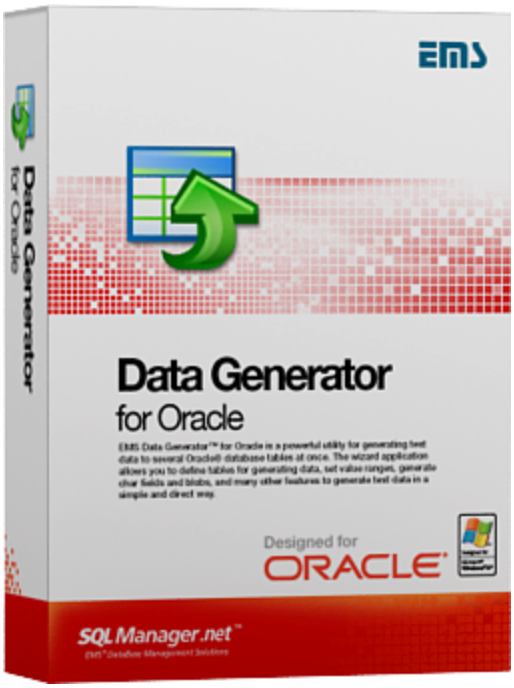
SQL Manager.net™

EMS® Software Development



Data Generator for Oracle User's Manual

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Data Generator for Oracle
User's Manual

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This manual documents EMS Data Generator for Oracle, version 3.0.x.x

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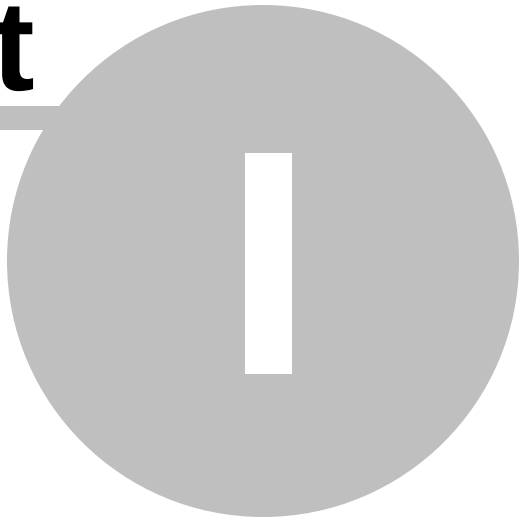
Part



1 Welcome to EMS Data Generator!

EMS Data Generator for Oracle is a powerful utility for generating test data into one or several Oracle database tables simultaneously, with script saving and editing capabilities. The wizard application allows you to define tables and columns for generating data, set value ranges, generate string values by mask, load values for BLOB columns directly from files, set lists of values manually, get sets of values from SQL queries and perform other operations with test date in a simple and direct way. The distribution of the utility also provides you with the console application which allows you to generate data in one-touch by using data generation templates.

Visit our web-site: https://www.sqlmanager.net for details.

Key features

- Unicode support
- Localizable user-friendly wizard interface
- Ability to save and edit data generation script, without actual script execution
- Generating data into several tables of different schemas
- Ability to select data insertion type: INSERT, MERGE
- Support for all Oracle data types including NUMERIC, CHARACTER, DATETIME (DATE, TIMESTAMP), INTERVALS and BINARY (RAW, LONGRAW, BLOB)
- Various data generation modes for each data type including list, random, incremental data generation and more
- Ability to use SQL query results as the list of values for data generation
- Ability to get data from another column for data generation
- Ability to preview the data grid for each table
- Automatic control over referential integrity for data generation into linked tables
- Ability to disable triggers associated with the tables during data generation
- Wide variety of generation parameters for each data type
- Ability to set NULL values for a specified percent of cases
- Ability to empty tables before data generation
- Possibility of saving all the generation parameters specified within the current wizard session
- The command-line utility to generate data using the configuration file

Product information

Homepage:	https://www.sqlmanager.net/products/oracle/datagenerator
Support Ticket System:	https://www.sqlmanager.net/support
Register online at:	https://www.sqlmanager.net/products/oracle/datagenerator/buy

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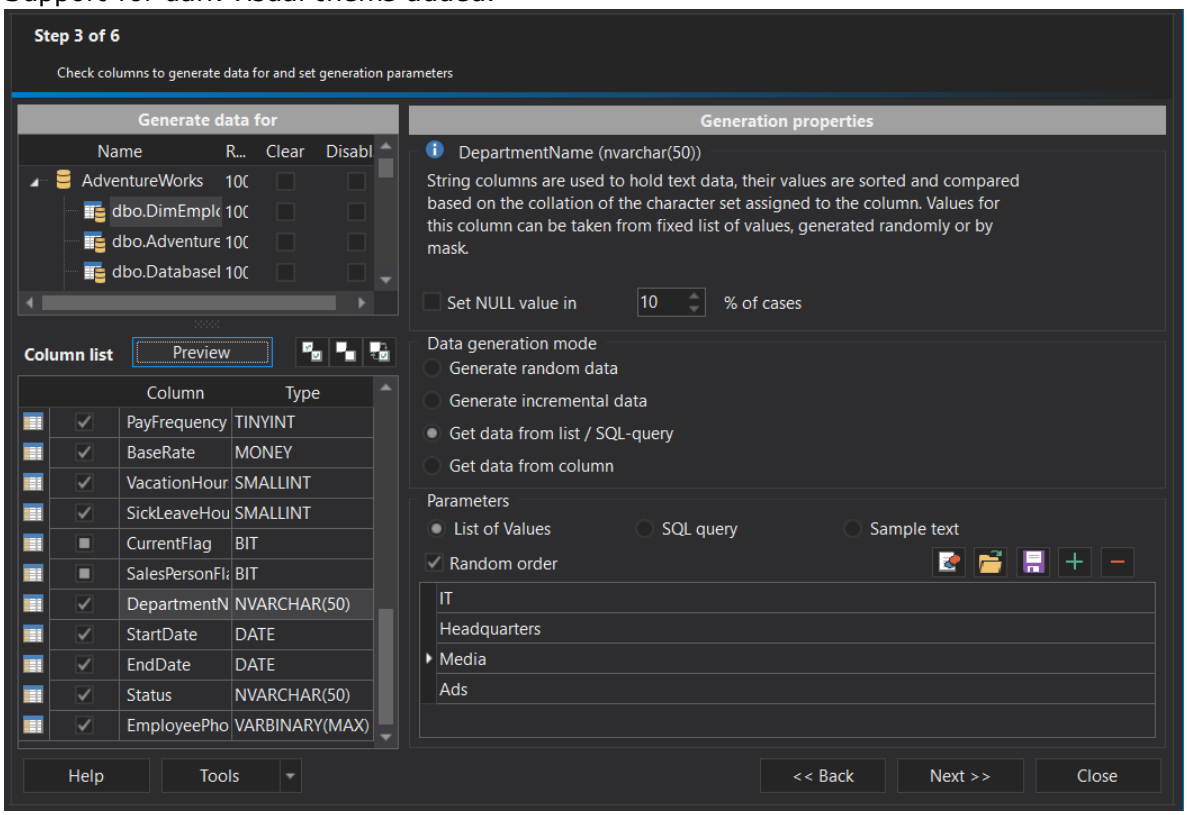
1.1 What's new

Version
Data Generator for Oracle 4.0

Release Date
November 21, 2023

What's new in EMS Data Generator 4.0?

- Support for dark visual theme added.



- Unicode names of objects are now supported.
- Updated SSH library with ECDSA, Ed25519 keys and Keyboard-interactive authentication method support.
- Support for the Oracle 21c server version.
- JSON data type is now supported.
- Encoding option for script file has been added.
- Files with test data are now supplied with the program installation pack.
- Many other improvements and fixes.

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1.2 System requirements

System requirements for Data Generator for Oracle

- Microsoft Windows XP, Microsoft Windows Server 2003, Microsoft Windows Server 2008, Microsoft Windows Server 2008 R2, Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2016, Microsoft Windows Vista, Microsoft Windows 7, Microsoft Windows 8/8.1, Microsoft Windows 10, Microsoft Windows 11, Microsoft Windows 11 ARM
- 50MB of available HD space for program installation
- Oracle Client 8.1.7 or higher
- Possibility to connect to any local or remote Oracle server
- Supported Oracle server versions: from 8.1.7 up to 21c

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1.3 Installation

If you are **installing Data Generator for Oracle for the first time** on your PC:

- download the Data Generator for Oracle distribution package from the download page available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- run *OraDataGenSetup.exe* from the local directory and follow the instructions of the installation wizard;
- after the installation process is completed, find the Data Generator shortcut in the corresponding group of Windows Start menu.

If you want to **upgrade an installed copy of Data Generator for Oracle** to the latest version:

- download the Data Generator for Oracle distribution package from the download page available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- close Data Generator application if it is running;
- run *OraDataGenSetup.exe* from the local directory and follow the instructions of the installation wizard.

See also:

System requirements

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1.4 Registration

All purchases are provided by **PayPro Global** registration service. The **PayPro Global** order process is protected via a secure connection and makes on-line ordering by credit/ debit card quick and safe.

PayPro Global is a global e-commerce provider for software and shareware sales via the Internet. It accepts payments in US Dollars, Euros, Pounds Sterling, Japanese Yen, Australian Dollars, Canadian Dollars or Swiss Franks by Credit Card (Visa, MasterCard/ EuroCard, American Express, Diners Club), Bank/Wire Transfer.

If you want to review your order information, or you have questions about ordering or payments please visit our PayPro Global Shopper Support, provided by **PayPro Global.**

Please note that all of our products are delivered via ESD (Electronic Software Delivery) only. After purchase you will be able to immediately download the registration keys. Also you will receive a copy of registration keys by email. Please make sure to enter a valid email address in your order. If you have not received the keys within 2 hours, please, contact us at sales@sqlmanager.net.

To obtain **MORE INFORMATION** on this product, visit us at https://www.sqlmanager.net/products/oracle/datagenerator

Product distribution	**PayPro Global**
EMS Data Generator for Oracle (Business license) + 1-Year Maintenance*	Register Now!
EMS Data Generator for Oracle (Business license) + 2-Year Maintenance*	
EMS Data Generator for Oracle (Business license) + 3-Year Maintenance*	
EMS Data Generator for Oracle (Non-commercial license) + 1-Year Maintenance*	
EMS Data Generator for Oracle (Non-commercial license) + 2-Year Maintenance*	
EMS Data Generator for Oracle (Non-commercial license) + 3-Year Maintenance*	
EMS Data Generator for Oracle (Trial version)	Download Now!

***EMS Maintenance Program** provides the following benefits:

- Free software bug fixes, enhancements, updates and upgrades during the maintenance period
- Free unlimited communications with technical staff for the purpose of reporting Software failures
- Free reasonable number of communications for the purpose of consultation on operational aspects of the software

After your maintenance expires you will not be able to update your software or get technical support. To protect your investments and have your software up-to-date, you need to renew your maintenance.

You can easily reinitiate/renew your maintenance with our on-line, speed-through Maintenance Reinstatement/Renewal Interface. After reinitiating/renewal you will receive

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a confirmation e-mail with all the necessary information.

See also:

How to register EMS Data Generator

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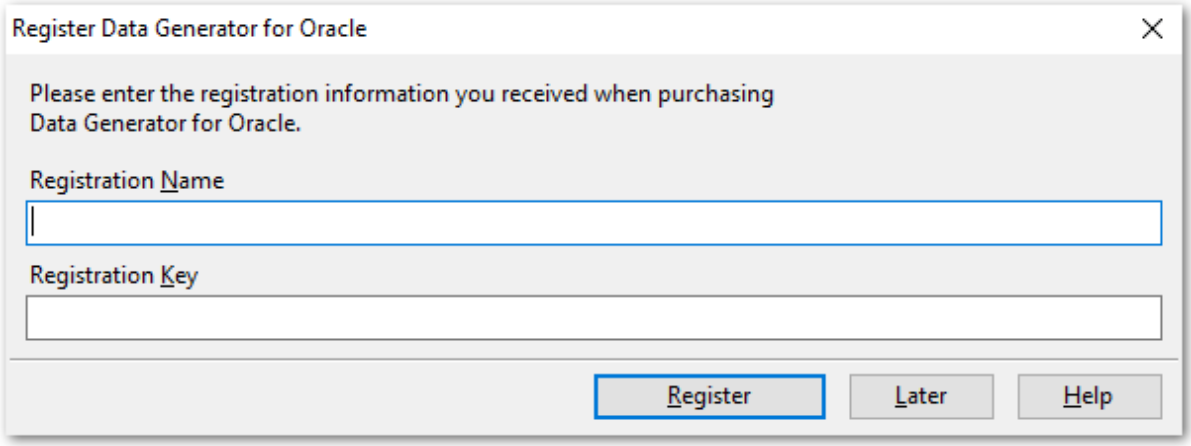
1.5 How to register Data Generator

To **register** your newly purchased copy of EMS **Data Generator for Oracle**, perform the following:

- receive the notification letter from **PayPro Global** with the registration info;
- enter the **Registration Name** and the **Registration Key** from this letter;
- make sure that the registration process has been completed successfully – check the registration information at the startup page.



See also:

Registration

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1.6 EMS Data Generator FAQ

Please read this page attentively if you have questions about EMS Data Generator for Oracle.

Table of contents

- What is Data Generator for Oracle?
- What do I need to start working with EMS Data Generator for Oracle?
- What is the easiest way to configure the template files for the console application of Data Generator?
- How can I register the product?
- Are there any limitations implied in the trial version as compared with the full one?

Question/answer list

Q: What is Data Generator for Oracle?

A: Data Generator for Oracle is a powerful utility for generating test data to several Oracle database tables at once. The wizard application allows you to define tables for generating data, set value ranges, generate char and BLOB values, and many other features to generate test data in a simple and direct way. The utility also provides you with the console application which allows you to generate data in one touch by using generation templates.

Q: What do I need to start working with EMS Data Generator for Oracle?

A: First of all you must have a possibility to connect to some local or remote Oracle server to work with Data Generator for Oracle. You can use the following link to download the server and/or client: https://www.oracle.com/technology/software. Besides, you need your computer to satisfy the system requirements for Data Generator for Oracle.

Q: What is the easiest way to configure the template files for the console application of Data Generator?

A: You can configure the template files for each table or export type visually using the Oracle Data Generator wizard. Set the required generation options at Step 4 of the wizard, click the 'Tools' button and select the 'Save Template' popup menu item. All the options will be saved to the template file which can be used later in the console application.

Q: How can I register the product?

A: If you have already purchased Data Generator for Oracle, you can register the product by entering the appropriate registration information. Please refer to Registration and How to register EMS Data Generator for details.

Q: Are there any limitations implied in the trial version as compared with the full one?

A: The trial version of the utility admits to the maximum of 100 records to be generated at a time. In all other respects it does not differ from the full version as far as the functionality is concerned. That is, you can test all the features implemented in Data Generator for Oracle within the 30-day trial period.

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If you have any additional questions, contact us at our Support Center.

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1.7 Other EMS Products

Quick navigation

MySQL

Microsoft SQL Server

PostgreSQL

InterBase / FireBird

Oracle

IBM DB2

Tools & components

MySQL

SQL Management Studio for MySQL
EMS SQL Management Studio for MySQL is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

SQL Manager for MySQL
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for MySQL
Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.

Data Import for MySQL
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for MySQL
Migrate from most popular databases (MySQL, PostgreSQL, Oracle, DB2, InterBase/Firebird, etc.) to MySQL.

Data Generator for MySQL
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for MySQL
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for MySQL
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for MySQL
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for MySQL
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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Microsoft SQL Server

SQL Management Studio for SQL Server
EMS SQL Management Studio for SQL Server is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

EMS SQL Backup for SQL Server
Perform backup and restore, log shipping and many other regular maintenance tasks on the whole set of SQL Servers in your company.

SQL Administrator for SQL Server
Perform administrative tasks in the fastest, easiest and most efficient way. Manage maintenance tasks, monitor their performance schedule, frequency and the last execution result.

SQL Manager for SQL Server
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for SQL Server
Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more

Data Import for SQL Server
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for SQL Server
Migrate from most popular databases (MySQL, PostgreSQL, Oracle, DB2, InterBase/Firebird, etc.) to Microsoft® SQL Server™.

Data Generator for SQL Server
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for SQL Server
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for SQL Server
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for SQL Server
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for SQL Server
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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PostgreSQL

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SQL Management Studio for PostgreSQL
EMS SQL Management Studio for PostgreSQL is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

EMS SQL Backup for PostgreSQL
Creates backups for multiple PostgreSQL servers from a single console. You can use automatic backup tasks with advanced schedules and store them in local or remote folders or cloud storages

SQL Manager for PostgreSQL
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for PostgreSQL
Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more

Data Import for PostgreSQL
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for PostgreSQL
Migrate from most popular databases (MySQL, SQL Server, Oracle, DB2, InterBase/Firebird, etc.) to PostgreSQL.

Data Generator for PostgreSQL
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for PostgreSQL
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for PostgreSQL
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for PostgreSQL
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for PostgreSQL
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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InterBase / Firebird

SQL Management Studio for InterBase/Firebird
EMS SQL Management Studio for InterBase and Firebird is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

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SQL Manager for InterBase/Firebird
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for InterBase/Firebird
Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more

Data Import for InterBase/Firebird
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for InterBase/Firebird
Migrate from most popular databases (MySQL, SQL Server, Oracle, DB2, PostgreSQL, etc.) to InterBase/Firebird.

Data Generator for InterBase/Firebird
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for InterBase/Firebird
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for InterBase/Firebird
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for InterBase/Firebird
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for InterBase/Firebird
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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Oracle

SQL Management Studio for Oracle
EMS SQL Management Studio for Oracle is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

SQL Manager for Oracle
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for Oracle
Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.

Data Import for Oracle
Import your data from MS Access, MS Excel and other popular formats to database tables via

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user-friendly wizard interface.

Data Pump for Oracle
Migrate from most popular databases (MySQL, PostgreSQL, MySQL, DB2, InterBase/Firebird, etc.) to Oracle

Data Generator for Oracle
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for Oracle
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for Oracle
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for Oracle
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for Oracle
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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IBM DB2

SQL Manager for DB2
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for DB2
Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.

Data Import for DB2
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for DB2
Migrate from most popular databases (MySQL, PostgreSQL, Oracle, MySQL, InterBase/Firebird, etc.) to DB2

Data Generator for DB2
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Extract for DB2
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for DB2
Analyze and retrieve your data, build your queries visually, work with query plans, build charts

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based on retrieved data quickly and more.

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Tools & components

Advanced Data Export for RAD Studio VCL
Advanced Data Export for RAD Studio VCL allows you to save your data in the most popular office programs formats.

Advanced Data Export .NET
Advanced Data Export .NET is a component for Microsoft Visual Studio .NET that will allow you to save your data in the most popular data formats for the future viewing, modification, printing or web publication. You can export data into MS Access, MS Excel, MS Word (RTF), PDF, TXT, DBF, CSV and more! There will be no need to waste your time on tiresome data conversion - Advanced Data Export will do the task quickly and will give the result in the desired format.

Advanced Data Import for RAD Studio VCL
Advanced Data Import for RAD Studio VCL will allow you to import your data to the database from files in the most popular data formats.

Advanced PDF Generator for RAD Studio
Advanced PDF Generator for RAD Studio gives you an opportunity to create PDF documents with your applications written on Delphi or C++ Builder.

Advanced Query Builder for RAD Studio VCL
Advanced Query Builder for RAD Studio VCL is a powerful component for Delphi and C++ Builder intended for visual building SQL statements for the SELECT, INSERT, UPDATE and DELETE clauses.

Advanced Excel Report for RAD Studio
Advanced Excel Report for RAD Studio is a powerful band-oriented generator of template-based reports in MS Excel.

Advanced Localizer for RAD Studio VCL
Advanced Localizer for RAD Studio VCL is an indispensable component for Delphi for adding multilingual support to your applications.

