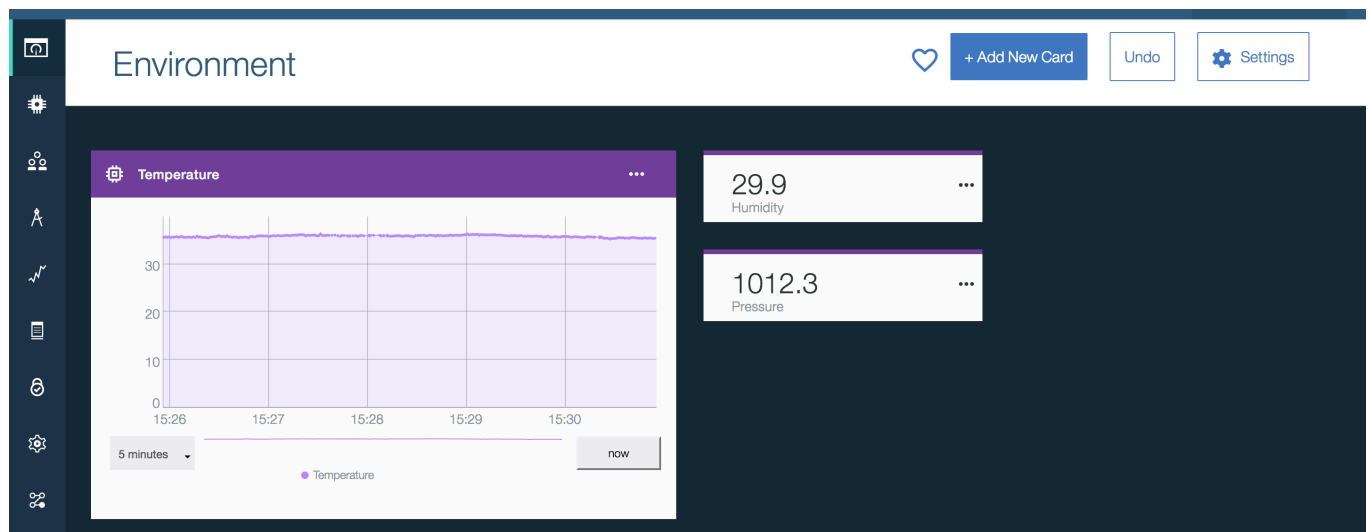
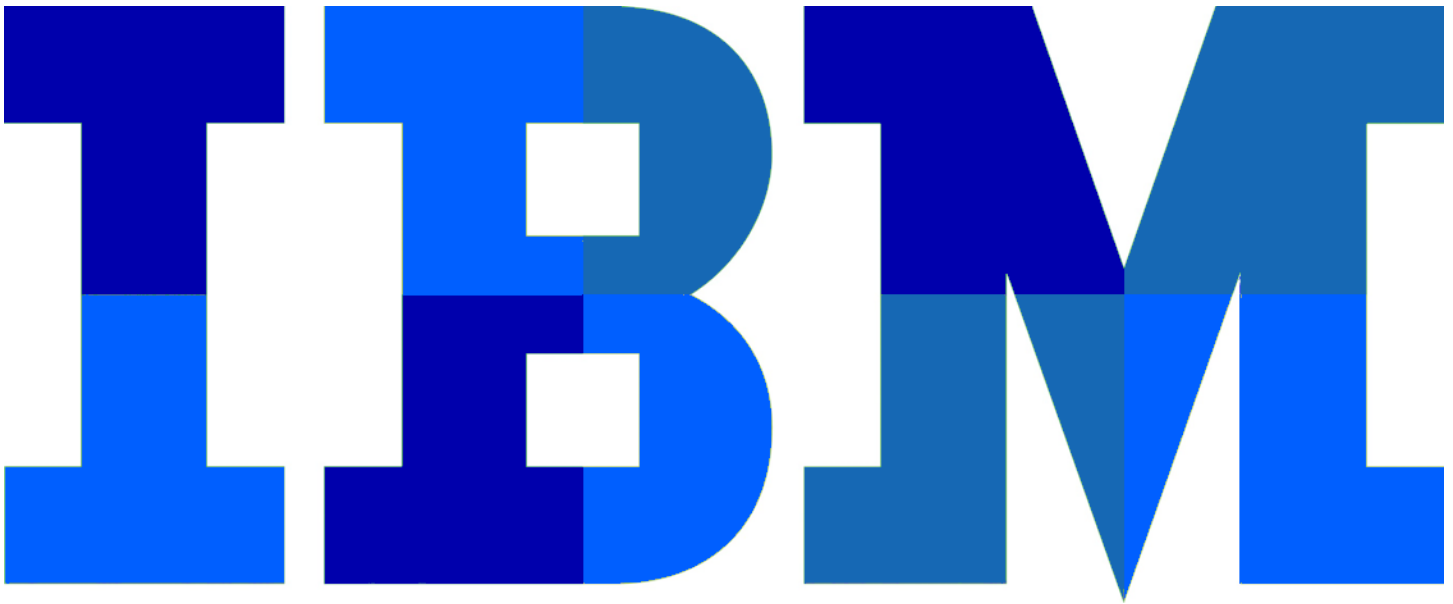


