

openCRX Installation Guide for PostgreSQL 8

Version 2.0



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Table of Contents

1	About this Book.....	4
1.1	Who this book is for.....	4
1.2	What do you need to understand this book.....	4
1.3	Tips, Warnings, etc.....	4
2	Prerequisites.....	5
3	Upgrading from previous versions.....	6
3.1	The SQL Script upgrade-from-.....	6
3.2	The SQL Script migrate-from-.....	6
3.3	The SQL Script drop-from-.....	6
3.4	The SQL Script dbcreate-views.sql.....	7
3.5	The SQL Script dbcreate-indexes.sql.....	7
3.6	Populate Preferences.....	7
4	Create the database.....	8
4.1	Create the database with psql terminal.....	8
4.2	Create the database with pgAdmin III.....	10
5	Install the openCRX Database Schema Objects.....	14
5.1	Install database schema objects with psql terminal.....	14
5.2	Install database schema objects with pgAdmin III.....	15
6	Next Steps.....	17

List of Figures

Figure 1: Start pgAdmin III and connect to the database.....	10
Figure 2: Create a new Login Role system – Step 1.....	10
Figure 3: Create a new Login Role system – Step 2.....	11
Figure 4: Create a new Database – Step 1.....	12
Figure 5: Create a new Database – Step 2.....	12
Figure 6: Create a new Database – Step 3.....	13
Figure 7: Start pgAdmin III Query.....	15
Figure 8: Load and execute dbcreate-tables.sql in pgAdmin III Query.....	15

List of Listings

Listing 1: Configure access to DB.....	8
Listing 2: Remove ident sameuser.....	8
Listing 3: Stop PostgreSQL server.....	8
Listing 4: Start PostgreSQL server.....	8
Listing 5: Create user system with psql terminal.....	9
Listing 6: Create the database crx-CRX with psql terminal.....	9
Listing 7: Install database schema objects with psql terminal.....	14

1 About this Book

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

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 PostgreSQL. The book assumes that you are familiar with PostgreSQL installation and configuration.

1.3 Tips, Warnings, etc.

We make use the following pictograms:



Tip

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



Important

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



Warning

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

2 Prerequisites

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

- Download and install **openCRX SDK Installer**. It is available from <http://www.opencrx.org/sdk.htm>
The SDK contains the DB scripts required to install an *openCRX* database in the directory `<SDK_Install_Dir>\opencrx-x.x.x\core\src\sql`
- Download **PostgreSQL Database Server** from <http://www.postgresql.org/download/>
- Download **pgAdmin III** from <http://www.postgresql.org/download/>
- Download the **PostgreSQL JDBC driver** from <http://jdbc.postgresql.org/download.html>
The JDBC driver is required for the application server installation.



Please ensure that you install the **correct JDBC driver** (i.e. matching JDK, PostgreSQL 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 **PostgreSQL** and **pgAdmin III** (please refer to the PostgreSQL documentation for installation details).

3 Upgrading from previous versions

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



Warning

Backup your database **before** you run any DB 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.

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 1.11.0, for example, and you want to upgrade to version 2.0.0 you have to run the script `upgrade-from-1.11.0-to-2.0.0.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 1.11.0, for example, and you want to upgrade to version 2.0.0 you have to run the script `upgrade-from-1.11.0-to-2.0.0.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 1.11.0, for example, and you want to drop tables not used by openCRX 1.11.0 you can run the script `drop-from-1.11.0-to-2.0.0.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 1.11.0, for example, and you want to upgrade to openCRX 2.0.0 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 1.11.0, for example, and you want to upgrade to openCRX 2.0.0 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 and news ones loaded. This table contains the configuration of the openMDX database plugin, i.e. openCRX persistency will not work properly if the loaded preferences do not match the version of openCRX.

4 Create the database

You can either create the database with the psql terminal or with pgAdmin III.

4.1 Create the database with psql terminal

In order to connect to a PostgreSQL server from a remote pgAdmin III instance you have to properly configure the PostgreSQL server.