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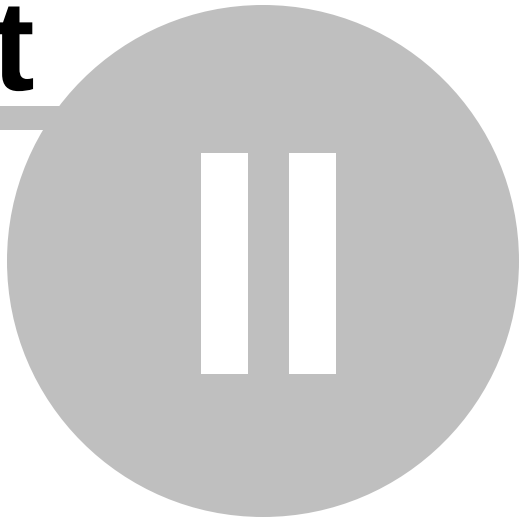
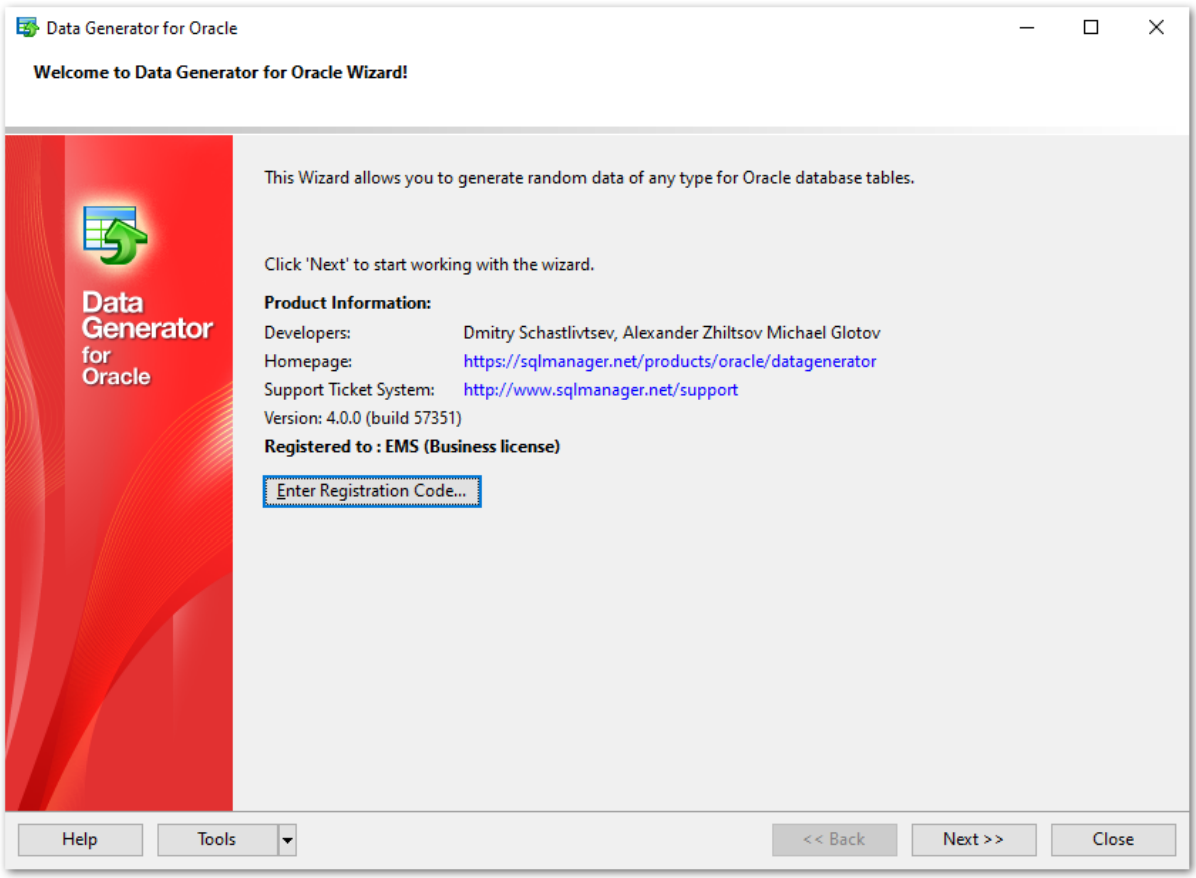
Part



2 Wizard Application

Data Generator for Oracle wizard application provides easy-to-use wizard interface to set all data generation parameters visually.

- Using wizard application
- Using configuration files
- Setting program preferences



See also:

Console Application

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2.1 Using wizard application

Go through the steps of the wizard and follow the wizard instructions to generate test data for your needs.

- Getting started
- Step 1 - Setting connection properties
- Step 2 - Selecting schemas and tables
- Step 3 - Specifying generation parameters
- Step 4 - Setting generation options
- Step 5 - Start of data generation process
- Step 6 - Editing generation script

See also:

Using console application

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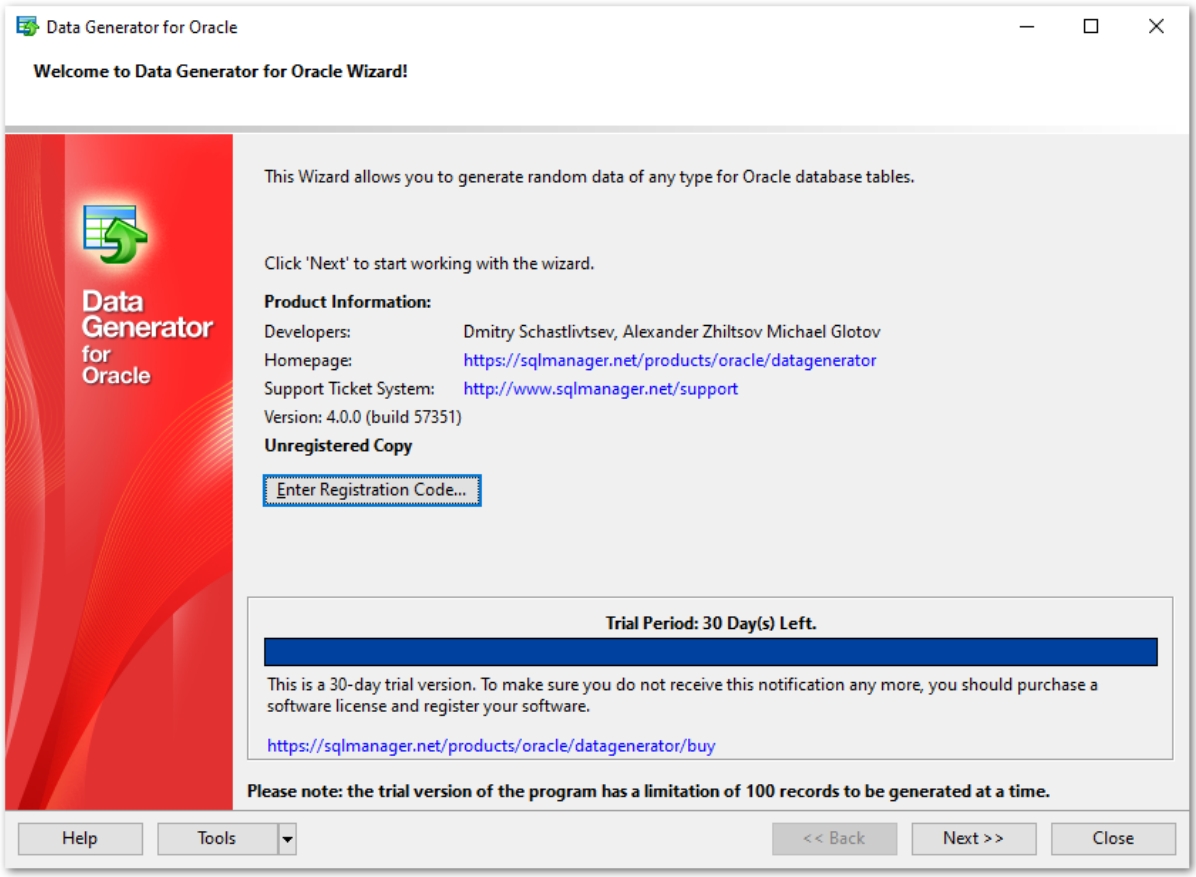
2.1.1 Getting started

This is how Data Generator for Oracle wizard application looks when you first start it.

This page allows you to view registration information. If you have not registered Data Generator for Oracle yet, you can do it by pressing the **Enter Registration Code...** button and specifying your registration information.



When you are done, press the **Next** button to proceed to Step 1.

See also:

Registration

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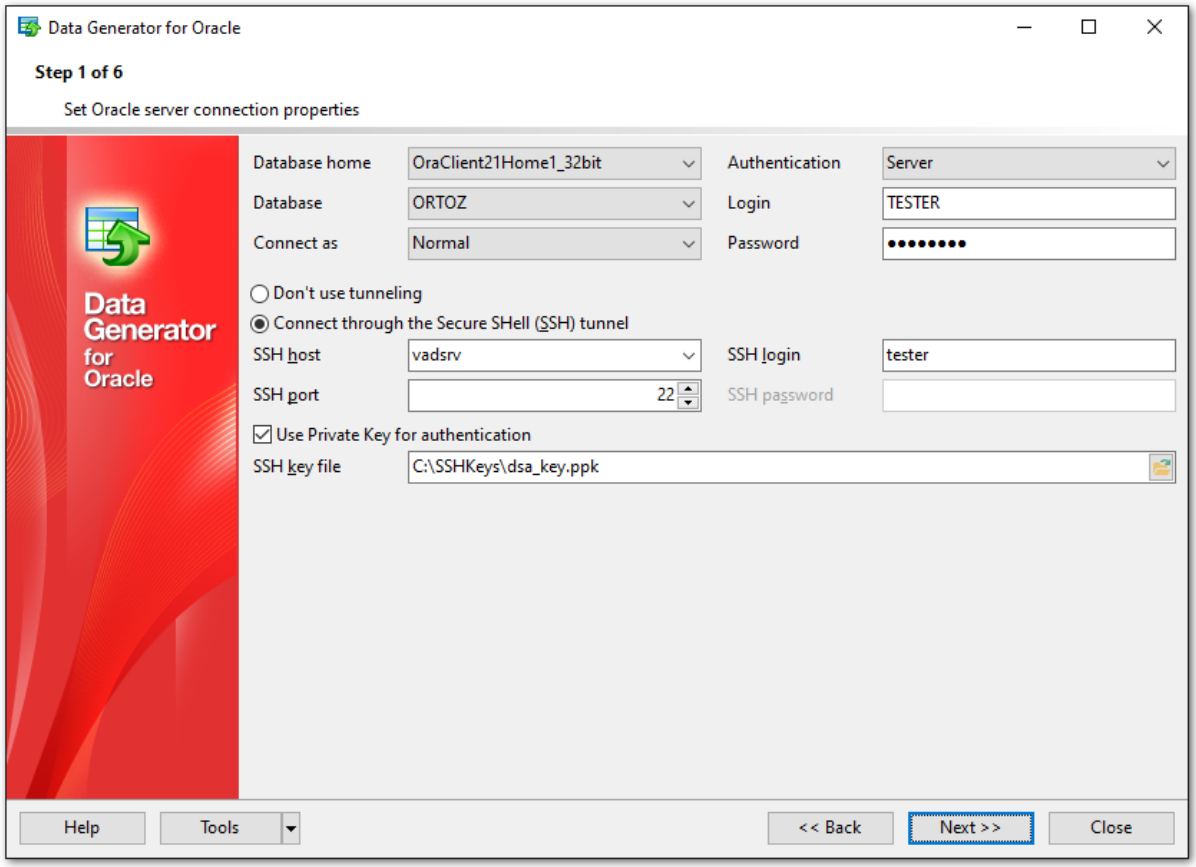
2.1.2 Step 1 - Setting connection properties

At this step you should enter the necessary settings to establish connection to Oracle server.



Database Home
Specify your Oracle Home storage for this connection.

Connect as
Select the type of connection to be established: *Normal* (by default), *SYSDBA*, *SYSOPER*.

Authentication
Specify the preferable type of authentication to be used for the connection:
- *Windows*
- *Server*

If *server authentication type* has been selected, you should also provide *authorization* settings: **Login** and **Password**.
The default superuser name is 'SYS' (for Oracle 9.0 and higher) and the default password is 'change_on_install'.

After that it is necessary to specify the database you are going to work with: type in the database name in the **Database** field or select one from the drop-down list (the drop-down list is only available if more than one Oracle database are registered in the TNS file).

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Note: If no database are registered in Oracle Client (DB list is empty in this case), then you need to add registration info manually.

Please note that you should have sufficient privileges to write to the destination database on Oracle server.

If you are using the EMS SQL Management Studio for Oracle version of Data Generator for Oracle then the **Select registered database** button is available. Click this button to pick a database already registered in the EMS SQL Management Studio in the Select Host or Database dialog.

Tunneling settings

To setup the connection via **SSH tunnel**, input the following values in the corresponding fields:

- **SSH host name** is the name of the host where SSH server is running
- **SSH port** indicates the port where SSH server is activated
- **SSH user name** stands for the user on the machine where SSH server is running (**Note:** it is a Linux/Windows user, not a user of Oracle server)
- **SSH password** is the Linux/Windows user password

For details see SSH tunneling options.

When you are done, press the **Next** button to proceed to the next step.

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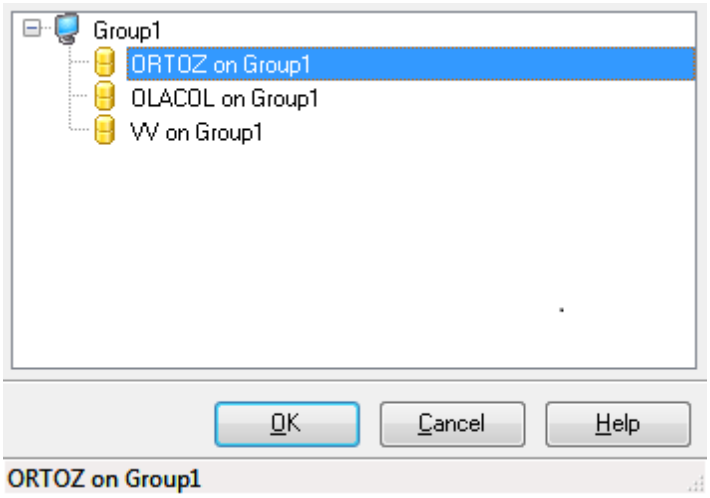
2.1.2.1 Selecting registered database

Use this dialog to select a database for data generation. This dialog is available only in EMS SQL Management Studio version of Data Generator for Oracle.



All databases registered in EMS SQL Management Studio for Oracle are displayed in the list.

Select the necessary database and click the **OK** button.

Database registration information will be filled on the first step automatically.

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2.1.3 Step 2 - Selecting schemas and tables

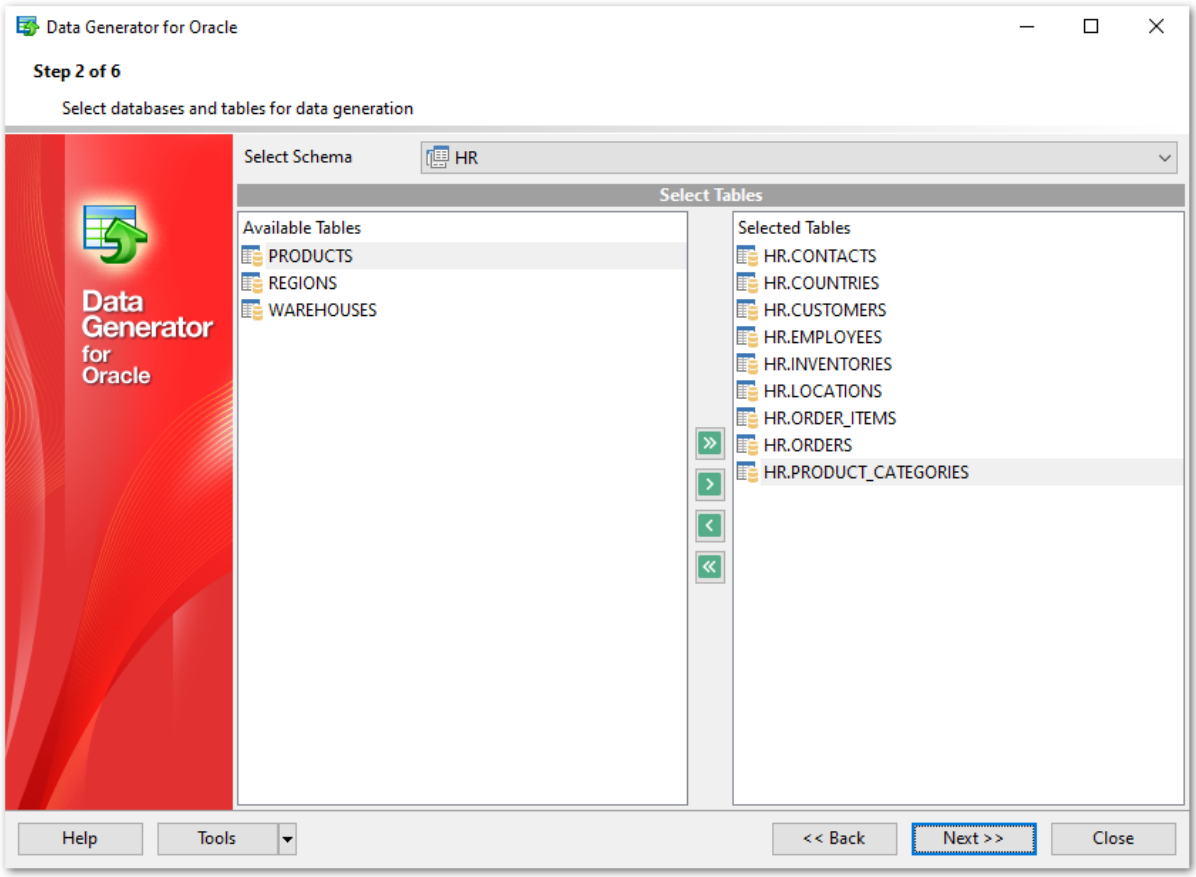
At this step you should select tables for test data generation.

First you should select a schema from the **Select Schema** drop-down list at the top of the window.

In the **Available Tables** list you can see all the tables belonging to the selected schema. To select a table, you need to move it from the **Available Tables** list to the **Selected Tables** list. In this list tables are displayed with their full names: <schema_name>.<table_name>. To cancel table selection, just remove it from the **Selected Tables** list.

Use the buttons or drag-and-drop operations to move the tables from one list to another.

Hint: To select multiple tables, hold down the *Shift* or *Ctrl* key while selecting the table names.



Please note that the order of data generation for tables depends on their position in the **Selected Tables** list. This might be critical in case of generating data for linked tables. You can change their order by dragging tables across the list.

When you press the **Next** button at this step, Data Generator for Oracle analyzes the order of data generation to avoid referential integrity conflicts and advises you to set a new order for data generation.

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When you are done, press the **Next** button to proceed to the next step.

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2.1.4 Step 3 - Specifying generation parameters

At this step you can select columns for generating data and set various data generation parameters.

Selected tables are displayed in the **Generate data for** tree at the top-left side of the window. Table columns and their types are listed in the grid of the **Columns list** area below.

Records count
Set the number of data records to be generated for each table.

☑ **Clear**
Set this flag for a table to empty the table before data generation.

Disable triggers
This column is visible if there are active triggers on one or more tables selected for data generation. Set a flag for a table to disable triggers associated with the table during data generation.

Insert type
Use the drop-down list to select the data insertion type:

- *insert*: common data insertion type
- *merge*: data are read from the source and *INSERT* or *UPDATE* operation is performed in the target table depending on a condition (note that for this generation type you will need to select a key column; if the table has a key column, this column will be automatically selected as the key coumn for the merge operation)

Preview
Click the **Preview** button to browse the selected table data in the preview mode.

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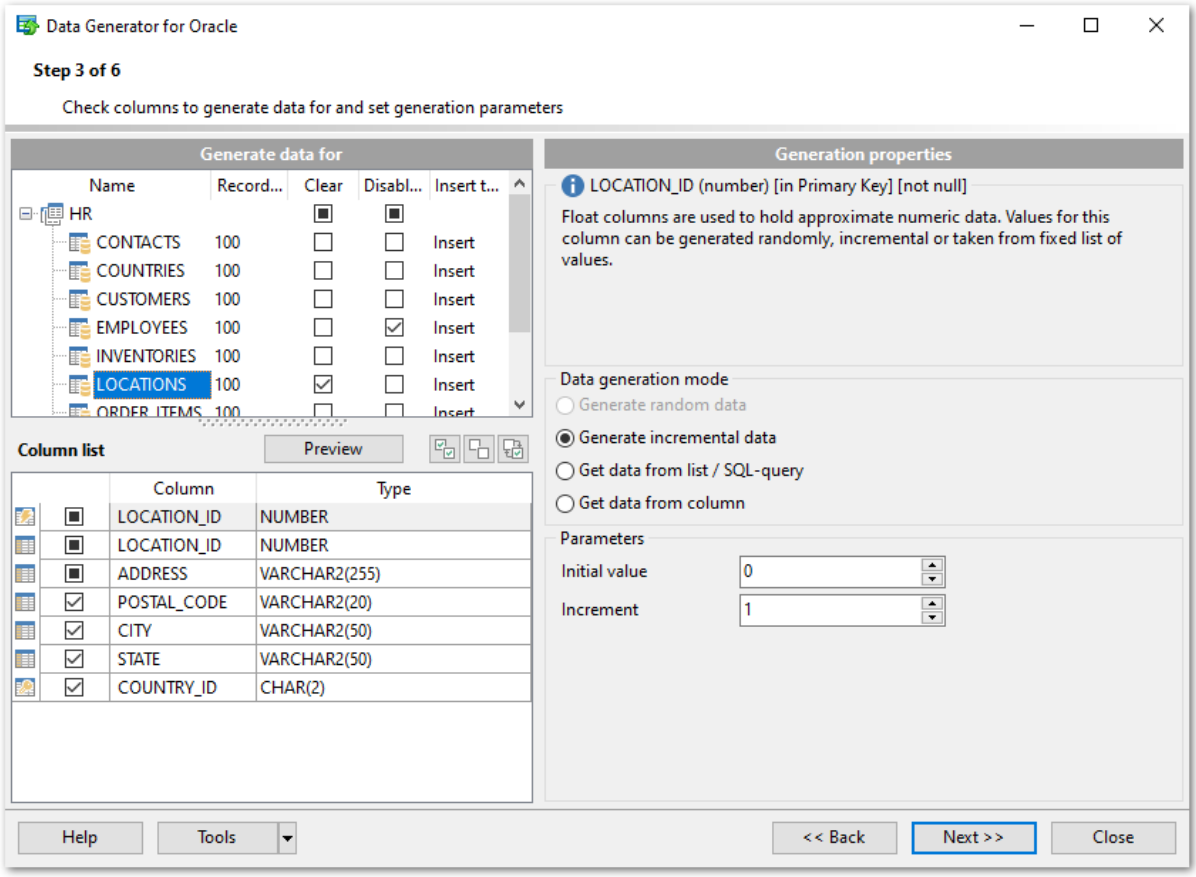

When you select a table in the **Generate data for** tree, you can set data generation parameters for each of its columns within the **Generation properties** area at the right side of the window. Use the and the buttons to manage columns within the **Columns list** area. For each column you can set the following:

☑ **Set NULL value in ... % of cases**
Check this option and specify the percentage of NULL values for the column data, if necessary.

