RELIERSOFT JDBC DRIVER FOR SALESFORCE

The Salesforce JDBC driver is designed to work immediately with tools such as Squirrel, DBeaver and DbVisualizer. If preferred, it may also be used in a Java IDE such as Eclipse, or added into a Maven build.

It provides SQL support for Salesforce.com (as opposed to SOQL), via a re-writing engine and via multi-pass execution where necessary.

It also provides data manipulation language (DML) support with its support for SQL UPDATE, DELETE, INSERT, UPSERT and MERGE statements.

CONTENTS

SQL SUPPORT

SELECT

Asterisk

SELECT * and SELECT [alias].* is supported.

Aggregation

Group By is supported, subject to Salesforce governor limits. SELECT DISTINCT is also supported, not subject to Salesforce governor limits.

Joins

Select query is supported including joins (inner and left join).

Functions

The driver includes some functions to reduce the dependency on hardcoded Id references that may change between Salesforce instances.

- To_UserName(UserId) returns the User Name given the User Id (for example an OwnerId).
- To_RecordType returns the Salesforce RecordTypeId from a given record type name.

INSERT

The driver supports both explicit INSERT and full-specification insert.

Full-specification insert involves listing out the columns being specified for the new record and is usually the easiest form. For example

```
INSERT INTO account (name, LOCATION) values ('A test', 'Paris');
```

DELETE

The driver supports DELETE FROM <object> with an optional WHERE clause to specify a condition around the records deleted. For example, the following SQL will remove all accounts starting with the letter A.

```
delete from account where name like 'A%'
```

The connection parameter performHardDeletes causes records to be removed from the recycle bin after the statement completes.

UPDATE

The driver supports UPDATE <object> SET <fields and expressions> WHERE <condition>.

```
UPDATE ACCOUNT SET Site = 'Phone ' || Phone
WHERE Name between 'AAAAAAAA' and 'CCCCCCCC';
```

Expressions supported include concatenation (|| operator) and arithmetic (numeric types only).

UPSERT

The driver supports UPSERT INTO <object> in a similar manner to an INSERT INTO query, however it also has the optional clauses MATCHING ON to specify the field to use for lookup, and IGNORE NULL or INCLUDE NULL, to specify whether to update fields to null (empty string) in the operation. If these optional clauses are not specified, they assume the default behavior per connection parameters.

For example,

```
upsert into custom__c (Id, Name, NormalText__c)
values ('a002800000bsFe4AAE', 'Tescns', 'hello')
MATCHING ON Id, Name IGNORE NULL
```

MERGE

Merge is supported from a target-based approach. In a SQL MERGE statement there is a source and target and matching on clause. The target is always a table, while the source can be either table of select query.

With matching on clause we make criteria for matching source columns with target columns.

There are two possible actions when matched and when not matched.

When matched we can do following SQL statements:

- INSERT, inserts new record into target table with new data or with data found in source, or some columns from source and some with constants.
- UPDATE can update record in target table with new data or with data from source or mixed (some columns from source some columns with constants).
- DELETE deletes record from target table

When not matched we can do following SQL statements:

- INSERT inserts a new record with constants.

For example,

```
merge into account
using (select name from custom__c) c on account.name = c.name
when matched then update set account.name = c.name
when not matched then insert (name) values ('not matched')
```

CONNECTION PARAMETERS

Connection parameters can be set by appending the connection URL string, beginning with "?", delimiting property=value pairs with "&". An example URL is,

jdbc:sforce://login.salesforce.com?proxyHost=127.0.0.1&proxyPort=8888&proxyUser=me&proxyPassword=hello&acceptAllCertificates=true&failIfFieldToLong=false

See the end of the document for the full list of properties available.

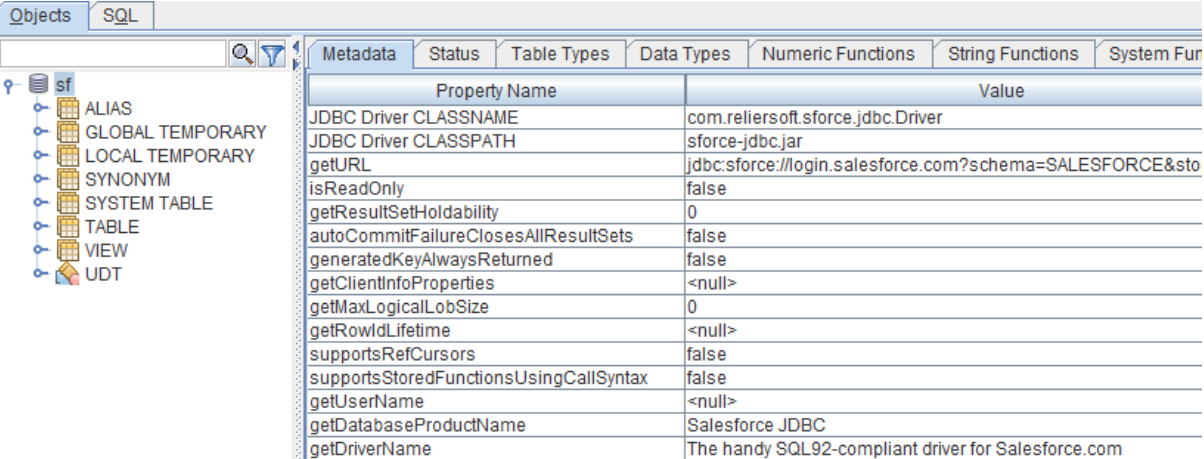Alternatively, configuration can be set in Java code using the Property object.

SYSTEM REQUIREMENTS

- Minimum
  - Java 7.
  - At least 200 megabytes memory available to Java virtual machine.
- Recommended
  - 4-core CPU for XML to table transformation
  - Java Virtual Machine running with at least 4096 megabytes of available memory (subject to usage requirements). Refer to application-specific instructions on how to set this in respective tools.

USING THE DRIVER WITH SQUIRREL

Connector Configuration

Setting up the driver in Squirrel is as easy as clicking on the Drivers tab on the left, and configuring the Salesforce entry.

1) In the Drivers tab on the left of the screen, click the plus button to add a new driver. Enter any name you wish. Click the "Extra Class Path" tab, and the "Add" button. Locate the driver on your computer. Click the "List Drivers" button. You should see com.reliersoft.sforce.jdbc.Driver in the Class Name at the bottom.

2) In the "Example URL" field, enter "jdbc:sforce://login.salesforce.com" and click OK.

