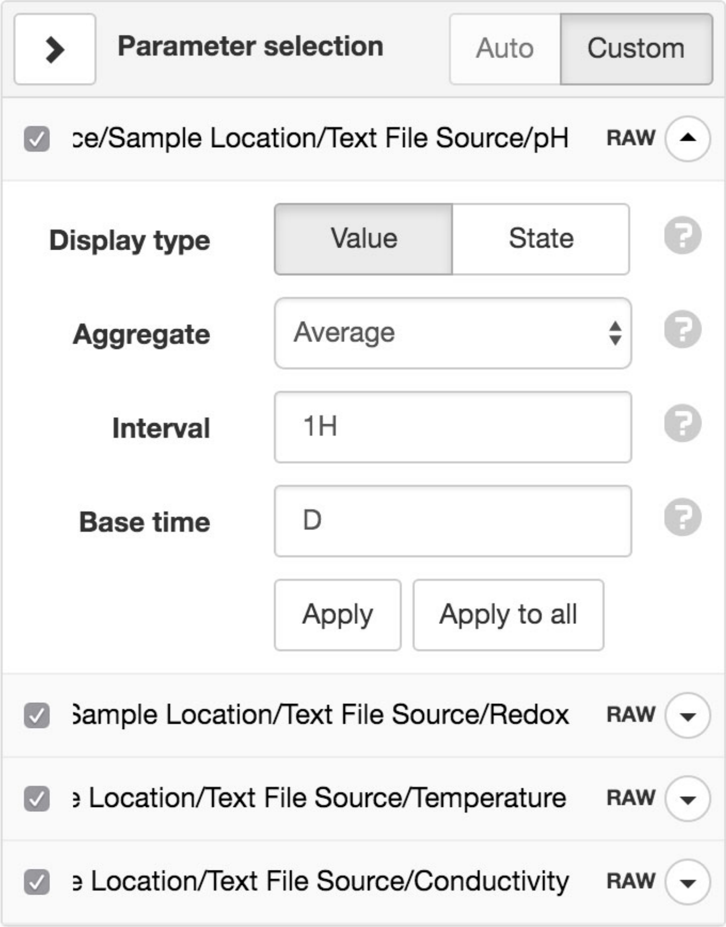
Annotations Specify how annotations should be exported:

Do not include Annotations are ignored.

Include as separate value Annotations will be included as a separate column in the file.

Parameter selection

The historic export dialog will only display the first 15 selected parameters by default. Use the *Parameter selection* panel accessible via the arrow on the right to refine your selection and change how the data should be exported, including any aggregate calculations to be applied.



Parameter selection: Custom

☑ ce/Sample Location/Text File Source/pH RAW

Display type: Value

Aggregate: Average

Interval: 1H

Base time: D

☑ Sample Location/Text File Source/Redox RAW

☑ e Location/Text File Source/Temperature RAW

☑ e Location/Text File Source/Conductivity RAW

Display type *Value* displays the parameter values.

State displays the state name associated with each value.

Aggregate Aggregates provide a method to resample raw data over a specified period. See the *list of available aggregates* (page 569) for full details. Select RAW to display the original raw data with no aggregation applied (Interval and Base time options will be hidden).

Interval Specify the data range that is included for each calculated value. Example *30M* will calculate a value for each 30 minute window of data.

Base time Base time is used to determine the start of the aggregate calculations. Example *D+9H* will start the calculations at 9am (start of current day + 9 hours). See *working with relative time* (page 585) for full details.

2.8.5 Import

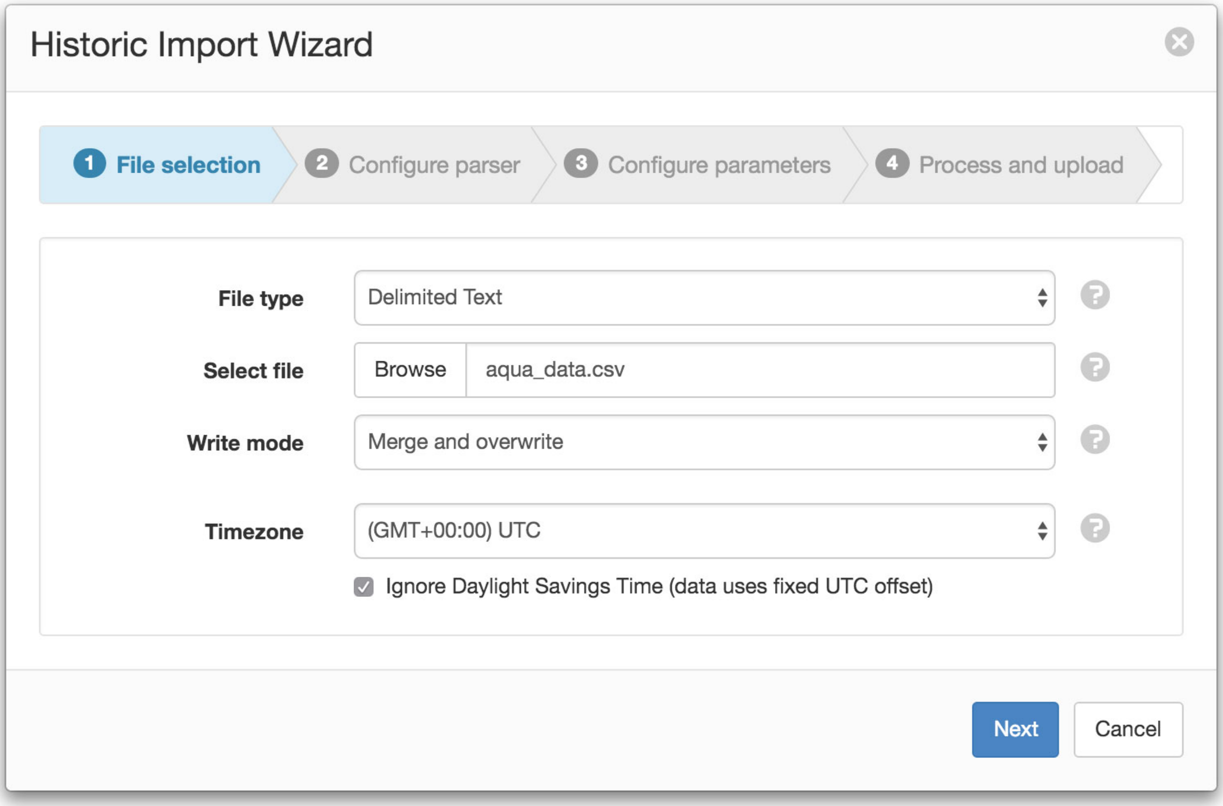
Historic Import is accessible from the Data Source context menu in the Workspaces Tree. You can upload/import historic data from a locally accessible file, into New or Existing *Parameters* (page 147), or update the historic coordinate data for *Locations* (page 56).

For automatic collection of your data you should configure the *Connection* (page 115) and *Collection* (page 119) properties of a file Data Source.

The Historic Import Wizard will guide you through the following steps to successfully import your time series data:

Select a file

Select a file to import from your computer or device and configure import options.


Historic Import Wizard

1 File selection
2 Configure parser
3 Configure parameters
4 Process and upload

File type: Delimited Text
Select file: aqua_data.csv
Write mode: Merge and overwrite
Timezone: (GMT+00:00) UTC
☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

File type Select the type of file you would like to import:

Delimited Text

Data is stored as rows of values separated with a specific *delimiter* character.

JSON Time Series

Data is stored in the *JSON Time Series* (page 572) format. Note: JTS files to be imported must contain a *columns* header that specifies *name* and *dataType* of each column included in the *data*.

Select file Click or touch the *Browse* button to select a file from your computer or device. There is a 250MB file size limit per import. To import a file exceeding the size limit you should split it into smaller chunks (< 250MB) and import separately.

Write mode Select how the new data will be imported:

Merge and overwrite [API: MERGE_OVERWRITE_EXISTING]

Insert the imported data into the existing historic data and overwrite the existing values when timestamps match.

Merge and preserve [API: MERGE_PRESERVE_EXISTING]

Merge the imported data into the existing historic data and do not overwrite existing values when timestamps match.

Replace [API: INSERT_DELETE_EXISTING]

Remove all existing historic data within the range of data being imported and replace with imported data.

[API: MERGE_UPDATE_EXISTING]

Merge the imported data into the existing historic data and and update specific record attributes when timestamps match.

[API: MERGE_FAIL_ON_EXISTING]

Merge the imported data into the existing historic data but fail if timestamps match.

[API: INSERT_FAIL_ON_EXISTING]

Insert new data only if there is no existing historic data within the range being imported.

[API: DELETE_RANGE]

Delete historic data encapsulated by the range of the imported data.

[API: DELETE]

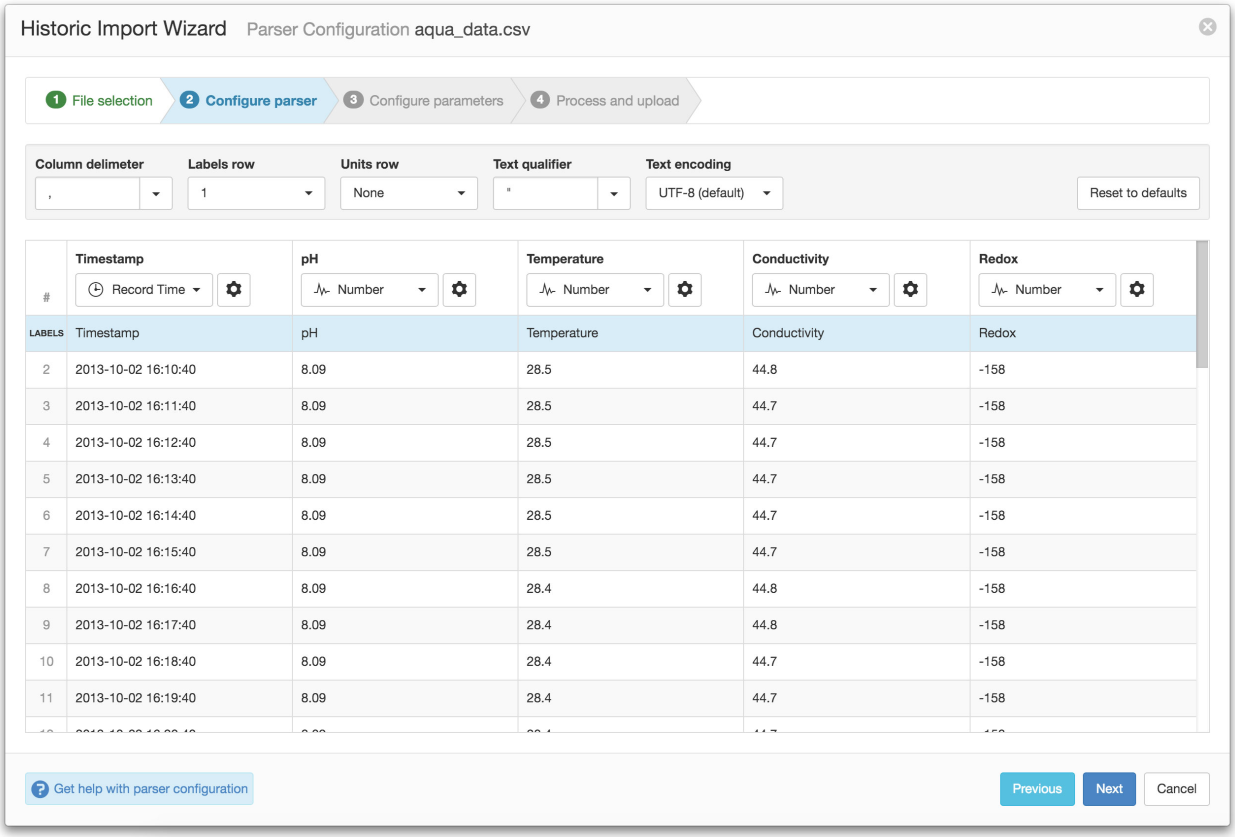
Delete historic data that matches the timestamps of the imported data.

Timezone Select the timezone of the data being imported. This is generally the location of the sensor or device, but can be adjusted as required.

Ignore Daylight Savings Time Check this option if the Source does not offset the data timestamps to account for DST.

Use the Text Parser to define Series

The Text Parser allows you to define how the delimited text file being imported should be processed including defining series to be assigned to Parameters. See *Text Parser Configuration* (page 123) for a detailed guide to using the Text Parser.

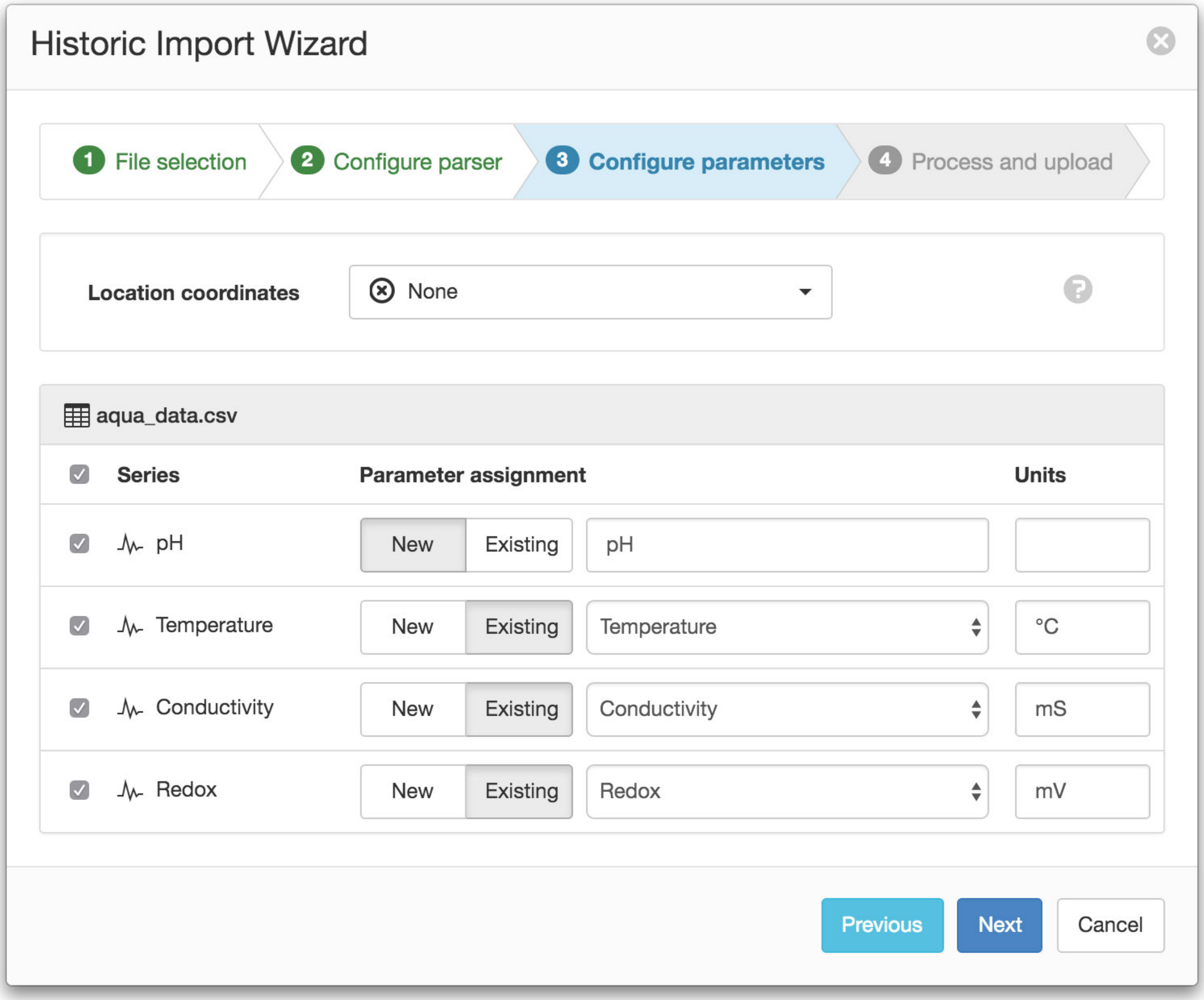

Historic Import Wizard
Parser Configuration aqua_data.csv
1 File selection
2 Configure parser
3 Configure parameters
4 Process and upload
Reset to defaults
Get help with parser configuration
Previous
Next
Cancel

Column delimeter: ,
Labels row: 1
Units row: None
Text qualifier: "
Text encoding: UTF-8 (default)

#	Timestamp	pH	Temperature	Conductivity	Redox
	Record Time	Number	Number	Number	Number
LABELS	Timestamp	pH	Temperature	Conductivity	Redox
2	2013-10-02 16:10:40	8.09	28.5	44.8	-158
3	2013-10-02 16:11:40	8.09	28.5	44.7	-158
4	2013-10-02 16:12:40	8.09	28.5	44.7	-158
5	2013-10-02 16:13:40	8.09	28.5	44.7	-158
6	2013-10-02 16:14:40	8.09	28.5	44.7	-158
7	2013-10-02 16:15:40	8.09	28.5	44.7	-158
8	2013-10-02 16:16:40	8.09	28.4	44.8	-158
9	2013-10-02 16:17:40	8.09	28.4	44.8	-158
10	2013-10-02 16:18:40	8.09	28.4	44.7	-158
11	2013-10-02 16:19:40	8.09	28.4	44.7	-158

Assign Series to Parameters and Location

Assign the newly defined Series to New or Existing Parameters. You can also assign the series to the Source's Location for the import of historic coordinate data.



Location coordinates: ⊗ None

aqua_data.csv

☑	Series	Parameter assignment		Units
☑	pH	[✓ New] Existing	pH	
☑	Temperature	New [✓ Existing]	Temperature	°C
☑	Conductivity	New [✓ Existing]	Conductivity	mS
☑	Redox	New [✓ Existing]	Redox	mV

Location Coordinates The imported file can optionally provide Location Coordinates from a coordinate series or a pair of numeric series (lat/lng) and will import the data into the Location Node this Source is contained within.

Parameter Assignment Assign Series to New or Existing parameters by toggling the New/Existing button (only enable when there are existing Parameters matching the data type of the Series). Uncheck any Series you do not want want to import.

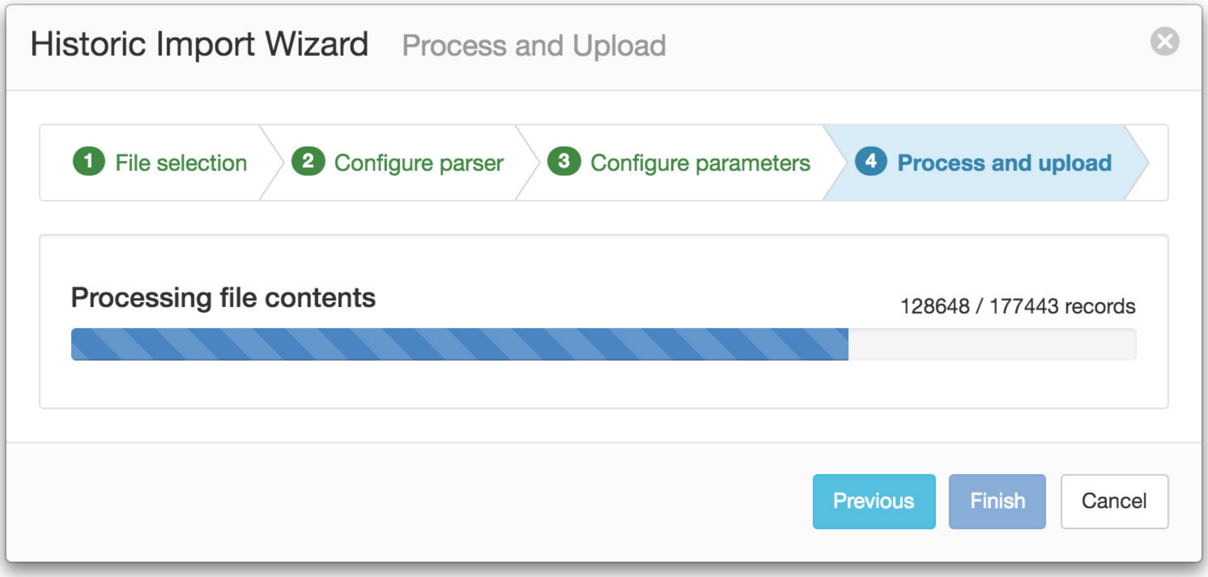
Any newly created parameters will be created within the Source and shown as GREYED out in the Workspaces Tree and Content Views to distinguish them from parameters assigned to series being automatically collected by the Data Source.

Parameters can be re-assigned to new Series at any time without loosing existing historic data.

The series icon indicates the *type of parameter* (page 49) that can be assigned to the Series.

Process and Upload

The Process and Upload screen displays a progress bar and status information about the current operation. If any problem is encountered an error message and *Retry* button will be displayed, otherwise the *Successfully Completed* status message will be shown. Click *Finish* to close the import wizard.


Historic Import Wizard
Process and Upload
1 File selection
2 Configure parser
3 Configure parameters
4 Process and upload
Previous
Finish
Cancel

Processing file contents

128648 / 177443 records

Note: Files containing a large number of records may be time consuming to process. Some browsers/devices may also enforce certain limits which prevent successful import of large files even if they are smaller than the 250MB limit.

2.9 Sharing and Security

Every interaction with the system is authenticated to ensure the user performing the interaction or operation has permission to do so.

Eagle.io provides 3 distinct types of user security in additional to anonmyous public access:

2.9.1 Owner

The user that signed up for the account. Only this user can close the account or change the subscription plan. The user has full unrestricted access to all assets and account settings including *Managed accounts* (page 283).

2.9.2 Administrator

A user can be *added as an Administrator* (page 269) of an account which provides them full unrestricted access to all assets and account settings excluding closing the account or changing the subscription plan. Administrators also have full access to *Managed accounts* (page 283).

2.9.3 Workspace

Individual users or *groups* (page 269) can be *added to a Workspace* (page 54) and assigned a security *role* (page 270) specific to the Workspace (role-based security). The security roles are maintained by administrators and the owner. Each role has a set of security permissions assigned (e.g. acknowledge alarms, export data, configure) which define the interactions allowed by a user or group for all assets (nodes) in the Workspace.

Workspaces can be shared with anyone. Users new to eagle.io (https://eagle.io) will receive an email notification prompting them to confirm their email address and configure their personal preferences. Select *Security* from the Workspace Node context menu to display the Security dialog. See *Workspace Security* (page 54) for full details.

You can restrict user and group access to any Node in the Workspace by opening the corresponding *Node Security* (page 58) dialog and assigning the *No Access* role.

Note: The *Events View* (page 43) provides an audit trail for all user interactions and system events.

2.9.4 Public Access

You can *enable public access* (page 102) on specific nodes to provide a URL for anonymous public access to the resource. Public access can be enabled on custom charts, dashboards, attachments and parameters.

Use the public access link for standalone viewing of the content in a web browser or embed the content in your own website.

Note: The Public Access feature is not included in *Starter* accounts.

2.10 Processing and Logic

Processing and Logic provides a programming environment to perform calculations, make decisions and take actions.

Some examples include:

- *Calculate average of multiple Parameters* (page 224)
- *Transform a series using an equation* (page 224)
- *Generate a series forecast to provide predictive alarming* (page 226)

Programs are expressed as JavaScript (http://www.ecma-international.org/ecma-262/5.1/), stored as configuration in Process Nodes, and executed on a schedule or automatically as new data is acquired. Each program can interact with all Nodes in the current Workspace and any associated time-series data.

2.10.1 Process Nodes

There are two types of Nodes that can have a program defined as part of their configuration. The first is a Process Parameter that allows you to transform existing data; the second is a type of Data Source called a Processor that allows you to create new data values.

A program should include three distinct stages:

- Define input nodes (using the NODE, NUMBER, TEXT, TIME or BOOLEAN functions)
- Apply processing to input nodes (or associated time-series data)
- Output results (either by returning a value or setting an attribute of a node)

	Process Parameter	Processor
Node Type	Parameter	Data Source
Number of inputs	3	25
Number of outputs	1	100
Execution trigger	On input update	On input update or schedule
Maximum Duration	0.2 seconds	2 seconds
Output timestamps	Defined by first input	Defined by first input or schedule

Process Parameter

A Process Parameter is a type of Parameter that has a program defined as part of it's configuration and can be created under any Data Source. The first input referred to by the program (known as the primary input) will be used to define the timestamps used by the output of the process. Each execution of the program must return a single output value of the expected type. This output can then be viewed in the same way as any other Parameter (for example, it can be shown as a table or chart, exported, used as input for a different process etc.). The output can also have states defined which will trigger alarms.

Examples

```
// Calculate the average currentValue of Parameters from different Locations
var param1 = NODE('Location 1/Source/Param');
var param2 = NODE('Location 2/Source/Param');
var param3 = NODE('Location 3/Source/Param');

return (param1 + param2 + param3) / 3;
```

```
// Transform the currentValue of Param using a 3rd order polynomial
var a = 7.24;
var b = -10.004;
var c = 4.328;
var d = -0.4667;
var v = NODE('Param').currentValue;

return a + (b*v) + (c * Math.pow(v,2)) + (d * Math.pow(v,3));
```

```
// Assign a bad quality code to value spikes and offset the timestamp by one␣
↪hour
var param = NODE('Param');
var ts = T(param.currentTime).subtract(1,'hours');
var v = param.currentValue;
var q;

if( v > 999 ) {
    q = 156;
}

return {"time": ts,"value": v,"quality": q};
```

Note: Assigning quality codes to value spikes can also be achieved by configuring the Quality of a *Parameter State* (page 150).

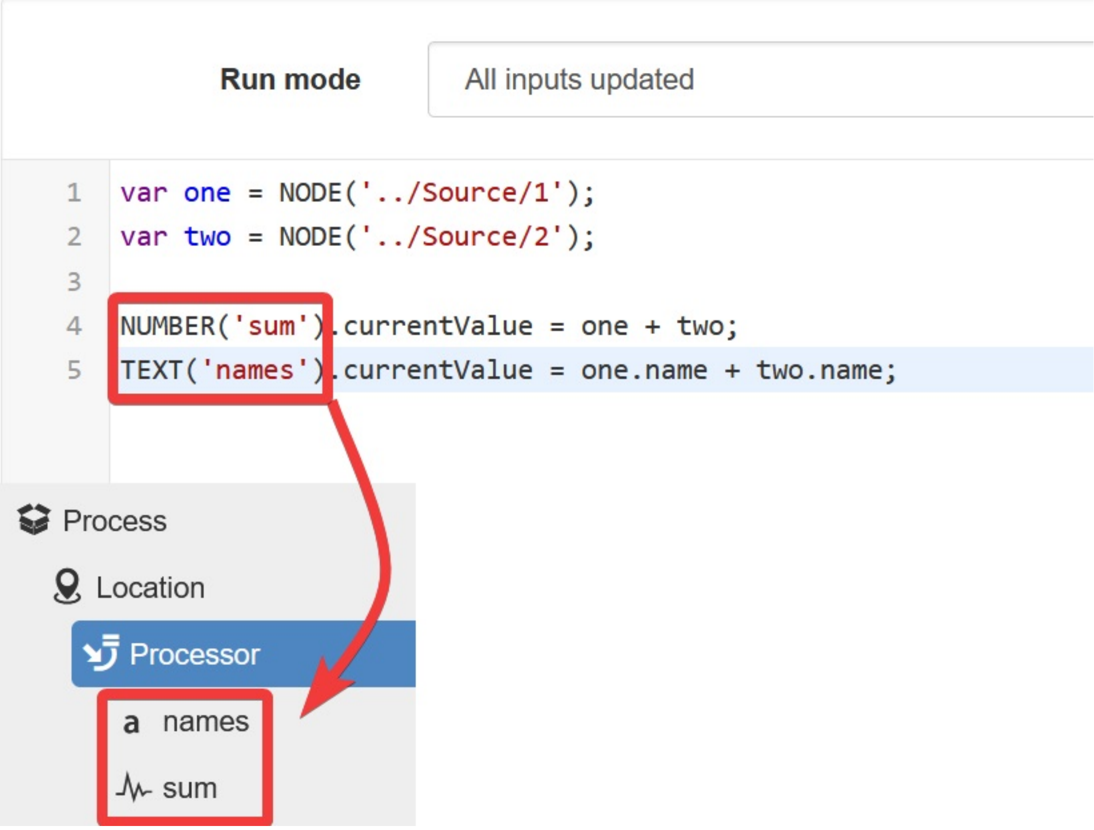
Processor

A Processor is a type of Data Source containing a program that generates multiple output values, which are stored as new Parameters. The timestamps of the output data can be generated by scheduling the execution of the process, in the same way that data acquisition of a regular Data Source can be scheduled. Alternatively, the timestamps can be defined by the first input, just as with Process Parameters.

Output Creation

Outputs are defined as part of your program and automatically created as Parameters under your Processor when the program is saved. To update a Processor output, use one of the four Node creation functions

(NUMBER, TEXT, TIME or BOOLEAN) to obtain a reference to the output, then assign a value to a specific attribute, e.g. `TEXT('output').currentValue = "Hello world";`.



Run mode All inputs updated

```
var one = NODE('../Source/1');
var two = NODE('../Source/2');

NUMBER('sum').currentValue = one + two;
TEXT('names').currentValue = one.name + two.name;
```

Examples

```
// Assign values to multiple outputs
var quotient = NODE('../Source/Param') / 5;
var remainder = NODE('../Source/Param') % 5;

NUMBER('quotient').currentValue = quotient;
NUMBER('remainder').currentValue = remainder;
```

```
// Assign a bad quality code to value spikes and offset the timestamp by one hour
var param = NODE('Param');
var output = NUMBER('Output');
var q;

if( v > 999 ) {
    q = 156;
```

(continues on next page)

(continued from previous page)

```
}

// NOTE: currentTime & currentQuality must be assigned prior to currentValue
output.currentTime = T(param.currentTime).subtract(1,'hours');
output.currentQuality = q;
output.currentValue = param.currentValue;
```

```
// Calculate average currentValue of all nodes ending with Temperature in the current Workspace
var sum = 0;
var temps = NODES(WORKSPACE + '/.*Temperature');
var avg = NUMBER('Output');

for( var i=0; i<temps.length; i++ ) {
    sum = sum + temps[i];
}

avg.currentValue = sum / nodes.length;
```

2.10.2 Environment

Global Variables

Global variables are references to Nodes and other values that are related to the currently executing process.

NOW	Current timestamp being evaluated by the process
THIS	Reference to currently executing *Process Node* (page 223)
SOURCE	Reference to Data Source of currently executing process
LOCATION	Reference to Location of currently executing process
WORKSPACE	Reference to Workspace of currently executing process

Global Functions

Global functions can be used to obtain a reference to a Node, authorize access to a Workspace or convert a time expression.

NODE(*path* **)**	Retrieve node by path
NODES(*path expr* **)**	Retrieve one or more nodes by path expression A path expression begins with an ordinary *path* (page 227) and includes a regular expression (https://en.wikipedia.org/wiki/Regular_expression) suffix matching one or more node names, e.g. retrieve all workspace nodes ending with *input*: `/Workspace/.*input` Retrieving nodes from outside the current Workspace is not supported
NUMBER(*path* **)**	Create or retrieve NUMBER Parameter by path
TEXT(*path* **)**	Create or retrieve TEXT Parameter by path
TIME(*path* **)**	Create or retrieve TIME Parameter by path
BOOLEAN(*path* **)**	Create or retrieve BOOLEAN Parameter by path
AUTH(*slug*, *api-key* **)**	*Authorise access to a Workspace* (page 228) using an API key
T(*expr* **)**	Convert a time expression to a Moment.js (https://momentjs.com) timestamp A time expression can be any of the following: • ISO8601 time string, e.g. `'2018-08-03T16:27:58+10:00'` • Number of milliseconds since Unix epoch, e.g. `1533277715816` • Node time attribute, e.g. `NODE('param').currentTime` • Current timestamp, e.g. `NOW`
Q(*name* **)**	Convert a quality name to a quality code

Paths

A path describes a reference to a Node and can be expressed as an absolute path, or a path that is relative to the current Process Node. Standard UNIX style path syntax is used, so `..` refers to the parent Node in the Workspace tree.

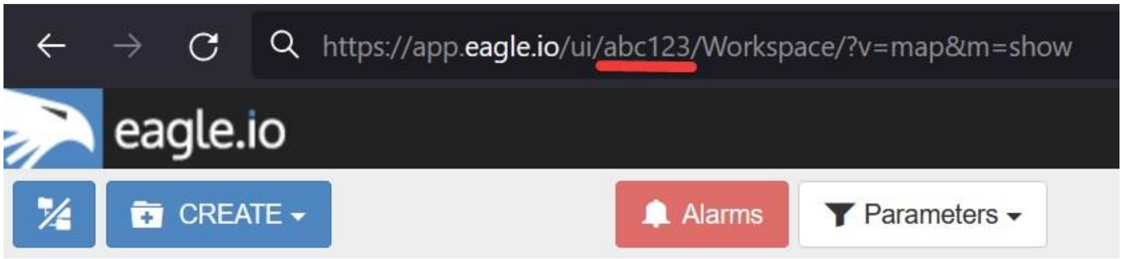
In addition to using names to identify Nodes, a path may also contain either a *Node Id* (page 444) or *Custom Id* (page 444). Named elements may also be included after the Node identifier. Note that Node identifiers should be enclosed by braces when included in a path, e.g. `{5ae92a139097830ee5711d94}` or `{@customId}`.

Examples	
`/Workspace/Location/Source/Parameter`	Absolute path to a Parameter
`../Location 2/Source/Parameter`	Path to a Parameter, relative to the Process Node
`{5b6a3fc24e960d0e7497b4b4}`	Path to a Node, identified by **Node Id**
`{@myParam}`	Path to a Parameter, identified by **Custom Id**
`{5ae92a139097830ee5711d94}/Parameter`	Path to a Parameter, relative to Source **Node Id**
`{@mySource}/Parameter`	Path to a Parameter, relative to Source **Custom Id**

Workspace Authorisation

Paths that reference a Node outside the current Workspace (including Nodes in other accounts) require authorisation to verify your process has the appropriate permission. This is achieved using the *AUTH* function, which must be used in your progam before referencing any Nodes from the foreign Workspace.

The *AUTH* function declares an association between an account identifier (or *slug*) and an *API key* (page 272). The *slug* for an account is visible in your browser address bar, immediately preceeding the Workspace name, when any Node is selected.



The following code snippet demonstrates declaring authorisation to an account (with slug `abc123`) and accessing a Node within the foreign Workspace.

```
// Authorise access to a node in a foreign Workspace
AUTH('abc123','eM1i7Pugp8EpSQNLAXiDT3DJJUAK2mOn17guVeTu');

return NODE('/abc123/Workspace/Location/Source/Parameter').currentValue;
```

Note: If all the Node paths in your program are in the same Workspace as your program, then the *AUTH* function is not required.

Aggregate Expressions

Aggregate Expressions provide a means of aggregating input data supplied to your program and may be optionally included as a suffix to any parameter path.

The three components of an aggregate expression must be expressed in order and separated by a semi-colon:

- *Aggregate Type* (page 569)
- *Base Time* (page 585)
- *Interval* (page 585)

Examples	
`Param 1`	Raw data
`Param 1;AVERAGE;D;1H`	Hourly average
`Param 1;TOTAL;D+9H;1D`	Daily total calculated at 9am
`Param 1;COUNT;W;1W`	Number of values since the start of the week

Node Attributes and Values

A Node reference can be used to access the attributes of that Node using dot notation, including the data value if the Node is a Parameter.

Examples	
`LOCATION.name`	Name of the Location
`WORKSPACE.createdTime`	Creation time of the Workspace
`NUMBER("param1").offset`	Numeric offset of the Number Parameter
`NODE("param2").currentValue`	Current data value of the Parameter
`NODE("param3").newestTime`	Newest timestamp of the Parameter

A full reference of *Node attributes* (page 442) is documented as part of the HTTP API. Note that for calculations requiring the time of the newest value, this can be accessed via the `newestTime` attribute.

Implicit Node Values

Each type of Node reference can be used as an implicit value without using dot notation. For example, the implicit value field of a Parameter is `currentValue`, so the Node reference can be used as a direct substitue for the current data value of the Node. This means the following two statements will return the same result:

Statement 1, access the current data value of a Node reference using dot notation, add 10 and return the result:

```
return NODE("param1").currentValue + 10;
```

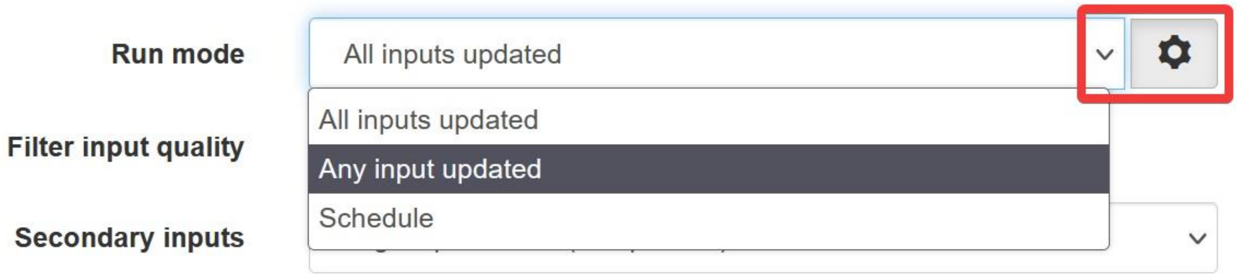
Statement 2, access the current data value of a Node reference using the implicit Node value, add 10 and return the result:

```
return NODE("param1") + 10;
```

The above example is able to treat the Node reference for **param1** as if it were a number, because this Node is a Number Parameter. Note that the type of any specific Node is always the same regardless of how the Node is referenced. This means that using the global functions `NUMBER("param1")` and `NODE("param1")` will both return a Node reference of type Number Parameter, assuming **param1** is a Number. Use care when relying on implicit Node values, because the implicit value field and type is different for different types of Nodes.

Node Type	Implicit value field	Implicit value type
Number Parameter	`currentValue`	Number
Text Parameter	`currentValue`	String
Time Parameter	`currentValue`	Time
Location	`currentValue`	Array of [latitude,longitude] decimal values
Source	`name`	String
Folder	`name`	String
Workspace	`name`	String

Process Trigger



Run mode: All inputs updated

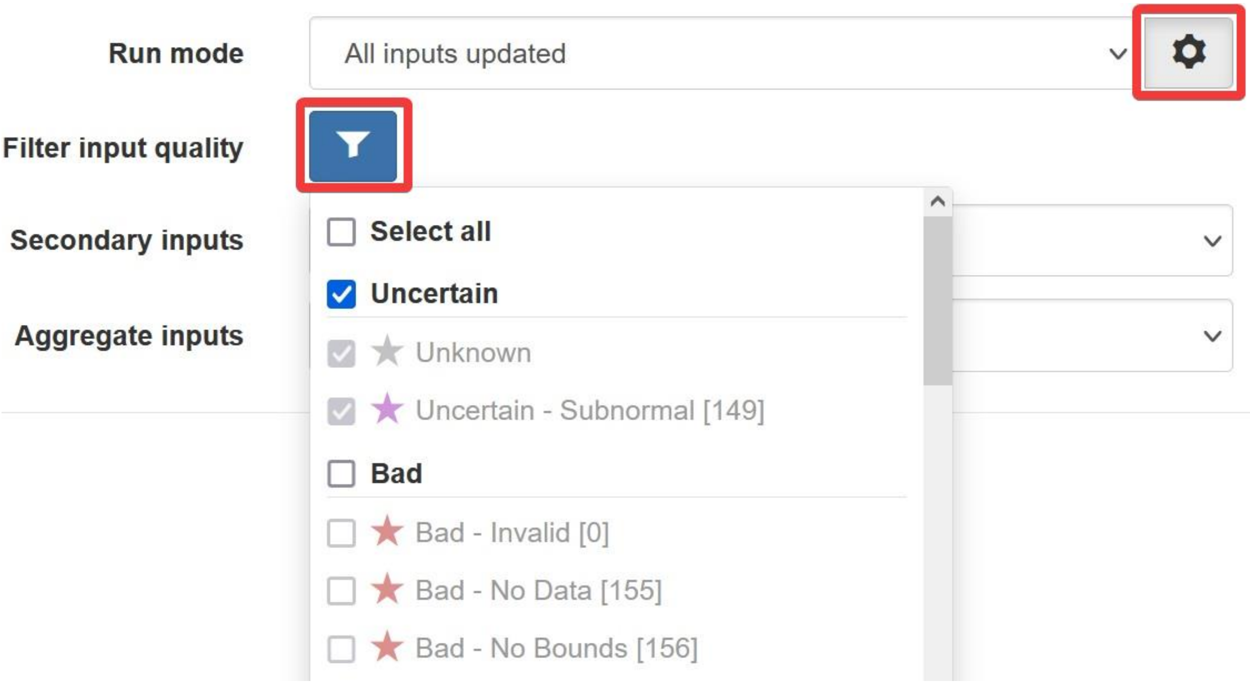
A process can be triggered to run in a number of ways:

Schedule	At a configurable interval (Processor only)
Any input updated	When any input advances beyond the current time of the process
All inputs updated	When all inputs have advanced beyond the current time of the process
Acquire Now	User action (causes Process Parameters to recalculate entire series)

Note: Each process timestamp is evaluated exactly once and only considers input data available at that time. Input data arriving after a process has advanced (e.g. Any input updated) may yield unexpected results.

Input Quality Filter

Input data to your program can be filtered according to its quality type to ensure only desired values are considered.


Run mode: All inputs updated

Filter input quality

☐ Select all

☑ Uncertain

☑ Unknown

☑ Uncertain - Subnormal [149]

☐ Bad

☐ Bad - Invalid [0]

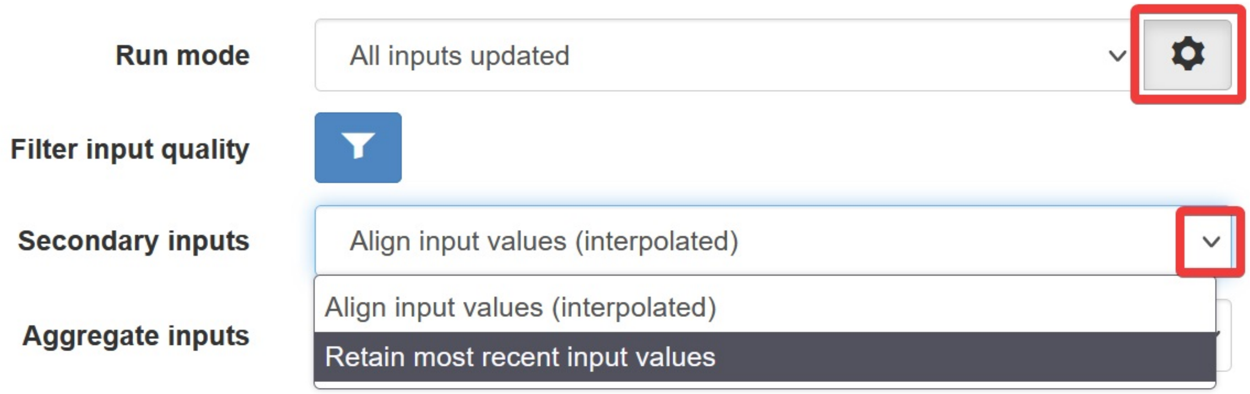
☐ Bad - No Data [155]

☐ Bad - No Bounds [156]

Secondary inputs
Aggregate inputs

By default, your program will exclude quality types according to the *Quality Codes* (page 266) configuration in your Account Settings. To ensure specific quality types are considered, a filter can be applied.

Secondary inputs


Run mode: All inputs updated

Filter input quality

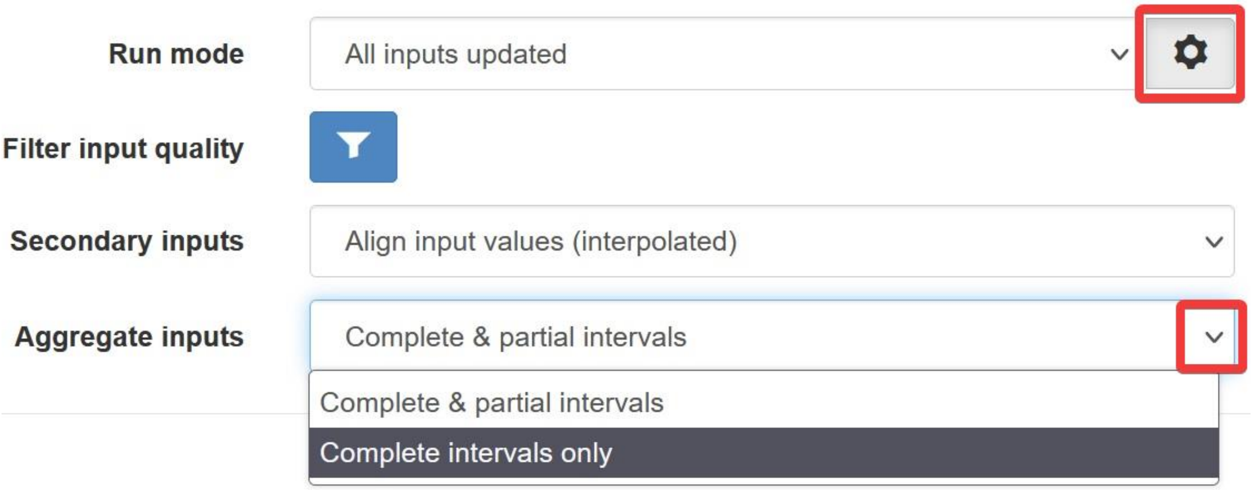
Secondary inputs: Align input values (interpolated)

Align input values (interpolated)
Retain most recent input values
Aggregate inputs

Secondary inputs may have records that occur at different times than the primary input, e.g. parameters from different data sources. Input data not aligned with the current execution timestamp can be interpreted by a process in two ways:

Align input values (interpolated)	Secondary values interpolated to align with the current execution timestamp
Retain most recent input values	Secondary values prior to the current execution timestamp are retained

Aggregate inputs



Run mode: All inputs updated

Filter input quality

Secondary inputs: Align input values (interpolated)

Aggregate inputs: Complete & partial intervals

Process aggregate inputs will have values that occur at a defined interval. Process execution can be delayed until the latest aggregate interval is complete:

Complete & partial intervals	Process will execute even during a partial aggregate interval
Complete intervals only	Process will only execute when the aggregate interval is complete

Shared Functions

Common processing routines can be defined as Shared Functions on the Processing tab of your Workspace configuration and accessed from any Process Node. Note that a Shared Function should not reference Global Variables or Global Functions.

```
// Convert Fahrenheit to Celsius
function toCelsius( f )
{
    return (5/9) * (f-32);
}
```

Third Party Libraries

A number of useful third-party libraries have been included to simplify common processing operations. Please refer to the documentation provided by each library for specific examples.

Library	Version	Description
`everpolate`	0.0.3	Step Function Interpolation (http://borischumichev.github.io/everpolate/#step) Linear Interpolation (http://borischumichev.github.io/everpolate/#linear) Polynomial Interpolation (http://borischumichev.github.io/everpolate/#poly) Linear Regression (http://borischumichev.github.io/everpolate/#regression)
`moment`	2.22.2	Parse, validate, manipulate, and display dates and times (https://momentjs.com)

These libraries can be accessed by your program using the `require` keyword, for example:

```
var linear = require('everpolate').linear;
```

2.10.3 Process Alarm

A Process Alarm is raised when a Process Node encounters an error either during validation or execution. A subsequent successful validation or execution of the process will clear the alarm.

2.10.4 Errors

The two general category of errors that can be encounted with Proccessing and Logic are validation errors and runtime errors.

Validation Errors

Validation errors are caused either by incorrect syntax or some other error condition that can be detected. These errors are experienced as immediate feedback when validating a program, and contain a specific error message which can be used to remedy the problem. A program will not be executed until it can be validated without errors.

Runtime Errors

Runtime errors can occur during the execution of a program even when it validates successfully. For example, if an input node referenced by the program is deleted from the workspace, the program will no longer be able to run successfully. These types of errors will be expressed as process alarms, and will contain a specific error message to help remedy the problem.

It is also possible to manually trigger a Runtime Error by using the `throw` keyword in conjunction with a custom error message:

```
throw 'custom error message';
```

2.10.5 Best Practices

- Program syntax should confirm to ECMAScript 5.1 (http://www.ecma-international.org/ecma-262/5.1/)
- Inputs should be declared before they are referenced, so that any line numbers in error messages will clearly refer to the declaration of a missing input.
- Very complex or time-consuming calculations may cause the process to exceed the allowed processing time limit.
- **Any** input that is referenced by a process will trigger execution of the process when that input is updated. Therefore, a large number of inputs being updated frequently or on different schedules can trigger a process to run very frequently. For example, if 9 inputs are updated every hour, but the 10th input is updated every minute, then the process will execute every minute.
- As the first referenced input is used to determine the output timestamp for a Process Parameter, the input which updates most frequently should be the first input.
- If the same algorithms are used repeatedly for different Process Nodes, this code should be expressed as a function and stored in the Workspace *Shared Code* (page 232).

2.11 Reports

Generate PDF reports using your data for download on-demand or schedule for email delivery.

Note: The reporting feature is currently a **pre-release** version that is subject to change without notice and is only available to limited accounts.

Refer to the *Quick Start* (page 234) guide to get up and running with reporting.

2.11.1 Quick start

This documentation is intended as a quick introduction to the reporting feature. Please refer to the *using the report editor* (page 238) section for a comprehesive guide to building reports.

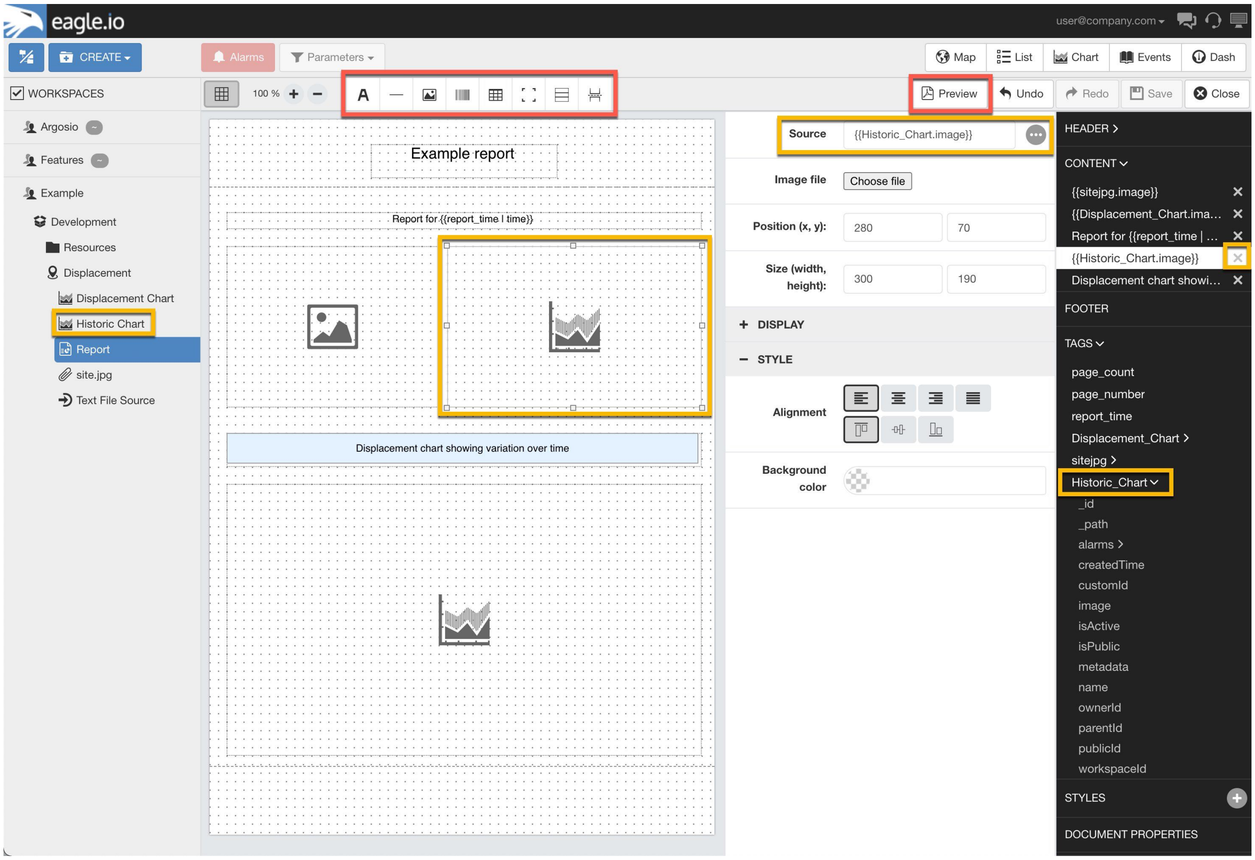
Creating a report

1. Using the `Create` menu in the workspaces tree, select `Report`. The *report node* (page 161) will be created and the report editor will open with a blank report template.
2. Click (or drag) a report element from the editor toolbar to insert it.
3. Drag nodes from the Workspaces tree to quickly insert them into the report template. eg. Drag an image attachment node or chart node to insert as an image in the report.

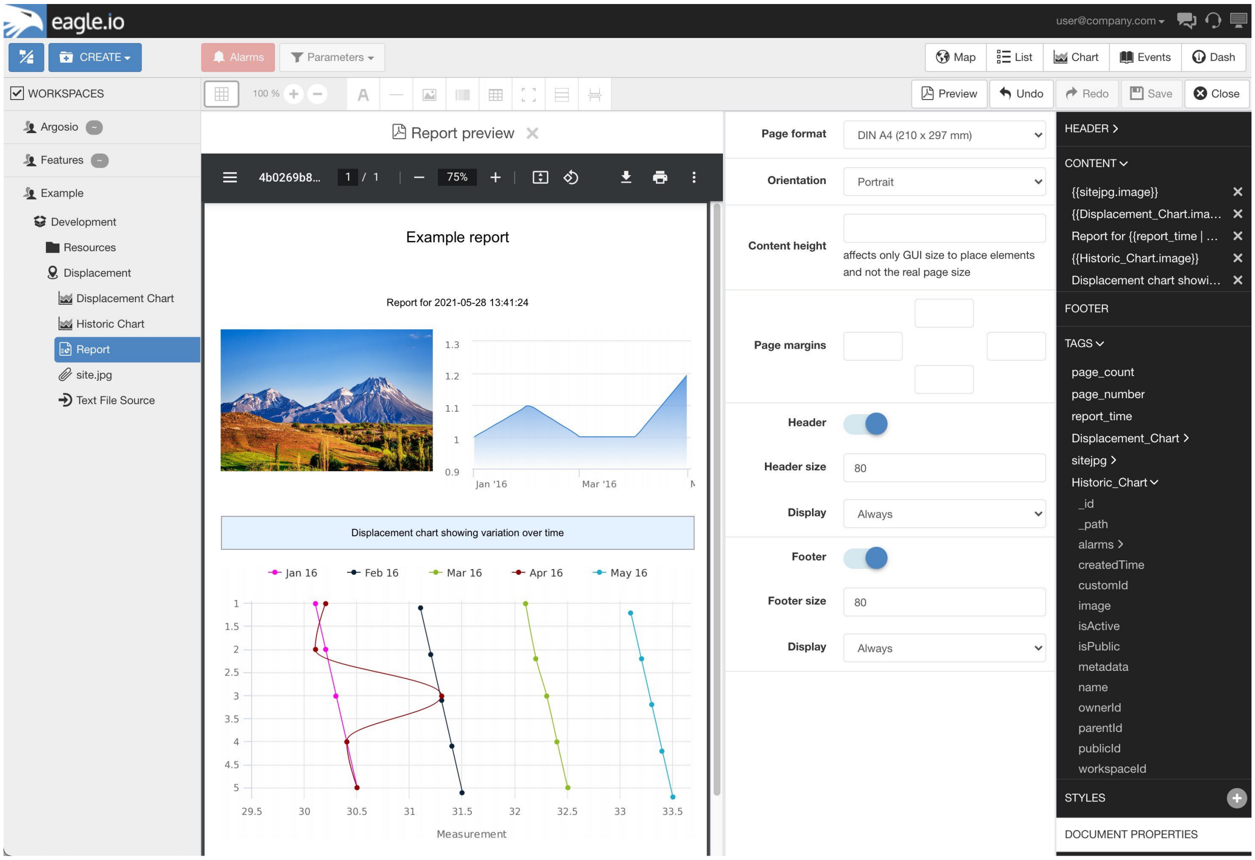
4. Remove an element by clicking the `x` next to the item in the `CONTENT` menu (on the right-hand side of the screen) or selecting the element(s) in the editor and pressing the `delete` key.
5. Insert page break elements to split content over multiple pages.
6. Click and drag the resize handle at the bottom of the page to adjust the content height so that more elements can be added to the report.
7. Click on the name of a linked node (automatically added after drag-drop from Workspaces tree) in the `TAGS` menu to display all of its available attributes.
8. Use *expressions* (page 523) directly inside report element content to control the output of the content and its formatting. A common scenario is to apply the *time* (page 545) expression filter to format the display of timestamps. eg. `{{report_time | time}}` or `{{report_time | time: "DD MMMM YYYY"}}`
9. Select *Preview* from the editor toolbar to generate a preview of the PDF report using the latest data.

Note: The report editor will automatically save changes made to the template.

Report editor


eagle.io
user@company.com
CREATE
Alarms
Parameters
Map
List
Chart
Events
Dash
WORKSPACES
100 %
Preview
Undo
Redo
Save
Close
Argosio
Features
Example
Development
Resources
Displacement
Displacement Chart
Historic Chart
Report
site.jpg
Text File Source
Example report
Report for {{report_time | time}}
Displacement chart showing variation over time
Source
{{Historic_Chart.image}}
Image file
Choose file
Position (x, y):
280
70
Size (width, height):
300
190
DISPLAY
STYLE
Alignment
Background color
HEADER
CONTENT
{{sitejpg.image}}
{{Displacement_Chart.ima…
Report for {{report_time | …
{{Historic_Chart.image}}
Displacement chart showi…
FOOTER
TAGS
page_count
page_number
report_time
Displacement_Chart
sitejpg
Historic_Chart
_id
_path
alarms
createdTime
customId
image
isActive
isPublic
metadata
name
ownerId
parentId
publicId
workspaceId
STYLES
DOCUMENT PROPERTIES

Report preview


eagle.io
user@company.com
CREATE
Alarms
Parameters
Map
List
Chart
Events
Dash
WORKSPACES
100 %
Preview
Undo
Redo
Save
Close
Argosio
Features
Example
Development
Resources
Displacement
Displacement Chart
Historic Chart
Report
site.jpg
Text File Source
Report preview
4b0269b8...
1 / 1
75%
Example report
Report for 2021-05-28 13:41:24
1.3
1.2
1.1
1
0.9
Jan '16
Mar '16
Displacement chart showing variation over time
Jan 16
Feb 16
Mar 16
Apr 16
May 16
1
1.5
2
2.5
3
3.5
4
4.5
5
29.5
30
30.5
31
31.5
32
32.5
33
33.5
Measurement
HEADER
CONTENT
{{sitejpg.image}}
{{Displacement_Chart.ima...
Report for {{report_time | ...
{{Historic_Chart.image}}
Displacement chart showi...
FOOTER
TAGS
page_count
page_number
report_time
Displacement_Chart
sitejpg
Historic_Chart
_id
_path
alarms
createdTime
customId
image
isActive
isPublic
metadata
name
ownerId
parentId
publicId
workspaceId
STYLES
DOCUMENT PROPERTIES

Page format: DIN A4 (210 x 297 mm)

Orientation: Portrait

Content height: affects only GUI size to place elements and not the real page size

Page margins

Header

Header size: 80

Display: Always

Footer

Footer size: 80

Display: Always

Downloading and Scheduling

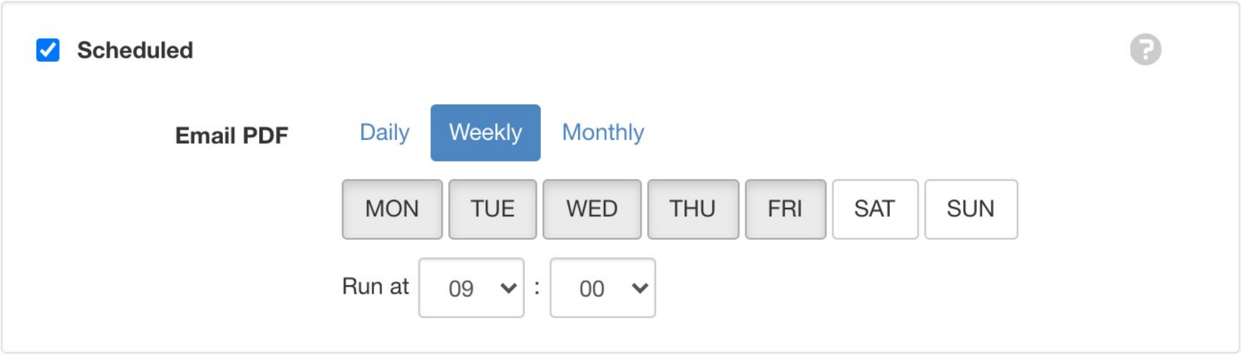
1. Locate the Report node in the Workspaces tree or from the *Reports* List content view.
2. To edit an existing report, select `Edit` from the context menu.
3. Alternatively select `Download` to generate a PDF report using the latest data.
4. Enable `Public access` to get a public URL to a report that will be generated on demand.
5. Use the *HTTP API* (page 483) to generate a PDF report on demand.

To schedule a report

1. Open the *report properties* (page 161) from the Workspaces tree context menu.
2. From the `Schedule` section, click the checkbox to enable a schedule and select either `Daily`, `Weekly` or `Monthly`.

3. The report will be generated at the scheduled time (check *debug* level Events).
4. Users must be subscribed to the *report node* (page 161) to receive the report at the scheduled time (the same way users and groups are subscribed to receive sms/email notifications). See *notification subscriptions* (page 179) for details.
5. Use the *Events* (page 43) view with `debug` detail level to audit when scheduled reports are generated and sent to subscribed users.

Report properties - schedule



☑ **Scheduled**

Email PDF Weekly

MON TUE WED THU FRI

Run at 09 : 00

Note: Dashboards currently can not be displayed as images on the report. Historic table data display will be available at a later time.

2.11.2 Using the report editor

The report editor is used to build the report including the document properties, content, layout and styles.

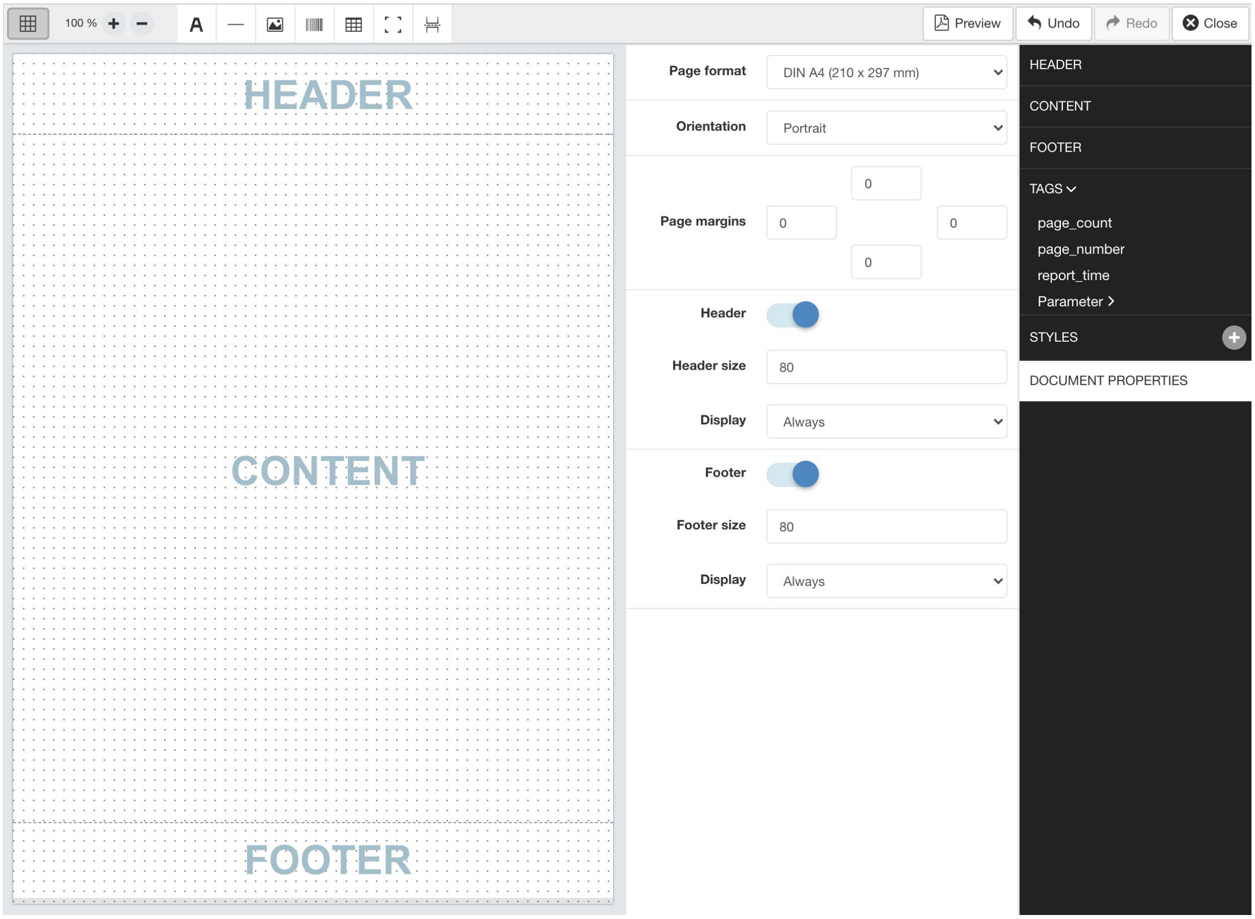
Quick Links

- *Navigation* (page 239)
- *Page basics* (page 245)
- *Content elements* (page 248)
- *Styles* (page 256)

- *Tags* (page 258)

Navigation

The report editor consists of the *toolbar* (page 239), *page designer* (page 241), *detail panel* (page 242) and *main panel* (page 243).



100 %
Preview
Undo
Redo
Close
HEADER
CONTENT
FOOTER
HEADER
CONTENT
FOOTER
TAGS
page_count
page_number
report_time
Parameter
STYLES
DOCUMENT PROPERTIES

Page format: DIN A4 (210 x 297 mm)

Orientation: Portrait

Page margins: 0, 0, 0, 0

Header

Header size: 80

Display: Always

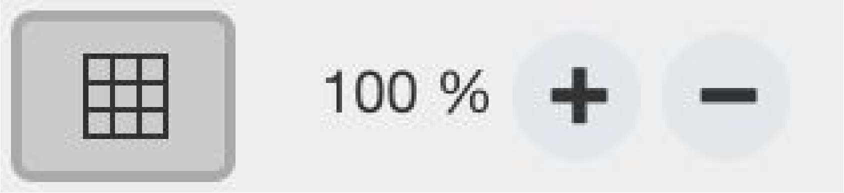
Footer

Footer size: 80

Display: Always

Editor toolbar

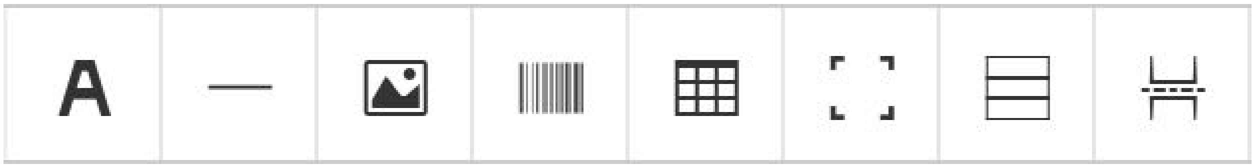
Layout controls



The `Grid` control can be toggled to show or hide the designer grid. When the grid is enabled page elements will snap to grid when moving or resizing making it easier to position elements on the page.

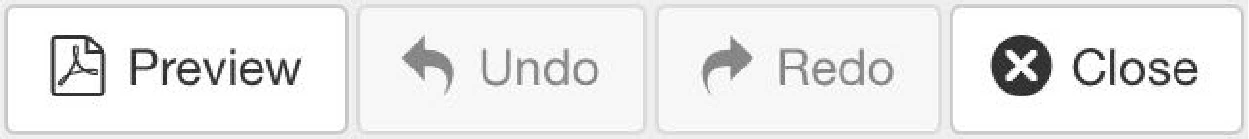
Use the `Zoom +/-` to magnify the report document.

Content elements



Content elements (page 248) are added to the page designer to build the report. The available elements are covered in detail *below* (page 248).

Operations



`Preview` will build the report and display the PDF. Click the `Design` button to close the preview and return to the *page designer* (page 241).

Reports are `automatically saved` as changes are made.

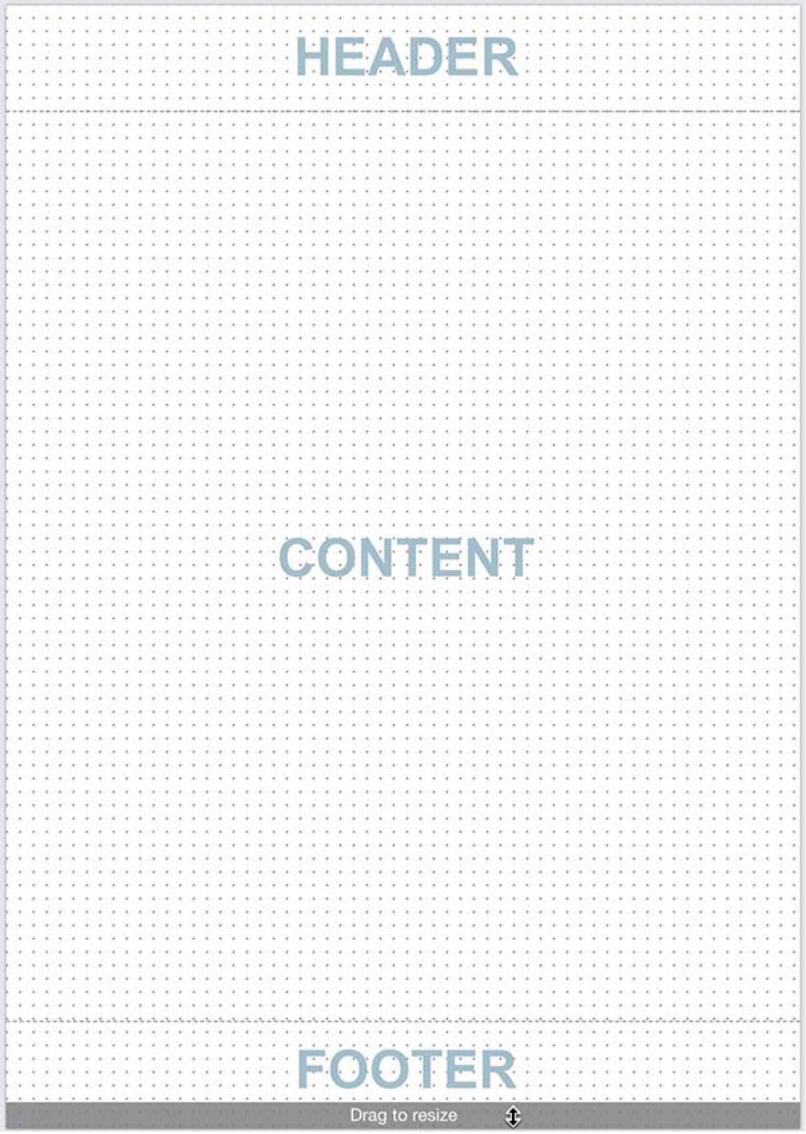
Concurrent editing of a report by multiple clients is partially supported. Any modification will trigger the report to be reloaded in all browsers with the most recent changes.

Use the `Undo` and `Redo` buttons to revert changes during the editing session and hit `Close` to exit the report editor.

Page designer

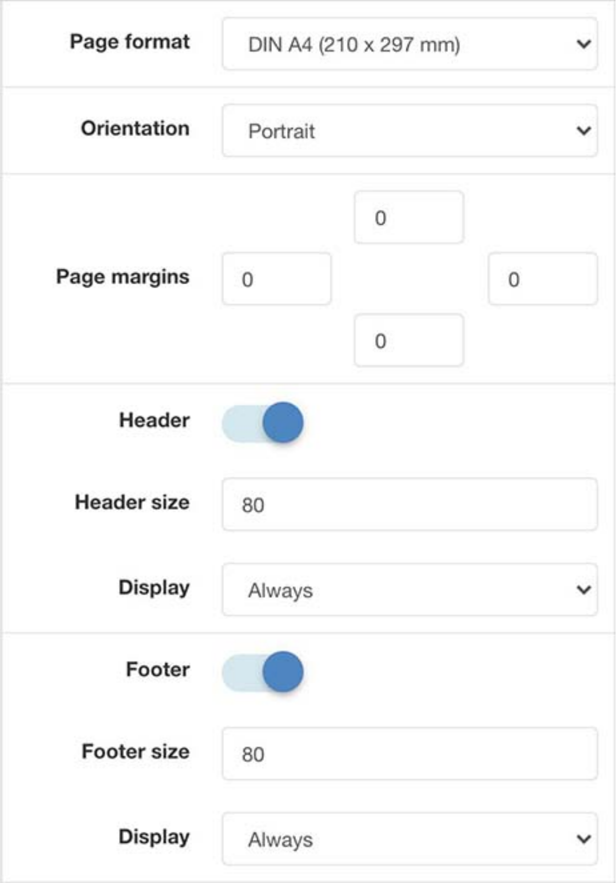
The page designer is where the report content is assembled by adding *content elements* (page 248) to the content, *header* (page 247) and *footer* (page 247) sections.

Click and drag the resize handle at the bottom of the page to adjust the content height so that more elements can be added to the report.


HEADER
CONTENT
FOOTER
Drag to resize

Detail panel

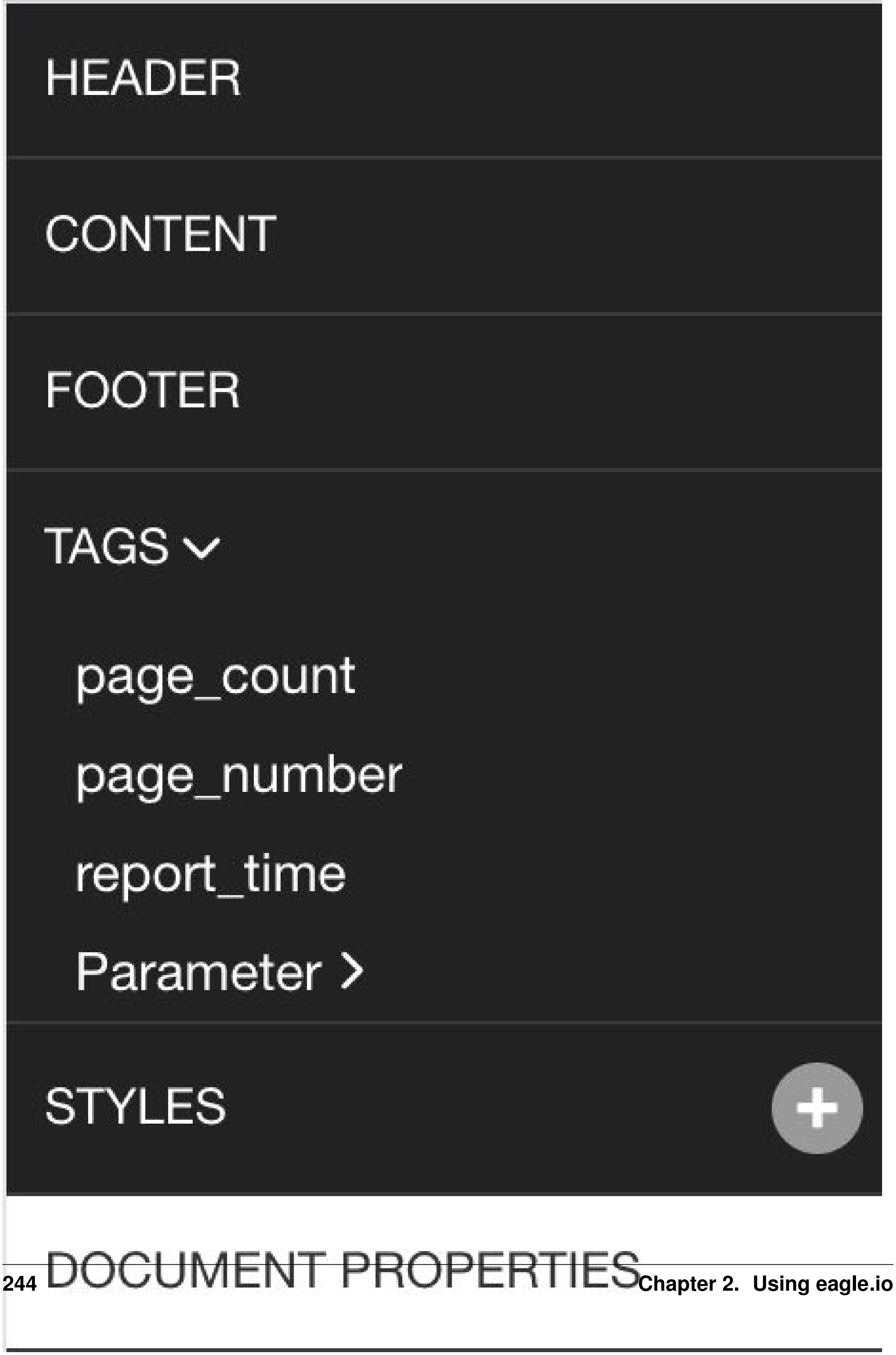
Selecting an item from the *main panel* (page 243) will display the associated configuration in the detail panel. Use this panel to modify the configuration of the document or the page elements and see the results in the *page designer* (page 241).



Page format	DIN A4 (210 x 297 mm)
Orientation	Portrait
Page margins	0 0 0 0
Header	●
Header size	80
Display	Always
Footer	●
Footer size	80
Display	Always

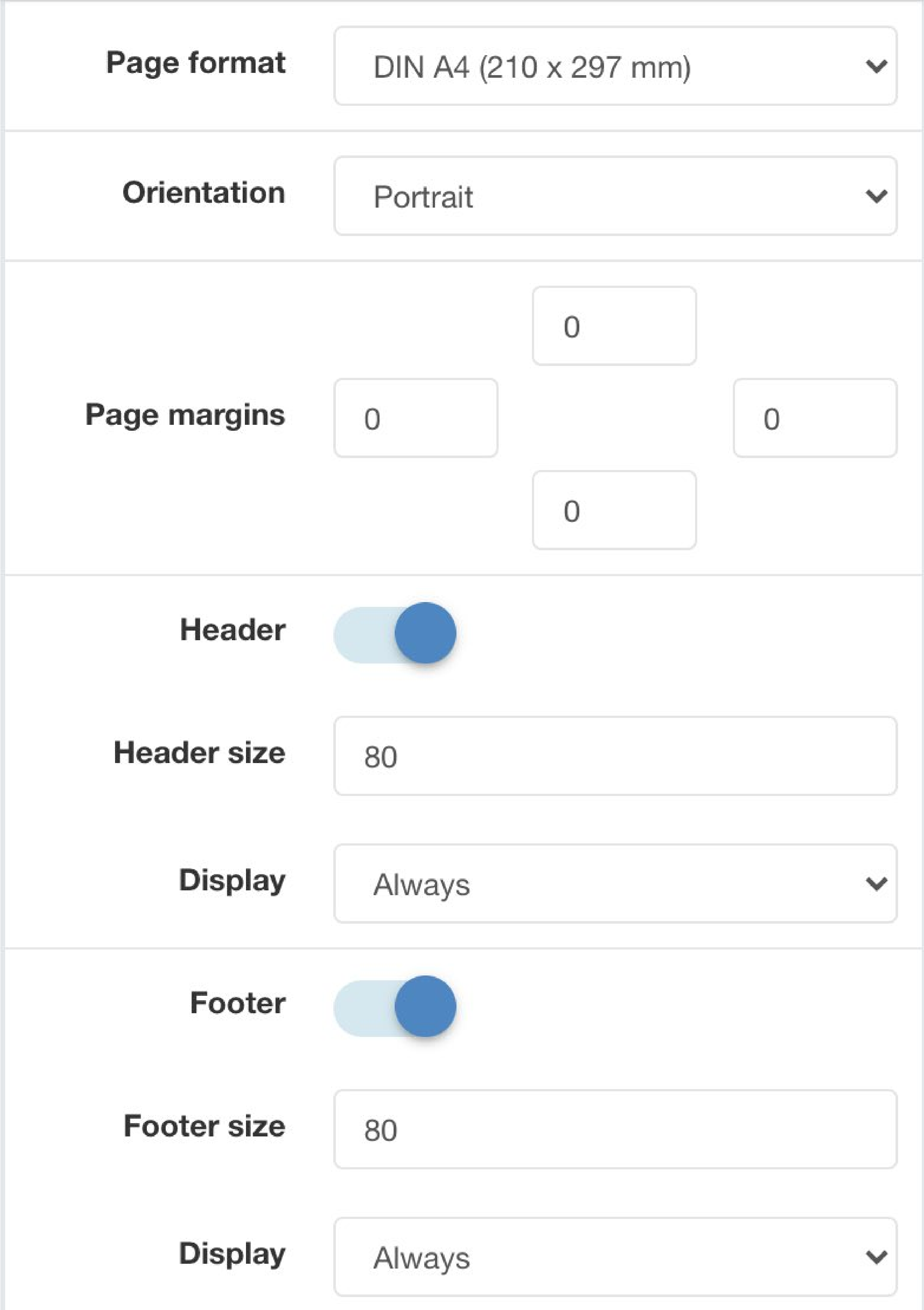
Main panel

The main panel allows for easy selection of content elements listed under the `HEADER`, `CONTENT` and `FOOTER` menus. *Tags* (page 258), *Styles* (page 256) and *Document properties* (page 245) can also be accessed from this panel.


HEADER
CONTENT
FOOTER
TAGS
page_count
page_number
report_time
Parameter
STYLES
DOCUMENT PROPERTIES

Page basics

The `DOCUMENT PROPERTIES` menu contains general page and display options.



Page format DIN A4 (210 x 297 mm)

Orientation Portrait

Page margins 0 0 0 0

Header

Header size 80

Display Always

Footer

Footer size 80

Display Always

Page size and document height

The `Page format` and `Orientation` options specify the output page settings for PDF documents. Typically a report would use *DIN A4*. Select *Own dimensions* to specify a custom *width* and *height*.

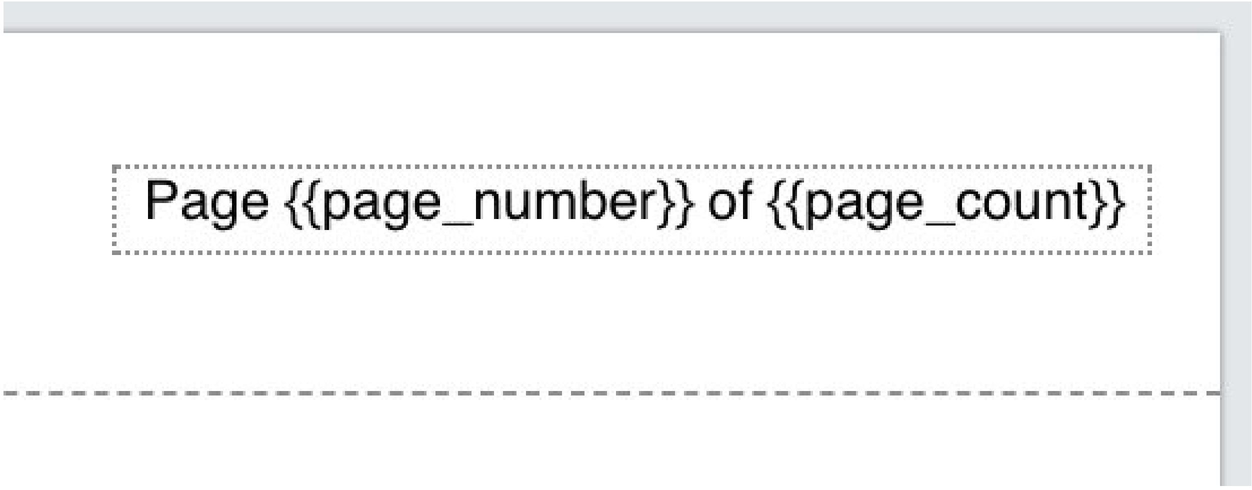
Click and drag the resize handle at the bottom of the page designer to adjust the content height so that more elements can be added to the report.

Content will automatically span over multiple pages as necessary. Alternatively insert a *page break* (page 254) element to force content to flow to a new page.

Headers, footers and page number

Headers and footers are special content sections at the top and bottom of the page respectively. These sections are automatically included on every page by default. Use the `Header` and `Footer` toggle switches to enable or disable these sections. The `Display` option can be set to *Always* or *Do not display on first page*.

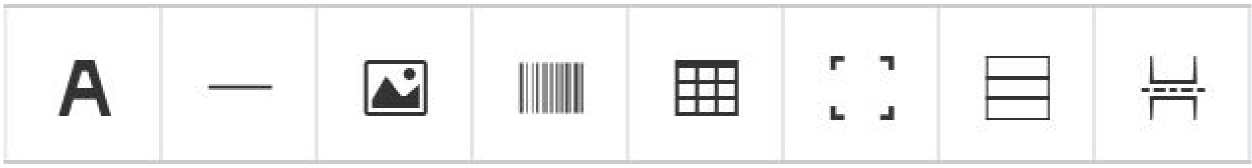
To include the **Page number** and **Page count** at the top of every page, create a new `Text` element and drag it into the document `Header`. Set the text of the element to use the `page_number` and `page_count` *tags* (page 258) as required. The text `Page {{page_number}} of {{page_count}}` will output similar to `Page 1 of 5`.



Page {{page_number}} of {{page_count}}

Content elements

Click or drag-drop an element icon from the *editor toolbar* (page 239) to insert it into the *page designer* (page 241).

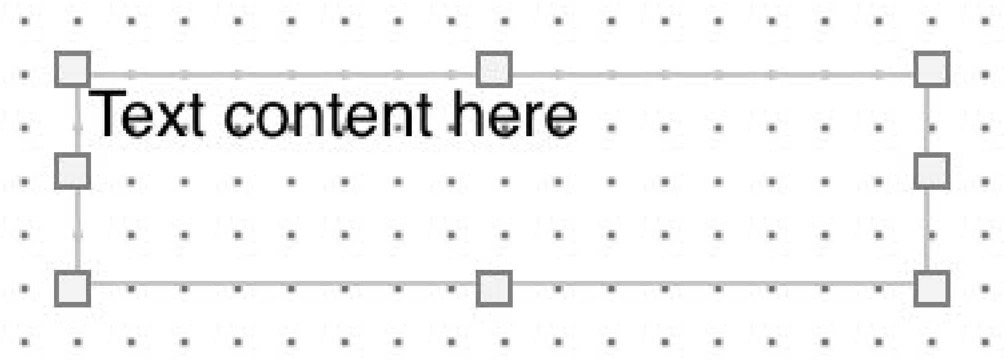


Types of elements

Elements include *text* (page 248), *horizontal line* (page 249), *image* (page 249), *bar code* (page 250), *table* (page 251), *frame* (page 253) and *page break* (page 254).

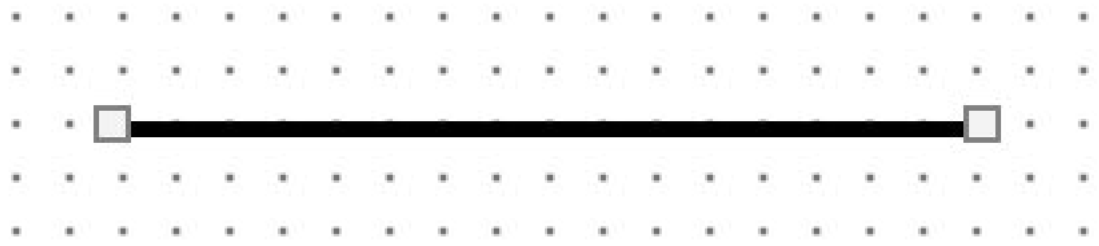
Text

Text elements are used to add text to your report. This includes headings, labels and paragraphs.



Horizontal line

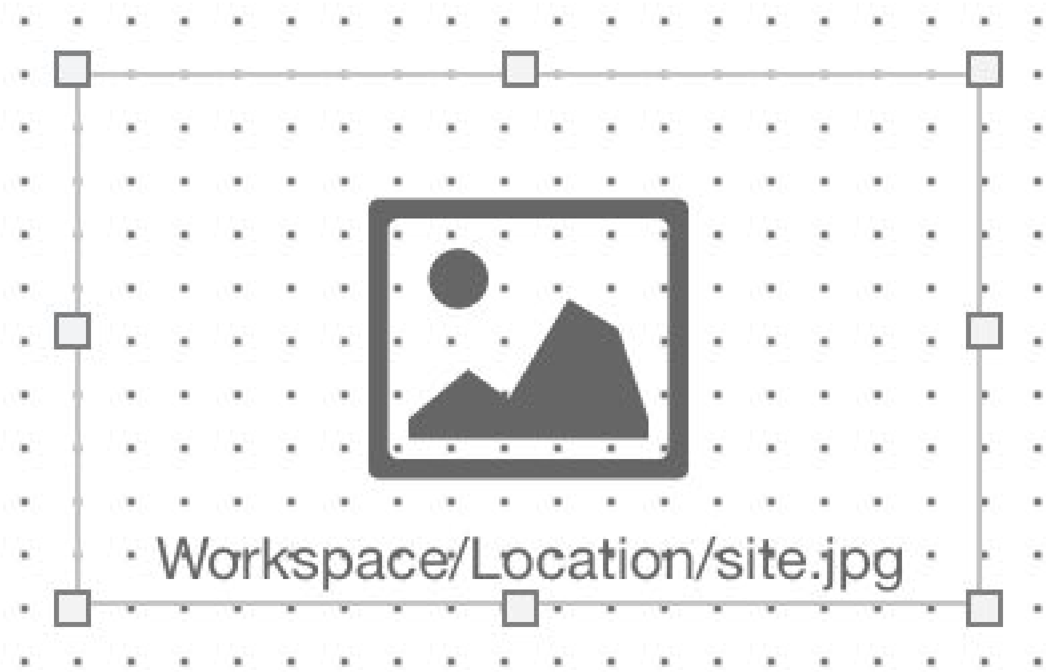
Insert a horizontal line and adjust width and height as required.



Image

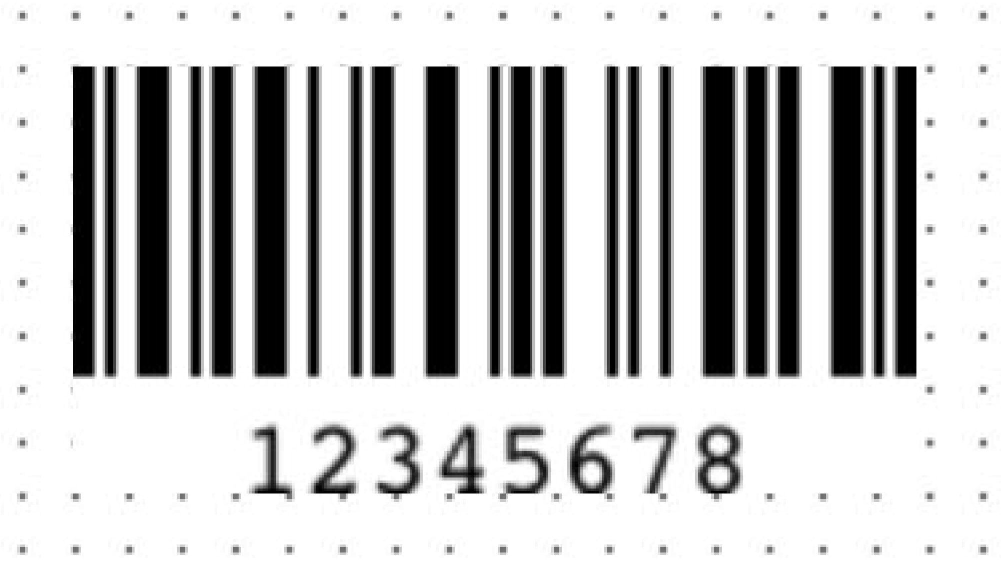
Add images to your report. Select `Choose file` from the *detail panel* (page 242) to upload a local **JPG** or **PNG** file from your device.

Alternatively specify a **URL** or *tag* (page 258) as the image `Source`. **Charts** and **attachments** from the workspaces tree can be added to the report via *tags* (page 258).


Workspace/Location/site.jpg

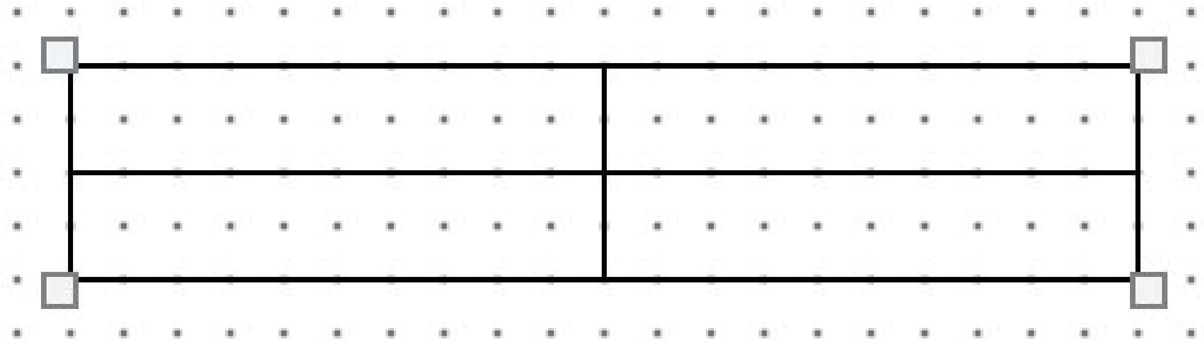
Bar code

Insert **CODE 128** bar codes into your report. Use the `Text` field to enter the alphanumeric characters for the bar code or use *tags* (page 258) for dynamic content.

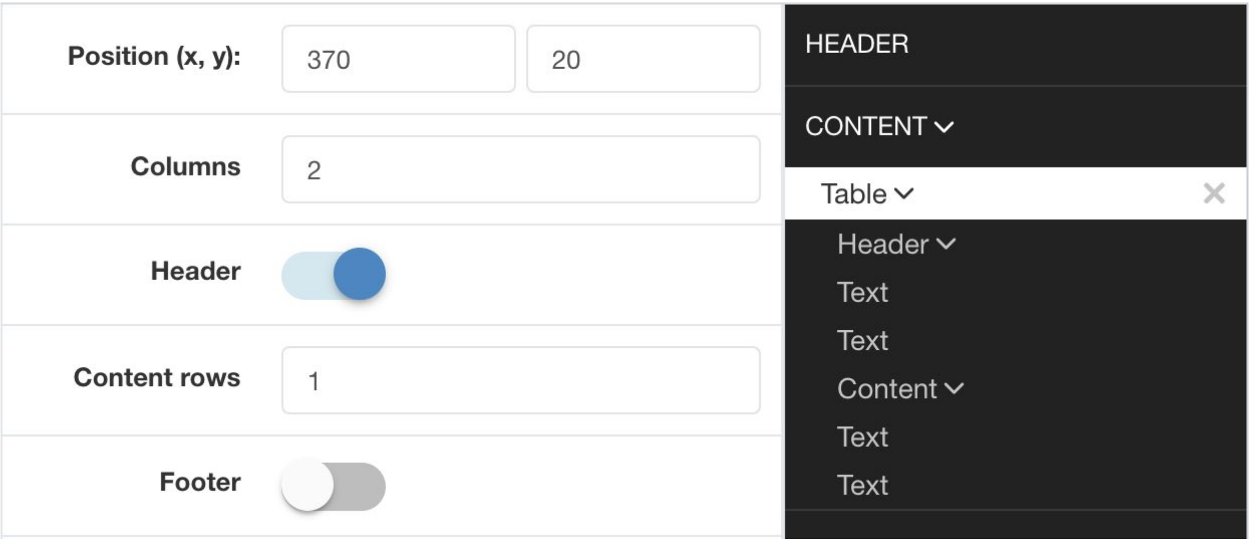


Table

Tables make it easy to align related content.



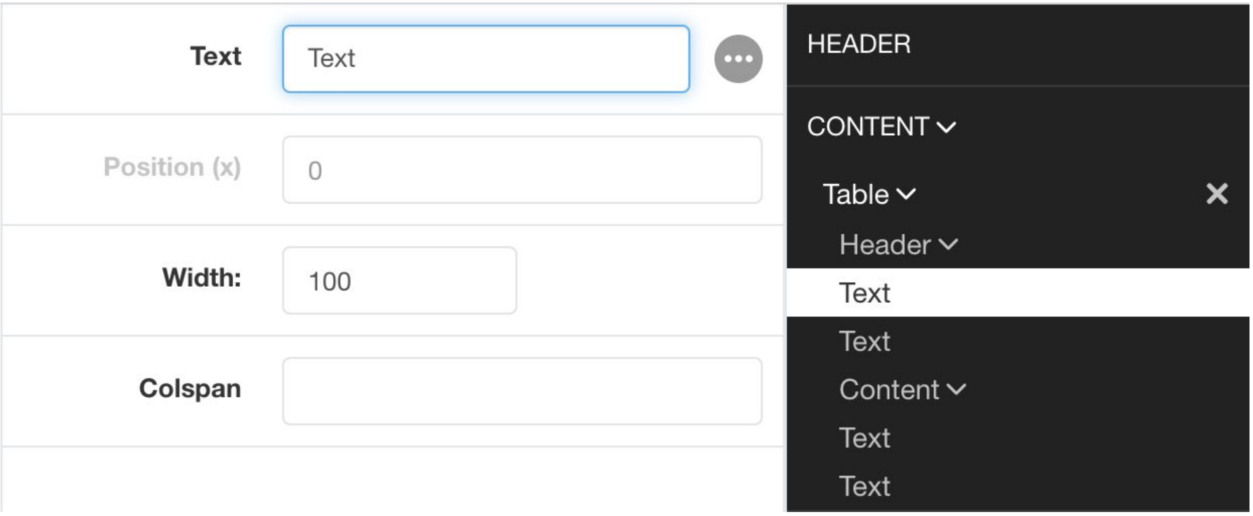
Drag the table around to position it within the report. To resize or configure the table you must select it and edit its settings from the *main panel* (page 243). Set the required number of `columns`, `content rows` and toggle header and footer rows as required.



Position (x, y):	370 · 20
Columns	2
Header	●
Content rows	1
Footer	○

HEADER
CONTENT
Table
Header
Text
Text
Content
Text
Text

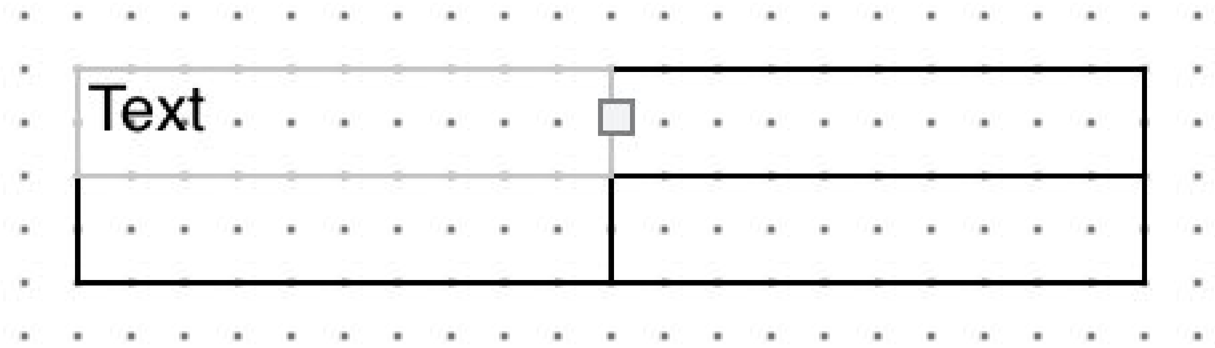
Clicking the *Table* item from the *main panel* (page 243) will expand to show individual cells grouped by header, content and footer. Select an individual cell from this panel to set its `Text` or column `Width` in pixels.



Text	Text
Position (x)	0
Width:	100
Colspan	

HEADER
CONTENT
Table
Header
Text
Text
Content
Text
Text

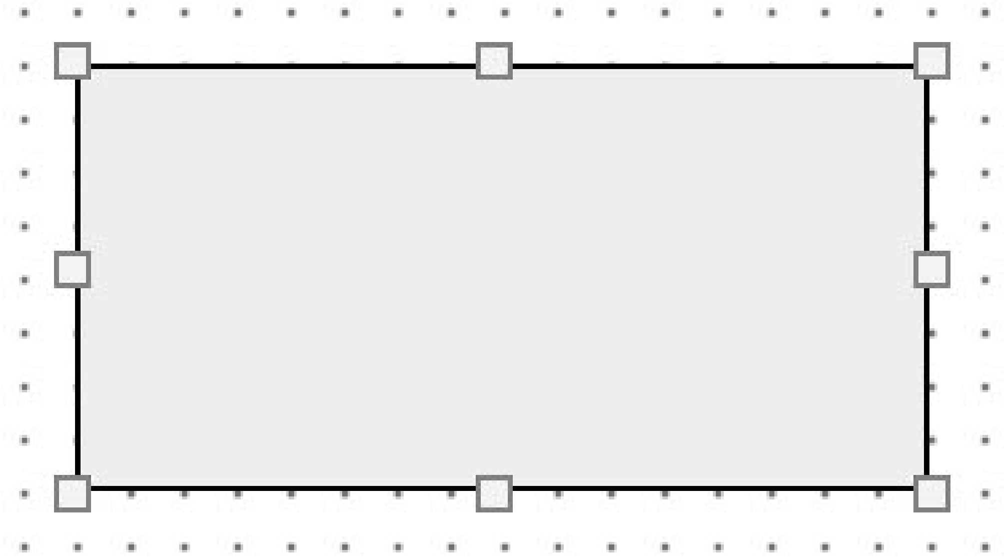
As you make changes from the *main panel* (page 243), the designer will update the table accordingly.



Note: You can add current parameter data values to individual cells using *tags* (page 258) however historic data in a table is not yet supported.

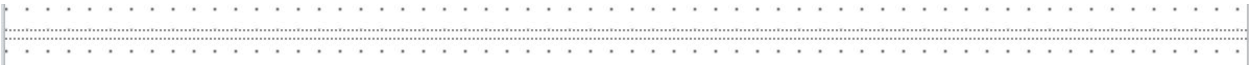
Frame

Use frames to group other content elements or add backgrounds and borders to sections of your report. Drag elements into the frame to group them, then simply position the frame on the page as necessary. Select the Frame from the *main panel* (page 243) to modify its settings or select its grouped elements.



Page break

Use page breaks to force content appearing below the break to flow to a new page.



Create and delete

Click or drag-drop an element icon from the *editor toolbar* (page 239) to insert it into the *page designer* (page 241).

An element can be removed by clicking the *x* delete button next to the element in the *main panel* (page 243) or selecting the element and pressing the `DELETE` key.

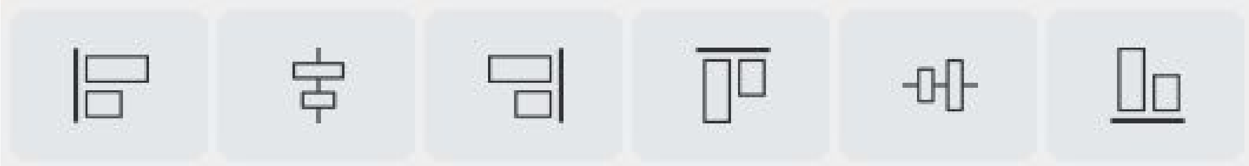
`Copy and Paste` elements using `CTRL+C` and `CTRL+V` shortcut keys to quickly duplicate selected elements.

Select, resize and align

Select the element by either clicking directly on the element's bounding box in the *page designer* (page 241), click and drag a selection box around elements, or clicking the element in the *main panel* (page 243). Additional elements can be added to the selection by holding the `SHIFT` key.

Drag the element(s) around the *page designer* (page 241) to **reposition** or use the `Arrow` keys for small adjustments. Click and drag the bounding box handles to **resize** an element.

Note: elements will automatically snap to the designer grid during reposition and resize operations but you can temporarily disable this behaviour by *toggling the grid* (page 239) off.



When multiple elements are selected, the **alignment toolbar** is available to quickly align elements together on the page.

Element properties

When an element is selected its properties, display, style and conditional style options are displayed in the *detail panel* (page 242).

The general properties section includes the element content, position and size.

`DISPLAY` section options customise the behaviour of the element in the PDF including preventing the content from being split over multiple pages, adding hyperlinks, etc.

`STYLE` allows a predefined *style* (page 256) to be applied or customise the appearance of elements individually.

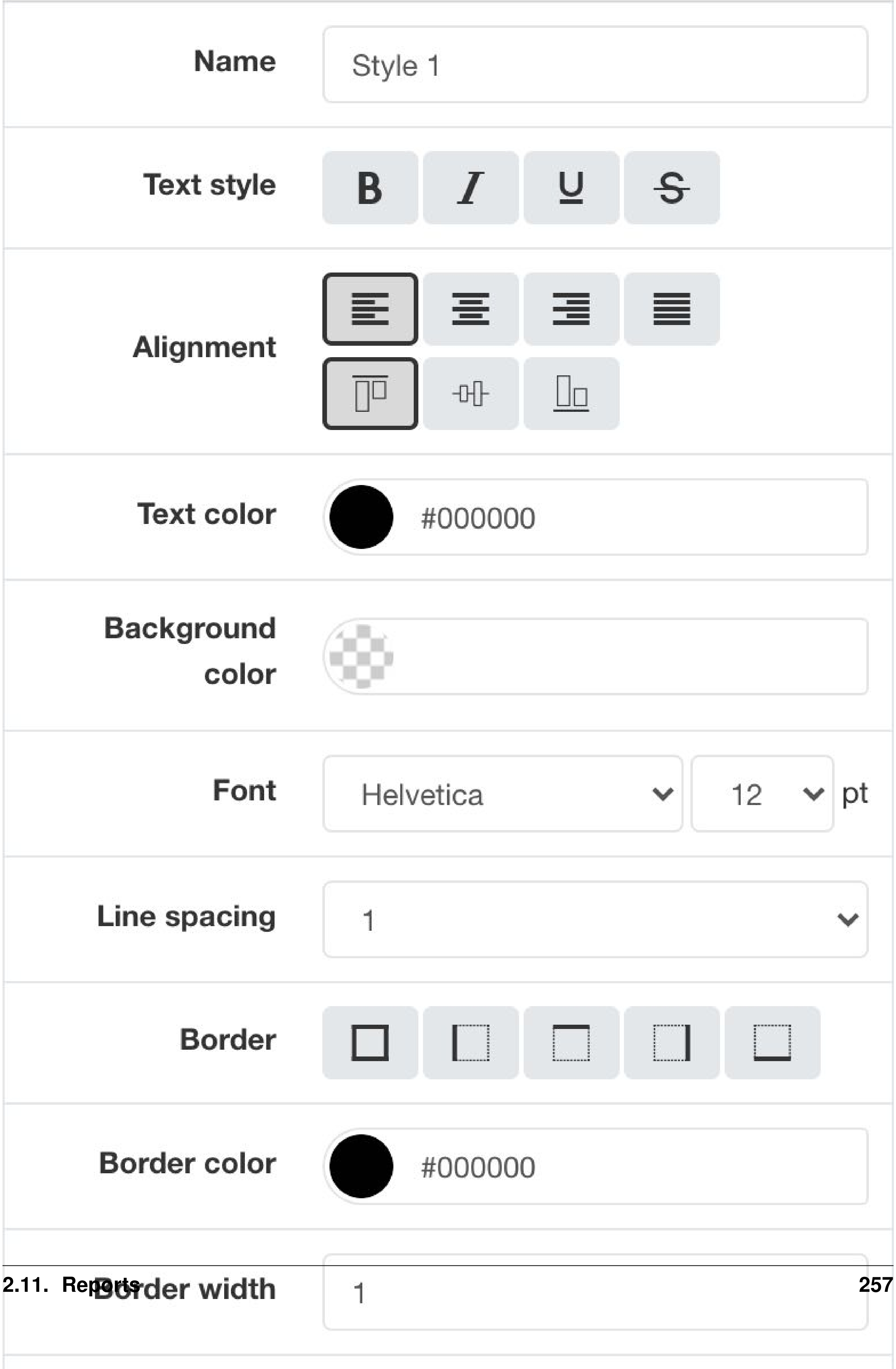
`CONDITIONAL STYLE` allows a different style (predefined or individually applied) to be set when a user-defined `Condition` is met. An example of a **conditional statement** is `11 > 10`, or using *tags* (page 258) `{{Parameter.currentValue}} > 10`.

Styles

The + add style button in the *main panel* (page 243) adds new predefined styles to the report.

Headings, paragraphs and other content elements generally share similar styles. You can set the styles on every element individually but this can be tedious.

Its more efficient to predefine a set of styles and then simply select the `Style` name on each element you want to apply it to.



Name: Style 1

Text style
B
I
U
S
Alignment

Text color: #000000

Background color

Font: Helvetica, 12 pt

Line spacing: 1

Border

Border color: #000000

Border width: 1

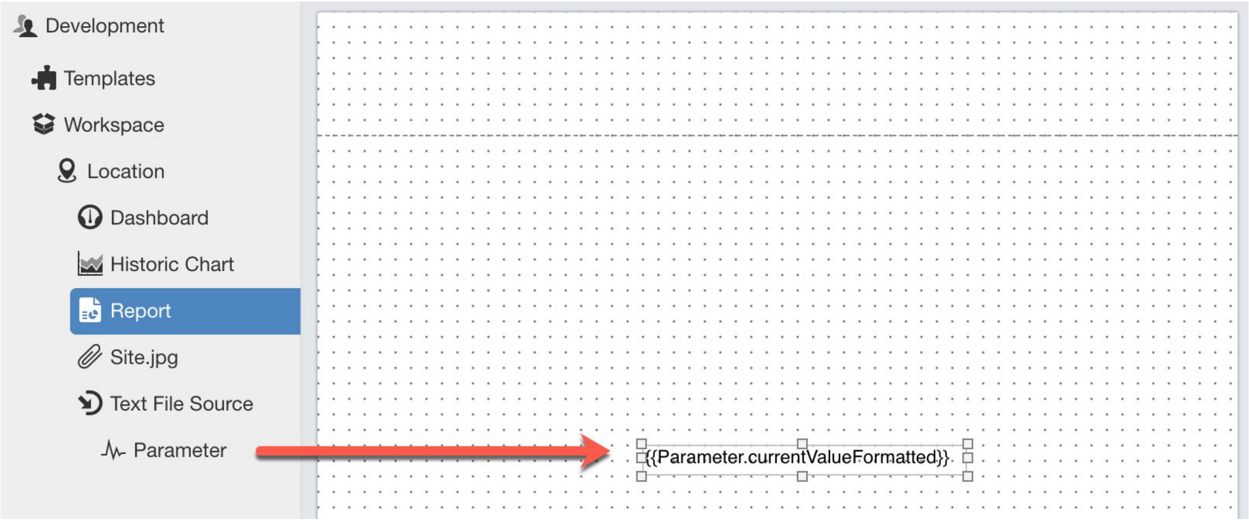
Tags

Tags are the mechanism in which dynamic attributes related to nodes in the workspaces tree can be inserted into the report. This can include tags such as parameter value text, location coordinates, chart images, and many more.

Tags are available for all nodes that has been linked to the report.

Drag & drop from workspaces tree

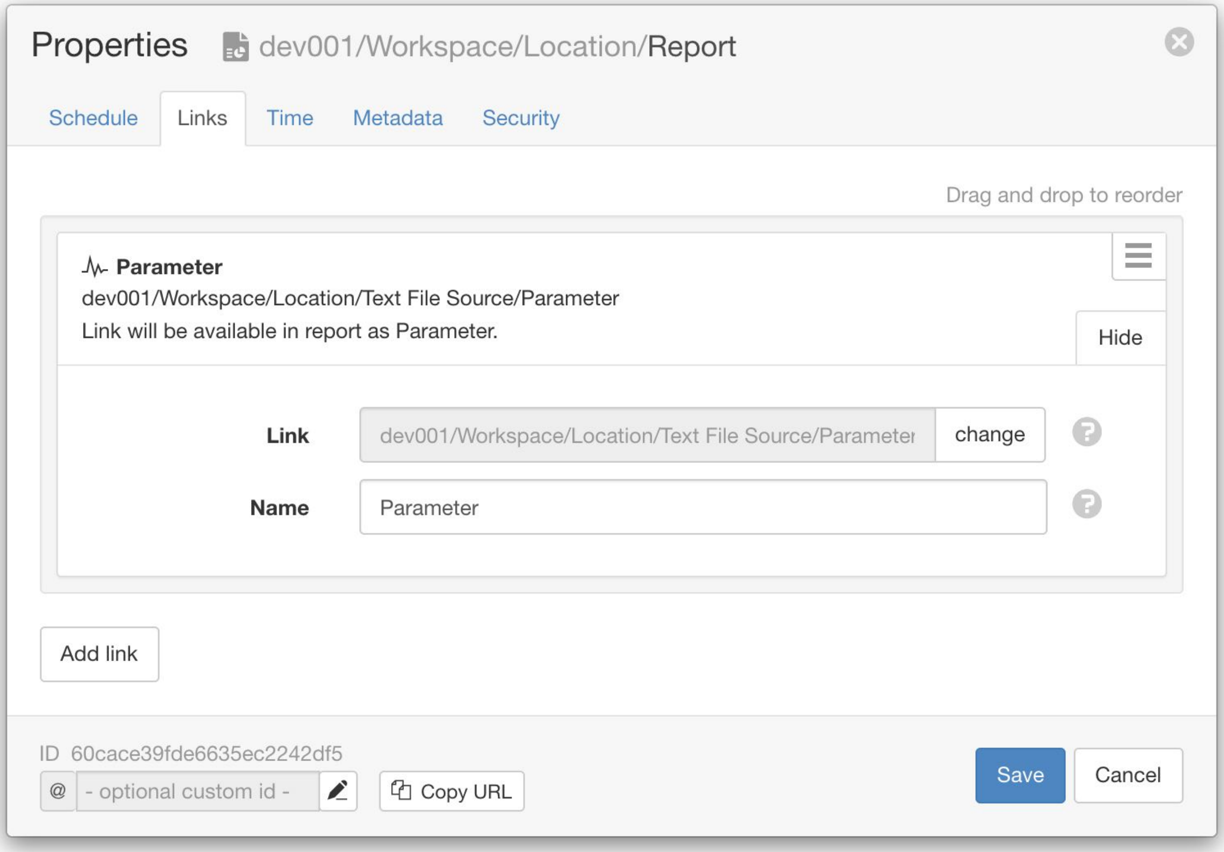
The easiest way to link a node and insert a default tag is to drag and drop the node from the workspaces tree on to the *page designer* (page 241).


