

Project Development Phase SPRINT-2


Date	07 November 2022
Team ID	PNT2022TMID01761
Project Name	IoT Based Safety Gadget for Child Safety Monitoring & Notification
Maximum Marks	20 marks

Sprint-2	US-1	Configuration the connection security and create API keys that are used in the Node-RED	10
Sprint-2	US-2	Service for accessing the IBM IoT platform. Create a Node-RED service.	10

The API key has been added.

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

Generated Details

API Key a-cci0bq-mnyawbswml 

Authentication Token YrFLGag2gUDd7@j6YP 

API Key Information

Description -

Role Standard Application

Expires Never



Make a note of the generated authentication token.
Lost authentication tokens cannot be recovered. If you lose the token, you must reregister the API to generate a new token.

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 }

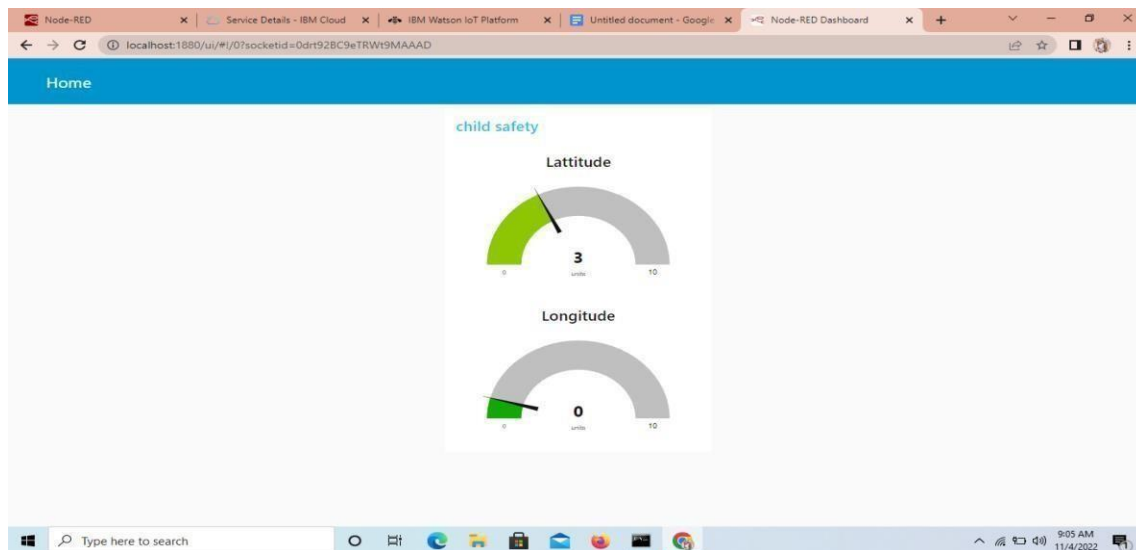
04/11/2022, 02:16:31 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -28, Longitude: 141 }

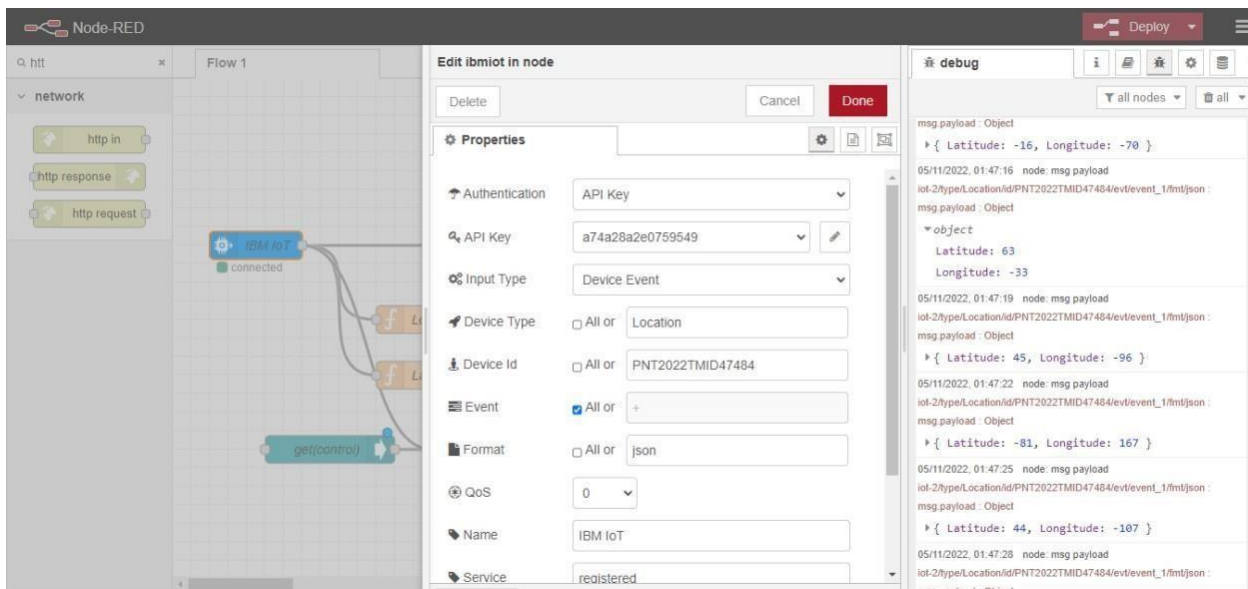
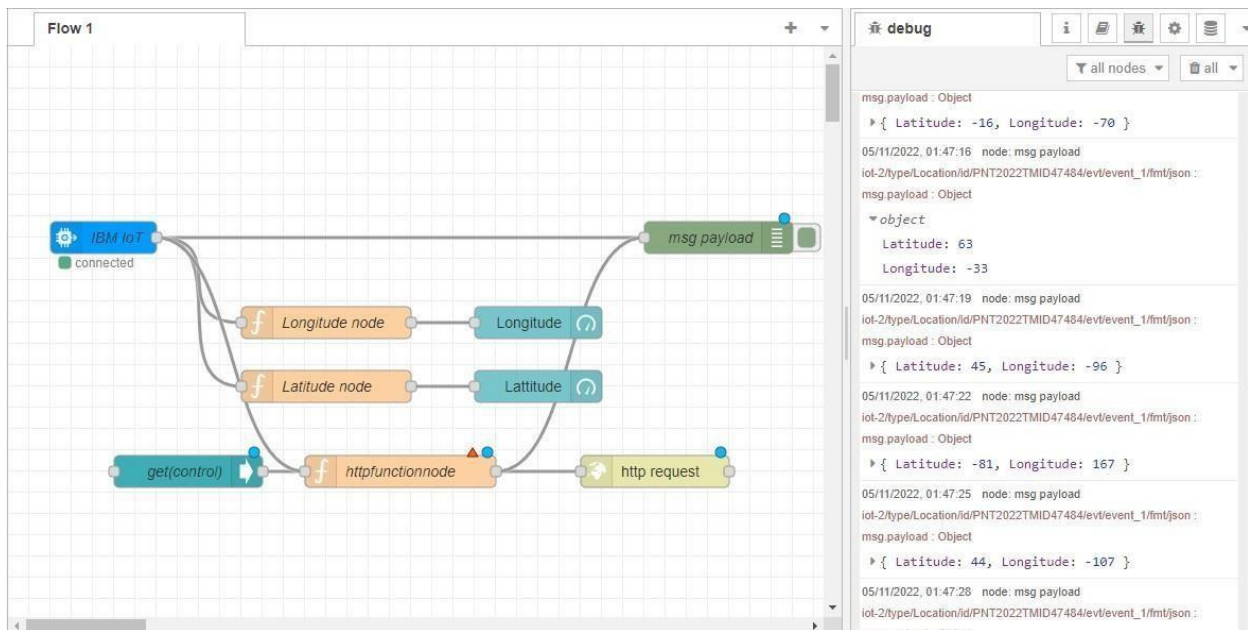
04/11/2022, 02:16:34 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: 58, Longitude: -58 }

