



SQream Native Java Connector

SQream Technologies

Version 1.2.0

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SQream Connector Native Java

Version 1.2.0

The SQream Native Java Connector - Overview

- This guide describes the implementation of the SQream Native Java connector and is designed for SQream DB administrators and developers.
- The SQream Native Java connector gives structures to initialize a connection, run SQL queries through the connection (statements), and enables network streaming (insert, select).
- SQream connector protocol version: 6

API Reference

To use the functions include the connector jar and import: "import com.sqream.connector;"

Connection

Table 1. Initializing and closing connections

Function	Description
<code>ConnectionHandle ('ip', port, 'database', 'username', 'password', useSsl, rowFlushSize, service)</code>	Creates a connection handle with all the connection informations and opens a socket to the ip, this object can be held to keep a connection alive to the sqream server. ip - IP address as a string. port - port number SQream is listening on. database - name of database to connect to. username, password - connection credentials. default is 'sqream' for both. useSsl - True / false. If true, connect to SQream using SSL port. rowFlushSize - Optional - amount of rows on which the connector flushes the data to SQream. Default is 10000 service - Optional - the service name to connect to. Default is "sqream"
<code>ConnectionHandle.connect ()</code>	Connects the handle to the sqream, accessing its database.
<code>ConnectionHandle.close ()</code>	Closes the connection handle.

Statement

Table 2. Statement execution

Function	Description
<code>StatementHandle (ConnectionHandle, 'statement')</code>	Creates a statement object which purpose is to operate the different messages of the protocol in order to execute a query and its different functionalities.
<code>StatementHandle.prepare ()</code>	Prepares the statement of the current StatementHandle.
<code>StatementHandle.execute ()</code>	Executes the statement of the current StatementHandle. Comes after prepare().
<code>StatementHandle.nextRow ()</code>	On an insert query - start setting the next row for insertion. SQream does not

Function	Description
	support partial inserts. On a select query - move to next row index to start selecting items from various columns using get() functions
StatementHandle.close()	Closes the StatementHandle.

High level protocol functions

Table 3. Retrieve results from a select query by column index

Function	Description
isNull(int col_id)	Check whether the value in column index col_id is a null
getBool(int col_id)	Get Boolean value from column index col_id at the current row
getUbyte(int col_id)	Get UByte value from column index col_id at the current row
getShort(int col_id)	Get Short value from column index col_id at the current row
getInt(int col_id)	Get Int value from column index col_id at the current row
getLong(int col_id)	Get Long value from column index col_id at the current row
getFloat(int col_id)	Get Float value from column index col_id at the current row
getDouble(int col_id)	Get Double value from column index col_id at the current row
getDate(int col_id)	Get Date value from column index col_id at the current row
getDatetime(int col_id)	Get Datetime value from column index col_id at the current row
getVarchar(int col_id)	Get Varchar value from column index col_id at the current row
getNvarchar(int col_id)	Get Nvarchar value from column index col_id at the current row

Table 4. Retrieve results from a select query by column name

Function	Description
isNull(String col_name)	Check whether the value in column named col_name is a null
getBool(String col_name)	Get Boolean value from column named col_name at the current row

Function	Description
<code>getUbyte(String col_name)</code>	Get UByte value from column named col_name at the current row
<code>getShort(String col_name)</code>	Get Short value from column named col_name at the current row
<code>getInt(String col_name)</code>	Get Int value from column named col_name at the current row
<code>getLong(String col_name)</code>	Get Long value from column named col_name at the current row
<code>getFloat(String col_name)</code>	Get Float value from column named col_name at the current row
<code>getDouble(String col_name)</code>	Get Double value from column named col_name at the current row
<code>getDate(String col_name)</code>	Get Date value from column named col_name at the current row
<code>getDatetime(String col_name)</code>	Get Datetime value from column named col_name at the current row
<code>getVarchar(String col_name)</code>	Get Varchar value from column named col_name at the current row
<code>getNvarchar(String col_name)</code>	Get Nvarchar value from column named col_name at the current row

