

EMS® Database Management Solutions



# Data Generator for MySQL User's Manual

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## Data Generator for MySQL User's Manual

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

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## **1 Welcome to EMS Data Generator!**

**EMS Data Generator for MySQL** is a powerful utility for generating test data into one or several MySQL database tables simultaneously, with script saving and editing capabilities. The wizard application allows you to define tables and fields for generating data, set value ranges, generate string fields by mask, load values for BLOB fields 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: <u>http://www.sqlmanager.net</u> for details.

#### Key features:

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- Unicode support
- Localisable user-friendly wizard interface
- Ability to save and edit data generation script, without actual script execution
- Generating data into several tables of different databases at one host
- Support for all MySQL data types including ENUM, SET, GEOMETRY
- Various data generation modes for each field 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 field for data generation
- Ability to preview the data grid for each table
- Automatic control over referential integrity for data generation into linked tables
- Wide variety of generation parameters for each field 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:http://www.sqlmanager.net/en/products/mysql/datageneratorSupport Tickethttp://www.sqlmanager.net/supportSystem:register online at:Register online at:http://www.sqlmanager.net/en/products/mysql/datagenerator/buy

## 1.1 What's new

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Version

Data Generator for MySQL 3.0

Release Date July 2, 2008

#### What's new in EMS Data Generator?

- Implemented Unicode support
- Added <u>options</u> for data generation to SQL script: appending to an existing file; <u>viewing/editing script</u>
- Added options for generating the same data into several columns
- Added options for generating string data according to sample text
- Implemented data preview
- Added options for generating data into dependent fields related as 1:n (n records will be generated into the dependent table field for each record of the primary table)
- Implemented data generation into fields of type GEOMETRY
- Data generation is now performed within a separate thread
- Other minor improvements and bug-fixes

### See also:

Version history

## **1.2** System requirements

#### System requirements for Data Generator for MySQL

- 300-megahertz (MHz) processor; 600-megahertz (MHz) or faster processor recommended
- Microsoft® Windows NT4 with SP4 or later, Microsoft® Windows 2000, Microsoft® Windows 2000 Server, Microsoft® Windows XP, Microsoft® Windows 2003 Server, Microsoft® Windows 2008 Server, Microsoft® Windows Vista, Microsoft Windows 7, Microsoft Windows 8
- 64MB RAM or more; 128MB or more recommended
- 20MB of available HD space for program installation
- Super VGA (800x600) or higher-resolution video adapter and monitor; Super VGA (1024x768) or higher-resolution video adapter and monitor recommended
- Microsoft® Mouse or compatible pointing device
- Possibility to connect to any local or remote MySQL server
- Supported MySQL server versions: from 3.23 up to 6.0

## 1.3 Installation

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

- download the Data Generator for MySQL distribution package from the <u>download page</u> available at our site;
- unzip the downloaded file to any local directory, e.g. C:\unzipped;
- run *MyDataGenSetup.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 MySQL** to the latest version:

- download the Data Generator for MySQL distribution package from the <u>download page</u> 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 *MyDataGenSetup.exe* from the local directory and follow the instructions of the installation wizard.

#### See also:

System requirements

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## 1.4 Registration

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To make it easier for you to purchase our products, we have contracted with share-it! registration service. The share-it! order process is protected via a secure connection and makes online ordering by credit/debit card quick and safe. The following information about share-it! is provided for your convenience.

**Share-it!** is a global e-commerce provider for software and shareware sales via the Internet. Share-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, Check or Cash.

If you have ordered EMS software online and would like to review your order information, or if you have questions about ordering, payments, or shipping procedures, please visit our <u>Customer Care Center</u>, provided by Share-it!

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 or passwords and download links for archives of full versions. Also you will receive a copy of registration keys or passwords by e-mail. Please make sure to enter a valid e-mail 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 <u>http://sqlmanager.net/en/</u>products/mysql/datagenerator

Product distribution	
Data Generator for MySQL (Business license) + 1-Year Maintenance*	
Data Generator for MySQL (Business license) + 2-Year Maintenance*	
Data Generator for MySQL (Business license) + 3-Year Maintenance*	<u>Register</u>
Data Generator for MySQL (Non-commercial license) + 1-Year Maintenance*	Now!
Data Generator for MySQL (Non-commercial license) + 2-Year Maintenance*	
Data Generator for MySQL (Non-commercial license) + 3-Year Maintenance*	
Data Generator for MySQL (Trial version)	<u>Download</u>
	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 online, speed-through

Maintenance Reinstatement/Renewal Interface. After reinitiating/renewal you will receive a confirmation e-mail with all the necessary information.

See also: How to register EMS Data Generator

## 1.5 How to register Data Generator

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

- receive the notification letter from **Share-it!** 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 <u>startup page</u>.

Register Data Generator for MySQL	×
Please enter the registration information you received when purchasing Data Generator for MySQL.	
Registration <u>N</u> ame	
Registration <u>K</u> ey	
<u>R</u> egister <u>L</u> ater <u>H</u> el	

See also: Registration

## 1.6 Version history

Product name	Version	Release date
Data Generator 2005 for MySQL	Version 2.3.0.1	February 7, 2007
Data Generator 2005 for MySQL	Version 2.2.0.1	June 26, 2006
Data Generator 2005 for MySQL	Version 2.1.0.1	August 8, 2005
Data Generator 2005 for MySQL	Version 2.0.0.1	April 12, 2005
MySQL Data Generator	Version 1.0.0.1	May 14, 2003

Full version history is available at <u>http://www.sqlmanager.net/products/mysql/</u> <u>datagenerator/news</u>.

#### Version 2.3

- <u>Wizard</u> interface has become more user-friendly
- Implemented Private Key support for <u>SSH</u> authentication
- Added the 'Clear tables before generation' option
- Implemented encrypted passwords storage
- Increased <u>data generation</u> speed
- Improved data generation for tables with Foreign keys
- Minor bug-fixes and improvements

Version 2.2

- The 'Commit every...' option added
- Added the ability to load lists of values from TXT and CSV files
- The <u>console version</u> now creates log files
- System tables are not displayed any more
- Fixed a bug concerned with applying default constraints
- Increased generation speed for <u>string</u> fields
- Added the opportunity to connect through <u>HTTP tunnel</u>
- Added the opportunity to connect through <u>SSH tunnel</u>

#### Version 2.1

- Improved processing of table relationships
- Now you can generate incremental data for <u>date</u> fields
- Formula-based random data generation for <u>integer</u> fields
- Minor <u>interface</u> improvements
- Fixed the bug when ordering tables related by foreign keys
- Fixed the bug concerned with refreshing metadata
- Fixed the bug concerned with generation of NULL values

#### Version 2.0

- Completely rewritten source code
- More user-friendly wizard interface
- Retrieving values for data from SQL queries

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- Foreign keys support
- The opportunity to empty tables before data generation
- The ability to set NULL values for certain percent of cases
- <u>String</u> fields data generation by mask
- Incremental data generation for <u>float</u> fields
- Getting values for <u>BLOB</u> fields from files
- A number of bugs fixed

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## Version 1.0

Basic features:

- Generating data to several tables simultaneously
- Most MySQL data types supported
- Generating as many records as you want
- <u>Defining fields</u> for generating data
- Easy-to-use wizard interface
- Adjustable parameters for each field type including minimum and maximum value for integer types, minimum and maximum length, start and end char for string fields, etc.
- The possibility of <u>saving all the generation parameters</u> used within the current wizard session
- The <u>command-line utility</u> to generate data using the template file and more...