Other generation parameters vary according to the data type of the selected column:

- FLOAT type parameters
- DATE type parameters
- STRING type parameters
- BLOB type parameters
- NUMBER type parameters
- JSON type parameters

If a column is part of a foreign key, you can select one of the following options for this column:

◉ *Generate data from the dependent column*
Values for the column will be taken from the corresponding column(s) of the foreign table (s).

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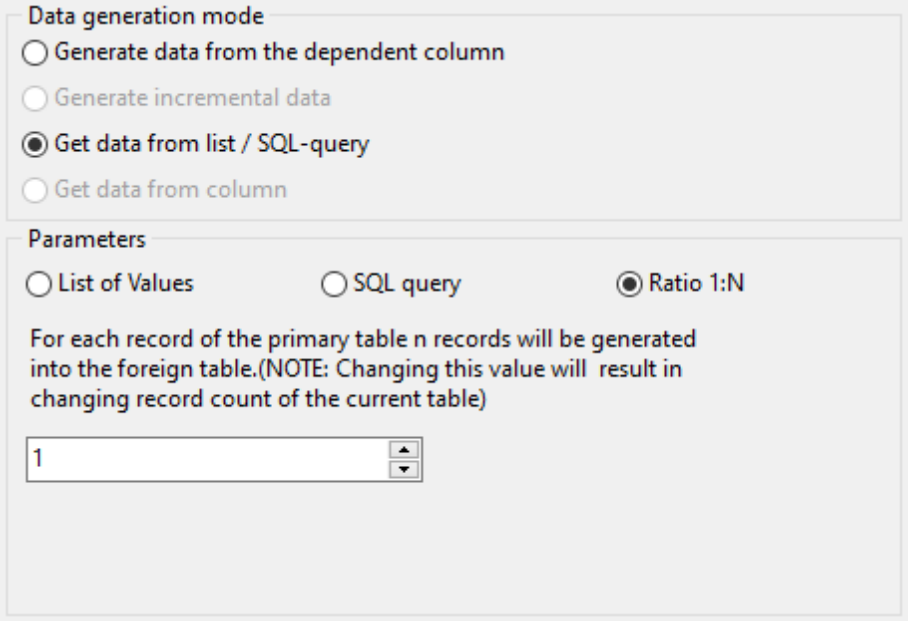
◉ *Generate data from list / SQL-query*
  ◉ *Ratio 1:N*

If this option is selected you should specify the *N* value using the spin-edit box below. Data will be generated into the column related as 1:N, i.e. *n* records will be generated into the foreign table for each record of the primary table.



When you are done, press the **Next** button to proceed to the next step of the Wizard.

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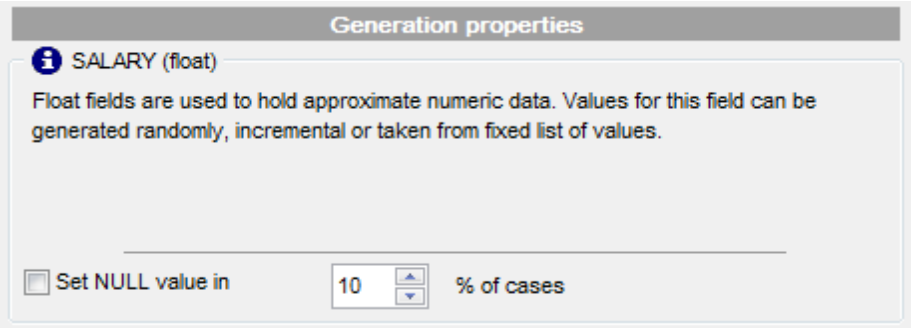
2.1.4.1 Setting type-specific properties

2.1.4.1.1 FLOAT column parameters

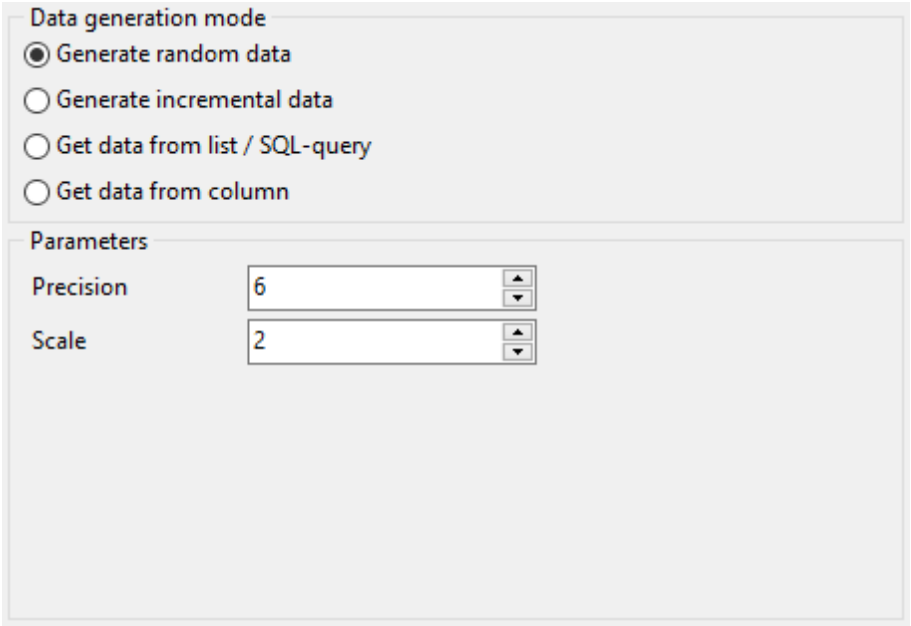
Float data are used for approximate numeric data storage. Values for this column can be generated *randomly*, *incrementally*, or they can be taken from a fixed *list* of values or *SQL query*, or from an existing table column of the same data type.

The **Generation properties** panel allows you to define preferences for generating values for floating point numeric types.



Select Data generation mode as follows:

Generate random data
Here you can define the number of precision and the scale for the result randomly generated values.



Generate incremental data
Specify the **Initial value** and the **Increment** properties to generate an ordered incremented sequence of values.

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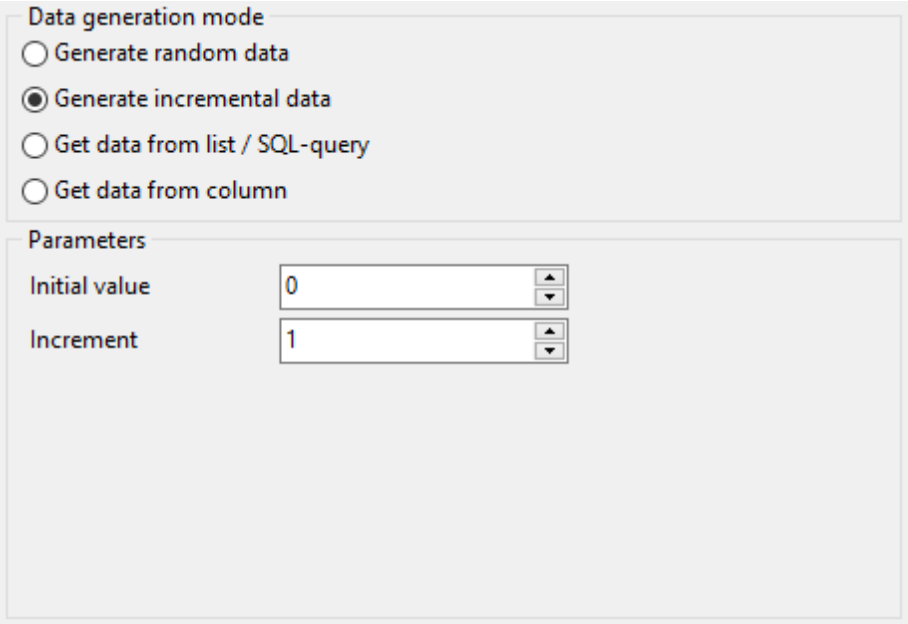

Get data from List / SQL query

This panel allows you to define the list of values to generate floating point numeric data from. You can enter these values directly into the editor by selecting the **List of Values** option.

To add a single value, use the **Add Value** button.

To load a list of values from an existing external file, use the **Load from file** button.

To save the list to an external file, use the **Save to file** button.

To remove a single value, use the **Delete Value** button.

To remove all items from the list, use the **Clear** button.

You can also specify whether the values are to be taken in **random order** or in the order they have been inputted.

Alternatively, you can set the **SQL Query** option and input an SQL query into the editor, and the resulting dataset will be used as the list for data generation.

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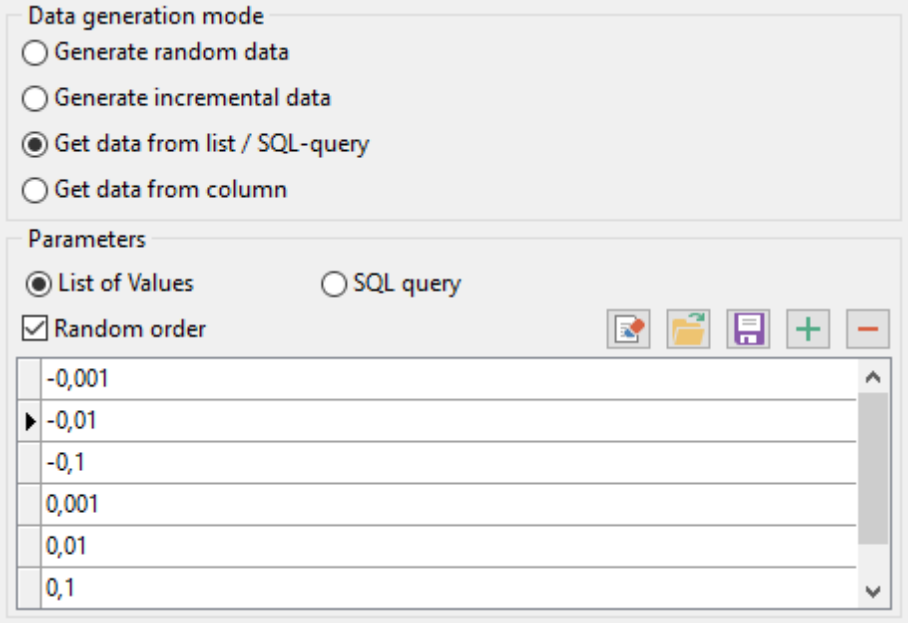
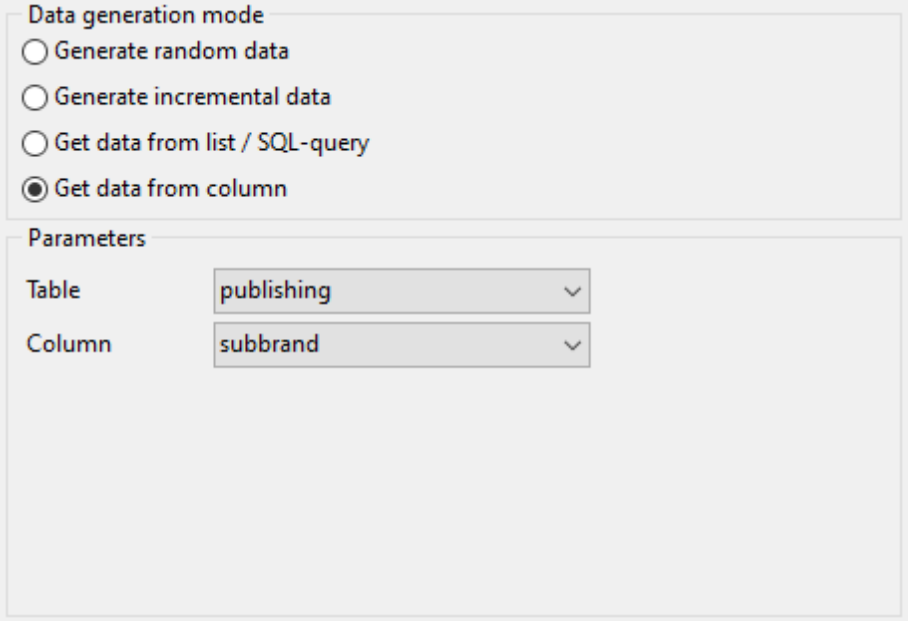


Get data from column
This option allows you to specify a column to generate data from: use the **Table** and **Column** drop-down lists to select the source table and column that will be used to take data for generation.



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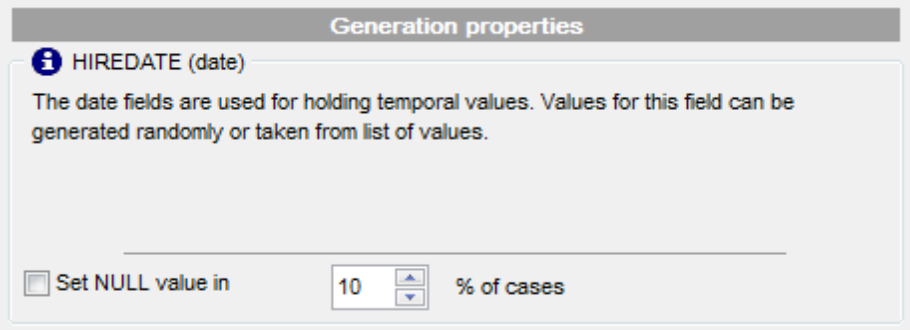
2.1.4.1.2 DATE column parameters

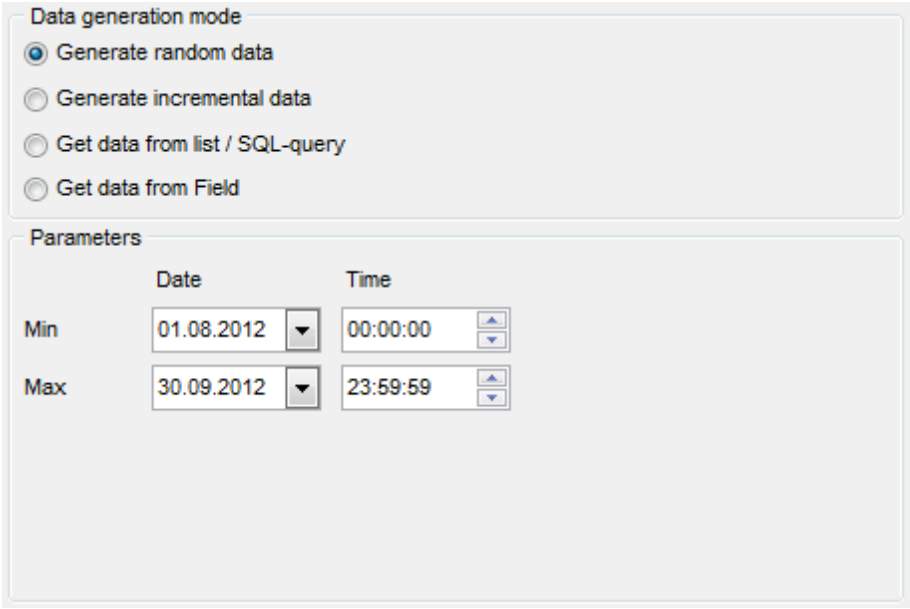
Date are used for temporal values storage. Values for this type can be generated *randomly*, *incrementally*, or they can be taken from a fixed *list* of values or *SQL query*, or from an existing table column of the same data type.

The **Generation properties** panel allows you to define preferences for generating date values for date types.



Select Data generation mode as follows:

Generate random data
Set the date range by defining the minimum and the maximum values.



Generate incremental data
Specify the **Start** and the **Increment** properties to generate an ordered incremented sequence of dates. The incremented value is day.

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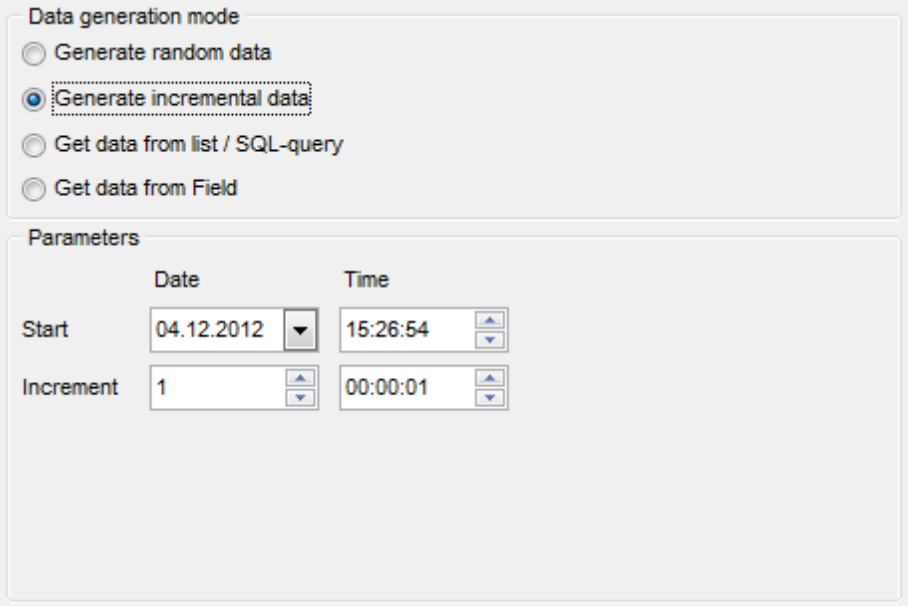

Get data from list / SQL query
This panel allows you to define the list of values to generate temporal data from. You can enter these values directly into the editor by selecting the **List of Values** option.

To add a single value, use the **Add Value** button.

To load a list of values from an existing external file, use the **Load from file** button.

To save the list to an external file, use the **Save to file** button.

To remove a single value, use the **Delete Value** button.

To remove all items from the list, use the **Clear** button.

You can also specify whether the values are to be taken in **random order** or in the order they have been inputted.

Alternatively, you can set the **SQL Query** option and input an SQL query into the editor, and the resulting dataset will be used as the list for data generation.

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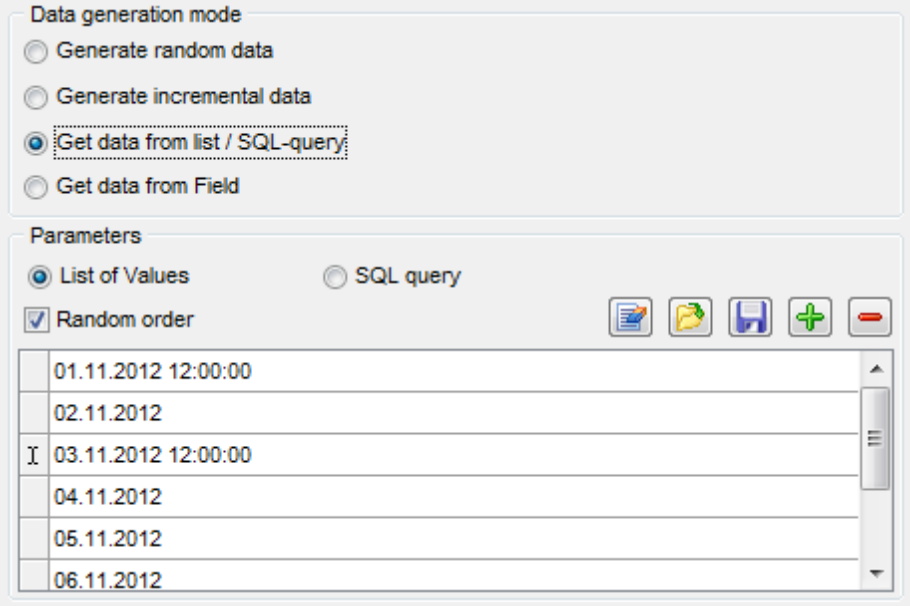
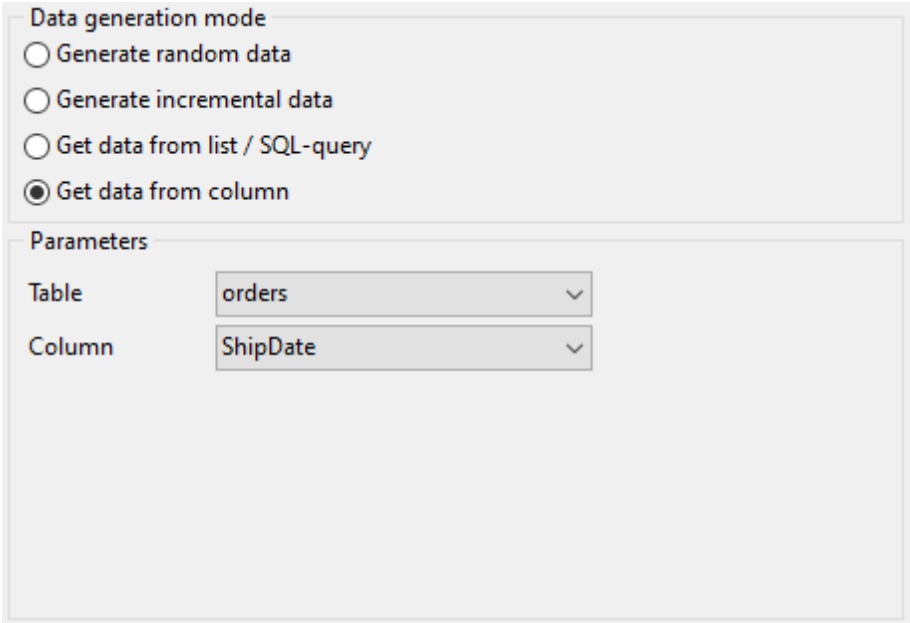


Get data from column
This option allows you to specify a column to generate data from: use the **Table** and **Column** drop-down lists to select the source table and column that will be used to take data for generation.



