

Project Development Phase SPRINT-2


Date	10 November 2022
Team ID	PNT2022TMID12654
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 with timestamps and payloads, including latitude and longitude coordinates.

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 }

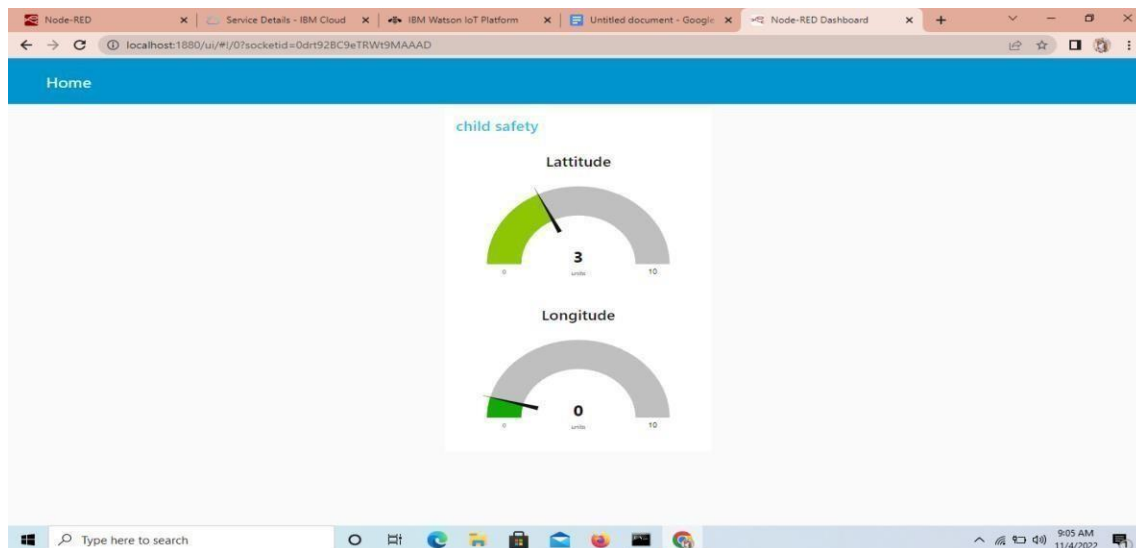
04/11/2022, 02:16:31 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: -28, Longitude: 141 }