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See also: What's new

## 1.7 EMS Data Generator FAQ

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

#### **Table of contents**

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- What is Data Generator for MySQL?
- What do I need to start working with EMS Data Generator for MySQL?
- 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 MySQL?
- A: Data Generator for MySQL is a powerful utility for generating test data to several MySQL database tables at once. The wizard application allows you to define tables for generating data, set value ranges, generate char fields and BLOBs, 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 MySQL?
- A: First of all you must have a possibility to connect to some local or remote MySQL server to work with Data Generator for MySQL. You can use the following link to download the server: <u>http://www.mysql.org/downloads/</u>. Besides, you need your computer to satisfy the <u>system requirements</u> for Data Generator for MySQL.
- *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 MySQL Data Generator wizard. Set the required generation options at <u>Step 4</u> 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 <u>console application</u>.
- *Q:* How can I register the product?
- A: If you have already purchased Data Generator for MySQL, you can register the product by entering the appropriate registration information. Please refer to <u>Registration</u> and <u>How to register EMS Data Generator</u> 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 MySQL within the 30-day trial period.

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If you have any additional questions, contact us at our <u>Support Center</u>.

#### 1.8 Other EMS Products

#### **Quick navigation**



#### **MySQL**

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#### 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!



<u>SQL Manager for MySQL</u> 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**

#### 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!



#### 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



#### 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!



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.

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#### DB Comparer for PostgreSOL

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.



#### SOL Query for PostgreSOL

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 PostgreSOL

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!



#### 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!



<u>SQL Manager for Oracle</u> Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL guery 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 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 1

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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#### DB2

#### SQL Management Studio for DB2

EMS SQL Management Studio for DB2 is a complete solution for database administration and development. SOL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

<u>SQL Manager for DB2</u> 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 Comparer for DB2

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



#### 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 based on retrieved data guickly and more.

#### Data Comparer for DB2

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

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#### **Tools & components**



#### Advanced Data Export

Advanced Data Export Component Suite (for Borland Delphi and .NET) will allow you to save your data in the most popular office programs formats.



#### Advanced Data Export .NET

Advanced Data Export .NET is a component suite for Microsoft Visual Studio .NET 2003, 2005, 2008 and 2010 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

Advanced Data Import<sup>™</sup> Component Suite for Delphi® and C++ Builder® will allow you to import your data to the database from files in the most popular data formats.



#### Advanced PDF Generator

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



#### Advanced Query Builder

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

#### Advanced Excel Report

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



#### Advanced Localizer

Advanced Localizer<sup>™</sup> is an indispensable component suite for Delphi® for adding multilingual support to your applications.



#### Source Rescuer

EMS Source Rescuer™ is an easy-to-use wizard application for Borland Delphi® and C+ +Builder® which can help you to restore your lost source code.

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## 2 Wizard Application

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

- Using wizard application
- Using configuration files
- <u>Setting program preferences</u>

🔂 Data Generator for MySQL							
Welcome	Welcome to Data Generator for MySQL Wizard!						
	3	This Wizard allows you to	generate random data of any type for MySQL d	latabase tables.			
		Click 'Next' to start working	g with the wizard.				
Da	ta	Product Information:					
Ge	nerator	Developers:	Dmitry Schastlivtsev, Alexander Zhiltsov, Ale	exey Butalov, Sergey Sviridov			
for MyS	SOL	Homepage:	http://www.sqlmanager.net/products/mysql/d	atagenerator			
injye		Support Ticket System:	http://www.sqlmanager.net/support				
		Version: 3.0.1.3					
		Registered to : EMS (I	Business license)				
		Enter Registration Code					
		ţ					
Help	Tools			<< Back Next >>	Close		

## See also: Console Application

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#### Using wizard application 2.1

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

- Getting started
- <u>Step 1 Setting connection properties</u>
- Step 2 Selecting databases 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

## 2.1.1 Getting started

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

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

🔄 Data Generator for MySQL						
Welcome to Data Generator for MySQL Wizard!						
Data Generator for Mysol	This Wizard allows you to generate random data of any type for MySQL database tables.         Click 'Next' to start working with the wizard. <b>Product Information:</b> Developers:       Dmitry Schastlivtsev, Alexander Zhiltsov, Alexey Butalov, Sergey Sviridov.         Homepage:       http://www.sqlmanager.net/products/mysql/datagenerator.         Support Ticket System:       http://www.sqlmanager.net/support.         Version: 3.0.1.3       Unregistered Copy         Enter Registration Code					
	Trial Period: 30 Day(s) Left.					
This is a 30-day trial version. To make sure you do not receive this notification any more, you should purchase a softwand register your software.						
	Please note: the trial version of the program has a limitation of 100 records to be generated at a time.					
Help Tools	Sack Next >> Close					

When you are done, press the **Next** button to proceed to <u>Step 1</u>.

### See also: Registration

### 2.1.2 Step 1 - Setting connection properties

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

#### **Connection settings**

First select the **connection type**: *local* or *remote*.

**Local** connection is used to connect to MySQL server launched on the same machine where Data Generator for MySQL is running.

The **Remote** mode allows you to connect to MySQL server launched on another computer in the network.

By default the program uses local connection. It is indicated by radio-button **Local** selected. If you wish to establish remote connection, you should select the **Remote** radio-button. For remote connection you should also enter MySQL host name in the **Host** field. For both types you should enter MySQL port to connect through in the **Connection port** field.

Afterwards you should specify *authorization* settings: **Login** and **Password**. The default superuser name is 'root' and the default password is empty.

If necessary, use the drop-down list to specify the preferable **Client charset** to be used by the application.

😽 Data Generator for MySQL						
Step 1 of 6						
Set MySQL server conne	ection properties					
Set MySQL server conne Data Generator for MySQL	Connection type Connection type Local Remote Host Connection port Don't use tunnelin Connect through SSH host name SSH port USE Private K SSH key file Connect through URL http://webs	doom_server 3306 ng the Secure SHell (SSH) tunnel vadsrv 22 ey for authentication e C:\SSHKeys\dsa_ket the HTTP tunnel server_name/emsproxy.php	SSH user nam SSH pagsword	Authorization Login Password Client charset d tester d	root       DEFAULT	
Help Tools	T			< Ba	ck Next >>	Close

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

#### **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 MySQL server)
- SSH password is the Linux/Windows user password

For details see <u>SSH tunneling options</u>.

To use **HTTP tunneling**, just upload the tunneling script to the webserver where MySQL server is located, or to any other webserver from which direct connections to your MySQL server are allowed. This script exposes the MySQL API as a set of web-services which is used by Data Generator for MySQL.

Note that the *emsproxy.php* script file is included into the distribution package and can be found in Data Generator installation directory.

For details see <u>HTTP tunneling options</u>.

When you are done, press the **Next** button to proceed to the <u>next step</u>.

### 2.1.3 Step 2 - Selecting databases and tables

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

First you should select a database from the **Select Database** drop-down list at the top of the window. If the  $\blacksquare$  **Show databases** option is disabled at the <u>General Options</u> tab of the <u>Preferences</u> dialog, there will be no drop-down list. Type the database name manually in this case.

In the **Available Tables** list you can see all the tables belonging to the selected database. 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: <database\_name>.<table\_name>. To cancel table selection, just remove it from the **Selected Tables** list. Use the **Selected Tables** list. Use the **Selected Tables** list. Use the **Selected Tables** list.

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.

Step 2 of 6 Select databases and tables for data generation	
Select databases and tables for data generation	
Select Database Sakila	set Tables         Selected Tables         sakila.country         sakila.country         sakila.customer         sakila.im         sakila.film         sakila.film_category         sakila.inim_text         sakila.inim_text

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 MySQL analyzes the order of data generation to avoid referential integrity conflicts and advises you to set a new order for data generation.

