

# XBOUND

with ReadSoft Capture Framework 3.9  
and ReadSoft Capture Components 1.3

## Installation Guide

Version: 3.9

Written by: Product Knowledge, R&D  
Date: September 2016

© 2015-2016 Lexmark International Technology, S.A. All rights reserved.

Lexmark is a trademark of Lexmark International Technology, S.A., or its subsidiaries, registered in the U.S. and/or other countries. All other trademarks are the property of their respective owners. No part of this publication may be reproduced, stored, or transmitted in any form without the prior written permission of Lexmark.

# Table of Contents

<b>Overview .....</b>	<b>5</b>
XBOUND .....	5
ReadSoft Capture Framework (RCF).....	5
RCC Document Capture.....	5
OmniPage.....	6
ABBYY .....	6
<b>Prerequisites.....</b>	<b>6</b>
Supported operating systems.....	6
Microsoft .NET Framework.....	7
64-bit installation.....	7
Supported database servers .....	8
SSRS .....	8
PC requirements.....	8
<b>Creating an XBOUND system .....</b>	<b>10</b>
Setting up an administration workstation.....	10
Creating an XBOUND user account.....	10
Installing XBOUND and related components .....	10
Setting up a small XBOUND system using the Configuration Wizard .....	12
Creating the databases .....	13
Installing the application server .....	31
Assigning an XBOUND application server .....	32
Configuring HTTP.....	32
Initializing the XBOUND platform .....	34
Initializing RCF data .....	34
Setting up licensing .....	35
Installing XBOUND clients.....	37
<b>Post-installation tasks.....</b>	<b>38</b>
Setting up Web Verification (part of RCF) .....	38
Setting up XBOUND for mobile apps .....	39
Setting up the report server for viewing SSRS-based reports in XBOUND .....	42
RCC Document Capture.....	50
RCC Administration .....	51
Knowledge Processing .....	52

<b>Upgrading from Version 3.x</b> .....	<b>52</b>
Preparing to upgrade.....	52
Stopping the production process.....	53
If upgrading RCC.....	53
Backing up the databases.....	54
Installing the new software.....	54
Upgrading the databases.....	54
Updating an ABBYY installation.....	56
Migrating the database contents.....	57
Continuing the production process.....	58
<b>Additional information</b> .....	<b>59</b>
Silent installation.....	59
(Re)starting or stopping Windows Services.....	61
Reinstalling the same version.....	61
Uninstalling XBOUND and related components.....	61
Encrypting communication.....	62
Database maintenance and backup.....	63
Switching between RCC databases.....	63
Additional SQL scripts.....	65
Where to find more product information.....	65

## Overview

This document describes how to install an XBOUND system, which may include:

- XBOUND (required)
- ReadSoft Capture Framework (RCF)
- RCC Document Capture
- OmniPage
- ABBYY
- Various databases

## XBOUND

A minimum operational XBOUND system consists of:

- An administration workstation, where the XBOUND Management Center is installed and from which documents can be processed interactively.
- The XBOUND database server containing an XBOUND database and the required XBOUND licenses.
- An “application server” on which the XBOUND Platform service runs.
- A “worker server” on which the remaining XBOUND services run.

**Recommended:** Install all XBOUND components on all computers, and specify by configuration which ones are actually used. This makes the system very flexible in production.

How to design processes is explained in “Processes: Overview” in *XBOUND Help*.

## ReadSoft Capture Framework (RCF)

ReadSoft Capture Framework (RCF) provides full OCR results to XBOUND, including the positions where text was found.

## RCC Document Capture

ReadSoft Capture Components (RCC) Document Capture includes:

- RCC Administration – Used to set up the *solution*, which is then imported into XBOUND. This module is a variant of the Administration module of Lexmark’s DOCUMENTS product, and for those who are familiar with that, its setup is similar.
- Activities – Contains all of the assemblies for the Import Solution, Classification, Inspection, Interpretation, and Knowledge Processing activities.
- Knowledge Processing – Includes the “ReadSoft Knowledge Processing Service” and the scripts for configuring the Knowledge Processing database. Using Knowledge Processing results in better interpretation of machine-printed character fields, date fields, and amount fields. It is recommended in solutions that include semi-structured documents.
- Knowledge Processing Explorer – For viewing and changing the learned data for Knowledge Processing.

- Inspection – Contains the Inspection client, used for examining documents, rearranging or separating documents and sheets, and classifying or canceling documents.
- Database Configuration – For creating and configuring the two databases used by RCC Document Capture. **Note:** This tool currently cannot be used to create the Knowledge Processing database.

## OmniPage

OmniPage consists of the OmniPage Ultimate interpretation engine.

RCC Document Capture requires OmniPage.

The necessary licenses are included in the RCC installation.

## ABBYY

**ABBYY Runtime** consists of the FlexiCapture and FineReader interpretation engines. This option is required for the following XBOUND and RCF activities and requires a separate license from ABBYY:

- Create Searchable PDF
- Extract XML
- ABBYY FlexiCapture Extraction
- ABBYY FullPage Extraction

## Prerequisites

### Supported operating systems

	XBOUND	RCF	RCC	KP service host <sup>1</sup>
Microsoft Windows 7 SP1 32-bit	✓	✓	✓	X
Microsoft Windows 7 SP1 64-bit	✓ <sup>2</sup>	X <sup>3</sup>	✓	✓
Microsoft Windows 8.1 32-bit	✓	✓	X	X
Microsoft Windows 8.1 64-bit	✓ <sup>2</sup>	X <sup>3</sup>	✓	✓
Microsoft Windows Server 2008 R2 64-bit	✓ <sup>2</sup>	X <sup>3</sup>	✓	✓
Microsoft Windows Server 2012 64-bit	✓ <sup>2</sup>	X <sup>3</sup>	✓	✓

The operating system should be updated to the latest service pack.

<sup>1</sup> The ReadSoft Knowledge Processing service is a 64-bit service and must run on a 64-bit operating system. See “Knowledge Processing Service hosts” on page 12 for important information.

<sup>2</sup> Be sure to read “64-bit installation” page 9 for details.

<sup>3</sup> The RCF components cannot run as native 64-bit components. On a 64-bit operating system they must be installed and used as 32-bit versions. To do this, start the XBOUND 32-bit setup explicitly and select the desired components. Exception: Two of the activities present in the RCF installation are not supported on Windows 8.1: RecoStar Professional Extraction and RecoStar FullPage Extraction.

## Microsoft .NET Framework

Microsoft .NET Framework version 4.5 is required by XBOUND and all related components.

## 64-bit installation

Installing a 64-bit XBOUND system does not differ in principle from installing a 32-bit system. However, there are some issues to consider:

- ❗ **Important:** 64-bit XBOUND installations are not supported by any RCC components. RCC can only be used with a 32-bit XBOUND installation.
- You can install and operate the 32-bit XBOUND product on a 64-bit operating system.
- You can install and operate 32-bit and 64-bit versions on one computer in parallel.
- The 64-bit version supports only the XBOUND components specified below. All other components (including all RCF components) can be installed and used as 32-bit versions on a 64-bit operating system. To do this, start the XBOUND 32-bit setup explicitly and choose the desired components.
- If dongle drivers are necessary, install the 64-bit versions. These are normally available on the manufacturer's website.
- ❗ **The ReadSoft Knowledge Processing service is a 64-bit service and *must* run on a 64-bit operating system.**

## XBOUND native 64-bit components

The following XBOUND components can run as native 64-bit components:

- XBOUND plug-ins (Process Designer, Process Monitor, Common Configuration Manager, etc.)
- XBOUND Platform Service
- XBOUND License Service
- XBOUND Activities Service
- XBOUND Web Application Service
- XBOUND Collect Service
- XBOUND Agent Service
- Build Document Structure activity
- Split Documents activity
- Merge Documents activity
- Adapter for File System activity
- Adapter for File System (Structured) activity
- Classify by Barcodes activity
- Delete Documents activity
- Collector for IMAP
- Collector for File System
- Collector for XBOUND Scan Client
- Agent for Session Removal
- Agent for Document Resubmit
- Agent for Service Logging Removal

## Supported database servers

	XBOUND	RCF	RCC	Knowledge Processing
Microsoft SQL Server 2014	✓	✓	✓	✓
Microsoft SQL Server 2008, 2008 R2, and 2012	✓	✓	✓ <sup>4</sup>	✓
Oracle 12.1 (12c Release 1) and later Oracle 12 versions	✓	✓	✗	✓
Oracle 11.2.0 (11g Release 2) and later Oracle 11 versions	✓	✓	✗	✓
Oracle 10.1.0.2 (10g Release 1) and later Oracle 10 versions	✓	✓	✗	✗
Oracle 9.2.0.1 (9i Release 2) and later Oracle 9 versions	✓	✓	✗	✗
IBM DB2 10.1 and 10.5	✓	✓	✗	✓

## SSRS

Microsoft SQL Server Reporting Services (SSRS) is needed if you want to view the SSRS-based reports in XBOUND (using the Reports plug-in). For further information, see “Setting up the report server for viewing SSRS-based reports in XBOUND” on page 42.

## PC requirements

### Application servers

Below are the minimum recommended requirements for an application server. These are normally used for the XBOUND platform and for automatic activities such as Interpretation and Classification.

<b>CPU</b>	Quad core or better. Intel and AMD processors, as well as hyper threading, are supported.
<b>RAM</b>	Min. 1 GB per core (min. 4 GB per application server).
<b>Disk space</b>	80 GB.

<sup>4</sup> **Important:** Install and set up SQL Server *before* installing RCC Document Capture. Please refer to *Installing and Configuring Microsoft SQL Server For Use With ReadSoft Capture Components* for instructions.

## Scanning workstations

Below are the minimum recommended requirements for a scanning workstation.

<b>CPU</b>	2 GHz quad core or better.
<b>RAM</b>	4 GB (8 GB is recommended).
<b>Disk space</b>	2 x 100 GB
<b>Network</b>	1 Gbit
<b>Graphics board</b>	256 MB
<b>Display</b>	1280 x 1024 resolution or better (1920 x 1200 is recommended).
<b>OS</b>	Windows 7 or higher
<b>Scanner drivers</b>	ISIS or ISIS-compatible driver. The drivers that are included with scanner manufacturers' standard installation are supported.

## Other workstations

Below are the minimum recommended requirements for workstations where manual activities such as Verification and Inspection are performed.

<b>CPU</b>	Dual core or better. Intel and AMD processors, as well as hyper threading, are supported.
<b>Display</b>	19" display with 1600 x 1200 resolution or better.
<b>RAM</b>	4 GB
<b>Disk space</b>	80 GB

## Knowledge Processing Service hosts

- 🔴 **Remember:** The ReadSoft Knowledge Processing service is a 64-bit service and must run on a 64-bit operating system.
- 📘 **Recommended:** Use one dedicated Knowledge Processing Service host computer per solution:
  - Multiple XBOUND processes running different solutions with Knowledge Processing should each have their own service host.
  - If within a single process there are process steps that use different solutions, there should be one service host per *solution*.

<b>Minimum RAM requirements</b>
Depends on how many document classes are to be used for the solution: ≤ 50 classes: 4 GB ≤ 200 classes: 8 GB ≤ 1000 classes: 16 GB

## Creating an XBOUND system

Use the procedures described in the following sections.

**Note:** If you are using a 64-bit operating system, see page 7.

### Setting up an administration workstation

You must first install XBOUND on a workstation where the initial XBOUND activities are to be executed. This also provides the SQL scripts for creating the XBOUND database.

To install the administration workstation:

1. Highly recommended: Create an XBOUND user account as described below.
2. Run the XBOUND software setup as described on page 10. Select all XBOUND plug-ins and all of their subcomponents for installation.
3. XBOUND saves all information on processes and documents in a relational database. Create the XBOUND databases as described on page 13.
4. Install an application server as described on page 31, and assign it as described on page 32.
5. Initialize the XBOUND platform and database as described on page 34.

### Creating an XBOUND user account

XBOUND accesses its data via an application server on a relational database. For accessing the data, create a dedicated user account (called *XBOUND user* from now on) to which all access rights to the XBOUND database can be assigned.

**Note:** This XBOUND user is exclusively intended for data access of the application server and is not related to the end users who work with XBOUND. The end users can work with XBOUND using their regular user accounts.

**Important:** Make this a user that is centrally administered in the domain controller or Active Directory. Using local user accounts can cause problems that are difficult to resolve. **Recommended:** Prevent interactive login. This makes it more difficult for unauthorized users to access XBOUND data directly via the database.

### Installing XBOUND and related components

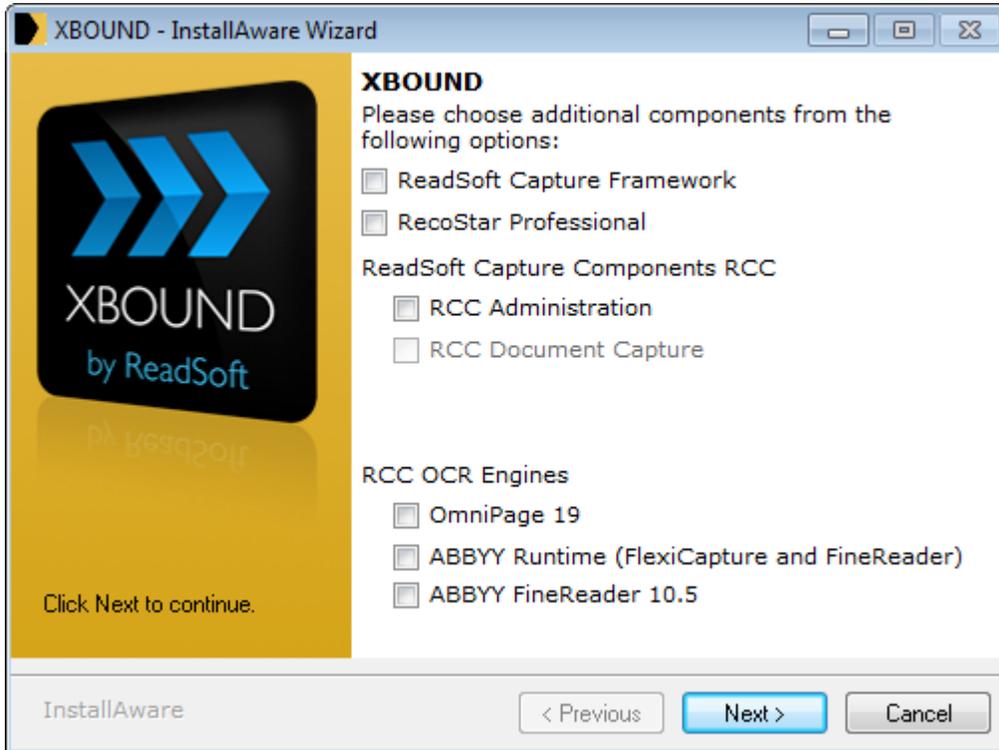
This section explains how to install XBOUND software components on a computer. Depending on what is selected for installation, some of the steps described below may not be needed.

**Note:** Microsoft .NET Framework 4.0 is required. Before installing XBOUND, ensure that .NET Framework 4.0 is installed. If RCC Document Capture is to be installed, update to .NET Framework 4.5.

