Oracle® NoSQL Database Integration with SQL Developer



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Oracle NoSQL Database Integration with SQL Developer, Release 20.2

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Preface

This document describes how to integrate Oracle NoSQL Database with Oracle SQL Developer.

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Conventions

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

The following text conventions are used in this document:

Introduction to Integrating Oracle NoSQL Database with Oracle SQL Developer

This chapter provides information on how to install and use Oracle SQL Developer to develop and view Oracle NoSQL Database stores and data.

Oracle SQL Developer is an integrated development environment designed to simplify the development and management of Oracle Database.

Note:

Oracle SQL Developer does not support Oracle NoSQL Database table and data creation, modification, and deletion.

See Also:

- "Oracle NoSQL Database"
- "Prerequisites"
- "Oracle SQL Developer Installation"
- "Viewing Oracle NoSQL Database Using Oracle SQL Developer"
- "Exploring Oracle NoSQL Database Store Using Oracle SQL Developer"

Prerequisites

Following are the prerequisites to install Oracle SQL Developer 4.2 in an Oracle Unix environment to use with Oracle NoSQL Database.

- Oracle Linux Operating System
- JDK 8 or above
- Oracle NoSQL Database
- Oracle SQL Developer 4.2 or greater

Oracle SQL Developer Installation

This section describes how to install Oracle SQL Developer.

To install Oracle SQL Developer and the .jar file necessary for it to connect to an Oracle NoSQL Database store, perform the following tasks:



1. Download and install JDK 8 to your Oracle Linux Operating System environment. For more information, see *Download Oracle SQL Developer and JDK 8*.



- 2. Install Oracle SQL Developer by following the steps below:
 - a. Download Oracle SQL Developer.
 - b. Install Oracle SQL Developer.
 - c. Start Oracle SQL Developer to verify installation.

Note:

The details about client/server version can be found here at Oracle Technology Network.

See Also:

- "Download Oracle SQL Developer and JDK 8"
- "Install Oracle SQL Developer"
- "Start Oracle SQL Developer to Verify Installation"



Viewing Oracle NoSQL Database Using Oracle SQL Developer

To use Oracle SQL Developer, you must create a connection to the Oracle NoSQL Database store.

For information about security considerations for NoSQL data stores, see Installation Configuration Parameters in the *Administrator's Guide*.

To create a connection to the Oracle NoSQL Database, perform the following steps:

1. Confirm that a kvstore is up and running. In the examples below, kvlite is used. To start kvlite, enter the following command in a terminal:

java -Xmx64m -Xms64m -jar \$KVHOME/lib/kvstore.jar kvlite

KVHOME refers to the directory where you have installed Oracle NoSQL Database. This command assumes that Oracle NoSQL Database is installed in the local machine.

- 2. A single node kvstore instance is created and opened using the default parameter values. Do not close this terminal as it shuts down kvlite.
- 3. To verify that kvlite is running, enter the following command in a new terminal:

```
java -Xmx64m -Xms64m -jar $KVHOME/lib/kvstore.jar ping -host localhost -port 5000
```

- 4. The output shows that a kystore is up and running successfully.
- 5. Open SQL Developer.

Note:

By default, Oracle NoSQL Database stores are installed with security being enabled, but you must check with your store's administrator to find out whether your store was installed with or without security.

Connecting to a Secure Oracle NoSQL Database Store

To connect to a secure Oracle NoSQL Database store, follow the steps below:

- 1. Obtain the SSL security files (client.trust and client.security) from your store's administrator that is used by an Oracle NoSQL Database client to connect to the store. This file was generated during the installation process of your secured store. Place these files on your local hard drive.
- 2. Open SQL Developer and click + in the Connections tab.







3. Choose New Oracle NoSQL Connection.

Figure 2-2 New Oracle NoSQL Connection

Connections	× =
New Connection	
New Oracle NoSQL Connection	
New Cloud Connection	

- 4. Enter your Connection Name, for example Oracle NoSQL Connection, and also the Username and Password that you use to log in to the Oracle NoSQL Database store.
- 5. Select SSL in the Security section. Provide the paths to the client.trust and client.security files that you placed locally on your machine. Note that after configuring and starting the KVStore successfully, you can see that the security directory is created and the security files are available to use. To know more details about the security files and the installation, contact your Oracle NoSQL Database administrator. See Security Configuration in the Security Guide.