3) In the "Aliases" tab, click the plus button to add a new alias. Enter any name you wish. Select the driver, and enter your Salesforce User Name and Password. Update the connection URL to configure any optional settings desired per "Connection Parameters". Click OK.

4) Double click on the alias name and click "Connect" to connect to Salesforce. Once successfully connected, Salesforce information will be shown.

Successful Salesforce connection using Squirrel

Recommended: Increase Memory Allocation

On a 64-bit operating system and JVM, it is recommended to edit <Program Files>\ squirrel-sql-<version>\squirrel-sql.bat file to increase the amount of memory that can be used to handle result sets. After opening this file, look for the "–Xmx" part, probably on the second last line and defaulted to "-Xmx256m", and edit it to allow a larger memory allocation, with 4096m being the recommended value (if the machine allows). For example, the line may become as follows (change is highlighted in yellow).

```
start "SQuirreL SQL Client" /B "%LOCAL_JAVA%" –Xmx4096m -Dsun.java2d.noddraw=true
-cp %SQUIRREL_CP% -splash:"%SQUIRREL_SQL_HOME%/icons/splash.jpg"
net.sourceforge.squirrel_sql.client.Main %TMP_PARMS%
```

The maximum rows to return field, shown below and found in the top right of the SQL Editor window, can then be edited from the default 100 to a larger value to return larger grids (or disabled completely).
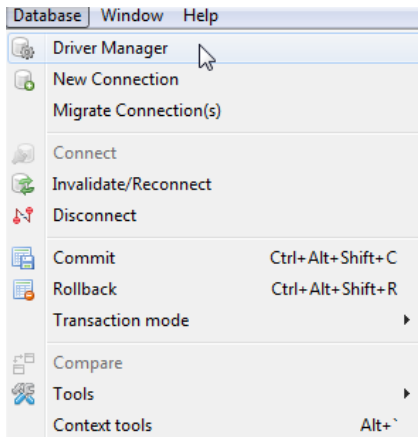

If an error is returned indicating the file cannot be saved, check file ownership (Windows 10) and user rights.

Connector Configuration

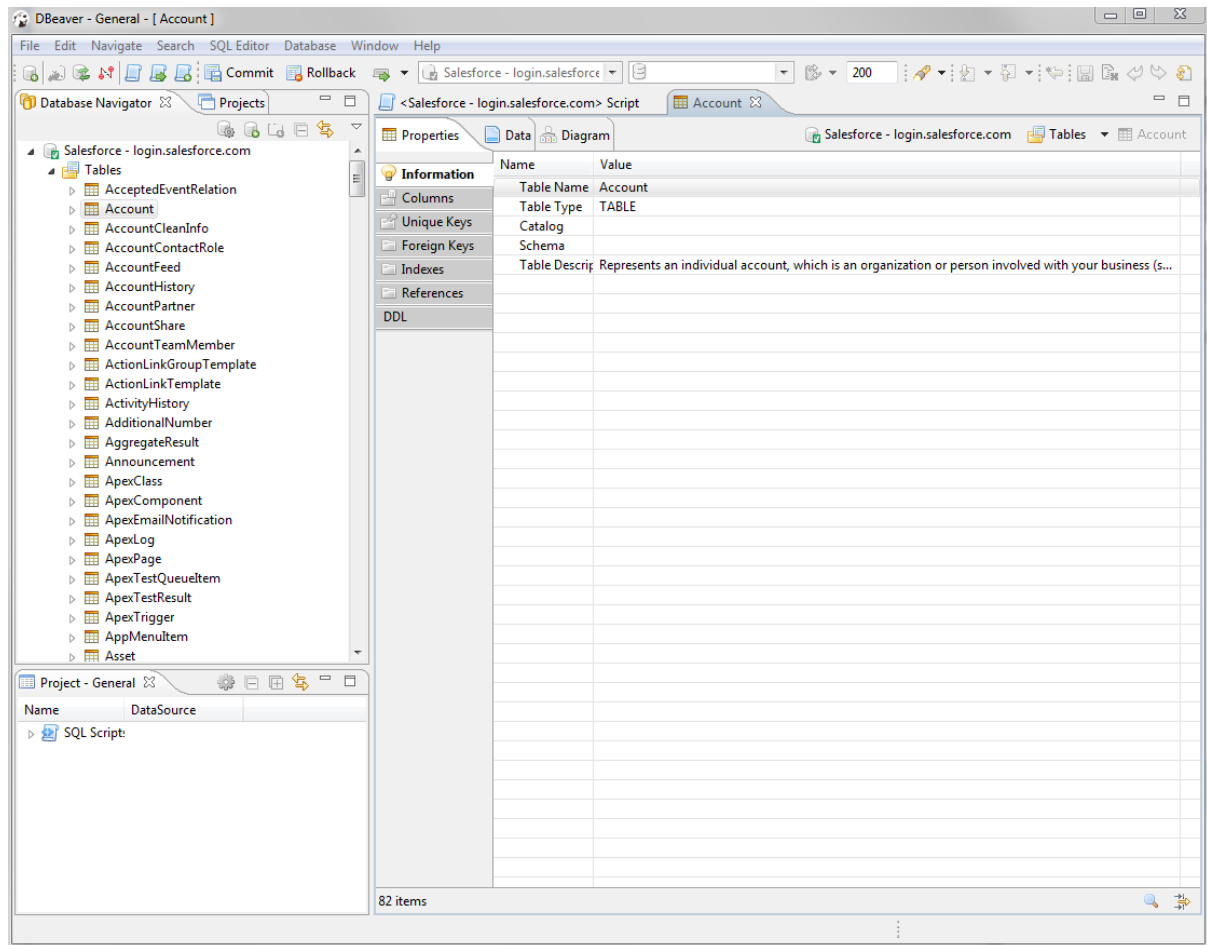1) Firstly configure the driver using Database -> Driver Manager

