

Delivery of Sprint – 3

Node Red Connection to IBM Cloudant

Date	18 November 2022
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Project Name	Smart Waste Management for Metropolitan Cities

Steps:

Node-RED Connection setup for data transmission from IBM Watson IOT platform to Node-RED dashboard

1. Simulate Wokwi connection to transmit data from wokwi account to IBM Watson IOT platform and then to Node Red dashboard.

The screenshot displays the Wokwi IDE interface. On the left, the code editor shows an `esp32-blink.ino` file with the following code:

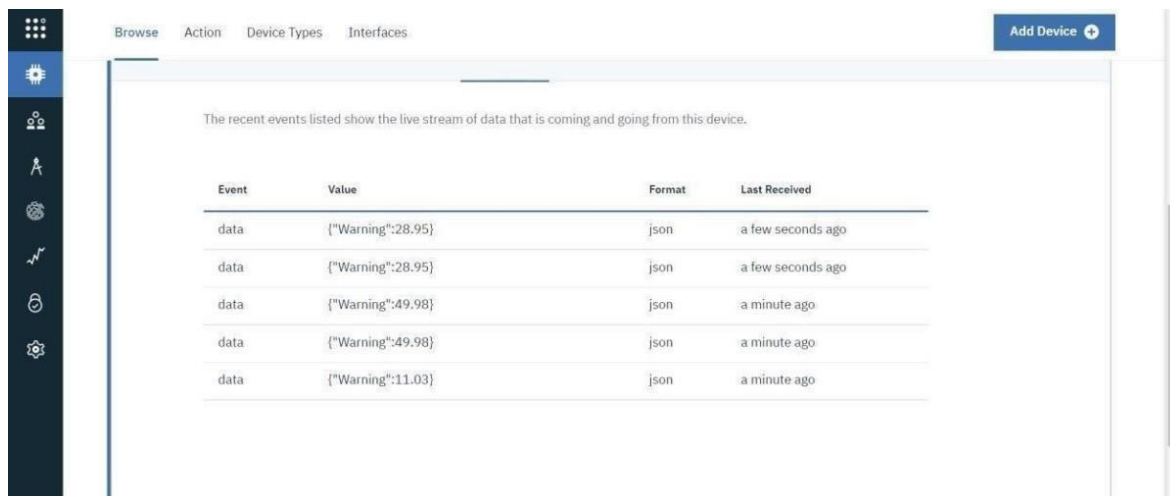
```
177
178
179
180
181
182 if(cm <= 25)
183 {
184 digitalWrite(21,HIGH);
185 String payload = "{\"High_Alert\":\"";
186 payload += cm;
187 payload += " }";
188 Serial.print("\n");
189 Serial.print("Sending payload: ");
190 Serial.println(payload);
191
192 if (client.publish(publishTopic, (char*) payload.c_str())) // if
193 {
194 Serial.println("Publish OK");
195 }
196 }
197 if(cm <= 50)
198 {
199 digitalWrite(22,HIGH);
200 String payload = "{\"Warning\":\"";
201 payload += cm ;
202 payload += " }";
203 Serial.print("\n");
```

On the right, the **Simulation** window is active, showing a circuit diagram of an ESP32 board connected to a PIR Motion Sensor and a buzzer. A **PIR Motion Sensor** dialog box is open with the **Simulate motion** button. Below the diagram, the simulation log displays the following output:

```
Sending distance: 26.94
Publish OK
Motion Detected
Lid Opened
High Alert!!!,Trash bin is about to be full
Lid Closed
```

2. Data transfer to Watson IOT platform.

3. Data transfer from IBM Watson IOT platform and to Node red.



The screenshot shows the IBM Watson IoT Platform interface. On the left is a dark sidebar with icons for home, devices, data, and settings. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A blue 'Add Device' button is in the top right. The main content area displays a message: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this is a table with four columns: 'Event', 'Value', 'Format', and 'Last Received'. The table contains five rows of data, all with 'data' as the event type and 'json' as the format. The values are JSON objects containing a 'Warning' field with numerical values. The 'Last Received' column shows timestamps like 'a few seconds ago' and 'a minute ago'.

Event	Value	Format	Last Received
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":11.03}	json	a minute ago

4. Storing database in IBM cloudant DB.

Database name

Create Database

{ } JSON

Database name

Create Database

{ } JSON

Databases

Your Databases

Name	Size	# of Docs	Partitioned	Actions
login_credentials	13.7 KB	111	No	<div></div> <div></div> <div></div>
noderedwjldy20221105	37.4 KB	4	No	<div></div> <div></div> <div></div>
sample	59.4 KB	351	No	<div></div> <div></div> <div></div>
sensor_data	15.7 KB	90	No	<div></div> <div></div> <div></div>

Showing 1–4 of 4 databases.

Databases per page

20

1

↔

sensor_data

⋮

📊

All Documents

+

🗉

Query

🔐

Permissions

🔄

Changes

📄

Design Documents

+

👤

Log Out

Document ID

Options

{ } JSON

🔔

☐











Table

Metadata

{ } JSON

📄

Create Document

	id	key	value
<input type="checkbox"/>	 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df..." }
<input type="checkbox"/>	 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-d26c5b40891e13c6c..." }
<input type="checkbox"/>	 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-cde2dd17c519394df..." }
<input type="checkbox"/>	 0198213c192cb2c244cc2433f1...	0198213c192cb2c244cc2433f1...	{ "rev": "1-f96eb0460bc16cfab0..." }
<input type="checkbox"/>	 1a921f21cbe229b86f599acb45...	1a921f21cbe229b86f599acb45...	{ "rev": "1-7226f08794cd47b7c..." }
<input type="checkbox"/>	 1a921f21cbe229b86f599acb45...	1a921f21cbe229b86f599acb45...	{ "rev": "1-1bbdd9a985bd56cf9..." }
<input type="checkbox"/>	 20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-7226f08794cd47b7c..." }
<input type="checkbox"/>	 20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-3ad288ead57f039e..." }
<input type="checkbox"/>	 20a854e5445fa818e6c1de049...	20a854e5445fa818e6c1de049...	{ "rev": "1-1bbdd9a985bd56cf9..." }
<input type="checkbox"/>	 298ed6fhd9b3b815f5ac7c061e...	298ed6fhd9b3b815f5ac7c061e...	{ "rev": "1-4e7240f6e5307a1h9..." }

Showing document 1 - 20. Documents per page: 20 < >