Development
Templates
Workspace
Location
Dashboard
Historic Chart
Report
Site.jpg
Text File Source
Parameter
{{Parameter.currentValueFormatted}}

Note: Only nodes within the same workspace (or template) as the report can be linked.

Rename or remove links

You can remove, modify or rename links from the *report properties* (page 161). If the `Name` of the link is changed you will need to use the new name when assigning tags in the report.


Properties
dev001/Workspace/Location/Report
Schedule
Links
Time
Metadata
Security
Drag and drop to reorder
Hide
change
Add link
Copy URL
Save
Cancel

Parameter
dev001/Workspace/Location/Text File Source/Parameter
Link will be available in report as Parameter.

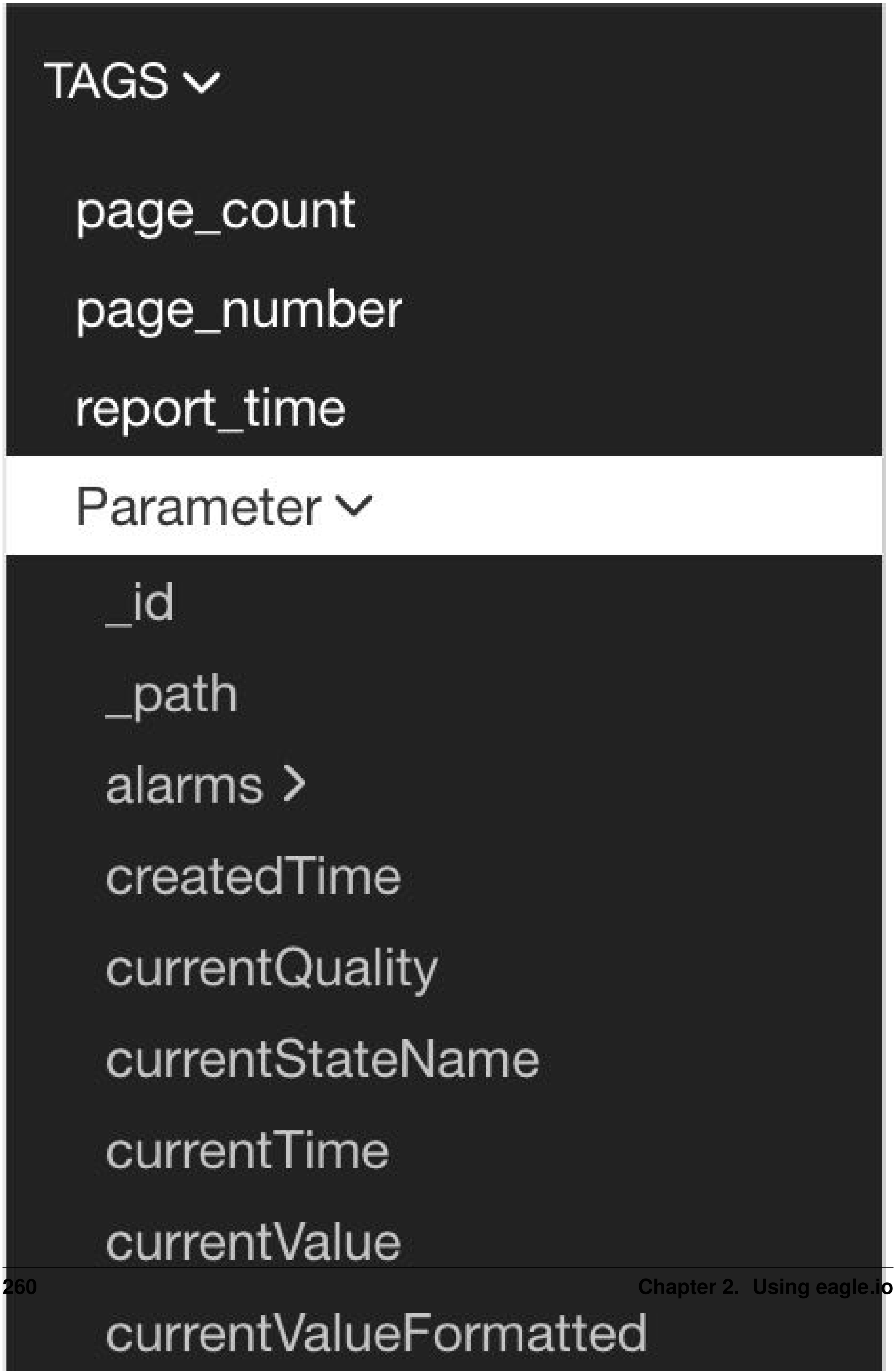
Link dev001/Workspace/Location/Text File Source/Parameter

Name Parameter

ID 60cace39fde6635ec2242df5
@ - optional custom id -

Show available attributes

Click on the > expand arrow next to a tag in the *main panel* (page 243) to show its available attributes.



TAGS

page_count

page_number

report_time

Parameter

_id

_path

alarms

createdTime

currentQuality

currentStateName

currentTime

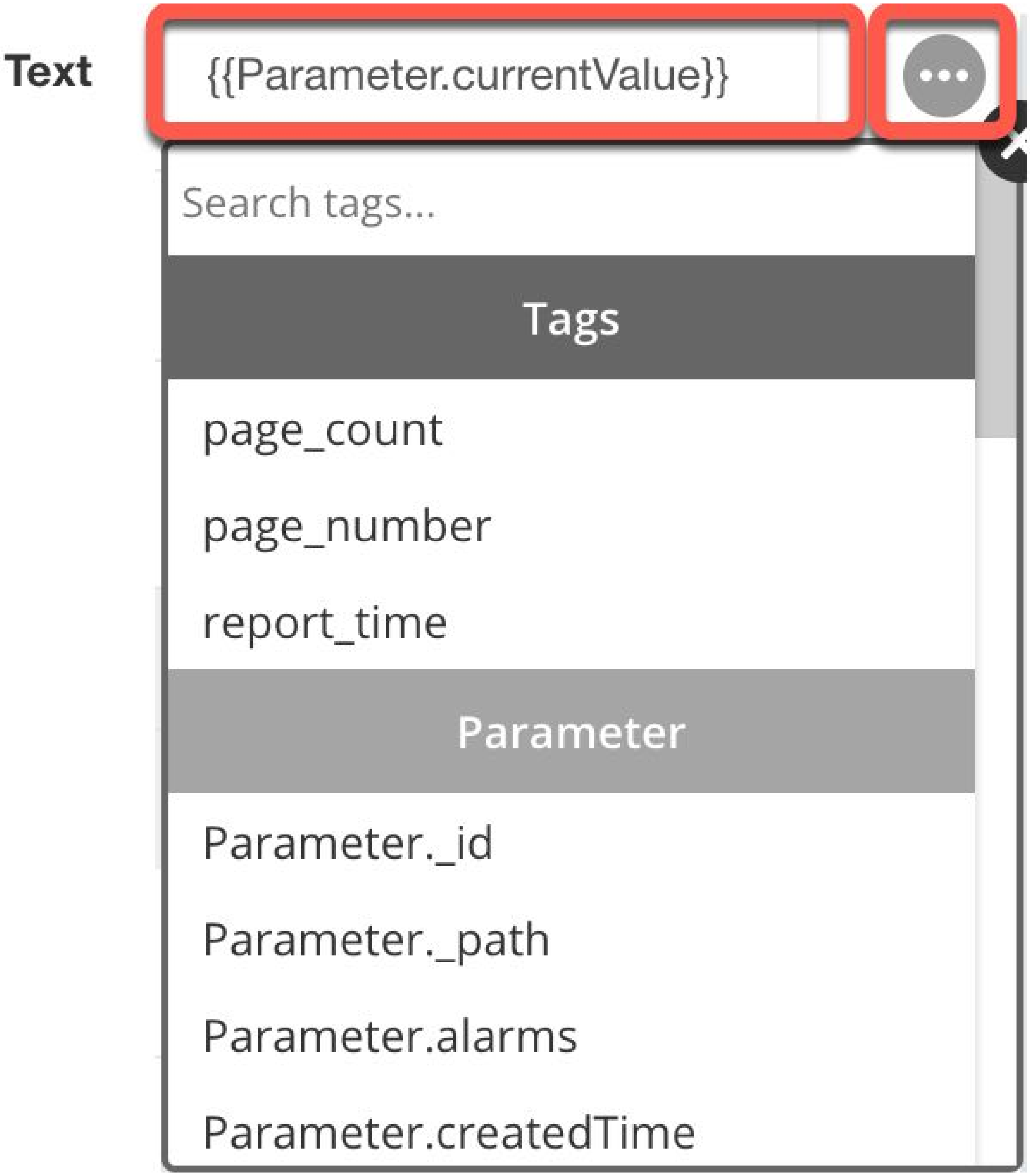
currentValue

currentValueFormatted

Insert tags in an element

Use the content field of an element (eg. `Text` or `Source`) to either manually enter a tag or click the `...` tag list button to select from a list of available tags. Tags are always surrounded by double curly braces `{{` and `}}`. eg. `{{Parameter.currentValue}}`

When the report is generated the tags are replaced with the corresponding data. Multiple tags can be inserted in a single element and are rendered inline. eg. `The value is {{Parameter.currentValue}} on {{Parameter.currentTime | time: "Do MMMM"}}` may be rendered in the PDF as `The value is 7.12 on 10th July`


Text
{{Parameter.currentValue}}
Search tags...
Tags
page_count
page_number
report_time
Parameter
Parameter._id
Parameter._path
Parameter.alarms
Parameter.createdTime

Expressions

Use *expressions* (page 523) directly inside report elements to control the output of the content and its formatting.

Common scenarios

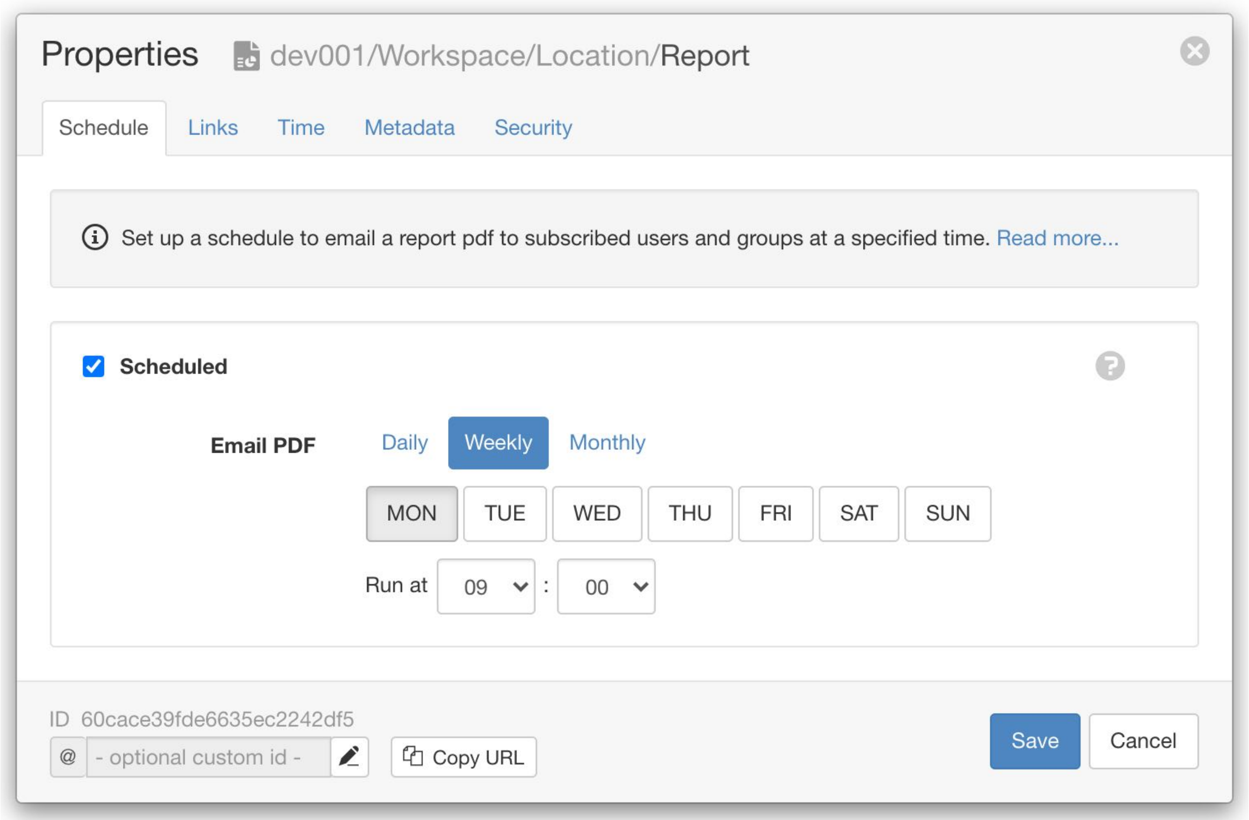
- Apply the *time* (page 545) filter to format a timestamp: `{{report_time | time}}` or `{{report_time | time: "DD MMMM YYYY"}}`
- *Round* (page 540) a number to 2 decimal places: `{{Parameter.currentValue | round: 2}}`
- Set a *default* (page 530) to insert when no value exists: `{{Parameter.currentValue | default: 0}}`
- *Truncate* (page 548) long text to a maximum number of characters: `{{Parameter.currentStateName | truncate: 15}}`
- Use expression *if / else* (page 561) tags to display alternate content based on a value

```
{% if Parameter.currentValue > 10 %}
  Value is above expected range
{% else %}
  Value is within expected range
{% endif %}
```

2.11.3 Scheduling

Reports can be downloaded on-demand from the *List view* (page 27), via the *Public access* (page 164) feature or using the *HTTP API* (page 483).

Reports can also be scheduled for **automatic delivery** to subscribed users and groups via email.


Properties
dev001/Workspace/Location/Report
Schedule
Links
Time
Metadata
Security
Daily
Weekly
Monthly
MON
TUE
WED
THU
FRI
SAT
SUN
@
- optional custom id -
Copy URL
Save
Cancel

Set up a schedule to email a report pdf to subscribed users and groups at a specified time. Read more...

☑ Scheduled

Email PDF: Weekly

MON

Run at 09 : 00

ID 60cace39fde6635ec2242df5

To schedule a report, open the *report properties* (page 161) from the Workspaces tree context menu and select the `Schedule` tab.

Enable a schedule by checking the `Scheduled` checkbox and select either `Daily`, `Weekly` or `Monthly`. Set the schedule required (maximum once per day) and **Save**.

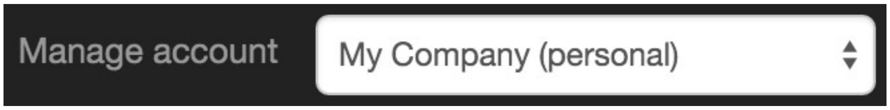
Users and groups must be *subscribed* (page 179) to the *report node* (page 161) to receive the report at the scheduled time.

Use the *Events* (page 43) view with `debug` detail level to audit when scheduled reports are generated and sent to subscribed users.

2.12 Account Settings

Overview and Guide to Account Settings:

Use the Account selector located in the User Menu of the Account Settings section to switch between all the Accounts you own or have Administration access to.



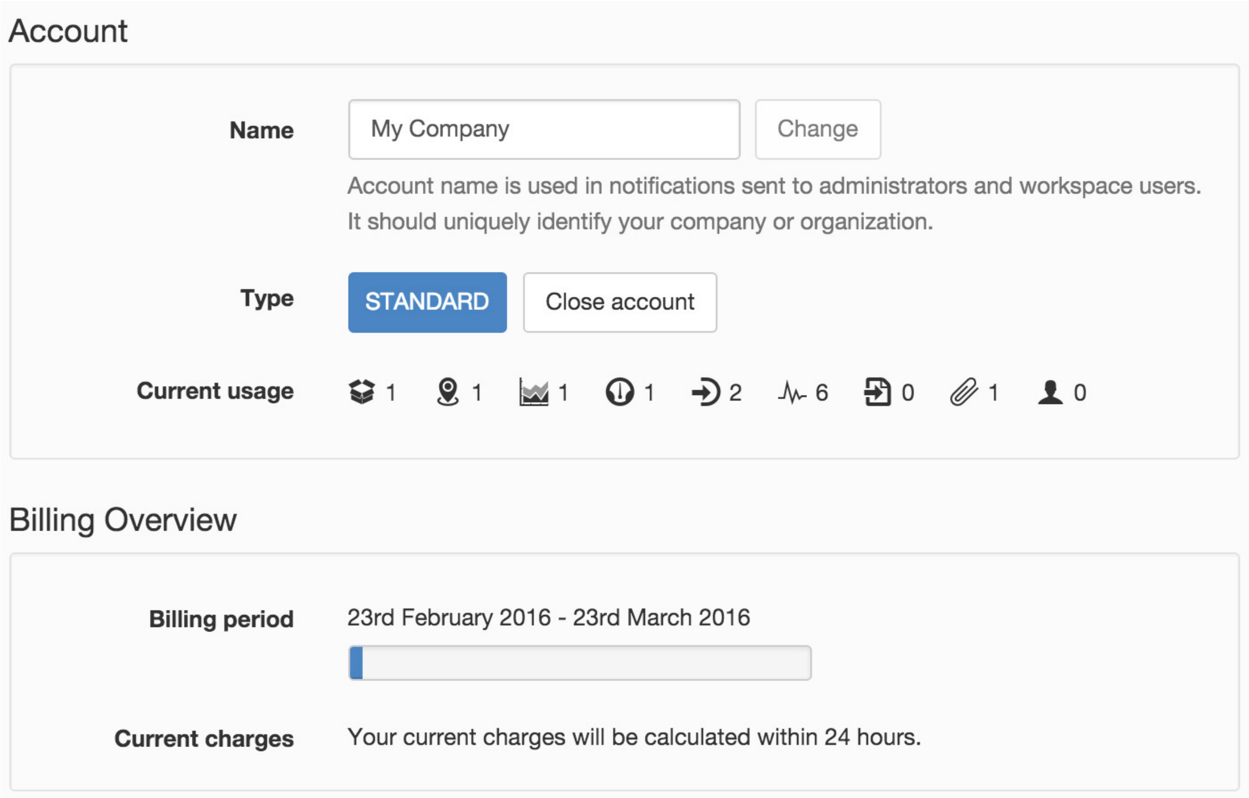
Manage account: My Company (personal)

2.12.1 General

⚙ General section provides an overview of the account and allows you to change your contact details and setup quality code information.

Overview

The account owner or manager can change the account name or view a summary of current usage.



Account

Name My Company

Account name is used in notifications sent to administrators and workspace users. It should uniquely identify your company or organization.

Type STANDARD

Current usage 1 1 1 1 2 6 0 1 0

Billing Overview

Billing period 23rd February 2016 - 23rd March 2016

Current charges Your current charges will be calculated within 24 hours.

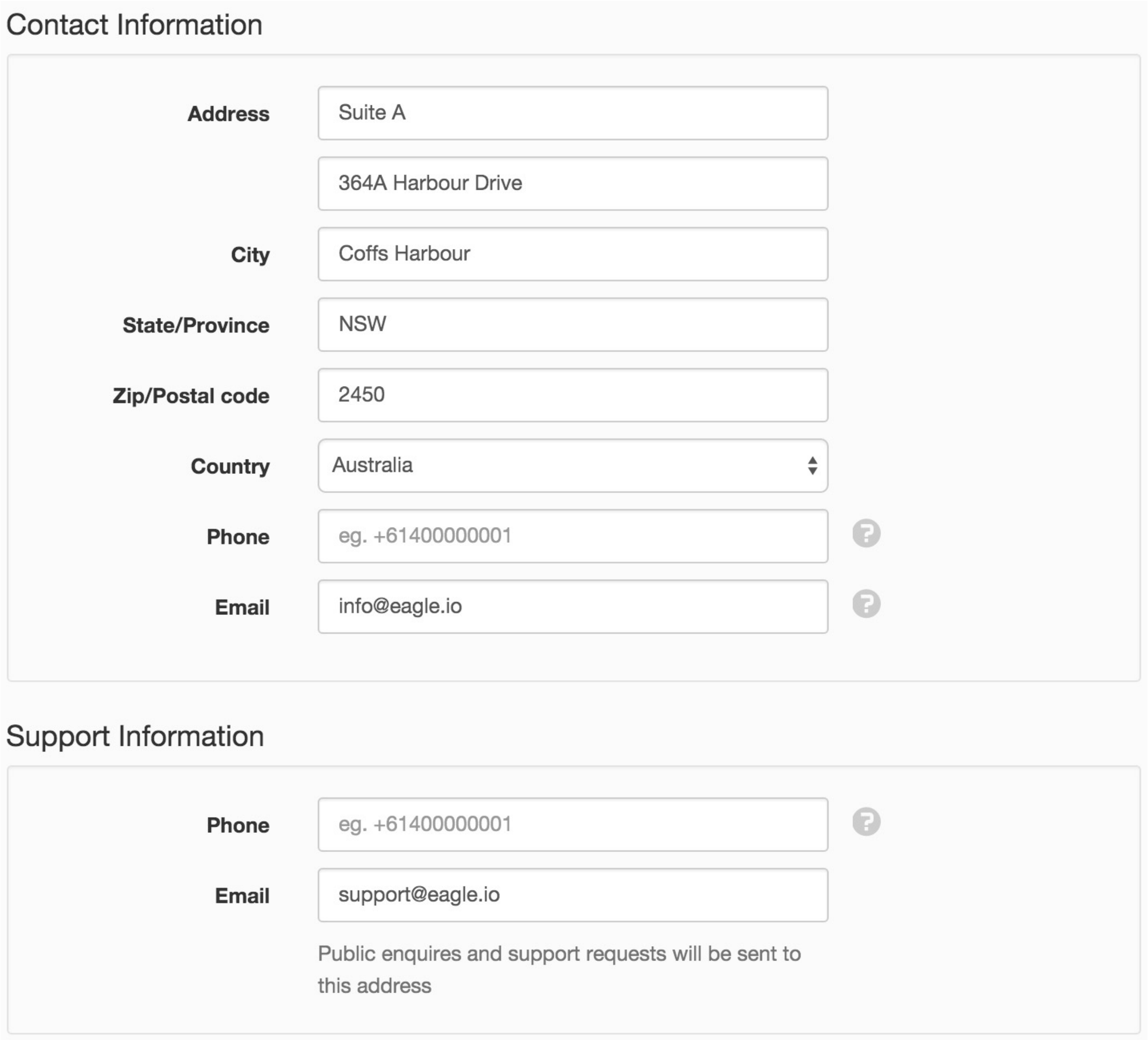
Note: Only the account owner or manager can change the account name or close the account.

Contact

Please ensure your contact details are always up to date so that we can contact you when required. You can optionally specifiy a different support phone number and email address for any public enquires or customer support requests.

Phone number should follow the standard international format (http://en.wikipedia.org/wiki/National_conventions_for_writi starting with '+' and including country and area code.

Email address is used for all account related correspondance with eagle.io. You should use your company admin email rather than your personal email address. eg. *admin@company.com*



Contact Information

Address	Suite A
	364A Harbour Drive
City	Coffs Harbour
State/Province	NSW
Zip/Postal code	2450
Country	Australia
Phone	eg. +61400000001
Email	info@eagle.io

Support Information

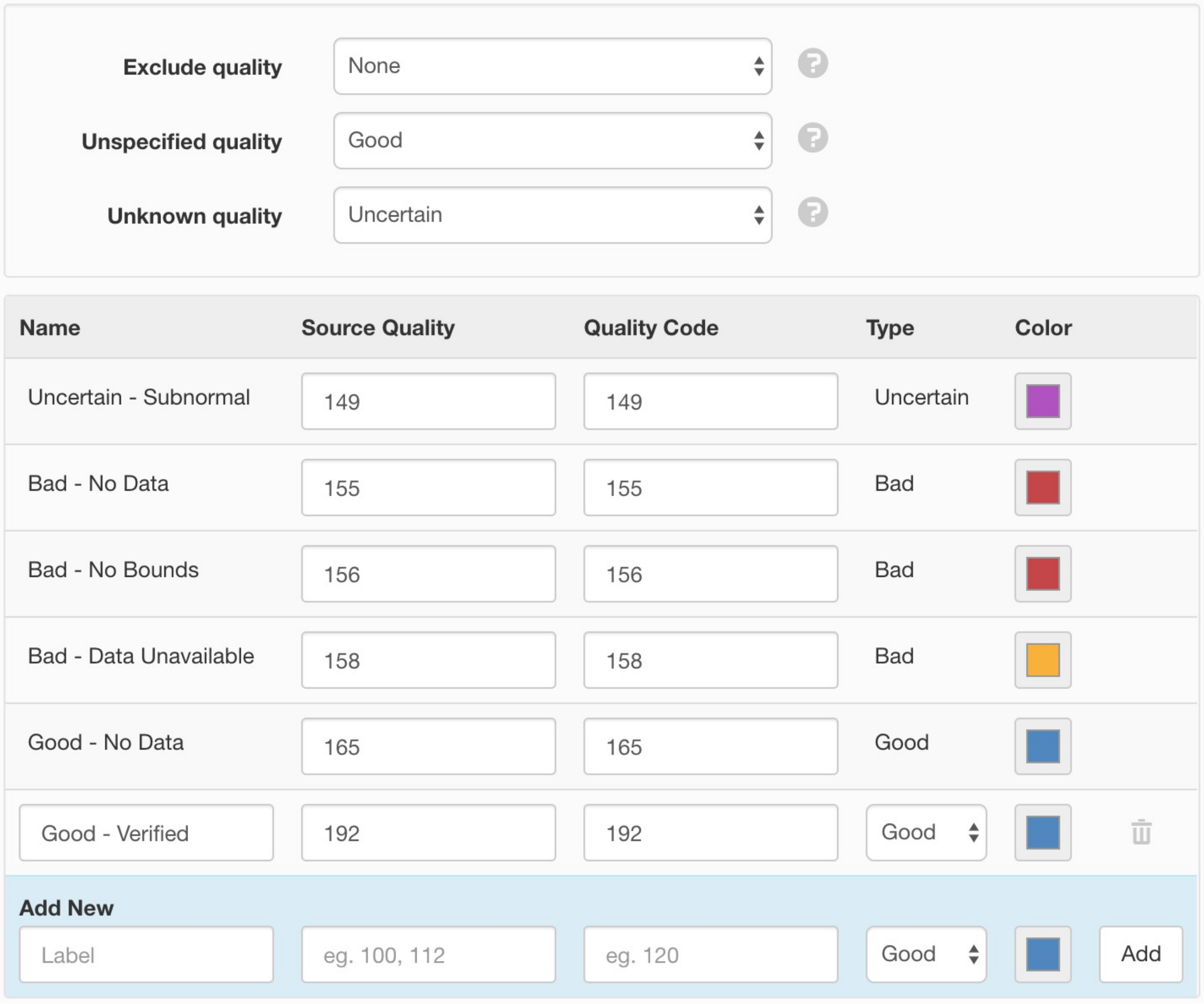
Phone	eg. +61400000001
Email	support@eagle.io

Public enquires and support requests will be sent to this address

Quality Codes

The Quality Codes section displays a list of the historic *Qualities* (page 577) for this Account. Quality Code settings apply to all Workspaces in the account. Use the *Add* button to create custom quality codes.

Source and Quality Codes must be whole numbers between 0 - 65535.



Exclude quality None

Unspecified quality Good

Unknown quality Uncertain

Name	Source Quality	Quality Code	Type	Color	
Uncertain - Subnormal	149	149	Uncertain	🟪	
Bad - No Data	155	155	Bad	🟥	
Bad - No Bounds	156	156	Bad	🟥	
Bad - Data Unavailable	158	158	Bad	🟧	
Good - No Data	165	165	Good	🟦	
Good - Verified	192	192	Good	🟦	🗑
Add New					
Label	eg. 100, 112	eg. 120	Good	🟦	Add

Exclude quality You can optionally choose to exclude *Bad* and *Uncertain* quality coded data from all historic data requests. Excluded data points will not be visible on Charts, Tabular data and Historic API requests.

Unspecified quality Quality to assume when no quality code has been specified.

Unknown quality Quality to assume when the quality code specified does not exist.

Source quality Quality code(s) to match on acquired data. Separate multiple quality codes with a comma.

Quality code Quality code to apply to the data for display and export. You can use the same Code as the Source or specify a custom code. Must be numeric.

Color Select a color to be assigned for this quality for display with current and historic data.

Refer to the *Quality reference* (page 577) for further details.

Note: System qualities can not be removed, but can be updated with new Quality Codes.

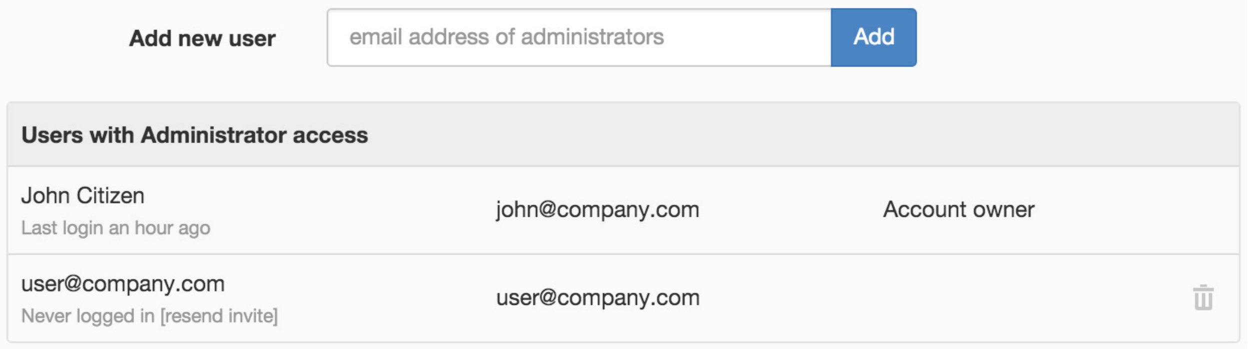
2.12.2 Security

Security allows you to configure Administrators of the account and User roles.

Administrators

Administrators have full access to your account including unrestricted access to all Workspaces and most configuration settings for the account. There is no need to explicitly *Share a Workspace* (page 54) with any Administrators of the same account. If you would like a user to have restricted access to Workspaces, then *do not* add them as Administrators. Instead use *Workspace Sharing* (page 54) to add them as a User of a Workspace with an assigned role.

Add a new administrators by entering their email addresses and click *Add*. Separate multiple email addresses with a comma. Remove administrators by clicking the trash icons. Click *Save* to confirm.



Users with Administrator access		
John Citizen Last login an hour ago	john@company.com	Account owner
user@company.com Never logged in [resend invite]	user@company.com	

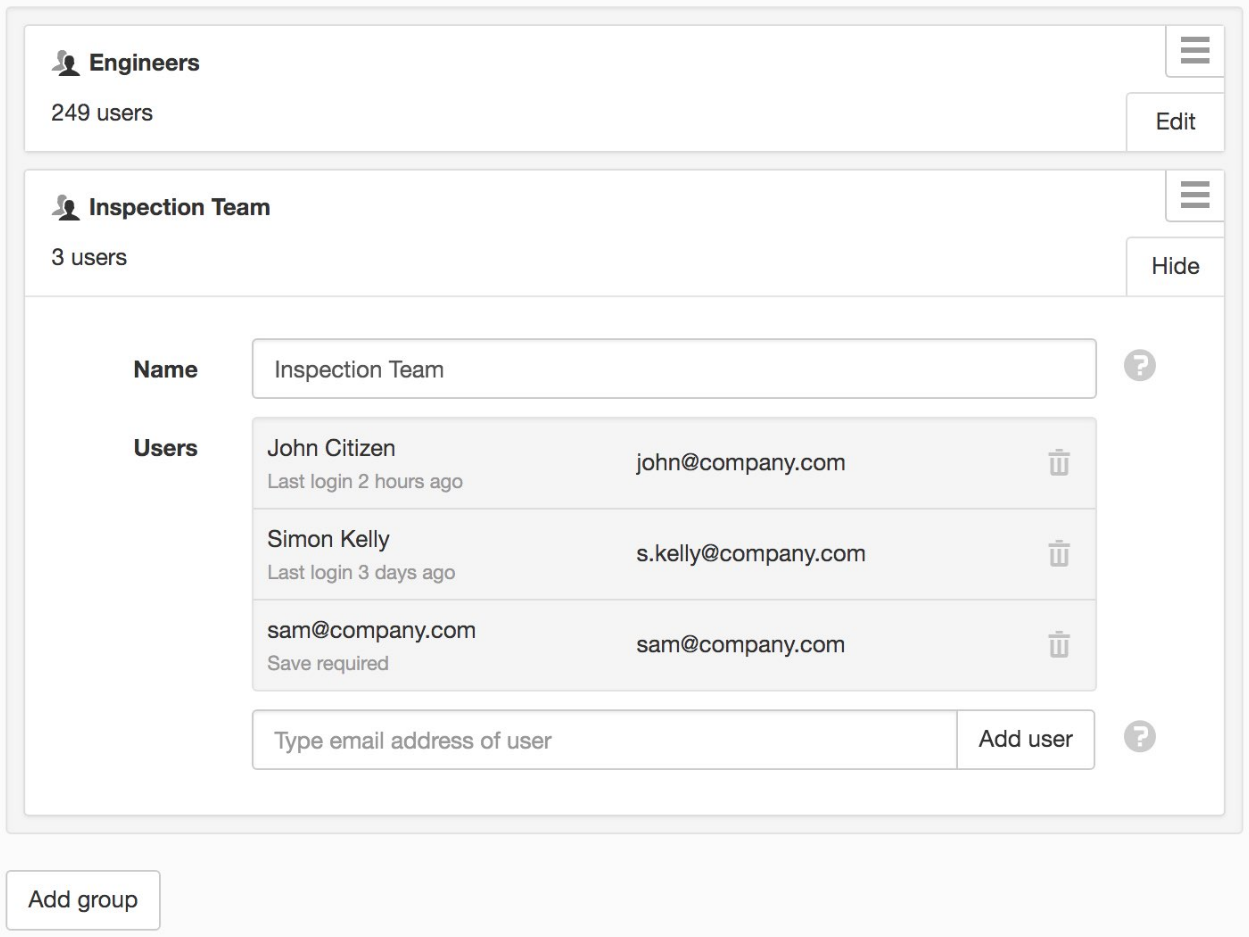
Note: You should only add trusted users as Administrators to keep your account secure.

Groups

Groups are used to organize your users and provide a convenient way to manage *Workspace access* (page 54) and *notifications* (page 179). To use groups, simply click *Add group*, assign a unique name and enter the email address of user(s) that you want to include in the group. New users will receive a welcome email with links to setup their user profile and login. A user can be assigned to more than one group.

After saving the newly created group, you can proceed to *share workspace access* (page 54) and *manage notifications* (page 180).

You can now add/remove users to the group and they will automatically receive/lose Workspace access and notifications associated with the group.



Engineers
249 users

Inspection Team
3 users

Name Inspection Team

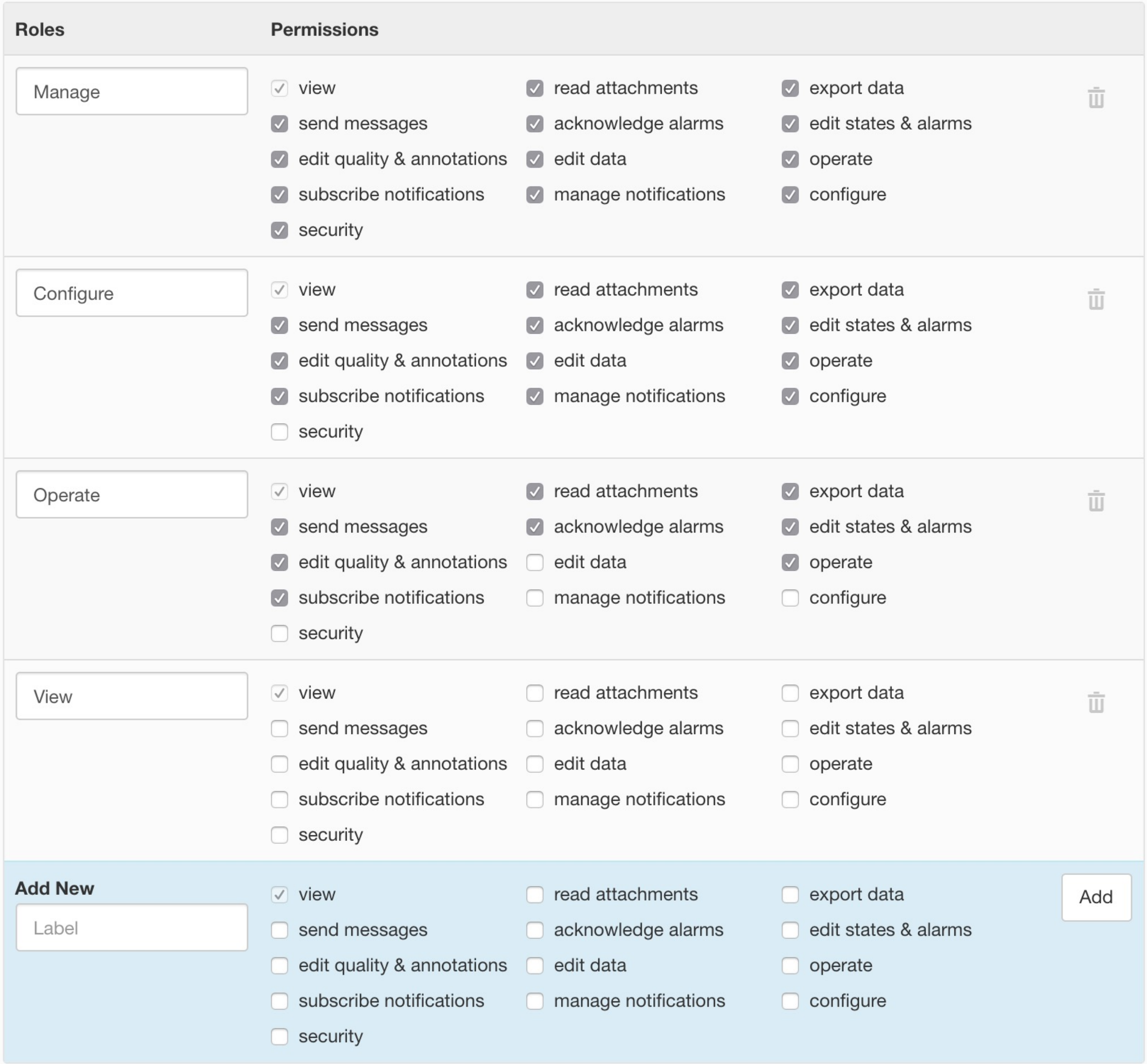
Users

John Citizen Last login 2 hours ago	john@company.com
Simon Kelly Last login 3 days ago	s.kelly@company.com
sam@company.com Save required	sam@company.com

Roles

Roles are assigned when *Sharing a Workspace* (page 54) to restrict user and group access to certain features. Create unlimited new roles, or change existing role permissions as needed. Removing a role that has been assigned will restrict associated users to *View only* access.

Default Roles



Roles	Permissions			
Manage	☑ view ☑ send messages ☑ edit quality & annotations ☑ subscribe notifications ☑ security	☑ read attachments ☑ acknowledge alarms ☑ edit data ☑ manage notifications	☑ export data ☑ edit states & alarms ☑ operate ☑ configure	
Configure	☑ view ☑ send messages ☑ edit quality & annotations ☑ subscribe notifications ☐ security	☑ read attachments ☑ acknowledge alarms ☑ edit data ☑ manage notifications	☑ export data ☑ edit states & alarms ☑ operate ☑ configure	
Operate	☑ view ☑ send messages ☑ edit quality & annotations ☑ subscribe notifications ☐ security	☑ read attachments ☑ acknowledge alarms ☐ edit data ☐ manage notifications	☑ export data ☑ edit states & alarms ☑ operate ☐ configure	
View	☑ view ☐ send messages ☐ edit quality & annotations ☐ subscribe notifications ☐ security	☐ read attachments ☐ acknowledge alarms ☐ edit data ☐ manage notifications	☐ export data ☐ edit states & alarms ☐ operate ☐ configure	
Add New Label	☑ view ☐ send messages ☐ edit quality & annotations ☐ subscribe notifications ☐ security	☐ read attachments ☐ acknowledge alarms ☐ edit data ☐ manage notifications	☐ export data ☐ edit states & alarms ☐ operate ☐ configure	Add

Permissions

View Minimum required permissions to log in and view content.

Read attachments Preview and Download attachments.

Export data Export historic data associated with parameters and locations.

Send messages Send messages to users of the Workspace.

Acknowledge alarms Acknowledge alarms with or without comment.

Edit states & alarms Configure Node states and alarms, or Clear alarms.

Edit quality & annotations Assign quality and annotations to timeseries records.

Edit data Modify or remove timeseries record values.

Operate User can Acquire and Control Datasources and Parameters.

Subscribe notifications Subscribe to Nodes and receive Email and SMS notifications.

Manage notifications Manage user notification subscriptions on behalf of other users.

Configure Create, Modify & Delete Nodes and associated configuration or Upload Attachments.

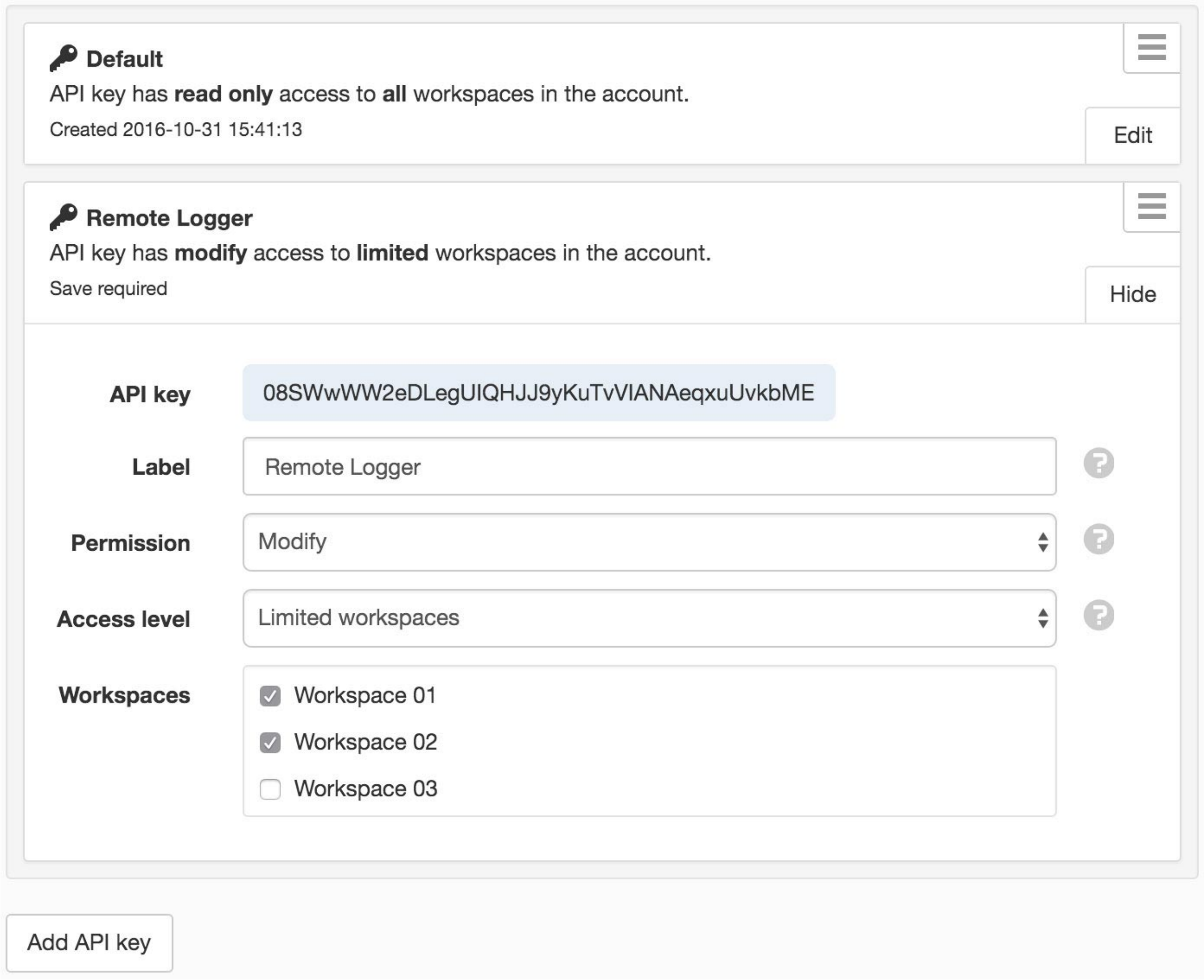
Security Workspace Sharing and assignment of User Roles.

Note: Security and Sharing changes take effect immediately on save.

API keys

API keys are used to authenticate eagle.io HTTP API requests. The API keys section allows you to create, delete or modify the permissions for API keys associated with your user account. You can have multiple API keys active at once.

API resource requests are restricted to the assets within the associated account and are assigned an *access level* and *permission* to restrict the actions an API request can perform.



Default

API key has **read only** access to **all** workspaces in the account.

Created 2016-10-31 15:41:13

Remote Logger

API key has **modify** access to **limited** workspaces in the account.

Save required

API key 08SWwWW2eDLegUIQHJJ9yKuTvVIANAeqxuUvkbME

Label Remote Logger

Permission Modify

Access level Limited workspaces

Workspaces

- ☑ Workspace 01
- ☑ Workspace 02
- ☐ Workspace 03

Access level

Account API requests will have access to all account resources including owner and account information and all Workspaces.

Workspace API requests will have access to all Workpace resources.

Limited Workspaces API requests will be limited to a pre-selected set of Workspaces.

Permission

Read only The API key can only be used to perform read-only (GET) requests on the resources specified by *Access level*.

Modify The API key can perform all requests on the resources specified by *Access level*.

Note: Your API keys carry many privileges, so be sure to keep them secret!

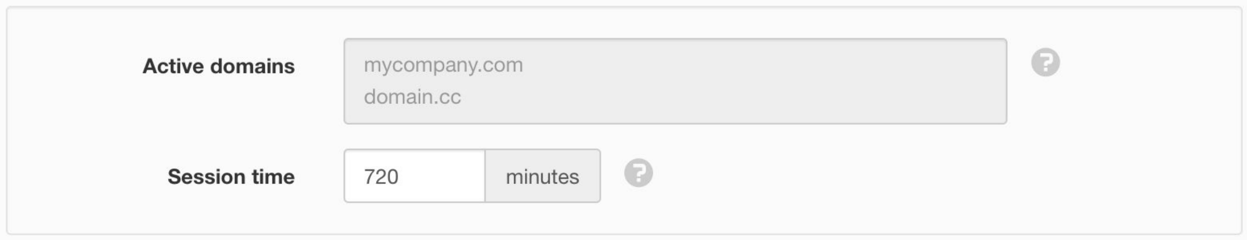
Single Sign-On

Single Sign-On (SSO) enables users from nominated domains to login via an enterprise authentication service.

We support a range of SSO identity providers including:

- Auth0 SAML
- AzureAD
- CyberArk SAML
- Generic SAML
- Google SAML
- JumpCloud SAML
- Microsoft AD FS
- Okta
- OneLogin
- OpenID Connect
- PingFederate
- PingOne
- Salesforce
- VMware Workspace One

Note: This is an enterprise level feature. Please contact support for more information.



Active domains	mycompany.com domain.cc
Session time	720 minutes

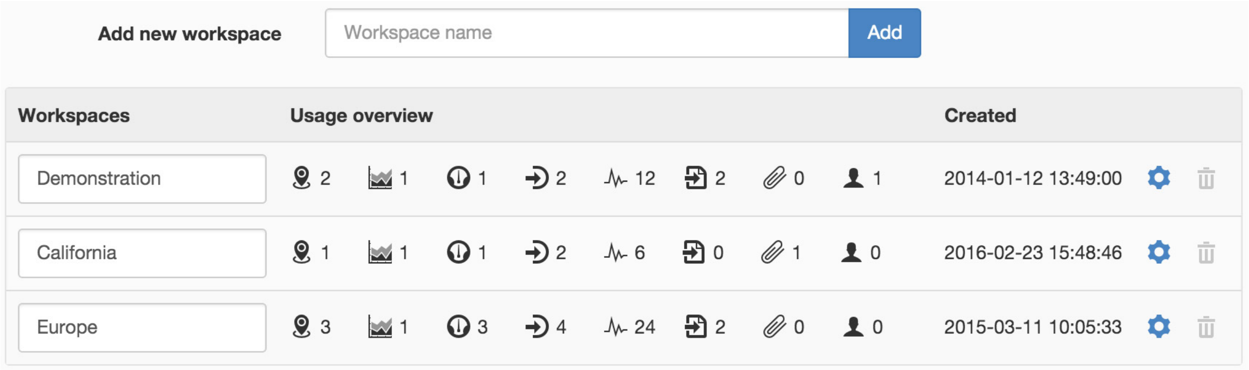
Active domains Users that login with an email address from an active domain are automatically redirected to a pre-configured Single Sign-On identify provider.

Session time Set the number of minutes after login before the user is automatically re-authenticated against the identity provider. Enter a value between 5 and 50000 minutes. The default is 720 minutes.

2.12.3 Workspaces

The workspaces section displays a list of all workspaces in the account. You can add, remove or configure workspaces.

The usage overview shows a current snapshot of usage for each workspace in the account. The user count does not include the account owner, administrators or account managers.



Workspaces	Usage overview								Created
Demonstration	2	1	1	2	12	2	0	1	2014-01-12 13:49:00
California	1	1	1	2	6	0	1	0	2016-02-23 15:48:46
Europe	3	1	3	4	24	2	0	0	2015-03-11 10:05:33

Note: Workspaces can also be created, removed or configured directly from the Workspaces Tree.

2.12.4 Notifications

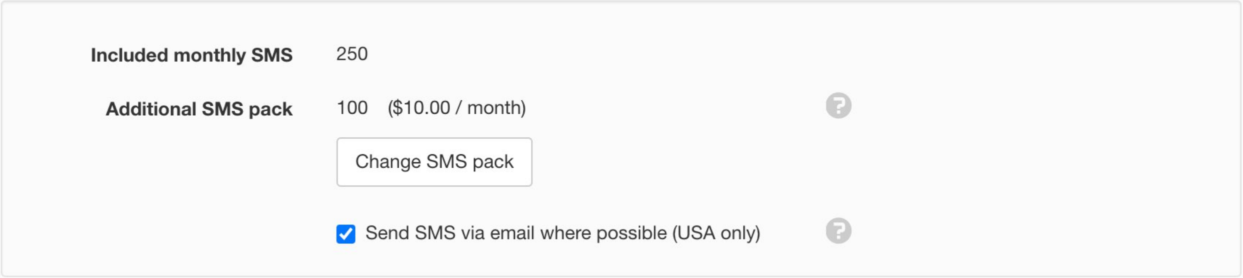
Notifications section is used to configure notification preferences for the account.

Notification Limits

Email notifications are free and unlimited.

All account plans are bundled with a specific number of included monthly SMS. Additional SMS Packs can be purchased in quantities of 100 / month.

The *Send SMS via email* option will send SMS notifications for free to phone numbers in the USA using the recipients' service provider email to SMS transport where possible. This option is only visible on primary accounts and is automatically applied to all managed accounts. The phone number field in *user preferences* (page 166) indicates if an SMS email address is in-use for your user profile (after sending an initial SMS) and allows you to reset/retry if you change service providers.

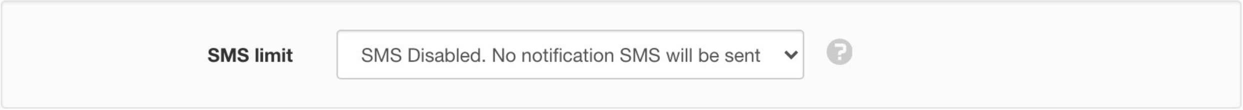


Included monthly SMS 250

Additional SMS pack 100 ($10.00 / month)

☑ Send SMS via email where possible (USA only)

You can optionally set a monthly *SMS limit* or disable SMS completely. The SMS limit is applied to assets configured directly within the account only. Managed accounts have an SMS Limit setting independent of the primary account.



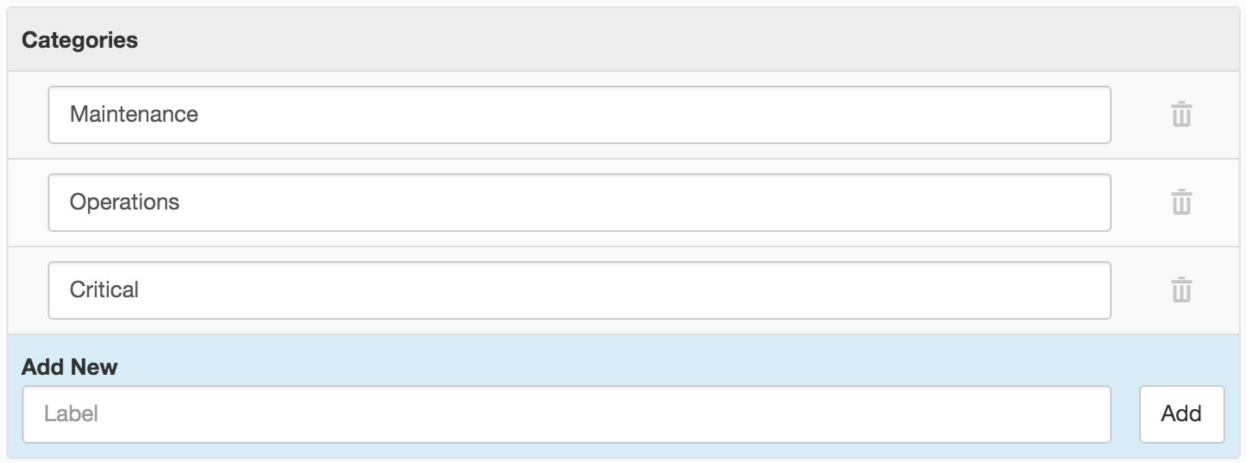
SMS limit SMS Disabled. No notification SMS will be sent

Note: The account owner will receive an email from the system when the total number of SMS sent within the current billing period gets close to the account limit. Another email will be sent when the limit is reached and no further notification SMS will be sent until the next billing period.

Notification Categories

Notification Categories provide a mechanism for users to filter the notifications they receive from a node they have subscribed to. All Nodes, States and/or Alarms that provide a Notification option require a Category to be specified. Users must individually select the categories in each Workspace they would like to receive notifications for. See *Notification Preferences* (page 168) for full details.

Add, rename and remove categories as needed for your organization.



Categories

Maintenance

Operations

Critical

Add New

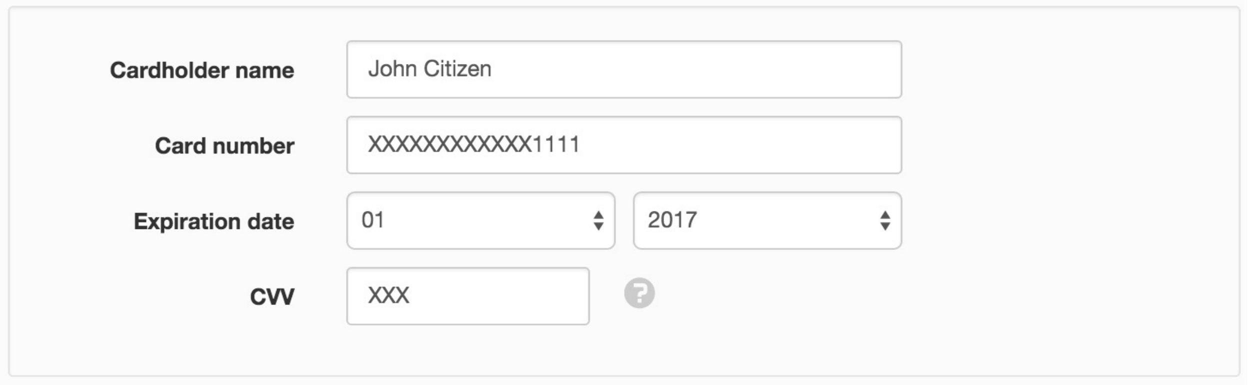
Note: Removing categories will also remove associated user notification preferences. There should always be at least one notification category configured.

2.12.5 Billing

Please ensure your billing details are always up to date to prevent your account being suspended.

Payment Information

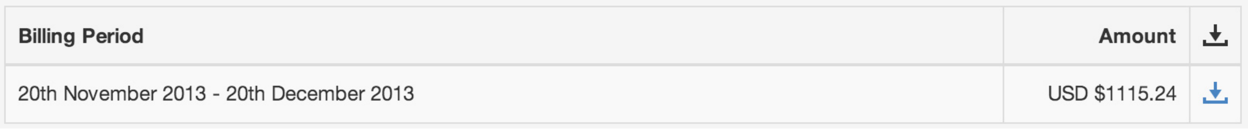
Credit Card details must be kept up to date. You will be notified about any failed transactions. Please contact support@eagle.io if you have any issues updating your billing information.



Cardholder name	John Citizen	
Card number	XXXXXXXXXXXX1111	
Expiration date	01	2017
CVV	XXX	?

Billing History

The Billing History section displays a list of all previous account bills available for download.



Billing Period	Amount	⬇
20th November 2013 - 20th December 2013	USD $1115.24	⬇

2.12.6 Customization

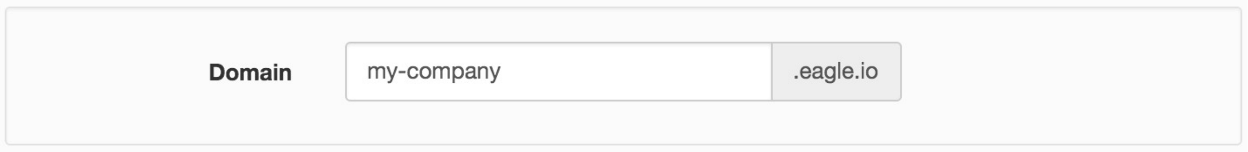
Create a personalised appearance for your company. Upload your own company logos, graphics and text which are displayed in the user interface and emails.

Product

Domains

You can specify a subdomain for free. If you would like to use your own custom domain name please contact your account manager or support@eagle.io. Subdomain changes take effect immediately and logged in users will be prompted to navigate to the new domain.

Minimum length of 5 characters is required. The subdomain will be validated on save.

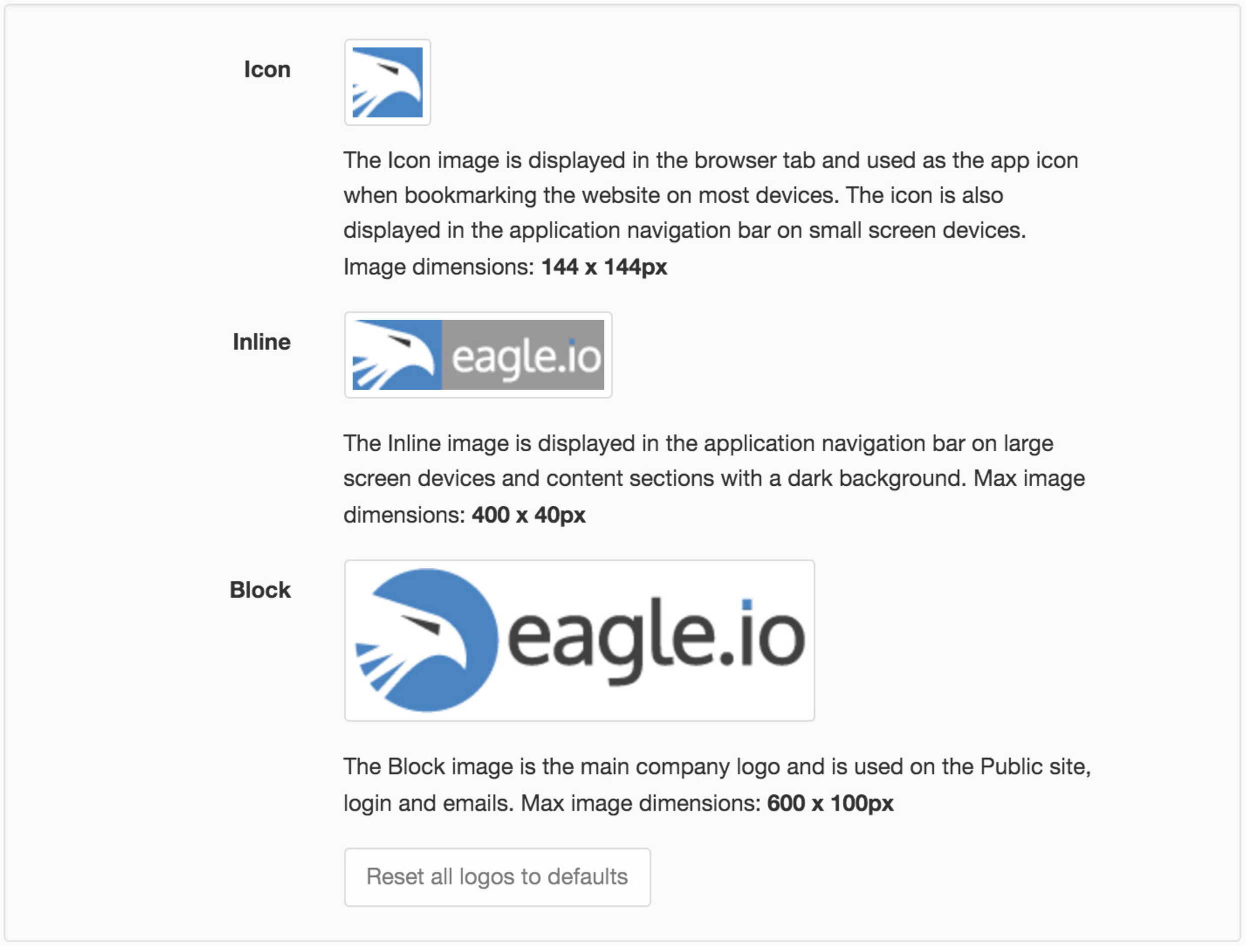


Domain my-company .eagle.io

Company Logo

Company logos can be uploaded to customize the appearance of the site when accessed via the account domain. Logos are also used in emails sent to users.

Click on the logo images to replace them with your own. For best results use images that conform to the recommended dimensions.



The Icon image is displayed in the browser tab and used as the app icon when bookmarking the website on most devices. The icon is also displayed in the application navigation bar on small screen devices. Image dimensions: **144 x 144px**

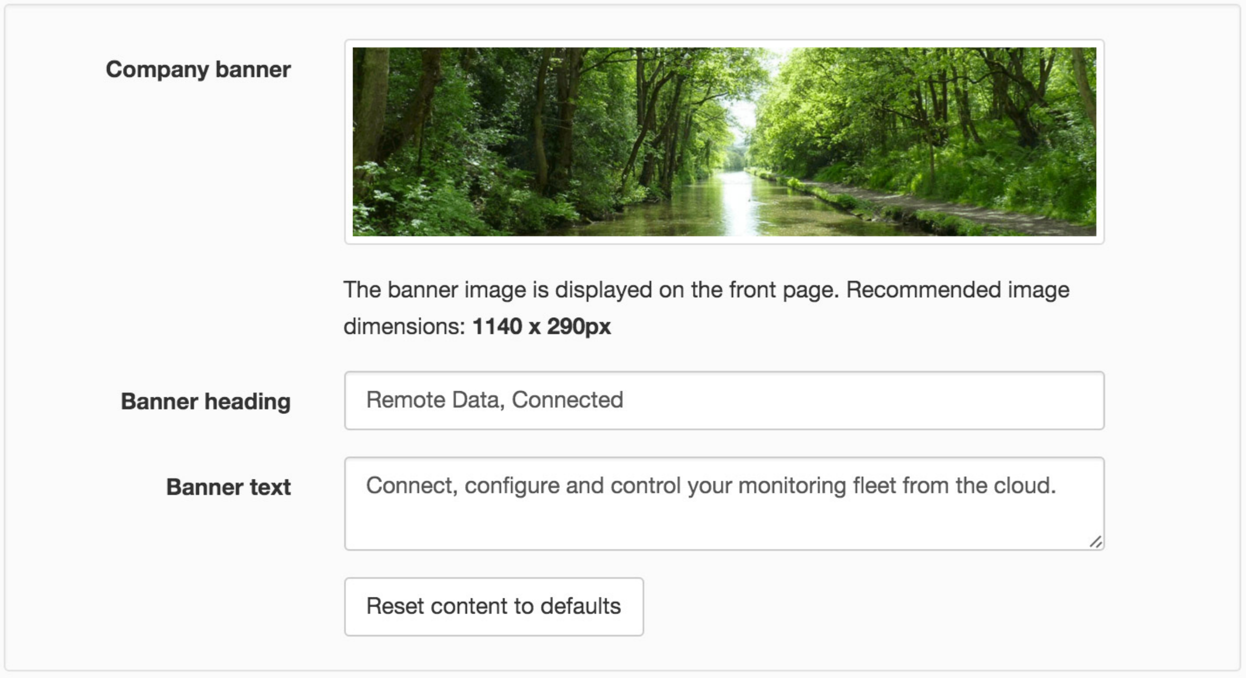
The Inline image is displayed in the application navigation bar on large screen devices and content sections with a dark background. Max image dimensions: **400 x 40px**

The Block image is the main company logo and is used on the Public site, login and emails. Max image dimensions: **600 x 100px**

Public Content

Front Page

You can customize your landing page by changing the banner image and description.



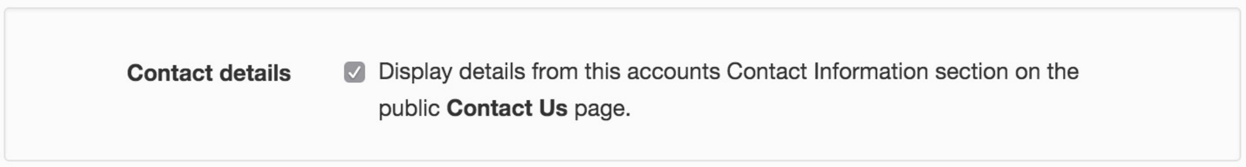
The banner image is displayed on the front page. Recommended image dimensions: **1140 x 290px**

Banner heading Remote Data, Connected

Banner text Connect, configure and control your monitoring fleet from the cloud.

Contact

Tick or untick the *Contact details* checkbox to display or hide your account contact details on the public *Contact Us* page.



Contact details ☑ Display details from this accounts Contact Information section on the public **Contact Us** page.

2.12.7 Integrations

Integrations provide extended functionality by connecting to apps from third party providers.

S3 Backup

The S3 Backup integration enables data files received by eagle.io to be backed up to a specific S3 bucket in your own Amazon Web Services account.

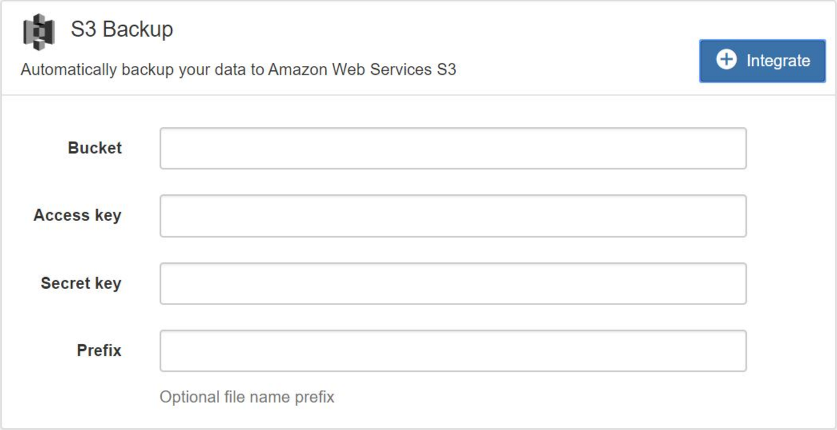
Note: This feature is a paid addition to Standard accounts, and is included with Premium accounts. Please contact sales@eagle.io to learn more about premium features.

To use this integration, first create a new S3 bucket in your AWS account to be used for the specific purpose of eagle.io backups. Create an IAM user (https://docs.aws.amazon.com/IAM/latest/UserGuide/id_users_create.html), and allocate an API access key (https://docs.aws.amazon.com/general/latest/gr/aws-sec-cred-types.html#access-keys-and-secret-access-keys) to this user. The access key will consist of two parts: an access key ID, and a secret access key. Finally, assign write permissions (https://docs.aws.amazon.com/AmazonS3/latest/user-guide/set-bucket-permissions.html) for this user to the bucket.

With this information, you can then enable the integration and enter the three required settings:

1. Bucket name
2. Access key ID
3. Secret access key

You can also enter an optional file name prefix.



S3 Backup

Automatically backup your data to Amazon Web Services S3

2.12.8 Managed accounts

Managed accounts are new accounts you have created for end-clients or your own company departments to segregate assets and users but retain full management functionality and centralized billing.

Administrators of your account automatically inherit administrator access to all managed accounts.

Note: Trial accounts and users of managed accounts do not have access to the *managed accounts* section.

Trials

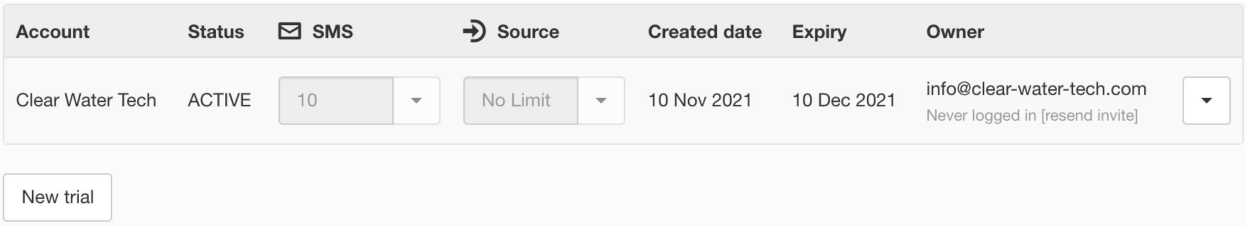
Create managed trials to provide clients with a 30 day free evaluation of the service at no charge to you.

Managed trials are displayed in the list with their status initially set to *ACTIVE* and become *DISABLED* on expiry. Use the dropdown menu to *Switch to account*, *Request extension*, *Upgrade to paid* or *Close account*.

Disabled trial accounts will be automatically removed 3 months after expiry.

Usage Limits

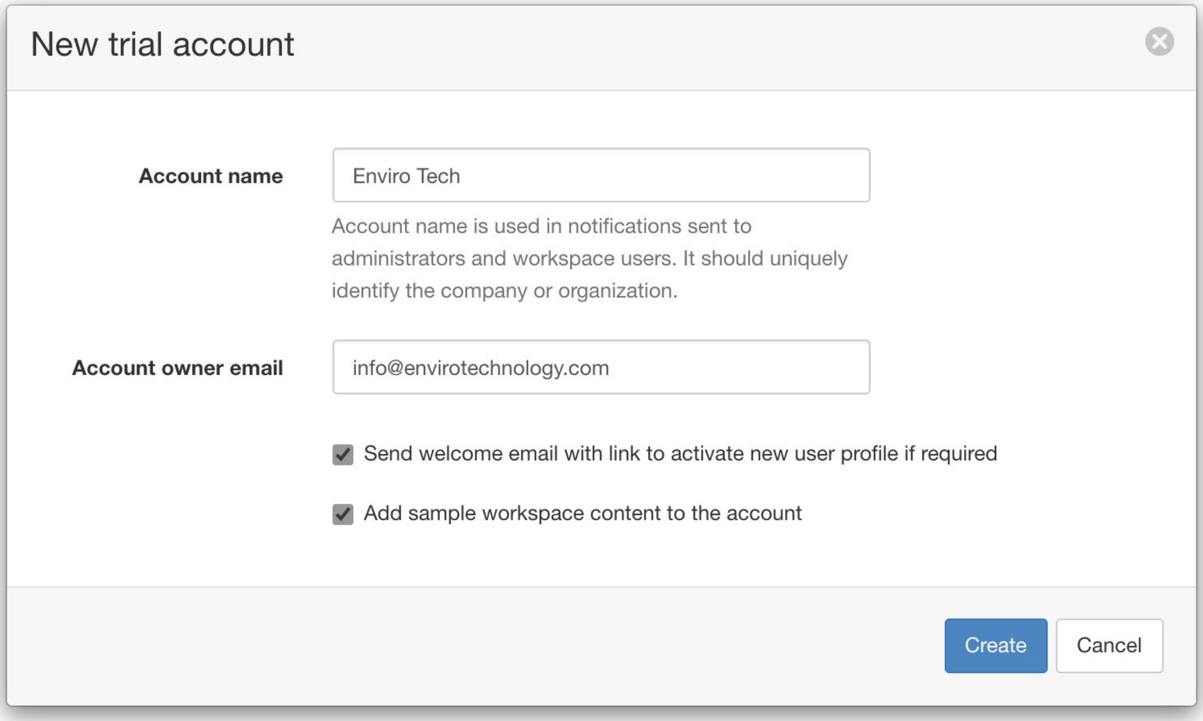
During the trial, users can create unlimited Sources, but the account is restricted to 10 free SMS.



Account	Status	SMS	Source	Created date	Expiry	Owner
Clear Water Tech	ACTIVE	10	No Limit	10 Nov 2021	10 Dec 2021	info@clear-water-tech.com Never logged in [resend invite]

Note: When a trial account is disabled, users will not have access to workspaces, historic data or events until the account has been *extended* or *upgraded to paid*.

Click the *New trial* button to create a new trial account. Specify the *account name* and *account owner email* address.



Account name Enviro Tech

Account name is used in notifications sent to administrators and workspace users. It should uniquely identify the company or organization.

Account owner email info@envirotechnology.com

☑ Send welcome email with link to activate new user profile if required

☑ Add sample workspace content to the account

You can optionally send a welcome email to the account owner. If the user has never logged-in to the system, the welcome email will contain a link to activate their user profile. You can skip the welcome email if you want to customize the account first, then use the *resend invite* option from the account list when ready (only available if the user has never logged-in).

Sample workspace content can also be added when the account is created. You should ensure you remove any demonstration datasources prior to upgrading a trial to a paid account to prevent being charged usage fees for this content.

Note: The *account owner email* address can only be assigned as the account owner of one account.

Accounts

Create managed accounts to provide your clients with their own rebranded account. Source and SMS usage will contribute to your overall account usage while the account is active.

Managed accounts are displayed in the list with their status initially set to *ACTIVE*. Use the dropdown menu to *Switch to account*, *Disable*, *Enable* or *Close account*. You can disable an account and re-enable it at any time. You will not be charged usage fees for the duration the account is disabled but new data will not be collected until the account has been re-enabled.

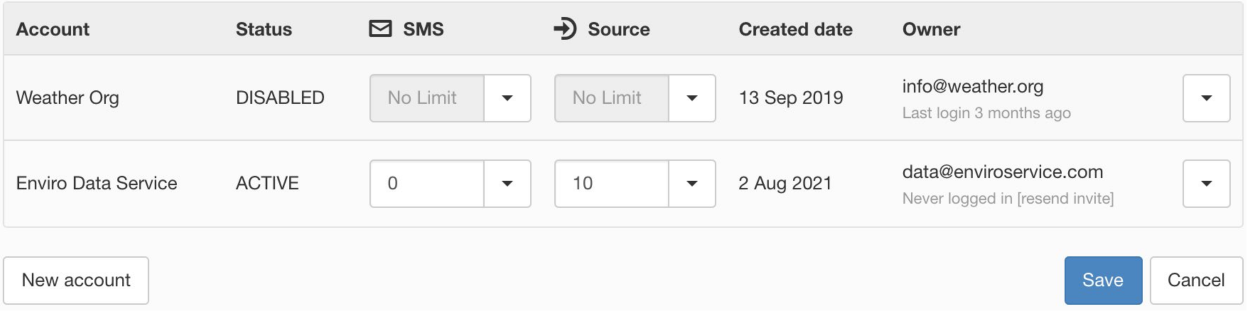
Usage Limits

You can optionally configure SMS and Source usage limits for individual accounts.

SMS limit restricts the number of SMS that can be sent from the account per monthly billing period.

Source limit restricts the number of Sources that can be created within the account. The usage per source may vary depending on type, size and account plan.

Applying a limit that is below *current usage* (page 265) will just prevent new SMS being sent or new Sources from being created. Limits are always capped by the primary account plan capacity.



Account	Status	SMS	Source	Created date	Owner
Weather Org	DISABLED	No Limit	No Limit	13 Sep 2019	info@weather.org Last login 3 months ago
Enviro Data Service	ACTIVE	0	10	2 Aug 2021	data@enviroservice.com Never logged in [resend invite]

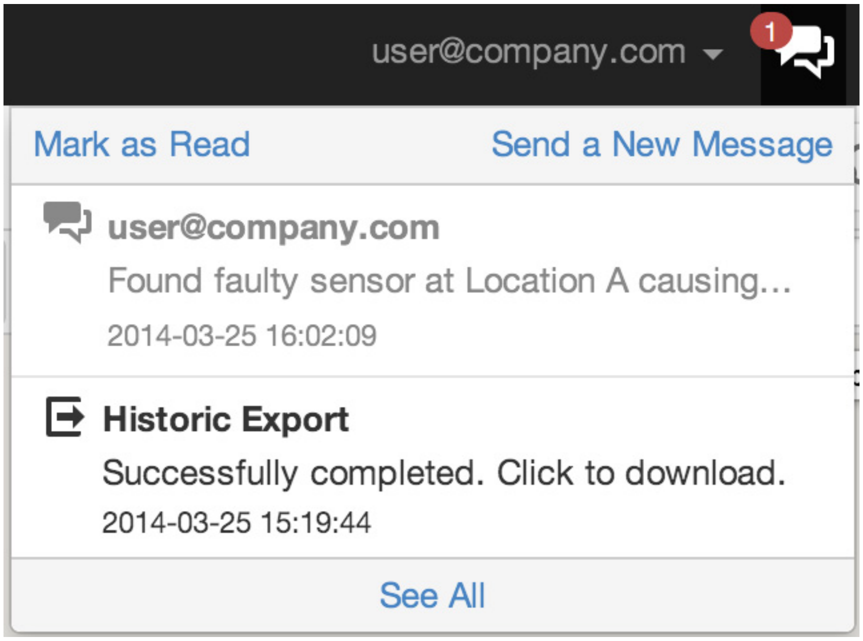
Click the *New account* button to create a new paid account. All account options are the same as the *New trial* dialog above.

Note: When an account is disabled, users will not have access to workspaces, historic data or events until the account has been *enabled* again.

2.13 Messages

Messages provides access to items for download, general communication to users of a Workspace and important system announcements.

The Messages icon indicates the total number of *Unread* messages. Clicking the icon will reveal the Message Menu (Desktop layout only) which displays a preview of the most recent messages. Scroll down the menu to reveal older messages. Clicking on an Export message will immediately download the associated file.



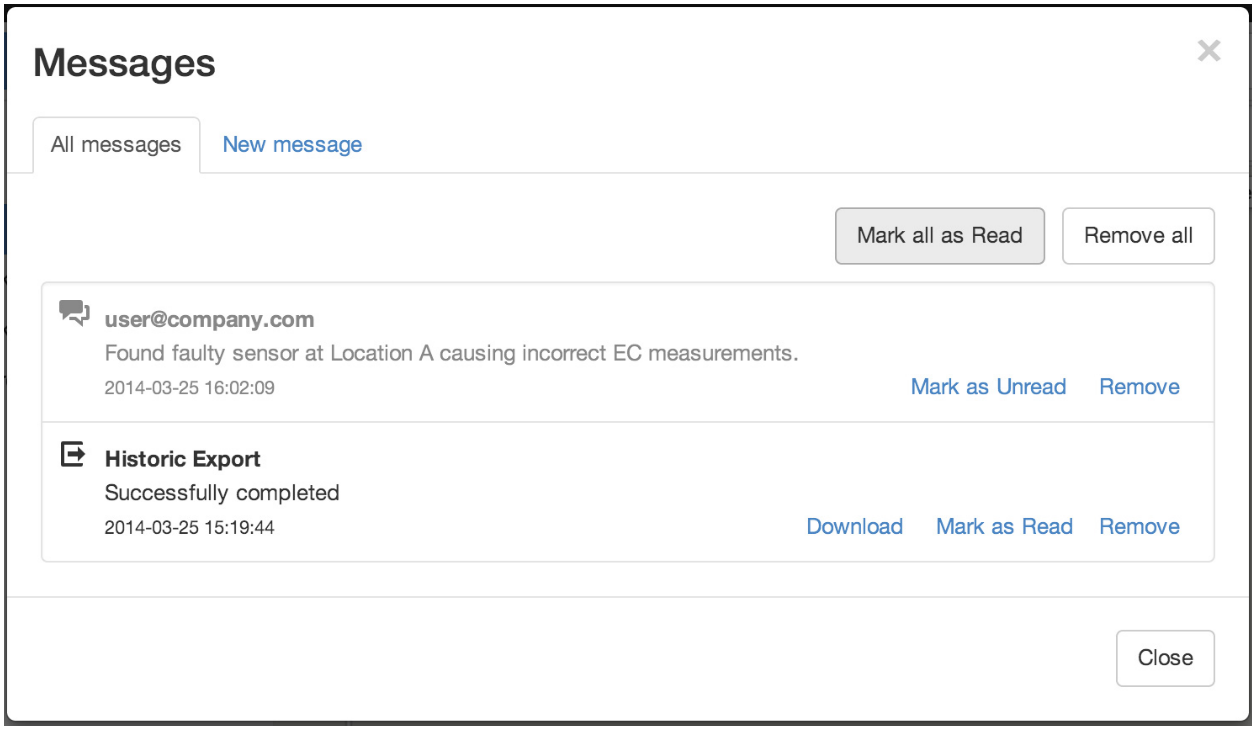
user@company.com
Found faulty sensor at Location A causing...
2014-03-25 16:02:09

Historic Export
Successfully completed. Click to download.
2014-03-25 15:19:44

Note: Export messages are automatically removed from the system after 12 hours.

2.13.1 All messages

The Messages dialog displays the full message content and provides management functions for marking messages as read/unread, removing messages and downloading historic exports.


Messages
×
All messages
New message
Mark all as Read
Remove all

user@company.com

Found faulty sensor at Location A causing incorrect EC measurements.

2014-03-25 16:02:09

Mark as Unread
Remove

Historic Export

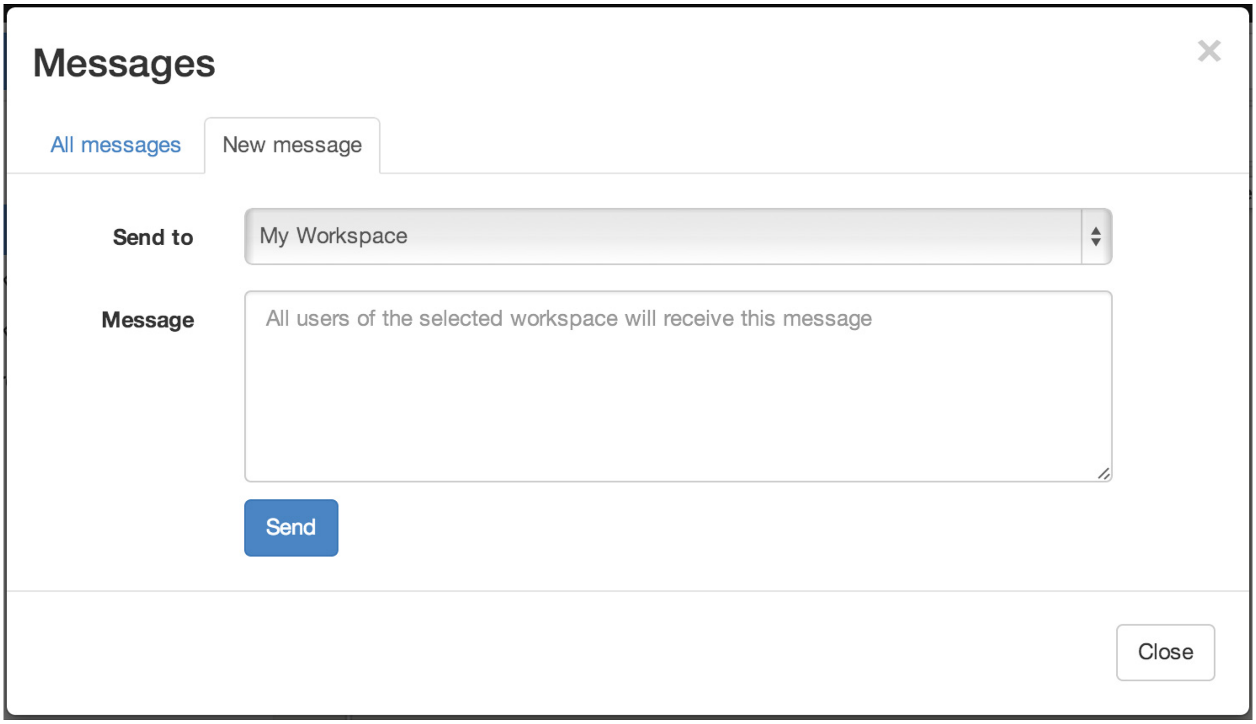
Successfully completed

2014-03-25 15:19:44

Download
Mark as Read
Remove
Close

2.13.2 New message

Send a new message to all users of a Workspace including the associated account Administrators and Owner. You will also receive a copy of the message. Select the Workspace from the drop down, enter your message and click Send.


Messages
×
All messages
New message
Send to
My Workspace
Message
All users of the selected workspace will receive this message
Send
Close

Note: You must have *Send Messages* permission for the Workspace in order to send messages to its users.

2.14 Device Configuration

The following topics will assist when configuring your device for eagle.io (https://eagle.io)

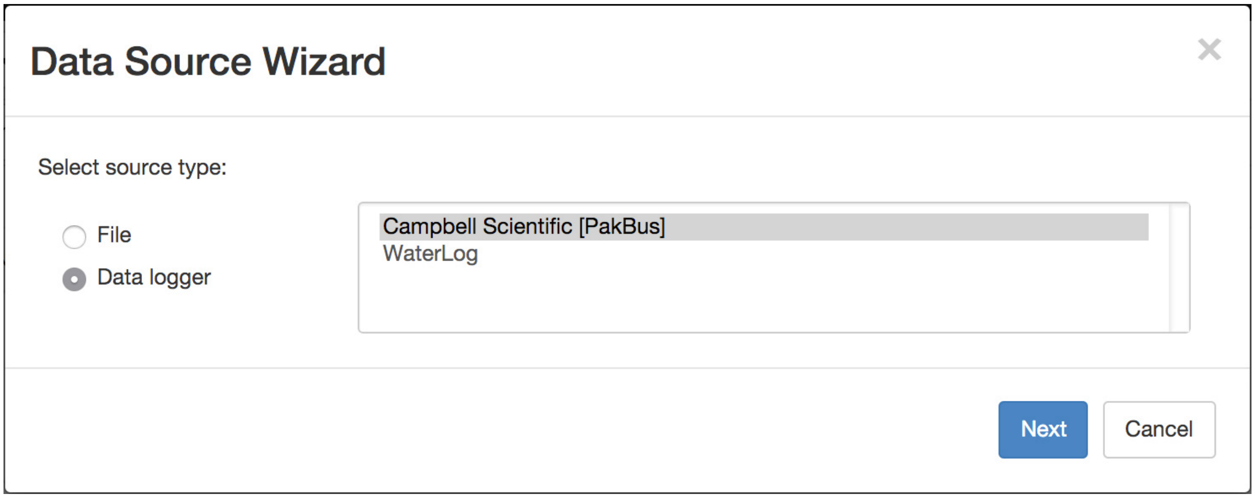
2.14.1 Campbell Scientific

Eagle.io (https://eagle.io) provides full support for Campbell Scientific (http://www.campbellsci.com/) PakBus data loggers including the **CR200**, **CR300**, **CR800**, **CR1000**, **CR3000**, **CR9000**, **CRVW** and **CR6** series.

This section provides instructions for connecting your PakBus data logger to eagle.io. Refer to *Operate and Control* (page 182) for advanced usage instructions.

Source configuration

1. Create a *Data Source* (page 134) and select *Data logger* as the Source Type. Choose *Campbell Scientific [PakBus]* from the list and click Next.



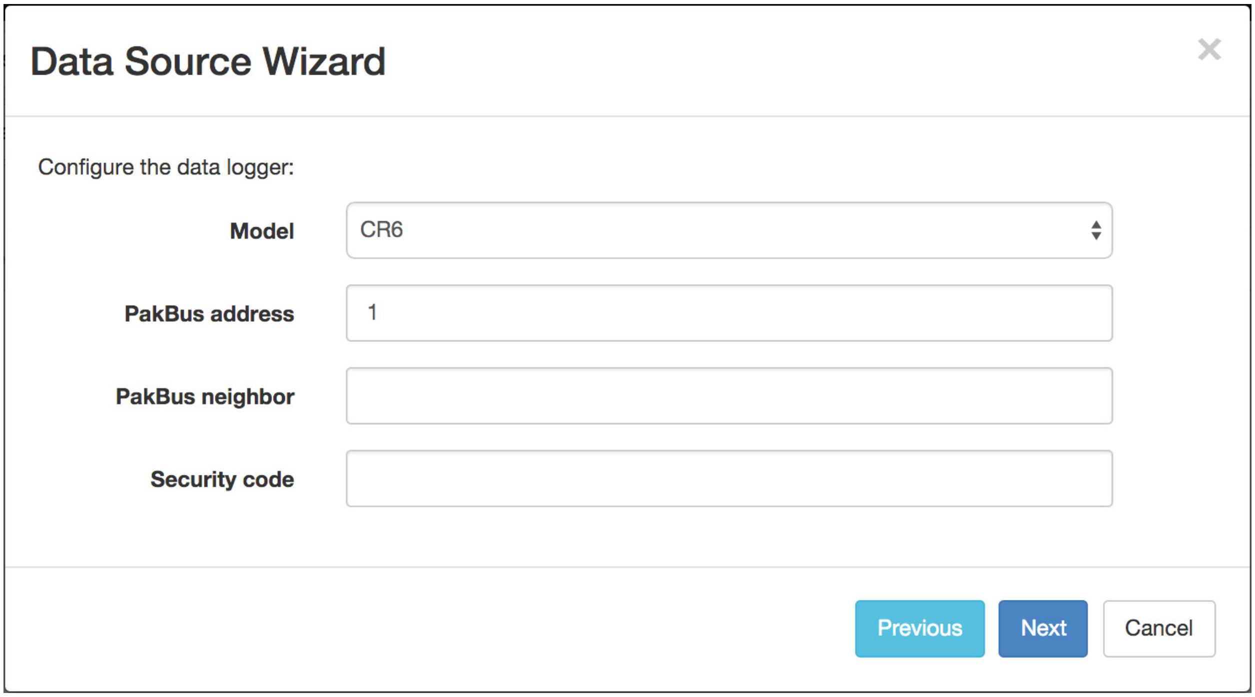
Data Source Wizard

Select source type:

○ File
● Data logger

Campbell Scientific [PakBus]
WaterLog

2. Select the data logger *Model* and *PakBus address* (default is 1). Optionally specify a *PakBus neighbor* and logger *Security code*. Click Next.



Data Source Wizard

Configure the data logger:

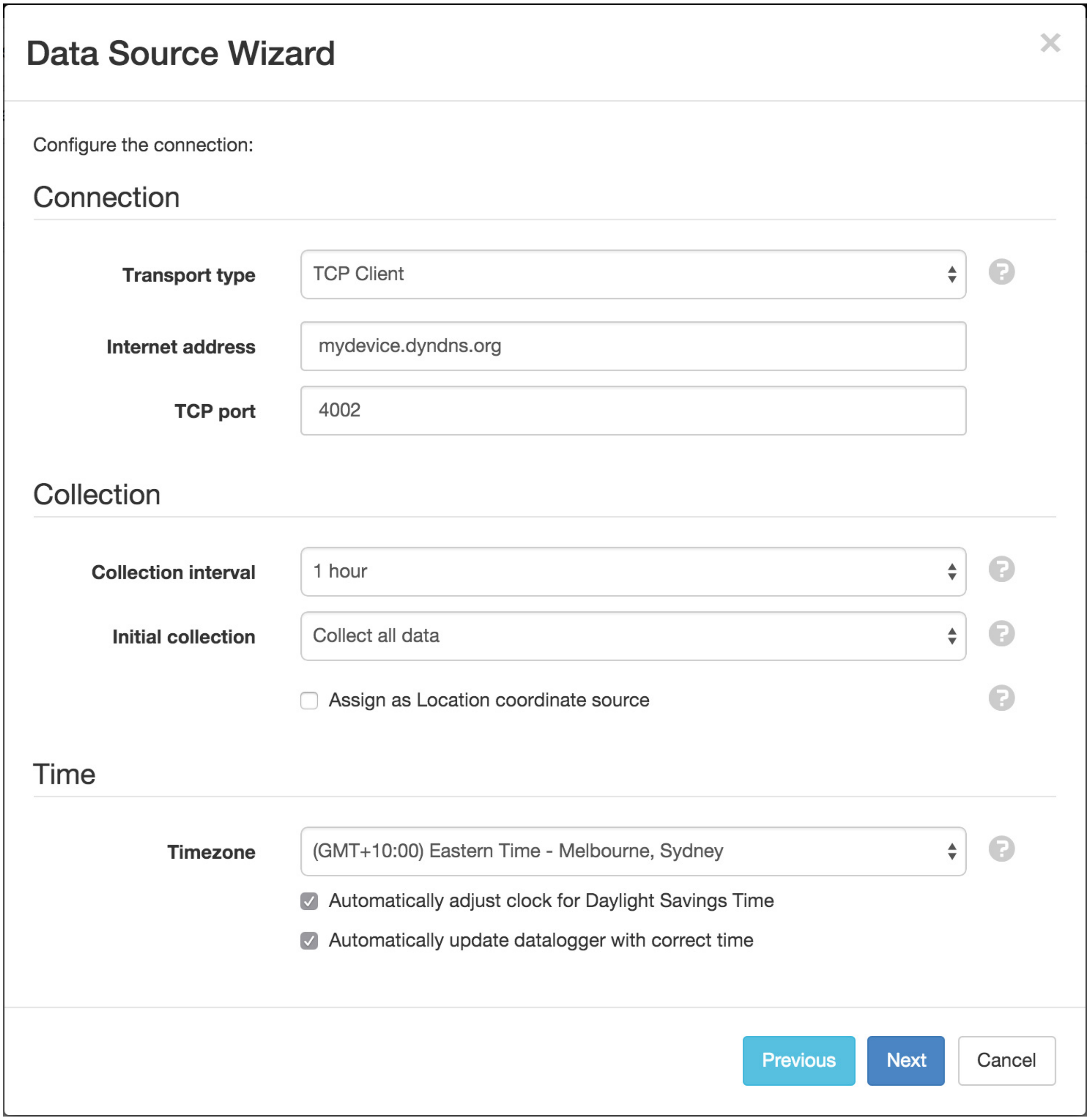
Model CR6

PakBus address 1

PakBus neighbor

Security code

3. Select a *Transport type* to use for *connecting to your logger* (page 136). This example uses the *TCP Client* Transport type to connect directly to a logger accessible via the Internet. Select the *Collection interval* and *Timezone* of the data logger. Refer to *Data Source configuration* (page 134) for a full list of available options.



Data Source Wizard

Configure the connection:

Connection

Transport type TCP Client

Internet address mydevice.dyndns.org

TCP port 4002

Collection

Collection interval 1 hour

Initial collection Collect all data

☐ Assign as Location coordinate source

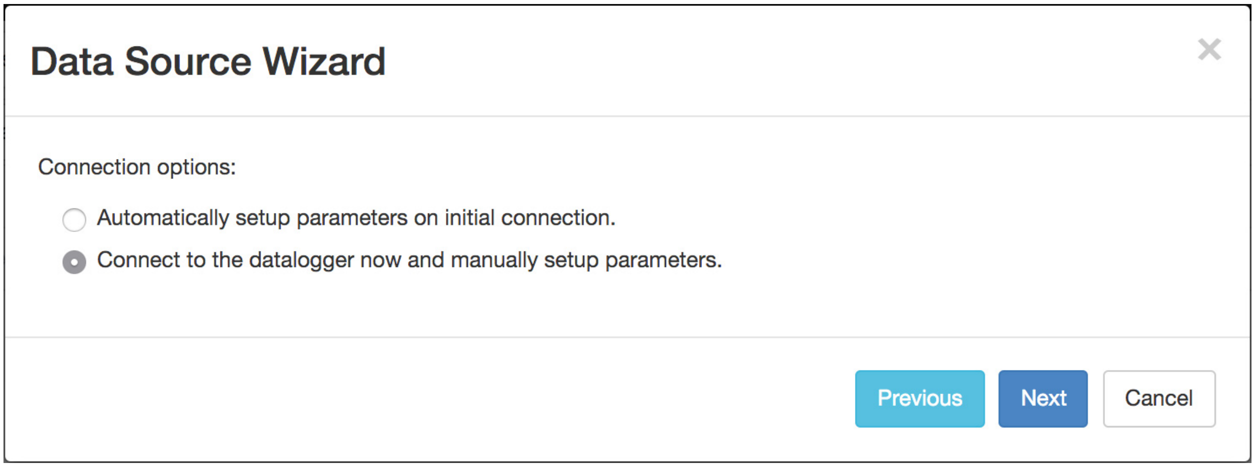
Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Automatically adjust clock for Daylight Savings Time

☑ Automatically update datalogger with correct time

4. You can choose to *Connect to the data logger now and manually setup parameters* if the logger is online. Alternatively choose the *Automatically setup parameters on initial connection* option and click Next to complete the setup.



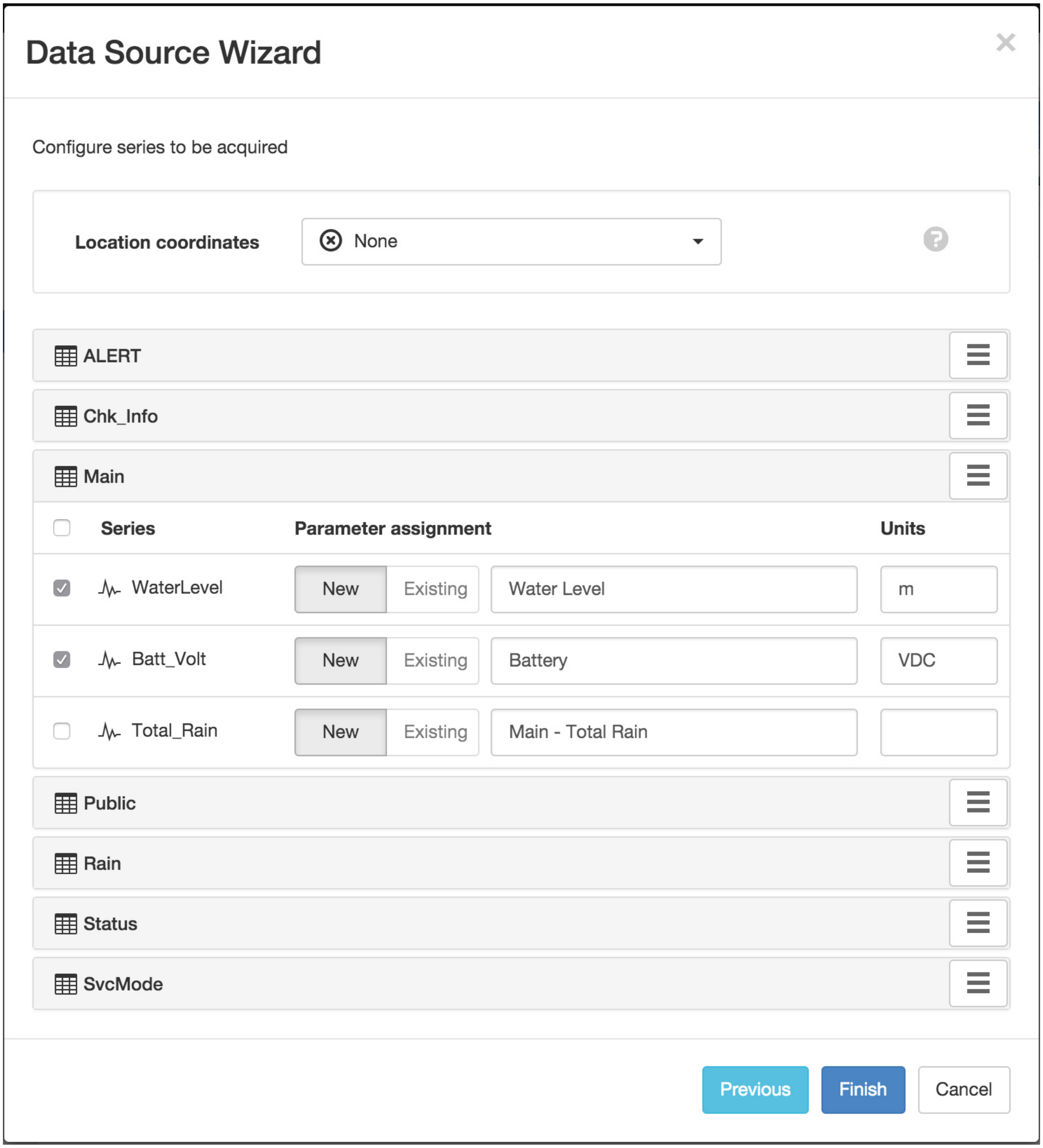
Data Source Wizard

Connection options:

○ Automatically setup parameters on initial connection.

● Connect to the datalogger now and manually setup parameters.

5. Table definitions are retrieved from the logger upon successful connection. Select the series from each table that you would like to create as parameters. You can create *Control* (page 182) Parameters from any Public table variables. Specify the parameter names (and optionally units) and click Finish to complete the setup.


ALERT
Chk_Info
Main
Public
Rain
Status
SvcMode
Previous
Finish
Cancel

Data Source Wizard

Configure series to be acquired

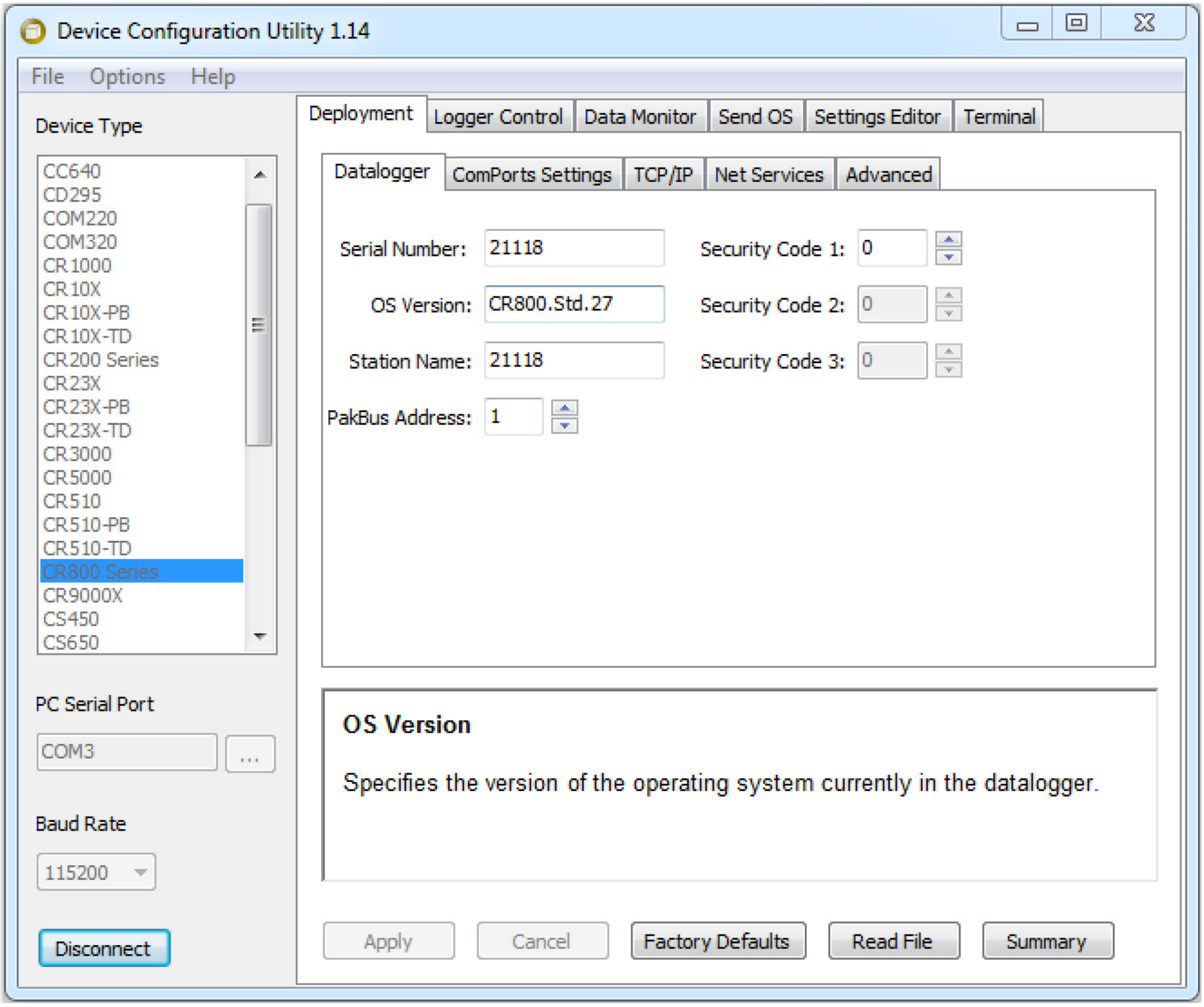
Location coordinates: None

☐	Series	Parameter assignment		Units
☑	WaterLevel	New / Existing	Water Level	m
☑	Batt_Volt	New / Existing	Battery	VDC
☐	Total_Rain	New / Existing	Main - Total Rain	

Note: You can reconfigure the series Parameter assignment from the *Data Source* (page 134) properties dialog after the setup is complete.

Device settings

Use the Campbell Scientific Device Configuration Utility to configure your data logger for communication with eagle.io. Refer to your Campbell Scientific (http://www.campbellsci.com/) PakBus logger manual for connection instructions.


Device Configuration Utility 1.14
File
Options
Help
Device Type
CC640
CD295
COM220
COM320
CR1000
CR10X
CR10X-PB
CR10X-TD
CR200 Series
CR23X
CR23X-PB
CR23X-TD
CR3000
CR5000
CR510
CR510-PB
CR510-TD
CR800 Series
CR9000X
CS450
CS650
PC Serial Port
Baud Rate
Disconnect
Deployment
Logger Control
Data Monitor
Send OS
Settings Editor
Terminal
Datalogger
ComPorts Settings
TCP/IP
Net Services
Advanced
Apply
Cancel
Factory Defaults
Read File
Summary

Serial Number: 21118

OS Version: CR800.Std.27

Station Name: 21118

PakBus Address: 1

Security Code 1: 0

Security Code 2: 0

Security Code 3: 0

PC Serial Port: COM3

Baud Rate: 115200

OS Version

Specifies the version of the operating system currently in the datalogger.

The following Server settings should be assigned as a minimum:

PakBus Address Use the PakBus address you assigned during Data Source creation. Default is 1.

Security Code Use the Security code you assigned during Data Source creation or use 0 for none.

You will also need to modify the TCP/IP settings as required based on your connection method.

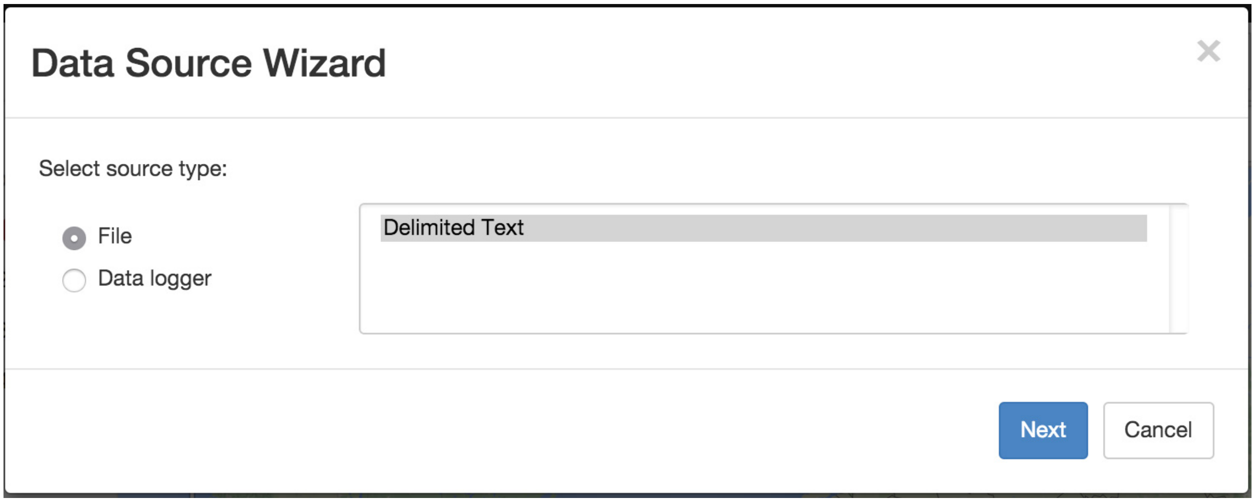
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.2 CellVisor

The E State Automation (http://www.estateautomation.com.au) **CellVisor** range of data loggers can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

Source configuration

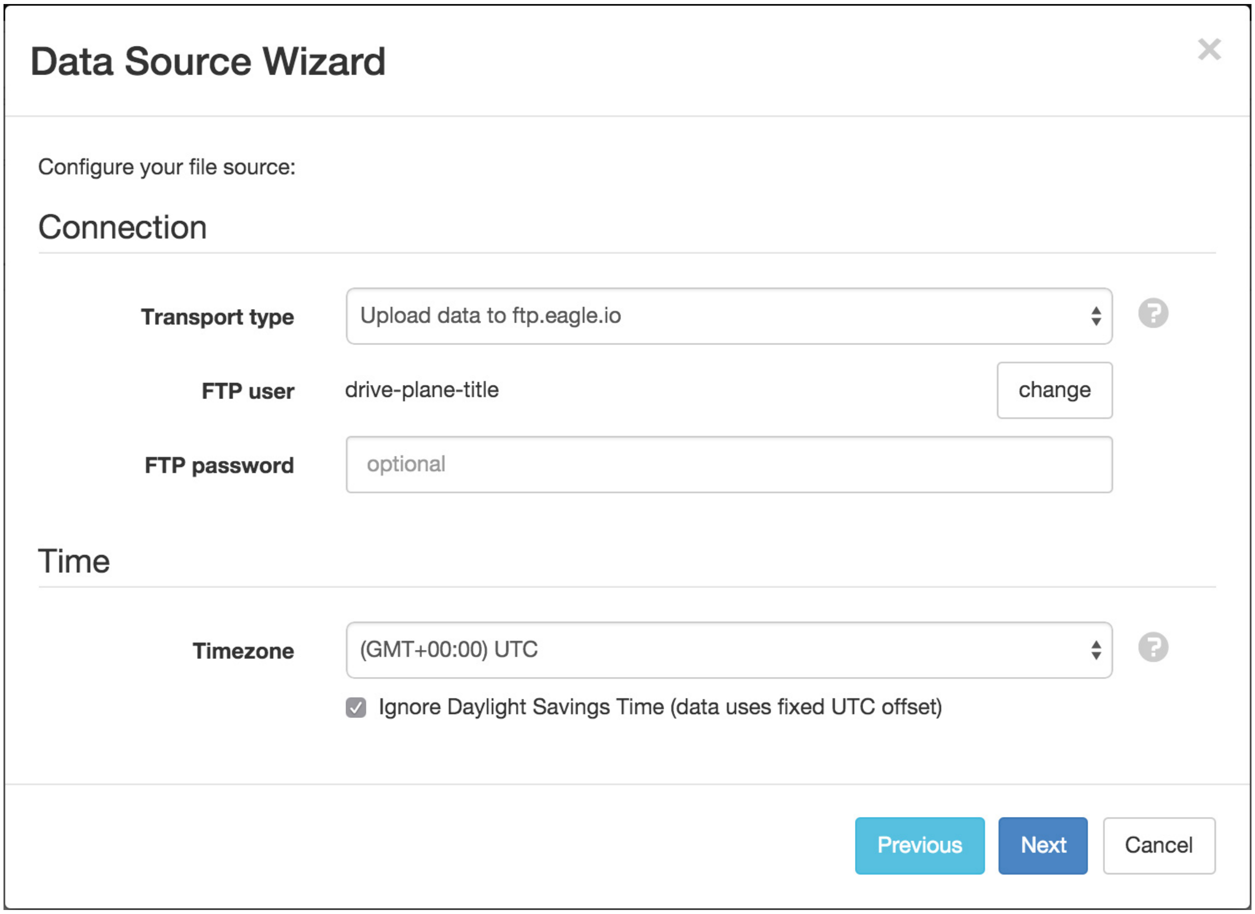
1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.



