

MQTT Settings

Note: By Default, MQTT uses port 1883.
This port will need to be open on your firewall to connect to external MQTT servers.

Endpoint URI

Interval (Secs)

User ID

Password

Client ID

Topic

Database Name



Endpoint URI - The web address of your MQTT broker.

Example io.adafruit.com

User ID - If your broker requires a login, this is where your user ID goes.

Example myUserId

Password - If your broker requires a login, this is where your password goes.

Example mypassword

Interval (secs) - How often the IoT should send to data to the broker.

Example 60

ClientID - A random ClientID. (no spaces)

Example My_Device



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Topic - The MQTT topic the data will be sent out under.

See <http://www.steves-internet-guide.com/understanding-mqtt-topics/>

Note

We append on some subtopics /SensorType/Add_(SensorAddress)/SensorName

Example /RTD/add_102/MyName

If there is no name set, we leave off that subtopic.

Database Name - This field shows the filename and location of the database.

./IoTData.db - This is the default filename and location of the database.

In the database is a table named SensorData, which have the following fields:

id INTEGER PRIMARY KEY	=	contains the ID number of the record
RecordDateUTC text	=	contains time and date of readings: yyyy-mm-dd-00:00:00
sensorType text	=	contains the type of sensor(s) you are using
moduleName text	=	contains the name you have given to the sensor(s)
lastReading text	=	contains the last reading from the sensor(s)
sensorData text	=	contains All JSON information

MQTT with Mosquitto

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Mosquitto is an Open Source MQTT broker that works quite well and is easy to troubleshoot. It can be found at <https://mosquitto.org> and is well supported.

If you assume your Mosquitto Broker is on a computer called **MyComputer**. Your settings for the Atlas IoT would be

```
Endpoint URI MyComputer
User ID leave blank, if you did not setup a user ID
Password leave blank, if you did not setup a password
Interval (Secs) 60 is a good place to start
Client ID My_Device (No spaces)
Topic MyTopic (I usually do NOT put the starting "/")
```

We will append a series of subtopic onto your topic

Example

If you are running an EZO™ RTD Temperature Circuit on the default address, and have named it, Mosquitto will receive the topic **MyTopic/RTD/add_102/SensorName**

If the circuit is unnamed (default) it will be **MyTopic/RTD/add_102**

If you have multiple sensors, there will be multiple topics, all underneath **MyTopic**. You should see them in your Mosquitto_sub session

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Environmental Robotics

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Endpoint URI	Interval (Secs)
<input type="text" value="MyComputer"/>	<input type="text" value="60"/>
User ID	Password
<input type="text"/>	<input type="text"/>
Client ID	Topic
<input type="text" value="My_Device"/>	<input type="text" value="MyTopic"/>
Database Name	
<input type="text"/>	

MQTT with Mosquitto

Troubleshooting

If we assume that you have installed Mosquitto on a computer called **MyComputer** (see their website <https://mosquitto.org> for ports to open, etc),

You can monitor all traffic to that broker with a program call **mosquitto_sub** (comes in the install package) The Manual can be found by clicking [HERE](#)

Assuming you have not setup mosquitto for login, the command would be **mosquitto_sub -v -h MyComputer -t '#'**

That command subscribes to ALL topics ('#') in a verbose manner.