When you are done, press the **Next** button to proceed to the <u>next step</u>.

### 2.1.4 Step 3 - Specifying generation parameters

At this step you can select fields 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 fields and their types are listed in the grid of the **Field list** area below.

#### **Records count**

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

#### 🗹 Clear

31

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

#### Preview

Click the **Preview** button to browse the selected table data in the <u>preview mode</u>.

<b>5</b>	Data (	Generator for MySQ	L			
	Step	3 of 6				
	Ch	eck fields to generate	e data for and set generation	parameters		
		-				
		Gei	nerate data for	_		Generation properties
	•	Name	Records count	Clear ^	16	U nim_id (smailint(6) unsigned) (in Primary Keyj (identity) [unique] (not null)
	🖯 sa	akila	100			integer fields are used to hold exact numeric data. Values for this field can be generated randomly, incremental or taken from fixed list of values.
		country	100			randomy, moremental of taken from tote for of values.
	<b>I</b>	customer	100			
	···· 🔳	employee	100			
		🔒 film	100			
		film_actor	100			
	<b>-</b>	film_category	100		10	Data generation mode
		film text	100		·	Generate random data
Ei	dd lie		Preview		1	Generate incremental data
		A	FICVICW			C Get data from list / SQL-query
		Field	Туре	-		Cet data from Field
2	1	film_id	SMALLINT(5) UNSIGNED		ΙL	
		title	VARCHAR(100)		I F	Parameters
	1	release_year	YEAR(4)			Initial value 1
		language_id	TINYINT(3) UNSIGNED	E		Increment 1
	1	original_language_ic	TINYINT(3) UNSIGNED			
		rental_duration	TINYINT(3) UNSIGNED			
		rental_rate	DECIMAL(4,2)			
	1	length	SMALLINT(5) UNSIGNED			
		replacement_cost	DECIMAL(5,2)			
	1	rating	ENUM('G','PG','PG-13','R','N	IC-17')		
	J	special features	SET/TRAILERS! COMMEN	TARIES' ID	1	
	He	elp Tool	is V			<< Back Next >> Close

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

#### Set NULL value in ... % of cases

Check this option and specify the percentage of NULL values for the field, if necessary.

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

- FLOAT field parameters
- INTEGER field parameters
- DATE field parameters
- <u>TIME field parameters</u>
- STRING field parameters
- <u>BLOB field parameters</u>
- <u>GEOMETRIC field parameters</u>
- ENUM and SET field parameters
- **BIT field parameters**

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

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

#### 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 field related as 1:N, i.e. n records will be generated into the foreign table for each record of the primary table.

Data generation mode © Generate data from the dependent field			
<ul> <li>Generate incremental data</li> </ul>			
Get data from list / SQL	O Get data from list / SQL-query		
Get data from Field			
Parameters			
List of Values	SQL query	Ratio 1:N	
For each record of the pri (NOTE: Changing this val	mary table n records will b ue will result in changing r	e generated into the foreign table. ecord count of the current table)	
1	<ul> <li>T</li> </ul>		

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

#### 2.1.4.1 Setting type-specific properties

#### 2.1.4.1.1 INTEGER field parameters

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

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

Generation properties		
DEPT_ID (int(11))		
Integer fields are used to hold exact numeric data. Values for this field can be generated randomly, incremental or taken from fixed list of values.		
Set NULL value in	10 % of cases	

Select Data generation mode as follows:

#### Generate random data

The value is generated randomly within the defined interval (the minimum and the maximum values).

Data generation mode     Generate random data	
Generate increm	ental data
Get data from list	t / SQL-query
Get data from Field	eld
Parameters	
Min value	1
Max value	100
Use formula	
x*2+1	

#### 🗹 Use formula

This option allows you to correct your data according to a formula; x is a randomly generated value here. Addition, substraction, multiplication, dividing and exponentiation

operations  $(+, -, *, /, ^)$  can be used.

#### Generate incremental data

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

Data generation mode			
Generate random d	Generate random data		
Generate increment	Generate incremental data		
Get data from list / \$	SQL-query		
Get data from Field			
Parameters			
Initial value	1		
Increment	1		

#### Get Data from List / SQL query

This panel allows you to define the list of values to generate integer 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.

Data generation mode				
Generate incremental data	Generate incremental data			
Oet data from list / SQL-qu	Jery			
Get data from Field				
Parameters				
List of Values	SQL query			
Random order			🔁 📙	🕂 😑
1				*
2				
3				=
I 4				
5				
6				Ŧ

## Get data from Field

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

Data generation mode		
<ul> <li>Generate increa</li> </ul>	mental data	
Get data from list	st / SQL-query	
Get data from F	īeld	
Parameters		
Table	ORDER	
Field		

#### 2.1.4.1.2 FLOAT field parameters

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

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

Generation properties		
SALARY (double(15,3))		
SALARY (double(15,5)) Float fields are used to hold approximate numeric data. Values for this field can be generated randomly, incremental or taken from fixed list of values.		
Set NULL value in	10 🔦 % of cases	

Select Data generation mode as follows:

#### Generate random data

Here you can define the number of digits and the precision for the result randomly generated values.

Data generation mode     Generate random data		
Generate increment	tal data	
Get data from list /	SQL-query	
Get data from Field		
Parameters		
Precision	6	
Scale	2	

#### Generate incremental data

Specify the **Initial value** and the **Increment** properties to generate an ordered incremented sequence of values.
Data generation mode <ul> <li>Generate random data</li> <li>Generate incremental data</li> </ul>			
Get data from list /	SQL-query		
Get data from Field			
Parameters			
Initial value	0		
Increment	1		

# In the second second

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 **J** 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.

Data generation mode					
Generate incremental data	а				
Oct data from list / SQL-q	uery				
Get data from Field					
Parameters					
List of Values	SQL query				
	0				
Random order	0	<b>&gt;</b>	H	+	-
Random order     -0,001	0	<b>&gt;</b>		+	-
Random order     -0,001     -0,01				+	
<ul> <li>Random order</li> <li>-0,001</li> <li>-0,01</li> <li>-0,1</li> </ul>				<b>+</b>	
<ul> <li>Random order</li> <li>-0,001</li> <li>-0,01</li> <li>-0,1</li> <li>▶ 0,001</li> </ul>				+	
<ul> <li>Random order</li> <li>-0,001</li> <li>-0,01</li> <li>-0,1</li> <li>▶ 0,001</li> <li>0,01</li> </ul>				<b>+</b>	

# Get data from field

Data generation m     Generate rando     Generate increm     Get data from lis	Data generation mode Generate random data Generate incremental data Cat data form Ent (CO), support		
Get data from F	ield		
Parameters			
Table	CUSTOMER		
Field	TAXRATE		

#### 2.1.4.1.3 DATE field parameters

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

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



Select Data generation mode as follows:

### Generate random data

Set the date range by defining the minimum and the maximum values. Check the **Include Time** option to generate non-zero random time in addition to the date.

<ul> <li>Data ger</li> <li>Gene</li> </ul>	neration mode rate random data
⊚ Gene	arate incremental data
🔘 Get d	lata from list / SQL-query
🔘 Get d	lata from Field
Paramet	ers
	Date
Min	01.08.2012 💌
Max	30.09.2012 💌

### Generate incremental data

Specify the **Initial Value** and the **Increment** properties to generate an ordered incremented sequence of dates. The incremented value is day.