<u>_</u>		
Password:	•••••	
<u>H</u> osts:	localhost:5000	
<u>S</u> tore:	kvstore	
ecurity		
<u>S</u> SL:		
<u>T</u> rustStore:	u01/nosql/kvroot/security/client.trust	<u>B</u> rowse
Oracle <u>W</u> alle	et: u01/nosql/kvroot/security/user.wallet	<u>B</u> rowse
P <u>r</u> operties F	ile: J01/nosql/kvroot/security/user.security	<u>B</u> rowse
11.14		Consel

Figure 2-3 Security Installation



6. The new secured connection is now listed in the Connections tab.

Figure 2-4 Listed NoSQL Connection



Connecting to a Non-Secure Oracle NoSQL Database Store

To connect to a non-secure Oracle NoSQL Database store, perform the following steps:

1. Open SQL Developer and click + in the Connections tab.

Figure 2-5 Connections Tab



2. Choose New Oracle NoSQL Connection.

Figure 2-6 New Oracle NoSQL Connection



3. Provide a name for the new connection. Key in the values for Hosts and Store, and click $\ensuremath{\mathsf{OK}}$.



New	Dracle NoSQL Con	nection
Connection <u>N</u>	lame: NoSQL_Connectio	n
Store		
<u>U</u> sername:		
Password:		
<u>H</u> osts:	localhost:5000	
<u>S</u> tore:	kvstore	
Security <u>S</u> SL: TrustStore:		Browse
Oracle <u>W</u> all	et:	Browse
P <u>r</u> operties	File:	<u>B</u> rowse
<u>H</u> elp	ОК	Cancel

Figure 2-7 Provide Name and Enter Values for New Connection

4. The new connection is now listed in the Connections tab.

Figure 2-8 Listed NoSQL Connection





3

Exploring Oracle NoSQL Database Store Using Oracle SQL Developer

Oracle SQL Developer provides a read-only interface to Oracle NoSQL Database stores. It does not currently support table creation, data creation, modification, or deletion.

See the following:

- To create, modify, or delete tables, execute the appropriate DDL statements against the store, see Table Management in the SQL Reference Guide.
- To load data into your table(s), modify it, or delete the data, see Data Row Management in the *SQL Reference Guide*.

Alternatively, you can use the Oracle NoSQL Database Admin Command Line Interface (CLI) to load your table data using the put table command. See Introduction to the SQL Shell in the SQL Beginner's Guide.

Follow the steps below to view the tables and table data in your store:

- 1. Click the + under Oracle NoSQL Connection to view the tables currently available in the store.
- 2. Click each table to view its child tables, if any have been created for it.
- 3. Expand the accounts table. You should see a nested table listed for this table.



Connections	×
🕂 - 🚱 🝸 🔁	
Connections	
🗿 Oracle NoSQL Connections	
E 🚮 NoSQL_Connection	
🖨 📲 Tables	
products	
🚊 📲 user	
🚊 🛄 accounts	
🛓 🎹 transaction	
🕀 🛄 ebcard	
i redemption	
Cloud Connections	

4. To view the schema definition for a table, double-click the products table.



Figure 3-2 Products Table

Connections	🖃 🕐 Start Page 👋 🛄 pro	oducts ×				
	Columns Data Indexes	Child Tables De	etails Mo	del		
Oracle NoSQL Connections	t Column Name	🚯 Data Type 🚯	Nullable	🕴 Default Value	🕀 Column ID	Comment
NoSQL_Connection	1 prodCat	STRING	~		1	
Tables	2 prodid	STRING	~		2	
	3 prodName	STRING	~		3	
accounts	4 stock	INTEGER	~		4	
🗄 🛄 transaction	5 price	INTEGER	~		5	
 ⊕ ebcard ⊕ ebcard ⊕ edcmption ○ Cloud Connections 						

