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Google Looker Studio iQunet Connector Editor User Manual

![iQunet® logo]

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How to open, view and edit a Google Looker Studio dashboard

1. Prerequisites

Read documentation: for example
https://support.google.com/looker-studio/?hl=en#topic=6267740
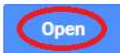https://support.google.com/looker-studio/topic/9207420
https://support.google.com/looker-studio/answer/6370267?hl=en#zippy=%2Cin-this-article (multipage reports)

2. Open and read a Google Looker Studio dashboard.

2.1. Go to your Gmail account inbox and open the 'Invitation to edit' email. Click on 'Open'.

Remark: it is also possible to open the report via the report link. Simply copy the link into your browser to open the Looker Studio report.

If you do not have access to the report, ask iQunet to change the permissions.
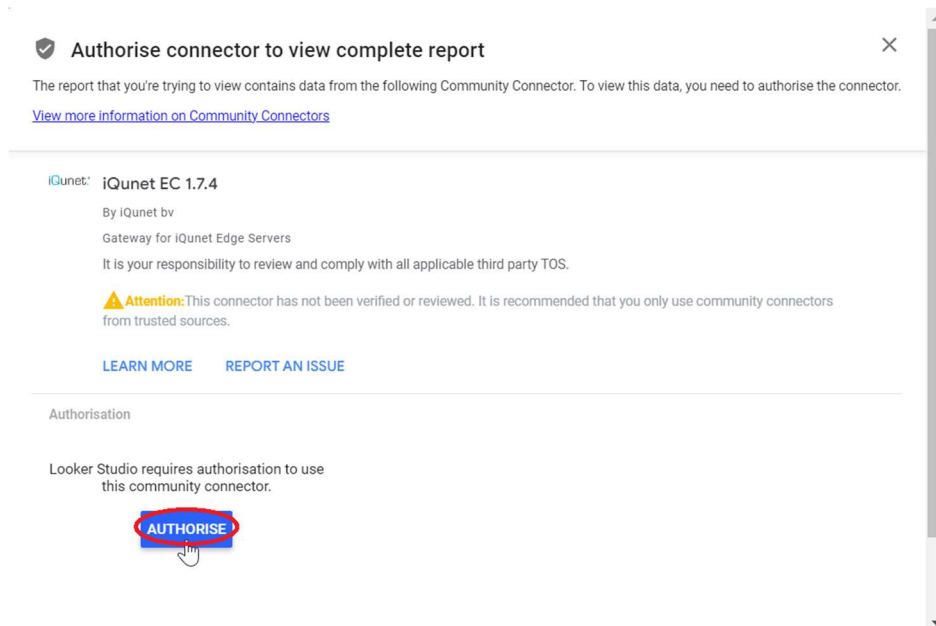
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2.2. You will be asked to authorize the iQunet EC 1.7.4 Connector to view the complete report. If you immediately get a popup window when opening the report, click on the 'Authorise' button. If this popup does not show up, click on one of the authorization icons (looks like a checkmark on a shield) in one of the created charts.
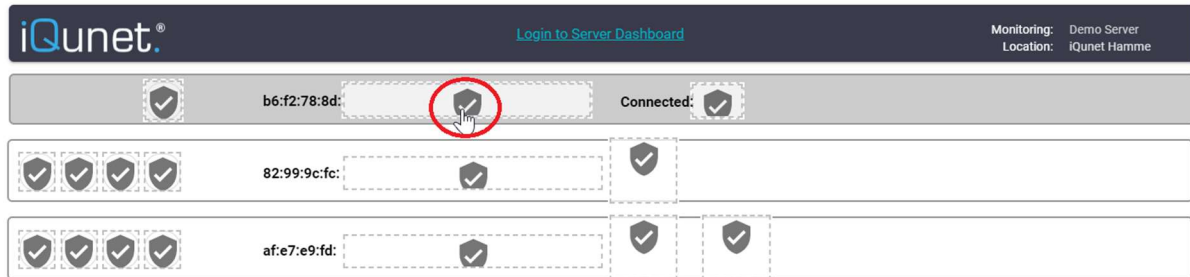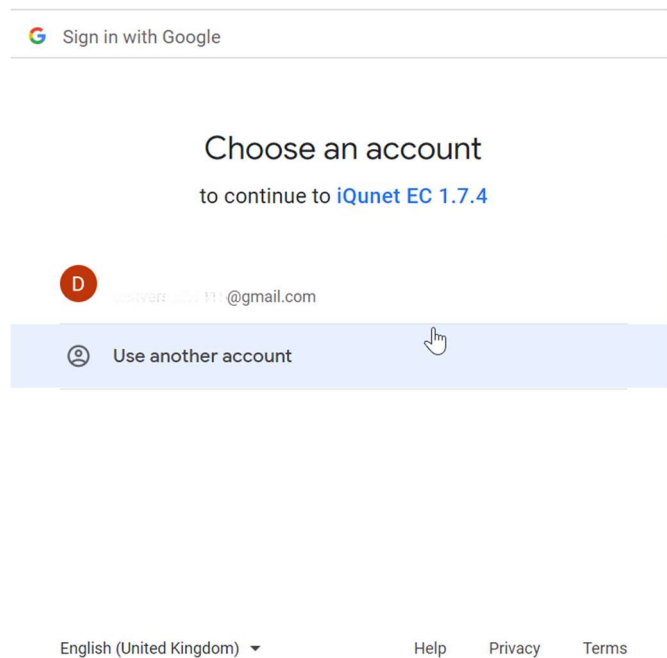