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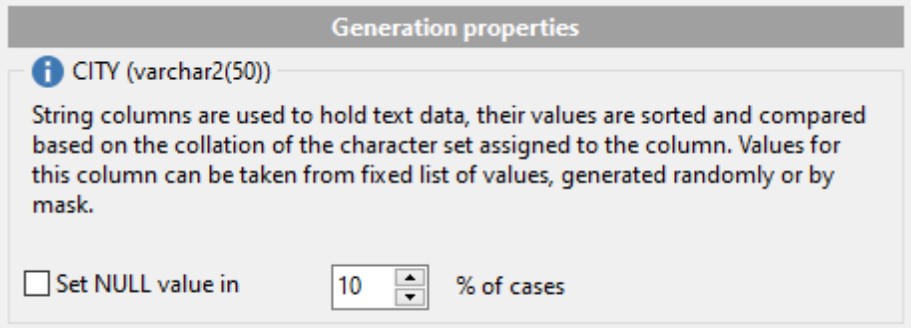
2.1.4.1.3 STRING column parameters

Strings are used for text data storage. The values are sorted and compared on the basis of the collation of the character set assigned to the column. Values for this column can be generated *randomly* (with *constraints* or *mask* used), *incrementally*, or they can be taken from a fixed *list* of values or *SQL query*, or from an existing table column of the same data type.

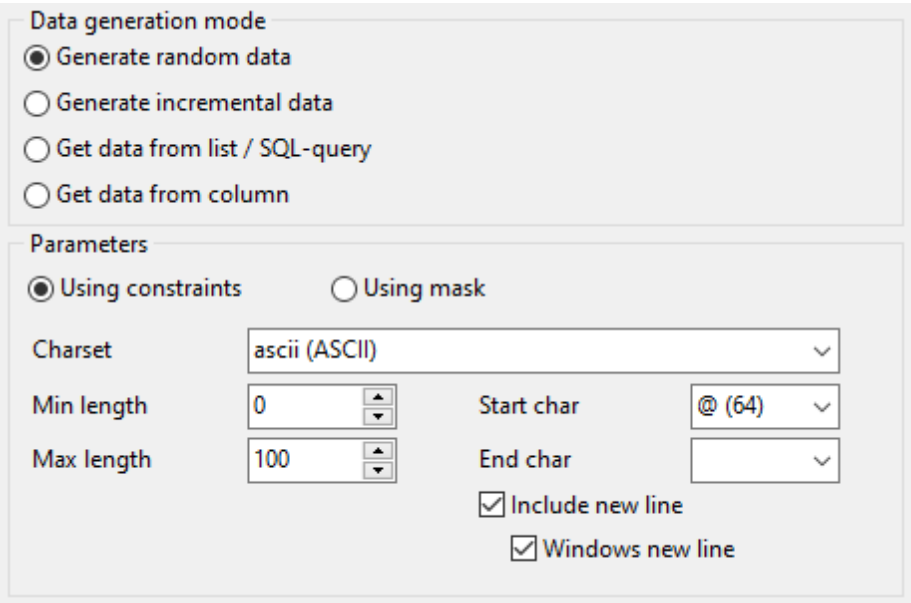
The **Generation properties** panel allows you to define preferences for generating string values for string-based types.



Select Data generation mode as follows:

◉ **Generate random data**
String random data can be generated in two ways - by using constraints or by typing the mask.

- **Using constraints**
  Set the **Min length**, **Max length** values to define the minimum and the maximum length for generated values. You can also specify the **Start char** and the **End char** segments to be used for string values generation.



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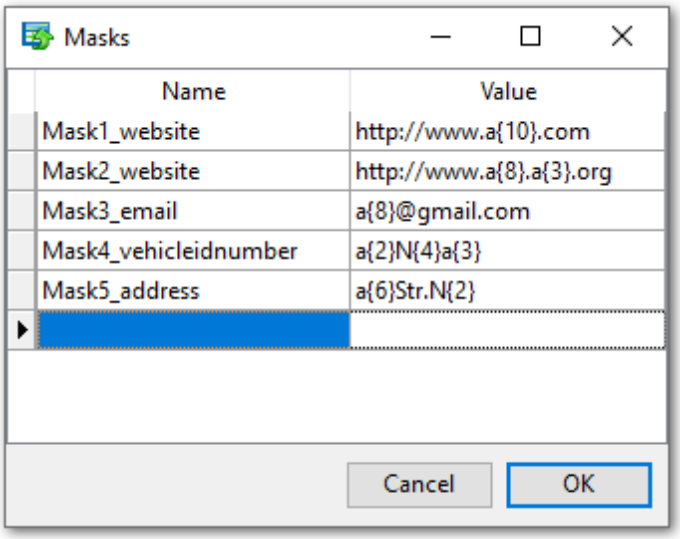
- **Using mask**
  Check the option to generate values by mask. Use the **Masks** window to create and edit various masks for string data generation:
  - the '*A*' and the '*a*' characters are replaced with a random letter (from '*A*' to '*Z*' and from '*a*' to '*z*');
  - the '*N*' character is replaced with a random digit;
  - '*{n}*' results in iteration of the last sign n times;
  - the character after the '\' symbol is interpreted as a common character.
  All the rest of the mask characters will be moved to the result value without changes.



Generate incremental data
Specify the **Initial value** and the **Increment** properties to generate an ordered incremented sequence of values.

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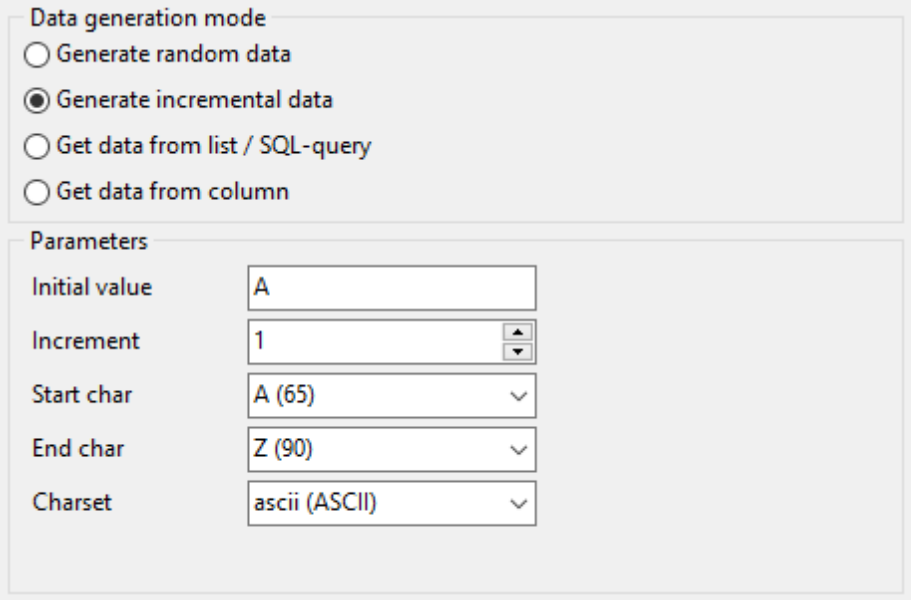

Get data from list / SQL query

This panel allows you to define the list of values to generate string data from. You can enter these values directly into the editor by selecting the **List of Values** option.

To add a single value, use the **Add Value** button.

To load a list of values from an existing external file, use the **Load from file** button.

To save the list to an external file, use the **Save to file** button.

To remove a single value, use the **Delete Value** button.

To remove all items from the list, use the **Clear** button.

You can also specify whether the values are to be taken in **random order** or in the order they have been inputted.

Alternatively, you can set the **SQL Query** option and input an SQL query into the editor, and the resulting dataset will be used as the list for data generation.

Use of the **Sample text** option allows you to generate fragments of previously defined text into the string type column. To define sample text used by default, see the Default constraints section of the Preferences dialog.

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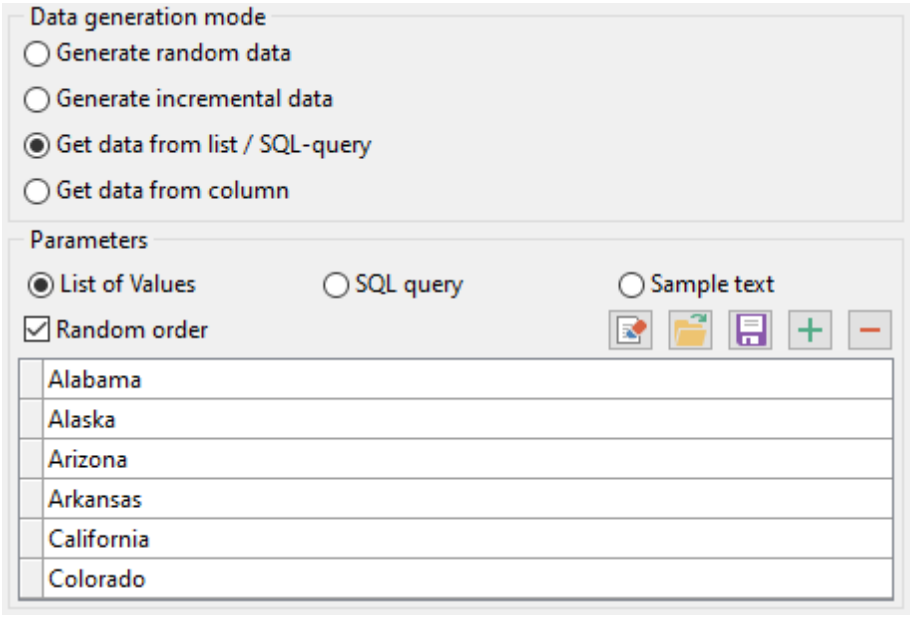
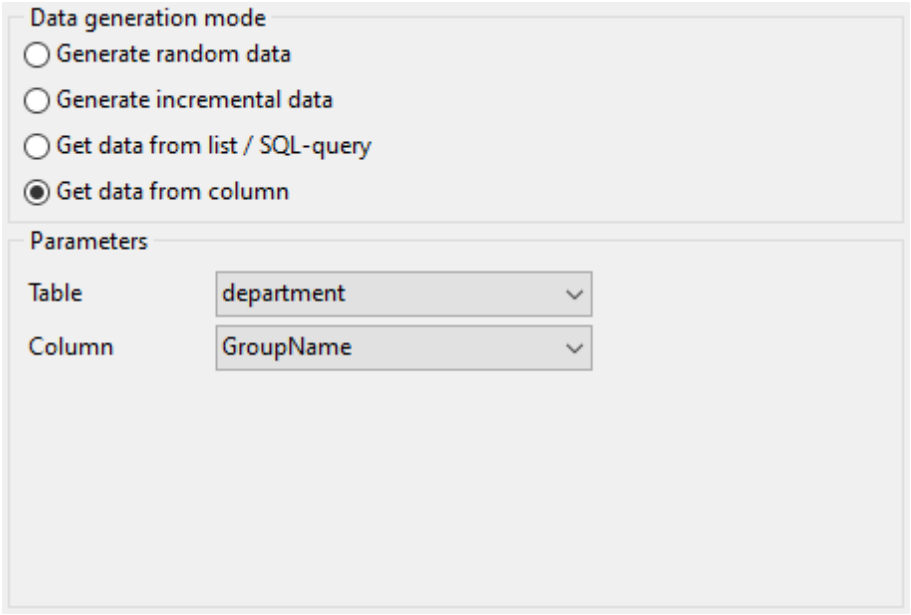


Get data from column

This option allows you to specify a column to generate data from: use the **Table** and **Column** drop-down lists to select the source table and column that will be used to take data for generation.



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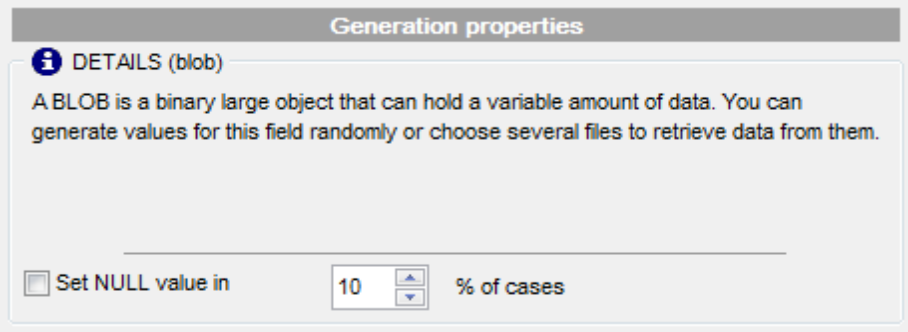
2.1.4.1.4 BLOB column parameters

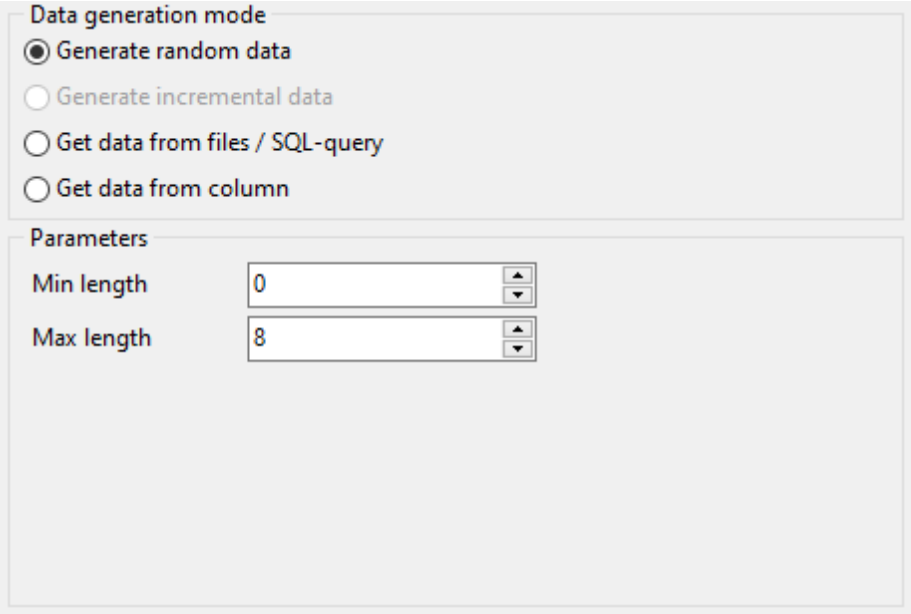
A BLOB is a binary large object that can store a variable amount of data. You can generate values for this column *randomly* or choose to take them from a specified *list* of files or *SQL query*, or from an existing table column of the same data type.

The **Generation properties** panel allows you to define preferences for generating values for BLOB column type.



Select Data generation mode as follows:

Generate random data
Set the **Min length**, **Max length** values to define the minimum and the maximum length for generated values.



Get data from files / SQL query
This panel allows you to define the list of files to generate BLOB data from. You can specify the list of files to use their content as values for the BLOB column by selecting the **List of Files** option.

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To add a file, use the **Add Value** button.

To load a list of file paths from an existing external file, use the **Load from file** button.

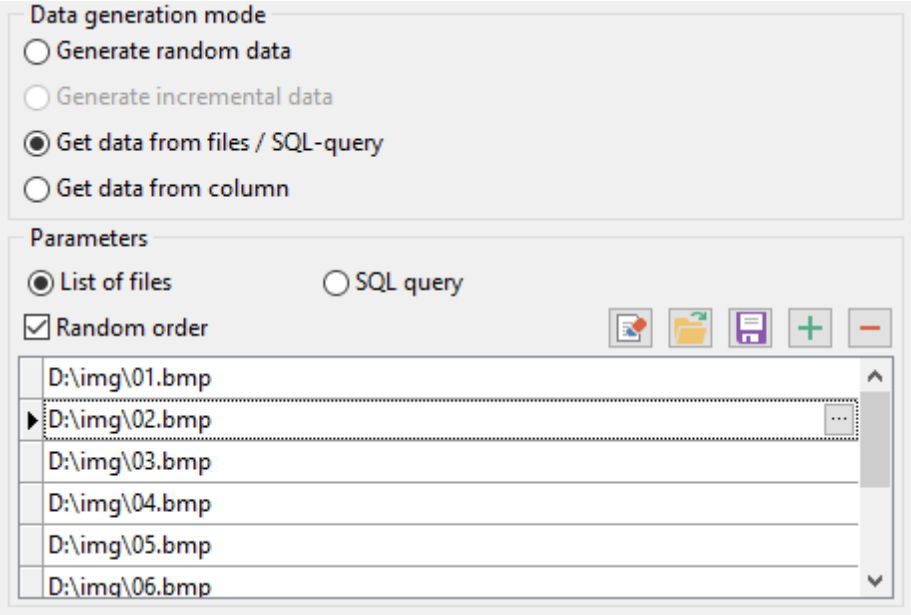
To save the list to an external file, use the **Save to file** button.

To remove a single file, use the **Delete Value** button.

To remove all items from the list, use the **Clear** button.

You can also specify whether the files are to be taken in **random order** or in the order they have been inputted.

Alternatively, you can set the **SQL query** option and input an SQL query into the editor, and the resulting dataset will be used as the list for data generation.



Get data from column

This option allows you to specify a column to generate data from: use the **Table** and **Column** drop-down lists to select the source table and column that will be used to take data for generation.

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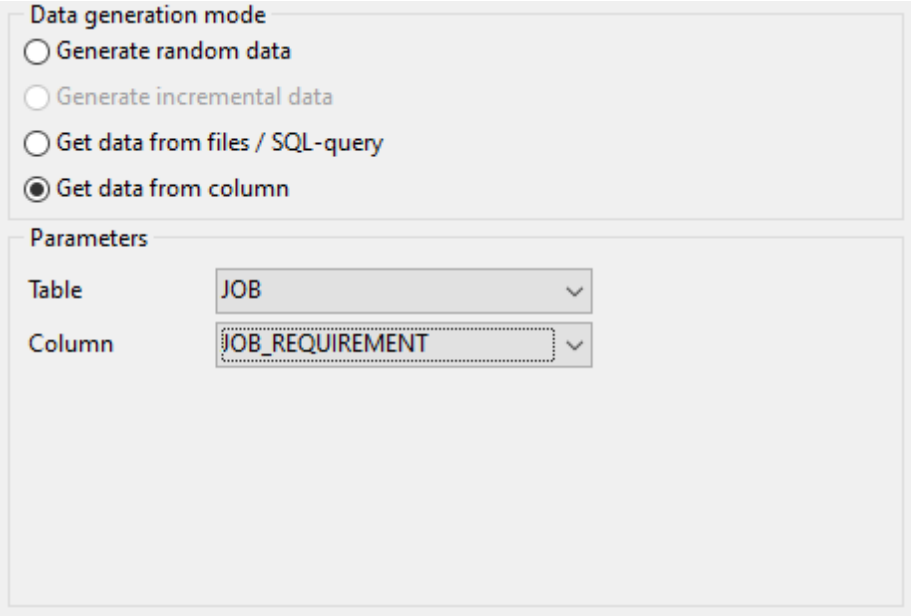

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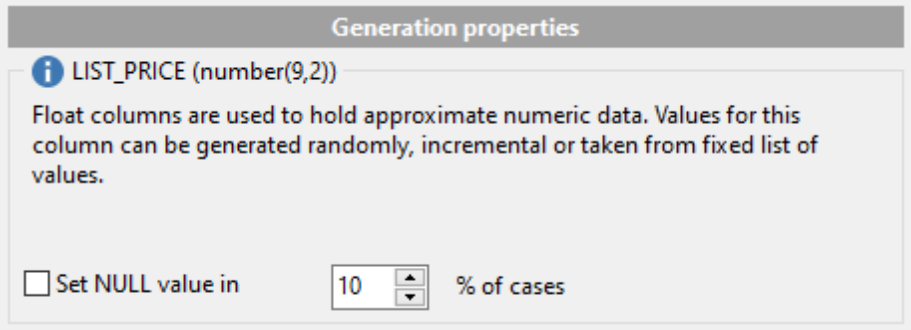
2.1.4.1.5 NUMBER column parameters

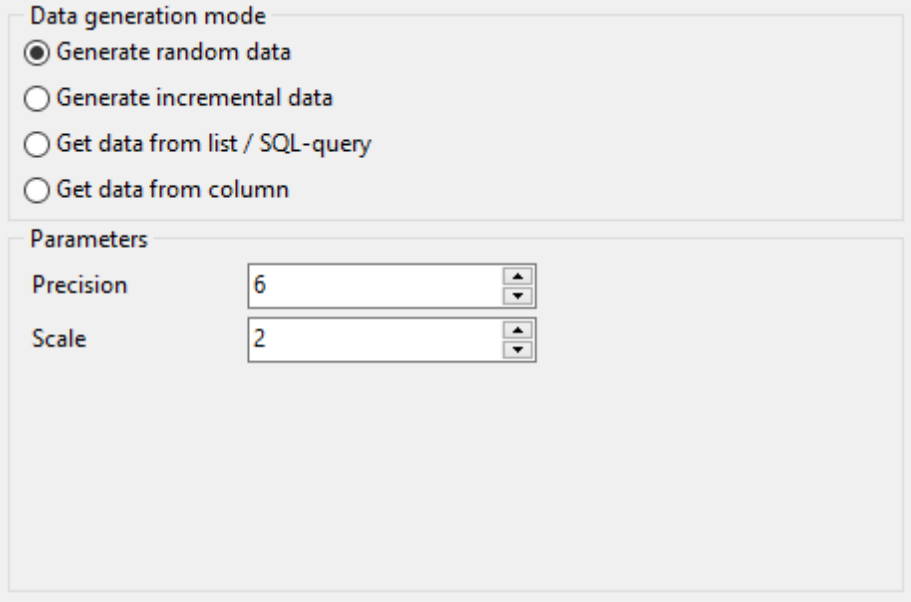
Number data are used in Oracle databases for exact numeric data storage. Values for this column can be generated *randomly*, *incrementally*, or they can be taken from a fixed *list* of values or *SQL query*, or from an existing table column of the same data type.