Raspberry Pi Sense HAT

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.



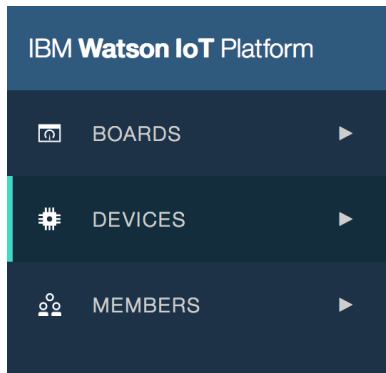
A digital copy of this lab can be found at:
<http://ibm.biz/sense-hat-watson-dashboard>



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**.

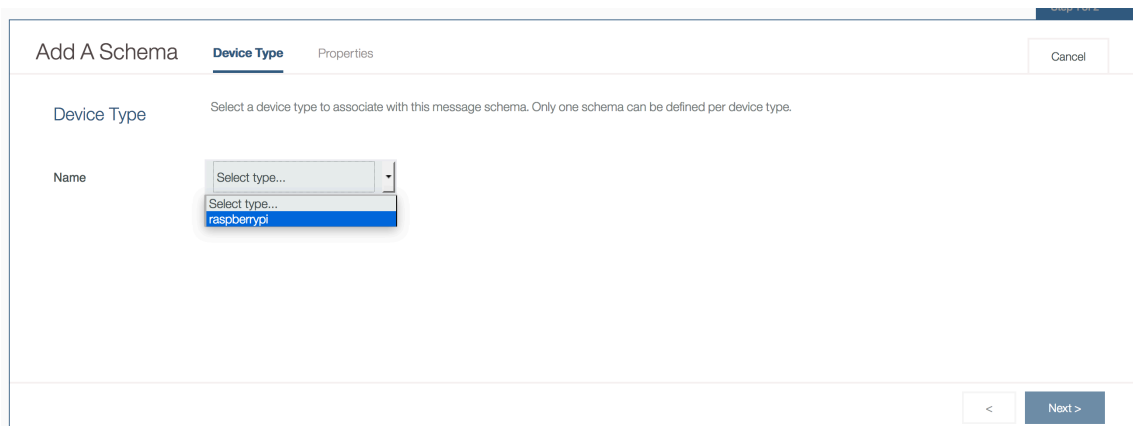
Devices

[Browse](#) | [Diagnose](#) | [Action](#) | [Device Types](#) | [Manage Schemas](#)

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

+ Add Schema

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



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

Add A Schema Device Type **Properties**

Add property

Property	Name
No properties are defined Add a property	

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

y **From Connected** X

ected devices

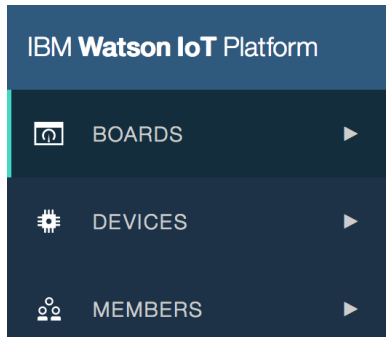
- Three properties should display when the next IoT event is published from the Raspberry Pi. Check the boxes next to all three. Click **OK**. Click **Finish**.

<input type="checkbox"/> Property	Type	
<input type="checkbox"/> d.temp	float	
<input type="checkbox"/> d.humidity	float	
<input type="checkbox"/> d.pressure	float	

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.