Table 5. Set data by index following a bulk insert query

Function	Description
<code>setNull(int col)</code>	Set column at index col in the current row to null
<code>setBool(int col, boolean val)</code>	Set column at index col of type Boolean in the current row
<code>setUbyte(int col, byte val)</code>	Set column at index col of type UByte in the current row - unsigned bytes only
<code>setShort(int col, short val)</code>	Set column at index col of type Short in the current row
<code>setInt(int col, int val)</code>	Set column at index col of type Int in the current row
<code>setLong(int col, long val)</code>	Set column at index col of type Long in the current row
<code>setFloat(int col, float val)</code>	Set column at index col of type Float in the current row
<code>setDouble(int col, double val)</code>	Set column at index col of type Double in the current row
<code>setDate(int col, Date val)</code>	Set column at index col of type Date in the current row
<code>setDatetime(int col, datetime val)</code>	Set column at index col of type Datetime in the current row

Function	Description
<code>col, Timestamp val)</code>	the current row
<code>setVarchar(int col, String val)</code>	Set column at index col of type Varchar in the current row
<code>setNvarchar(int col, String val)</code>	Set column at index col of type Nvarchar in the current row

Code Samples

Import and establish a connection

Example

```
import com.sqream.connector;

class Test {

    // Connection parameters: IP, Port, Database, Username,
    Password
    ConnectionHandle Client = new ConnectionHandle
("127.0.0.1", 5000, "master", "sqream", "sqream", false);
    Client = Client.connect();
```

Run a query - Create a table

Example

```
String statement = "create or replace table table_name
(int_column int)";
StatementHandle stmt = new StatementHandle(Client,
statement);
stmt.prepare();
stmt.execute();
stmt.close();
```

Run a query - Insert values into table

Example

```
String statement = "insert into table_name(int_column)
values (5), (6), (7), (8)";
StatementHandle stmt = new StatementHandle(Client,
statement);
stmt.prepare();
stmt.execute();
stmt.close();
```

Run a query - Get column values from table

Example

```
// Retrieve data
String statement = "select int_column from table_name";
StatementHandle stmt = new StatementHandle(Client,
```

```
statement);
    stmt.prepare();
    stmt.execute();

    // Pull out the actual data
    while (stmt.nextRow())
        System.out.println("Number recieved: " + stmt.getInt(1));

    stmt.close();

    // After running all statements
    // -----
    client.close()
}
```

Run a query - Use bulk insert to insert large amounts of data in a programmatic way

Example

```
/* Example of classic Set data loop, using network streaming (also
called Network Insert) */
// here we create the according table by executing a
// "create or replace table table_name (int_column int, varchar_
column varchar(10))" statement

int[] row1 = {1,2,3};
String[] row2 = {"s1","s2","s3"};
int length_of_arrays = 3;

// each interrogation symbol represent a column to which the
network insertion can push
String statement = "insert into table_name(int_column, varchar_
column) values(?, ?)";
StatementHandle stmt = new StatementHandle(Client, statement);

stmt.execute();
for (int idx = 0; idx < length_of_arrays; idx ++) {
    stmt.setInt(1, row1[idx]) // put a value at column 1 of
the table
    stmt.setVarchar(2, row2[idx]) // put a value at column 2 of
the table
}

stmt.close();
client.close();
```

Run a query - Starting and finishing

Example

```

/* Initialization - Termination Example */
import com.sqream.connector;

class Query {
    // arg types are: string, integer, string, string, string,
    boolean, integer
    ConnectionHandle Client = new ConnectionHandle
('127.0.0.1', 5000, 'master', 'sqream', 'sqream', false);
    Client = Client.connect();
    String statement = "sql statement";
    StatementHandle stmt = new StatementHandle(Client,
statement);
    .
    .

    // closes the statement (to do after execute + necessary
    fetch/put to close the
    // statement and be able to open another one through
    prepare())
    stmt.close();

    // closes the connection completely, destroying
    the socket, a call to "connect(..)"
    // needs to be done do continue
    client.close();
}

```