1. Exit all Windows programs. (Always close all other programs before installing any part of XBOUND.)
2. Log in as a user with administrator rights.
3. Insert the XBOUND DVD.
4. To start a 64-bit installation, right-click `x64\Setup.exe` and select **Run As Administrator**.

Alternatively, to start a 32-bit installation, right-click `x86\Setup.exe` and select **Run As Administrator**.

- ❗ **Important:** You must indeed use **Run As Administrator**, even though you are logged in as a user with administrator rights.
  - ❗ **Important:** The 64-bit version does not support all XBOUND components (for details, see “64-bit installation” on page 7.)
5. Select **English** and click **OK**. (**Note:** The language applies only to the installation program.)
  6. If you also want to install RCF or RCC components, select them in the dialog that is displayed:



- ❗ **Note:** If you want to deselect the components, you must first deselect **RCC Document Capture**. Otherwise the other items cannot be deselected.
  - ❗ **Important:** **RCC Document Capture** requires **OmniPage**.
7. Click **Next** twice.
  8. Accept the terms of the license agreement and click **Next**.
  9. Enter your name and company and click **Next**.
  10. In most cases you will need to manually select the components to install. Select **Custom** and click **Next**.
  11. Select the software components to install and click **Next**.
  12. Optional: Change the installation path. Click **Next**.
  13. Optional: Change the settings for the shortcuts. Click **Next**.
  14. If you chose to install services, enter the user name, the password (twice) and the domain of the [XBOUND user account](#) that you created in the previous section. Click **Next**.
  15. If you chose to install ABBYY FineReader, enter the installation path and click **Next**.

16. Now that all required information has been collected, click **Next** to launch the installation actions.
17. When the installation procedure has completed, click **Finish**.

## Setting up a small XBOUND system using the Configuration Wizard

After installation, the Configuration Wizard becomes available. This wizard is intended for the smallest XBOUND installations, including those to be used for testing or demonstration purposes. The wizard is not recommended for larger installations. In such cases please continue with “Creating the databases” on page 13.

1. Using Windows Explorer, navigate to the XBOUND installation folder. Right-click the `xboundConfigurationWizard.exe` file and select **Run As Administrator**.
2. Click **Next**.
3. The wizard first checks whether XBOUND is installed.

Then it checks whether XBOUND is already configured. In that case you can select whether to continue and replace the existing configuration. If you confirm, XBOUND services will be stopped and all existing XBOUND settings and data will be overwritten.

 **Warning:** In some cases—for example if XBOUND privileges are already set up and the user lacks a privilege such as “Log On to XBOUND”—the wizard cannot recognize a configured XBOUND system. If you run the wizard on such a system, it will overwrite the local XBOUND settings. It is your responsibility to ensure that no existing XBOUND system is overwritten.

4. In the **XBOUND Settings** part of the wizard, the XBOUND license file is selected. You can also deactivate Windows-based logging in XBOUND.
5. In **Databases** you set the database settings. Ensure that **Create databases** is selected, if they do not yet exist and are to be created automatically.

 **Note:** If you deselect this option, then the schemas, tables, etc. are created *in the existing databases*.

If you activate **Extended Settings**, you can configure a separate database server for each XBOUND database.

6. The **Overview** lists the actions to be executed. Click **Execute** to start the configuration process:
  - The user rights for the XBOUND service user are set.
  - If selected, the databases are created and configured. (Microsoft SQL Server 2012 Shared Management Objects are used for this.)
  - The local XBOUND configuration files are adjusted.
  - The XBOUND Platform Service is configured.
  - The XBOUND-related Windows services are started.
  - RCF is configured (if installed).
  - The XBOUND system is initialized.
  - The RCC activities are added to the XBOUND Process Designer (if RCC is installed).
  - All of the XBOUND activities are assigned to one instance of the XBOUND Activities Service.
  - The collection of statistical and audit trail data is activated.

The result of each step is represented in the overview by  (failed) or  (succeeded).

- After running the wizard, you can click **Next** to proceed to the next part of the wizard, which helps you with subsequent setup steps.

 **Tip:** The wizard can be manually configured in advance by manipulating the `xboundConfigurationAssistent.xml` file, which is located in the XBOUND installation folder.

## Creating the databases

### XBOUND databases

Depending on how the system is set up, XBOUND stores data in three to five databases:<sup>5</sup>

Required databases	
XBOUND database	This is the main database.
License database	Contains information about your XBOUND license.
Logging database	<p>Contains the XBOUND log. Also contains audit trail data, if that is activated.</p> <p>Note: Logging to the logging database is not required but is recommended due to its advantages:</p> <ul style="list-style-type: none"> <li>The logging database can be used by different servers.</li> <li>The log messages can be accessed individually.</li> <li>The logging database is native to XBOUND. XBOUND accesses this database to provide information to users (for example using the Log Explorer and Process Monitor).</li> <li>There is an agent for maintaining this database (Agent for Service Logging Removal).</li> <li>Other options are logging to file and logging to Windows event log. (Please refer to <i>XBOUND Help</i> for more information.) However, the logging database is still required.</li> </ul>
Optional databases	
Statistics database (optional)	<p>XBOUND can collect statistical data and save it in this separate database during the processing of documents. These statistics provide the basis of several reports (for example the <b>Processing Report</b>). You can also interpret these statistics using common analysis tools.</p> <p>Recommended: Run the statistics database on an separate database server so that the performance of the XBOUND database is not adversely affected.</p> <p>After creating the statistics database, activate statistics collection in XBOUND (see “Synchronizing” on page 18).</p>
Audit trail database (optional)	<p>If XBOUND is set up to collect audit trail data, it is saved in the logging database by default. However, you can also (optionally) select to save that data to this separate audit trail database for archiving.</p> <p>After creating the audit trail database, activate the functionality in XBOUND (see “Synchronizing the audit trail database” on page 19).</p>

<sup>5</sup> Or in one to three databases, if you use the script that combines the objects of the three required databases into a single database – see below.

- ❗ **Important:** Data is not automatically deleted from the statistics database or the audit trail database. From time to time, old data must be deleted manually from these databases using an appropriate database maintenance program.
- ❗ The sections below describe how to install the XBOUND databases on the supported database servers (see page 8). *The procedure is the same for all of the databases; only the SQL scripts to use are different.*

To create this database:	Default location of the SQL script to use:
XBOUND database (main database)	C:\Program Files\ReadSoft\xbound\Sql
License database	C:\Program Files\ReadSoft\xbound\Sql\License
Logging database	C:\Program Files\ReadSoft\xbound\Sql\Logging
Objects of all three above dbs in one db	C:\Program Files\ReadSoft\xbound\Sql\Combined
Statistics database (optional)	C:\Program Files\ReadSoft\xbound\Sql\Statistics
Audit trail database (optional)	C:\Program Files\ReadSoft\xbound\Sql\Audit

Basic knowledge of database administration is required.

### Creating XBOUND databases on SQL Server 2008 or 2012

❗ **Note:** Beginning with XBOUND 3.9, the isolation level of new XBOUND databases on Microsoft SQL Server is set to *snapshot*. You can read more about the snapshot isolation level on [the MSDN website](#).

1. Install SQL Server on the XBOUND database server.
2. Start SQL Server Management Studio and connect to the XBOUND database server.
3. Right-click **Security** and select **New > Login**. Enter the [XBOUND user](#) details.
  - ❗ **Important:** Using Windows Authentication is strongly recommended in order to avoid the transmitting or saving of passwords in the connection string.
4. Right-click **Databases** and select **New Database**. The XBOUND application server will save its data in this database. Assign suitable parameters under **Database files**. You will find details on database tuning in your SQL Server documentation.

Click **OK** when you have set all parameters.