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 interface showing the "Edit function node" configuration. The node is named "Longitude node" and is configured to process the "Longitude" property of the message payload. The code in the function editor is:

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

The debug console shows the following log entries:

```
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
  { 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 :
```

Node-RED interface showing the "Edit gauge node" configuration. The node is named "Longitude node" and is configured to display the "Longitude" property of the message payload as a gauge. The configuration includes:

- 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

The debug console shows the following log entries:

```
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
  { 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 :
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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 :
```

Node-RED interface showing a flow with an IBM IoT node connected to a gauge node. The gauge node is configured with the following 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:

The debug console shows the following message payloads:

```
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
{
  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 flow with an IBM IoT node connected to a function node. The function node is configured with the following properties:

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

```
1 msg.payload = msg.payload.Latitude
2 return msg;
```
- On Stop:

The debug console shows the following message payloads:

```
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
{
  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.

Left Panel (Network): Contains nodes for `http in`, `http response`, and `http request`. A `connected` status is shown.

Flow 1: A function node is configured.

Edit function node:

- Properties:** Name: `httpfunctionnode`.
- On Message:** The code is:

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

Debug Console: Shows a sequence of messages with payloads containing latitude and longitude data.

```
msg.payload : Object
  { Latitude: -16, Longitude: -70 }
05/11/2022, 01:47:16 node: msg payload
iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
msg.payload : Object
  { Latitude: 63, Longitude: -33 }
05/11/2022, 01:47:19 node: msg payload
iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
msg.payload : Object
  { Latitude: 45, Longitude: -96 }
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iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
msg.payload : Object
  { Latitude: -81, Longitude: 167 }
05/11/2022, 01:47:25 node: msg payload
iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
msg.payload : Object
  { Latitude: 44, Longitude: -107 }
05/11/2022, 01:47:28 node: msg payload
iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
```

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

Left Panel (Network): Contains nodes for `http in`, `http response`, and `http request`. A `connected` status is shown.

Flow 1: A function node is configured.

Edit function node:

- Properties:** Name: `httpfunctionnode`.
- On Message:** The code is:

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

Debug Console: Shows a sequence of messages with payloads containing latitude and longitude data.

```
msg.payload : Object
  { Latitude: -16, Longitude: -70 }
05/11/2022, 01:47:16 node: msg payload
iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
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05/11/2022, 01:47:28 node: msg payload
iot-2typeLocationId/PNT2022TMD47484/ev/ev/ev_1/fmt/json :
```

Node-RED

Flow 1

network

- http in
- http response
- http request

IBM IoT

connected

http

Lat

Lat

http

Edit http in node

Delete Cancel Done

Properties

Method GET

URL /control

Name Name

debug

msg payload: Object

{ Latitude: -16, Longitude: -70 }

05/11/2022, 01:47:19 node: msg payload

iot-2typeLocationId/PNT2022TMD47484ev/ev/ev/ev_1/fmt/json :

msg payload: Object

object

Latitude: 63

Longitude: -33

05/11/2022, 01:47:19 node: msg payload

iot-2typeLocationId/PNT2022TMD47484ev/ev/ev/ev_1/fmt/json :

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msg payload: Object