Raspberry Pi Sense HAT

Part 2: Watson IoT Platform Dashboard

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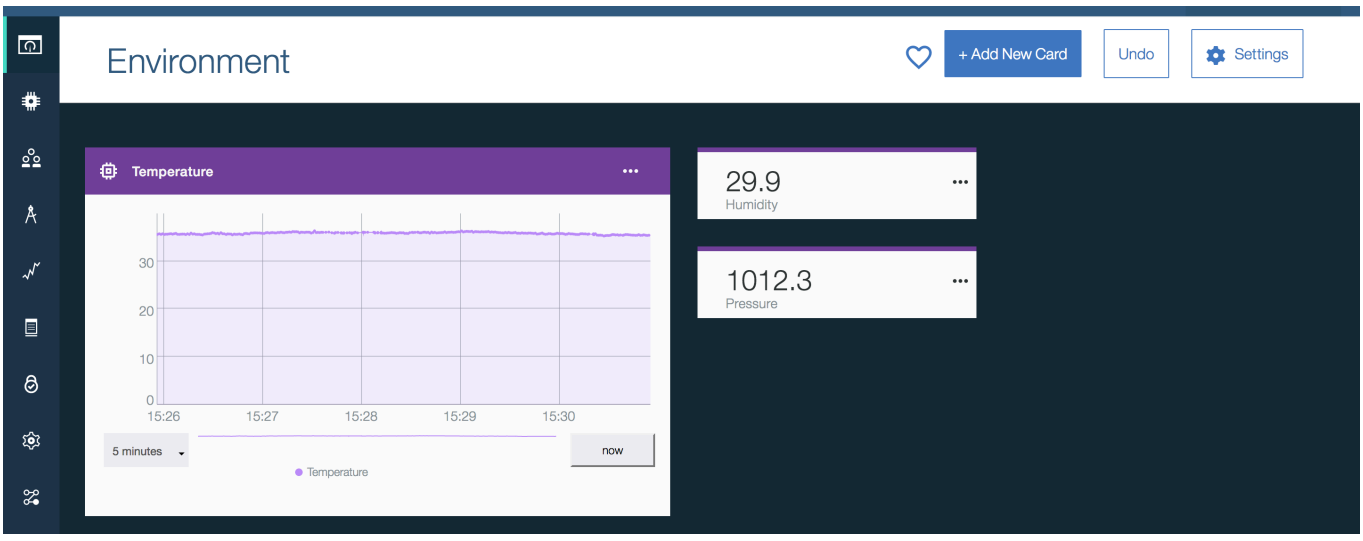


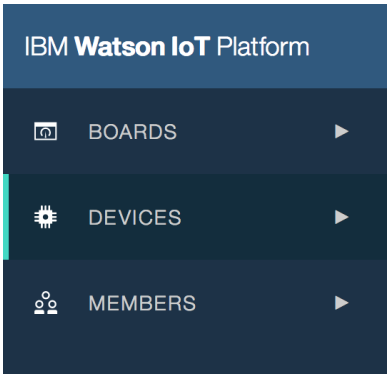
Watson IoT Platform dashboards can display a variety of charts and UI elements containing data from IoT devices.

A digital copy of this lab can be found at:
`http://ibm.biz/sense-hat-watson-dashboard`

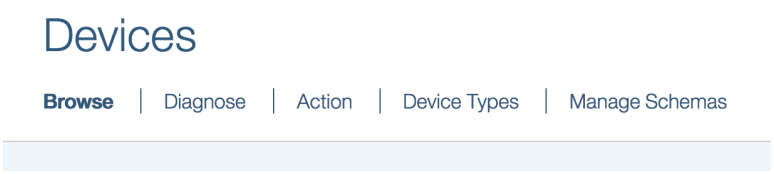
Setup Device Schema

The Watson IoT Platform is more than just a place to register devices and publish and subscribe to events and commands. The dashboard offers a powerful set of UI widgets that can be used to visualize incoming event data and create rules. In this section, we'll setup the device schema the IoT Platform uses to understand the structure of the IoT data.

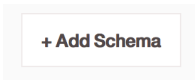
1. Open the Watson IoT platform service in the IBM Bluemix console.
2. Select **Devices** from the menu on the left.