❗ **Optional:** To manage very high data traffic, you can distribute the database file groups on two or even three different physical devices. This allows the database server to parallelize the I/O requests. If you want to do this, create dedicated file groups for data, indices, and/or image data.

5. Click the icon of the new XBOUND database. Right-click **Security** and select **New > User**.
6. Enter the name of the [XBOUND user](#) under **User name**.
7. Select the XBOUND user under **Login name**.
8. Under **Database role membership**, select **db\_datareader** and **db\_datawriter**.
9. Click **OK**.
10. Right-click the XBOUND database icon and select **Properties**.
11. Click **Permissions** and select the XBOUND user.
12. Select **Grant** in the lower table of the **Execute** line.

13. Click **OK**.
14. Open the `xbound_create_3.9.0.0.sql` file in SQL Server Management Studio. It is found in `C:\Program Files\ReadSoft\xbound\Sql` on the administration workstation.
15. If you created database file groups on different physical devices in step 4, change the `TABLESPACE_DATA`, `TABLESPACE_IND`, and/or `TABLESPACE_BLOB` variables on lines 5–7 from `PRIMARY` to your new file group names.
16. Click **Connect**.
17. Select the new database.
  - 🚫 **Warning:** This step is important, because otherwise the XBOUND database objects are created in the master database!
18. Make sure you are in the correct database for the script, and click **Execute**.
19. Check your messages. You should see a “Query executed successfully” message.

### Creating XBOUND databases on Oracle 9.2.0.1

- 📘 **Note:** When using Oracle version 11.2.0 (11g Release 2) or earlier, Microsoft .NET Framework 3.5 and 2.0 must be present. (With Oracle 12 or later this is not needed.)

Not all Windows installations include .NET Framework 3.5 and 2.0. However, you can install .NET Framework 3.5 and 2.0 after installing Windows.

Only when these .NET Framework versions are installed does the Oracle installation include all of the necessary components.

Use this procedure:

1. Install Oracle 9.2.0.1 on the XBOUND database server.
  - 📘 **Optional:** To manage very high data traffic, you can distribute the tablespaces on two or even three different physical devices. This allows the database server to parallelize the I/O requests. If you want to do this, create dedicated tablespaces data, indices, and/or image data. If XBOUND’s statistics functionality is to be used, the `W_SyncSet` table should be assigned a separate file group.
2. Create a user for XBOUND and give that user all access rights to the tablespaces in which data and indices are to be saved (in the simplest case `UNLIMITED TABLESPACE`).
  - 🚫 **Important:** Using Windows authentication is strongly recommended in order to avoid the transmitting or saving passwords in the connection string. You will find more details of setting up Windows authentication regarding your database in the Oracle documentation or suitable third-party products.
3. Start SQL\*Plus Worksheet and log in as the XBOUND user.
4. Open the `xbound_create_oracle_3.9.0.0.sql` file. By default this is found in `C:\Program Files\ReadSoft\xbound\Sql` on the administration workstation.
5. If you created tablespaces on different physical devices in step 1, change the `TABLESPACE_DATA`, `TABLESPACE_IND`, and/or `TABLESPACE_BLOB` variables on lines 2–4 from `USERS` to your new tablespace names.
6. Execute the SQL script.

## Creating XBOUND databases on Oracle 10.2.0.1, 11.2.0, or 12.1.0.1.0

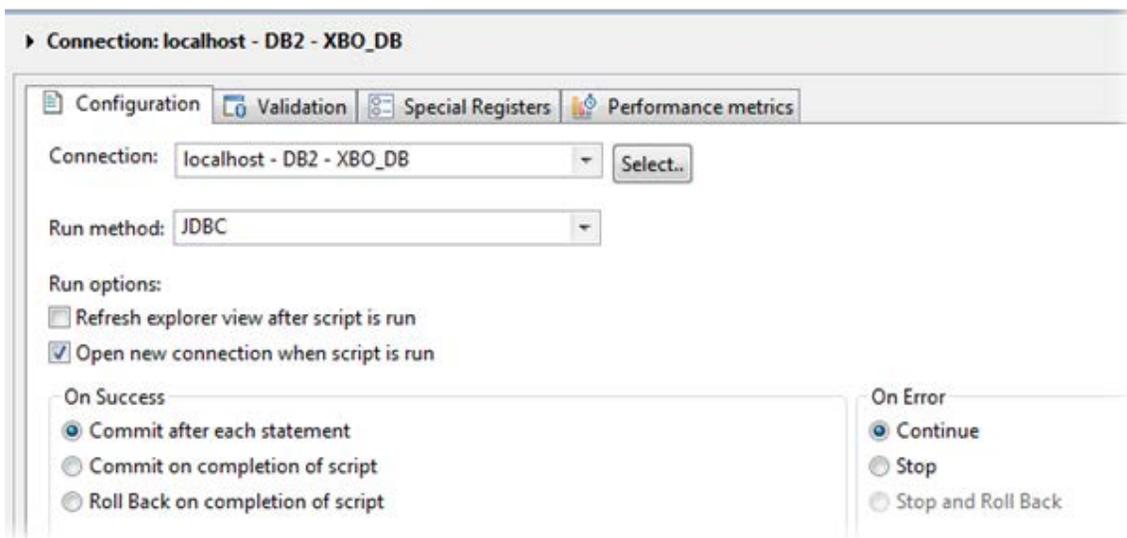
**Important:** When using Oracle version 11.2.0 (11g Release 2) or earlier, see **Note** on page 15.

1. Install Oracle on the XBOUND database server.
  - Optional:** To manage very high data traffic, you can distribute the tablespaces on two or even three different physical devices. This allows the database server to parallelize the I/O requests. If you want to do this, create dedicated tablespaces data, indices, and/or image data. If XBOUND's statistics functionality is to be used, the W\_SyncSet table should be assigned a separate file group.
2. Create a user for XBOUND and give that user all rights to create, change, and delete tables as well as to create procedures, indices, and sequences. In the simplest case, use at least these rights:
  - ALTER ANY TABLE
  - CREATE ANY INDEX
  - CREATE ANY PROCEDURE
  - CREATE ANY SEQUENCE
  - CREATE ANY TABLE
  - CREATE ANY VIEW
  - CREATE SESSION
  - DROP ANY TABLE
  - UNLIMITED TABLESPACE

**Important:** Using Windows authentication is strongly recommended in order to avoid transmitting or saving passwords in the connection string. You will find more details of setting up the Windows authentication regarding your database in the Oracle documentation or suitable third-party products.
3. Start a program like SQL Developer which you can use to execute SQL scripts on your Oracle database.
4. Log in as the XBOUND user to Oracle and load `xbound_create_oracle_3.9.0.0.sql`. By default this file is found in `C:\Program Files\ReadSoft\xbound\Sql` on the administration workstation.
5. If you created tablespaces on different physical devices in step  change the `TABLESPACE_DATA`, `TABLESPACE_IND`, and/or `TABLESPACE_BLOB` variables on lines 2–4 from `USERS` to your new tablespace names.
6. Execute the SQL script.

## Creating XBOUND databases on IBM DB2 Express 10.x

1. Install IBM DB2 Express on the XBOUND database server.
2. Start IBM Data Studio.
3. Expand **All Databases > localhost**.
4. Right-click **DB2** and select **New Database**. Create a database for XBOUND.
  - Optional:** To manage very high data traffic, you can distribute the database tables on two or even three different physical devices. This allows the database server to parallelize the I/O requests. If you want to do this, create dedicated database tables data, indices, and/or image data. If XBOUND's statistics functionality is to be used, the W\_SyncSet table should be assigned a separate file group.
  - Important:** Change the **Page size of the default buffer pool and table space** setting to 8 KB.
5. Select the **DB Users** folder of this database.
6. Add the **XBOUND user** and select every access option.
7. Under **DB2**, select the new database and click the **SQL** button ()
8. In the configuration screen, select the connection to use for executing the script.