2.3. Click on the 'Authorise' button.

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2.4. Select your Google account.

Remark: you can always create a dummy Google account for the iQunet Sensor Dashboard and Looker Studio if you do not want to use your personal account.

2.5. Allow the iQunet EC 1.7.4 Connector to access your Google account.

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2.6. The iQunet EC 1.7.4 Connector is now authorized and the charts will start loading in the report.

Depending on your account's security settings you might receive a text message or email warning you about the granted access. You can ignore this mail or check the activity and confirm that you granted access.
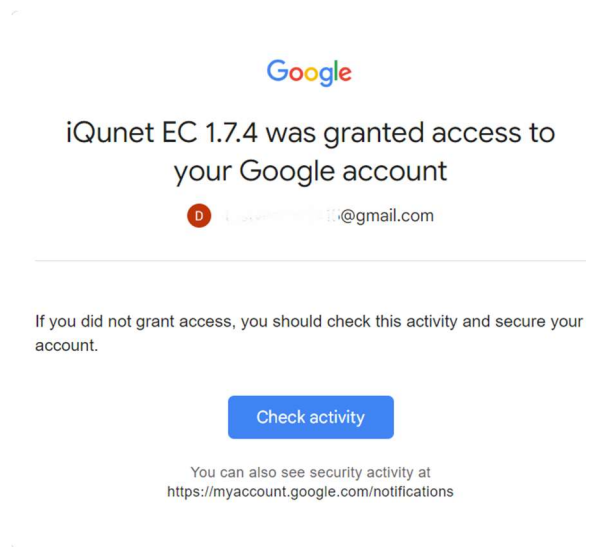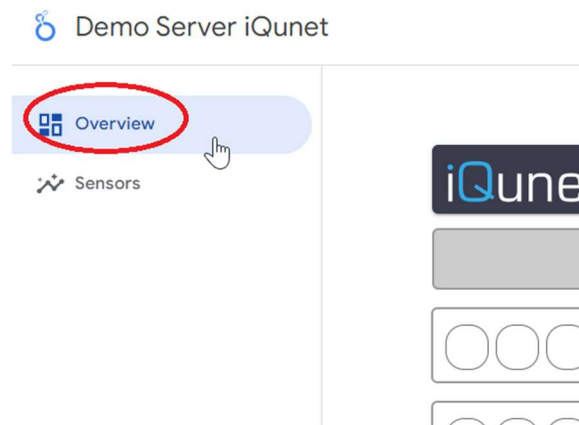

2.7. You can scroll through the different pages in the report by clicking on the tabs at the left side of the page (underneath the report title).