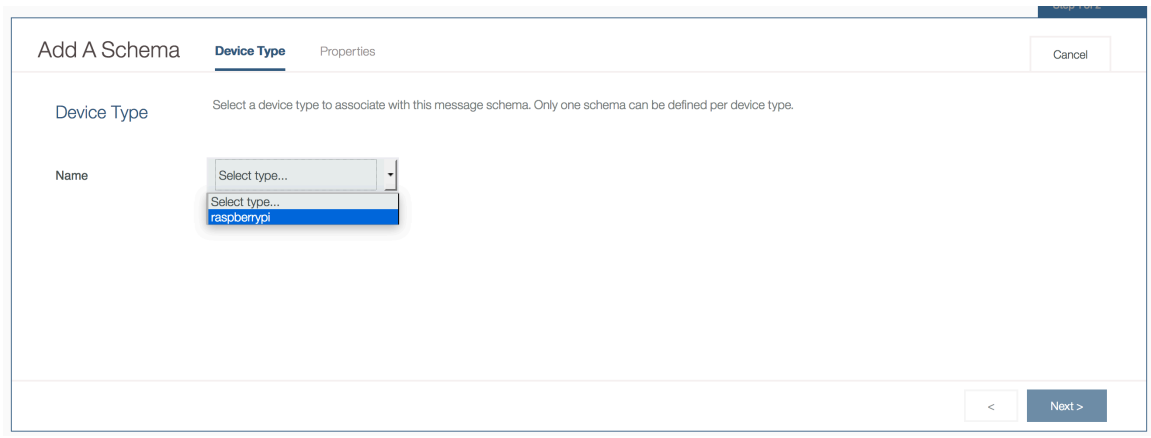
3. Click on **Manage Schemas**.



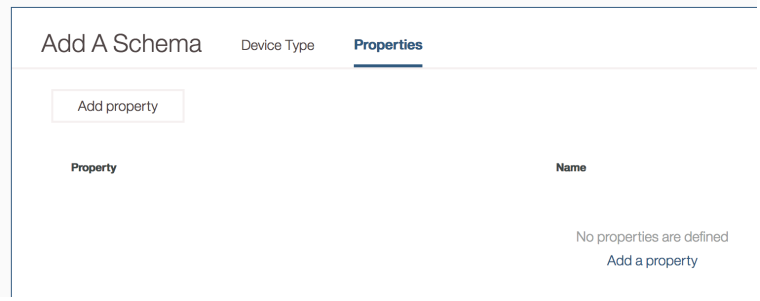
4. Click **Add Schema** on the right side of the page.



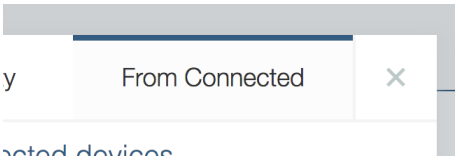
5. Select `raspberrypi` from the drop-down menu. Click **Next**.



6. Click on the **Add property** button.



7. You can manually create properties, or use properties from a connected device. Select the **From Connected** tab.

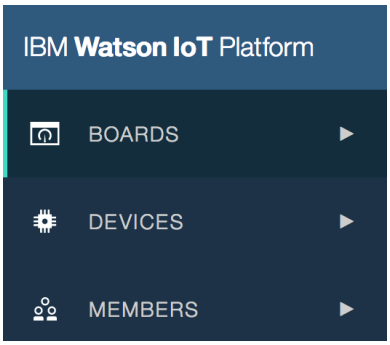


8. Three properties should display when the next IoT event is published from the Raspberry Pi. Check the boxes next to all three. Click **OK**. Click **Finish**.

Add a Line Chart Card

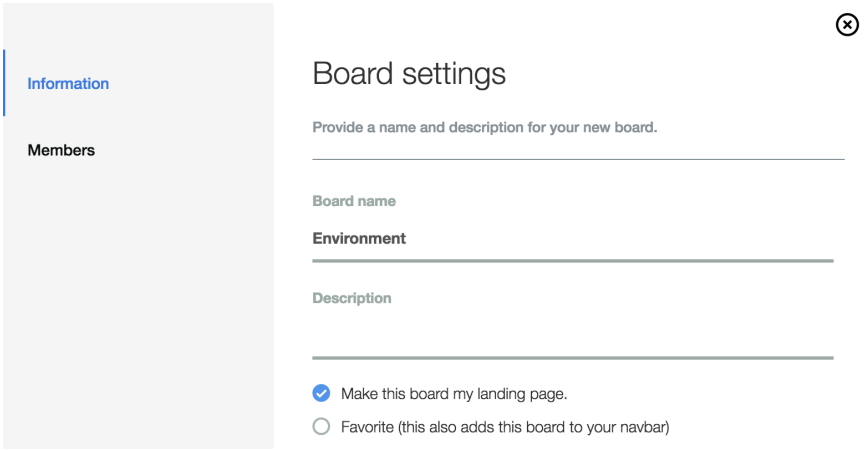
In this section, we'll create a line chart to display the temperature over time. A line chart can graph multiple data points at the same time, if desired.

