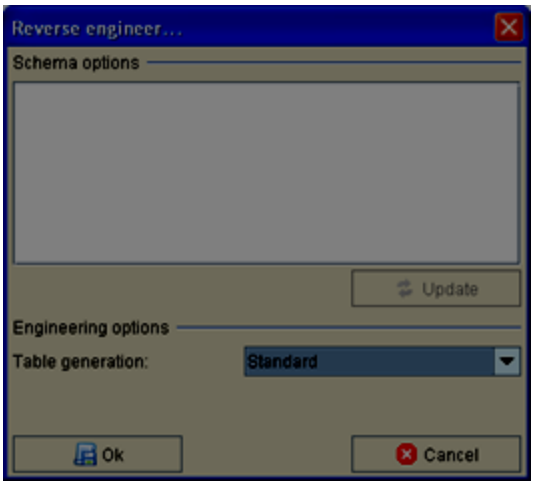
Mogwai ERDesigner NG

Expert Guide

Overview

Reverse Engineering Existing Databases

Mogwai ERDesigner NG can also reverse engineer existing databases. To reverse engineer a database, you need a working database connection. Now, you have to select Database → Reverse engineer from the main menu. The reverse engineering dialog will be displayed:

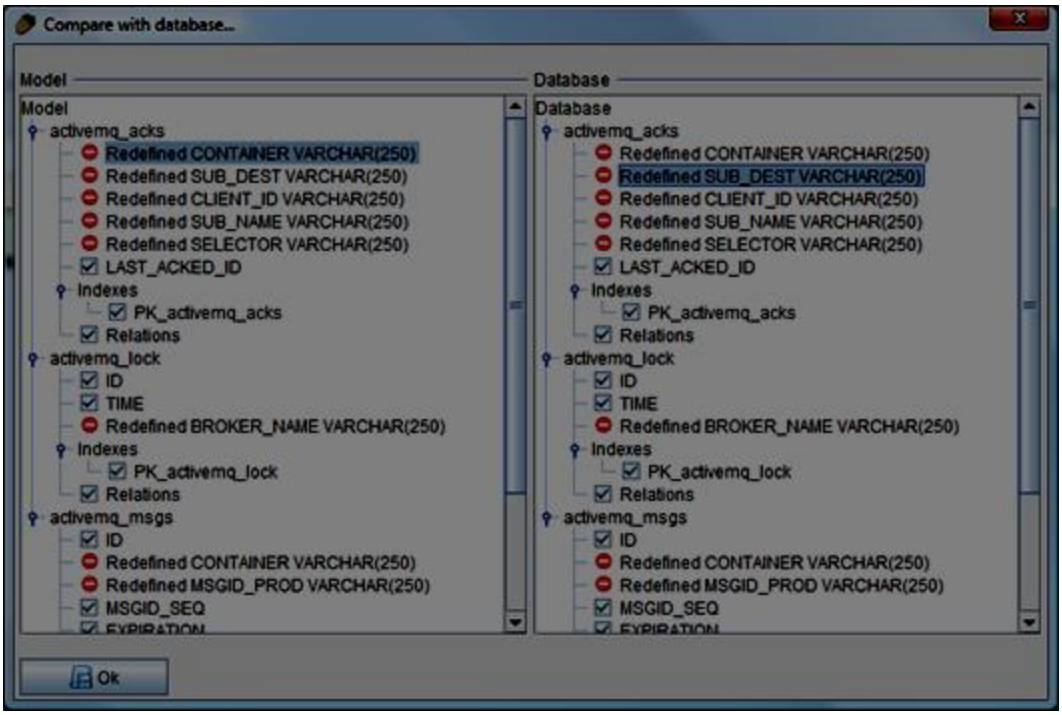


If the current database dialect supports schemas, you have to select a database schema you want to reverse engineer. Click the “Update” button, and select one ore more schemas. If the current dialect does not support schemas, just select the standard table generation engineering method and click the “Ok” button. Now, you have to select the tables and views you want to reverse engineer. The table selection dialog will be displayed:

By default, all available tables are selected. If you don't want to reverse engineer some tables, just deselect them. When you are ready, click the "Ok" button, and the reverse engineering process will start. The reverse engineering process will run in three steps. The first step is to add the tables to the model. The second step is to add indexes and primary keys to the tables. The third and last step is to add the relations and foreign keys to the reverse engineered tables.