Remark: if you open a Google Looker Studio report or reopen it by refreshing the browser, the data used in the report will be refreshed. However, if the download of new data values takes longer than 5 seconds, the report will show old, cached history values (the data available after the previous refresh).

Remark: you can check if data is coming from the cache by opening the report and looking in the bottom left corner. When all the charts on the current page are being served from the cache, you'll see a lightning bolt icon along with the time and date of the last update.

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Remark: Google Looker Studio report data is only automatically refreshed every 12 hours. If you want to refresh the report data more often, you need to do this manually by clicking on the 3 dots in the righthand side of the report header. Select "Refresh data". Every page in the report must be refreshed separately. By refreshing every page separately, upload speed is improved.
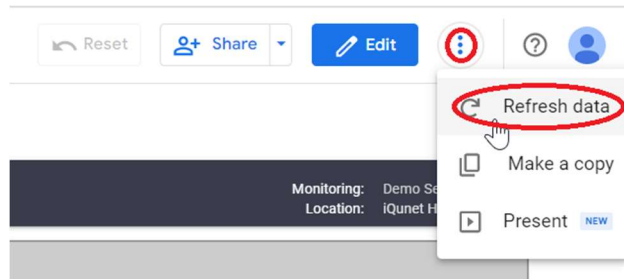

Remark: the manual refresh button is not available for report viewers (only for editors). When an editor clicks on the refresh button, data will be updated at the global level and be available for all report users (including report viewers).

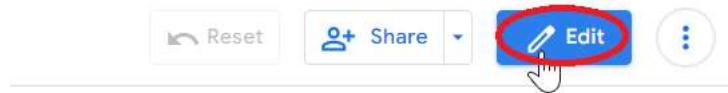2.8. You can see the detailed data points by hovering the mouse over the graphs.
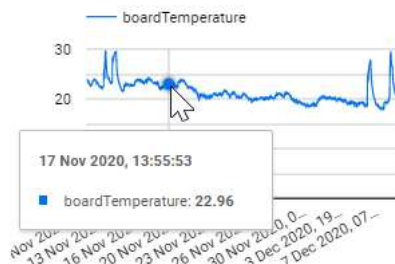
2.9. You can change the date range for the charts by clicking on the arrow icon. The selected range will apply to all charts on that page.
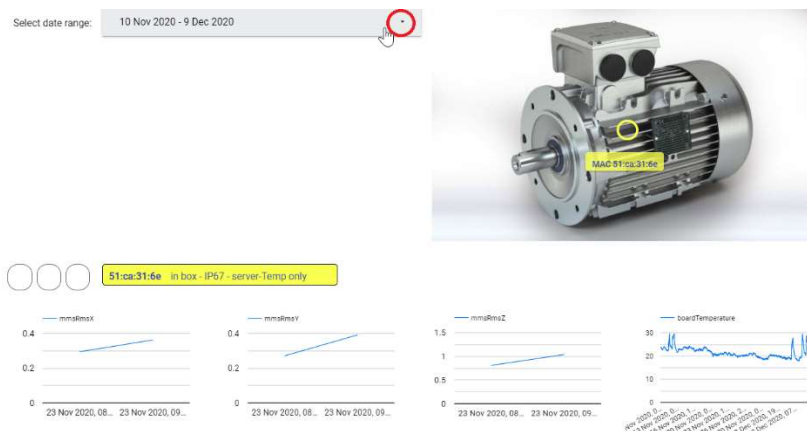
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3. Edit a Google Looker Studio dashboard.

3.1. Change to edit mode by clicking on "Edit" in the righthand side of the report header.

Remark: change back to view mode by clicking on the same button which now shows "View".