2) If Salesforce driver does not already exist, use the URL template "jdbc:sforce://login.salesforce.com", and class name "com.reliersoft.sforce.jdbc.Driver". Other attributes can be left blank. Click Find Class, and select the entry that appears. Click Ok.
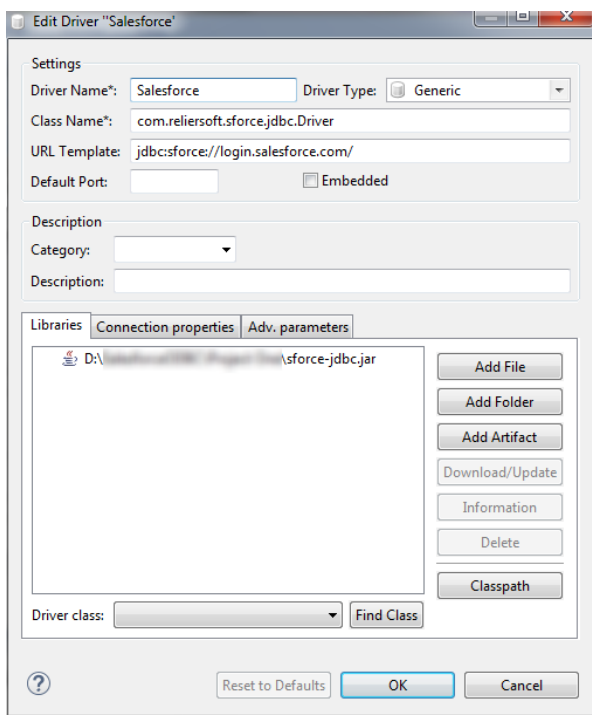
3) Set up the new connection using Database -> New Connection, choose "Salesforce".
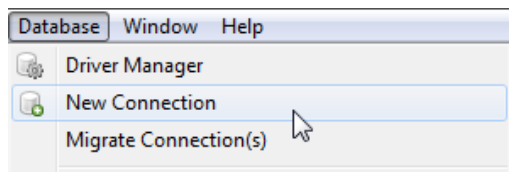
Recommended: Increase Memory Allocation

On a 64-bit operating system and JVM, it is recommended to edit <Program Files>\dbeaver\dbeaver.ini file and add a –vmargs sections like follows if it is not already defined. Use this to allocate at least 4096 megabytes of memory and support larger sets of data (subject to machine memory). For example, dbeaver.ini may appear as follows.

```
-startup
plugins/org.eclipse.equinox.launcher_1.3.100.v20150511-1540.jar
--launcher.library
plugins/org.eclipse.equinox.launcher.win32.win32.x86_64_1.1.300.v20150602-1417
-showsplash
-vmargs -Xms4096m
```

The maximum rows to return field, highlighted below, can then be edited from the default 200 to a larger value to return larger grids.

If an error is returned indicating the dbeaver.ini file cannot be saved, check file ownership (Windows 10) and user rights.

Table Information

Table Description

Description of the object.

Column Information

Description

Description of the attribute.

Column Name	#	Data Type	Len...	Not ...	Auto Genera...	Auto Increm...	Def...	K..	Description
Id	1	ID	18	✓	☐	☐		☐	Account ID
IsDeleted	2	CHECKBOX	1	✓	☐	☐		☐	Deleted
MasterRecordId	3	REFERENCE	18	☐	☐	☐		☐	Account
Name	4	TEXT	255	✓	☐	☐		☐	
Type	5	PICKLIST	40	☐	☐	☐		☐	Type
RecordTypeId	6	REFERENCE	18	☐	☐	☐		☐	
ParentId	7	REFERENCE	18	☐	☐	☐		☐	Parent Account
BillingStreet	8	TEXTAREA	255	☐	☐	☐		☐	Billing Address
BillingCity	9	TEXT	40	☐	☐	☐		☐	Billing Address
BillingState	..	TEXT	80	☐	☐	☐		☐	Billing Address
BillingPostalCode	..	TEXT	20	☐	☐	☐		☐	Billing Address
BillingCountry	..	TEXT	80	☐	☐	☐		☐	Billing Address
BillingLatitude	..	NUMBER	18	☐	☐	☐		☐	
BillingLongitude	..	NUMBER	18	☐	☐	☐		☐	
BillingGeocodeAc...	..	PICKLIST	40	☐	☐	☐		☐	
ShippingStreet	..	TEXTAREA	255	☐	☐	☐		☐	Shipping Add...
ShippingCity	..	TEXT	40	☐	☐	☐		☐	Shipping Add...
ShippingState	..	TEXT	80	☐	☐	☐		☐	Shipping Add...
ShippingPostalCo...	..	TEXT	20	☐	☐	☐		☐	Shipping Add...
ShippingCountry	..	TEXT	80	☐	☐	☐		☐	Shipping Add...
ShippingLatitude	..	NUMBER	18	☐	☐	☐		☐	
ShippingLongitude	..	NUMBER	18	☐	☐	☐		☐	
ShippingGeocode...	..	PICKLIST	40	☐	☐	☐		☐	
Phone	..	PHONE	40	☐	☐	☐		☐	Phone
Fax	..	PHONE	40	☐	☐	☐		☐	Fax
AccountNumber	..	TEXT	40	☐	☐	☐		☐	
Website	..	URL	255	☐	☐	☐		☐	Website
PhotoUrl	..	URL	255	☐	☐	☐		☐	
Sic	..	TEXT	20	☐	☐	☐		☐	
Industry	..	PICKLIST	40	☐	☐	☐		☐	
AnnualRevenue	..	CURRENCY	18	☐	☐	☐		☐	
NumberOfEmplo...	..	INT	9	☐	☐	☐		☐	
Ownership	..	PICKLIST	40	☐	☐	☐		☐	
TickerSymbol	..	TEXT	20	☐	☐	☐		☐	
Description		TEXTAREA	32	☐	☐	☐		☐	

Properties | Data | Diagram   Salesforce - login.salesforce.com   Tables ▼ Accoun

Information
Columns
Unique Keys
Foreign Keys
Indexes
References
DDL

Data Tab

Export

Right click -> Export.

Filter

Click the filter funnel.

Sort

Click on the column header icon.

Indices, Foreign Keys and Global References

Name	Owner	Ref Table	Reference	On Delete	On Update	Defferability
Account_CreatedBy_fkey	Account	User	User_pkey	No Action	No Action	NOT_DEFERRABLE
Account_DandbCompany_fkey	Account	DandBCompany	DandBCompany_pkey	No Action	No Action	NOT_DEFERRABLE
Account_LastModifiedBy_fkey	Account	User	User_pkey	No Action	No Action	NOT_DEFERRABLE
Account_MasterRecord_fkey	Account	Account	Account_pkey	No Action	No Action	NOT_DEFERRABLE
Account_Owner_fkey	Account	User	User_pkey	No Action	No Action	NOT_DEFERRABLE
Account_Parent_fkey	Account	Account	Account_pkey	No Action	No Action	NOT_DEFERRABLE
Account_RecordType_fkey	Account	RecordType	RecordType_pkey	No Action	No Action	NOT_DEFERRABLE
Account_SimonId__r_fkey	Account	Simon__c	Simon__c_pkey	No Action	No Action	NOT_DEFERRABLE