Data Source Wizard
×
Select source type:
● File
○ Data logger
Delimited Text
Next
Cancel

2. Select *Upload data to ftp.eagle.io* as the transport type. A unique *Ftp user* account will be automatically generated per Data Source. You can optionally specify a password to be used by the logger for

additional security. Select *UTC* as the *Timezone* and click Next.



Configure your file source:

Connection

Transport type: Upload data to ftp.eagle.io

FTP user: drive-plane-title

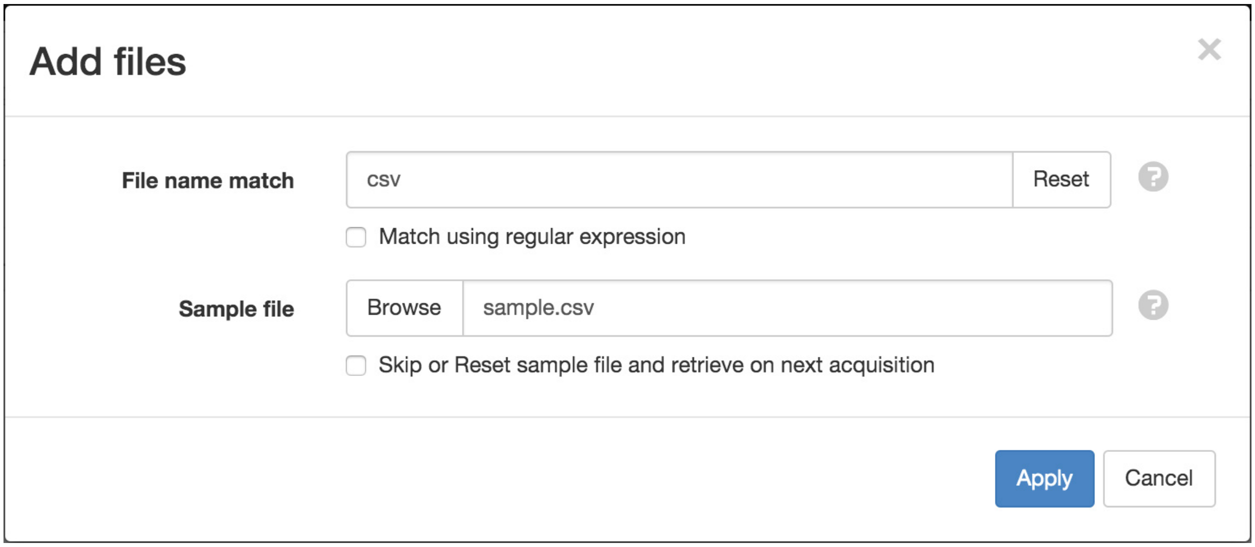
FTP password: optional

Time

Timezone: (GMT+00:00) UTC

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Specify *csv* as the *File name match*. This will match all incoming files for this Source containing 'csv' in the filename. To continue the setup you will need a sample copy of the logger's output data file(s).



File name match: csv

☐ Match using regular expression

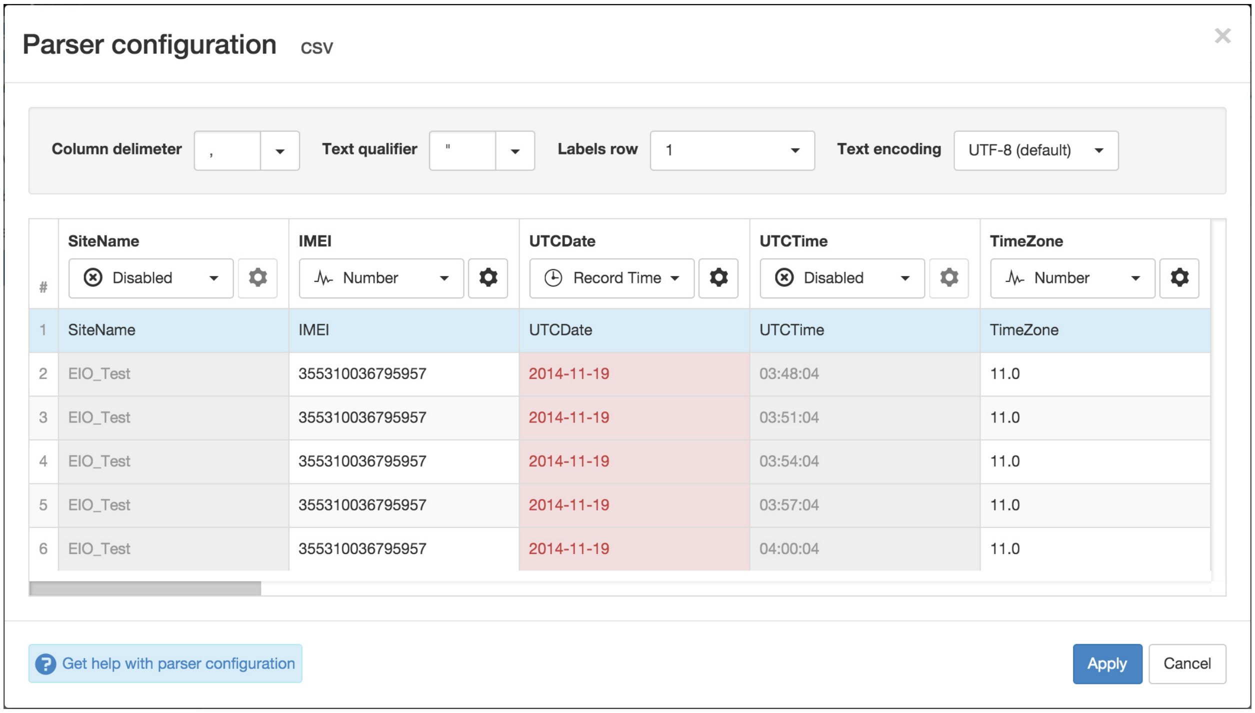
Sample file: sample.csv

☐ Skip or Reset sample file and retrieve on next acquisition

Note: If you do not have a sample available, click the *Skip* checkbox and click finish on the next screen. A sample will be saved automatically on the initial upload from the data logger and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

---

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.



Parser configuration csv

Column delimiter: ,
Text qualifier: "
Labels row: 1
Text encoding: UTF-8 (default)

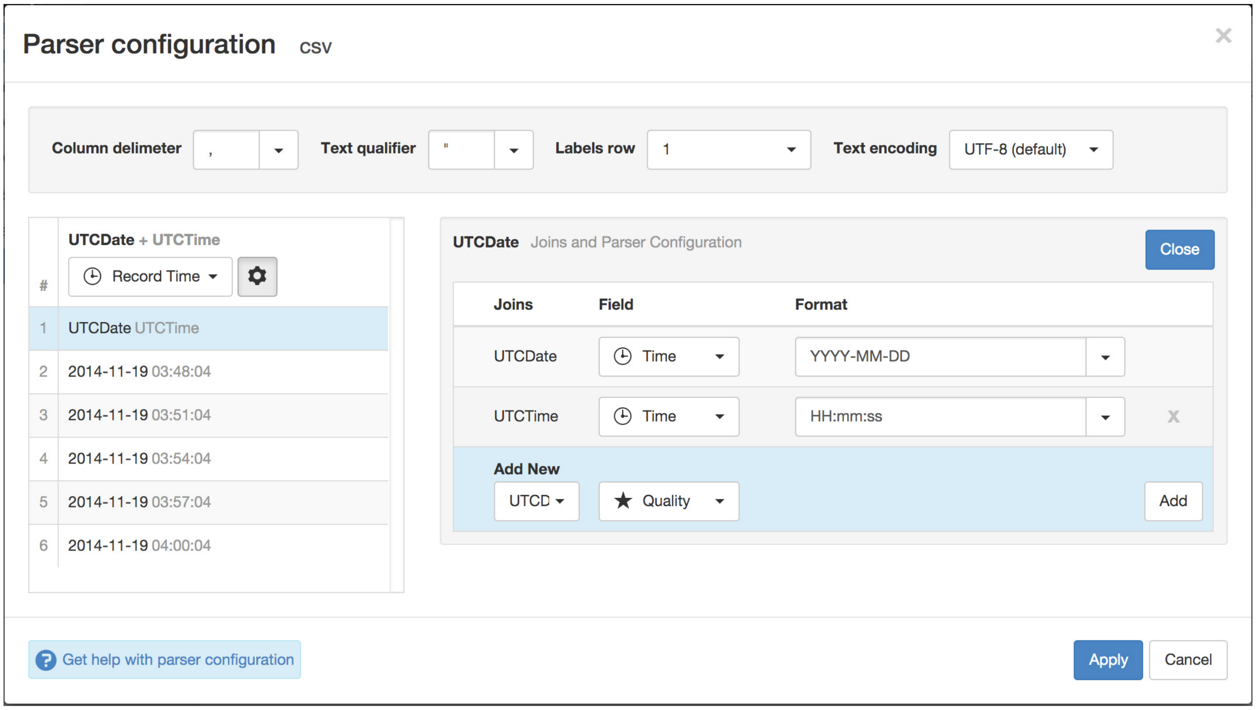
#	SiteName	IMEI	UTCDate	UTCTime	TimeZone
	Disabled	Number	Record Time	Disabled	Number
1	SiteName	IMEI	UTCDate	UTCTime	TimeZone
2	EIO_Test	355310036795957	2014-11-19	03:48:04	11.0
3	EIO_Test	355310036795957	2014-11-19	03:51:04	11.0
4	EIO_Test	355310036795957	2014-11-19	03:54:04	11.0
5	EIO_Test	355310036795957	2014-11-19	03:57:04	11.0
6	EIO_Test	355310036795957	2014-11-19	04:00:04	11.0

If the file contains a header row, set the *Labels row* control to the corresponding row number which will assign default labels for parameter creation.

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*.

You will need to use the drop-down menu above the columns to assign the *Record Time* data type to the first column containing part of the record timestamp. Click the configure button to change the *Format* field to use the *time format* (page 583) **YYYY-MM-DD**.

The record timestamp spans multiple columns by default. Add any additional columns containing part of the timestamp and specify the format. By default you will need to add the UTCTime column to the list of Joins and change the *Format* field to use the *time format* (page 583) **HH:mm:ss**. Click Apply and Next.



Parser configuration csv

Column delimeter: ,

Text qualifier: "

Labels row: 1

Text encoding: UTF-8 (default)

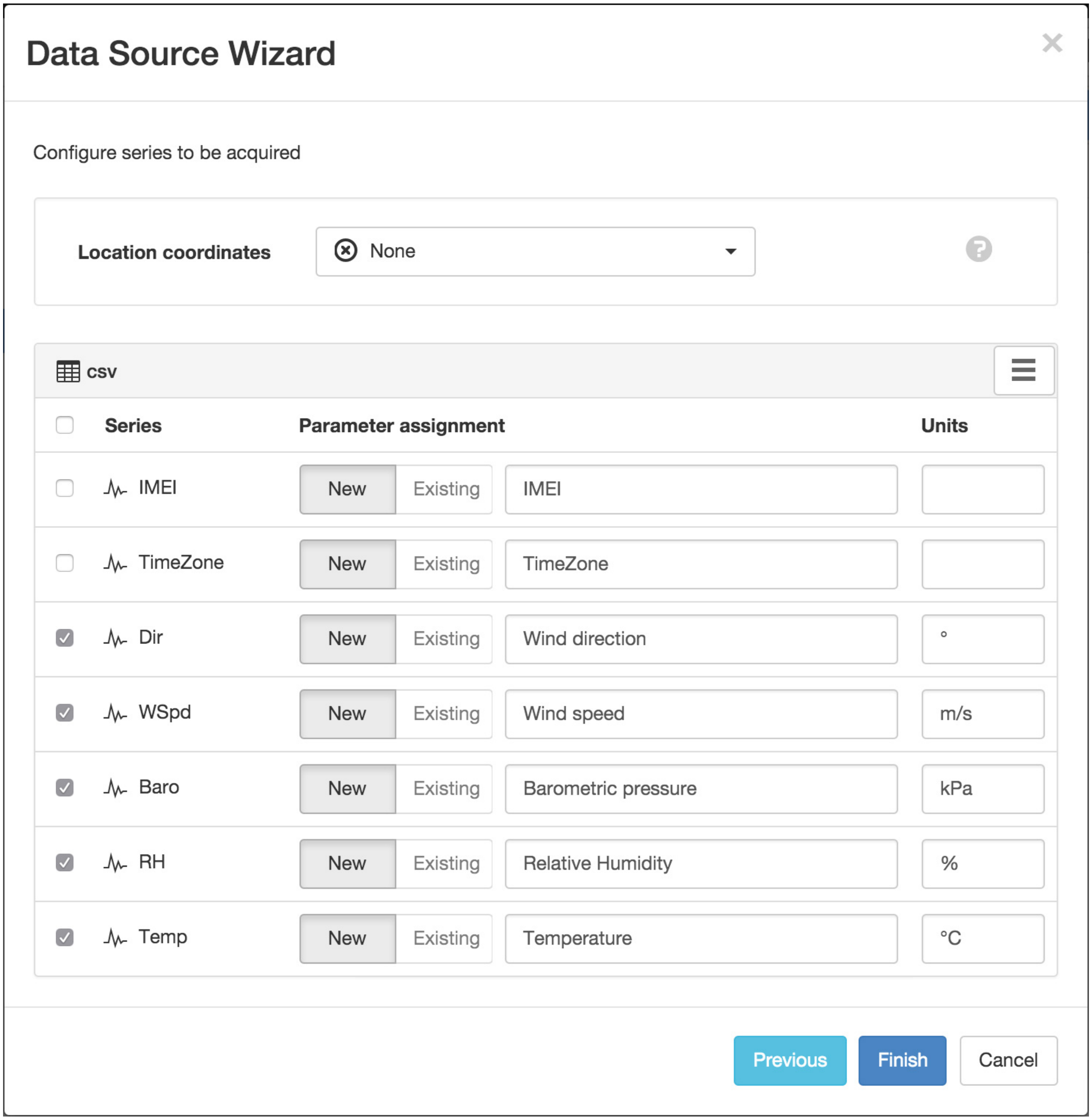
#	UTCDate + UTCTime Record Time
1	UTCDate UTCTime
2	2014-11-19 03:48:04
3	2014-11-19 03:51:04
4	2014-11-19 03:54:04
5	2014-11-19 03:57:04
6	2014-11-19 04:00:04

UTCDate Joins and Parser Configuration

Joins	Field	Format
UTCDate	Time	YYYY-MM-DD
UTCTime	Time	HH:mm:ss

Add New: UTCD, Quality

5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.



Data Source Wizard

Configure series to be acquired

Location coordinates: None

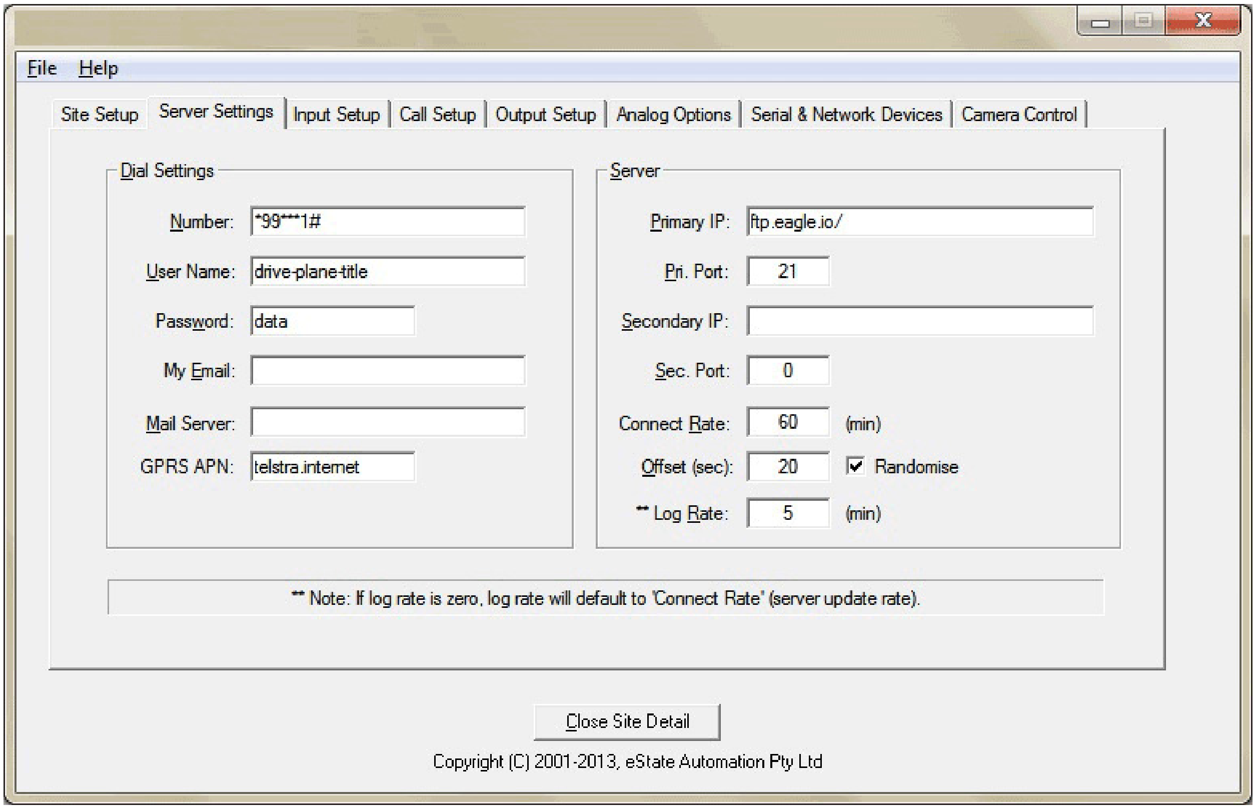
csv

☐	Series	Parameter assignment		Units
☐	IMEI	New / Existing	IMEI	
☐	TimeZone	New / Existing	TimeZone	
☑	Dir	New / Existing	Wind direction	°
☑	WSpd	New / Existing	Wind speed	m/s
☑	Baro	New / Existing	Barometric pressure	kPa
☑	RH	New / Existing	Relative Humidity	%
☑	Temp	New / Existing	Temperature	°C

Note: You can reconfigure the file name match/sample file, parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

Device settings

Use the CellVisor software to configure the logger for communication with eagle.io. Refer to your CellVisor user manual (http://estateautomation.com.au) for connection instructions.


File
Help
Site Setup
Server Settings
Input Setup
Call Setup
Output Setup
Analog Options
Serial & Network Devices
Camera Control
Close Site Detail

Dial Settings

Number: *99***1#

User Name: drive-plane-title

Password: data

My Email:

Mail Server:

GPRS APN: telstra.internet

Server

Primary IP: ftp.eagle.io/

Pri. Port: 21

Secondary IP:

Sec. Port: 0

Connect Rate: 60 (min)

Offset (sec): 20 ☑ Randomise

** Log Rate: 5 (min)

** Note: If log rate is zero, log rate will default to 'Connect Rate' (server update rate).

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The following Server settings should be assigned:

Primary IP ftp.eagle.io/

Pri. Port 21

User Name Use the unique *FTP user* generated during Data Source creation.

Password Use the password you assigned during Data Source creation (or leave blank for none).

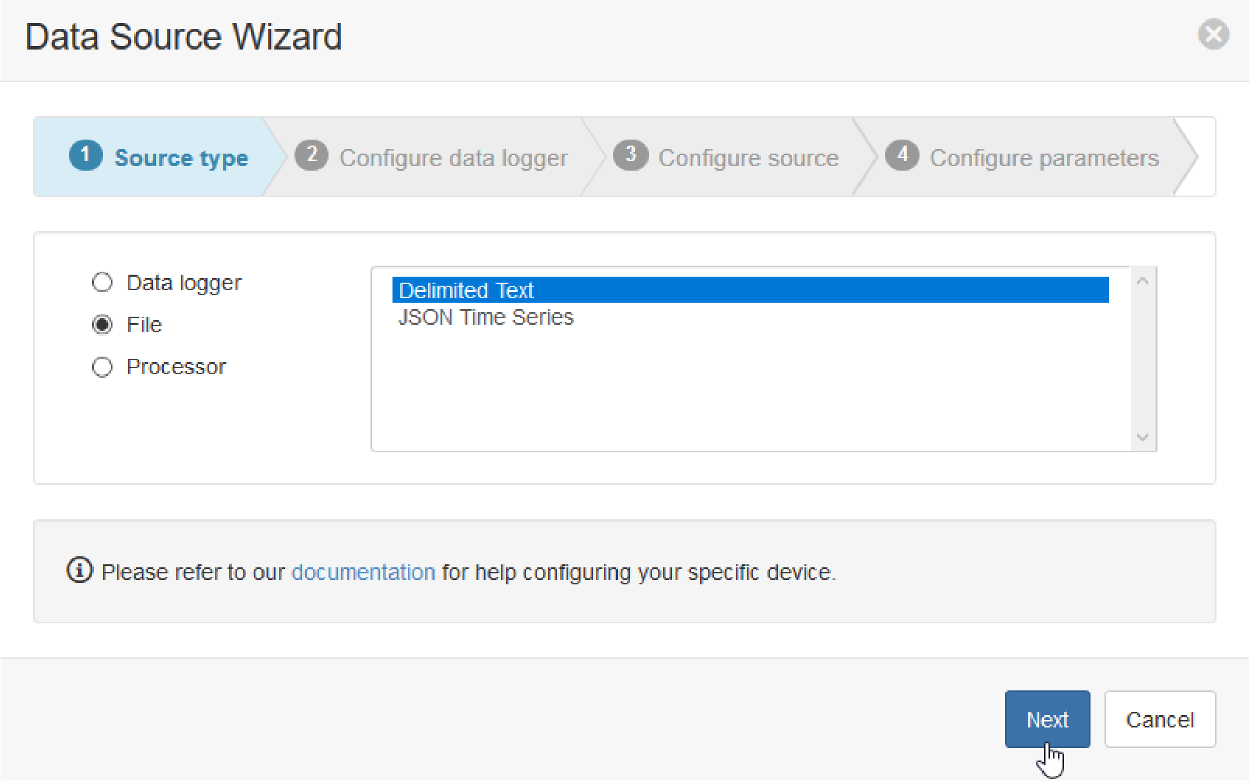
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.3 Dataforth MAQ®20

The Dataforth MAQ®20 (https://www.dataforth.com/maq20.aspx) Industrial Data Acquisition and Control System can be connected with eagle.io (https://eagle.io) in a few easy steps.

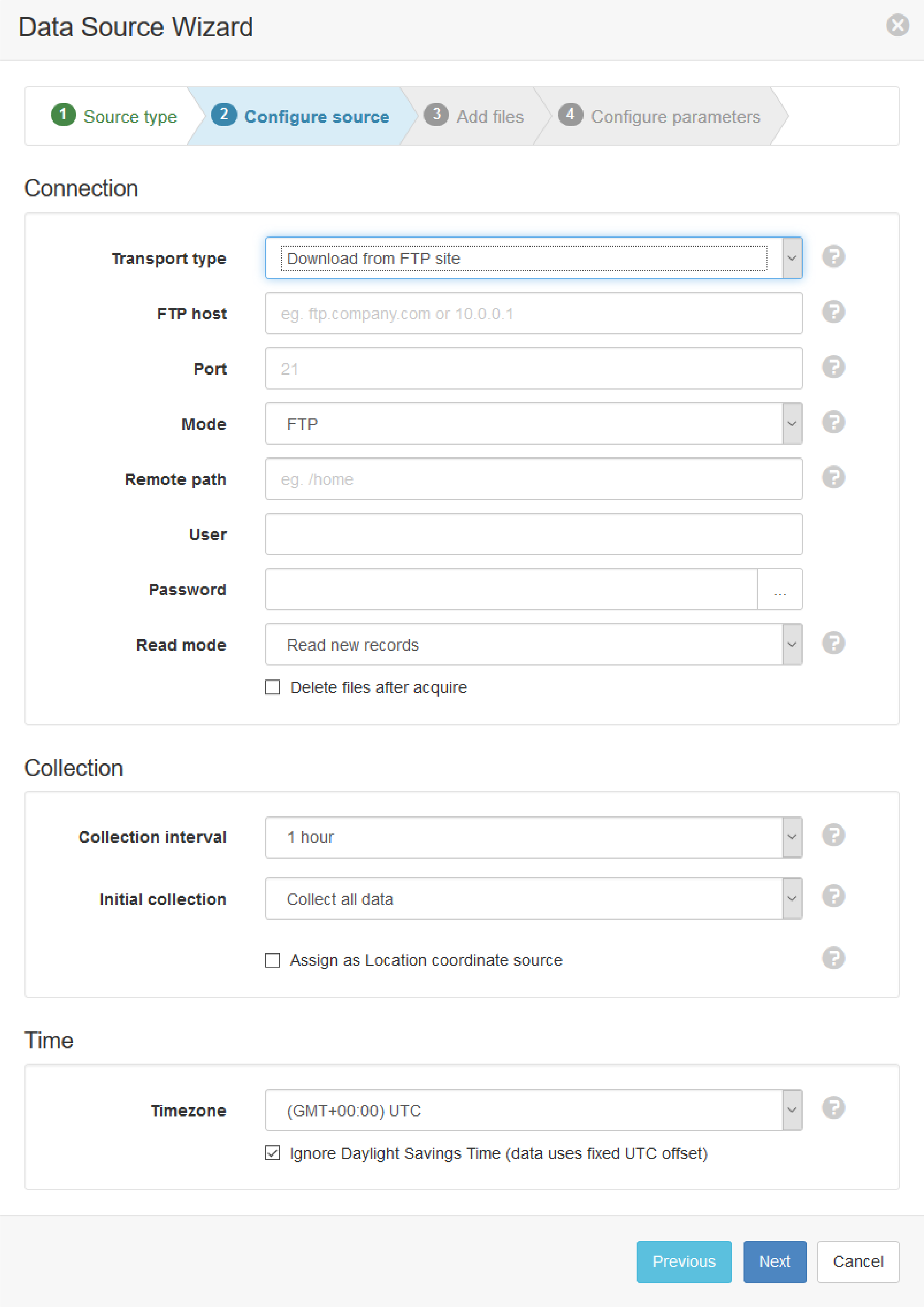
Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
○ Data logger
● File
○ Processor
Delimited Text
JSON Time Series
Please refer to our documentation for help configuring your specific device.
Next
Cancel

2. Select *Download from FTP site* as the transport type. Configure the settings as defined in your FTP settings for the MAQ20 system. *FTP Host* must contain a valid public hostname or public IP thatcan be used to access the FTP server. Set Collection interval, Initial collection and Timezone to desired values, then click Next.

Note: If desired, please reference the MA1040 MAQ20-COM Module Hardware User Manual (https://www.dataforth.com/FileDownload.ashx?docid=51) for more information about FTP configuration.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Previous
Next
Cancel

Connection

Transport type Download from FTP site

FTP host eg. ftp.company.com or 10.0.0.1

Port 21

Mode FTP

Remote path eg. /home

User

Password ...

Read mode Read new records

☐ Delete files after acquire

Collection

Collection interval 1 hour

Initial collection Collect all data

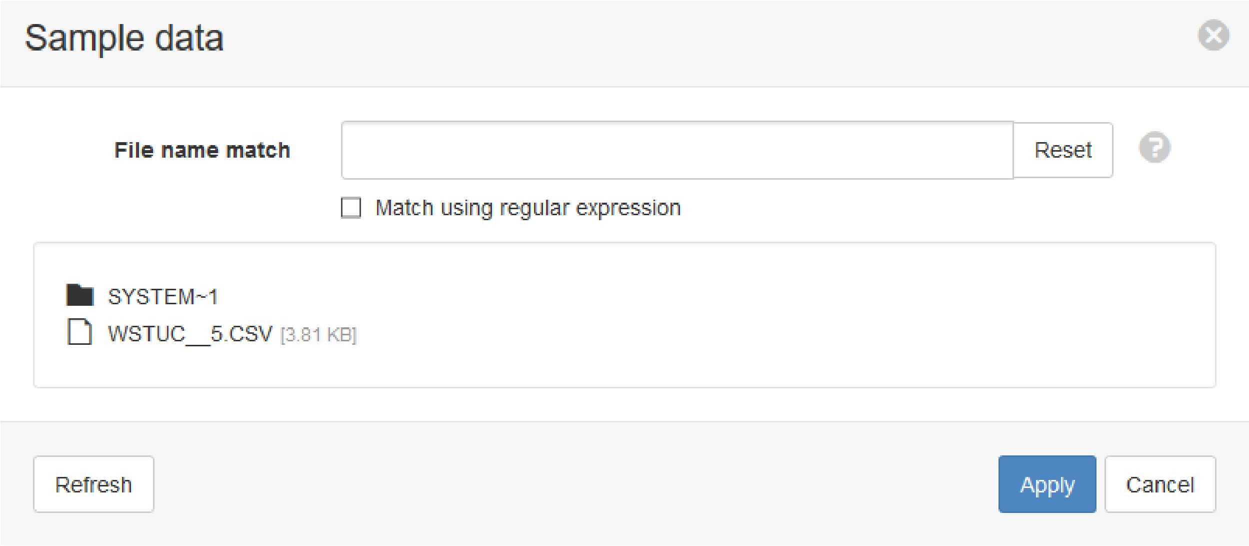
☐ Assign as Location coordinate source

Time

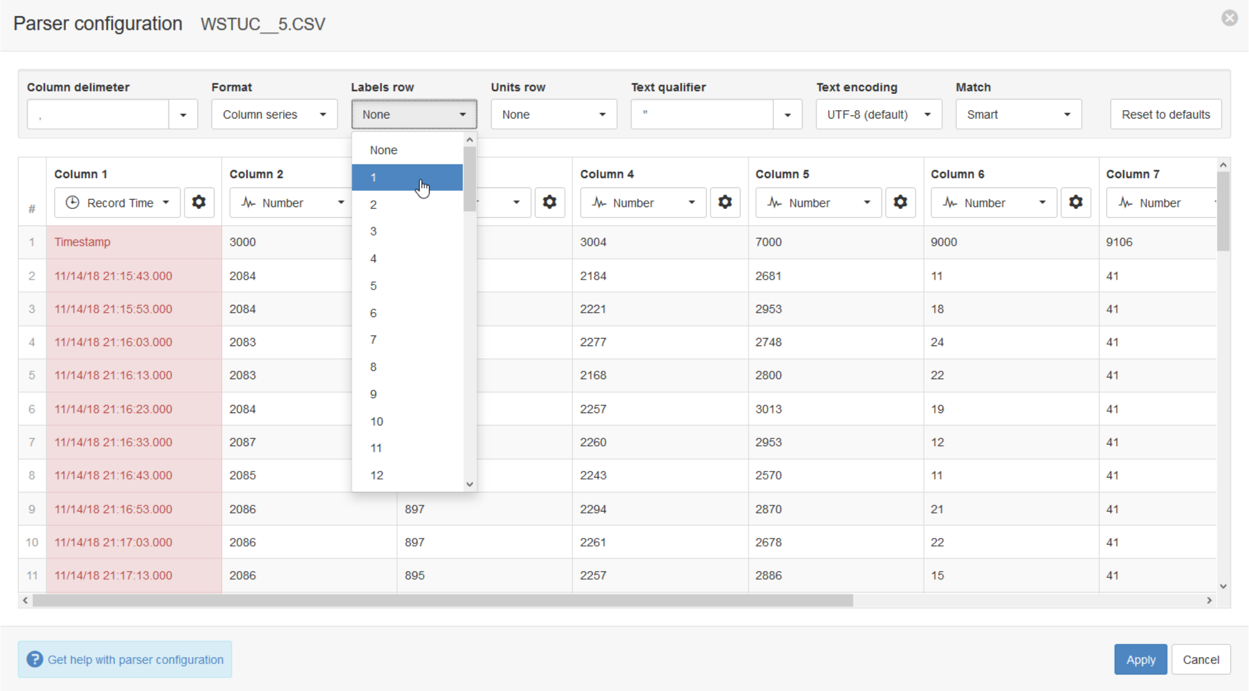
Timezone (GMT+00:00) UTC

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. If FTP settings are configured correctly, you will see a directory of files that exist in the system's SD card. Choose the filename that corresponds to the file you have configured for the SD card logger for the system, then click Apply.


Sample data
File name match
Reset
☐ Match using regular expression
SYSTEM~1
WSTUC__5.CSV [3.81 KB]
Refresh
Apply
Cancel

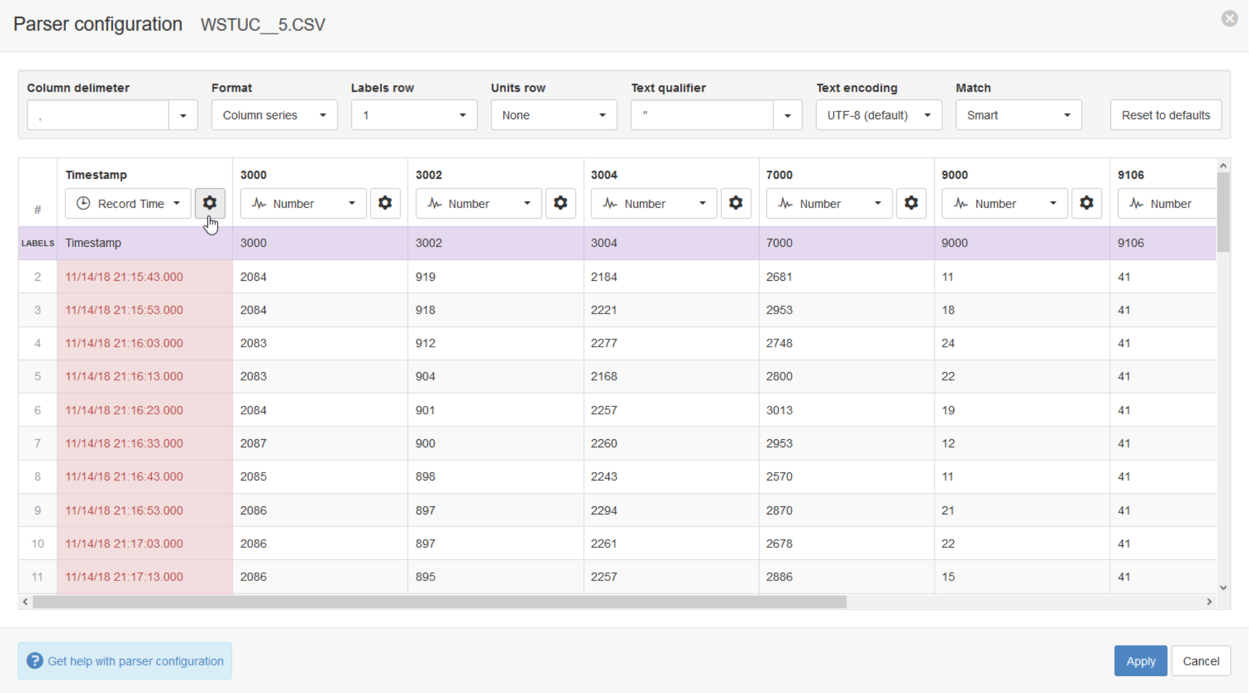
4. The Parser configuration screen allows the user to describe the structure and format of the sample data file so it can be correctly interpreted by the system during subsequent data collection. Refer to *Text Parser Configuration* (page 123) for full details. First you will need to change the labels row to be 1.


Parser configuration WSTUC__5.CSV
Column delimeter
Format
Labels row
Units row
Text qualifier
Text encoding
Match
Reset to defaults
None
1
2
3
4
5
6
7
8
9
10
11
12
Get help with parser configuration
Apply
Cancel

Column delimeter	Format	Labels row	Units row	Text qualifier	Text encoding	Match
,	Column series	None	None	"	UTF-8 (default)	Smart

#	Column 1 Record Time	Column 2 Number		Column 4 Number	Column 5 Number	Column 6 Number	Column 7 Number
1	Timestamp	3000		3004	7000	9000	9106
2	11/14/18 21:15:43.000	2084		2184	2681	11	41
3	11/14/18 21:15:53.000	2084		2221	2953	18	41
4	11/14/18 21:16:03.000	2083		2277	2748	24	41
5	11/14/18 21:16:13.000	2083		2168	2800	22	41
6	11/14/18 21:16:23.000	2084		2257	3013	19	41
7	11/14/18 21:16:33.000	2087		2260	2953	12	41
8	11/14/18 21:16:43.000	2085		2243	2570	11	41
9	11/14/18 21:16:53.000	2086	897	2294	2870	21	41
10	11/14/18 21:17:03.000	2086	897	2261	2678	22	41
11	11/14/18 21:17:13.000	2086	895	2257	2886	15	41

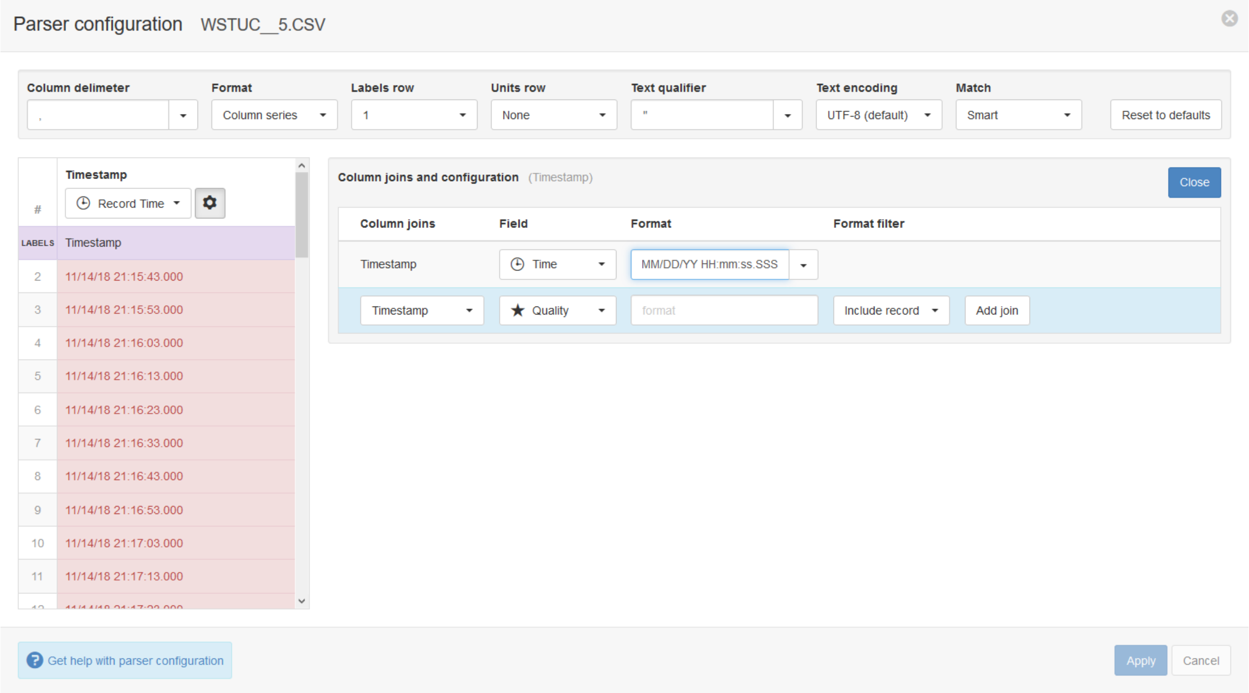
You will need to set the correct *time format* (page 583) by clicking the gear icon in Column 1 (Record time).


Parser configuration WSTUC__5.CSV
Column delimeter
Format
Labels row
Units row
Text qualifier
Text encoding
Match
Reset to defaults
Get help with parser configuration
Apply
Cancel

Column delimeter	Format	Labels row	Units row	Text qualifier	Text encoding	Match
,	Column series	1	None	"	UTF-8 (default)	Smart

#	Timestamp Record Time	3000 Number	3002 Number	3004 Number	7000 Number	9000 Number	9106 Number
LABELS	Timestamp	3000	3002	3004	7000	9000	9106
2	11/14/18 21:15:43.000	2084	919	2184	2681	11	41
3	11/14/18 21:15:53.000	2084	918	2221	2953	18	41
4	11/14/18 21:16:03.000	2083	912	2277	2748	24	41
5	11/14/18 21:16:13.000	2083	904	2168	2800	22	41
6	11/14/18 21:16:23.000	2084	901	2257	3013	19	41
7	11/14/18 21:16:33.000	2087	900	2260	2953	12	41
8	11/14/18 21:16:43.000	2085	898	2243	2570	11	41
9	11/14/18 21:16:53.000	2086	897	2294	2870	21	41
10	11/14/18 21:17:03.000	2086	897	2261	2678	22	41
11	11/14/18 21:17:13.000	2086	895	2257	2886	15	41

Set the time format to be **MM/DD/YY HH:mm:ss.SSS** then click Close, Apply, and Next.



Parser configuration WSTUC__5.CSV

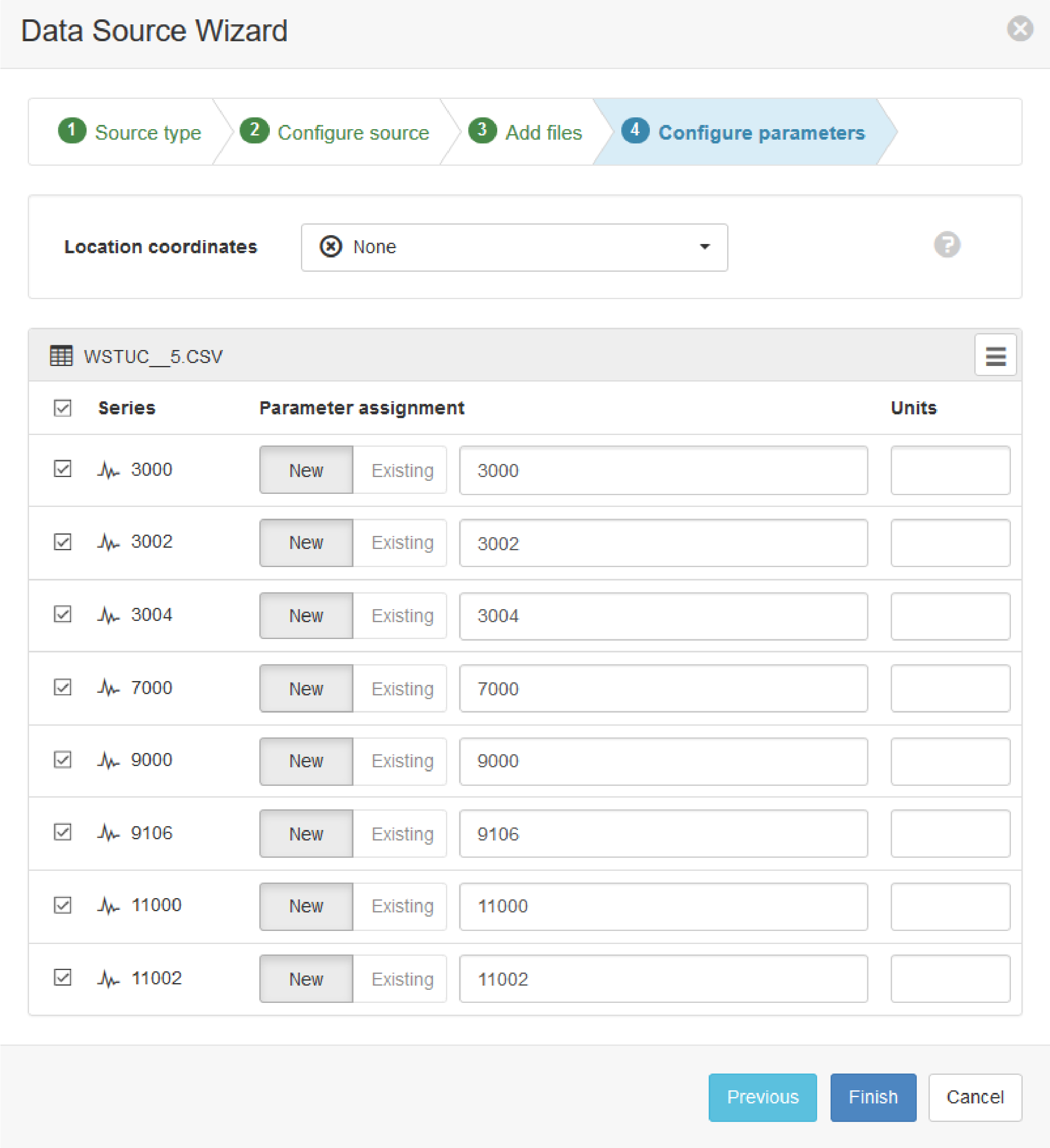
Column delimeter	Format	Labels row	Units row	Text qualifier	Text encoding	Match
,	Column series	1	None	"	UTF-8 (default)	Smart

#	Timestamp Record Time
LABELS	Timestamp
2	11/14/18 21:15:43.000
3	11/14/18 21:15:53.000
4	11/14/18 21:16:03.000
5	11/14/18 21:16:13.000
6	11/14/18 21:16:23.000
7	11/14/18 21:16:33.000
8	11/14/18 21:16:43.000
9	11/14/18 21:16:53.000
10	11/14/18 21:17:03.000
11	11/14/18 21:17:13.000

Column joins and configuration (Timestamp)

Column joins	Field	Format	Format filter
Timestamp	Time	MM/DD/YY HH:mm:ss.SSS	
Timestamp	Quality	format	Include record

5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Previous
Finish
Cancel

Location coordinates: None

WSTUC__5.CSV

☑	Series	Parameter assignment		Units
☑	3000	New / Existing	3000	
☑	3002	New / Existing	3002	
☑	3004	New / Existing	3004	
☑	7000	New / Existing	7000	
☑	9000	New / Existing	9000	
☑	9106	New / Existing	9106	
☑	11000	New / Existing	11000	
☑	11002	New / Existing	11002	

Note: You can reconfigure the collection schedule, file name match/sample file, parser configuration, parameter assignment, and other Data Source settings from the *Data Source* (page 114) properties dialog after creation.

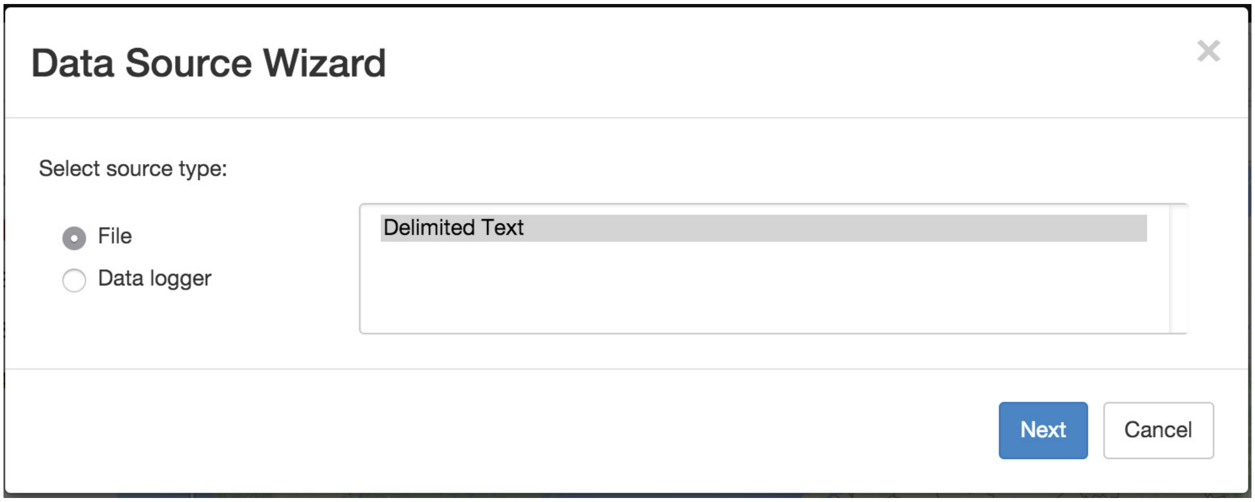
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.4 dataTaker

The dataTaker (http://datataker.com) **DT80** range of data loggers can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.



Data Source Wizard

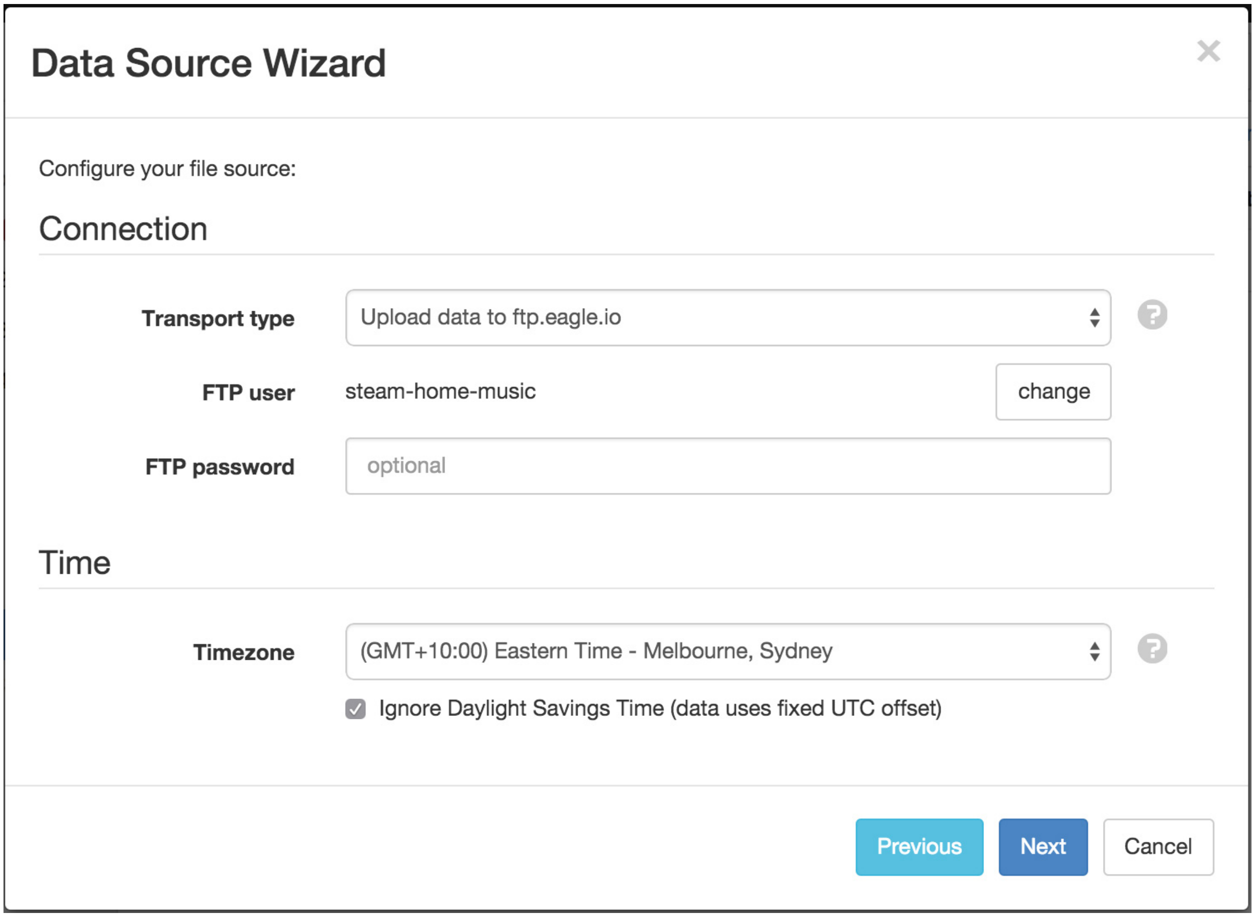
Select source type:

● File
○ Data logger

Delimited Text

2. Select *Upload data to ftp.eagle.io* as the transport type. A unique *Ftp user* account will be automatically generated per Data Source. You can optionally specify a password to be used by the logger for

additional security. Select the timezone of the logger's clock and click Next.


Data Source Wizard

Configure your file source:

Connection

Transport type Upload data to ftp.eagle.io

FTP user steam-home-music

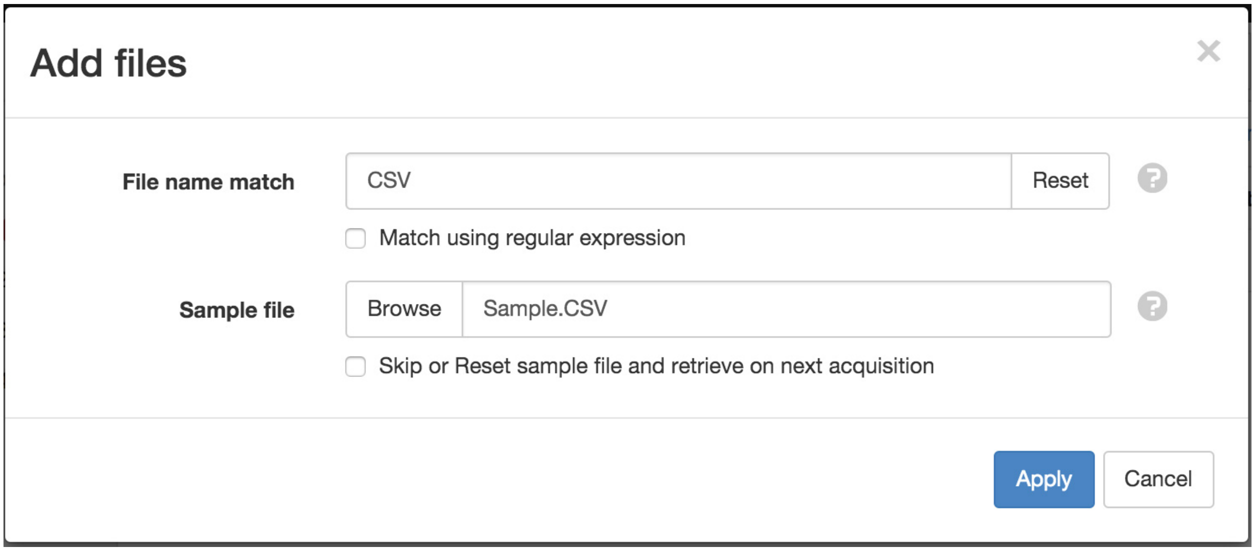
FTP password optional

Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Specify *CSV* as the *File name match*. This will match all incoming files for this Source containing 'CSV' in the filename. To continue the setup you will need a sample copy of the logger's output data file(s).



Add files

File name match: CSV

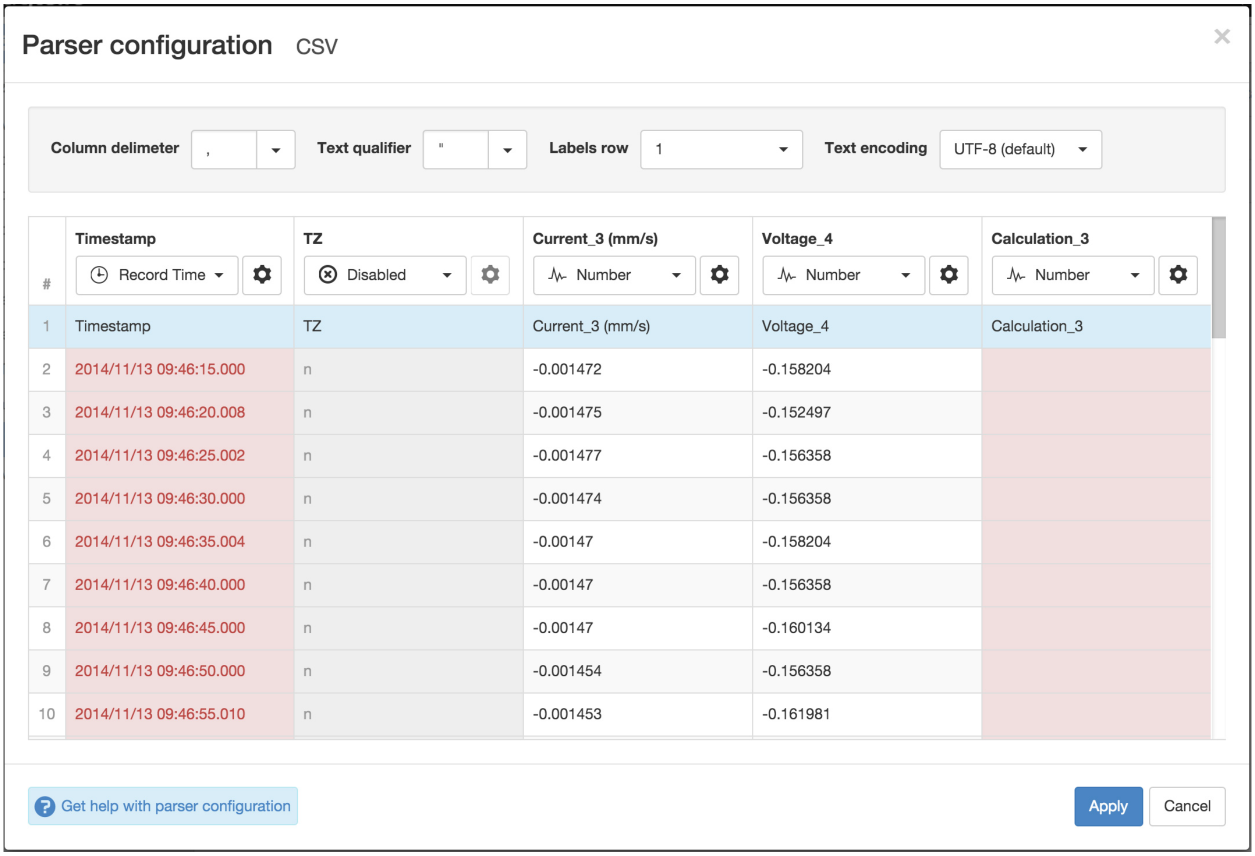
☐ Match using regular expression

Sample file: Sample.CSV

☐ Skip or Reset sample file and retrieve on next acquisition

Note: If you do not have a sample available, click the *Skip* checkbox and click finish on the next screen. A sample will be saved automatically on the initial upload from the data logger and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.



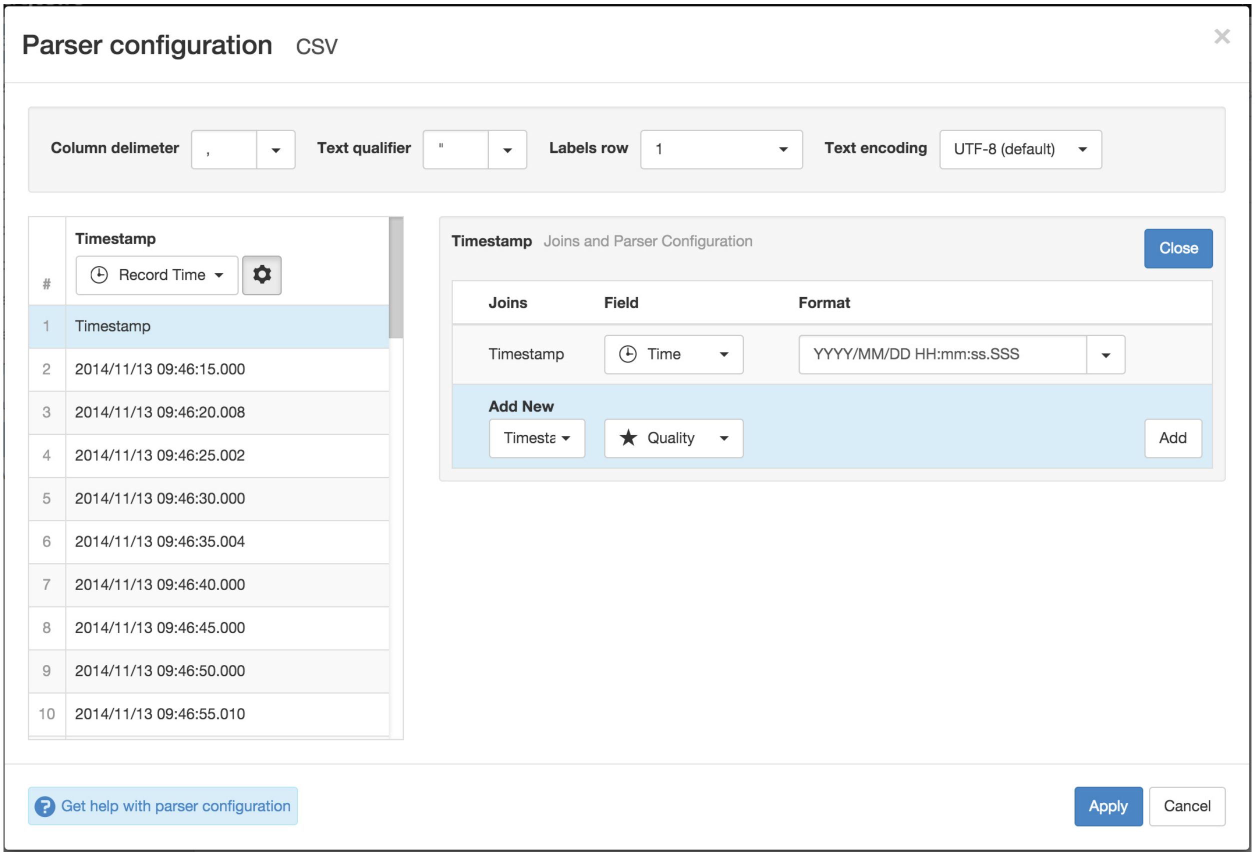
Column delimiter: ,
Text qualifier: "
Labels row: 1
Text encoding: UTF-8 (default)

#	Timestamp Record Time	TZ Disabled	Current_3 (mm/s) Number	Voltage_4 Number	Calculation_3 Number
1	Timestamp	TZ	Current_3 (mm/s)	Voltage_4	Calculation_3
2	2014/11/13 09:46:15.000	n	-0.001472	-0.158204	
3	2014/11/13 09:46:20.008	n	-0.001475	-0.152497	
4	2014/11/13 09:46:25.002	n	-0.001477	-0.156358	
5	2014/11/13 09:46:30.000	n	-0.001474	-0.156358	
6	2014/11/13 09:46:35.004	n	-0.00147	-0.158204	
7	2014/11/13 09:46:40.000	n	-0.00147	-0.156358	
8	2014/11/13 09:46:45.000	n	-0.00147	-0.160134	
9	2014/11/13 09:46:50.000	n	-0.001454	-0.156358	
10	2014/11/13 09:46:55.010	n	-0.001453	-0.161981	

If the file contains a header row, set the *Labels row* control to the corresponding row number which will assign default labels for parameter creation.

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*.

You will need to change the default time format for the *Record Time* column. Click the configure button above the column and change the *Format* field to use the *time format* (page 583) **YYYY/MM/DD HH:mm:ss.SSS**. Click Apply and Next.



Parser configuration CSV

Column delimeter ,

Text qualifier "

Labels row 1

Text encoding UTF-8 (default)

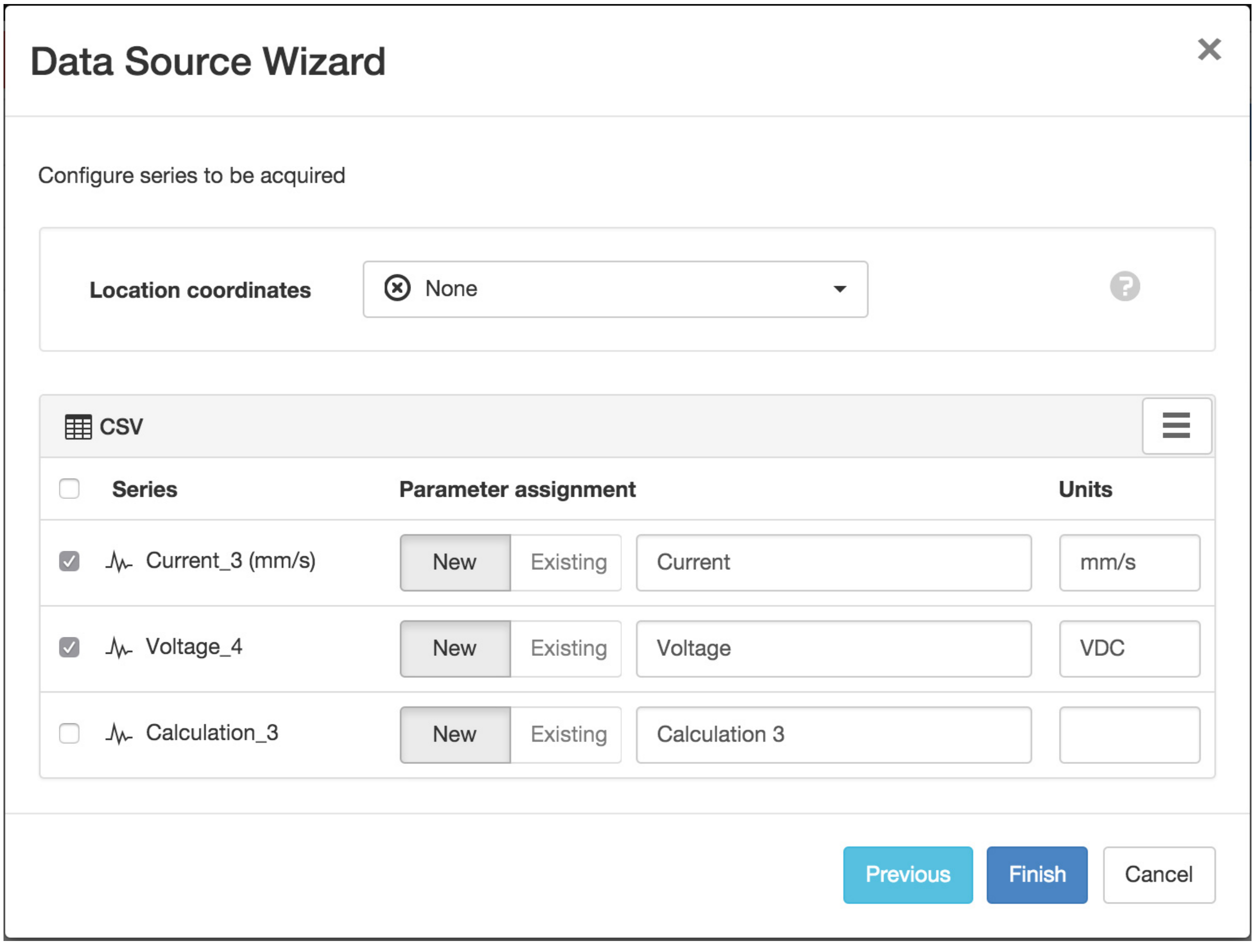
#	Timestamp
1	Timestamp
2	2014/11/13 09:46:15.000
3	2014/11/13 09:46:20.008
4	2014/11/13 09:46:25.002
5	2014/11/13 09:46:30.000
6	2014/11/13 09:46:35.004
7	2014/11/13 09:46:40.000
8	2014/11/13 09:46:45.000
9	2014/11/13 09:46:50.000
10	2014/11/13 09:46:55.010

Timestamp Joins and Parser Configuration

Joins	Field	Format
Timestamp	Time	YYYY/MM/DD HH:mm:ss.SSS

Record Time
Close
Add New
Timesta
Quality
Add
Get help with parser configuration
Apply
Cancel

5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.



Data Source Wizard

Configure series to be acquired

Location coordinates: None

CSV

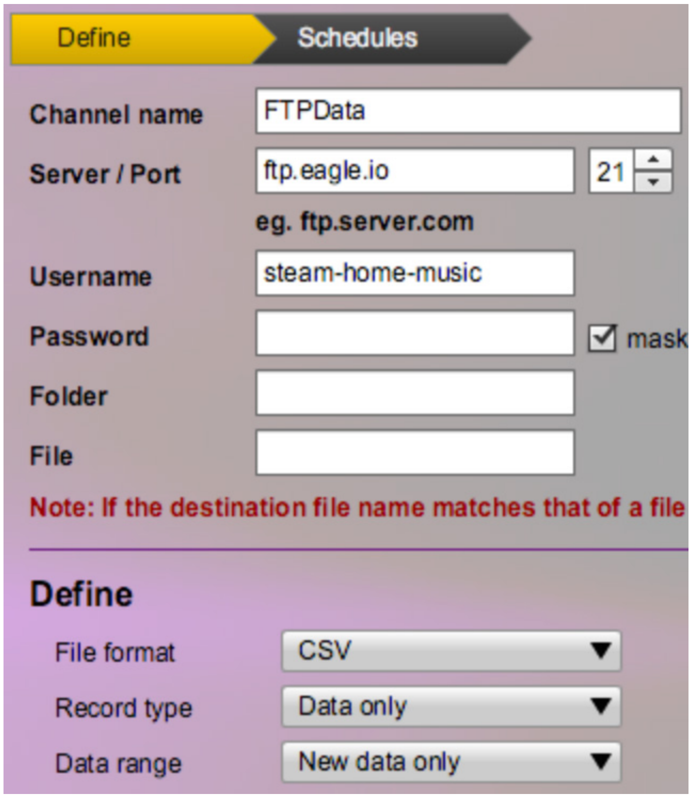
☐	Series	Parameter assignment		Units
☑	Current_3 (mm/s)	New / Existing	Current	mm/s
☑	Voltage_4	New / Existing	Voltage	VDC
☐	Calculation_3	New / Existing	Calculation 3	

Note: You can reconfigure the file name match/sample file, parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

Device settings

Use the built-in web interface of the dataTaker to configure the logger for communication with eagle.io. Refer to your dataTaker user manual (http://www.datataker.com) for connection instructions.

Create a new *FTP logged data* action as part of a schedule.



Channel name: FTPData

Server / Port: ftp.eagle.io 21

eg. ftp.server.com

Username: steam-home-music

Password: ☑ mask

Folder:

File:

Note: If the destination file name matches that of a file

Define

File format: CSV

Record type: Data only

Data range: New data only

The following settings should be assigned to the action:

Server ftp.eagle.io

Port 21

Username Use the unique *FTP user* generated during Data Source creation.

Password Use the password you assigned during Data Source creation (or leave blank for none).

Folder & File Leave blank

File format CSV

Record type Data only

Data range New data only

Schedules Select all schedules that should be included in the upload.

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

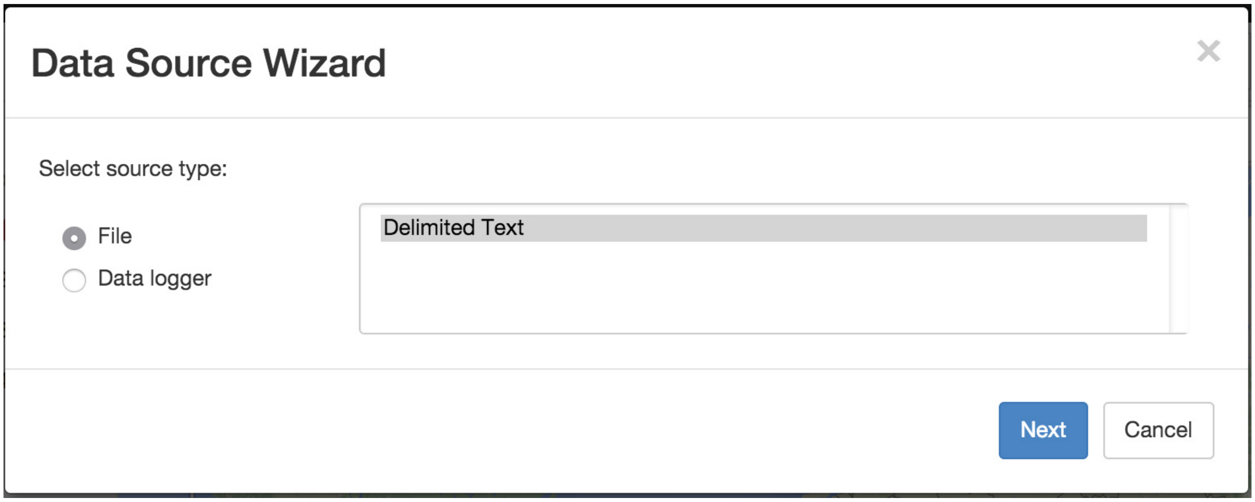
2.14.5 Spider

The Halytech (http://halytech.com.au) **Spider SMS** and **microSpider** range of data loggers can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

SPIDER
microSpider
microSpider industrial

Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.

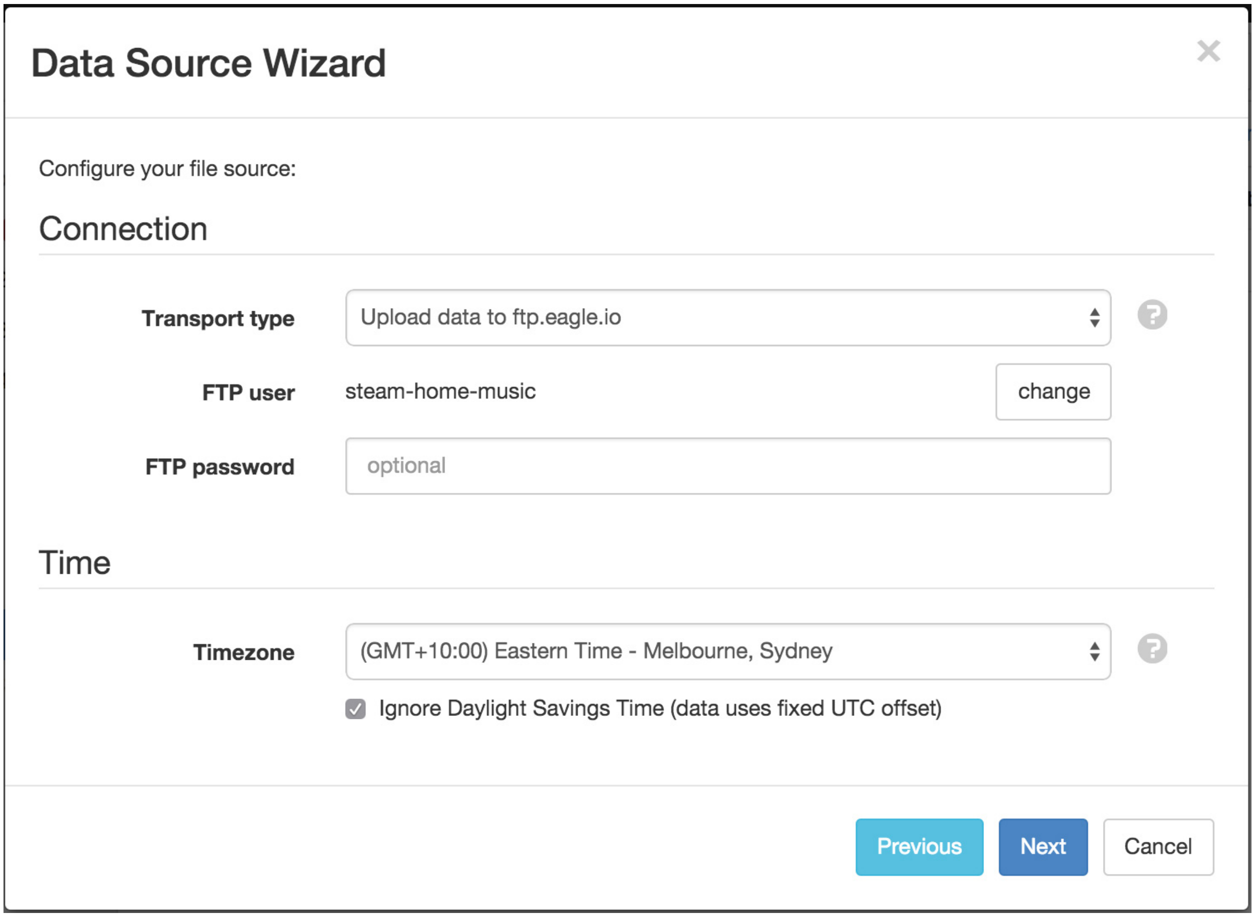

Data Source Wizard
×
Next
Cancel

Select source type:

● File
○ Data logger

Delimited Text

2. Select *Upload data to ftp.eagle.io* as the transport type. A unique *Ftp user* account will be automatically generated per Data Source. You can optionally specify a password to be used by the logger for additional security. Select the timezone of the logger's clock and click Next.



Data Source Wizard

Configure your file source:

Connection

Transport type: Upload data to ftp.eagle.io

FTP user: steam-home-music

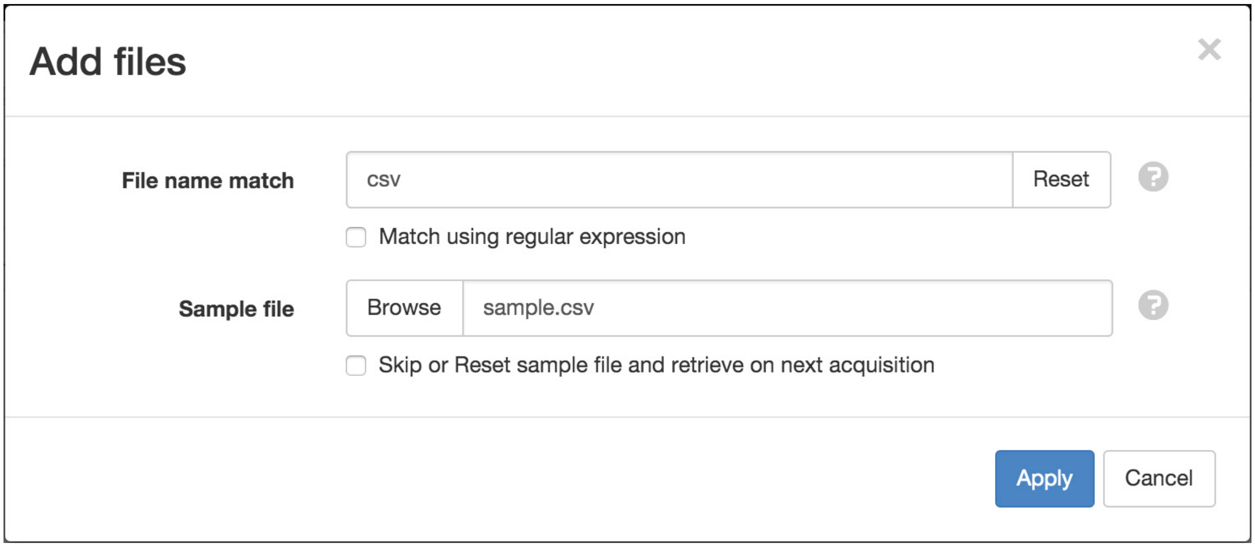
FTP password: optional

Time

Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Specify *csv* as the *File name match*. This will match all incoming files for this Source containing 'csv' in the filename. To continue the setup you will need a sample copy of the logger's output data file(s).



Add files

File name match: csv

☐ Match using regular expression

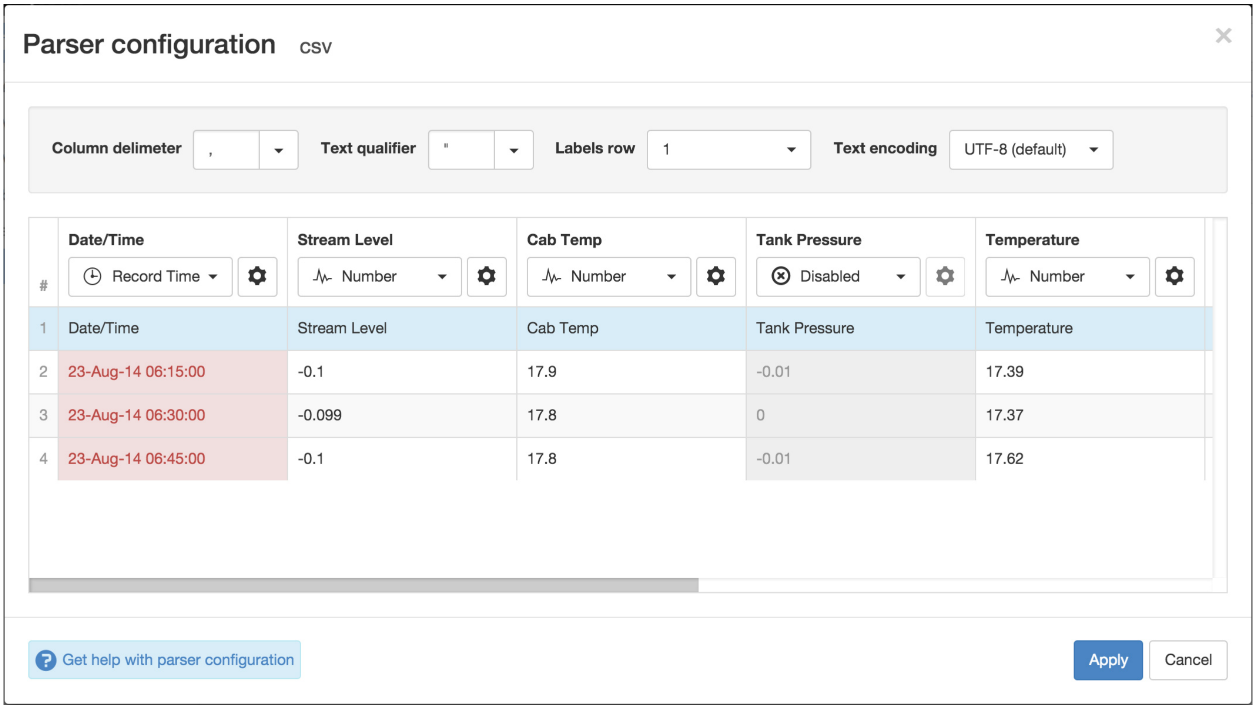
Sample file: sample.csv

☐ Skip or Reset sample file and retrieve on next acquisition

Note: If you do not have a sample available, click the *Skip* checkbox and click finish on the next screen. A sample will be saved automatically on the initial upload from the data logger and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

---

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.



Parser configuration csv

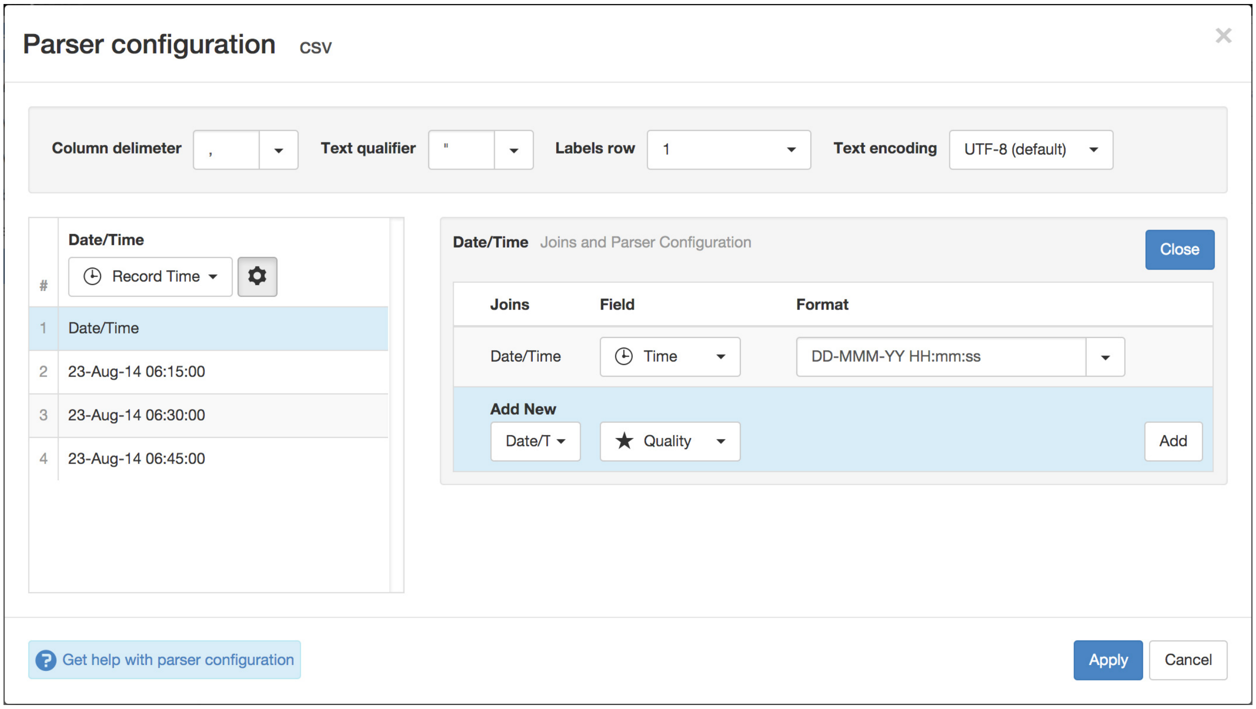
Column delimiter: ,
Text qualifier: "
Labels row: 1
Text encoding: UTF-8 (default)

#	Date/Time	Stream Level	Cab Temp	Tank Pressure	Temperature
	Record Time	Number	Number	Disabled	Number
1	Date/Time	Stream Level	Cab Temp	Tank Pressure	Temperature
2	23-Aug-14 06:15:00	-0.1	17.9	-0.01	17.39
3	23-Aug-14 06:30:00	-0.099	17.8	0	17.37
4	23-Aug-14 06:45:00	-0.1	17.8	-0.01	17.62

If the file contains a header row, set the *Labels row* control to the corresponding row number which will assign default labels for parameter creation.

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*.

You will need to change the default time format for the *Record Time* column. Click the configure button above the column and change the *Format* field to match the *time format* (page 583) of the data. By default the Spider SMS requires **DD-MMM-YY HH:mm:ss** and the microSpider requires **DD-MMM-YY H:mm:ss**. Click Apply and Next.



Parser configuration CSV

Column delimeter: ,
Text qualifier: "
Labels row: 1
Text encoding: UTF-8 (default)

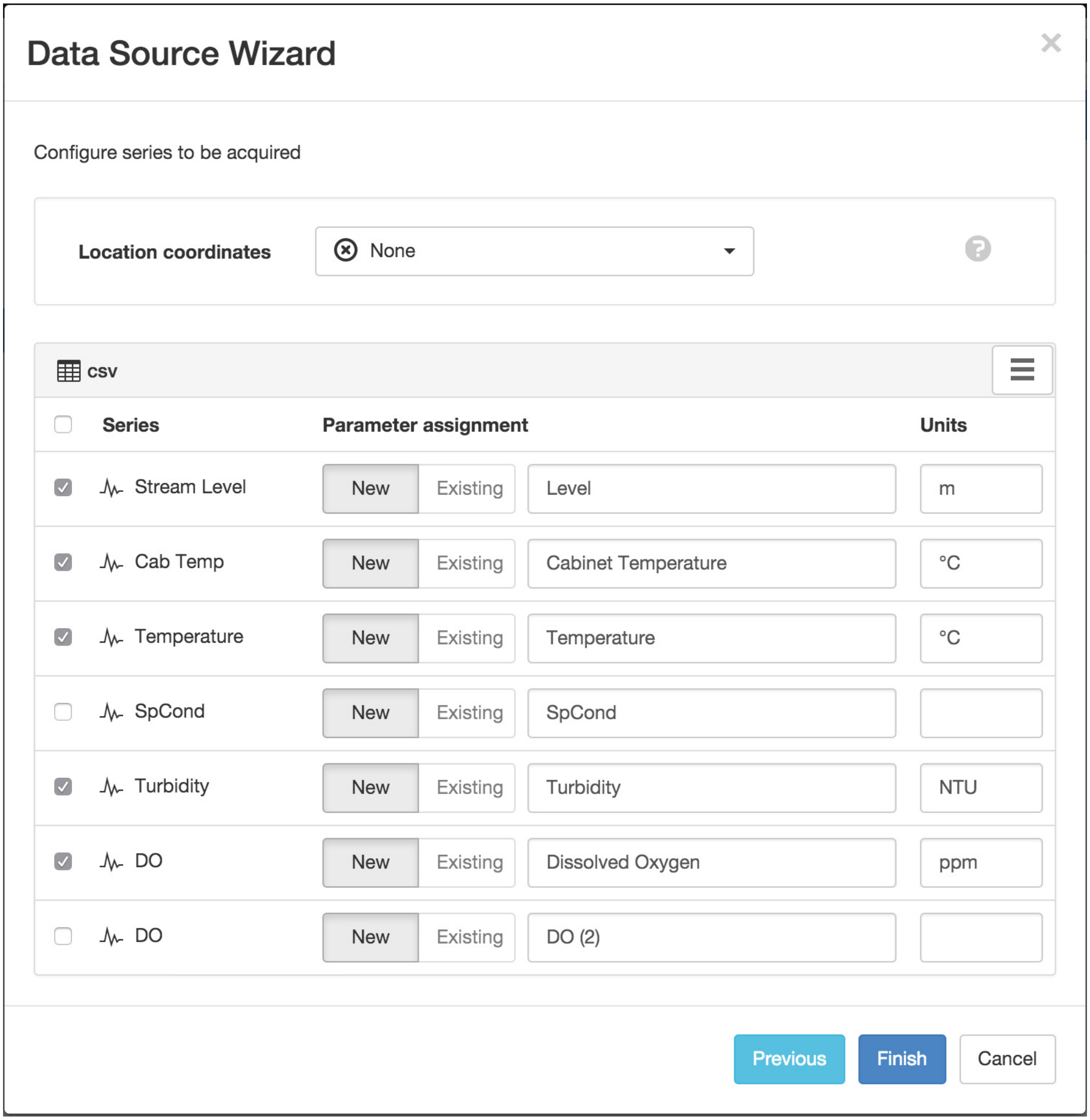
#	Date/Time Record Time
1	Date/Time
2	23-Aug-14 06:15:00
3	23-Aug-14 06:30:00
4	23-Aug-14 06:45:00

Date/Time Joins and Parser Configuration

Joins	Field	Format
Date/Time	Time	DD-MMM-YY HH:mm:ss

Add New: Date/T, Quality

5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.



Data Source Wizard

Configure series to be acquired

Location coordinates None

csv

☐	Series	Parameter assignment		Units
☑	Stream Level	New / Existing	Level	m
☑	Cab Temp	New / Existing	Cabinet Temperature	°C
☑	Temperature	New / Existing	Temperature	°C
☐	SpCond	New / Existing	SpCond	
☑	Turbidity	New / Existing	Turbidity	NTU
☑	DO	New / Existing	Dissolved Oxygen	ppm
☐	DO	New / Existing	DO (2)	

Note: You can reconfigure the file name match/sample file, parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

Device settings

Use the built-in web interface of the Spider SMS or microSpider to configure the logger for communication with eagle.io. Refer to your Halytech (http://halytech.com.au) Spider user manual for connection instructions.

The following settings should be assigned:

Server ftp.eagle.io

Port 21

Username Use the unique *FTP user* generated during Data Source creation.

Password You **must set an FTP password** or the logger will not attempt the connection. Use the password you assigned during Data Source creation or use *data* for none.

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

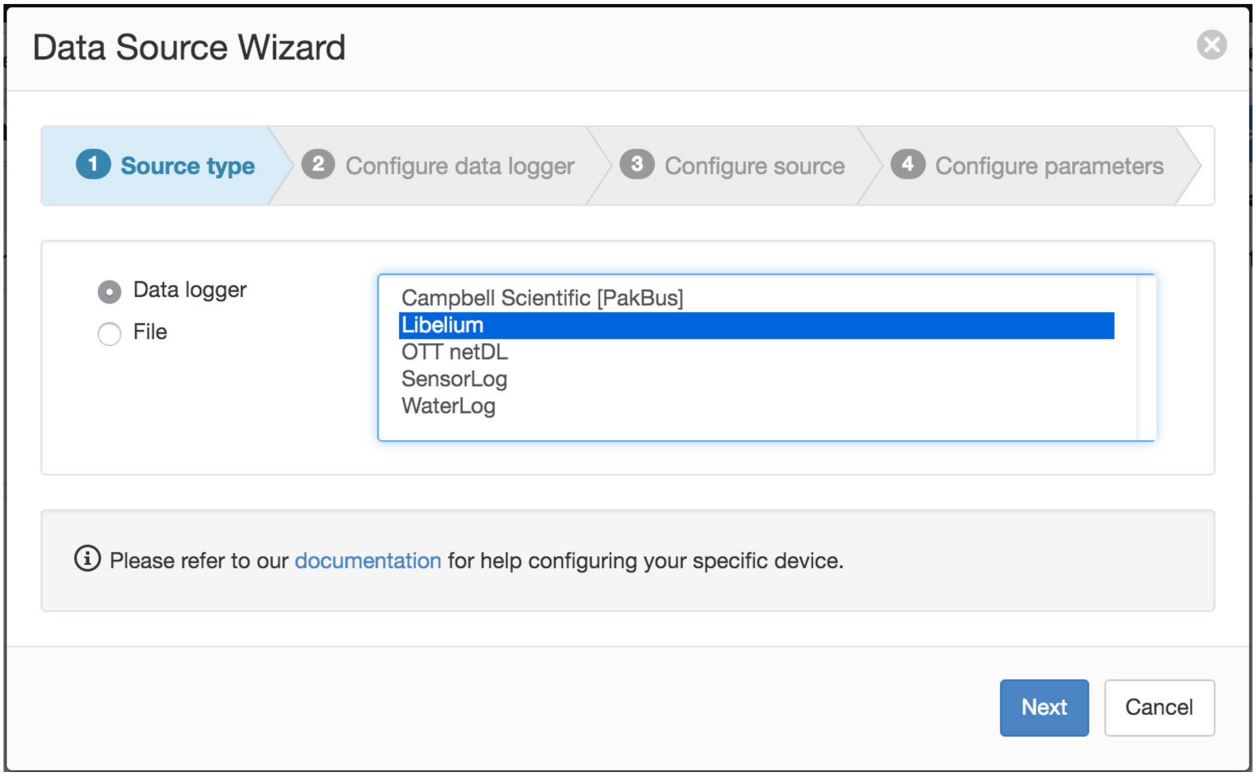
2.14.6 Libelium Waspmote

Libelium (http://www.libelium.com/) **Waspmote - Plug & Sense!** loggers can be configured to send data to eagle.io (https://eagle.io) in a few easy steps. Waspmotes can communicate directly or use a Meshlium to connect large sensor networks.

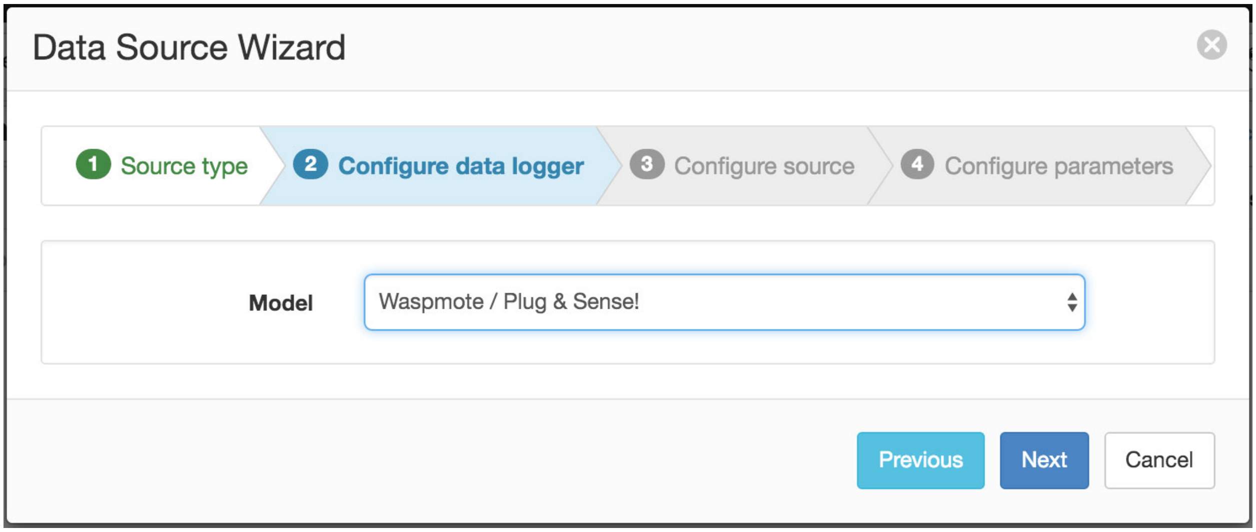
libelium
Smart Agriculture
wasp
mote
Plug & Sense!

Source configuration

1. Create a *Data Source* (page 134) and select *Data logger* as the Source Type. Choose *Libelium* from the list and click Next.

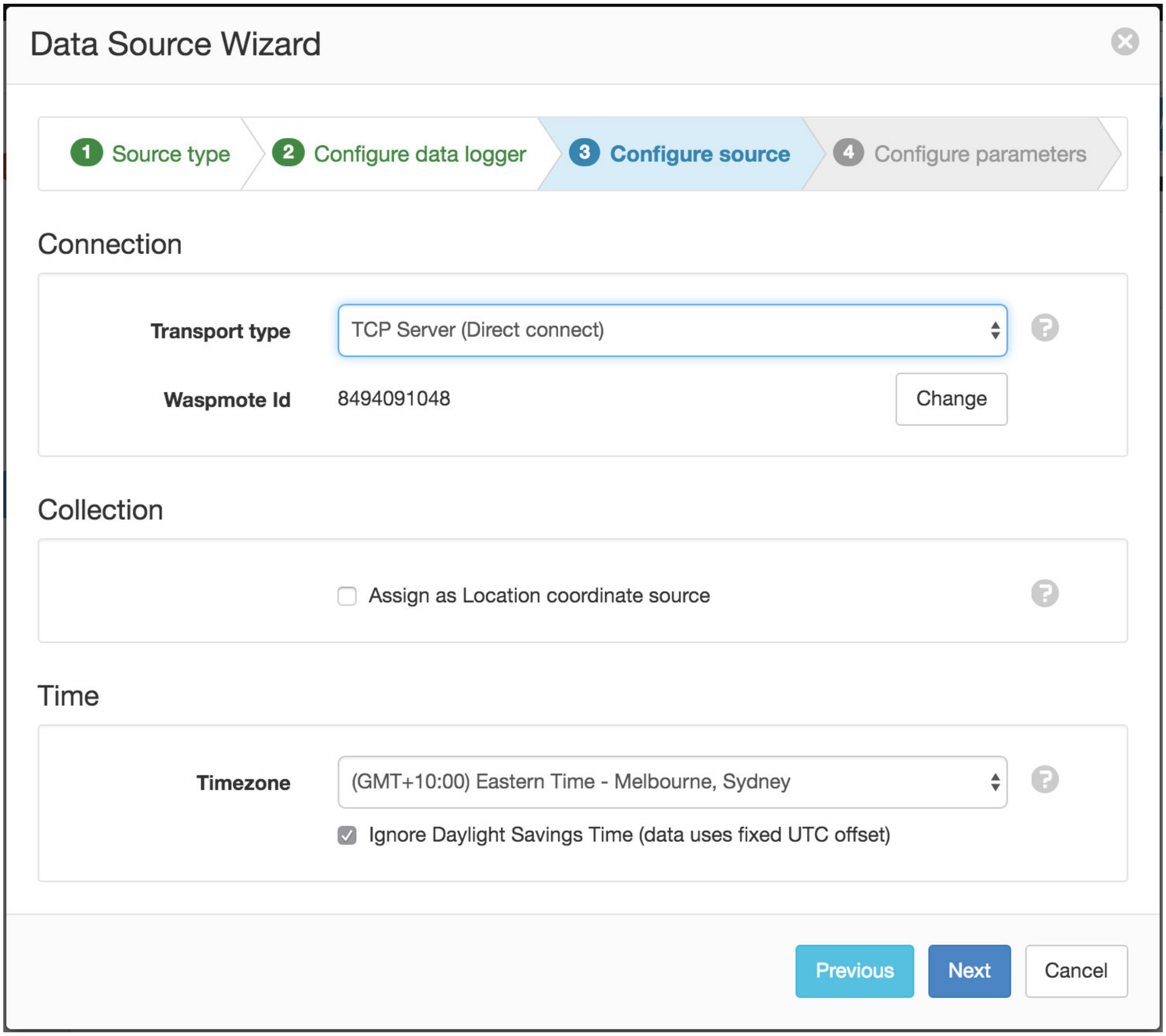

Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
● Data logger
○ File
Campbell Scientific [PakBus]
Libelium
OTT netDL
SensorLog
WaterLog
Please refer to our documentation for help configuring your specific device.
Next
Cancel

2. Select *Waspmote / Plug & Sense!* as the *Model*. Click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Previous
Next
Cancel

Model Waspmote / Plug & Sense!

3. Select *TCP Server* as the transport type if the Waspmote will connect directly to eagle.io (alternatively jump to Step 4 for Meshlium connection). A *Waspmote Id* will be automatically generated. Select the timezone of the logger's clock and click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters

Connection

Transport type TCP Server (Direct connect)

Waspmote Id 8494091048

Change

Collection

☐ Assign as Location coordinate source

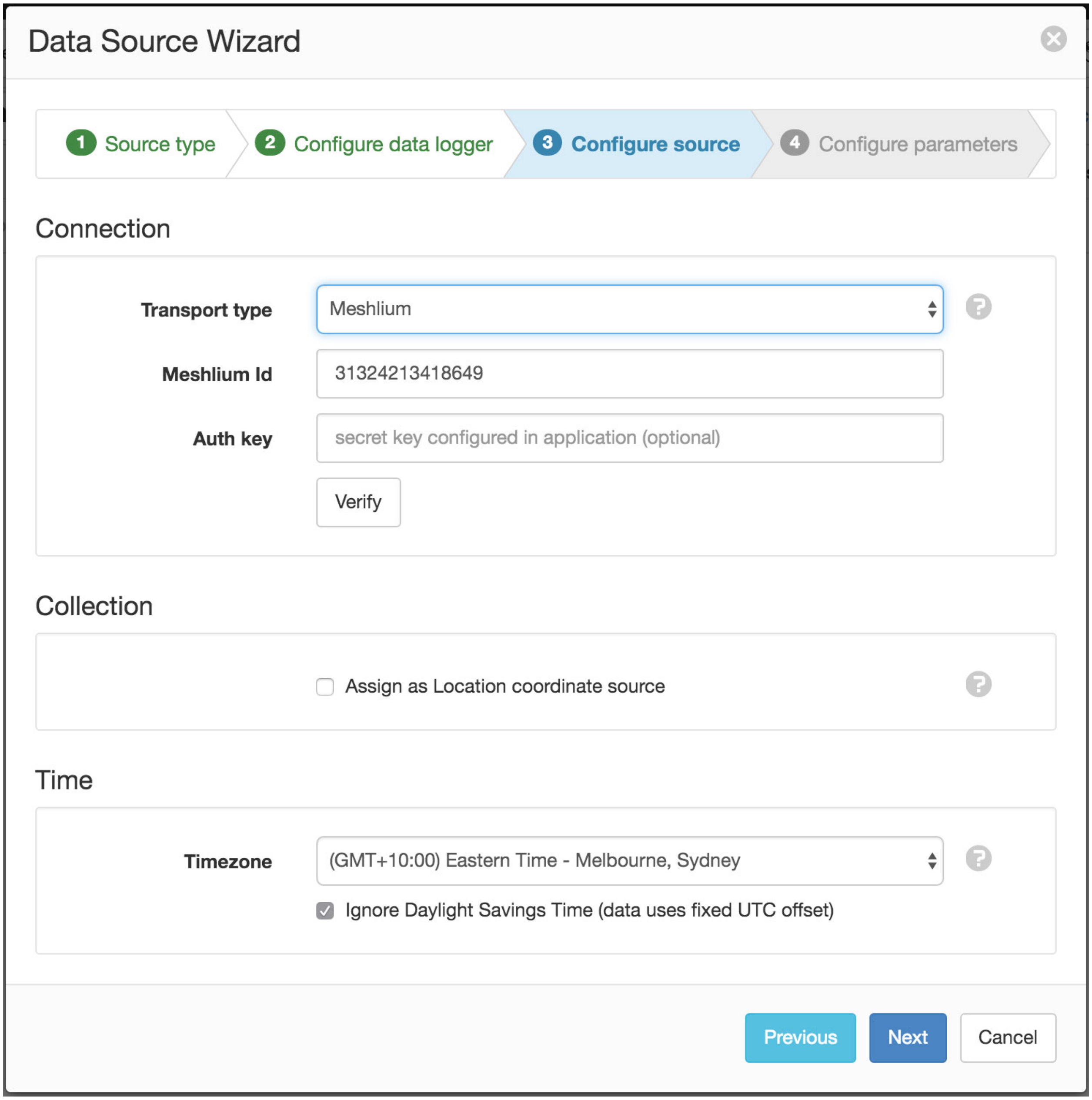
Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

Previous
Next
Cancel

4. Select *Meshlium* if the Waspmote will send data via a Meshlium (alternatively jump to Step 6). Enter the *Meshlium Id* and optional *Auth key* if configured in the eagle.io application on the device. Click Verify.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Verify
Previous
Next
Cancel

Connection

Transport type: Meshlium

Meshlium Id: 31324213418649

Auth key: secret key configured in application (optional)

Collection

☐ Assign as Location coordinate source

Time

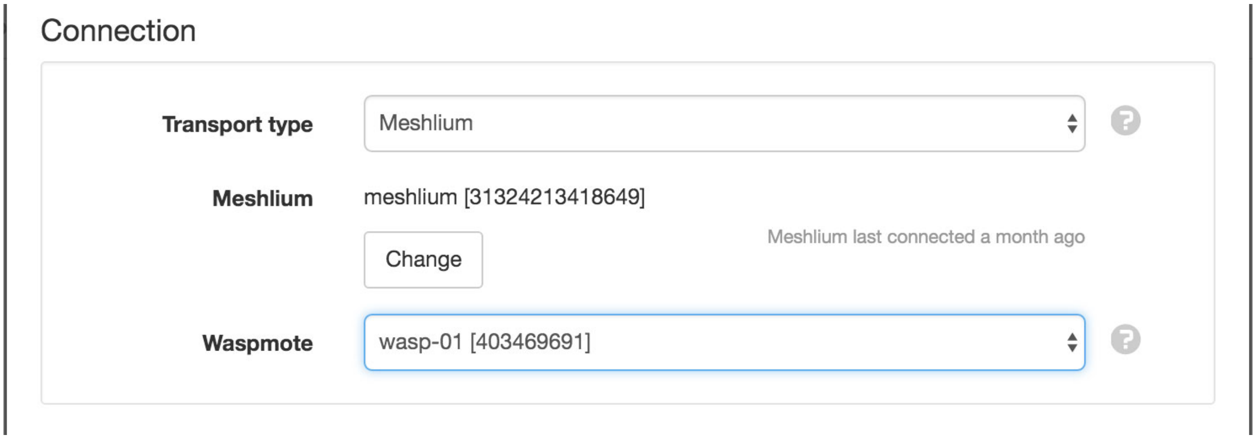
Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

Note: The eagle.io application in the Meshlium device needs to be started and initial connection established with eagle.io before it can be used as a transport.

---

5. Select the *Waspmote* you would like to acquire data from and click Next.



Connection

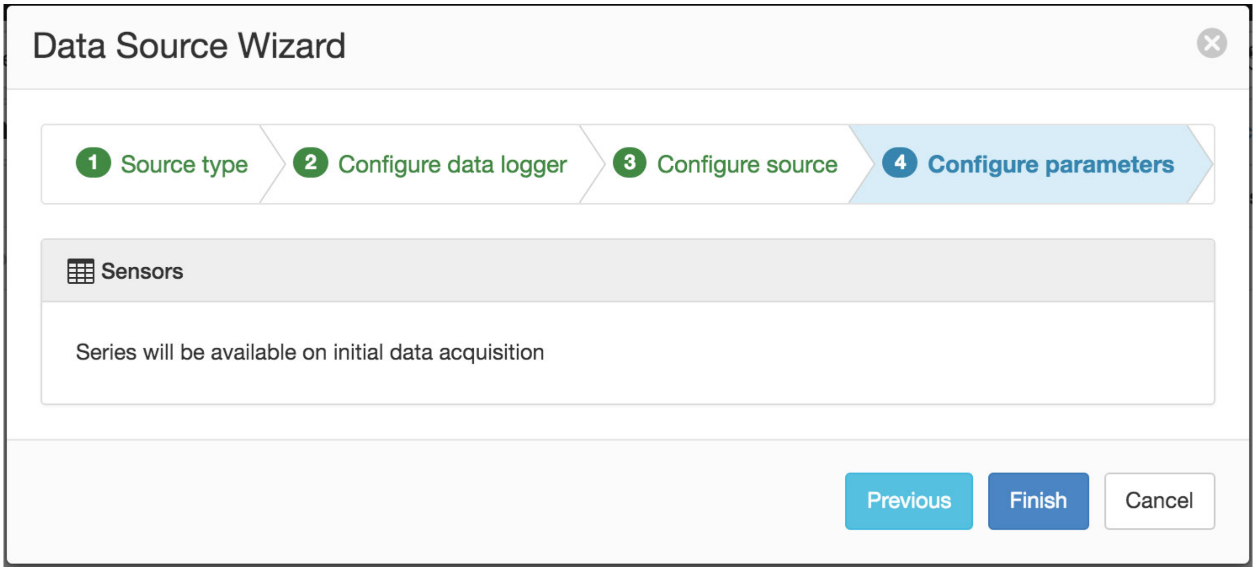
Transport type Meshlium

Meshlium meshlium [31324213418649]

Meshlium last connected a month ago

Waspmote wasp-01 [403469691]

6. Parameters will be automatically created on initial data acquisition. Click Finish to complete the setup.



Data Source Wizard

Series will be available on initial data acquisition

1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Sensors
Previous
Finish
Cancel

Note: You can disable/enable parameters from the *Data Source* (page 134) properties dialog after initial creation.

Device settings

Use the settings below for *Direct Connection* or *Meshlium Connection* with your Waspmote.

Direct Connection

Refer to our example Waspmote operating programs for use with 3G `(download)` and 4G modems `(download)` to establish a direct connection to eagle.io.

Apply the following settings to the variables at the top of the operating program:

waspmoteId Use the unique *Waspmote Id* generated during Data Source creation. eg. "8494091048"

host "device.eagle.io"

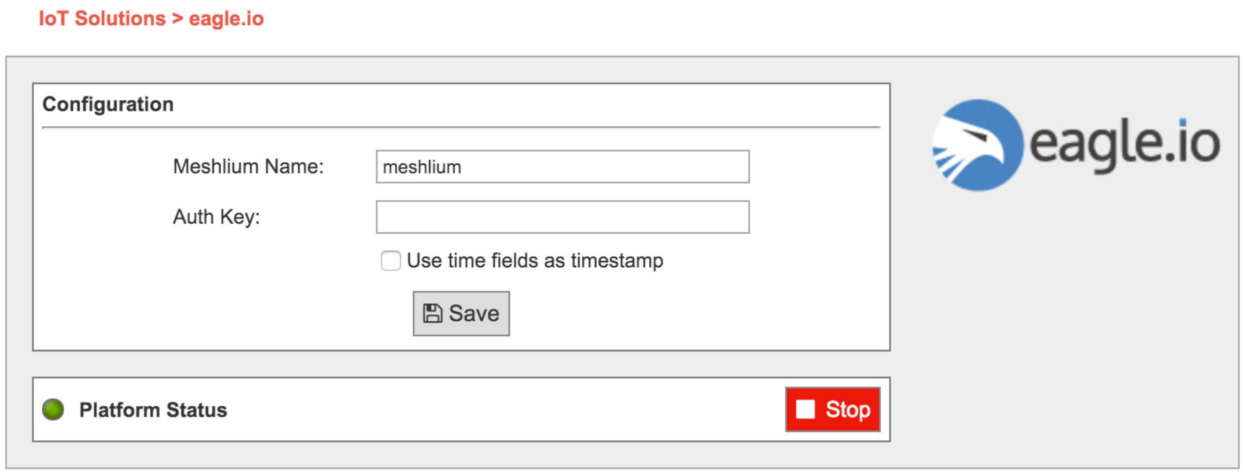
port "5566"

Meshlium Connection

Connect to the web interface on the Meshlium device, open the eagle.io Cloud Connector configuration and *Save* the following settings prior to clicking *Start* to run the application:

Meshlium Name Enter a name to help identify this device

Auth Key Optional secret key required to create a Data Source that uses this device in eagle.io (or leave blank for none).


IoT Solutions > eagle.io

Configuration

Meshlium Name: meshlium

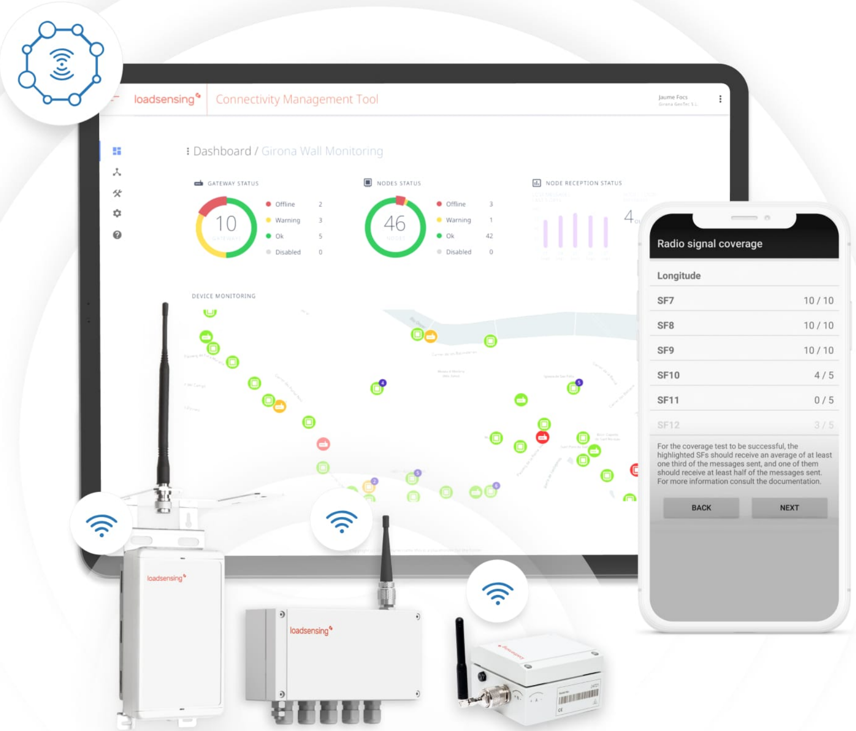
Auth Key:

☐ Use time fields as timestamp

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.7 Worldsensing

Loadsensing (https://www.worldsensing.com/loadsensing/) is the IoT remote monitoring solution by Worldsensing (https://www.worldsensing.com), a global industrial IoT leader and expert in monitoring the geotechnical, geospatial and structural performance of civil infrastructures. The monitoring solution can be connected with eagle.io (https://eagle.io) through the Worldsensing software called Connectivity Management Tool (CMT) (https://www.worldsensing.com/connectivity-connectivitymanagement/) in a few easy steps.


loadsensing
Connectivity Management Tool
Jaume Focs
Dashboard / Girona Wall Monitoring
GATEWAY STATUS
10
Offline 2
Warning 3
Ok 5
Disabled 0
NODES STATUS
46
Offline 3
Warning 1
Ok 42
Disabled 0
NODE RECEPTION STATUS
DEVICE MONITORING
Radio signal coverage
Longitude
SF7 10 / 10
SF8 10 / 10
SF9 10 / 10
SF10 4 / 5
SF11 0 / 5
SF12 3 / 5
BACK
NEXT
loadsensing
loadsensing

For the coverage test to be successful, the highlighted SFs should receive an average of at least one third of the messages sent, and one of them should receive at least half of the messages sent. For more information consult the documentation.

