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.

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>
      <maxConcurrentConnectionsPerNode>4</maxConcurrentConnectionsPerNode>
      <!-- Following properties used by adapter's key manager for choosing specific certificate from key st
ore
      <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 return

  Returns JSON object with document information
- `updateDocs (name, updates)`
  Arguments:
  - `name` - database name
  - `updates` - list of objects to create or update

  Returns JSON result statement
- `createDoc (name, doc)`
  Arguments:
  - `name` - database name
  - `doc` - JSON document to create

  Returns JSON result statement
- `getDoc (name, docID)`
  Arguments:
  - `name` - database name
  - `docID` - document ID

  Returns JSON document
- `updateDoc (name, doc)`
  Arguments:
  - `name` - database name
  - `docID` - document to update

  Returns JSON result statement
- `createDesignDoc (name, docName, designDoc)`
  Arguments:
  - `name` - database name
  - `docName` - design doc name
  - `designDoc` - JSON design document to create

  Returns 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.