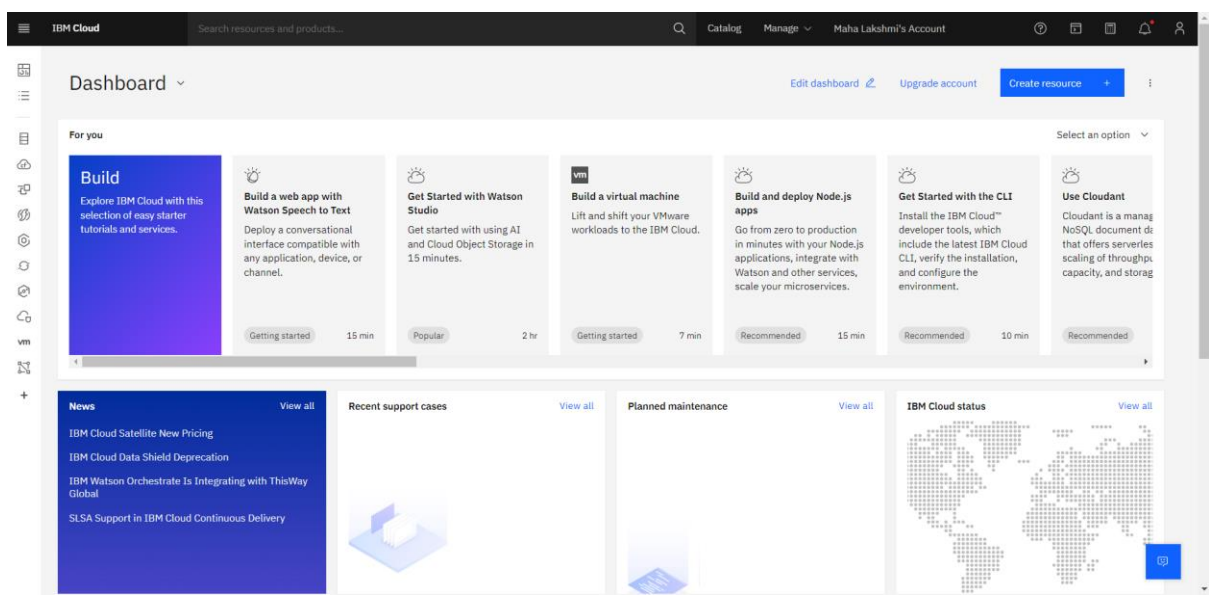


CREATE AND CONFIGURE IBM CLOUD SERVICE

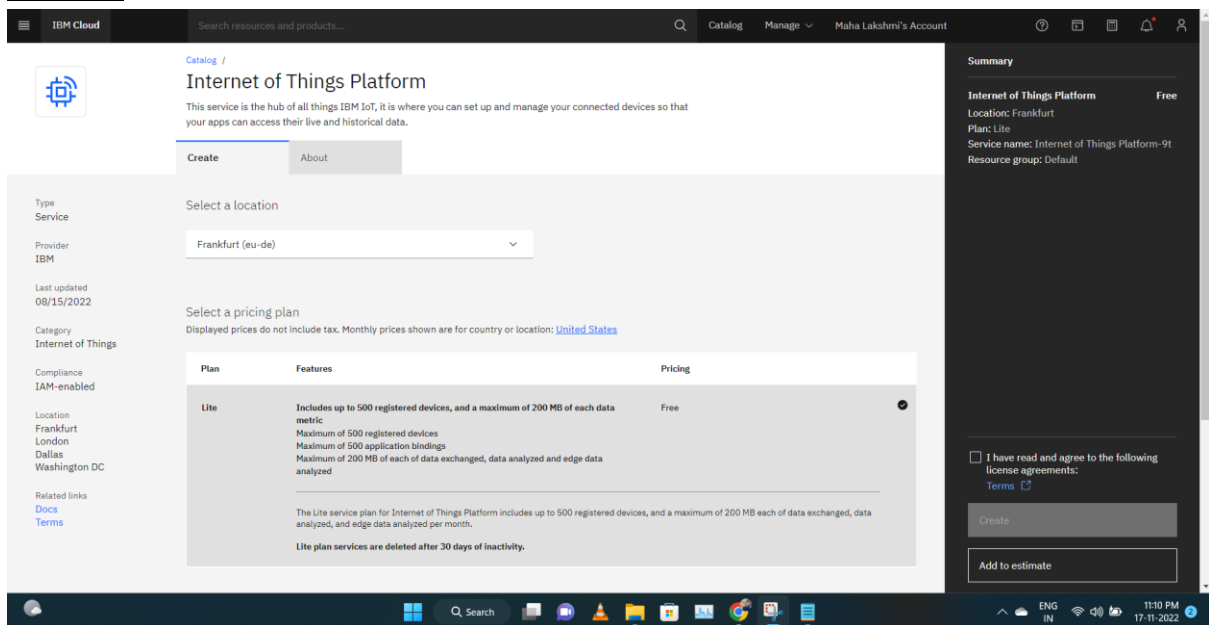
Date	18 November 2022
Team id	PNT2022TMID38469
Project Name	Signs with smart connectivity for better road safety
Maximum Marks	