Introduction

CMT (Connectivity Management Tool) (https://www.worldsensing.com/connectivity-connectivitymanagement/) is part of the Worldsensing connectivity portfolio. It allows integrating data collected through Worldsensing monitoring networks with 3rd party systems. The CMT software features FTP push of data to 3rd party systems, such as eagle.io.

Setting up CMT with eagle.io

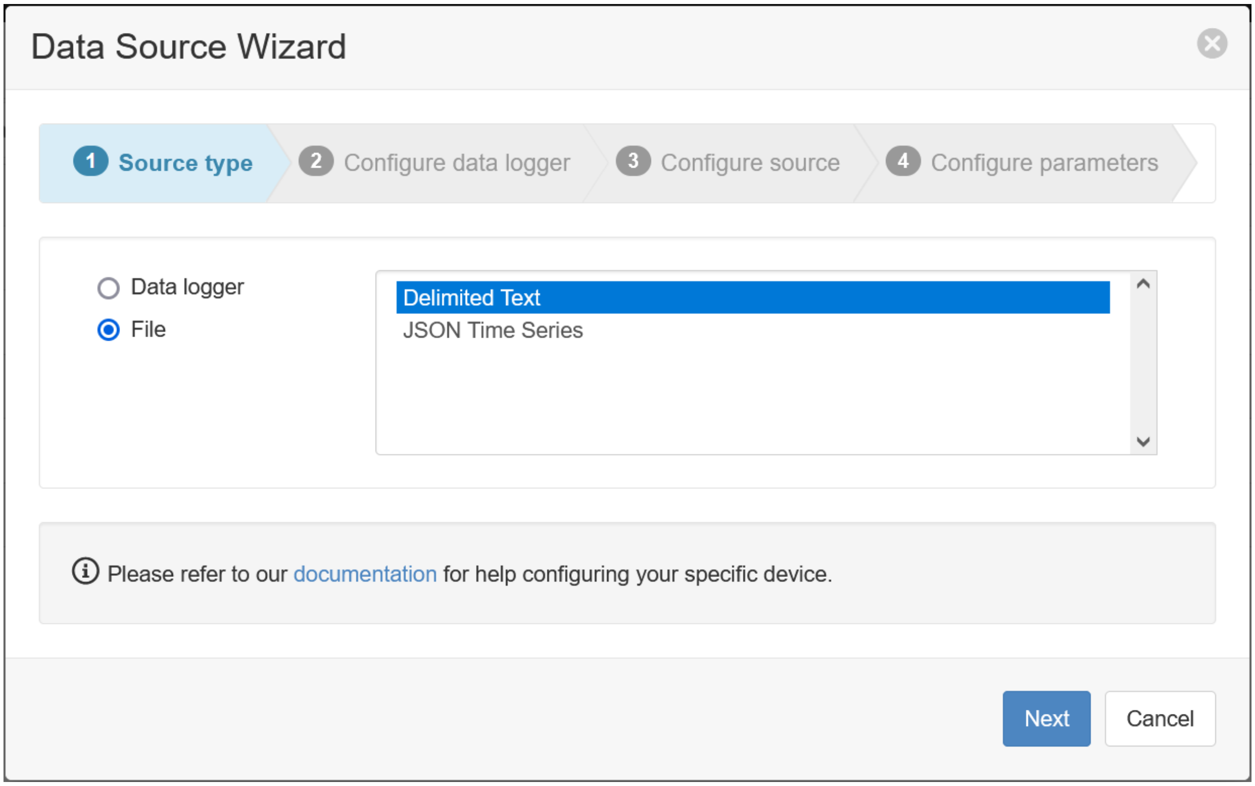
Follow the steps below to configure CMT to send data to an eagle.io data source. Use a similar process to connect CMT Edge to eagle.io.

3 Steps for an easy setup:

1. Configure a new eagle.io data source with the **Upload data to ftp.eagle.io** transport
2. Configure CMT with FTP client details
3. Use the first file sent as sample data to finalize configuring the data source parser, and create parameters

1. Configure an eagle.io data source

1. Create a *data source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click **Next**.



Data Source Wizard

1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters

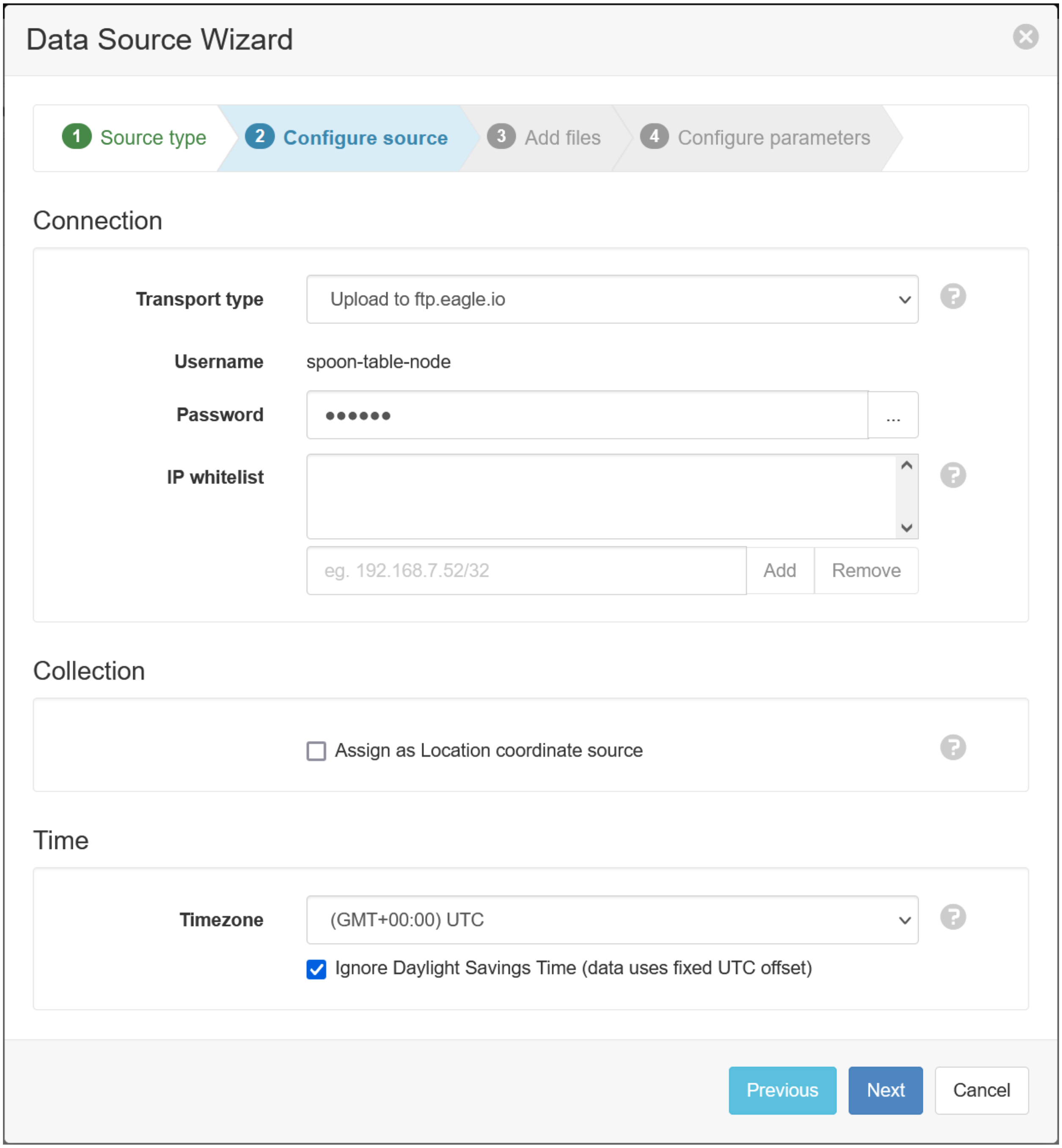
○ Data logger
● File

Delimited Text
JSON Time Series

ⓘ Please refer to our documentation for help configuring your specific device.

Next
Cancel

2. Select *Upload to ftp.eagle.io* as the transport type. A unique *Username* will be automatically generated per data source; for this example, it is `spoon-table-node`. A password should also be entered for additional security. Select the desired timezone (in this example it is **UTC** to match the timezone of the data file) and click **Next**.



Data Source Wizard

1 Source type
2 Configure source
3 Add files
4 Configure parameters

Connection

Transport type: Upload to ftp.eagle.io

Username: spoon-table-node

Password: ••••••

IP whitelist:

eg. 192.168.7.52/32
Add
Remove

Collection

☐ Assign as Location coordinate source

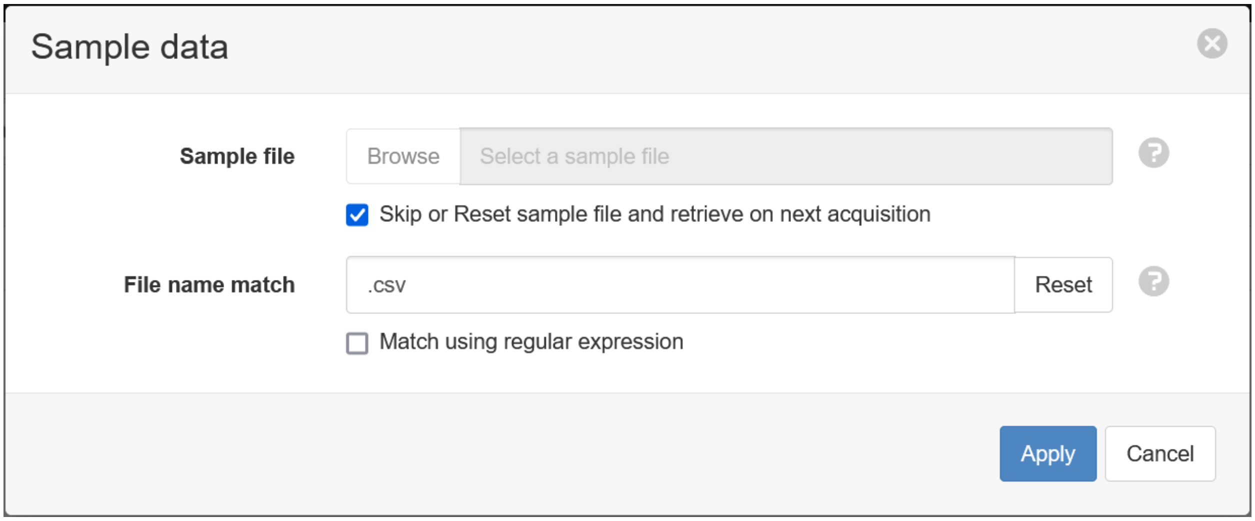
Time

Timezone: (GMT+00:00) UTC

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

Previous
Next
Cancel

3. Check the box labled **Skip or Reset sample file and retrieve on next acquisition**. Enter a file match of `.csv` and click **Apply**.



Sample data

Sample file Browse Select a sample file

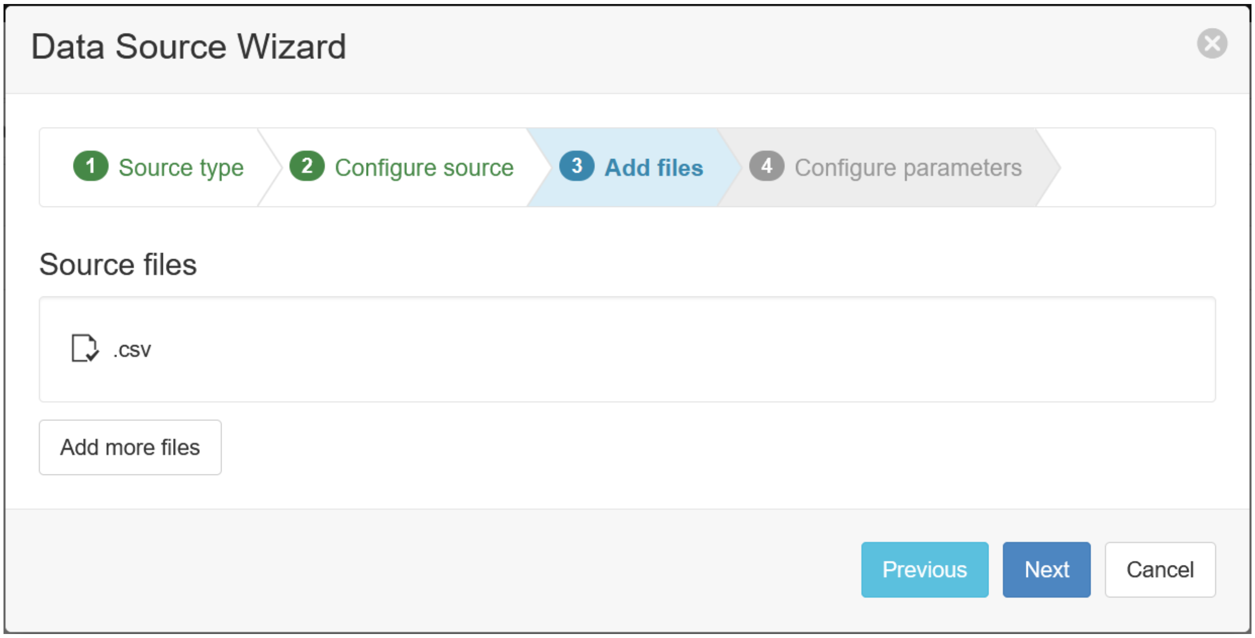
☑ Skip or Reset sample file and retrieve on next acquisition

File name match .csv Reset

☐ Match using regular expression

Apply
Cancel

3. Click **Next**.



Data Source Wizard

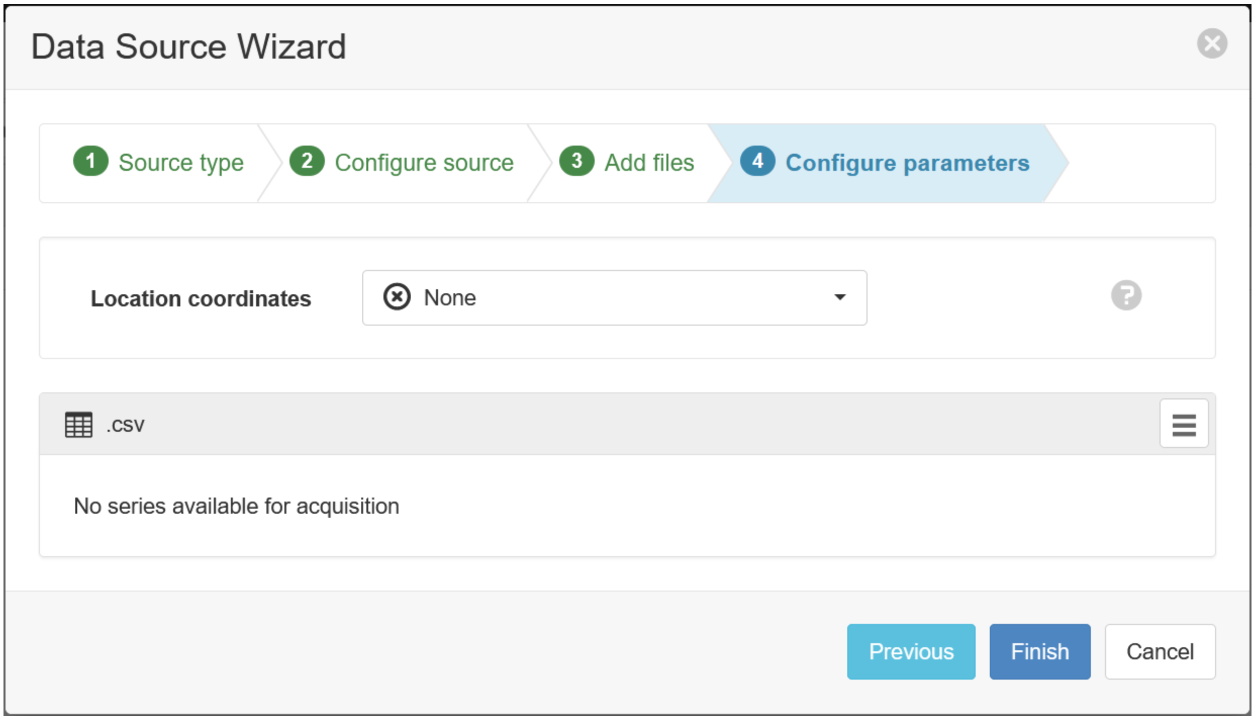
1 Source type
2 Configure source
3 Add files
4 Configure parameters

Source files

.csv

Add more files
Previous
Next
Cancel

4. Click **Finish**.



Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters

Location coordinates: None

.csv

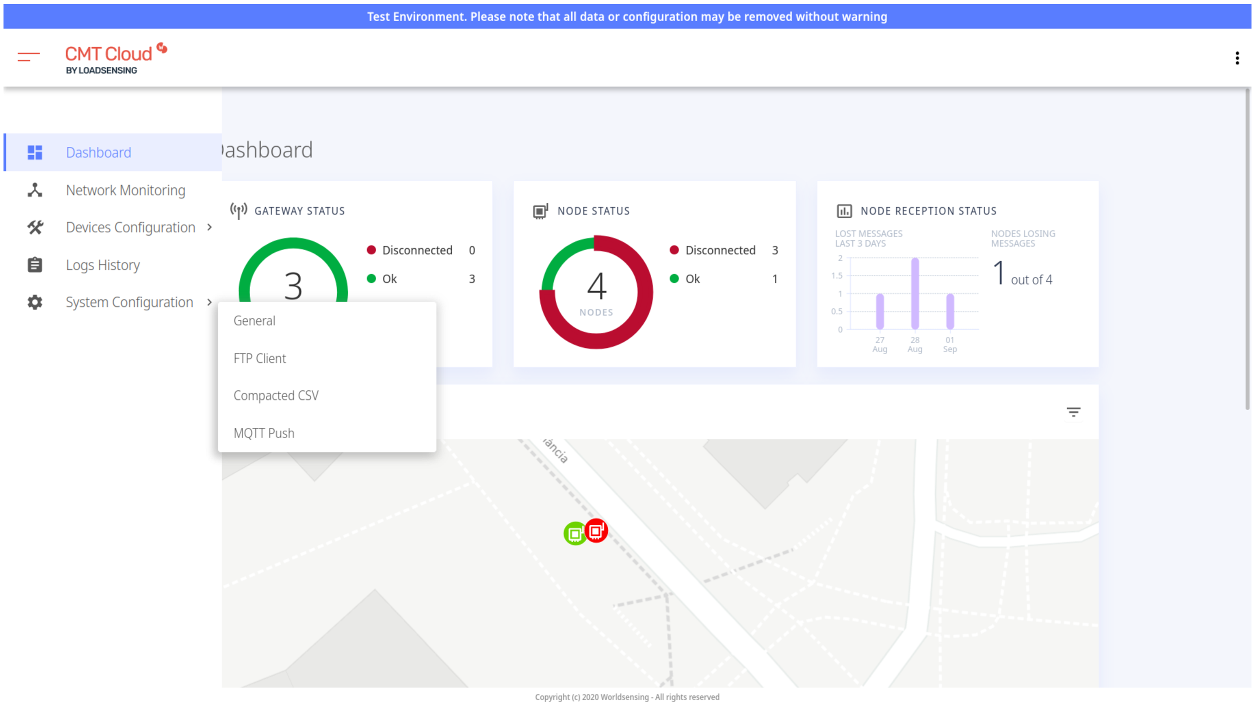
No series available for acquisition

Previous
Finish
Cancel

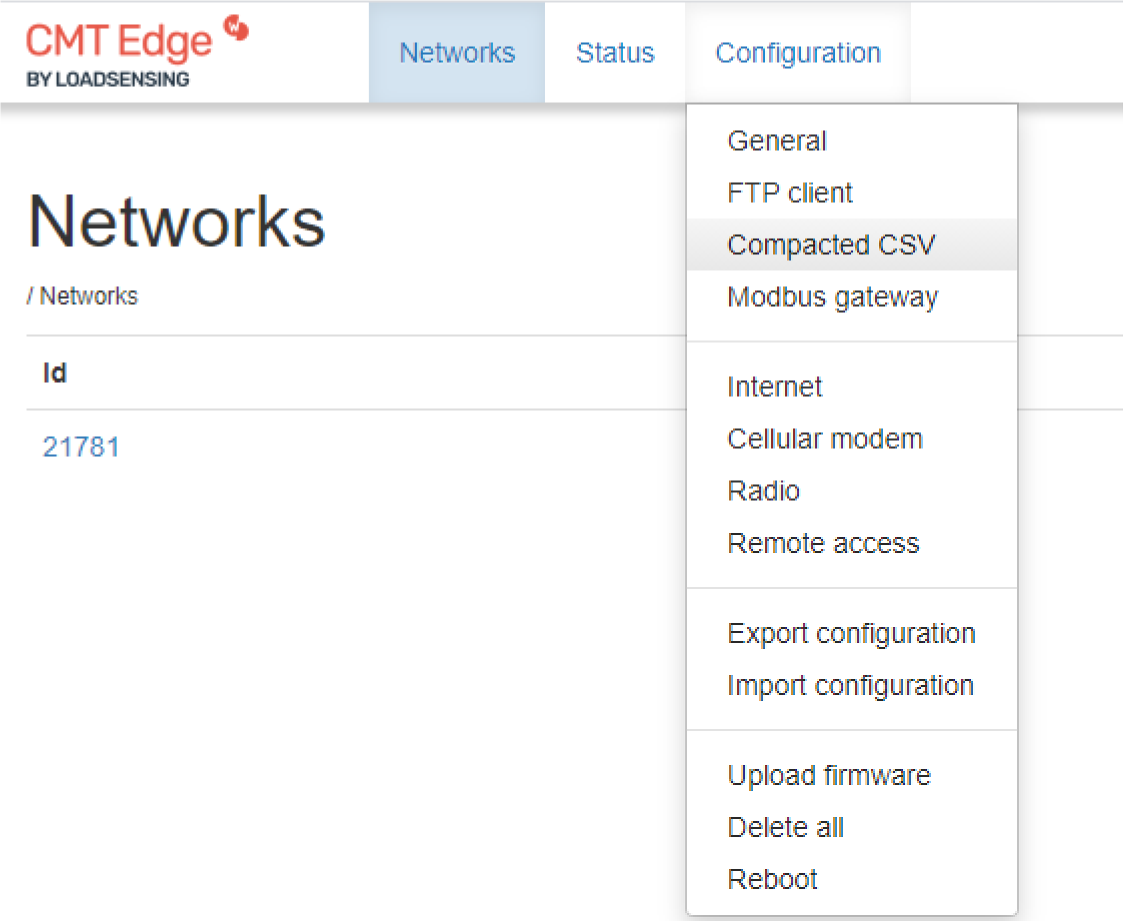
2. Configure CMT

1. After logging into the CMT, select *System Configuration/Configuration*, then *FTP Client*.

CMT Cloud:


Test Environment. Please note that all data or configuration may be removed without warning
CMT Cloud
BY LOADSENSING
Dashboard
Network Monitoring
Devices Configuration
Logs History
System Configuration
General
FTP Client
Compacted CSV
MQTT Push
ashboard
GATEWAY STATUS
3
Disconnected 0
Ok 3
NODE STATUS
4
NODES
Disconnected 3
Ok 1
NODE RECEPTION STATUS
LOST MESSAGES LAST 3 DAYS
NODES LOSING MESSAGES
1 out of 4
2
1.5
1
0.5
0
27 Aug
28 Aug
01 Sep
Copyright (c) 2020 Worldsensing - All rights reserved

CMT Edge:


CMT Edge
BY LOADSENSING
Networks
Status
Configuration
General
FTP client
Compacted CSV
Modbus gateway
Internet
Cellular modem
Radio
Remote access
Export configuration
Import configuration
Upload firmware
Delete all
Reboot

Networks

/ Networks

Id
21781

2. Check the **Enable FTP** box and enter the following FTP client details:

Hostname `ftp.eagle.io`

Port number `21`

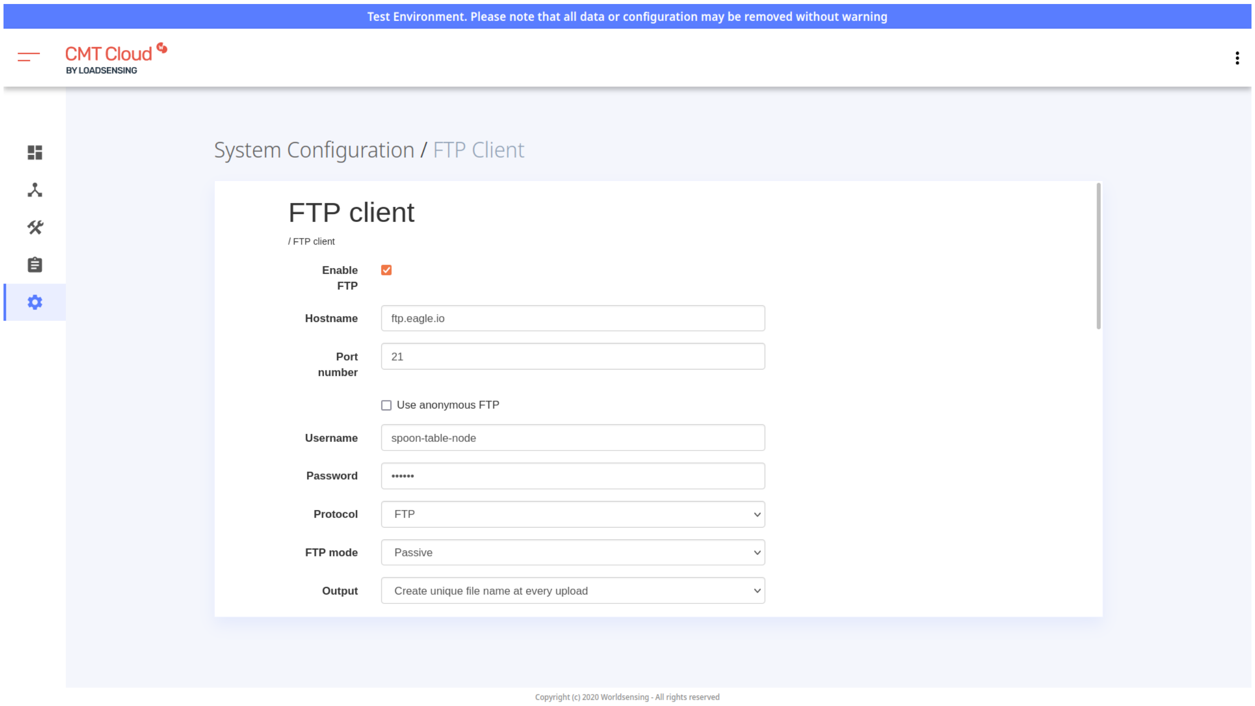
Username Use the unique FTP username generated during creation of the data source. In this example, it is `spoon-table-node`. Every data source will have a different unique username.

Password Use the password you entered during creation of the data source.

Protocol **FTP**

FTP mode **Passive**

Output **Create unique file name at every upload**


Test Environment. Please note that all data or configuration may be removed without warning
CMT Cloud
BY LOADSENSING

System Configuration / FTP Client

FTP client

/ FTP client

Enable FTP ☑

Hostname: ftp.eagle.io

Port number: 21

☐ Use anonymous FTP

Username: spoon-table-node

Password: ••••••

Protocol: FTP

FTP mode: Passive

Output: Create unique file name at every upload

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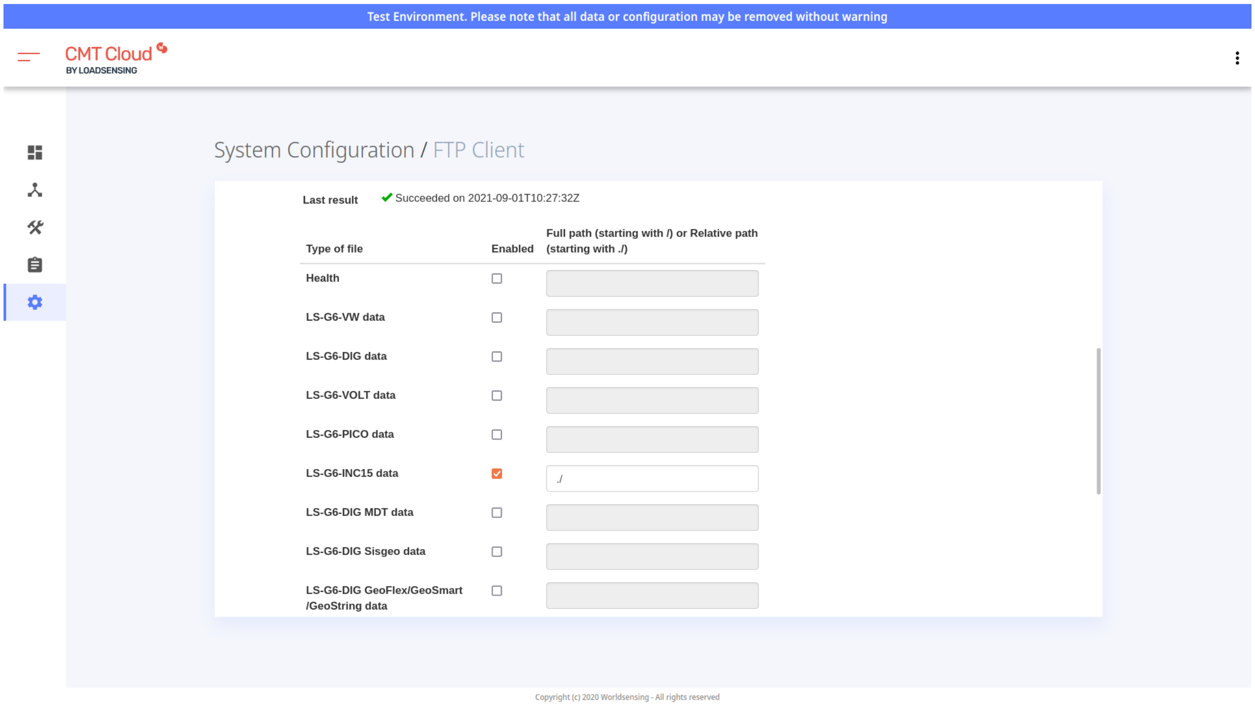
3. Click a single box corresponding to the data you want to send, for example **LS-G6-INC15 data**, and enter a relative path of `./`:



Test Environment. Please note that all data or configuration may be removed without warning

System Configuration / FTP Client

Last result ✓ Succeeded on 2021-09-01T10:27:32Z

Type of file	Enabled	Full path (starting with /) or Relative path (starting with ./)
Health	☐	
LS-G6-VW data	☐	
LS-G6-DIG data	☐	
LS-G6-VOLT data	☐	
LS-G6-PICO data	☐	
LS-G6-INC15 data	☑	./
LS-G6-DIG MDT data	☐	
LS-G6-DIG Sisgeo data	☐	
LS-G6-DIG GeoFlex/GeoSmart /GeoString data	☐	

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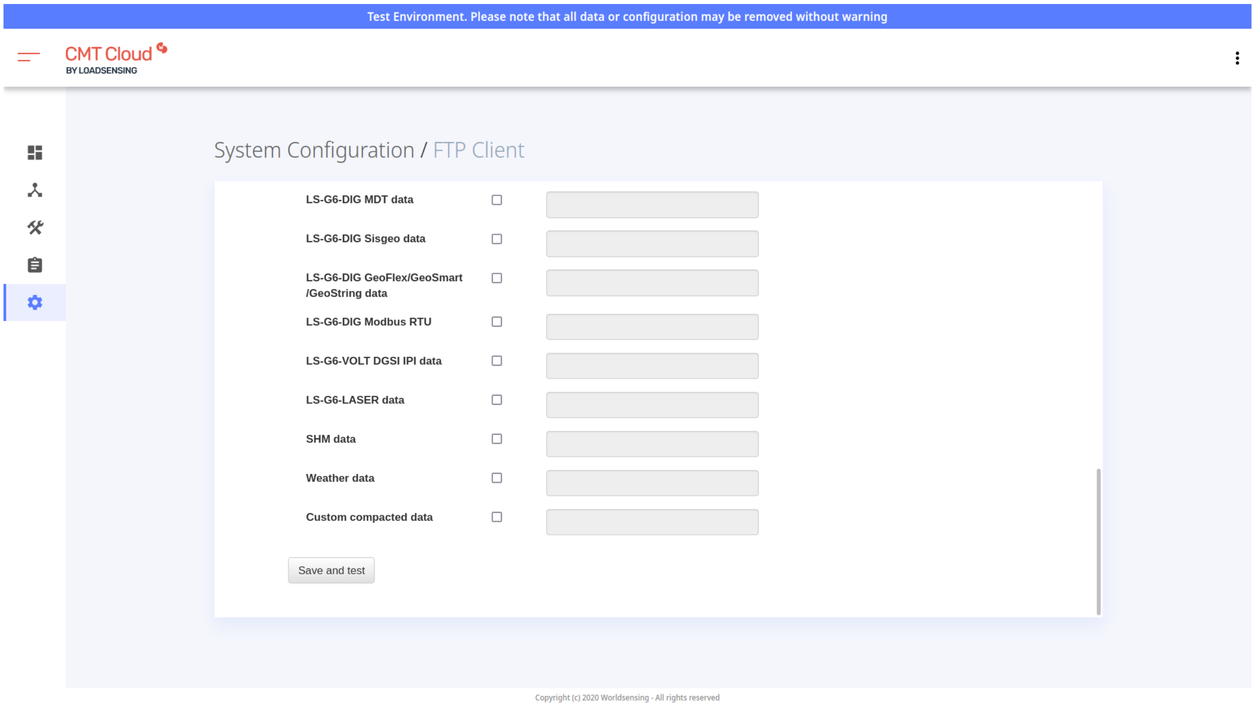
4. Click **Save and test**


Test Environment. Please note that all data or configuration may be removed without warning

CMT Cloud
BY LOADSENSING

System Configuration / FTP Client

LS-G6-DIG MDT data ☐
LS-G6-DIG Sisgeo data ☐
LS-G6-DIG GeoFlex/GeoSmart /GeoString data ☐
LS-G6-DIG Modbus RTU ☐
LS-G6-VOLT DGSI IPI data ☐
LS-G6-LASER data ☐
SHM data ☐
Weather data ☐
Custom compacted data ☐

Save and test

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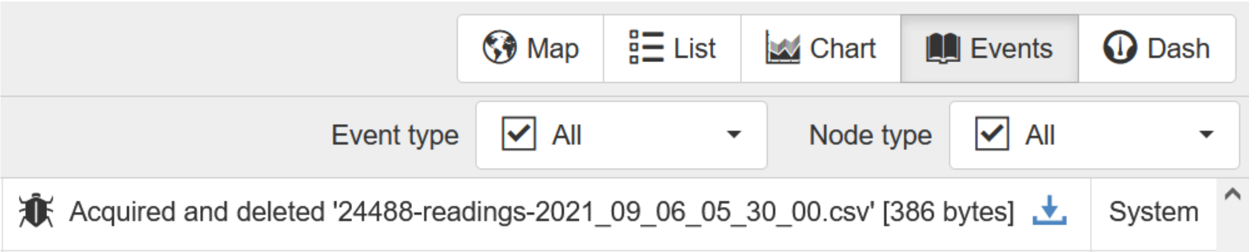
3. Finalize the configuration of the data source parser

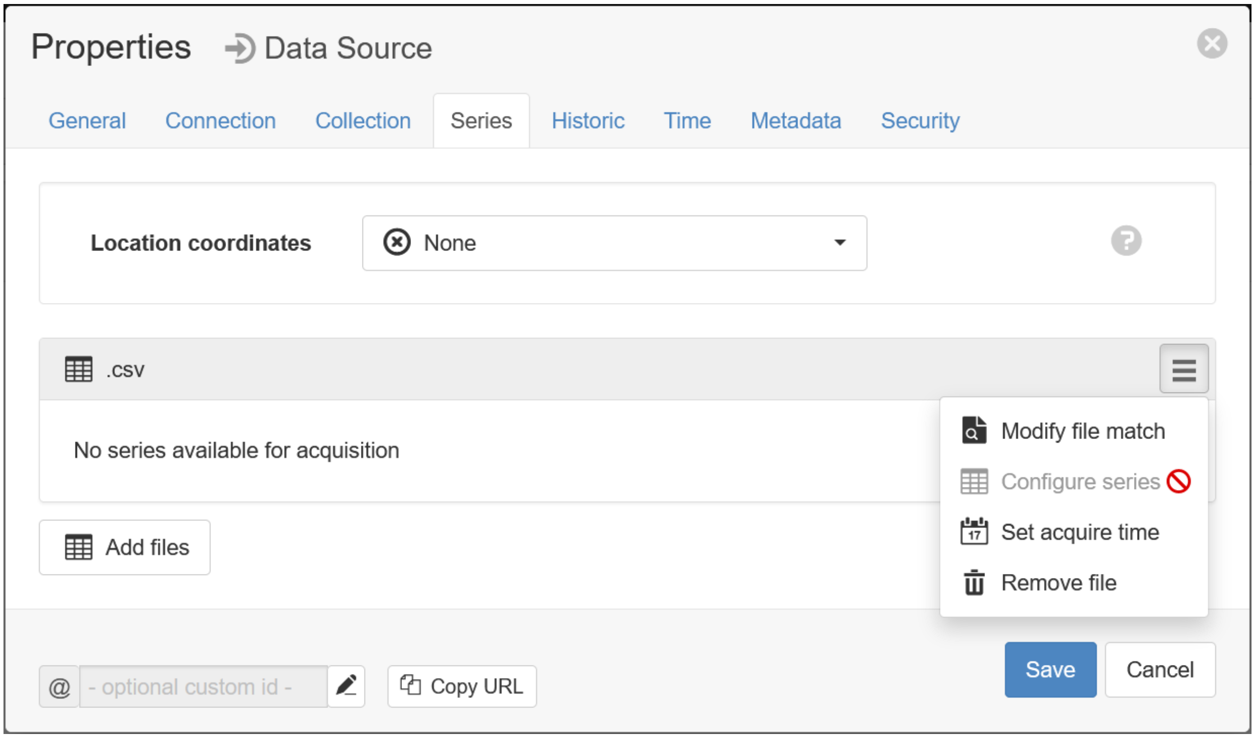
Once a file has been sent from the CMT software to eagle.io via FTP, this file can be used to finalize the configuration of the data source that was created previously.

1. In eagle.io, check the debug *Events* (page 43) view of the data source to ensure that at least one file has been received. The event will look like this:



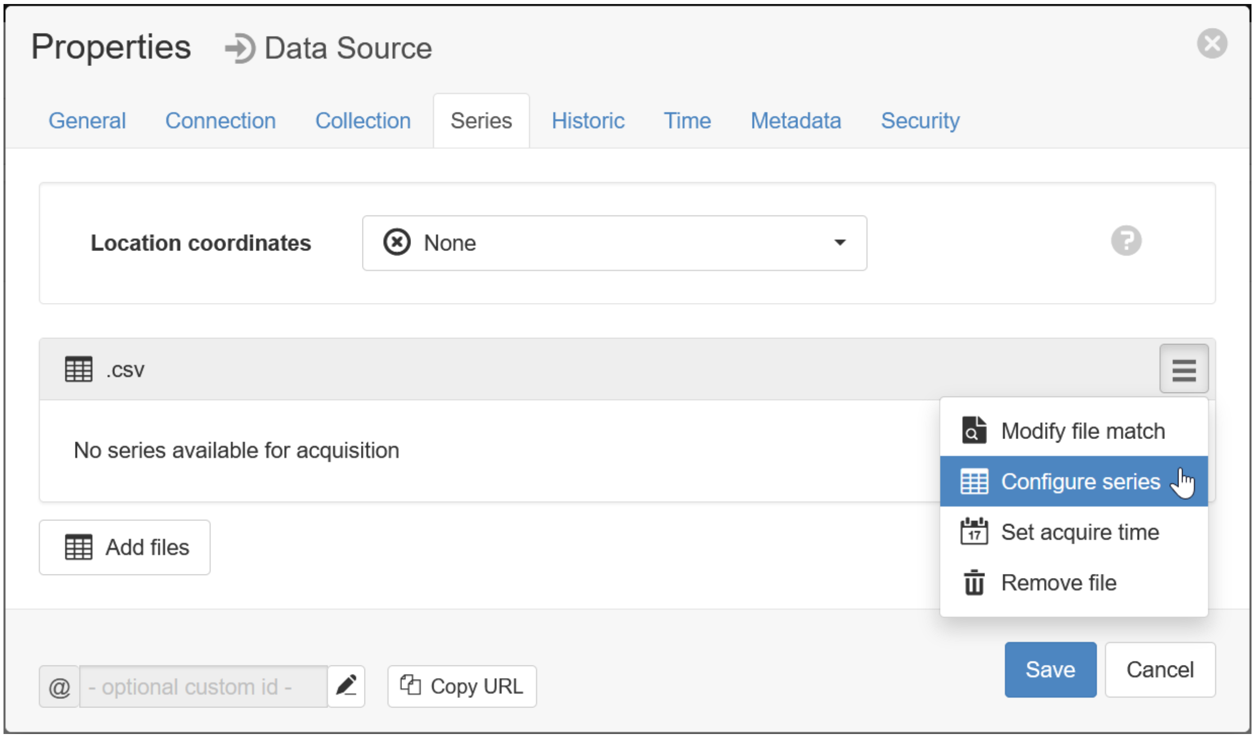
Acquired and deleted '24488-readings-2021_09_06_05_30_00.csv' [386 bytes]

2. In the *data source* (page 114) properties dialog, go to the **Series** tab and choose the **Configure series** option for the **.csv** data file. If this option is greyed-out, that means a file has not yet been received (refer to the previous step):


Properties
Data Source
General
Connection
Collection
Series
Historic
Time
Metadata
Security
Location coordinates
None
.csv
Modify file match
Configure series
Set acquire time
Remove file
Add files
@
- optional custom id -
Copy URL
Save
Cancel

No series available for acquisition

3. Once a file has been received, the **Configure series** option for the **.csv** data file will be avilable:


Properties
Data Source
General
Connection
Collection
Series
Historic
Time
Metadata
Security
Modify file match
Configure series
Set acquire time
Remove file
Add files
Copy URL
Save
Cancel

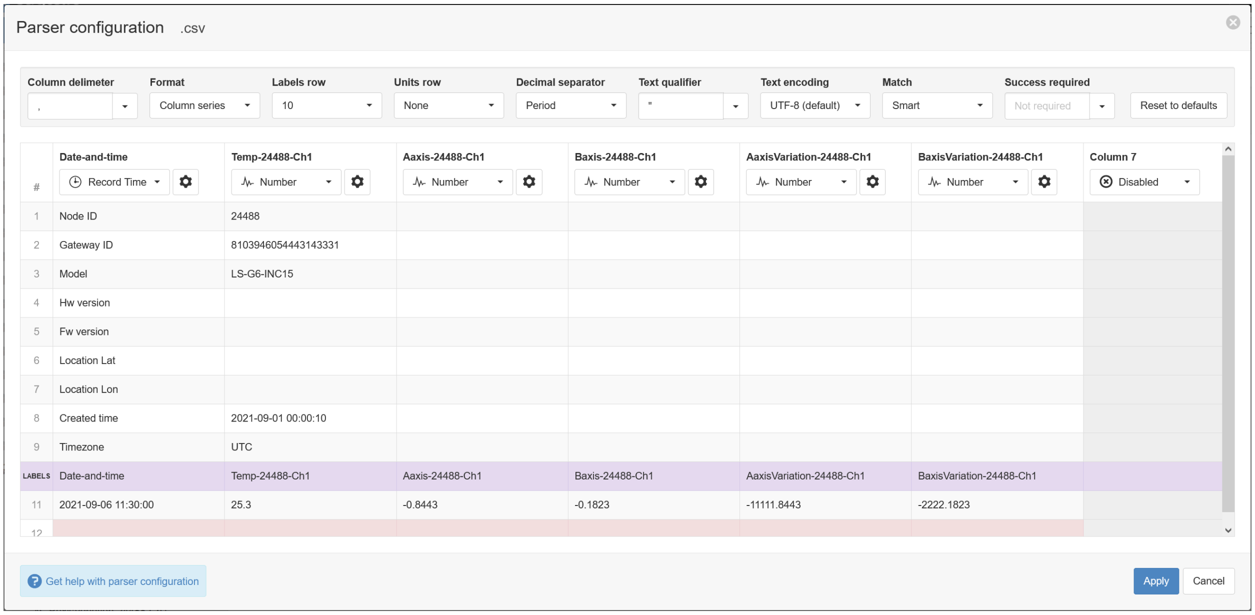
Location coordinates: None

.csv

No series available for acquisition

@ - optional custom id -

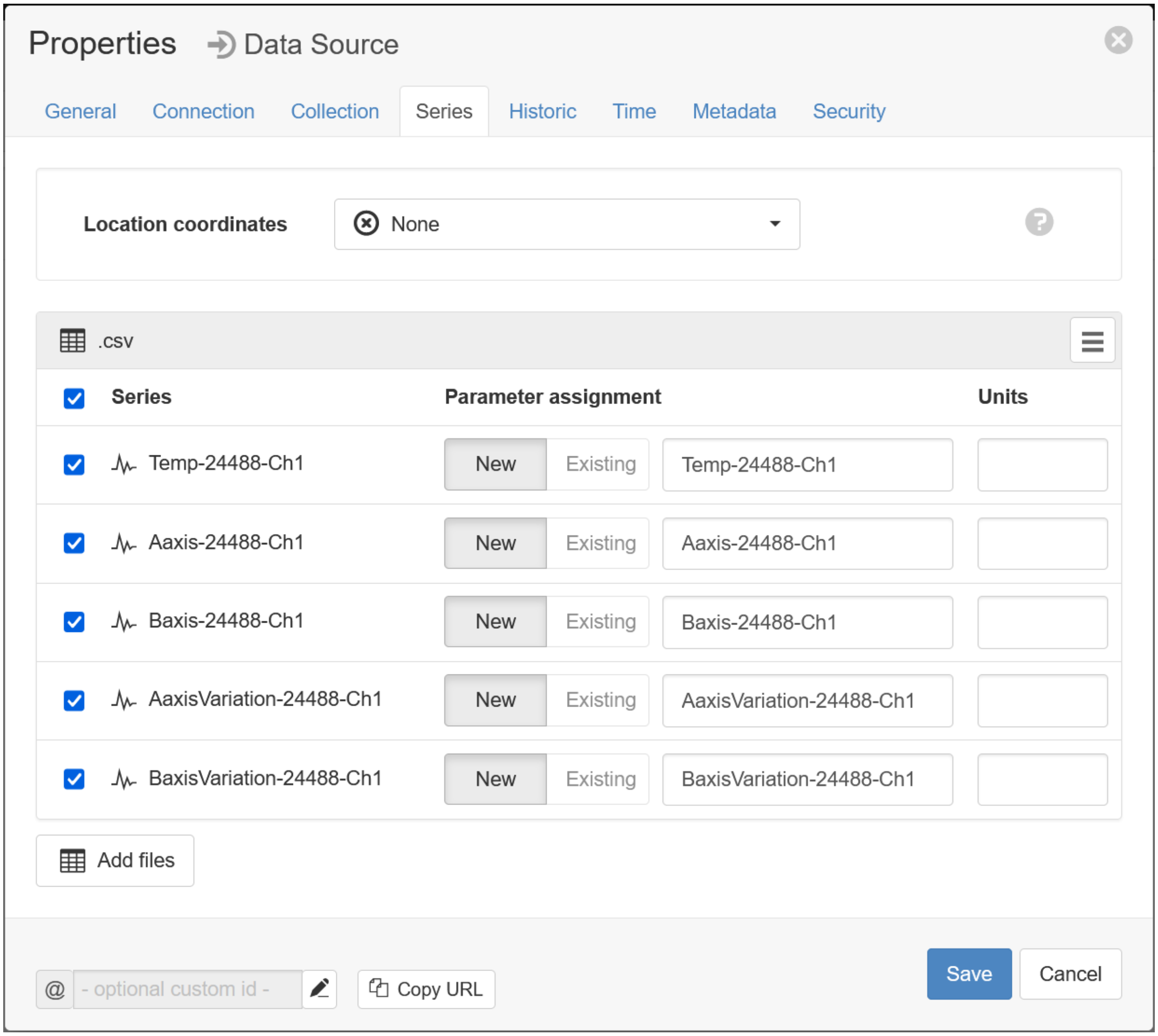
4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpreted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details. The data file contains a header row, so set the *Labels row* control to row 10 which will assign default labels for parameter creation (that is the purple line in the example below). Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*. The default time format for the *Record Time* column is already set to **YYYY-MM-DD HH:mm:ss** and should not need to change. After appropriate configuration, the parser should look now look like this; click **Apply** to continue:



Column delimiter: ,
Format: Column series
Labels row: 10
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	Date-and-time Record Time	Temp-24488-Ch1 Number	Aaxis-24488-Ch1 Number	Baxis-24488-Ch1 Number	AaxisVariation-24488-Ch1 Number	BaxisVariation-24488-Ch1 Number	Column 7 Disabled
1	Node ID	24488					
2	Gateway ID	8103946054443143331					
3	Model	LS-G6-INC15					
4	Hw version						
5	Fw version						
6	Location Lat						
7	Location Lon						
8	Created time	2021-09-01 00:00:10					
9	Timezone	UTC					
LABELS	Date-and-time	Temp-24488-Ch1	Aaxis-24488-Ch1	Baxis-24488-Ch1	AaxisVariation-24488-Ch1	BaxisVariation-24488-Ch1	
11	2021-09-06 11:30:00	25.3	-0.8443	-0.1823	-11111.8443	-2222.1823	
12							

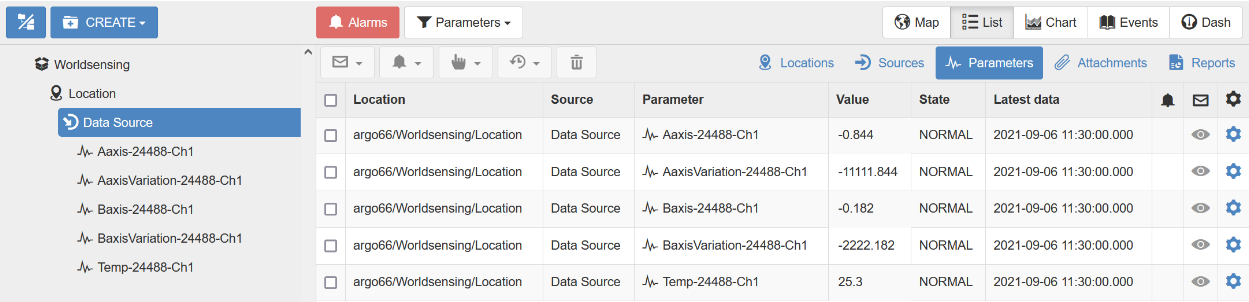
5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click **Save** to complete the configuration and create the parameters.


Properties
Data Source
General
Connection
Collection
Series
Historic
Time
Metadata
Security
.csv
Add files
@
- optional custom id -
Copy URL
Save
Cancel

Location coordinates ⓧ None

☑	Series	Parameter assignment		Units
☑	Temp-24488-Ch1	New Existing	Temp-24488-Ch1	
☑	Aaxis-24488-Ch1	New Existing	Aaxis-24488-Ch1	
☑	Baxis-24488-Ch1	New Existing	Baxis-24488-Ch1	
☑	AaxisVariation-24488-Ch1	New Existing	AaxisVariation-24488-Ch1	
☑	BaxisVariation-24488-Ch1	New Existing	BaxisVariation-24488-Ch1	

6. The parameters have now been created; when data is next sent via FTP, the values will appear in the Parameters view:


CREATE
Alarms
Parameters
Map
List
Chart
Events
Dash
Locations
Sources
Parameters
Attachments
Reports
Worldsensing
Location
Data Source
Aaxis-24488-Ch1
AaxisVariation-24488-Ch1
Baxis-24488-Ch1
BaxisVariation-24488-Ch1
Temp-24488-Ch1

☐	Location	Source	Parameter	Value	State	Latest data
☐	argo66/Worldsensing/Location	Data Source	Aaxis-24488-Ch1	-0.844	NORMAL	2021-09-06 11:30:00.000
☐	argo66/Worldsensing/Location	Data Source	AaxisVariation-24488-Ch1	-11111.844	NORMAL	2021-09-06 11:30:00.000
☐	argo66/Worldsensing/Location	Data Source	Baxis-24488-Ch1	-0.182	NORMAL	2021-09-06 11:30:00.000
☐	argo66/Worldsensing/Location	Data Source	BaxisVariation-24488-Ch1	-2222.182	NORMAL	2021-09-06 11:30:00.000
☐	argo66/Worldsensing/Location	Data Source	Temp-24488-Ch1	25.3	NORMAL	2021-09-06 11:30:00.000

Note: You can reconfigure the file name match/sample file, parser configuration and parameter assignment from the *data source* (page 114) properties dialog after creation.

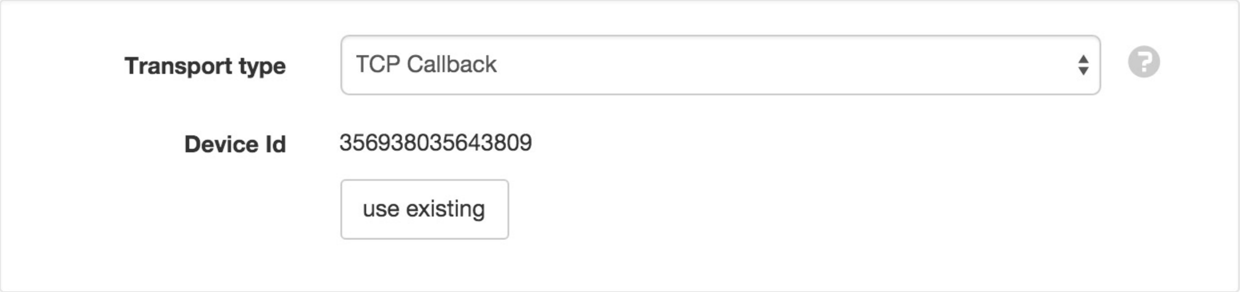
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.8 Maxon Intelimax+

The Maxon Intelimax+ 3G SERIAL MA-2020 (http://www.maxon.com.au/products/modems-routers/INTELIMAX+_3G_SERIAL_MA-2020.html) modem can be quickly configured to connect your data logger to eagle.io (https://eagle.io). The *Intelimax+* takes any standard internet ready SIM Card without the need for fixed IP addresses and offers exceptional performance in locations with marginal signal strength.

Source configuration

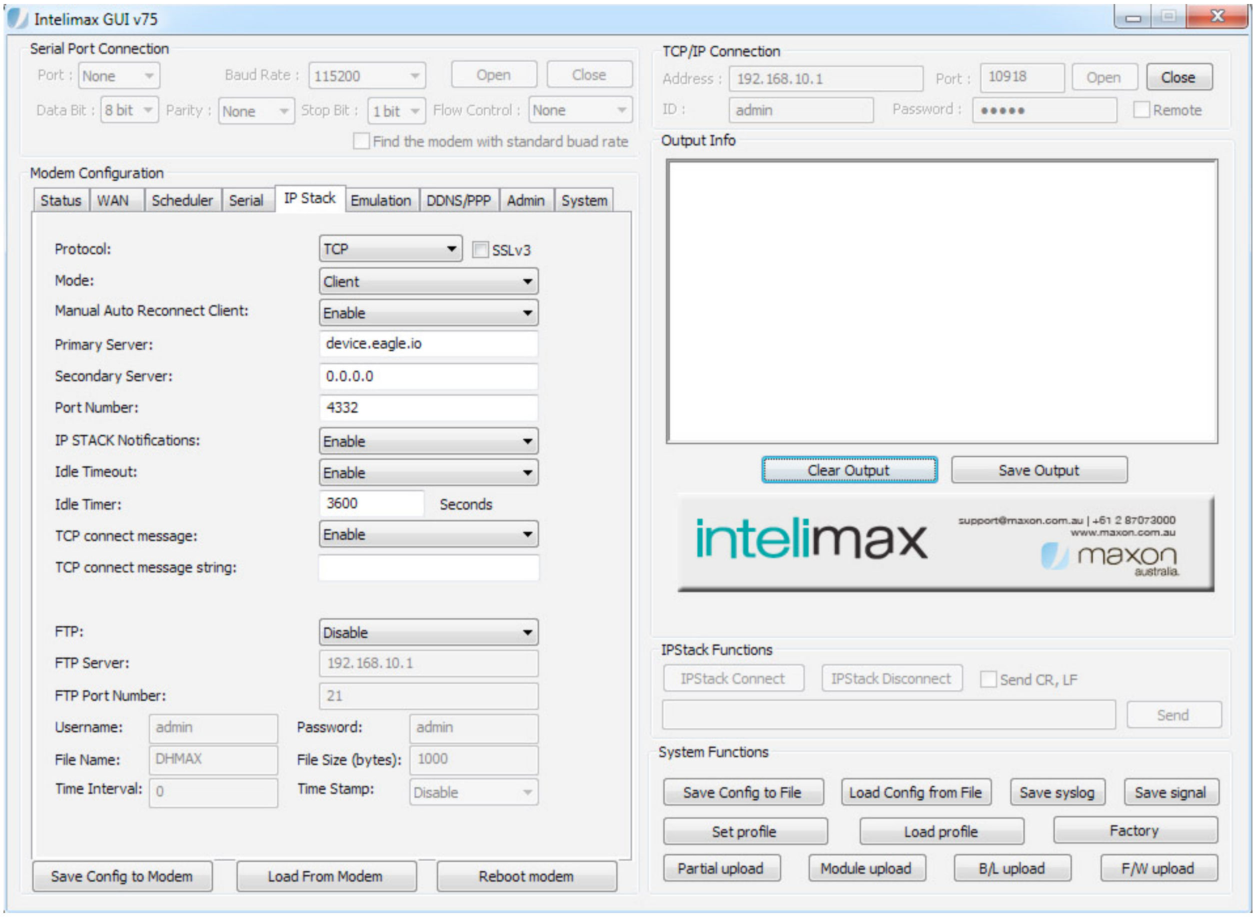
You need to configure your Data Source to use the **TCP Callback** transport. Click the *use existing* button and enter in the IMEI number printed on the back of the modem. See *configuring a Data Source* (page 134) for full details.


Transport type: TCP Callback

Device Id: 356938035643809

Device settings

Use the Intelimax GUI software (http://www.maxon.com.au/product-supports/drivers-and-manuals.html) to configure the logger for communication with eagle.io. Refer to your Intelimax+ user manual (http://www.maxon.com.au/products/modems-routers/INTELIMAX+_3G_SERIAL_MA-2020.html) for connection instructions.


Intelimax GUI v75
Serial Port Connection
Open
Close
Find the modem with standard buad rate
TCP/IP Connection
Open
Close
Remote
Modem Configuration
Status
WAN
Scheduler
Serial
IP Stack
Emulation
DDNS/PPP
Admin
System
SSLv3
Seconds
Output Info
Clear Output
Save Output
intelimax
support@maxon.com.au | +61 2 87073000
www.maxon.com.au
maxon
australia
IPStack Functions
IPStack Connect
IPStack Disconnect
Send CR, LF
Send
System Functions
Save Config to File
Load Config from File
Save syslog
Save signal
Set profile
Load profile
Factory
Partial upload
Module upload
B/L upload
F/W upload
Save Config to Modem
Load From Modem
Reboot modem

Port : None
Baud Rate : 115200
Data Bit : 8 bit
Parity : None
Stop Bit : 1 bit
Flow Control : None

Address : 192.168.10.1
Port : 10918
ID : admin
Password : •••••

Protocol: TCP
Mode: Client
Manual Auto Reconnect Client: Enable
Primary Server: device.eagle.io
Secondary Server: 0.0.0.0
Port Number: 4332
IP STACK Notifications: Enable
Idle Timeout: Enable
Idle Timer: 3600 Seconds
TCP connect message: Enable
TCP connect message string:

FTP: Disable
FTP Server: 192.168.10.1
FTP Port Number: 21
Username: admin
Password: admin
File Name: DHMAX
File Size (bytes): 1000
Time Interval: 0
Time Stamp: Disable

The following settings should be assigned:

Protocol TCP

Mode Client

Primary Server device.eagle.io

Port Number 4332

TCP connect message Enable

2.14.9 Myriota Developer Toolkit

The Myriota Network (http://myriota.com) is a next generation, direct-to-orbit IoT technology platform that offers data transfer at mass scale.

The Myriota Developer Toolkit (http://myriota.com/developers) gives you all the tools you need to add affordable, long battery life IoT connectivity to your product. This unique direct-to-satellite technology offers the lowest cost of data transfer and the longest battery life for applications, and can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

Developer Tools
developer.myriota.com
Myriota

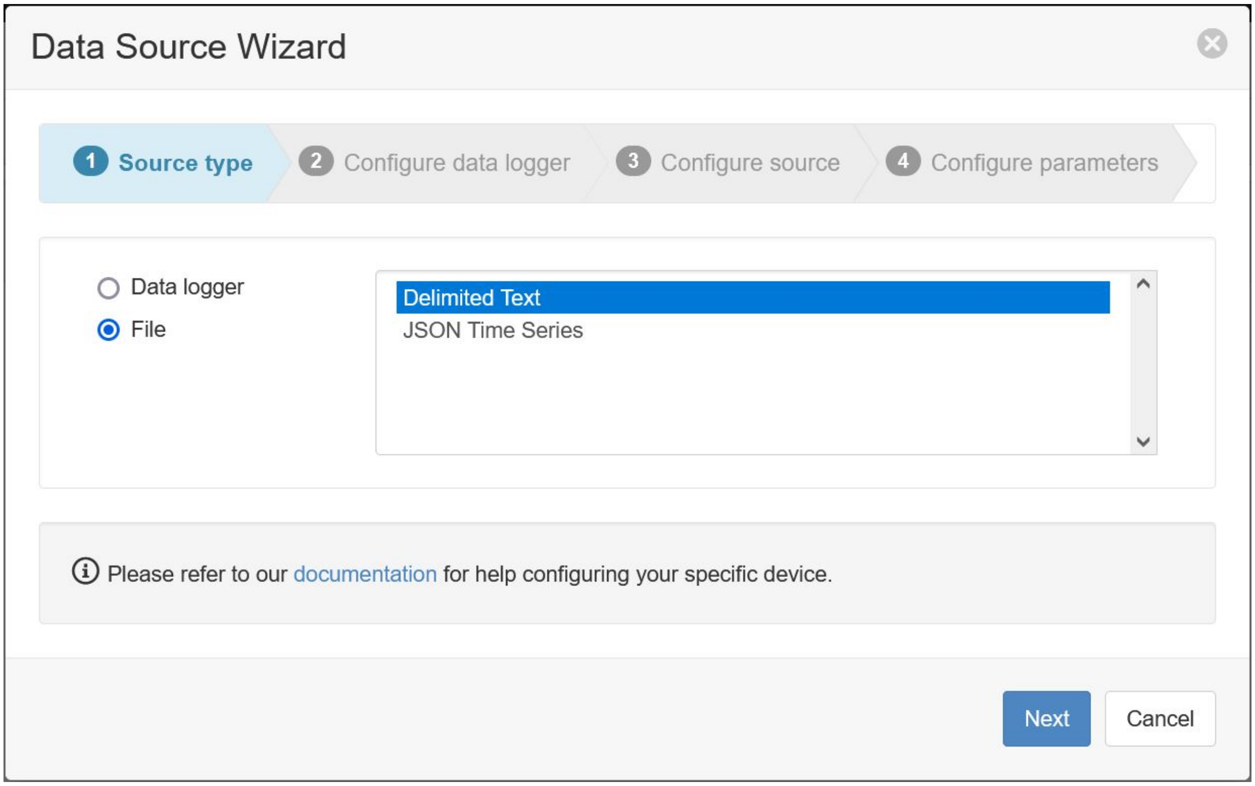
Introduction

There are 5 main tasks required when setting up the Myriota Developer Toolkit to work with eagle.io

1. Configure an eagle.io data source with the **Upload via HTTP** transport
2. Define Myriota message format using Ruby unpack syntax
3. Determine the destination URL (defined by the data source and the message format)
4. Send a sample message to the destination URL with the send message function
5. Use the sample message to configure the eagle.io parser, and map/name your variables

1. Configure an eagle.io data source

1. Create a *Data Source* (page 114) (note that a Data Source node can only be created within a *Location* (page 56) node) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.



Data Source Wizard

1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters

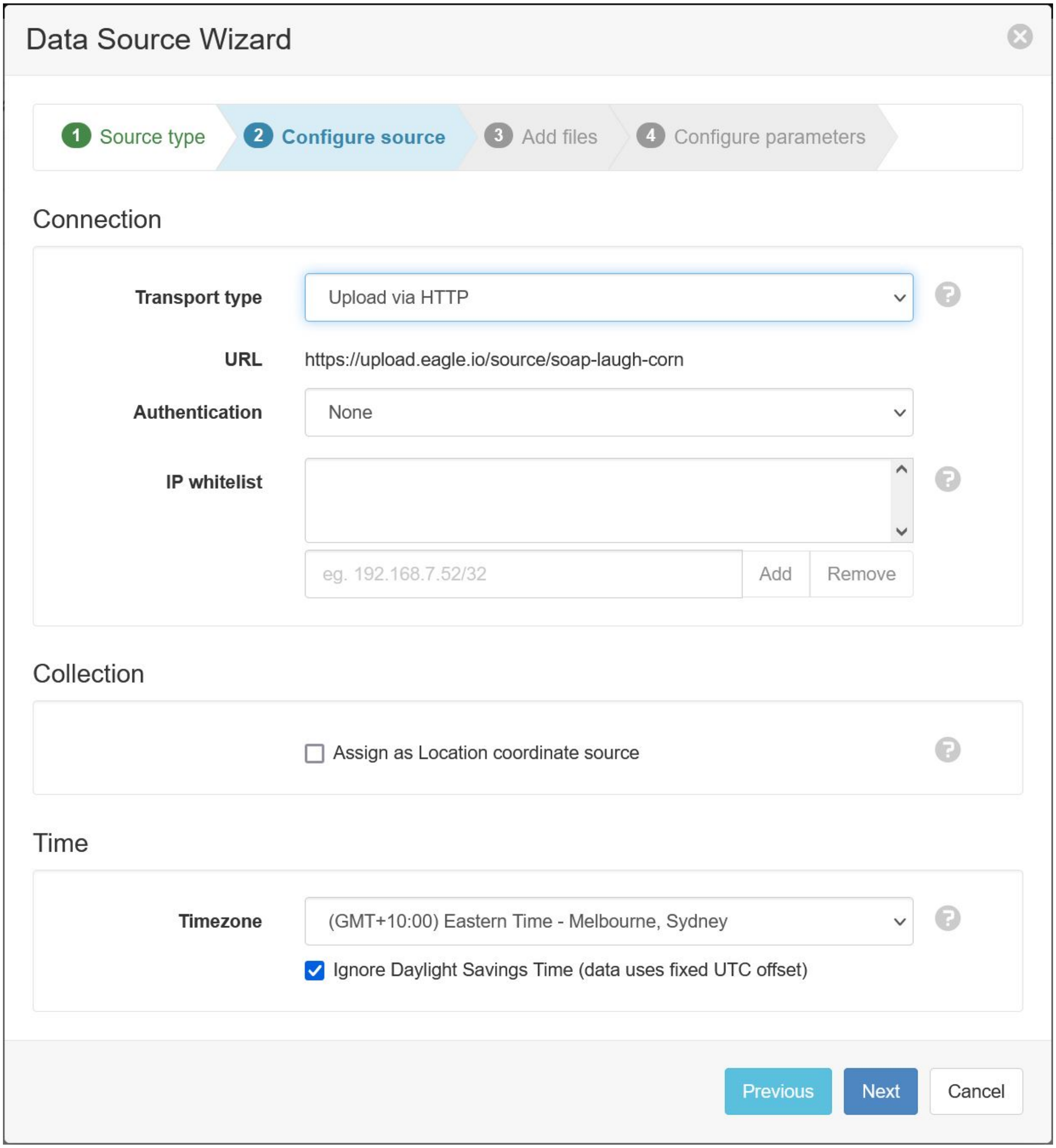
○ Data logger
● File

Delimited Text
JSON Time Series

Please refer to our documentation for help configuring your specific device.

Next
Cancel

2. Select *Upload via HTTP* as the transport type. A unique URL will be automatically generated per data source. Select the desired timezone and click Next.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Add
Remove
Previous
Next
Cancel

Connection

Transport type Upload via HTTP

URL https://upload.eagle.io/source/soap-laugh-corn

Authentication None

IP whitelist eg. 192.168.7.52/32

Collection

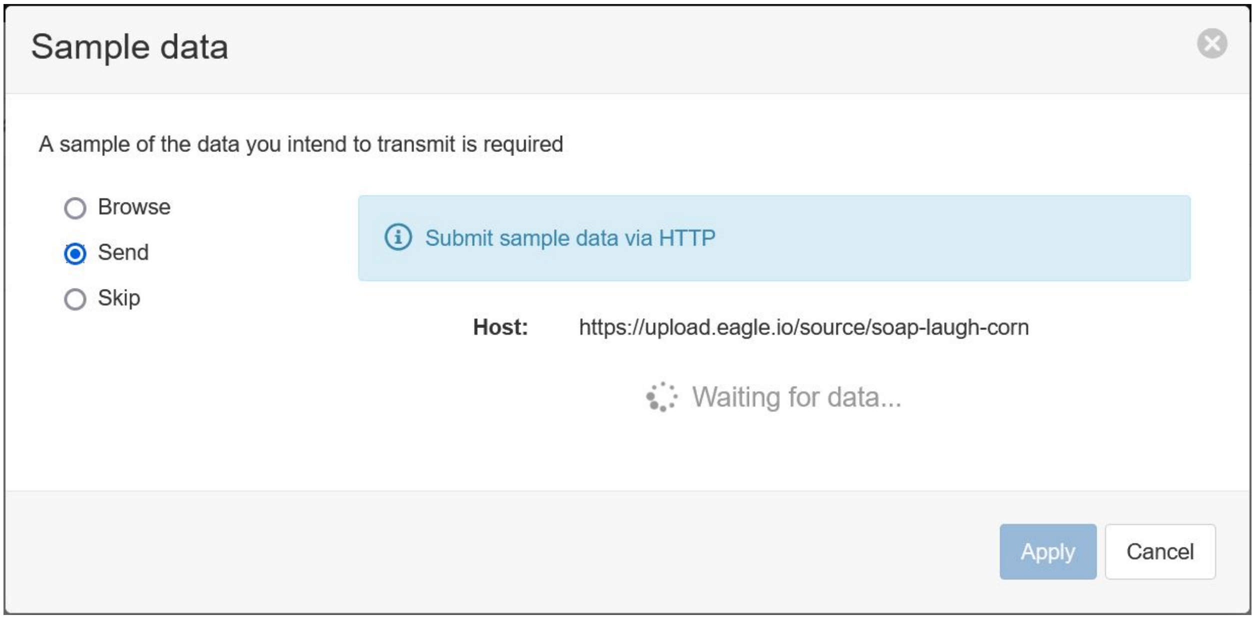
☐ Assign as Location coordinate source

Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Choose the **Send** option:



Sample data

A sample of the data you intend to transmit is required

Submit sample data via HTTP

Host: https://upload.eagle.io/source/soap-laugh-corn

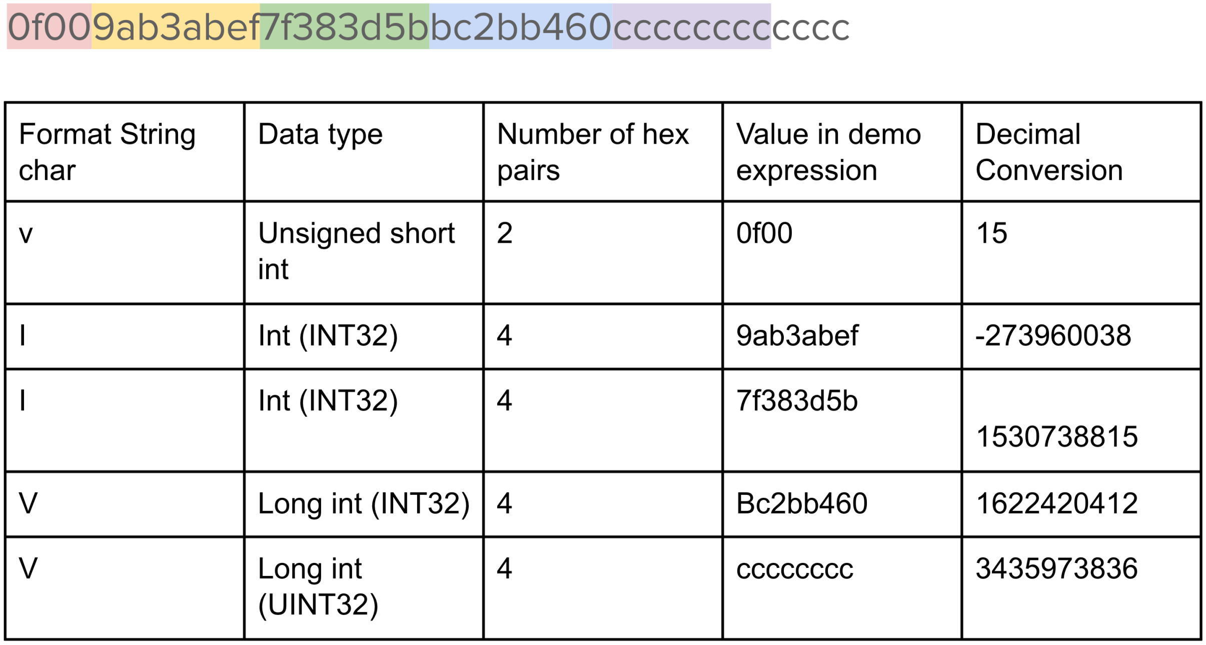
Waiting for data...

The data source is now ready to receive sample data.

2. Define Myriota message format

In order to send data from the Myriota device to eagle.io, the data format must first be defined. This will describe how to decode the message, which comprises a 40-character hexadecimal string. Ruby unpack syntax (https://apidock.com/ruby/String/unpack) is used to define the format.

This is an example of the packed Myriota string, and the data format which defines how to unpack it:



0f009ab3abef7f383d5bbc2bb460cccccccccccc

Format String char	Data type	Number of hex pairs	Value in demo expression	Decimal Conversion
v	Unsigned short int	2	0f00	15
l	Int (INT32)	4	9ab3abef	-273960038
l	Int (INT32)	4	7f383d5b	1530738815
V	Long int (INT32)	4	Bc2bb460	1622420412
V	Long int (UINT32)	4	cccccccc	3435973836

Note that each of the 5 elements packed into this particular hexadecimal string has a data type which maps to a letter code. These letter codes are an example of the Ruby unpack syntax (https://apidock.com/ruby/String/unpack), a shorthand way of defining data types.

The 5 elements of this example are defined by the 5 code letters, **v l l V V**. Although all messages will be 40-character hex strings, other messages may be defined by different combinations of data types, which will result in different combinations of the unpack (https://apidock.com/ruby/String/unpack) letter codes.

The combination of letter codes that define the data format will play an important role in the following step.

3. Determine the destination URL

The destination URL that Myriota will send data to takes the following format:

https://upload.eagle.io/source/<server key>/myriota?format=<data format>

Where:

- **<server key>** is the unique three-word key that is generated as part of the URL during the data source wizard in step 1
- **<data format>** is the combination of letter codes that define the specific data format used to unpack the 40-character hexadecimal message

The first portion of this URL is displayed in the data source creation wizard, which at the end of step 1 was left waiting for data.

This should be appended with **/myriota?format=<data format>** to complete the URL, for example:

https://upload.eagle.io/source/soap-laugh-corn/myriota?format=vllVV

Note that this specific example uses a server key of **soap-laugh-corn**, and a data format of **vllVV**

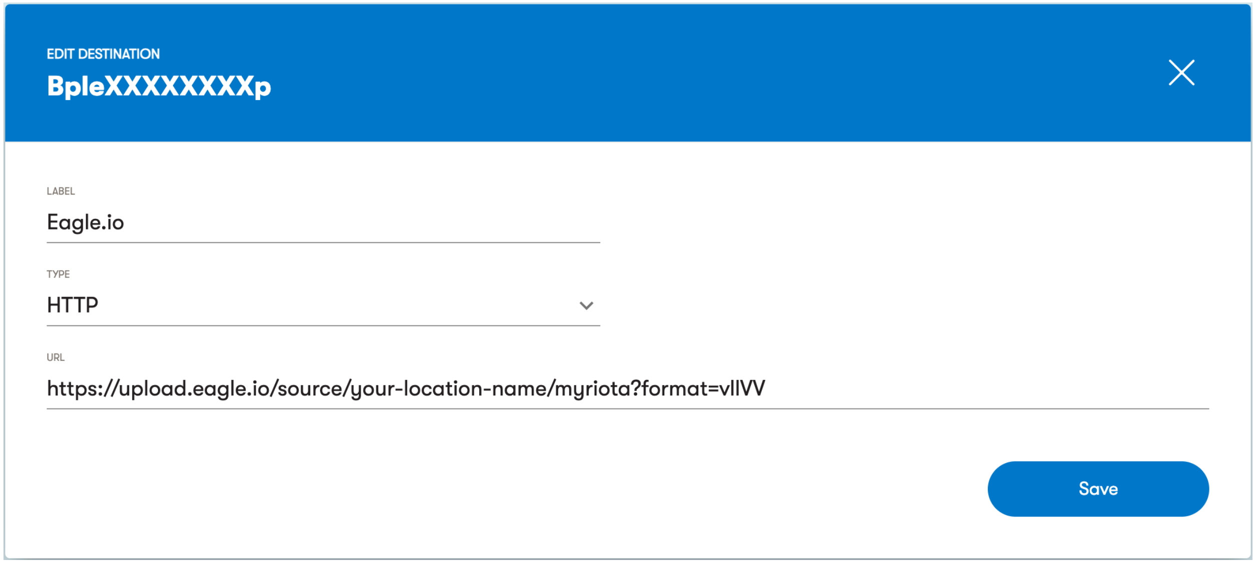
4. Send a sample message to the destination URL

Using the URL determined in the previous step, the Myriota device can now be configured.

Note: Each eagle.io destination URL is unique to that data source. You will need to create a new data source with a new URL for each new Myriota device, along with with a corresponding new destination in the Myriota Device Manager

---

1. In the **Destinations** section of the Myriota Device Manager, click the **Create** button to create a new destination. Enter a descriptive label, choose **HTTP** as the type, and enter the destination URL from the previous step, then click **Save**:

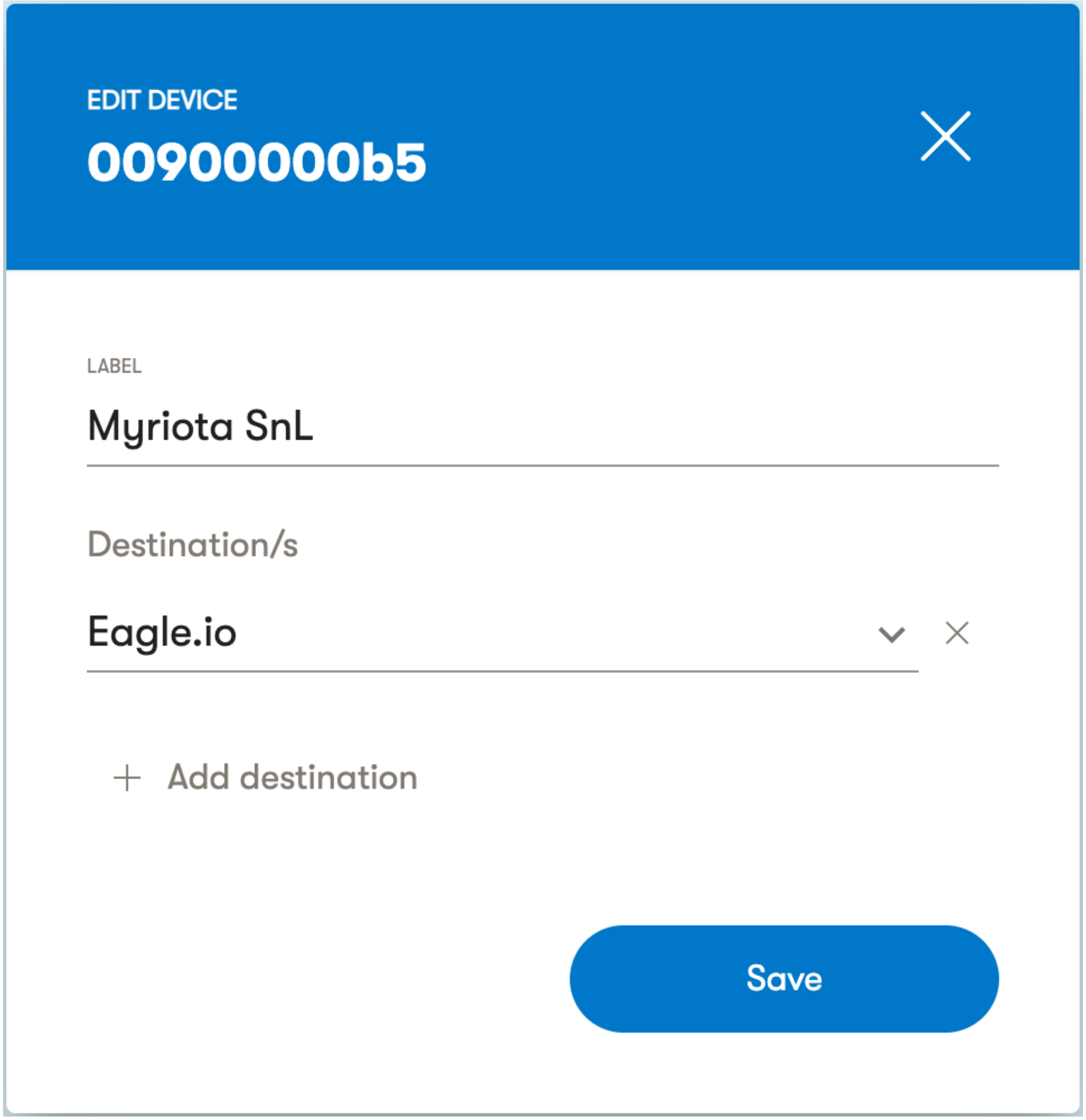


LABEL: Eagle.io

TYPE: HTTP

URL: https://upload.eagle.io/source/your-location-name/myriota?format=vllVV

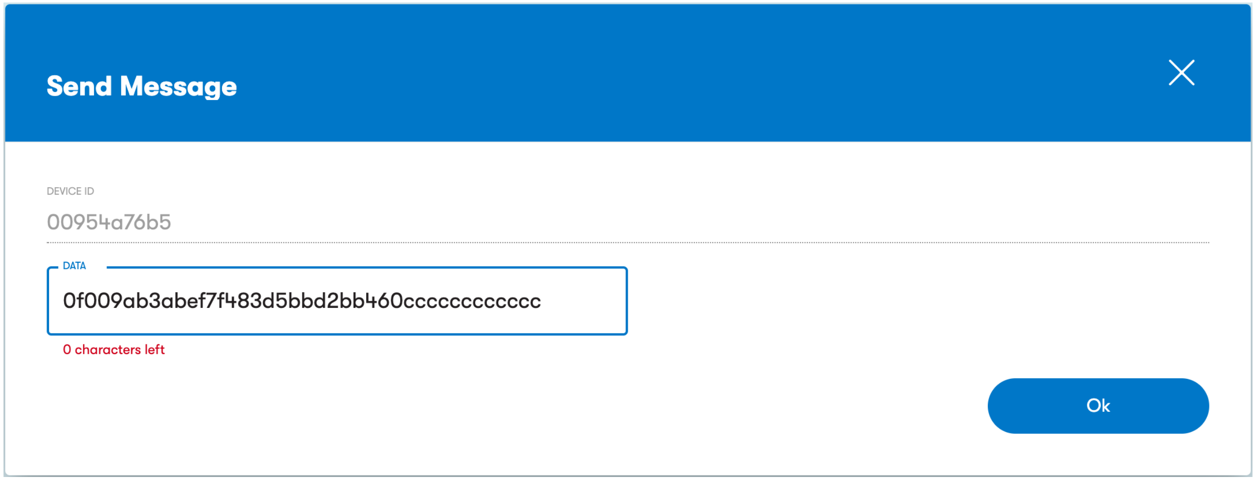
2. In the **Devices** section of the Myriota Device Manager, assign a device to the new eagle.io destination:


EDIT DEVICE
00900000b5
LABEL
Myriota SnL
Destination/s
Eagle.io
+ Add destination
Save

3. Send a sample message from Myriota by clicking the configured device, and then clicking the **Send**

message button.

4. Enter the example data string (a 40-character hex string formatted in Ruby unpack format (https://apidock.com/ruby/String/unpack)) and click **Ok** to send the data to the eagle.io data source which is waiting to receive it:



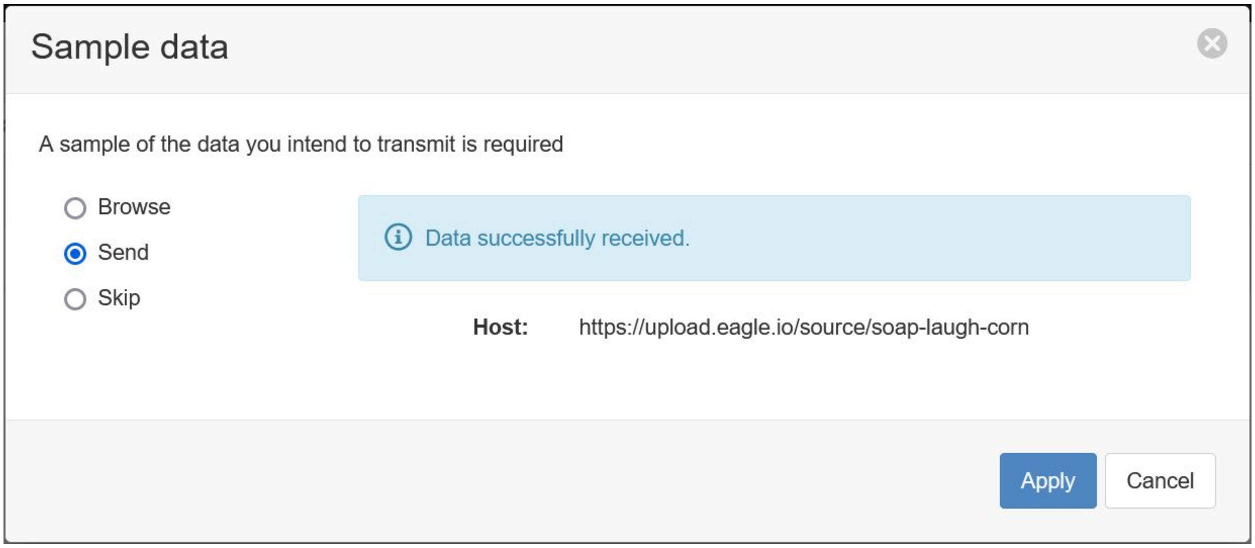
DEVICE ID: 00954a76b5

DATA: 0f009ab3abef7f483d5bbd2bb460cccccccccccc

0 characters left

5. Use the sample message to configure the eagle.io parser

Returning to the eagle.io data source wizard, you should now see that data has been received:



Sample data

A sample of the data you intend to transmit is required

○ Browse
● Send
○ Skip

Data successfully received.

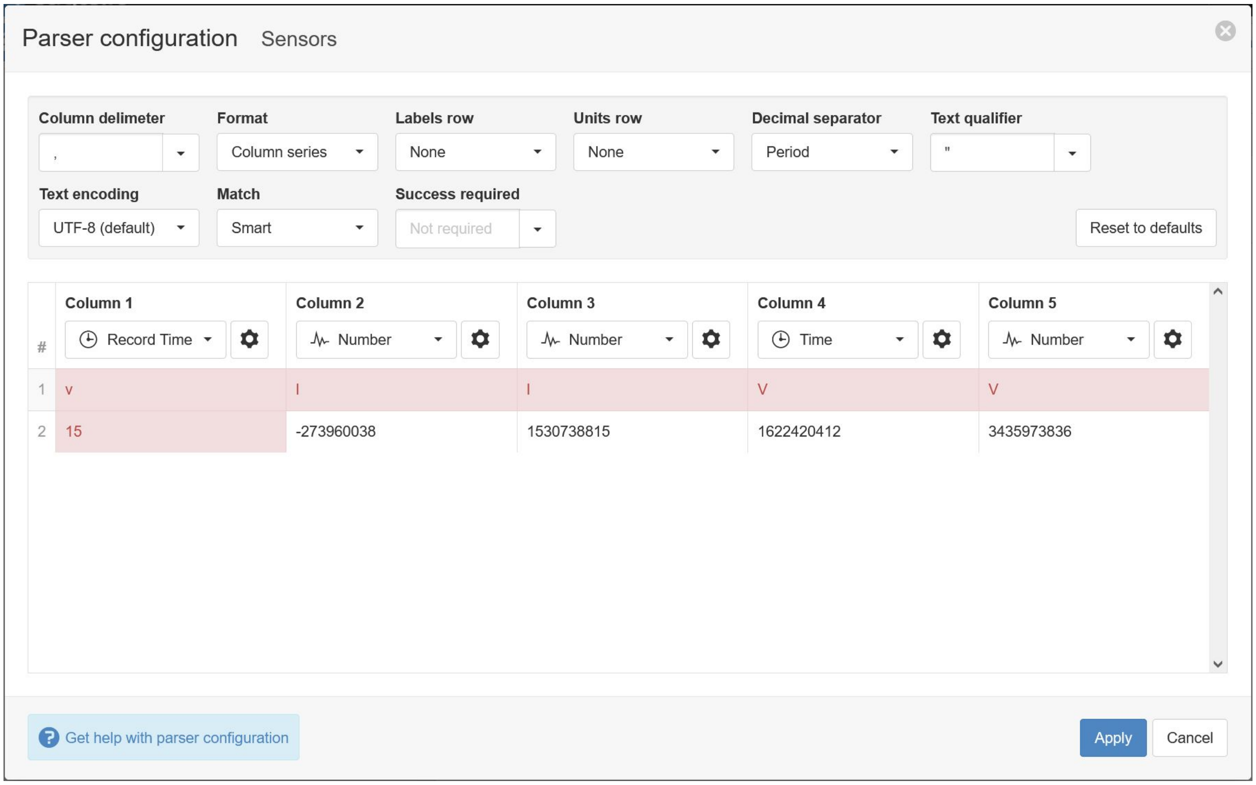
Host: https://upload.eagle.io/source/soap-laugh-corn

Note: If the data source wizard does not say **Data successfully received**, review the actions taken in step 4, and ensure the correct URL was used.

Click the **Apply** button to move to the next step of the data source wizard.

The Parser configuration screen allows the user to describe the structure and format of the message so it can be correctly interpreted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.

The Myriota message will be received as a header row and a data row. The header row (which is called a **Labels row** in the parser configuration) will comprise each letter code used in the format portion of the URL. The number of columns defined will be the same as the number of letters in the format code. In the current example the format is **vllVV**, therefore 5 columns will be defined with header values of **v**, **l**, **l**, **V**, **V**



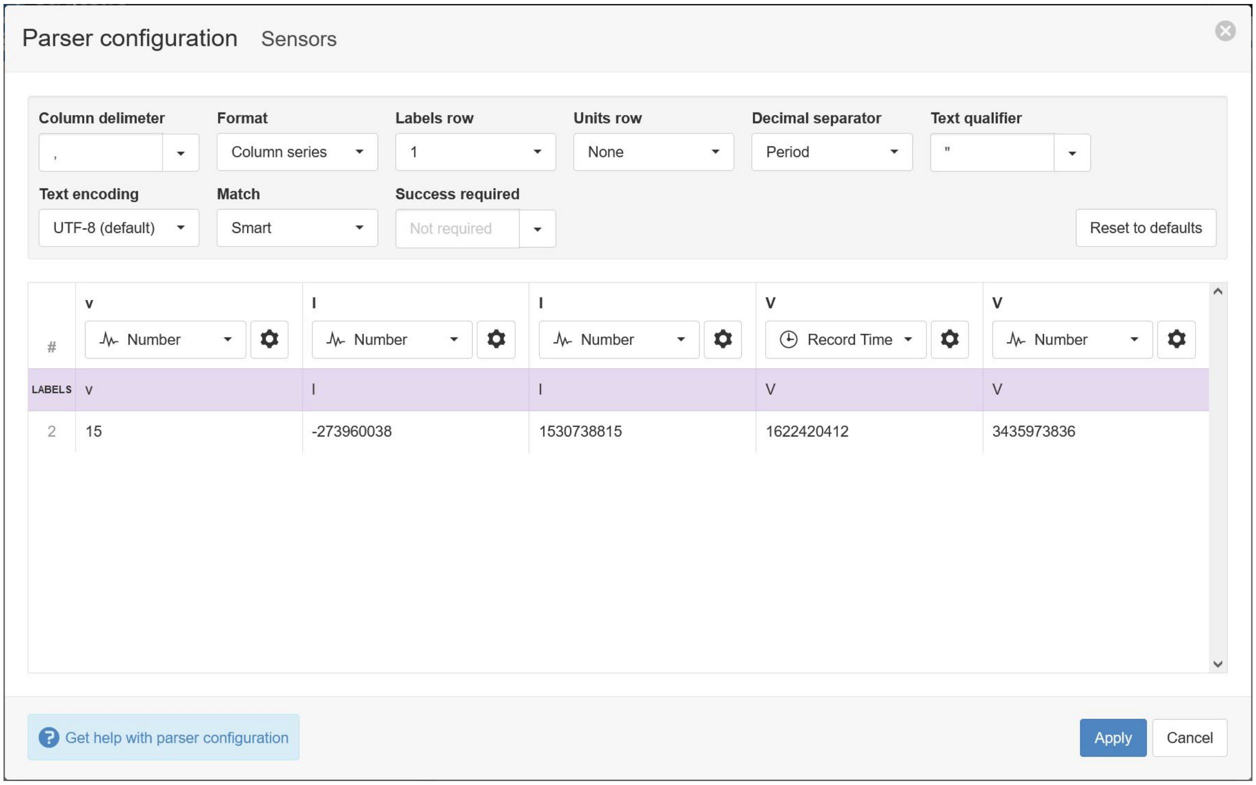
Parser configuration Sensors

Column delimeter: ,
Format: Column series
Labels row: None
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	Column 1	Column 2	Column 3	Column 4	Column 5
	Record Time	Number	Number	Time	Number
1	v	I	I	V	V
2	15	-273960038	1530738815	1622420412	3435973836

Configure the **Labels row** to be row 1.

The data in each column will be different when different formats are defined. The parser must be configured so that each portion of the message matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*. The specific message in this example defines a record timestamp in column 4, with all other values being numbers. Thefore in the parser configuration, the column data type of column 1 should be changed to **Number**, and the column data type of column 4 should be changed to **Record Time**. The parser configuration should now look like this:

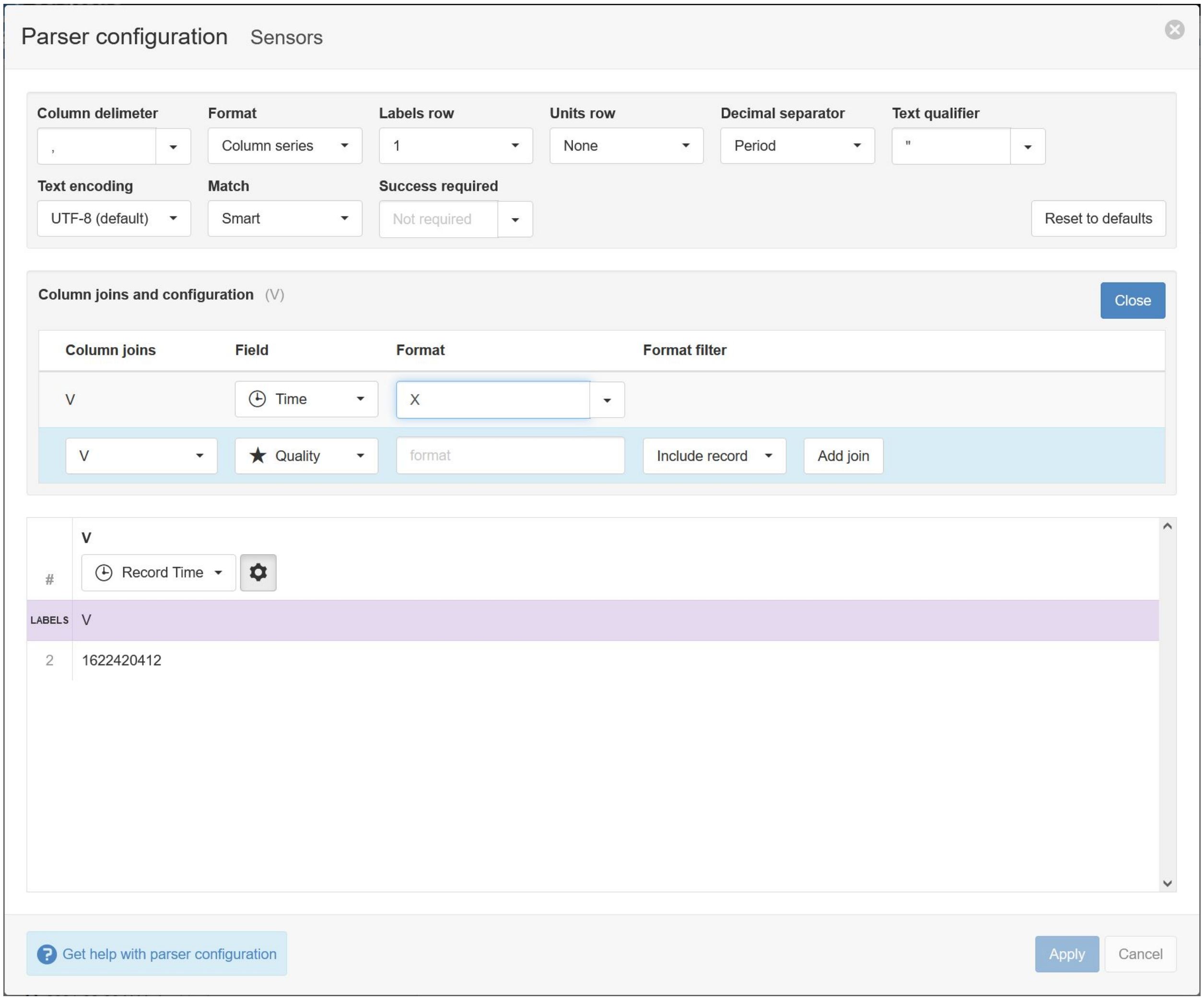


Parser configuration Sensors

Column delimeter: ,
Format: Column series
Labels row: 1
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	v	I	I	V	V
	Number	Number	Number	Record Time	Number
LABELS	V	I	I	V	V
2	15	-273960038	1530738815	1622420412	3435973836

Additionally, the **Record Time** column will need to be configured to match the timestamp format. Click the cog icon next to column 4 to configure the record time format, and change the *Format* field to use the *time format* (page 583) **X**, which defines a timestamp format of seconds since UNIX epoch:



Parser configuration Sensors

Column delimiter: ,
Format: Column series
Labels row: 1
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

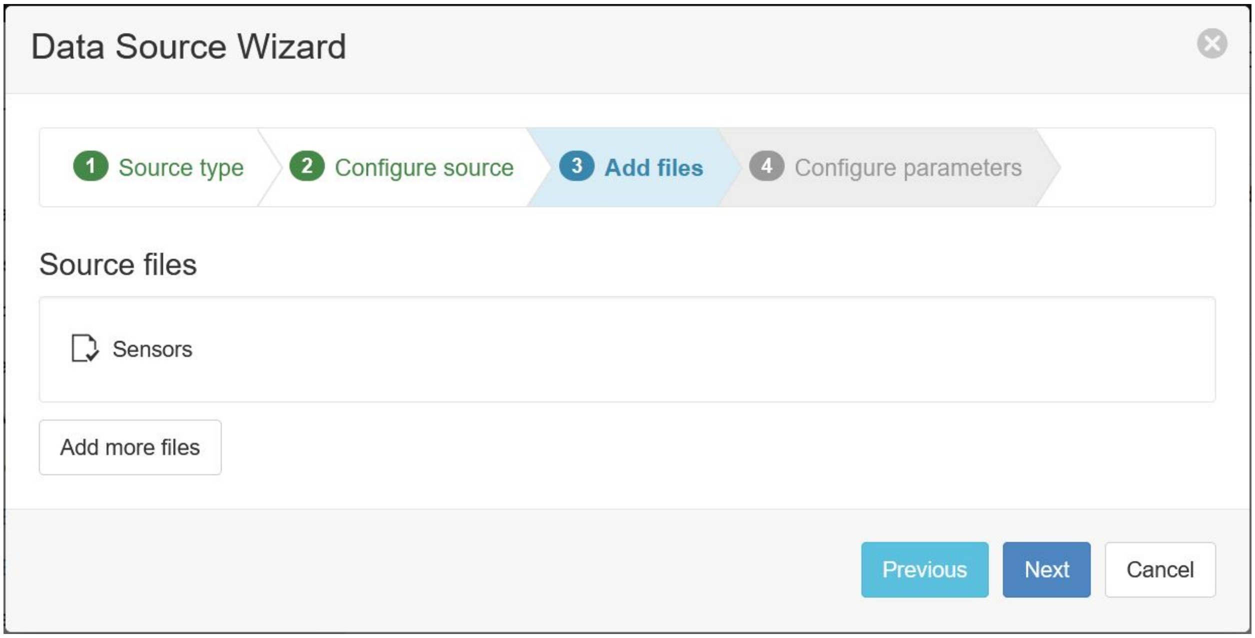
Column joins and configuration (V)

Column joins	Field	Format	Format filter
V	Time	X	
V	Quality	format	Include record

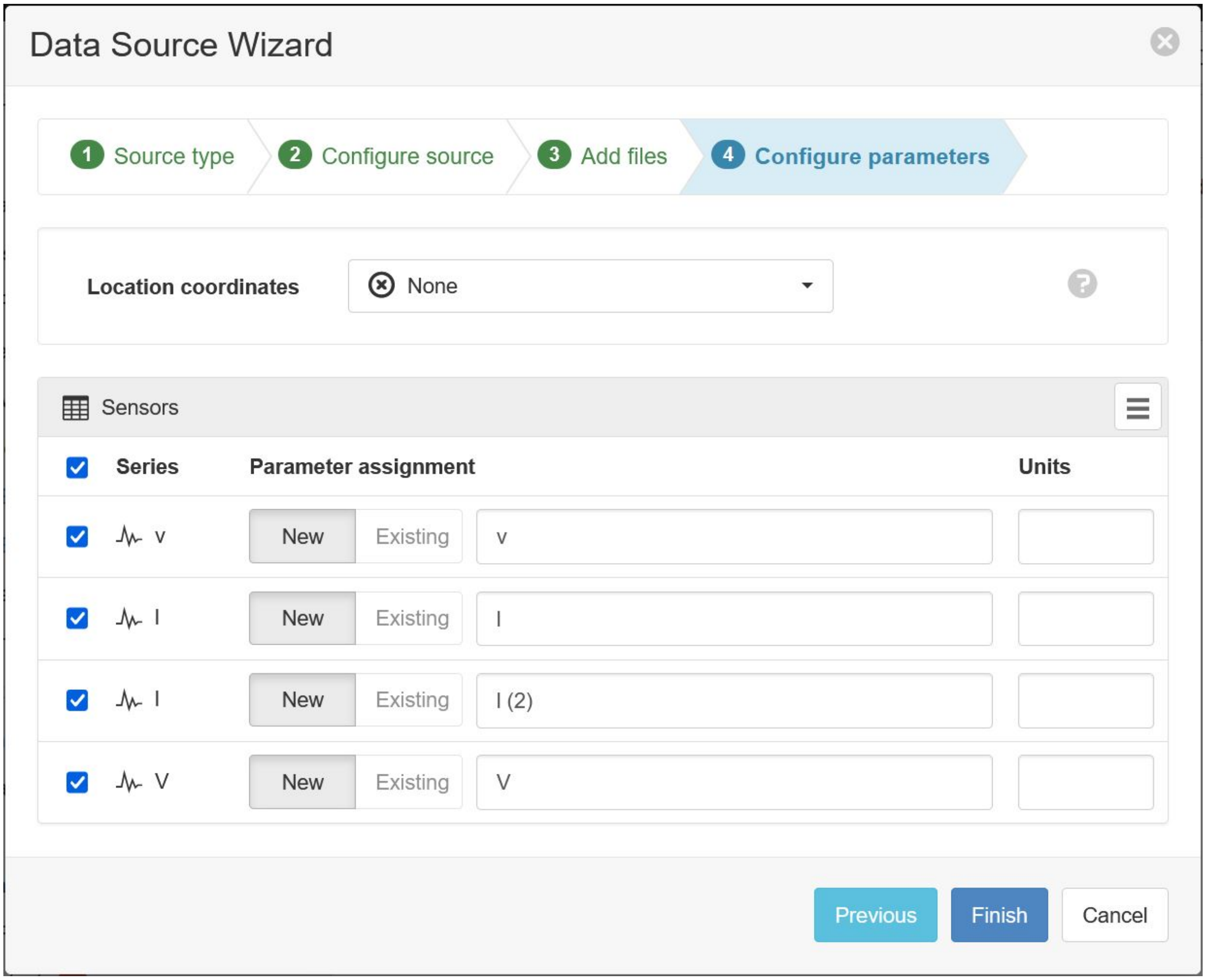
#	V Record Time
LABELS	V
2	1622420412

Reset to defaults
Close
Add join
Get help with parser configuration
Apply
Cancel

Click **Close** to return to the main parser, and click **Apply** to exit the parser. Click **Next** to move to step 4 in the data source wizard:


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Source files
Sensors
Add more files
Previous
Next
Cancel

By default, the 4 parameter names will be based on the letters in the header row:

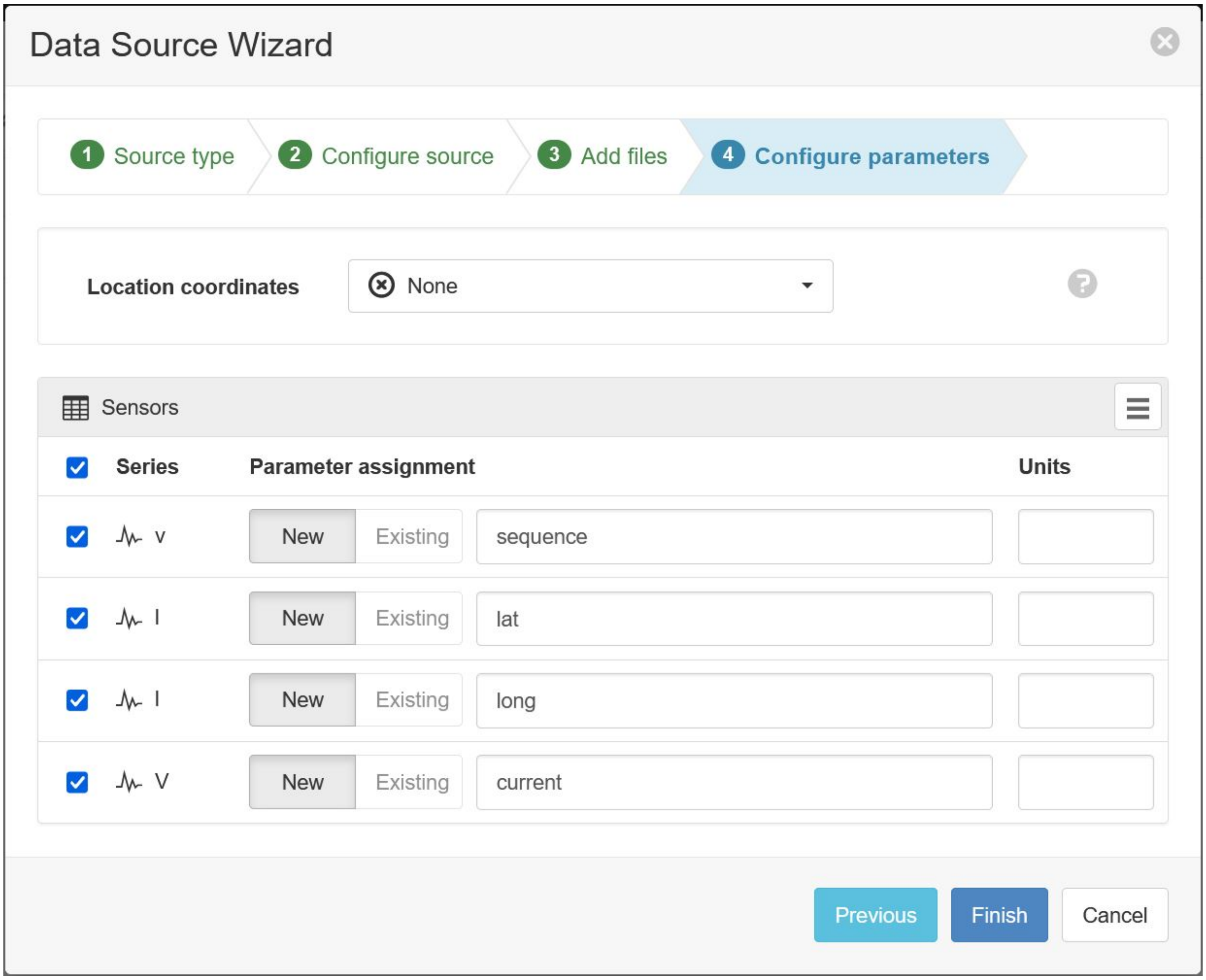

Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Previous
Finish
Cancel

Location coordinates: None

Sensors

☑	Series	Parameter assignment		Units
☑	v	New / Existing	v	
☑	I	New / Existing	I	
☑	I	New / Existing	I (2)	
☑	V	New / Existing	V	

Change the defaults to the desired the parameter names (and optionally units) for each column defined in the parser configuration. Uncheck any series you do not want to create as parameters:


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Sensors
Previous
Finish
Cancel

Location coordinates: None

☑	Series	Parameter assignment		Units
☑	v	New / Existing	sequence	
☑	l	New / Existing	lat	
☑	l	New / Existing	long	
☑	V	New / Existing	current	

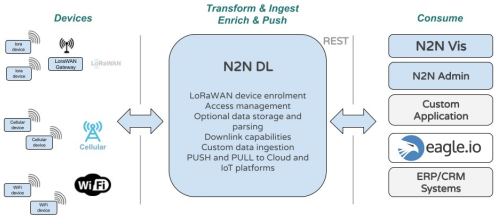
Click Finish to complete the setup.

Note: You can reconfigure the parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

Note: If the Myriota message includes latitude and longitude, this can be configured to update a location map marker within eagle.io by using this process (https://help.eagle.io/hc/en-au/articles/4404653973273-Using-coordinates-from-a-data-source-in-a-location).

2.14.10 NNNco

The N2N DL platform (https://www.nnnco.io/n2n/v3/docs/) is designed to offer programmatic access to a multitude of IoT devices from multiple networks (LoraWAN / Cellular & Internet enabled). This platform allows eagle.io (https://eagle.io) to use the *Download via HTTP* (page 116) transport to acquire the data.


Devices
lora device
lora device
LoraWAN Gateway
LoRaWAN
Cellular device
Cellular device
Cellular
WiFi device
WiFi device
Wi Fi
Transform & Ingest
Enrich & Push
N2N DL
LoRaWAN device enrolment
Access management
Optional data storage and parsing
Downlink capabilities
Custom data ingestion
PUSH and PULL to Cloud and IoT platforms
REST
Consume
N2N Vis
N2N Admin
Custom Application
eagle.io
ERP/CRM Systems

Getting an API key for access

An NNNco API key will be required for eagle.io to access data on your NNNco devices. API keys can be obtained from NNNCo by getting in touch with one of their sales reps or emailing n2n-dl-support@nnnco.com.au.

Read more about getting API access (https://www.nnnco.io/n2n/v3/docs/getting-started/#getting-access).