<ul> <li>Data generation</li> </ul>	ation mode	
Generate	Generate random data	
Generate	e incremental data	
🔘 Get data	from list / SQL-query	
🔘 Get data	from Field	
Parameters	3	
	Date	
Start	04.12.2012 🔻	
Increment	1	

# Ist 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 **I** 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.

Data generation mode ) Generate random data
Generate incremental data
Get data from list / SQL-query
Get data from Field
Parameters
List of Values     O SQL query
🛛 Random order 🛛 😰 🕞 🖨 😑
01.11.2012
02.11.2012
03.11.2012
04.11.2012
05.11.2012
06.11.2012 🔻

# Get data from Field

<ul> <li>Data generation m</li> <li>Generate random</li> </ul>	oode om data
Generate increa	mental data
🔘 Get data from li	st / SQL-query
Get data from F	Tield
Parameters	
Table	ORDER
Field	SALE_DATE

#### 2.1.4.1.4 TIME field parameters

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

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



Select Data generation mode as follows:

### Generate random data

Set the time range by defining the minimum and the maximum values.

Data ger	neration mode	
Gene	Generate random data	
Generation	rate incremental data	
🔘 Get d	ata from list / SQL-query	
⊚ Get d	ata from Field	
Paramet	ers	
	Time	
Min	00:00:00	
Max	23:59:59	

## Generate incremental data

Specify the **Start** value and the **Increment** properties to generate an ordered incremented sequence of values.

<ul> <li>Data generation</li> </ul>	ation mode	
Generate	Generate random data	
Generat	e incremental data	
🔘 Get data	from list / SQL-query	
Get data	from Field	
Parameters	3	
	Time	
Start	12:00:00	
Increment	00:00:01	

# In the second second

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 **J** 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.

Data generation mode						
Generate incremental data	1					
Oet data from list / SQL-qu	lery					
Get data from Field						
Parameters						
List of Values	SQL query					
Random order			0		÷	-
Random order     01:00:00			2	5	<b>+</b>	-
Random order           01:00:00           02:00:00					<b>+</b>	
Random order           01:00:00           02:00:00           03:00:00					<b>+</b>	
Random order           01:00:00           02:00:00           03:00:00           04:00:00					<b>+</b>	
Random order           01:00:00           02:00:00           03:00:00           04:00:00           05:00:00						

# Get data from Field

<ul> <li>Data generation m</li> <li>Generate random</li> </ul>	ode om data
Generate incre	mental data
Get data from li	ist / SQL-query
Get data from F	Field
Parameters	
Table	city 💌
Field	last_update

#### 2.1.4.1.5 STRING field parameters

String fields 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 field 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 *field* of the same data type.

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

Generation properties
first_name (varchar(45)) [not null]
String fields are used to hold text data, their values are sorted and compared based on the collation of the character set assigned to the column. Values for this field can be taken from fixed list of values, generated randomly or by mask.

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.

Data generation mode     Generate random data					
Generate increment	tal data				
Get data from list /	SQL-query				
Get data from Field					
Parameters Using constraints	🔘 Usi	ng mask			
Charset	ascii (ASCII)		•		
Min length	0	Start char	A (65)		
Max length	50	End char	z (122) 💌		
		Include new line			
Windows new line					

# • 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.

🚯 Masks	
Name	Value
Mask1_website	http://www.a{10}.com
Mask2_website	http://www.a{8}.a{3}.org
Mask3_email	a{8}@gmail.com
Mask4_vehicleidnumber	a{2}N{4}a{3}
Mask5_address	a{6}Str.N{2}
•	
	Cancel OK

#### Generate incremental data

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

Data generation mode			
Generate incremental data			
Get data from I	ist / SQL-query		
Get data from	Field		
Parameters			
Initial value	а		
Increment	1		
Start char	a (97)	•	
End char	z (122)	•	
Charset	ascii (ASCII)	•	

# In the second second

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 field. To define sample text used by default, see the <u>Default</u> <u>constraints</u> section of the <u>Preferences</u> dialog.

Data generation mode			
Generate incremental data	1		
Oet data from list / SQL-qu	lery		
Get data from Field			
Parameters			
<ul> <li>List of Values</li> </ul>	SQL query	Sample text	
Random order		2 🔁 📄	+
Alabama			*
Alaska			
Arizona			=
Arkansas			
California			
Colorado			-

# Get data from Field

Data generation mo	ode
Generate rando	m data
Generate Increm	
<ul> <li>Get data from lis</li> <li>Get data from Fi</li> </ul>	id SQL-query
Parameters	
Table	address
Field	AddressLine1

2.1.4.1.6 BLOB field parameters

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

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

	Generation properties			
DETAILS (blob)				
A BLOB is a binary large object that can hold a variable amount of data. You can generate values for this field randomly or choose several files to retrieve data from them.				
Set NULL value in	10 % of cases			

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.

a
query
×.

### 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 field by selecting the **List of Files** option.

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 **J** 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.

Data generation mode Generate random data				
O Generate incremental data	1			
Get data from files / SQL-     Get data from files / S	query			
Get data from Field				
Parameters				
List of Files	SQL query			
Random order		! 🖻 月	) 👍 📻	•
D:\img\01.bmp			4	-
D:\img\02.bmp			-	
D:\img\03.bmp				
D:\img\04.bmp				
D:\img\05.bmp				
D:\img\01.bmp				-

#### Get data from Field

Data generation mode © Generate random data			
Generate increa	mental data		
Get data from fil	les / SQL-query		
Get data from F	ield		
Parameters			
Table	EMPLOYEE		
Field	DETAILS		

2.1.4.1.7 GEOMETRIC field parameters

Geometric data types represent two-dimensional spatial objects. You can generate values for this field *randomly* or choose to take them from a specified *list* of values or *SQL query*, or from an existing table *field* of the same data type.

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

Generation properties				
GeomCol (geometry) —				
Geometric data types represent two-dimensional spatial objects. Values for this field can be generated randomly or taken from list.				
Set NULL value in	10 🔦 % of cases			

Select Data generation mode as follows:

# Generate random data

The coordinates are generated randomly within the defined intervals (the minimum and the maximum values).

<ul> <li>Data generation</li> <li>Generate ration</li> </ul>	n mode ndom data				
O Generate ind	cremental data				
Get data from	m list / SQL-query				
Get data from	m Field				
Parameters					
Min X	-10	×	Geometry type	Point	-
Max X	10	×.			
Min Y	-15	×			
Max Y	15	▲ ▼			

# Get data from list / SQL query

This panel allows you to define the list of values to generate geometric 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.

Data generation mode © Generate random data	
Generate incremental data	
Get data from list / SQL-query	
Get data from Field	
Parameters	
List of Values     SQL query	
select geom_col from geomtable;	<u>^</u>
	=
	*
< III	P.

#### Get data from Field

<ul> <li>Data generation mode</li> <li>Generate random data</li> </ul>			
O Generate increm	nental data		
Get data from list	st / SQL-query		
Get data from F	ield		
Parameters			
Table	store		
Field	position		

#### 2.1.4.1.8 ENUM and SET field parameters

An ENUM or a SET field in MySQL is a string object with a value which is selected from a list of defined values. Values for this field can be generated *randomly* or they can be taken from a fixed *list* of values or *SQL query*.

The **Generation properties** panel allows you to define preferences for generating values for ENUM and SET field types.



Select Data generation mode as follows:

### Generate random data

There are no additional parameters for this field type.

Data generation mode     Generate random data     Generate incremental data     Get data from list / SQL-query     Get data from Field
Parameters
This field will be generated randomly according to the field definition.