Name	Owner	Ref Table	Reference
Account_MasterRecord_fkey	Account	Account	Account_pk
Account_RecordType_fkey	Account	RecordType	RecordType
Account_Parent_fkey	Account	Account	Account_pk
Account_Owner_fkey	Account	User	User_pkey
Account_CreatedBy_fkey	Account	User	User_pkey
Account_LastModifiedBy_fkey	Account	User	User_pkey
Account_DandbCompany_fkey	Account	DandBCompany	DandBCom
Account_ChildAccounts_fkey	Account	Account	Account_pk
AccountCleanInfo_AccountCleanInfos_fkey	AccountCleanInfo	Account	Account_pk
AccountContactRole_AccountContactRoles_fkey	AccountContactRole	Account	Account_pk
AccountFeed_Feeds_fkey	AccountFeed	Account	Account_pk
AccountHistory_Histories_fkey	AccountHistory	Account	Account_pk
AccountPartner_AccountPartnersFrom_fkey	AccountPartner	Account	Account_pk
AccountPartner_AccountPartnersTo_fkey	AccountPartner	Account	Account_pk
AccountShare_Shares_fkey	AccountShare	Account	Account_pk
AccountTeamMember_AccountTeamMembers_fkey	AccountTeamMember	Account	Account_pk
ActivityHistory_ActivityHistories_fkey	ActivityHistory	Account	Account_pk
Asset_Assets_fkey	Asset	Account	Account_pk
AttachedContentDocument_AttachedContentDocuments_fkey	AttachedContentDocument	Account	Account_pk
AttachedContentNote_AttachedContentNotes_fkey	AttachedContentNote	Account	Account_pk
Attachment_Attachments_fkey	Attachment	Account	Account_pk
Case_Cases_fkey	Case	Account	Account_pk
CollaborationGroupRecord_RecordAssociatedGroups_fkey	CollaborationGroupRecord	Account	Account_pk
CombinedAttachment_CombinedAttachments_fkey	CombinedAttachment	Account	Account_pk
Contact_Contacts_fkey	Contact	Account	Account_pk
ContentDistribution_null_fkey	ContentDistribution	ContentDocument	ContentDoc
ContentDocumentLink_null_fkey	ContentDocumentLink	Account	Account_pk
ContentVersion_null_fkey	ContentVersion	User	User_pkey
Contract_Contracts_fkey	Contract	Account	Account_pk
DuplicateRecordItem_DuplicateRecordItems_fkey	DuplicateRecordItem	Account	Account_pk
EntitySubscription_FeedSubscriptionsForEntity_fkey	EntitySubscription	Account	Account_pk
Event_null_fkey	Event	Event	Event_pkey
Event_Events_fkey	Event	Account	Account_pk
FeedComment_null_fkey	FeedComment	AccountFeed	AccountFee
FeedItem_null_fkey	FeedItem	User	User_pkey

References
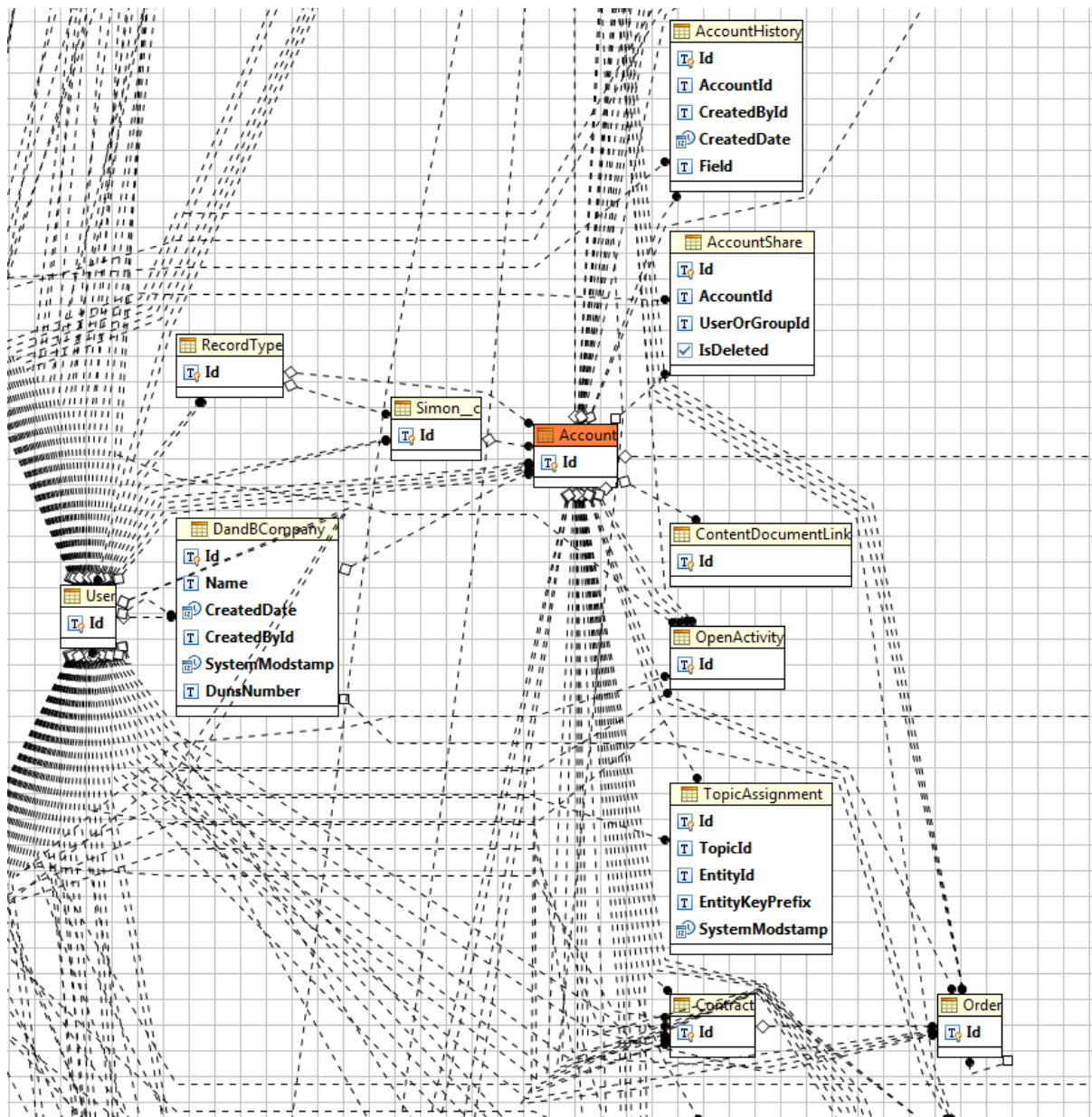
The object relationships within Salesforce. This is similar to the view shown in the Schema browser.