Getting a device ID

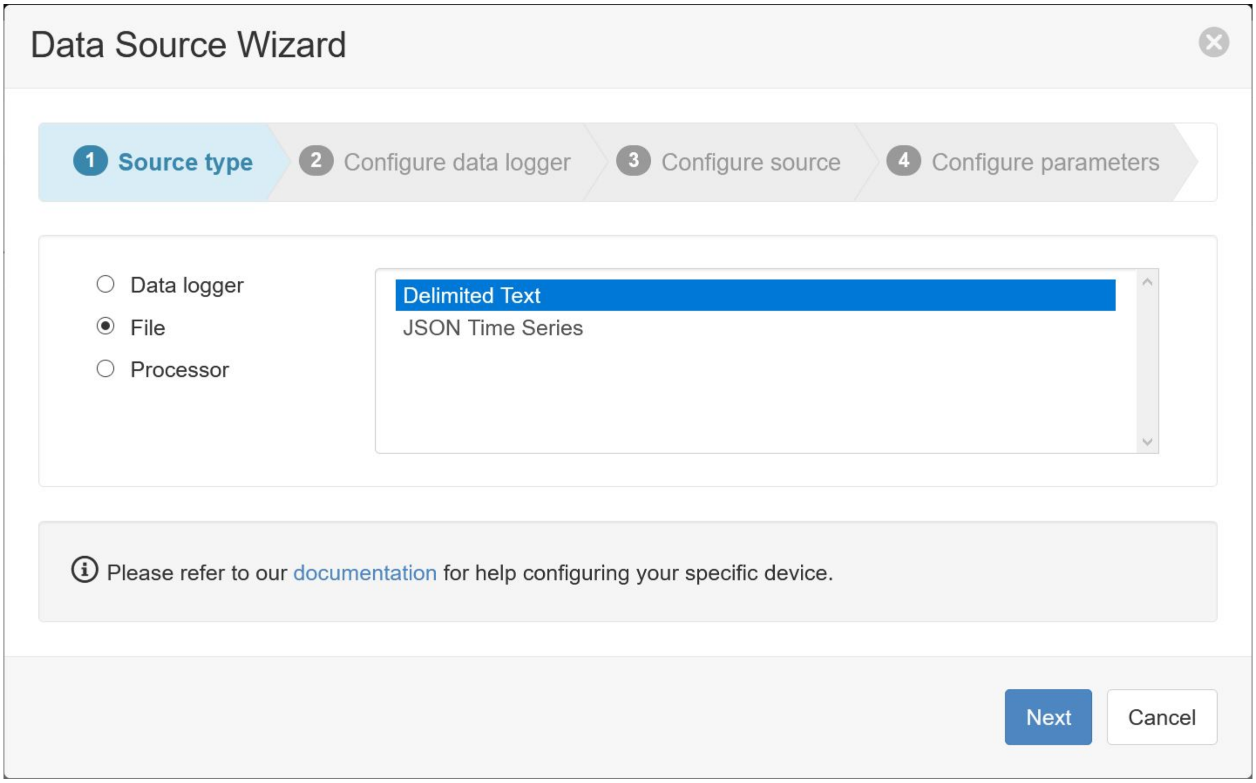
A device ID will be required for each data source you create in eagle.io. Read more about getting a list of devices that belong to your accounts (https://www.nnnco.io/n2n/v3/docs/getting-started/#get-a-list-of-devices-that-belong-to-your-account).

Once you have your API key and at least one device ID, you are ready to create a new data source in eagle.io.

The following documentation and images will use an example NNNco API key of `8a0892e3aedbe2f2ade4bd727d4725e0c639d021` and an example NNNco device ID of `393435376A377906`.

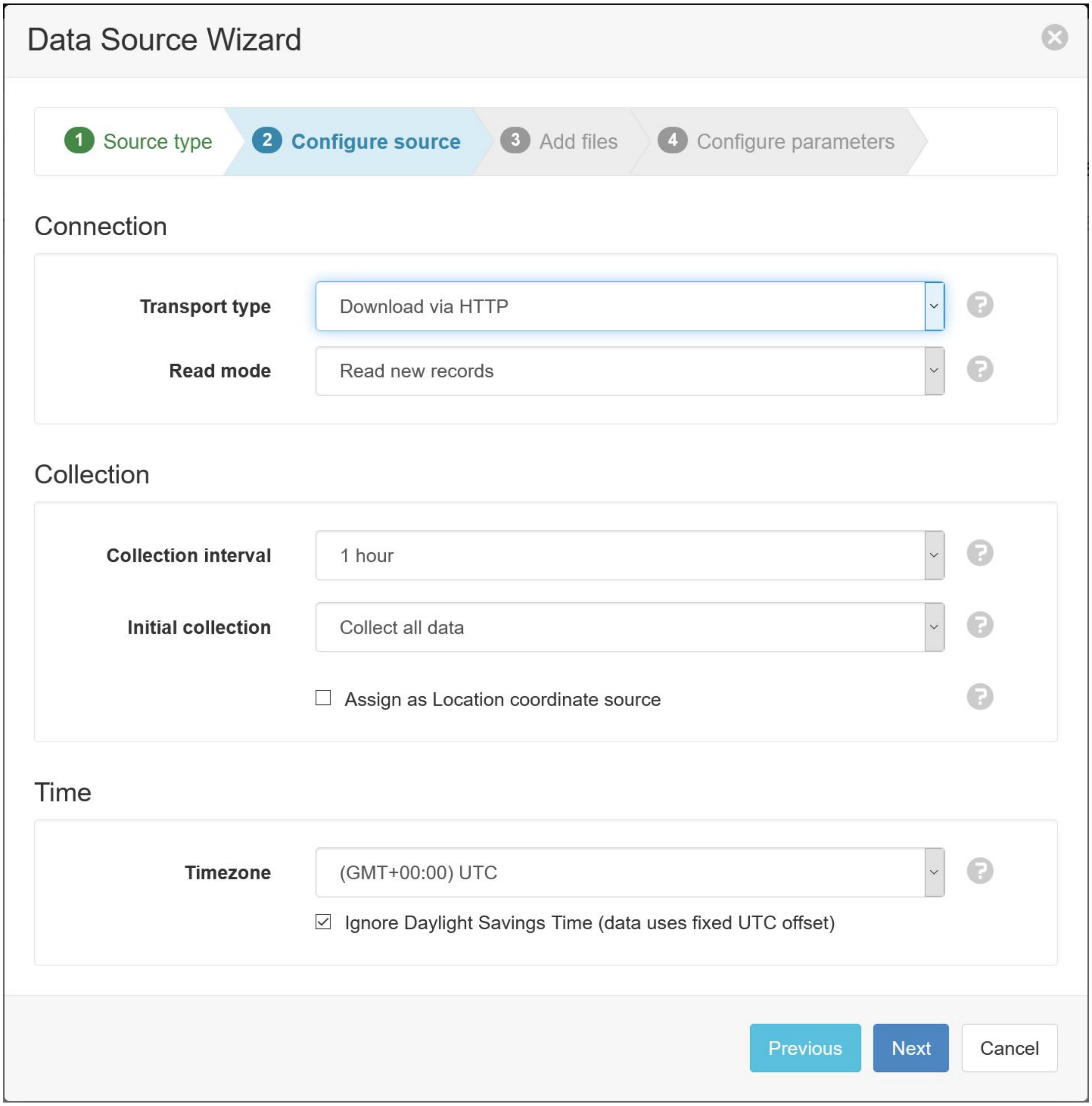
Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
○ Data logger
● File
○ Processor
Delimited Text
JSON Time Series
Next
Cancel

Please refer to our documentation for help configuring your specific device.

2. Select *Download via HTTP* as the transport type. The read mode should be left as **Read new records**. Choose a desired collection interval, for example 1 hour. The timezone of the data source should be set to **(GMT+00:00) UTC**, then click Next.



Data Source Wizard

Connection

Transport type: Download via HTTP

Read mode: Read new records

Collection

Collection interval: 1 hour

Initial collection: Collect all data

☐ Assign as Location coordinate source

Time

Timezone: (GMT+00:00) UTC

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

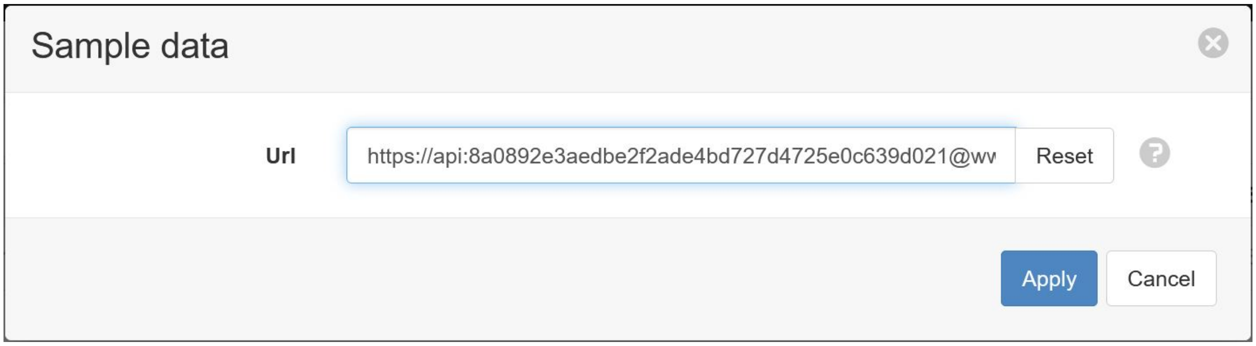
3. Enter the URL of the device in the following format, where **<key>** is your API key and **<deviceId>** is your device ID:

```
https://api:<key>@www.nnnco.io/v3/api/core/devices/<deviceId>/readings/
export
```

For example, if your API key is **8a0892e3aedbe2f2ade4bd727d4725e0c639d021** and your device ID is **393435376A377906**, then the URL would be:

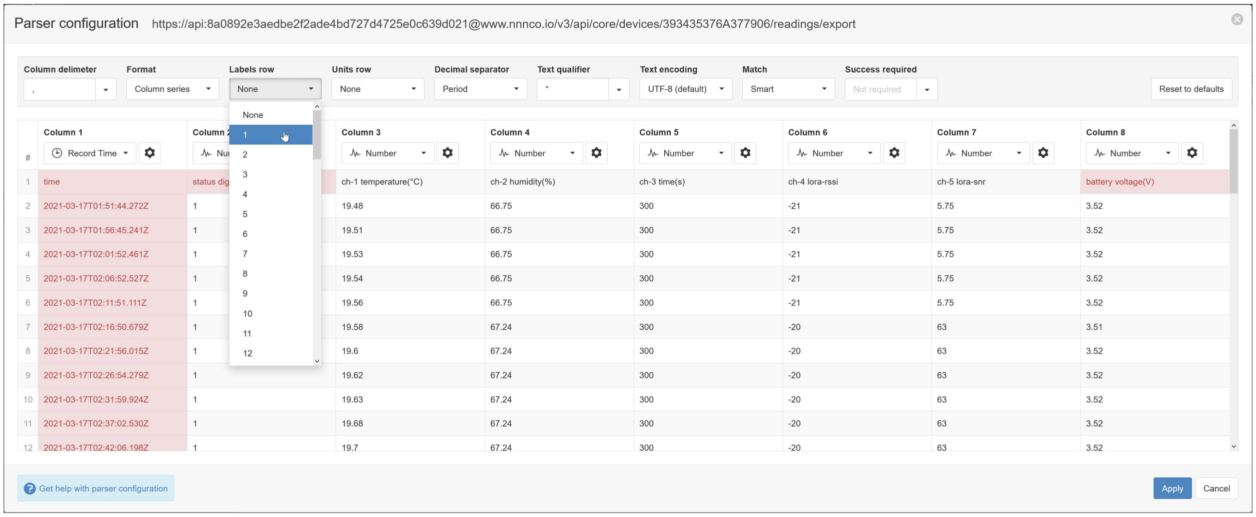
```
https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/
api/core/devices/393435376A377906/readings/export
```

After entering the URL in the wizard, click Apply.



Sample data
Url
https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@wv
Reset
Apply
Cancel

4. The Parser configuration screen allows the user to describe the structure and format of the sample data file so it can be correctly interpreted by the system during subsequent data collection. Refer to *Text Parser Configuration* (page 123) for full details. First you will need to change the labels row to be 1.



Parser configuration https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/api/core/devices/393435376A377906/readings/export

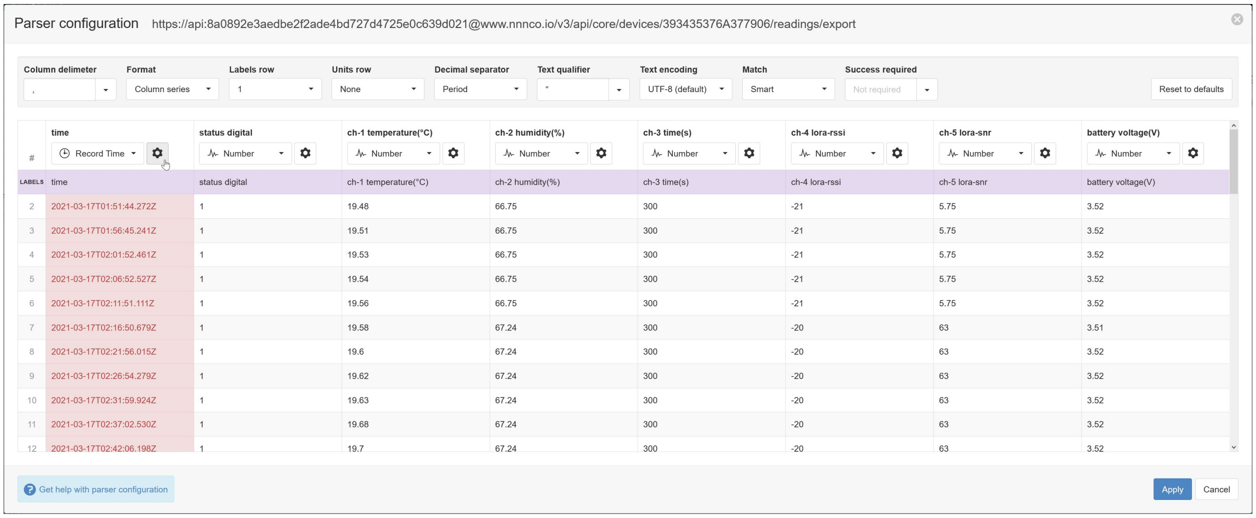
Column delimeter: ,
Format: Column series
Labels row: None
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

Reset to defaults
None
1
2
3
4
5
6
7
8
9
10
11
12

#	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
	Record Time	Nu	Number	Number	Number	Number	Number	Number
1	time	status dig	ch-1 temperature(°C)	ch-2 humidity(%)	ch-3 time(s)	ch-4 lora-rssi	ch-5 lora-snr	battery voltage(V)
2	2021-03-17T01:51:44.272Z	1	19.48	66.75	300	-21	5.75	3.52
3	2021-03-17T01:56:45.241Z	1	19.51	66.75	300	-21	5.75	3.52
4	2021-03-17T02:01:52.461Z	1	19.53	66.75	300	-21	5.75	3.52
5	2021-03-17T02:06:52.527Z	1	19.54	66.75	300	-21	5.75	3.52
6	2021-03-17T02:11:51.111Z	1	19.56	66.75	300	-21	5.75	3.52
7	2021-03-17T02:16:50.679Z	1	19.58	67.24	300	-20	63	3.51
8	2021-03-17T02:21:56.015Z	1	19.6	67.24	300	-20	63	3.52
9	2021-03-17T02:26:54.279Z	1	19.62	67.24	300	-20	63	3.52
10	2021-03-17T02:31:59.924Z	1	19.63	67.24	300	-20	63	3.52
11	2021-03-17T02:37:02.530Z	1	19.68	67.24	300	-20	63	3.52
12	2021-03-17T02:42:06.198Z	1	19.7	67.24	300	-20	63	3.52

Get help with parser configuration
Apply
Cancel

You will need to set the correct *time format* (page 583) by clicking the gear icon in Column 1 (Record time).

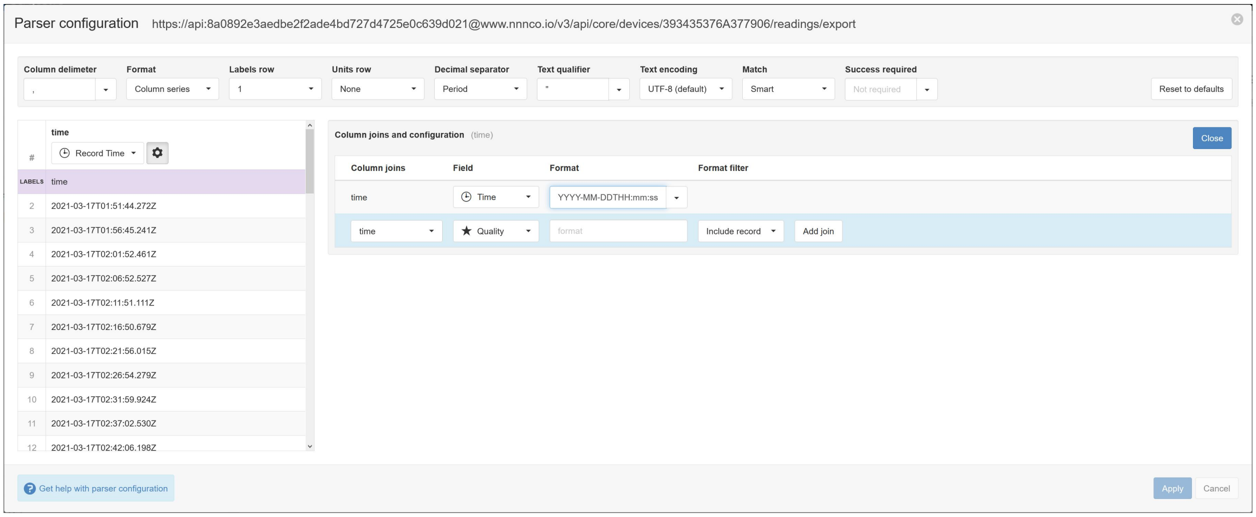


Parser configuration https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/api/core/devices/393435376A377906/readings/export

Column delimeter: ,
Format: Column series
Labels row: 1
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	time	status digital	ch-1 temperature(°C)	ch-2 humidity(%)	ch-3 time(s)	ch-4 lora-rssi	ch-5 lora-snr	battery voltage(V)
	Record Time	Number	Number	Number	Number	Number	Number	Number
LABELS	time	status digital	ch-1 temperature(°C)	ch-2 humidity(%)	ch-3 time(s)	ch-4 lora-rssi	ch-5 lora-snr	battery voltage(V)
2	2021-03-17T01:51:44.272Z	1	19.48	66.75	300	-21	5.75	3.52
3	2021-03-17T01:56:45.241Z	1	19.51	66.75	300	-21	5.75	3.52
4	2021-03-17T02:01:52.461Z	1	19.53	66.75	300	-21	5.75	3.52
5	2021-03-17T02:06:52.527Z	1	19.54	66.75	300	-21	5.75	3.52
6	2021-03-17T02:11:51.111Z	1	19.56	66.75	300	-21	5.75	3.52
7	2021-03-17T02:16:50.679Z	1	19.58	67.24	300	-20	63	3.51
8	2021-03-17T02:21:56.015Z	1	19.6	67.24	300	-20	63	3.52
9	2021-03-17T02:26:54.279Z	1	19.62	67.24	300	-20	63	3.52
10	2021-03-17T02:31:59.924Z	1	19.63	67.24	300	-20	63	3.52
11	2021-03-17T02:37:02.530Z	1	19.68	67.24	300	-20	63	3.52
12	2021-03-17T02:42:06.198Z	1	19.7	67.24	300	-20	63	3.52

Set the time format to be **YYYY-MM-DDTHH:mm:ss.SSSZ** then click Close twice.



Parser configuration https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/api/core/devices/393435376A377906/readings/export

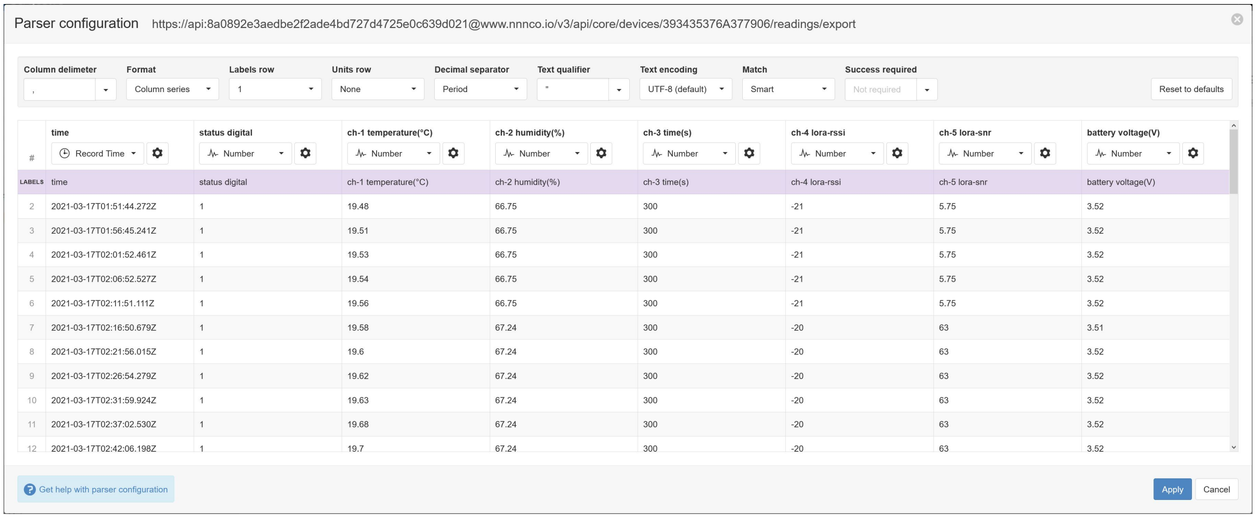
Column delimeter: ,
Format: Column series
Labels row: 1
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	time
	Record Time
LABELS	time
2	2021-03-17T01:51:44.272Z
3	2021-03-17T01:56:45.241Z
4	2021-03-17T02:01:52.461Z
5	2021-03-17T02:06:52.527Z
6	2021-03-17T02:11:51.111Z
7	2021-03-17T02:16:50.679Z
8	2021-03-17T02:21:56.015Z
9	2021-03-17T02:26:54.279Z
10	2021-03-17T02:31:59.924Z
11	2021-03-17T02:37:02.530Z
12	2021-03-17T02:42:06.198Z

Column joins and configuration (time)

Column joins	Field	Format	Format filter
time	Time	YYYY-MM-DDTHH:mm:ss	
time	Quality	format	Include record

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*. In the following example, the labels row has now been set to 1 (row background is purple), the record time has been set to the correct format (column background is not red), and the 7 data columns are all of type Number. Click Apply to close the parser and continue.

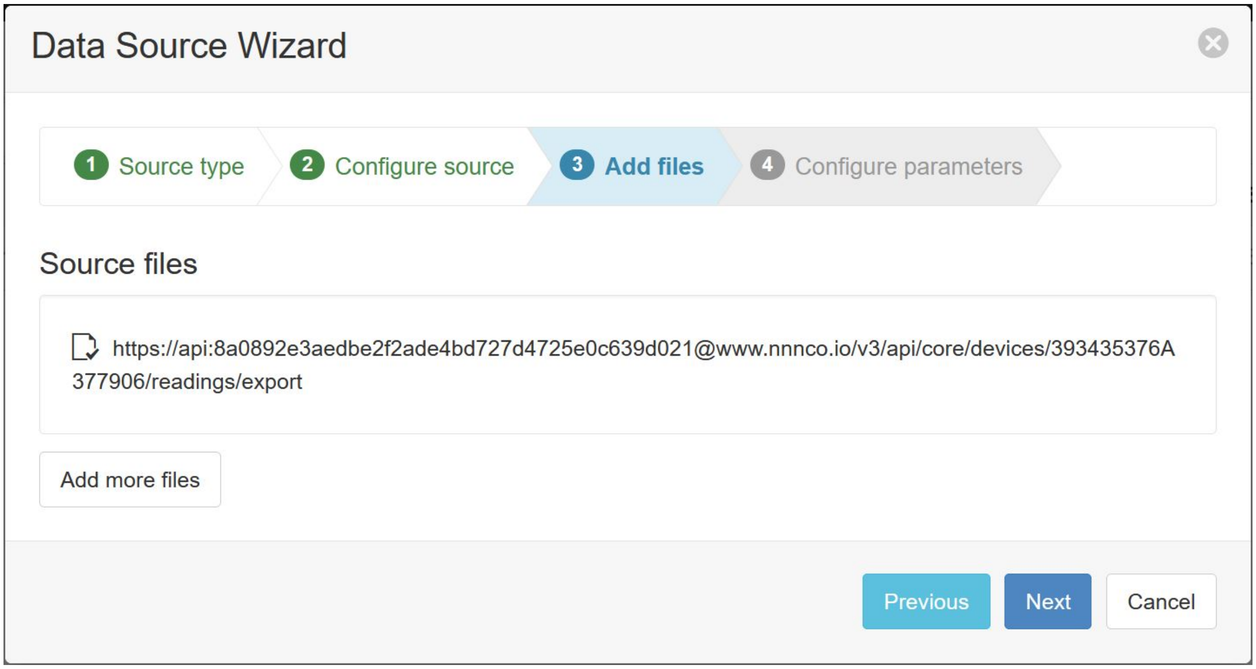

Reset to defaults
Get help with parser configuration
Apply
Cancel

Parser configuration https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/api/core/devices/393435376A377906/readings/export

Column delimeter: ,
Format: Column series
Labels row: 1
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	time	status digital	ch-1 temperature(°C)	ch-2 humidity(%)	ch-3 time(s)	ch-4 lora-rssi	ch-5 lora-snr	battery voltage(V)
	Record Time	Number	Number	Number	Number	Number	Number	Number
LABELS	time	status digital	ch-1 temperature(°C)	ch-2 humidity(%)	ch-3 time(s)	ch-4 lora-rssi	ch-5 lora-snr	battery voltage(V)
2	2021-03-17T01:51:44.272Z	1	19.48	66.75	300	-21	5.75	3.52
3	2021-03-17T01:56:45.241Z	1	19.51	66.75	300	-21	5.75	3.52
4	2021-03-17T02:01:52.461Z	1	19.53	66.75	300	-21	5.75	3.52
5	2021-03-17T02:06:52.527Z	1	19.54	66.75	300	-21	5.75	3.52
6	2021-03-17T02:11:51.111Z	1	19.56	66.75	300	-21	5.75	3.52
7	2021-03-17T02:16:50.679Z	1	19.58	67.24	300	-20	63	3.51
8	2021-03-17T02:21:56.015Z	1	19.6	67.24	300	-20	63	3.52
9	2021-03-17T02:26:54.279Z	1	19.62	67.24	300	-20	63	3.52
10	2021-03-17T02:31:59.924Z	1	19.63	67.24	300	-20	63	3.52
11	2021-03-17T02:37:02.530Z	1	19.68	67.24	300	-20	63	3.52
12	2021-03-17T02:42:06.198Z	1	19.7	67.24	300	-20	63	3.52

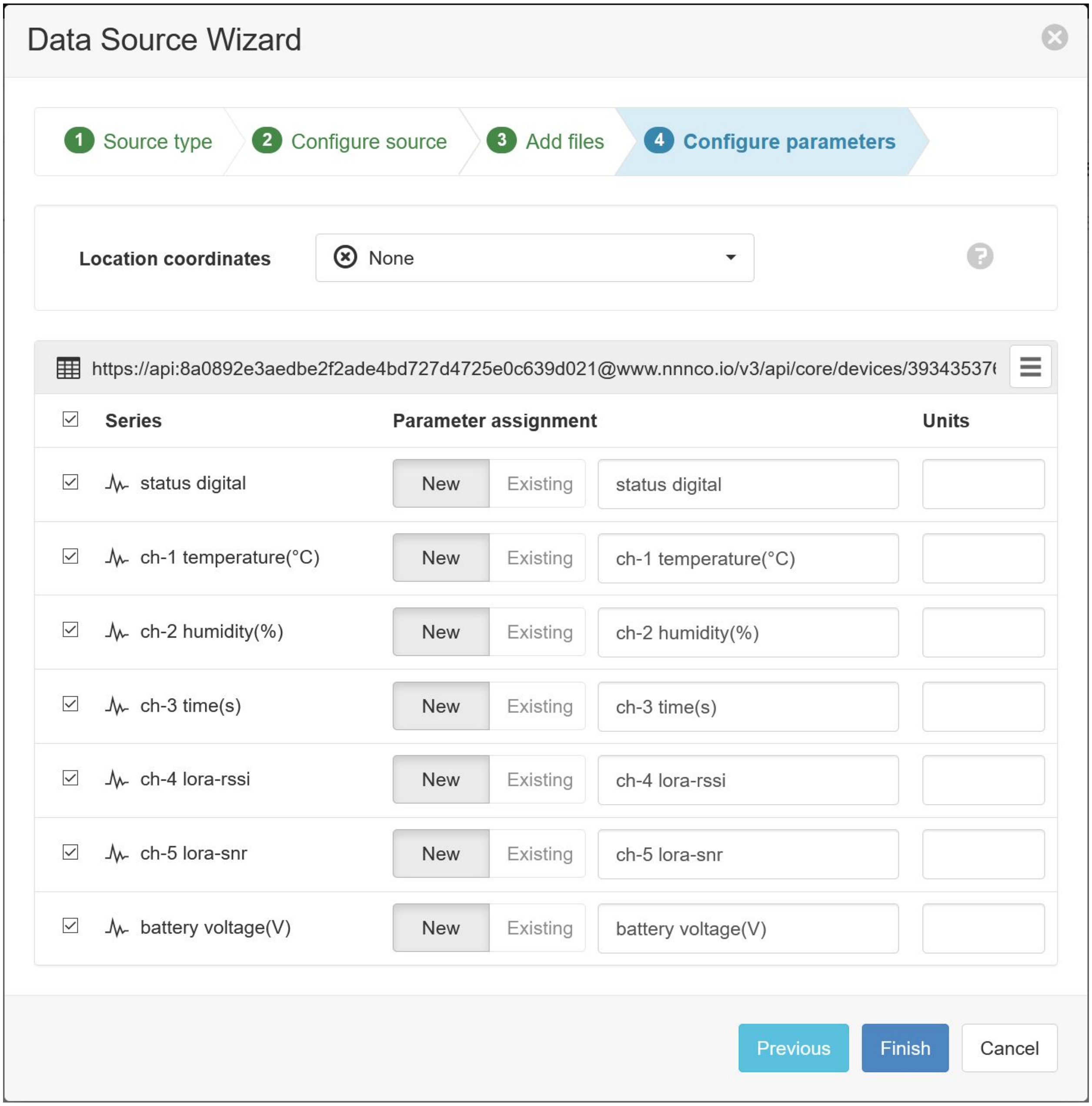
5. Click Next to continue.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Add more files
Previous
Next
Cancel

Source files

https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/api/core/devices/393435376A377906/readings/export

6. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.



Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Previous
Finish
Cancel

Location coordinates: None

https://api:8a0892e3aedbe2f2ade4bd727d4725e0c639d021@www.nnnco.io/v3/api/core/devices/39343537

☑	Series	Parameter assignment		Units
☑	status digital	New	status digital	
☑	ch-1 temperature(°C)	New	ch-1 temperature(°C)	
☑	ch-2 humidity(%)	New	ch-2 humidity(%)	
☑	ch-3 time(s)	New	ch-3 time(s)	
☑	ch-4 lora-rssi	New	ch-4 lora-rssi	
☑	ch-5 lora-snr	New	ch-5 lora-snr	
☑	battery voltage(V)	New	battery voltage(V)	

Note: You can reconfigure the device URL, parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

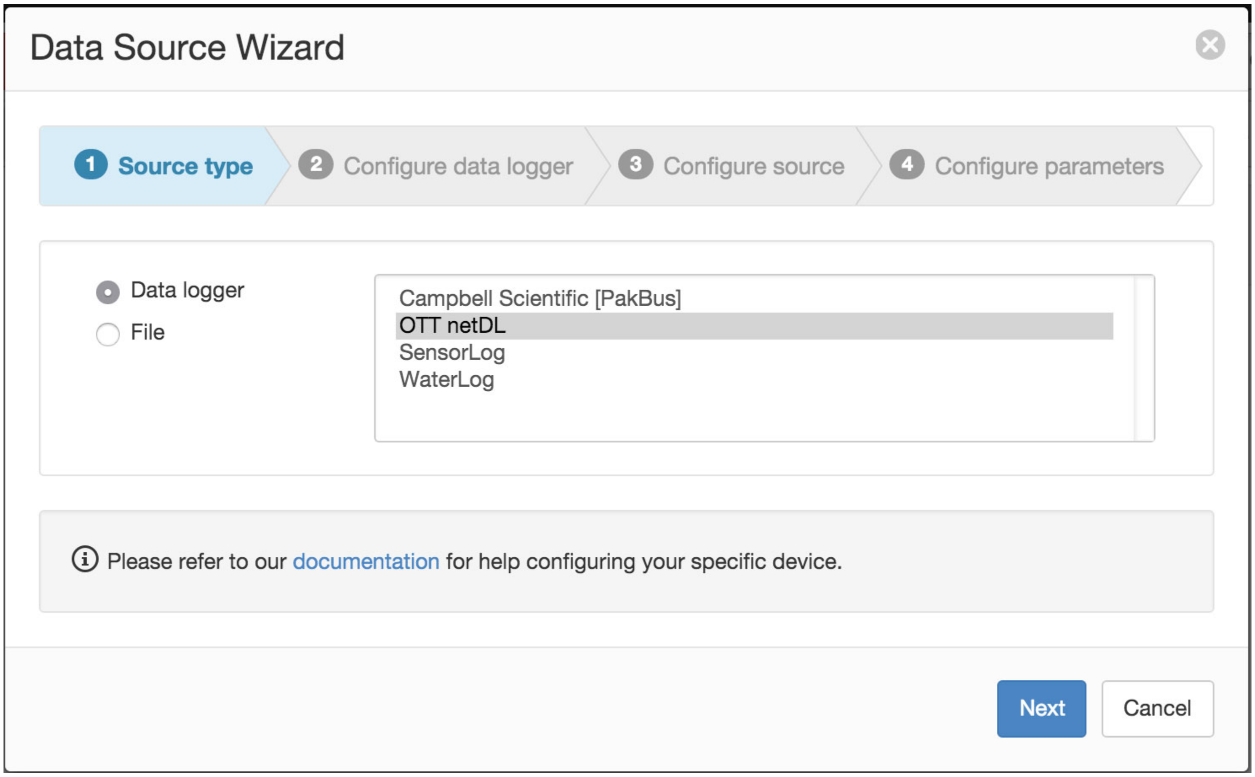
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.11 OTT netDL

The OTT (http://ott.com) **netDL 500** and **netDL 1000** data loggers can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

Source configuration

1. Create a *Data Source* (page 114) and select *Data logger* as the Source Type. Choose *OTT netDL* from the list and click Next.



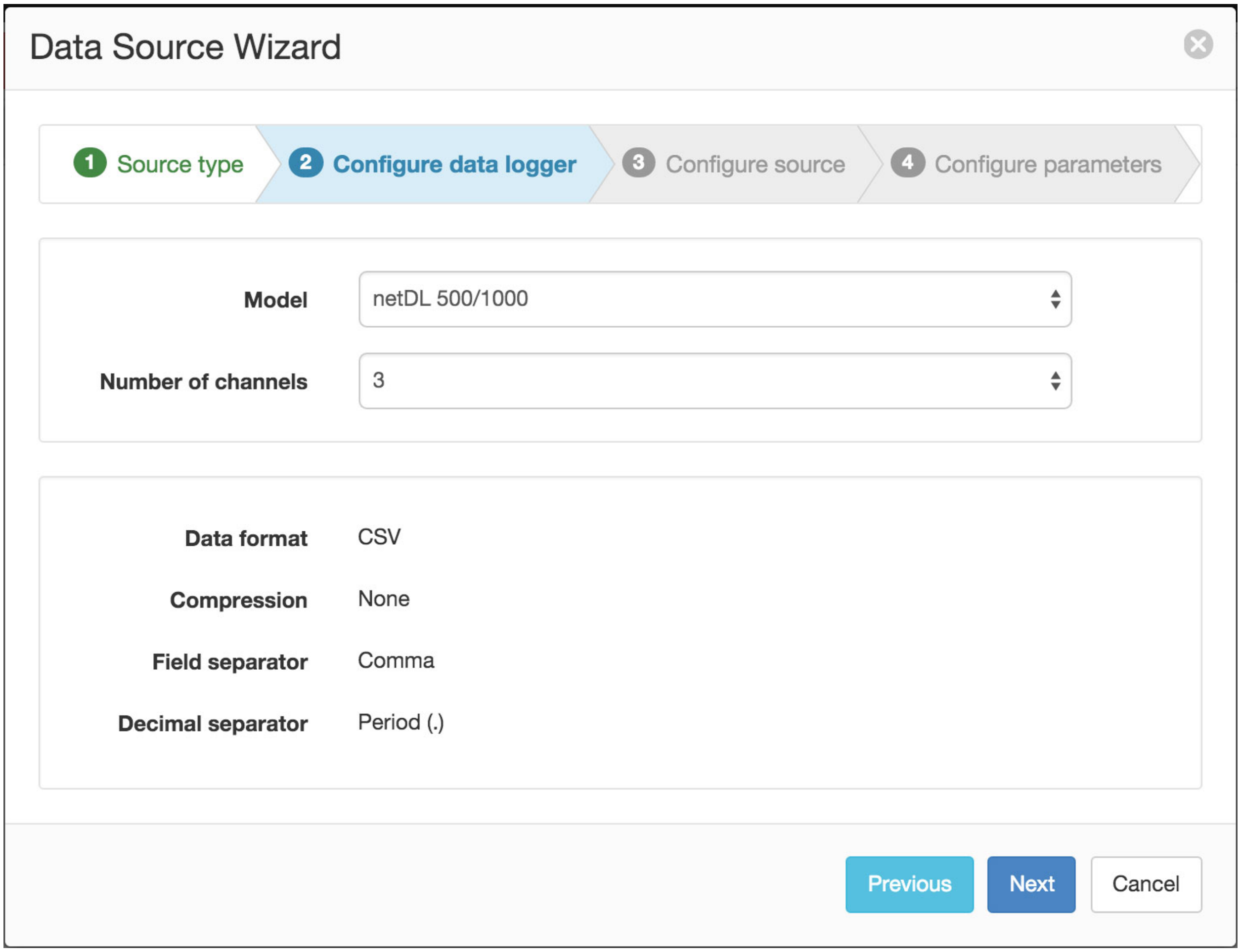
Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Next
Cancel

● Data logger
○ File

Campbell Scientific [PakBus]
OTT netDL
SensorLog
WaterLog

Please refer to our documentation for help configuring your specific device.

2. Select the data logger Model and specify the number of channels/sensors configured in the logger (this can be changed later). Click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Previous
Next
Cancel

Model netDL 500/1000

Number of channels 3

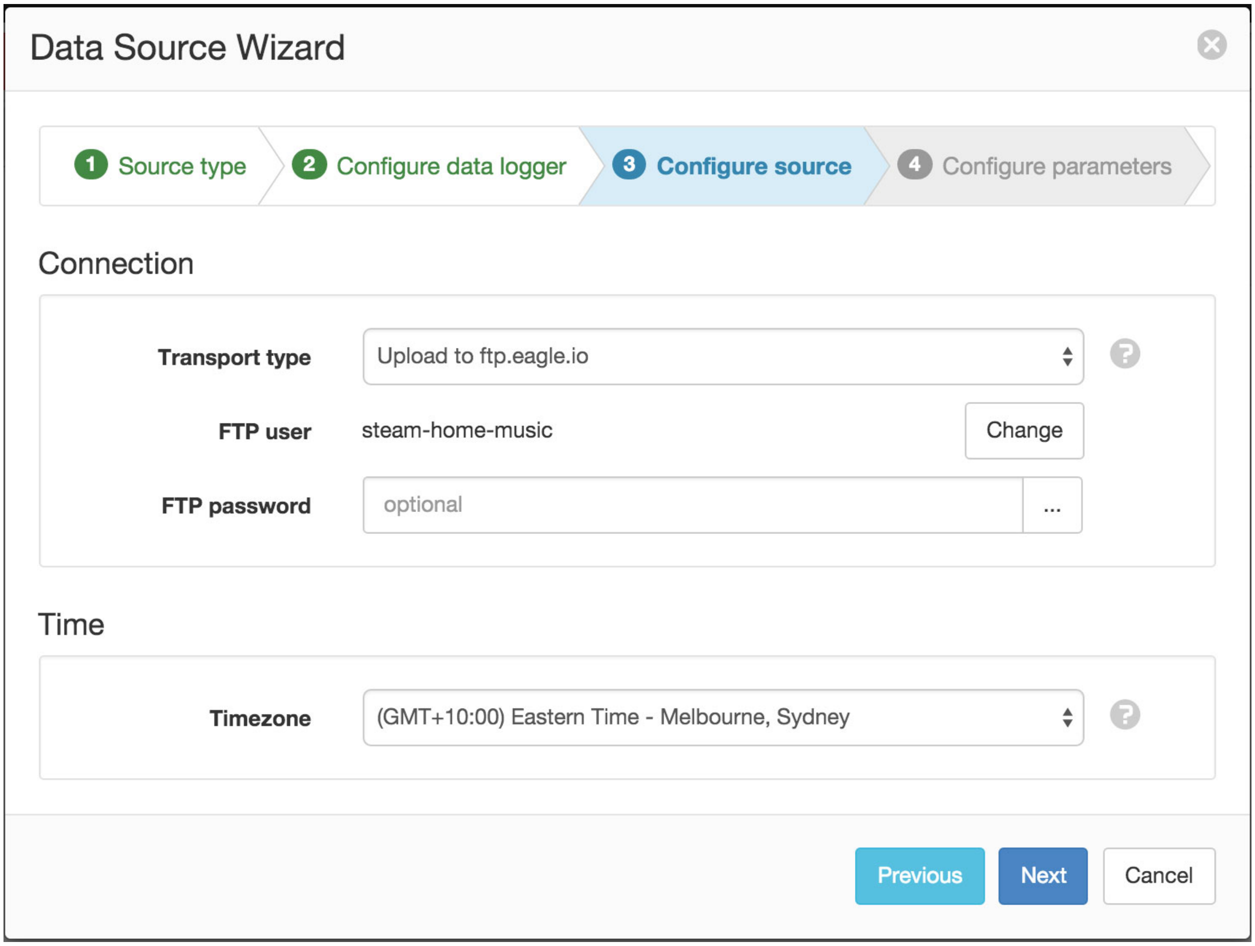
Data format CSV

Compression None

Field separator Comma

Decimal separator Period (.)

2. Select *Upload data to ftp.eagle.io* as the transport type. A unique *Ftp user* account will be automatically generated per Data Source. You can optionally specify a password to be used by the logger for additional security. Select the timezone of the logger's clock and click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Previous
Next
Cancel
Change
...

Connection

Transport type: Upload to ftp.eagle.io

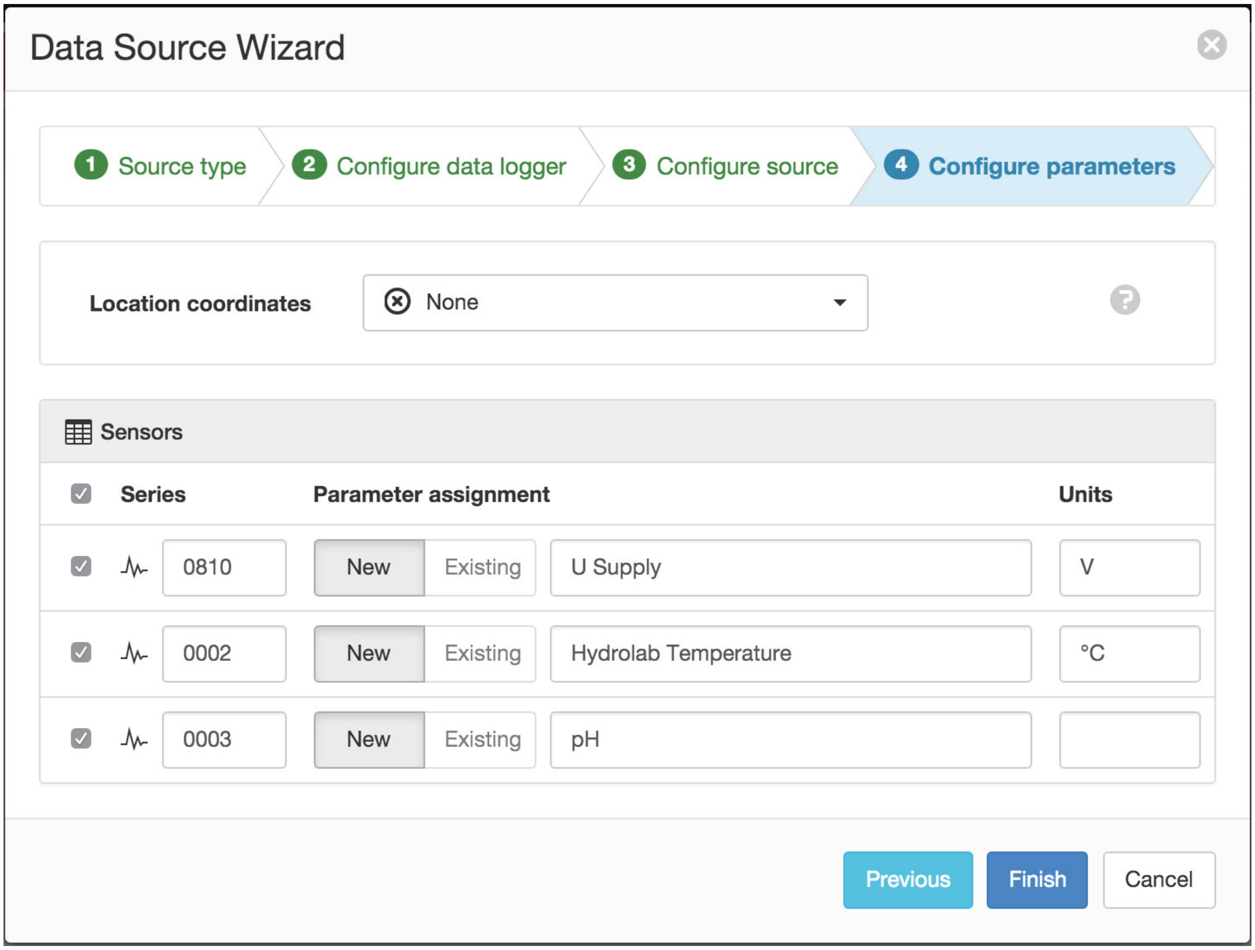
FTP user: steam-home-music

FTP password: optional

Time

Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

4. Specify the channel Id and name of each parameter (with optional units) you would like to collect from the logger. Uncheck any series you do not want to create as parameters. In the example below, the logger will have channel ‘0810’ configured as ‘U Supply’. Click Finish to complete the setup.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Previous
Finish
Cancel

Location coordinates: None

Sensors

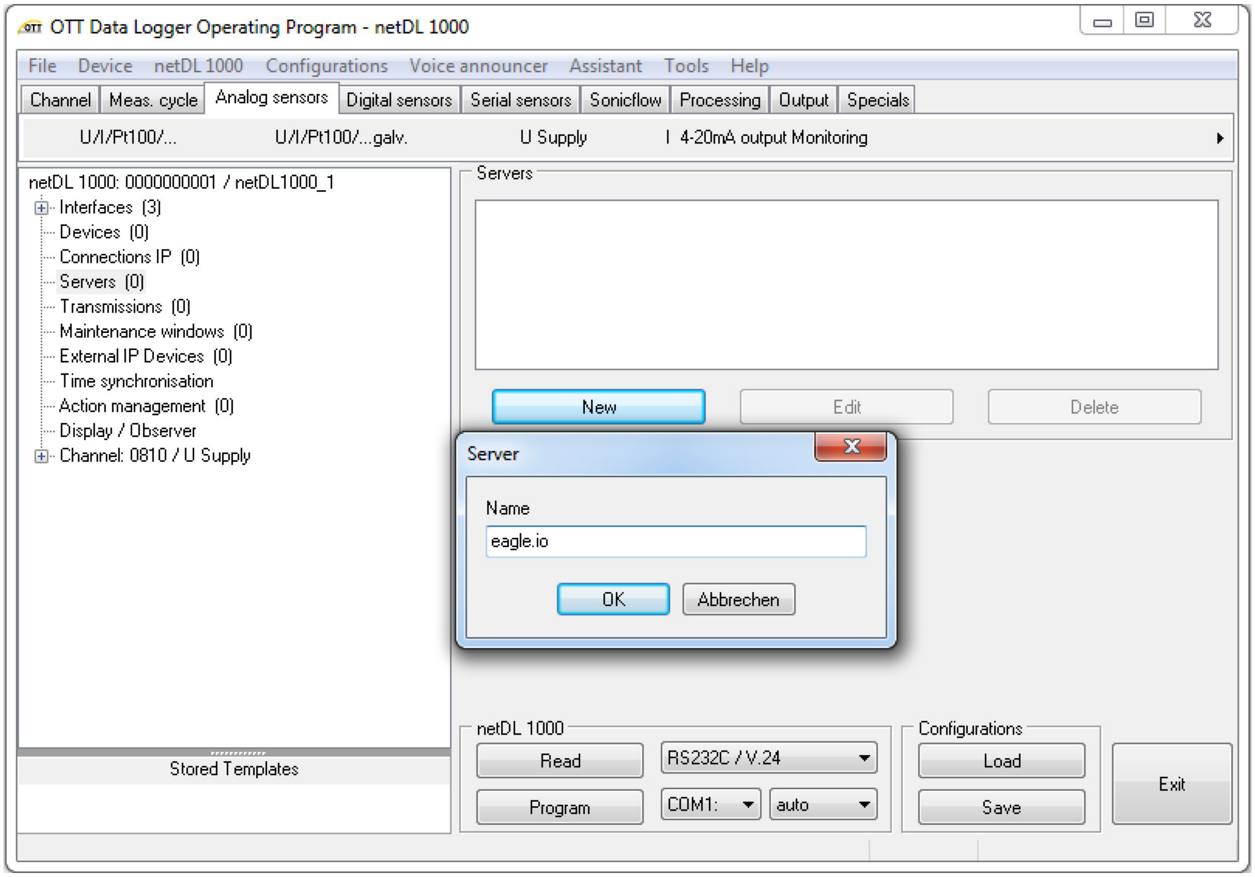
☑	Series	Parameter assignment		Units
☑	0810	New / Existing	U Supply	V
☑	0002	New / Existing	Hydrolab Temperature	°C
☑	0003	New / Existing	pH	

Note: You can reconfigure the series and parameter assignment from the *Data Source* (page 134) properties dialog after creation.

Device settings

Use the OTT Data Logger Operating Program to configure the netDL logger for communication with eagle.io. Refer to your OTT netDL user manual (http://www.ott.com) for connection instructions.

1. Create a new *Server* and specify the *Type* as FTP.


OTT Data Logger Operating Program - netDL 1000
File
Device
netDL 1000
Configurations
Voice announcer
Assistant
Tools
Help
Channel
Meas. cycle
Analog sensors
Digital sensors
Serial sensors
Sonicflow
Processing
Output
Specials
U/I/Pt100/...
U/I/Pt100/...galv.
U Supply
I 4-20mA output Monitoring
netDL 1000: 0000000001 / netDL1000_1
Interfaces (3)
Devices (0)
Connections IP (0)
Servers (0)
Transmissions (0)
Maintenance windows (0)
External IP Devices (0)
Time synchronisation
Action management (0)
Display / Observer
Channel: 0810 / U Supply
Stored Templates
Servers
New
Edit
Delete
Server
OK
Abbrechen
netDL 1000
Read
Program
Configurations
Load
Save
Exit

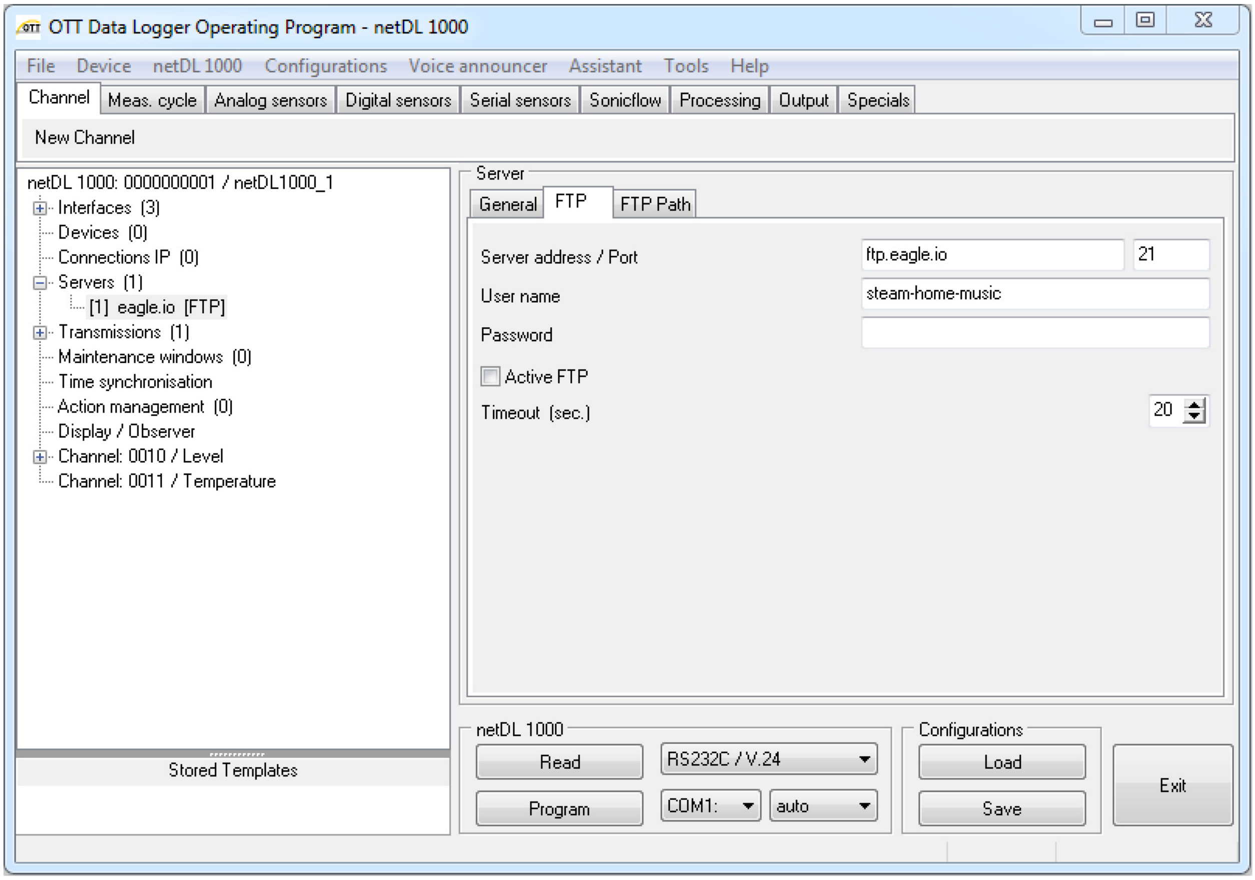
Name: eagle.io

RS232C / V.24

COM1:

auto

2. Change to the FTP tab.


OTT Data Logger Operating Program - netDL 1000
File
Device
netDL 1000
Configurations
Voice announcer
Assistant
Tools
Help
Channel
Meas. cycle
Analog sensors
Digital sensors
Serial sensors
Sonicflow
Processing
Output
Specials
New Channel
netDL 1000: 0000000001 / netDL1000_1
Interfaces (3)
Devices (0)
Connections IP (0)
Servers (1)
[1] eagle.io [FTP]
Transmissions (1)
Maintenance windows (0)
Time synchronisation
Action management (0)
Display / Observer
Channel: 0010 / Level
Channel: 0011 / Temperature
Server
General
FTP
FTP Path
Stored Templates
netDL 1000
Read
Program
RS232C / V.24
COM1:
auto
Configurations
Load
Save
Exit

Server address / Port: ftp.eagle.io 21

User name: steam-home-music

Password:

☐ Active FTP

Timeout (sec.) 20

The following FTP settings should be assigned:

Server address ftp.eagle.io

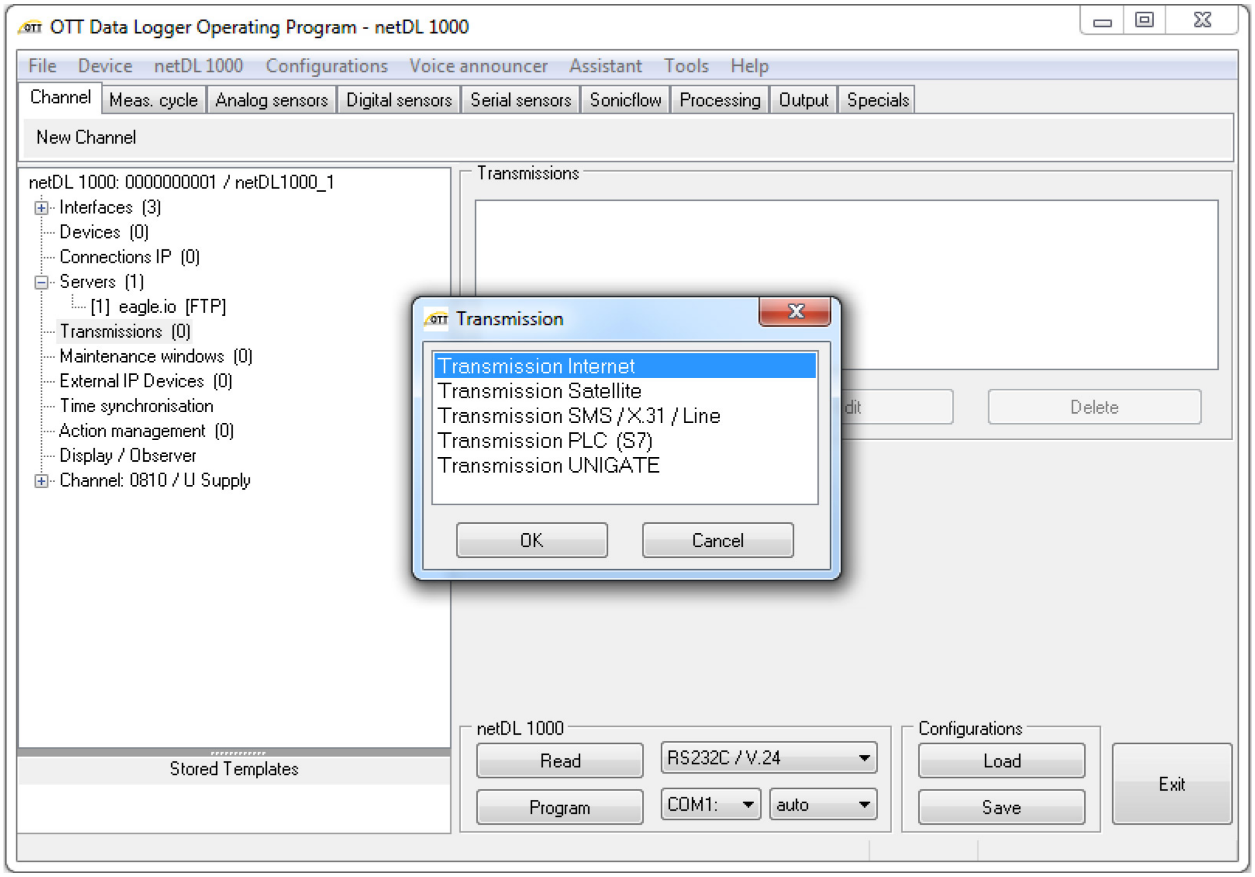
Port 21

User name Use the unique *FTP user* generated during Data Source creation.

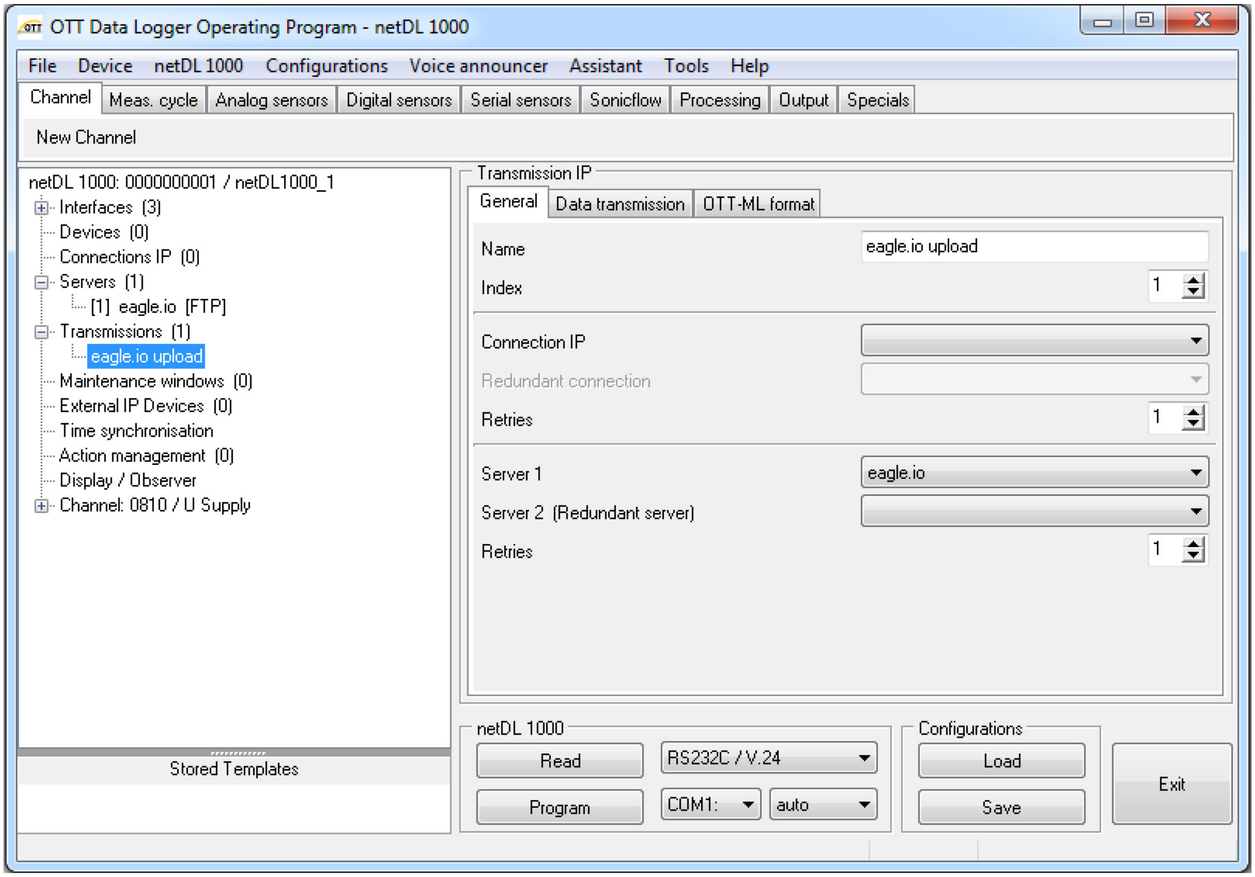
Password Use the password you assigned during Data Source creation (or leave blank for none).

FTP Path Leave blank

3. Create a new *Transmission* and select *Transmission Internet* as the type.

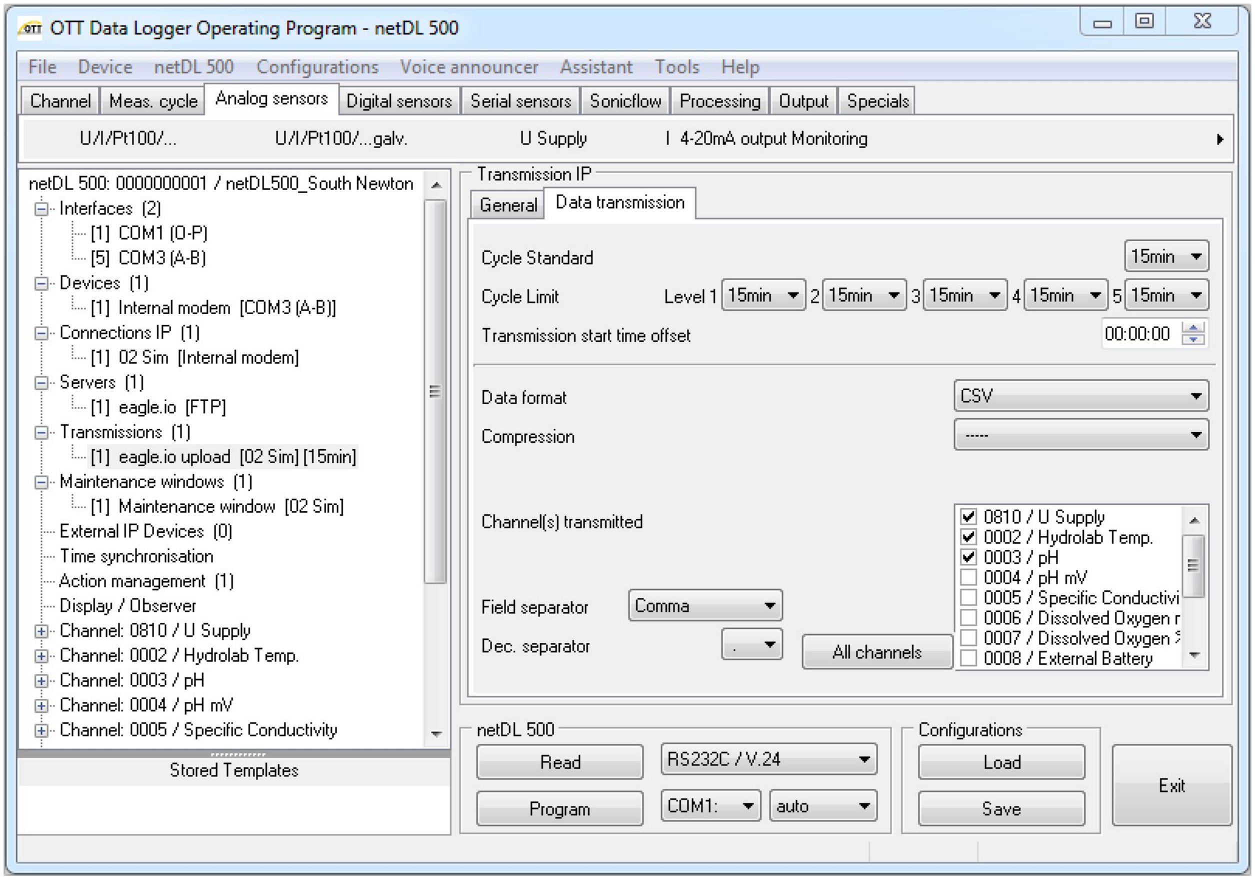

OTT Data Logger Operating Program - netDL 1000
File Device netDL 1000 Configurations Voice announcer Assistant Tools Help
Channel Meas. cycle Analog sensors Digital sensors Serial sensors Sonicflow Processing Output Specials
New Channel
netDL 1000: 0000000001 / netDL1000_1
Interfaces (3)
Devices (0)
Connections IP (0)
Servers (1)
[1] eagle.io [FTP]
Transmissions (0)
Maintenance windows (0)
External IP Devices (0)
Time synchronisation
Action management (0)
Display / Observer
Channel: 0810 / U Supply
Stored Templates
Transmissions
Edit
Delete
Transmission
Transmission Internet
Transmission Satellite
Transmission SMS / X.31 / Line
Transmission PLC (S7)
Transmission UNIGATE
OK
Cancel
netDL 1000
Read
Program
RS232C / V.24
COM1:
auto
Configurations
Load
Save
Exit

4. Configure the *Server 1* option to use the newly created Server. ie. eagle.io


OTT Data Logger Operating Program - netDL 1000
File
Device
netDL 1000
Configurations
Voice announcer
Assistant
Tools
Help
Channel
Meas. cycle
Analog sensors
Digital sensors
Serial sensors
Sonicflow
Processing
Output
Specials
New Channel
netDL 1000: 0000000001 / netDL1000_1
Interfaces (3)
Devices (0)
Connections IP (0)
Servers (1)
[1] eagle.io [FTP]
Transmissions (1)
eagle.io upload
Maintenance windows (0)
External IP Devices (0)
Time synchronisation
Action management (0)
Display / Observer
Channel: 0810 / U Supply
Stored Templates
Transmission IP
General
Data transmission
OTT-ML format
netDL 1000
Read
Program
RS232C / V.24
COM1:
auto
Configurations
Load
Save
Exit

Name: eagle.io upload
Index: 1
Connection IP:
Redundant connection:
Retries: 1
Server 1: eagle.io
Server 2 (Redundant server):
Retries: 1

5. Change to the *Data Transmission* tab and specify the *Cycle Standard* which sets the frequency of uploads (eg. 15min). Set the *Data format* to *CSV* with no compression. Select *Comma* as the *Field separator* and *Period* (.) as the *Decimal separator*.


OTT Data Logger Operating Program - netDL 500
File
Device
netDL 500
Configurations
Voice announcer
Assistant
Tools
Help
Channel
Meas. cycle
Analog sensors
Digital sensors
Serial sensors
Sonicflow
Processing
Output
Specials
U/I/Pt100/...
U/I/Pt100/...galv.
U Supply
I 4-20mA output Monitoring
netDL 500: 0000000001 / netDL500_South Newton
Interfaces (2)
[1] COM1 (O-P)
[5] COM3 (A-B)
Devices (1)
[1] Internal modem [COM3 (A-B)]
Connections IP (1)
[1] 02 Sim [Internal modem]
Servers (1)
[1] eagle.io [FTP]
Transmissions (1)
[1] eagle.io upload [02 Sim] [15min]
Maintenance windows (1)
[1] Maintenance window [02 Sim]
External IP Devices (0)
Time synchronisation
Action management (1)
Display / Observer
Channel: 0810 / U Supply
Channel: 0002 / Hydrolab Temp.
Channel: 0003 / pH
Channel: 0004 / pH mV
Channel: 0005 / Specific Conductivity
Stored Templates
Transmission IP
General
Data transmission
All channels
netDL 500
Read
Program
Configurations
Load
Save
Exit

Cycle Standard: 15min

Cycle Limit: Level 1 15min, 2 15min, 3 15min, 4 15min, 5 15min

Transmission start time offset: 00:00:00

Data format: CSV

Compression: -----

Channel(s) transmitted:

- ☑ 0810 / U Supply
- ☑ 0002 / Hydrolab Temp.
- ☑ 0003 / pH
- ☐ 0004 / pH mV
- ☐ 0005 / Specific Conductivi
- ☐ 0006 / Dissolved Oxygen r
- ☐ 0007 / Dissolved Oxygen 9
- ☐ 0008 / External Battery

Field separator: Comma

Dec. separator: .

RS232C / V.24

COM1: auto

6. Tick all the channels you would like to transmit to eagle.io (or select the *All channels* option) and save the configuration to the data logger.

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

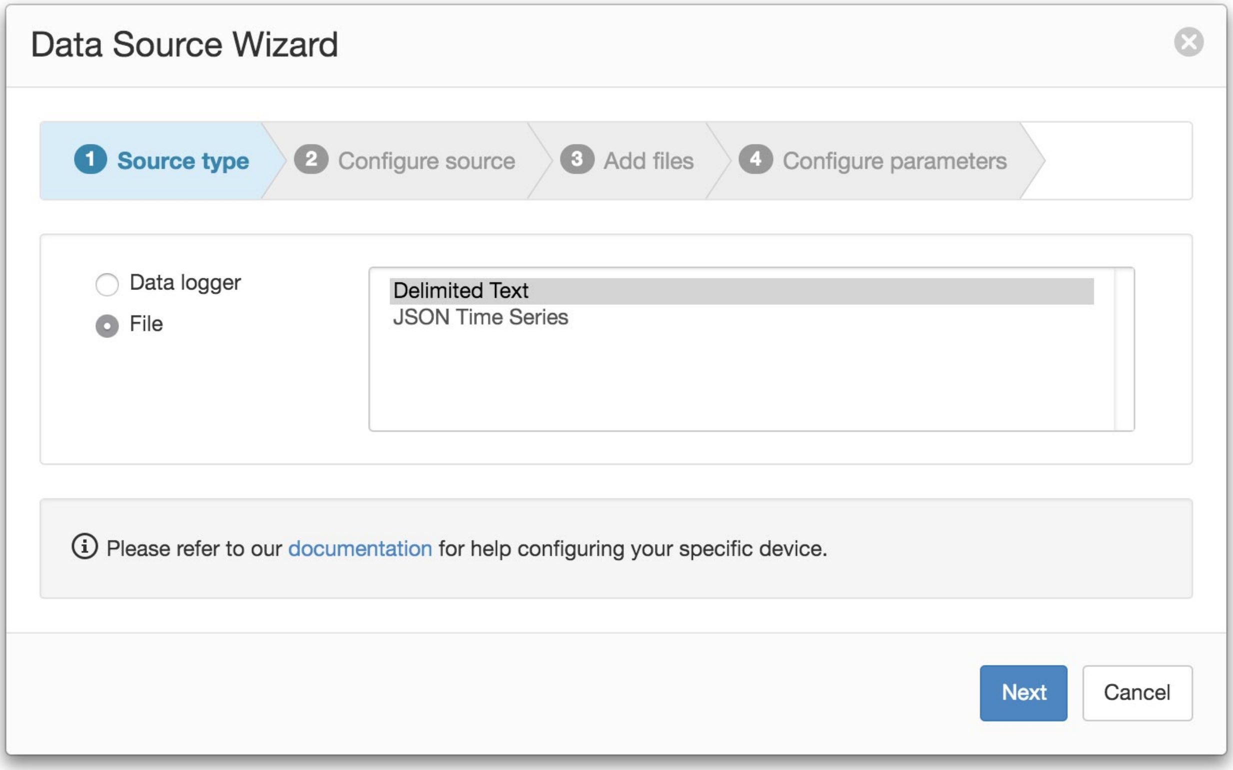
2.14.12 Point Orange 3G

The Metasphere Point Orange 3G (https://www.metasphere.co.uk/products/battery-powered/point-orange-3g-comms/) RTU outstation can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

Point
orange
Point

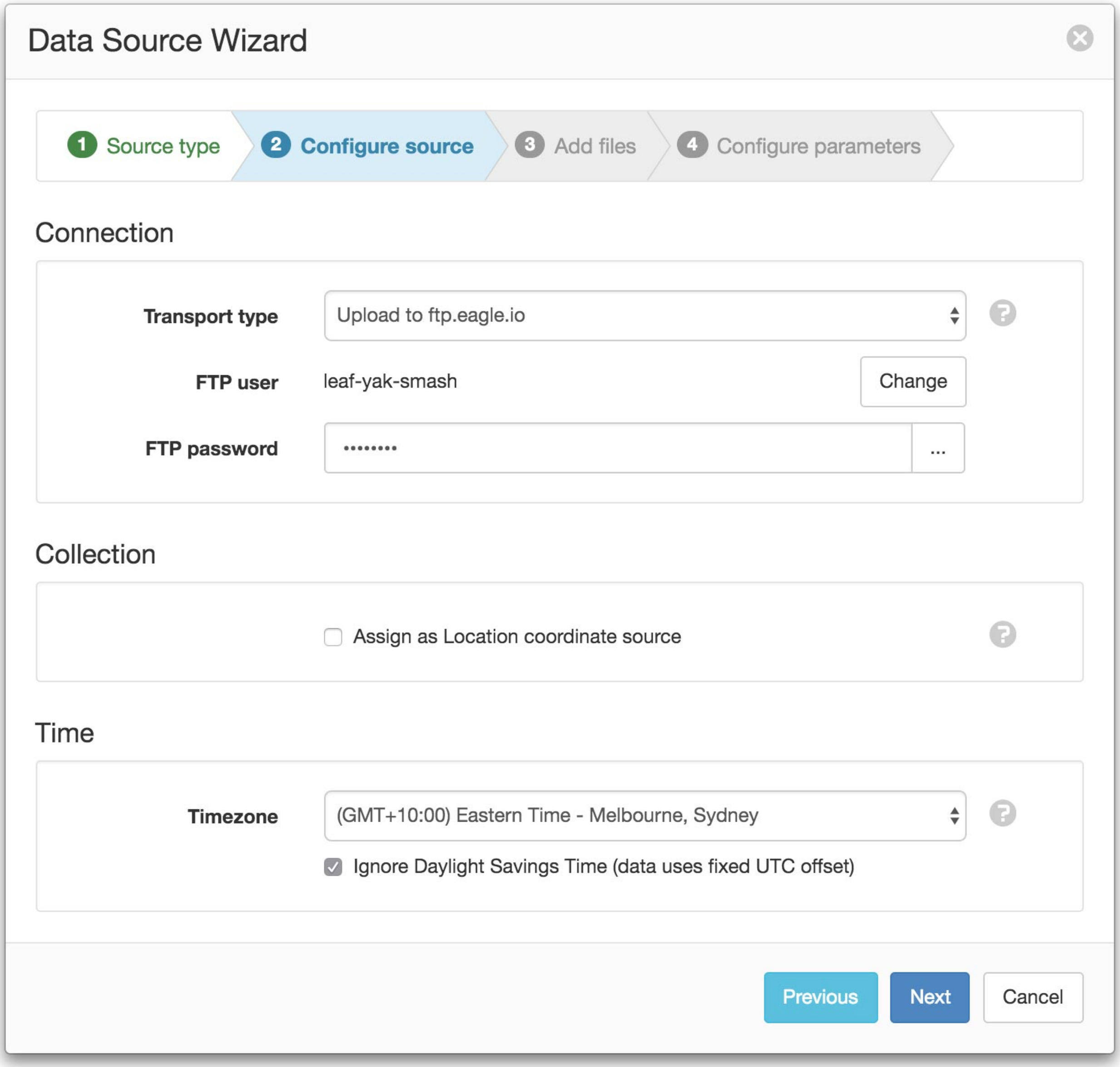
Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
○ Data logger
● File
Delimited Text
JSON Time Series
Next
Cancel

Please refer to our documentation for help configuring your specific device.

2. Select *Upload to ftp.eagle.io* as the transport type. A unique *Ftp user* account will be automatically generated per Data Source. You can optionally specify a password to be used by the logger for additional security. Select the timezone of the logger's clock and click Next.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Previous
Next
Cancel

Connection

Transport type: Upload to ftp.eagle.io

FTP user: leaf-yak-smash [Change]

FTP password: ••••••••• [...]

Collection

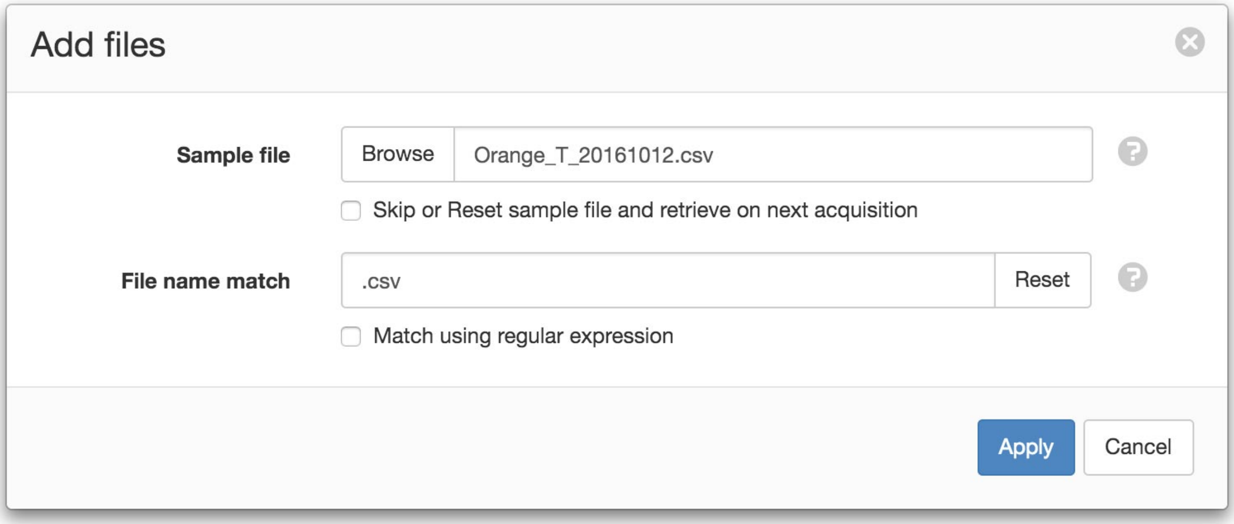
☐ Assign as Location coordinate source

Time

Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Specify *.csv* as the *File name match*. This will match all incoming files for this Source containing '.csv' in the filename. To continue the setup you will need a sample copy of the logger's output data file(s).



Sample file Orange_T_20161012.csv

☐ Skip or Reset sample file and retrieve on next acquisition

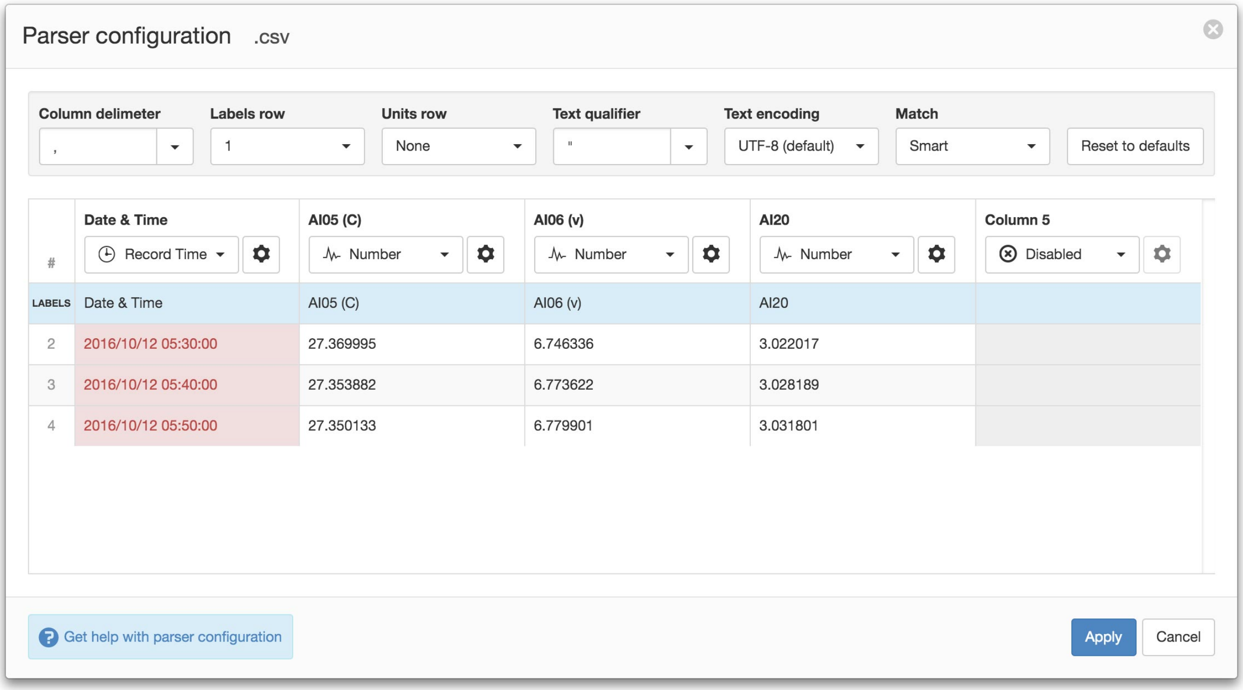
File name match .csv

☐ Match using regular expression

Note: If you do not have a sample available, click the *Skip* checkbox and click finish on the next screen. A sample will be saved automatically on the initial upload from the data logger and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

---

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.



Parser configuration .csv

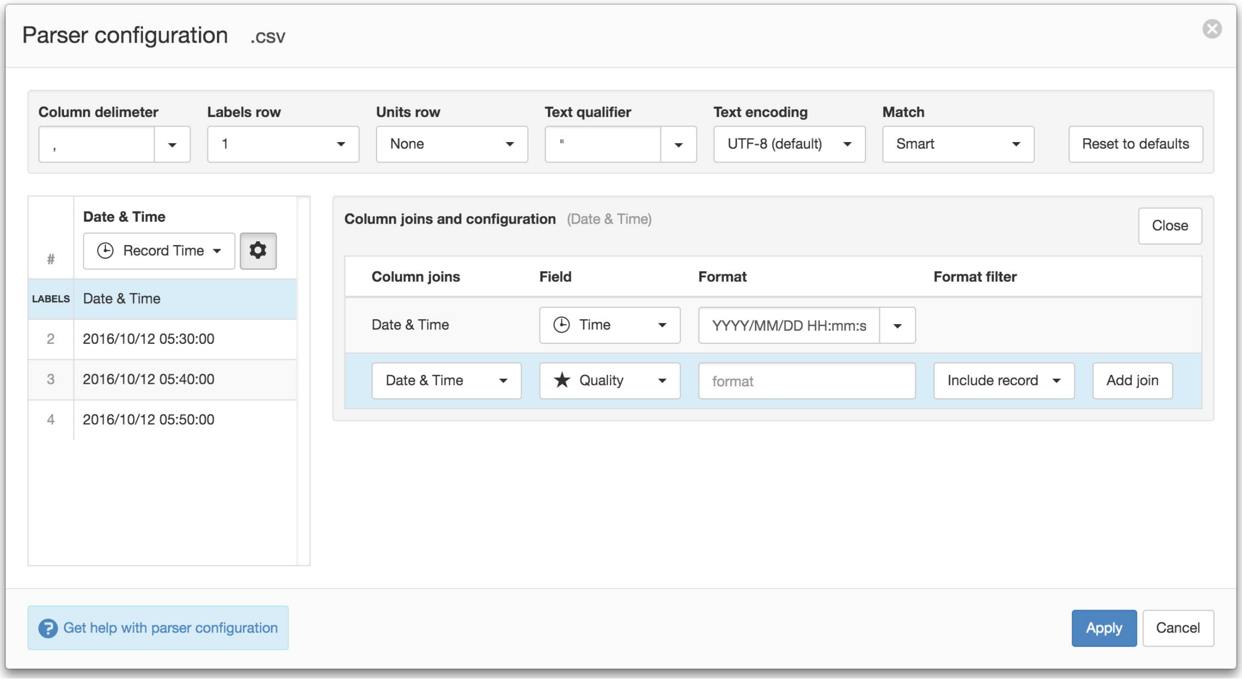
Column delimiter: ,
Labels row: 1
Units row: None
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart

#	Date & Time Record Time	AI05 (C) Number	AI06 (v) Number	AI20 Number	Column 5 Disabled
LABELS	Date & Time	AI05 (C)	AI06 (v)	AI20	
2	2016/10/12 05:30:00	27.369995	6.746336	3.022017	
3	2016/10/12 05:40:00	27.353882	6.773622	3.028189	
4	2016/10/12 05:50:00	27.350133	6.779901	3.031801	

If the file contains a header row, set the *Labels row* control to the corresponding row number which will assign default labels for parameter creation.

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*.

You will need to change the default time format for the *Record Time* column. Click the configure button above the column and change the *Format* field to use the *time format* (page 583) **YYYY/MM/DD HH:mm:ss**. Click Apply and Next.


Parser configuration .csv
Reset to defaults
Close
Add join
Get help with parser configuration
Apply
Cancel

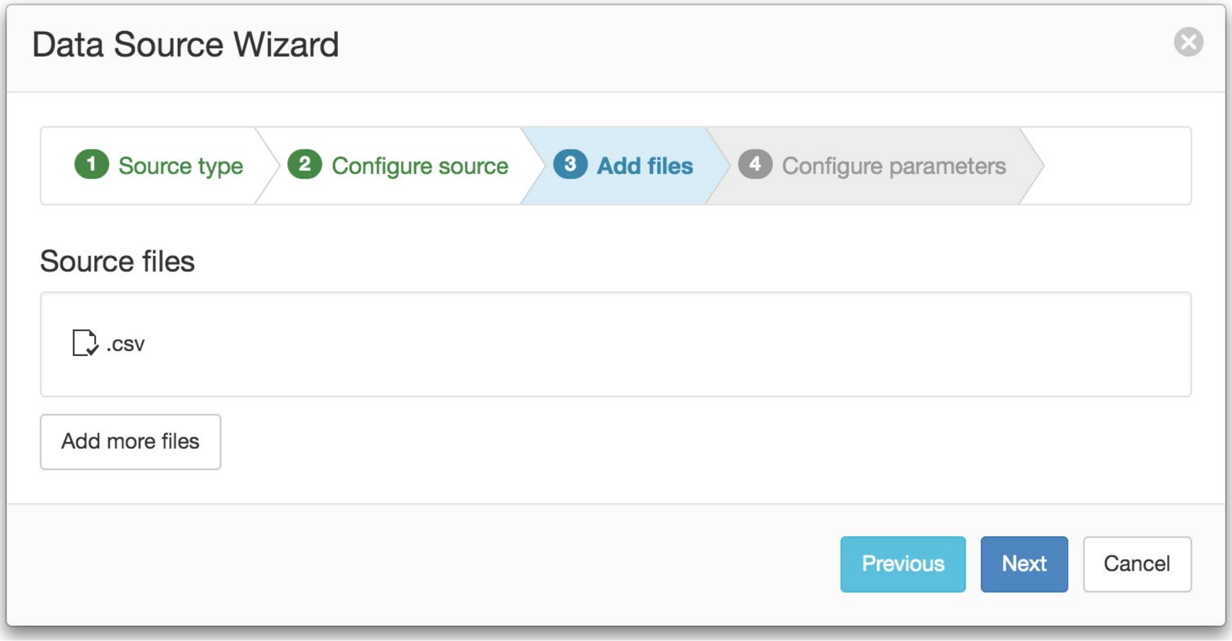
Column delimiter: ,
Labels row: 1
Units row: None
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart

#	Date & Time
	Record Time
LABELS	Date & Time
2	2016/10/12 05:30:00
3	2016/10/12 05:40:00
4	2016/10/12 05:50:00

Column joins and configuration (Date & Time)

Column joins	Field	Format	Format filter
Date & Time	Time	YYYY/MM/DD HH:mm:s	
Date & Time	Quality	format	Include record

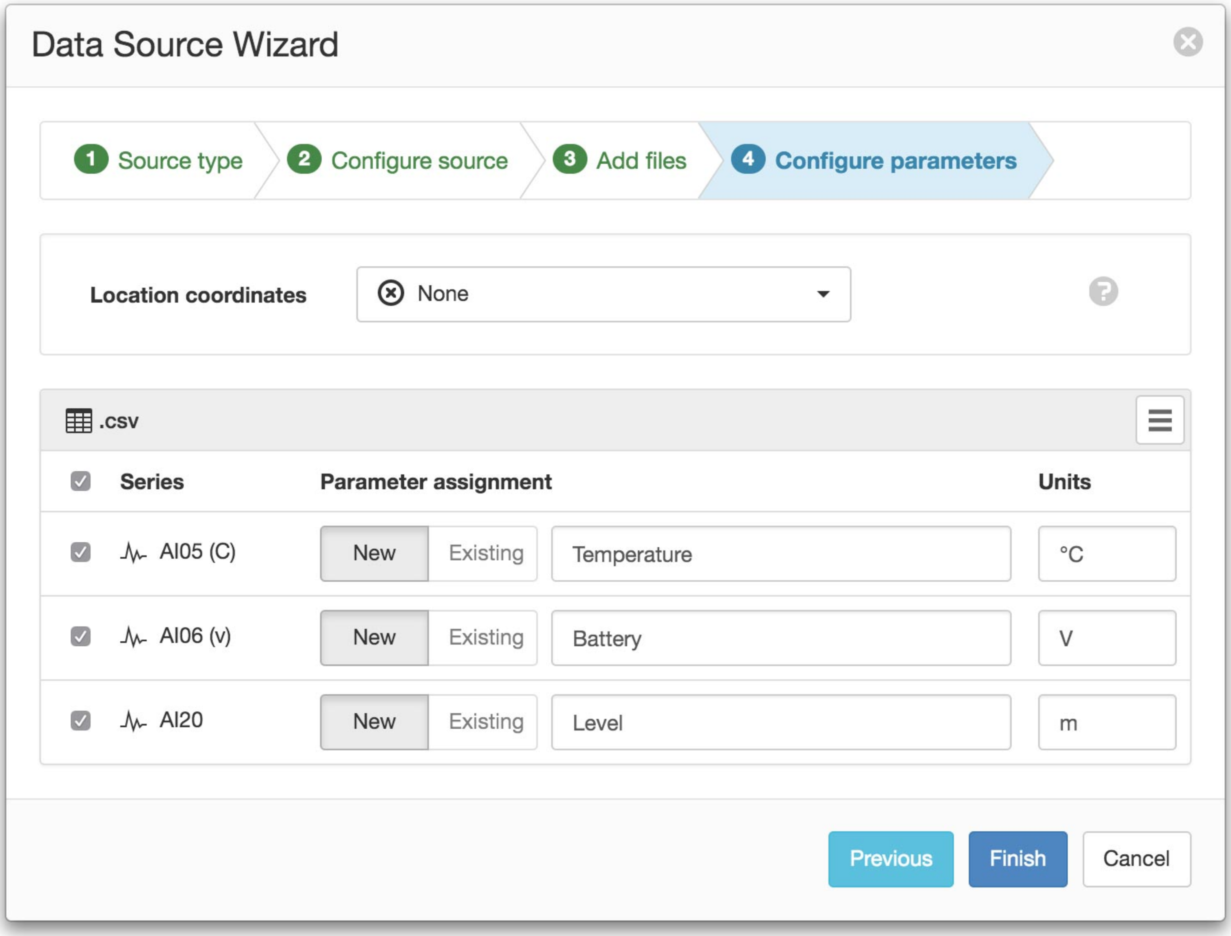
5. Click next to proceed to parameter assignment.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Add more files
Previous
Next
Cancel

Source files

.csv

6. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
.csv
Previous
Finish
Cancel

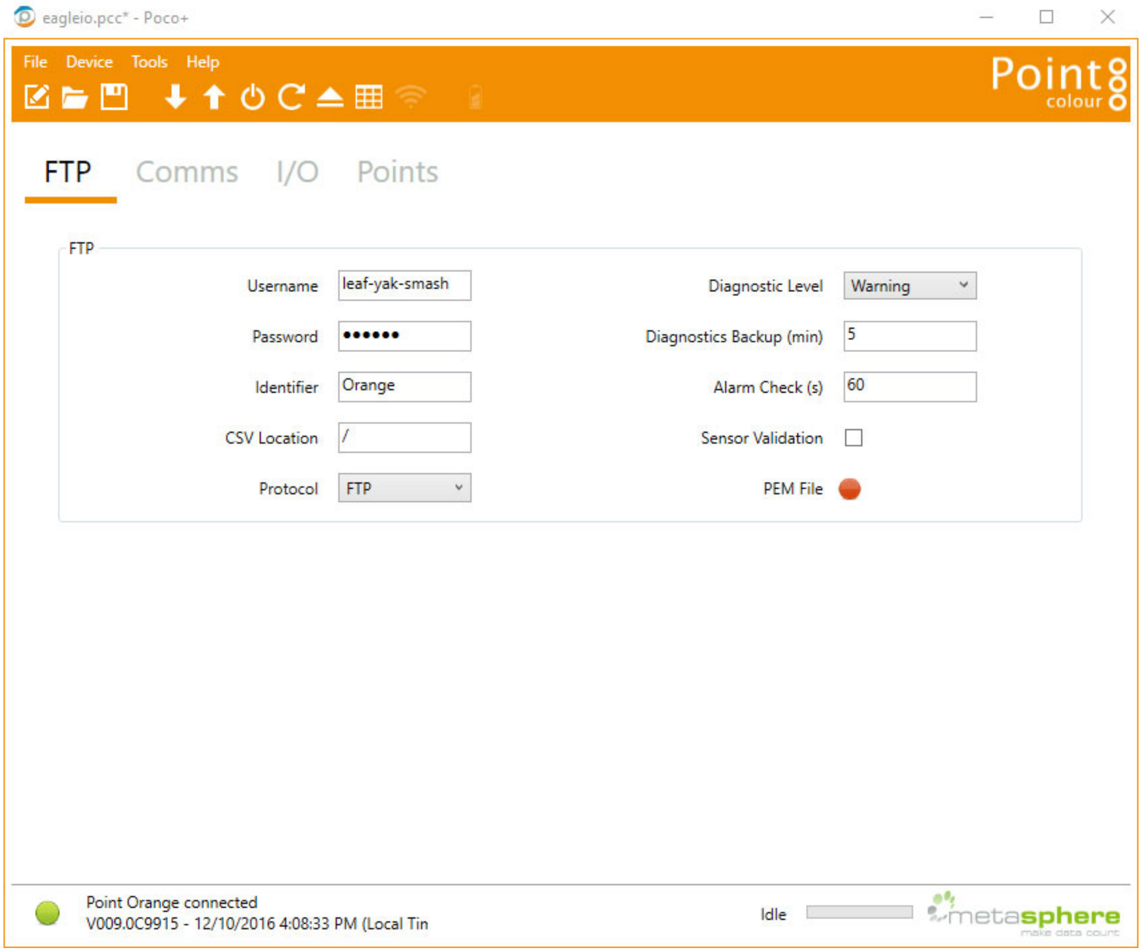
Location coordinates ⊗ None

☑	Series	Parameter assignment		Units
☑	AI05 (C)	New / Existing	Temperature	°C
☑	AI06 (v)	New / Existing	Battery	V
☑	AI20	New / Existing	Level	m

Note: You can reconfigure the file name match/sample file, parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

Device settings

Use the Metasphere Poco+ application software to configure the logger for communication with eagle.io. Refer to your Point Orange 3G user manual (https://www.metasphere.co.uk) for connection instructions.


eagleio.pcc* - Poco+
File
Device
Tools
Help
Point
colour
FTP
Comms
I/O
Points
FTP
metasphere
make data count

Username	leaf-yak-smash	Diagnostic Level	Warning
Password	••••••	Diagnostics Backup (min)	5
Identifier	Orange	Alarm Check (s)	60
CSV Location	/	Sensor Validation	☐
Protocol	FTP	PEM File	●

● Point Orange connected
V009.0C9915 - 12/10/2016 4:08:33 PM (Local Tin

Idle

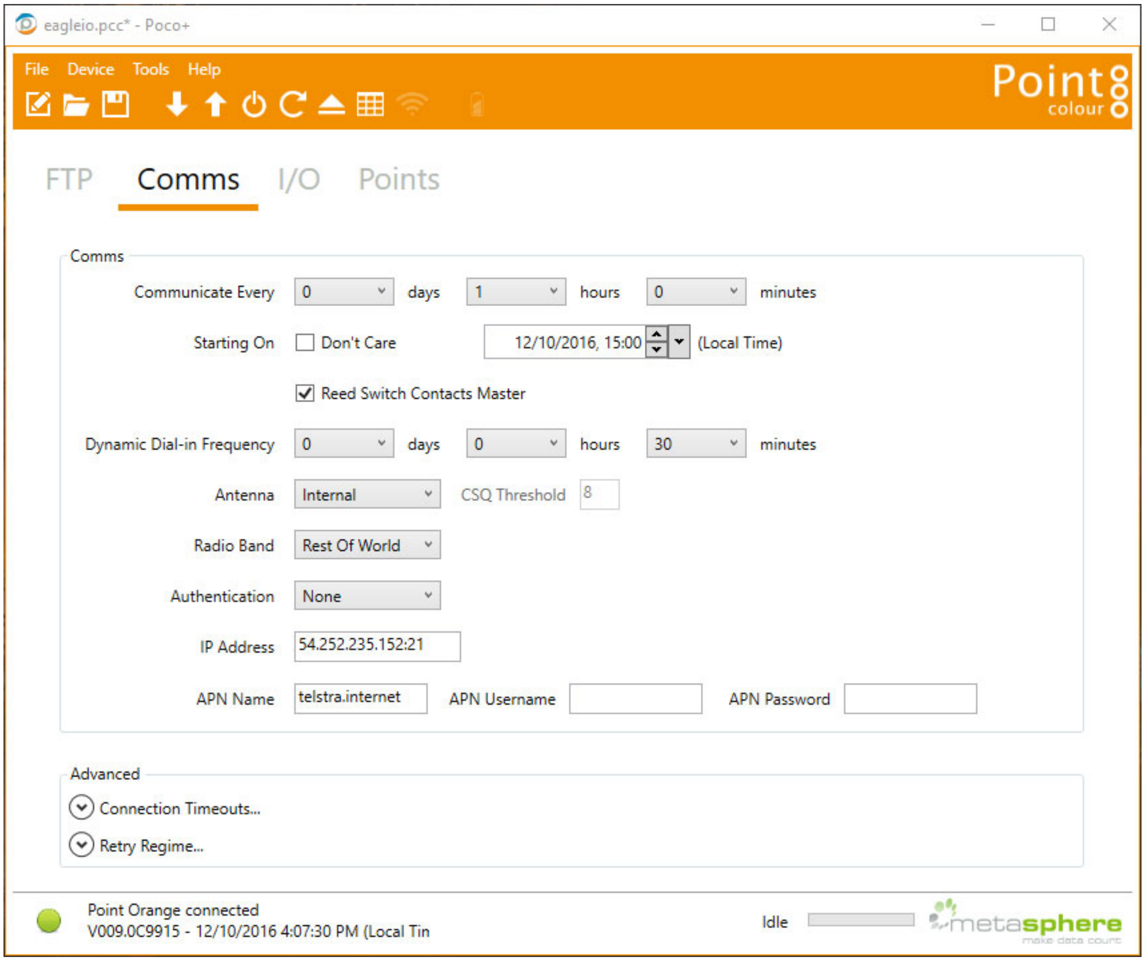
The following settings should be assigned in the **FTP** section:

Username Use the unique *FTP user* generated during Data Source creation.

Password Use the password you assigned during Data Source creation (or set to ‘pass’ for none).

CSV Location /

Protocol FTP



Comms

Communicate Every 0 days 1 hours 0 minutes

Starting On ☐ Don't Care 12/10/2016, 15:00 (Local Time)

☑ Reed Switch Contacts Master

Dynamic Dial-in Frequency 0 days 0 hours 30 minutes

Antenna Internal CSQ Threshold 8

Radio Band Rest Of World

Authentication None

IP Address 54.252.235.152:21

APN Name telstra.internet APN Username APN Password

Advanced

Connection Timeouts...

Retry Regime...

Point Orange connected
V009.0C9915 - 12/10/2016 4:07:30 PM (Local Tin

Idle

The following settings should be assigned in the **Comms** section:

IP Address 54.252.235.152:21

You should configure the communication frequency and APN settings as required.

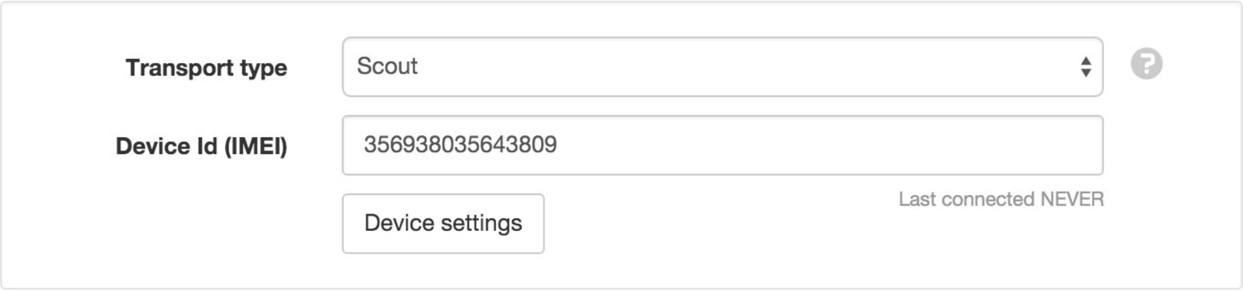
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.13 Scout

The *Scout modem* is the easiest way to connect your data logger to eagle.io (https://eagle.io). The *Scout* takes any standard internet ready SIM Card without the need for fixed IP addresses and has a range of smart features including inbuilt GPS, signal strength monitoring, event based reporting and low power mode.

Source configuration

You need to configure your Data Source to use the **Scout** transport. You can then use the *Device settings* button to display the device settings dialog. See *configuring a Data Source* (page 134) for full details.



Transport type: Scout

Device Id (IMEI): 356938035643809

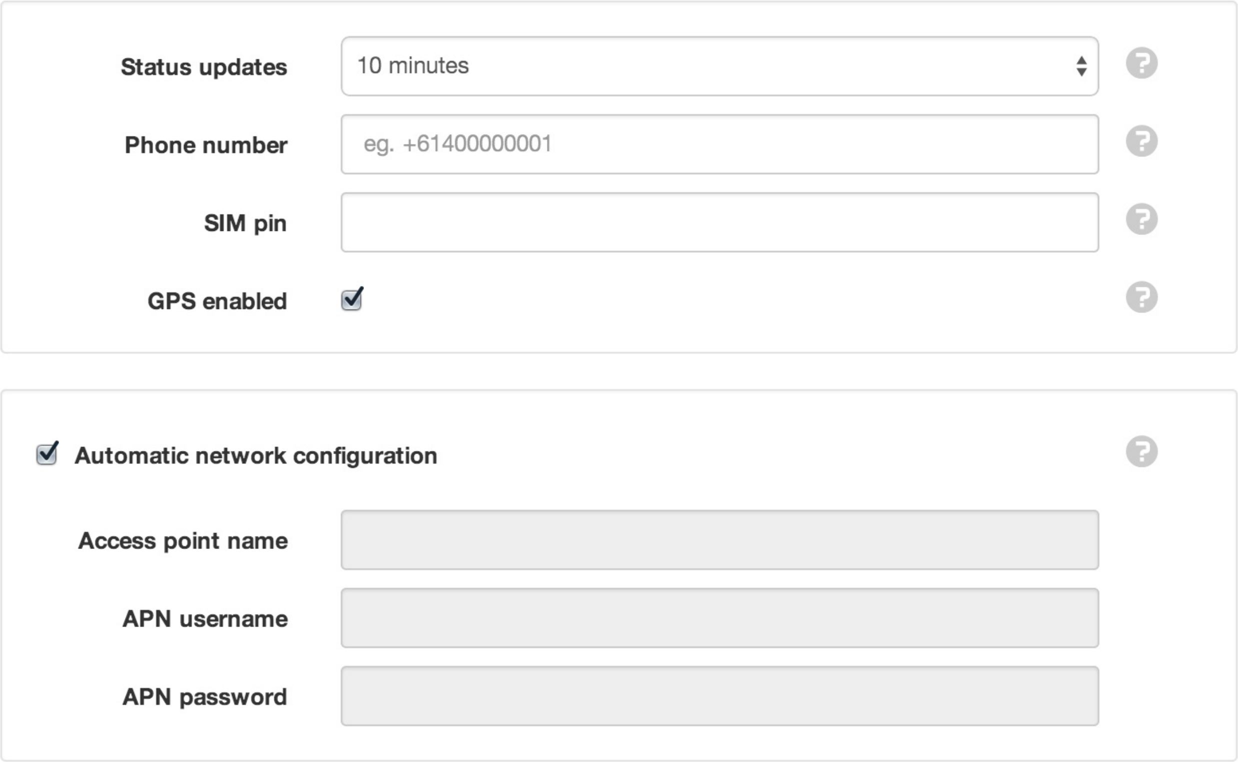
Last connected NEVER

Device settings

The device settings dialog allows you to review and configure the settings for your Scout. The status message at the bottom of the dialog will indicate if the remote device is *up to date* or *out of date*. Configuration updates will automatically be applied on the next successful connection.

General

The general section allows you to configure the device for use with your SIM.



Status updates	10 minutes
Phone number	eg. +61400000001
SIM pin	
GPS enabled	☑

☑ Automatic network configuration

Access point name	
APN username	
APN password	

Status updates Frequency of status updates - including GPS coordinates and signal strength. This option is only available when the Data Source schedule is *Enabled* and Schedule type set to *Server*. When the Data Source schedule is *Disabled* or set to *Remote* the status updates will only occur when the device performs a Callback.

Phone number Phone number of the SIM Card in the device. Follow the standard international format (http://en.wikipedia.org/wiki/National_conventions_for_writing_telephone_numbers) starting with '+' and including country and area code. When the Data Source schedule is *Disabled* or set to *Remote* the phone number is used to send an SMS to the device to initiate a callback.

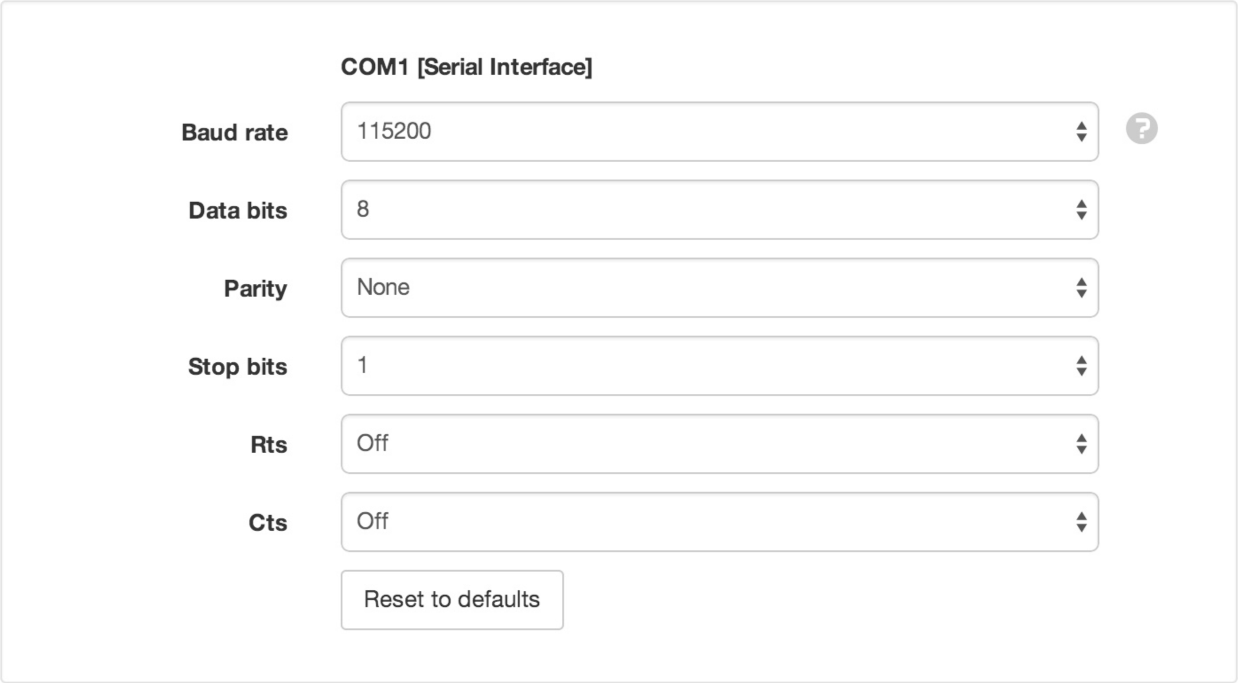
SIM pin PIN of the SIM Card or leave blank for no pin.

GPS enabled Disable the GPS if not needed to reduce power consumption.

Network configuration Uncheck *Automatic network configuration* only when the automatic mode does not work with your SIM. You will need to configure the Access point name and username/password as specified by your provider.

Communication

The communication section allows you to change the COM1 port settings to correctly pass data between eagle.io and your data logger.



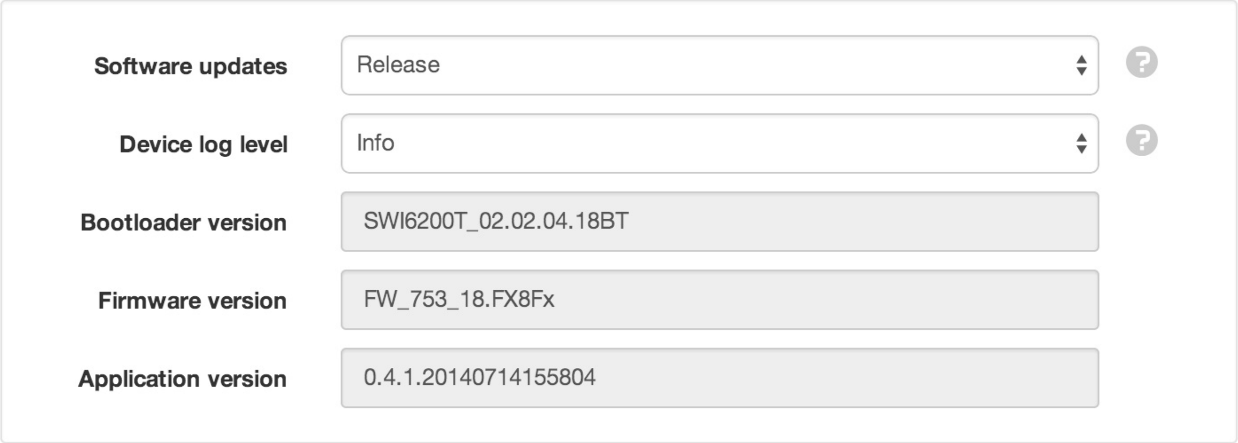
COM1 [Serial Interface]

Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Rts	Off
Cts	Off

Note: Some data loggers may require a specific Baud rate, but most other settings should use the defaults.

Configuration

The configuration section allows you to view software versions and configure updates.



Software updates	Release
Device log level	Info
Bootloader version	SWI6200T_02.02.04.18BT
Firmware version	FW_753_18.FX8Fx
Application version	0.4.1.20140714155804

Software updates Select an option for software updates:

Release will use the latest stable software (recommended).