3.2. Add a chart, table, map… by clicking on 'Add a chart' and selecting the desired type.

Remark: do not use a time series graph since this will try to calculate useless aggregate graphs (sum, average) of the data.
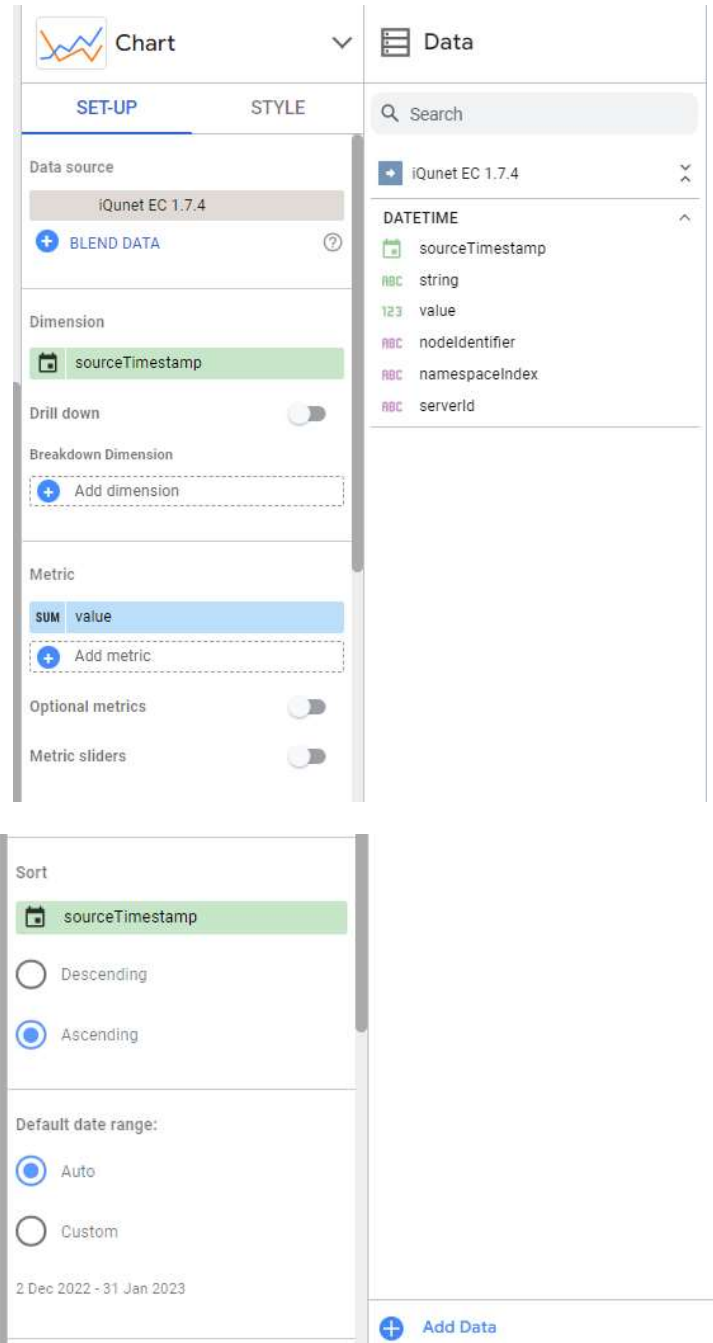
Remark: only one XY combination is allowed at this moment per graph. It is thus not possible to use multiple lines on the same graph.
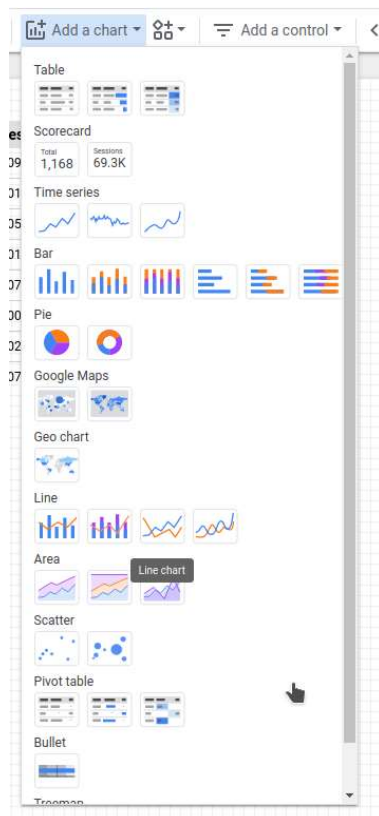
Click on the created chart and edit the settings in the pane on the right.
- Data source = iQunet EC 1.7.4 (default setting)
- Dimension = sourceTimestamp (not default setting)
- Metric = value (default setting)
- Sort = SourceTimeStamp > ascending

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This will not work yet since the node parameters are not set yet.

