openCRX Installation Guide for MS SQL Server 2005

Version 2.1.0



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1 About this Book

This book describes how to setup an openCRX database instance for MS SQL Server 2005.

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 MS SQL Server 2005. The book assumes that you are familiar with the installation and configuration of MS SQL Server 2005.

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 ensure that you have a working installation of MS SQL Server(please refer to the appropriate documentation from Microsoft for installation details).



While openCRX supports both MS SQL Server 2000 and 2005, **this document is based on MS SQL Server 2005**. Differences between the two versions are **highlighted** in this document.

As an alternative to the full version of MS SQL Server 2005 you can also download and install the Express Edition (free, but with some limitations):

 Download MS SQL Server 2005 Express Edition from http://www.microsoft.com/express/

You also need the openCRX distribution for MS SQL Server (this distribution works for both MS SQL Server 2000 and MS SQL Server 2005):

- Download and install openCRX SDK Installer. It is available from http://www.opencrx.org/sdk.htm
 The SDK contains DB2 scripts required to install the openCRX database in the directory <SDK_Install_Dir>\opencrx-x.x.x\core\src\sql
- Download MS SQL Server 2005 JDBC Driver from http://www.microsoft.com/downloads/details.aspx? familyid=C47053EB-3B64-4794-950D-81E1EC91C1BA&displaylang=en You will need the file sqljdbc.jar.



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

While you can use the JDBC Driver for MS SQL Server 2005 to connect to MS SQL Server 2000 (it is even recommended!), you cannot use the JDBC Driver for MS SQL 2000 to connect to MS SQL Server 2005.

As a next step you must install MS SQL 2005 (please refer to the appropriate documentation from Microsoft for installation details).

This document assumes that you use the Microsoft SQL Server Management Studio Express for database administration.

3 Upgrading from previous versions

If you already have MS SQL for openCRX installed, upgrade the database as explained in this chapter. You can then skip the rest of this document.



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.



Please note that you cannot skip versions when upgrading.

3.1 The SQL Script upgrade-from-...

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

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

If you have installed openCRX 2.0.0, for example, and you want to upgrade to version 2.1.0 you have to run the script upgrade-from-2.0.0-to-2.1.0.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 2.0.0, for example, and you want to upgrade to version 2.1.0 you have to run the script upgrade-from-2.0.0-to-2.1.0.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 2.0.0, for example, and you want to drop tables

not used by openCRX 2.1.0 you can run the script drop-from-2.0.0-to-2.1.0.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 must run that script. If you have installed openCRX 2.0.0, for example, and you want to upgrade to openCRX 2.1.0 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.



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.

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 2.0.0, for example, and you want to upgrade to openCRX 2.1.0 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

As a first step you must create the database. This can be done with the Microsoft SQL Server Management Studio. Start the Management Studio and navigate to the appropriate instance and select Databases. Right-click and select New Database from the pop-up menu as shown below:



Figure 1: Create a new database

Enter 🤇	CRX_	CRX	as database nan	ne:
---------	------	-----	-----------------	-----

🖥 New Database				
Select a page	🕵 Script 🝷 🎼 Help			
Filegroups	Database <u>n</u> ame:		CRX_CRX	
	Owner:		<default></default>	
	Use full-text indexing			
	Database <u>fi</u> les:			
	Logical Name	File Type	Filegroup	Initial Size (MB)
	CRX_CRX	Data	PRIMARY	2
	CRX_CRX_log	Log	Not Applicable	1

Figure 2: Create schema CRX_CRX

Click OK to create the database:



Figure 3: Database CRX_CRX has been created

Next we need to create a new user. Navigate to Security and right-click to bring up the pop-up menu. Select New Login as shown below:



Figure 4: Create New User – step 1

Complete the New Login Dialog as shown below and then click OK:

Login <u>n</u> ame:	system	Search
O Windows authentication		
O SQL Server authentication		
Password:	•••••	
Confirm password:	•••••	
Enforce password policy Enforce password expiration User must change password a Mapped to certificate	at next login	
Certificate name:		
O Mapped to asymmetric key		
<u>K</u> ey name:		
Default <u>d</u> atabase:	CRX_CRX	~
Default l <u>a</u> nguage:	<default></default>	~
	ОК	Cancel

Figure 5: Create New User – step 2



Make yourself a note of the password as you will need it again for setting up the datasource configuration file (this step is covered in the respective application server installation guide).