Connector Configuration

1) In DbVisualizer, go to the Driver Manager (Tools in the top menu, then Driver Manager...) and click the "Create a new driver" button.

2) Enter any name you wish. The URL Format can remain empty. In the "Driver File Paths" section, open up the driver.
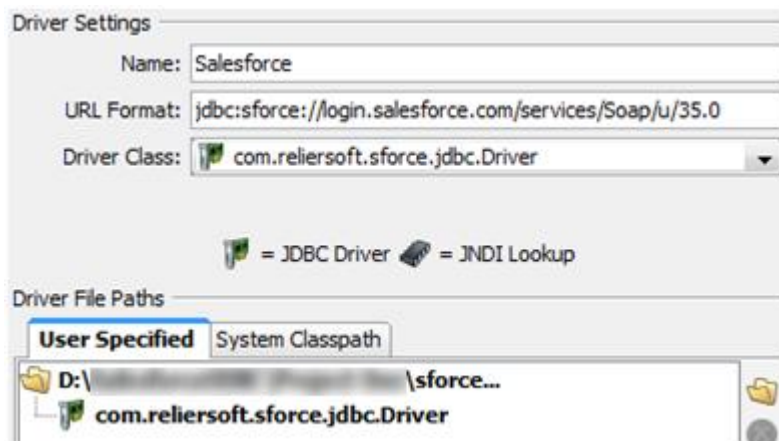
3) Once the driver has been added, in the main screen of DbVisualizer, you may use the following settings to connect to Salesforce (entering your Salesforce Userid and Password):
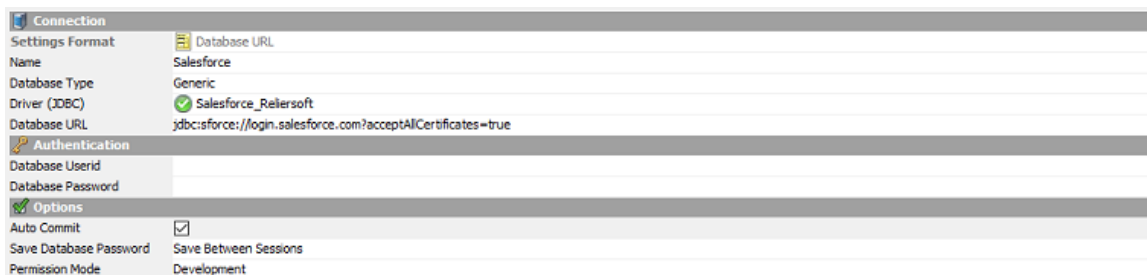
The settings should be as follows:

Database Type: Generic
Database URL: jdbc:sforce://login.salesforce.com**?anyoptionalparameters**

Recommended: Increase Memory Allocation

On a 64-bit DbVisualizer distribution, it is recommended to edit <Program Files>\DbVisualizer\dbvis.vmoptions file and replace the first line with the following to allocate at least 4096 megabytes of memory and support larger sets of data (subject to machine memory). For example,

```
-Xmx4096m
-XX:MaxPermSize=192m
-XX:StringTableSize=1000003
```

If an error is returned indicating the file cannot be saved, check file ownership (Windows 10) and user rights.

Once connected, the Salesforce schema will show and be visible through the DbVisualiser tabs.
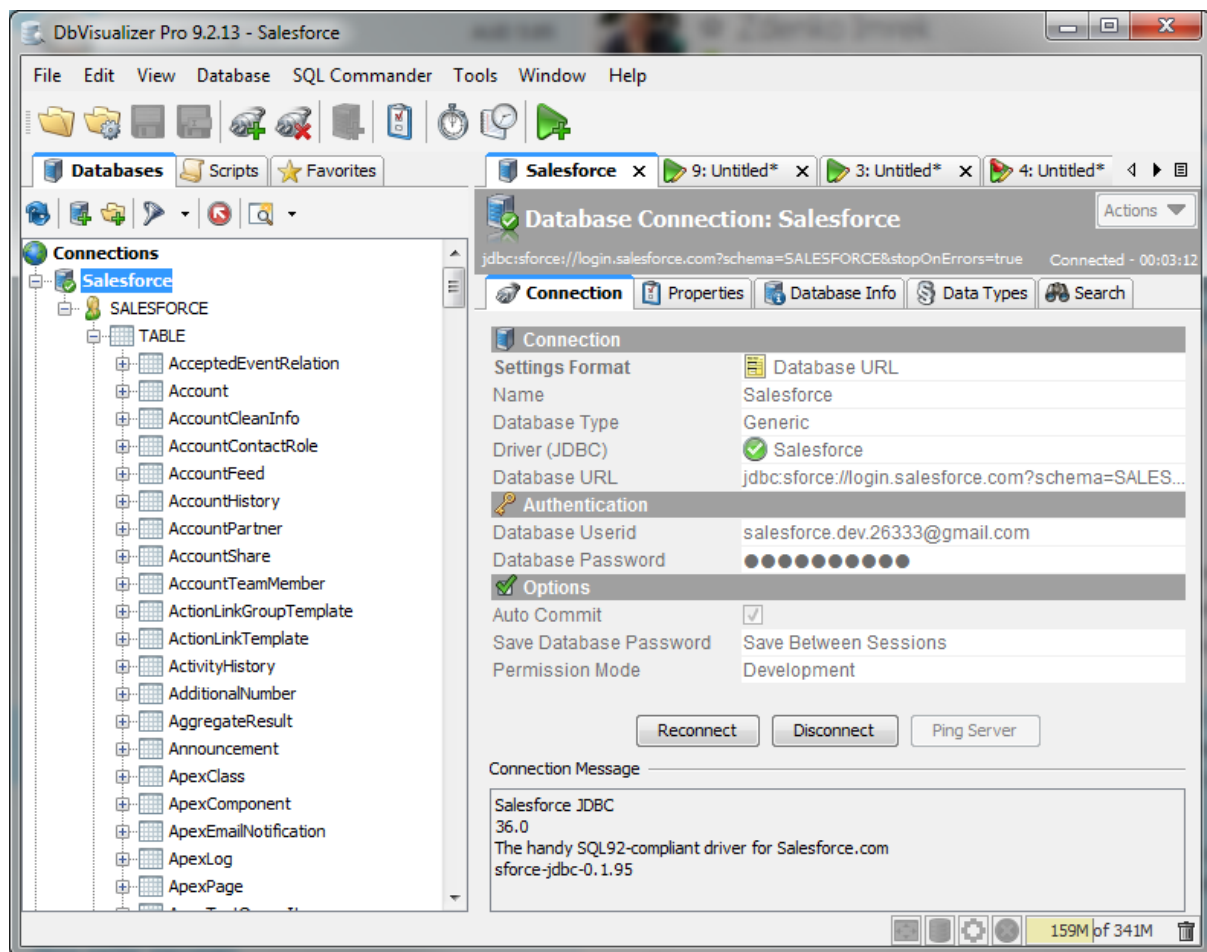
Table Information

Remarks

Description of the object.