The **Generation properties** panel allows you to define preferences for generating values for numeric data types.



Select Data generation mode as follows:

◉ **Generate random data**
Here you can define the number of precision and the scale for the result values.



◉ **Generate incremental data**
Specify the **Initial value** and the **Increment** properties to generate an ordered incremented sequence of values.

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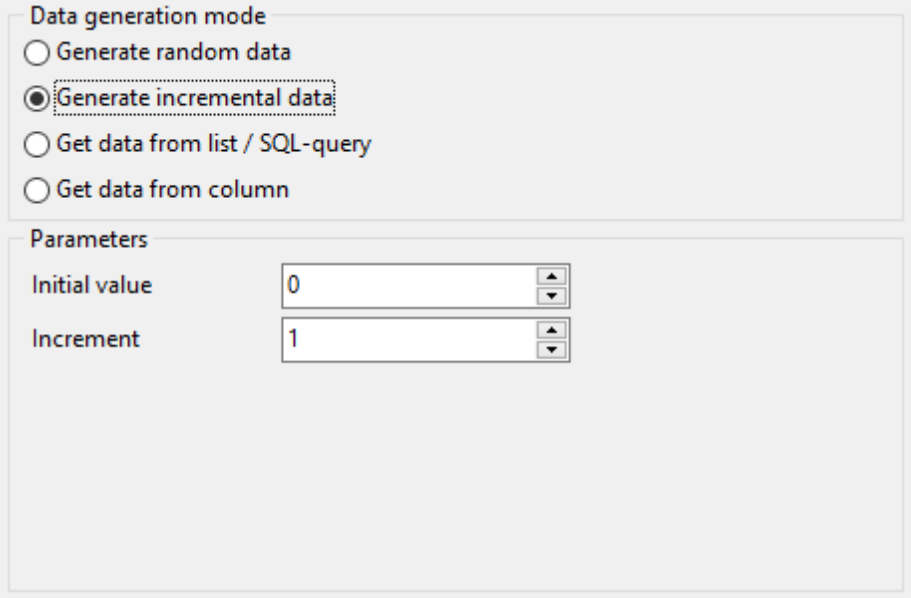

Get Data from List / SQL query

This panel allows you to define the list of values to generate numeric data from. You can enter these values directly into the editor by selecting the **List of Values** option.

To add a single value, use the **Add Value** button.

To load a list of values from an existing external file, use the **Load from file** button.

To save the list to an external file, use the **Save to file** button.

To remove a single value, use the **Delete Value** button.

To remove all items from the list, use the **Clear** button.

You can also specify whether the values are to be taken in **random order** or in the order they have been inputted.

Alternatively, you can set the **SQL Query** option and input an SQL query into the editor, and the resulting dataset will be used as the list for data generation.

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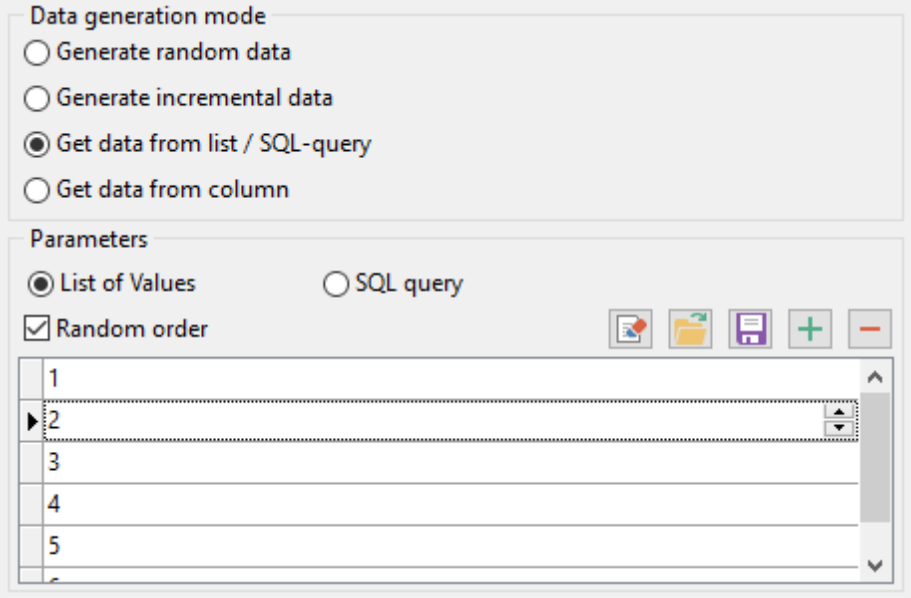
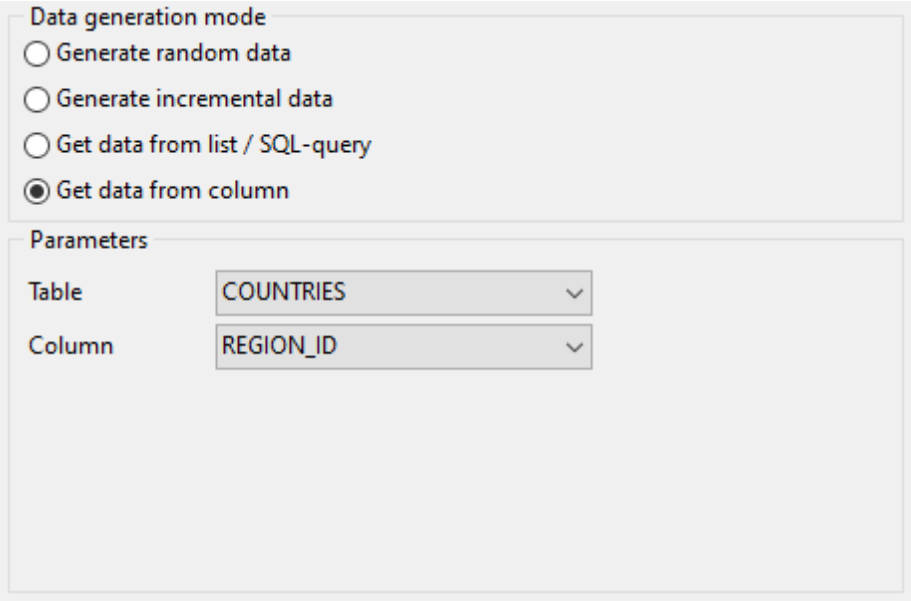


Get data from column

This option allows you to specify a column to generate data from: use the **Table** and **Column** drop-down lists to select the source table and column that will be used to take data for generation.



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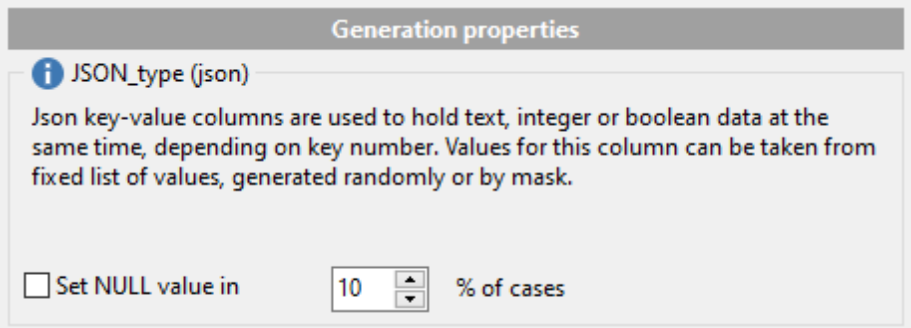
2.1.4.1.6 JSON / JSONB column parameters

JSON type is used for representing structured data and it's mainly used for transmitting data in web applications. Values for this column can be generated *randomly* (with *constraints* or *mask* used) or they can be taken from a fixed *list* of values or *SQL query*, or from an existing table column of the same data type.

Generation properties

Adjust parameters for generating JSON data.



Select Data generation mode as follows:

◉ **Generate random data**

Set the target number of each data type values in the **Integer values count**, **Boolean values count** and **String values count** options to be generated for JSON object.

Set minimum and maximum restrictions for numeric data in the **Min** and **Max** options**.**

Key value delimiter
Set the delimiter for key-value pair separator.

Text data for JSON can be generated randomly either using constraints or with mask templates.

- **Using constraints**
  Set the **Min length**, **Max length** values to define the minimum and the maximum length for generated values. You can also specify the **Start char** and the **End char** segments to be used for string values generation.

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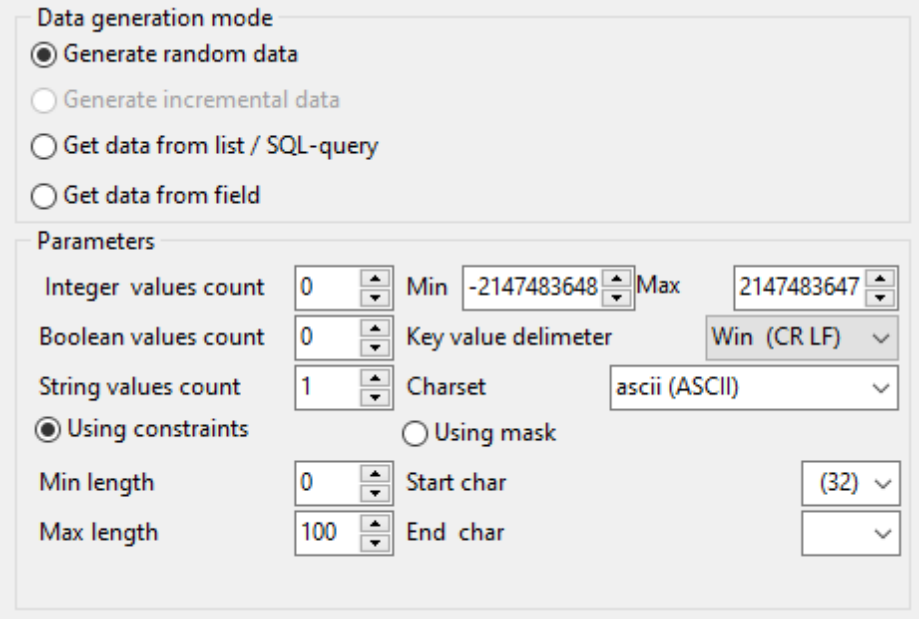
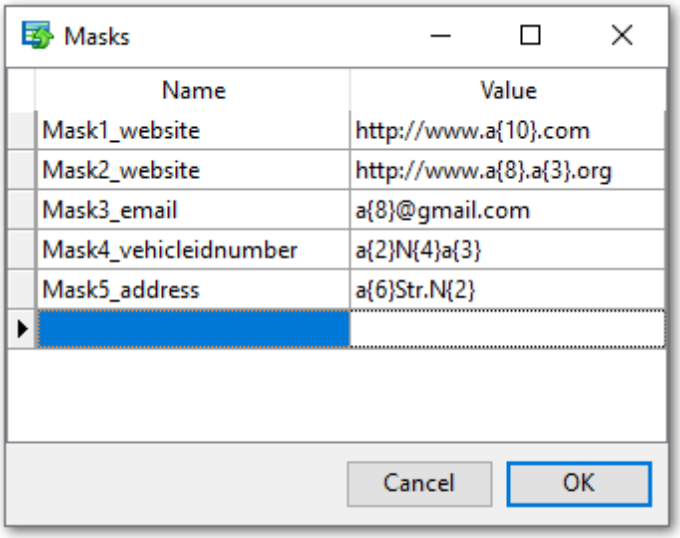


- **Using mask**
  Check the option to generate values by mask. Use the **Masks** window to create and edit various masks for string data generation:
  - the '*A*' and the '*a*' characters are replaced with a random letter (from '*A*' to '*Z*' and from '*a*' to '*z*');
  - the '*N*' character is replaced with a random digit;
  - '*{n}*' results in iteration of the last sign n times;
  - the character after the '\' symbol is interpreted as a common character.
  All the rest of the mask characters will be moved to the result value without changes.



Get data from list / SQL query
This panel allows you to define the list of values to generate string data from. You can enter these values directly into the editor by selecting the **List of Values** option.

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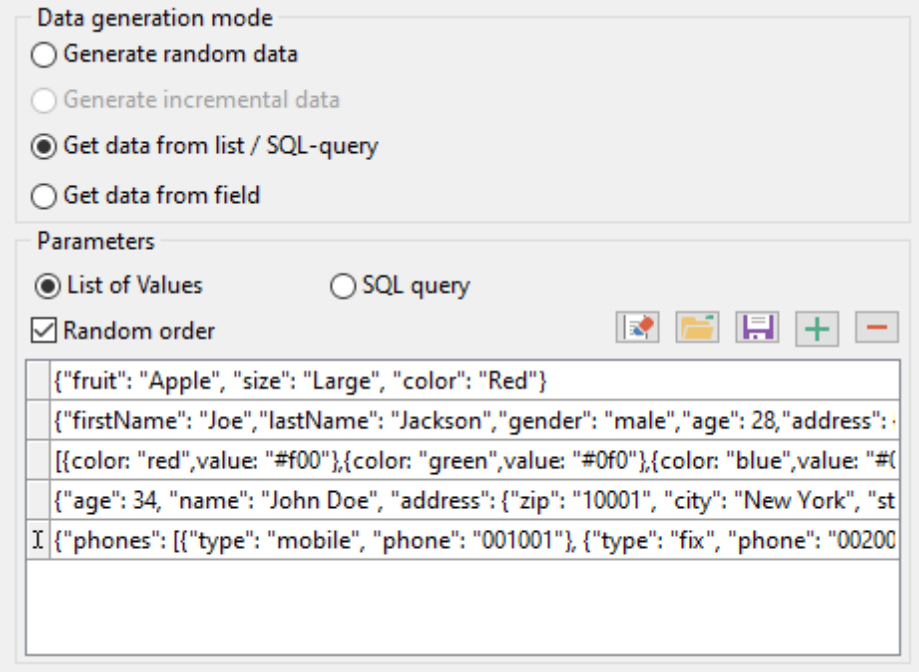
To add a single value, use the **Add Value** button.
To load a list of values from an existing external file, use the **Load from file** button.
To save the list to an external file, use the **Save to file** button.
To remove a single value, use the **Delete Value** button.
To remove all items from the list, use the **Clear** button.

You can also specify whether the values are to be taken in **random order** or in the order they have been inputted.

Alternatively, you can set the **SQL Query** option and input an SQL query into the editor, and the resulting dataset will be used as the list for data generation.



Get data from column
This option allows you to specify a column to generate data from: use the **Table** and **Column** drop-down lists to select the source table and column that will be used to take data for generation.

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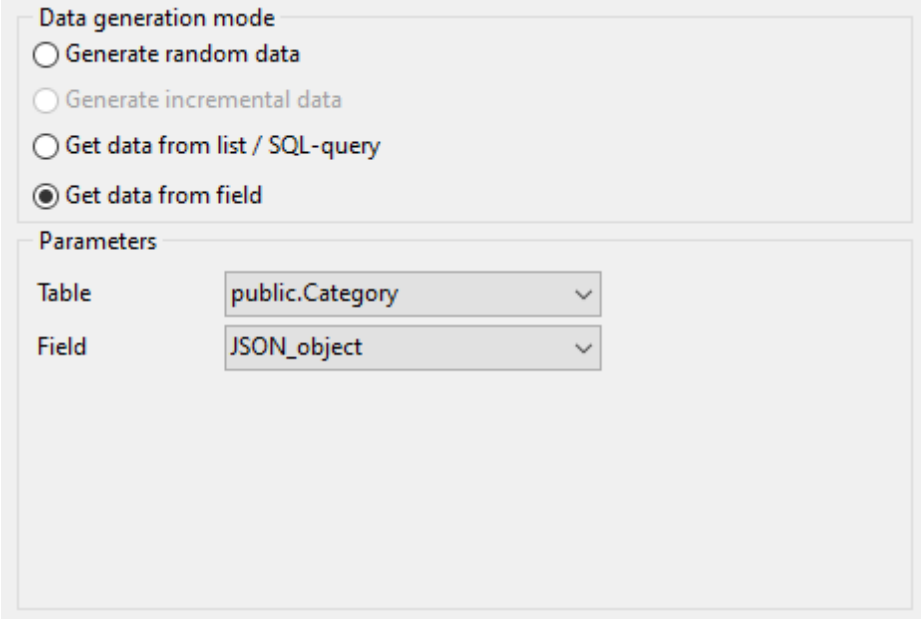

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2.1.4.2 Viewing table DDL

When you select a schema in the **Generate data for** tree, you can select a table belonging to the schema and view its DDL structure within the **Table Definition** area at the right side of the window.

Hint: If more convenient, you can see the DDL of the tables in the hint that popup when the mouse cursor is positioned over the table names within the **Generate Data for** area.

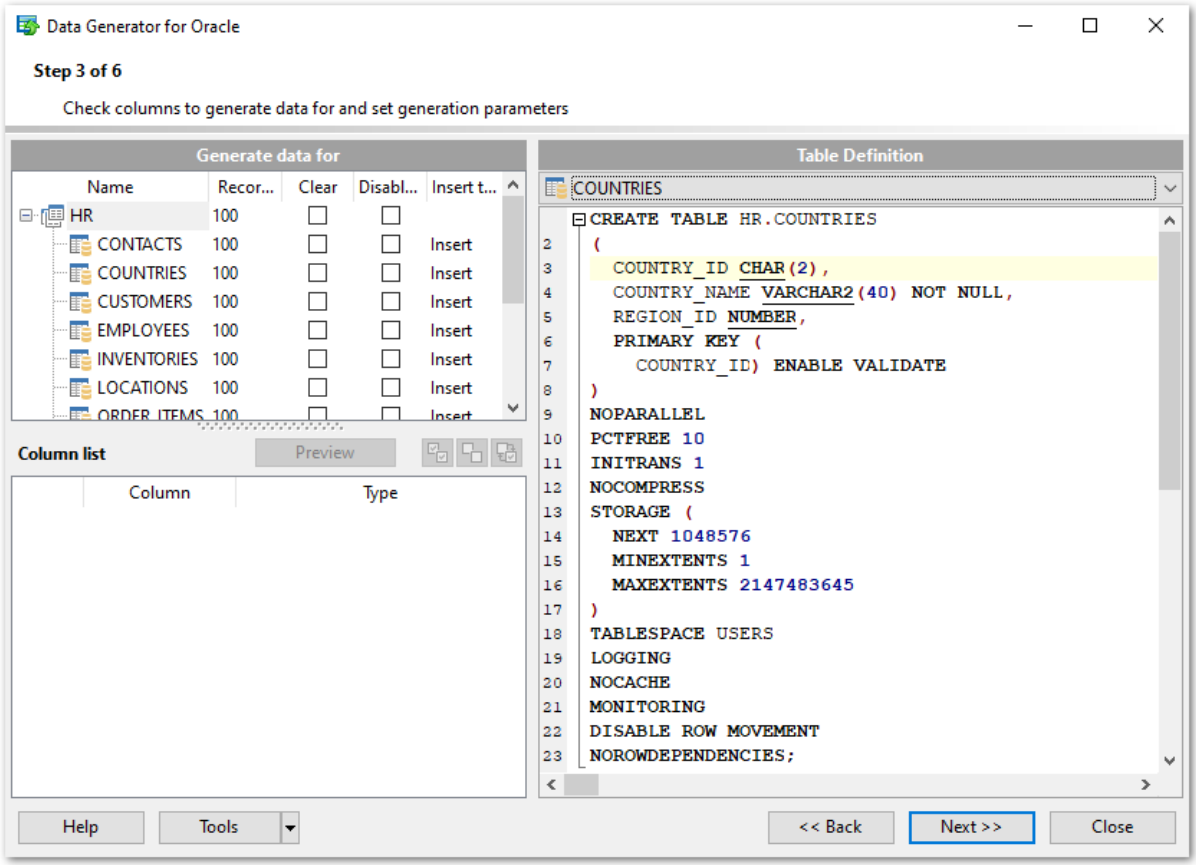

Table Definition
The drop-down list at the top contains the tables that were selected for data generation at Step 2. Select a table to view its DDL.

Right-click within the **Table Definition** area to call the **popup menu** allowing you to *copy* the DDL of the table to Windows clipboard.