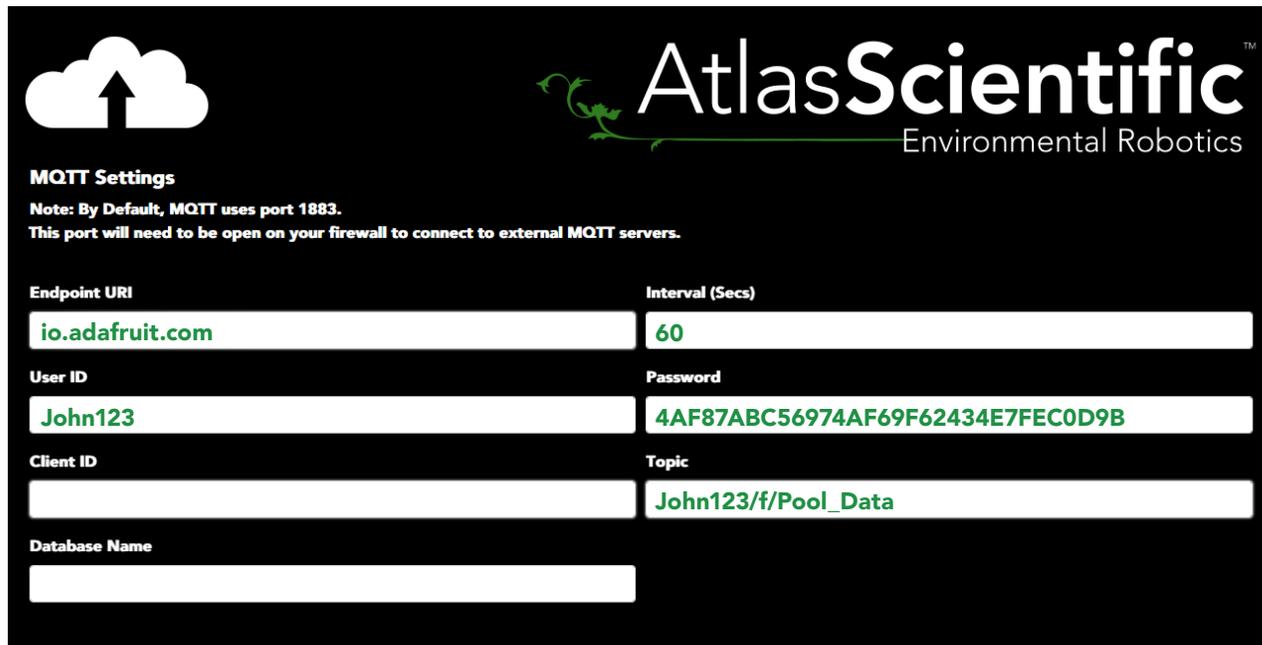
MQTT with io.adafruit.com

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io.adafruit.com is a MQTT broker that has some limitations, but is usually quite reliable. That said, it has some differences from stock Mosquitto.

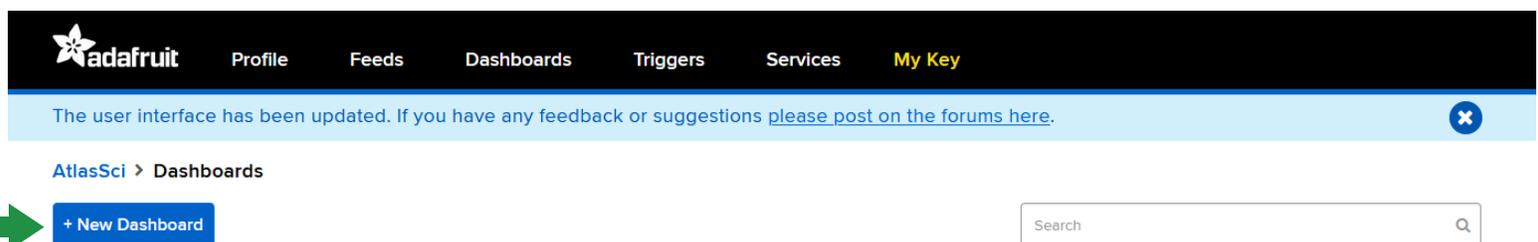
Your settings for the Atlas IoT would be

Endpoint URI io.adafruit.com
User ID your loginID. **Example** John123
Password This is the Adafruit IO key, a 32digit ID that you generate and download from the adafruit site. **Example** 4AF87ABC56974AF69F62434E7FEC0D9B
Interval (Secs) 60 is a good place to start
Client ID (Not used for adafruit, leave blank)
Topic This is the name of your data set. (choose a name, **Example** Pool_Data
Format UserID/f/MyTopicNoSpaces
Example John123/f/Pool_Data



The screenshot shows the 'MQTT Settings' form on the AtlasScientific website. The form is set against a dark background with white and green text. At the top left is a cloud icon with an upward arrow. The logo 'AtlasScientific Environmental Robotics' is at the top right. Below the title, a note states: 'Note: By Default, MQTT uses port 1883. This port will need to be open on your firewall to connect to external MQTT servers.' The form contains several input fields: 'Endpoint URI' with 'io.adafruit.com', 'Interval (Secs)' with '60', 'User ID' with 'John123', 'Password' with '4AF87ABC56974AF69F62434E7FEC0D9B', 'Client ID' (empty), 'Topic' with 'John123/f/Pool_Data', and 'Database Name' (empty). A green arrow points to the 'Endpoint URI' field.

Once you hit save, go to io.adafruit.com and click on dashboard, + New Dashboard.



Name your dashboard and hit create.