Is_External_Object

This indicates if the object is from at external data source. It will be NO for all default and custom objects.

Column Information

Remarks

Description of the attribute.

Column_Label

The Label value defined for the attribute. Usually, this is the value labelling the field in the front-end Layout.

Is_System_Populated

Whether the attribute is populated automatically.

Is_Auto_Unique

Whether the attribute is populated automatically in a unique manner.

Is_External_Id

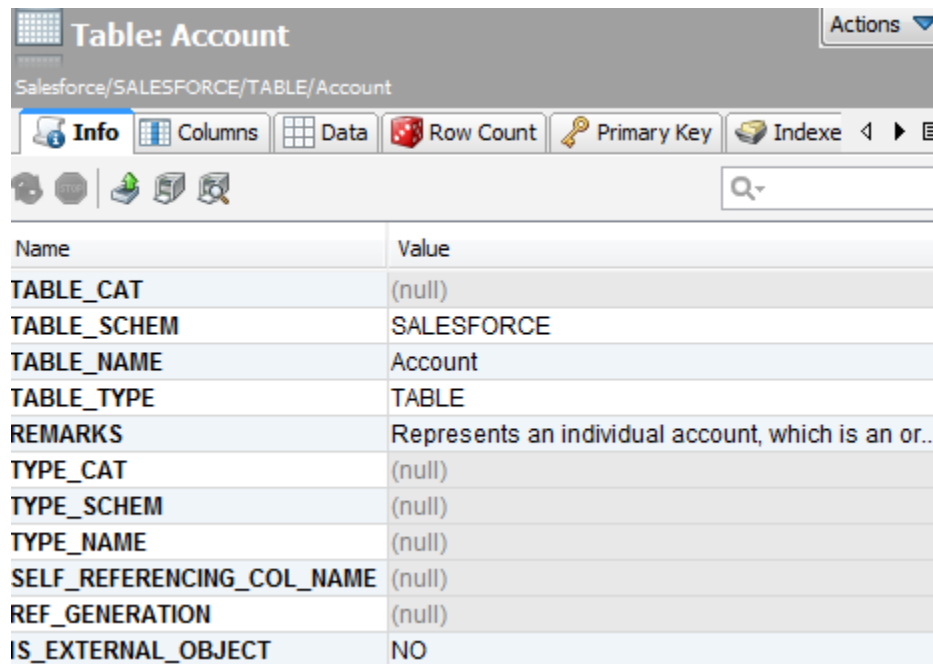Whether this attribute identifies the entity in an external system. This option is chosen when a field is defined and is Yes or No value, applicable to any data type.

Table: Account

Salesforce/SALESFORCE/TABLE/Account

Info | Columns | Data | Row Count | Primary Key | Indexes | Grants | Row Id | DDL | References | Navigator

TABLE_CAT	TABLE_SCHEM	TABLE_NAME	COLUMN_NAME	DATA_TYPE	TYPE_NAME	COLUMN_SIZE	BUFFER_LENGTH	DECIMAL_DIGITS	NUM_PREC_RADIX	NULLABLE	REMARKS	COLUMN_DEF	SQL_DATA_TYPE	SQL_DATETIME_SUB
(null)	SALESFORCE	Account	ShippingCountry	12	TEXT	80	160	(null)	(null)	1	Shipping Address	(null)	12	(null)
(null)	SALESFORCE	Account	ShippingLatitude	2	NUMBER	18	18	15	(null)	1	(null)	(null)	2	(null)
(null)	SALESFORCE	Account	ShippingLongitude	2	NUMBER	18	18	15	(null)	1	(null)	(null)	2	(null)
(null)	SALESFORCE	Account	ShippingGeocodeAccur...	12	PICKLIST	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Phone	12	PHONE	40	80	(null)	(null)	1	Phone	(null)	12	(null)
(null)	SALESFORCE	Account	Fax	12	PHONE	40	80	(null)	(null)	1	Fax	(null)	12	(null)
(null)	SALESFORCE	Account	AccountNumber	12	TEXT	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Website	12	URL	255	510	(null)	(null)	1	Website	(null)	12	(null)
(null)	SALESFORCE	Account	PhotoUrl	12	URL	255	510	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Sic	12	TEXT	20	40	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Industry	12	PICKLIST	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	AnnualRevenue	2	CURRENCY	18	18	0	(null)	1	(null)	(null)	2	(null)
(null)	SALESFORCE	Account	NumberOfEmployees	4	INT	9	9	0	10	1	(null)	(null)	4	(null)
(null)	SALESFORCE	Account	Ownership	12	PICKLIST	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	TickerSymbol	12	TEXT	20	40	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Description	12	TEXTAREA	32000	64000	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Rating	12	PICKLIST	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Site	12	TEXT	80	160	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	OwnerId	12	REFERENCE	18	36	(null)	(null)	0	Account Owner	(null)	12	(null)
(null)	SALESFORCE	Account	CreatedDate	93	DATETIME	19	19	0	(null)	0	Created Date	(null)	9	(null)
(null)	SALESFORCE	Account	CreatedById	12	REFERENCE	18	36	(null)	(null)	0	Created By	(null)	12	(null)
(null)	SALESFORCE	Account	LastModifiedDate	93	DATETIME	19	19	0	(null)	0	Last Modified Date	(null)	9	(null)
(null)	SALESFORCE	Account	LastModifiedById	12	REFERENCE	18	36	(null)	(null)	0	Last Modified By	(null)	12	(null)
(null)	SALESFORCE	Account	SystemModstamp	93	DATETIME	19	19	0	(null)	0	System Modstamp	(null)	9	(null)
(null)	SALESFORCE	Account	LastActivityDate	91	DATE	10	10	(null)	(null)	1	Last Activity	(null)	91	(null)
(null)	SALESFORCE	Account	LastViewedDate	93	DATETIME	19	19	0	(null)	1	Last Viewed Date	(null)	9	(null)
(null)	SALESFORCE	Account	LastReferencedDate	93	DATETIME	19	19	0	(null)	1	Last Referenced Date	(null)	9	(null)
(null)	SALESFORCE	Account	Jigsaw	12	TEXT	20	40	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	JigsawCompanyId	12	TEXT	20	40	(null)	(null)	1	Jigsaw Company Id	(null)	12	(null)
(null)	SALESFORCE	Account	CleanStatus	12	PICKLIST	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	AccountSource	12	PICKLIST	40	80	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	DunsNumber	12	TEXT	9	18	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	Tradestyle	12	TEXT	255	510	(null)	(null)	1	(null)	(null)	12	(null)
(null)	SALESFORCE	Account	NaicsCode	12	TEXT	8	16	(null)	(null)	1	(null)	(null)	12	(null)

