

# Node-RED on IBM Cloud

Upkar Lidder

# About me

<3 coding and coffee!

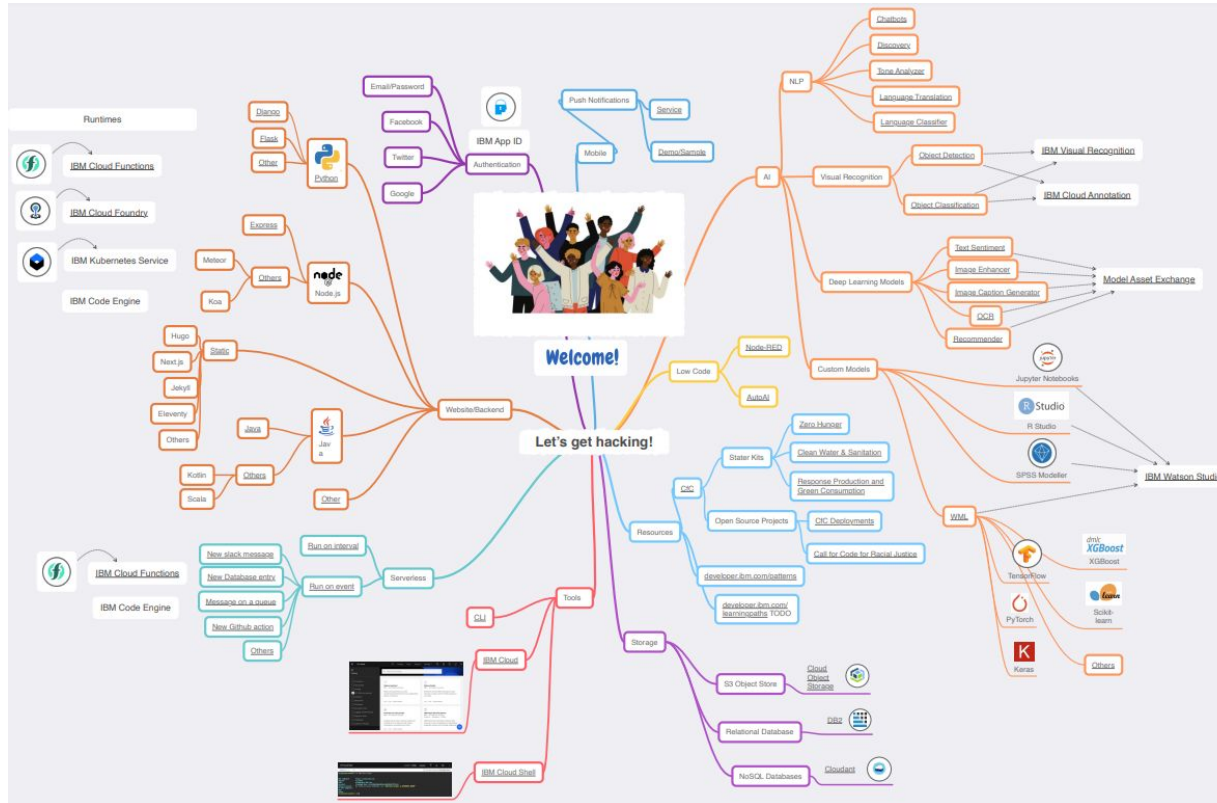
 @upkarlidderr



**Upkar Lidder**  
Software Engineer



# What are you building?



<https://github.com/upkarliddler/ibmhacks>

Node-RED is a  
programming  
tool for wiring  
together  
hardware  
devices, APIs  
and online

services in new  
and interesting  
ways.

—

# STEPS

1. Create IBM Cloud Account
2. Create Node-RED Service
3. Hello World!
4. Import Starter Kit

# 1. IBM Cloud Account

<https://ibm.biz/Bdfqe5>

IBM Cloud

CatalogCost estimator

Create an account

1. Account information

Email

Password

Next ↓

2. Verify email

3. Personal information

## Call for Code

### Global Challenge

Join the fight against climate change. Your entire registration journey will be three simple steps.

**Step 1: Create your account or log in.**  
Enter your email address and create a password to get free access to IBM Cloud.