Next you navigate back to the Database CRX_CRX and navigate to the subentry Security | Users. Right-click Users to bring up the pop-up menu and select the entry New User as shown below:



Figure 6: Create New User - step 3

Complete the New User Dialog as shown below and then click OK:

User name:	system	
⊙ <u>L</u> ogin name:	system)
O Certificate name:		
O Key name:		
🔿 <u>W</u> ithout login		
<u>D</u> efault schema:	dbo)
Schemas owned by this user:		
Owned Schemas		^
db_ddladmin		
db_denydatareader		
db_denydatawriter		C
db_owner		
db_securityadmin		=
guest		
		~
Database role <u>m</u> embership:		
Role Members		^
db_datawriter		
db_ddladmin		
db_denydatareader		
db_denydatawriter		
db_owner		≡
db_securityadmin		
		~

Figure 7: Create New User – step 4

Please note that the password of this user are managed by the SQL Server.

You have completed creating the database **CRX_CRX**.

5 Install the openCRX Database Schema Objects

After creating the database 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.

Navigate to the newly created database. Right-click on it and then select the entry New Query from the pop-up menu to open a query window:



Figure 8: Open Query Window

Copy/paste the database script **dbcreate-tables.sql** and execute by clicking on the button Execute:

🇏 Microsoft SQL Server Management Studio Express 📃 🗖 🔀				
File Edit View Query Tools Window Community Help				
🗄 🛄 New Query 🛅 📂 🖼 🎒 📴 🏙 🥻 🎼 🚰 💂				
👔 💷 🔩 🗽 CRX_CRX 💿 💽 💽 Execute 🗸 = 🎲 🖉 🐔 📅 🖷 💷 🏹 🏭 🚆				
Object Explorer Image: Summary Image: Summary Image: Summary Image: Summary Image: Summary Image: Sumary Image: Sumary				
<pre>/* All rights reserved. /* Database Diagr</pre>				
Programmability Security Users				
dbo guest (1 row(s) affected) Sys (1 row(s) affected) system				
Ready Ln 2998 Col 1 Ch 1 INS				

Figure 9: Execute script dbcreate-tables.sql



The script must execute without errors. If you get error messages you must investigate and resolve the issue before you continue.

Similarly, execute the remaining scripts in the following order:

dbcreate-views.sql

Hint: you can ignore error messages about views that could not be dropped as the script tries to drop views before creating them.

- dbcreate-indexes.sql
- populate-preferences.sql

All the scripts should run without errors and after execution you should be able to inspect all the newly created tables, views, and indexes:

🧏 Microsoft SQL Server Management Studio Express					
<u>File E</u> dit <u>V</u> iew <u>T</u> ools <u>W</u> indow <u>C</u> ommunity	Help				
🔛 New Query 📭 📂 📕 🥥 🎼 🏢 🔖	16 🕾 🔤				
Object Explorer + 7 ×	Supparv	• ×			
Detabases					
Databases System Databases	lables				
	DPM65\SQLEXPRESS\Databases\CRX_CRX\Table	251 Item(s)			
Database Diagrams		2011(6)			
⊕ ☐ Tables					
🖃 🚞 Views 😑	Name Schema Crea	ated			
🕀 🚞 System Views	System Tables				
⊕ dbo.kernel_View_004	dummy dho 13-D	ec-2006			
⊕ ☐ dbo.kernel_View_011	dummy N dbo 13-D	ec-2006			
	kernel AccessHistory dbo 13-D	ec-2006			
⊞ dbo.kernel_View_027	kernel AccessHistory N dbo 13-D	ec-2006			
⊞ dbo.kernel_View_039	kernel Account dbo 13-D	ec-2006			
	kernel Account N dbo 13-D	ec-2006			
dbo.kernel_view_052	kernel AccountAssignment dbo 13-D	ec-2006			
dbo.kernel_view_055	kernel AccountAssignment N dbo 13-D	ec-2006			
do.kernel_view_071	kernel Activity dbo 13-D	ec-2006			
dbo.kernel_view_001 dbo.kernel_view_128	kernel Activity N dbo 13-D	ec-2006			
	kernel activity number SEO dbo 13-D	ec-2006			
dbo.kernel_View_136	kernel ActivityCreator dbo 13-D	ec-2006			
	kernel ActivityCreator N dbo 13-D	ec-2006			
	kernel ActivityEffortEsti dbo 13-D	ec-2006			
	kernel ActivityEffortEsti N dbo 13-D	ec-2006			
	kernel ActivityFilter dbo 13-D	ec-2006			
	kernel_ActivityFilter_N dbo 13-D	ec-2006			
⊞ dbo.kernel_View_214	kernel_ActivityFollowUp dbo 13-D	ec-2006 🔽			
C III dhe karnel View 31E					
Ready		.;			

Figure 10: Verify creation of tables, views, and indexes

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.