

Deploying a Full Stack Node.js Application to IBM Bluemix



IBM Cloudant[®]

Interactivity Tips

1. Ask A Question 

2. Download a PDF copy of today's presentation 

3. Social Networking Tools  

Deploying a Full Stack Node.js Application to IBM Bluemix

IBM Bluemix Webinar

Tuesday, June 16, 2015

Bradley Holt, Developer Advocate

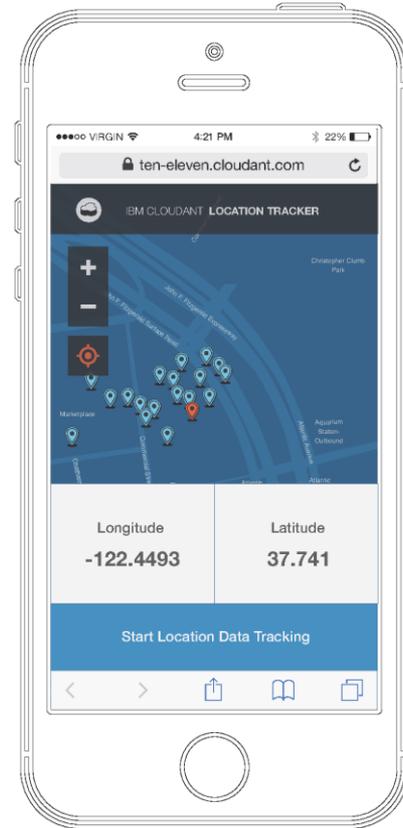
@[BradleyHolt](#)



IBM Cloudant[®]

Location Tracker

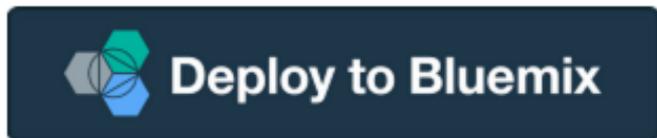
- Stores data locally in PouchDB
- Front end built with AngularJS
- Authentication logic built with Node.js
- User interface built with Leaflet
- Replicates location data to Cloudant
- More info:
<https://cloudant.com/location-tracker/>



Deploy to IBM Bluemix

One-Click Deployment

The fastest way to deploy the Location Tracker app to Bluemix is to click the **Deploy to Bluemix** button. Then skip ahead to learn how [edit online or locally](#).



Don't have a Bluemix account? If you haven't already, you'll be prompted to sign up for a Bluemix account when you click the button. Sign up, verify your email address, then return here and click the the **Deploy to Bluemix** button again. Your new credentials let you deploy to the platform and also to code online with Bluemix and Git. If you have questions about working in Bluemix, find answers in the [Bluemix Docs](#).

Location Tracker Part 3: <https://cloudant.com/location-tracker/>

Deploying Manually



IBM Cloudant®

Clone from GitHub

```
$ git clone https://github.com/cloudant-labs/location-tracker-nodejs.git
```

```
$ cd location-tracker-nodejs
```

Sign up for IBM Bluemix

- Deploy with one command
- Based on Cloud Foundry
- Sign up at:
<https://bluemix.net/>



Install the Cloud Foundry CLI

- Allows you to deploy and modify applications and service instances
- Set up instructions available at:
https://www.ng.bluemix.net/docs/#starters/install_cli.html
- Installers and binaries for Debian, Red Hat, Mac OS X, Windows, and other Linux systems available at:
<https://github.com/cloudfoundry/cli/releases>

Configure the Cloud Foundry CLI

1. Connect to Bluemix using the `cf api` command. For example:
`$ cf api https://api.ng.bluemix.net`
2. Log in to Bluemix using the `cf login` command. For example:
`$ cf login -u john.doe@acme.com -o john.doe@acme.com -s myspace`
3. Don't deploy to Bluemix quite yet!

Create a Cloudant Service

```
$ cf create-service cloudantNoSQLDB Shared cloudant-location-tracker-db
```



ORG: bradley.holt@u... ▾



Type to search



+ Create a Space

dev ▾

CF APPS (4)

SERVICES (4) ←

CONTAINERS (0)

VIRTUAL MACHINES (0)

Deploy your app the way you want

Choose the right infrastructure for each project. Click an option to learn more and get started.



CLOUD FOUNDRY



IBM CONTAINERS



VIRTUAL MACHINES

Cloud Foundry



APP HEALTH



ORG: **bradley.holt@u...**



Type to search



+ Create a Space

dev

CF APPS (4)

SERVICES (4) >

Cloudant NoSQL DB-ok

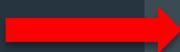
cloudant-location-tracker-db

cloudant-location-tracker-db-v01

deployment-tracker-db

CONTAINERS (0)

VIRTUAL MACHINES (0)



+
ADD A SERVICE OR API

Cloudant NoSQL DB-ok
Cloudant NoSQL DB
cloudant
Plan: Shared

cloudant-location-tracker-db
Cloudant NoSQL DB
clouda...
Plan: Shared

cloudant-location-tracker-db-v01
Cloudant NoSQL DB
Unbound Service

deployment-tracker-db
Cloudant NoSQL DB
deploy...

Category

- Watson
- Mobile
- DevOps
- Web and Application
- Integration
- Data Management
- Big Data
- Security
- Business Analytics
- Internet of Things

Support

- IBM
- Third Party
- Community
- Beta

Data Management

Agile data management and refinement



Cloudant NoSQL DB
IBM



DataWorks
IBM



Object Storage
IBM BETA



Object Storage (v2)
IBM BETA



SQL Database
IBM



ClearDB MySQL Database
Third Party



ElephantSQL
Third Party



MongoLab
Third Party



Redis Cloud
Third Party

Big Data

Harness the power





Cloudant NoSQL
DB
IBM

PUBLISH DATE
6/5/2015

TYPE
Service

LOCATION
US South

[VIEW DOCS](#)

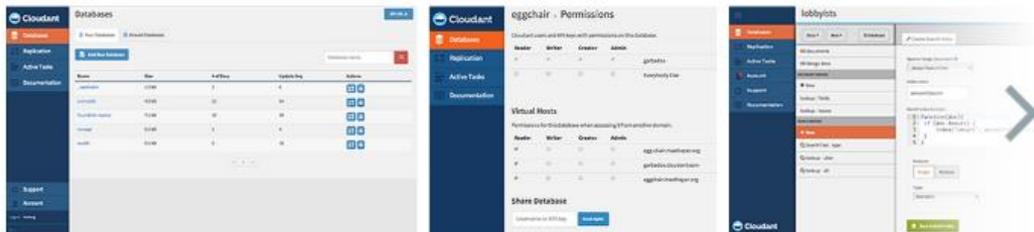
Cloudant NoSQL DB provides access to a fully managed NoSQL JSON data layer that's always on. This service is compatible with CouchDB, and accessible through a simple to use HTTP interface for mobile and web application models

• **Ease of Use**

Work with self-describing JSON documents through a RESTful API that makes every document in your Cloudant database accessible as JSON via a URL. Documents can be retrieved, stored, or deleted individually or in bulk and can also have files attached. IBM takes care of the provisioning, management, and scalability of the data store, freeing up your time to focus on your application.

• **Powerful search, sync and more**

With extremely powerful indexing, real time MapReduce and Apache Lucene-based full-text search, Cloudant NoSQL DB makes it easy to add advanced data analytics and powerful data access. Data access can also extend to Cloudant Sync, enabling data access from mobile devices and client apps to run connected or off-line.



Add Service

App:

Leave unbound

Service name:

cloudant-location-tracker-db

Selected Plan:

Shared

CREATE

Pick a plan

Monthly prices shown are for country or region: [United States](#)

Plan	Features	Price
✓ Shared	20 GB of free data storage 500,000 light API calls free per month	\$1.00 USD/GB \$0.03 USD/1000 light API Calls

IBM Cloudant

- Globally distributed data layer for web and mobile applications
- MongoDB-style queries
- Advanced geospatial capabilities
- Full text search indexing



JSON Documents

```
{
  _id: "6EF9D2B0-13D3-1378-8D30-39E3CE0B36C2",
  _rev: "1-0b457efcf82fb29492ef927ba5b6ee15",
  type: "Feature",
  geometry: {
    type: "Point",
    coordinates: [
      -71.1028,
      42.3691
    ]
  },
  properties: {
    session_id: "3486b13f-7b8a-8a96-dfbf-9b82800e367f",
    timestamp: 1422928591717
  }
}
```

Deploy!

\$ cf push

← Back to Dashboard... ▾

cloudant-location-tracker

Overview >

SDK for Node.js™

Files and Logs

Environment Variables

Start Coding

SERVICES

Cloudant NoSQL DB



cloudant-location-tracker

Routes: [cloudant-location-tracker.mybluemix.net](#) [cloudant-location-tracker-accommodativ...](#)

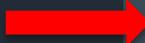
+1 more ▾



ADD GIT ⚙️

 SDK FOR NODE.JS™	INSTANCES:	MEMORY QUOTA:	AVAILABLE MEMORY:	SAVE
	1	128	704.0 MB ?	RESET

(MB per Instance)



+ ADD A SERVICE OR API

+ BIND A SERVICE OR API

 **Cloudant NoSQL DB** ⚙️
cloudant-location-trac...
Shared

Show Credentials ^ Docs



APP HEALTH **RESTART**

✔️ Your app is running. **STOP**

ACTIVITY LOG

- 6/15/15 3:28 PM **bradley.holt@us.ibm.com** started **cloudant-location-tracker** app
- 6/15/15 3:28 PM **bradley.holt@us.ibm.com** stopped **cloudant-location-tracker** app
- 6/15/15 3:28 PM **cloudant-location-tracker** an instance of the app crashed:
 - exit status: -1, **CRASHED**
- 6/15/15 **bradley.holt@us.ibm.com**

Estimate the cost of this app →



Track your location data and
save to your IBM Cloudant database

[Sign Up](#)

How it Works



IBM Cloudant®

Demo web application which records a device's location and saves this information to IBM Cloudant — Edit

168 commits

2 branches

0 releases

5 contributors

branch: master location-tracker-nodejs / +

communicate the reason for doing deployment tracking

rajrsingh authored 7 days ago

latest commit 739e4bcc4c

public	marker bottom center is now at the location of the point	2 months ago
routes	Rename variable to avoid confusion	a month ago
tutorial	Update tutorial.md	17 days ago
.cfignore	ignore .env file	5 months ago
.gitignore	ignore .env file	5 months ago
LICENSE.txt	Create LICENSE file	5 months ago
Procfile	Create separate admin script	2 months ago

Code

Issues 4

Pull requests 0

Wiki

Pulse

Graphs

Settings

SSH clone URL

git@github.com:cclou

You can clone with HTTPS SSH

Location Tracker Files

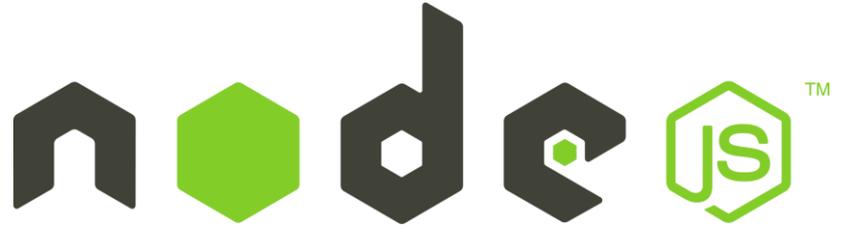
public	marker bottom center is now at the location of the point	2 months ago
routes	Rename variable to avoid confusion	a month ago
tutorial	Update tutorial.md	17 days ago
.cfignore	Ignore .env file	5 months ago
.gitignore	Ignore .env file	5 months ago
LICENSE.txt	Create LICENSE file	5 months ago
Procfile	Create separate admin script	2 months ago
README.md	communicate the reason for doing deployment tracking	7 days ago
admin.js	Track additional metadata	20 days ago
app.js	Look up user name when getting session info	2 months ago
manifest.yml	Declare Cloudant service and remove references to manually provisioni...	a month ago
package.json	Move all scripts to install section	18 days ago

The Application Manifest (manifest.yml)

```
---
declared-services:
  cloudant-location-tracker-db:
    label: cloudantNoSQLDB
    plan: Shared
applications:
- name: cloudant-location-tracker
  memory: 128M
  host: cloudant-location-tracker-#{random-word}
  services:
- cloudant-location-tracker-db
```

Node.js Buildpack

- Builds the application by installing the npm dependencies declared in package.json
- Executes any scripts declared in package.json
- Provides a Node.js runtime environment in which to start your application



Deploy Scripts (package.json)

```
{
  "name": "cloudant-location-tracker",
  "version": "0.0.0",
  "description": "A demo web application which records a device's location and saves this information",
  "main": "app.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1",
    "install": "./admin.js track && ./admin.js db put && ./admin.js api set_permissions",
    "start": "node app.js"
  },
  #
}
```