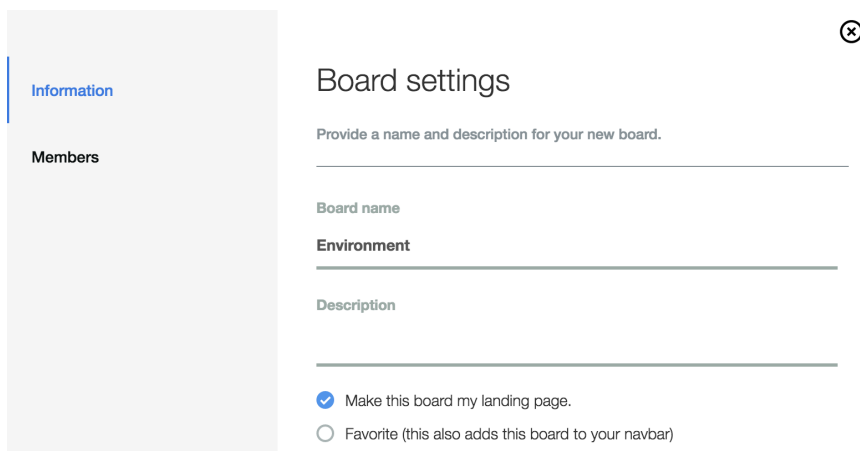
1. Select **Boards** in the menu on the left.



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



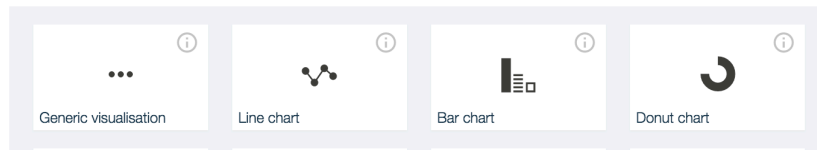
3. Enter **Environment** in the **Board** name field. Click **Next**. Click **Submit**.

A screenshot of the 'Board settings' form in the IBM Watson IoT Platform. On the left is a sidebar with 'Information' (selected) and 'Members'. The main area is titled 'Board settings' with a close button (X) in the top right. Below the title is a prompt: 'Provide a name and description for your new board.' followed by three input fields: 'Board name', 'Environment' (which is pre-filled with the text 'Environment'), and 'Description'. At the bottom, there are two radio button options: 'Make this board my landing page.' (which is selected) and 'Favorite (this also adds this board to your navbar)'.

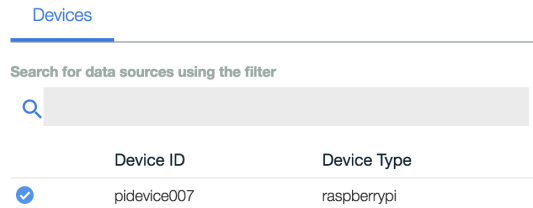
4. The board is added to the list of dashboards. Select the board from the list. To add a new card, click on **Add New Card** on the right side of the page.



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**.

Create Line chart Card

Connect data set

[+ Connect new data set](#)

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

Create Line chart Card

Connect data set

≡

Temperature

🗑

Property

d.temp

▼

Name

Temperature

Type

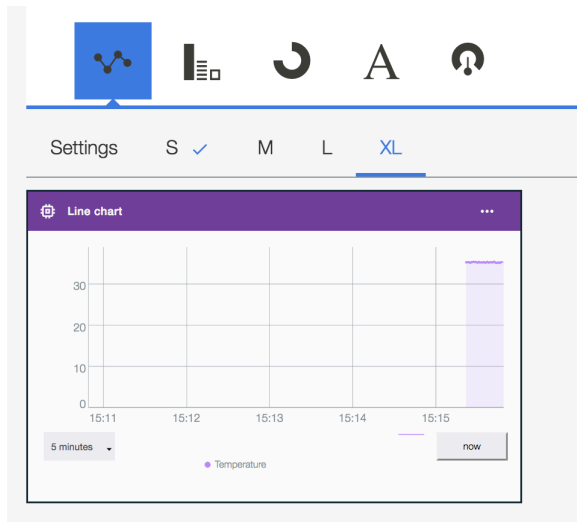
Unit

Text

°C

[+ Connect new data set](#)

