

## Project Development Phase SPRINT-2


Date	07 November 2022
Team ID	PNT2022TMID24179
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 



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.

#### API Key Information

Description -

Role Standard Application

Expires Never

Node-RED

Deploy

filter nodes

Flow 1

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function
- switch

IBM IoT

connected

msg payload

debug

all nodes

all

04/11/2022, 02:16:25 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: -36, Longitude: 108 }

04/11/2022, 02:16:28 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: 80, Longitude: 43 }

04/11/2022, 02:16:31 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: -28, Longitude: 141 }

04/11/2022, 02:16:34 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: 58, Longitude: -58 }

04/11/2022, 02:16:37 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: -7, Longitude: 124 }

04/11/2022, 02:16:40 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: -39, Longitude: -122 }

04/11/2022, 02:16:43 node: msg payload  
iot-2/type/Location/Id/PNT2022TMD47484/evt/event\_1/fmt/json : msg.payload : Object  
↳ { Latitude: -48, Longitude: 75 }

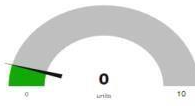
Home

child safety

Latitude



Longitude



Flow 1

The flow diagram shows the following components and connections:

- IBM IoT** (connected) node connects to **Longitude node** and **Latitude node**.
- Longitude node** connects to **Longitude** (output node).
- Latitude node** connects to **Latitude** (output node).
- get(control)** node connects to **httpfunctionnode**.
- httpfunctionnode** connects to **http request** node.
- Longitude** and **Latitude** output nodes connect to **msg payload** node.
- http request** node connects to **msg payload** node.

**debug**

msg.payload : Object

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

05/11/2022, 01:47:16 node: msg payload  
iot-2/type/Location/id/PNT2022TMID47484/evt/event\_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/PNT2022TMID47484/evt/event\_1/fmt/json :  
msg.payload : Object

- { Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg payload  
iot-2/type/Location/id/PNT2022TMID47484/evt/event\_1/fmt/json :  
msg.payload : Object

- { Latitude: -81, Longitude: 167 }

05/11/2022, 01:47:25 node: msg payload  
iot-2/type/Location/id/PNT2022TMID47484/evt/event\_1/fmt/json :  
msg.payload : Object

- { Latitude: 44, Longitude: -107 }

05/11/2022, 01:47:28 node: msg payload  
iot-2/type/Location/id/PNT2022TMID47484/evt/event\_1/fmt/json :

Node-RED interface showing the configuration of an IBM IoT node in a flow.

**Flow 1:** The flow starts with an **http in** node, followed by an **IBM IoT** node (status: connected). The output of the IBM IoT node is connected to a **get(control)** node.

**Edit ibmiot in node:**

- Authentication:** API Key
- API Key:** a74a28a2e0759549
- Input Type:** Device Event
- Device Type:** ☐ All or Location
- Device Id:** ☐ All or PNT2022TMID47484
- Event:** ☒ All or +
- Format:** ☐ All or json
- QoS:** 0
- Name:** IBM IoT
- Service:** registered

**debug:**

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

05/11/2022, 01:47:16 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: 63, Longitude: -33 }

05/11/2022, 01:47:19 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: -81, Longitude: 167 }

05/11/2022, 01:47:25 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: 44, Longitude: -107 }

05/11/2022, 01:47:28 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
```

Node-RED interface showing the configuration of a function node in a flow.

**Flow 1:** The flow starts with an **http in** node, followed by an **http response** node, and then an **http request** node. The output of the **http request** node is connected to a **function** node.

**Edit function node:**

- Name:** Longitude node
- Setup:** On Start, On Message, On Stop
- Code:**

```
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/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: 63, Longitude: -33 }

05/11/2022, 01:47:19 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: -81, Longitude: 167 }

05/11/2022, 01:47:25 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
msg.payload : Object
  { Latitude: 44, Longitude: -107 }

05/11/2022, 01:47:28 node: msg payload
iot-2/type/Location/id/PNT2022TMID47484/evt/event_1/fmt/json :
```

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: 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/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

object

Latitude: 63

Longitude: -33

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

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

{ Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg.payload

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

{ Latitude: -81, Longitude: 167 }

05/11/2022, 01:47:25 node: msg.payload

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

{ Latitude: 44, Longitude: -107 }

05/11/2022, 01:47:28 node: msg.payload

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/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/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

object

Latitude: 63

Longitude: -33

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

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

{ Latitude: 45, Longitude: -96 }

05/11/2022, 01:47:22 node: msg.payload

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

{ Latitude: -81, Longitude: 167 }

05/11/2022, 01:47:25 node: msg.payload

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/json :

msg.payload: Object

{ Latitude: 44, Longitude: -107 }

05/11/2022, 01:47:28 node: msg.payload

iot-2/type/Location/id/PNT2022TMID47484/ev/1event\_1/rmt/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/LocationId/PNT2022TMD47484/evt/event\_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/evt/event\_1/fmt/json :

msg payload : Object

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

05/11/2022, 01:47:22 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_1/fmt/json :

msg payload : Object

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

05/11/2022, 01:47:25 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_1/fmt/json :

msg payload : Object

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

05/11/2022, 01:47:28 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_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: httpfunctionnode

Setup On Start On Message On Stop

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

debug

msg payload : Object

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

05/11/2022, 01:47:16 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_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/evt/event\_1/fmt/json :

msg payload : Object

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

05/11/2022, 01:47:22 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_1/fmt/json :

msg payload : Object

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

05/11/2022, 01:47:25 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_1/fmt/json :

msg payload : Object

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

05/11/2022, 01:47:28 node: msg payload

iot-2/type/LocationId/PNT2022TMD47484/evt/event\_1/fmt/json :

msg payload : Object

Node-RED interface showing the "Edit function node" configuration for a function named "httpfunctionnode". The function code is:

```
1 msg.payload = msg.payload.command
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/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  object
    Latitude: 63
    Longitude: -33
05/11/2022, 01:47:19 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  { Latitude: 45, Longitude: -96 }
05/11/2022, 01:47:22 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  { Latitude: -81, Longitude: 167 }
05/11/2022, 01:47:25 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  { Latitude: 44, Longitude: -107 }
05/11/2022, 01:47:28 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
```

Node-RED interface showing the "Edit http in node" configuration for a node named "http". The node properties are:

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

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/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  object
    Latitude: 63
    Longitude: -33
05/11/2022, 01:47:19 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  { Latitude: 45, Longitude: -96 }
05/11/2022, 01:47:22 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  { Latitude: -81, Longitude: 167 }
05/11/2022, 01:47:25 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
  { Latitude: 44, Longitude: -107 }
05/11/2022, 01:47:28 node: msg payload
iot-2/type/LocationId/PNT2022TMID47484/ev/tevent_1/fmtljson :
msg.payload : Object
```