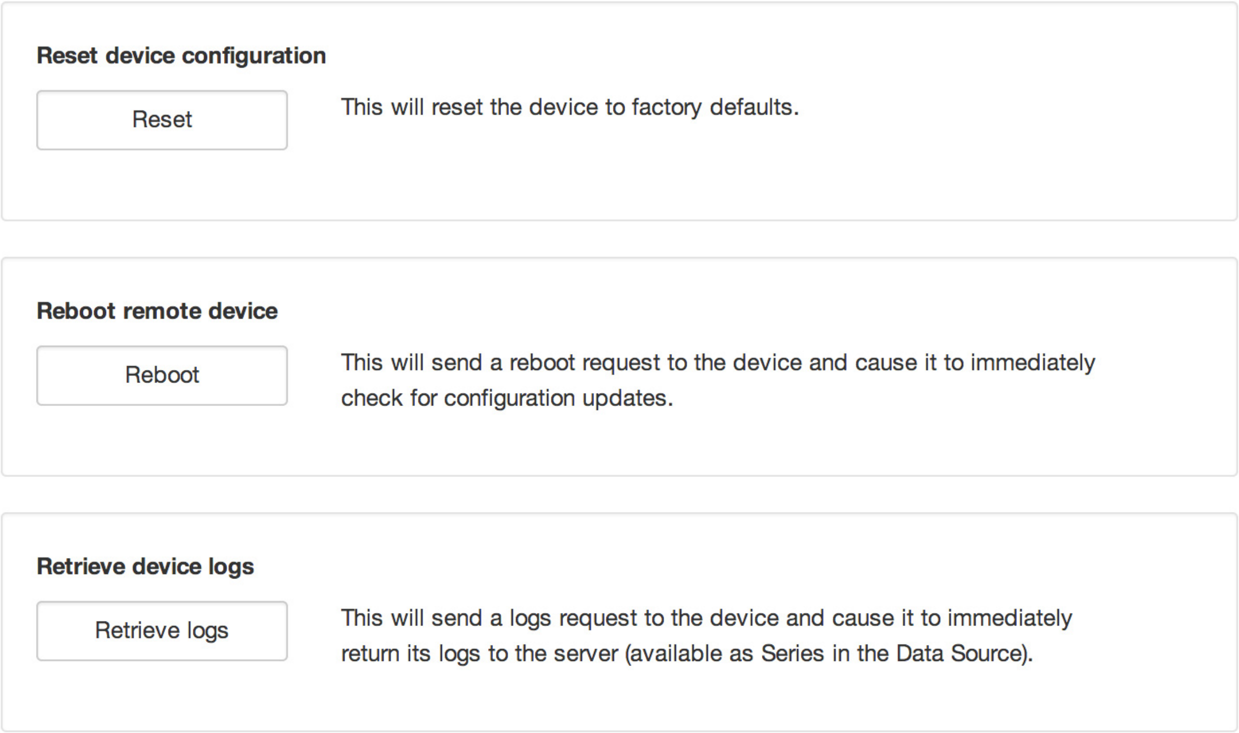
Development will use an unstable version of the software still being tested.

Do not update automatically will disable the updates.

Device log level Select the detail level of the device logs. Debug is the lowest level and will record all events. Select a higher level to filter out less important events. Logs are only retrieved on request via the *Retrieve logs* button in the Operation section.

Operation

The operation section can be used to remotely reset or reboot the *Scout modem* or retrieve its internal logs.


Reset device configuration
Reset
Reboot remote device
Reboot
Retrieve device logs
Retrieve logs

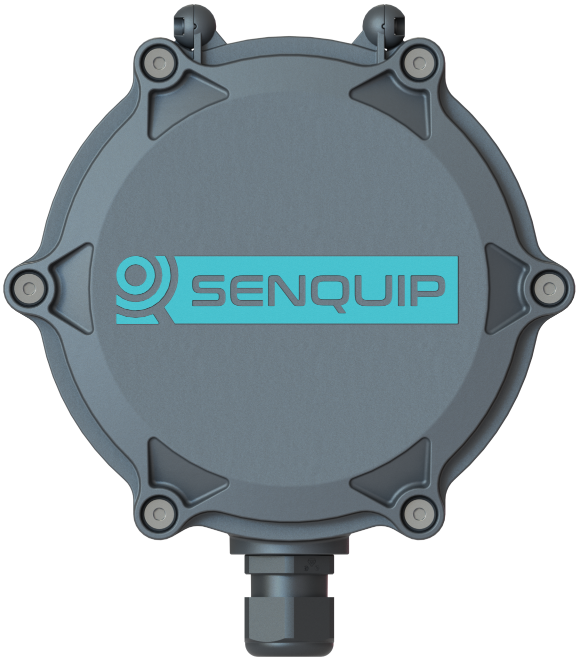
This will reset the device to factory defaults.

This will send a reboot request to the device and cause it to immediately check for configuration updates.

This will send a logs request to the device and cause it to immediately return its logs to the server (available as Series in the Data Source).

2.14.14 Senquip ORB-X1

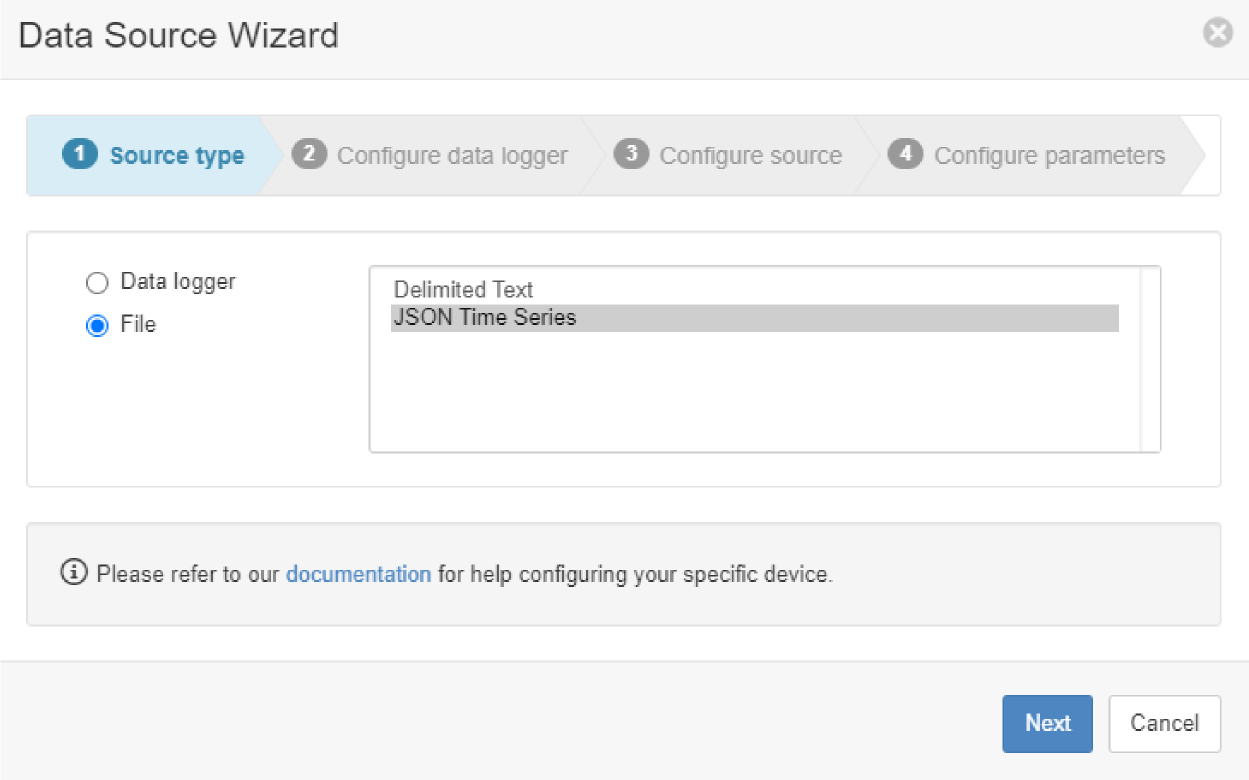
The Senquip (http://senquip.com) **ORB-X1** connects to standard industrial sensors and allows remotely measured data to be delivered to users anywhere in the world. It can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.



SETUP
RESET
AA
AA
AA

Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *JSON Time Series* from the list and click Next.

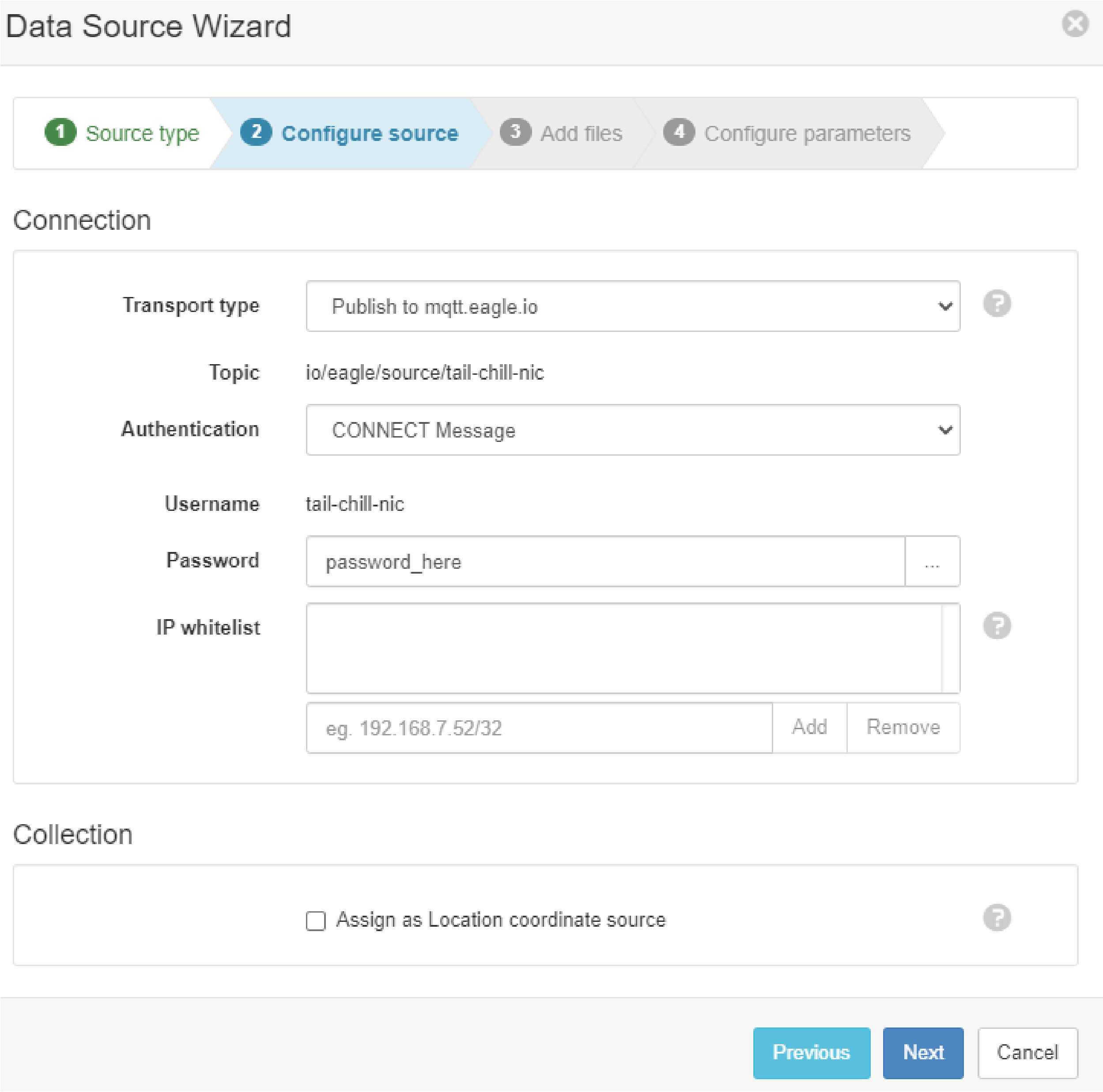

Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Next
Cancel

○ Data logger
● File

Delimited Text
JSON Time Series

Please refer to our documentation for help configuring your specific device.

2. Select *Publish to mqtt.eagle.io* as the transport type. A unique MQTT *Topic* will be automatically generated per Data Source. The *Topic* will always start with `io/eagle/source/`, followed by a unique 3-word code, for example in the screenshot below the *Topic* is `io/eagle/source/tail-chill-nic`. Change the Authentication setting from *None* to *CONNECT Message*, and you will notice that the *Username* becomes the 3-word code. Enter a password in the *Password* field, and click Next.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters

Connection

Transport type: Publish to mqtt.eagle.io

Topic: io/eagle/source/tail-chill-nic

Authentication: CONNECT Message

Username: tail-chill-nic

Password: password_here

IP whitelist

eg. 192.168.7.52/32

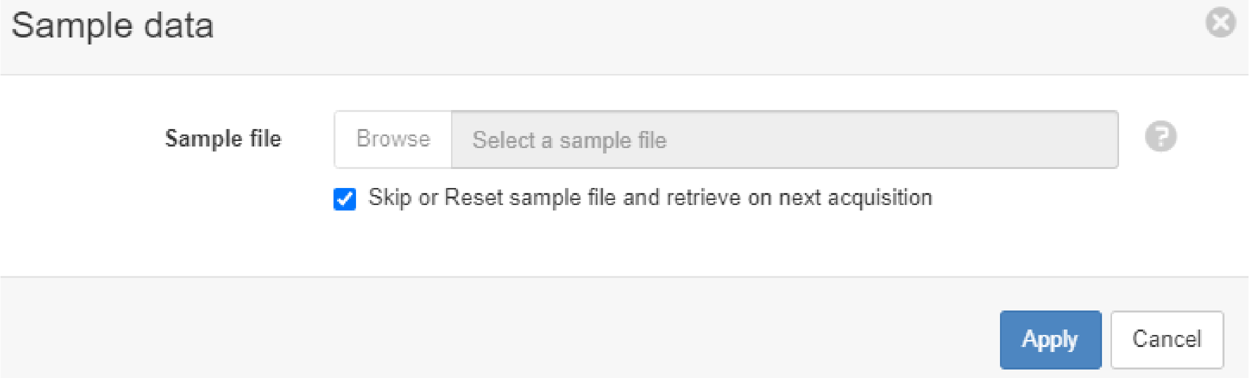
Add
Remove

Collection

☐ Assign as Location coordinate source

Previous
Next
Cancel

3. In the next step, check the box to *Skip or Reset sample file and retrieve on next acquisition* and click Apply.


Sample data

Sample file: Select a sample file

☑ Skip or Reset sample file and retrieve on next acquisition

4. Complete the Data Source wizard by clicking *Next*, *Next* and *Finish*.
5. Final configuration requires the device to send some sample data. Follow these detailed device configuration steps (http://docs.senquip.com/app_notes/APN0014%20Rev%201.0%20-%20Integrating%20ORB%20Data%20with%20Eagle.io.pdf), and then check the following settings:

MQTT Check the *Enabled* box

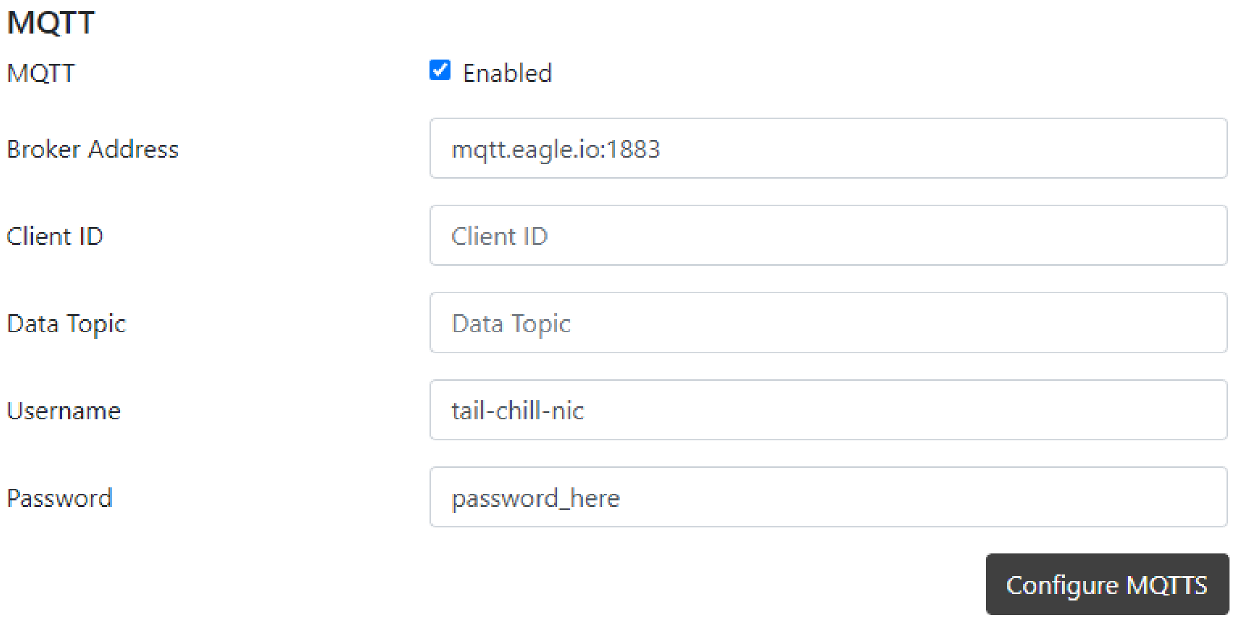
Broker Address `mqtt.eagle.io:1883`

Client ID Leave blank

Data Topic Use the topic generated in step 2, e.g. `io/eagle/source/tail-chill-nic`

Username Use the 3-word code generated in step 2, e.g. `tail-chill-nic`

Password Use the password you entered in step 2


MQTT

MQTT: ☑ Enabled

Broker Address: mqtt.eagle.io:1883

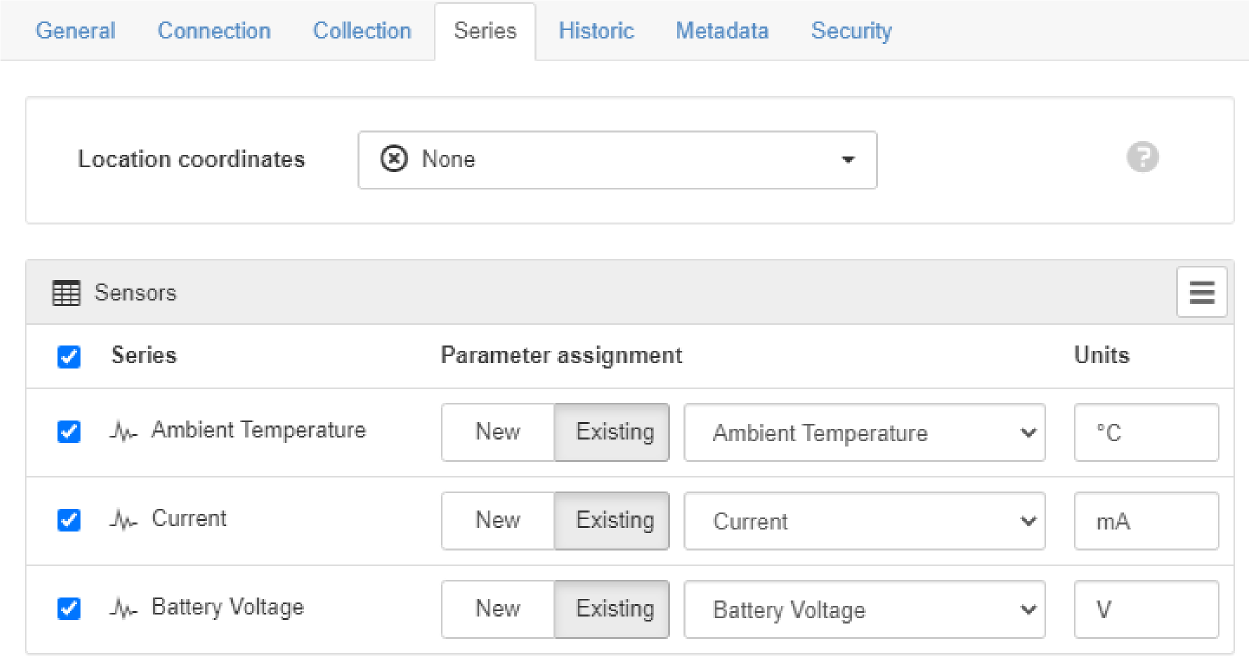
Client ID: Client ID

Data Topic: Data Topic

Username: tail-chill-nic

Password: password_here

6. Once sample data has been sent, final configuration of data series can be performed by right-clicking the Data Source in the eagle.io Workspace tree, and choosing *Properties*. Then click the *Series* tab, where data series' can be associated with Parameters.

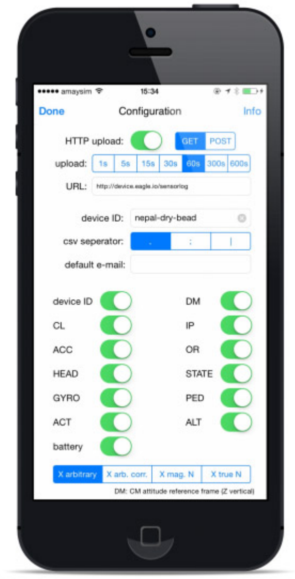


Location coordinates: None

☑	Series	Parameter assignment		Units
☑	Ambient Temperature	New / Existing	Ambient Temperature	°C
☑	Current	New / Existing	Current	mA
☑	Battery Voltage	New / Existing	Battery Voltage	V

2.14.15 SensorLog

The SensorLog (https://itunes.apple.com/au/app/sensorlog/id388014573/) iOS 8.0+ App for iPhone and iPad can be configured to send data to eagle.io (https://eagle.io) for demonstration purposes in a few easy steps.


amaysim
15:34
Done
Configuration
Info
GET
POST
1s
5s
15s
30s
60s
300s
600s
X arbitrary
X arb. corr.
X mag. N
X true N

HTTP upload: ● GET

upload: 60s

URL: http://device.eagle.io/sensorlog

device ID: nepal-dry-bead

csv seperator: ,

default e-mail:

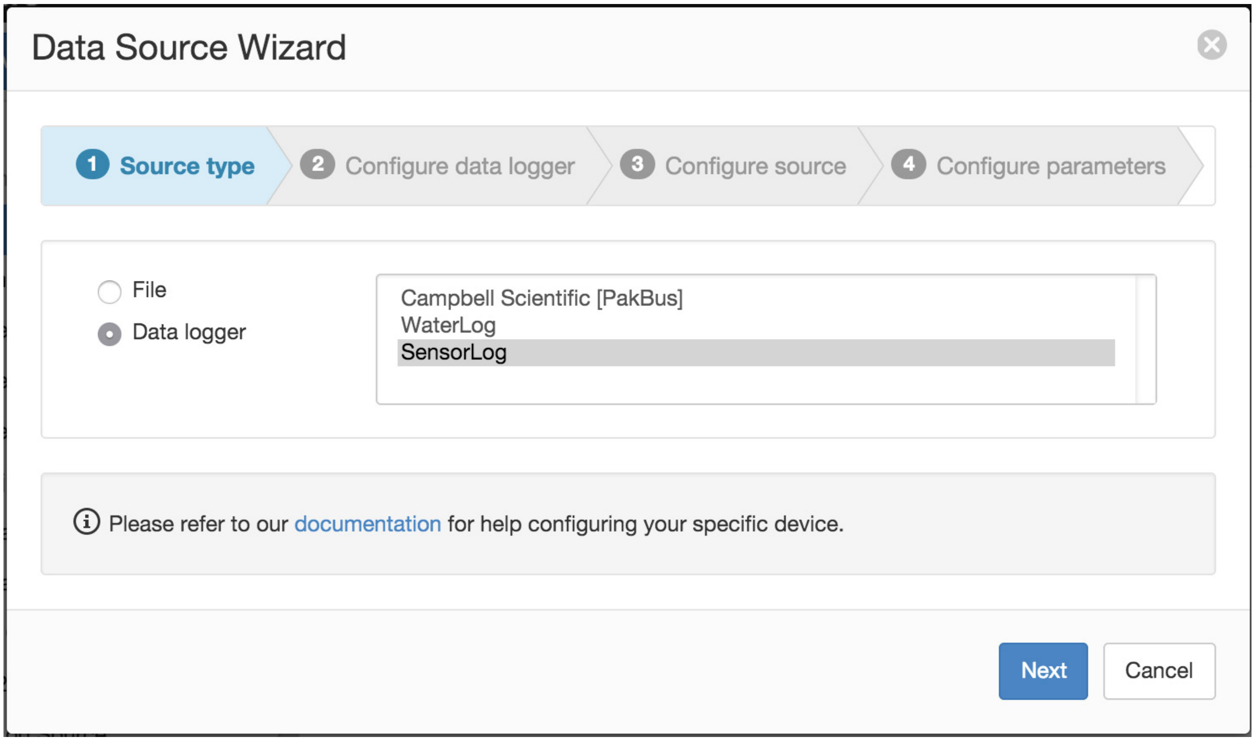
device ID ●
CL ●
ACC ●
HEAD ●
GYRO ●
ACT ●
battery ●
DM ●
IP ●
OR ●
STATE ●
PED ●
ALT ●

X arbitrary

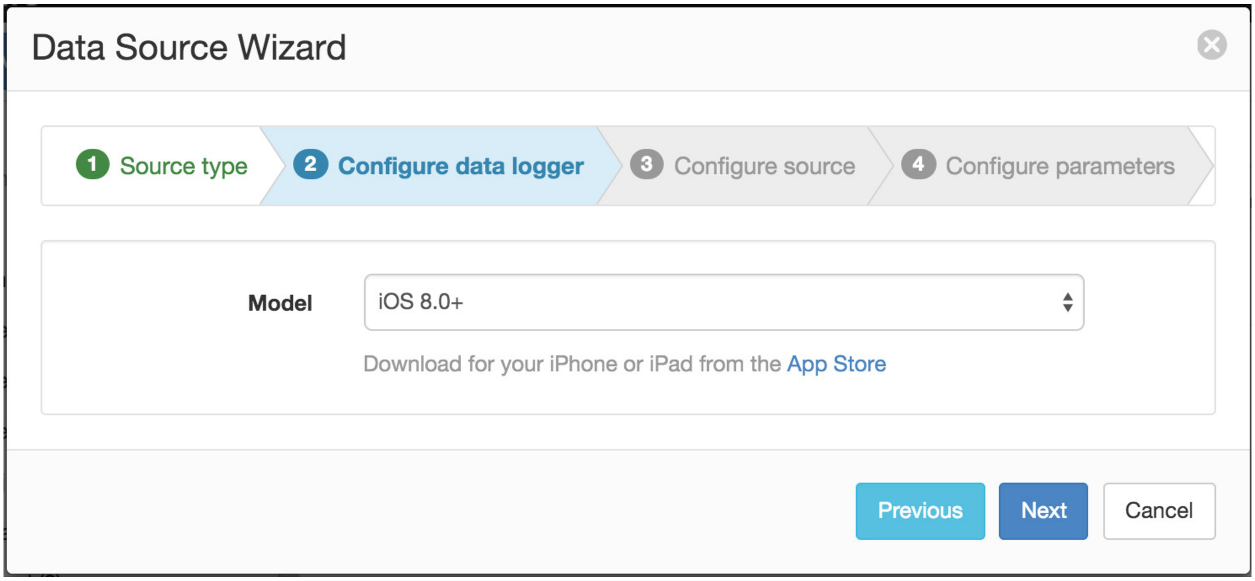
DM: CM attitude reference frame (Z vertical)

Source configuration

1. Create a *Data Source* (page 114) and select *Data logger* as the Source Type. Choose *SensorLog* from the list and click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
○ File
● Data logger
Campbell Scientific [PakBus]
WaterLog
SensorLog
Please refer to our documentation for help configuring your specific device.
Next
Cancel

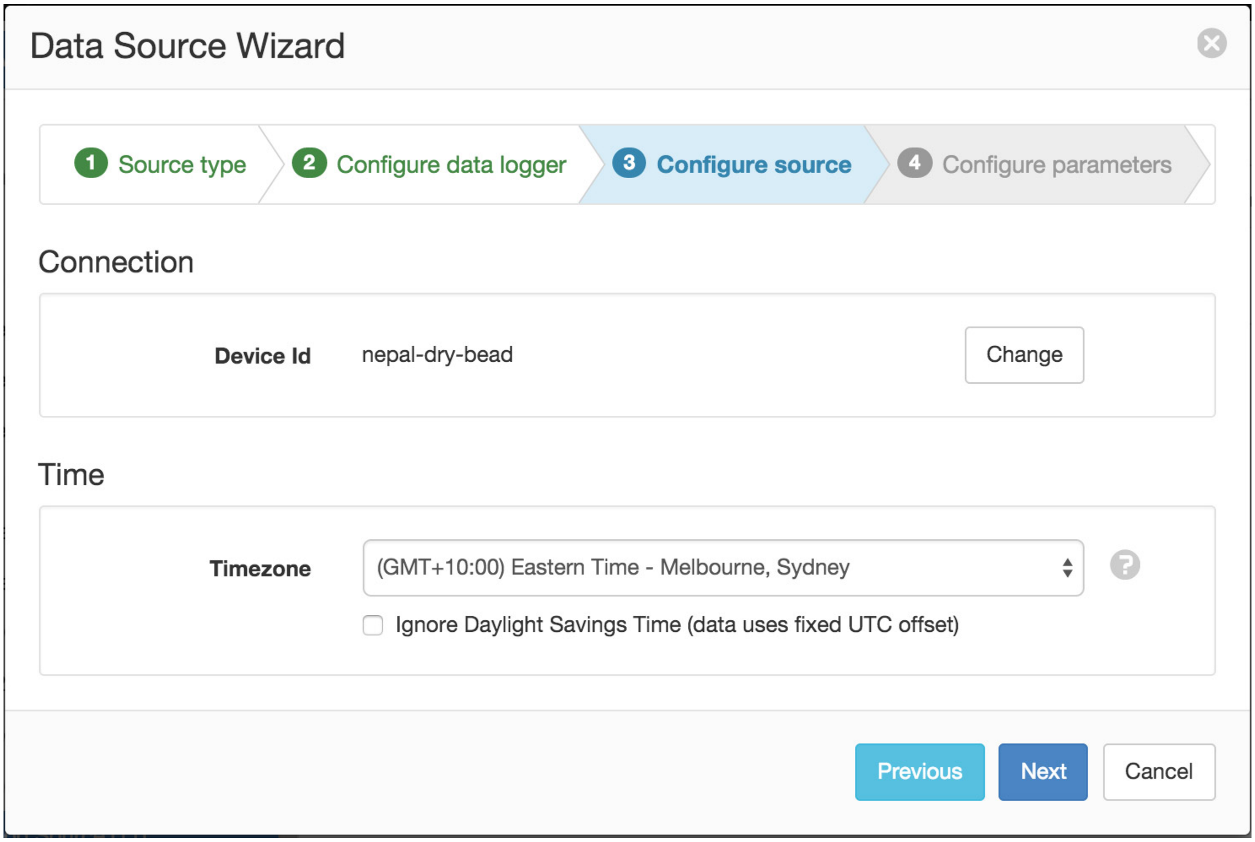
2. Download the SensorLog App to your iPhone or iPad from the App Store (https://itunes.apple.com/au/app/sensorlog/id388014573/) and click Next.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Previous
Next
Cancel

Model iOS 8.0+

Download for your iPhone or iPad from the App Store

3. The Device Id will be automatically generated. Select the Timezone of your device and click Next to continue.



Data Source Wizard

Connection

Device Id nepal-dry-bead

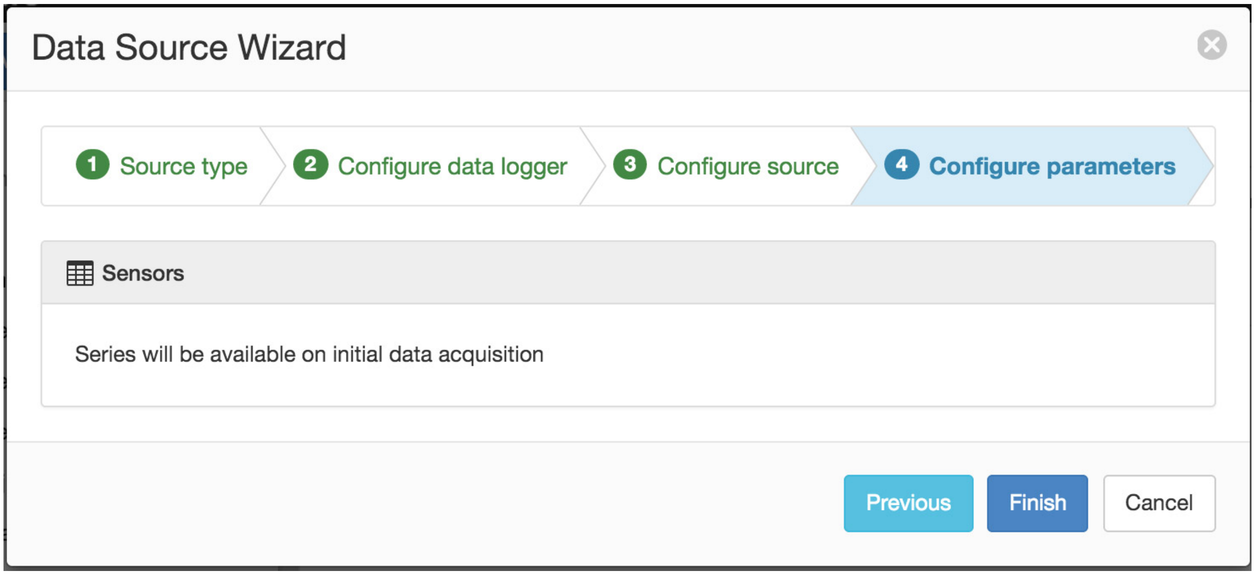
Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☐ Ignore Daylight Savings Time (data uses fixed UTC offset)

1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Change
Previous
Next
Cancel

4. Click Finish to complete the setup. Parameters will be automatically created on initial data acquisition.


Data Source Wizard
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters
Sensors

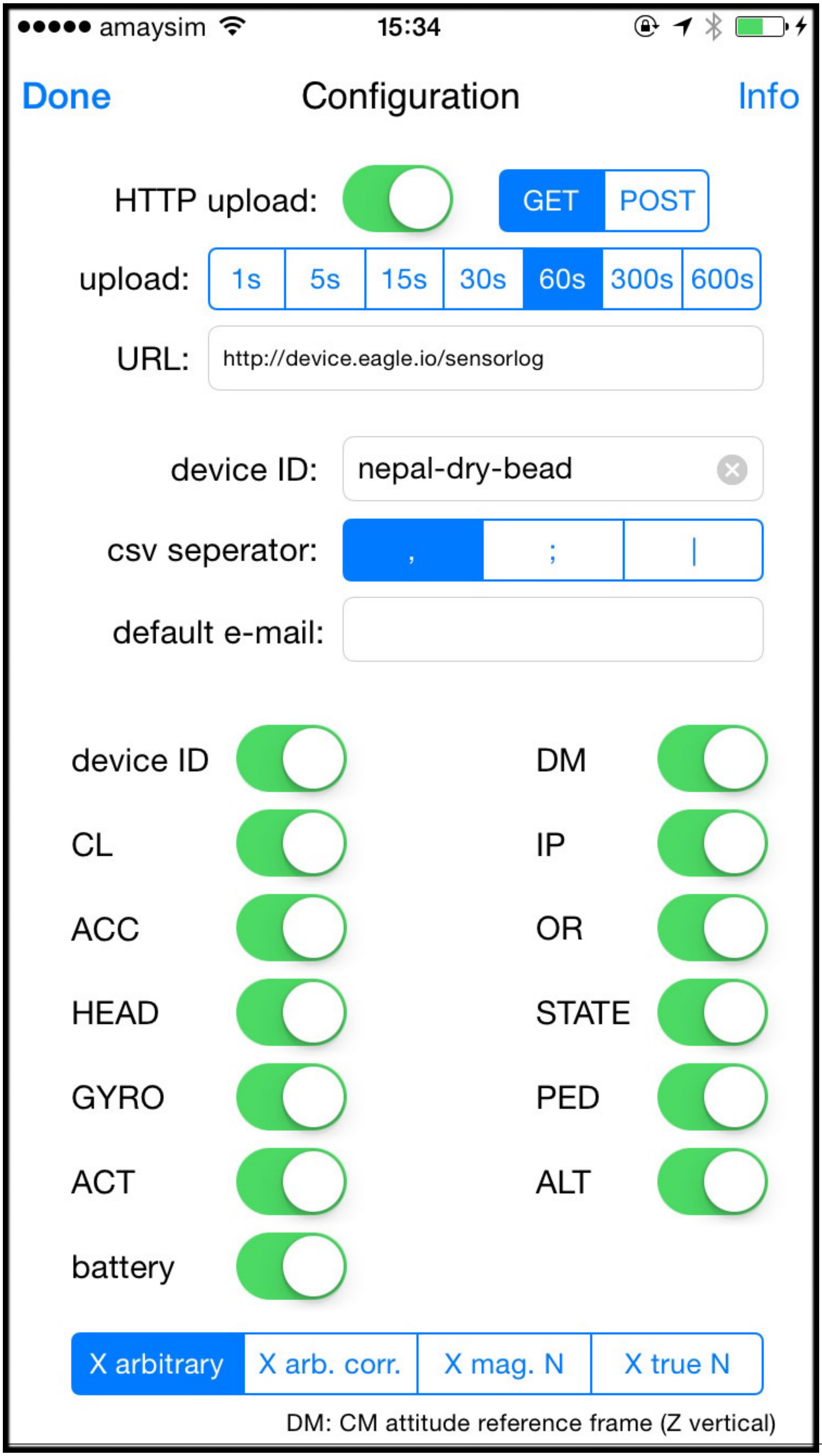
Series will be available on initial data acquisition

Previous
Finish
Cancel

Note: You can enable or disable parameters for collection from the *Data Source* (page 114) properties dialog after creation.

Device settings

Launch the SensorLog App and open the *Configuration* section.


●●●●● amaysim
15:34
Done
Configuration
Info

HTTP upload: ● [✓ GET] POST

upload: 1s 5s 15s 30s [✓ 60s] 300s 600s

URL: http://device.eagle.io/sensorlog

device ID: nepal-dry-bead

csv seperator: [✓ ,] ; |

default e-mail:

device ID ●
DM ●
CL ●
IP ●
ACC ●
OR ●
HEAD ●
STATE ●
GYRO ●
PED ●
ACT ●
ALT ●
battery ●

[✓ X arbitrary] X arb. corr. X mag. N X true N

DM: CM attitude reference frame (Z vertical)

The following settings should be assigned:

HTTP upload Enabled. Select GET or POST

upload Set the upload frequency from 5s - 60s

URL http://device.eagle.io/sensorlog

device ID Use the unique *Device Id* generated during Data Source creation. eg. nepal-dry-bead

csv seperator Comma ‘,’

Sensors Enabled the sensors you wish to log. The selected sensors will be automatically created as parameters on initial data acquisition.

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

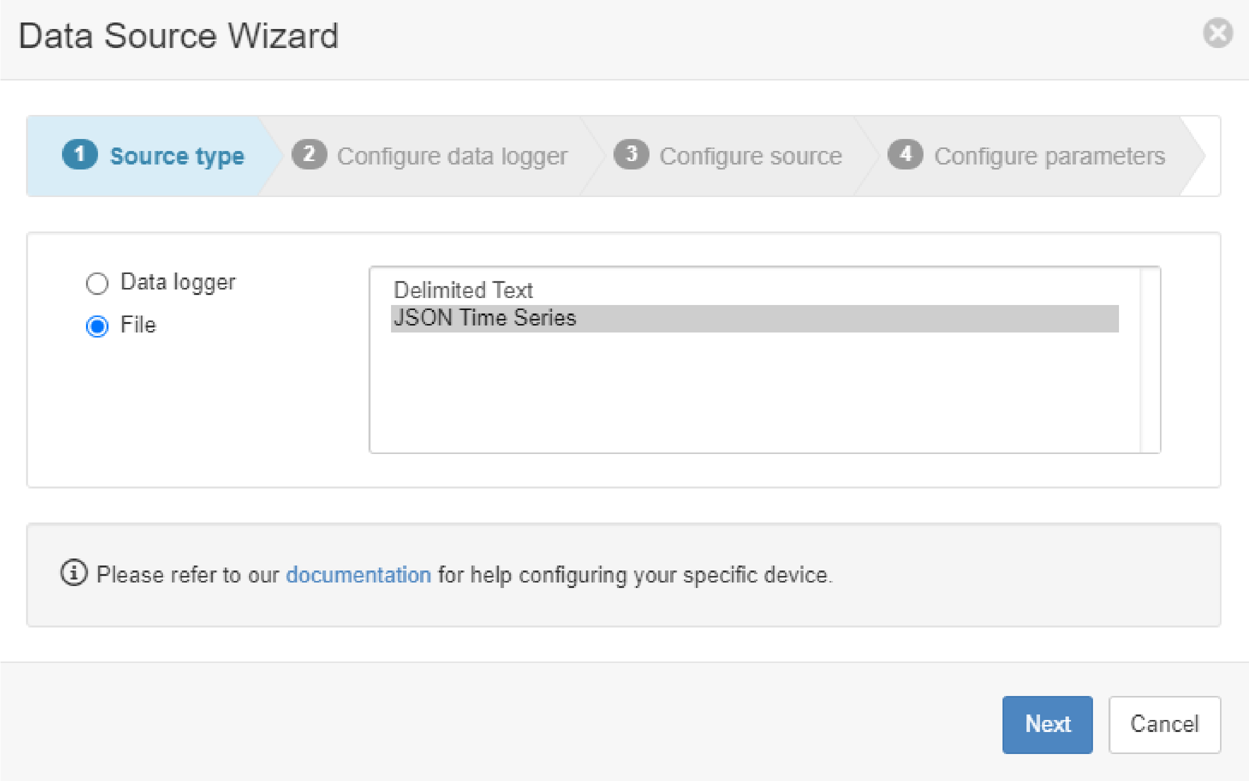
2.14.16 Smithtek Mako V2

The Smithtek (https://www.smithtek.com.au/products) **Mako V2** is a compact, low-power LoRa (RF) PLC designed for reliable, smart and wireless operation in applications such as water treatment plants, power generation, environmental, and pumping systems. With its embedded LoRa antenna, it offers long-range connectivity up to 15 km and can run 24/7 on minimal solar backup. It can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

LoRa
SMITHTEK
MAKO
WWW.SMITHTEK.COM.AU
GNS
PWR 12-24VDC
VCC GND
DIGITAL IN
1 2 3 4 5 6 7 8
DIGITAL OUT
1 2 3 4 5 6 7 8
LoRa COM1 COM2 GPS
PWR
V2.0
GEN 2 RF PLC
GND RS485-1 B A
GND RS485-2 B A
SD CARD
GND AI1 AI2 AI3 AI4 AI5 AI6 5V 5V NC DI1 DI2 DI3 DI4 DI5 DI6 DI7 DI8 GND VO DO1 DO2 DO3 DO4 DO5 DO6 DO7 DO8 GND

Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *JSON Time Series* from the list and click Next.



Data Source Wizard

1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters

○ Data logger

● File

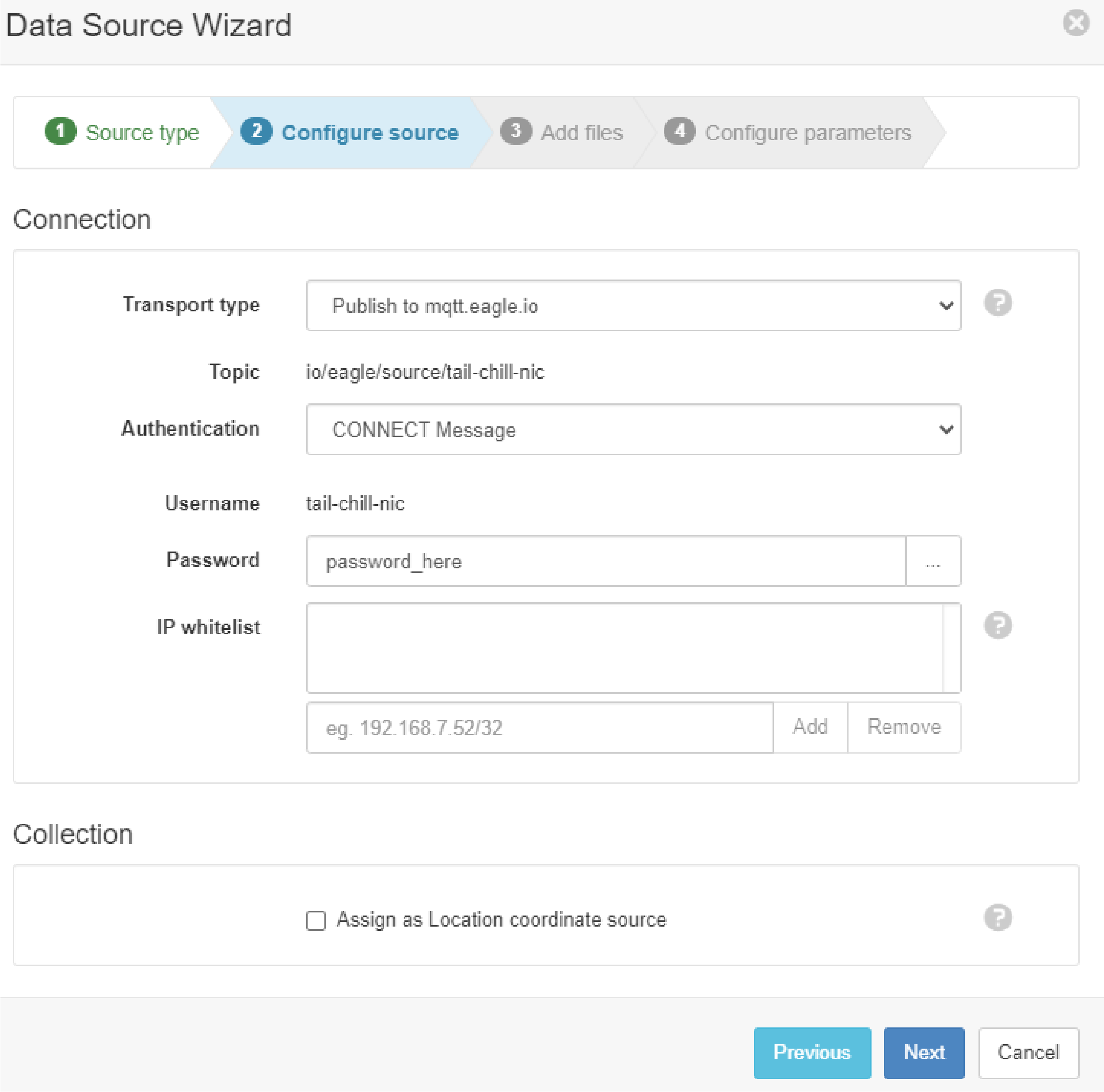
Delimited Text

JSON Time Series

Please refer to our documentation for help configuring your specific device.

Next
Cancel

2. Select *Publish to mqtt.eagle.io* as the transport type. A unique MQTT *Topic* will be automatically generated per Data Source. The *Topic* will always start with `io/eagle/source/`, followed by a unique 3-word code, for example in the screenshot below the *Topic* is `io/eagle/source/tail-chill-nic`. Change the Authentication setting from *None* to *CONNECT Message*, and you will notice that the *Username* becomes the 3-word code. Enter a password in the *Password* field, and click Next.



Data Source Wizard

Connection

Transport type: Publish to mqtt.eagle.io

Topic: io/eagle/source/tail-chill-nic

Authentication: CONNECT Message

Username: tail-chill-nic

Password: password_here

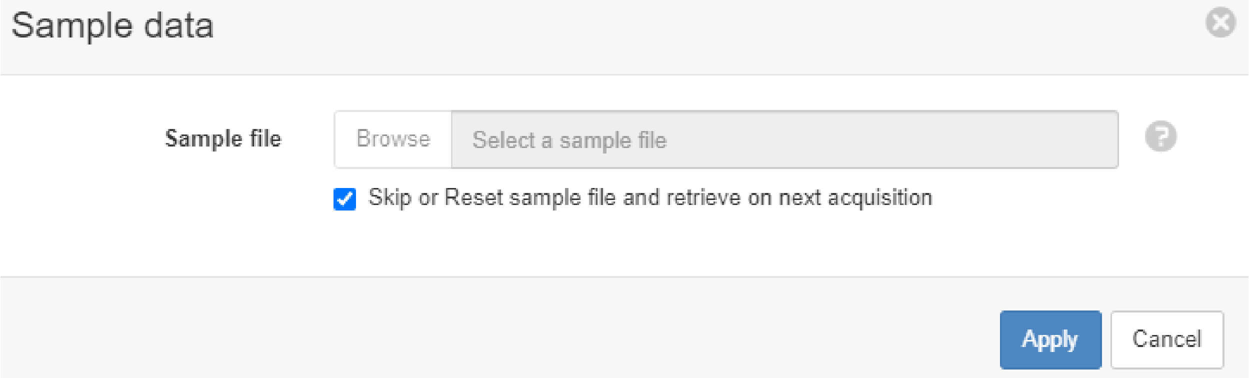
IP whitelist: eg. 192.168.7.52/32

Collection

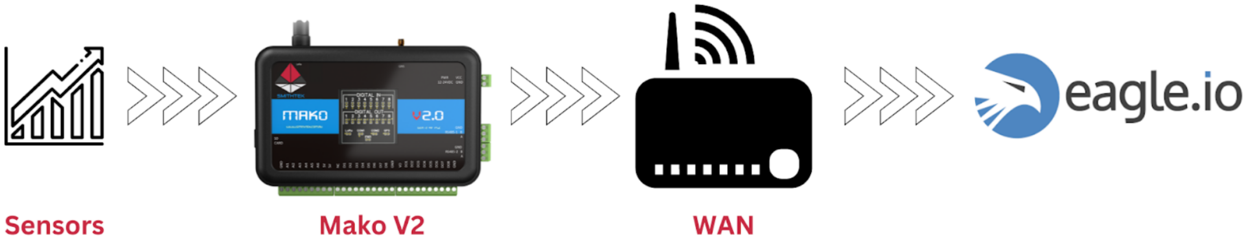
☐ Assign as Location coordinate source

1 Source type
2 Configure source
3 Add files
4 Configure parameters
...
Add
Remove
Previous
Next
Cancel

3. In the next step, check the box to *Skip or Reset sample file and retrieve on next acquisition* and click Apply.


Sample data
Sample file
Browse
Select a sample file
☑ Skip or Reset sample file and retrieve on next acquisition
Apply
Cancel

4. Complete the Data Source wizard by clicking *Next*, *Next* and *Finish*.
5. Final configuration requires the device to send some sample data. The device can be configured in two different ways; to send data directly to eagle.io (via a 4G dongle or WAN network), or using the PassPort Gateway over LoRa.
6. Direct connection via a 4G dongle or WAN network:


Sensors
MAKO
V2.0
Mako V2
WAN
eagle.io

6.1. Download the V-net software (https://26a6bc40-3386-4481-b01e-f59bb39d6cae.filesusr.com/archives/6ba956_63dc769f5a89455cbcc8b63a0d518781.zip?dn=V-Net35.zip) and install on your computer (Windows only).

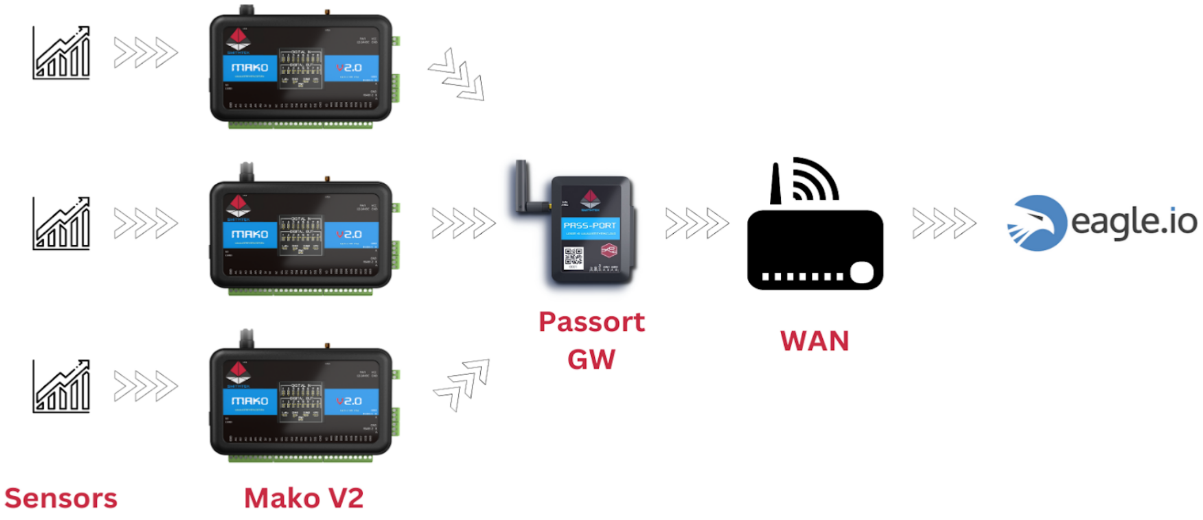
6.2. Download the eagle.io template from Smithtek technical support.

6.3. Over Wifi, connect your Mako V2 to a local USB 4G dongle or a WAN network. Enter the Wifi SSID and Pass credentials.

6.4. Connect your physical sensors to the Mako V2 and within V-net software wire these sensors reading to the JTS form component.

6.5. Upload the program.

7. Connection using the PassPort Gateway over LoRa:



7.1. The PassPort Gateway can communicate with multiple Makos over long distances. This kind of system is very useful in locations with no mobile signal but has some form of fixed WAN network, like Starlink or NBN Sky Muster. It can also be used to minimize the need for multiple mobile SIMs, keeping your communications costs down.

7.2. Configure the Mako to send and receive data over its LoRa antenna within the V-net configuration software. Connect wires between single or arrays of sensors. Data formats can be binary packets, raw JSON data or some custom protocol.

7.3. In the LoRa properties, make sure your LoRa RF settings are the same on each device.

7.4. Start the PassPort Gateway and follow the connection guidelines to access the NodeRED editor and secure your instance.

7.5. Within the NodeRED editor, select the dedicated eagle.io nodes or the MQTT nodes

7.6. To configure the Smithtek eagle.io nodes follow these instructions (https://flows.nodered.org/node/smithtek-node-red-eagleio)

8. Once sample data has been sent, final configuration of data series can be performed by right-clicking the Data Source in the eagle.io Workspace tree, and choosing *Properties*. Then click the *Series* tab, where data series' can be associated with Parameters.

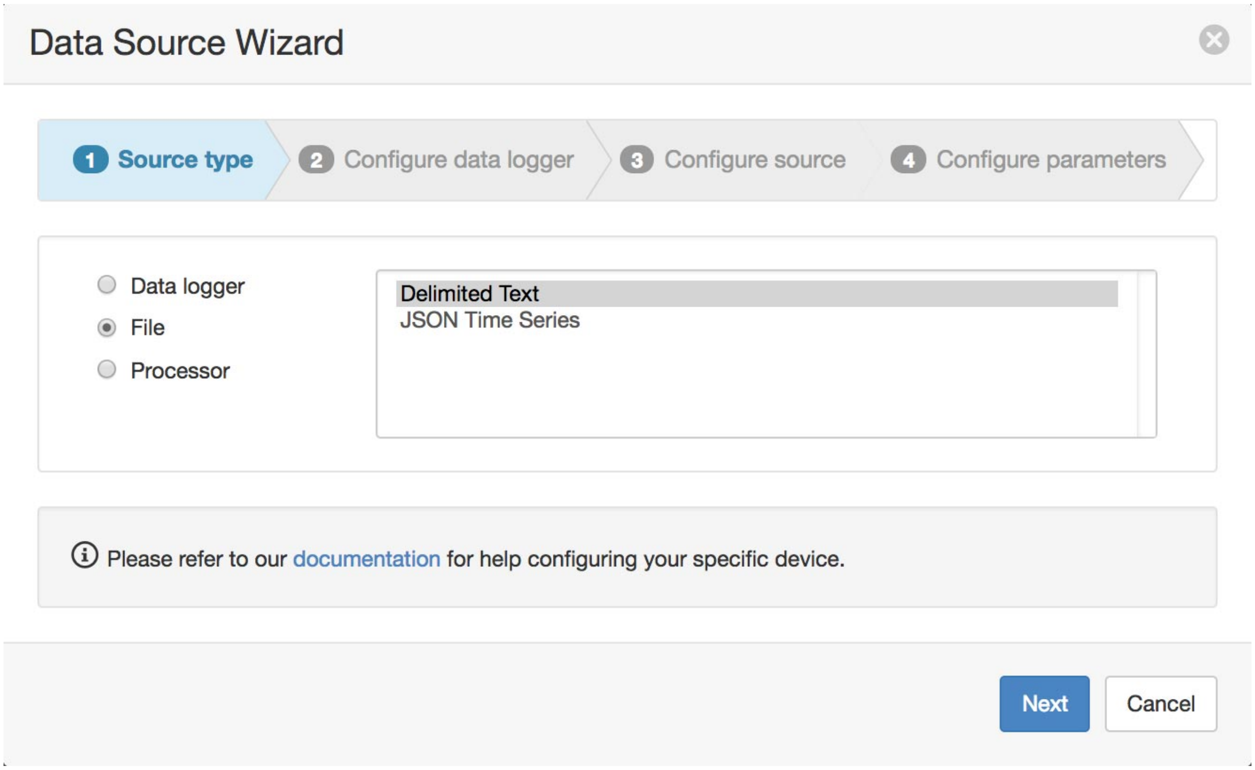
2.14.17 Sigfox

The Sigfox (https://www.sigfox.com/) **network** can be configured to send data to eagle.io (https://eagle.io) in CSV format embedded in an email in a few easy steps.

sigfox

Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.



Data Source Wizard

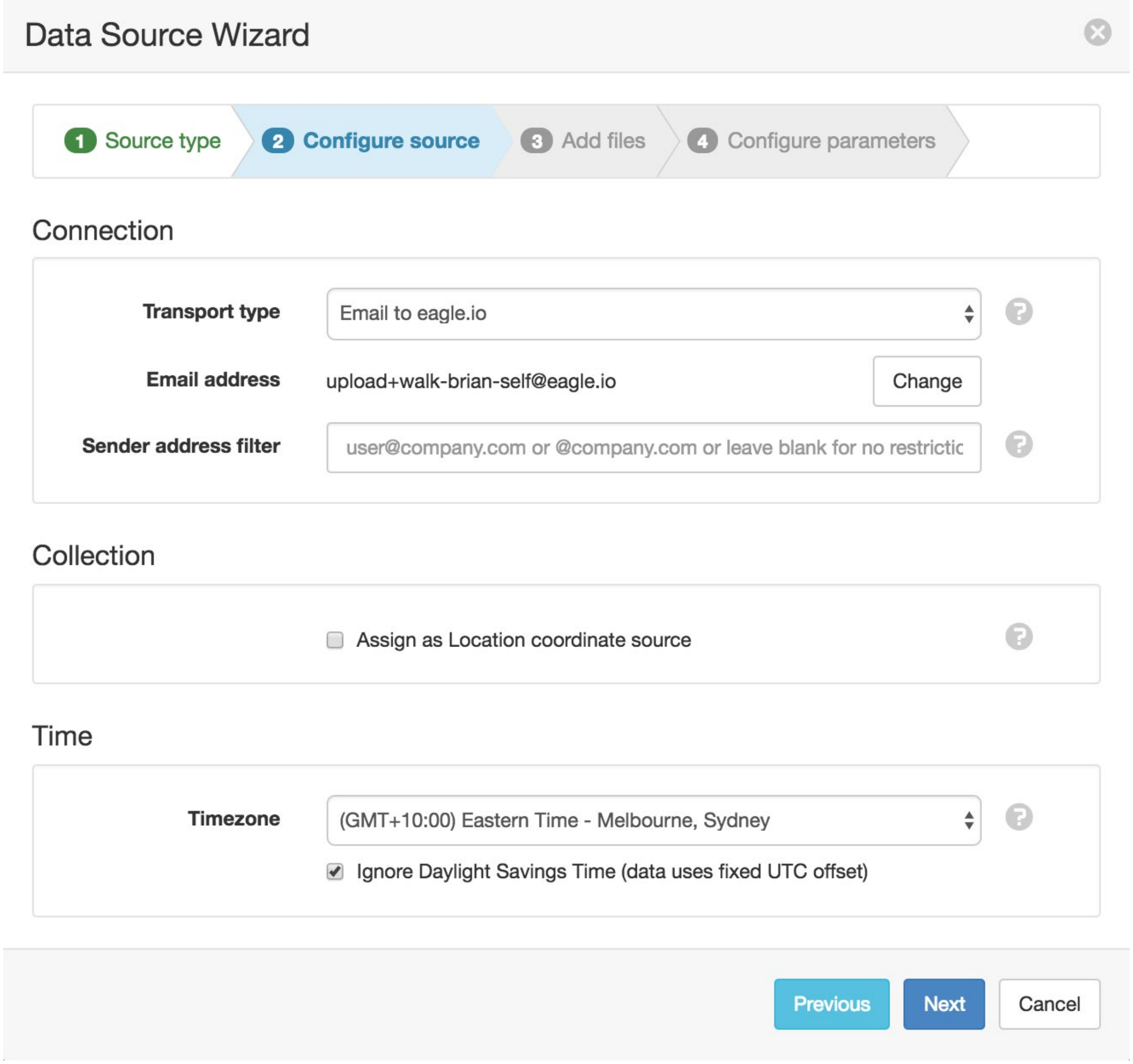
1 Source type
2 Configure data logger
3 Configure source
4 Configure parameters

○ Data logger
● File
○ Processor

Delimited Text
JSON Time Series

Please refer to our documentation for help configuring your specific device.

2. Select *Email to eagle.io* as the transport type. A unique *email address* will be automatically generated per Data Source. Click Next to continue.


Data Source Wizard

1 Source type
2 Configure source
3 Add files
4 Configure parameters

Connection

Transport type: Email to eagle.io

Email address: upload+walk-brian-self@eagle.io

Change

Sender address filter: user@company.com or @company.com or leave blank for no restrictic

Collection

☐ Assign as Location coordinate source

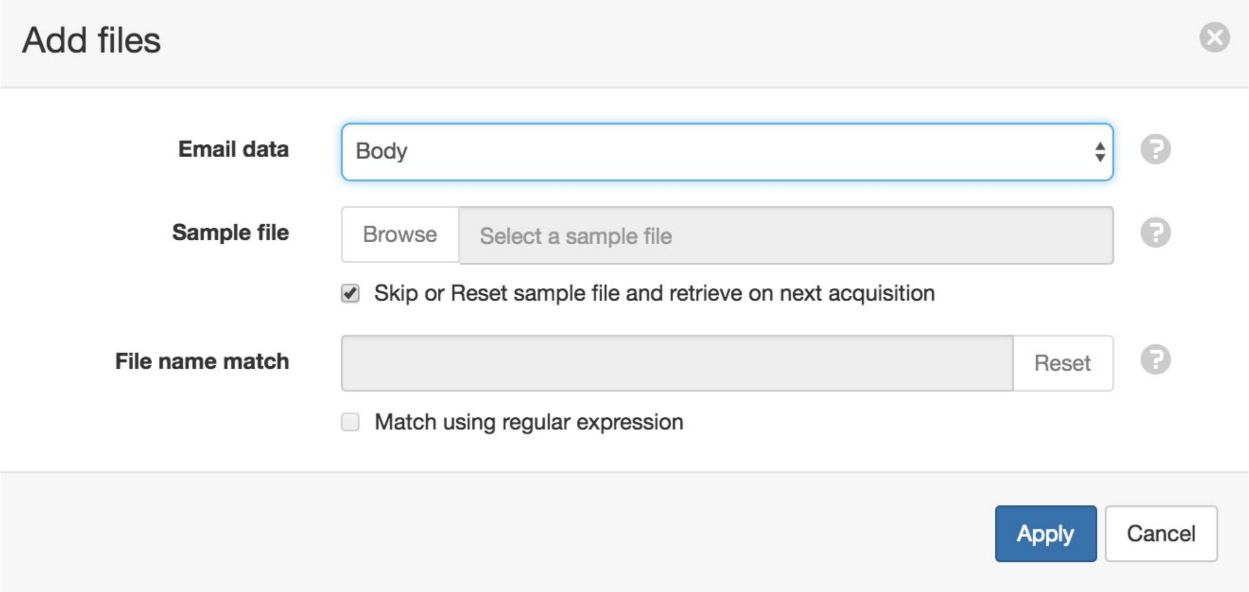
Time

Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

Previous
Next
Cancel

3. Select *Body* for the *Email data* and click the *Skip or Reset sample file and retrieve on next acquisition* checkbox.



Add files

Email data: Body

Sample file: Browse | Select a sample file

☑ Skip or Reset sample file and retrieve on next acquisition

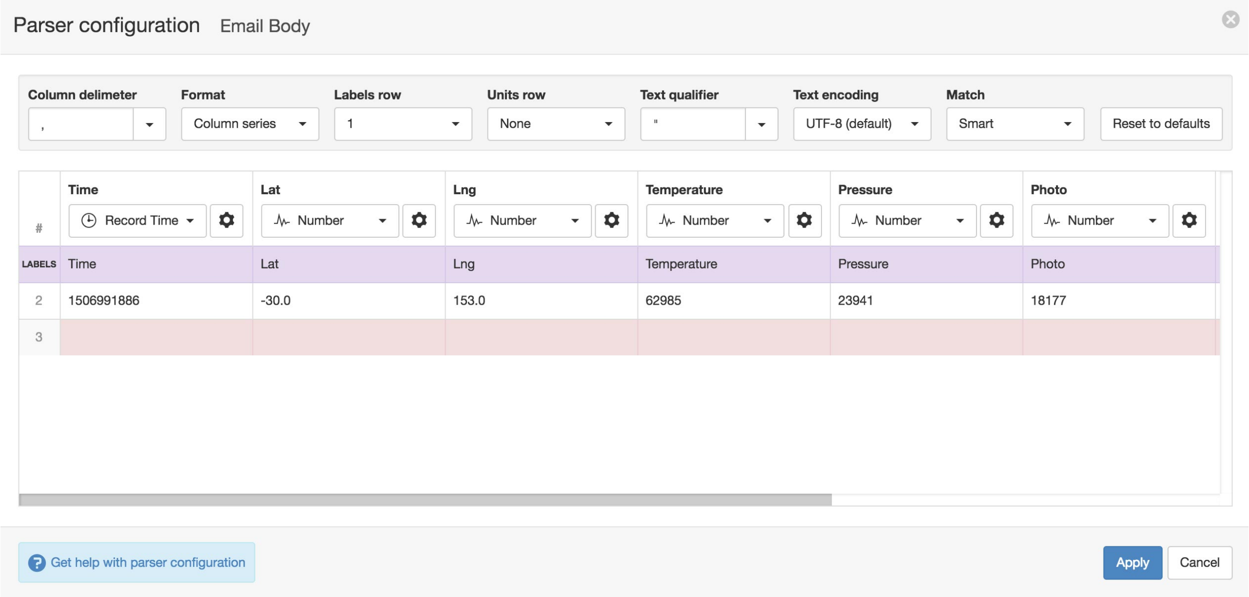
File name match: Reset

☐ Match using regular expression

Note: If you do not have a sample available, click the *Skip* checkbox and click finish on the next screen. A sample will be saved automatically on the initial upload from the data logger and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

---

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.



Parser configuration   Email Body

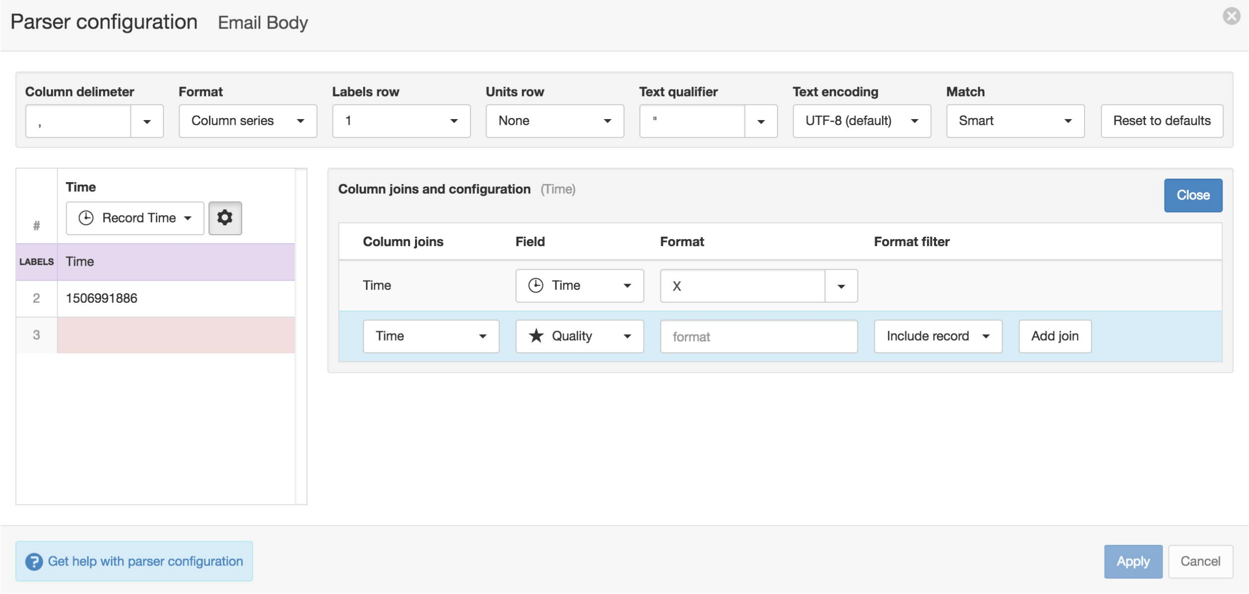
Column delimeter	Format	Labels row	Units row	Text qualifier	Text encoding	Match
,	Column series	1	None	"	UTF-8 (default)	Smart

#	Time	Lat	Lng	Temperature	Pressure	Photo
	Record Time	Number	Number	Number	Number	Number
LABELS	Time	Lat	Lng	Temperature	Pressure	Photo
2	1506991886	-30.0	153.0	62985	23941	18177
3						

If the data embedded in the email contains a header row, set the *Labels row* control to the corresponding row number (1 by default) which will assign default labels for parameter creation.

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*.

You will need to use the drop-down menu above the columns to assign the *Record Time* data type to the column containing the record timestamp. Click the configure button to change the *Format* field to use the *time format* (page 583) **X** (Unix Timestamp).



Parser configuration Email Body

Column delimiter	Format	Labels row	Units row	Text qualifier	Text encoding	Match
,	Column series	1	None	"	UTF-8 (default)	Smart

#	Time Record Time
LABELS	Time
2	1506991886
3	

Column joins and configuration (Time)

Column joins	Field	Format	Format filter
Time	Time	X	
Time	Quality	format	Include record

Click Apply and Next.

Note: You can reconfigure the parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

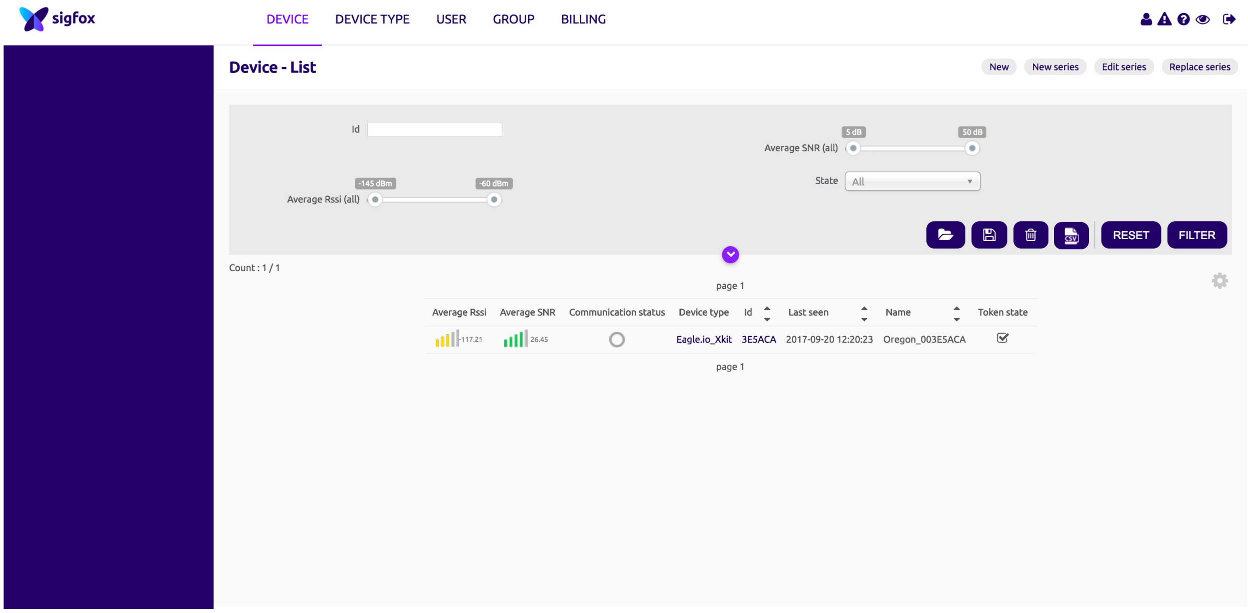
---

5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.

Device settings

Configure the Sigfox Network to send data to eagle.io:

1. Login into your account and ensure your device is activated and registered (http://makers.sigfox.com/getting-started/#register) with the Sigfox network.


sigfox
DEVICE
DEVICE TYPE
USER
GROUP
BILLING
New
New series
Edit series
Replace series
RESET
FILTER

Device - List

Id

Average SNR (all) 5 dB 50 dB

State All

Average Rssi (all) -145 dBm -60 dBm

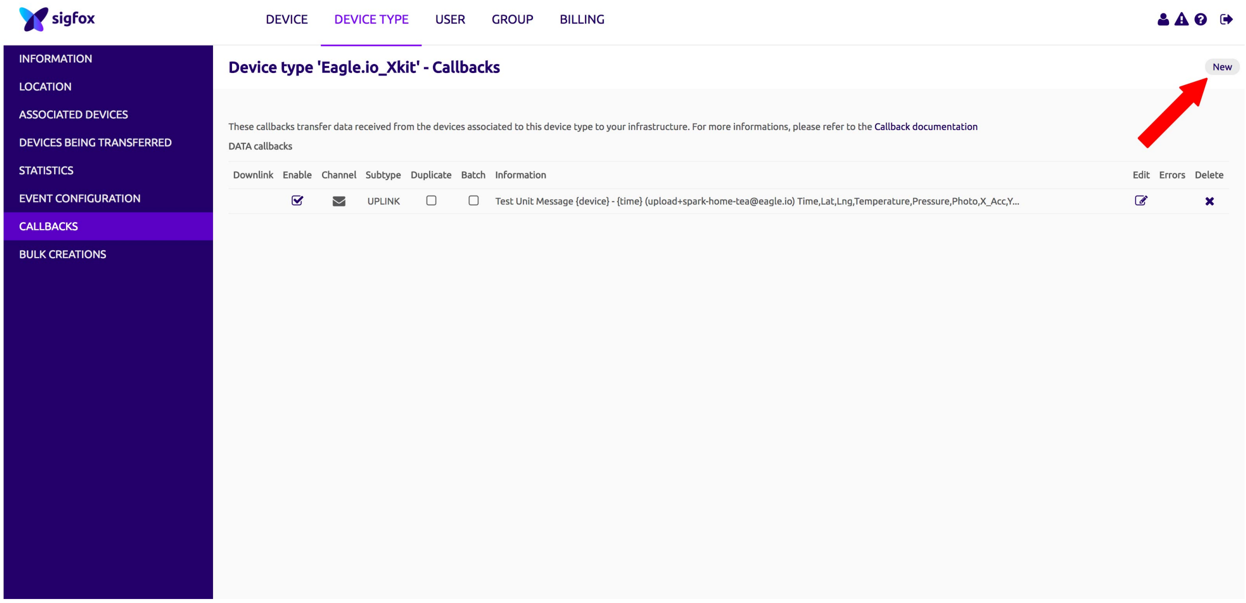
Count : 1 / 1

page 1

Average Rssi	Average SNR	Communication status	Device type	Id	Last seen	Name	Token state
-117.21	26.45	○	Eagle.io_Xkit	3E5ACA	2017-09-20 12:20:23	Oregon_003E5ACA	☑

page 1

2. Select *Device Type* from the top navigation bar and select *Callbacks* from the menu on the left. Click the *New* button in the top-right of the Callbacks screen.


sigfox
DEVICE
DEVICE TYPE
USER
GROUP
BILLING
INFORMATION
LOCATION
ASSOCIATED DEVICES
DEVICES BEING TRANSFERRED
STATISTICS
EVENT CONFIGURATION
CALLBACKS
BULK CREATIONS
New

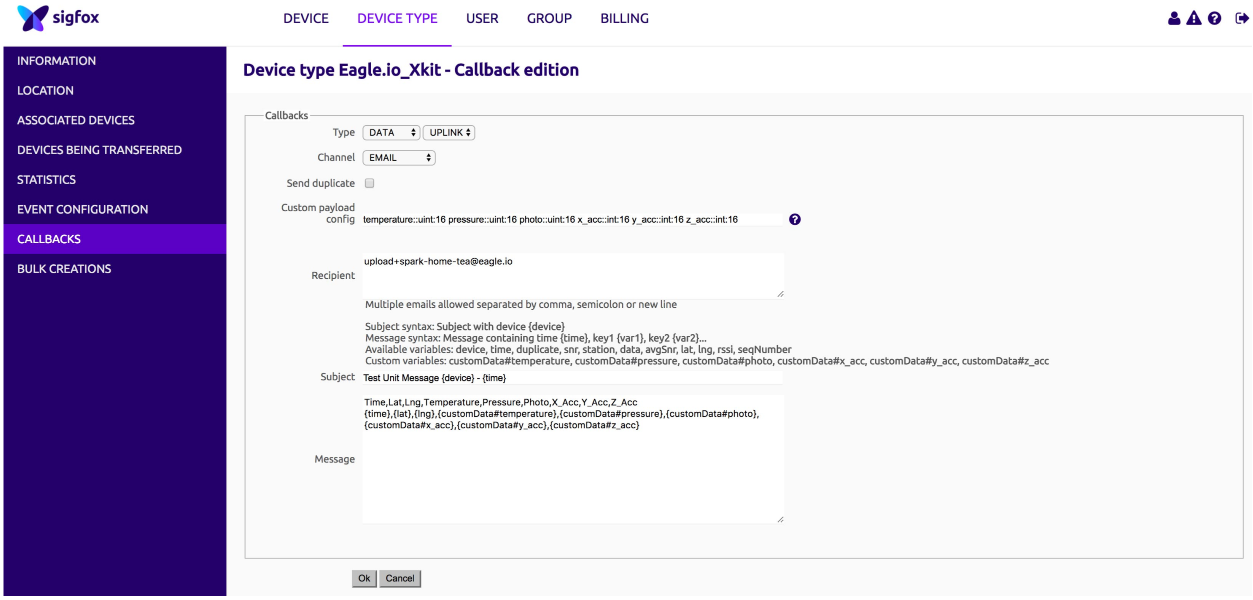
Device type 'Eagle.io_Xkit' - Callbacks

These callbacks transfer data received from the devices associated to this device type to your infrastructure. For more informations, please refer to the Callback documentation

DATA callbacks

Downlink	Enable	Channel	Subtype	Duplicate	Batch	Information	Edit	Errors	Delete
	☑	✉	UPLINK	☐	☐	Test Unit Message {device} - {time} (upload+spark-home-tea@eagle.io) Time,Lat,Lng,Temperature,Pressure,Photo,X_Acc,Y...	✎		✖

3. Create the Callback.



Device type Eagle.io_Xkit - Callback edition

Callbacks

Type: DATA, UPLINK

Channel: EMAIL

Send duplicate ☐

Custom payload config: temperature::uint:16 pressure::uint:16 photo::uint:16 x_acc::int:16 y_acc::int:16 z_acc::int:16

Recipient: upload+spark-home-tea@eagle.io

Multiple emails allowed separated by comma, semicolon or new line

Subject syntax: Subject with device {device}
Message syntax: Message containing time {time}, key1 {var1}, key2 {var2}...
Available variables: device, time, duplicate, snr, station, data, avgSnr, lat, lng, rssi, seqNumber
Custom variables: customData#temperature, customData#pressure, customData#photo, customData#x_acc, customData#y_acc, customData#z_acc

Subject: Test Unit Message {device} - {time}

Message:

```
Time,Lat,Lng,Temperature,Pressure,Photo,X_Acc,Y_Acc,Z_Acc
{time},{lat},{lng},{customData#temperature},{customData#pressure},{customData#photo},
{customData#x_acc},{customData#y_acc},{customData#z_acc}
```

The following settings should be assigned:

Type DATA

Channel Email

Custom payload config You will need to set your own custom message type to decode your sigfox payload data into individual sensor values. Refer to Sigfox Callbacks (http://makers.sigfox.com/getting-started/#callbacks) for help. Example:

```
temperature::uint:16 pressure:uint:16
```

Recipient Use the unique *Email address* generated during Data Source creation. eg. *upload+walk-brian-self@eagle.io*

Subject Any text can be used.

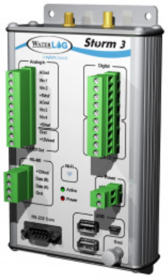
Message Use the Sigfox built-in and custom fields (http://makers.sigfox.com/getting-started/#callbacks) for CSV output optionally including a header labels row. In the example below *time*, *lat* & *lng* are build-in fields. *temperature* and *pressure* are custom fields defined in the *Custom payload config*

```
Time,Lat,Lng,Temperature,Pressure
{time},{lat},{lng},{customData#temperature},{customData#pressure}
```

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

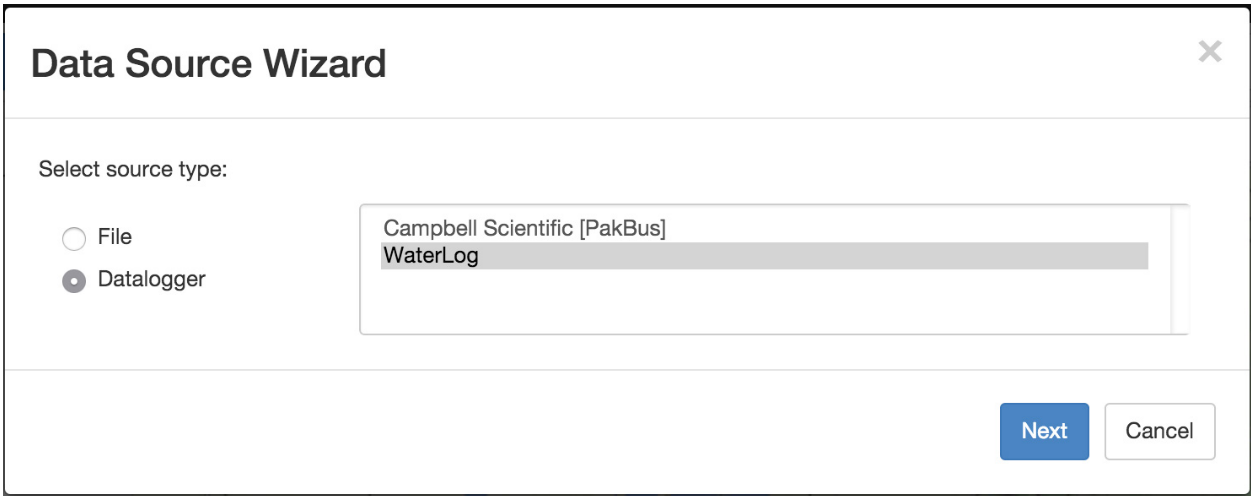
2.14.18 WaterLog

The WaterLog (http://www.waterlog.com/) **Storm 3** series data logger can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.



Source configuration

1. Create a *Data Source* (page 134) and select *Data logger* as the Source Type. Choose *WaterLog* from the list and click Next.



Data Source Wizard

Select source type:

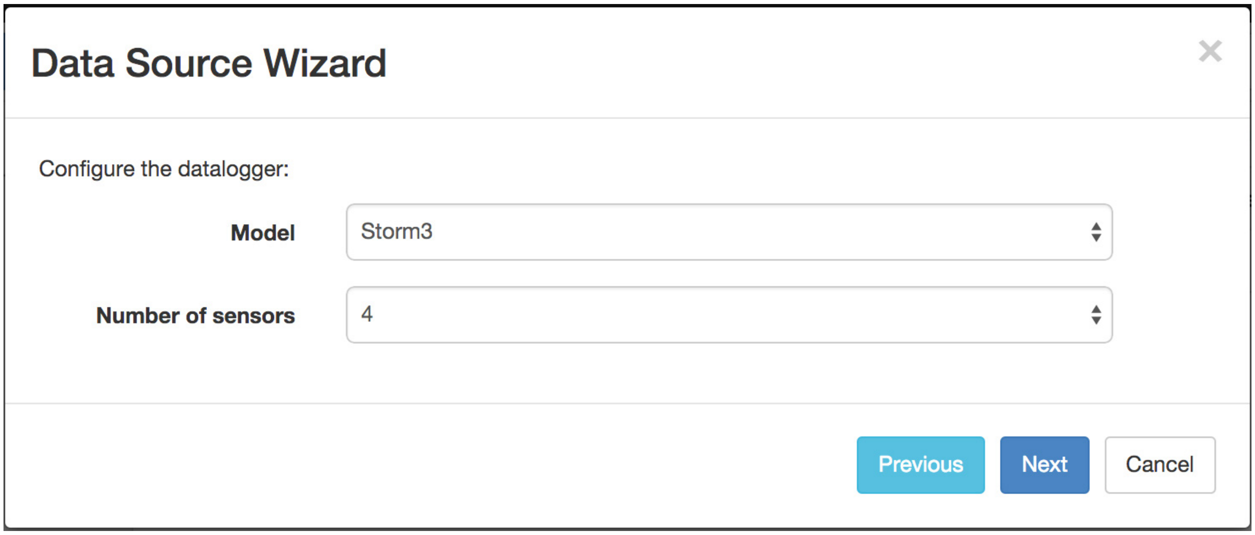
○ File

● Datalogger

Campbell Scientific [PakBus]

WaterLog

2. Select the data logger *Model* and specify the number of sensors connected (this can be changed later). Click Next.

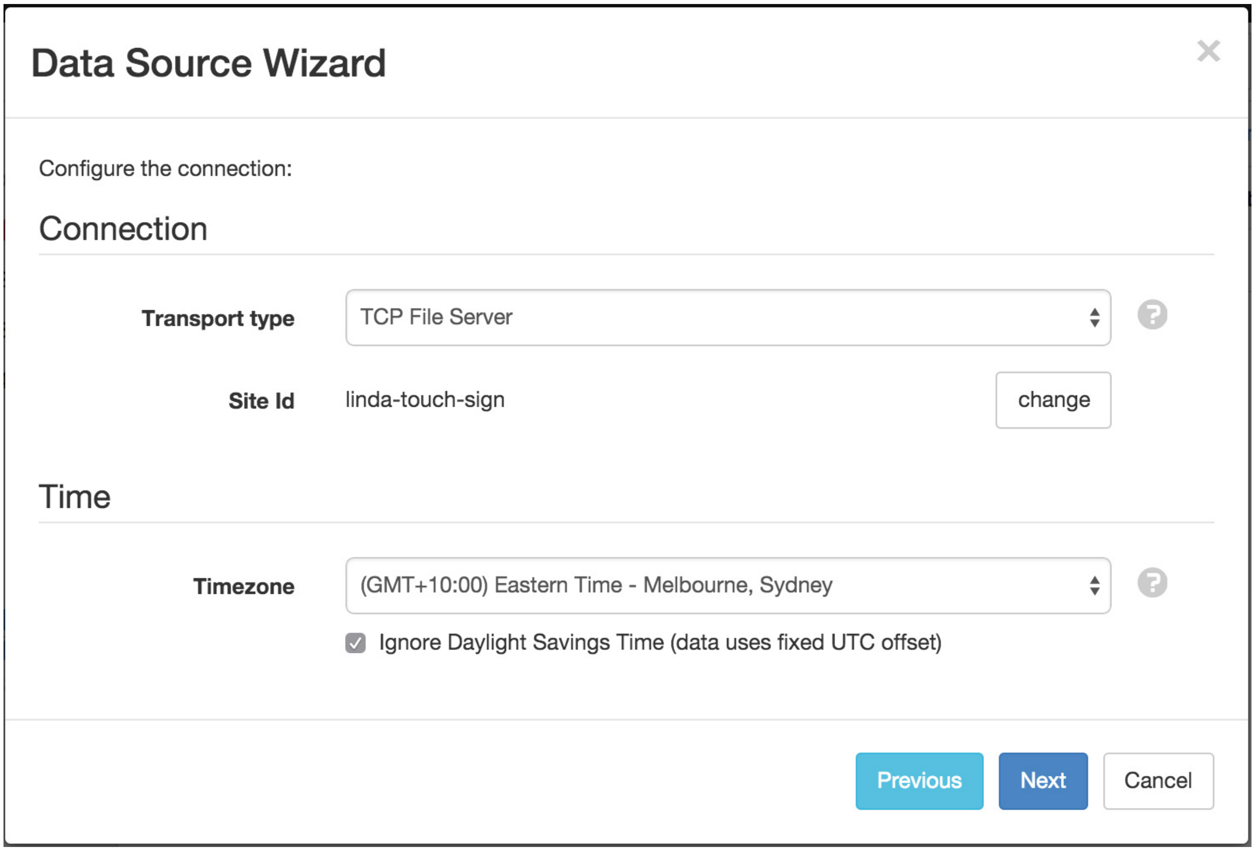

Data Source Wizard
×
Previous
Next
Cancel

Configure the datalogger:

Model Storm3

Number of sensors 4

3. Select *TCP Server* as the transport type and a *Site Id* will be automatically generated. Select the timezone of the logger's clock and click Next.


Data Source Wizard
×
change
Previous
Next
Cancel

Configure the connection:

Connection

Transport type TCP File Server

Site Id linda-touch-sign

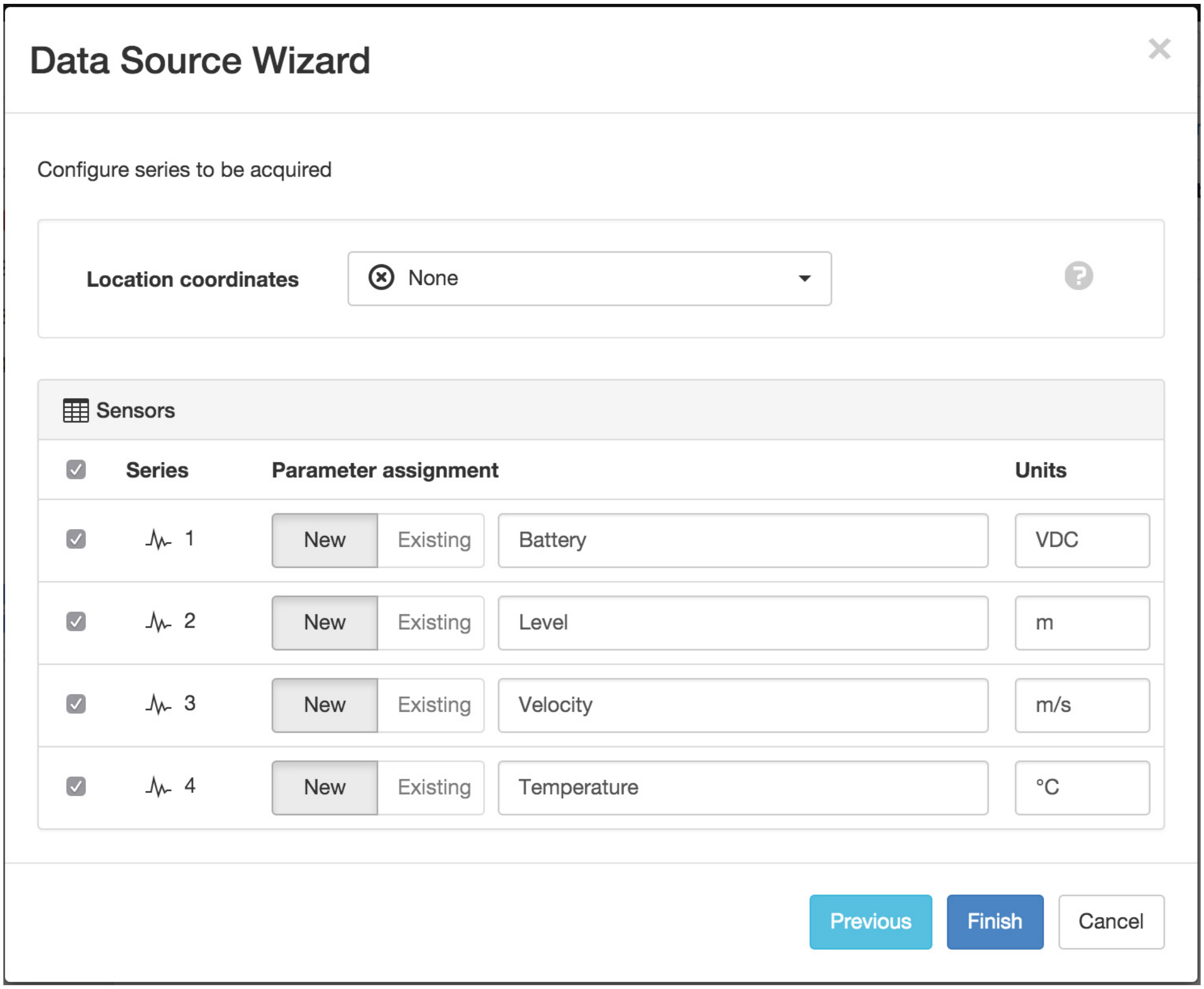
Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

4. Specify the parameter names for each connected sensor and optionally assign units. Click Finish to

complete the setup.



Data Source Wizard

Configure series to be acquired

Location coordinates: None

Sensors

☑	Series	Parameter assignment		Units
☑	1	New / Existing	Battery	VDC
☑	2	New / Existing	Level	m
☑	3	New / Existing	Velocity	m/s
☑	4	New / Existing	Temperature	°C

Note: You can reconfigure the number of sensors, ordering of sensors and Site Id from the *Data Source* (page 134) properties dialog after creation.

Device settings

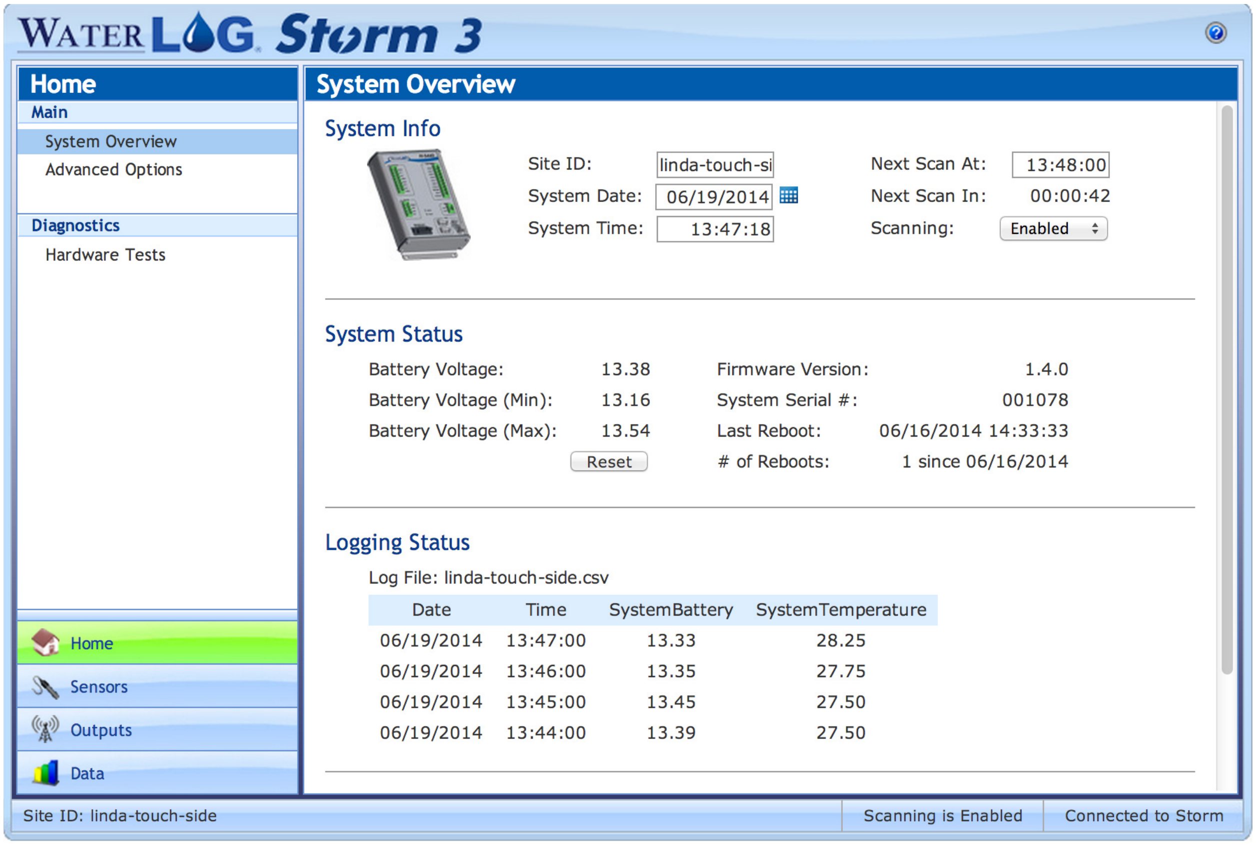
Use the WaterLog Storm3 configuration software to setup your Storm3 data logger for communication with eagle.io.

Overview

The *System Overview* section accessible from the *Home* menu requires the following settings to be applied:

Site ID Use the unique *Site Id* identification code generated during Data Source creation.

System Date/Time Ensure the correct local time is set in the device. You should set the timezone of the Data Source to match your local timezone.



System Overview

System Info

Site ID: linda-touch-si
System Date: 06/19/2014
System Time: 13:47:18
Next Scan At: 13:48:00
Next Scan In: 00:00:42
Scanning: Enabled

System Status

Battery Voltage: 13.38
Battery Voltage (Min): 13.16
Battery Voltage (Max): 13.54
Firmware Version: 1.4.0
System Serial #: 001078
Last Reboot: 06/16/2014 14:33:33
# of Reboots: 1 since 06/16/2014

Logging Status

Log File: linda-touch-side.csv

Date	Time	SystemBattery	SystemTemperature
06/19/2014	13:47:00	13.33	28.25
06/19/2014	13:46:00	13.35	27.75
06/19/2014	13:45:00	13.45	27.50
06/19/2014	13:44:00	13.39	27.50

Site ID: linda-touch-side | Scanning is Enabled | Connected to Storm

Storm Central Setup

The *Storm Central Setup* section accessible from the *Outputs* menu requires the following settings to be applied:

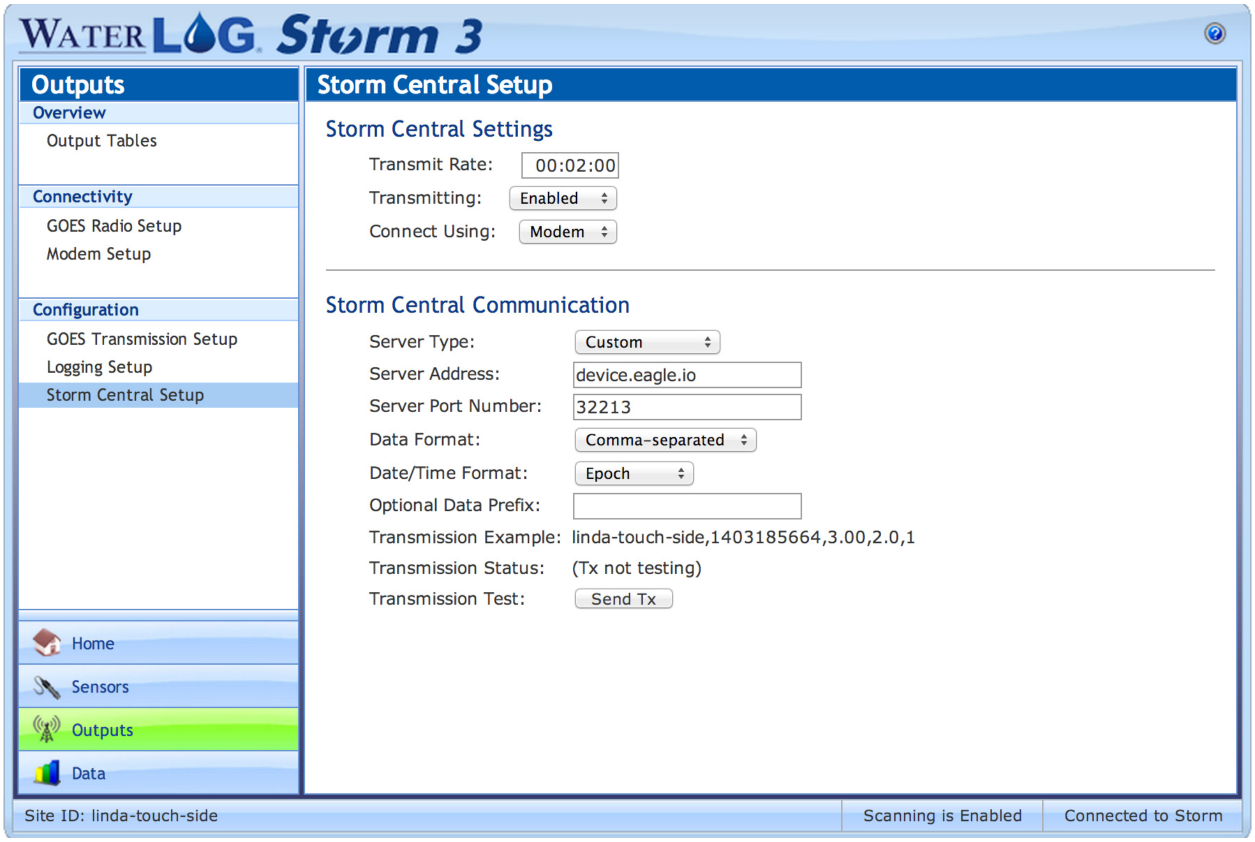
Server Type Custom

Server Address device.eagle.io

Server Port Number 32213

Data Format Comma-separated

Date/Time Format Epoch


WATERLOG Storm 3
Outputs
Overview
Output Tables
Connectivity
GOES Radio Setup
Modem Setup
Configuration
GOES Transmission Setup
Logging Setup
Storm Central Setup
Home
Sensors
Outputs
Data
Send Tx

Storm Central Setup

Storm Central Settings

Transmit Rate: 00:02:00
Transmitting: Enabled
Connect Using: Modem

Storm Central Communication

Server Type: Custom
Server Address: device.eagle.io
Server Port Number: 32213
Data Format: Comma-separated
Date/Time Format: Epoch
Optional Data Prefix:
Transmission Example: linda-touch-side,1403185664,3.00,2.0,1
Transmission Status: (Tx not testing)
Transmission Test: Send Tx

Site ID: linda-touch-side | Scanning is Enabled | Connected to Storm

---

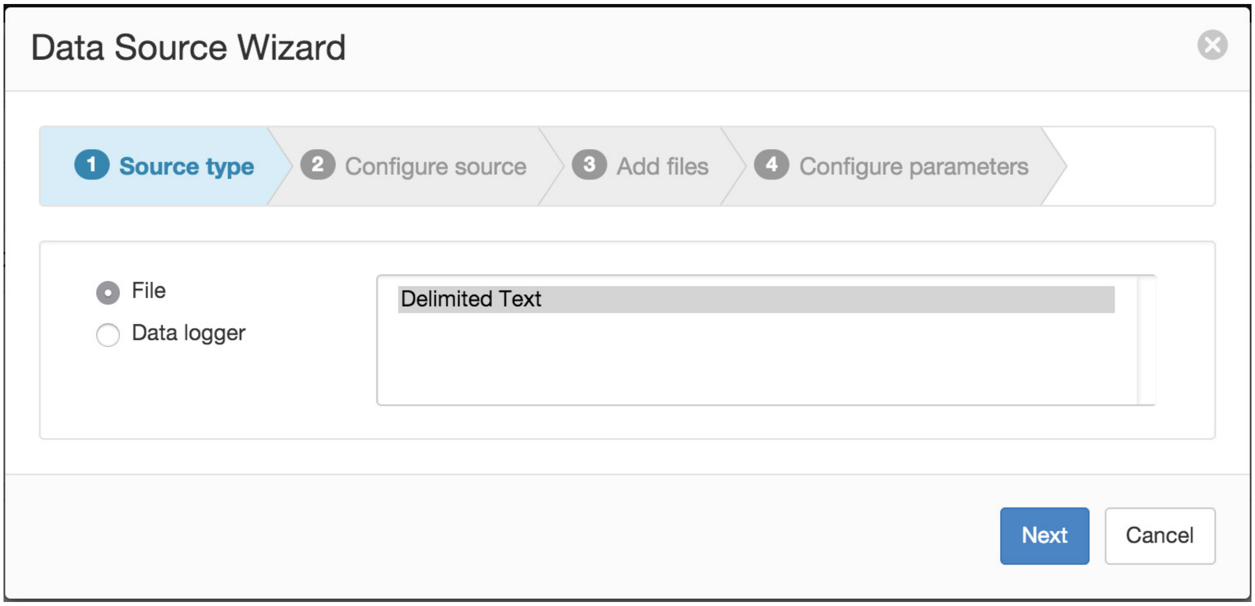
Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

2.14.19 YDOC

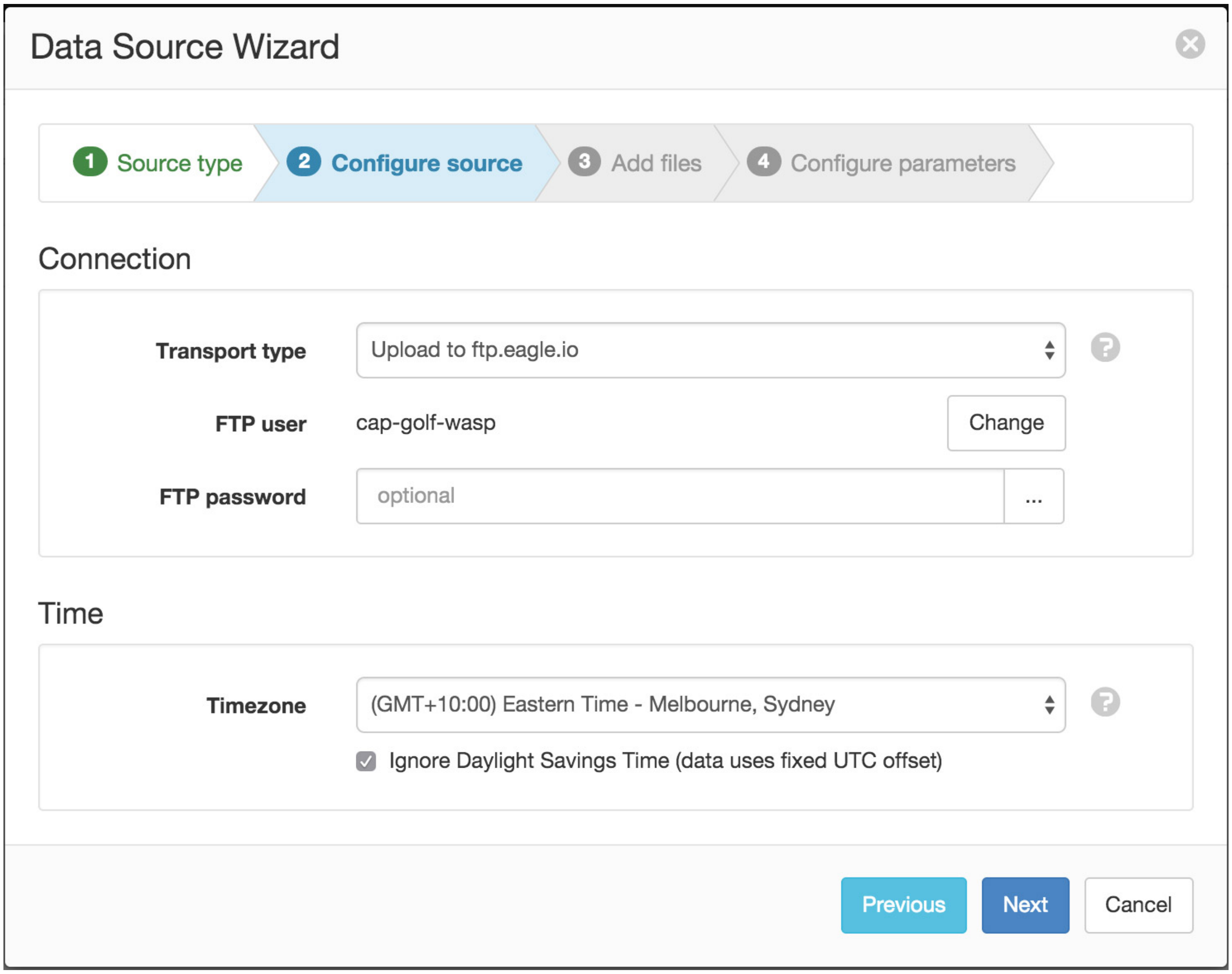
The YDOC (http://www.your-data-our-care.com/) **ML-315** range of data loggers can be configured to send data to eagle.io (https://eagle.io) in a few easy steps.

Source configuration

1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
● File
○ Data logger
Delimited Text
Next
Cancel

2. Select *Upload to ftp.eagle.io* as the transport type. A unique *Ftp user* account will be automatically generated per Data Source. You can optionally specify a password to be used by the logger for additional security. Select the *Timezone* you have configured in the YDOC logger and leave the *Ignore Daylight Savings Time* option checked (unless you have enabled the DST adjustment option in the logger). Click Next to continue.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Previous
Next
Cancel
Change
...

Connection

Transport type Upload to ftp.eagle.io

FTP user cap-golf-wasp

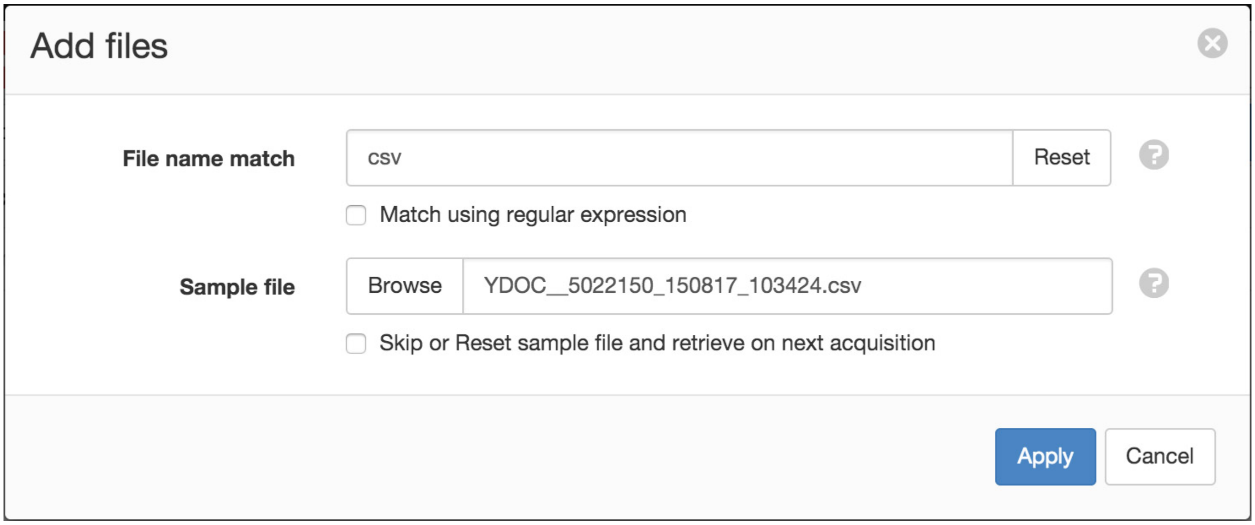
FTP password optional

Time

Timezone (GMT+10:00) Eastern Time - Melbourne, Sydney

☑ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Specify *csv* as the *File name match*. This will match all incoming files for this Source containing 'csv' in the filename. To continue the setup you will need a sample copy of the logger's output data file(s).



Add files

File name match csv Reset

☐ Match using regular expression

Sample file Browse YDOC__5022150_150817_103424.csv

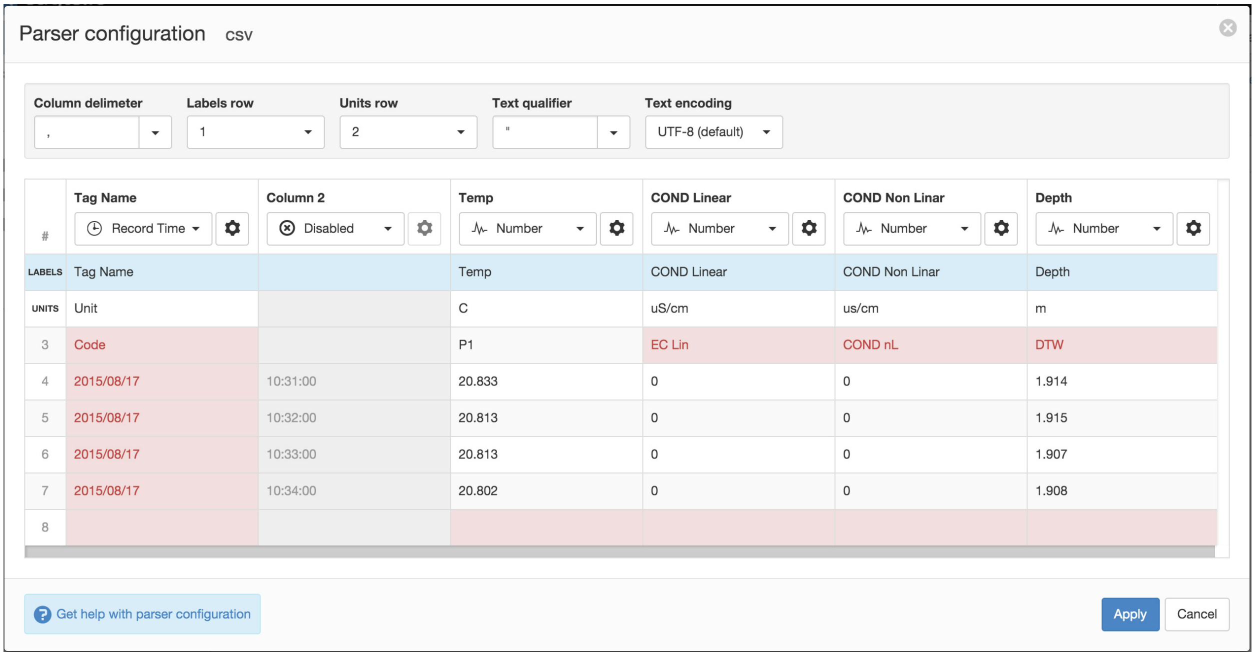
☐ Skip or Reset sample file and retrieve on next acquisition

Apply Cancel

Note: If you do not have a sample available, click the *Skip* checkbox and click finish on the next screen. A sample will be saved automatically on the initial upload from the data logger and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

---

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details.