9. Click the **Select script** button () and select the `XBOUND_create_db2_3.9.0.0.sql` file. By default this file is found in `C:\Program Files\ReadSoft\xbound\Sql` on the administration workstation.
  - Note:** The script creates the database object in the XBOUND schema. To create the objects in another schema, you must first change the script by replacing all occurrences of XBOUND by your desired schema.
  - If you created tables on different physical devices in step 3, search for `IN USERSPACE1` in the entire file and replace it with the name of the new table, for example `IN TABLENAME`.
10. As **Statement termination character**, enter a hash symbol (#).
11. Execute the script ()
12. A dialog displays the log result. Check the results.

## Creating XBOUND databases on IBM DB2 Express-C 9.5 to 9.8

1. Install IBM DB2 Express-C on the XBOUND database server.
2. Start **DB2 Control Center**.
3. Create a database for XBOUND.
  - i** **Optional:** To manage very high data traffic, you can distribute the database tables on two or even three different physical devices. This allows the database server to parallelize the I/O requests. If you want to do this, create dedicated database tables data, indices, and/or image data. If XBOUND's statistics functionality is to be used, the W\_SyncSet table should be assigned a separate file group.
4. Select the **DB Users** folder of this database.
5. Add the **XBOUND user** and select every access option.
6. On the database, select **Selected > Queries**.
7. Select **Selected > Open** and open `xbound_create_db2_3.9.0.0.sql`. By default this file is found in `C:\Program Files\ReadSoft\xbound\Sql` on the administration workstation.
  - i** **Note:** The script creates the database object in the XBOUND schema. To create the objects in another schema, you must first change the script by replacing all occurrences of XBOUND by your desired schema.
  - i** If you created tables on different physical devices in step 3, search for `IN USERSPACE1` in the entire file and replace it with the name of the new table, for example `IN TABLENAME`.
8. As **Statement termination character**, enter a hash symbol (#).
9. Click **Execute**.

## Synchronizing XBOUND databases

If you created a statistics database, you must synchronize it with the main database. Likewise, if you created an audit trail database, you must synchronize it with the logging database.

These databases may need to be synchronized at other times, as well, for example if they were offline.

## Synchronizing the statistics database

1. Create an XBOUND Data Manager console:
  - a) When logged in as the same user as the database owner, start the XBOUND Management Center by selecting **Start menu > All Programs > ReadSoft > ReadSoft XBOUND Management Center**.
  - b) When the Management Center is displayed, click the link for adding a new console.
  - c) Double-click **Base Data**.
2. In the **Statistics** area, click the link that says **Click [here](#) for reading or changing the settings**.
3. Specify the connection data for the statistics database, and click **Check connection** to test the connection. (As mentioned in step a) above, you must be the database owner.)
4. If it is not selected already, select **Activate statistics**.

5. Click **Synchronize now** and confirm by clicking **Yes**. The statistical data from the production database starts synchronizing to the statistics database. Wait until the action finishes.
  - 🔴 This can take several minutes or even hours, depending on the amount of production data and the database server's performance.
6. Click **OK**.
7. Check the status line in the Process Designer to see whether synchronization was successful. If there was an error, double-click the error message to see a more detailed description and resolve the problem.

Now any changes to the statistics data are automatically kept synchronized in the statistics database.

- 📘 The linking of the production database to the statistics database is specified in the **StatisticsDB** keyword of the **C\_DBInfo** table in the main database. That keyword stores the connection string for the statistics database.

## Synchronizing the audit trail database

1. In an XBOUND Data Manager console (see step 1 on page 18), in the **Audit** area, click the link that says **Click [here](#) for reading or changing the settings**.
2. Specify the connection data for the audit trail database, and click **Check connection** to test the connection. (As mentioned in step a) above, you must be the database owner.)
3. If it is not selected already, select **Activate Audit Synchronization**.
4. Click **Synchronize now** and confirm with **Yes**. The audit messages from the logging database are start synchronizing to the audit trail database. Wait until the action has finished.
  - 🔴 This can take several minutes or even hours, depending on the number of audit messages and the database server's performance.
5. Click **OK**.

Now any audit messages are automatically kept synchronized in the audit trail database. Exception: If the audit trail database goes offline, you should synchronize the audit messages again when the database is running again.

## Databases for RCC Document Capture

### Supported database servers

- Microsoft SQL Server 2008, 2008 R2, 2012, and 2014
- IBM DB2 version 10.1 or 10.5 (Knowledge Processing database only)
- Oracle version 12.1 [and later Oracle 12 versions] or 11.2.0 [and later Oracle 11 versions] (Knowledge Processing database only)

## Setting up the configuration and production databases

Use the below procedure to create and initialize the two databases that are required by RCC Document Capture:

- The configuration database will contain the configuration data from RCC Administration, as well as the solutions that you create.
- The production database will contain the solutions that you deploy to it using RCC Administration.

(A third database is optional – see “Setting up the Knowledge Processing database” on page 24.)

- **Note:** To create a database that uses Windows authentication, you must log in as a Windows user with administrator rights.

Even if the database will not use Windows authentication, you must still at least be an administrator *on the computer*. If not, it is sometimes (depending on the User Account Control settings) possible to enter administrator details and proceed.

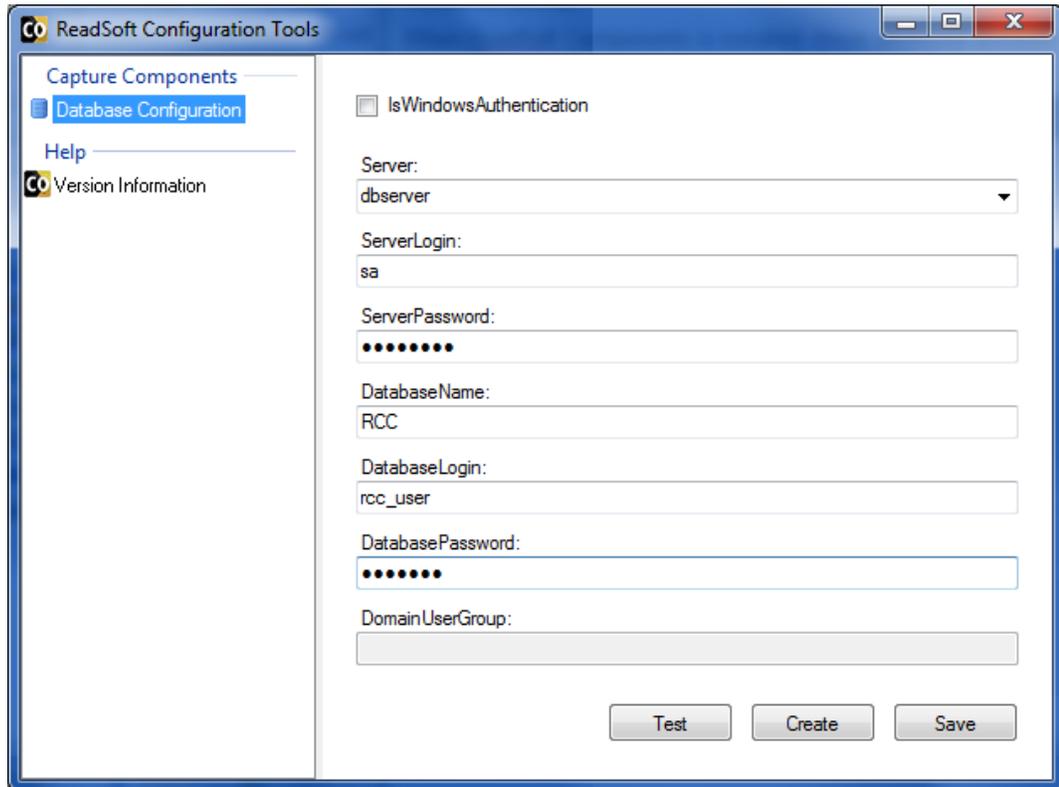
- **Tip:** You can also set up the databases manually – see “Setting up the configuration and production databases manually, using SQL scripts” on page 22.