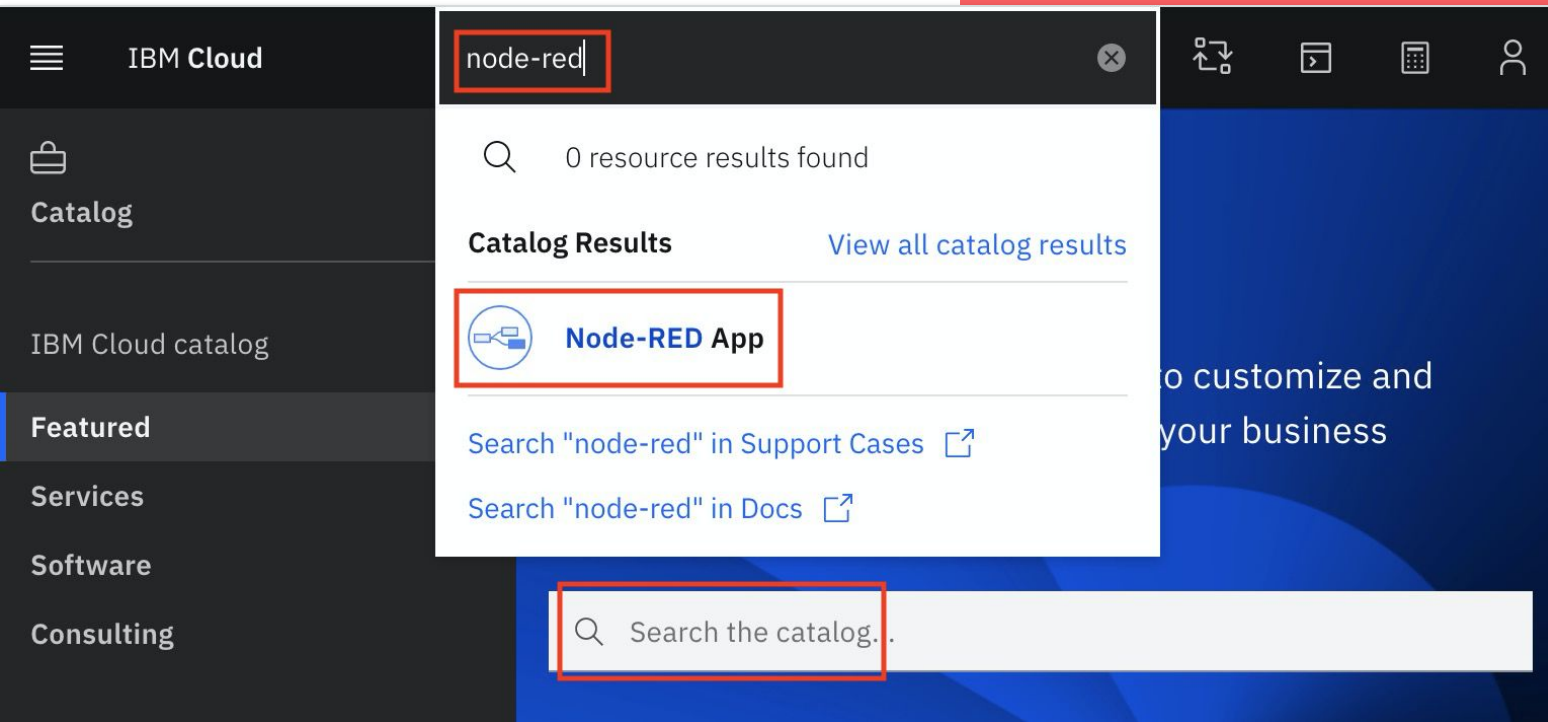
**Step 2: Confirm your privacy settings (new accounts only).**  
You're in control of what you share with IBM and receive from us.

**Step 3: Finalize your registration.**  
Complete the remaining fields and customize your preferences, then you're done!  
By registering, you agree to the IBM Developer [Terms of Use](#).

