

# openCRX Installation Guide for MySQL 5

Version 1.9.1



[www.opencrx.org](http://www.opencrx.org)

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# 1 About this Book

This book describes how to setup an openCRX database instance for MySQL.

## 1.1 Who this book is for

The intended audience are openCRX database administrators.

## 1.2 What do you need to understand this book

This book describes the installation of openCRX for MySQL. The book assumes that you are familiar with MySQL installation and configuration.

## 1.3 Tips, Warnings, etc.

We make use the following pictograms:



Information provided as a "Tip" might be helpful for various reasons: time savings, risk reduction, etc.



You should carefully read information marked with "Important". Ignoring such information is typically not a good idea.



Warnings should not be ignored (risk of data loss, etc.)

## 2 Prerequisites

As a first step you must download the following software packages:

- Download **openCRX for MySQL** from <http://www.opencrx.org/downloads.htm> (e.g. *opencrx-1.9.0-core.mysql-5.zip*). The distribution contains MySQL scripts required to install the *openCRX* database.
- Download **MySQL Database Server** from <http://dev.mysql.com/downloads/mysql/5.0.html>.
- Download **MySQL Administrator** from <http://dev.mysql.com/downloads/administrator/1.1.html>.
- Download **MySQL Query Browser** from <http://dev.mysql.com/downloads/query-browser/1.1.html>
- Download the **JDBC driver MySQL Connector/J** from <http://dev.mysql.com/downloads/connector/j/5.0.html>



Please ensure that you install the **correct JDBC driver** (i.e. matching JDK, MySQL version, etc.) and **one JDBC driver** only! Ignoring this wisdom leads to problems as the connection to the database will fail.

As a next step you must install **MySQL**, **MySQL Administrator**, and **MySQL Query Browser** (please refer to the MySQL documentation for installation details).



Please ensure that your installation of MySQL creates tables of type **InnoDB**. By default, MySQL creates tables of type MyISAM. MyISAM tables are not appropriate for openCRX because the key length is limited to roughly 1000 bytes (~ characters with UTF-8 support).

Add the following line to the section `[mysqld]` in your file **my.ini** containing MySQL settings and MySQL will default to InnoDB:

*Listing 1: Setting in my.ini so that MySQL defaults to InnoDB*

```
[mysqld]
# The default storage engine that will be used when create new tables when
default-storage-engine=INNODB
```

This document assumes that you use the **MySQL Administrator** for database administration. The JDBC driver is required for the application server installation.

## 3 Upgrading from previous versions

If you already have MySQL for openCRX installed, upgrade the database as explained below. You can then skip the rest of this document.



**Warning**

Do not forget to backup your database **before** you run any upgrade or migrate scripts!



**Warning**

Please consult <http://www.opencrx.org/faq.htm#upgrade> and find out whether there exist specific instructions for your openCRX version. Instructions below are generic and might not cover all steps required to successfully upgrade your openCRX version.



**Tip**

Please note that the behavior of MySQL is not very consistent if it comes to the spelling/naming of tables. Regardless of the CREATE TABLE statement table names are always created with small letters (e.g. `CREATE TABLE prefs_Preference(...)`; creates a table named *prefs\_preference* as opposed to *prefs\_Preference*); if you try to DROP or DELETE the table *prefs\_Preference*, however, the table name is case-sensitive; as a consequence, the DROP or DELETE statement will fail ⇒ you might have to adapt the capitalization of some of the table names with MySQL.

This peculiarity also strikes with VIEW names, by the way.

### 3.1 The SQL Script upgrade-from-...

In a first step you must upgrade your database. openCRX distributions provide an SQL script of the form

**upgrade-from-<version from>-to-<version to>.sql**

If you have installed openCRX 1.8.1, for example, and you want to upgrade to version 1.9.0 you have to run the script `upgrade-from-1.8.1-to-1.9.0.sql` on your database instance.