5. Click Columns to view Column Name, Data Type, and value specification.

Figure 3-3 Columns Tab

) Star	t Page 👘 🛄 pro	oducts ×				
olumn	s Data Indexes	Child Tables	Details Mo	odel		
r (42)						
	🕀 Column Name	🚯 Data Type	🚯 Nullable	🚯 Default Value	🕴 Column ID	🚯 Comment
1	prodCat	STRING			1	
2	prodid	STRING			2	
З	prodName	STRING	 Image: A start of the start of		3	
4	stock	INTEGER	 Image: A start of the start of		4	
5	price	INTEGER			5	

6. Click Data to view table data.

Figure 3-4 View Table Data

	prodCat	<pre> prodid </pre>	🚯 prodName	stock 🕸	price
1	camera	1	nikon	12	145
2	electronics	1	philips mp3 player	15	79
з	mobiles	1	nokia 1100	4	67
4	electronics	2	dry iron	2	55
5	electronics	4	toaster	6	34
6	kitchenware	1	tava	5	15
7	electronics	3	bose speaker	3	150

7. Click Child Tables to view the child tables available for the corresponding parent table.



Figure 3-5 View Child Tables

Star	t Page 🔺 🛄 i	user ×		
Column 📌 🚯	s Data Indexe	es Child Tables De	tails Mode	l
	🚯 Table Name	🚯 Full Table Name	Version	Description
1	accounts	user.accounts	1	
2	ebcard	user.ebcard	1	
3	redemption	user.redemption	1	

Note:

- You can query (read) Oracle NoSQL Database data while simultaneously accessing an Oracle Database.
- If your Oracle SQL Developer is of a version earlier than 4.2, and you receive incompatibility issues due to discrepancy in different version numbers across NoSQL client and NoSQL server, ensure to import the supporting Oracle NoSQL JAR files to the Oracle SQL Developer library to view the Oracle NoSQL Database tables and the corresponding data successfully.

See Also:

- "Table Data Definition Language Overview"
- "Getting Started with Oracle NoSQL Database Tables"
- "Admin Command Line Reference (CLI) put table"
- "Introduction to Integrating Oracle NoSQL Database with Oracle SQL Developer"



4 Upgrading Oracle NoSQL Database Support via Check for Updates

You can upgrade the NoSQL Server by using the SQL Developer ${\tt Check\ for\ Updates\ feature.}$

1. Ensure that you have installed Oracle SQL Developer. See Oracle SQL Developer Installation.

The following screen is displayed.

B Oracle SQL Developer : Start Page			
Eile Edit View Navigate Bun Te.	am Iools Window Help	Automation	
Connections → ○ ②	Start Page - ORACLE	E	
Database Schema Service Connections	Ge	t Started	Community
	Overview Video	Featured Tutorials	Featured Online Demonstrations
	What's New	Optimizer Access Paths	Database Copy
	Release Notes	SQL Tuning Advisor	Reporting Features
	Documentation	Working with Tuning Utilities	Oracle Data Pump Feature
	SQL Developer on OTH		
Reports		All Online Tutorials	All Online Demonstrations
All Reports Analytic View Reports Data Dictionary Reports			
Data Modeler Reports OLAP Reports Data TimesTen Reports Duser Defined Reports	Show on Startup	Copyright 🕲 :	2005, 2017, Grade and/or its affiliates. All rights reserved.

Figure 4-1 Start Page

2. Choose Help-> Check for Updates.



Connections		SQL DEVELOPER	
Database Schema Service Connections	Check for Updates	- Step 1 of 4	×
	Select update so	nce	10
	Source	Search for updates published to Update Centers, or Install an update from a bundle you have already downloaded. U Automatically check for updates at startup Sarch Update Centers: Proof Sarch	
	U Summery	Oracle SQL Developer Mitp://ipes.arable.com/pki/apas/dbiols/usage/dfu	Add
		energia sqc. beredesen oppustes traps//roptic-beredesen.arelybuilds/updates/updates.sent Oracle Extensions	
Reports C C C C C C C C C C C C C C C C C C C		Third Party SQL Developer Extensions http://www.eracle.com/ocom/groups/public/distry/documents/webcontent/160033.sml	
		that depend on OPatch will not be available. To view OPatch updates, please run IDeveloper in an admin mode. Distal Previ Local Field; Pile Issuer ch.	from .
	Help	< jack Boot > Ermit	Cancel

Figure 4-2 Check for Updates

3. Choose Add. The Update Center window is displayed.

Figure 4-3 Update Center Window



4. Enter a Name, for example Oracle NoSQL Updates, and browse to the update.xml file. To navigate to the updates.xml file, go to Oracle NoSQL Database in Oracle Technology Network, and choose the Downloads tab in the Download SQLDeveloper update.xml section.