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2.1.4.3 Data Preview

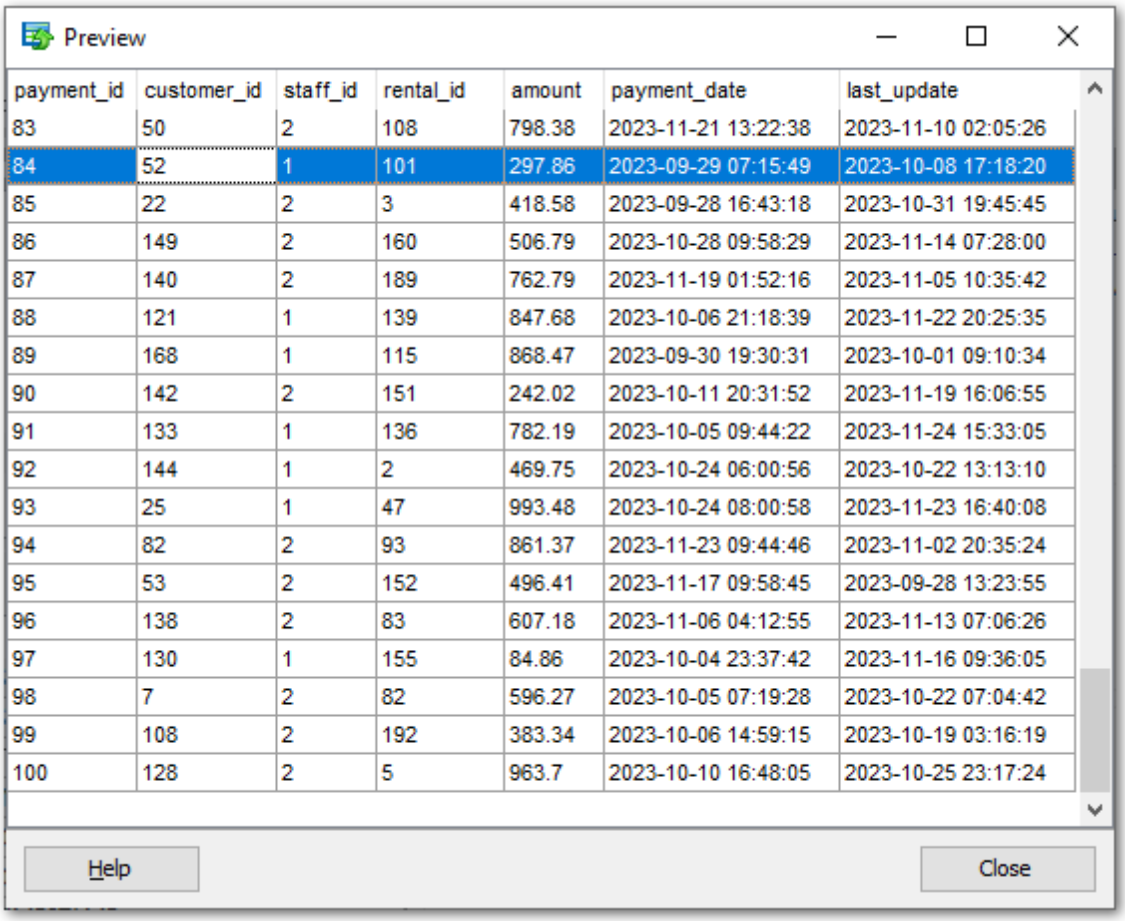
The **Preview** window allows you to browse the selected table data in the preview mode.

Note: The data in preview are selected randomly according to specified parameters and are not actually inserted into the table, i.e. a different set of values will be generated into the table.

To open the window, click the **Preview** button available at Step 3.

The grid contains all selected columns with data that will be generated according to the parameters you have specified at Step 3. If more convenient, you can **change the order** of the columns by dragging their headers horizontally.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.



payment_id	customer_id	staff_id	rental_id	amount	payment_date	last_update
83	50	2	108	798.38	2023-11-21 13:22:38	2023-11-10 02:05:26
84	52	1	101	297.86	2023-09-29 07:15:49	2023-10-08 17:18:20
85	22	2	3	418.58	2023-09-28 16:43:18	2023-10-31 19:45:45
86	149	2	160	506.79	2023-10-28 09:58:29	2023-11-14 07:28:00
87	140	2	189	762.79	2023-11-19 01:52:16	2023-11-05 10:35:42
88	121	1	139	847.68	2023-10-06 21:18:39	2023-11-22 20:25:35
89	168	1	115	868.47	2023-09-30 19:30:31	2023-10-01 09:10:34
90	142	2	151	242.02	2023-10-11 20:31:52	2023-11-19 16:06:55
91	133	1	136	782.19	2023-10-05 09:44:22	2023-11-24 15:33:05
92	144	1	2	469.75	2023-10-24 06:00:56	2023-10-22 13:13:10
93	25	1	47	993.48	2023-10-24 08:00:58	2023-11-23 16:40:08
94	82	2	93	861.37	2023-11-23 09:44:46	2023-11-02 20:35:24
95	53	2	152	496.41	2023-11-17 09:58:45	2023-09-28 13:23:55
96	138	2	83	607.18	2023-11-06 04:12:55	2023-11-13 07:06:26
97	130	1	155	84.86	2023-10-04 23:37:42	2023-11-16 09:36:05
98	7	2	82	596.27	2023-10-05 07:19:28	2023-10-22 07:04:42
99	108	2	192	383.34	2023-10-06 14:59:15	2023-10-19 03:16:19
100	128	2	5	963.7	2023-10-10 16:48:05	2023-10-25 23:17:24

If necessary, you can filter records in the grid in either of the following ways:

- click the Arrow-Down button next to the column caption to display the drop-down list and select any of the column values to filter records by this value of the selected column;
- click the Arrow-Down button next to the column caption to display the drop-down list, then select the **Custom** item and build a simple filter using the **Custom Filter** dialog.

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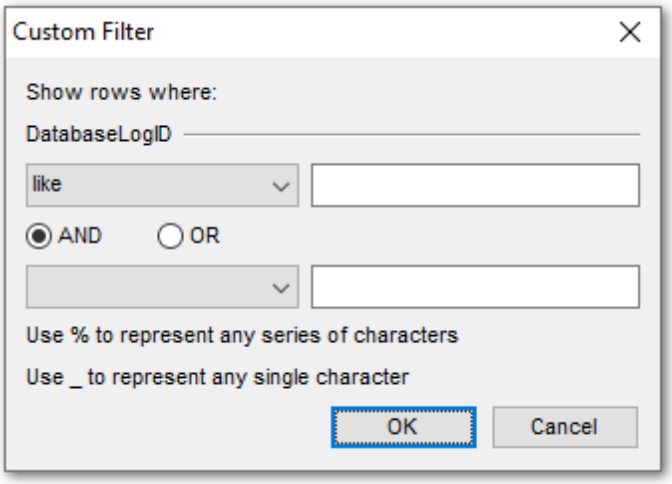
Select a logical operator for checking the column values (*like*, *is less than*, *is greater than* , etc.) and set a value to be checked by this operator in the corresponding box on the right.



If necessary, you can set the second condition and specify the relation between the two conditions: whether both of them should be satisfied (*AND*) or just any of them (*OR*). Use the '_' character to represent any single symbol, and use the '%' character to represent any series of symbols in the condition string.

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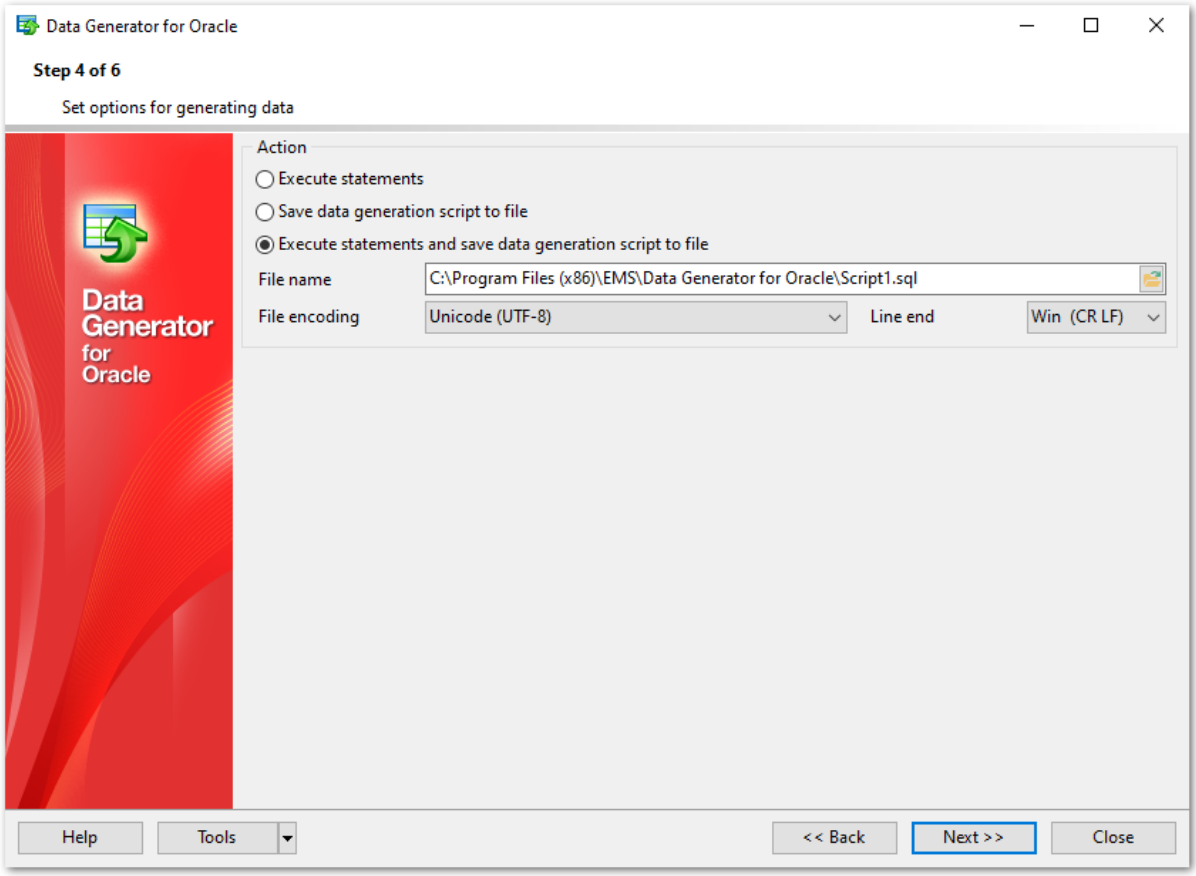
2.1.5 Step 4 - Setting generation options

At this step you can specify data generation options.



Action
Specify the action to be taken at the next step of the wizard:

Execute statements
Select this option to execute the script for data generation.

Save data generation script to file
Select this option if you only need to save the script for data generation to a file, without the script execution.

Execute statements and save data generation script to file
Select this option to execute the script for data generation and save it to a file.

File name
This box is enabled if the *Save data generation script to file* or *Execute statements and save data generation script to file* option is selected. Type in or use the **Explorer** button to specify the path to the **.sql* file to store the SQL script.

File encoding
Select target encoding for the file.

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Line end
Select the required line end symbol for the file: CR LF for Windows OS, LF for Unix or CR for MacOS.

When you are done, press the **Next** button to proceed to the next step of the Wizard.

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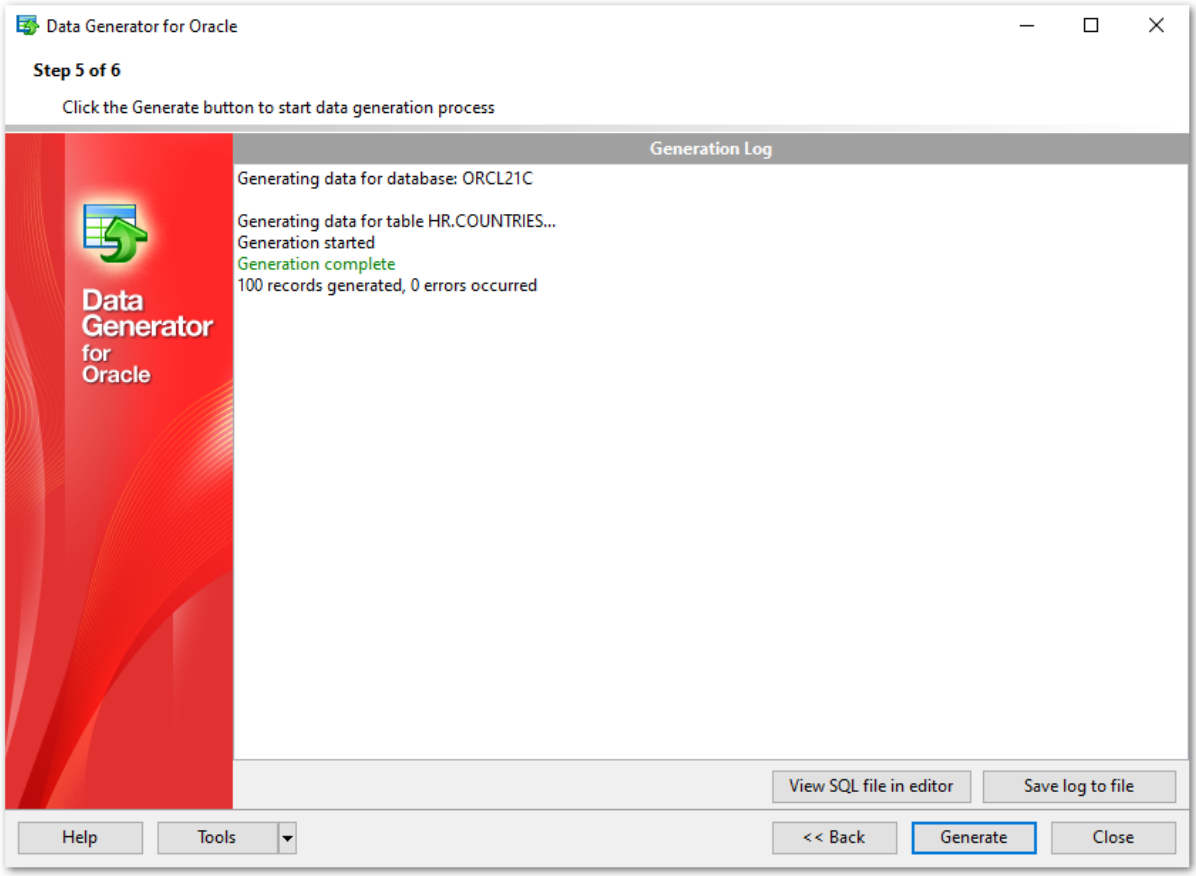
2.1.6 Step 5 - Start of data generation process

This step informs you that all data generation parameters are set, and you can start the generation process.



If everything is correct, press the **Generate** button to start the process. If you want to change something, you can return to any of the wizard steps using the **Back** button.

The **Generating...** dialog indicates the amount of generated *records*, elapsed *time*, the number of *errors* (if any) and visually represents the percentage of *data generated*.

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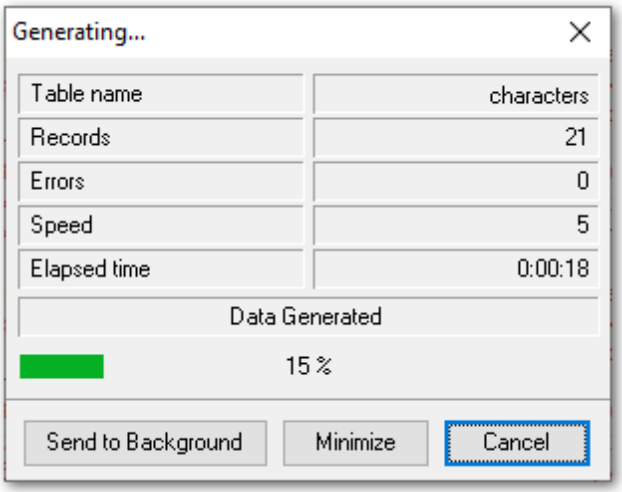

Use the **Send to background** button to run the process in the background mode, the **Minimize** button to minimize the application to Windows Task bar, or the **Cancel** button to stop the generation process.
During data generation the **Generation Log** area displays the log of performed operations and errors (if any).

When the process is completed, you can use the **View SQL file in editor** and the **Save log to file** buttons to edit the data generation script at Step 6 of the wizard and save the generation log content to an external text file respectively.

Do not forget to save data generation options if you need to repeat the generation process with the same (or similar) settings later.

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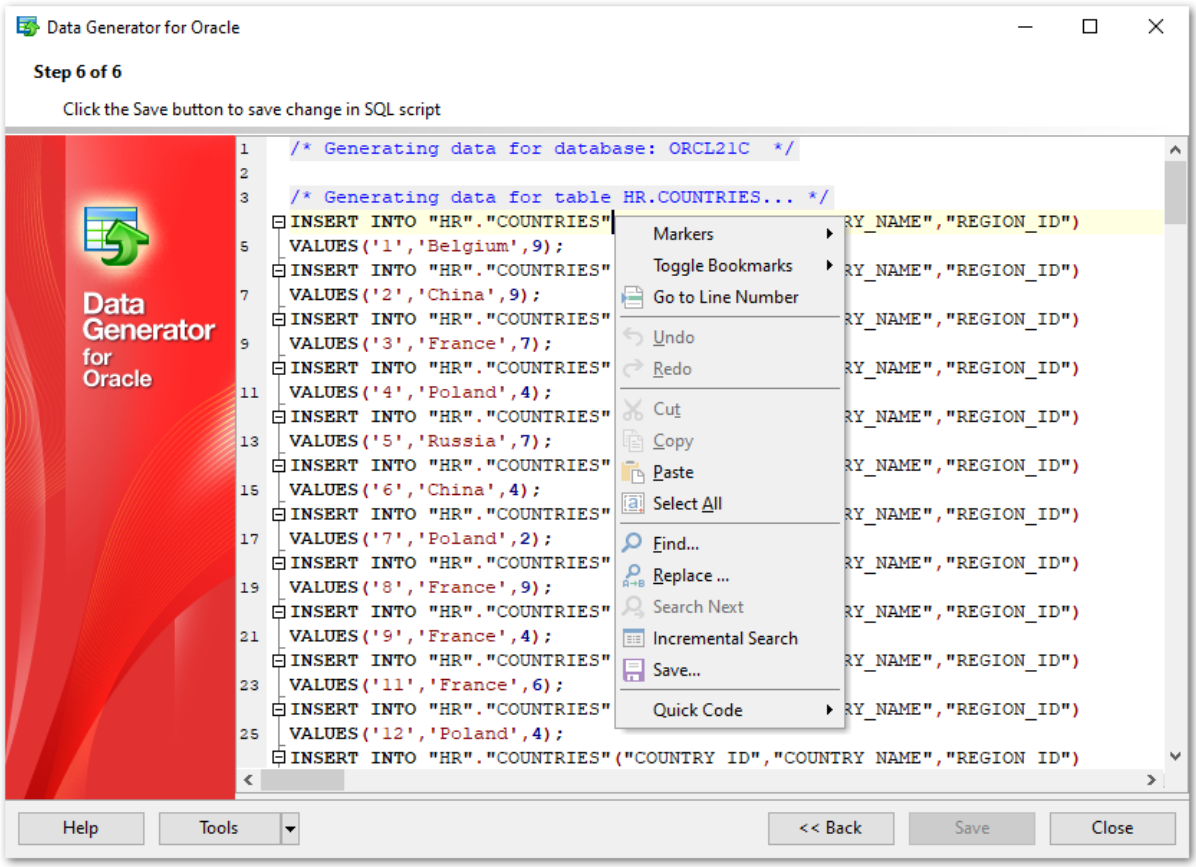
2.1.7 Step 6 - Editing generation script

This step of the wizard allows you to edit the result script for data generation.

For your convenience the **code folding**, **syntax highlight** and a number of other features for efficient SQL editing are implemented.



The **context menu** of the editor area contains most of the standard text-processing functions (*Cut*, *Copy*, *Paste*, *Select All*) and functions for working with the script as a whole, e.g. you can *move the cursor to a particular line*, set *markers*, toggle *bookmarks*, etc.

Implementation of the Find Text and the Replace Text dialogs contributes to more efficient work with the SQL code.

Find the complete list of the context menu items below. The context menu allows you to:

- manage markers: *Drop Marker*, *Collect Marker*, *Swap Marker*;
- toggle bookmarks allowing you to navigate through the query text and jump to a line with a particular number;
- go to a line with specified number;
- perform editing operations: *Undo/Redo*, *Cut*, *Copy*, *Paste*, *Select all*;
- perform search and replace operations;
- save the script to an external **.sql* file;
- format the selected code using *SQL Formatter* to make the code easier to read;
- use the Quick Code features: select a character, toggle a comment for a code

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fragment, toggle case of the selected text, indent/unindent lines in the script.

Press the **Back** button to return to any of the previous steps (the content of the editor area will not be lost).

If you press the **Save** button, the script will be saved to an external file.

Pressing the **Close** button will result in closing the application (before closing Data Generator will prompt for saving changes).

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2.2 Using configuration files

Data Generator for Oracle allows you to store its settings in external **.gtm* files if you need to repeat data generation process several times.

You can load previously saved configuration settings to the application wizard if you need to make some changes before data generation, or you can run it with the console application for quicker generation.

- Saving configuration file
- Loading configuration file

See also:

Using wizard application

Setting program preferences

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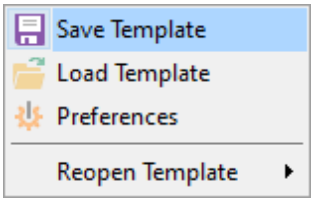
2.2.1 Saving configuration file

Data Generator templates are saved within the **Save template options** dialog. To open this dialog, press the **Tools** button and select the **Save Template** popup menu item.



Please note that you can save data generation options at the steps from Specifying generation parameters to the last step of Data Generator for Oracle wizard.

- Save Template options
- Loading configuration file

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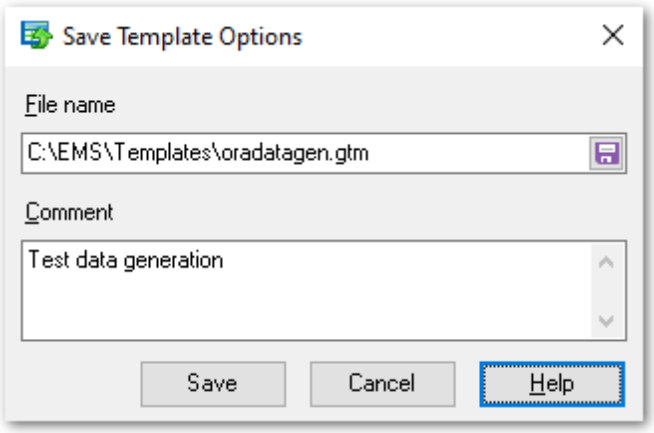
2.2.1.1 Save Template options

File name
Specify the template file name and select its location using the button to open the **Save As...** dialog.