### 3.2 The SQL Script migrate-from-...

In a second step you must migrate your database. openCRX distributions often times provide an SQL script of the form

**migrate-from-<version from>-to-<version to>.sql**

If you have installed openCRX 1.8.1, for example, and you want to upgrade to version 1.9.0 you have to run the script `upgrade-from-1.8.1-to-1.9.0.sql` on your database instance.

### 3.3 The SQL Script drop-from-...

Next you can drop unused tables from your database. openCRX distributions often times provide an SQL script of the form

#### **drop-from-<version from>-to-<version to>.sql**

If you have installed openCRX 1.8.1, for example, and you want to drop tables not used by openCRX 1.9.0 you can run the script `drop-from-1.8.1-to-1.9.0.sql` on your database instance. Alternatively, you can also rename such tables, e.g. from `transition_type` to `_unused_transition_type`. Also, it goes without saying that you should never drop a table before you made a backup!

### 3.4 The SQL Script dbcreate-views.sql

Most new openCRX versions make use of new/changed views, i.e. if an openCRX distribution includes an SQL script of the form

#### **dbcreate-views.sql**

then you should run that script. If you have installed openCRX 1.8.1, for example, and you want to upgrade to openCRX 1.9.0 you should run the script `dbcreate-views.sql` on your database instance. Make sure that old views are indeed dropped and new views properly created.

### 3.5 The SQL Script dbcreate-indexes.sql

Most new openCRX versions make use of new/changed indexes, i.e. if an openCRX distribution includes an SQL script of the form

#### **dbcreate-indexes.sql**

then you should run that script. If you have installed openCRX 1.8.1, for example, and you want to upgrade to openCRX 1.9.0 you should run the script `dbcreate-indexes.sql` on your database instance.

### 3.6 Populate Preferences

The last step involves deleting old preferences and populating the table with new ones. Run the SQL script **populate-preferences.sql** to do this.



Make sure that old preferences are indeed removed. MySQL typically creates tables with small letters only (e.g. `prefs_preference` instead of `prefs_Preference`) which can cause the DELETE command to fail.

## 4 Create the database

As a first step you must create the database. This can be done with MySQL Administrator. Start MySQL Administrator. Select **Catalogs** and then **Create New Schema** from the pop-up menu as shown below:

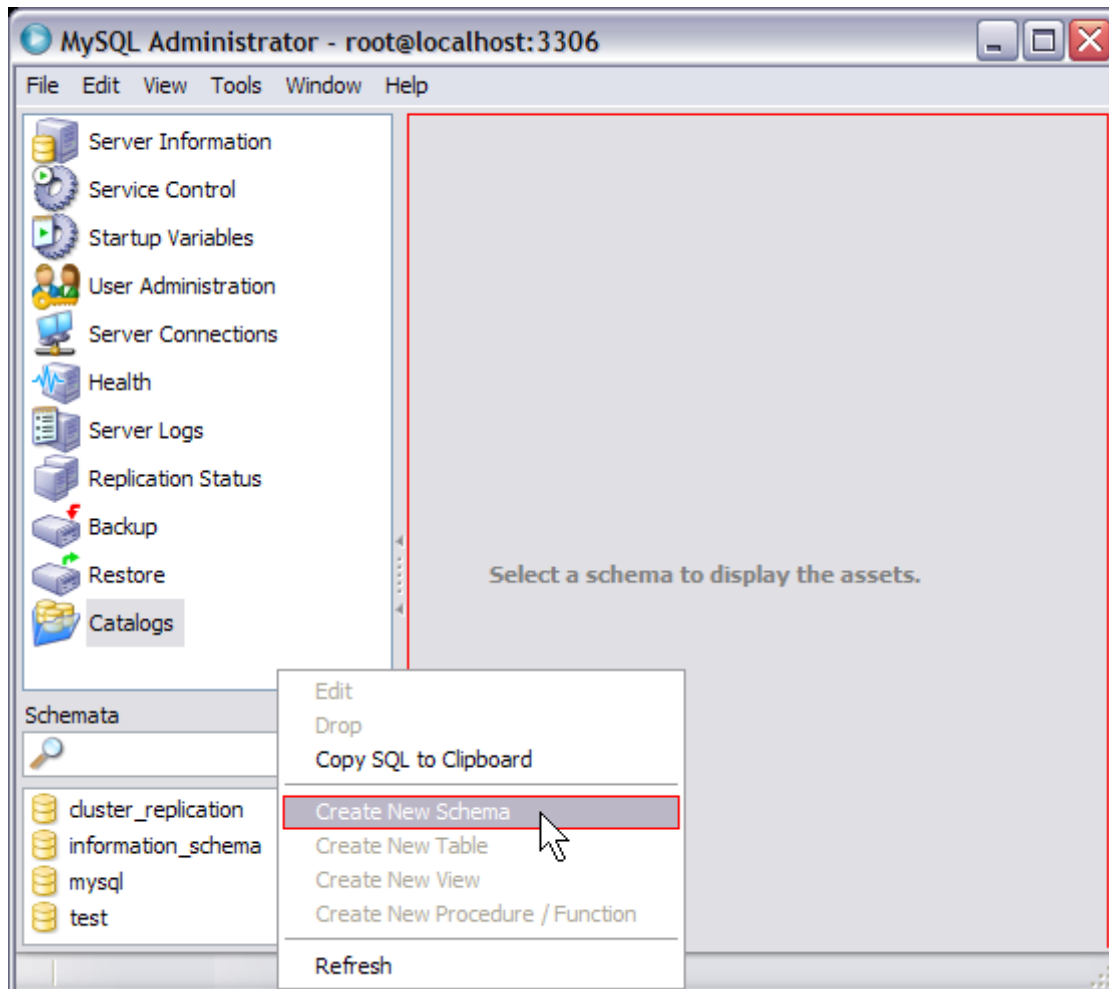


Figure 1: Create a new database

Enter **crx-crx** as database name (please note that MySQL on Windows ignores