



Oracle NoSQL Database cloud – Developer On- Boarding

Getting Productive Sooner with Oracle NoSQL Database cloud SDK

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INTRODUCTION

Oracle NoSQL Database cloud is a fully managed NoSQL database cloud service for today's most demanding applications that require predictable low latencies, flexible data models, and elastic scaling for dynamic workloads.

Developers focus on application development without dealing with the hassle of managing back-end servers, storage expansion, cluster deployments, software installation/patches/upgrades, backup, operating systems, and high availability configurations.

Oracle is providing developers the tools necessary to develop applications on their local machine before deploying to the Oracle cloud. Developers can create and debug their applications (the client) and connect to a localized, simulated Oracle NoSQL Database cloud environment (the server) before connecting to their real Oracle NoSQL Database cloud environment.

COMPONENTS AND ARCHITECTURE

The Oracle NoSQL Cloud SDK (SDK) contains two components:

- Oracle NoSQL Cloud Simulator
- Examples and build/run scripts

The Oracle NoSQL Cloud Java Driver contains the client components.

Figure 1 shows the relationship between the different components for Java only:

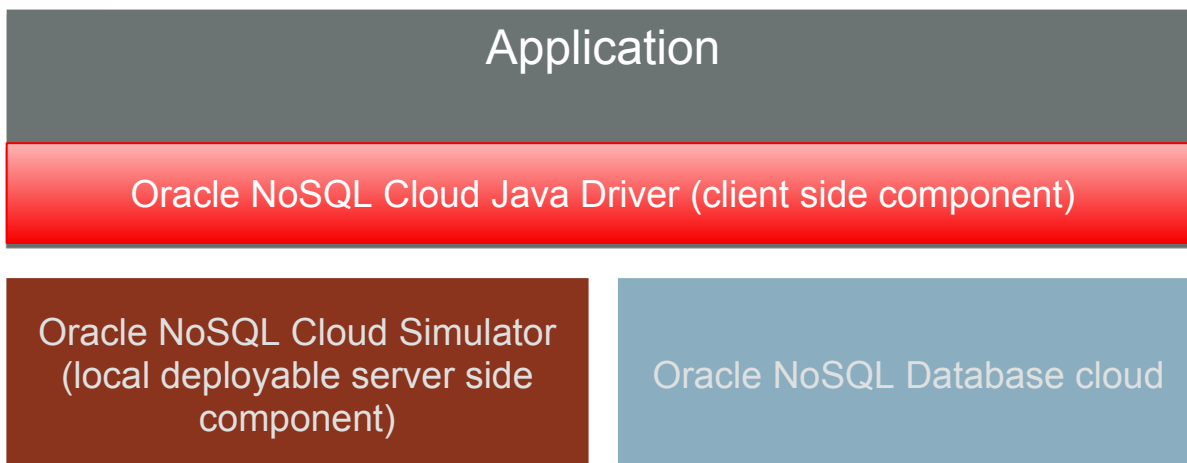


Figure 1 - Oracle NoSQL Cloud SDK Components\ and the client driver

Oracle NoSQL Cloud Simulator is not allowed for production environments.

Oracle NoSQL Cloud Java Driver is the Java client API's which can be used to build an application that can run either against Oracle NoSQL Cloud Simulator or Oracle NoSQL Database cloud.

PERSONAS

Application Developers designing cloud applications

- Developers write code that can be built, debugged and tested in their local environments using Oracle NoSQL Cloud Simulator and Oracle NoSQL Cloud Java Driver (referred as the “client driver” in the rest of this document). Then, with minor changes the application can be connected to the Oracle NoSQL Database cloud.
- Developers use Oracle NoSQL Cloud Simulator to troubleshoot issues locally without impacting their production operations in the cloud.
- A developer would download files from the Oracle NoSQL OTN page, namely the SDK and the client driver:

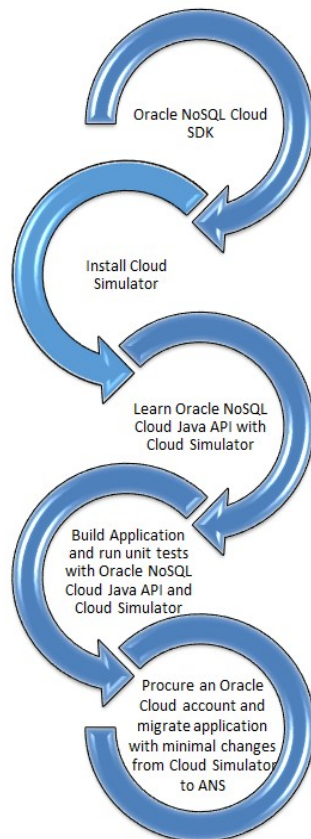


Figure 2 - Developer Workflow

Developers can download SDK and client driver from [Oracle Cloud download page](#)

For reference, the javadoc for the NoSQL client driver API is located in the parent directory of the untarred SDK under `/java/Javadoc`.