# 2. Node-RED Service

<https://github.com/pmmistry/Node-RED-Series>

```
sudo npm install -g --unsafe-perm  
node-red
```



# 3.1 Create Free Translation Service!

<https://cloud.ibm.com/catalog/services/language-translator>

The screenshot shows the IBM Cloud console interface for the Language Translator service. The top navigation bar includes the IBM Cloud logo, a search bar, and links to Catalog, Docs, Support, and Manage. The breadcrumb trail indicates the path: Catalog / Services / Language Translator. The main content area is divided into two tabs: 'Create' (active) and 'About'. Under the 'Create' tab, there are two sections: 'Select a location' and 'Select a pricing plan'. The 'Select a location' section has a dropdown menu currently set to 'Dallas (us-south)'. The 'Select a pricing plan' section includes a note about tax and a link to 'United States'. Below this is a table comparing two plans: 'Lite' and 'Standard'. The 'Lite' plan is highlighted with a red border and a checkmark, indicating it is the selected option. The 'Standard' plan is also visible below it. On the right side of the console, a 'Summary' panel provides details about the selected plan, including its name, location, plan type, service name, and resource group. At the bottom of the 'Create' tab, there is a blue 'Create' button, also highlighted with a red border.

IBM Cloud Search resources and offerings... Catalog Docs Support Manage Cloudapp Devs

Catalog / Services / Language Translator

IBM Watson • Date of last update: 04/28/2021 • Docs • API docs

Create About

Select a location

Select a location

Dallas (us-south)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features	Pricing
Lite	<b>Translate up to 1,000,000 Characters per Month</b> Identify up to 68 languages with Language Identification Document Translation supporting 12 file types  The Lite plan gets you started with 1,000,000 characters per month at no cost and includes the default translation models. When you upgrade to a paid plan, you can create custom models.  <b>Lite plan services are deleted after 30 days of inactivity.</b>	Free
Standard	<b>Everything in Lite plus...</b> Removal of monthly 1M character translation limit First 250,000 characters are free	\$0.02 USD/THOUSAND CHAR

Summary

**Language Translator** Free

Location: Dallas  
Plan: Lite  
Service name: Language Translator-s9  
Resource group: Default

Create



# 3.2 Save the Secret!

<https://cloud.ibm.com/catalog/services/language-translator>

IBM Cloud

Search resources and offerings...

Catalog Docs Support Manage Cloudapp Devs

Resource list /

## Language Translator-s9

Active Add tags

Details Actions...

Manage

Getting started

**Service credentials**

Plan

Connections

### Service credentials

You can generate a new set of credentials for cases where you want to manually connect an app or external consumer to an IBM Cloud service. [Learn more](#)

Search credentials...

New credential +

Key name	Date created
Auto-generated service credentials	2021-05-09 10:31 AM

```
{  "apikey": "...",  "iam_apikey_description": "Auto-generated for key 1937d46a-655f-4edb-a27f-7c37eca444e4",  "iam_apikey_name": "Auto-generated service credentials",  "iam_role_crn": "crn:v1:bluemix:public:iam:::serviceRole:Manager",  "iam_serviceid_crn": "crn:v1:bluemix:public:iam-identity::a/c1efa0d5bbda462dac88a908e27570cd::serviceid:ServiceId-981blcc5-89a6-4a2c-ac91-0ac9204a199e",  "url": "https://api.us-south.language-translator.watson.cloud.ibm.com/instances/..."}
```

# 3.3 Install Waston Nodes - I

The screenshot displays the Node-RED web interface. At the top, the 'Node-RED' logo is visible. Below it, a search bar labeled 'filter nodes' is present. The main workspace is a grid where flows are created. On the left, there are two categories of nodes: 'common' and 'function'. The 'common' category includes nodes like 'inject', 'debug', 'complete', 'catch', 'status', 'link in', 'link out', and 'comment'. The 'function' category includes 'function' and 'switch'. The right sidebar shows the 'dashboard' view with tabs for 'Layout', 'Site', and 'T'. Below these, there's a 'Tabs & Links' section with a tree view showing a hierarchy of flows and maps. A red circle with the number '1' highlights the 'Deploy' button in the top right corner. Another red circle with the number '2' highlights the 'Manage palette' option in the sidebar menu.

Node-RED

filter nodes

anta Watershed Flow 2 Audio classification Flow 3

common

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

function

- function
- switch

dashboard

Layout Site T

Tabs & Links

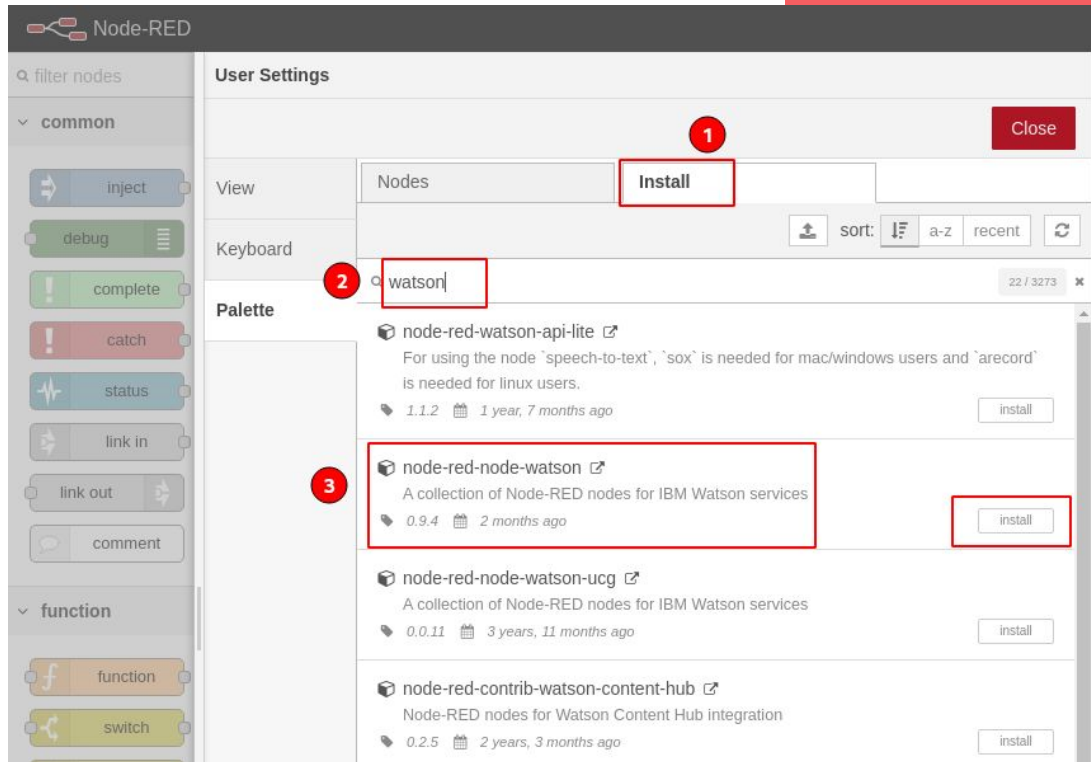
- Atlanta Water Ba
  - Show Maps
  - Atlanta and W
  - Contaminants
- my map
  - my map

