

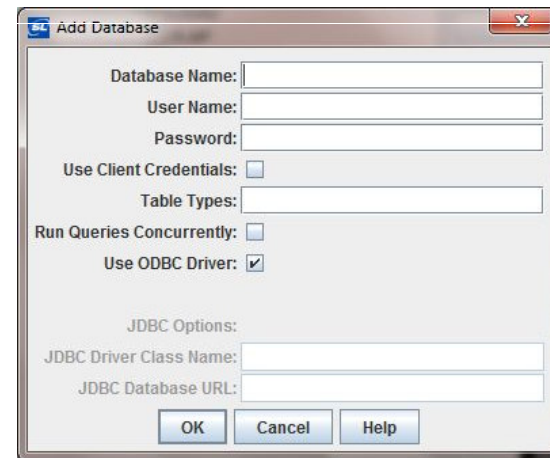
RTView Datasource - SQL

SQL – Configuration

To configure in the Display Builder, select Tools->Options>SQL

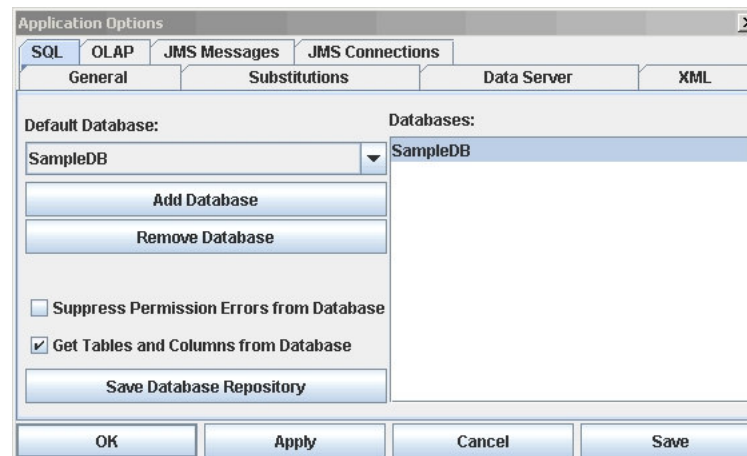
- Database Name: The name to use when referencing this database connection in your data attachments. If ODBC, must match ODBC data source.
- A JDBC driver can be specified instead of ODBC. Must provide JDBC class name and URL.
- Use Client Credentials: If selected, the User Name and Password from the RTView login will be used instead of the User Name and Password.
- Table Types: Specify the types of tables to retrieve when querying the database for available tables. Table types are entered as a comma delimited list, e.g., TABLE, VIEW.
- Run Queries Concurrently: Allows each query to run in its own thread. Multithreading might not be supported by the Database.

SQL related settings are saved under OPTIONS.ini



SQL - Configuration

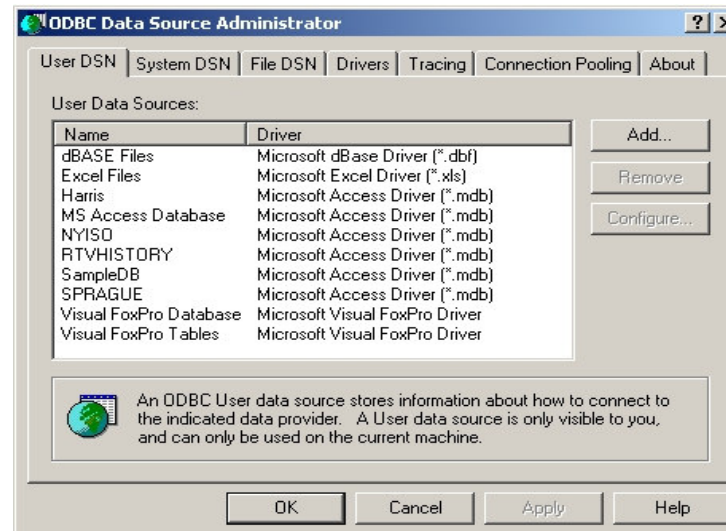
- Suppress Permission Errors: If selected, SQL errors with the word "permission" in them will not be printed to the console. Used with the Use Client Credentials option. In cases where user's login does not allow access for some data in their display, users will not see any errors.
- Get Tables and Columns: If checked, RTView will retrieve table and column metadata from database.
- Save Database Repository: Click to save a file (sqlrepository.xml) that records available tables and column metadata in your database.



SQL - ODBC Setup

ODBC Setup (windows only)

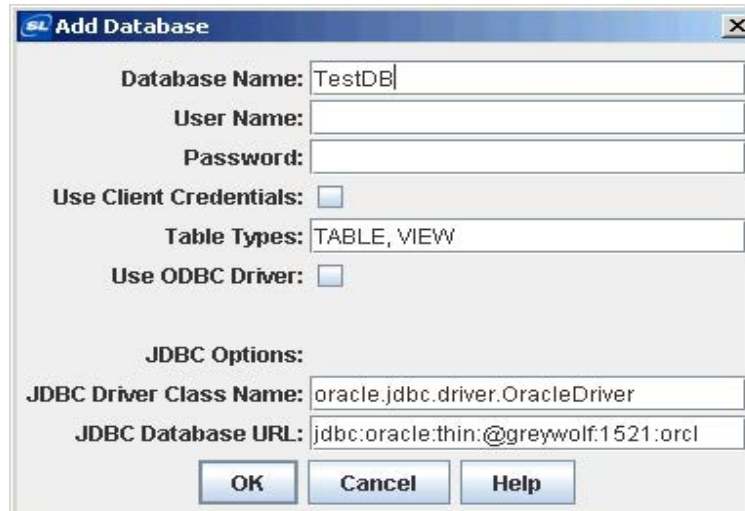
- Simpler to configure
- Use Administrative Tools>Data Sources (ODBC)
 - Add an ODBC Datasource for your database



SQL - JDBC Setup

JDBC Setup

- Locate the JDBC driver on your machine
- Define an environment variable named RTV_USERPATH
 - Contains the path to the jar file that contains the JDBC Driver class
- Define the JDBC driver name and URL in SQL dialog
- JDBC driver specific. Consult JDBC documentation.