The Complete Compare Functionality

Mogwai ERDesigner NG has a build in complete compare functionality. Using this functionality, you can compare the current database model with an existing database. To compare the current database model, you need to specify the target connection using the database connection dialog. Of course, the target database dialect must match the database dialect used in the current model. Now, select Database → Compare with database from the main menu. ERDesigner NG will display the reverse engineering dialog. Use this dialog as described in the previous chapter of this documentation. After the reverse engineering process, ERDesigner NG will display the complete compare dialog with the comparison results:

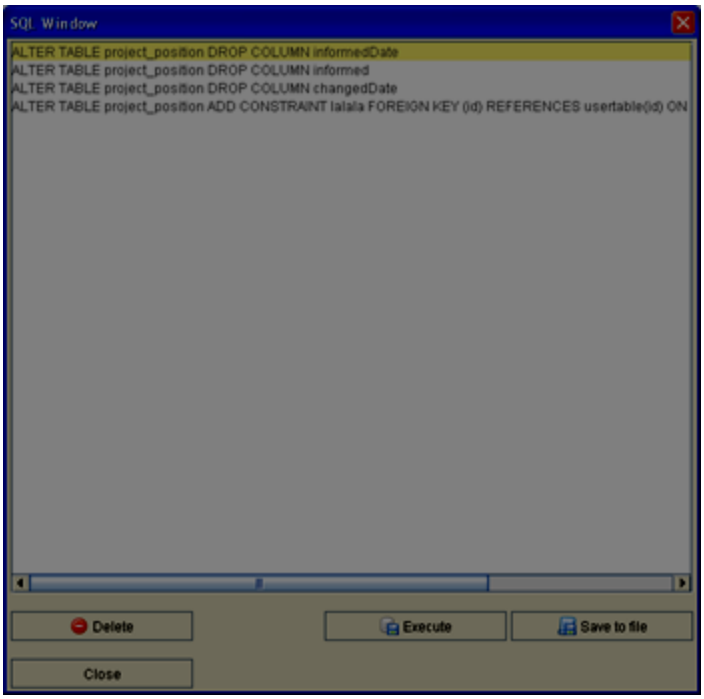


Now, you can see the differences between the model and the database. Missing or changed elements will be marked with a red icon. Using this functionality, you can easily see the difference between a model and a database!

Guide To The Version Control Tracking System

ERDesigner NG has a build in version control tracking system. Every change you make to the database model is tracked, and corresponding SQL DDL statements are generated. These statements can be saved to disk or can be sent directly to the current database connection.

The version control tracking system has two operating modes. The first mode is the in time editing mode. Every change of the current model results in SQL statements. These statements can be seen by selecting Database → Current db changes from the main menu. The SQL editor dialog will be displayed, and the current model changes are shown as SQL files:



Now, you can save the current changes to disk, or you can send them directly to the current database connection.

Note: The database changes SQL dialog will always show every change you have made since you loaded the model, or the last time you saved the model to disk. When you save the model to disk, the latest db change statements are deleted.

Well, the statements are not completely deleted. The version control tracking system has a second operating mode. Every time you save the model to disk, a migration SQL DDL script is generated to migrate an existing database from the state when it was loaded to the state when it is saved. And you can guess: the content of this migration file is the content of the current db changes dialog. So, the statements are saved to disk (with a timestamp appended to the model file name, and with the .SQL extension), and then they are deleted.

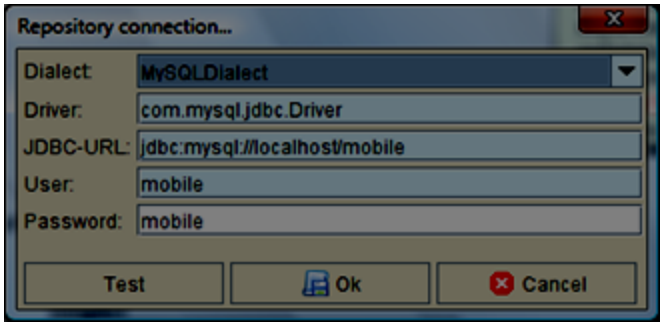
Mogwai ERDesigner NG will also make a backup of an existing model before it is overwritten. Using these backup files, you can easily go back to a prior version of your model. And with the generated migration files, it is quite easy to migrate an existing database to another version!

Using The Model Repository

Mogwai ERDesigner NG as a build in Model Repository support. Using this feature, multiple models can be stored in the single repository. This repository is stored in a SQL database, and enables ERDesignerNG for future multi user support and better audit trails. Model information are stored in special tables with audit trails, so for every model item is tracked who created it and who changed it the last time. Model changes are also stored in this central repository, supporting you to create database schema migration scripts from one version of the schema to another!