- After downloading and unbundling the .zip or .tar.gz files, developers can quickly start developing for Oracle NoSQL Cloud Simulator:
 - Start and run the Oracle NoSQL Cloud Simulator as a background process.
 - Write an application in Java that uses classes from the client driver to connect to the Oracle NoSQL Cloud Simulator and perform read/write operations to a local implementation of the data storage.
- After downloading and unbundling the .zip or .tar.gz files, developers can quickly start developing for Oracle NoSQL Database cloud:
 - Unlike an application written for the Cloud Simulator, an application running against Oracle NoSQL Database cloud needs to handle authorization and authentication.
 - Create a `DefaultAccessTokenHandler` object which should have the access token associated with the cloud account. This handler should be set when creating a connection with Oracle NoSQL Database cloud. The `DefaultAccessTokenProvider` method takes two parameters, an `entitlementId` and an `idcsurl`. Both of these can be gotten from the Application Administrator (the person that set up the Oracle NoSQL Database cloud service). The `entitlementId` represents a permission to use the service, and the `idcsurl` is the url for the Oracle cloud identity service. A step by step guide to setting up an application for connecting to Oracle NoSQL Database cloud can be found in the [“Getting started with Oracle NoSQL Database cloud” guide](#).

The following are the code changes that must be made to change the connection from the local system to Oracle NoSQL Database cloud:

```
URL serviceURL =
    new URL("https", "ans.uscom-east-1.oraclecloud.com", 443, "");
    NoSQLHandleConfig config = new NoSQLHandleConfig(serviceURL);
    config.setAuthorizationProvider(new
DefaultAccessTokenProvider(entitlementId, idcsurl));
    /*
    * Open the handle
    */
    NoSQLHandle handle = NoSQLHandleFactory.createNoSQLHandle(config)
```

DATA FLOWS

Below is a logical diagram of how an application would connect to the Oracle NoSQL Cloud Simulator.

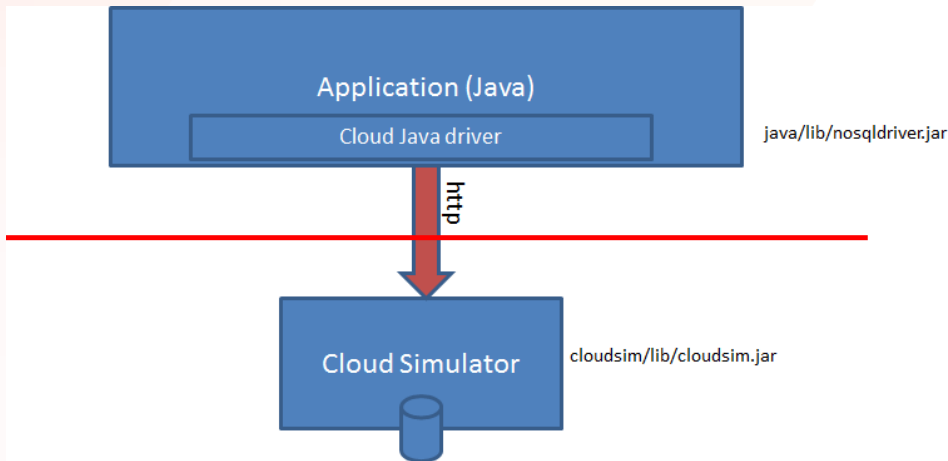


Figure 3 - Relationship between components for Oracle NoSQL Cloud Simulator

Once the developer is confident running the application using the Oracle NoSQL Cloud Simulator they can run the application with the addition of authentication credentials/access tokens using Oracle NoSQL Database cloud.

The application logic and code remains the same between using Oracle NoSQL Cloud Simulator and Oracle NoSQL Database cloud.

Below is a logical diagram of how an application would connect to Oracle NoSQL Database cloud.