capitalization, whereas MySQL on Linux is case-sensitive) and then click OK:

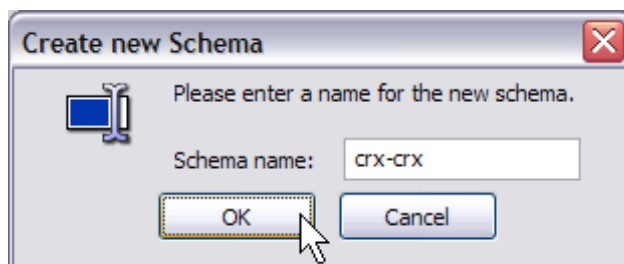
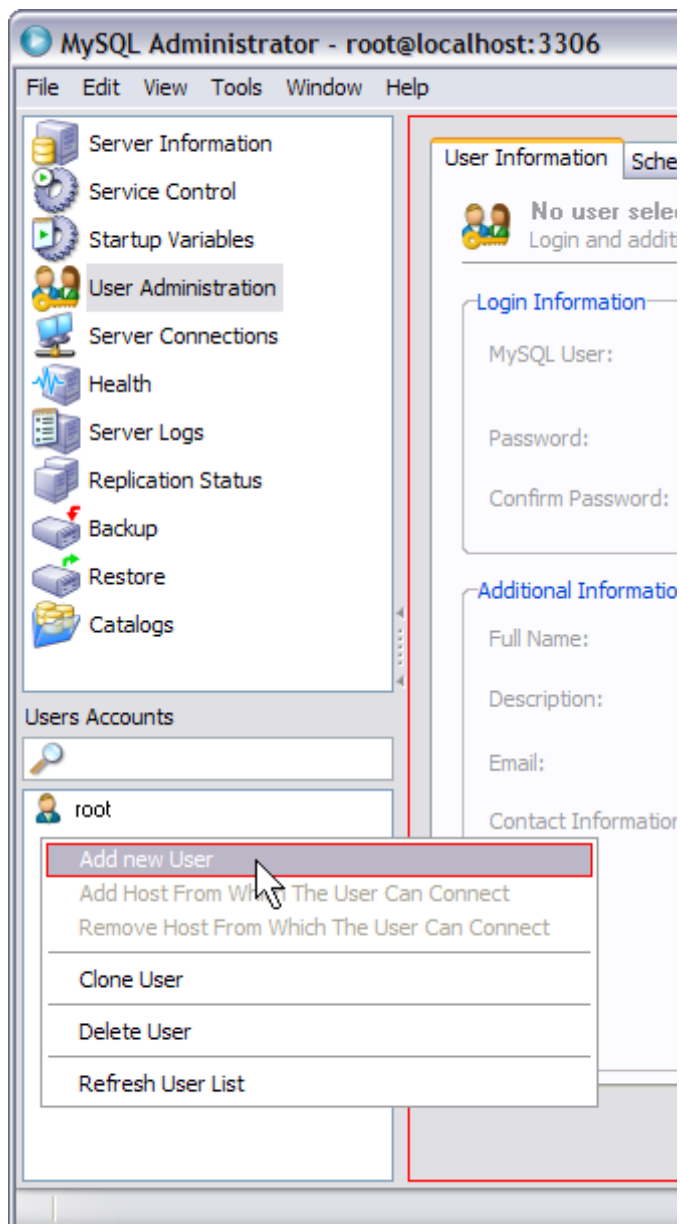