Scroll to the bottom of the set-up section to the Parameters section. Fill in the nodeIdentifier, the namespaceIndex (mostly 2) and the serverId (server-xxxxxxxx).

E.g. 367690843, nsIdx = 2, server-xxxxxxxxx

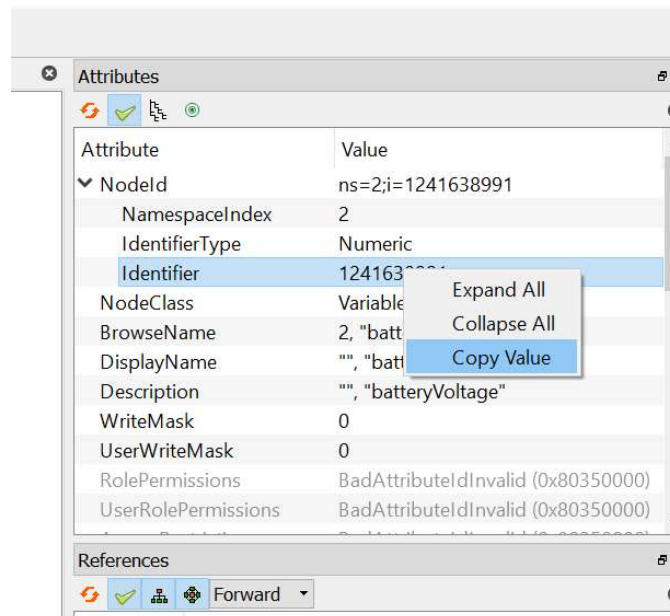*Subject to reasonable modifications due to technical advances*
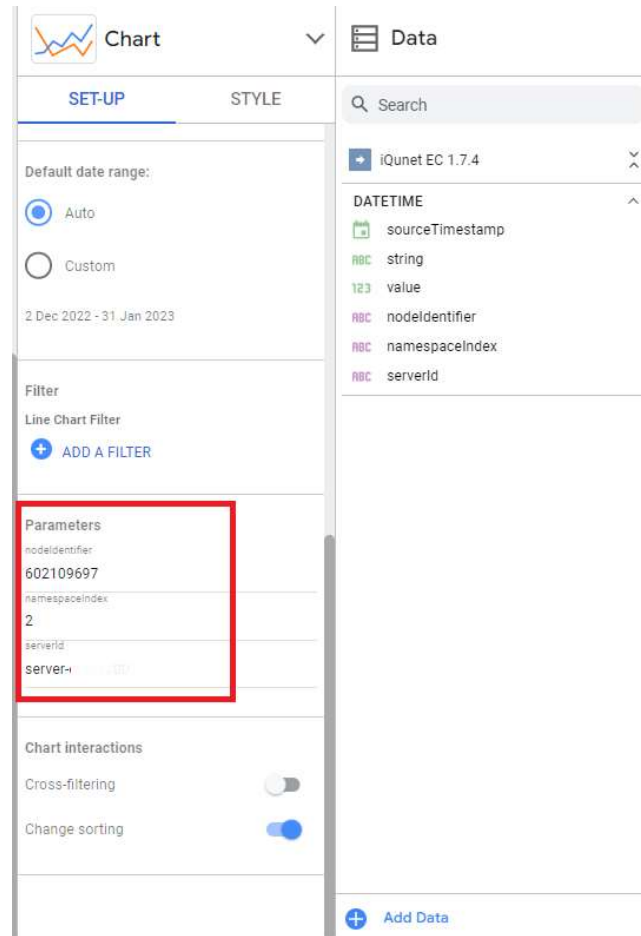
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The nodeIdentifier and the namespaceIndex can be found in UA Expert at the right side after selecting the desired node in the address space.