CREATE IBM WATSON IoT PLATFORM AND DEVICE

STEP:1



STEP:2



STEP:3

The screenshot shows the IBM Cloud IoT Platform-9t dashboard. At the top, there's a navigation bar with 'IBM Cloud', a search bar, and links for 'Catalog', 'Manage', and 'Maha Lakshmi's Account'. Below this, the main header reads 'Internet of Things Platform-9t' with a green 'Active' status and an 'Add tags' link. A left sidebar contains 'Manage', 'Plan', and 'Connections'. The main content area features a large graphic of a central square with four U-shaped connectors. To the right, a section titled 'Let's get started with IBM Watson IoT Platform' includes the text 'Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.' and buttons for 'Launch' and 'Docs'. Below this, a section titled 'Ready for the next level?' introduces the 'IBM Watson IoT Platform Journey' with three stages: 'Lite', 'Non-Production', and 'Production'. Each stage has a description and a list of features or limits.

IBM Cloud Search resources and products... Catalog Manage Maha Lakshmi's Account

Resource list / Internet of Things Platform-9t Active Add tags

Manage
Plan
Connections

Let's get started with IBM Watson IoT Platform
Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.
[Launch](#) [Docs](#)

Ready for the next level?
IBM Watson IoT Platform Journey

Lite
The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.

- Free
- 200 MB data-transfer limit
- 500 application bindings limit
- 500 registered devices limit

Non-Production
The Non-Production service plan is a full-featured, fully-integrated offering that enables you to explore Watson IoT Platform to see how the service can fit into your IoT environment.

- Starts at \$500 per month
- Capacity limit based on device type
- Optional Analytics Service and Blockchain Service add-ons

Production
The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data.

- Includes IBM Service & Support
- Pricing based on number of devices per device type
- Optional Analytics Service and Blockchain Service add-ons

STEP:4

The screenshot shows the IBM Watson IoT Platform landing page. At the top, there's a dark blue header with 'IBM Watson IoT Platform', a help icon, and a 'Sign in' button. The main content area features a large graphic with the word 'Assets' in the center. To the left, it says 'Collect data from' with icons for a cloud, a factory, and an airplane. To the right, it says 'and make value from it' with icons for a lightbulb, a smartphone, and a server. Below the 'Assets' text, there's a 'Learn More' link with a downward arrow. At the bottom, there's a Windows taskbar with various application icons and a system tray showing the time as 11:12 PM on 17-11-2022.