Add Database

Database Name: TestDB

User Name:

Password:

Use Client Credentials:

Table Types: TABLE, VIEW

Use ODBC Driver:

JDBC Options:

JDBC Driver Class Name: oracle.jdbc.driver.OracleDriver

JDBC Database URL: jdbc:oracle:thin:@greywolf:1521:orcl

OK Cancel Help

SQL - Oracle JDBC Example

JDBC Setup Example: Oracle 9.2 driver setup

- JDBC Driver Class Name

```
oracle.jdbc.driver.OracleDriver
```

- JDBC Database URL

```
Jdbc:oracle:thin:@hostname:port:SID
```

```
Example:          jdbc:oracle:thin:@greywolf:1521:orcl
```

- RTV_USERPATH

```
= ORACLE_HOME\jdbc\lib\ojdbc6.jar
```

SQL - Oracle JDBC Example

JDBC Setup Example: Microsoft SQL Server

- JDBC Driver Class Name
`com.microsoft.jdbc.sqlserver.SQLServerDriver`
- JDBC Database URL
`jdbc:microsoft:sqlserver://<hostname>:<port>`
Example: `jdbc:microsoft:sqlserver://slnb22\tigerone:1433`
- RTV_USERPATH
`=%MSJDBC_HOME%\mssqlserver.jar;%MSJDBC_HOME%\msbase.jar;`
`%MSJDBC_HOME%\msutil.jar`
where
`MSJDBC_HOME=C:\Program Files\Microsoft SQL Server 2000 Driver for JDBC\lib`

SQL - Data Attachment

- RTView 'Attach to SQL' dialogs can select from a single table without using any SQL.
- If "Enter SQL Query" is checked, user can enter
 - complex SQL queries
 - call stored procedures
- Update Mode – user can configure how often RTView issues SQL queries
 - Run query once
 - Run query every update period
 - Run query every custom period (i.e., some multiple of update period)
 - Run query on demand

The screenshot shows a dialog box titled "Attach To SQL Data". It contains the following fields and controls:

- Property Name: tableStringValue
- Database Name: SampleDB (dropdown menu)
- Enter SQL Query:
- SQL Query: `select * from production_table where Plant=$myplant` (text area)
- Update Mode: Run Query Every Update Period (dropdown menu)
- Query Interval (seconds): (text input field)

At the bottom of the dialog are five buttons: OK, Apply, Reset, Clear, and Cancel.

SQL - Performance and Debugging

Performance considerations

- Limit the columns selected
- Limit number of rows selected
- Use RDBMS views if possible
 - Easiest to implement
 - Database server caches query and query plan
- Use 'static data' check box if data does not change.

Debugging flags

- sqltrace: debug information regarding initial database connections
- sqltime: debug information regarding sql queries made by RTView. Includes sql query string passed to database, number of rows returned and exact completion time taken by the queries themselves

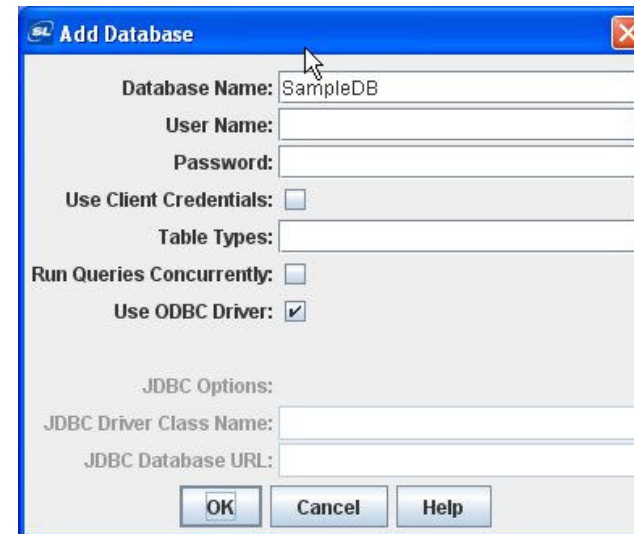
Example:

```
run_builder.bat -sqltime -sqltrace
```

Exercise

Ex 1: Create a ODBC connection with sample database

1. Control Panel>Administrative Tools>Data Sources (ODBC)
2. Under User DSN, Add a new data source
3. Choose Microsoft Access Driver (*.mdb). Select Finish
4. Type in a data source name (e.g., SampleDB)
5. Select a database – look for %RTV_HOME%\demos\dstutorial\sqlsampledb.mdb
6. Select OK.
7. Select OK to exit Data Sources (ODBC)
8. Invoke the Display Builder
9. Select Tools>Options>SQL
10. Add Database
11. Enter “SampleDB” as the database name and select OK.
12. Save settings



Exercise

Ex 2: Attach Table to SQL data

1. From the Display Builder, select Table Object from “Table” Object Palette
2. From Object Properties, right-click on “valueTable” to Attach to Data>SQL
3. Select “SampleDB” as Database Name.
4. Select “system_table” as Table Name
5. Right-click on Column(s) to bring up Select Column Dialog. Add desired columns.
6. Select “OK” twice to apply changes to table.
7. Save file
e.g., sql_example.rtv

