

# Integrating with Cloudant by using an adapter

Relevant to:



Hybrid

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## What is Cloudant?

Cloudant is a NoSQL Database based on CouchDB, which is included with the product as a component called IBM MobileFirst Cloudant Local Data Layer Edition. Cloudant is also available as a stand-alone installed product and as a Database-as-a-Service (DBaaS) on IBM Bluemix and `cloudant.com`.

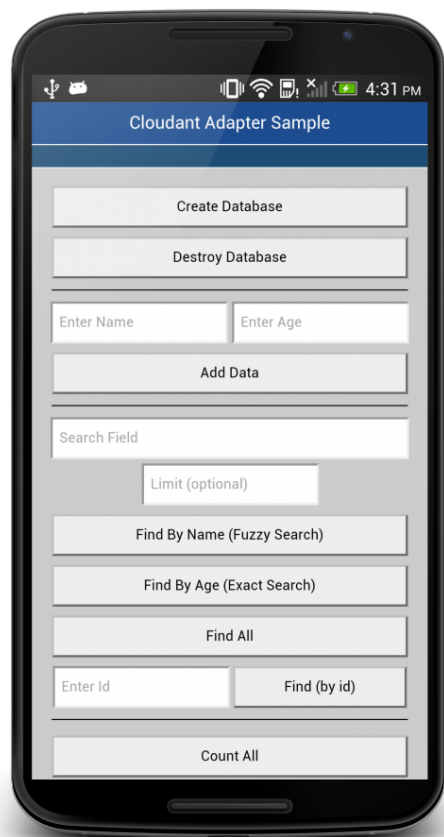
The Cloudant API is documented on the [IBM Cloudant Documentation](https://docs.cloudant.com/index.html) site at `https://docs.cloudant.com/index.html`.

## 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.



## Configuring the sample application

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

1. Download and import the sample module.
2. Open the `CloudantAdapterDemo/adapters/CloudantAdapter/CloudantAdapter.xml` file.  
The adapter uses basic authentication to connect to the Cloudant database.
3. 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"?>
<!--
```

```
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```

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```
-->
<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 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

1. Right-click **adapters/CloudantAdapter** and select **Run As > Deploy MobileFirst Adapter**.
2. Right-click **apps/CloudantSampleApp** and select **Run As > Run on MobileFirst Development Server**.
3. From the MobileFirst Operations Console, select **Preview as Common Resources** (or view the app in the environment of your choice).

## Cloudant adapter methods

- createDB (name)

Returns the JSON result statement.

- `deleteDB (name)`

Returns the JSON result statement.

- `getAllDocs (name, limit, include_docs)`

Arguments:

- `name`: The database name
- `limit`: The limit on the number of docs
- `include_docs`: Whether to include the full body of the docs in the returned object.

Returns a JSON object with document information.

- `updateDocs (name, updates)`

Arguments:

- `name`: The database name
- `updates`: The list of objects to create or update

Returns a JSON result statement.

- `createDoc (name, doc)`

Arguments:

- `name` – database name
- `doc` – JSON document to create

Returns JSON result statement

- `getDoc (name, docID)`

Arguments:

- `name`: The database name
- `docID`: The document ID

Returns a JSON document.

- `updateDoc (name, doc)`

Arguments:

- `name`: The database name
- `docID`: The document to update

Returns a JSON result statement.

- `createDesignDoc (name, docName, designDoc)`

Arguments:

- `name`: The database name
- `docName`: The design doc name
- `designDoc`: The JSON design document to create

Returns a JSON result statement.

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

Arguments:

- `name`: The database name
- `designDocName`: The design doc name
- `viewName`: The view name
- `limit`: The limit on number of results
- `include_docs`: Whether to include the full body of the docs in the returned document
- `query`: The query

Returns a JSON document with results.

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

Arguments:

- `name`: The database name
- `designDocName`: The design doc name
- `viewName`: The view name
- `group`: Whether the 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, and then extend the adapter as needed with the functionality for your app.

## Sample application

[Click to download](#) the MobileFirst project.