Parser configuration csv

Column delimeter	Labels row	Units row	Text qualifier	Text encoding
,	1	2	"	UTF-8 (default)

#	Tag Name	Column 2	Temp	COND Linear	COND Non Linar	Depth
	Record Time	Disabled	Number	Number	Number	Number
LABELS	Tag Name		Temp	COND Linear	COND Non Linar	Depth
UNITS	Unit		C	uS/cm	us/cm	m
3	Code		P1	EC Lin	COND nL	DTW
4	2015/08/17	10:31:00	20.833	0	0	1.914
5	2015/08/17	10:32:00	20.813	0	0	1.915
6	2015/08/17	10:33:00	20.813	0	0	1.907
7	2015/08/17	10:34:00	20.802	0	0	1.908
8						

Get help with parser configuration

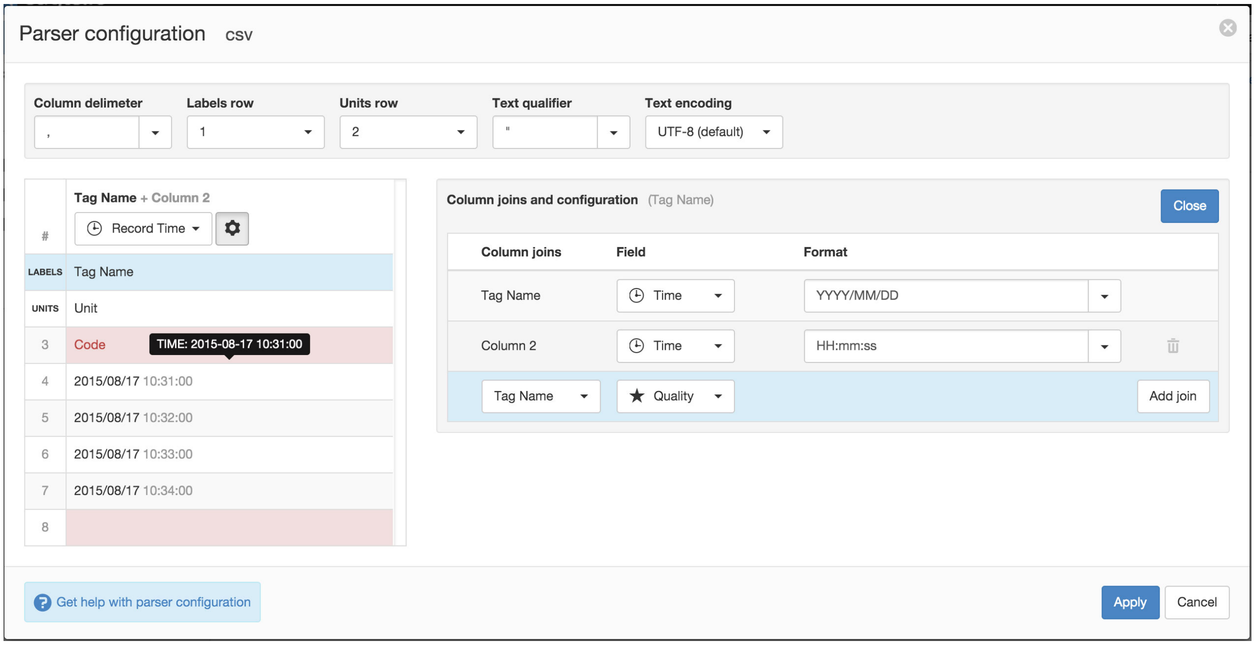
Apply Cancel

If the file contains header rows, set the *Labels row* control to the corresponding row number (1 by default) which will assign default labels for parameter creation. You can also specify the *Units row* if it is available (2 by default).

Ensure the data in each column matches the expected column data type and format. Validation errors are shown in red. Any columns not required for collection can optionally be *Disabled*.

You will need to use the drop-down menu above the columns to assign the *Record Time* data type to the first column containing part of the record timestamp. Click the configure button to change the *Format* field to use the *time format* (page 583) **YYYY/MM/DD**.

The record timestamp spans multiple columns. Add any additional columns containing part of the timestamp and specify the format. By default you will need to add 'Column 2' to the list of *Column joins* and change the *Format* field to use the *time format* (page 583) **HH:mm:ss**. Click Apply and Next.



Column delimeter	Labels row	Units row	Text qualifier	Text encoding
,	1	2	"	UTF-8 (default)

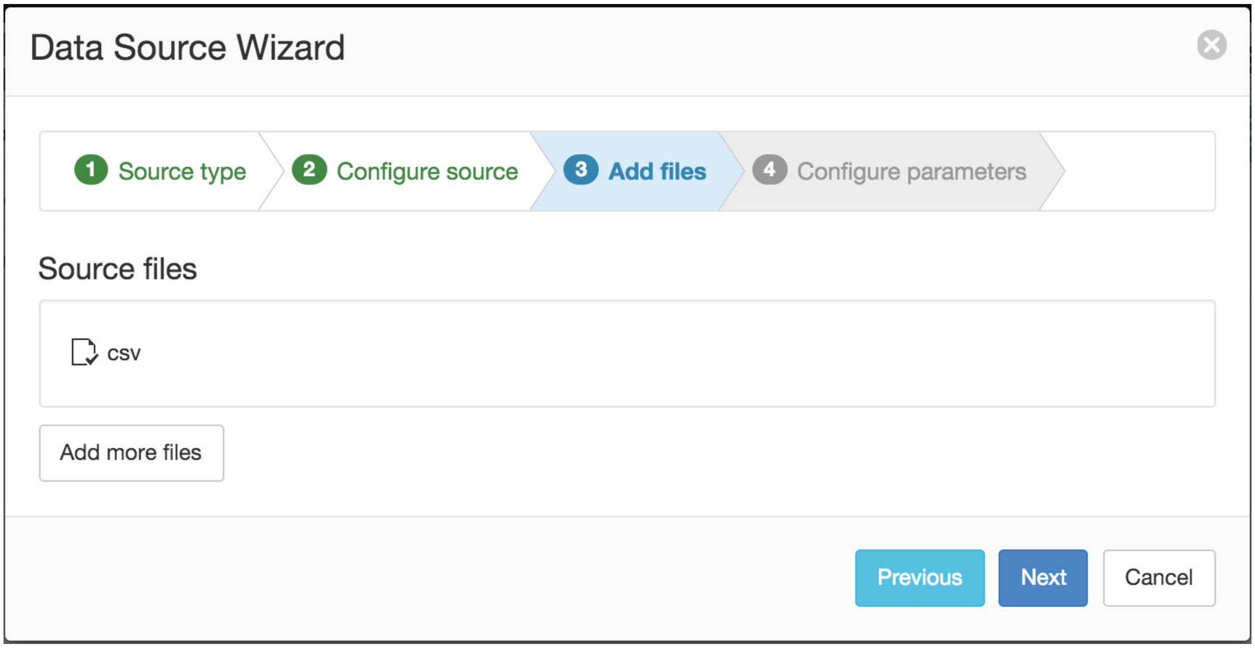
#	Tag Name + Column 2 Record Time
LABELS	Tag Name
UNITS	Unit
3	Code
4	2015/08/17 10:31:00
5	2015/08/17 10:32:00
6	2015/08/17 10:33:00
7	2015/08/17 10:34:00
8	

TIME: 2015-08-17 10:31:00

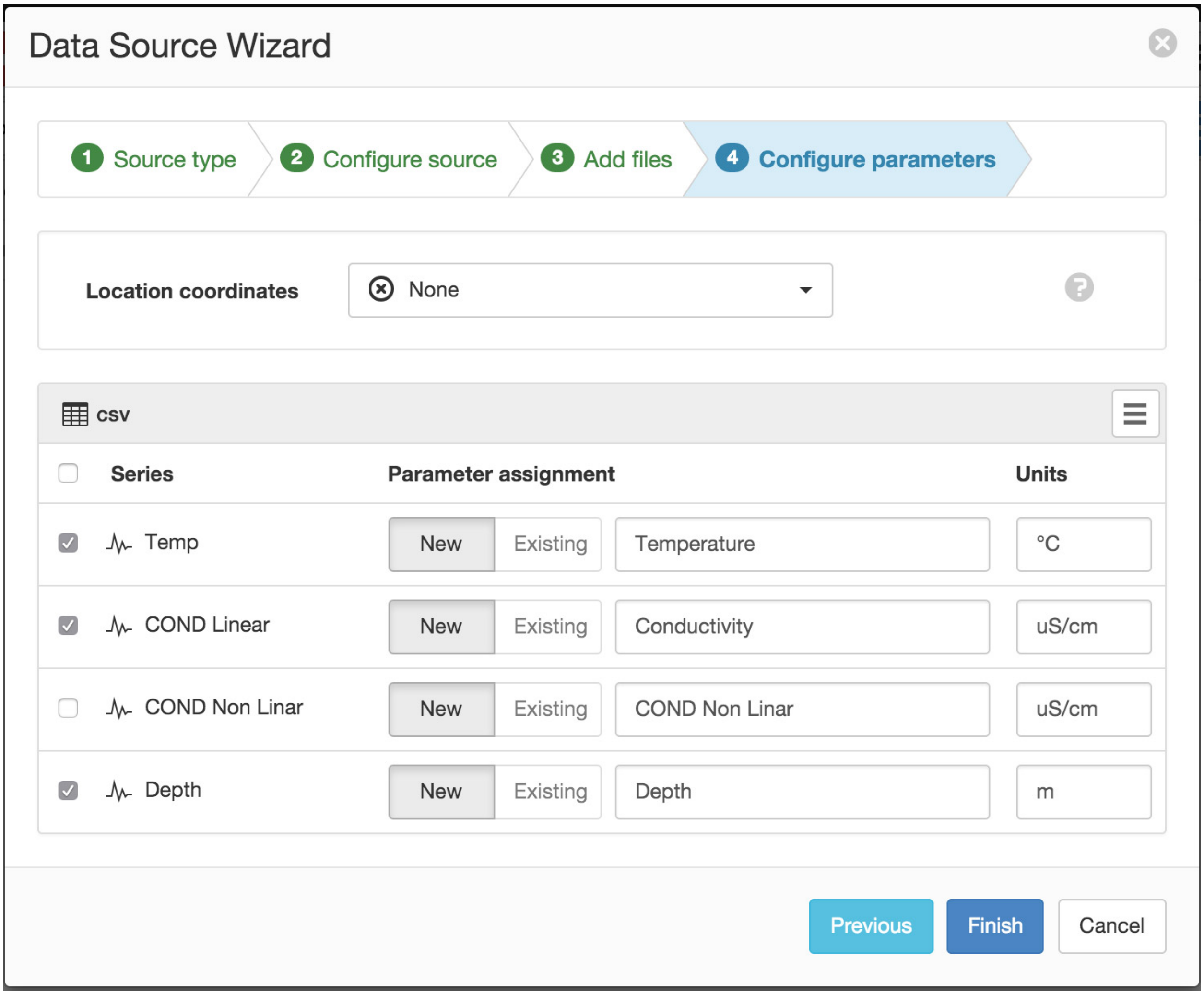
Column joins and configuration (Tag Name)

Column joins	Field	Format
Tag Name	Time	YYYY/MM/DD
Column 2	Time	HH:mm:ss
Tag Name	Quality	

5. Click next to *Configure parameters*.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Source files
csv
Add more files
Previous
Next
Cancel

6. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
csv
Previous
Finish
Cancel

Location coordinates None

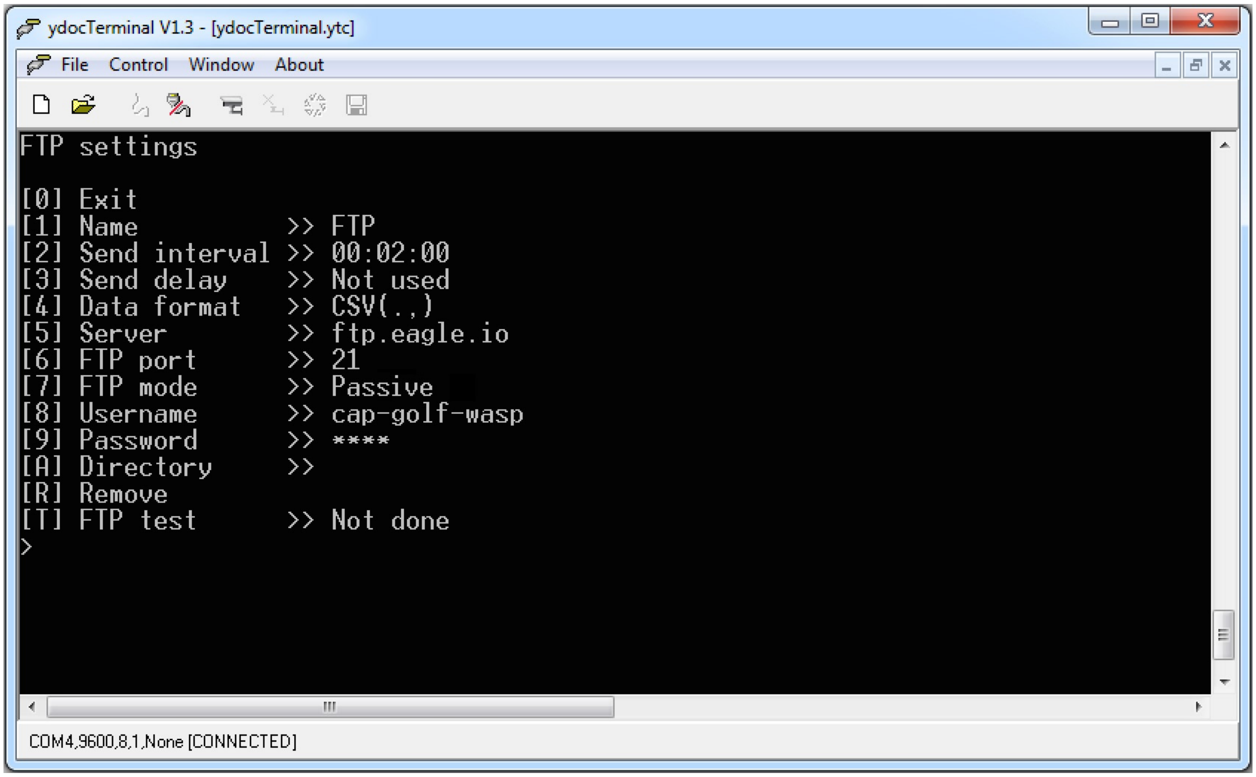
☐	Series	Parameter assignment			Units
☑	Temp	New	Existing	Temperature	°C
☑	COND Linear	New	Existing	Conductivity	uS/cm
☐	COND Non Linar	New	Existing	COND Non Linar	uS/cm
☑	Depth	New	Existing	Depth	m

Note: You can reconfigure the file name match/sample file, parser configuration and parameter assignment from the *Data Source* (page 114) properties dialog after creation.

Device settings

Use the YDOC terminal software to configure the logger for communication with eagle.io. Refer to your YDOC user manual (http://www.your-data-our-care.com/) for connection instructions.

Select option *[D] FTP output* from the *Configuration setup* menu.


ydocTerminal V1.3 - [ydocTerminal.ytc]
File
Control
Window
About

```
FTP settings

[0] Exit
[1] Name          >> FTP
[2] Send interval >> 00:02:00
[3] Send delay    >> Not used
[4] Data format   >> CSV(.,)
[5] Server        >> ftp.eagle.io
[6] FTP port      >> 21
[7] FTP mode      >> Passive
[8] Username      >> cap-golf-wasp
[9] Password      >> ****
[A] Directory     >>
[R] Remove
[T] FTP test      >> Not done
>
```

COM4,9600,8,1,None [CONNECTED]

The following FTP settings should be assigned:

[2] Send interval Specify the frequency of the data uploads to eagle.io.

[4] Data format CSV (Option 1)

[5] Server ftp.eagle.io

[6] FTP port 21

[7] FTP mode Passive

[8] Username Use the unique *FTP user* generated during Data Source creation. eg. cap-golf-wasp

[9] Password Use the password you assigned during Data Source creation (or set to 'pass' for none).

You should also ensure the YDOC data logger has been configured with the correct time and timezone offset.

Note: Use the *Events* (page 43) view with the detail level set to *Debug* for reviewing communication history and diagnosing configuration issues.

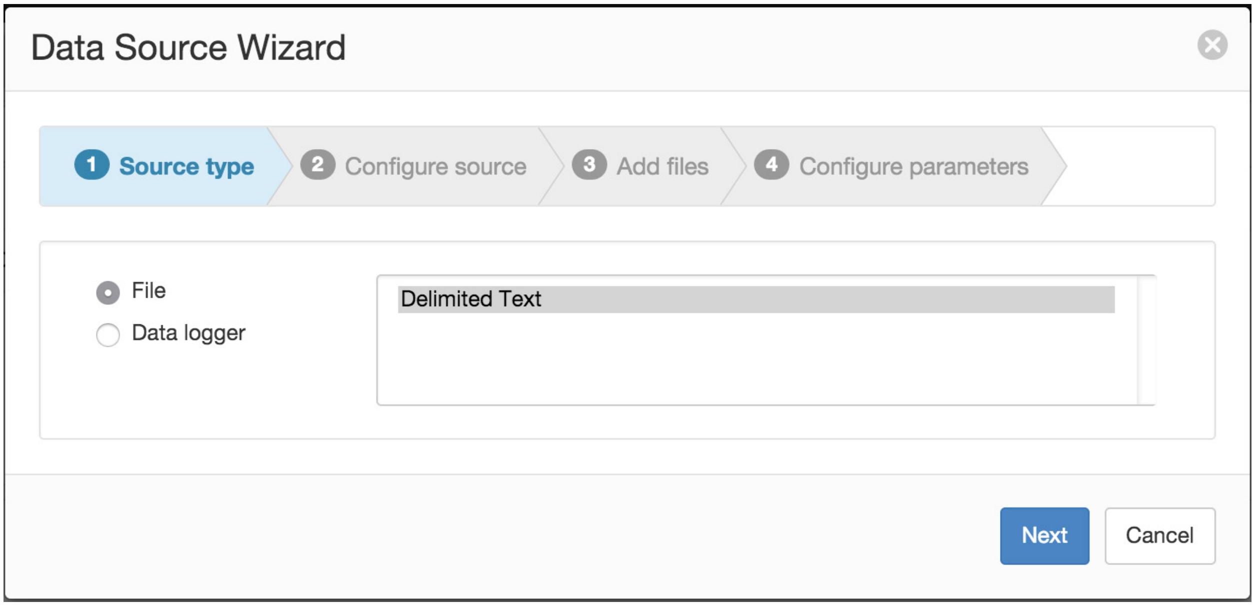
2.14.20 YuDash

The YuDash LYNX (http://www.yudash.com) is a flexible Industrial IoT gateway that can read various industrial sensors/instrumentation over different protocols: Modbus RS485, analog inputs, Modbus TCP/IP, I2C sensors, and many more. Connectivity is via WiFi/Ethernet LAN or 4G/LTE. It supports HTTP POST and MQTT Publish to send data to eagle.io, and has a flexible payload format.

YuDash
YuDash
LYNX

Source configuration

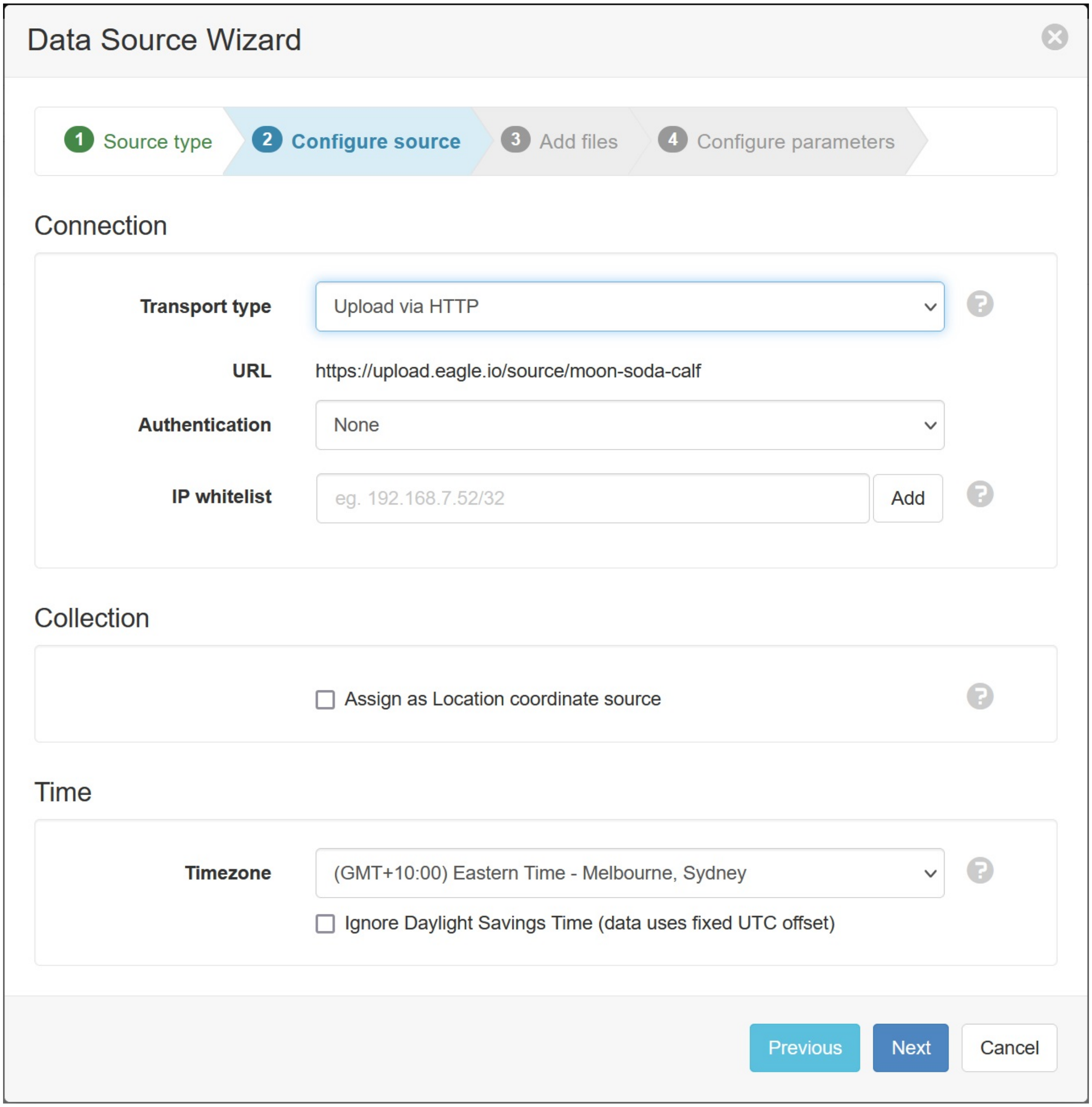
1. Create a *Data Source* (page 114) and select *File* as the Source Type. Choose *Delimited Text* from the list and click Next.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Next
Cancel

● File
○ Data logger

Delimited Text

2. Select *Upload via HTTP* as the transport type. A unique URL will be automatically generated per Data Source. Select the *Timezone* and *Ignore Daylight Savings Time* options which match the timezone of the corresponding YuDash device. Note that in the following example, the URL ends with the three words **moon-soda-calf**; these three words will be different for each Data Source that is created.


Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Connection
Collection
Time
Previous
Next
Cancel
Add

Transport type: Upload via HTTP

URL: https://upload.eagle.io/source/moon-soda-calf

Authentication: None

IP whitelist: eg. 192.168.7.52/32

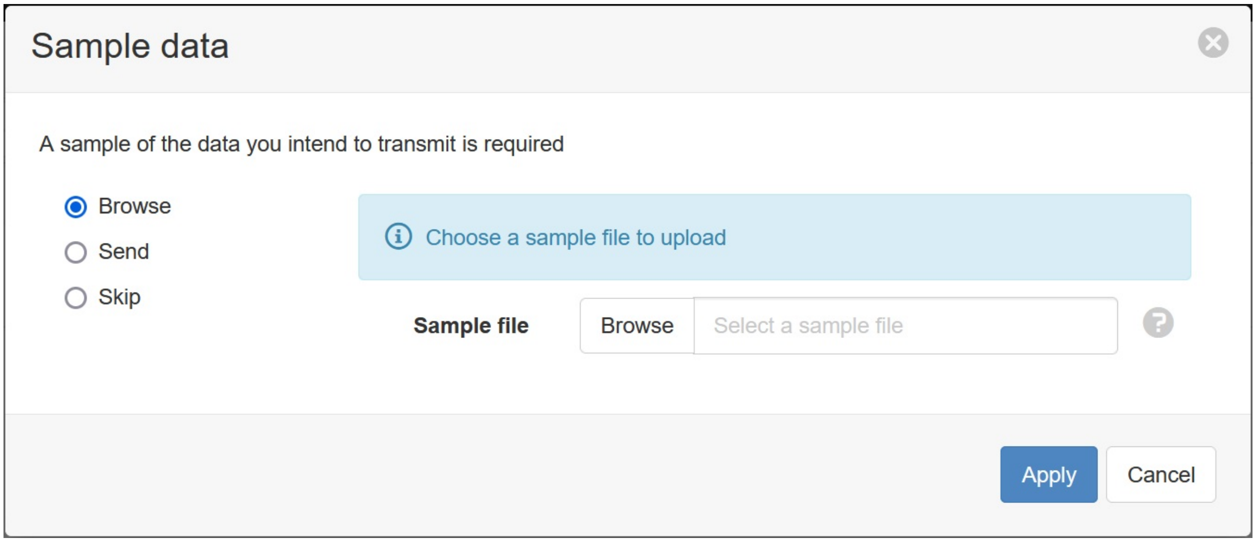
☐ Assign as Location coordinate source

Timezone: (GMT+10:00) Eastern Time - Melbourne, Sydney

☐ Ignore Daylight Savings Time (data uses fixed UTC offset)

3. Click the *Browse* button and select a text file that contains a sample data format consistent with the data which will be sent by the device. An example data format would be:

```
2023-02-19 21:20:00,234.5,50.5,3456
```



Sample data

A sample of the data you intend to transmit is required

● Browse
○ Send
○ Skip

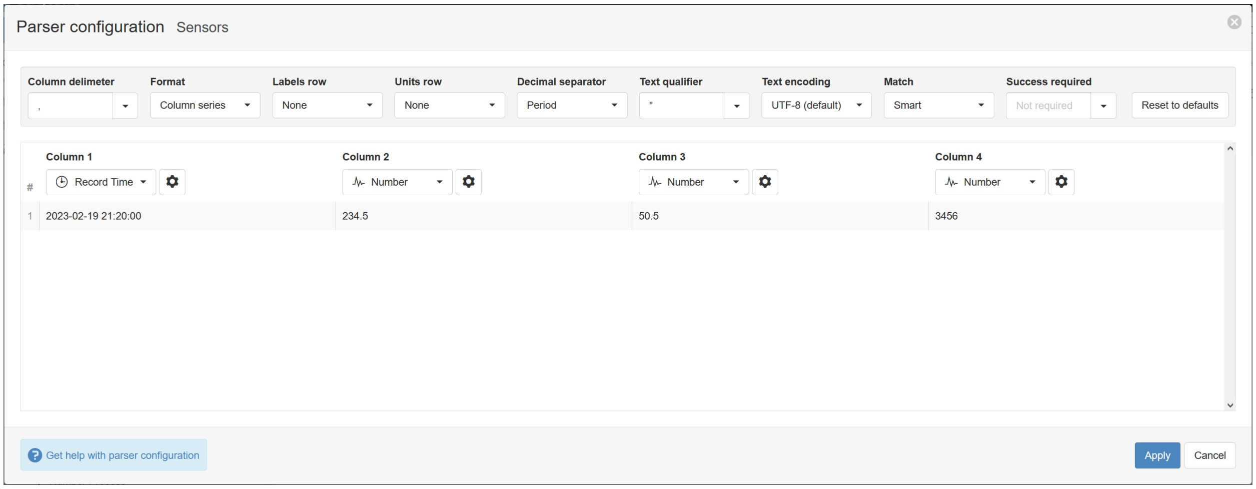
Choose a sample file to upload

Sample file: Select a sample file

Note: If you do not have a sample text file available, instead select the *Skip* option and click finish on the next screen. A sample will be saved automatically on the initial upload from the device and you will need to open the *Data Source* (page 134) properties dialog and *configure the series* (page 119) to create parameters.

---

4. The Parser configuration screen allows the user to describe the structure and format of the data file so it can be correctly interpretted by the system in subsequent uploads. Refer to *Text Parser Configuration* (page 123) for full details. Click Apply to *Configure parameters*.

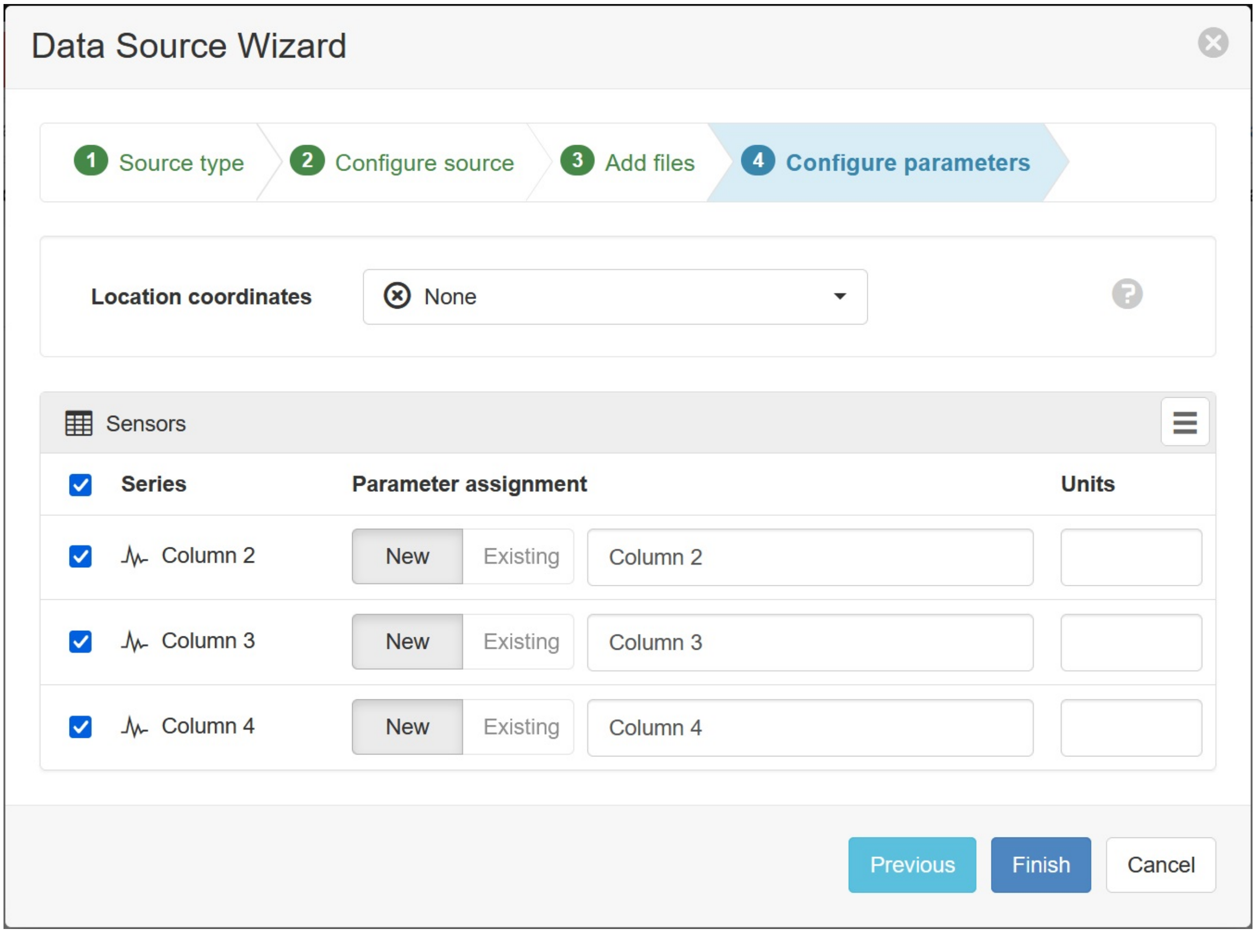


Parser configuration Sensors

Column delimeter: ,
Format: Column series
Labels row: None
Units row: None
Decimal separator: Period
Text qualifier: "
Text encoding: UTF-8 (default)
Match: Smart
Success required: Not required

#	Column 1 Record Time	Column 2 Number	Column 3 Number	Column 4 Number
1	2023-02-19 21:20:00	234.5	50.5	3456

5. Specify the parameter names (and optionally units) for each series/column defined in the Parser configuration. Uncheck any series you do not want to create as parameters. Click Finish to complete the setup.

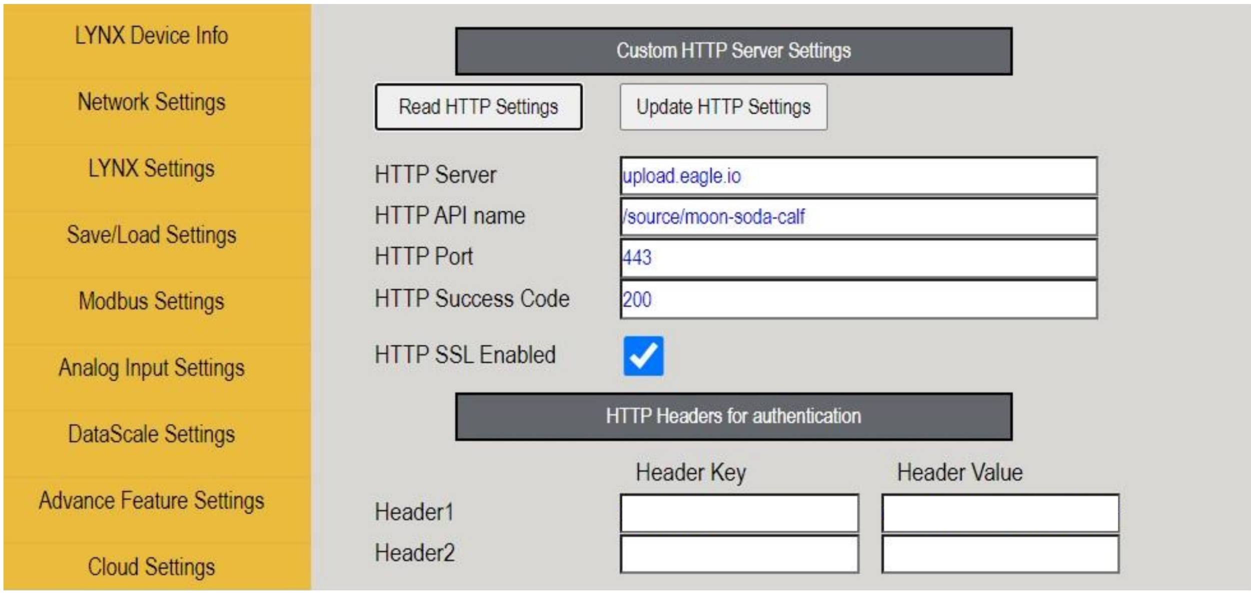

Data Source Wizard
1 Source type
2 Configure source
3 Add files
4 Configure parameters
Sensors
Previous
Finish
Cancel

Location coordinates: None

☑ Series	Parameter assignment		Units
☑ Column 2	New / Existing	Column 2	
☑ Column 3	New / Existing	Column 3	
☑ Column 4	New / Existing	Column 4	

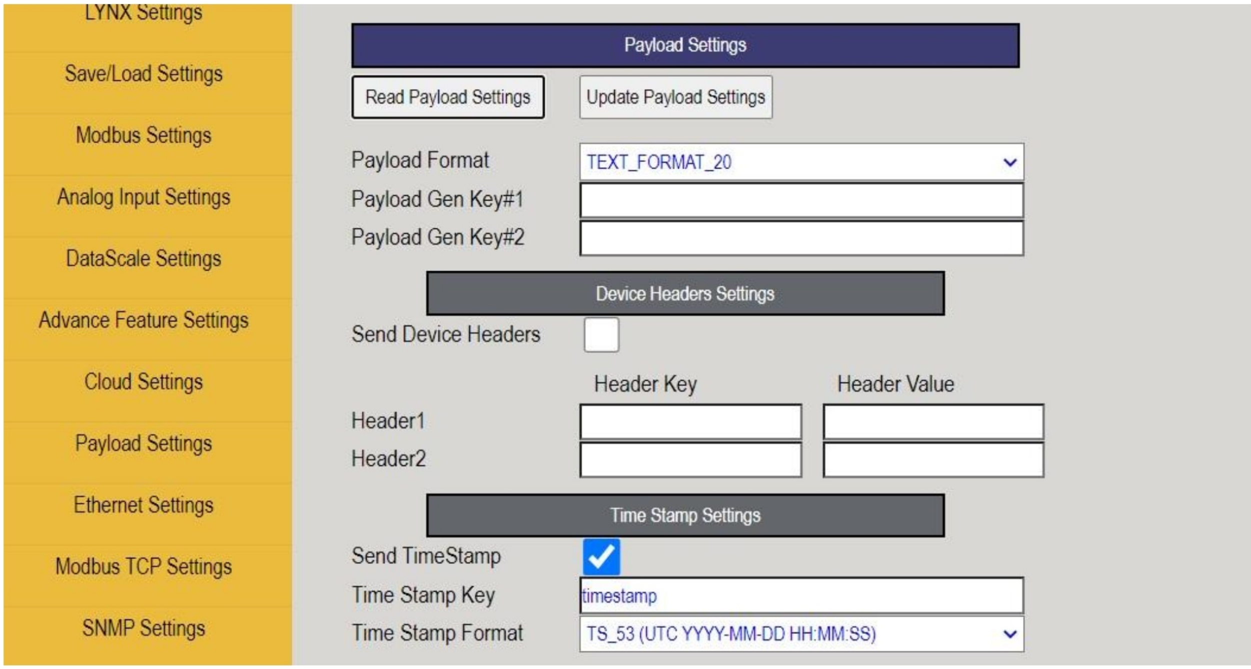
Device settings

1. Configure the YuDash HTTP settings to match the unique URL that was previously generated during data source configuration. Because the unique three words in the example URL were **moon-soda-calf**, the HTTP API name is entered as **/source/moon-soda-calf**. The other details will remain the same for every eagle.io Data Source that is added.


LYNX Device Info
Network Settings
LYNX Settings
Save/Load Settings
Modbus Settings
Analog Input Settings
DataScale Settings
Advance Feature Settings
Cloud Settings
Custom HTTP Server Settings
Read HTTP Settings
Update HTTP Settings
HTTP Headers for authentication
Header Key
Header Value
Header1
Header2

HTTP Server upload.eagle.io
HTTP API name /source/moon-soda-calf
HTTP Port 443
HTTP Success Code 200
HTTP SSL Enabled ☑

2. The Payload Format to send parameters to eagle.io is **TEXT_FORMAT_20**. The timestamp format is **TS_53**. This will be inserted in the payload CSV string.


LYNX Settings
Save/Load Settings
Modbus Settings
Analog Input Settings
DataScale Settings
Advance Feature Settings
Cloud Settings
Payload Settings
Ethernet Settings
Modbus TCP Settings
SNMP Settings
Payload Settings
Read Payload Settings
Update Payload Settings
Device Headers Settings
Header Key
Header Value
Header1
Header2
Time Stamp Settings

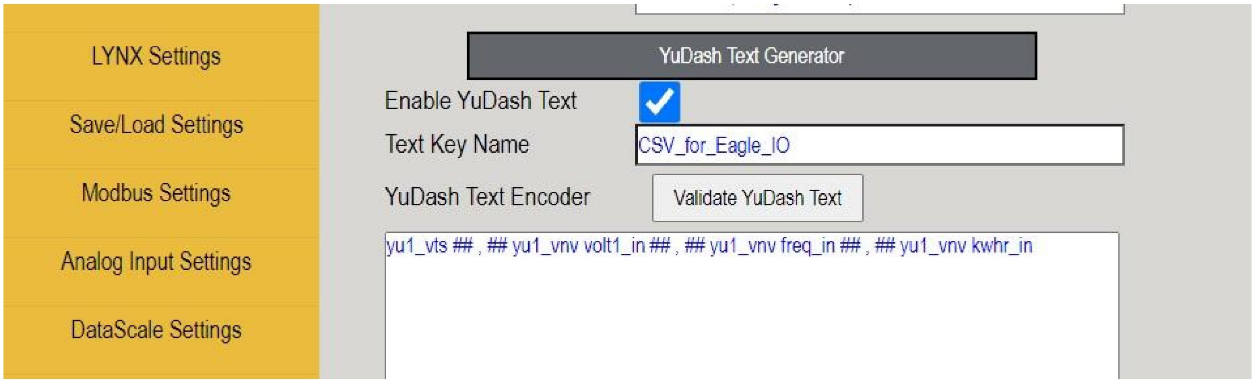
Payload Format TEXT_FORMAT_20
Payload Gen Key#1
Payload Gen Key#2
Send Device Headers ☐
Send TimeStamp ☑
Time Stamp Key timestamp
Time Stamp Format TS_53 (UTC YYYY-MM-DD HH:MM:SS)

3. Within payload settings, the YuDash Text Generator Engine is used to generate CSV. The Text Encoder text box is populated to generate required payload.

    a) **##** is a general separator in the Encoder Text.

    b) **yu1_<abc> [name]** is a generic place-holder name to access process values.

   c) Other characters are passed in payload directly.
   d) **yu1_vts** is the placeholder for timestamp in selected format.
   e) **yu1_vnv [variable_name]** is the placeholder for a named variable; **yu1_vnv volt1_in** will place the value of voltage **volt1_in** read by LYNX.


LYNX Settings
Save/Load Settings
Modbus Settings
Analog Input Settings
DataScale Settings
YuDash Text Generator
Validate YuDash Text

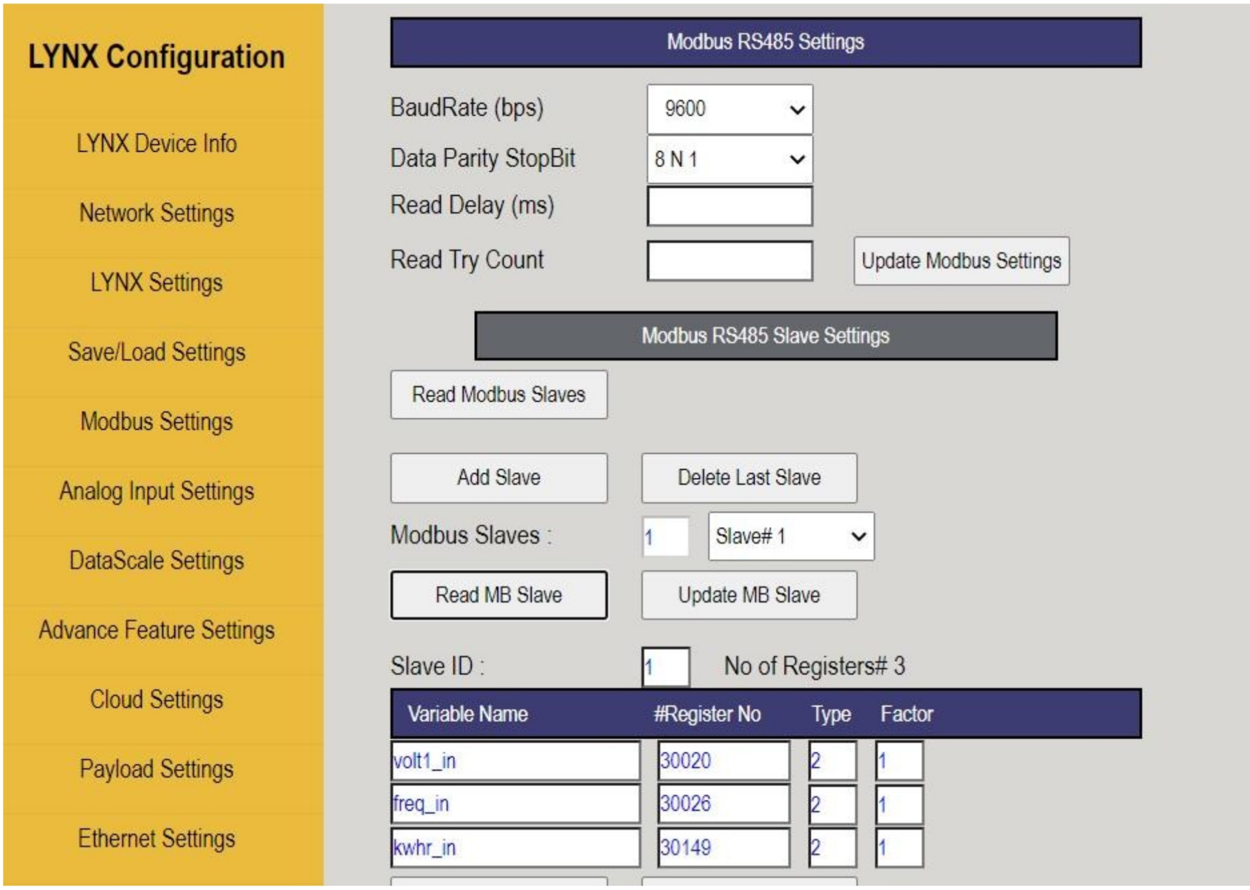
Enable YuDash Text ☑

Text Key Name: CSV_for_Eagle_IO

YuDash Text Encoder

```
yu1_vts ## , ## yu1_vnv volt1_in ## , ## yu1_vnv freq_in ## , ## yu1_vnv kwhr_in
```

4. Generic LYNX Settings and Features.
   1) The variable names (fields) are filled in Modbus settings of LYNX. This is a generic Modbus/RS485 setting of LYNX. Similar to Modbus/RS485; MODBUS/TCPIP, analog inputs and many other protocols can be used.
   2) In this example, the variable names **volt1_in**, **freq_in** and **kwhr_in** are sent to eagle.io by YuDash LYNX IoT gateway.


LYNX Configuration
LYNX Device Info
Network Settings
LYNX Settings
Save/Load Settings
Modbus Settings
Analog Input Settings
DataScale Settings
Advance Feature Settings
Cloud Settings
Payload Settings
Ethernet Settings
Modbus RS485 Settings
Update Modbus Settings
Modbus RS485 Slave Settings
Read Modbus Slaves
Add Slave
Delete Last Slave
Read MB Slave
Update MB Slave

BaudRate (bps): 9600

Data Parity StopBit: 8 N 1

Read Delay (ms):

Read Try Count:

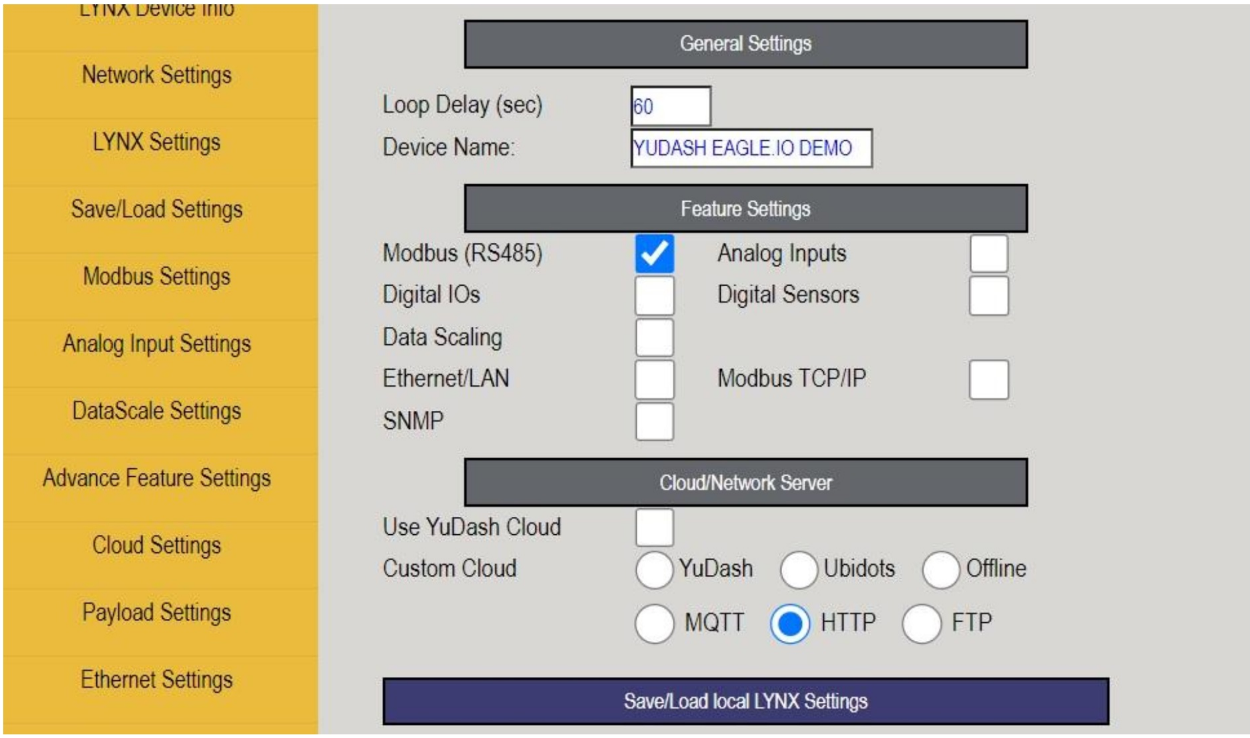
Modbus Slaves : 1 Slave# 1

Slave ID : 1

No of Registers# 3

Variable Name	#Register No	Type	Factor
volt1_in	30020	2	1
freq_in	30026	2	1
kwhr_in	30149	2	1

5. Select **HTTP** in the *Custom Cloud* section to send data to eagle.io.


LYNX Device Info
Network Settings
LYNX Settings
Save/Load Settings
Modbus Settings
Analog Input Settings
DataScale Settings
Advance Feature Settings
Cloud Settings
Payload Settings
Ethernet Settings
Save/Load local LYNX Settings

General Settings

Loop Delay (sec): 60

Device Name: YUDASH EAGLE.IO DEMO

Feature Settings

Modbus (RS485) ☑ Analog Inputs ☐

Digital IOs ☐ Digital Sensors ☐

Data Scaling ☐

Ethernet/LAN ☐ Modbus TCP/IP ☐

SNMP ☐

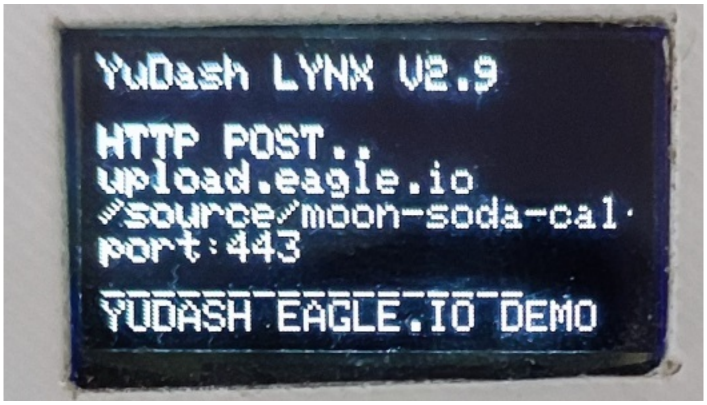
Cloud/Network Server

Use YuDash Cloud ☐

Custom Cloud ○ YuDash ○ Ubidots ○ Offline

○ MQTT ● HTTP ○ FTP

6. LYNX has an on-device screen which shows connectivity with eagle.io



```
YuDash LYNX V2.9
HTTP POST..
upload.eagle.io
/source/moon-soda-cal
port:443
YUDASH EAGLE.IO DEMO
```

Note: Use the *Events* (page 43) view in eagle.io, with the detail level set to *Debug*, for reviewing communication history and diagnosing data source configuration issues.

Note: We are continually adding support for new devices. If your device is not listed contact us (https://eagle.io/contact) to get support.

2.15 Troubleshooting

The interface is not displaying correctly or does not appear to be up to date Try clearing your browser cache, refresh the page and ensure you are using the latest version of a supported web browser: Chrome, Firefox, Internet Explorer, Safari. Some browser addons or plugins are known to degrade performance and should be disabled when using eagle.io.

We recommend Google Chrome (https://www.google.com/intl/en/chrome/browser/) for the best eagle.io experience.

Uploading attachment failed Ensure you have a stable internet connection and retry. Some camera phones generate large files which may be time consuming to upload. Note: there is a file size limit of 100MB per file.

Location Nodes do not expand to show their contained Nodes in the Workspaces Tree You must have *configure* permission on the Workspace to see Nodes contained within Locations from the Workspaces Tree. The content associated with the hidden Nodes will still be displayed in the Views.

Context Menu not displayed or has limited options Most context menu items require certain Workspace permissions. If there are no context menu items available to the user then the context menu will not be displayed.

Other issue? We are here to help, so please post a question or bug report on our forum (http://forum.eagle.io) or contact us at support@eagle.io

2.15.1 Debug logging

If you are experiencing intermittent bugs or other software related issues, our software development team may instruct you to use our in-built *debug logging* feature. This will temporarily capture user interactions and other eagle.io specific information which will assist our team to find and fix the problem.

To use this feature:

1. Open the *Support request* dialog from the navigation bar and click the *Start debug logging* button.
2. Close the dialog (or refresh browser) and perform the interactions/navigation steps needed to reproduce the issue.
3. Re-open the *Support request* dialog and click the *Stop debug logging* button.
4. If any critical data has been captured, a log file will be automatically saved to your device.
5. Email the log file (along with a description of the issue) to support@eagle.io

CHAPTER 3

HTTP API

The HTTP API has been designed to make it easy for developers to interact with eagle.io (https://eagle.io) from a 3rd party application or service.

Refer to the *Quick Start* (page 433) guide to get up and running. Be sure to review our recommended *Best Practices* (page 440) for working with the API.

API Resources (page 442) provides detailed descriptions and usage instructions for all API endpoints.

3.1 Quick Start

The eagle.io (https://eagle.io) API conforms to the design principles of Representational State Transfer (REST) (http://en.wikipedia.org/wiki/Representational_State_Transfer).

Our API is designed to have predictable, resource-oriented URLs and to use HTTP response codes to indicate API errors. We use built-in HTTP features which can be understood by off-the-shelf HTTP clients.

Example code is available on GitHub (https://github.com/eagle-io/api-examples).

3.1.1 Authentication

You authenticate to the eagle.io API by providing one of your *API keys* (page 272) in the **X-Api-Key** request header:

```
GET /api/v1/nodes/
Host: api.eagle.io
X-Api-Key: xxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

You can manage your API keys from the account settings *API keys* (page 272) security tab. You can have multiple API keys active at one time. Your API keys carry many privileges, so be sure to keep them secret.

All API requests must be made over **HTTPS**. Calls made over plain HTTP will fail. You must authenticate for all requests.

3.1.2 HTTP Methods

The following HTTP methods are used to determine which action to take on a particular resource:

Method	Action
GET	Retrieve the current representation of a resource
POST	Create a new resource or action
PUT	Update a specific resource
DELETE	Delete a specific resource

Note: If your client does not support the required method the **X-HTTP-Method-Override** header can be added to a POST request to inform the server of the desired method.

```
POST /api/v1/nodes/5a2a5a129bc9b4035f906d70
Host: api.eagle.io
X-Api-Key: xxxxxxxxxxxxxxxxxxxxxxxxxxxxx
X-HTTP-Method-Override: DELETE
```

3.1.3 HTTP Headers

The following HTTP headers are used by the eagle.io API:

Header	Value	Required	Description
X-Api-Key	YOUR_API_KEY	Yes	Unique API authentication key generated from *account settings* (page 272)
Content-Type	application/json	Yes	All requests containing JSON data in the body must specify this header
Content-Encoding	gzip	No	Request body is gzip compressed
Accept-Encoding	gzip	No	Response will use gzip compression when content-length exceeds 1024 bytes
X-HTTP-Method-Override	PUT, DELETE	No	Clients not supporting PUT/DELETE methods can send via POST with this header

3.1.4 HTTP Status Codes

The eagle.io API will return appropriate HTTP status codes (http://en.wikipedia.org/wiki/List_of_HTTP_status_codes) for every request.

Code	Status	Description
200	OK	Completed successfully
201	Created	Resource created successfully
202	Operation accepted	Operation accepted but not yet complete
304	Not Modified	There was no new data to return
400	Bad Request	The request was invalid or cannot be otherwise served
401	Unauthorized	Authentication failed
403	Forbidden	No permission for HTTP Method or requested resource
404	Requested resource not found	Requested resource not found
405	Method Not Allowed	Resource does not support the requested HTTP Method
413	Request Too Large	Request body or response exceeds limit
429	Too Many Requests	Request has been rejected for exceeding usage limits
500	Internal Server Error	Error occurred processing the request
503	Service Unavailable	Service is temporarily unavailable

Error and Status messages

Error and Status messages are always returned in a standard JSON format with the status code and message in the body of the response. An example error response:

```
{"error": {"code": 405, "message": "Method not allowed for requested resource
↪"}}
```

Status messages are returned for certain requests that have been accepted but do not return a resource in the response body:

```
{"status": {"code": 202, "message": "Operation accepted but not yet complete"}
↪}
```

3.1.5 HTTP Compression

HTTP compression is supported on both incoming and outgoing requests. Compression is highly recommended where large requests are being submitted.

We use the standard HTTP method of specifying compression encoding, with support for the gzip compression schema.

Incoming compression

In order to send compressed data to the eagle.io API it is necessary to send it with gzip encoding. Compress your data using gzip and add the **Content-Encoding** header to your request:

```
Content-Encoding: gzip
```

Outgoing compression

To receive data from the eagle.io API in gzip compressed format simply add the **Accept-Encoding** header to your request:

```
Accept-Encoding: gzip
```

Any response exceeding 1024 bytes will be compressed and the **Content-Encoding** header added.

3.1.6 Resource Attributes

API Resource (page 442) requests commonly result in a response containing the current representation of one or more resources. The representations are a combination of attributes used to describe the individual resources.

Consumers of Resources should tolerate the addition of new attributes and variance in ordering of attributes with ease. Not all attributes appear in all contexts. It is generally safe to consider a nulled attribute, an empty set, and the absence of an attribute as the same thing.

Attributes are assigned specific *Data types* which are enforced for all requests and include:

Data type	Example	Description
Number	12.4	Any number. Also expressed as **Int32** or **Int64** for integers and **Double** for double precision floating point numbers
Boolean	true	*true* or *false*
String	“Valve Open”	Any text surrounded in quotes
Time	“2014-09-24T19:48:32.000Z”	*ISO8601* (page 581) timestamp surrounded in quotes
ObjectId	“53ce0b6a0eba8dc46900000f”	Unique identifier surrounded in quotes
Array	[“item1”, “item2”]	List of items. May contain any data type but generally not mixed
Object	{“key”: “value”}	Nested attributes
Variable		May contain various data types but usually specific for each resource _class

3.1.7 Request Arguments

Most *API Resource* (page 442) requests allow for arguments to be specified as part of the request URL. While some resources have *required* arguments, most are *optional* and are used to alter, refine or filter the response.

Arguments are specified using the standard Query string (http://en.wikipedia.org/wiki/Query_string) format and should be appended to the resource endpoint, prefixed with a ‘?’.

```
/api/v1/nodes/?arg1=val1&arg2=val2&arg3=val3...
```

Certain resource request arguments may contain sub-arguments (denoted by indentation in arguments table). Sub-arguments should be included in parentheses with key/value separated by colons and multiple arguments semicolon delimited.

```
/api/v1/nodes/?arg1=val1(subarg1:subval1;subarg2:subval2...),val2,val3
```

All special characters should be Url Encoded (http://en.wikipedia.org/wiki/Percent-encoding).

The query string should not exceed 4096 bytes. A **413 Request Too Large** response will be returned for requests exceeding the size limit.

Filter Argument

Certain *API Resource* (page 442) requests allow for an optional `filter` argument to be specified. When a filter is provided, only resources with attributes matching the filter criteria will be returned. If no criteria matches than an empty set will be returned.

The filter argument includes the attribute name with an operator and operand colon delimited and included in parentheses directly after the attribute name:

```
/?filter=attribute(operator:operand)
```

An example filter request for recently created nodes:

```
/api/v1/nodes/?filter=createdTime($gt:2015-01-01T00:00:00Z)
```

The following operators can be used when specifying filter criteria. Use is limited to specific attribute data types:

Operator	Supported data types	Description
$gt	Number, Time	Greater than
$gte	Number, Time	Greater than or equal to
$lt	Number, Time	Less than
$lte	Number, Time	Less than or equal to
$eq	Number, Time, Boolean, String, ObjectId	Equal
$ne	Number, Time, Boolean, String, ObjectId	Not equal
$match	String	Text match

Multiple filter criteria can be specified using logical AND, OR operators. To specify an AND between criteria, use a comma character ‘,’. To specify an OR between criteria, use a pipe character ‘|’ Url Encoded (http://en.wikipedia.org/wiki/Percent-encoding) as ‘**%7C**’. The AND criteria is always evaluated before the OR criteria.

An example of a multi-criteria filter request for retrieving nodes with (name matching Batt* AND isActive true) OR (createdTime greater than 2015-01-01T00:00:00Z):

```
/api/v1/nodes/?filter=name($match:Batt),isActive($eq:true)%7CcreatedTime(
↪$gt:2015-01-01T00:00:00Z)
```

Note: If the attribute data type is **Variable** you must explicitly specify the data type of the operand.

Example specifying currentValue operand as a Time:

```
/?filter=currentValue($eq:Time(2015-01-01T00:00:00Z))
```

3.1.8 Data Formats

The eagle.io API uses JSON data format (http://json.org) by default for all requests and responses. Certain resources allow for alternate data formats by specifying the **format** argument as part of the request URL:

```
/?format=csv
```

Content-Type is always included in the header of the response:

```
Content-Type: text/csv; charset=utf-8
```

Request

Content-Type must be defined in the header of all requests that contain data:

```
Content-Type: application/json
```

The body of the request must be valid JSON or a **400 Bad Request** response will be returned. The complete HTTP request should not exceed 5MB before compression. A **413 Request Too Large** response will be returned for requests exceeding the size limit.

Example request for inserting historic data:

```
POST /api/v1/nodes/542a5a129bc9b4035f906d70/historic/
Host: api.eagle.io
X-Api-Key: xxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Content-Type: application/json
```

```
{
    "docType": "jts",
    "version": "1.0",
    "data": [
        { "ts": "2014-10-07T01:25:00.000Z", "f": { "0": { "v": 10.0, "q": 100␣
↪} } },
        { "ts": "2014-10-07T01:26:00.000Z", "f": { "0": { "v": 10.2, "q": 100␣
↪} } }
    ]
}
```

Response

Example response from a Nodes GET request:

```
HTTP/1.1 200 OK
Content-Length: 831
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.node.point.NumberPoint",
    "_id": "541a5a129bc9b4035f906d70",
    "createdTime": "2014-09-18T04:05:38.699Z",
    "currentStateId": "541a58dc9bc9b4035f906938",
    "currentTime": "2014-10-06T21:06:29.000Z",
    "currentValue": 157.7,
    "displayType": "VALUE",
    "format": "0.###",
    "isActive": true,
    "name": "Temperature",
    "oldestStateId": "541a58dc9bc9b4035f906938",
    "oldestTime": "2014-02-13T22:58:53.000Z",
    "oldestValue": 144.7,
    "ownerId": "52969365593a1a3a3200000f",
    "parentId": "541a59fb9bc9b4035f906d58",
    "previousTime": "2014-10-06T21:01:28.000Z",
    "previousValue": 164.1,
    "states": [
        {
            "name": "NORMAL",
            "index": 0,
            "categoryId": null,
            "_id": "541a58dc9bc9b4035f906938",
            "notify": "NEVER",
            "description": "",
            "isAlarm": false,
            "_class": "io.eagle.models.node.point.PointState"
        }
    ],
    "statesType": "RANGE",
    "units": "",
    "workspaceId": "536884ecb5a76fd5d3000014"
}
```

3.1.9 Resource Ids

Most resources must be accessed with an *id*. The automatically assigned id is stored as the *_id* attribute of the resource. Nodes can optionally be assigned a unique *customId* which can also be used to access the resource prepended with '@'. Learn how to assign a customId.

Example accessing a node by its automatically assigned *_id*

```
/api/v1/nodes/536884ecb5a76fd5d3000014
```

Example accessing a node by its *customId*

```
/api/v1/nodes/@sensor_254
```

3.1.10 Versioning

The API version number is specified as part of the URL. **v1** is the currently supported version and has a base URL:

```
https://api.eagle.io/api/v1/
```

As we make updates and additions to the eagle.io API, we will only make changes, add new features and/or implement fixes to the current released API that do not affect backward compatibility.

3.1.11 Usage Limits

API usage is rate limited by IP Address to prevent misuse. If you exceed more than 350 requests per 5 minute window the request will be refused and you will receive a **429 Too Many Requests** response.

3.2 Best Practices

As you build with the eagle.io (https://eagle.io) API, take note of the following best practices to ensure you develop safe, reliable and efficient code.

3.2.1 Enforce Security

All requests must be made over **HTTPS**.

API keys (page 272) should be kept secret and the *Read only* permission assigned to keys that only need to perform read operations (GET requests). For additional security, you can restrict the API key to certain Workspaces by setting the *Access level* to *Limited Workspaces*.

3.2.2 Use Compression for large requests

Take advantage of *HTTP compression* (page 435) for sending and receiving large requests.

3.2.3 Limit Size and Rate of requests

When working with *time series* data, ensure you limit the size of the requests for both extraction and insertion. If the request or response is too large or exceeds our processing time threshold, the **413 Request Too Large** error response will be returned.

The body of the request should not exceed 5MB before compression. The query string should not exceed 4096 bytes. A **413 Request Too Large** response will be returned for requests exceeding the size limit.

You should limit the rate of requests to the API to ensure you do not exceed the *usage limits* (page 440).

3.2.4 Handle Errors and Status responses

Responses will always use *HTTP Status Codes* (page 434) to indicate the result of the request. Be prepared to handle unexpected errors which may arise from:

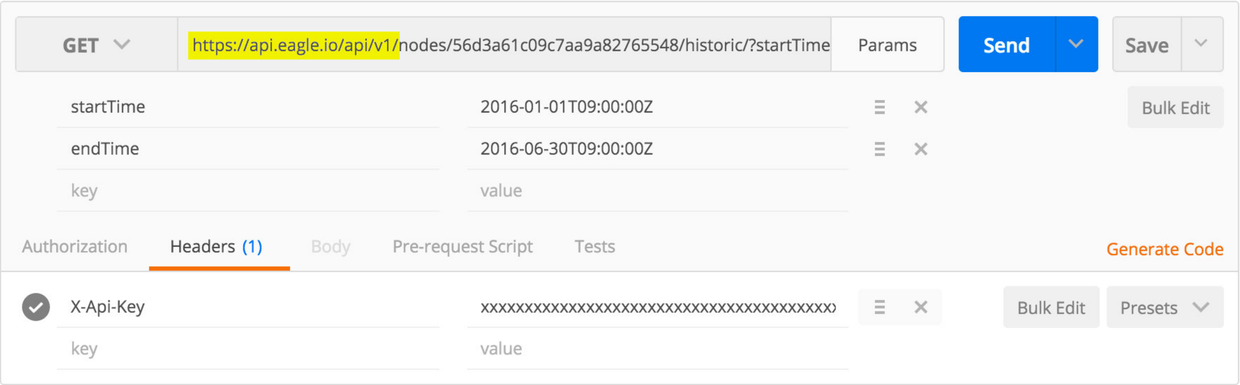
- Large or long running requests
- Moved, renamed or deleted resources
- API key permission and account changes
- Usage limits exceeded
- Service temporarily unavailable

3.2.5 Discover Node Ids from the user interface

Node Ids are shown in the associated Node properties dialog. You can also assign your own unique Custom Id to every node for use with the API.

3.2.6 Use Development Tools for testing

Use development tools such as cURL (http://curl.haxx.se) or Postman (http://www.getpostman.com) to test API requests and responses. We recommend Postman (http://www.getpostman.com) for its simple to use, powerful user interface.



GET https://api.eagle.io/api/v1/nodes/56d3a61c09c7aa9a82765548/historic/?startTime

startTime	2016-01-01T09:00:00Z
endTime	2016-06-30T09:00:00Z

Headers (1)

X-Api-Key	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

3.2.7 Synchronise data efficiently

When synchronising data to an external system, ensure you only query for data that has changed since your previous request. By specifying a *timeQuery* of *MODIFIED*, only records added or changed within your query range will be returned.

3.3 API Resources

API Resources are the URL endpoints for interacting with the system. Interactions may include creating, reading, updating or deleting an asset, extracting or inserting historic data, or performing operations such as triggering data acquisition, control operations or device configuration.

Refer to the *Quick Start* (page 433) guide for instructions on using the API.

3.3.1 Nodes

Nodes are the container objects that store all data and configuration for your projects. There are various *types of nodes* (page 49) including: Workspaces, Groups, Locations, Dashboards, Attachments, Sources and Parameters.

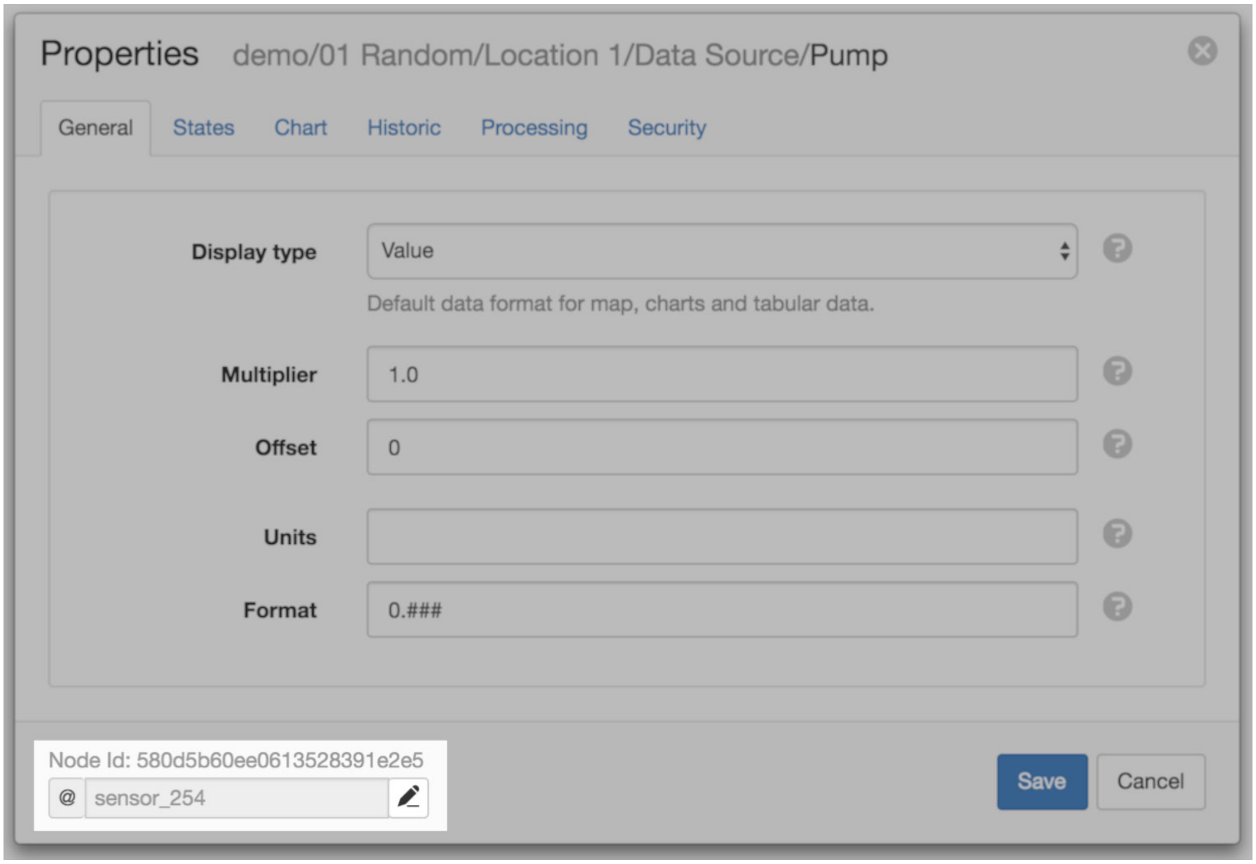
Quick Links

- *Node References* (page 443)
- *Node Attributes* (page 444)
- *Retrieve all nodes* (page 448)
- *Retrieve a node* (page 451)
- *Create a node* (page 452)
- *Update a node* (page 453)
- *Delete a node* (page 463)
- *Clone a node or create instance from template* (page 463)
- *Acknowledge node alarms* (page 465)
- *Clear node alarms* (page 465)
- *Trigger an acquisition* (page 466)
- *Retrieve user and group notification preferences* (page 467)
- *Update user notification preferences* (page 469)
- *Subscribe users and groups to notifications* (page 471)
- *Unsubscribe users and groups from notifications* (page 472)

- *Retrieve Workspace user and group permissions* (page 473)
- *Add or Update Workspace user and group permissions* (page 475)
- *Remove users and groups from a Workspace* (page 477)
- *Retrieve node historic data* (page 478)
- *Retrieve node historic chart* (page 481)
- *Retrieve node report* (page 483)
- *Update Parameter or Location historic data* (page 486)
- *Update Data Source historic data* (page 487)
- *Update node historic data with a single value* (page 489)
- *Delete node historic data* (page 490)
- *Retrieve node events* (page 490)
- *Create node events* (page 492)
- *Delete node events* (page 493)

Node References

A Node can be referenced programmatically using either a **Node Id** (globally unique) or a user-defined **Custom Id** (unique to your account). These identifiers can be found (and **Custom Id** configured) at the bottom of the Properties for each Node.


Properties demo/01 Random/Location 1/Data Source/Pump
General
States
Chart
Historic
Processing
Security
Save
Cancel

Display type: Value

Default data format for map, charts and tabular data.

Multiplier: 1.0

Offset: 0

Units:

Format: 0.###

Node Id: 580d5b60ee0613528391e2e5

@ sensor_254

Node Id

A **Node Id** is a 24-character alphanumeric string that uniquely identifies a Node in eagle.io. It is generated by the system and cannot be changed.

Custom Id

A **Custom Id** is a 255-character user-defined string that uniquely identifies a Node in your account. A **Custom Id** is prefixed with the `@` symbol and must not contain the following special characters: dot `.`, underscore _ and hyphen `-`. In the example above, the **Custom Id** has been set to `sensor_254`.

Node Attributes

Consumers of Nodes should tolerate the addition of new attributes and variance in ordering of attributes with ease. Not all attributes appear in all contexts. It is generally safe to consider a nulled attribute, an empty set, and the absence of an attribute as the same thing.

Standard attributes	Type	Update	Description
_class	String		Identifies resource type: *io.eagle.models.node.**
_id	ObjectId		Unique identifier for this node
alarms	Object	Yes	*Alarm configuration* (page 454) and status
createdTime	Time		*ISO8601* (page 581) timestamp the node was created
customId	String	Yes	Optional user-assigned identifier for this node. Unique to owner (account)
isActive	Boolean		Flag to indicate if node is active
isPublic	Boolean	Yes	Flag to indicate if *Public access* (page 221) is enabled
metadata	Array	Yes	Array of metadata fields and values for a location
name	String	Yes	Name of node. *Restrictions apply* (page 15).
ownerId	ObjectId		Unique owner _id
parentId	ObjectId		Parent node _id (not included in Workspace)
publicId	String		Unique identifier used in public URL when *isPublic* is enabled. eg. *https://public.eagle.io/public/dash/w31s3dndr408wcq*
workspaceId	ObjectId		Associated Workspace _id (not set on Workspace node)

Attachment attributes	Type	Update	Description
description	String	Yes	Description of attachment as set by user.
fileSize	Int64		Size of attachment in bytes
fileUrl[3]	String		Attachment URL. Requires *ATTACHMENT_READ* permission. Optionally specify an `expiry` period for the URL.
filePreviewUrl[3]	String		Preview URL. Only included if the attachment is a valid media file. Requires *ATTACHMENT_READ* permission. Optionally specify an `expiry` period for the URL. Note: image dimensions may change without notice.
mimeType	String		Mime-type of the attachment

---

[3] Certain attributes can not be used in filter criteria.

Parameter & Location attributes	Type	Update	Description
coordinateSourceId	ObjectId		Data Source _id used to set location coordinates. Applies to Locations only.
chart	Object	Yes	*Parameter chart configuration* (page 458)
controlValue	Variable	Yes	Pending control value. Type inherited from _class.
controlValueMaximum	Double	Yes	Maximum control value when controlValueRestriction set to RANGE
controlValueMinimum	Double	Yes	Minimum control value when controlValueRestriction set to RANGE
controlValueRestriction	String	Yes	Control value is restricted to: *[NONE, RANGE, STATES]*
currentQuality	Int32		Quality code associated with current value
currentStateId	ObjectId		State _id associated with current value
currentTime	Time		*ISO8601* (page 581) timestamp of the current value
currentValue	Variable		Latest value with multiplier and offset applied. Type inherited from _class
displayType	String	Yes	Default display type of parameter: *[VALUE, STATE]*
format	String	Yes	Formatting to apply to displayed value
imageSourceId	ObjectId		Attachment Source _id used to set location image. Applies to Locations only.
multiplier	Double	Yes	Value to multiply rawValue and historic data on extraction. Applies to number parameters only
offset	Double	Yes	Value to add to rawValue and historic data on extraction. Applies to number parameters only
oldestQuality	Int32		Quality code associated with oldest value
oldestStateId	ObjectId		State _id associated with oldest value
oldestTime	Time		*ISO8601* (page 581) timestamp of the oldest value
oldestValue	Variable		Oldest value. Type inherited from _class
previousQuality	Int32		Quality code associated with oldest value
previousStateId	ObjectId		State _id associated with previous value
previousTime	Time		*ISO8601* (page 581) timestamp of the previous value
previousValue	Variable		Previous value. Type inherited from _class
rating	Object	Yes	*Rating parameter configuration* (page 461)
rawValue	Double		Latest raw value. Applies to number parameters only
states	Array	Yes	Array of *state configuration* (page 456) objects
statesType	String	Yes	States evaluation mode: *[RANGE, DISCRETE]*
units	String	Yes	Units to display with value
updatedTime	Time		*ISO8601* (page 581) timestamp the historic data was last updated.

Source attributes	Type	Update	Description
currentAttachmentId	ObjectId		Current attachment _id associated with Attachment Source
currentStatus	String		Current status: *[DISABLED, FAILED, IDLE, SCHEDULED, QUEUED, CONNECTING, DOWNLOADING, PROCESSING, RETRYING, CONFIGURING, CONTROLLING, REMOTE]*
clockSync	Boolean		Flag to indicate if data logger clock is being syncronized with server
firmwareVersion	String		Firmware version in-use by data logger
isEnabled	Boolean	Yes	Flag to enable or disable the Source
lastAcquireRecordCount	Int32		Number of records acquired on last acquisition
lastCommsAttempt	Time		*ISO8601* (page 581) timestamp of the last communications attempt
lastCommsSuccess	Time		*ISO8601* (page 581) timestamp of the last successful communication with Source
model	String		Model of data logger in-use
pakBusAddress	Int32	Yes	PakBus address of Campbell data logger
pakBusGatewayAddress	Int32	Yes	PakBus gateway address of Campbell data logger
progName	String		Name of program currently loaded in Campbell data logger
quietMaxSeconds	Int32	Yes	Maximum period in seconds between communication updates before triggering an Outdated alarm (non-scheduled collection only). *120 - 31536000* seconds
scheduleType	String		Type of Schedule for automatic collection: *[SERVER, REMOTE, NONE]*
timezone	String	Yes	*Timezone* (page 581) of Source data.
timezoneAdjustForDst	Boolean	Yes	Flag to indicate if acquired data is adjusted for DST in selected timezone
totalCommsAttempt	Int32		Total count of communications attempts
totalCommsSuccess	Int32		Total count of successful communications

Retrieve all nodes

Retrieve a list of all nodes available to the authenticated API key. Optionally *filter* by attribute values.

Arguments

Argument	Example	Description
attr	_id,slug	*Optional.* Comma delimited list of attributes to include in response
type	TREE	*Optional - Default is LIST*[4] | **LIST** returns a flat list of nodes | **TREE** returns hierarchical list of nodes (only available for requests that return less than 5000 nodes)
filter	isActive($eq:true)	*Optional. Filter* (page 437) the records based on attribute value(s)
limit	100	*Optional - Default is 50000* Maximum number of records to be returned. 0-50000
skip	50	*Optional.* Skip the first *n* records returned. Can be used with `limit` to paginate results
sort	createdTime(DESC)	*Optional.* Comma delimited list of attributes to sort by. Optionally include sort direction in parentheses or default to ASC: *[ASC, DESC]*
expiry	60	*Optional.* Expiry period in minutes for any included resource links. ie. *fileUrl* for Attachments. Default is 0 (no expiry). Expired resource links will return 403 Forbidden.

Request

```
GET /api/v1/nodes
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
[
    {
        "_class": "io.eagle.models.node.Workspace",
        "_id": "536884ecb5a76fd5d3000014",
        "createdTime": "2014-05-06T06:45:00.061Z",
        "isActive": true,
        "name": "My Workspace",
        "ownerId": "52969365593a1a3a3200000f"
```

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---

[4] When TREE `type` is specified the filter, limit, skip and sort arguments are not allowed. A 413 ‘request too large‘ response will be returned if there are more than 5000 nodes when using type TREE.

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```
    },
    {
        "_class": "io.eagle.models.node.Group",
        "_id": "53eada0ada91110000000046",
        "createdTime": "2014-08-13T03:22:50.489Z",
        "isActive": true,
        "name": "Australia",
        "ownerId": "52969365593a1a3a3200000f",
        "parentId": "536884ecb5a76fd5d3000014",
        "workspaceId": "536884ecb5a76fd5d3000014"
    },
    {
        "_class": "io.eagle.models.node.location.Location",
        "_id": "542cbd18815043850e995f84",
        "alarms": {
            "stateAlarm": {
                "status": {
                    "acknowledgeComment": null,
                    "acknowledgeTime": null,
                    "acknowledgeUsername": null,
                    "categoryId": null,
                    "message": null,
                    "alarmState": "CLEARED"
                },
                "_class": "io.eagle.models.node.alarm.StateAlarm"
            }
        },
        "createdTime": "2014-10-02T02:48:56.186Z",
        "displayType": "VALUE",
        "isActive": true,
        "metadata": [],
        "name": "New Location",
        "ownerId": "52969365593a1a3a3200000f",
        "parentId": "53eada0ada91110000000046",
        "states": [
            {
                "name": "NORMAL",
                "index": 0,
                "categoryId": null,
                "_id": "542cbc4f815043850e995ebb",
                "threshold": {
                    "_class": "io.eagle.util.geo.GeoPoint"
                },
                "notify": "NEVER",
                "description": null,
                "isAlarm": null,
                "_class": "io.eagle.models.node.point.PointState"
            }
        ],
        "statesType": "RANGE",
        "workspaceId": "536884ecb5a76fd5d3000014"
    }
```

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```
]
```

Example response when `type` argument is TREE. Descendants are wrapped in a `children` array:

```
[
    {
        "_class": "io.eagle.models.node.Workspace",
        "_id": "536884ecb5a76fd5d3000014",
        "createdTime": "2014-05-06T06:45:00.061Z",
        "isActive": true,
        "name": "My Workspace",
        "ownerId": "52969365593a1a3a3200000f",
        "children": [
            {
                "_class": "io.eagle.models.node.Group",
                "_id": "53eada0ada91110000000046",
                "createdTime": "2014-08-13T03:22:50.489Z",
                "isActive": true,
                "name": "Australia",
                "ownerId": "52969365593a1a3a3200000f",
                "parentId": "536884ecb5a76fd5d3000014",
                "workspaceId": "536884ecb5a76fd5d3000014",
                "children": [
                    {
                        "_class": "io.eagle.models.node.location.Location",
                        "_id": "542cbd18815043850e995f84",
                        "alarms": {
                            "stateAlarm": {
                                "status": {
                                    "acknowledgeComment": null,
                                    "acknowledgeTime": null,
                                    "acknowledgeUsername": null,
                                    "categoryId": null,
                                    "message": null,
                                    "alarmState": "CLEARED"
                                },
                                "_class": "io.eagle.models.node.alarm.
↪StateAlarm"
                            }
                        },
                        "createdTime": "2014-10-02T02:48:56.186Z",
                        "displayType": "VALUE",
                        "isActive": true,
                        "metadata": [],
                        "name": "New Location",
                        "ownerId": "52969365593a1a3a3200000f",
                        "parentId": "53eada0ada91110000000046",
                        "states": [
                            {
                                "name": "NORMAL",
                                "index": 0,
                                "categoryId": null,
```

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```
                                "_id": "542cbc4f815043850e995ebb",
                                "threshold": {
                                    "_class": "io.eagle.util.geo.GeoPoint"
                                },
                                "notify": "NEVER",
                                "description": null,
                                "isAlarm": null,
                                "_class": "io.eagle.models.node.point.
↪PointState"
                            }
                        ],
                        "statesType": "RANGE",
                        "workspaceId": "536884ecb5a76fd5d3000014",
                        "children": []
                    }
                ]
            }
        ]
    }
]
```

Retrieve a node

Retrieve a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Arguments

Argument	Example	Description
attr	_id,_class	*Optional.* Comma delimited list of attributes to include in response
expiry	60	*Optional.* Expiry period in minutes for any included resource links. ie. *fileUrl* for Attachments. Default is 0 (no expiry). Expired resource links will return 403 Forbidden.

Request

```
GET /api/v1/nodes/:id
```

Example accessing a node by its automatically assigned *_id*

```
/api/v1/nodes/536884ecb5a76fd5d3000014
```

Example accessing a node by its *customId*

```
/api/v1/nodes/@workspace-01
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.node.Workspace",
    "_id": "536884ecb5a76fd5d3000014",
    "createdTime": "2014-05-06T06:45:00.061Z",
    "isActive": true,
    "name": "My Workspace",
    "ownerId": "52969365593a1a3a3200000f",
    "customId": "workspace-01"
}
```

Create a node

Create a node (currently limited to creation of *Workspace* and *Group*). You must specifiy both the *_class* and a unique *name*. Creating a Group also requires a valid *parentId*.

Note: Required API key permission: *Modify*

Request

```
POST /api/v1/nodes
```

Example creating a Workspace

```
{
    "_class": "io.eagle.models.node.Workspace",
    "name": "New Workspace"
}
```

Example creating a Folder

```
{
    "_class": "io.eagle.models.node.Group",
    "name": "New Folder",
    "parentId": "5a554eed0b64aabe5738da86"
}
```

Response

```
HTTP/1.1 201 Created
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.node.Workspace",
    "_id": "5ae7c3d03549e867c718ff97",
    "createdTime": "2018-05-01T01:33:04.830Z",
    "isActive": true,
    "metadata": [],
    "name": "New Workspace",
    "ownerId": "56d3a61a09c7aa9a82765540"
}
```

Update a node

Update a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Updates are limited to the attributes listed with the *Update* flag. Multiple attributes can be updated in a single request.

The updated node will be returned in the response if the request is successful. You can optionally limit the returned attributes by specifying the **attr** argument.

Note: Required API key permission: *Modify*

Arguments

Argument	Example	Description
attr	_id,_class	*Optional*. Comma delimited list of attributes to include in successful response

Request

```
PUT /api/v1/nodes/:id
```

```
{
    "name": "My Renamed Workspace"
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.node.Workspace",
    "_id": "536884ecb5a76fd5d3000014",
    "createdTime": "2014-05-06T06:45:00.061Z",
    "isActive": true,
    "name": "My Renamed Workspace",
    "ownerId": "52969365593a1a3a3200000f"
}
```

Complex attribute updates

Certain attributes such as alarms and states have specific update requirements:

- *Alarm configuration* (page 454)
- *States configuration* (page 456)
- *Parameter chart configuration* (page 458)
- *Rating configuration* (page 461)

Alarm configuration

Alarm configuration can be included in the update request for Location, Source and Parameter nodes. You must specify each alarm type as a nested attribute containing the *config* to be updated. Only changed attributes need to be specified.

Alarm config attributes	Type	Description
isEnabled	Boolean	Enable or disable the alarm. Overload alarm can not be disabled.
categoryId	ObjectId	Id of *owner category* (page 508) to assign to this alarm. Required when *notify* option is not *NEVER*
notify	String	When notifications should be triggered: *[NEVER, ALWAYS, AWAY_FROM_NORMAL, TOWARDS_NORMAL]*.
messageAway	String	*Optional - Only valid for outdatedAlarm*. Custom message to send when the alarm becomes active. Maximum of 255 characters. Leave empty for default message.
messageTowards	String	*Optional - Only valid for outdatedAlarm*. Custom message to send when the alarm becomes inactive. Maximum of 255 characters. Leave empty for default message.
qualityTypes	Array	Only valid for *qualityAlarm*. List of quality types that will trigger this alarm: *[GOOD, BAD, UNCERTAIN]*.
excludeBeforeSeconds	Int32	*Optional - Default is null*. Only valid for *dataAlarm*. Exclude data older than this duration and raise alarm if encountered. *120 - 315360000* seconds.
excludeAfterSeconds	Int32	*Optional - Default is null*. Only valid for *dataAlarm*. Exclude data newer than this duration and raise alarm if encountered. *120 - 315360000* seconds.

Example:

```
{
    "alarms": {
        "communicationsAlarm": {
            "config": {
                "isEnabled": true,
                "notify": "ALWAYS",
                "categoryId": "52969367593a1a3a32000012"
            }
        },
        "qualityAlarm": {
            "config": {
                "isEnabled": true,
                "qualityTypes": ["BAD", "UNCERTAIN"]
            }
        },
        "configurationAlarm": { "config": { "isEnabled": false } }
    }
}
```

The alarm types available are specific to the type of node being updated:

Alarm types	Supported nodes
communicationsAlarm	Sources
configurationAlarm	Sources
controlAlarm	Control parameters
dataAlarm	Sources
outdatedAlarm[1]	Sources
overloadAlarm	Sources
processAlarm	Processor Sources, Process Parameters
qualityAlarm	Locations, Parameters
stateAlarm[2]	Locations, Parameters

States configuration

States configuration can be included in the update request for Number and Text Parameter nodes. Number parameters can use either *DISCRETE* or *RANGE* states. Text parameters are limited to *DISCRETE* states only.

States can be reset to parameter defaults by updating the *states* attribute with *null*.

Update existing states by providing the *_id* attribute for each state in the request. Any states without the *_id* attribute will be ignored. Only changed attributes need to be specified.

If no states in the request contain an *_id* attribute the update will **Replace** the existing states. **RANGE** states for number parameters must always be specified in *ascending* order based on *threshold* and there must be one state with the *name* attribute set to *NORMAL*.

Refer to *Parameter states* (page 147) for further information.

Note: State type for number parameters can be changed with the *statesType* attribute. When changing *statesType* you should specify new *states* configuration or default states will be applied.

---

[1] outdatedAlarm *Maximum timeout* is set via the node *quietMaxSeconds* attributes.

[2] stateAlarm has no direct configuration. Modify *states* to change state alarm behaviour.

State attributes	Type	Description
name	String	*Required*. Unique name assigned to the state
threshold	Variable	*Required*. Unique threshold value for the state. Number parameters require a *Double*. Text parameters require a *String*.
occurrences	Int32	*Optional - Default is 1*. Minimum number of repeat values equal or beyond threshold required to trigger state: *1-15*.
isAlarm	Boolean	*Optional - Default is FALSE*. Flag to indicate if this state should raise an alarm. Not valid for *NORMAL* RANGE state.
notify	String	*Optional - Default is NEVER*. When notifications should be triggered: *[NEVER, ALWAYS, AWAY_FROM_NORMAL, TOWARDS_NORMAL]*. The *NORMAL* RANGE state is restricted to: *[NEVER, ALWAYS]*
categoryId	ObjectId	Id of *owner category* (page 508) to assign to this state. Required when *notify* option is not *NEVER*
messageAway	String	*Optional*. Custom message to send when the state becomes active (away from normal). Maximum of 255 characters. Leave empty for default message.
messageTowards	String	*Optional*. Custom message to send when the state becomes inactive (towards normal). Maximum of 255 characters. Leave empty for default message.
qualityCode	Int32	*Optional - Default is null*. Quality code to apply to acquired data that matches this state: *0-65535*.

Example replacing DISCRETE states

```
{
    "statesType": "DISCRETE",
    "states": [
        {
            "name": "OFF",
            "threshold": 0
        },
        {
            "name": "ON",
            "threshold": 1,
            "occurrences": 1,
            "isAlarm": true,
            "notify": "ALWAYS",
            "categoryId": "52969367593a1a3a32000012",
            "messageAway": "PUMP IS RUNNING",
            "messageTowards": "PUMP IS OFF",
            "qualityCode": 192
        }
    ]
}
```

Example updating existing DISCRETE states

```
{
    "statesType": "DISCRETE",
    "states": [
        {
            "_id": "52969367593a1a3a32000091",
            "name": "SIREN OFF"
        },
        {
            "_id": "52969367593a1a3a32000092",
            "name": "SIREN ON",
            "notify": "NEVER"
        }
    ]
}
```

Example replacing RANGE states

```
{
    "statesType": "RANGE",
    "states": [
        {
            "name": "LOW",
            "threshold": 20
        },
        {
            "name": "NORMAL"
        },
        {
            "name": "HIGH",
            "threshold": 50
        },
        {
            "name": "CRITICAL",
            "threshold": 100,
            "occurrences": 2,
            "isAlarm": true,
            "notify": "ALWAYS",
            "categoryId": "52969367593a1a3a32000012",
            "qualityCode": 192
        }
    ]
}
```

Parameter chart configuration

Parameter chart configuration is used when displaying parameters as series on automatically generated charts. It can be included in the update request for Parameter nodes. Only changed attributes need to be specified.

Parameter chart config attributes	Type	Description
_class	String	Determines chart series type (Line or Column): *[io.eagle.models.node.point.chart.LineChart, io.eagle.models.node.point.chart.ColumnChart]*
stateThresholds	String	Threshold lines to display (when in y-axis range): *[NONE, ALL, ALARM, NONALARM, USER_NOTIFICATION]*
markerType	String	Marker type: *[AUTOMATIC, CIRCLE, SQUARE, DIAMOND, TRIANGLE, TRIANGLE-DOWN]*
markerSize	Int32	Marker size (0 is Hidden): *0-6*.
qualityStyle	String	Specify how quality colors are display on chart: *[NONE, MARKER, MARKER_HOVER, MARKER_LINE, MARKER_FILL]*
shadow	Boolean	*Optional - default is false*. Drop shadow effect
primaryColor	String	*Optional - default is AUTOMATIC*. Hex color code (eg. *#ff3399*) or *AUTOMATIC* used as primary color.
secondaryColor	String	*Optional - default is AUTOMATIC*. Hex color code (eg. *#ffffff*) or *AUTOMATIC* used as secondary color when *fillStyle* is a gradient.
fillStyle	String	Fill style: *[NONE, SOLID, LINEAR_TOP, LINEAR_BOTTOM, LINEAR_LEFT, LINEAR_RIGHT, PIPE_VERTICAL, PIPE_HORIZONTAL, RADIAL_INSIDE, RADIAL_OUTSIDE]*
fillOpacity	Int32	Fill opacity (0 is Transparent): *0-100*.
lineWidth	Int32	Series line width (0 is Hidden): *0-6*.
lineType	String	Line type (Line series only): *[NORMAL, STEP_LEFT, STEP_CENTER, STEP_RIGHT, SPLINE]*
lineStyle	String	Line style (Line series only): *[SOLID, SHORTDASH, SHORTDOT, SHORTDASHDOT, SHORTDASHDOTDOT, DOT, DASH, LONGDASH, DASHDOT, LONGDASHDOT,*

Example Line series:

```
{
    "chart": {
        "_class": "io.eagle.models.node.point.chart.LineChart",
        "stateThresholds": "ALL",
        "markerType": "AUTOMATIC",
        "markerSize": 2,
        "qualityStyle": "MARKER_HOVER",
        "shadow": false,
        "primaryColor": "AUTOMATIC",
        "fillStyle": "NONE",
        "fillOpacity": 75,
        "lineWidth": 1,
        "lineType": "NORMAL",
        "lineStyle": "SOLID",
        "aggregation": {
            "mode": "AUTOMATIC"
        }
    }
}
```

Example updating to stepped Line series with custom gradient fill:

```
{
    "chart": {
        "_class": "io.eagle.models.node.point.chart.LineChart",
        "primaryColor": "#33ff00",
        "secondaryColor": "#ff0000",
        "fillStyle": "LINEAR_TOP",
        "fillOpacity": 100,
        "lineType": "STEP_LEFT"
    }
}
```

Example Column series with hourly totals:

```
{
    "chart": {
        "_class": "io.eagle.models.node.point.chart.ColumnChart",
        "markerSize": 0,
        "primaryColor": "AUTOMATIC",
        "fillStyle": "SOLID",
        "fillOpacity": 100,
        "pointPlacementType": "ON",
        "groupType": "NORMAL",
        "aggregation": {
            "mode": "CUSTOM",
            "type": "TOTAL",
            "period": "FIXED",
            "interval": "1H",
            "baseTime": "D"
        }
```

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```
        }
}
```

Rating configuration

Rating configuration can be included in the update request for *Rating Parameter* (page 156) nodes. An *inputNodeId* is required which specifies the Number Parameter to use as the input for the rating calculations. Multiple ratings can be added, with the *startTime* used to determine the data range each rating will apply.

Note: Rating configuration updates will **replace** any existing ratings and trigger historic data to be recalculated for this parameter.

Rating attributes	Type	Description
inputNodeId	ObjectId	Node *_id* to be used as the input for the rating calculations. Must be a Number parameter in the same Workspace as this Rating parameter.
ratings	Array	Rating table and rating equation objects (as documented below).

Rating table	Type	Description
startTime	Time	*Required.* *ISO8601* (page 581) timestamp of the start range this rating will be applied. End range is automatically set to the startTime of the next most recent rating or will continue to apply to new data if no other ratings are specified.
table	Array	Lookup table for rating calculations with each row specified as an array of *input* and *result*. Values that fall between each input lookup will be derived by linear interpolation.
[<input>, <result>]	Array	*Required.* The numeric value of the input node to match and corresponding result.

Rating equation	Type	Description
startTime	Time	*Required*. *ISO8601* (page 581) timestamp of the start range this rating will be applied. End range is automatically set to the startTime of the next most recent rating or will continue to apply to new data if no other ratings are specified.
equationType	String	*POLYNOMIAL* is currently the only supported rating equation.
coefficients	Object	Map of *coefficient* key and corresponding *value*. The coefficient keys must be single letters, ordered alphabetically.

Example rating configuration:

```
{
    "rating": {
        "inputNodeId": "5ec206f9309acc31a896c3b9",
        "ratings": [
            {
                "startTime": "2020-01-01T00:00:00Z",
                "table": [
                    [0.1, 9.8],
                    [0.5, 40],
                    [1.2, 120]
                ]
            },
            {
                "startTime": "2020-10-24T11:00:00Z",
                "table": [
                    [0.1, 7.8],
                    [0.2, 18.3],
                    [0.6, 44.2],
                    [1.1, 130.4]
                ]
            },
            {
                "startTime": "2020-11-01T11:00:00Z",
                "equationType": "POLYNOMIAL",
                "coefficients": {
                    "a": 1.1,
                    "b": 2.5,
                    "c": 1.115,
                    "d": 4.01,
                    "e": 0.85
                }
            }
        ]
    }
}
```

In this example, Discharge is calculated using 2 rating lookup tables and 1 rating polynomial. The *inputNodeId* is set to the *_id* of the *Water Level* parameter. A water level value of **0.1** will result in an output value of **9.8** for data at the beginning of 2020. Water level **0.1** will result in an output value of **7.8** for data in the range starting 24th October. From 1st November onwards, a polynomial equation will be applied using the coefficients **a, b, c, d, e**.

Delete a node

Delete a node by its **id** including all child nodes. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: This will permanently delete the node including all historic data and events. Required API key permission: *Modify*

Request

```
DELETE /api/v1/nodes/:id
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 200,
        "message": "Success"
    }
}
```

Clone a node or create instance from template

Clone a node or create an *instance* (page 62) from a *template* (page 60) by its *id*. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

When the node being cloned is not a Workspace you must specify a valid *parentId* as the destination for the clone/create operation. Optionally include *name* and *metadata* to be assigned to the newly created node.

Note: Not available for TRIAL accounts. Required API key permission: *Modify*. Cloning a workspace requires the API key to have 'All workspaces' access level.

Arguments

Argument	Example	Description
attr	_id,slug	*Optional.* Comma delimited list of attributes to include in response
type	TREE	*Optional - Default is LIST*[4] | **LIST** returns a flat list of nodes | **TREE** returns hierarchical list of nodes
expiry	60	*Optional.* Expiry period in minutes for any included resource links. ie. *fileUrl* for Attachments. Default is 0 (no expiry). Expired resource links will return 403 Forbidden.

Request

```
POST /api/v1/nodes/:id/clone
```

```
{
    "parentId": "5a554eed0b64aabe5738da86"
    "name": "Copy of Location 1",
    "metadata": [
        "name": "Site ID",
        "value": "abc123"
    ]
}
```

Response

```
HTTP/1.1 201 Created
Content-Type: application/json; charset=utf-8
```

```
[
    {
        "_id": "5ae809d73549e867c71900db",
        "_class": "io.eagle.models.node.location.Location",
        "parentId": "5a554eed0b64aabe5738da86",
        "name": "Copy of Location 1",
        "metadata": [
            "name": "Site ID",
            "value": "abc123"
        ],
        "ownerId": "56d3a61a09c7aa9a82765540",
        "createdTime": "2018-05-01T06:31:51.907Z",
        "workspaceId": "5a554eed0b64aabe5738da86"
    }
]
```

Acknowledge node alarms

Acknowledge active alarms for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Optionally provide a *comment* for the acknowledgement.

Note: Only available for Location, Source and Parameter nodes. Required API key permission: *Modify*

Arguments

Argument	Example	Description
alarmTypes	stateAlarm,qualityAlarm	*Optional - Default is ALL.* Comma delimited list of specific alarms to acknowledge: *[communicationsAlarm, configurationAlarm, controlAlarm, outdatedAlarm, overloadAlarm, processAlarm, qualityAlarm, stateAlarm]*

Request

```
POST /api/v1/nodes/:id/alarms/acknowledge
```

```
{
    "comment": "maintenance team investigating"
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Clear node alarms

Clear active and acknowledged alarms for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: Only available for Location, Source and Parameter nodes. Required API key permission: *Modify*

Arguments

Argument	Example	Description
alarmTypes	stateAlarm,controlAlarm	*Optional - Default is ALL.* Comma delimited list of specific alarms to clear: *[communicationsAlarm, configurationAlarm, controlAlarm, outdatedAlarm, overloadAlarm, processAlarm, qualityAlarm, stateAlarm]*

Request

```
POST /api/v1/nodes/:id/alarms/clear
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Trigger an acquisition

Trigger an acquisition (*Acquire Now*) for a Source node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: Only available for Source nodes with Transports that allow for manual collection. Required API key permission: *Modify*

Request

```
POST /api/v1/nodes/:id/operate/acquire
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Retrieve user and group notification preferences

Retrieve a list of all users and groups subscribed to receive notifications for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Arguments

Argument	Example	Description
subscribeType	NODE	*Optional - Default is NODE*. Users and Groups to return in the response: *[NODE, BRANCH, ALL]*. NODE includes users & groups subscribed to this node. BRANCH includes users & groups subscribed to this node and any nodes it contains. ALL includes all users & groups that have access to the node (and can be subscribed) regardless of current subscription state. This can used to retrieve user notification preferences for a workspace prior to *subscribing to notifications* (page 471).

Request

```
GET /api/v1/nodes/:id/notifications
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "users": [
        {
            "name": {
                "last": "Jones",
                "first": "Bob"
            },
            "contact": {
                "email": "bob@company.com"
            },
            "account": {
                "lastLoginTime": "2018-02-27T01:05:02.029Z"
            },
            "notificationCategories": [
                {
                    "category": "Maintenance",
                    "email": true,
                    "sms": false
                },
                {
                    "category": "Operations",
                    "email": true,
                    "sms": true
                },
                {
                    "category": "Critical",
                    "email": true,
                    "sms": false
                }
            ]
        }
    ],
    "groups": [
        {
            "group": "Engineers",
            "users": [
                {
                    "name": {
                        "last": "Smith",
                        "first": "Will"
                    },
                    "contact": {
                        "email": "will@company.com"
                    },
                    "account": {
                        "lastLoginTime": ""
                    },
                    "notificationCategories": [
                        {
```

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```
                            "category": "Maintenance",
                            "email": true,
                            "sms": true
                        },
                        {
                            "category": "Operations",
                            "email": true,
                            "sms": true
                        },
                        {
                            "category": "Critical",
                            "email": true,
                            "sms": true
                        }
                    ]
                }
            ]
        }
    ]
}
```

Update user notification preferences

Update user notification preferences for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

This allows for *notificationCategories* to have *email* and *sms* enabled or disabled per *category*. These preferences **apply to all node notification subscriptions within the Workspace**. Only categories with changed attributes need to be included in the update. If the category specified does not exist it will be ignored.

When *subscribing groups to notifications* (page 471) you still need to update notification preferences for individual users of the group.

The response includes updated profiles for all *requested users*.

Note: The specified users (email addresses) must be valid *workspace users* (page 473). Required API key permission: *Modify*.

You must also *subscribe users and groups to notifications* (page 471) for the specific nodes they want to receive notifications from.

Request

```
POST /api/v1/nodes/:id/notifications
```

```
{
    "users": [
        {
            "user": "bob@company.com",
            "notificationCategories": [
                {
                    "category": "Critical",
                    "email": true,
                    "sms": true
                }
            ]
        },
        {
            "user": "will@company.com",
            "notificationCategories": [
                {
                    "category": "Operations",
                    "sms": false
                },
                {
                    "category": "Critical",
                    "email": false,
                    "sms": false
                }
            ]
        }
    ]
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "users": [
        {
            "user": "bob@company.com",
            "notificationCategories": [
                {
                    "category": "Maintenance",
                    "email": false,
                    "sms": false
                },
                {
                    "category": "Operations",
                    "email": false,
                    "sms": false
                },
                {
```

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```
                    "category": "Critical",
                    "email": true,
                    "sms": true
                }
            ]
        },
        {
            "user": "will@company.com",
            "notificationCategories": [
                {
                    "category": "Maintenance",
                    "email": true,
                    "sms": true,
                },
                {
                    "category": "Operations",
                    "email": true,
                    "sms": false
                },
                {
                    "category": "Critical",
                    "email": false,
                    "sms": false
                }
            ]
        }
    ]
}
```

Subscribe users and groups to notifications

Subscribe a list of users and groups to receive notifications for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: Only available for Location, Source and Parameter nodes. The specified users (email addresses) must be valid workspace users. Required API key permission: *Modify*

Request

```
POST /api/v1/nodes/:id/notifications/subscribe
```

```
{
    "users": [
        {
            "user": "john@company.com"
```

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```
        },
        {
            "user": "bob@company.com"
        }
    ],
    "groups": [
        {
            "group": "Engineers"
        }
    ]
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Unsubscribe users and groups from notifications

Unsubscribe a list of users and groups from receieving notifications for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: Only available for Location, Source and Parameter nodes. Required API key permission: *Modify*

Request

```
POST /api/v1/nodes/:id/notifications/unsubscribe
```

```
{
    "users": [
        {
            "user": "john@company.com"
        },
        {
            "user": "bob@company.com"
        }
```

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```
    ],
    "groups": [
        {
            "group": "Engineers"
        }
    ]
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Retrieve Workspace user and group permissions

Retrieve a list of all users and groups with access to a workspace (or node) by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. When a user is included in a group that has been provided access, the user entry may contain an *effectivePermissions* attribute which combines individual user and group(s) permissions (where different).

Request

```
GET /api/v1/nodes/:id/security
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "users": [
        {
            "name": {
                "last": "Smith",
                "first": "John"
```

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```
            },
            "contact": {
                "email": "john@company.com"
            },
            "account": {
                "lastLoginTime": "2018-05-01T01:21:59.735Z"
            },
            "role": "OWNER",
            "permissions": [
                "VIEW",
                "ATTACHMENT_READ",
                "EXPORT_DATA",
                "SEND_MESSAGE",
                "SUBSCRIBE_NOTIFICATIONS",
                "MANAGE_NOTIFICATIONS",
                "ACKNOWLEDGE_ALARMS",
                "EDIT_ALARMS",
                "CONTROL",
                "CONFIGURE",
                "SECURITY",
                "OWNER"
            ]
        },
        {
            "name": {
                "last": "Jones",
                "first": "Bob"
            },
            "contact": {
                "email": "bob@company.com"
            },
            "account": {
                "lastLoginTime": "2018-02-27T01:05:02.029Z"
            },
            "role": "",
            "permissions": []
            "effectivePermissions": [
                "VIEW"
            ]
        }
    ],
    "groups": [
        {
            "group": "Engineers",
            "role": "View",
            "permissions": [
                "VIEW"
            ],
            "users": [
                {
                    "user": "bob@company.com"
                }
```

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```
            ]
        }
    ]
}
```

Note: When retrieving permissions for a node it will return permissions that have been directly set on this node (or the Workspace) and not inherited node permissions.

Add or Update Workspace user and group permissions

Add a list of users and groups to a Workspace by its **id** and set or update user security roles. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. You must specify a valid *role* name that has been preconfigured in *account settings* (page 270).

If the user (email address) does not already exist a new user profile will be created and a *profileActivateUrl* will be returned so the user profile can be finalized by navigating to the url in a web browser. When adding a new user (profile does not exist) you can optionally include attributes: *name*, *phone*, *timezone*, *timezoneAdjustForDst*, *timeFormat* and *notificationCategories*.