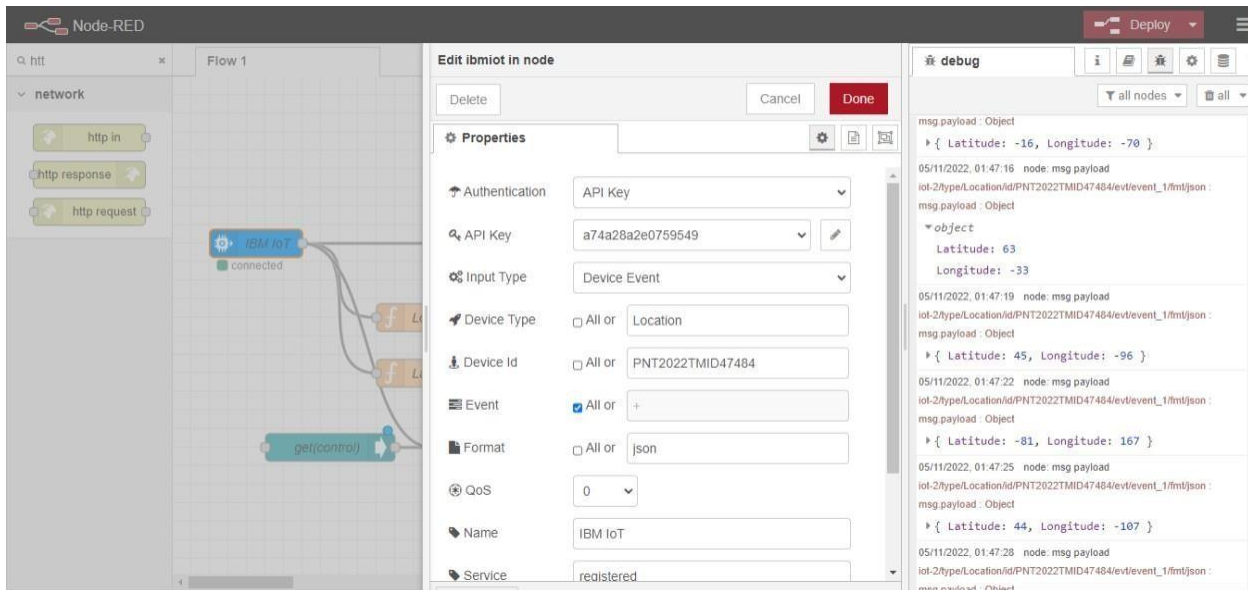
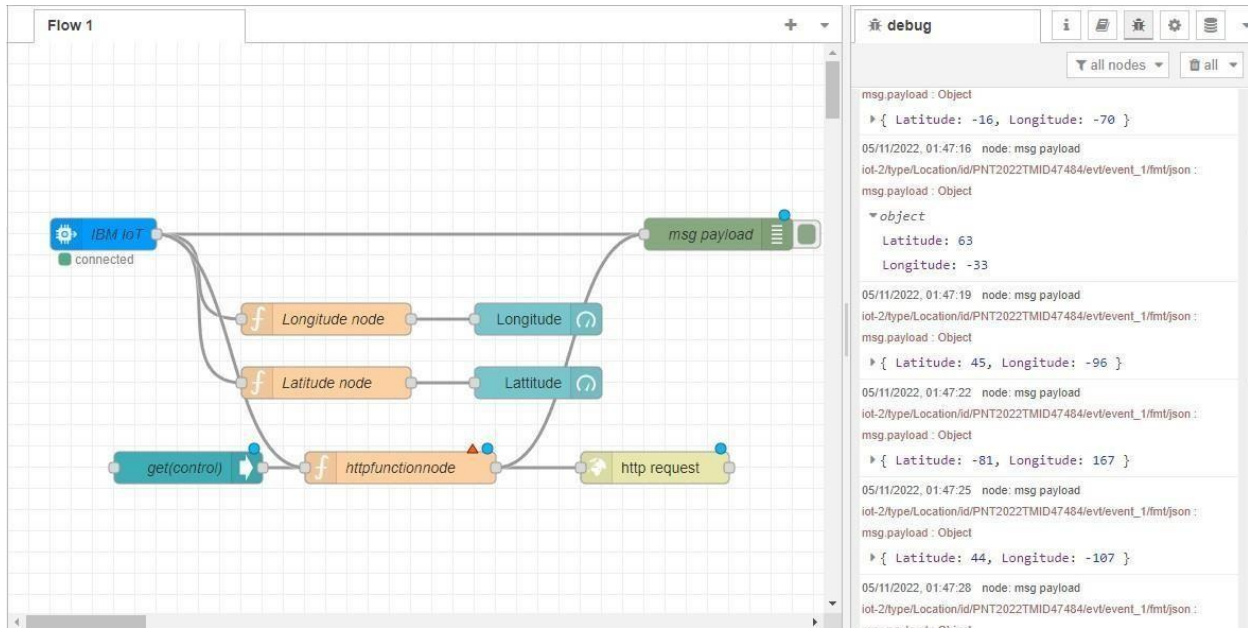
04/11/2022, 02:16:34 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/evt/event_1/fmt/json : msg payload : Object
  { Latitude: 58, Longitude: -58 }

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 run "On Message". The function code 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/ev/ev_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/ev/ev_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/ev/ev_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/ev/ev_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/ev/ev_1/fmt/json :
```

Node-RED interface showing the "Edit gauge node" configuration. The node is named "Longitude node" and is configured to run "On Message". The gauge is configured with the following 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

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/ev/ev_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/ev/ev_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/ev/ev_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/ev/ev_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/ev/ev_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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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/PNT2022TMDID47484/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 with the following code:

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

Properties: The node is named `httpfunctionnode`. The `On Message` tab is selected.

Debug Console: Shows a sequence of messages with the following structure:

```
msg.payload : Object
  { Latitude: -16, Longitude: -70 }
05/11/2022, 01:47:16 node: msg payload
iot-2/type/LocationId/PNT2022TMD47484/ev/evient_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/evient_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/evient_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/evient_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/evient_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 with the following code:

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

Properties: The node is named `httpfunctionnode`. The `On Message` tab is selected.

Debug Console: Shows a sequence of messages with the following structure:

```
msg.payload : Object
  { Latitude: -16, Longitude: -70 }
05/11/2022, 01:47:16 node: msg payload
iot-2/type/LocationId/PNT2022TMD47484/ev/evient_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/evient_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/evient_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/evient_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/evient_1/fmt/json :
msg.payload : Object
```

Node-RED

Flow 1

network

- http in
- http response
- http request

IBM IoT

connected

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, 01:47:16 node: msg.payload

iot-2/type/LocationId/PNT2022TMD47484/ev/ievent_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/ievent_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/ievent_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/ievent_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/ievent_1/fmt/json :

msg.payload : Object