This procedure requires **Database Configuration**, part of the RCC Document Capture installation.

1. Select **Start** menu > **All Programs** > **ReadSoft** > **Capture Components** > **Configuration**.
2. In the navigation panel, select **Capture Components** > **Database Configuration**.
3. Specify the server installation (**Server** setting) where the databases are to be created.
4. In the **Database name** box, specify the name of the database to create. (When you click **Create**, *two* databases are created, one with the name you specify and one with the extension `_PRODUCTION`.)
5. Now you must select how to connect to the database:
  - To use Windows authentication—both when creating the database and when accessing the database from Capture Components Administration:
    - a) Select **Use Windows authentication**.
    - b) At the bottom of the dialog, fill in the domain and user name (or Active Directory user group) that will need access to the database.

Continue to the next step.

- Alternatively, specify the following details:
  - a) In the **Server login** and **Server password** boxes, specify an administrator login name and password for the server installation that you specified in step 3. This user is used only to:
    - Create the user that RCC Document Capture will always use (no matter which user is using the program) to connect to the databases (see step b).
    - Create the databases (step 7).

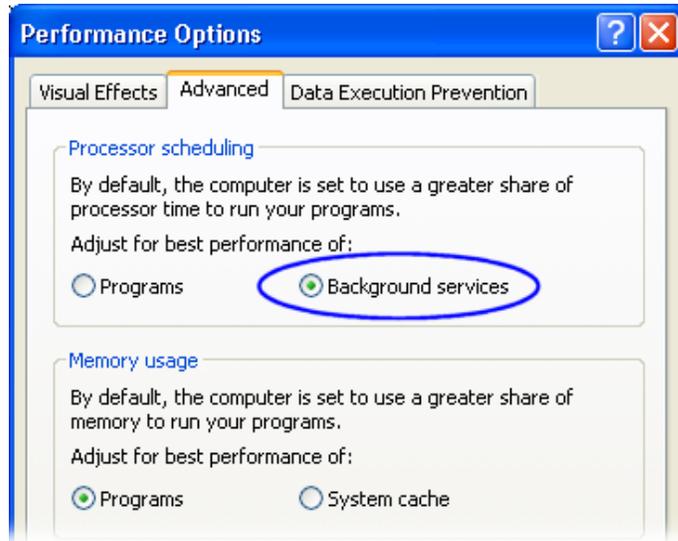


- b) In the **DatabaseLogin** and **DatabasePassword** boxes, specify a login name and password that RCC Document Capture will always use (no matter which user is using the program) to connect to the databases.
- Note:** The password will not be encrypted in the Windows Registry. If you need more security, use Windows authentication (see above).
6. Click **Test** to test the connection.
  7. Click **Create**. (**Save** is used after creating the databases manually – see page 22 – or for *switching* databases – see page 59.) Two databases are created, and the Windows Registry is updated.

## Using a dedicated database server

After setting up the databases, follow this procedure to dedicate the server to the database:

1. Select **Start** menu > **Settings** > **Control Panel** > **System**.
2. Click the **Advanced** tab.
3. Under **Performance**, click **Settings**.
4. On the **Advanced** tab, in the **Processor scheduling** box, select **Background services**.



## Setting up the configuration and production databases manually, using SQL scripts

You can manually create the databases, and then configure them using the SQL script files provided. This is an alternative to the procedure described under "Setting up the configuration and production databases" on page 20.

**Note:** This procedure should only be performed by a database administrator or a Lexmark consultant.

Before you begin:

- Copy the three script files (`CreateTables.sql`, `GrantUser.sql`, and `CreateData.sql`) from the `SqlScripts` folder (by default located in `C:\Program Files\ReadSoft\Configuration Tools\Bin`) to another location.

Do not delete or move the original files. They are used by the configuration tool and you may need them later.

- Ensure that you have database permission to create databases and logins and to execute database scripts in SQL Server Management Studio.

Script	What it does
CreateTables.sql	Creates the database structure for RCC Document Capture. Execute this script for each of the databases.
GrantUser.sql	Adds the roles db_datawriter, db_datareader, and db_ddladmin to the user; grants Execute rights for all stored procedures to the user. Execute this script for each of the databases.
CreateData.sql	Updates the <b>runtimesystems</b> table with server name, database name, user name, and password. Execute this script on the configuration database.

Use this procedure:

1. Start SQL Server Management Studio.
2. Create the first database named (for example) RSCaptureComponents.  
This “configuration database” will contain the Capture Components Administration configuration data, and the solutions that you create.
3. Create a second database named (for example) RSCaptureComponents\_PRODUCTION.
4. Create or add a SQL Server login. This login will also be used as the database user for both databases. If you want to use a Windows user name or Windows group name, then the user or group must exist in the Active Directory.
5. For each database, execute the SQL script `CreateTables.sql`.
6. In the `GrantUser.sql` script, change these parameters:
  - `$(databasename)` – the name of the configuration database that you created in step 2 (for example RSCaptureComponents).
  - `$(user)` – the user name (same as the SQL Server login that you created in step 4).
7. Execute `GrantUser.sql` for the configuration database.
8. In the `GrantUser.sql` script, change the `$(databasename)` parameter to the name of the production database that you created in step 3 (for example RSCaptureComponents\_PRODUCTION).
9. Execute `GrantUser.sql` for the production database.
10. In the `CreateData.sql` script, change these parameters:
  - `$(server)` – the name of the SQL Server.
  - `$(databasename)` – the name of the *production* database that you created in step 3.
  - `$(user)` – the user name (same as the SQL Server login, see step 4). Leave this empty if you are using Windows authentication.
  - `$(encpwd)` – the user password. Leave this empty if you are using Windows authentication.
11. Execute the SQL script `CreateData.sql` for the *configuration* database that you created in step 2.
12. Select **Start** menu > **All Programs** > **ReadSoft** > **Capture Components** > **Configuration** and use the configuration tool to specify the server, database name, and database login. (Detailed instructions are provided in the previous section, starting on page 20.) Then click **Save** instead of **Create**.

## Setting up the Knowledge Processing database

Use the one of the below procedures to create and initialize the Knowledge Processing database that will contain the RCC Knowledge Processing data:

- Manual setup (using a script) on Microsoft SQL Server
- Manual setup (using a script) on IBM DB2
- Manual setup (using a script) on Oracle

These procedures require that you installed **Knowledge Processing**.

- 📘 **Note:** The database configuration tool currently cannot be used to create the Knowledge Processing database.
- 🔴 **Important:** Knowledge Processing does not automatically clean up after itself during production. Therefore, we recommend creating a job that removes inactive LDPs. (For SQL Server there are instructions available in the *ReadSoft Capture Components Help* topic “Removing inactive LDPs”.)
- 🔴 **Important:** For security reasons, we recommend not storing passwords as plain text in the connection strings. Password encryption is supported; see step 8 of “Manual setup (using a script) on Microsoft SQL Server” on page 24 or step 8 of “Manual setup (using a script) on IBM DB2” on page 26. Note that passwords can be decrypted only on the computer where they were encrypted. (Encrypted passwords cannot be copied between computers.)

### Manual setup (using a script) on Microsoft SQL Server

You can manually create the Knowledge Processing database, and then create the table using the script file provided.

- 📘 **Note:** This procedure should only be performed by a database administrator or a Lexmark consultant.