Figure 2: Create schema crx-crx

Next you must create a database user and grant this user access to the newly created database. Select **User Administration** and then **Add new User** from the pop-up menu as shown below:



*Figure 3: Add new user*

Complete the Login Information and Additional information. We assume that you create the user **system** and set the password to **manager**.

Next you must grant the user **system** access to the database **crx-crx**. Select the tab **Schema Privileges** and then select the schema **crx-crx**. Move all privileges from the pane **Available Privileges** to the pane **Assigned Privileges** and click the button **Apply changes** as shown below:

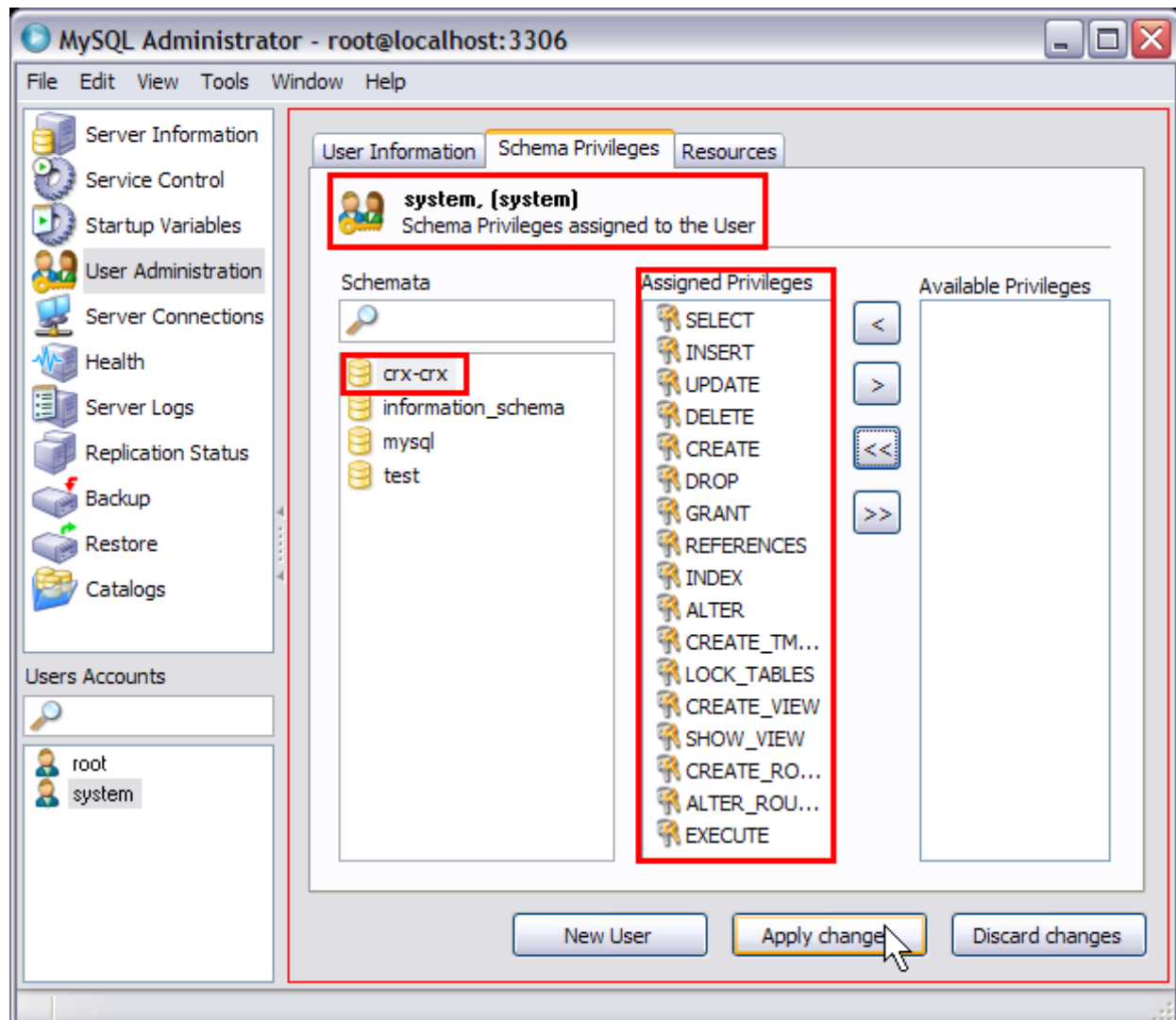


Figure 4: Grant privileges to user system

You have completed creating the database **crx-crx**.

## 5 Install the openCRX Database Schema Objects

After creating the schema you are now ready to install the openCRX database schema objects. The following scripts must be executed:

- dbcreate-tables.sql
- dbcreate-views.sql
- dbcreate-indexes.sql
- populate-preferences.sql



Do not execute any other scripts included in the distribution.

Start the **MySQL Query Browser**. Select the schema **crx-crx**, then create a new script tab with **File > New Script Tab**. Copy/paste the database script **dbcreate-tables.sql** and execute by clicking on the button **Execute**:

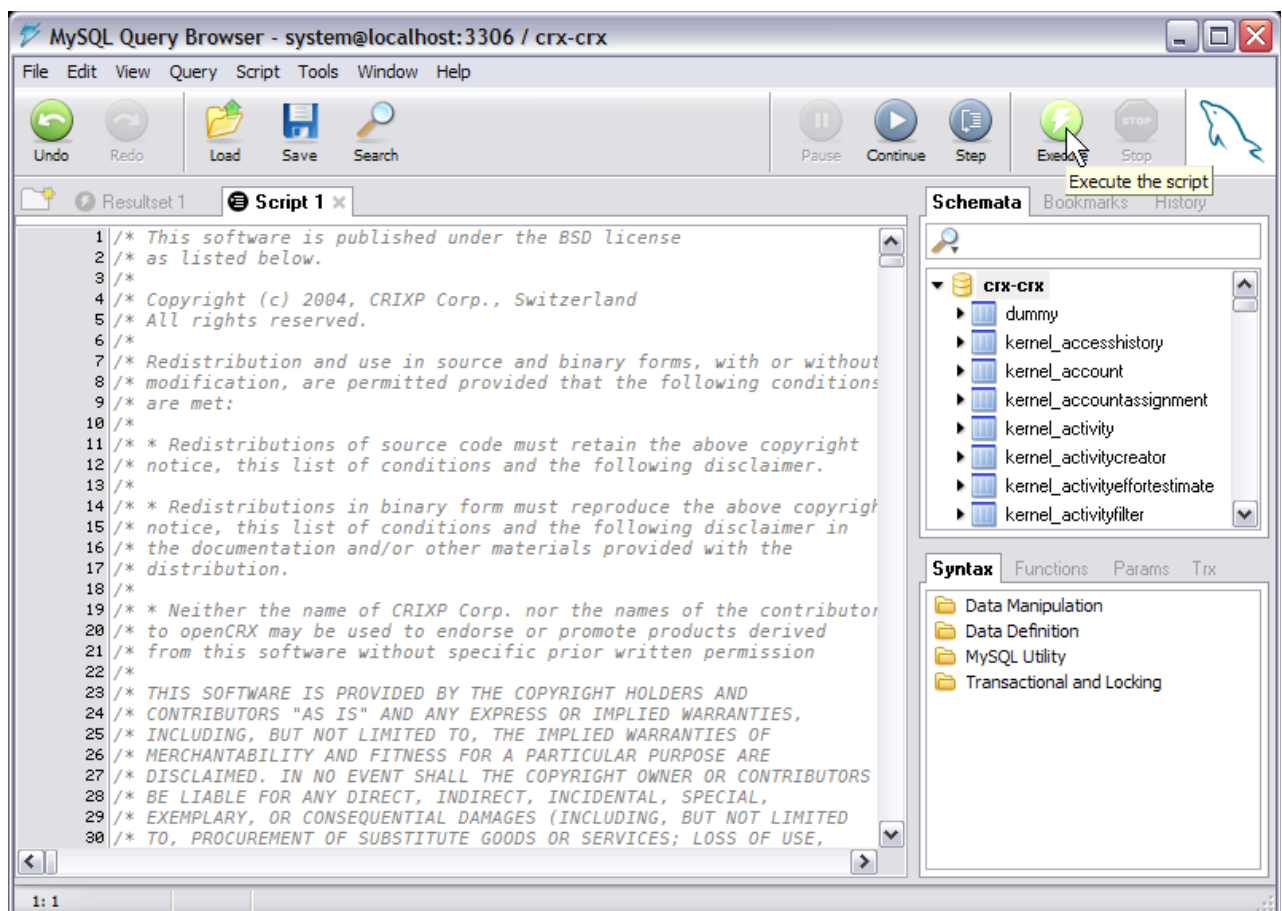


Figure 5: Execute script dbcreate-tables.sql



Please note that you will get a lot of errors running the above script if MySQL creates new tables of the type MyISAM. You must ensure that your installation of MySQL creates tables of type **InnoDB**. MyISAM tables are not appropriate for openCRX because the key length is limited to roughly 1000 bytes (~ characters with UTF-8 support).

See Listing 1 for more information on how to configure MySQL.



If you want/need **UTF-8** support you should verify that tables and columns of type varchar were indeed created with the options

character set **utf8** collate **utf8\_bin**

Some versions/configurations of MySQL have a tendency to pick latin\_1 or some other default character set instead of utf8 – if your installation suffers from such troubles try to fix it now before you have a lot of data in your tables!

Similarly, execute the remaining scripts in the following order:

- **dbcreate-views.sql** (hint: you can ignore error messages of the following sort: `Unknown table 'crx-crx.kernel_view_xxx'`).
- **dbcreate-indexes.sql** (hint: you can ignore error messages of the following sort: `Duplicate key name 'xxx' Error 1061`).
- **populate-preferences.sql**

The scripts should run without errors and after execution the pane `Schemata` should list all created tables as shown in Figure 5. Alternatively, you can use MySQL Administrator to verify that all the tables, views, and indexes were created properly.

## 6 Next Steps

If you have completed successfully the database installation you are ready to use the openCRX database **crx-crx**. The application server installation guides explain how to connect the application server to the openCRX database instance.