### Get data from List / SQL query

This panel allows you to define the list of values to generate list 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 **3** 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.

Data generation mode © Generate random data	
Generate incremental data	
Get data from list / SQL-query	
Get data from Field	
Parameters	
List of Values SQL query	
Random order	2 🏓 📙 🗕 💻
LEGAL DEPARTMENT	
ACCOUNTING DEPARTMENT	
I ADMINISTRATIVE DIVISION	-

#### 2.1.4.1.9 BIT field parameters

Bit strings are strings of 1's and 0's. They can be used to store or visualize bit masks. You can generate values for this field *randomly*, *incrementally* or choose to take them from a specified *list* of values or *SQL query*, or from an existing table *field* of the same data type.

The **Generation properties** panel allows you to define preferences for generating values for Bit field type.

	Generation properties
B IsActive (bit(1))	
Bit strings are strings of 1's an	d 0's. They can be used to store or visualize bit masks.
Set NULL value in	10 😴 % of cases

Select Data generation mode as follows:

#### Generate random data

Specify the ratio between True and False values in randomly generated data.

<ul> <li>Data gene</li> <li>Genera</li> </ul>	ration mode te random data	3			
General	te incremental	data			
Get dat	a from list / SQ	L-query			
Get data	a from Field				
Parameter	s				
0 (25%)			1	1 (75%)	
			0		
I.	I	I	Ĩ	I	

# Generate incremental data

Specify the **Initial value** and the **Increment** properties to generate an ordered incremented sequence of values. The value is incremented bit-by-bit.

Data generation mode © Generate random data		
Generate increment	tal data	
Get data from list / S	SQL-query	
Get data from Field		
Parameters		
Initial value	0	
Increment	1	

# Ist data from list / SQL query

This panel allows you to define the list of values to generate bit 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 **I** 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.

Data generation mode					
Generate incremental data	3				
Oet data from list / SQL-question	uery				
Get data from Field					
Parameters					
List of Values	SQL query	 			
Random order		1	F	÷	-
10					
00					
▶ 10					

# Get data from Field

Data generation mode			
Generate incre	mental data		
Get data from li	ist / SQL-query		
Get data from F	Field		
Parameters			
Table	employee 💌		
Field	IsActive		

### 2.1.4.2 Viewing table DDL

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

**Hint:** If more convenient, you can select the **Show DDL for table in hint** option (available in the <u>General</u> section of the <u>Preferences</u> dialog) to enable hints that popup when the mouse cursor is positioned over the table names within the **Generate Data for** area.

😽 Data Ge	enerator for MySQL				
Step 3	3 of 6				
Che	ck fields to generate da	ta for and set generation	on parameters		
	Genera	te data for			Table Definition
	Name	Records count	Clear 🔺	<b>1</b>	actor 🔹
🖃 🖯 sak	kila	100	_	1	CREATE TABLE `actor` (
	actor	100			`actor_id` smallint(5) unsigned NOT NULL
	address	100		2	AUTO_INCREMENT,
	category	94		3	`first_name` varchar(45) NOT NULL,
	city	100		4	`last_name` varchar(45) NOT NULL,
	country	100			`last_update` timestamp NOT NULL DEFAULT
	customer	100		5	CURRENT_TIMESTAMP ON UPDATE
	emplovee	100	-		CURRENT_TIMESTAMP,
Field list		Preview		6	PRIMARY KEY (`actor_id`),
				7	KEY `idx_actor_last_name` (`last_name`)
	Field	Туре		8	) ENGINE=InnoDB DEFAULT CHARSET=utf8 COMMENT='
					InnoDB free: 225280 kB';
					-
Help	p Tools	•			<< Back Next >> Close

#### **Table Definition**

The drop-down list at the top contains the tables that were selected for data generation at <u>Step 2</u>. 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.

### 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 <u>generated</u> into the table.

To open the window, click the **Preview** button available at <u>Step 3</u>.

The grid contains all selected columns with data that will be generated according to the parameters you have specified at <u>Step 3</u>. 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.

🚯 Preview					• <b>*</b>	
ORDER_ID 💌	CUSTOMER_ID	EMPLOYEE_ID	SHIP_VIA 👻	SALE_DATE	SHIP_[ 🔺	
84	2984	70	UPS	2012-08-09 07:54:01.000008	2012-1:	
85	4652	97	UPS	2011-09-09 17:50:41.000004	2012-1	
86	1354	11	EMS	2010-10-20 07:34:35.000007	2012-1:	
87	1563	63	DHL	2011-04-12 23:28:33.000004	2012-1:	
88	2163	31	UPS	2012-03-10 12:31:21.000005	2012-1	
89	1551	54	Emery	2012-09-03 08:17:17.000006	2012-1	
90	3054	5	DHL	2010-10-20 12:20:34.000008	2012-1	
91	5412	4	UPS	2010-12-03 00:40:13.000005	2012-1:	
92	6516	24	EMS	2011-06-05 17:47:09.000004	2012-1:	
93	4531	38	UPS	2012-02-28 21:46:04.000007	2012-1	
94	2156	99	Emery	2010-09-01 13:39:51.000005	2012-1:	
95	4531	74	UPS	2011-03-19 19:10:13.000004	2012-1 👻	
•						
Help	<u>H</u> elp Close					

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.

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.

# 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 <u>next step</u> 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 Bexplorer button to specify the path to the \*.sql file to store the SQL script.

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# 2.1.6 Step 5 - Start of data generation process

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

😽 Data Generator 1	r MySQL	
Step 5 of 6		
Click the Gen	rate button to start data generation process	3
		Generation Log
	Generating data for database: tes	st
<b>5</b>	Generating data for table orders Generation started Generation complete 100 records generated. 0 errors o	pocurred
Data	Generating data for table custome	ers
Gene	Generation started Generation complete	
MySQL	100 records generated, 0 errors o	occurred
		View SQL file in editor Save log to file
Help	Tools	< Back Generate Close

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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Generating	<b>—</b>			
TableName	customers			
Records	34			
Errors	0			
Speed	0			
Elapsed Time	0:00:04			
Data Generated				
67%				
Send to Background	Minimize Cancel			

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 <u>Step 6</u> of the wizard and save the generation log content to an external text file respectively.

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

# 2.1.7 Step 6 - Editing generation script

This step of the wizard allows you is provided for working with the result SQL script for data generation.

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

🖾 Data Generator for MySQL					
Step 6 of 6					
Click the Save button to save change in SQL script					
		H/* Generating data for	database: test */		
		/* Concrating data for	table ordere */	5	
		FINSERT INTO brder	vendor id` order number` user info id`)		
5	_	VALUES(101.1)	Markers	► -1719599838.", 1708642991):	
		INSERT INTO C		ndor_id`,`order_number`,`user_info_id`)	
Data		VALUES(102,',	loggie Bookmarks		
Generator		INSERT INTO (	Go to Line Number	ndor_id`,`order_number`,`user_info_id`)	
MvSQL	· .	VALUES(103,'= )	Undo	6\r\nA6Pj] \\fH70{{c <b>,/</b> Ro' <b>,16373787'66);</b>	
		DINSERT INTO C	Redo	ndor_id`,`order_number`,`user_info_id`)	
	·	VALUES(104,'Q		Nd<}pm',-1896038266,",1569467504);	
		EINSERT INTO W	Cu <u>t</u>	indor_id', order_number', user_info_id')	
	1	VALUES(105,B	<u>C</u> opy	C(7,498703627);	
	_		Paste	14 83184748)-	
			Coloct All	ndor id``order number``user info id`)	
		VALUES(107.'8	Select <u>A</u> ll	-256488558.'OLVg.Y\'z@Ln=}:WF7K%m-v9WF.I'.742	
		INSERT INTO	<u>F</u> ind	ndor_id`,`order_number`,`user_info_id`)	
		VALUES(108,'9) 🍰	Replace	JV\"^\$RwyM_ Owl', <b>1630298013);</b>	
	20	INSERT INTO (	Search Next	ndor_id`,`order_number`,`user_info_id`)	
	· .	VALUES(109,'0	lesses at a 2 and	Ks', <b>1134274192,'</b> \'N6-sQT3E0& <b>6</b> 0v1H <b>(</b> \\+EndvOpQ~'	
	÷.,	INSERT INTO (	Incremental Search	ndor_id`,`order_number`,`user_info_id`)	
	÷	VALUES(110,'0)	Save	H{,-1613456316,'!4(pc;ZQ!+,-*SU<_It4P@sZ:O&FW4',	
	•		Quick Code	Additional and a second s	
Help Tools V Close					