Setting up a Model Repository connection

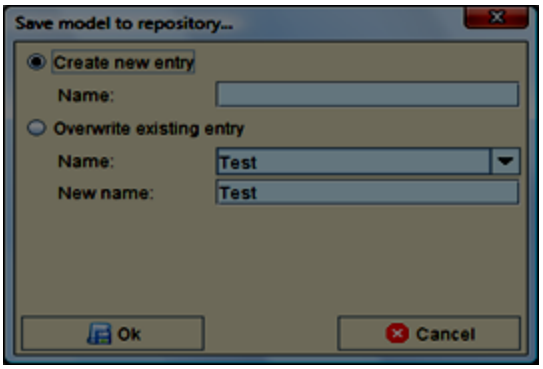
Before you can use the Model Repository, you have to specify the connection to the repository SQL server. You can specify a connection by selecting File → Repository Connection from the main menu. The well known database connection dialog will come up:



Here, you have to enter the connection parameters. When you are ready, you can test the settings by clicking the “Test” button. The connection parameters are saved after you have clicked the “Ok” button.

Saving a model to the Model Repository

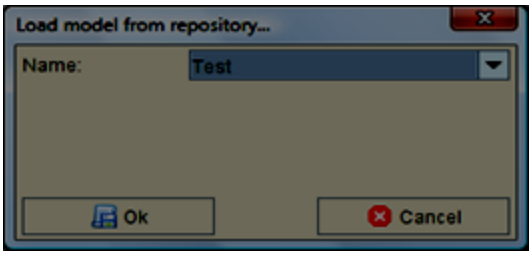
A model can easily be saved to the Model Repository. After you have specified a connection to the repository, and then you have to select File → Save model to repository. The save model to repository dialog will appear:



Here, you have the option to create a new entry in the Model Repository, or the option to overwrite an existing entry, and additionally give it a new name. After you have chosen the option of your choice, and entered the parameters like entry name, you have to click the “Ok” button. Then, the current model will be saved to the Model Repository.

Loading a model from the Model Repository

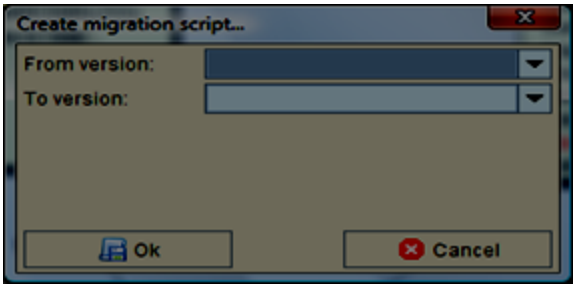
A model can be easily loaded from the Model Repository. You have to select File → Load model from repository. The load model dialog will be displayed:



Here, you have to select an existing repository entry. After you have clicked the “Ok” button, the model is loaded from the repository and is displayed in the editor.

Generating Migration Scripts

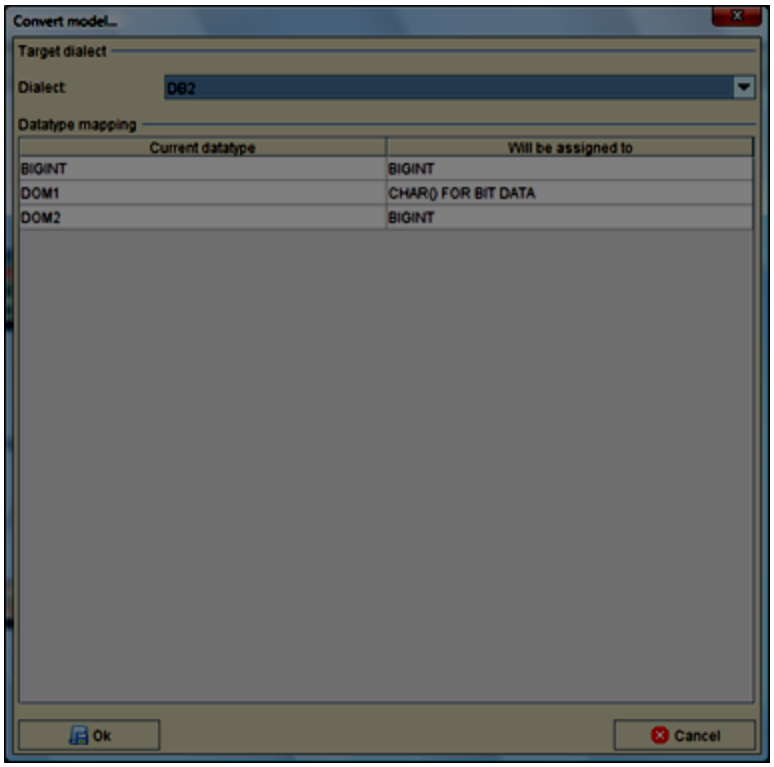
Sometimes, you might want to create a script to migrate from one version of the model to another version. This can easily be done using the Model Repository. First of all, you have to load an existing model into the editor using the load model from repository functionality. Now, the menu item File → Repository utilities → Create migration script is enabled. Click this menu item. The migration script dialog will be displayed:



Here, you have to select the source version, and the target version. After you have clicked the “Ok” button, the SQL window is displayed. Here, you can send the SQL statements to the current database connection, or you can just save them to file.