IBM Watson IoT Platform Sign in

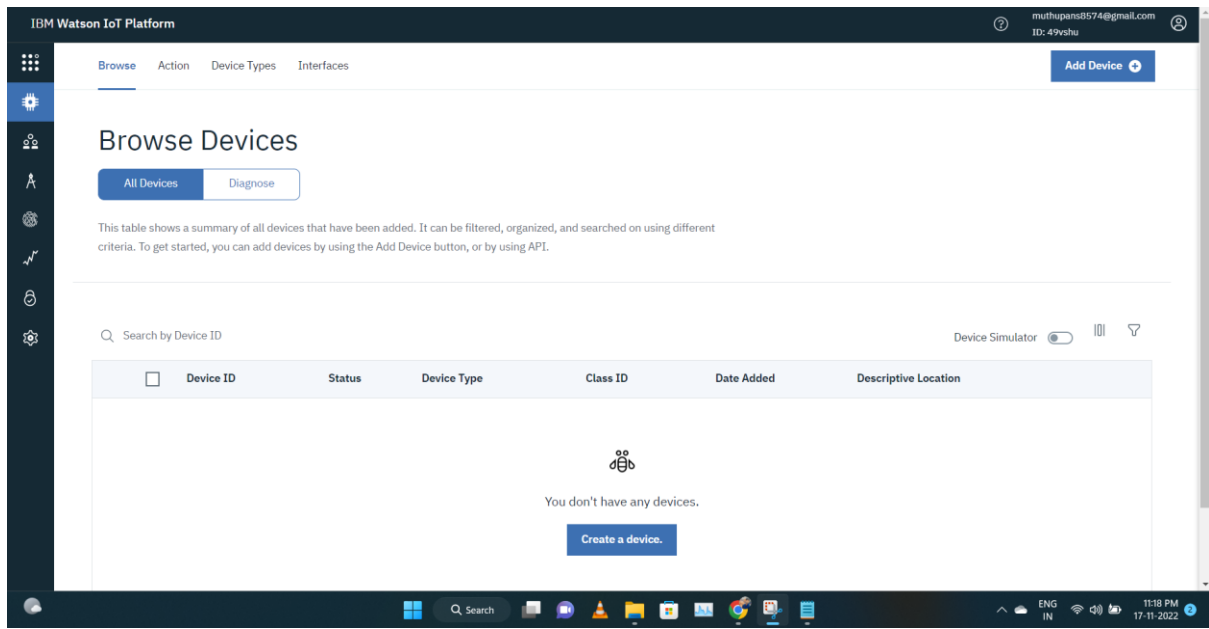
Collect data from **Assets** and make value from it

Learn More

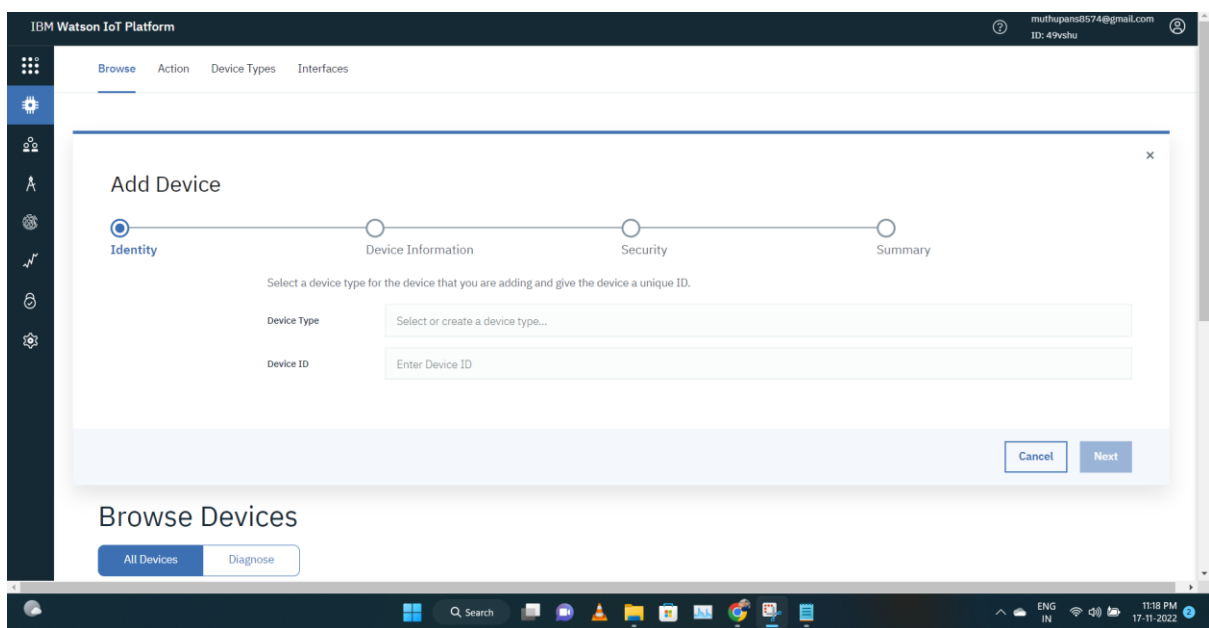
Cookie Preferences

11:12 PM 17-11-2022

STEP:5



STEP:6



STEP:7

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform. The progress bar indicates that the 'Device Information' step is currently active, while 'Identity', 'Security', and 'Summary' are completed or pending. The 'Identity' step is marked with a checkmark, 'Device Information' with a circle, 'Security' with a circle, and 'Summary' with a circle. The 'Device Information' step contains a form with the following fields:

Field	Value
Serial Number	Enter Serial Number
Model	Enter Model
Description	Enter Description
Hardware Version	Enter Hardware Version
Manufacturer	Enter Manufacturer
Device Class	Enter Device Class
Firmware Version	Enter Firmware Version
Descriptive Location	Enter Descriptive Location

Below the form is a button labeled 'Add Metadata'. At the bottom right of the wizard are 'Back' and 'Next' buttons. The top of the screen shows the 'IBM Watson IoT Platform' header with a user profile 'muthupans574@gmail.com' and 'ID: 49vshu'. The bottom of the screen shows a Windows taskbar with various application icons and a system clock showing '11:19 PM 17-11-2022'.

STEP:8

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform, specifically the 'Security' step. The progress bar indicates that 'Identity' and 'Device Information' are completed, 'Security' is the current step, and 'Summary' is pending. The 'Identity' step is marked with a checkmark, 'Device Information' with a checkmark, 'Security' with a circle, and 'Summary' with a circle. The 'Security' step contains the following information:

There are two options for selecting a device authentication token.

Auto-generated authentication token (default)

Allow the service to generate an authentication token for you. Tokens are 18 characters and contain a mix of alphanumeric characters and symbols. The token is returned to you at the end of the device registration process.

Self-provided authentication token

Provide your own authentication token for this device. The token must be between 8 and 36 characters and contain a mix of lowercase and uppercase letters, numbers, and symbols, which can include hyphens, underscores, and periods. Do not use repeated characters, dictionary words, user names, or other predefined sequences.

Below the text is a text input field labeled 'Authentication Token' with the placeholder text 'Enter an optional token'. Below the input field is a note: 'Make a note of the generated token. Lost authentication tokens cannot be recovered. Tokens are encrypted before being stored.' and a sub-note: 'Authentication token are encrypted before we store them.'

At the bottom right of the wizard are 'Back' and 'Next' buttons. The top of the screen shows the 'IBM Watson IoT Platform' header with a user profile 'muthupans574@gmail.com' and 'ID: 49vshu'. The bottom of the screen shows a Windows taskbar with various application icons and a system clock showing '11:19 PM 17-11-2022'.

STEP:9

The screenshot shows the 'Device Drilldown - 27022002' page in the IBM Watson IoT Platform. The left sidebar contains a navigation menu with options: Device Credentials, Connection Information, Recent Events, State, Device Information, Metadata, Diagnostics, Connection Logs, and Device Actions. The 'Device Credentials' section is active, displaying a table of credentials and a warning message.

Organization ID	Device Type	Device ID	Authentication Method	Authentication Token
49vshu	SENSOR	27022002	use-token-auth	27022002

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

[Find out how to add these credentials to your device](#)

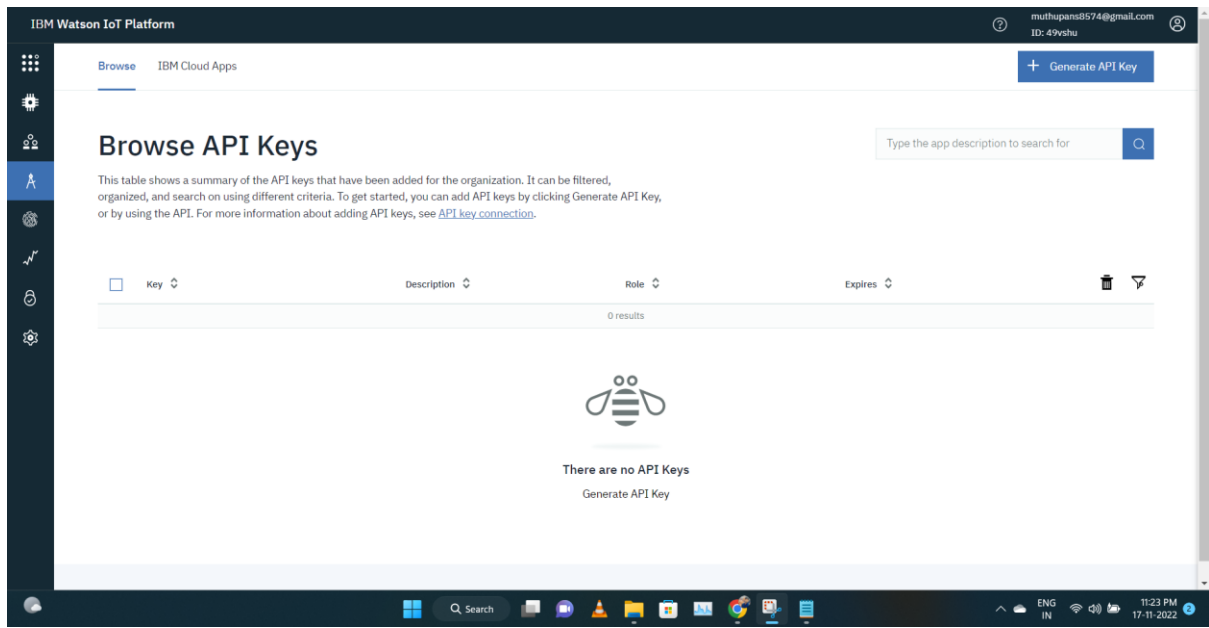
STEP:10

The screenshot shows the 'Browse Devices' page in the IBM Watson IoT Platform. The page includes a search bar, a table of devices, and a 'Device Simulator' toggle. The table lists one device with ID 27022002, which is currently 'Disconnected'.