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 <u>Find Text</u> and the <u>Replace Text</u> 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 <u>search</u> and <u>replace</u> operations;
- save the script to an external \*.sql file;

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- 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 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).

# 2.2 Using configuration files

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Data Generator for MySQL 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 <u>console</u> <u>application</u> for quicker generation.

- Saving configuration file
- Loading configuration file

See also: Using wizard application Setting program preferences

# 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 only save data generation options at the <u>Specifying generation</u> <u>parameters</u> step or at the <u>last step</u> of Data Generator for MySQL wizard.

- <u>Save Template options</u>
- Loading configuration file

# 2.2.1.1 Save Template options

### File name

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

# Comment

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

Save template options	X				
<u>F</u> ile name					
C:\EMS\Templates\mydatagen.gtm					
Comment					
Test data generation					
	_				
	*				
Save Cancel <u>H</u>	elp				

# 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 any step of the wizard using the corresponding popup menu item of the **Tools** menu.

- Saving configuration file
- <u>Save Template options</u>

# 2.3 Setting program preferences

Data Generator for MySQL 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 options**

These options define general behavior of Data Generator for MySQL

# **Default constraints**

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

### **Language**

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

# **Interface**

This branch contains several pages with a number of options allowing you to customize the application interface style according to your liking.



See also: Using wizard application Using configuration files
## 2.3.1 Setting general options

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

#### 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 <u>Data Preview</u> window by default.

Preferences		x
명 General General		General
Interface	Number of records to generate Commit every Number of records to preview Confirmation on exit All fields selected by default BLOB fields selected by default Clear tables before generation Save passwords Show DDL for table in hint Show databases	100       records         100       records         100       records
Help		OK Cancel

## Confirmation on exit

Enables/disables confirmation upon exiting the program.

## All fields selected by default

Check this option to include all fields into the data generation process by default.

## BLOB fields selected by default

Uncheck this option if you need to exclude BLOB fields 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).

## Show DDL for table in hint

This option enables/disables hints that popup when the mouse cursor is positioned over the table names within the **Generate Data for** area at Step 3.

## Show databases

This option enables/disables the 'Select Database' drop-down list at <u>Step 2</u> of the wizard. If you check this option, you can select the database from the list, otherwise you must type the database name manually.

### See also:

Setting default constraints Setting program language Defining interface style

## 2.3.2 Setting default constraints

On this page you can define the default constraints for all supported data types.

## Set NULL value in ... % of cases

This option allows you to specify the percentage of records that will remain *NULL* by default.

Preferences		۲
·····································	Defaults	
	Set NULL value in 10 🚔 % of cases	
™ ≕∉ Interrace	Integers Floats Strings Time Dates	-
	Min Length 0 Start Char (32)	
	Max Length         100         End Char         I (127)	
	✓ Include new line ✓ Windows new line	
	Sample Text	
	Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.	
Help	OK Cancel	

#### **Default Integers**

Use this tab to set the desired minimum and maximum integer values to be generated.

#### **Default Floats**

Use this tab to set the number of digits and the precision for the <u>floating point</u> numeric values.

#### **Default Strings**

Use this tab to set the range of characters to be used for generating <u>string</u> values (for example, from "A" to "z") and their minimum/maximum length.

## 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 choose to generate sample text when setting generation parameters for <u>strings</u>.

#### **Default Date**

Use this tab to set the <u>date</u> range by defining the minimum and the maximum values. Check the  $\mathbb{V}$  **Include Time** option to generate non-zero random time in addition to the date.

## **Date format**

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

#### **Default Time**

Use this tab to set the time range by defining the minimum and the maximum values.

#### Time format

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

## See also:

Setting general options Setting program language Defining interface style

## 2.3.3 Setting program language

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

You can create your own \*.*Ing* 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 \*.*Ing* files. Doubleclick a language in the list to edit its name or the \*.Ing file.

Preferences		
····의분 General ····의분 Defaults		Language
	Language Name	Language File
	Original	(none)
	French	C:\Program Files\EMS\Data Generator for MySQL\Languages\Fre
	German	C:\Program Files\EMS\Data Generator for MySQL\Languages\Gei
	Russian	C:\Program Files\EMS\Data Generator for MySQL\Languages\Rus
	Language directo	ITY
Help		OK Cancel

## Language directory

Use the B button to specify the directory where the \*.*Ing* files are stored by default.

## Load files

This button is used for searching for \*.*Ing* files in the **Language directory** and adding all them to the **Available languages** list.

See also:

Setting general options Setting default constraints Defining interface style

## 2.3.4 Defining interface style

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The **Interface** section of the **Preferences** dialog allows you to customize the application interface style to your liking.

- Trees and lists
- Edit controls
- <u>Check boxes</u>
- <u>Buttons</u>
- <u>Page controls</u>
- Group boxes
- Fonts

Use the **Scheme name** drop-down list to select an interface scheme according to your liking: *Classic*, *Office XP* style, *Windows XP* native style, etc.

Preferences			<b>—</b> ×-
General		Interface	
····· 브웨 Language Interface ·····안 Trees and lists ······ 도 Edit controls	Scheme name	Office11 Save As	Delete
Check boxes Buttons Page controls Group boxes	Sample text edit Sample button edit Sample combo box Sample group Sample check Sample check	them 1 them 2 them 3 them 3 to box 1 to box 2 to box 3	Sample radio button Sample button 1 Sample button 2 Sample button 3
Help	1	ОК	Cancel

It is also possible to create one's own interface scheme, if necessary:

- set your preferences within the available branches of the **Interface** node (*Trees and Lists, Edit Controls, Check Boxes, Buttons, Page controls, Group Boxes, Fonts*);
- return to the Interface page and click the Save As button;
- specify the scheme name in the **Input scheme name** dialog.

Input scheme name	×
Scheme name	
My new visual scheme	
OK Cancel	

**Note:** For your convenience the previews illustrating the changes are displayed in the **Sample** area of each branch of the **Interface** node.

See also: Setting general options Setting default constraints Setting program language

#### 2.3.4.1 Trees and lists

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Use the Trees and lists section to view and edit the corresponding options.

Preferences			<b>—</b> ×
- 역문 General - 역문 Defaults	т	rees and lists	
	Look & feel		
	Ultraflat		•
Edit controls	Hide selection		
Check boxes	Hide focus rectangle		
Buttons	✓ Native style		
Group boxes			
TI Fonts			
	📮 Item 1	Column 1	Column 2
	Item 2	Item 1	Subitem 1
	i Item 3	Item 2	Subitem 2
Help		ок	Cancel

#### Look & feel

This setting determines the manner in which tree and list elements are painted. Use the drop-down list to select the painting style that will be applied to the trees and lists: *Standard Flat* 

UltraFlat

## Hide selection

This option specifies how selected tree nodes and list items are displayed when focus leaves the tree or list control.

