Pre-Requisites

IBM Watson IoT Platform :

This service is the hub for IBM Watson IoT and lets you communicate with and consume data from connected devices and gateways. Use the built-in web console dashboards to monitor your IoT data and analyze it in real time. Then, enhance and customize your IBM Watson IoT Platform experience by building and connecting your own apps by using messaging and REST APIs.

Features

Connect:

Quickly and securely register and connect your devices and gateways. You can find simple step-by-step instructions for connecting popular devices, sensors, and gateways in our recipes site.

Information Management

Control what happens to the data that is received from your connected devices. Manage data storage, configure data transformation actions, and integrate with other data services and device platforms.

Analyze in real time

Monitor your real-time device data through rules, analytics, and dashboards. Define rules to monitor conditions and trigger automatic actions that include alerts, email, IFTTT, Node-RED flows, and external services to react quickly to critical changes.

Risk and Security management

Our secure-by-design control capabilities protect the integrity of your IoT solution through secure connectivity and access control for users and applications. Extend the base security with threat intelligence for IoT to visualize critical risks and automate operational responses with policy-driven mitigation actions.

Node-RED Service:

Input Node:

The input node receive device commands from the IBM Watson Internet of Things Platform.

The node can connect as either a Device or Gateway:

- **Device**: the node can be configured to either receive all commands for the Device, or just select a specific command type.
- **Gateway**: the node can be configured to receive commands for all devices connected through the gateway, or to select a subset of them.

Output Node

Send device events to the IBM Watson Internet of Things Platform.

The node can connect as either a Device or Gateway, in registered mode or using the Quickstart service.

When connecting using the Quickstart service, the connection will use a device type of node-red-ibmwiotp and a randomly generated device id, which can be configured in the node

Cloudant DB:

IBM Cloudant is a fully managed JSON document database that offers independent serverless scaling of provisioned throughput capacity and storage. Cloudant is compatible with Apache CouchDB and accessible through a simple to use HTTPS API for web, mobile, and IoT applications.

Features:

• 99.99% SLA

• Secure: All data encrypted over the wire and at rest. Optional BYOK and private service endpoints on Dedicated Hardware environments.

HA/DR: All Cloudant JSON documents are stored in triplicate for in-region HA/DR. In regions that support availability zones (Dallas,

• Washington DC, London, Frankfurt, Tokyo, Sydney), documents are stored across three separate availability zones.
• Compliance: GDPR, PCI, SOC2 & ISO 27001 Compliant. HIPAA available on Dedicated Hardware environments and requires opt into HIPAA Supported setting. Any Cloudant instance deployed from the Frankfurt region will be in an EU Supported environment.
• Max JSON document size of 1MB

TTS Service:

The IBM Watson™ Text to Speech service provides APIs that use IBM's speech-synthesis capabilities to synthesize text into natural-sounding speech in a variety of languages, dialects, and voices. The service supports at least one male or female voice, sometimes both, for each language. The audio is streamed back to the client with minimal delay.

For speech synthesis, the service supports a synchronous HTTP Representational State Transfer (REST) interface and a WebSocket interface. Both interfaces support plain text and SSML input. SSML is an XML-based markup language that provides text annotation for speech-synthesis applications. The WebSocket interface also supports the SSML <mark> element and word timings