Create a new Dashboard ✕

Name

Description

Show Header Image

Header Image

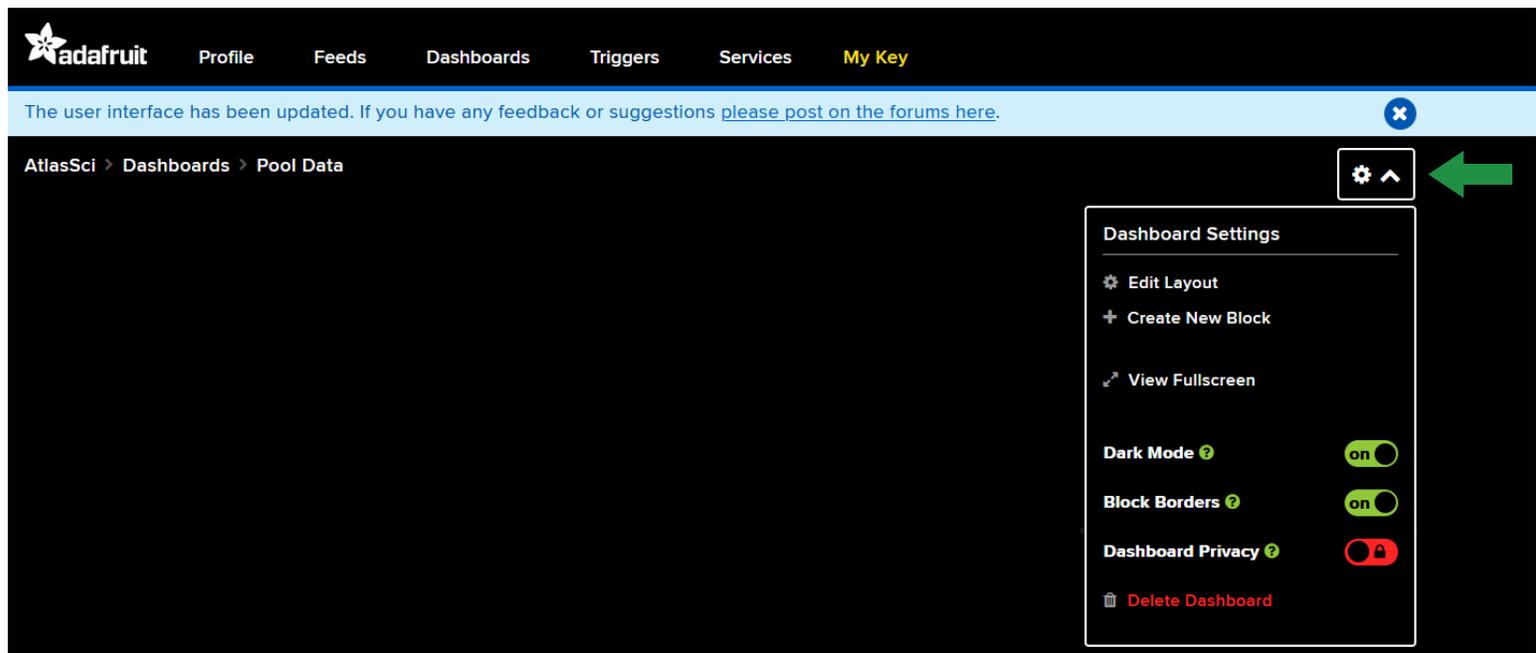
No file selected.

[Sample header image with breakpoints marked.](#)

Cancel

Create 

Once complete, click on your new dashboard.



The screenshot shows the Adafruit dashboard interface. At the top, there is a navigation bar with the Adafruit logo and links for Profile, Feeds, Dashboards, Triggers, Services, and My Key. Below the navigation bar, a message states: "The user interface has been updated. If you have any feedback or suggestions [please post on the forums here.](#)"

The main content area shows the breadcrumb "AtlasSci > Dashboards > Pool Data". In the top right corner of this area, there is a gear icon and an upward arrow icon. A green arrow points to the gear icon. A settings menu is open, listing the following options:

- Dashboard Settings
- Edit Layout
- Create New Block
- View Fullscreen
- Dark Mode on
- Block Borders on
- Dashboard Privacy off
- Delete Dashboard

Click the gear icon located on the top right; Then click on **+ Create New Block**.

Choose the style you would like to see your data in, and apply the style to your sensor feed.

Default



Feed Name	Last value	Recorded	
<input checked="" type="checkbox"/> pool_data_ORP_add98	293	2 minutes	
<input type="checkbox"/> pool_data_pH_add76	7.0	2 minutes	
<input type="checkbox"/> pool_data_RTD_add102	25.35	2 minutes	

Once complete your dashboard could look like this:

