

# Integrating with Cloudant by using an adapter

## What is Cloudant?

Cloudant is a NoSQL Database based on CouchDB that is included with the product as a component called IBM MobileFirst Cloudant Local Data Layer Edition. Cloudant is also available as a standalone installed product and as a Database as a Service (DBaaS) on IBM Bluemix and [cloudant.com](https://cloudant.com).

The Cloudant API is documented at <https://docs.cloudant.com/index.html>  
(<https://docs.cloudant.com/index.html>)

## Cloudant adapter

You can create and use a MobileFirst adapter to communicate with Cloudant.

The adapter within the sample that is provided with this module is an HTTP adapter.

- This adapter implements a subset of the Cloudant API.
- You can extend it to implement more Cloudant API

## Sample Application

The sample module contains an application that demonstrates the use of the adapter to store, list, and query a set of names and ages in a Cloudant-hosted database.

## Configuring the sample application

First, download and import the sample module.

Then, open the `CloudantAdapterDemo/adapters/CloudantAdapter/CloudantAdapter.xml` file.

The adapter uses basic authentication to connect to the Cloudant database. Enter your database location and username and password into the `CloudantAdapter.xml` file. You can obtain this information from Cloudant.

To avoid exposing the user credentials in `CloudantAdapter.xml`, you can leverage Cloudant support for API keys and passwords.

```
<?xml version="1.0" encoding="UTF-8"?>
<wl:adapter name="CloudantAdapter" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:wl="http://
www.ibm.com/mfp/integration" xmlns:http="http://www.ibm.com/mfp/integration/http">
  <displayName>CloudantAdapter</displayName>
  <description>CloudantAdapter</description>
  <connectivity>
    <connectionPolicy xsi:type="http:HTTPConnectionPolicyType">
      <protocol>https</protocol>
      <domain>mylogin.cloudant.com</domain>
      <port>443</port>
      <connectionTimeoutInMilliseconds>30000</connectionTimeoutInMilliseconds>
      <socketTimeoutInMilliseconds>30000</socketTimeoutInMilliseconds>
      <authentication>
        <basic/>
        <serverIdentity>
          <username>mylogin</username>
          <password>mypassword</password>
        </serverIdentity>
      </authentication>
    </connectionPolicy>
    <maxConcurrentConnectionsPerNode>4</maxConcurrentConnectionsPerNode>
  </connectivity>
</wl:adapter>
```

*<!-- Following properties used by adapter's key manager for choosing specific certificate from key store*

*<sslCertificateAlias></sslCertificateAlias>*

*<sslCertificatePassword></sslCertificatePassword>*

*-->*

*</connectionPolicy>*

*</connectivity>*

*<procedure name="createDB"/>*

*<procedure name="deleteDB"/>*

*<procedure name="getAllDocs"/>*

*<procedure name="updateDocs"/>*

*<procedure name="createDoc"/>*

*<procedure name="getDoc"/>*

*<procedure name="updateDoc"/>*

*<procedure name="deleteDoc"/>*

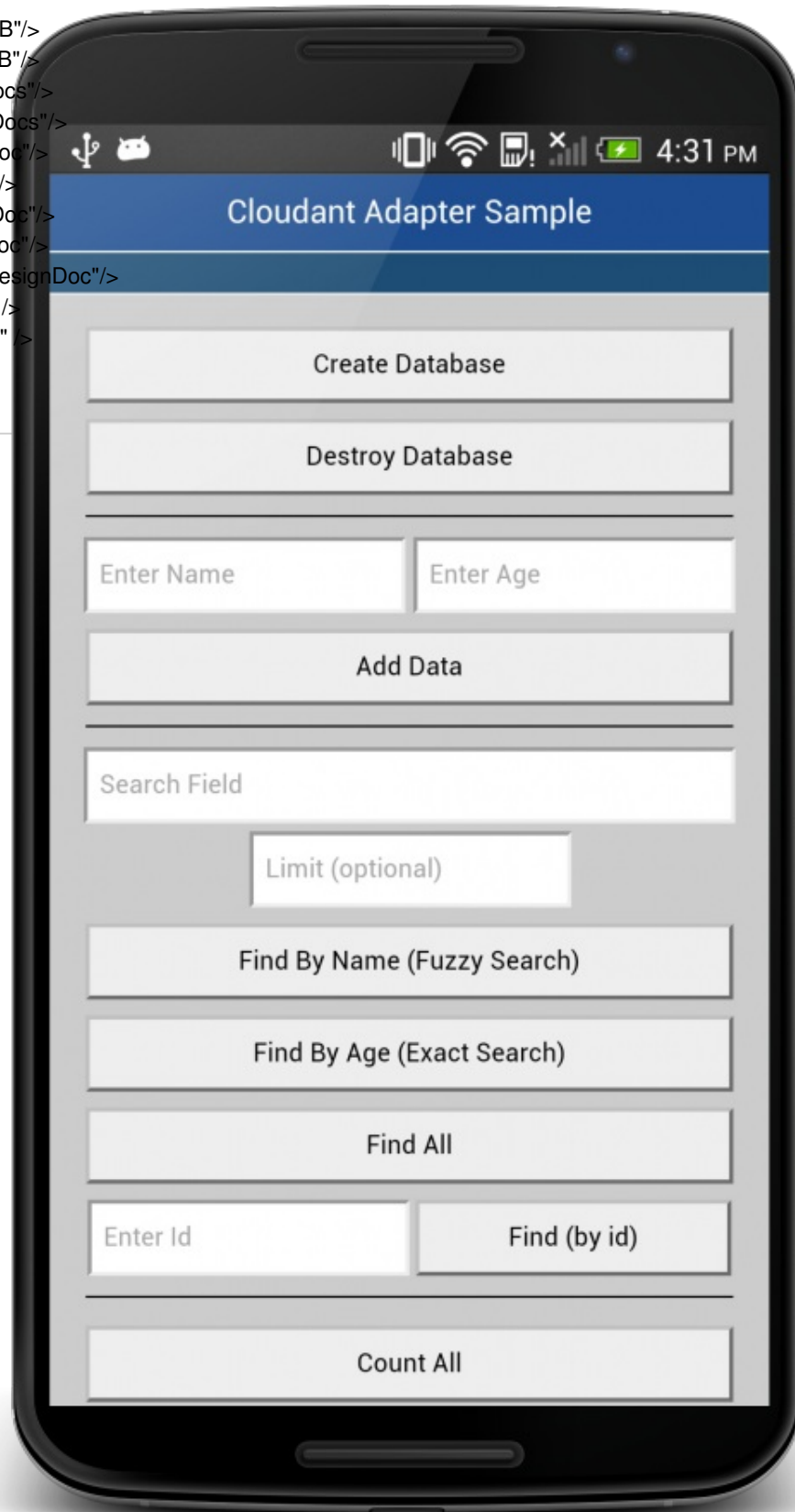
*<procedure name="createDesignDoc"/>*

*<procedure name="search" />*

*<procedure name="getView" />*

*</wl:adapter>*

## Starting the sample



application and adapter

Right-click adapters/CloudantAdapter and select **Run As > Deploy MobileFirst Adapter**.

Right-click apps/CloudantSampleApp and select **Run As > Run on MobileFirst Development Server**.

From the MobileFirst Platform Operations Console, select **Preview as Common Resources** (or view the app in the environment of your choice).

## Cloudant adapter methods

- `createdB (name)`  
Returns JSON result statement
- `deletedB (name)`  
Returns JSON result statement
- `getAllDocs (name, limit, include_docs)`  
Arguments:
  - `name` - database name
  - `limit` - limit on the number of docs
  - `include_docs` - whether or not to include the full body of the docs in the returnReturns JSON object with document information
- `updateDocs (name, updates)`  
Arguments:
  - `name` - database name
  - `updates` - list of objects to create or updateReturns JSON result statement
- `createDoc (name, doc)`  
Arguments:
  - `name` - database name
  - `doc` - JSON document to createReturns JSON result statement
- `getDoc (name, docID)`  
Arguments:
  - `name` - database name
  - `docID` - document IDReturns JSON document
- `updateDoc (name, doc)`  
Arguments:
  - `name` - database name
  - `docID` - document to updateReturns JSON result statement
- `createDesignDoc (name, docName, designDoc)`  
Arguments:
  - `name` - database name
  - `docName` - design doc name
  - `designDoc` - JSON design document to createReturns JSON result statement

- `search (name, designDocName, viewName, limit, include_docs, query)`

Arguments:

- `name` - database name
- `designDocName` - design doc name
- `viewName` - view name
- `limit` - limit on number of results
- `include_docs` - whether or not to include the full body of the docs in the return
- `query` - the query

Returns JSON document with results

- `getView (name, designDocName, viewName, group)`

Arguments:

- `name` - database name
- `designDocName` - design doc name
- `viewName` - view name
- `group` - if results must be grouped

Returns JSON documents from the view

## Using the Cloudant adapter in your app

To use the adapter in your app, copy the `CloudantAdapter` folder to your MobileFirst app.

Extend the adapter as needed with the functionality for your app.

## Sample application

Click to download

(<http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v700/CloudantAdapterDemoProject.zip>)  
the Studio project.