You will need:

- The script file `Create Script SQL.sql`. Default location: `C:\Program Files (x86)\ReadSoft\Capture Components\SqlScripts\KnowledgeStore`

Use this procedure:

1. Start SQL Server Management Studio.
2. Create the database named (for example) `CapComponents_KP`. The “Simple” recovery model is recommended.
3. Create or add a SQL Server login. This login also be used as the database user, so grant it read and write permissions.
4. Execute the SQL script `Create Script SQL.sql`.

Follow the below additional steps to update the Knowledge Processing configuration file to allow connection to a SQL database server. This uses the standard connection string syntax for .NET Data Provider. Other connection strings can be used – see SQL Server documentation or for example <https://www.connectionstrings.com/sql-server/>.

5. Using Notepad or another text or XML editor, open the Knowledge Processing configuration file, `ReadSoft.Du.KnowledgeStore.Service.exe.config`. This is located in the installation folder, typically `C:\Program Files (x86)\ReadSoft\Capture Components`. Ensure that you have administrator rights to edit the file.

6. Find the `ServerType` setting and ensure that it is set to `SqlServer`:

```
<setting name="ServerType" serializeAs="String">
  <value>SqlServer</value>
</setting>
```

7. Find the `SqlServer` connection string and edit it as follows, depending on whether you are using integrated security or standard SQL Server security:

- o Integrated security:

```
<add name="SqlServer" connectionString="data source=server;initial
catalog=database;integrated
security=True;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
```

Change the highlighted values:

- o `data source`: Change `server` to the name of the database server.
- o `initial catalog`: Change `database` to the name of the Knowledge Processing database that you created in step 2.
- o Standard SQL Server security (the user name and password must be defined in the connection string):

```
<add name="SqlServer" connectionString="Server=server;
Database=database;User Id=user;Password=password;"
providerName="System.Data.SqlClient" />
```

Change the highlighted values:

- o `Server`: Change `server` to the name of the database server.
  - o `Database`: Change `database` to the name of the Knowledge Processing database that you created in step 2.
  - o `User Id`: Change `user` to the name of the database user.
  - o `Password`: Change `password` to the password of the database user. This password can be encrypted; see step 8.
8. If applicable, configure password encryption by changing two settings in the `<appSettings>` section:
    - o `EnableEncryptedPassword`: If this setting is present and set to `true`, password encryption is enabled. The password is encrypted or decrypted as needed to avoid storing it in plain text. This setting is enabled by default.
    - o `PasswordIsEncrypted`: If this setting is present and set to `false` (assuming that `EncryptPassword` is enabled), the Knowledge Processing Service encrypts the (plain text) password in the connection string, writes back the encrypted password, and updates this setting to `true`.

If `PasswordIsEncrypted` is present and set to `true`, the password is assumed to be encrypted, and the Knowledge Processing Service decrypts it before sending the connection string to the database server. This setting is `false` by default.

9. Save your changes.
10. Start the ReadSoft Knowledge Processing Service.
11. Check the Event Log to ensure that the connection to the database succeeded.

## Manual setup (using a script) on IBM DB2

You can manually create the Knowledge Processing database on an IBM DB2 version 10.1 or 10.5 database server, and then create the table using the SQL script file provided.

**Note:** This procedure should only be performed by a database administrator or a Lexmark consultant.

You will need:

- The script file `Create script DB2.sql`. Default location: `C:\Program Files (x86)\ReadSoft\Capture Components\SqlScripts\KnowledgeStore`
- If the Knowledge Processing service is not run on the same server as the database, you will need the 64-bit DB2 client database drivers. These drivers are not included in the installation package from Lexmark. You must obtain them from IBM. Ensure that they match your database version and that relevant fix packs are also installed.
- **Important:** As stated under “Prerequisites” on page 9, the ReadSoft Knowledge Processing service must run on a 64-bit operating system. Only the 64-bit DB2 client database drivers are to be used.

Use this procedure:

1. Manually create a separate Knowledge Processing database on the DB2 server.  
Select a buffer pool and table space page size of 32 KB.  
The database user must be granted read and write access to the database.
2. Create a database table named `LDPDATA` by executing `Create script DB2.sql`.  
You can change the database schema of the table by adding the schema name before the table name. However, you must always define the schema in the connection string as described below.
3. If the Knowledge Processing service is not run on the same server as the database, install the 64-bit DB2 client database drivers on the Knowledge Processing service server.

Follow the below additional steps to update the Knowledge Processing configuration file to allow connection to a DB2 database server. This uses the standard connection string syntax for .NET Data Provider. Other connection strings can be used, as long as the table schema is defined in the `CurrentSchema` attribute. See DB2 documentation or for example <https://www.connectionstrings.com/ibm-db2/>.

4. Using Notepad or another text or XML editor, open the Knowledge Processing configuration file, `ReadSoft.Du.KnowledgeStore.Service.exe.config`. This is located in the installation folder, typically `C:\Program Files (x86)\Readsoft\Capture Components`. Ensure that you have administrator rights to edit the file.
5. Find the `ServerType` setting and change its value to `Db2`. Result:

```
<setting name="ServerType" serializeAs="String">
  <value>Db2</value>
</setting>
```

6. Find the DB2 connection string, which looks like this:

```
<add name="Db2" connectionString="Database=database;User
ID=user;Password=password;Server=server";CurrentSchema=schema"
providerName="IBM.Data.DB2" />
```

Change the highlighted values:

- Database: The name of the Knowledge Processing database that you created in step 1.
- User ID (UID): The name of the database user that has the necessary access rights to the Knowledge Processing database.
- Password (PWD): The password of the database user. This password can be encrypted; see step 8.
- Server: The name of the DB2 server.
- CurrentSchema: The schema name of the LDPDATA table.

 **Note:** UID and PWD can be used as abbreviations.

7. Find and uncomment the DB2 database `provider` element for Entity Framework in the `<providers>` section. After uncommenting, it looks like this:

```
<provider invariantName="IBM.Data.DB2"
type="IBM.Data.DB2.EntityFramework.DB2ProviderServices,
IBM.Data.DB2.EntityFramework, Version=10.5.5.6, Culture=neutral,
PublicKeyToken=7c307b91aa13d208" />
```

8. If applicable, control password encryption by changing two settings in the `<appSettings>` section:

- `EnableEncryptedPassword`: If this setting is present and set to `true`, password encryption is enabled. The password is encrypted or decrypted as needed to avoid storing the it in plain text. This setting is enabled by default.
- `PasswordIsEncrypted`: If this setting is present and set to `false` (assuming `EncryptPassword` is enabled), the Knowledge Processing Service encrypts the (plain text) password in the connection string, writes back the encrypted password, and updates this setting to `true`.

If this setting is present and set to `true`, the password is assumed to be encrypted, and the Knowledge Processing Service decrypts it before sending the connection string to the database server. This setting is `false` by default.

9. Save your changes.
10. Start the ReadSoft Knowledge Processing Service.
11. Check the Event Log to ensure that the connection to the database succeeded.

## Manual setup (using a script) on Oracle

You can manually create the Knowledge Processing database on an Oracle database server, and then create the table using the SQL script file provided. The supported Oracle versions are listed on page 8.

**Note:** This procedure should only be performed by a database administrator or a Lexmark consultant.

You will need:

- The script file `Create script Oracle.sql`. Default location: `C:\Program Files (x86)\ReadSoft\Capture Components\SqlScripts\KnowledgeStore`

Use this procedure:

1. Manually create a separate Knowledge Processing database on the Oracle server.
2. Start a program like SQL Developer which you can use to execute SQL scripts on your Oracle database.
3. Open a command window (worksheet) in the database.
4. Create a database table named LDPDATA by executing `Create script Oracle.sql`.

Follow the below additional steps to update the Knowledge Processing configuration file to allow connection to an Oracle database server.