Converting a Database Model

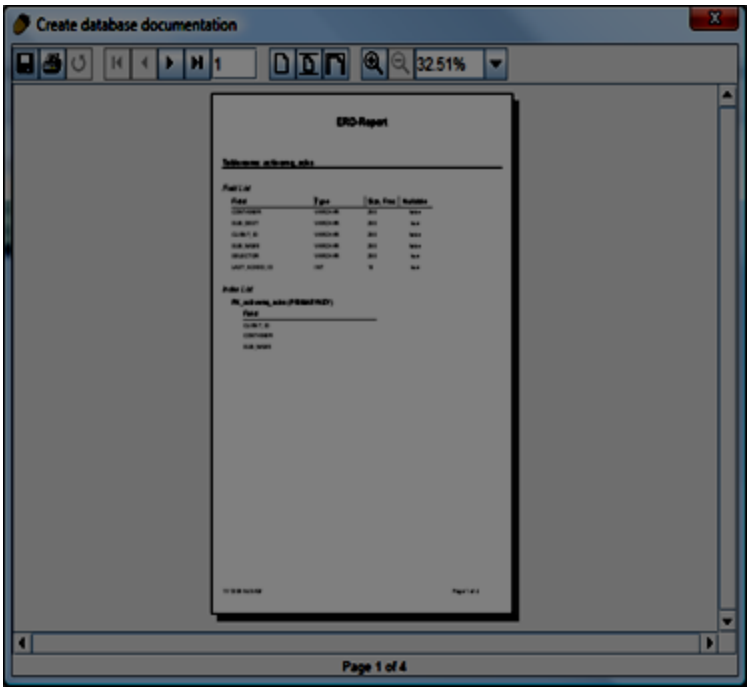
Mogwai ERDesignerNG help you to convert an existing database model to another Dialect. Using this functionality, you can reverse engineer an existing database, and convert it to another database type, like from Oracle to MySQL. To start the database conversion, you have to select Database → Convert Model from the main menu. The database conversion dialog will be displayed:



Here, you have to select the target dialect, and you have to specify the datatype mapping. By default, the model converter tries to find the corresponding datatype in the target dialect based on the JDBC datatype, but the default can of course be overridden. After the datatype mapping is done, click the “Ok” button, and the current database model including the schema and domain specification is converted to the new dialect.

Creating a Database Documentation

Mogwai ERDesignerNG has a built in model documentation functionality based on JasperReports. Using this functionality, reports can be generated in different formats, like HTML, PDF, RTF and others. ERDesignerNG comes with a set of sample reports, but can easily be extended with custom report templates. Templates can be added or modified using the JasperReports iReport editor. Templates are stored in the “reports” directory of the ERDesignerNG distribution. A model documentation can be generated by selecting Database → Create database Documentation → <The report you want to have> from the main menu. The report is generated and the report viewer is started. The following screen will be displayed:

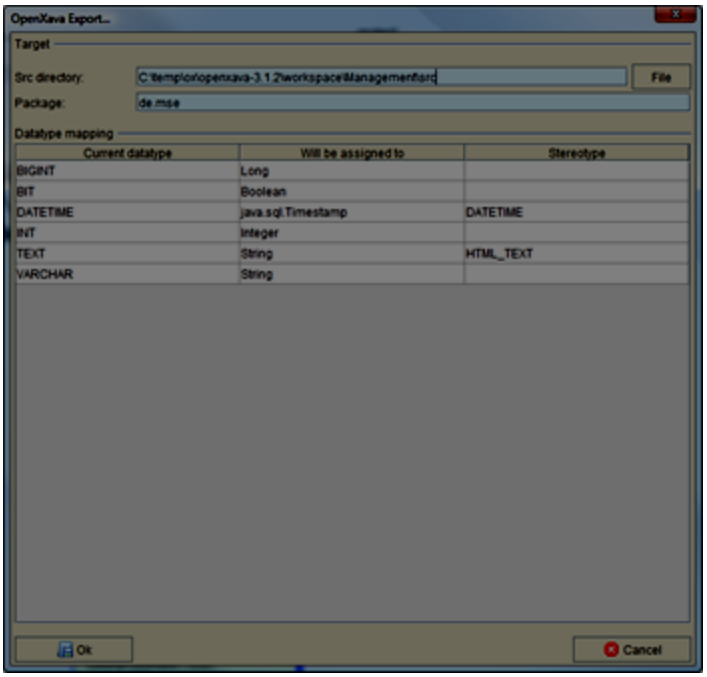


Now, the report can be read, and saved in the format you want to have. By default, the following formats are supported: PDF, RTF, ODT, HTML, XLS and CSV. Reports can also directly be printed using this screen. For more information about report design and JasperReports, please visit the following site:

http://jasperforge.org/plugins/project/project_home.php?group_id=83

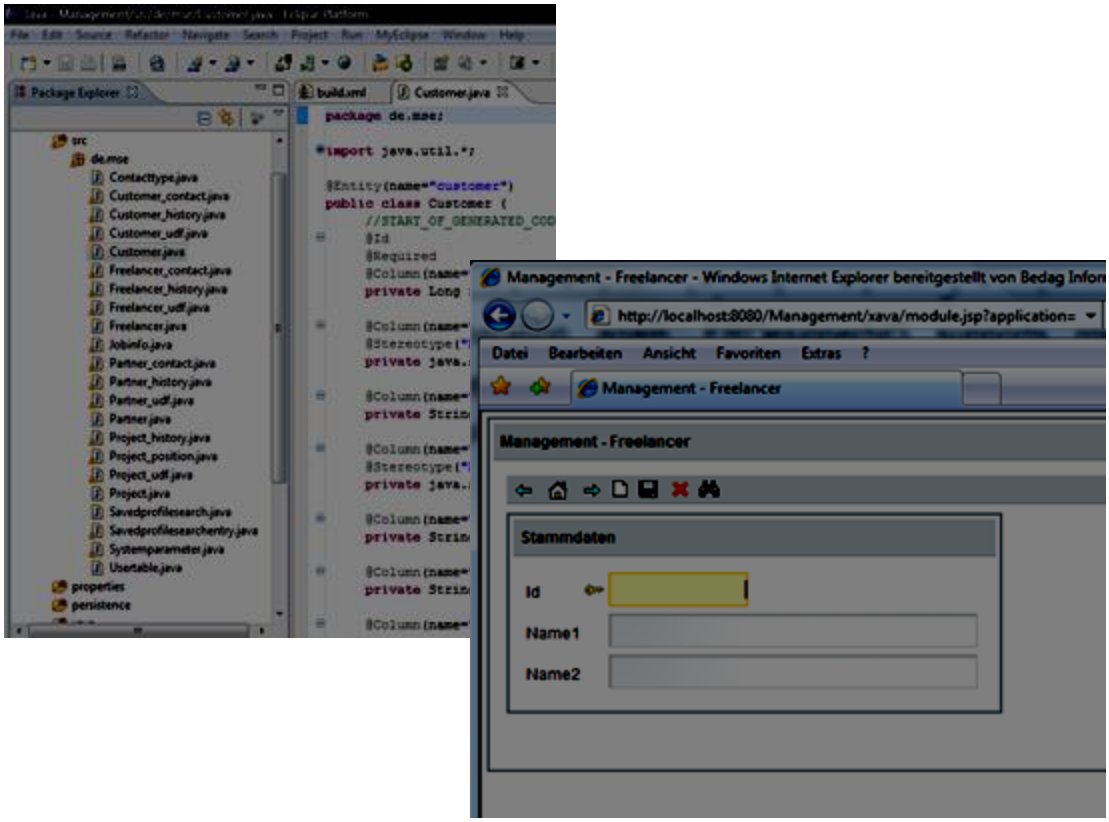
Generating an OpenXava Application

Mogwai ERDesignerNG help to to create an OpenXava application for the loaded datamodel. OpenXava is a rapid application development framework based on Java and the concept of Nacked Objects. To start the OpenXava generator, Select File → Export → OpenXava export from the main menu. The OpenXava export dialog will be shown:



Here we can specify the SQL Datatype to Java Typemapping. Also, the OpenXava Stereotype can be specified, but it is optional. After entering the base directory for the Java source files and the package name, we can start the code generation process by clicking the “Ok” Button. Mogwai ERDesignerNG will generate the corresponding Java files. It is also possible to change the Java files after generation, and do a generation again. ERDesignerNG supports round trip engineering!

Now, the OpenXava files can be edited in your favorite IDE and the application can be deployed to Tomcat or a Portal server.



For more information about Nacked Objects and OpenXava, please visit the following site:

http://www.openxava.org