

Project Development Phase

SPRINT 2

| | | | |
|----------|------|---|--------|
| Sprint-2 | US-1 | Configuration the connection security and create API keys that are used in the Node-RED | 1 0 |
| Sprint-2 | US-2 | Service for accessing the IBM IoT platform. Create a Node-RED service. | 1 0 |

| | |
|---------------|--|
| Date | 10 November 2022 |
| Team ID | PNT2022TMID48583 |
| Project Name | IoT Based Safety Gadget for Child Safety Monitoring & Notification |
| Maximum Marks | 20 marks |

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar shows the user's email (sethukannanm143@gmail.com) and ID (cw758v). The main content area is titled "Browse IBM Cloud Apps" and lists a single application: "a-cw758v-rsmpqilszm" with the description "child safty gadget" and role "Visualization Application". Below this, the "API Key Information" tab is active, showing details for the API key "a-cw758v-rsmpqilszm". The key was created on Nov 6, 2022 at 10:47 AM and has never expired. The last update was also on Nov 6, 2022 at 10:47 AM. The key was last edited by sethukannanm143@gmail.com.

| Key | Description | Date Added | Last Update | Last Edited By | Expires |
|---------------------|--------------------|----------------------|----------------------|---------------------------|---------|
| a-cw758v-rsmpqilszm | child safty gadget | Nov 6, 2022 10:47 AM | Nov 6, 2022 10:47 AM | sethukannanm143@gmail.com | Never |

Node-RED interface showing a flow named "Flow 1" with an "IBM IoT" node connected to a "msg payload" node. The "debug" console displays a series of messages, each containing a timestamp, a node name, and a JSON payload with Latitude and Longitude values.

Flow 1:

```
graph LR; IoT[IBM IoT] --> Payload[msg payload];
```

Debug Console:

```
04/11/2022, 02:16:25 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -36, Longitude: 108 }

04/11/2022, 02:16:28 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: 80, Longitude: 43 }

04/11/2022, 02:16:31 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -28, Longitude: 141 }

04/11/2022, 02:16:34 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: 58, Longitude: -58 }

04/11/2022, 02:16:37 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -7, Longitude: 124 }

04/11/2022, 02:16:40 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -39, Longitude: -122 }

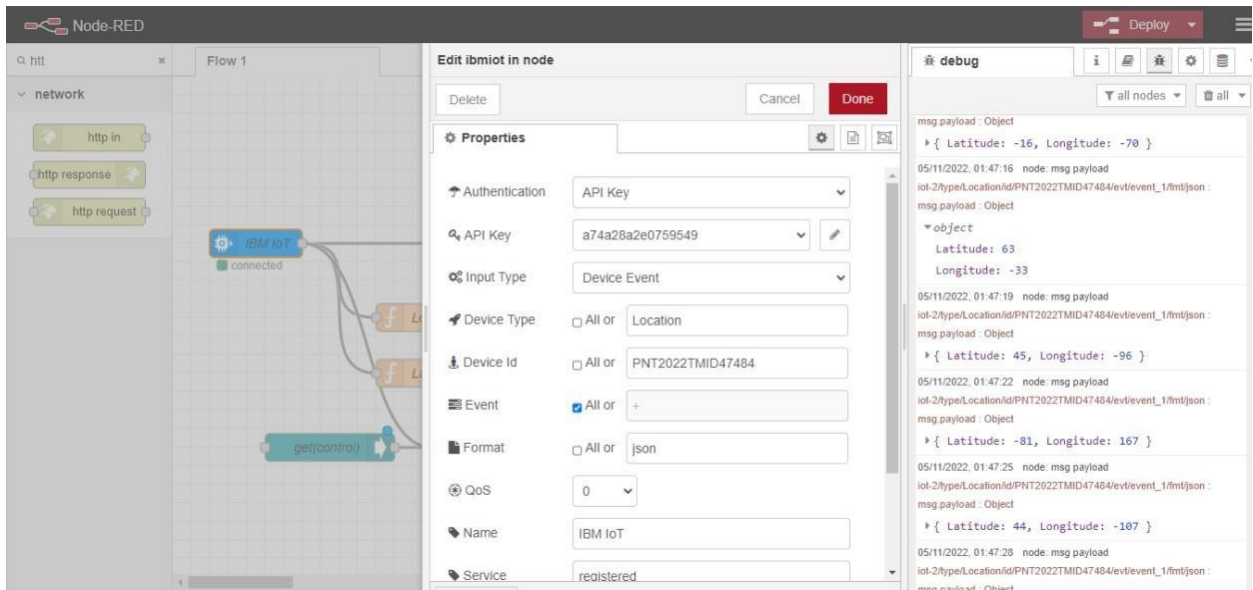
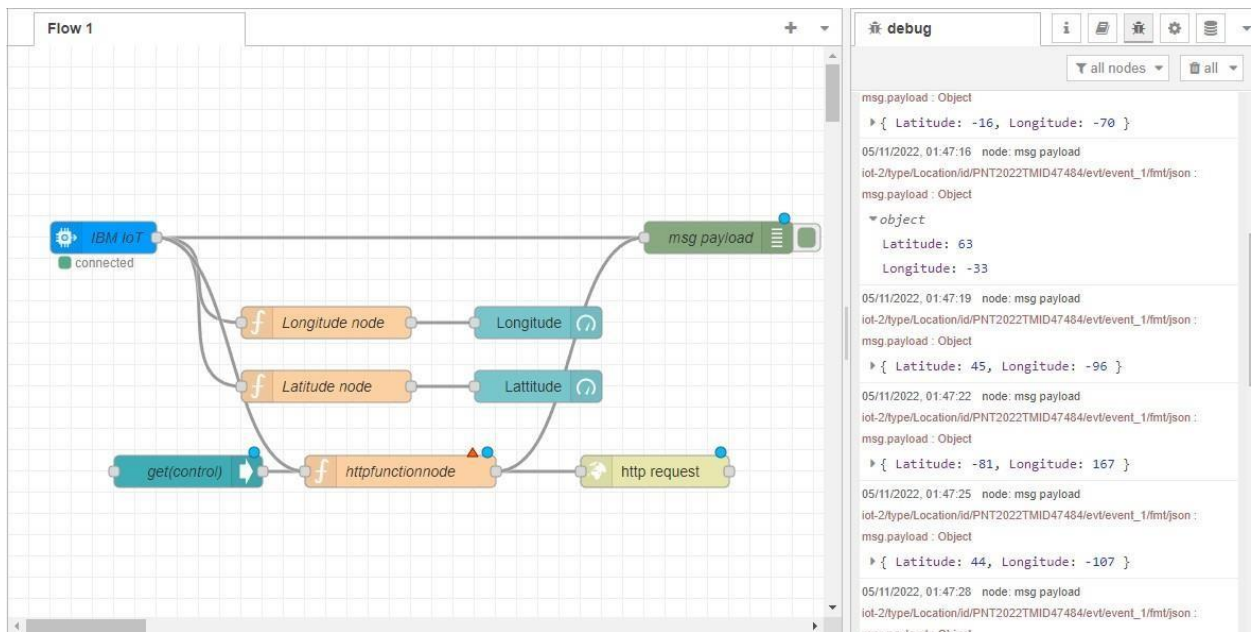
04/11/2022, 02:16:43 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -48, Longitude: 75 }
```