Let the PostgreSQL server accept connections from inside your network (suppose 192.168.1.0/24) by postgres and system users. We suppose the connections will be clear (not ssl) and protected by a password authentication mechanism. To do this, add the following lines at the end of the file `<postgres home dir>/data/pg_hba.conf`:

Listing 1: Configure access to DB

#TYPE	DATABASE	USER	IP-ADDRESS	IP-MASK	METHOD
local	all	all			password
host	crx-CRX	system	192.168.1.0	255.255.255.0	password
host	all	postgres	192.168.1.0	255.255.255.0	password



Remove the line with ident sameuser if it exists in `pg_hba.conf`:

Listing 2: Remove ident sameuser

```
host all all 127.0.0.1 255.255.255.255 ident sameuser
```

If the PostgreSQL server is running, stop it before you continue:

Listing 3: Stop PostgreSQL server

```
postgres$pg_ctl stop
```

Next, the PostgreSQL server has to be configured to accept more than one connection through a socket. To do this, log-in to the system with the PostgreSQL server user account (usually `postgres`) and start the PostgreSQL server with the following options:

Listing 4: Start PostgreSQL server

```
postgres$pg_ctl -o -i -l postmaster.log start
```

Now you can connect to the default PostgreSQL server database (template1) with the `postgres` user (DB Administrator).

Create a PostgreSQL *user* named **system**. Set the password of the user to **manager** (for the purpose of this guide). Allow the user to create databases.

Listing 5: Create user system with psql terminal

```
su - postgres          # change to your postgresql Account.
createuser -P system   # Create the user system and ask for a password
```

Create the database **crx-CRX** with the following commands:

Listing 6: Create the database crx-CRX with psql terminal

```
su - postgres
createdb -h localhost -E utf8 -U system crx-CRX
```



Set the Encoding to UTF-8 if you intend to make use of the openCRX UTF-8 support.

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

4.2 Create the database with pgAdmin III

Start pgAdmin III and connect to the database:

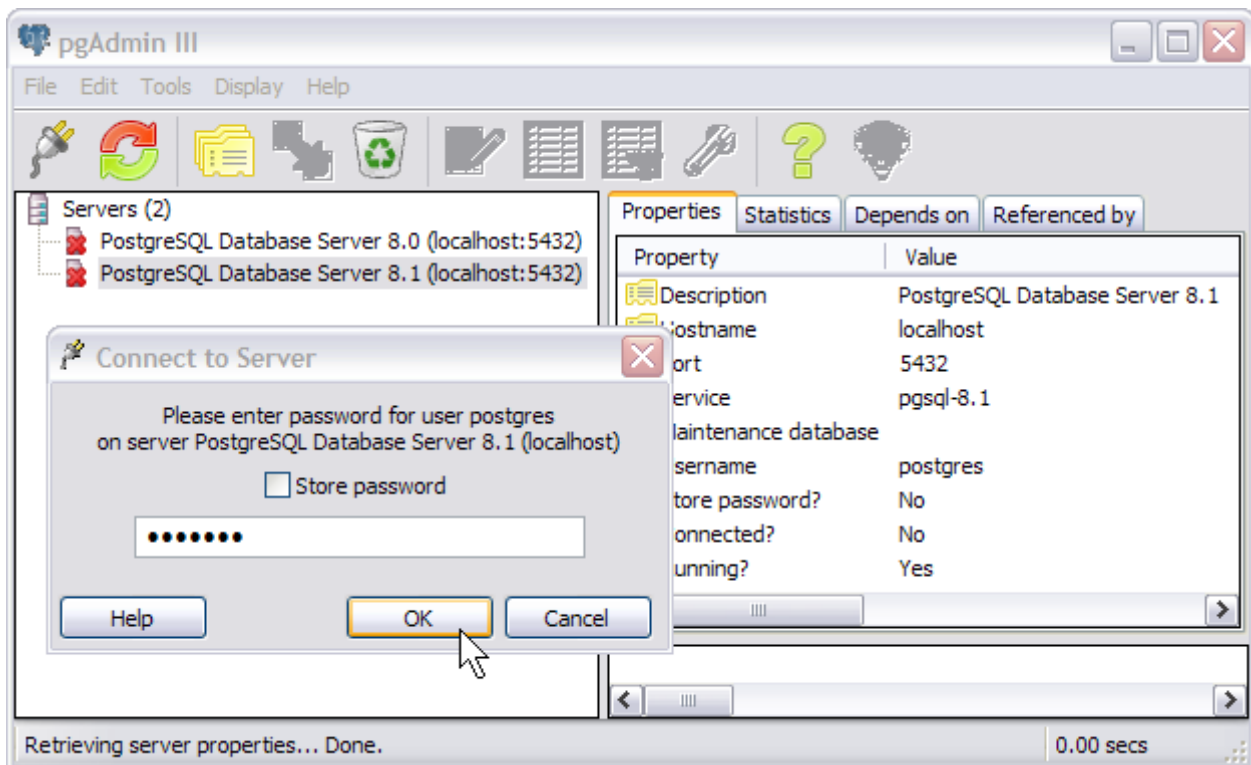


Figure 1: Start pgAdmin III and connect to the database

Next you create a new *login role* **system** as follows:

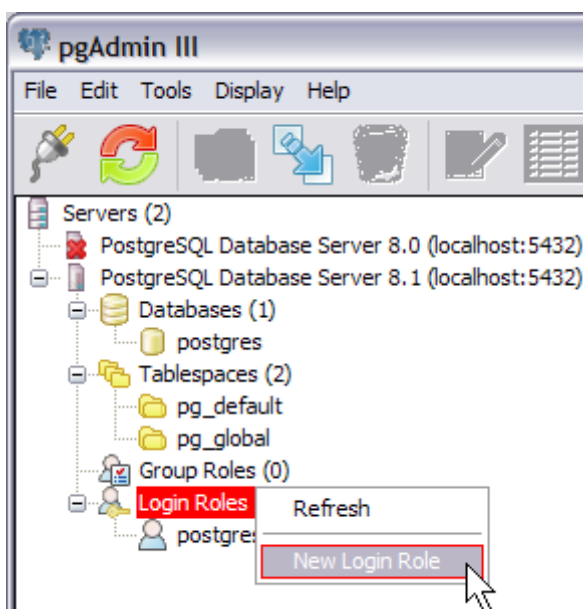


Figure 2: Create a new Login Role system – Step 1

You will get a new window **New Login Role** where you can enter the *Role name* **system** and a *password* (we use *password manager* for the purpose of this guide) – verify that you check options as shown below:

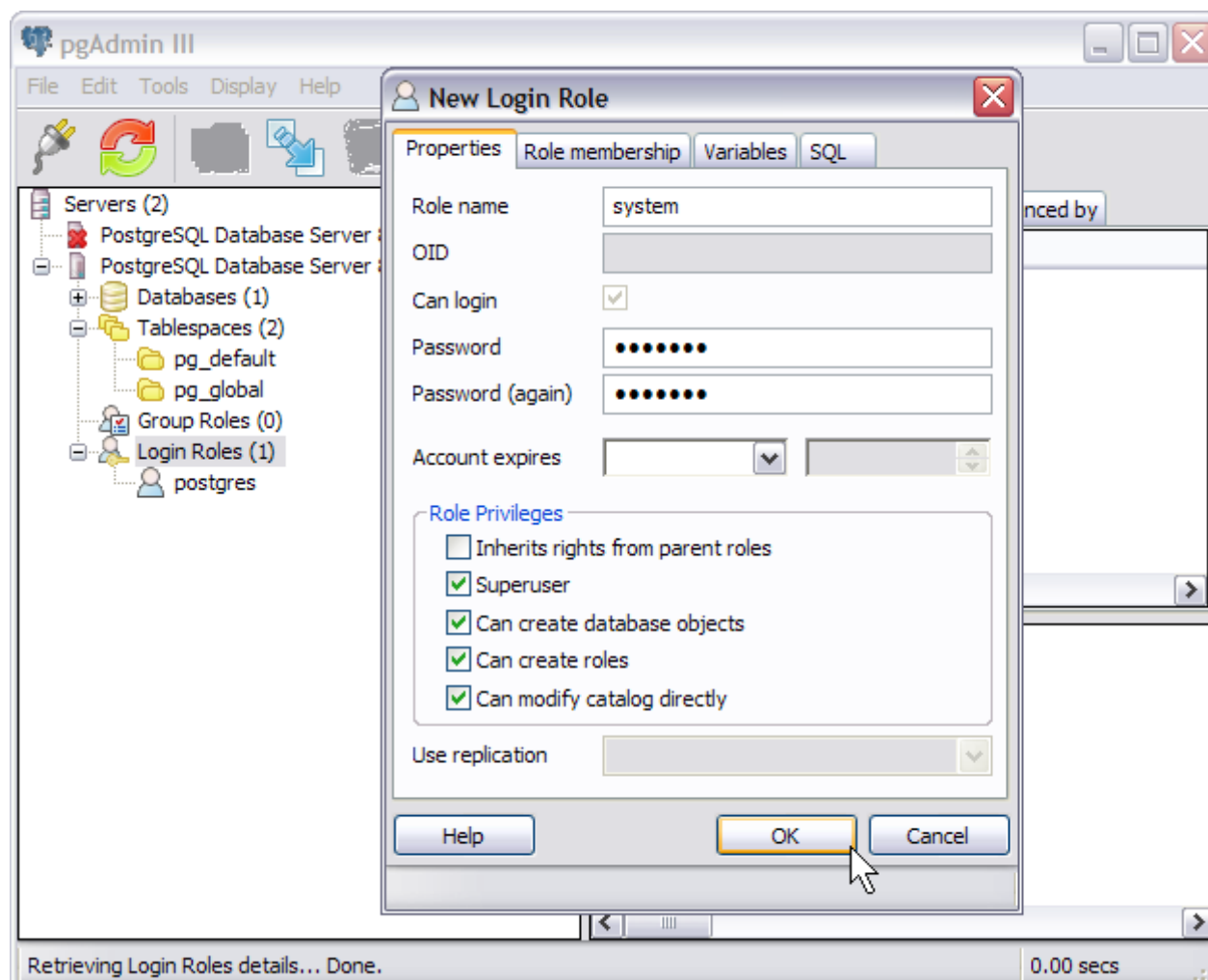


Figure 3: Create a new Login Role system – Step 2



Please note that system must be a **Superuser**

pgAdmin III allows you to create and manage databases. Before you can install the openCRX database schema objects you must create a new database for openCRX. Right-click on the tree item **Databases** and then select the pop-up menu entry **New Database** as shown below:

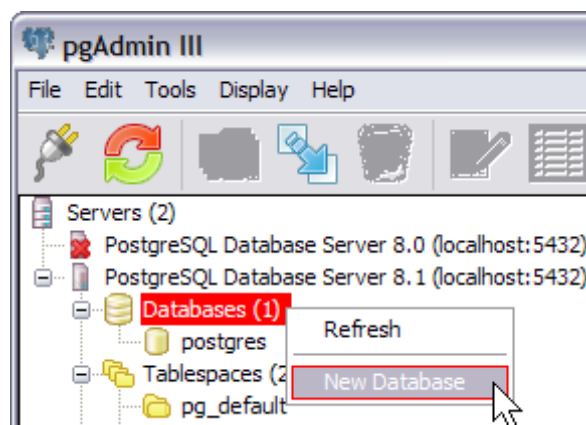


Figure 4: Create a new Database – Step 1

You will get a new window **New Database** – populate it as shown below to create the database **crx-CRX** owned by **system**:

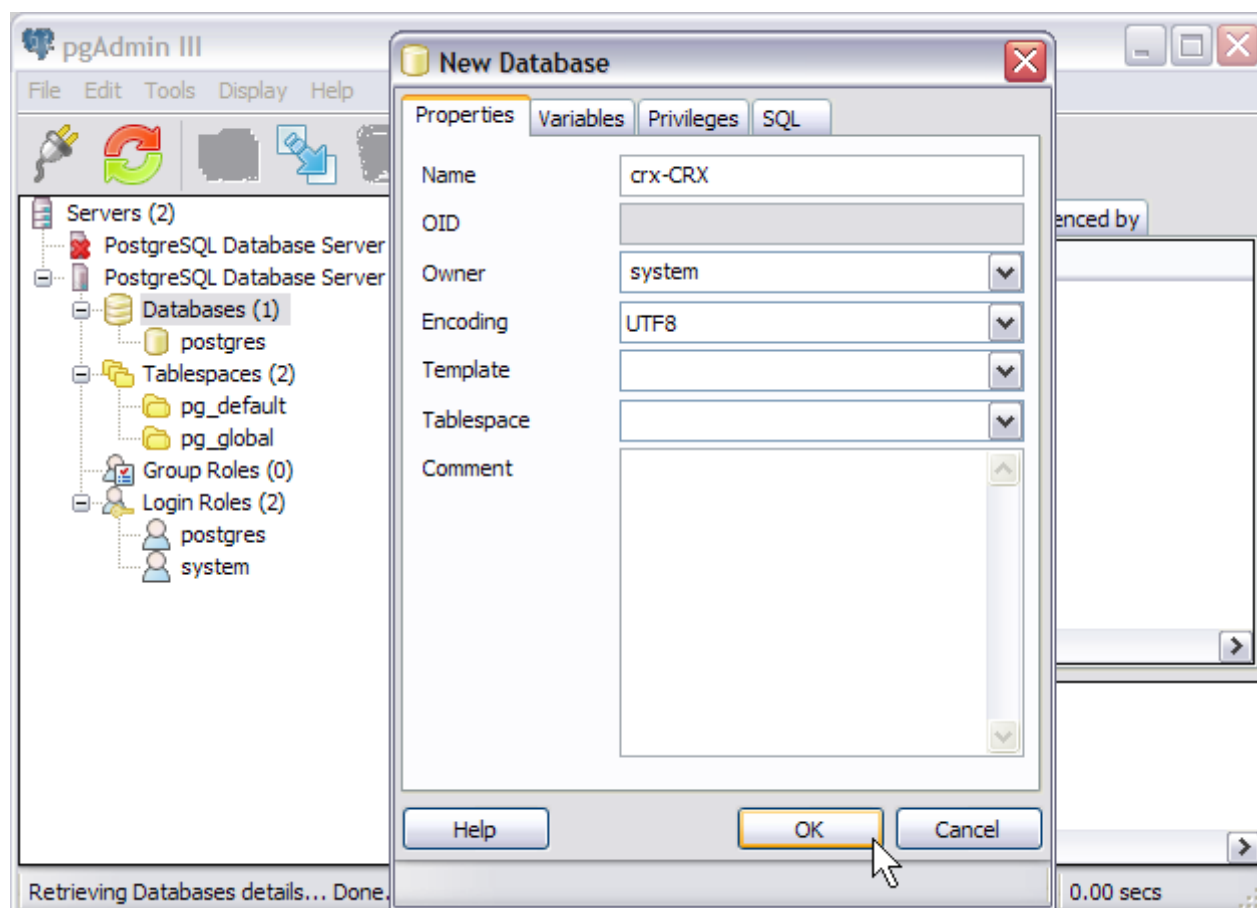


Figure 5: Create a new Database – Step 2



Set the Encoding to UTF-8 if you intend to make use of the openCRX UTF-8 support.

After creating the new Database **crx-CRX** your pgAdmin III window should look similar to the following figure:

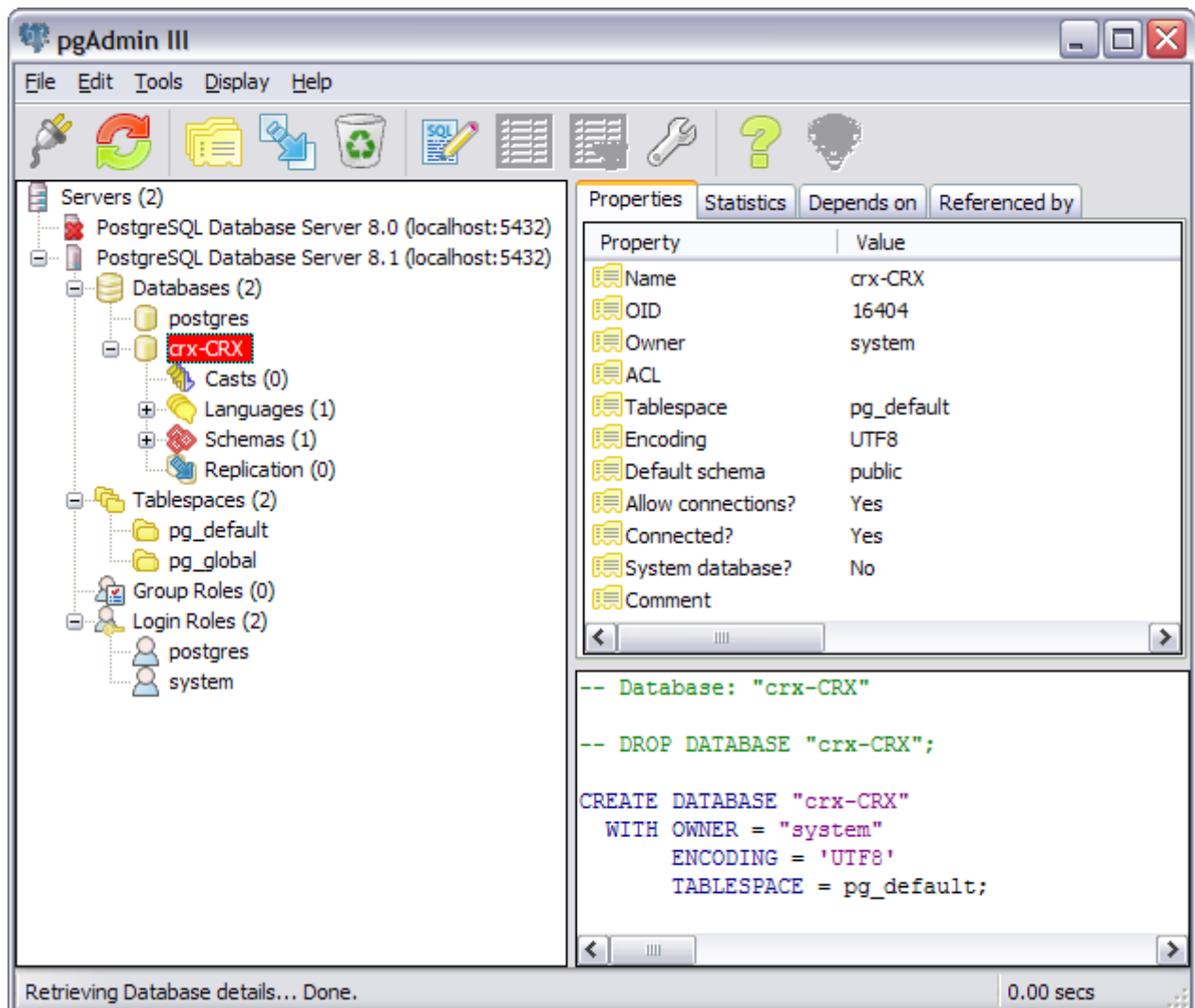


Figure 6: Create a new Database – Step 3

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 in the order given below:

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



Do not execute any other scripts included in the distribution.

Again, depending on your preferences you can either use the psql terminal or pgAdmin III to install the openCRX database schema objects.

5.1 Install database schema objects with psql terminal

Execute the scripts in the given order.



If any of the scripts does not run without errors, correct the errors **before** you continue with the next script.

Listing 7: Install database schema objects with psql terminal

```
psql -U system crx-CRX < dbcreate-tables.sql
psql -U system crx-CRX < dbcreate-views.sql
psql -U system crx-CRX < dbcreate-indexes.sql
psql -U system crx-CRX < populate-preferences.sql
```



The script **dbcreate-views.sql** tries to drop old views before it creates the new ones. In case there are no existing views you need to comment out the drop statement to successfully create new views.

This completes the installation of the openCRX database schema objects.

5.2 Install database schema objects with pgAdmin III

After creating the database instance and the user `system` you are ready to install the openCRX database schema objects. Connect to the database `crx-CRX` as user `system` and then start **pgAdmin III Query** as shown below:

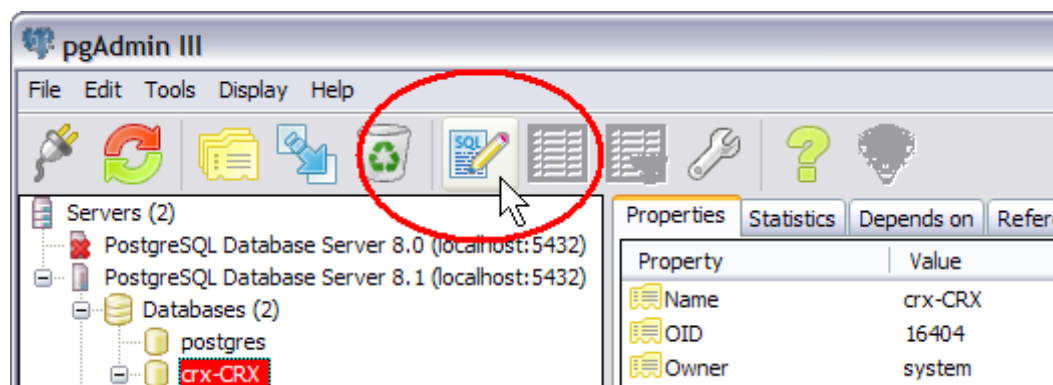



Figure 7: Start pgAdmin III Query

Next you load the script `dbcreate-tables.sql` into the query window and execute it by clicking on the play button :