Remark: you can find more information on how to connect to UA Expert here:
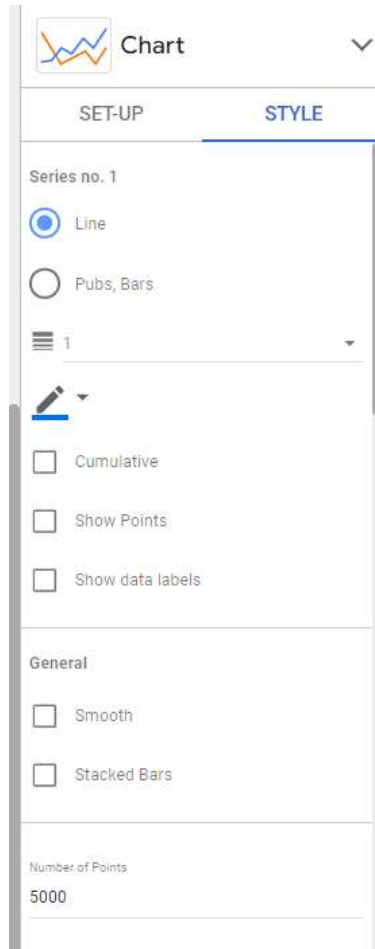https://iqunet.com/resources/knowledge-base/how-can-i-extract-data-from-the-opc-ua-server/.
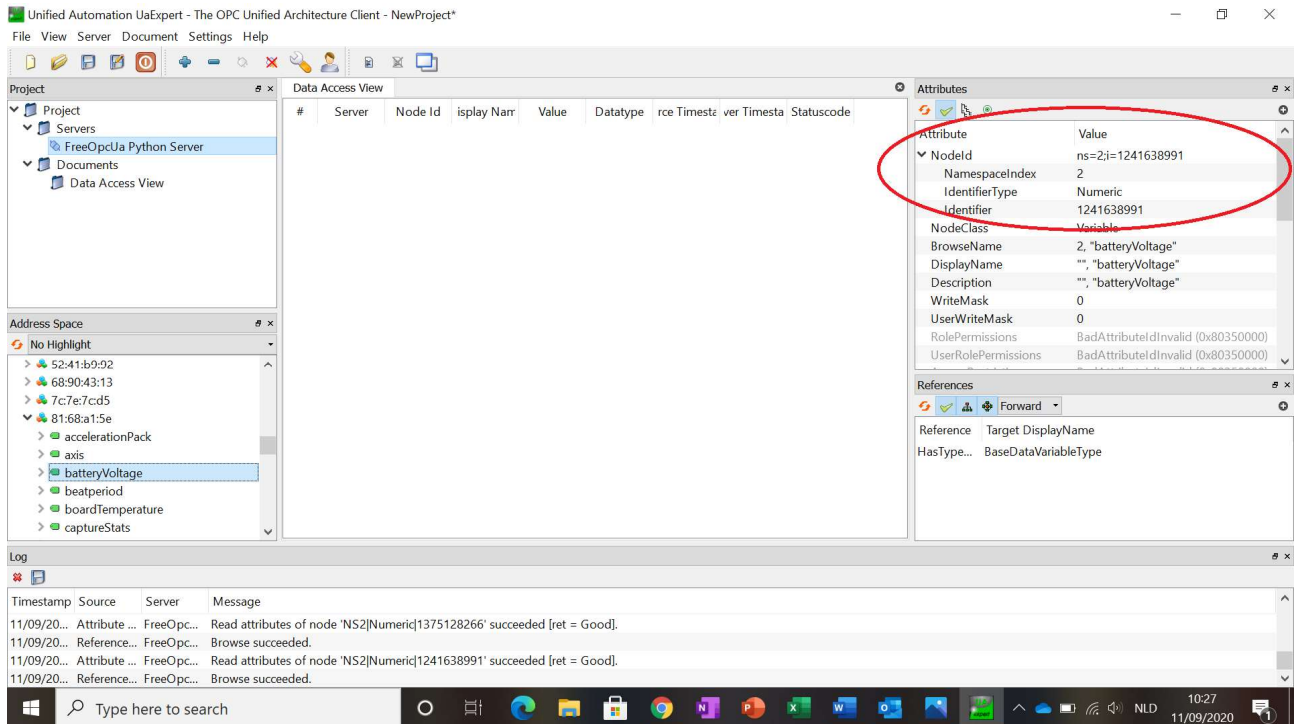
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Right click on the identifier value and select "Copy Value" to copy the identifier value.