Node-RED Dashboard interface showing a "Home" page with two gauges labeled "Latitude" and "Longitude". The "Latitude" gauge shows a value of 3, and the "Longitude" gauge shows a value of 0. The dashboard is titled "child safety".

child safety

Latitude: 3

Longitude: 0



Node-RED

Flow 1

network

- http in
- http response
- http request

IBM IoT

connected

Edit function node

Properties

Name: Longitude node

Setup On Start On Message On Stop

```
1 msg.payload = msg.payload.Longitude
2 return msg;
```

debug

msg.payload: Object

```
{ Latitude: -16, Longitude: -70 }
```

05/11/2022, 01:47:16 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

object

```
Latitude: 63  
Longitude: -33
```

05/11/2022, 01:47:19 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

```
{ Latitude: 45, Longitude: -96 }
```

05/11/2022, 01:47:22 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

```
{ Latitude: -81, Longitude: 167 }
```

05/11/2022, 01:47:25 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

```
{ Latitude: 44, Longitude: -107 }
```

05/11/2022, 01:47:28 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

Node-RED

Flow 1

network

- http in
- http response
- http request

IBM IoT

connected

get(controller)

Edit gauge node

Properties

Group: [Home] child safety

Size: auto

Type: Gauge

Label: Longitude

Value format: {{value}}

Units: units

Range: min 0 max 10

Colour gradient: [Green, Yellow, Red]

Sectors: 0 optional optional 10

Name:

debug

msg.payload: Object

```
{ Latitude: -16, Longitude: -70 }
```

05/11/2022, 01:47:16 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

object

```
Latitude: 63  
Longitude: -33
```

05/11/2022, 01:47:19 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

```
{ Latitude: 45, Longitude: -96 }
```

05/11/2022, 01:47:22 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

```
{ Latitude: -81, Longitude: 167 }
```