1. Select **Boards** in the menu on the left.

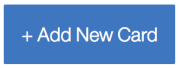


2. Click on **Create New Board**.

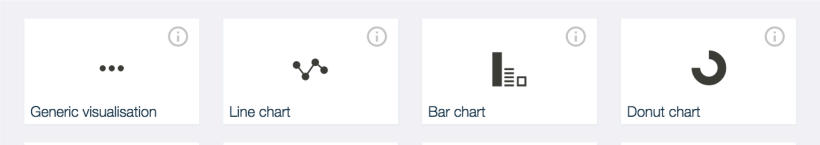
3. Enter `Environment` in the **Board** name field. Click **Next**. Click **Submit**.



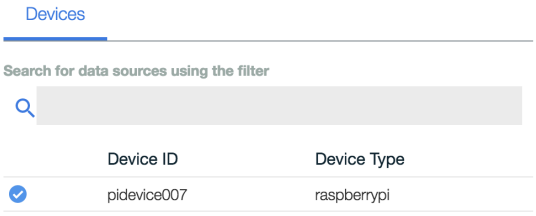
4. The board is added to the list of dashboards. Select the board from the list. To add a new card, click on **Add New Card** on the right side of the page.



5. Select **Line chart**.

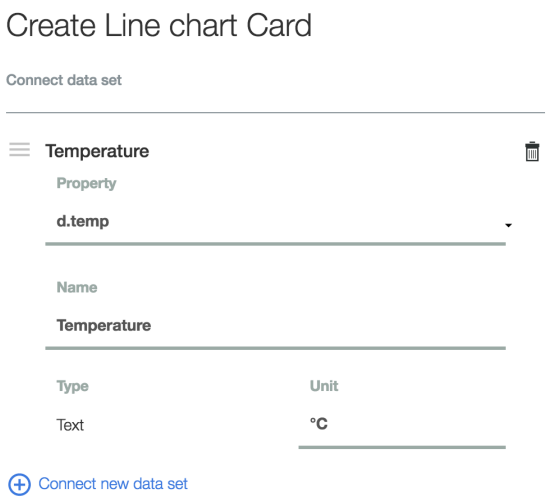


6. Select the device where the sensor data is coming from, `pidevice007`. Click **Next**.

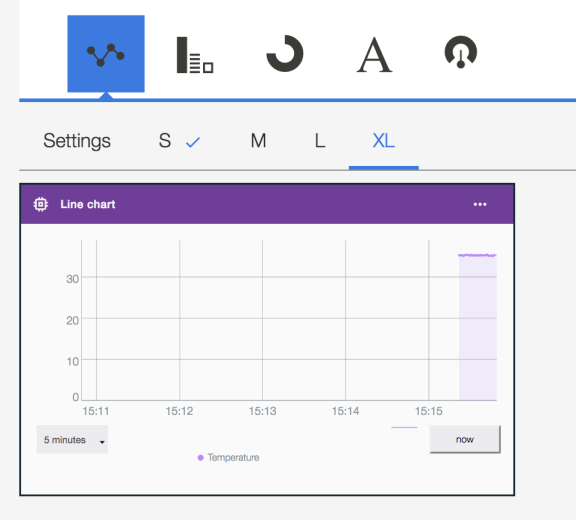


7. Click on **Connect new data set**.

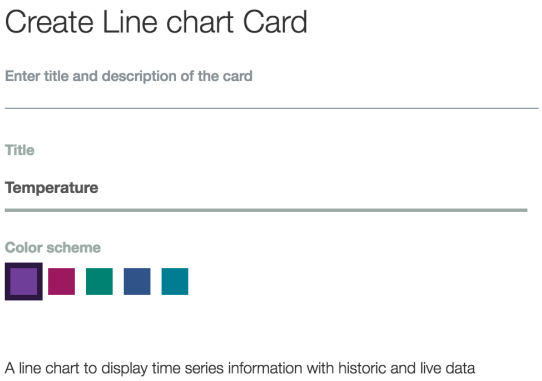
8. Select the `d.temp` property and give it a name of `Temperature`, and a unit of °C. Click **Next**.



