

Project Development Phase SPRINT-2

Date	07 November 2022
Team ID	PNT2022TMID24177
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

Deploy

filter nodes

Flow 1

common

inject

debug

complete

catch

status

link in

link call

link out

comment

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 }

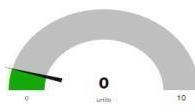
Home

child safety

Latitude



Longitude



Flow 1

```
graph LR; IoT[IBM IoT] --> LongitudeNode[f Longitude node]; IoT --> LatitudeNode[f Latitude node]; IoT --> HTTPReq[http request]; LongitudeNode --> LongitudeGauge[Longitude]; LatitudeNode --> LatitudeGauge[Latitude]; HTTPReq --> HTTPFunc[f httpfunctionnode]; HTTPFunc --> LongitudeGauge; HTTPFunc --> LatitudeGauge; HTTPFunc --> MSGPayload[msg payload];
```

The flow diagram shows an IBM IoT node connected to three parallel paths. The top path goes through a 'Longitude node' to a 'Longitude' gauge. The middle path goes through a 'Latitude node' to a 'Latitude' gauge. The bottom path goes through an 'http request' node, then an 'httpfunctionnode', which then branches to both the 'Longitude' and 'Latitude' gauges, and finally to a '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 :
msg.payload : Object

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
- Device Id:** ☐ All or
- Event:** ☒ All or
- Format:** ☐ All or
- QoS:** 0
- Name:** IBM IoT
- Service:** registered

debug: The debug console shows a series of messages from the IBM IoT node, including timestamps, node names, and payloads. The payloads are objects containing latitude and longitude coordinates.

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: The debug console shows a series of messages from the function node, including timestamps, node names, and payloads. The payloads are objects containing latitude and longitude coordinates.

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

On Message

```
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

On Message

```
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 configuration is:

- 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
```