Deploy

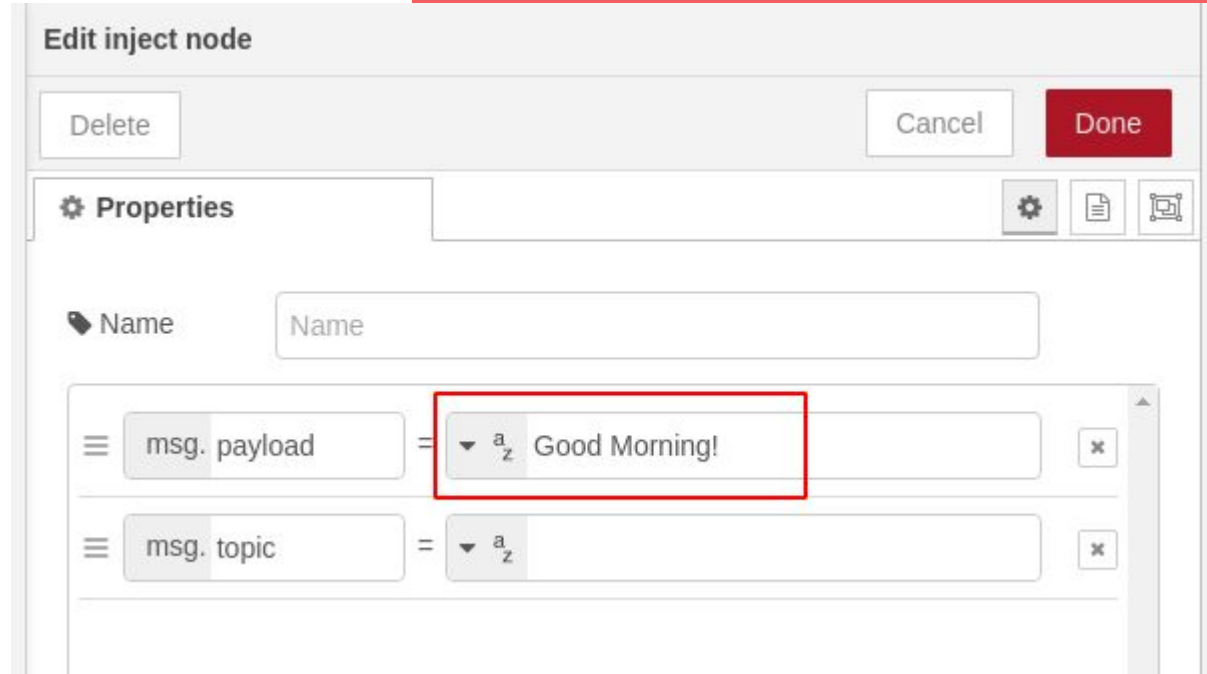
View

- Import
- Export
- Search flows
- Configuration nodes
- Flows
- Subflows
- Groups
- Manage palette
- Settings
- Keyboard shortcuts
- Node-RED website
- v1.3.4

# 3.4 Install Waston Nodes - II



# 3.5 Create Translation Flow - Inject



# 3.5 Create Translation Flow - Translator



### Edit language translator node

Delete Cancel Done

#### Properties

Name

Username

Password

API Key

Service Endpoint

Mode

Domains

Source

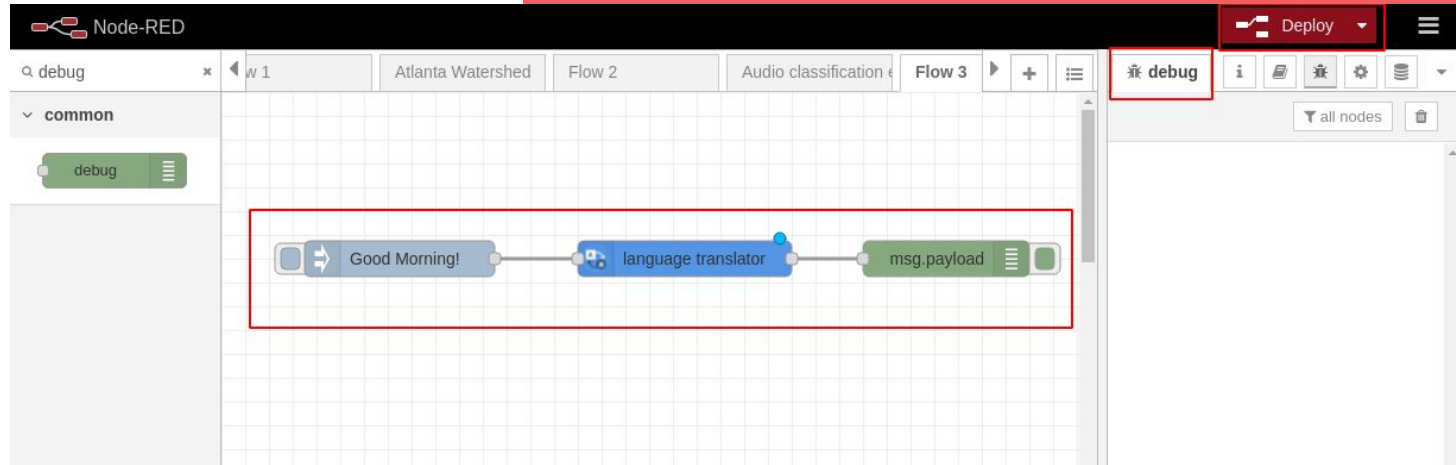
Target

Parameters ☒

Scope Not using translation utility

**Note:** When **not** using the language translation utility to set credentials then 'Not using translation utility' must be checked, else credentials will not be found.

# 3.5 Create Translation Flow - Debug



# 3.5 Create Translation Flow

The screenshot displays the Node-RED web interface. The main workspace contains a flow with three nodes: an inject node (labeled '1'), a 'Good Morning!' message node, a 'language translator' node, and a 'msg.payload' output node. A red box highlights the inject node. A notification banner at the top center reads 'Successfully injected: Good Morning!' with a red circle '2' next to it. On the right, the debug console shows two log entries. The first entry, at 5:15:11 PM, shows 'msg.payload : string[13]' and '¡Buenos días!'. The second entry, at 5:15:31 PM, also shows 'msg.payload : string[13]' and '¡Buenos días!'. A red box highlights the second log entry, and a red circle '3' is positioned below it.

```
graph LR; 1[1] --> GM[Good Morning!]; GM --> LT[language translator]; LT --> MP[msg.payload];
```