Comment
If necessary, set a comment for your template file in this field.



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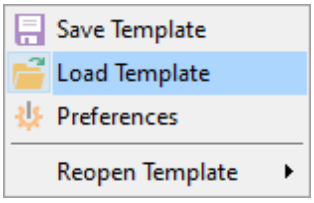
2.2.2 Loading configuration file

Data Generator templates are loaded within the **Open template** dialog. To open this dialog, press the **Tools** button and select the **Load template** popup menu item.



Please note that you can **reopen a template** at the steps from starting to Specifying generation parameters of the wizard using the corresponding popup menu item of the **Tools** menu.

- Saving configuration file
- Save Template options

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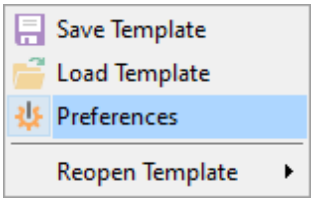
2.3 Setting program preferences

Data Generator for Oracle provides full customization of the program interface by setting various options within the **Preferences** dialog. This chapter is intended to inform you how to use these options.

General
These options define general behavior of Data Generator for Oracle

Defaults
This page allows you to set the constraints for data values used by default in the generation process.

Language
This page allows you to select a language to be applied for your copy of Data Generator for Oracle.



See also:

Using wizard application
Using configuration files

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2.3.1 Setting general options

This page allows you to define general options of the application.

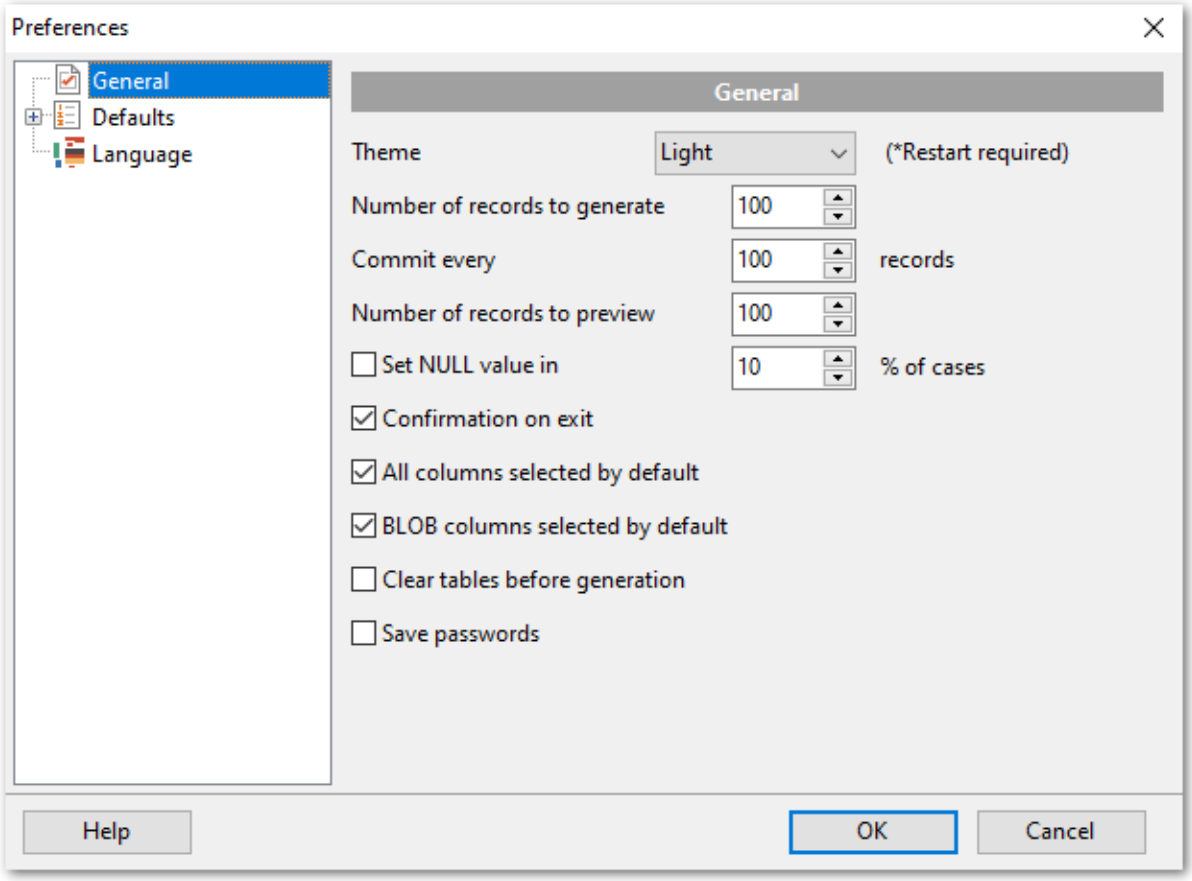
Theme
Select the main color theme for the application: Light or Dark.

Number of records to generate
Sets the quantity of records generated by default.

Commit every ... records
Specifies the number of records in each block of the generation script to be supplemented with the COMMIT statement.

Number of records to preview
Sets the quantity of records used in the Data Preview window by default.

☑ **Set NULL value in ... % of cases**
This option allows you to specify the percentage of records that will remain *NULL* by default.



☑ **Confirmation on exit**
Enables/disables confirmation upon exiting the program.

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☑ **All columns selected by default**
Check this option to include all columns into the data generation process by default.

☑ **BLOB columns selected by default**
Uncheck this option if you need to exclude BLOB columns from the generation process by default.

☑ **Clear tables before generation**
Set this option to empty tables before data generation.

☑ **Save passwords**
Setting this option allows you to save passwords used for access to the databases automatically upon closing the application. Please note that checking this option saves the latest password used for connection to the database (including the SSH server password).

See also:

Setting default constraints
Setting program language

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2.3.2 Setting default constraints

In this section you can define default constraints for all supported data types:

Numeric types
Character types
Date/Time types
JSON types

Default values are used as initially set values for data range and can be modified at Step 3.

See also:
Setting general options
Setting program language

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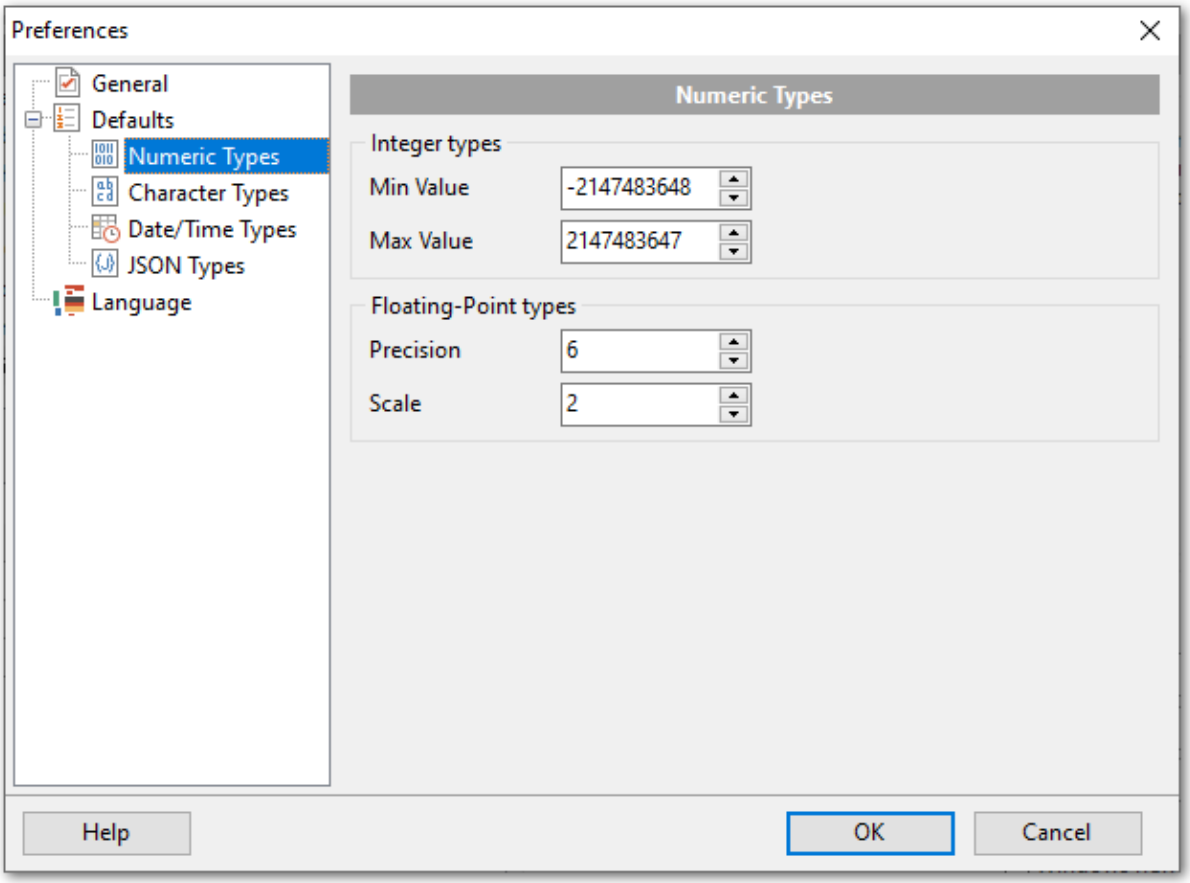
2.3.2.1 Numeric types

On this tab you can define default constraints for numeric types.



Integers types
Set the target minimum and maximum values set by default for integer types.

Floating-point types
Set the precision and scale values set by default for floating-point types.

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2.3.2.2 Character types

On this tab you can define default constraints for character types.

Min Length
Set the minimum length of the generated value.

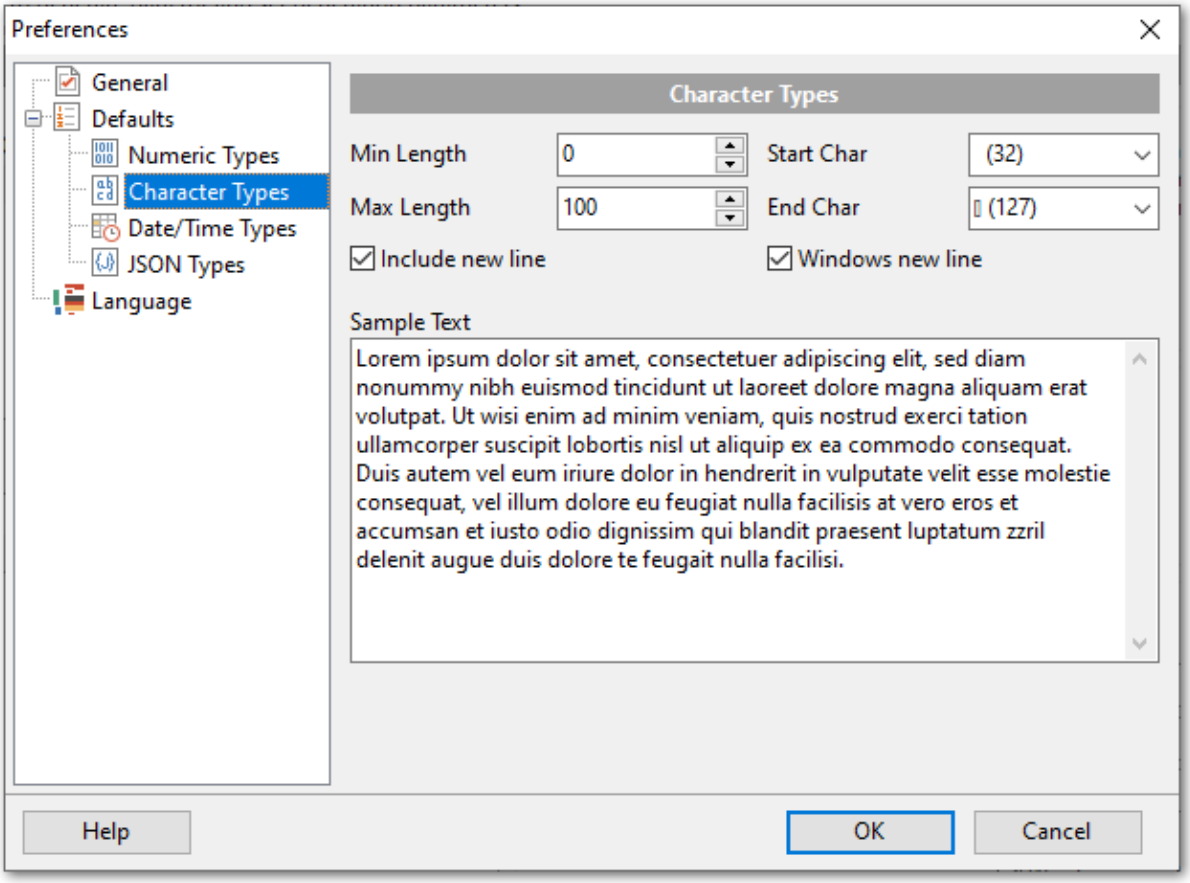
Max Length
Set the maximum length of the generated value.

Start Char
Select the start char for the range to be used for generation.

End Char
Select the end char for the range to be used for generation.

☑ **Include new line**
Select this option to allow line feeds in generated string values.

☑ **Windows new line**
Select this option to specify Windows-style line feeds.



Sample Text
If more convenient, you can input any string that will be used as sample text. You can

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choose to generate sample text when setting generation parameters for strings.

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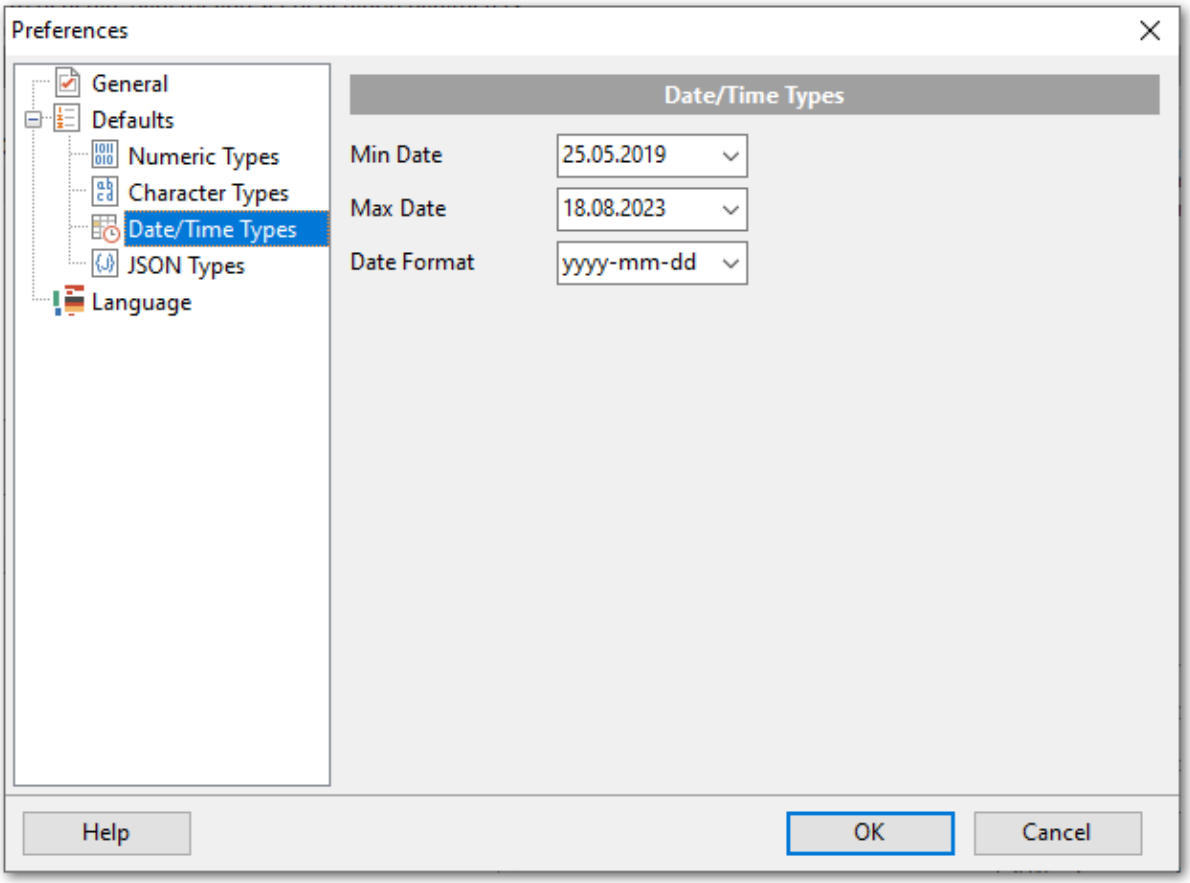
2.3.2.3 Date/Time types

On this tab you can define default constraints for date and time types.



Min Date
Select the start date for generating date values.

Max Date
Select the end date for generating date values.

Date format
Type in or use the drop-down list to specify the preferable date format.

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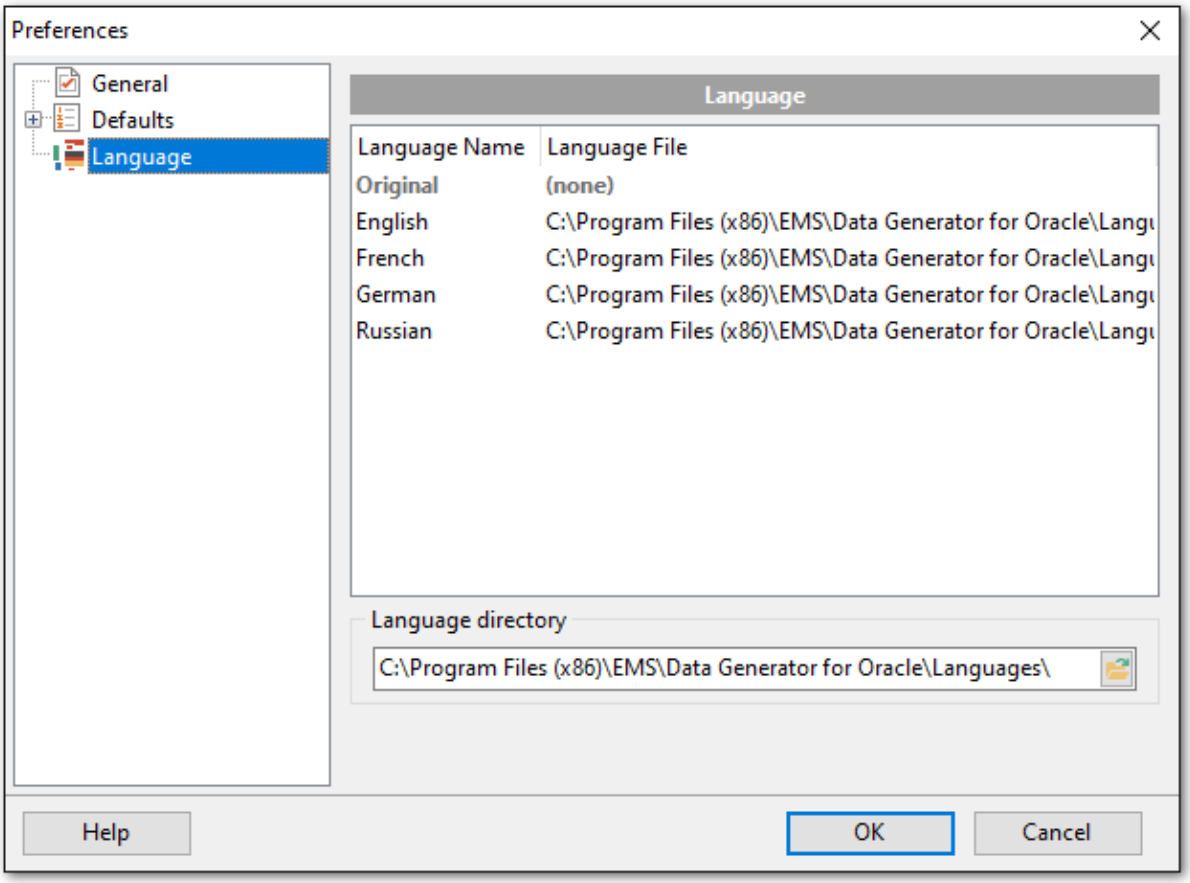
2.3.2.4 JSON types

On this tab you can define default constraints for JSON data type.



Integer values count
Set the target number of integer values for generation.

Boolean values count
Set the target number of boolean type values for generation.

String values count
Set the target number of string values for generation.

Key-value pair delimiter
Select the default delimiter for key-value pair separator.