Note: Required API key permission: *Modify*

Arguments

Argument	Example	Description
notify	TRUE	*Optional - Default is FALSE.* Notify users they have been granted workspace access

Request

```
POST /api/v1/nodes/:id/security/subscribe
```

```
{
    "users": [
        {
            "user": "bob@company.com",
            "role": "View"
        },
        {
            "user": "jane@company.com",
```

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```
            "role": "Operate",
            "expiryTime": "2019-11-05T05:24:32.000+0000"
            "name": {
                "first": "Jane",
                "last": "Smith"
            },
            "phone": "+61400000001",
            "timezone": "Australia/Sydney",
            "timezoneAdjustForDst": true,
            "timeFormat": "YYYY-MM-DD HH:mm:ss"
        }
    ],
    "groups": [
        {
            "group": "Engineers",
            "role": "View"
        }
    ]
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "added": [
        {
            "user": "jane@company.com",
            "role": "Operate",
            "permissions": [
                "VIEW",
                "ATTACHMENT_READ",
                "EXPORT_DATA",
                "SEND_MESSAGE",
                "ACKNOWLEDGE_ALARMS",
                "EDIT_ALARMS",
                "CONTROL",
                "SUBSCRIBE_NOTIFICATIONS"
            ],
            "expiryTime": "2019-11-05T05:24:32.000+0000",
            "profileActivateUrl": "https://app.eagle.io/auth/setupprofile/
↪ca4d1da0-8231-46df-af69-df1b2f1a8b5d"
        },
        {
            "group": "Engineers",
            "role" : "View",
            "permissions": [
                "VIEW"
```

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```
            ],
            "users": [
                {
                    "user": "will@company.com",
                    "profileActivateUrl": "https://app.eagle.io/auth/
↪setupprofile/bb2d3fc9-7399-26dc-ca22-ee2b6f0b6a0c"
                }
            ]
        }
    ],
    "updated": [
        {
            "user": "bob@company.com",
            "role": "View",
            "permissions": [
                "VIEW"
            ]
        }
    ]
}
```

Remove users and groups from a Workspace

Remove a list of users and groups from a Workspace by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: Owner and Administrator users can not be removed from an individual workspace. Required API key permission: *Modify*

Arguments

Argument	Example	Description
notify	TRUE	*Optional - Default is FALSE*. Notify users they have had their workspace access revoked

Request

```
POST /api/v1/nodes/:id/security/unsubscribe
```

```
{
    "users": [
```

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```
        {
            "user": "jane@company.com"
        }
    ],
    "groups": [
        {
            "group": "Engineers"
        }
    ]
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "removed": [
        {
            "user": "jane@company.com"
        },
        {
            "group": "Engineers"
        }
    ]
}
```

Retrieve node historic data

Retrieve historic data from a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Data can be returned in JSON (*JTS* (page 572)) or CSV format. Use the *Historic resource* (page 494) for extracting historic data from multiple nodes in a single request.

Note: Only available for Location and Parameter nodes.

Arguments

Argument	Example	Description
format	JSON	*Optional - Default is JSON*. Data format to return: *[JSON, CSV]*
startTime	2014-08-16T02:00:00Z	*Required*.[5] *ISO8601* (page 581) url encoded timestamp
endTime	2014-08-16T02:20:43Z	*Required*.[5] *ISO8601* (page 581) url encoded timestamp
limit	100	*Optional*. Maximum number of historic records to be returned.
timezone	Etc/UTC	*Optional - Default is Etc/UTC*. *Timezone* (page 581) applied to timestamps. Aggregate *interval* and *baseTime* calculations will also use this zone.
timezoneAdjustForDst	FALSE	*Optional - Default is FALSE*. Flag to indicate if timestamps should be adjusted for DST in selected *timezone*.
timeQuery	RECORD	*Optional - Default is RECORD*. Timestamp to query by. MODIFIED will query by modified timestamp (typically used to obtain records changed since a specific timestamp): *[RECORD, MODIFIED]*
timeFormat	YYYY-MM-DD HH:mm:ss	*Optional*. *Time format* (page 582) to use when *format* is ‘CSV’.
header	TRUE	*Optional - Default is TRUE*. Flag to include header
delimiter	,	*Optional - Default is ‘,’*. Delimiter character to use (in CSV format).
textQualifier	“	*Optional - Default is ‘”’*. Text qualifier character to use (in CSV format).
quality	NONE	*Optional - Default is NONE*. Specify how *quality* (page 577) should be output (in CSV format): *[NONE, DELIMITED_WITH_VALUE, SEPARATE_VALUE]*
qualityDelimiter	:	*Optional - Default is ‘:’*. Delimiter to use when *quality* is ‘DELIMITED_WITH_VALUE’.
qualityExcluded	BAD,UNCERTAIN	*Optional* - Default uses account settings *Exclude quality* (page 266). Comma separated list of data point quality types to be excluded: *[GOOD, BAD, UNCERTAIN or NONE]*
annotation	NONE	*Optional - Default is NONE*. Specify how *annotations* (page 578) should be output (in CSV format): *[NONE, DELIMITED_WITH_VALUE, SEPARATE_VALUE]*
annotationDelimiter	;	*Optional - Default is ‘;’*. Delimiter to use when *annotation* is ‘DELIMITED_WITH_VALUE’.
renderType	VALUE	*Optional - Default is node displayType*. Rendering of value: *[VALUE, STATE]*
renderFormat	0.000	*Optional - Default is node format*. *Format* (page 147) to apply when renderType is VALUE. ‘#’ must be URL Encoded (http://en.wikipedia.org/wiki/Percent-encoding) as ‘%23’.
aggregate	AVERAGE	*Optional - Default is NONE (raw)*. Historic *aggregate* (page 569) to apply to extracted data.
baseTime	D	*Optional*. *OPC Base Time* (page 585) required for aggregation.

Request

```
GET /api/v1/nodes/:id/historic
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "docType": "jts",
    "version": "1.0",
    "header": {
        "startTime": "2014-08-16T02:00:00.000Z",
        "endTime": "2014-08-16T02:20:43.000Z",
        "recordCount": 5,
        "columns": {
            "0": {
                "id": "541a5a129bc9b4035f906d70",
                "name": "Temperature",
                "dataType": "NUMBER",
                "aggregate": "NONE"
            }
        }
    },
    "data": [
        {
            "ts": "2014-08-16T02:00:39.000Z",
            "f": { "0": {"v": 28.21 } }
        },
        {
            "ts": "2014-08-16T02:05:40.000Z",
            "f": { "0": {"v": 28.22 } }
        },
        {
            "ts": "2014-08-16T02:10:41.000Z",
            "f": { "0": {"v": 28.7 } }
        },
        {
            "ts": "2014-08-16T02:15:42.000Z",
            "f": { "0": {"v": 29.2 } }
        },
        {
            "ts": "2014-08-16T02:20:43.000Z",
            "f": { "0": {"v": 29.18 } }
        }
    ]
}
```

---

[5] startTime or endTime can be omitted when `limit` is specified.

Retrieve node historic chart

Retrieve historic chart image from a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Chart images can be returned in PNG, JPG, SVG and PDF format.

If a *chart node* (page 66) is specified, you can optionally specify: *format, width, height, title, subtitle, startTime, endTime, timezone, timezoneAdjustForDst*.

If a *parameter node* (page 147) is specified, the nodes' pre-configured (or default) chart settings will be used but you can optionally specify any of the arguments below. Use the *Historic resource* (page 494) chart endpoint for generating an adhoc chart using data from multiple parameters in a single request.

Note: Only available for Parameter and Custom Chart nodes.

Arguments

Argument	Example	Description
format	PNG	*Optional - Default is PNG*. Image format to return: *[PNG, JPG, SVG, PDF]*
width	1200	*Optional - Default is 1200*. Width of image (png, jpg) in pixels
height	800	*Optional - Default is 800*. Height of image (png, jpg) in pixels
scale	2	*Optional - Default is 1*. Multiplier to adjust image dimensions (png, jpg) for higher resolution output: *1-4*.
title	My Chart	*Optional*. Title to display on chart
subtitle	Generated by eagle.io	*Optional*. Subtitle to display on chart
startTime	2014-08-16T02:00:00Z	*Required*. *ISO8601* (page 581) url encoded timestamp
endTime	2014-08-16T02:20:43Z	*Required*. *ISO8601* (page 581) url encoded timestamp
timezone	Etc/UTC	*Optional - Default is Etc/UTC*. *Timezone* (page 581) applied to timestamps. Aggregate *interval* and *baseTime* calculations will also use this zone
timezoneAdjustForDst	FALSE	*Optional - Default is FALSE*. Flag to indicate if timestamps should be adjusted for DST in selected *timezone*
renderType[6]	VALUE	*Optional - Default is node displayType*. Rendering of value: *[VALUE, STATE]*
aggregate[6]	AVERAGE	*Optional - Default is NONE (raw)*. Historic *aggregate* (page 569) to apply to extracted data
baseTime[6]	D	*Optional*. *OPC Base Time* (page 585) required for aggregation
interval[6]	3H	*Optional*. *OPC Interval* (page 585) required for aggregation
intervalInclude[6]	PARTIAL	*Optional - Default is PARTIAL*. COMPLETE will include aggregated values for complete intervals only. PARTIAL will also include values for non-complete intervals: *[PARTIAL, COMPLETE]*
baselineType[6]	RELATIVE	*Optional - Default is ABSOLUTE*. Absolute will return data point values unmodified. Relative will subtract the first data point value from all subsequent data point values: *[ABSOLUTE, RELATIVE]*

Request

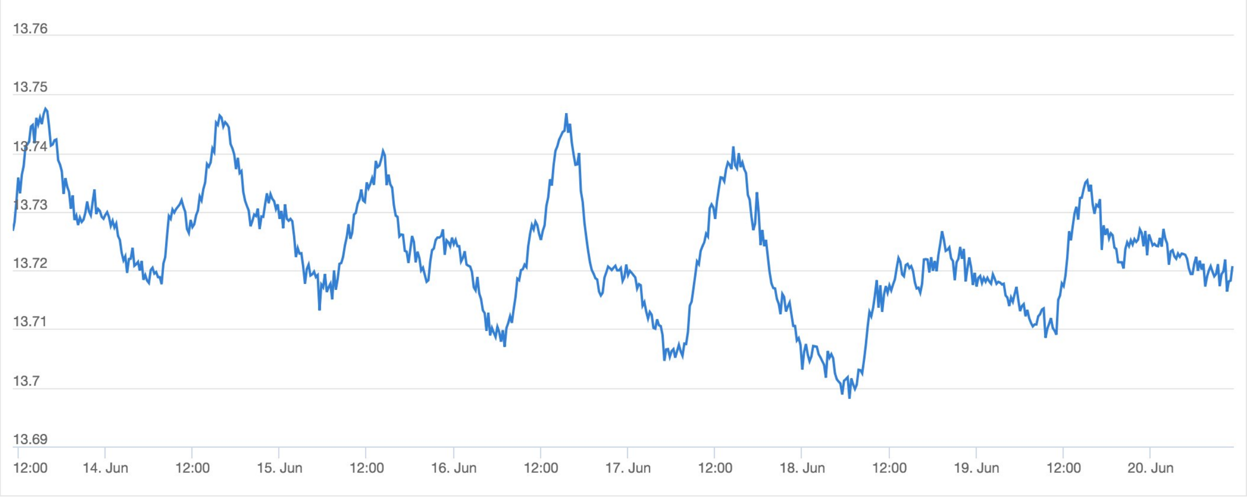
```
GET /api/v1/nodes/:id/historic/chart
```

---

[6] Only available when specifying a *parameter* node.

Response

```
HTTP/1.1 200 OK
Content-Type: image/png;
```



Retrieve node report

Generate and retrieve a PDF file from a *report node* (page 161) by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: The reporting feature is currently a **pre-release** version that is subject to change without notice and is only available to limited accounts.

Arguments

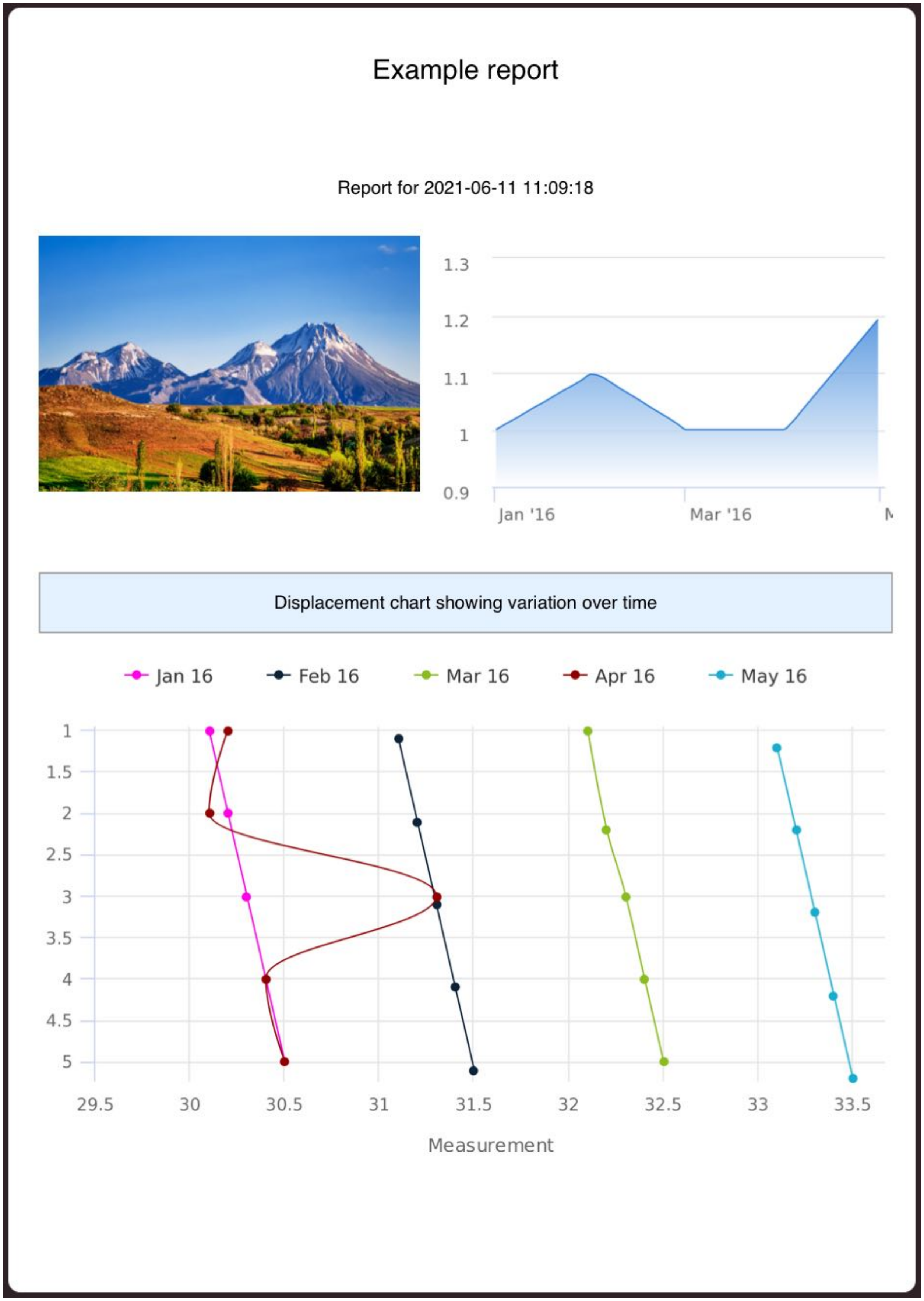
Argument	Example	Description
nowTime	2021-06-01T00:00:00Z	*Optional*. Default is null (current time). *ISO8601* (page 581) url encoded timestamp to use for report generation. All current values and historic records are relative to this timestamp.
timezone	Etc/UTC	*Optional - Default is report timezone*. *Timezone* (page 581) applied to timestamps. Only specify to override the default report timezone.
timezoneAdjustForDst	FALSE	*Optional - Default is report timezone adjust for dst*. Flag to indicate if timestamps should be adjusted for DST in selected *timezone* Only specify to override the default report timezone.

Request

```
GET /api/v1/nodes/:id/report
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/pdf;
```



Example report

Report for 2021-06-11 11:09:18

Displacement chart showing variation over time

1.3
1.2
1.1
1
0.9
Jan '16
Mar '16
Jan 16
Feb 16
Mar 16
Apr 16
May 16
1
1.5
2
2.5
3
3.5
4
4.5
5
29.5
30
30.5
31
31.5
32
32.5
33
33.5
Measurement

Update Parameter or Location historic data

Update historic data for a Parameter or Location node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Data can be inserted in JSON (*JTS* (page 572)) or CSV format. Use the *Historic resource* (page 494) to update historic data for multiple nodes in a single request.

Note: Only available for Location and Parameter nodes. Required API key permission: *Modify*

Arguments

Argument	Example	Description
format	JSON	*Optional - Default is JSON*. Data format being inserted: *[JSON]*.
writeMode	MERGE_OVERWRITE_EXISTING	*Optional - Default is MERGE_OVERWRITE_EXISTING*. See all available *write mode* (page 217) options.
notifyOn	LATEST_ONLY	*Optional - Default is LATEST_ONLY*. When to generate events, raise alarms and send notifications: *[ALL_NEWER, LATEST_ONLY, NONE]*. ALL_NEWER: All events newer than parameter current value. LATEST_ONLY: Latest event newer than parameter current value.
columnIndex	0	*Optional - Default is 0*. Index of column in data to be associated with this parameter. Will use index specified in JTS Doc header if available or default to 0.

Request

```
PUT /api/v1/nodes/:id/historic
```

```
{
    "docType": "jts",
    "version": "1.0",
    "data": [
        {
            "ts": "2014-09-17T07:30:00Z",
            "f": { "0": {"v": 25.05 } }
        },
        {
            "ts": "2014-09-17T07:40:00Z",
            "f": { "0": {"v": 25.20 } }
        },
        {
            "ts": "2014-09-17T07:50:00Z",
            "f": { "0": {"v": 25.14 } }
        }
```

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```
    ]
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Update Data Source historic data

Update historic data for multiple parameters via a Data Source node **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Data can be inserted in JSON (*JTS* (page 572)) format. New parameters will be automatically created.

The JTS Document must contain header columns. Each column must either specify a **series** or parameter **id**. If **id** is provided it will be used to match to the associated parameter under the current Data Source, otherwise the associated parameter will be matched using the **series** attribute.

If a column specified in the header can not be matched to an existing parameter (and **series** was provided), a new parameter will be created automatically. Optionally specify **name**, **dataType** (NUMBER, TEXT, TIME. Default is NUMBER) and **units** in the column header which will be used when creating new parameters.

Note: Only available for Datasource nodes. Required API key permission: *Modify*

Arguments

Argument	Example	Description
format	JSON	*Optional - Default is JSON*. Data format being inserted: *[JSON]*.
writeMode	MERGE_OVERWRITE_EXISTING	*Optional - Default is MERGE_OVERWRITE_EXISTING*. See all available *write mode* (page 217) options.
notifyOn	LATEST_ONLY	*Optional - Default is LATEST_ONLY*. When to generate events, raise alarms and send notifications: *[ALL_NEWER, LATEST_ONLY, NONE]*. ALL_NEWER: All events newer than parameter current value. LATEST_ONLY: Latest event newer than parameter current value.

Request

```
PUT /api/v1/nodes/:id/historic
```

```
{
    "docType": "jts",
    "version": "1.0",
    "header" : {
        "columns": {
            "0": {
                "series": "temp1",
                "name": "Temperature",
                "dataType": "NUMBER",
                "units": "°C"
            },
            "1": {
                "id": "541a5a129bc9b4035f906d71"
            }
        }
    },
    "data": [
        {
            "ts": "2014-09-17T07:30:00Z",
            "f": { "0": { "v": 25.05 } }
        },
        {
            "ts": "2014-09-17T07:40:00Z",
            "f": { "0": { "v": 25.20 } }
        },
        {
            "ts": "2014-09-17T07:50:00Z",
            "f": { "0": { "v": 25.14 }, "1": { "v": "text data here" } }
        }
```

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```
    ]
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Update node historic data with a single value

Update historic data for a node with a single record. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. You must specify at least one record attribute: *value*, *quality*, *annotation*. If *timestamp* is omitted the time the request was made will be used. Existing records with the same timestamp will be overwritten.

Note: Only available for Location and Parameter nodes. Required API key permission: *Modify*

Request

```
PUT /api/v1/nodes/:id/historic/now
```

```
{
    "value": 10,
    "quality": 156,
    "annotation": "maintenance performed at site",
    "timestamp": "2019-01-09T23:38:00Z"
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Delete node historic data

Delete all historic data from a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'.

Note: Only available for Location and Parameter nodes. Required API key permission: *Modify*

Request

```
DELETE /api/v1/nodes/:id/historic
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Retrieve node events

Retrieve events related to a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Use the *Events resource* (page 505) for retrieving events related to multiple nodes in a single request.

Arguments

Argument	Example	Description
startTime	2017-08-16T02:00:00Z	*Optional*. *ISO8601* (page 581) url encoded timestamp
endTime	2017-08-16T02:20:43Z	*Optional*. *ISO8601* (page 581) url encoded timestamp
attr	eventTime,message	*Optional*. Comma delimited list of attributes to include in response
filter	level($eq:DEBUG)	*Optional*. *Filter* (page 437) the records based on attribute value(s). *Note: eventTime can not be used as a filter*
limit	100	*Optional - Default is 1000 if both startTime & endTime are not specified*. Maximum number of records to be returned.
skip	50	*Optional*. Skip the first *n* records returned. Can be used with `limit` to paginate results
sort	eventTime(DESC)	*Optional - Default is eventTime(ASC)*. Comma delimited list of attributes to sort by. Optionally include sort direction in parentheses or default to ASC: *[ASC, DESC]*

Request

```
GET /api/v1/nodes/:id/events
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
[
    {
        "_class": "io.eagle.models.event.Event",
        "_id": "58d3508c8d6a80f2bd7eaf2e",
        "alarmState": "NONE",
        "message": "Processed 60 records from sensors.dat [4 parameters␣
↪updated]",
        "eventType": "ACQUISITION",
        "eventTime": "2017-03-23T04:35:24.000Z",
        "nodeId": "57d799d86a559fb79215b5c1",
        "nodeType": "io.eagle.models.node.source.data.TextParser",
        "level": "DEBUG",
        "workspaceId": "57e0a4d8a19b65042ad079c2",
        "username": "System"
```

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```
    },
    {
        "_class": "io.eagle.models.event.Event",
        "_id": "58d0b9df0bb36d2965e5b745",
        "alarmState": "NONE",
        "message": "Rename node 'Cond' to 'Conductivity'",
        "eventType": "CONFIGURATION",
        "eventTime": "2017-03-21T05:27:59.000Z",
        "nodeId": "58bf63d57426a2b19ea63f54",
        "nodeType": "io.eagle.models.node.point.NumberPoint",
        "level": "INFO",
        "workspaceId": "577b5a821f704bb5a3f1411b",
        "username": "user@company.com"
    }
]
```

Create node events

Create new event(s) for a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. Multiple events can be created for the node in a single request by providing an Array of Events in the request body. The event requires a **message** and optional **eventTime**. Events created via the API are assigned *level: INFO*, *eventType: CONFIGURATION*, *alarmState: NONE*.

Note: Required API key permission: *Modify*

Attributes

Attribute	Type	Description
message	String	*Required*. Event description. 1-500 characters.
eventTime	Time	*Optional*. *ISO8601* (page 581) timestamp associated with the event. If not specified the time the request was made will be used.

Request

```
POST /api/v1/nodes/:id/events
```

```
[
    {
        "message": "Configuration and Site Acceptance Test complete"
    },
```

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```
    {
        "message": "New event created via API with optional timestamp",
        "eventTime": "2019-10-20T02:32:55.000Z"
    }
]
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

Delete node events

Delete all events related to a node by its **id**. You can use the automatically assigned *_id* or your own *customId* prepended with '@'. A new event *"Cleared events"* will be created to indicate this action occurred.

Note: Required API key permission: *Modify*

Request

```
DELETE /api/v1/nodes/:id/events
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

3.3.2 Historic

Historic data can be extracted or inserted into one or more nodes in a single request. You can also use the *Nodes resource* (page 442) to extract or insert data for a single node. Data can be extracted or inserted in JSON (*JTS* (page 572)) format.

We recommend you `limit` the size of requests to 1000 records or less and use *HTTP compression* (page 435) whenever possible. If the request or response is too large or exceeds our processing time threshold, the **413 Request Too Large** error response will be returned.

Successful extraction requests will result in a **200 OK** response with the data returned in the body of the response. Successful insertion requests always result in a **202 Accepted** response.

Quick Links

- *Retrieve historic data from multiple nodes* (page 494)
- *Retrieve historic chart with multiple nodes* (page 497)
- *Update historic data for multiple nodes* (page 499)

Retrieve historic data from multiple nodes

Retrieve historic data from multiple nodes in a single request using **node id's**. You can use the automatically assigned *_id's* or your own *customId's* prepended with '@'.

Note: Only available for Location and Parameter nodes.

Arguments

Argument	Example	Description
format	JSON	*Optional - Default is JSON*. Data format to return: *[JSON, CSV]*
startTime	2014-08-16T02:00:00Z	*Required.*[1] *ISO8601* (page 581) url encoded timestamp
endTime	2014-08-16T02:20:43Z	*Required.*[1] *ISO8601* (page 581) url encoded timestamp
limit	100	*Optional*. Maximum number of historic records to be returned
timezone	Etc/UTC	*Optional - Default is Etc/UTC*. *Timezone* (page 581) applied to timestamps. Aggregate *interval* and *baseTime* calculations will also use this zone.
timezoneAdjustForDst	FALSE	*Optional - Default is FALSE*. Flag to indicate if timestamps should be adjusted for DST in selected *timezone*.
timeQuery	RECORD	*Optional - Default is RECORD*. Timestamp to query by. MODIFIED will query by modified timestamp (typically used to obtain records changed since a specific timestamp): *[RECORD, MODIFIED]*
timeFormat	YYYY-MM-DD HH:mm:ss	*Optional*. *Time format* (page 582) to use when *format* is ‘CSV’.
header	TRUE	*Optional - Default is TRUE*. Flag to include header
delimiter	,	*Optional - Default is ‘,’*. Delimiter character to use (in CSV format).
textQualifier	“	*Optional - Default is ‘”’*. Text qualifier character to use (in CSV format).
quality	NONE	*Optional - Default is NONE*. Specify how *quality* (page 577) should be output (in CSV format): *[NONE, DELIMITED_WITH_VALUE, SEPARATE_VALUE]*
qualityDelimiter	:	*Optional - Default is ‘:’*. Delimiter to use when *quality* is ‘DELIMITED_WITH_VALUE’.
qualityExcluded	BAD,UNCERTAIN	*Optional* - Default uses account settings *Exclude quality* (page 266). Comma separated list of data point quality types to be excluded: *[GOOD, BAD, UN-*

Include individual parameter arguments in parentheses with key/value separated by colons and multiple arguments semicolon delimited:

```
params=:id(key:value;key:value),:id
```

Example with optional parameter arguments:

```
params=541a5a129bc9b4035f906d71(aggregate:AVERAGE;baseTime:D;interval:3H),
↪@sensor_254
```

Request

```
GET /api/v1/historic
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "docType": "jts",
    "version": "1.0",
    "header": {
        "startTime": "2014-08-16T02:00:00.000Z",
        "endTime": "2014-08-16T02:20:43.000Z",
        "recordCount": 5,
        "columns": {
            "0": {
                "id": "541a5a129bc9b4035f906d70",
                "name": "Temperature",
                "dataType": "NUMBER",
                "aggregate": "NONE"
            }
        }
    },
    "data": [
        {
            "ts": "2014-08-16T02:00:39.000Z",
            "f": { "0": {"v": 28.21 } }
        },
        {
            "ts": "2014-08-16T02:05:40.000Z",
            "f": { "0": {"v": 28.22 } }
        },
        {
            "ts": "2014-08-16T02:10:41.000Z",
```

(continues on next page)

---

[1] startTime or endTime can be omitted when `limit` is specified.

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```
                "f": { "0": {"v": 28.7 } }
            },
            {
                "ts": "2014-08-16T02:15:42.000Z",
                "f": { "0": {"v": 29.2 } }
            },
            {
                "ts": "2014-08-16T02:20:43.000Z",
                "f": { "0": {"v": 29.18 } }
            }
        ]
}
```

Retrieve historic chart with multiple nodes

Retrieve historic chart image with multiple nodes in a single request using **node id's**. You can use the automatically assigned *_id's* or your own *customId's* prepended with '@'. Chart images can be returned in PNG, JPG, SVG and PDF format.

The node's pre-configured (or default) chart settings will be used but you can optionally specify any of the arguments below.

Alternatively use the *Nodes resource* (page 442) historic chart endpoint for generating an image from a *chart node* (page 66).

Note: Only available for Parameter nodes.

Arguments

Argument	Example	Description
format	PNG	*Optional - Default is PNG*. Image format to return: *[PNG, JPG, SVG, PDF]*
width	1200	*Optional - Default is 1200*. Width of image (png, jpg) in pixels
height	800	*Optional - Default is 800*. Height of image (png, jpg) in pixels
scale	2	*Optional - Default is 1*. Multiplier to adjust image dimensions (png, jpg) for higher resolution output: *1-4*.
title	My Chart	*Optional*. Title to display on chart
subtitle	Generated by eagle.io	*Optional*. Subtitle to display on chart
startTime	2014-08-16T02:00:00Z	*Optional*. *ISO8601* (page 581) url encoded timestamp
endTime	2014-08-16T02:20:43Z	*Optional*. *ISO8601* (page 581) url encoded timestamp
timezone	Etc/UTC	*Optional - Default is Etc/UTC*. *Timezone* (page 581) applied to timestamps. Aggregate *interval* and *baseTime* calculations will also use this zone
timezoneAdjustForDst	FALSE	*Optional - Default is FALSE*. Flag to indicate if timestamps should be adjusted for DST in selected *timezone*
params	541a5a129bc9b4035f906d70 @sensor_254	*Required*. Comma delimited list of parameter id's to include in extraction. Individual parameter options are specified in parentheses
renderType	VALUE	*Optional - Default is parameter displayType*. Rendering of value: *[VALUE, STATE]*
aggregate	AVERAGE	*Optional*. Historic *aggregate* (page 569) to apply to extracted data
baseTime	D	*Optional*. *OPC Base Time* (page 585) required for aggregation
interval	3H	*Optional*. *OPC Interval* (page 585) required for aggregation

Include individual parameter arguments in parentheses with key/value separated by colons and multiple arguments semicolon delimited:

```
params=:id(key:value;key:value),:id
```

Example with optional parameter arguments:

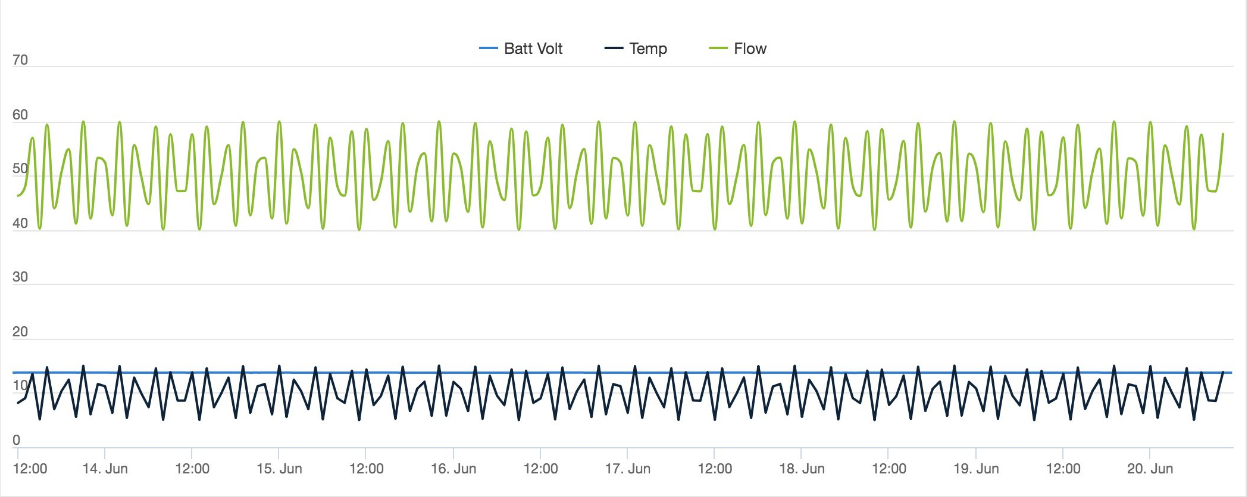
```
params=541a5a129bc9b4035f906d71(aggregate:AVERAGE;baseTime:D;interval:3H),
↪@sensor_254,@sensor_255
```

Request

```
GET /api/v1/historic/chart
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```



Update historic data for multiple nodes

Update historic data for one or more nodes by **id's**. You can use the automatically assigned *_id's* or your own *customId's* prepended with '@'.

Note: Only available for Location and Parameter nodes. Required API key permission: *Modify*

Arguments

Argument	Example	Description
format	JSON	*Optional - Default is JSON*. Data format being inserted: *[JSON]*. (CSV support coming soon)
writeMode	MERGE_OVERWRITE_EXISTING	*Optional - Default is MERGE_OVERWRITE_EXISTING*. See all available *write mode* (page 217) options.
notifyOn	LATEST_ONLY	*Optional - Default is LATEST_ONLY*. When to generate events, raise alarms and send notifications: *[ALL_NEWER, LATEST_ONLY, NONE]*. ALL_NEWER: All events newer than parameter current value. LATEST_ONLY: Latest event newer than parameter current value.
params	541a5a129bc9b4035f906d70 @sensor_254	*Required*.[2] Comma delimited list of parameter _id's to include in extraction. Individual parameter options are specified in parentheses.
columnIndex	0	*Required*.[2] Index of column in data to be associated with this parameter.

Include individual parameter arguments in parentheses with key/value separated by colons and multiple arguments semicolon delimited:

```
params=:id(key:value;key:value),:id
```

Example with required parameter arguments:

```
params=541a5a129bc9b4035f906d70(columnIndex:0),@sensor_254(columnIndex:1)
```

---

[2] params argument can be omitted if JTS Document contains headers

Request

```
PUT /api/v1/historic
```

```
{
    "docType": "jts",
    "version": "1.0",
    "data": [
        {
            "ts": "2014-09-17T07:30:00Z",
            "f": { "0": {"v": 25.05 }, "1": {"v": 44.6 } }
        },
        {
            "ts": "2014-09-17T07:40:00Z",
            "f": { "0": {"v": 25.20 } }
        },
        {
            "ts": "2014-09-17T07:50:00Z",
            "f": { "0": {"v": 25.14 }, "1": {"v": 45.21 } }
        }
    ]
}
```

Response

```
HTTP/1.1 202 Accepted
Content-Type: application/json; charset=utf-8
```

```
{
    "status": {
        "code": 202,
        "message": "Operation accepted but not yet complete"
    }
}
```

3.3.3 Devices

Devices contain details about modems and other communication hardware associated with a Source or Workspace.

Quick Links

- *Device Attributes* (page 502)
- *Retrieve all devices* (page 502)
- *Retrieve a device* (page 504)

Device Attributes

Consumers of Devices should tolerate the addition of new attributes and variance in ordering of attributes with ease. Not all attributes appear in all contexts. It is generally safe to consider a nulled attribute, an empty set, and the absence of an attribute as the same thing.

Attribute	Type	Description
_class	String	Identifies resource type: *io.eagle.models.device.**
_id	ObjectId	Unique identifier for this device
config	Object	Object containing device specific configuration
createdTime	Time	*ISO8601* (page 581) timestamp the device was created
deviceKey	String	IMEI or Unique identifier for this device
isConnected	Boolean	Flag to indicate if device is currently connected
lastConnected	Time	*ISO8601* (page 581) timestamp the device last established a connection
phoneNumber	String	Phone number associated with the device
software	Object	Object containing info about the current device software
workspaceId	ObjectId	Associated Workspace _id

Retrieve all devices

Retrieve a list of all devices available to the authenticated API key. Optionally *filter* by attribute values.

Arguments

Argument	Example	Description
attr	_id,phoneNumber	*Optional*. Comma delimited list of attributes to include in response
filter	isConnected($eq:true)	*Optional*. *Filter* (page 437) the records based on attribute value(s)
limit	100	*Optional*. Maximum number of records to be returned
skip	50	*Optional*. Skip the first *n* records returned. Can be used with `limit` to paginate results
sort	createdTime(DESC)	*Optional*. Comma delimited list of attributes to sort by. Optionally include sort direction in parentheses or default to ASC: *[ASC, DESC]*

Request

```
GET /api/v1/devices
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
[
    {
        "_class": "io.eagle.models.device.Device",
        "_id": "53ce0b6a0eba8dc46900000f",
        "createdTime": "2014-09-08T04:13:32.488Z",
        "deviceKey": "123456789012347",
        "isConnected": true,
        "lastConnected": null,
        "workspaceId": "536884ecb5a76fd5d3000014"
    },
    {
        "_class": "io.eagle.models.device.ScoutDevice",
        "_id": "541b8d46b94f051649012fae",
        "config": {
            "utcOffset": "+00:00",
            "simPin": "",
            "schedule": {
                "scheduleType": "SERVER",
                "statusIntervalSeconds": 600,
                "dataIntervalSeconds": 3600,
                "dataIntervalOffsetSeconds": -1
            },
            "logLevel": "INFO",
            "interfaces": {
                "ETH0": {
                    "gateway": "",
                    "subnet": "",
                    "ipAddress": "",
                    "_class": "io.eagle.models.device.config.EthernetInterface
↪"
                },
                "COM1": {
                    "stopBits": 1,
                    "speed": 9600,
                    "rts": false,
                    "parity": "none",
                    "name": "UART1",
                    "dataBits": 8,
                    "cts": false,
                    "_class": "io.eagle.models.device.config.SerialInterface"
                }
            },
            "gpsEnabled": true,
            "connection": {
                "retryMax": 3,
                "retryDelaySeconds": 30,
                "port": 4331,
```

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```
                "host": "device.eagle.io"
            },
            "apn": {
                "user": "",
                "pass": "",
                "host": ""
            }
        },
        "createdTime": "2014-09-08T05:24:15.461Z",
        "deviceKey": "123456789012313",
        "isConnected": false,
        "lastConnected": null,
        "phoneNumber": null,
        "software": {
            "appSentTime": null,
            "appVersion": null,
            "firmwareSentTime": null,
            "firmwareVersion": null,
            "bootloaderSentTime": null,
            "bootloaderVersion": null,
            "branch": "RELEASE"
        },
        "workspaceId": "536884ecb5a76fd5d3000014"
    }
]
```

Retrieve a device

Retrieve a device by its **id**.

Arguments

Argument	Example	Description
attr	_id,_class	*Optional.* Comma delimited list of attributes to include in response

Request

```
GET /api/v1/devices/:id
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.device.Device",
    "_id": "53ce0b6a0eba8dc46900000f",
    "datasourceId": "541a45c1d07ac441473b0fc3",
    "deviceKey": "123456789012347",
    "isConnected": true,
    "lastConnected": null,
    "phoneNumber": "+61400000001",
    "software": {
        "appSentTime": null,
        "appVersion": "0.4.1.20140714155804",
        "bootloaderSentTime": null,
        "bootloaderVersion": "SWI6200T_02.02.04.18BT",
        "branch": "RELEASE",
        "firmwareSentTime": null,
        "firmwareVersion": "FW_753_18.FX8Fx"
    },
    "workspaceId": "536884ecb5a76fd5d3000014"
}
```

3.3.4 Events

Events contain details about user interactions, alarm history and system generated notices.

Quick Links

- *Event Attributes* (page 505)
- *Retrieve events* (page 506)
- *Create or Delete events* (page 508)

Event Attributes

Consumers of Events should tolerate the addition of new attributes and variance in ordering of attributes with ease. Not all attributes appear in all contexts. It is generally safe to consider a nulled attribute, an empty set, and the absence of an attribute as the same thing.

Attribute	Type	Description
_class	String	Identifies resource type: *io.eagle.models.event.**
_id	ObjectId	Unique identifier for this event
level	String	Detail level of event: *[DEBUG, INFO, WARNING, ERROR]*
eventTime	Time	*ISO8601* (page 581) timestamp associated with the event
eventType	String	Type of event: *[ACQUISITION, CONFIGURATION, STATE, NOTIFICATION, CONTROL, SECURITY]*
message	String	Event description
alarmState	String	Indicate if event is associated with an alarm: *[NONE, ACTIVE, ACKNOWLEDGED, CLEARED]*
nodeId	ObjectId	Id of node associated with the event (where applicable)
nodeType	String	_class of node associated with the event (where applicable)
workspaceId	ObjectId	Associated Workspace _id
ownerId	ObjectId	Associated Owner (account) _id
username	String	User or process that triggered the event

Retrieve events

Retrieve a list of events available to the authenticated API key. Optionally *filter* by attribute values.

Arguments

Argument	Example	Description
startTime	2017-08-16T02:00:00Z	*Optional*. *ISO8601* (page 581) url encoded timestamp
endTime	2017-08-16T02:20:43Z	*Optional*. *ISO8601* (page 581) url encoded timestamp
attr	eventTime,message	*Optional*. Comma delimited list of attributes to include in response
filter	level($eq:DEBUG)	*Optional*. *Filter* (page 437) the records based on attribute value(s). *Note: eventTime can not be used as a filter*
limit	100	*Optional - Default is 10000 when both startTime & endTime are specified. 1000 when startTime or endTime is omitted*. Maximum number of records to be returned. *1-10000*
skip	50	*Optional*. Skip the first *n* records returned. Can be used with `limit` to paginate results
sort	eventTime(DESC)	*Optional - Default is eventTime(ASC)*. Comma delimited list of attributes to sort by. Optionally include sort direction in parentheses or default to ASC: *[ASC, DESC]*

Request

```
GET /api/v1/events
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
[
    {
        "_class": "io.eagle.models.event.Event",
        "_id": "58d3508c8d6a80f2bd7eaf2e",
        "alarmState": "NONE",
        "message": "Processed 60 records from sensors.dat [4 parameters␣
↪updated]",
        "eventType": "ACQUISITION",
        "eventTime": "2017-03-23T04:35:24.000Z",
        "nodeId": "57d799d86a559fb79215b5c1",
        "nodeType": "io.eagle.models.node.source.data.TextParser",
        "level": "DEBUG",
        "workspaceId": "57e0a4d8a19b65042ad079c2",
        "username": "System"
```

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```
    },
    {
        "_class": "io.eagle.models.event.Event",
        "_id": "58d0b9df0bb36d2965e5b745",
        "alarmState": "NONE",
        "message": "Rename node 'Cond' to 'Conductivity'",
        "eventType": "CONFIGURATION",
        "eventTime": "2017-03-21T05:27:59.000Z",
        "nodeId": "58bf63d57426a2b19ea63f54",
        "nodeType": "io.eagle.models.node.point.NumberPoint",
        "level": "INFO",
        "workspaceId": "577b5a821f704bb5a3f1411b",
        "username": "user@company.com"
    }
]
```

Create or Delete events

You can *Create events* (page 492) or *Delete events* (page 493) for a specific node via the *Nodes Resource* (page 442).

3.3.5 Owners

Owners contain details about the eagle.io account associated with a Workspace or Device.

Quick Links

- *Owner Attributes* (page 508)
- *Retrieve owner* (page 509)
- *Update owner* (page 510)
- *Create owner groups* (page 515)
- *Update owner group* (page 516)
- *Remove owner group* (page 517)
- *Retrieve account usage* (page 517)

Owner Attributes

Consumers of Owners should tolerate the addition of new attributes and variance in ordering of attributes with ease. Not all attributes appear in all contexts. It is generally safe to consider a nulled attribute, an empty set, and the absence of an attribute as the same thing. Restricted attributes are only available when using an API Key with **account** level access.

Standard attributes	Type	Update	Description
_class	String		Identifies resource type: *io.eagle.models.owner.Owner*
_id	ObjectId		Unique identifier for this owner
accountName	String	Yes	Name of the account
accountType	String		Type of account
categories	Array		Array of notification categories configured for this owner
createdTime	Time		*ISO8601* (page 581) timestamp the account was created.
quality	Object		Quality *codes* and configuration
slug	String		Used as part of Node full name path

Restricted attributes	Type	Update	Description
administrators	Array	Yes	Array of *administrator users* (page 512)
groups	Array	Yes	Array of *groups* (page 513) and associated users

Retrieve owner

Retrieve the owner associated with the API key.

Arguments

Argument	Example	Description
attr	_id,slug	*Optional.* Comma delimited list of attributes to include in response

Request

```
GET /api/v1/owners/account
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.owner.Owner",
    "_id": "5424fbe96c4728a166f0d725",
    "accountName": "Environment Inc",
    "accountType": "STANDARD",
    "administrators": [
        {
            "user": "rlewis@company.com",
```

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```
            "name": {
                "first": "Rod",
                "last": "Lewis"
            },
            "lastLoginTime": "2021-12-16T03:17:35.170Z"
        }
    ],
    "categories": [
        {
            "name": "Maintenance",
            "index": 0,
            "_id": "52969367593a1a3a32000012"
        },
        {
            "name": "Operations",
            "index": 1,
            "_id": "52969367593a1a3a32000011"
        },
        {
            "name": "Critical",
            "index": 2,
            "_id": "52969367593a1a3a32000010"
        }
    ],
    "createdTime": "2022-01-26T05:38:49.167Z",
    "groups": [
        {
            "_id": "61bac74a84cac62fcbfe2c3c",
            "name": "Engineering team",
            "users": [
                {
                    "user": "jsmith@company.com",
                    "name": {
                        "first": "Jane",
                        "last": "Smith"
                    },
                    "lastLoginTime": "2022-01-04T11:30:22.310Z"
                }
            ]
        }
    ],
    "slug": "mypers42"
}
```

Update owner

Update the owner associated with the API key. Updates are limited to the attributes listed with the *Update* flag. Multiple attributes can be updated in a single request.

The updated owner will be returned in the response if the request is successful. You can optionally limit the returned attributes by specifying the **attr** argument.

Note: Required API key permission: *Modify*. Required API key level: *Account*.

Arguments

Argument	Example	Description
attr	_id,_class	*Optional*. Comma delimited list of attributes to include in successful response
notify	TRUE	*Optional - Default is FALSE*. Notify users when they have been granted/revoked administrator access or a new user profile created (as a result of this request)

Request

```
PUT /api/v1/owners/account
```

```
{
    "accountName": "My Renamed Account"
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "_class": "io.eagle.models.owner.Owner",
    "_id": "5424fbe96c4728a166f0d725",
    "accountName": "My Renamed Account",
    ...
}
```

Complex attribute updates

Certain attributes such as Administrator and Groups have specific update requirements:

- *Administrators* (page 512)
- *Groups* (page 513)

Administrators

Administrators can be included in the update request. This will replace existing administrators.

If the user email address does not already exist in the system, a new user profile will be created and *profileActivateUrl* will be returned in the response. Use the *notify=TRUE* *argument* (page 511) to automatically send a welcome email to newly created users (or use the *profileActivateUrl* to manually complete the user profile setup).

When adding a new user (profile does not exist) you can optionally include attributes: *name*, *phone*, *timezone*, *timezoneAdjustForDst* and *timeFormat*.

Note: Removing a user as an administrator will also remove their *user notification subscriptions* (page 471) for any workspace nodes they no longer have access to.

The account owner and account manager administrators (for managed accounts) automatically inherit implicit administrator access and are not included in the administrators array.

Example replacing administrators

```
PUT /api/v1/owners/account
```

```
{
    "administrators": [
        {
            "user": "rlewis@company.com"
        },
        {
            "user": "new@company.com",
            "name": {
                "first": "New",
                "last": "User"
            },
            "phone": "+61000000001",
            "timezone": "Australia/Sydney",
            "timezoneAdjustForDst": true,
            "timeFormat": "YYYY-MM-DD HH:mm:ss"
        }
    ]
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "administrators": [
        {
            "user": "rlewis@company.com",
            "name": {
                "first": "Rod",
                "last": "Lewis"
            },
            "lastLoginTime": "2021-12-16T03:17:35.170Z"
        },
        {
            "user": "new@company.com",
            "name": {
                "first": "New",
                "last": "User"
            },
            "profileActivateUrl": "https://app.eagle.io/auth/setupprofile/
↪ca4d1da0-8231-46df-af69-df1b2f1a8b5c"
        }
    ],
    ...
}
```

Groups

Groups and associated users can be included in the update request. This will merge and replace existing groups.

For each group in the request, if an *_id* attribute is provided it will be used to update an existing group (which allows the group name to be changed as part of the update). If the *_id* attribute is not provided or does not match an existing group, the *name* attribute will be used to find an existing group to update.

Note: If an existing group is not found, a new group entity will be created. Any groups previously configured that do not match will be permanently removed.

Removing a group will also remove its *group notification subscriptions* (page 471).

When specifying the users associated with a group, if the user email address does not already exist in the system, a new user profile will be created and *profileActivateUrl* will be returned in the response. Use the *notify=TRUE argument* (page 511) to automatically send a welcome email to newly created users (or use the *profileActivateUrl* to manually complete the user profile setup).

When adding a new user (profile does not exist) you can optionally include attributes: *name*, *phone*, *timezone*, *timezoneAdjustForDst* and *timeFormat*.

Group attributes	Type	Description
_id	ObjectId	*Optional*. Id of existing group to update.
name	String	*Required*. Name to assign to this group.
users	Array	*Required*. Array of users to assign to this group.

Example updating groups

```
PUT /api/v1/owners/account
```

```
{
    "groups": [
        {
            "name": "New Group",
            "users": [
                {
                    "user": "rlewis@company.com"
                },
                {
                    "user": "new@company.com",
                    "name": {
                        "first": "New",
                        "last": "User"
                    },
                    "phone": "+61000000001",
                    "timezone": "Australia/Sydney",
                    "timezoneAdjustForDst": true,
                    "timeFormat": "YYYY-MM-DD HH:mm:ss"
                }
            ]
        },
        {
            "_id": "61bac74a84cac62fcbfe2c3c",
            "users": []
        }
    ]
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "groups": [
        {
            "_id": "61bac74a84cac62fcbfe47aa",
            "name": "New Group",
            "users": [
                {
                    "user": "rlewis@company.com",
```

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```
                    "name": {
                        "first": "Rod",
                        "last": "Lewis"
                    },
                    "lastLoginTime": "2021-12-16T03:17:35.170Z"
                },
                {
                    "user": "new@company.com",
                    "name": {
                        "first": "New",
                        "last": "User"
                    },
                    "profileActivateUrl": "https://app.eagle.io/auth/
↪setupprofile/ca4d1da0-8231-46df-af69-df1b2f1a8b5c"
                }
            ]
        },
        {
            "_id": "61bac74a84cac62fcbfe2c3c",
            "name": "Engineering team",
            "users": []
        }
    ],
    ...
}
```

Create owner groups

Create new owner group(s). The complete array of groups will be returned in the response if the request is successful.

Alternatively *update or replace multiple groups* (page 513) via owner update.

Group attributes	Type	Description
name	String	*Required.* Name to assign to this group.
users	Array	*Required.* Array of users to assign to this group.

Request

```
POST /api/v1/owners/account/groups
```

```
[
    {
        "name": "New Group",
        "users": [
            {
                "user": "rlewis@company.com"
```

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```
                },
                {
                    "user": "new@company.com",
                    "name": {
                        "first": "New",
                        "last": "User"
                    },
                    "phone": "+61000000001",
                    "timezone": "Australia/Sydney",
                    "timezoneAdjustForDst": true,
                    "timeFormat": "YYYY-MM-DD HH:mm:ss"
                }
            ]
        },
        {
            "name": "New Group 2",
            "users": []
        },
]
```

Response

```
HTTP/1.1 201 Created
Content-Type: application/json; charset=utf-8
```

Update owner group

Update an existing owner group by its *_id*. The updated group will be returned in the response if the request is successful.

Alternatively *update or replace multiple groups* (page 513) via owner update.

Group attributes	Type	Description
name	String	*Optional*. Name to assign to this group.
users	Array	*Optional*. Array of users to assign to this group.

Request

```
PUT /api/v1/owners/account/groups/:id
```

```
{
    "name": "Updated Group",
    "users": [
        {
```

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```
                "user": "rlewis@company.com"
            }
        ]
}
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

Remove owner group

Permanently delete an existing group by its *_id*.

Alternatively *update or replace multiple groups* (page 513) via owner update.

Request

```
DELETE /api/v1/owners/account/groups/:id
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

Retrieve account usage

Retrieve account usage for an owner (including managed accounts) associated with the API key. TRIAL and DISABLED managed accounts are not included in Source usage.

Note: This resource is currently in development and may change prior to finalization. Required API key access level: *Account*. Not accessible using managed account API keys.

Request

```
GET /api/v1/owners/account/usage
```

Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
    "rates": {
        "attachmentsource": 0.7,
        "datasource": {
            "small": 0.3,
            "medium": 0.7,
            "large": 1
        },
        "sms": 1
    },
    "total": {
        "source": {
            "usage": 32.4,
            "usageLimit": 50
        },
        "sms": {
            "usage": 30,
            "usageLimit": 250
        }
    },
    "accounts": [
        {
            "_id": "5424fbe96c4728a166f0d725",
            "accountName": "My Personal Account",
            "accountType": "STANDARD",
            "usage": {
                "attachmentsource": 0.7,
                "datasource": {
                    "small": 0.3,
                    "medium": 1.4,
                    "large": 20
                },
                "sms": 10
            }
        },
        {
            "_id": "5d7adc82e9e941211c57032c",
            "accountName": "Managed account",
            "accountType": "MANAGED",
            "usage": {
                "attachmentsource": 0,
                "datasource": {
                    "small": 0,
                    "medium": 7,
                    "large": 3
                },
                "sms": 20
```

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```
            }
        }
    ]
}
```

CHAPTER 4

Reference

4.1 Configuration

This section provides specifications for configuration file formats.

4.1.1 Ratings CSV

Rating parameters (page 156) support the **import** and **export** of rating configuration files from the user interface in a fixed CSV format as specified below.

The *HTTP API* (page 433) can additionally be used to read or update *rating parameter configuration* (page 461) in JSON (http://json.org) format.

Example *ratings.csv*

```
"2019-05-14T00:00:00.000Z","table",0:0,1:10,2:20
"2020-09-25T13:30:00.000Z","table",0.1:15,0.7:32.44,1.22:122.91,1.5:200
"2020-10-10T00:00:00.000Z","polynomial",a:1.1,b:2.5,c:1.115,d:4.01,e:0.85
```

Rating CSV line specification

Every line in the ratings.csv file defines a single rating. The file can contain multiple lines/ratings. Columns (separated by comma ‘,’) must use this strict format.

Column	Example	Description
1	“2020-09-25T13:30:00.000Z”	*ISO8601* (page 581) start timestamp this rating applies. *Note the double quotes around the timestamp.*
2	“table”	Rating type: *[“table”, “polynomial”] Note the double quotes around the text.*
3+	0.1:15	**Table**: Columns 3 onwards represent the rows in the rating table. Each column must use the format **<input>:<result>** which contains an *input* lookup value and *result* value separated by ‘:’. In the example shown *0.1* is the input lookup value and *15* is the result.
	a:1.1	**Polynomial**: Columns 3 onwards specifies the coefficients of a polynomial equation. Each column must use the format **<coefficient>:<value>**. The coefficient must be a single letter, ordered alphabetically. In the example shown *a* is the coefficient and *1.1* is its value.

Note: Rating configuration files require the ‘.csv’ file extension for import.

4.2 Expressions

Expressions provide a simple method to describe dynamic text content.

Our expressions are based on the open-source Liquid (https://shopify.github.io/liquid/) template language with some custom filter additions.

Expressions can be categorized into *objects* (page 566), *filters* (page 566) and *tags* (page 567).

4.2.1 Filters

Liquid expressions implement business-logic independent filters that are typically implemented in shopify/liquid (https://shopify.github.io/liquid/). This section contains the specification and examples for all the filters implemented by Liquid.

There's 40+ filters supported by Liquid. These filters can be categorized into these groups:

Categories	Filters
Math	plus, minus, modulo, times, floor, ceil, round, divided_by, abs, decimal
String	append, prepend, capitalize, upcase, downcase, strip, lstrip, rstrip, strip_newlines, split, replace, replace_first, remove, remove_first, truncate, truncatewords
HTML/URI	escape, escape_once, url_encode, url_decode, strip_html, newline_to_br, link_to
Array	slice, map, sort, sort_natural, uniq, where, first, last, join, reverse
Time	time, time_plus, time_minus

abs

Returns the absolute value of a number.

Input

```
{{ -17 | abs }}
```

Output

```
17
```

Input

```
{{ 4 | abs }}
```

Output

```
4
```

`abs` will also work on a string that only contains a number:

Input

```
{{ "-19.86" | abs }}
```

Output

```
19.86
```

append

Concatenates two strings and returns the concatenated value.

Input

```
{{ "/my/fancy/url" | append: ".html" }}
```

Output

```
/my/fancy/url.html
```

`append` can also be used with variables:

Input

```
{% assign filename = "/index.html" %}
{{ "website.com" | append: filename }}
```

Output

```
website.com/index.html
```

at_least

Limits a number to a minimum value.

Input

```
{{ 4 | at_least: 5 }}
```

Output

```
5
```

Input

```
{{ 4 | at_least: 3 }}
```

Output

```
4
```

at_most

Limits a number to a maximum value.

Input

```
{{ 4 | at_most: 5 }}
```

Output

```
4
```

Input

```
{{ 4 | at_most: 3 }}
```

Output

```
3
```

capitalize

Makes the first character of a string capitalized.

Input

```
{{ "title" | capitalize }}
```

Output

```
Title
```

`capitalize` only capitalizes the first character of a string, so later words are not affected:

Input

```
{{ "my great title" | capitalize }}
```

Output

```
My great title
```

ceil

Rounds the input up to the nearest whole number. Liquid tries to convert the input to a number before the filter is applied.

Input

```
{{ 1.2 | ceil }}
```

Output

```
2
```

Input

```
{{ 2.0 | ceil }}
```

Output

```
2
```

Input

```
{{ 183.357 | ceil }}
```

Output

```
184
```

Here the input value is a string:

Input

```
{{ "3.5" | ceil }}
```

Output

```
4
```

compact

Removes any `nil`/`null` values from an array.

For this example, assume `site.pages` is an array of content pages for a website, and some of these pages have an attribute called `category` that specifies their content category. If we `map` those categories to an array, some of the array items might be `nil` if any pages do not have a `category` attribute.

Input

```
{% assign site_categories = site.pages | map: "category" %}

{% for category in site_categories %}
- {{ category }}
{% endfor %}
```

Output

```
- business
- celebrities
-
- lifestyle
- sports
-
- technology
```

By using `compact` when we create our `site_categories` array, we can remove all the `nil` values in the array.

Input

```
{% assign site_categories = site.pages | map: "category" | compact %}

{% for category in site_categories %}
- {{ category }}
{% endfor %}
```

Output

```
- business
- celebrities
- lifestyle
- sports
- technology
```

concat

Concatenates (joins together) multiple arrays. The resulting array contains all the items from the input arrays.

Input

```
{% assign fruits = "apples, oranges, peaches" | split: ", " %}
{% assign vegetables = "carrots, turnips, potatoes" | split: ", " %}

{% assign everything = fruits | concat: vegetables %}

{% for item in everything %}
- {{ item }}
{% endfor %}
```

Output

```
- apples
- oranges
- peaches
- carrots
- turnips
- potatoes
```

You can string together `concat` filters to join more than two arrays:

Input

```
{% assign furniture = "chairs, tables, shelves" | split: ", " %}

{% assign everything = fruits | concat: vegetables | concat: furniture %}

{% for item in everything %}
- {{ item }}
{% endfor %}
```

Output

```
- apples
- oranges
- peaches
- carrots
- turnips
- potatoes
- chairs
- tables
- shelves
```

Output

```
- business
- celebrities
-
- lifestyle
- sports
-
- technology
```

By using `compact` when we create our `site_categories` array, we can remove all the `nil` values in the array.

Input

```
{% assign site_categories = site.pages | map: "category" | compact %}

{% for category in site_categories %}
- {{ category }}
{% endfor %}
```

Output

```
- business
- celebrities
- lifestyle
- sports
- technology
```

date

Converts a timestamp into another date format using strftime (http://www.ruby-doc.org/core/Time.html#method-i-strftime) syntax.

Note: The *time* (page 545) filter is recommended to be used instead of *date* it is more versatile and correctly applies timezone and DST to the formatted output.

Input

```
{{ article.published_at | date: "%a, %b %d, %y" }}
```

Output

```
Fri, Jul 17, 15
```

Input

```
{{ article.published_at | date: "%Y" }}
```

Output

```
2015
```

`date` works on strings if they contain well-formatted dates:

Input

```
{{ "March 14, 2016" | date: "%b %d, %y" }}
```

Output

```
Mar 14, 16
```

To get the current time, pass the special word `"now"` (or `"today"`) to `date`:

Input

```
This page was last updated at {{ "now" | date: "%Y-%m-%d %H:%M" }}.
```

Output

```
This page was last updated at 2020-03-25 15:57.
```

decimal

Decimal uses tokens to format the number to a set number of decimal places. `0` will always display a digit. # will only display a digit if it exists. Liquid tries to convert the input to a number before the filter is applied.

Input

```
{{ 1.23 | decimal: "0.#" }}
```

Output

```
1.2
```

Input

```
{{ 1000000 | decimal: "#,###.#" }}
```

Output

```
1,000,000
```

Input

```
{{ "2" | decimal: "0.00" }}
```

Output

```
2.00
```

default

Allows you to specify a fallback in case a value doesn't exist. `default` will show its value if the left side is `false` or empty (`string` or `Array`).

In this example, `product_price` is not defined, so the default value is used.

Input

```
{{ product_price | default: 2.99 }}
```

Output

```
2.99
```

In this example, `product_price` is defined, so the default value is not used.

Input

```
{% assign product_price = 4.99 %}
{{ product_price | default: 2.99 }}
```

Output

```
4.99
```

In this example, `product_price` is empty, so the default value is used.

Input

```
{% assign product_price = "" %}
{{ product_price | default: 2.99 }}
```

Output

```
2.99
```

divided_by

Divides a number by another number.

Input

```
{{ 16 | divided_by: 4 }}
```

Output

```
4
```

Input

```
{{ 5 | divided_by: 3 }}
```

Output

```
1.6666666666666667
```

downcase

Makes each character in a string lowercase. It has no effect on strings which are already all lowercase.

Input

```
{{ "Parker Moore" | downcase }}
```

Output

```
parker moore
```

Input

```
{{ "apple" | downcase }}
```

Output

```
apple
```

escape

Escapes a string by replacing HTML special characters with escape sequences. It doesn't change strings that don't have anything to escape.

Input

```
{{ "Have you read 'James & the Giant Peach'?" | escape }}
```

Output

```
Have you read &#39;James &amp; the Giant Peach&#39;?
```

Input

```
{{ "Tetsuro Takara" | escape }}
```

Output

```
Tetsuro Takara
```

escape_once

Escapes a string without changing existing escaped entities. It doesn't change strings that don't have anything to escape.

Input

```
{{ "1 < 2 & 3" | escape_once }}
```

Output

```
1 &lt; 2 &amp; 3
```

Input

```
{{ "{{"1 < 2 & 3" | escape}}" | escape_once }}
```

Output

```
{{"1 < 2 & 3" | escape}}
```

first

Returns the first item of an array.

Input

```
{{ "Ground control to Major Tom." | split: " " | first }}
```

Output

```
Ground
```

Input

```
{% assign my_array = "zebra, octopus, giraffe, tiger" | split: ", " %}
{{ my_array.first }}
```

Output

```
zebra
```

You can use `first` with dot notation when you need to use the filter inside a tag:

```
{% if my_array.first == "zebra" %}
  Here comes a zebra!
{% endif %}
```

floor

Rounds the input down to the nearest whole number. Liquid tries to convert the input to a number before the filter is applied.

Input

```
{{ 1.2 | floor }}
```

Output

```
1
```

Input

```
{{ 2.0 | floor }}
```

Output

```
2
```

Input

```
{{ 183.357 | floor }}
```

Output

```
183
```

Here the input value is a string:

Input

```
{{ "3.5" | floor }}
```

Output

```
3
```

join

Combines the items in an array into a single string using the argument as a separator.

Input

```
{% assign beatles = "John, Paul, George, Ringo" | split: ", " %}
{{ beatles | join: " and " }}
```

Output

```
John and Paul and George and Ringo
```

json

Convert variables to JSON text.

Input

```
{% assign arr = "foo bar coo" | split: " " %}
{{ arr | json }}
```

Output

```
["foo","bar","coo"]
```

last

Returns the last item of an array.

Input

```
{{ "Ground control to Major Tom." | split: " " | last }}
```

Output

```
Tom.
```

Input

```
{% assign my_array = "zebra, octopus, giraffe, tiger" | split: ", " %}
{{ my_array.last }}
```

Output

```
tiger
```

You can use `last` with dot notation when you need to use the filter inside a tag:

```
{% if my_array.last == "tiger" %}
  There goes a tiger!
{% endif %}
```

link_to

Generates an HTML link for HTML content.

Input

```
{{ "Ground control to Major Tom." | link_to: "http://majortom.com" }}
```

Output

```
<a href="http://majortom.com">Ground control to Major Tom.</a>
```

lstrip

Removes all whitespace (tabs, spaces, and newlines) from the left side of a string. It does not affect spaces between words.

Input

```
BEGIN{{ "          So much room for activities!          " | lstrip }}END
```

Output

```
BEGINSo much room for activities!          END
```

map

Creates an array of values by extracting the values of a named property from another object.

In this example, assume the object `site.pages` contains all the metadata for a website. Using `assign` with the `map` filter creates a variable that contains only the values of the `category` properties of everything in the `site.pages` object.

Input

```
{% assign all_categories = site.pages | map: "category" %}

{% for item in all_categories %}
- {{ item }}
{% endfor %}
```

Output

```
- business
- celebrities
- lifestyle
- sports
- technology
```

minus

Subtracts a number from another number.

Input

```
{{ 4 | minus: 2 }}
```

Output

```
2
```

Input

```
{{ 16 | minus: 4 }}
```

Output

```
12
```

Input

```
{{ 183.357 | minus: 12 }}
```

Output

```
171.357
```

modulo

Returns the remainder of a division operation.

Input

```
{{ 3 | modulo: 2 }}
```

Output

```
1
```

Input

```
{{ 24 | modulo: 7 }}
```

Output

```
3
```

Input

```
{{ 183.357 | modulo: 12 }}
```

Output

```
3.3569999999999993
```

newline_to_br

Replaces every newline (`\n`) in a string with an HTML line break (`<br />`).

Input

```
{% capture string_with_newlines %}
Hello
there
{% endcapture %}

{{ string_with_newlines | newline_to_br }}
```

Output

```
<br/>Hello<br/>there<br/>
```

plus

Adds a number to another number.

Input

```
{{ 4 | plus: 2 }}
```

Output

```
6
```

Input

```
{{ 16 | plus: 4 }}
```

Output

```
20
```

Input

```
{{ 183.357 | plus: 12 }}
```

Output

```
195.357
```

prepend

Adds the specified string to the beginning of another string.

Input

```
{{ "apples, oranges, and bananas" | prepend: "Some fruit: " }}
```

Output

```
Some fruit: apples, oranges, and bananas
```

`prepend` can also be used with variables:

Input

```
{% assign url = "example.com" %}
{{ "/index.html" | prepend: url }}
```

Output

```
example.com/index.html
```

remove

Removes every occurrence of the specified substring from a string.

Input

```
{{ "I strained to see the train through the rain" | remove: "rain" }}
```

Output

```
I strained to see the t through the
```

remove_first

Removes only the first occurrence of the specified substring from a string.

Input

```
{{ "I strained to see the train through the rain" | remove_first: "rain" }}
```

Output

```
I strained to see the t through the rain
```

replace

Replaces every occurrence of the first argument in a string with the second argument.

Input

```
{{ "Take my protein pills and put my helmet on" | replace: "my", "your" }}
```

Output

```
Take your protein pills and put your helmet on
```

replace_first

Replaces only the first occurrence of the first argument in a string with the second argument.

Input

```
{{ "Take my protein pills and put my helmet on" | replace_first: "my", "your"␣
↪}}
```

Output

```
Take your protein pills and put my helmet on
```

reverse

Reverses the order of the items in an array. `reverse` cannot reverse a string.

Input

```
{% assign my_array = "apples, oranges, peaches, plums" | split: ", " %}

{{ my_array | reverse | join: ", " }}
```

Output

```
plums, peaches, oranges, apples
```

Although `reverse` cannot be used directly on a string, you can split a string into an array, reverse the array, and rejoin it by chaining together filters:

Input

```
{{ "Ground control to Major Tom." | split: "" | reverse | join: "" }}
```

Output

```
.moT rojaM ot lortnoc dnuorG
```

round

Rounds a number to the nearest integer or, if a number is passed as an argument, to that number of decimal places.

Input

```
{{ 1.2 | round }}
```

Output

```
1
```

Input

```
{{ 2.7 | round }}
```

Output

```
3
```

Input

```
{{ 183.357 | round: 2 }}
```

Output

```
183.36
```

rstrip

Removes all whitespace (tabs, spaces, and newlines) from the right side of a string. It does not affect spaces between words.

Input

```
BEGIN{{ "          So much room for activities!          " | rstrip }}END
```

Output

```
BEGIN          So much room for activities!END
```

size

Returns the number of characters in a string or the number of items in an array.

Input

```
{{ "Ground control to Major Tom." | size }}
```

Output

```
28
```

Input

```
{% assign my_array = "apples, oranges, peaches, plums" | split: ", " %}

{{ my_array.size }}
```

Output

```
4
```

You can use `size` with dot notation when you need to use the filter inside a tag:

```
{% if site.pages.size > 10 %}
  This is a big website!
{% endif %}
```

slice

Returns a substring of 1 character beginning at the index specified by the first argument. An optional second argument specifies the length of the substring to be returned.

String indices are numbered starting from 0.

Input

```
{{ "Liquid" | slice: 0 }}
```

Output

```
L
```

Input

```
{{ "Liquid" | slice: 2 }}
```

Output

```
q
```

Input

```
{{ "Liquid" | slice: 2, 5 }}
```

Output

```
quid
```

If the first argument is a negative number, the indices are counted from the end of the string:

Input

```
{{ "Liquid" | slice: -3, 2 }}
```

Output

```
ui
```

sort

Sorts items in an array in case-sensitive order.

Input

```
{% assign my_array = "zebra, octopus, giraffe, Sally Snake" | split: ", " %}

{{ my_array | sort | join: ", " }}
```

Output

```
Sally Snake, giraffe, octopus, zebra
```

An optional argument specifies which property of the array's items to use for sorting.

```
{% assign products_by_price = collection.products | sort: "price" %}
{% for product in products_by_price %}
  <h4>{{ product.title }}</h4>
{% endfor %}
```

sort_natural

Sorts items in an array in case-insensitive order.

Input

```
{% assign my_array = "zebra, octopus, giraffe, Sally Snake" | split: ", " %}

{{ my_array | sort_natural | join: ", " }}
```

Output

```
giraffe, octopus, Sally Snake, zebra
```

An optional argument specifies which property of the array's items to use for sorting.

```
{% assign products_by_company = collection.products | sort_natural: "company"
↪%}
{% for product in products_by_company %}
  <h4>{{ product.title }}</h4>
{% endfor %}
```

split

Divides a string into an array using the argument as a separator. `split` is commonly used to convert comma-separated items from a string to an array.

Input

```
{% assign beatles = "John, Paul, George, Ringo" | split: ", " %}

{% for member in beatles %}
  {{ member }}
{% endfor %}
```

Output

```
John

Paul
```

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(continued from previous page)

```

George

Ringo
```

strip

Removes all whitespace (tabs, spaces, and newlines) from both the left and right sides of a string. It does not affect spaces between words.

Input

```
BEGIN{{ "          So much room for activities!          " | strip }}END
```

Output

```
BEGINSo much room for activities!END
```

strip_html

Removes any HTML tags from a string.

Input

```
{{ "Have <em>you</em> read <strong>Ulysses</strong>?" | strip_html }}
```

Output

```
Have you read Ulysses?
```

strip_newlines

Removes any newline characters (line breaks) from a string.

Input

```
{% capture string_with_newlines %}
Hello
there
{% endcapture %}

{{ string_with_newlines | strip_newlines }}
```

Output

```
Hellothere
```

time

Converts an *ISO8601 timestamp* (page 581) or *OPC Relative time* (page 585) into another time format using *time format tokens* (page 583).

Input

```
{{ node.createdTime | time }}
```

Output

```
2021-06-01 10:50:00
```

Input

```
{{ "2021-06-01T10:50:00.000Z" | time }}
```

Output

```
2021-06-01 10:50:00
```

Here the input value is an *OPC Relative time* (page 585)

Input

```
{{ "NOW" | time }}
```

Output

```
2021-07-18 14:30:00
```

Format

Format the output using *time format tokens* (page 583). The default format is `YYYY-MM-DD HH:mm:ss`.

Input

```
{{ node.createdTime | time: "DD MMMM YYYY" }}
```

Output

```
01 June 2021
```

Timezone and DST

Provide *timezone* (page 581) for output in regional time. The default timezone is `Etc/UTC`.

Input

```
{{ "2021-01-01T01:50:00.000Z" | time: "YYYY-MM-DD HH:mm:ss", "Australia/Sydney
↪" }}
```

Output

```
2021-01-01 12:50:00
```

The timezone will always be adjusted to DST (Daylight Savings Time) but this can be disabled to ensure a fixed UTC offset by including `false` as an additional option.

Input

```
{{ "2021-01-01T01:50:00.000Z" | time: "YYYY-MM-DD HH:mm:ss", "Australia/Sydney
↪", false }}
```

Output

```
2021-01-01 11:50:00
```

Note: Reports will default to the *Timezone* and *DST* specified in its properties dialog.

time_minus

Subtracts an interval of time from an *ISO8601 timestamp* (page 581).

Interval units include: `years`, `months`, `weeks`, `days`, `hours`, `minutes`, `seconds`, `milliseconds`

Input

```
{{ node.createdTime | time_minus: 1, "years"}}
```

Output

```
2020-06-01T10:50:00.000Z
```

The `time_minus` filter can be applied multiple times

Input

```
{{ "2021-06-01T10:50:00.000Z" | time_minus: 1, "years" | time_minus: 2, "days
↪"}}
```

Output

```
2020-05-30T10:50:00.000Z
```

Format the timestamp by applying the *time* (page 545) filter last

Input

```
{{ "2021-06-01T10:50:00.000Z" | time_minus: 1, "years" | time: "MMMM YYYY"}}
```

Output

```
June 2020
```

time_plus

Adds interval of time to an *ISO8601 timestamp* (page 581).

Interval units include: `years`, `months`, `weeks`, `days`, `hours`, `minutes`, `seconds`, `milliseconds`

Input

```
{{ node.createdTime | time_plus: 1, "years"}}
```

Output

```
2022-06-01T10:50:00.000Z
```

The `time_plus` filter can be applied multiple times

Input

```
{{ "2021-06-01T10:50:00.000Z" | time_plus: 1, "years" | time_plus: 2, "days"}}
```

Output

```
2022-06-03T10:50:00.000Z
```

Format the timestamp by applying the *time* (page 545) filter last

Input

```
{{ "2021-06-01T10:50:00.000Z" | time_plus: 1, "years" | time: "MMMM YYYY"}}
```

Output

```
June 2022
```

times

Multiplies a number by another number.

Input

```
{{ 3 | times: 2 }}
```

Output

```
6
```

Input

```
{{ 24 | times: 7 }}
```

Output

```
168
```

Input

```
{{ 183.357 | times: 12 }}
```

Output

```
2200.284
```

truncate

Shortens a string down to the number of characters passed as an argument. If the specified number of characters is less than the length of the string, an ellipsis (. . .) is appended to the string and is included in the character count.

Input

```
{{ "Ground control to Major Tom." | truncate: 20 }}
```

Output

```
Ground control to...
```

Custom ellipsis

`truncate` takes an optional second argument that specifies the sequence of characters to be appended to the truncated string. By default this is an ellipsis (...), but you can specify a different sequence.

The length of the second argument counts against the number of characters specified by the first argument. For example, if you want to truncate a string to exactly 10 characters, and use a 3-character ellipsis, use **13** for the first argument of `truncate`, since the ellipsis counts as 3 characters.

Input

```
{{ "Ground control to Major Tom." | truncate: 25, ", and so on" }}
```

Output

```
Ground control, and so on
```

No ellipsis

You can truncate to the exact number of characters specified by the first argument and avoid showing trailing characters by passing a blank string as the second argument:

Input

```
{{ "Ground control to Major Tom." | truncate: 20, "" }}
```

Output

```
Ground control to Ma
```

truncatewords

Shortens a string down to the number of words passed as an argument. If the specified number of words is less than the number of words in the string, an ellipsis (. . .) is appended to the string.

Input

```
{{ "Ground control to Major Tom." | truncatewords: 3 }}
```

Output

```
Ground control to...
```

Custom ellipsis

`truncatewords` takes an optional second argument that specifies the sequence of characters to be appended to the truncated string. By default this is an ellipsis (. . .), but you can specify a different sequence.

Input

```
{{ "Ground control to Major Tom." | truncatewords: 3, "--" }}
```

Output

```
Ground control to--
```

No ellipsis

You can avoid showing trailing characters by passing a blank string as the second argument:

Input

```
{{ "Ground control to Major Tom." | truncatewords: 3, "" }}
```

Output

```
Ground control to
```

uniq

Removes any duplicate elements in an array.

Input

```
{% assign my_array = "ants, bugs, bees, bugs, ants" | split: ", " %}
{{ my_array | uniq | join: ", " }}
```

Output

```
ants, bugs, bees
```

upcase

Makes each character in a string uppercase. It has no effect on strings which are already all uppercase.

Input

```
{{ "Parker Moore" | upcase }}
```

Output

```
PARKER MOORE
```

Input

```
{{ "APPLE" | upcase }}
```

Output

```
APPLE
```

url_decode

Decodes a string that has been encoded as a URL.

Input

```
{{ "%27Stop%21%27+said+Fred" | url_decode }}
```

Output

```
'Stop!' said Fred
```

url_encode

Converts any URL-unsafe characters in a string into percent-encoded characters.

Input

```
{{ "john@liquid.com" | url_encode }}
```

Output

```
john%40liquid.com
```

Input

```
{{ "Tetsuro Takara" | url_encode }}
```

Output

```
Tetsuro+Takara
```

where

Creates an array including only the objects with a given property value, or any `truthy` value by default.

In this example, assume you have a list of products and you want to show your kitchen products separately. Using `where`, you can create an array containing only the products that have a `"type"` of `"kitchen"`.

Input

```
All products:
{% for product in products %}
- {{ product.title }}
{% endfor %}

{% assign kitchen_products = products | where: "type", "kitchen" %}

Kitchen products:
{% for product in kitchen_products %}
- {{ product.title }}
{% endfor %}
```

Output

```
All products:
- Vacuum
- Spatula
- Television
- Garlic press

Kitchen products:
- Spatula
- Garlic press
```

Say instead you have a list of products and you only want to show those that are available to buy. You can `where` with a property name but no target value to include all products with a **truthy** `"available"` value.

Input

```
All products:
{% for product in products %}
- {{ product.title }}
{% endfor %}

{% assign available_products = products | where: "available" %}

Available products:
{% for product in available_products %}
- {{ product.title }}
{% endfor %}
```

Output

```
All products:
- Coffee mug
- Limited edition sneakers
- Boring sneakers

Available products:
- Coffee mug
- Boring sneakers
```

The `where` filter can also be used to find a single object in an array when combined with the `first` filter. For example, say you want to show off the shirt in your new fall collection.

Input

```
{% assign new_shirt = products | where: "type", "shirt" | first %}

Featured product: {{ new_shirt.title }}
```

Output

```
Featured product: Hawaiian print sweater vest
```

4.2.2 Tags

Liquid expressions implement business-logic independent tags that are typically implemented in shopify/liquid (https://shopify.github.io/liquid/). This section contains the specification and examples for all the tags implemented by Liquid.

There're are dozens of tags supported by Liquid, with all tags described at shopify/liquid (https://shopify.github.io/liquid/). These tags can be categorized into these groups:

Category	Purpose	Tags
Iteration	iterate over a collection	for, cycle, tablerow
Control Flow	control the execution branch of template rendering	if, unless, elsif, else, case, when
Variable	define and alter variables	assign, increment, decrement
Language	temporarily disable Liquid syntax	raw, comment

assign

Creates a new variable.

Input

```
{% assign my_variable = false %}
{% if my_variable != true %}
  This statement is valid.
{% endif %}
```

Output

```
This statement is valid.
```

Wrap a variable value in quotations " to save it as a string.

Input

```
{% assign foo = "bar" %}
{{ foo }}
```

Output

```
bar
```

capture

Captures the string inside of the opening and closing tags and assigns it to a variable. Variables created through `capture` are strings.

Input

```
{% capture my_variable %}I am being captured.{% endcapture %}
{{ my_variable }}
```

Output

```
I am being captured.
```

Using `capture`, you can create complex strings using other variables created with `assign`:

Input

```
{% assign favorite_food = "pizza" %}
{% assign age = 35 %}

{% capture about_me %}
I am {{ age }} and my favorite food is {{ favorite_food }}.
{% endcapture %}

{{ about_me }}
```

Output

```
I am 35 and my favourite food is pizza.
```

case

Creates a switch statement to compare a variable with different values. `case` initializes the switch statement, and `when` compares its values.

Input

```
{% assign handle = "cake" %}
{% case handle %}
  {% when "cake" %}
     This is a cake
  {% when "cookie" %}
     This is a cookie
  {% else %}
     This is not a cake nor a cookie
{% endcase %}
```

Output

```
This is a cake
```

comment

Allows you to leave un-rendered code inside a Liquid template. Any text within the opening and closing `comment` blocks will not be printed, and any Liquid code within will not be executed.

Input

```
Anything you put between {% comment %} and {% endcomment %} tags
is turned into a comment.
```

Output

```
Anything you put between tags is turned into a comment.
```

cycle

Loops through a group of strings and prints them in the order that they were passed as arguments. Each time `cycle` is called, the next string argument is printed.

Input

```
{% cycle "one", "two", "three" %}
{% cycle "one", "two", "three" %}
{% cycle "one", "two", "three" %}
{% cycle "one", "two", "three" %}
```

Output

```
one
two
three
one
```

Uses for `cycle` include:

- applying odd/even classes to rows in a table
- applying a unique class to the last product thumbnail in a row

Parameters

`cycle` accepts a "cycle group" parameter in cases where you need multiple `cycle` blocks in one template. If no name is supplied for the cycle group, then it is assumed that multiple calls with the same parameters are one group.

Input

```
{% cycle "first": "one", "two", "three" %}
{% cycle "second": "one", "two", "three" %}
{% cycle "second": "one", "two", "three" %}
{% cycle "first": "one", "two", "three" %}
```

Output

```
one
one
two
two
```

decrement

Creates a new number variable, and decreases its value by one every time it is called. The first value is `-1`.

Input

```
{% decrement variable %}
{% decrement variable %}
{% decrement variable %}
```

Output

```
-1
-2
-3
```

Like *increment* (page 562), variables declared inside `decrement` are independent from variables created through *assign* (page 554) or *capture* (page 554).

for

Iteration tags run blocks of code repeatedly.

Basic Usage

for…in

Repeatedly executes a block of code. For a full list of attributes available within a `for` loop, see *forloop* (page 559).

Input

```
{% for product in collection.products %}
  {{ product.title }}
{% endfor %}
```

Output

```
hat shirt pants
```

For loops can iterate over arrays, hashes, and *ranges of integers* (page 560).

When iterating a hash, item[0] contains the key, and item[1] contains the value:

Input

```
{% for item in hash %}
  * {{ item[0] }}: {{ item[1] }}
{% endfor %}
```

Output

```
* key1: value1
* key2: value2
```

else

Specifies a fallback case for a `for` loop which will run if the loop has zero length.

Input

```
{% for product in collection.products %}
  {{ product.title }}
{% else %}
  The collection is empty.
{% endfor %}
```

Output

```
The collection is empty.
```

break

Causes the loop to stop iterating when it encounters the `break` tag.

Input

```
{% for i in (1..5) %}
  {% if i == 4 %}
    {% break %}
  {% else %}
    {{ i }}
  {% endif %}
{% endfor %}
```

Output

```
1 2 3
```

continue

Causes the loop to skip the current iteration when it encounters the `continue` tag.

Input

```
{% for i in (1..5) %}
  {% if i == 4 %}
    {% continue %}
  {% else %}
```

(continues on next page)

(continued from previous page)

```
    {{ i }}
  {% endif %}
{% endfor %}
```

Output

```
1 2 3   5
```

forloop

There's a `forloop` object available inside `for` loops. It's used to indicate the current state of `for` loop.

The `forloop.first`, `forloop.last` and `forloop.length` property:

Input

```
{% for i in (1..5) %}
  {%- if forloop.first == true -%} First
  {%- elsif forloop.last == true -%} Last
  {%- else -%} {{ forloop.length }}
  {%- endif %}
{% endfor -%}
```

Output

```
First
5
5
5
Last
```

The `forloop.index`, `forloop.index0`, `forloop.rindex` and `forloop.rindex0` property:

Input

```
index index0 rindex rindex0
{% for i in (1..5) %}
  {{- forloop.index }}     {{ forloop.index0 }}      {{ forloop.rindex }}    ␣
↪ {{ forloop.rindex0 }}
{% endfor -%}
```

Output

```
index index0 rindex rindex0
1     0      5      4
2     1      4      3
3     2      3      2
4     3      2      1
5     4      1      0
```

Parameters

limit

Limits the loop to the specified number of iterations.

Input

```
<!-- if array = [1,2,3,4,5,6] -->
{% for item in array limit:2 %}
  {{ item }}
{% endfor %}
```

Output

```
1 2
```

offset

Begins the loop at the specified index.

Input

```
<!-- if array = [1,2,3,4,5,6] -->
{% for item in array offset:2 %}
  {{ item }}
{% endfor %}
```

Output

```
3 4 5 6
```

range

Defines a range of numbers to loop through. The range can be defined by both literal and variable numbers.

Input

```
{% for i in (3..5) %}
  {{ i }}
{% endfor %}

{% assign num = 4 %}
{% for i in (1..num) %}
  {{ i }}
{% endfor %}
```

Output

```
3 4 5
1 2 3 4
```

reversed

Reverses the order of the loop. Note that this flag's spelling is different from the filter `reverse`.

Input

```
<!-- if array = [1,2,3,4,5,6] -->
{% for item in array reversed %}
  {{ item }}
{% endfor %}
```

Output

```
6 5 4 3 2 1
```

if

Executes a block of code only if a certain condition is `true`.

Input

```
{% if product.title == "Awesome Shoes" %}
  These shoes are awesome!
{% endif %}
```

Output

```
These shoes are awesome!
```

elsif / else

Adds more conditions within an `if` or `unless` block.

Input

```
{% if customer.name == "kevin" %}
  Hey Kevin!
{% elsif customer.name == "anonymous" %}
  Hey Anonymous!
```

(continues on next page)

(continued from previous page)

```
{% else %}
  Hi Stranger!
{% endif %}
```

Output

```
Hey Anonymous!
```

increment

Creates a new number variable, and increases its value by one every time it is called. The first value is `0`.

Input

```
{% increment my_counter %}
{% increment my_counter %}
{% increment my_counter %}
```

Output

```
0
1
2
```

Variables created through the `increment` tag are independent from variables created through assign or capture.

In the example below, a variable named "var" is created through `assign`. The `increment` tag is then used several times on a variable with the same name. Note that the `increment` tag does not affect the value of "var" that was created through `assign`.

Input

```
{% assign var = 10 %}
{% increment var %}
{% increment var %}
{% increment var %}
{{ var }}
```

Output

```
0
1
2
10
```

raw

Raw temporarily disables tag processing. This is useful for generating content (eg, Mustache, Handlebars) which uses conflicting syntax.

Input

```
{% raw %}
  In Handlebars, {{ this }} will be HTML-escaped, but
  {{{ that }}} will not.
{% endraw %}
```

Output

```
In Handlebars, {{ this }} will be HTML-escaped, but {{{ that }}} will not.
```

tablerow

Generates an HTML table. Must be wrapped in opening `<table>` and closing `</table>` HTML tags.

Basic Usage

Input

```
<table>
{% tablerow product in collection.products %}
  {{ product.title }}
{% endtablerow %}
</table>
```

Output

```
<table>
  <tr class="row1">
    <td class="col1">
      Cool Shirt
    </td>
    <td class="col2">
      Alien Poster
    </td>
    <td class="col3">
      Batman Poster
    </td>
    <td class="col4">
      Bullseye Shirt
    </td>
    <td class="col5">
      Another Classic Vinyl
    </td>
```

(continues on next page)

(continued from previous page)

```
    <td class="col6">
      Awesome Jeans
    </td>
  </tr>
</table>
```

Parameters

cols

Defines how many columns the tables should have.

Input

```
{% tablerow product in collection.products cols:2 %}
  {{ product.title }}
{% endtablerow %}
```

Output

```
<table>
  <tr class="row1">
    <td class="col1">
      Cool Shirt
    </td>
    <td class="col2">
      Alien Poster
    </td>
  </tr>
  <tr class="row2">
    <td class="col1">
      Batman Poster
    </td>
    <td class="col2">
      Bullseye Shirt
    </td>
  </tr>
  <tr class="row3">
    <td class="col1">
      Another Classic Vinyl
    </td>
    <td class="col2">
      Awesome Jeans
    </td>
  </tr>
</table>
```

limit

Exits the tablerow after a specific index.

```
{% tablerow product in collection.products cols:2 limit:3 %}
  {{ product.title }}
{% endtablerow %}
```

offset

Starts the tablerow after a specific index.

```
{% tablerow product in collection.products cols:2 offset:3 %}
  {{ product.title }}
{% endtablerow %}
```

range

Defines a range of numbers to loop through. The range can be defined by both literal and variable numbers.

```
<!--variable number example-->

{% assign num = 4 %}
<table>
{% tablerow i in (1..num) %}
  {{ i }}
{% endtablerow %}
</table>

<!--literal number example-->

<table>
{% tablerow i in (3..5) %}
  {{ i }}
{% endtablerow %}
</table>
```

unless

The opposite of *if* (page 561) – executes a block of code only if a certain condition is **not** met.

Input

```
{% unless product.title == "Awesome Shoes" %}
  These shoes are not awesome.
{% endunless %}
```

Output

```
These shoes are not awesome.
```

This would be the equivalent of doing the following:

```
{% if product.title != "Awesome Shoes" %}
  These shoes are not awesome.
{% endif %}
```

4.2.3 Overview

Objects

Objects describe where to insert dynamic content in your expression and are denoted by double curly braces: `{{` and `}}`.

The following objects are available to your expression:

NOW	Current time (in timezone of Source)
THIS	Reference to Node of current expression
SOURCE	Reference to Source of current expression
LOCATION	Reference to Location of current expression
WORKSPACE	Reference to Workspace of current expression

In the following example, the expression refers to an object called `WORKSPACE`, which has an attribute called `name`, and that object attribute contains the text `Workspace 01`.

Input

```
{{ WORKSPACE.name }}
```

Output

```
Workspace 01
```

Note: A full list of available object attributes are described *here* (page 444).

Filters

Filters change the output of an object. They are used within an output and are separated by a `|`.

Input

```
{{ "/my/fancy/url" | append: ".html" }}
```

Output

```
/my/fancy/url.html
```

Multiple filters can be used on one output. They are applied from left to right.

Input

```
{{ "adam!" | capitalize | prepend: "Hello " }}
```

Output

```
Hello Adam!
```

Note: A full list of available filters are described *here* (page 523)

Tags

Tags create the logic and control flow for templates. They are denoted by curly braces and percent signs: `{%` and `%}`.

The markup used in tags does not produce any visible text. This means that you can assign variables and create conditions and loops without showing any of the logic in the content.

Input

```
{% if user %}
  Hello {{ user.name }}!
{% endif %}
```

Output

```
Hello Adam!
```

Note: A full list of available tags are described *here* (page 553)

Operators

Liquid operators are very simple and different. There're 2 types of operators supported:

- Comparison operators: ==, !=, >, <, >=, <=
- Logic operators: `or`, `and`, `contains`

Thus numerical operators are not supported and you cannot even plus two numbers like this `{{a + b}}`, instead we need a filter `{{ a | plus: b}}`.

Precedence

1. Comparison operators. All comparison operations have the same precedence and higher than logic operators.
2. Logic operators. All logic operators have the same precedence.
3. Logic operators are evaluated from right to left, see shopify docs (https://help.shopify.com/en/themes/liquid/basics/operators#order-of-operations).

Truthy and Falsy

According to shopify documentation (https://shopify.github.io/liquid/basics/truthy-and-falsy/) everything other than `false` and `nil/null` is truthy. Our implementation is slightly different:

value	truthy	falsy
`true`	✓	
`false`		✓
`nil/null`		✓
`undefined`		✓
`string`	✓	
`empty string`	✓	
`0`	✓	
`integer`	✓	
`float`	✓	
`array`	✓	
`empty array`	✓	

4.3 Historic Data

When working with *time series* or historic data there are several important topics to understand:

4.3.1 Aggregates

Historic Data Aggregates provide a method to resample raw data over a specified period into Intervals and then perform a calculation on the data in each interval.

Advantages of aggregation:

- Reduces the size of the dataset. Charts and tabular data can be loaded faster
- Easy generation of advanced statistical reports and charts. eg. Daily totals

The following aggregates are available depending on the *Display type* (page 147) setting of the Parameter:

Aggregate	VALUE	STATE
NONE (raw)	x	x
INTERPOLATED	x	
AVERAGE	x	
MEDIAN	x	
TOTAL	x	
MIN	x	
MAX	x	
RANGE	x	
DELTA	x	
CHANGE	x	x
START	x	x
END	x	x
COUNT	x	x

Note: Text and Time Parameters only support *State* aggregates.

NONE — No Aggregation is applied. Raw data (as collected by the Source) is returned.

INTERPOLATED

The Interpolated aggregate either finds or calculates a value at each interval boundary. For each interval boundary timestamp, if there is already good raw data at that timestamp, then the raw data is used. Otherwise, the two closest bounding values must be found, one each in the intervals before and after the boundary. The value at the boundary is then interpolated between these two bounding values. In either case, the raw values involved must be good values to be used. If no good value can be found in the previous or next interval, then the aggregate will have a quality of *No Data*. If any non-good values are skipped in order to find the closest good bounding values, the aggregate quality will be *Data Subnormal*.

AVERAGE

The average aggregate adds up the values of all good raw data for each interval, and divides the sum by the number of good values producing a mean average. If any non-good values are ignored in the computation, the aggregate quality will be *Data Subnormal*.

MEDIAN

The median aggregate sorts the good values for each interval and selects the middle value as the median. If any non-good values are ignored in the computation, the aggregate quality will be *Data Subnormal*.

TOTAL

The total aggregate adds up all the values of all good raw values for each interval. If any non-good values are ignored in the computation, the aggregate quality will be *Data Subnormal*.

MIN

The minimum aggregate retrieves the minimum good raw value within the interval.

MAX

The maximum aggregate retrieves the maximum good raw value within the interval.

RANGE

The range aggregate finds the difference between the raw maximum and raw minimum values in the interval. If only one value exists in the interval, the range is zero. Note that the range is always zero or positive.

DELTA

The delta aggregate retrieves the difference between the earliest and latest good raw values in an interval. If the last value is less than the first value, the result will be negative. If the last value is the same as the first value, or if the last value is also the first value at the same timestamp, the result will be zero. If the last value is greater than the first value, the result will be positive. If any non-good values exist earlier or later than the earliest and latest good values, respectively, the aggregate quality is *Data Subnormal*.

CHANGE

The change aggregate retrieves raw values which have been filtered to remove any duplicate sequential values.

START

The start aggregate retrieves the first raw value within the interval. If the value is non-good, than the quality of the aggregate will be *Data Subnormal*.

END

The end aggregate retrieves the last raw value within the interval. If the value is non-good, than the quality of the aggregate will be *Data Subnormal*.

COUNT

This aggregate retrieves a count of all the raw values within an interval. If one or more raw values are non-good, they are not included in the count and the aggregate quality will be *Data Subnormal*.

Note: Aggregates use the OPC-UA Historical Access v1.0 Specification

4.3.2 JSON Time Series

JSON (http://json.org) Time Series (JTS) is a lightweight data-interchange format for *time series* data. The specification is provided with an **MIT license** for free use. It has been designed to be highly readable, parsable and extendable.

The JTS document format is natively supported by eagle.io (https://eagle.io) which can be easily imported and exported via the *HTTP API* (page 433).

Note: The Time Series (https://github.com/eagle-io/timeseries) JavaScript library is provided for free and can easily output time series data in JTS format.

Example JTS document:

```
{
    "docType": "jts",
    "version": "1.0",
    "header": {
        "startTime": "2018-08-16T02:00:00.000Z",
        "endTime": "2018-08-16T02:20:43.000Z",
        "recordCount": 5,
        "columns": {
            "0": {
                "id": "541a5a129bc9b4035f906d70",
                "name": "Temperature",
                "dataType": "NUMBER",
                "renderType": "VALUE",
                "format": "0.###",
                "aggregate": "NONE"
            }
        }
    },
    "data": [
        {
            "ts": "2018-08-16T02:00:39.000Z",
            "f": { "0": {"v": 99, "q": 100, "a": "site maintenance"} }
        },
        {
            "ts": "2018-08-16T02:05:40.000Z",
            "f": { "0": {"v": 28.22 } }
        },
        {
            "ts": "2018-08-16T02:10:41.000Z",
            "f": { "0": {"a": "sensor recalibrated" } }
        },
        {
            "ts": "2018-08-16T02:15:42.000Z",
            "f": { "0": {"v": 29.2, "q": 100 } }
        },
        {
            "ts": "2018-08-16T02:20:43.000Z",
```

(continues on next page)

(continued from previous page)

```
            "f": { "0": {"v": 29.18 } }
        }
    ]
}
```

JTS Document specification

Attribute	Example	Description
docType	jts	*Required*. Must be ‘jts’
version	1.0	*Required*. Version ‘1.0’ supported
header		*Optional*. Object describing document data
data		*Required*. Array of historic records in chronological order

```
{
    "docType": "jts",
    "version": "<version>",
    "header": {},
    "data": []
}
```

Header

The header is optional and is used to describe the data contained within the document.

Header Attribute	Example	Description
startTime	2018-08-16T02:00:00.000Z	*ISO8601* (page 581) timestamp of earliest record in document
endTime	2018-08-16T02:20:43.000Z	*ISO8601* (page 581) timestamp of latest record in document
recordCount	5	Total record count (number of array items in data)
columns		Object describing columns in document

```
{
    "startTime": "<startTime>",
    "endTime": "<endTime>",
    "recordCount": 0,
    "columns": {}
}
```

Header Columns

The header *columns* object contains *column index* keys which map to the corresponding *column index* in the record fields object. Column index assignment is generally zero-based (first index is 0).

Column Attribute	Example	Description
id	541a5a129bc9b4035f906d70	Unique identifier of resource (usually its _id)
name	Temperature	Name of resource or node
dataType	NUMBER	*Data type* (page 575) of associated node. *[NUMBER, TEXT, TIME, COORDINATES]* Note: if 'renderType' is STATE the data in this document will be String.
renderType	VALUE	Rendering of 'v' attribute in records. *[VALUE, STATE]*
format	0.###	*Format* (page 147) of the value.
aggregate	NONE	Historic *aggregate* (page 569) applied to data. Default is NONE
baseTime	D	*OPC Base Time* (page 585) used for aggregation
interval	1H	*OPC Interval* (page 585) used for aggregation

```
{
    "0": {
        "id": "<id>",
        "name": "<name>",
        "dataType": "<dataType>",
        "format": "<format>",
        "aggregate": "<aggregate>",
        "baseTime": "<baseTime>",
        "interval": "<interval>"
    },
    "1": {},
    "2": {}
}
```

Data

The data attribute contains an array of records. Each record contains a 'ts' *ISO8601* (page 581) timestamp and an 'f' fields object which can contain value, quality and annotation attributes for one or more columns (using column index as key). The records should be sorted chronologically by timestamp.

Record Attribute	Example	Description
ts	2018-08-16T02:00:00.000Z	*Required*. *ISO8601* (page 581) timestamp of data point(s)
f		*Required*. Object containing data for 1 or more columns (using column index as key)
v	10.4	*Optional*. Value of column for the corresponding record timestamp *Data type* (page 575) should match *dataType* option in header
q	100	*Optional*. *Quality* (page 577) code associated with data value for this column
a	site maintenance	*Optional*. *Annotation* (page 578) text associated with data point

```
[
    {
        "ts": "<ts>",
        "f": {
            "0": {"v": 10.4, "q": 100, "a": "site maintenance"},
            "1": {"v": 55}
            "2": {"a": "sensor recalibrated"}
        }
    },
    {
        "ts": "<ts>",
        "f": { "0": {"v": 12, "q": 100}, "1": {"v": 55, "q": 100} }
    }
]
```

Note: The 'f' fields object can be sparsley populated by only including columns that have data for the associated record timestamp.

Data Types

JTS supports both simple and complex data types. Complex data types are always encapsulated in a JSON object with its key prefixed with '$'.

When inserting historic data, the data type *MUST* match the parameter type. For example, TIME data is only accepted on Time parameters. Data that has been exported using renderType 'STATE' will always have a *String* format.

The following data types are supported in the ‘v’ value field of a record column:

Data Type	Accepted Parameter Type	Format	Example
NUMBER	Number parameters	Number	24.5
TEXT	Text parameters	String	“valve open”
TIME	Time parameters	{“$time”: *“ISO8601* (page 581)”}	{“$time”: “2014-08-16T02:00:00Z”}
COORDINATES	Locations	{“$coords”: [<latitude>, <longitude>]}	{“$coords”: [-33.86785, 151.20732]}

Note: The record ‘ts’ field can be expressed as a simple *ISO8601* (page 581) timestamp instead of the complex TIME data type.

4.3.3 Quality

☆ Historic data can optionally contain quality information. Each data point in the time series can store a quality code that represents the quality of the value captured. System quality codes may also be applied automatically when displaying or exporting the historic data (usually when aggregate calculations are applied).

The account settings *Quality Codes* (page 266) section allows Account Owners and Administrators to add custom quality codes or modify the built-in system quality codes.

Quality codes are assigned a Type which represents the validity of the data: GOOD, BAD or UNCERTAIN.

System Qualities

System qualities can have their source and quality codes re-assigned but they can not be removed.

Data Subnormal [149] Non-Good values have been excluded in the aggregate calculation so the quality of the data is uncertain.

Data Unavailable [158] There is no data available for this period and has been specifically indicated as a gap by the user.

No Bounds [156] Bounding values determine the start and end points when requesting raw data. If a raw data value exists at the start or end point, it is considered the bounding value. If no raw data value exists at the start or end point, the next data point outside of the range is considered the bounding value and the quality will be shown as No Bounds.

No Data [155] There is no data available for the aggregation calculation period after non-good values have been excluded.

No Good Data [165] There is no data available for the aggregate calculation period.

Entry Inserted [162] Data has been inserted (e.g. via interpolation)

4.3.4 Annotations

ⓘ Historic data can optionally contain annotations. Each data point in the time series can store a textual comment to provide users with additional context to the value or quality.

Annotations are visible on charts and tabular data and can be included in historic exports.

Note: The maximum length of an annotation is 500 characters.

4.3.5 Limits

Eagle.io enforces some basic historic data limits to ensure the platform remains performant and provides the best user experience.

Note: If you believe your application may exceed our historic limits, please contact us to discuss your requirements.

Acquisition and Storage

Eagle.io supports the acquisition and storage of up to **20000 records per** *Data Source* (page 134) **per day**. Exceeding the limit will trigger an *Overload Alarm* (page 173) on the Source.

Daily intervals are defined in the UTC time zone. The acquisition limit applies to the number of records acquired in one UTC day, regardless of the record timestamps. The storage limit applies to the number of records that have timestamps occurring on the same UTC day, regardless of when they are acquired.

The limit of 20000 records is sufficient for Data Sources that generate data continuously at 5-second intervals. While eagle.io supports smaller data intervals (down to 1 millisecond), such resolutions cannot be generated continuously. For example, if a Data Source generated data at 1-second intervals, the limit of 20000 records would be reached in under 6 hours.

Under some circumstances, a Data Source will be exempt from the acquisition limit (but will always be subject to the storage limit of 20000 records per day):

1. Data Sources that have never been acquired before (because they have just been created)
2. Data Sources that do not have current data (defined as a record that occurs on the current day in the UTC time zone)
3. Data Sources that have had all their historical records deleted since the last acquisition

This exemption from the acquisition limit allows a large number of historical records to be backfilled at one time; however, each individual day of data must still not have more than 20000 records. For example, when connecting a new data logger that has been logging data at 5-second intervals for 1 month, all the data on the device can be acquired by eagle.io in a single attempt, even though this is over 500000 records. Note that each individual day of data still does not contain more than 20000 records, and so does not exceed the storage limit.

The acquisition limit and storage limit have different effects, highlighted by the following examples.

Acquisition limit example

Consider a data set spanning 1 week at 5-second resolution, i.e. 17280 records per day, for a total of 120960 records. If you tried to acquire all these records in one attempt, you would hit the daily limit of 20000 records acquired per day, even though each individual day of records is under the storage limit. The following day, you would be able to acquire a further 20000 records. In total, you would need to perform daily acquisitions for a week, adding only 20000 records per day, to acquire the entire data set. However, if any of the previously listed exemptions applied to the Data Source, you would be able to acquire all 120960 records in a single attempt.

Storage limit example

Consider a data set spanning 1 day at 1-second resolution, i.e. a total of 86400 records with timestamps all occurring on the same day. If you only acquired 1000 of these records each day, you would not hit the daily acquisition limit. However, after 20 days, you would hit the storage limit of 20000 records with timestamps occurring on the same day. You would then be permanently restricted from storing any more records with timestamps occurring on that day. There are no exemptions to the storage limit, so the only way to store additional records on that day would be to delete some or all of the existing records.

Data editing

Eagle.io limits the number of raw records that are loaded on a *historic chart* (page 201) to **50000 records per parameter while editing**. If your time range selection exceeds the record limit a notice will be shown in the top-left corner of the chart with an option to temorarily ignore the warning and load the full dataset (please be aware this may result in poor browser performance and stability issues).

4.4 Time

When working with *time series* data from multiple geographic locations its important to understand how timezones and date formatting affects the display of the data.

4.4.1 Timezones

Timezones allow for data to be collected from various geographical locations and stored on the server in *UTC*. Refer to the Source configuration docs for information on assigning a timezone.

Users can assign a timezone to their User profile. All data displayed to the user including current, historic, notifications and events will be displayed in the selected timezone.

Example:

```
(GMT-08:00) Pacific Time
```

The *HTTP API* (page 433) requires all timezones to be specified using the *TZ* naming convention as specified in this list (http://en.wikipedia.org/wiki/List_of_tz_database_time_zones). *Etc/UTC* should be used for UTC.

Example:

```
America/Los_Angeles
```

4.4.2 Timestamps

Timestamps represent the date and time of an event and can be represented in different formats.

ISO8601

The *HTTP API* (page 433) requires all timestamps to use the ISO8601 (http://en.wikipedia.org/wiki/ISO_8601) standard format for date and time display. Timestamps in this format can be in UTC with the ‘Z’ (Zulu) zone designator applied or include a ‘+’ offset from UTC. Timestamps can optionally specify fractional seconds using 3 decimal places.

Example

```
2014-10-09T22:38:10Z
2014-10-09T22:38:10.000Z

2014-10-09T20:38:10+0200
2014-10-09T20:38:10+02:00
```

Customize time format

Users can assign a preset or custom Time format to their User profile using the time format tokens below. All timestamps displayed to the user will be in their preferred format (where applicable).

Default format

```
YYYY-MM-DD HH:mm:ss
```

Example output

```
2021-06-01 22:38:00
```

ISO8601 timestamp format

```
YYYY-MM-DDTHH:mm:ssZ
```

Example output

```
2021-06-01T22:38:00+1000
```

Time format tokens

Time Unit	Token	Output
Month	M	1 2 … 11 12
	Mo[1]	1st 2nd … 11th 12th
	MM	01 02 … 11 12
	MMM	Jan Feb … Nov Dec
	MMMM	January February … November December
Day of Month	D	1 2 … 30 31
	Do[1]	1st 2nd … 30th 31st
	DD	01 02 … 30 31
Day of Year	DDD	1 2 … 364 365
	DDDo	1st 2nd … 364th 365th
	DDDD	001 002 … 364 365
Day of Week	d[1]	0 1 … 5 6
	do[1]	0th 1st … 5th 6th
	dd	Su Mo … Fr Sa
	ddd	Sun Mon … Fri Sat
	dddd	Sunday Monday … Friday Saturday
Day of Week (Locale)	e[1]	0 1 … 5 6
Day of Week (ISO)	E	1 2 … 6 7
Week of Year	w	12 .. 52 53
	wo[1]	1st 2nd … 52nd 53rd
	ww	01 02 … 52 53
Week of Year (ISO)	W	1 2 … 52 53
	Wo[1]	1st 2nd … 52nd 53rd
	WW	01 02 … 52 53
Year	YY	70 71 … 29 30
	YYYY	1970 1971 … 2029 2030
Week Year	gg	70 71 … 29 30
	gggg	1970 1971 … 2029 2030
Week Year (ISO)	GG	70 71 … 29 30
	GGGG	1970 1971 … 2029 2030
AM/PM	A	AM PM
	a	am pm
Hour	H	0 1 … 22 23
	HH	00 01 … 22 23
	h	1 2 … 11 12
	hh	01 02 … 11 12
Minute	m	0 1 … 58 59
	mm	00 01 … 58 59
Second	s	0 1 … 58 59
	ss	00 01 … 58 59

Continued on next page

Table 1 – continued from previous page

Time Unit	Token	Output
Fractional Second	S	0 1 … 8 9
	SS	0 1 … 98 99
	SSS	0 1 … 998 999
Timezone	Z	-07:00 -06:00 … +06:00 +07:00
	ZZ	-0700 -0600 … +0600 +0700
Unix Timestamp	X	1360013296
Unix MS Timestamp	x	1360013296000

---

[1] Tokens not available for Delimited Text Source.

4.4.3 Relative Time

OPC Relative Time is used to represent date and time in an easy to read format that allows users to navigate or select a period of time without explicitly specifying a date. An example use is NOW-5M which simply translates to the current time minus 5 minutes. All times are relative to the user profile timezone.

OPC Relative Time syntax:

```
<basetime> [ ( + ¦ - ) <interval> ]
```

Base Time A time that is relative to 'now', the present time. You can enter a base time in either short or long format.

Interval An optional further offset that you can either add or subtract from the base time. You specify this offset in the OPC Time Format.

Example usage:

```
H (start of the current hour)
D+9H  (9am current day)
NOW-7D+6H  (6 days and 18hours ago)
```

OPC Base Time and Interval Keywords

Keyword Long (short)	Base Time	Interval
NOW	The current time	N/A
FIRST	Earliest data value time	N/A
LAST	Most recent data value time	N/A
SECOND (S)	The start of the current second	Offset from time in seconds
MINUTE (M)	The start of the current minute	Offset from time in minutes
HOUR (H)	The start of the current hour	Offset from time in hours
DAY (D)	The start of the current day	Offset from time in days
WEEK (W)	The start of the current week	Offset from time in weeks
MONTH (MO)	The start of the current month	Offset from time in months
YEAR (Y)	The start of the current year	Offset from time in years

Note: You can specify both the <basetime> and <interval> in either short or long format.

CHAPTER 5

Frequently Asked Questions

5.1 General

5.1.1 What browsers do you support?

We support all modern browsers: Chrome, Edge, Safari, Firefox and Opera.

Please ensure you have both **Cookies** and **Javascript enabled** and are using the **latest version** of your preferred browser.

We recommend Google Chrome (https://www.google.com/intl/en/chrome/browser/) for the best eagle.io (https://eagle.io) experience.

5.1.2 How do I access an existing users data?

Account access is managed by the owner of the account and any nominated account administrators. Please request access directly from the appropriate persons in charge of the account.

New users will receive an email invitation with a link to enter their details and access the site.

5.1.3 What languages do you support?

English is currently the only supported language. We recommend you use the Google Translate extension for Chrome (https://chrome.google.com/webstore/search/google%20translate%20extension?hl=en) for other languages. Users can set their own locale and timezone display preferences.

5.1.4 What types of charts do you support?

We offer a variety of highly customizable interactive charts including *Historic* (page 67), *Windrose* (page 74) and *Displacement* (page 81) charts. Check out our *charts documentation* (page 66) for full usage details.

5.1.5 How much historic data can I store?

We support the acquisition and storage of up to **20000 records per** *Data Source* (page 134) **per day**. Refer to Historic Data *Limits* (page 579) for more information about storage limits.

5.1.6 Where is my data stored and is it secure?

We store all customer data securely on Amazon Web Services data hosting facilities located in Australia. Data is strictly segregated so that no user may ever view, tamper with, or become aware of the data of any other user. Refer to our Compliance (https://eagle.io/policies/compliance) section for full details.

5.1.7 Do you have a service level guarantee?

We provide a full service level guarantee (99.9% up-time commitment) to clients subscribed to our Standard (or larger) pricing plans. Refer to our SLA (https://eagle.io/policies/sla) for full details.

5.2 Data Loggers

5.2.1 What types of data loggers, PLCs and RTUs are supported?

We support the following range of data loggers:

Campbell Scientific Campbell PakBus loggers including CR200, CR300, CR800, CR1000, CR3000, CR9000, CRVW & CR6 series.

CellVisor E State Automation CellVisor 3000/6000 series.

dataTaker Thermo Fisher Scientific DT80 range.

Generic Virtually any data logger that can *Email* or *FTP* data in CSV format.

Libelium Waspmote and Plug & Sense! range with support for *Direct Connect* or *Meshlium*

libelium
Smart Agriculture

Worldsensing Loadsensing

Loadsensing

OTT netDL OTT netDL 500 and 1000.

OTT netDL1000
OTT netDL500

Point Orange 3G Metasphere Point Orange 3G RTU.

Senquip ORB-X1.

Spider Halytech Spider SMS and microSpider range.

YDOC YDOC ML-315 range of data loggers.

WaterLog WaterLog Storm3 series.

Support for a wide range of additional data loggers and devices is coming soon. Contact Us (https://eagle.io/contact/) to find out how to get support for your device.

5.2.2 What connection options are supported?

You can use a variety of transport options to connect your data logger to eagle.io (https://eagle.io) including:

TCP Client Connect to any device with a Public IP Address or Domain name (including DDNS).

TCP Server WaterLog, SensorLog, Waspmotes and other devices can establish a direct connection to the cloud to stream data on schedule or event-based.

TCP Callback Allow any remote device to establish an IP connection to eagle.io using a special identification number. You can use your modem or data logger to send the Id on initial connection, or include a unique identifier in the data stream.

Scout The *Scout modem* is the easiest way to connect your data logger to eagle.io. The Scout takes any standard internet ready SIM Card without the need for fixed IP addresses and has a range of smart features including inbuilt GPS, signal strength monitoring, event based reporting and low power mode.

Meshlium Meshlium devices provide efficient routing of data collected from Waspmote devices in large Libelium sensor networks.

FTP/SFTP, Email, MQTT Send your data to the cloud via FTP/SFTP, Email or MQTT.

5.2.3 What level of functionality do you provide for connected data loggers?

- Upload programs and firmware (including network wide updates in one click)
- Perform Control operations (setting of public table variables in Campbell Scientific data loggers)
- Create/update/merge parameters automatically as programs change
- Synchronize device clock with timezone and daylight savings support

5.2.4 Can I connect to my data logger using 3rd party software?

Yes! You can enable *Remote Access* to your data logger at any time. An Internet address and Port will be allocated to allow you to immediately connect via TCP/IP. You can specify a session timeout and restrict access based on IP Address or allow connections from anywhere. Want to use LoggerNet or other tools for your low level operations - no problem. See *Data Source* (page 134) configuration for full details.

5.3 Files

5.3.1 What types of time series data files do you support?

We support most types of delimited text files such as csv, loggernet and other standard formats. See *Data Source* (page 114) configuration for full details.

5.3.2 What file transports do you support for automatic collection?

We support automatic collection via the following transports:

- Download from FTP site
- Download from Web site
- Email to eagle.io
- Publish using MQTT
- Read from Amazon S3 (https://aws.amazon.com/s3)
- Read from Dropbox (http://www.dropbox.com)
- Upload to ftp.eagle.io
- Upload to sftp.eagle.io

You can also manually import and export data files directly from the user interface or use our *HTTP API* (page 433) for automation.

5.3.3 Can I upload other types of files?

Files of any type can be uploaded through the interface as an *Attachment* (page 105) or use an *Attachment Source* (page 109) for automated uploads. All content and files uploaded must comply with our Terms of Use (https://eagle.io/policies/terms).

5.4 Cameras

5.4.1 Do you support cameras sending images or video files to eagle.io?

Yes, you can create an *Attachment Source* (page 109) which accepts files of any type. The files are stored as Attachments and you can set your Locations to display the most recent images uploaded. Images and video can be reviewed in the media gallery or downloaded for offline viewing.

We support Email and FTP as the Attachment Source transport. To send via Email, your camera must have in-built support for emailing images/files with custom subject text. For uploads via FTP/SFTP you can simply enter the credentials provided on Source creation.

Note - live streaming video is not directly supported.

CHAPTER 6

Glossary

data logger A data logger is an electronic device that records data over time or in relation to location either with a built in instrument or sensor or via external instruments and sensors.

delimiter A delimiter is a sequence of one or more characters used to specify the boundary between separate, independent regions in plain text or other data streams. An example of a delimiter is the comma character, which acts as a field delimiter in a sequence of comma-separated values.

time series A time series is a sequence of data points, measured typically at successive points in time spaced at uniform time intervals or at irregular intervals (event based).

timestamp A timestamp is a sequence of characters or encoded information identifying when a certain event occurred, usually giving date and time of day.

UTC Coordinated Universal Time is the primary time standard by which the world regulates clocks and time. UTC is synonymous with GMT.

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