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



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

Create Line chart Card

Enter title and description of the card

Title

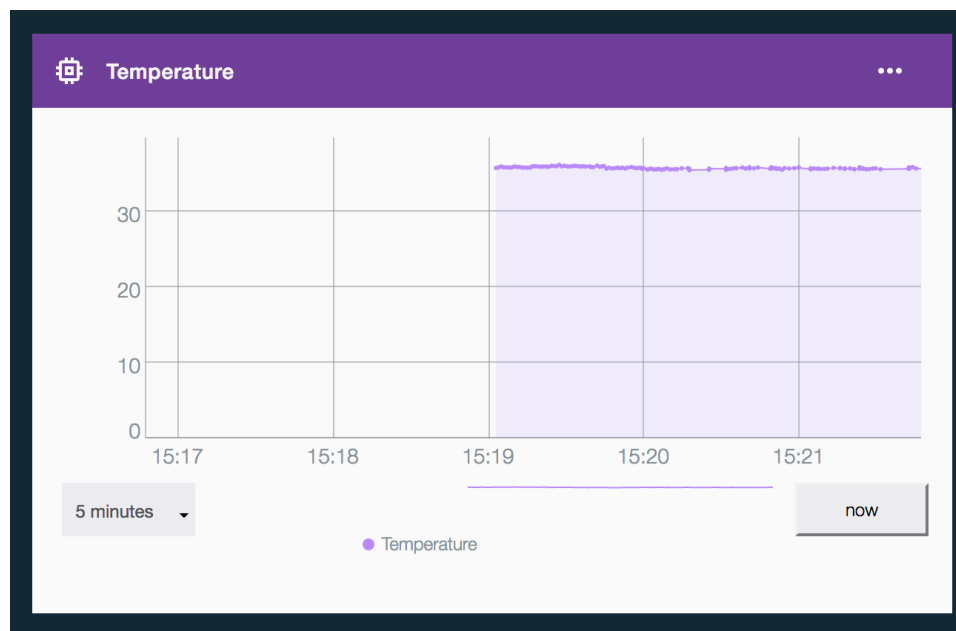
Temperature

Color scheme



A line chart to display time series information with historic and live data

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.



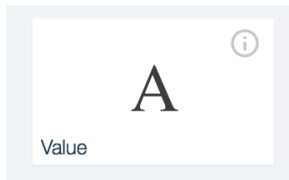
Add a Value Card

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**.


+ Add New Card

2. Select the **Value** card.



3. Select the `d.humidity` property and give it a name of **Humidity**.
Create Value Card

Connect data set

≡ Humidity 

Property

`d.humidity` ▾

Name

Humidity

Type Unit






Text

[+ Connect new data set](#)

4. Keep the size **XS**.

Create Value Card

Select the card size and specify additional information

XS ✓ S M L XL

31.1 ...

Humidity

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

Create Value Card

Enter title and description of the card

Title

Humidity

Color scheme



Display the value of one or more data points as text, table or chart

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

Create Value Card

Connect data set

Pressure

Property

d.pressure

Name

Pressure

Type

Text

Unit

[+ Connect new data set](#)

Create Value Card

Enter title and description of the card

Title

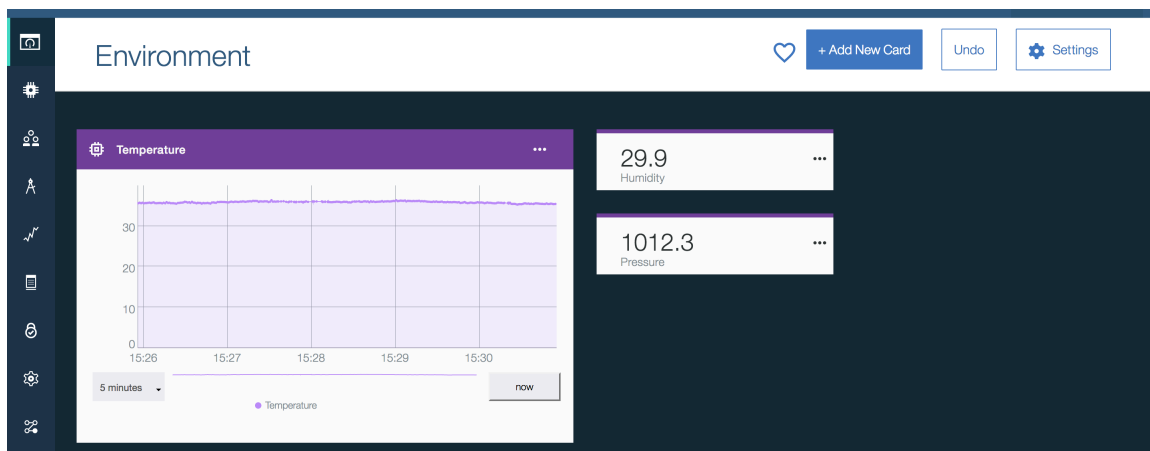
Pressure

Color scheme



Display the value of one or more data points as text, table or chart

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



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