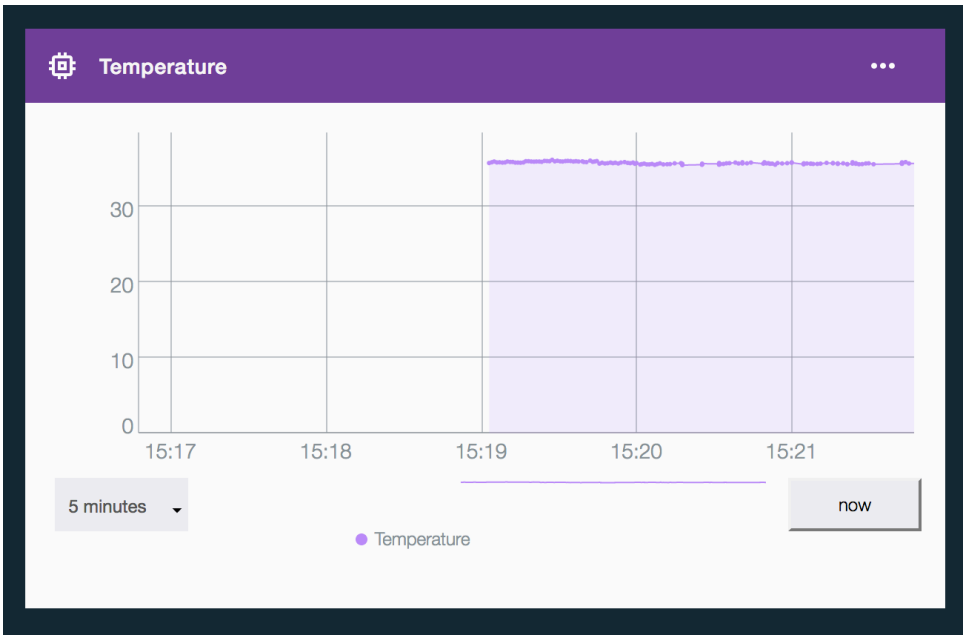
9. Select the size **XL**. Click **Next**.



10. Give the chart a name, `Temperature`. Click **Submit**.



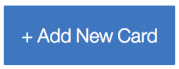
11. A line chart is added to the board. As time goes on and more IoT events are published from the sensor, you'll see additional data points added. You can also change the time range using the drop-down menu.



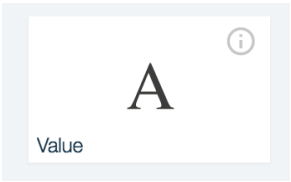
Add a Value Card

In this section, we'll create two Value cards to display the humidity and pressure values. The process is like the one in the last section, so we've shown the important parts for brevity.

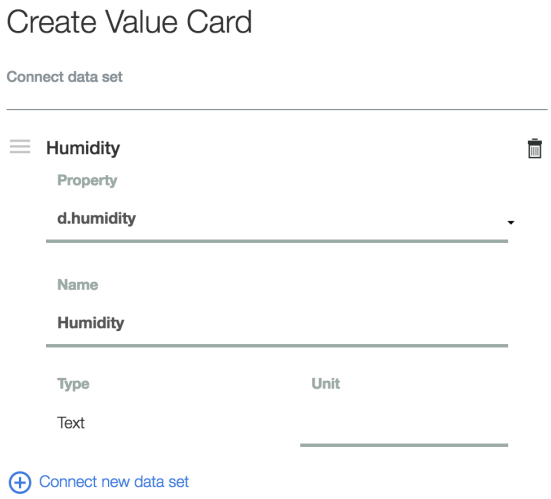
1. Click **Add New Card**.



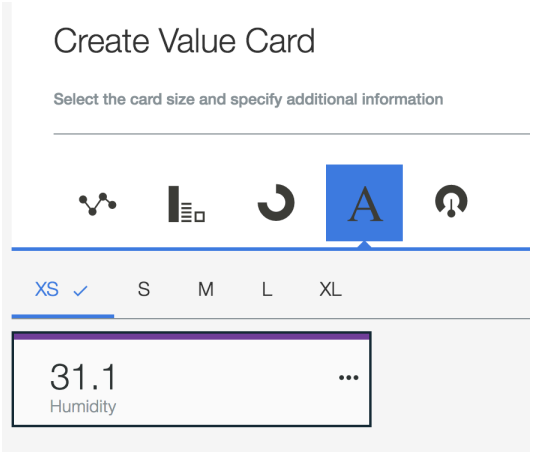
2. Select the **Value** card.