Node-RED

debug

common

debug

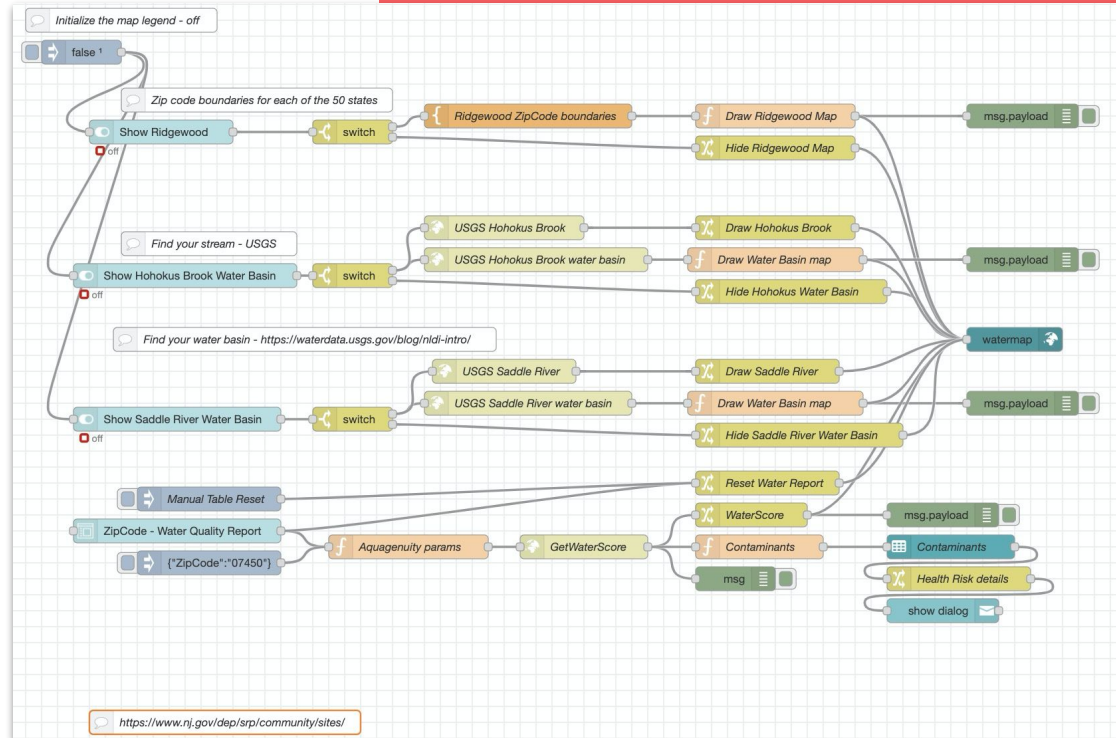
Successfully injected: Good Morning! 2

5/9/2021, 5:15:11 PM node: 39f09feb.6c0c1  
msg.payload : string[13]  
"¡Buenos días!"

5/9/2021, 5:15:31 PM node: 39f09feb.6c0c1  
msg.payload : string[13]  
"¡Buenos días!" 3

# 4. Import Clean Water Flow

<http://bit.ly/cfc-clean-water>





# Use Cases

1. IoT with IBM IoT Platform
  2. Backend Services (HTTP Nodes)
  3. Artificial Intelligence
    - a. Watson
    - b. MAX
  4. Dashboards
  5. Try out APIs
  6. Home Automation
  7. Chatbots
  8. MQTT
  9. Message Hubs
  10. Web Sockets
-

# Uh oh!

❏ If you already have a Cloudant account, you need to use that as only one cloudant lite account is allowed in the free account

## Cloudant★

★ = You have existing instances of this service available to use in this kit. If you wish to use the existing service, select it from the pricing plan menu.

Region

Dallas



Resource group

Default



### Warning



Only one instance of a Lite plan per service is allowed. To create a new service instance, either delete your existing Lite plan service instance, or select a paid plan before continuing. You can also use your existing Lite plan service instance with the application.

Pricing plan

✓ Lite

Standard

Dedicated Hardware

Standard on Transaction Engine

Or select an existing instance

Cloudant-tu