The Procfile (Procfile)

```
web: node app.js
```

Configuration

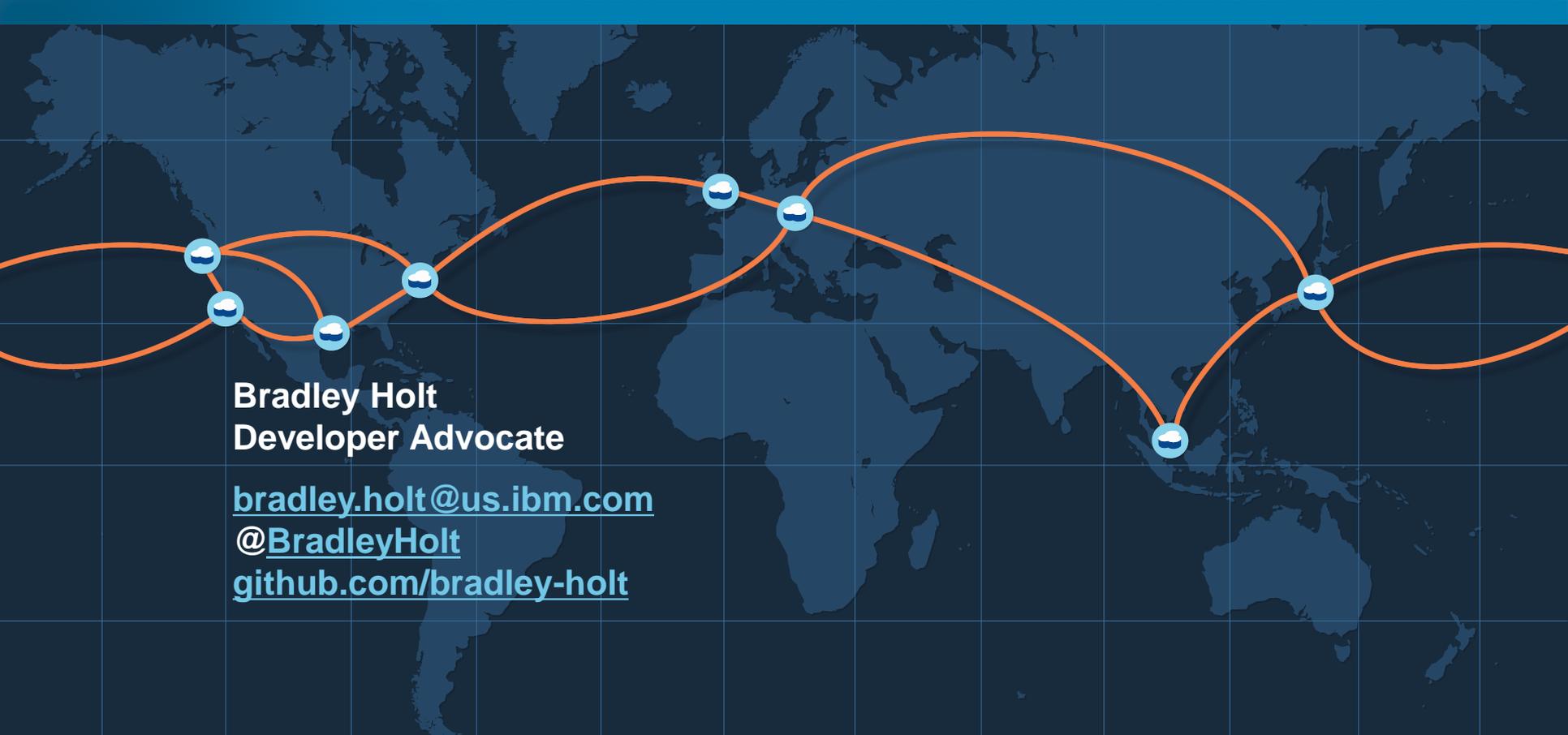
```
{
  "cloudantNoSQLDB": [
    {
      "name": "cloudant-location-tracker-db",
      "label": "cloudantNoSQLDB",
      "plan": "Shared",
      "credentials": {
        "username": "your-username",
        "password": "your-password",
        "host": "your-host",
        "port": 443,
        "url": "https://your-username:your-password@your-host"
      }
    }
  ]
}
```

Further Reading

- Location Tracker
<https://cloudant.com/location-tracker/>
- Cloudant Node.js library
<https://github.com/cloudant/nodejs-cloudant>
- PouchDB
<http://pouchdb.com/>
- Webinar: Integrate User Management and Cloudant Query into a Node.js/Cloudant Application
<https://cloudant.com/resources/webinars/>



IBM Cloudant®

A dark blue world map with a grid overlay. Several orange curved lines with small cloud icons at their endpoints are drawn across the map, connecting various geographical locations.

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github.com/bradley-holt



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Thank You

QUESTIONS?



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