If this option is enabled, selected nodes look like other nodes. Otherwise, selected nodes/ items are highlighted within the tree/list.

#### **W** Hide focus rectangle

This option determines whether a focus rectangle is displayed around the focused tree node or list item within the tree or list control.

If this option is disabled, the focused node/item is not highlighted but the focus rectangle is displayed around it.

## **Native style**

This option determines whether the native Windows style will be applied to the trees and lists.

The option has the highest priority for trees and lists. If this option is selected, the tree nodes and list items are painted according to the native Windows style, regardless of other painting settings.

**Note:** The **Native style** option is currently supported for the Windows® XP operating system only.

See also: Edit controls Check boxes Buttons Page controls Group boxes Fonts

#### 2.3.4.2 Edit controls

Use the **Edit controls** section to customize the appearance of various Data Generator for MySQL edit controls: *Border style*, *Button style*, *Button transparency*, etc.

10H 0 11		
General General Defaults Language Language Trees and lists Edit controls Check boxes Buttons Page controls Group boxes The fonts	Edit co Border style Ultraflat Button transparency None Mone Mone Mone None None None	ntrols Button <u>s</u> tyle Ultraflat Edges ✓ Left ✓ Right ✓ Top ✓ Bottom
Group boxes	Native style         Sample text edit         Sample button edit         Sample combo box	OK Cancel

#### **Border style / Button style**

Use these drop-down lists to specify the style around an editor (the edit control **borders**) and select the painting style that will be applied to the edit control **buttons** (ellipsis button, arrow-down combo-box button, etc.) respectively: *None Single Thick Flat 3D UltraFlat* 

#### Button transparency

Represents the button transparency mode within an editor. Use the drop-down list to specify the transparency that will be applied to the edit control **buttons** (ellipsis button, arrow-down combo-box button, etc.):

*None* (a button is always displayed in a non-transparent fashion)

*Inactive* (a button is drawn when the editor has focus or when the mouse cursor is positioned over the button; otherwise, the button is transparent)

Always (a button is always transparent)

*Hide inactive* (a button is drawn only when the editor has focus; otherwise, the button is invisible)

*Hide unselected* (a button is drawn when the editor has focus or when the mouse cursor is positioned over the editor region; otherwise, the button is invisible).

#### Edges

This group defines which edges are displayed within an editor. Check/uncheck the boxes to hide/show individual edges of the edit controls:

- Left (if unchecked, the left border edge is invisible)
- *Right* (if unchecked, the right border edge is invisible)
- *Top* (if unchecked, the top border edge is invisible)
- Bottom (if unchecked, the bottom border edge is invisible)

## Hot track

This option specifies whether editor items are highlighted when the mouse cursor is positioned over an edit control. Select this option to highlight an edit control in response to mouse movements.

#### Shadow

If this option is selected, a shadow is displayed for the edit controls.

#### Native style

This option determines whether the native Windows style will be applied to the edit controls.

The option has the highest priority for edit controls. If this option is selected, the edit controls are painted according to the native Windows style, regardless of other painting settings.

**Note:** The **Native style** option is currently supported for the Windows® XP operating system only.

#### See also:

Trees and lists Check boxes Buttons Page controls Group boxes Fonts

### 2.3.4.3 Check boxes

Use the **Check boxes** section to customize the *border style* and the appearance of *check boxes* and *radio buttons*.

Preferences	
·····································	Check boxes
	Border style
Interface	Ultrafiat 💌
Edit controls	✓ Hot track
Check boxes	Shadow
Buttons Page controls Group boxes Fonts	✓ <u>N</u> ative style
	Sample radio group     Sample check box     Sample radio item 1     Sample radio button     Sample radio item 2
Help	OK Cancel

#### **Border style**

This setting determines the manner in which check box and radio group borders are painted. Use the drop-down list to select the painting style that will be applied to the check boxes and radio groups:

None Single Thick Flat 3D UltraFlat

## Hot track

This option specifies whether check boxes are highlighted when the mouse cursor is positioned over the check box controls. Select this option to highlight check boxes in response to mouse movements.

## Shadow

If this option is selected, a shadow is displayed for the check boxes and radio groups.

## **Native style**

This option determines whether the native Windows style will be applied to the check boxes and radio buttons.

The option has the highest priority for check boxes and radio buttons. If this option is selected, the check boxes and radio buttons are painted according to the native Windows style, regardless of other painting settings.

**Note:** The **Native style** option is currently supported for the Windows® XP operating system only.

See also: <u>Trees and lists</u> <u>Edit controls</u> <u>Buttons</u> <u>Page controls</u> <u>Group boxes</u> <u>Fonts</u>

## 2.3.4.4 Buttons

Preferences	
General	Buttons
	Button kind
Interface	Ultraflat
Edit controls	☑ <u>N</u> ative style
Check boxes	
Buttons	
Group boxes	
Fonts	
	Sample button 1 Sample button 2 Sample button 3
Help	OK Cancel

Use the **Buttons** section to customize Data Generator buttons.

## **Button kind**

This setting determines the manner in which a button is painted. Use the drop-down list to select the painting style that will be applied to buttons:

Standard Flat UltraFlat

## **Native style**

This option determines whether the native Windows style will be applied to the buttons. The option has a higher priority than the **Button kind** setting. If this option is selected, the buttons are painted according to the native Windows style, otherwise the **Button kind** selection is applied.

**Note:** The **Native style** option is currently supported for the Windows® XP operating system only.

See also:

Trees and lists Edit controls Check boxes Page controls Group boxes Fonts

#### 2.3.4.5 Page controls

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Use the **Page controls** section of the **Preferences** dialog to customize the style of all Data Generator *page controls*.

Preferences	
- General - Befaults	Page controls
	Tab style
Trees and lists	Flat  Hot track
Check boxes	Multiline pages
Group boxes	<u>IV</u> ative style
	Tab 1 Tab 2 Tab 3
Help	OK Cancel

**Tabs** are visual elements of **tab controls**. Their purpose is to identify pages and switch between them. Once a tab is clicked, the corresponding page is selected. **Pages** are container controls that represent the contents of tab controls. Tab controls contain a single page, whose context is to be updated each time the selected tab changes. **Page controls** contain the number of pages equal to the number of tabs.

#### Tab style

Use the drop-down list to select the painting style that will be applied to the tab controls: *Tabs* (tabs are painted as notebook tabs)

*Buttons* (the selected tab is painted as a pressed button, other tabs are painted as released buttons)

Flat (tabs are painted as notebook tabs, but appear lowered slightly)

## Hot track

This option specifies whether tab captions are highlighted when the mouse pointer hovers over tabs. Select this option to enable tab highlighting.

## Multiline pages

This option specifies whether tabs are arranged across several rows.

If this option is enabled, tabs are automatically arranged into the minimum number of rows required to fit all of them. If this option is disabled, tabs are displayed within a single row.

### **Native style**

This option determines whether the native Windows style will be applied to the tab controls.

The option has the highest priority for the tab controls. If this option is selected, the tabs are painted according to the native Windows style, regardless of other painting settings.

**Note:** The **Native style** option is currently supported for the Windows® XP operating system only.

See also: <u>Trees and lists</u> <u>Edit controls</u> <u>Check boxes</u> <u>Buttons</u> <u>Group boxes</u> <u>Fonts</u>

#### 2.3.4.6 Group boxes

Use the **Group boxes** section to customize all Data Generator group boxes to your liking.

