Installation and Setup of UnityJDBC with Rapid SQL[®]

Overview

UnityJDBC allows Rapid SQL[®] users to create a virtual data source that may consist of multiple data sources on different servers and platforms. The user can enter one SQL query to combine and join information from multiple sources. Any database that has a JDBC driver is supported including NoSQL databases such as MongoDB.

Benefits

- No data source or server changes are required.
- Support for standard SQL including joins, group by, aggregation, LIMIT, and ordering where tables may come from one or more sources.
- UnityJDBC will perform function translation when a user requests a function or SQL feature/syntax that is not supported by a certain source.
- Users can use the virtualization information and driver in other Java programs and reporting software.

Installation

1. Download and install UnityJDBC. The UnityJDBC installation consists of the main unityjdbc.jar, a sample database and programs, and JDBC drivers for popular databases. Using UnityJDBC Source Builder, define the data virtualization. See: https://www.unityjdbc.com/support/doc/html/ch03.html.

2. After building your sources, you should have a sources.xml file and one or more XML files describing database schema information. You should create a directory on your system to copy these files into. Also, copy the unityjdbc.jar and other JDBC drivers that may be needed for your sources. In the example below, there are five databases: MySQL, Oracle, Microsoft SQL Server, PostgreSQL, and MongoDB. Each database has the JDBC driver in the directory. The main sources file is called virtualDemo.xml.

🗲 🖉 🖉 🖉 🗸 🕹 🗸 temp 🕨 rapidsql	- - - -	 Search rapidsql 		\$
Organize 🔻 Include in library 🔻	Share with 👻 🛛 Burn	New folder	≣ - □	0
Name	Date modified	Туре	Size	
📓 mongo-java-driver-2.11.2.jar	8/28/2013 9:28 A	M Executable Jar File	409 KB	
📧 mysql.jar	7/24/2013 2:07 AI	M Executable Jar File	836 KB	
🔟 nlscharset12.jar	9/18/2012 2:25 PM	M Executable Jar File	1,618 KB	
🔟 oracle.jar	9/18/2012 2:25 PM	M Executable Jar File	1,950 KB	
🔟 postgresql.jar	9/18/2012 2:25 PM	M Executable Jar File	528 KB	
🛋 sqljdbc4.jar	7/17/2013 6:58 PM	M Executable Jar File	571 KB	
🔟 unityjdbc.jar	9/24/2013 9:58 At	M Executable Jar File	1,128 KB	
📄 virtualDemo.xml	9/10/2013 1:33 PM	M XML File	2 KB	
📄 virtualDemo_mongo.xml	9/10/2013 1:33 PM	M XML File	52 KB	
📋 virtualDemo_mssql.xml	9/10/2013 1:33 PM	M XML File	43 KB	
📄 virtualDemo_mysql.xml	9/10/2013 1:33 PM	M XML File	49 KB	
📋 virtualDemo_oracle.xml	9/10/2013 1:33 PM	M XML File	46 KB	
📄 virtualDemo_postgres.xml	9/10/2013 1:33 PM	M XML File	45 KB	

Sample Directory Storing JDBC Drivers and Source Information

3. Register the UnityJDBC driver in Rapid SQL under the File Menu, select Options..., then under Java click on the Manage... button for JDBC Driver Options.

Options	
Type filter text	Java
 Datasource General Connection LDAP Configuration Logging Mail Perf Center CONNECT Reports Explorer ISQL Debug DDL Extract Results Grid Properties Version Control Warnings Data Transfer Oracle Utilities MySQL Utilities Directories Data Editor Query Builder DBMS_JAVA Code Analyst 	JVM Memory Options Additional JVM Options Initial heap size (MB): 128 Maximum heap size (MB): 2046 Maximum Pem Gen (MB): 64 JDBC Driver Options Manage custom JDBC drivers that are available to use with the application. JDBC Driver Options Manage custom JDBC drivers that are available to use with the application. *Note: Changes to JVM options require a restart of the application to take effect.
	OK Cancel Help

Selecting Manage JDBC Driver Options

- 4. Then create a new JDBC driver. Steps:
 - 1. Name is: UnityJDBC Virtualization Driver
 - 2. Add the path to the unityjdbc.jar and other needed JDBC drivers under Driver Archives.
 - 3. The class is: unity.jdbc.UnityDriver
 - 4. The template URL is: jdbc:unity://pathToSourcesFile

JDBC Driver Editor			—
Custom Drivers UnityJDBC Virtualization Driver MongoDB JDBC Driver	Driver Prop Name: Version: Driver Arch	UnityJDBC Virtualization Driver 4.2	
	C:\temp	rapidsql\postgresql.jar rapidsql\mongo-java-driver-2.11.2.jar rapidsql\unityjdbc.jar	Add Remove
	Class: unity.jdb	c.UnityDriver	
		Connect URL for new data sources:	
New Remove	jdbc:unit	y://pathToSourcesFile	
			Close

Register UnityJDBC Driver

5. Create a new source under the Datasource menu selecting Register DataSource... The database type is Generic JDBC.

Register Datasource		×
Information Select the database typ		•
Database Type Connection Information Security Parameters Custom Driver Properties Datasource Properties Datasource Group	Available database types: IBM DB2 Microsoft SQL Server MySQL Oracle Sybase Adaptive Server Sybase IQ InterBase/Firebird Generic ODBC Generic JDBC Attached to QONNECT Data Source:	
Test Connection	< <u>Back</u> Next > Finish Cancel Help].::

Register Datasource: Select Generic JDBC

Select UnityJDBC Virtualization Driver, Provide Path to XML Configuration File, and Give the Data Source a Name

Register Datasource			×
Information Please enter the conne	ection information for the	JDBC server.	P
Database Type Connection Information Security Parameters Custom Driver Properties Datasource Properties Datasource Group	JDBC driver to use: Connection URL: Datasource name:	UnityJDBC Virtualization Driver idbc:unity://c:\temp\rapidsql\virtualDemo.xml	Manage
Test Connection		< Back Next > Finish Cancel	Help

6. There is no configuration needed under the **Security Parameters** tab if the source files are not encrypted. There is no configuration required under the other tabs: Custom Driver Properties, Datasource Properties, Datasource Group. Click Finish.