05/11/2022, 01:47:25 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

```
{ Latitude: 44, Longitude: -107 }
```

05/11/2022, 01:47:28 node: msg payload
iot-2/type/Location/id/PNT2022TMD47484/ev/levent_1/fmt/json :
msg.payload: Object

Node-RED

Flow 1

network

- http in
- http response
- http request

IBM IoT

connected

get(control)

Edit gauge node

Properties

- Group: [Home] child safety
- Size: auto
- Type: Gauge
- Label: Latitude
- Value format: {{value}}
- Units: units
- Range: min 0 max 10
- Colour gradient: [Green, Yellow, Red]
- Sectors: 0 optional optional 10
- Name:

debug

msg.payload - Object

```
{ Latitude: -16, Longitude: -70 }
```

05/11/2022, 01:47:16 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

object

```
{ Latitude: 63  
Longitude: -33 }
```

05/11/2022, 01:47:19 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

```
{ Latitude: 45, Longitude: -96 }
```

05/11/2022, 01:47:22 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

```
{ Latitude: -81, Longitude: 167 }
```

05/11/2022, 01:47:25 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

```
{ Latitude: 44, Longitude: -107 }
```

05/11/2022, 01:47:28 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

Node-RED

Flow 1

network

- http in
- http response
- http request

IBM IoT

connected

Edit function node

Properties

- Name: Latitude node
- Setup
- On Start
- On Message
- On Stop

```
1 msg.payload = msg.payload.Latitude  
2 return msg;
```

debug

msg.payload - Object

```
{ Latitude: -16, Longitude: -70 }
```

05/11/2022, 01:47:16 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

object

```
{ Latitude: 63  
Longitude: -33 }
```

05/11/2022, 01:47:19 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

```
{ Latitude: 45, Longitude: -96 }
```

05/11/2022, 01:47:22 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

```
{ Latitude: -81, Longitude: 167 }
```

05/11/2022, 01:47:25 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

```
{ Latitude: 44, Longitude: -107 }
```

05/11/2022, 01:47:28 node: msg payload
iot-2/type/Locaton/Id/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg.payload - Object

Node-RED interface showing a function node configuration and a debug console.

Function Node Configuration:

- Name: httpfunctionnode
- Trigger: On Message
- Code:

```
1 msg.payload={"longitude":global.get(long)
2
3 "latitude": global.get(lati)}
4 return msg;
```

Debug Console:

msg payload : Object

{ Latitude: -16, Longitude: -70 }

05/11/2022, 01:47:16 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

object

Latitude: 63
Longitude: -33

05/11/2022, 01:47:19 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

{ Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

{ Latitude: -81, Longitude: 167 }

05/11/2022, 01:47:25 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

{ Latitude: 44, Longitude: -107 }

05/11/2022, 01:47:28 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

Node-RED interface showing a function node configuration and a debug console.

Function Node Configuration:

- Name: httpfunctionnode
- Trigger: On Message
- Code:

```
1 msg.payload = msg.payload.command
2 return msg;
```

Debug Console:

msg payload : Object

{ Latitude: -16, Longitude: -70 }

05/11/2022, 01:47:16 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

object

Latitude: 63
Longitude: -33

05/11/2022, 01:47:19 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
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05/11/2022, 01:47:28 node: msg payload
iot-2?type/LocationId/PNT2022TMD47484/ev/evnt_1/fmt/json :
msg payload : Object

Node-RED interface showing a flow configuration and the 'Edit http in node' dialog.

Flow Configuration:

- Nodes: `http in`, `http response`, `http request`, `IBM IoT` (connected), `http`.
- Connections: `http in` connects to `http response`. `http request` connects to `IBM IoT`. `IBM IoT` connects to `http`.

Edit http in node dialog:

- Method: GET
- URL: /control
- Name: Name

Debug Console:

```
msg payload - Object
  { Latitude: -16, Longitude: -70 }

05/11/2022, 01:47:16 node: msg payload
iot-2/type/location/id/PNT2022TMD47484/evts/event_1/mtljson:
msg payload - Object
  object
    Latitude: 63
    Longitude: -33

05/11/2022, 01:47:19 node: msg payload
iot-2/type/location/id/PNT2022TMD47484/evts/event_1/mtljson:
msg payload - Object
  { Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg payload
iot-2/type/location/id/PNT2022TMD47484/evts/event_1/mtljson:
msg payload - Object
  { Latitude: -81, Longitude: 167 }

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05/11/2022, 01:47:28 node: msg payload
iot-2/type/location/id/PNT2022TMD47484/evts/event_1/mtljson:
msg payload - Object
```