Connections	Start Page		
Connections Oracle NoSQL Connectio Dotabase Schema Servi	001	CITLOFEA	
	Select update source	sep Lot 4	10
	Source Updates Download	Search for updates published to Update Canters; or install an update from a bundle you have already downloaded @ gutanatically check for updates at startup @ Search Update Centers: Progy Setting	l. 8
	C Summery	V Oracle SQL Developer	ⅆ
Reports		Internal SQL Developer Updates http://ropta.com/builds/updates/updates.aml Oracle Extensions http://www.aracle.com/acom/groups/public/@ath/documents/webcontent/162031.cml Third Party SQL Developer Extensions http://www.aracle.com/acom/groups/public/@ath/documents/webcontent/162033.cml Update Center Inter/	Eda

Figure 4-4 Enter Details of the Update Center

- 5. Choose Next (it checks for Internal SQL Developer Updates).
- 6. Select Oracle NoSQL Database and choose Next.

Figure 4-5 Select Updates to Install

u. Source	<u>Available</u> Updates:		
Updates	Q, Search	Show Upgrades Only	Oracle NoSQL Database
Download Summary	B- Database	batabase 12cR2.4.4.6	12.2.1.160.1335 Orade NoSQL Database support for SQL Developer Created By
			Orade Visit Homepage

- 7. Select the I Agree option in the License Agreement screen. You see that Oracle NoSQL Database is installed under Upgrades. Choose Finish.
- 8. Choose Yes to the window prompt, which asks for a restart of SQL Developer, to complete the installation steps.



This step completes the installation process.

Figure 4-6 Restart SQL Developer

Connections (2) Start Page			
• • • • • • • • • • • • • • • • •			
Database Schema Service Cernections	Ge	Get Storted	
	Overview Video	Featured Tutorials	Featured Online Demonstrations
	What's New	Optimizer Access Paths	Database Copy
	Release Notes	SQL Tuning Advisor	Reporting Features
	Documer Confirm Exit	finish installing updates, SQL Developer needs to	Oracle Data Pump Feature
Reports -/ III-	SQL Deve	you want to restart now?	All Online Demonstrations
)) All Reports (g) Analysis: Virum Reports (g) Analysis: Virum Reports (g) Data Nucleivir Reports (g) Data Nucleivi	Shew on Startup	Copyright (2005, 2017, Grade and/or its attildees. All rights reserv

9. Choose Help -> About and then choose the Extensions tab to see the installed Oracle NoSQL Database.

Figure 4-7 Extensions

oout Version Properties	Extensions			Export +
λ, onsd 🛛 😤				
lame	Identifier	Version	Status	Regis
racle NoSQL Database 12cR2.4.4.	6 oracle.sqldeveloper.onsd	12.2.1.160.1439	Fully Loaded	

Uninstalling Updates

To uninstall the updates for Oracle NoSQL Database, choose Tools -> Features. Go to the Installed Updates tab and select Oracle NoSQL Database and choose Uninstall. This uninstalls the updates.



	Check for Up <u>d</u> a
Features Installed Updates	
Corremove one or more installed updates, select the bundles and o Q. Search Database Database Oracle NoSQL Database 12cR2.4.4.6	Oracle NoSQL Database 12cR2.4.4.6 12.2.1.160.1439 Oracle NoSQL Database support for SQL Developer Created By Oracle Visit Homepage Currently Installed Version 12.2.1.160.1439

Figure 4-8 Uninstall Update

Note:

This will only uninstall the Oracle NoSQL Database extension that was added and not the base version that comes with SQL Developer.