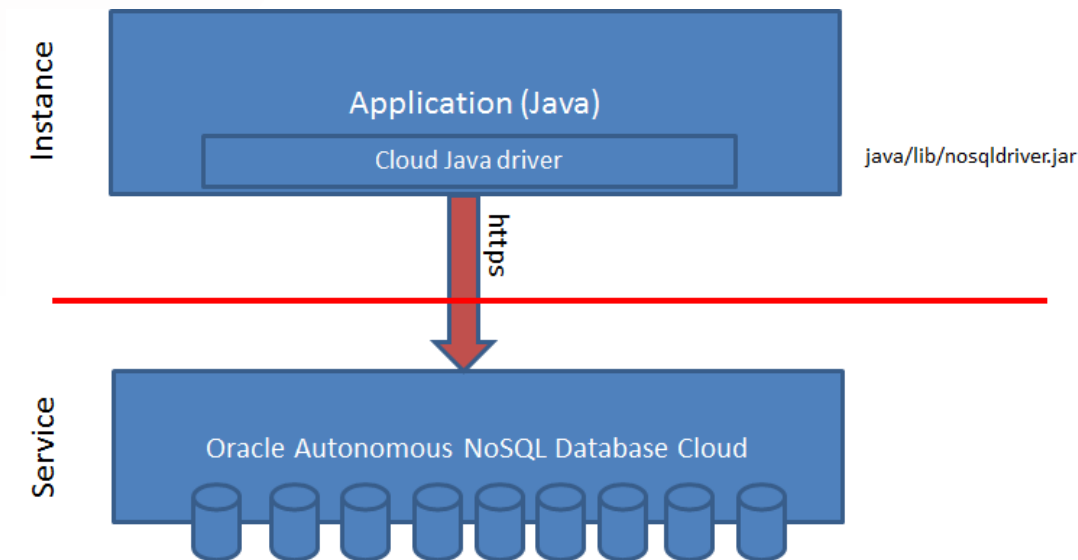


Figure 4 - Relationship between components for connecting to Oracle NoSQL Database cloud

ORACLE NOSQL CLOUD SIMULATOR

The Oracle NoSQL Cloud Simulator allows application developers to start developing Oracle NoSQL Database cloud applications without having to purchase or use any Oracle NoSQL Database cloud credits.

- Developers can take advantage of the Oracle NoSQL Cloud Simulator and run the storage service as a background process in a developer's local environment.
- The Oracle NoSQL Cloud Simulator supports all the client API's that are required to communicate with Oracle NoSQL Database cloud.
- Developers can design, build and test all functionality using the Oracle NoSQL Cloud Simulator utility before running the application against Oracle NoSQL Database cloud.

Assumptions and Requirements

- The Oracle NoSQL Cloud SDK can be used on standalone/local development environments on Windows, Mac and Linux platforms for development and test.
- Developers should have Java Developer Kit (JDK) Version 10 installed on their client systems.
- If there are questions regarding the API for Oracle NoSQL Cloud Simulator, send an email to:

oraclenosql-info_ww@oracle.com with Oracle NoSQL Cloud Simulator in the subject line.

ORACLE NOSQL CLOUD SIMULATOR COMPARED TO ORACLE NOSQL DATABASE CLOUD

The server instance created in Oracle NoSQL Cloud Simulator supports relatively limited aggregate throughput. The operations depend on the speed and capability of the machine running the Simulator. By comparison Oracle Database NoSQL cloud includes scalability, availability and durability features which make it ideal for production use.

- Oracle NoSQL Cloud Simulator is for development and testing purposes.
- Multiple instances of Oracle NoSQL Cloud Simulator must not be started against the same root directory. It assumes exclusive control over the data storage.
- Oracle NoSQL Cloud Simulator doesn't support or require security-relevant configuration.
- No hard limits are enforced for number of tables, size of tables, number of indexes or maximum throughput specified for tables
- By default, read operation consistency is *Eventual*, but might seem strongly consistent since the server runs locally.
- If *-throttle* option is not enabled some data operations may still appear throttled based on the limits assigned to a table. For development purposes it is recommended not to enable *-throttle* and instead assign very high table limits. Enable the *-throttle* option only if this type of testing is necessary for your application.
- DDL Operations such as table create/drop, index create/drop, are not throttled.

- The Oracle NoSQL Cloud Simulator does not maintain a operation history.

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Integrated Cloud Applications & Platform Services

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