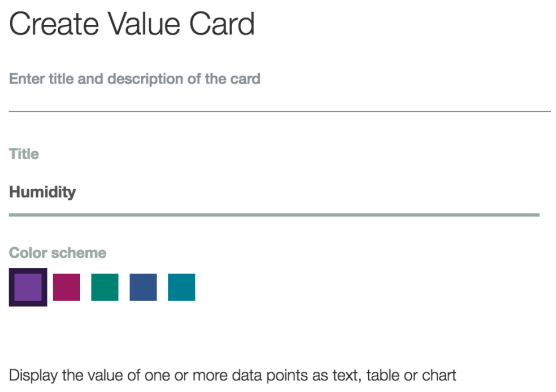
3. Select the `d.humidity` property and give it a name of `Humidity`.



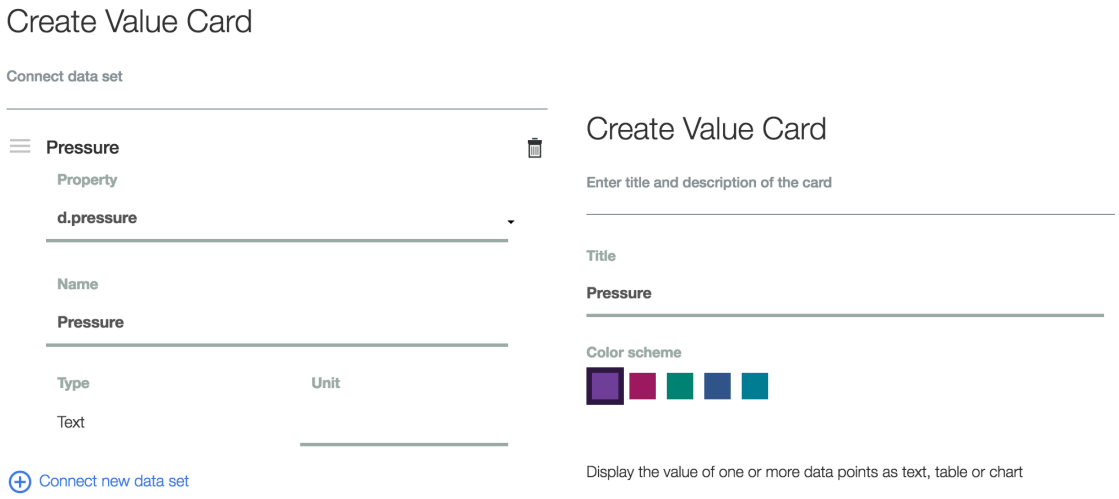
4. Keep the size **XS**.



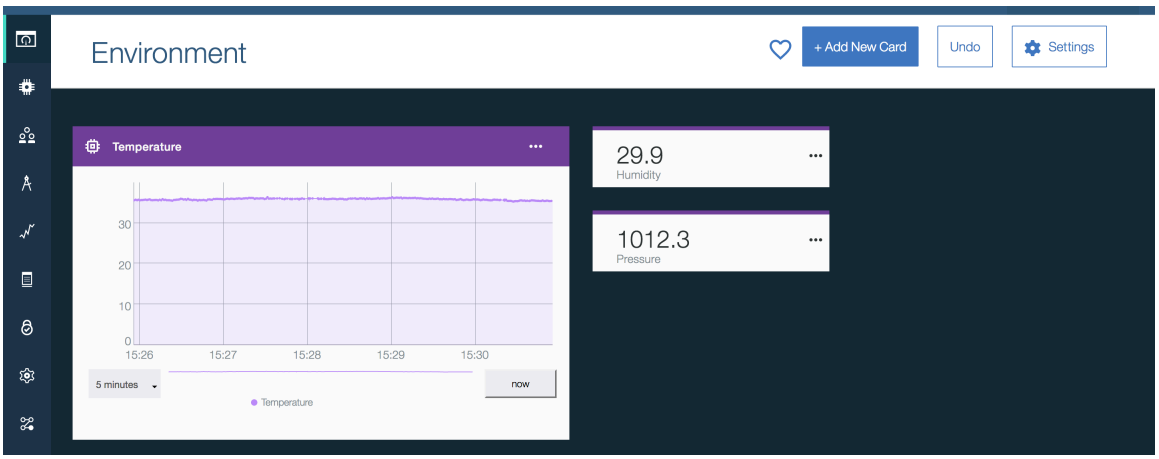
5. Give the card a title of `Humidity.`



6. Repeat the process to create a card for the `d.pressure` property as shown below.



7. The dashboard should look like the one shown below.



Explore the other elements you can use to chart and display the incoming data.