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3.3. Change the plot style in the style section on the right (opened after clicking on the graph).

Remark: do not use "bars" in a line chart since the number of bars is very limited and not all data points will be shown on the plot.

Set the line weight to 1.

Set the "Number of Points" to 5000 (the maximum) to show all (or most of the data) that is downloaded by the connector via OPC UA.

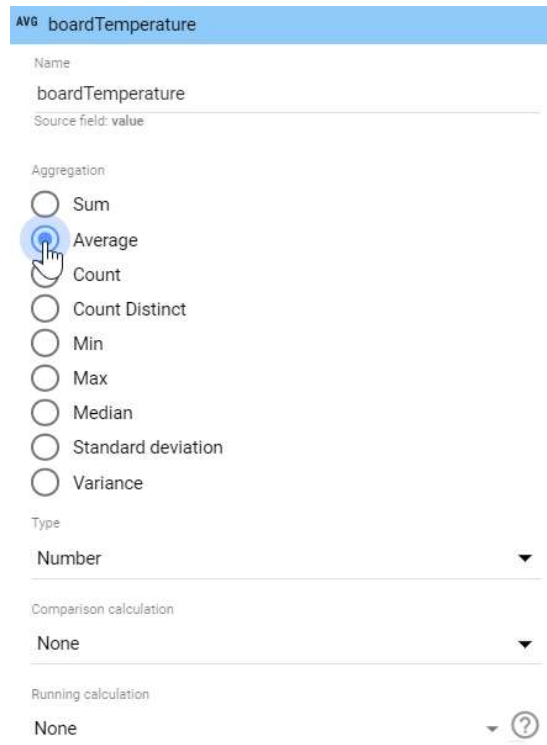3.4. Create a more descriptive label in the graph instead of "value".

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For this, click on the pencil icon next to the value metric (in the set-up section).

Fill out a more descriptive name (for example boardTemperature).

Change the aggregation setting to 'Average' instead of 'Sum'. Since the accuracy of Looker Studio is limited to 1 second, using Sum will lead to peaks if two or more datapoints occur in that one second.

Click somewhere next to the popup to close it.

The label is now changed to our more descriptive custom name.
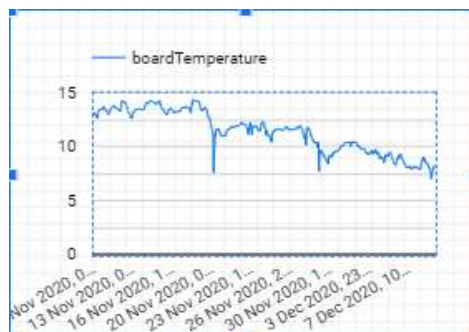
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3.5. Add a scorecard for a single value.

Remark: make sure that there is no SourceTimestamp listed in the set-up pane on the right. If there is, delete it. If there is no Sourcetimestamp listed in the request, the connector will download the latest value instead of the history.

3.6. Add additional nodes by adding new charts, tables… using the other nodes parameters.

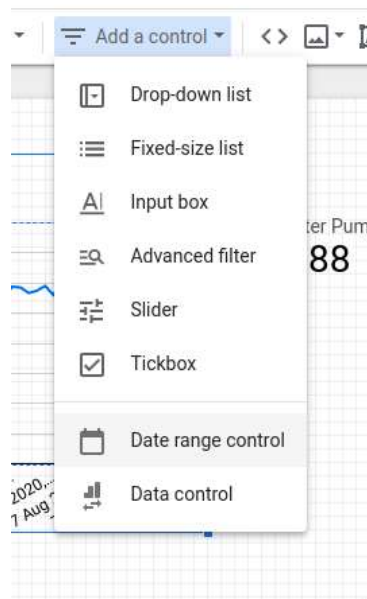Remark: Google Looker Studio currently has a limit of 50 elements (charts, controls, tables) on one page.