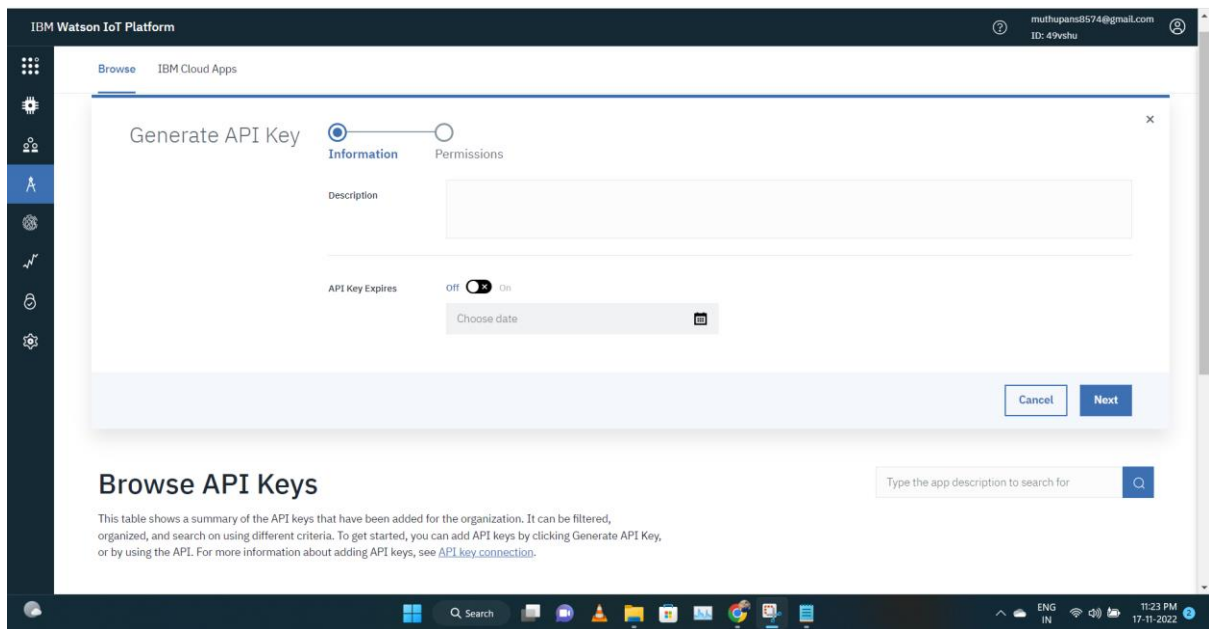
Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
27022002	Disconnected	SENSOR	Device	17 Nov 2022 23:22	

Items per page: 50 | 1-1 of 1 item

STEP:11



STEP:12



STEP:13

The screenshot shows the 'Generate API Key' dialog box in the IBM Watson IoT Platform. The dialog has two tabs: 'Information' (selected) and 'Permissions'. Under 'Information', it states 'The application will have access for the following role:' and shows a dropdown menu with 'Standard Application' selected. Below this, it says 'For more information about roles, see [User, application, and gateway roles](#).' At the bottom right of the dialog are 'Back' and 'Generate Key' buttons. Below the dialog, the 'Browse API Keys' section is visible, featuring a search bar and a table with columns: Key, Description, Role, and Expires.

STEP:14

The screenshot shows the 'The API key has been added' confirmation screen in the IBM Watson IoT Platform. It includes a warning message: '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.' Below this, there are two sections: 'Generated Details' and 'API Key Information'. 'Generated Details' lists the 'API Key' as 'a-49vshu-lt6wnqlr2f' and the 'Authentication Token' as 'nJ1ieDJTP87cEITQyW'. 'API Key Information' lists 'Description' as '-', 'Role' as 'Standard Application', and 'Expires' as 'Never'. A warning icon and text state: '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.' At the bottom right are 'View API Key', 'Add Another', and 'Close' buttons. Below the confirmation screen, the 'Browse API Keys' section is visible, featuring a search bar and a table with columns: Key, Description, Role, and Expires.

STEP:15

IBM Watson IoT Platform

muthupans8574@gmail.com
ID: 49vshu

Browse IBM Cloud Apps

+ Generate API Key

Browse API Keys

Type the app description to search for

This table shows a summary of the API keys that have been added for the organization. It can be filtered, organized, and search on using different criteria. To get started, you can add API keys by clicking Generate API Key, or by using the API. For more information about adding API keys, see [API key connection](#).