Preferences	
	Group boxes
	Border style
Interface	Ultraflat
Edit controls	Shadow
Check boxes	✓ Native style
Buttons	
Group boxes	
TI Fonts	
	Sample group
	Sample check box 1
	Sample check box 2
	Sample check box 3
Help	OK Cancel

#### **Border style**

This setting determines the manner in which group box borders are painted. Use the dropdown list to select the painting style that will be applied to the group boxes:

None Single Thick Flat 3D UltraFlat

## Shadow

If this option is selected, a shadow is displayed for the group boxes.

#### **Native style**

This option determines whether the native Windows style will be applied to the group boxes.

The option has the highest priority for the group boxes. If this option is selected, the group boxes are painted according to the native Windows style, regardless of other painting settings.

**Note:** The **Native style** option is currently supported for the Windows® XP operating system only.

See also: Trees and lists Edit controls Check boxes Buttons Page controls Fonts

## 2.3.4.7 Fonts

This section of the **Preferences** dialog allows you to specify fonts used in the application.

The box below displays the *sample text* with the selected font applied.

Preferences	
Preferences  Preferences  General  Peter Defaults  Peter Language  Peter Interface  Edit controls  Check boxes  Buttons  Page controls  Group boxes  Fonts  Fonts	Fonts System font name The Arial Unicode MS System font size 8 Sample Text 12345
Tonts	
Help	OK Cancel

#### System font name

Defines the font used by Data Generator for MySQL. Select the font name from the dropdown list of available system fonts.

Sys	tem font name	
Ŧ	Arial Unicode MS	•
	Arial Unicode MS	S
Ŧ	Arabic Typesetting	*
Tr.	Arial	
Tr.	Arial Black	=
Tr.	Arial Narrow	
Ŧ	Arial Rounded MT Bold	
$\mathbf{T}$	Arial Unicode MS	
Tr.	Baskerville Old Face	
Ŧ	Batang	Ŧ

## System font size

Defines the font size used by Data Generator for MySQL. Type in or use the drop-down list to select the required value.

## See also:

Trees and lists Edit controls Check boxes Buttons Page controls Group boxes



# **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 MySQL includes **the console version** which is intended for being run from Windows command line with a template file name used as the execution parameter.

# C:\Program Files\EMS\Data Generator for MySQL>MyDataGenC.exe\_

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

• Using console application

See also: Wizard Application

# 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 MySQL.

To create a template file, follow the instructions below:

- start Data Generator for MySQL 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 MySQL 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.

#### <u>Usage:</u>

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<path to Data Generator for MySQL console application>\MyDataGenC.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 MySQL** in background mode

#### Example:

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

**Note:** The result of the latest task performed by Data Generator for MySQL can be found in the system variable '*%ERRORLEVEL%*'.

- 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



# 4 Appendix

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# 4.1 SSH tunneling options

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 MySQL server)
- SSH password is the Linux/Windows user password

Please note that MySQL **host name** should be set relatively to the SSH server in this case. For example, if both MySQL and SSH servers are located on the same computer, you should specify *localhost* as **host name** instead of the server external host name or IP address.

## **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.

Enter passphrase	×
*****	
OK Cancel	

# 4.2 HTTP tunneling options

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To use **HTTP tunneling**, just upload the tunneling script to the webserver where MySQL server is located, or to any other webserver from which direct connections to your MySQL server are allowed. This script exposes the MySQL API as a set of web-services used by Data Generator for MySQL.

In case of using this connection method the response will be slower as compared to the direct connection or the SSH Tunneling method, since the data are XML encoded and HTTP is stateless by nature. However, all the features of Data Generator for MySQL are available.

Note that the *emsproxy.php* script file is included into the distribution package and can be found in Data Generator installation directory.

# 4.3 Data generation mode

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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 *field*.

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

# 4.4 Configuration file format

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

## [#General#]

This section stores general information about the utility:

Parameter	Description
Product	internal product name
Version	major <u>version</u>

## [#Comment#]

This section stores the template file comment as specified optionally in the <u>Save template</u> <u>options</u> dialog:

Parameter	Description
Line <n></n>	comment text
where N stands for the	e comment line identifier

## Example:

Line0=Data Generator for MySQL Line1=Template file Line2=Data generation #1

## [CONNECTION]

This section stores connection parameters to MySQL. The parameters correspond to the values entered at <u>Step 1</u> of the <u>Wizard application</u> and are obligatory.

Parameter	Description
Host	host where the database resides (if <b>Remote</b> = $1$ )
Port	port on which MySQL is listening
Remote	0 = local connection
	1 = remote connection
Login	MySQL login
Password	password to identify the login (encrypted)
Charset	client character set specified for the connection
FontCharset	font character set used by the application
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)

## [TUNNELING]

The section contains parameters required for connection with tunneling used; the values correspond to the settings specified at <u>Step 1</u> of the <u>Wizard application</u> for connection via <u>SSH Tunnel</u> or <u>HTTP Tunnel</u> (if used).

Parameter	Description
TunnelType	indicates the tunneling type being used: SSH, HTTP, or none (
	<b>TunnelType</b> = <i>ttNotUse</i> )
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	<i>True</i> = SSH Private key is used
-	False = SSH Private key is not used
PassPhrase	passphrase for Private key (if <b>SSHUseKeyFile</b> = <i>True</i> )
HTTPUrl	URL to the <i>emsproxy.php</i> script file uploaded to your web-server
	(for <b>HTTP</b> tunneling)

## [ADDITIONAL]

The section contains additional settings specified at <u>Step 2</u> and <u>Step 4</u> of the <u>Wizard</u> <u>application</u>.

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

## [TABLE\_XX]

The section is repeated for all tables; the settings are specified at <u>Step 3</u> of the <u>Wizard</u> application.

Parameter	Description
Database	indicates the name of the database where the table is located
TableName	indicates the name of the table to generate data into
RecordCount	number of records to be generated
ClearBeforeGener	ration1 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.

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 <u>Data generation mode</u> :
	0 stands for incremental data generation
	1 = random data generation
	2 refers to Get data from list / SOL guery option
	3 = from another field
GenFromSOL	0 = the direct list of values is taken for data generation
<b>L</b>	1 = SOL query is used
SOL	text of the SOL query from which a list of values is taken for
- <b>4</b> -	generation (as the result of the SOL query execution)
UsingMask	$0 = n_0$ mask is used for string field values
Oshighask	1 -  generation of string field values by mask
Mask	mask for string field values generation
MinTnt	minimal value for integer fields
MaxInt	maximal value for integer fields
liseEormula	n = no  formula
User Unitud	1 - 2 formula is applied for data concration
Formula	$1 - a$ formula is applied for data generation $a = x^{*}2 + 1$
Digite	digits quantity for float fields
Brecision	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
Minl ength	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 <b>GenMethod</b> = $0$ )
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

# 4.5 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.

Find Text 🗾		
Find		
Text to find	data	•
Options		Direction
Case sensitiv	ve	Forward
Whole words only		
Regular expressions		© Backward
Scope		Origin
<u> <u> G</u>lobal </u>		From cursor
Selected text		Entire scope
Mark search result with stack marker		
OK Show <u>All</u> Cancel <u>H</u> elp		

## 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* 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.

# 4.6 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 <a href="http://perldoc.perl.org/perlre.html#Regular-Expressions">http://perldoc.perl.org/perlre.html#Regular-Expressions</a>.

### 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.



## 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

#### Iobal

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

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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