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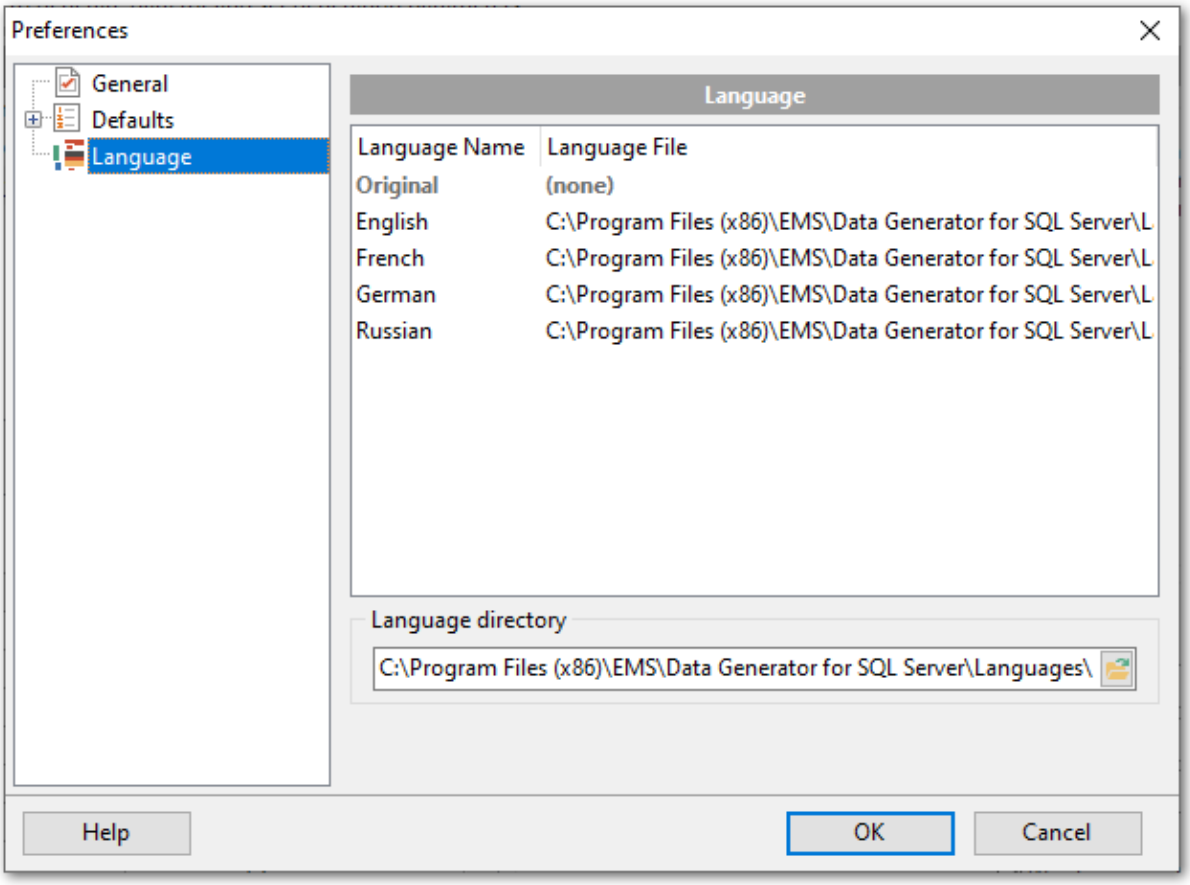
2.3.3 Setting program language

The **Language** page is provided for managing Data Generator localization files.

You can create your own **.lng* files similar to those available in the %program_directory% \Languages folder, add them to the list of available languages and set the new language as the program interface language.

Available languages
Lists all the languages available for localization and the corresponding **.lng* files. Double-click a language in the list to edit its name or the *.lng file.



Language directory
Use the button to specify the directory where the **.lng* files are stored by default.

See also:
Setting general options
Setting default constraints

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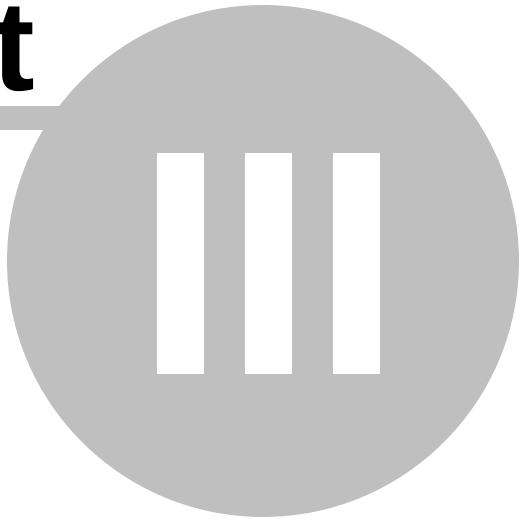
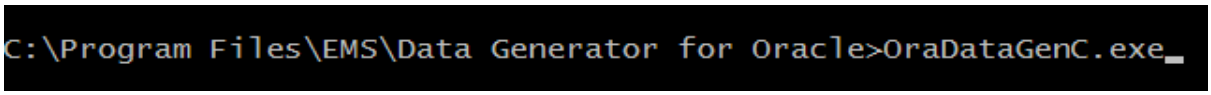
Part



3 Console Application

Additionally to **the GUI version** which is implemented in the form of a wizard application, the installation package of Data Generator for Oracle includes **the console version** which is intended for being run from Windows command line with a template file name used as the execution parameter.



Data Generator for Oracle command line utility is intended for quick and powerful data generation to Oracle tables.

- Using console application

See also:

Wizard Application

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3.1 Using console application

All the generation options are set in **template** (**.gtm*) files. A template can be also used in the **Console version** of Data Generator for Oracle .

To create a template file, follow the instructions below:
- start Data Generator for Oracle Wizard Application;
- set all the required options in all steps of the wizard;
- test the generation process at the last step;
- save all generation options in the template file.

The easiest way to start Data Generator for Oracle console application is to double-click the generated **.gtm* template file. The other way is to enter the command line and type the appropriate command.

Usage:
<path to Data Generator for Oracle console application>\OraDataGenC.exe TemplateFile [-L] [-B]

TemplateFile
Stands for the **.gtm* template file to be used as the console version execution parameter

[-L]
Applies the current localization selected in Wizard Application (GUI)

[-B]
Use this parameter in the command line to run the console version of **Data Generator for Oracle** in background mode

Example:

"C:\Program Files\EMS\Data Generator for Oracle\OraDataGenC.exe" "C:\EMS\Templates\DataGenerator\Example.gtm" -L

Note: The following exit codes can be returned by Data Generator for Oracle to the operating system after performing the latest task:
0 - successful completion;
1 - error(s) occurred during task performing;
2 - fatal error occurred. The task was not performed.

See also:

Using wizard application

Configuration file format

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Part

4 Appendix

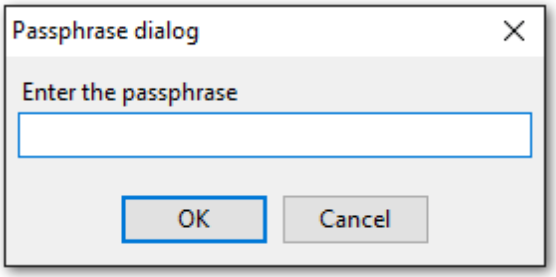
4.1 SSH tunneling options

To setup the connection via **SSH tunnel**, input the following values in the corresponding fields:

- **SSH host** is the name of the host where SSH server is running
- **SSH port** indicates the port where SSH server is activated
- **SSH login** stands for the user on the machine where SSH server is running (**Note:** it is a Linux/Windows user, not a user of Oracle server)
- **SSH password** is the Linux/Windows user password

☑ **Use Private Key for authentication**
If the SSH encryption is enabled on the SSH server, a user can generate a pair of cryptographic keys (the **Private key** and the **Public key**). The **Public key** is placed on the SSH server, and the **Private key** is the part you keep secret inside a secure box that can only be opened with the correct passphrase (or an empty string as the passphrase). When you wish to access the remote system, you open the secure box with your passphrase (if any), and use the private key to authenticate yourself with the Public key on the remote Linux computer.

SSH Key file
Specify the location (the secure box) of the **Private key** file on your local machine.
Supported Private Key file formats are:
OpenSSH
Putty
SSH.com
Note that you need to trust your local machine not to scrape your passphrase or a copy of your Private key file while it is out of its secure box.



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4.2 Data generation mode

This option defines data generation mode - *random data generation*, *incremented values generation* or getting data from *list or SQL query*, or getting data from an existing table column.

Select the **Generate random data** option to generate random data within the defined range.

Another mode - **Generate incremental data** - allows one to set the initial value and the increment for generated values.

Select the **Get Data from List / SQL query** option to generate data by getting values from the user-defined list randomly or in the fixed order. This can be:
- a *list of values* (for numeric, string, date/time, boolean data types);
- a *list of files* (for BLOB data type);
- an *SQL query*;
- previously defined *sample text* (for string data types).

Select the **Get data from column** option to specify a column to generate data from: use the *Table* and Column drop-down lists to select the source table and column that will be used to take data for generation.

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4.3 Configuration file format

The **configuration** (**template**) **file** used by Data Generator for Oracle is divided into several sections, each corresponding to a particular group of settings specified at different steps of the GUI application wizard.

[#General#]
This section stores general information about the utility:

Parameter	*Description*
Product	internal product name
Version	major version

[#Comment#]
This section stores the template file comment as specified optionally in the Save template options dialog:

Parameter	*Description*
Line<N>	comment text

where *N* stands for the comment line identifier

Example:
Line0=Data Generator for Oracle
Line1=Template file
Line2=Data generation #1

[CONNECTION]
This section stores connection parameters to Oracle. The parameters correspond to the values entered at Step 1 of the Wizard application and are obligatory.

Parameter	*Description*
DBName	database name as specified in the TNS file
Login	Oracle login (if **NTAuth** = *0*)
Password	password to identify the login (encrypted)
NTAuth	type of authentication: *0* = Server authentication *1* = Windows authentication
OracleHome	Oracle Home storage
ConnectAs	*0* = Normal *1* = SYSDBA *2* = SYSOPER
OptimizeGoalType	*0* = Unchanged *1* = Choose *2* = FirstRows *3* = AllRows *4* = Rule
Major	major version used to encrypt the passwords (the value must not be changed)
Minor	minor version used to encrypt the passwords (the value must not be changed)

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[TUNNELING]
The section contains parameters required for connection with SSH tunneling used; the values correspond to the settings for connection via SSH Tunnel (if used).

Parameter	*Description*
TunnelType	indicates whether SSH tunneling is used for connection or not (**TunnelType** = *ttNotUse*)
SSHHostName	name of the host where SSH server is running
SSHPort	port on which SSH server is activated
SSHUserName	user on the machine where SSH server is running
SSHPassword	password to identify SSH server user (encrypted)
SSHKeyFile	path to the Private key used for the SSH connection (if **SSHUseKeyFile** = *True*)
SSHUseKeyFile	*True* = SSH Private key is used *False* = SSH Private key is not used
PassPhrase	passphrase for Private key (if **SSHUseKeyFile** = *True*)

[ADDITIONAL]
The section contains additional settings specified at Step 2 and Step 4 of the Wizard application.

Parameter	*Description*
TablesCount	number of tables selected for data generation
SqlExecute	corresponds to the *Execute statements* option of the **Action** radio group available at Step 4: *1* = enabled *0* = disabled
SqlSave	corresponds to the *Save data generation script to file* option of the **Action** radio group available at Step 4: *1* = enabled *0* = disabled
SaveFile	path to the script file (if **SqlSave** = *1*)
BlobFile	the parameter is not used by Data Generator for Oracle
ExportBlobType	the parameter is not used by Data Generator for Oracle

[TABLE_XX]
The section is repeated for all tables; the settings are specified at Step 3 of the Wizard application.

Parameter	*Description*
Schema	indicates the name of the schema where the table is located
TableName	indicates the name of the table to generate data into
RecordCount	number of records to be generated
ClearBeforeGeneration	*1* leads to emptying table *0* leaves the table as it was before data generation

[TABLE_XX_FIELD_YY]
The section is created for each field of each table.

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Parameter	*Description*
DoGenerate	*0* indicates that the field is excluded *1* indicates that the field is included
IncludeNulls	*1* specifies that the NULL values are set for certain percent of cases *0* disables this option
NumNulls	the percentage of field values to be set to NULL
GenMethod	defines Data generation mode: *0* stands for incremental data generation *1* = random data generation *2* refers to **Get data from list / SQL query** option *3* = from another field
GenFromSQL	*0* = the direct list of values is taken for data generation *1* = SQL query is used
SQL	text of the SQL query from which a list of values is taken for generation (as the result of the SQL query execution)
UsingMask	*0* = no mask is used for string field values *1* = generation of string field values by mask
Mask	mask for string field values generation
MinInt	minimal value for integer fields
MaxInt	maximal value for integer fields
UseFormula	*0* = no formula *1* = a formula is applied for data generation
Formula	formula for data generation, e.g. *x*2+1*
Digits	digits quantity for float fields
Precision	precision value for float fields
MinDate	minimum value for date fields
MaxDate	maximum value for date fields
IncludeTime	indicates whether time is added (for *DATETIME* fields)
MinTime	minimum value for time fields
MaxTime	maximum value for time fields
MinLength	minimum length for string fields
MaxLength	maximum length for string fields
StartChar	first char code for generating strings
EndChar	last char code for generating strings
Charset	field character set
InitialValue	the initial value for data generation into the field
IncrementStep	specifies the step to increment values (for **GenMethod** = *0*)
UseNewLine	1 = a line feed is used for a new line 0 = no line feeds used
WinNewLineStyle	style to be applied to line feeds: *1* = Windows style *0* = Unix style
SampleText	sample text to be generated for a string field

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4.4 Find Text dialog

The **Find Text** dialog is provided for quick and flexible searching for specified text within the working area of the script editor.

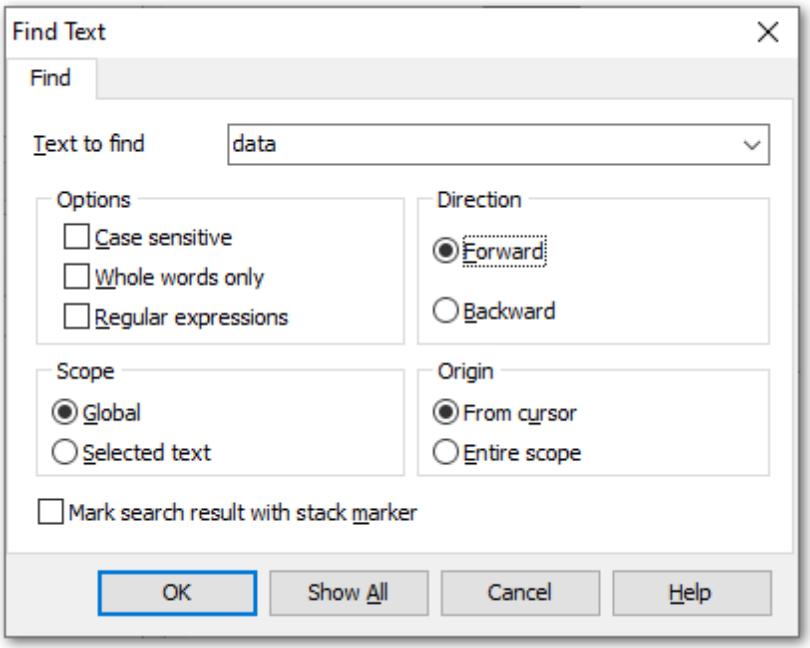
Text to find
Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

Options

☑ **Case sensitive**
This option can be used to differentiate uppercase characters from lowercase ones during the search process.

☑ **Whole words only**
Use this option to search for words only (with this option off, the search string might be found within longer words.)

☑ **Regular expressions**
Recognizes regular expressions in the search string.



Direction

◉ **Forward**
Searches from the current position to the end of the working area.

◉ **Backward**
Searches from the current position to the beginning of the working area.

Scope

◉ **Global**
Searches within the entire working area, in the direction specified by the *Direction*

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setting.

◉ **Selected text**
Searches only within the currently selected text, in the direction specified by the *Direction* setting. You can use the mouse or block commands to select a block of text.

Origin
◉ **From cursor**
The search starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

◉ **Entire scope**
The search covers either the entire block of selected text or the entire script (no matter where the cursor is in the Editor area) depending upon the *Scope* options.

☑ **Mark search result with stack marker**
The option toggles marking search results. If this option is selected, stack markers are set at all search positions - this makes it possible to jump from one marker (search result) to another within the text.

Click the **Show All** button to highlight every occurrence of the search string.

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4.5 Replace Text dialog

The **Replace Text** dialog is provided for searching and replacing text within the working area of the script editor.

Text to find
Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

Text to replace
This box allows you to enter a string to replace the search string. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered strings. To replace the search string with an empty string, leave this input box blank.

Options
☑ **Case sensitive**
This option can be used to differentiate uppercase characters from lowercase ones during the search process.

☑ **Whole words only**
Use this option to search for words only (with this option off, the search string might be found within longer words.)

☑ **Regular expressions**
Recognizes regular expressions in the search string.

☑ **Replace with template**
This option requires the **Regular expressions** option selection.
Enable this option to use regular expressions in the **Text to replace** field. Expression used in this field will be applied to each string that matches the **Text to find** expression.

Note: The syntax of regular expressions that can be used in the Text to find and the Text to replace fields is similar to that used in Perl regular expressions. Comprehensive information about it can be found at http://perldoc.perl.org/perlre.html#Regular-Expressions.

☑ **Prompt on replace**
Check this option if you wish to be prompted before replacing upon each occurrence of the search string. When this option is off, the search string is replaced automatically.

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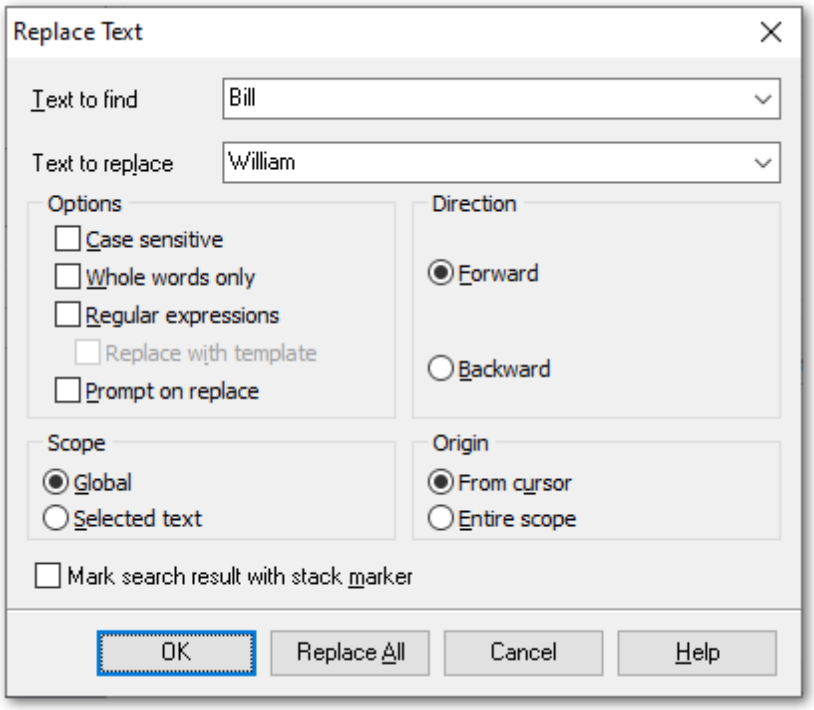

Direction

Forward
Searches and replaces from the current position to the end of the working area.

Backward
Searches and replaces from the current position to the beginning of the working area.

Scope

Global
Searches and replaces within the entire working area, in the direction specified by the *Direction* setting.

Selected text
Searches and replaces only within the currently selected text, in the direction specified by the *Direction* setting. You can use the mouse or block commands to select a block of text.

Origin

From cursor
The search and replace process starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

Entire scope
The search and replace process covers either the entire block of selected text or the entire script (no matter where the cursor is in the Editor area) depending upon the *Scope* options.

Mark search result with stack marker

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The option toggles marking search results. If this option is selected, stack markers are set at all search positions - this makes it possible to jump from one marker (search result) to another within the text.

Click the **Replace All** button to replace every occurrence of the search string. If you have checked the **Prompt on replace** option, the confirmation dialog box appears upon each occurrence of the search string.

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4.6 Advanced connection settings

You need the installed Oracle client on the client computer where Data Generator for Oracle will be used. The version of the Oracle client should be compatible with the version of Oracle server you need to connect.

You need to add the connection settings of Oracle server databases to your TNS names file (tnsnames.ora file). This is a configuration file which contains databases description.

If you use Database Client the tnsnames.ora file is located in the % HOME_name\NETWORK\ADMIN directory.

If you use Instant Client for oracle, you should create tnsnames.ora file manually. since it does not exist. File should be created in the same directory where Oracle instant client is installed (e.g. C:\OracleInstantClient\). This file can be created using any text editor (create a simple text file and then change its name and extension).

Only for Instant Client: After the tnsnames.ora file is created and database description is added, create TNS_ADMIN environment variable. For this please do the following:
1. Right-click 'My computer'.
2. Select 'Properties' menu item.
3. Proceed to the 'Advanced' tab and press 'Environment Variables' button.
4. Press 'New...' button in the 'System variables' section.
5. Set 'Variable name:' TNS_ADMIN, 'Variable value:' C:\OracleInstantClien\tnsnames.ora
6. Press 'OK' button to save the variable.

Find PATH variable in the same dialog, double-click it and add path to the Oracle Instant client libraries (they are located in the directory where client is installed, i.e. C:\OracleInstantClient\). Remember that the paths entries should be separated with semicolons (;).

Data Generator for Oracle connects to the server (with the help of Oracle client) via TCP/IP protocol. Here is an example of TCP/IP connection specified in TNS names file:

```
DB_Alias =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = Host_name)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVER = DEDICATED)
        (SERVICE_NAME = Database_Name)
    )
  )
```

PROTOCOL is the keyword that identifies the specific protocol adapter used. For this protocol, the value is TCP. The value can be entered in either uppercase or lowercase.
HOST is the host name or IP address.
PORT is the TCP/IP port number.
SERVICE_NAME the name of service on server; the database instance name may differ from the actual database name, but generally the names match.
DB_Alias any name of the connection

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At the firs step select Oracle client HOME in **Database home** dropdown list and select database from the **Database** dropdown list. The databases names are taken from the tnsnames.ora file.

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