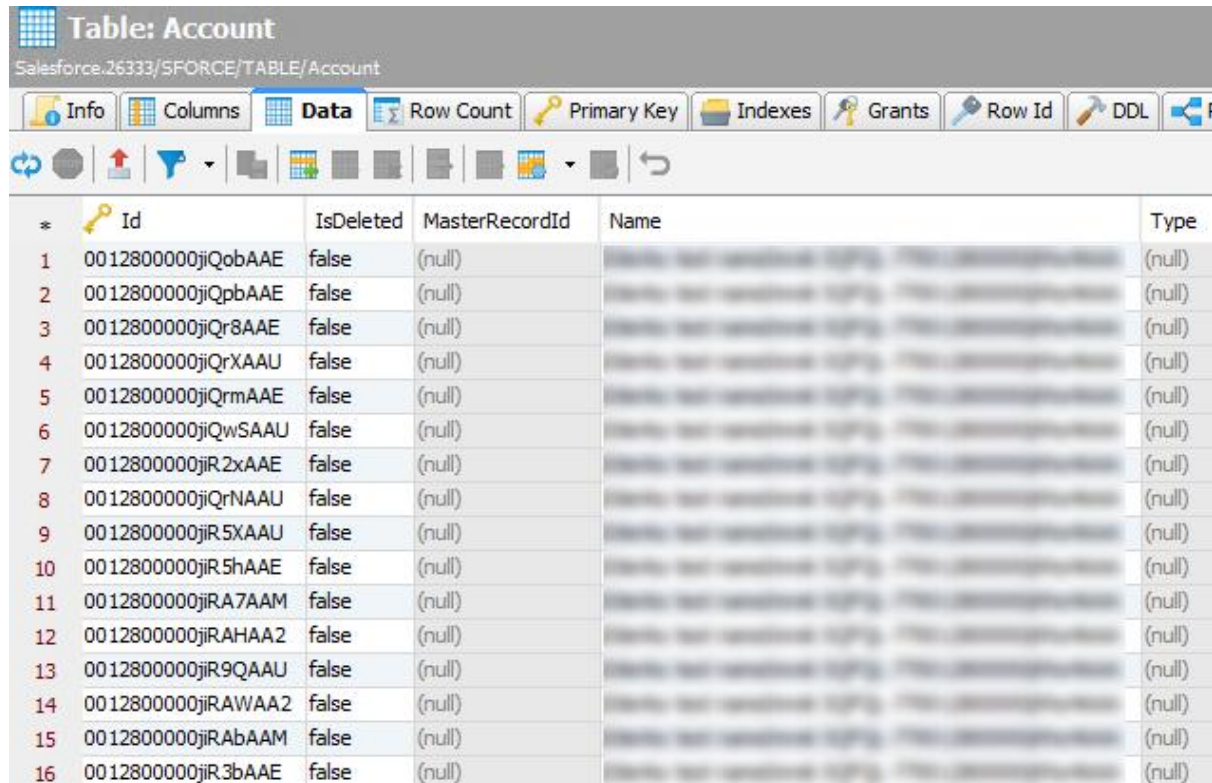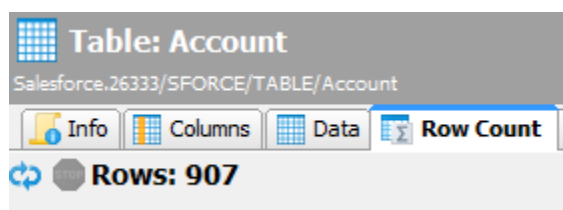| CHAR_OCTET_LENGTH	ORDINAL_POSITION	IS_NULLABLE	SCOPE_CATALOG	SCOPE_SCHEMA	SCOPE_TABLE	SOURCE_DATA_TYPE	IS_AUTOINCREMENT	IS_GENERATEDCOLUMN	IS_EXTERNAL_ID	IS_AUTO_UNIQUE	IS_SYSTEM_POPULATED	COLUMN_LABEL
80	21	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Shipping Country
(null)	22	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Shipping Latitude
(null)	23	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Shipping Longitude
40	24	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Shipping Geocode Accuracy
40	26	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Phone
40	27	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Fax
40	28	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Number
255	29	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Website
255	30	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Photo URL
20	31	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	SIC Code
40	32	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Industry
(null)	33	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Annual Revenue
(null)	34	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Employees
40	35	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Ownership
20	36	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Ticker Symbol
32000	37	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Description
40	38	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Rating
80	39	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Site
18	40	NO	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Owner ID
(null)	41	NO	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Created Date
18	42	NO	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Created By ID
(null)	43	NO	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Last Modified Date
18	44	NO	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Last Modified By ID
(null)	45	NO	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	System Modstamp
(null)	46	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Last Activity
(null)	47	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Last Viewed Date
(null)	48	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Last Referenced Date
20	49	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Data.com Key
20	50	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	YES	Jigsaw Company ID
40	51	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Clean Status
40	52	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Account Source
9	53	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	D-U-N-S Number
255	54	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	Tradestyle
8	55	YES	(null)	(null)	(null)	(null)	NO	NO	NO	NO	NO	NAICS Code

Data Tab

Export

Right click -> Export.

Filter

Click the filter funnel.

Row Count

The number of rows in the table, as reported by Salesforce metadata.

Indices

The indexed columns on Salesforce. Usually, this is Id, plus reference attributes, plus external Id attributes.

Sometimes, there will be other fields Salesforce has indexed.

TABLE_CAT	TABLE_SCHEM	TABLE_NAME	NON_UNIQUE	INDEX_QUALIFIER	INDEX_NAME	TYPE	ORDINAL_POSITION	COLUMN_NAME
(null)	SFORCE	Account	☐	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	
(null)	SFORCE	Account	☑	(null)	Account_pkey	3	1	

References

The object relationships within Salesforce. This is similar to the view shown in the Schema browser.