Key	Description	Role	Expires	
1 result				
a-49vshu-lt6wnqlr2f	-	Standard Application	-	

STEP:16

IBM Watson IoT Platform

muthupans8574@gmail.com
ID: 49vshu

Browse IBM Cloud Apps

+ Generate API Key

Key	Description	Role	Expires	
1 result				
a-49vshu-lt6wnqlr2f	-	Standard Application	-	

API Key Information

Access Control/Permissions

Key	a-49vshu-lt6wnqlr2f	Last Edited By	muthupans8574@gmail.com
Description	-	Expires	Never
Date Added	17 Nov 2022 23:24		
Last Update	17 Nov 2022 23:24		

STEP:17

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Add Device

Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator ☒

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
27022002	Disconnected	SENSOR	Device	17 Nov 2022 23:22	

Items per page 50 | 1-1 of 1 item

1 of 1 page

0 Simulations running

STEP:18

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Add Device

Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator ☒

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
27022002	Disconnected	SENSOR	Device	17 Nov 2022 23:22	

Items per page 50 | 1-1 of 1 item

Simulations

Import/Export simulation

You can use the simulated event data to learn about, test, and demonstrate fully functioning Watson IoT Platform features. You can simulate a device and its data or simulate only data for a device that is already registered.

To create a device simulation:

1. Select a device type.
2. Configure the event and payload.
3. Add devices.

Create simulation

STEP:19

The screenshot shows the IBM Watson IoT Platform interface. The main panel displays the 'Browse Devices' page with a table of devices. A modal window is open for configuring a device of type 'SENSOR'.

Device List:

Device ID	Status	Device Type	Class ID	Date
27022002	Disconnected	SENSOR	Device	17/11/2022

Device Configuration Modal (Device Type: SENSOR):

- Events:** 1
- Event type name:** event_1
- Schedule:** 20 Every Minute
- Payload:**

```
{  "dataA": random(0, 100) }
```
- Buttons:** Send, Upload a CSV file, Cancel, Save

STEP:20

The screenshot shows the IBM Watson IoT Platform interface. The main panel displays the 'Browse Devices' page with a table of devices. A modal window is open for configuring simulations for a device of type 'SENSOR'.

Device List:

Device ID	Status	Device Type	Class ID	Date
27022002	Disconnected	SENSOR	Device	17/11/2022

Simulations Modal:

- Simulations:** 0/50 Simulations Running
- Device Type:** SENSOR
- Buttons:** New Simulation, Create Simulated Device, Use Registered Device
- Status:** 0 event sent, 0 bytes sent

STEP:21

The screenshot shows the IBM Watson IoT Platform interface. The main page is titled 'Browse Devices' and contains a table of devices. A 'Simulations' modal is open on the right side of the screen.

Simulations Modal:

- 1/50 Simulations Running
- + New Simulation
- Device Type: SENSOR
- 1 Event
- 1 Device: 27022002
- Buttons: Create Simulated Device, Use Registered Device
- 0 event sent
- 0 bytes sent

Device Table:

Device ID	Status	Device Type	Class ID	Date Added
27022002	Disconnected	SENSOR	Device	17 Nov 2022 23:22

STEP:22

The screenshot shows the IBM Watson IoT Platform interface. The main page is titled 'Recent Events' and displays a table of events. A '1 Simulation running' notification is visible at the bottom right.

Recent Events Table:

Event	Value	Format	Last Received
-------	-------	--------	---------------

Waiting for device events...

1 Simulation running

STEP:23

The screenshot displays the IBM Watson IoT Platform web interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area shows a table of devices. One device is selected, and its details are shown in a modal window. The modal window has tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, showing a table of events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. One event is listed: 'event_1' with a value of '["data":10]' in json format, received 'a few seconds ago'. The bottom of the modal window shows 'Items per page 50' and '1-1 of 1 item'. A status bar at the bottom of the modal indicates '1 Simulation running'. The bottom of the screenshot shows a Windows taskbar with various icons and the system clock showing 11:31 PM on 17-11-2022.

IBM Watson IoT Platform

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ID: 49vshu

Browse Action Device Types Interfaces

Add Device

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
27022002	Disconnected	SENSOR	Device	17 Nov 2022 23:22	

Identity Device Information Recent Events State Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	["data":10]	json	a few seconds ago

Items per page 50 | 1-1 of 1 item

1 of 1 page

1 Simulation running

11:31 PM 17-11-2022