7. The data source will now be visible for querying. In the connection window, no login id or password needs to be specified (assuming encryption is not used). Click OK to connect.

Login to virtualdemo	×
Login <u>I</u> d:	
1	
Password:	
Login As:	
	-
Default Schema Id:	
Default Function Path:	
Auto Connect in the future	
V OK X Cancel ?	<u>H</u> elp

Connection Window – User id/Password not Required

8. Tables appear as usual although they are prefixed by the source name. SQL queries function the same as usual although table names may need to be prefixed by a source name. All other query features in Rapid SQL are unchanged.

9. Below is a sample query that joins five databases together.

SQL Query joining tables in MySQL, Microsoft SQL Server, Oracle, PostgreSQL, and MongoDB

<u>File Edit Query Datasource Browse</u>						
💷 🖪 💑 🗇 🍪 🚚 ¹ 🏝 🛯 🖪 😭	🛱 🖂 🛛	🖥 🕶 🛄 🖬 🛙	I 🔍 🖬 🖕 ⁱ 3	📐 🖉 🖁 🛛	è 🖻 🕭 🛍 🖄 🖉	P 🖓 ẩÃ 🚱 🛤 🔏 🎭
🍼 音 virtualdemo	-			Ŧ	-	
atasource Navigator P >						
۹ 🖓 ۷	şoù		SQ	L2 * - \virtua	demo\	- • ×
	() ()	r				🖕 - 🚱 I 🌫 🛋 I 🐴
virtualdemo (JDBC - UnityJDBC / Aliases			1.1. (D.)			
Procedures	1				country and and a server, My	
x=y Synonyms	2				COUNT(o_orderkey) as numOrders,
Tables (49)	3		_quantity) as postgres.Cus		Orders	
ii mongo."system.indexes"	5				O ON C.c_custkey =	O a custkov
iii mongoschema	6				L ON O.o_orderkey	
11 mongo.customer	7				ON L.I_partkey = P.p	
ii mongo.gb_test	8				N ON C.c_nationkey	
mongo.lineitem	9		E n_name =			- main_nadoniccy
mongo.nation	10		P BY c_custk			
iii mongo.orders	11		R BY SUM(Lo			
🔝 mongo.part		LIMIT				
mongo.partsupp						
iii mongo.region						•
iii mongo.supplier	· · ·					
mssql."CUSTOMER"			\virtu	aldemo\	Line 12	Col 9 00:10.3
mssql."LINEITEM"						
mssql."NATION"			1	Results4 - \vir	tual\	- O X
mssql."ORDERS"	100	n				
mssql."PART"		≮ ¢ ר				
mssql."PARTSUPP"		the second se			umItemsOrders	<u>^</u>
mssql."REGION"	1	386	1423	2	96	E
mssql."SUPPLIER"	2	1093	1692	2	94	
mysql."Customer"	3	1454	479	2	93	
mysql."Lineitem"	4	1486	1919	2	91	
mysql."Nation" mysql."Orders"	5	1102 1274	1489 300	2	84	
iii mysql. "Part"	6	1274	292	2	83	
mysql. Part mysql."Part2"	8	1057	1238	2	80	
mysql. Partz	8	446	383	2	71	
iii mysql. Partsupp	10	638	474	2	69	
iii mysql."Supplier"	11	448	604	2	62	
mysql.table1	12	1057	1155	2	62	-
iii mysql.table2			\virtua		Row 1 G	Iol 1
iii oracle."CUSTOMER"	. [. I Society 2001	
4	SQL2	* - \virtualdem	o\ × 🗮 Resu	lts4 - \virtual\		4
Output						

Virtualization Export for use with Other Programs and Reporting Software

Once a virtualization has been created using SourceBuilder, all the information necessary is available in the XML files created. These files can be copied and moved to another location and used with any Java/JDBC program or reporting software.

Existing XML configuration files can be used by specifying an absolute or relative path in the JDBC URL. For example, if the user has saved the sources.xml file (and the associated schema files for sources in the directory C:\tmp, then a JDBC connection URL is: jdbc:unity://c:\tmp\sources.xml.

Trial Version

The UnityJDBC virtualization driver is released under a commercial license. The trial UnityJDBC driver is fully functioning with no time limits allowing an unlimited number of sources and queries. The only limitation is the size of the result set is limited to the first 100 rows. (Note there is no limit on the number of rows extracted from each source. SELECT COUNT(*) FROM table with a 1 million row table works as it only returns one result row.) Use LIMIT 100 to get the first 100 results of a query.

For more information and technical support for the UnityJDBC driver contact:

UnityJDBC Support, support@unityjdbc.com, 250-807-9390

UnityJDBC driver information: <u>www.unityjdbc.com</u>