USING THE DRIVER IN AN IDE

In any Java IDE such as Eclipse, you may add the driver to your build path and connect through your Java application. Below is an example:

```java
public class main {
      public static void main(String[] args) {
            try {
                  Class.forName("com.reliersoft.sforce.jdbc.Driver");
            } catch (ClassNotFoundException e) {
                  e.printStackTrace();
                  return;
            }
            try {
                  Connection connection = null;
                  String salesforceUsername = "";
                  String salesforcePassword = "";
                  connection = DriverManager.getConnection(
                    "jdbc:sforce://login.salesforce.com",
                    salesforceUsername,salesforcePassword);
                  System.out.println("Connected to Salesforce.");
            } catch (SQLException e) {
                  e.printStackTrace();
                  return;
            }
      }
}
```

CONNECTION STRING PARAMETERS AND PROPERTIES

locale

Example value: en_US
Default value: en_US

The language to use for the display of metadata (table, column and related information). This does not affect the display of time-of-day (timezones) and currency (monetary) amount displays, which are determined by the user settings.

proxyHost

Example value: myproxy.com
Default value: [system settings]

If a specific proxy needs to be specified, it can be entered using this parameter, providing either an IPv4 address, IPv6 address or a hostname.

proxyPort

Example value: 8080
Default value: [system settings]

If a specific proxy server is being specified, the TCP/IP port number it is reachable on.

proxyUser

Example value: fred
Default value: (none)

If a specific proxy server is being specified and requires an explicit authentication, the username to use to authenticate with the proxy server.

proxyPassword

Example value: pASS
Default value: (none)

If a specific proxy server is being specified and requires an explicit authentication, the password to use to authenticate with the proxy server.

fetchSize

Example value: 1000
Default value: 2000

The fetch size to use in SOQL calls to SFDC. Valid values are between 1 and 2000, according to Salesforce limits. The maximum value is 2000 however Salesforce may use a lower value for very wide objects. The driver may multi-thread requests for chunks to impove fetch performance.

batchSize

Example value: 400
Default value: 200

For DML operations, this is the maximum number of operations per submission to Salesforce back-end. For example, DELETE FROM [object], where object has 10,000 records and the batchSize is 200, will result in 20 submissions to Salesforce. Additionally, if JDBC batch methods are used, then this is the limit prior to submitting the batch.

For example if the batch size is 200 and the following code is performed for 10,000 inserts, there will be 50 request messages sent to Salesforce,

```java
public static void main(String[] args) {
      Connection conn;
      Statement stmt;
      props = new Properties();
      props.setProperty("user","Salesforce.User@org.com");
      props.setProperty("password","abcdef");
      url = "jdbc:sforce://test.salesforce.com";
      try {
            conn = DriverManager.getConnection(url, props);
            stmt = conn.createStatement();
            sql="insert into Account (name) values ('hello world!')";

            // insert this record ten thousand times
            for ( int i = 0; i < 10000; i++) {
                  stmt.addBatch(sql);
            }
      }
      catch (Exception e) {
            e.printStackTrace();
      }
}
```

Note that in some cases, where there is a large overhead in relation to an operation, this value may need to be reduced to very low values in order not to exceed Salesforce API limits.

compression

Example value: false
Default value: true

Sets whether to enable compression for downloads from SFDC. Generally this option is recommended.

failIfFieldTooLong

Example value: false
Default value: true

The behaviour if an input field is too large for its target field. If this is set to false, then a value too long to fit a field will be truncated to fit into the field. If this is set to true, it will error instead. The default is true (to fail the record).

stopOnErrors

Example value: true
Default value: false

If an error is encountered during a DML operation, then if this is set to true, an exception will be thrown and there will be no further requests sent to SFDC in relation to that statement. If set to false (the default), execution will continue after the first error. For example, some records may fail an update and some may not.

setFieldsToNullInUpdates

Example value: false
Default value: true

If a value for update is null or an empty string, and this has been set to false, the value will not be changed. The default value is true, meaning that by default all updates are performed including those that set a value to nothing.

Note, Salesforce treats nulls and empty strings as the same. Consequently, Salesforce JDBC driver also treats null and empty string as equivalent.

performHardDeletes

Example value: true
Default value: false

When set to true, the default behaviour of moving deleted records to the recycle bin is replaced by a hard delete, whereby records are removed from the recycle bin immediately after a DELETE statement is performed. This may be necessary if Data Usage limits have been reached.

setFieldsToNullInUpserts

Example value: false
Default value: true

When set to true, this attribute will set fields to null if the value specified or resolved in an UPSERT SQL statement comes out to null (or empty string, which is equivalent in the context of Salesforce JDBC).

This behaviour can be overridden at the SQL statement level by the optional IGNORE NULL and INCLUDE NULL clauses of UPSERT.

Note, Salesforce treats nulls and empty strings as the same. Consequently, Salesforce JDBC driver also treats null and empty string as equivalent.

acceptAllCertificates

Example value: true
Default value: false

If set to true, SFDC certificate is not validated. Default false.

readTimeout

Example value: 20000
Default value: 30000

The time to wait for a response from SFDC before timing out, in milliseconds. If waiting more than this time for a response from SFDC, a timeout exception is thrown. Default is 30 seconds.

connectTimeout

Example value: 60000
Default value: 30000

The timeout value applicable when connecting, in milliseconds. If waiting more than this time for a response from SFDC, a timeout exception is thrown. Default is 30 seconds.

timeout

Example value: 15000
Default value: (none)

Timeout value for both readTimeout and connectTimeout.

token

Example value: d8OVlZ7hnPefP4mLT1x7F4Sy0
Default value: (none)

Salesforce security token in relation to the user account (User settings -> Reset my security token). Alternatively, the security token can be appended to the password (which is equivalent).

api

Example value: 36.0
Default value: 35.0

Target back-end API version. Valid values are of the form [integer].[integer]

Note, API versions much younger or older than the driver release date, may not be compatible with the driver. To resolve this, check the website for a new version of the driver. *The current driver version can be found with getDriverVersion().*

The default API version may change with newer releases of the driver. To check the API endpoint version being used, refer to *getDatabaseProductVersion().*

schema

Example value: MYSANDBOX
Default value: (none)

Sets a schema name for all database metadata to be presented under. Default is no schema.

fetchThreads

Example value: 1
Default value: (equal to the number of logical CPU cores times two)

The number of threads used to fetch data from the result of a back-end SOQL statement. More threads will deliver higher throughput but use more CPU.

SUPPORT

Please contact support@reliersoft.com for any enquiries.