Remark: Google Looker Studio does not throttle data requests. If you place 100 graphs on the dashboard, it will download all graphs concurrently. The current OPC UA Server only allows 32 simultaneous OPC UA connections per server. Google Looker Studio does not close the OPC UA connections. There is a timeout of 20 seconds before a connection is closed after the last data is transmitted through this connection.

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3.7. Add a Date range control. Click on "Add a control" and select the Date range control. The date range control can only be tested in view mode.

Remark: if you want the control to work only for a single graph instead of for the whole page you can group the control with the graph by selecting the control and the graph and then clicking on Group in the Arrange tab.

Remark: currently only a limited number of history continuation point reads is supported, so not the whole selected date range may be visible and downloaded.

You can for example set the Date Range Control to Advanced and set today-1 to today.
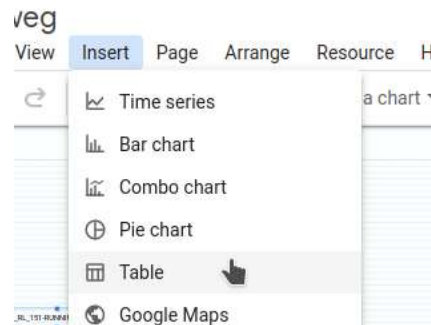
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3.8. Add a string datatype (for example to display the sensor device tag).

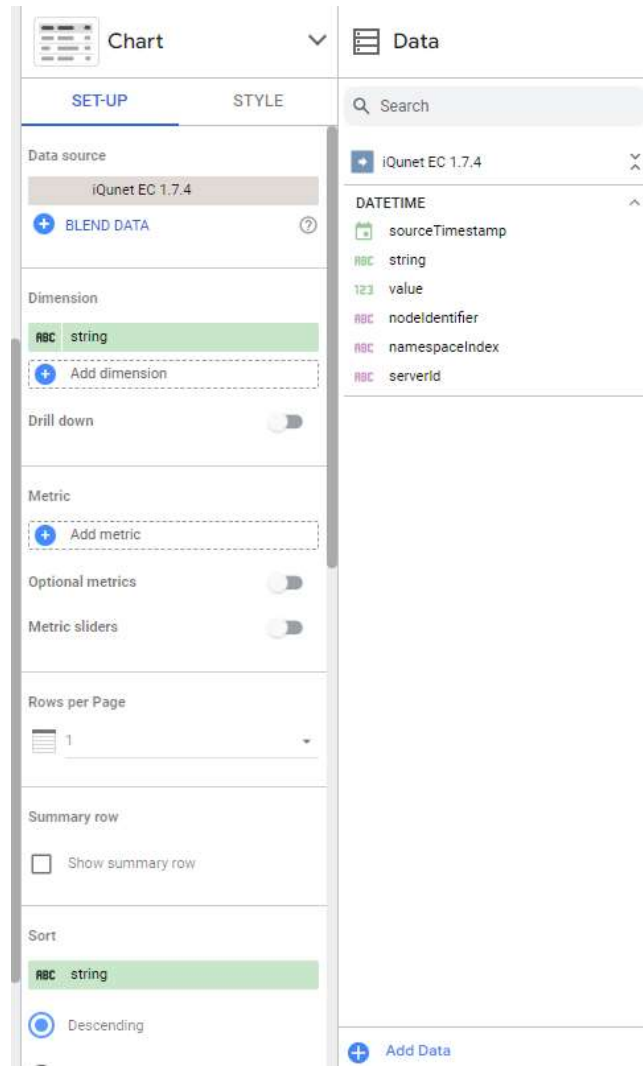Remark: string datatypes only work with tables.

Insert a table into the report.

Click on the created table and edit the settings in the pane on the right.
- Dimension = "ABC string"
- Delete the metric
- Sort = "ABC string"
- "rows per page" = 1

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Fill out the nodeIdentifier, the namespaceIndex (mostly 2) and the serverId (server-xxxxxxxx).
E.g. 367690843, nsIdx = 2, server-xxxxxxxxx

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Remove the table header, row numbers and table footer in the "Style" tab.

Set the used "Table Colours" to transparent.