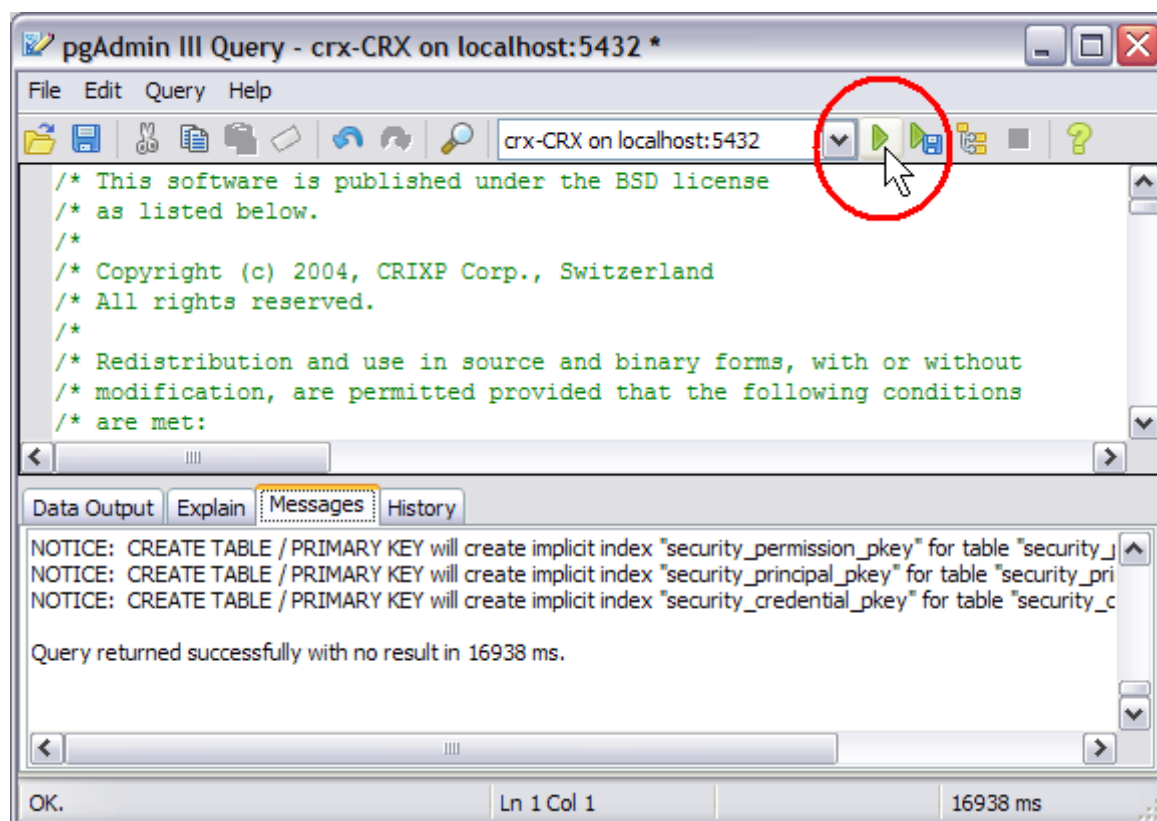


Figure 8: Load and execute `dbcreate-tables.sql` in pgAdmin III Query



If any of the scripts does not run without errors, correct the errors **before** you continue with the next script.

Similarly, execute the remaining scripts in the following order:

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



The script **dbcreate-views.sql** tries to drop old views before it creates the new ones. In case there are no existing views you need to comment out the drop statement to successfully create new views.

The scripts should run without errors and after execution you might want to verify with pgAdmin III that everything (i.e. tables, views, indexes, and a populated table `prefs_preference`) was properly created.

This completes the installation of the openCRX database schema objects.

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.