

Team id	PNT2022TMID51115
Team Project	Smart solution for railways
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The image shows two screenshots of a development environment. The top screenshot is the IBM Watson IoT Platform interface, displaying the 'Device Drilldown - 18082001' page. It shows device credentials for an organization with ID 'qcf1jj', device type 'shri', and device ID '18082001'. The authentication method is 'use-token-auth' and the token is 'hZ(3su09peuT_yfq1h)'. A warning states that authentication tokens are non-recoverable. The bottom screenshot is the Wokwi simulation environment, showing the 'esp32-dht22.ino' sketch by 'turish'. The code includes the PubSubClient library and defines the device ID, token, and server. The simulation shows an ESP32 board connected to an HC-SR04 ultrasonic sensor. The output console displays three successful publishes of the payload '{"Distance":399.96}'.

IBM Watson IoT Platform - Device Drilldown - 18082001

Device Credentials

You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details.

Organization ID	qcf1jj
Device Type	shri
Device ID	18082001
Authentication Method	use-token-auth
Authentication Token	hZ(3su09peuT_yfq1h)

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

WOKWI - esp32-dht22.ino by turish

```

1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 WiFiClient wifiClient;
4 String data3;
5 #define ORG "qcf1jj"
6 #define DEVICE_TYPE "shri"
7 #define DEVICE_ID "18082001"
8 #define TOKEN "hZ(3su09peuT_yfq1h)"
9 #define speed 0.034
10 #define led 14
11 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
12 char publishTopic[] = "iot-2/evt/data/fmt/json";
13 char topic[] = "iot-2/cmd/led/fmt/String";
14 char authMethod[] = "use-token-auth";
15 char token[] = TOKEN;
16 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
17 PubSubClient client(server, 1883, wifiClient);
18
19
20 const int trigpin=5;
21 const int echopin=18;
22 String command;
23 String data="";
24
25
26 long duration;
27 float dist;
28
29
30

```

Simulation

00:28.054 99%

Publish OK

Sending payload: {"Distance":399.96}

Publish OK

Sending payload: {"Distance":399.96}

Publish OK

WOKWI

esp32-dht22.ino

diagram.json • libraries.txt • Library Manager

```
28 float dist;
29
30
31 void setup()
32 {
33   Serial.begin(115200);
34   pinMode(led, OUTPUT);
35   pinMode(trigpin, OUTPUT);
36   pinMode(echopin, INPUT);
37   wifiConnect();
38   mqttConnect();
39 }
40
41 void loop() {
42   bool isNearby = dist < 100;
43   digitalWrite(led, isNearby);
44
45   publishData();
46   delay(500);
47
48   if (!client.loop()) {
49     mqttConnect();
50   }
51 }
52
53 void wifiConnect() {
54   Serial.print("Connecting to "); Serial.print("Wifi");
55   WiFi.begin("Wokwi-GUEST", "", 6);
56   while (WiFi.status() != WL_CONNECTED) {
57     delay(500);
```

Simulation

00:34.508 98%

Publish OK

Sending payload: {"Distance":399.98}

Publish OK

Sending payload: {"Distance":399.96}

Publish OK

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WOKWI

esp32-dht22.ino

diagram.json • libraries.txt • Library Manager

```
54 Serial.print("Connecting to "); Serial.print("Wifi");
55 WiFi.begin("Wokwi-GUEST", "", 6);
56 while (WiFi.status() != WL_CONNECTED) {
57   delay(500);
58   Serial.print(".");
59 }
60 Serial.print("WiFi connected, IP address: "); Serial.println(WiFi.localIP());
61
62
63 void mqttConnect() {
64   if (!client.connected()) {
65     Serial.print("Reconnecting MQTT client to "); Serial.println(server);
66     while (!client.connect(clientId, authMethod, token)) {
67       Serial.print(".");
68       delay(500);
69     }
70     initManagedDevice();
71     Serial.println();
72   }
73 }
74
75 void initManagedDevice() {
76   if (client.subscribe(topic)) {
77     // Serial.println(client.subscribe(topic));
78     Serial.println("IBM subscribe to cmd OK");
79   } else {
80     Serial.println("subscribe to cmd FAILED");
81   }
82 }
83 void publishData()
```

Simulation

00:39.691 99%

Publish OK

Sending payload: {"Distance":399.96}

Publish OK

Sending payload: {"Distance":399.96}

Publish OK

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IBM Watson IoT Platform

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Browse Action Device Types Interfaces Add Device

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
data	{"Distance":399.96}	json	a few seconds ago
data	{"Distance":399.96}	json	a few seconds ago
data	{"Distance":399.96}	json	a few seconds ago
data	{"Distance":399.96}	json	a few seconds ago
data	{"Distance":399.92}	json	a few seconds ago

Items per page 50 | 1-1 of 1 item 1 of 1 page < 1 >

0 Simulations running

Wowki Link : <https://wokwi.com/projects/322410731508073042>