5. Using Notepad or another text or XML editor, open the Knowledge Processing configuration file, `ReadSoft.Du.KnowledgeStore.Service.exe-Template V2.0.Config`. This is located in the installation folder, typically `C:\Program Files (x86)\Readsoft\Capture Components`. Ensure that you have administrator rights to edit the file.
6. Save a new version of the file using this name:  
`ReadSoft.Du.KnowledgeStore.Service.exe.Config`

7. Find the `ServerType` setting and change its value to `Oracle`. Result:

```
<setting name="ServerType" serializeAs="String">
  <value>Oracle</value>
</setting>
```

8. Find the Oracle connection string, which looks like this:

```
<add name="Oracle" connectionString="DATA
SOURCE=SERVER;PASSWORD=PASSWORD;PERSIST SECURITY INFO=True;USER ID=USER"
providerName="Oracle.ManagedDataAccess.Client" />
```

Change the highlighted values:

- DATA SOURCE:
  - For Oracle 11.2.0 (11g Release 2) and later Oracle 11 versions, change `SERVER` to the server on which the Oracle database is running.
  - For Oracle 12.1 (12c Release 1) and later Oracle 12 versions, change `SERVER` to the name of the data source. This data source should also be specified in the Oracle `dataSources` section; see step 10.
- PASSWORD: Change `PASSWORD` to the password of the database user.
- USER ID: Change `USER` to the name of the database user that has the necessary access rights to the Knowledge Processing database.

9. Find and uncomment the Oracle provider element for Entity Framework in the <providers> section. After uncommenting, it looks like this:

```
<provider invariantName="Oracle.ManagedDataAccess.Client"
  type="Oracle.ManagedDataAccess.EntityFramework.EFOracleProviderServices
  , Oracle.ManagedDataAccess.EntityFramework, Version=6.121.2.0,
  Culture=neutral, PublicKeyToken=89b483f429c47342"/>
```

10. Highly recommended for Oracle 12.1 (12c Release 1) and later Oracle 12 versions: Find the Oracle dataSources section, which looks like this:

```
<oracle.manageddataaccess.client>
<version number="*">
<dataSources>
  <dataSource alias="MYORACLE"
  descriptor="(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=computer_name)(PORT=1521))(
  CONNECT_DATA=(SERVICE_NAME=orcl.company.com))" />
</dataSources>
</version>
</oracle.manageddataaccess.client>
```

Change the highlighted values:

- o dataSource Alias: Change MYORACLE to the name of the data source.
  - ❗ **Important:** The alias must match the data source specified in step 8.
- o HOST: Change computer\_name to the computer name of the database.
- o SERVICE\_NAME: Change orcl.company.com to the instance name of the database.

11. Save your changes.

12. Recommended for Oracle 12.1 (12c Release 1) and later Oracle 12 versions: If you will be running the Knowledge Processing remotely, edit the tnsnames.ora and listener.ora configuration files in your Oracle installation.

The tnsnames.ora file looks like this:

```
# tnsnames.ora Network Configuration File:
H:\app\user\product\12.1.0\dbhome_1\network\admin\tnsnames.ora
# Generated by Oracle configuration tools.

LISTENER_ORCL =
  (ADDRESS = (PROTOCOL = TCP)(HOST = computer_name)(PORT = 1521))

ORACLR_CONNECTION_DATA =
  (DESCRIPTION =
    (ADDRESS_LIST =Om
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))
    )
    (CONNECT_DATA =
      (SID = CLRExtProc)
      (PRESENTATION = RO)
    )
  )

ORCL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = computer_name)(PORT = 1521))
```

```

    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = orcl.company.com)
    )
  )
)

```

The listener.ora file looks like this:

```

# listener.ora Network Configuration File:
H:\app\user\product\12.1.0\dbhome_1\network\admin\listener.ora
# Generated by Oracle configuration tools.

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (SID_NAME = CLRExtProc)
      (ORACLE_HOME = H:\app\psvahn\product\12.1.0\dbhome_1)
      (PROGRAM = extproc)
      (ENVS =
"EXTPROC_DLLS=ONLY:H:\app\psvahn\product\12.1.0\dbhome_1\bin\oraclr12.dll")
      )
    )
  )

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = computer_name)(PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))
    )
  )
)

```

13. Change the highlighted values in both configuration files:

- HOST: Change `computer_name` to the computer name of the database.
- SERVICE\_NAME: Change `orcl.company.com` to the instance name of the database.

14. Save your changes.

15. Start the ReadSoft Knowledge Processing Service.

16. Check the Event Log to ensure that the connection to the database succeeded.

## Installing the application server

The XBOUND Platform Service supports all communication possibilities (bindings) offered by XBOUND and can be configured easily:

1. Follow the XBOUND installation procedure described on pages 10–12. In step 11, select **XBOUND Platform Service** for installation.
2. Create an XBOUND Common Configuration Manager console:
  - a) Start the XBOUND Management Center by selecting **Start** menu > **All Programs** > **ReadSoft** > **ReadSoft XBOUND Management Center**.
  - b) When the Management Center is displayed, click the link for adding a new console.
  - c) Double-click **Configuration**.
3. Click **XBOUND Platform Service** and select the **XBOUND Connection** tab.
4. Select in **Database Provider** whether to use Microsoft SQL Server, Oracle, or DB2.
5. Select in **Database Server Name** the database server (for SQL Server and DB2) or the service (Oracle).
6. Select in **Authentication Type** whether the integrated security of Windows is to be used for logging in (recommended). If not, enter the user name and password.
7. If SQL Server or DB2 is used, enter the name of the database in **Database Name**.
8. Click **Check connection** to see if a connection to the database can be established.
  -  **Note:** If you work with Windows authentication (recommended), please be aware that this connection test is done from your Windows session. It must also be ensured that the user who runs the XBOUND Platform Service has all required rights to access the database.
9. If applicable, select **Use WebService** so that the XBOUND Platform Service enables the WebService and makes it accessible.
10. Click the **XBOUND Service Logging Connection** tab and configure the connection to the XBOUND logging database in the same way.
11. Click **Save**.
12. Start the Windows service “XBOUND Platform”. (There are instructions on page 61.)

If it is not possible to start the service because of an incorrect login, open this service in the Windows Service Manager and reenter the data of the [XBOUND user account](#). Restart the “XBOUND Platform” service.

If the service immediately closes again, include the XBOUND user in the group of the application server's local administrators, start the service once and stop it. Now you can take the XBOUND user out of the local administrator group and start the service successfully.

## Assigning an XBOUND application server

Before you can initialize the XBOUND database using the XBOUND Process Designer, you must assign an application server to XBOUND applications. Use this procedure:

1. Log in to the workstation with the XBOUND applications.
2. Start XBOUND Management Center by selecting **Start > All Programs > ReadSoft > XBOUND > XBOUND Management Center**.
3. Load the Common Configuration Manager plug-in.
4. Select **Enterprise Common Properties** and click the **Binding** tab.
5. If you are using the XBOUND Platform Service, select **Native** and enter the base URL `tcp://host:4444` as server name, replacing `host` with the application server's host name.  
If you are using the WebService application server, select **WebService** and enter the base URL `https://host` as server name, replacing `host` with the application server's host name.
6. Click the **Service Logging** tab and repeat the configuration described above. Select **Native** and specify port 4445. Activate service logging and select your log level.
7. Select **File > Save All** and close the configuration program.
8. Restart the XBOUND Platform Service. (There are instructions on page 61.)

## Configuring HTTP

If you selected **Native** binding (see step 5 in the previous section), you can skip this section and continue with "Initializing the XBOUND platform" on page 34.

If you are using the WebService application server, these additional steps (described in detail below) are required:

- Enabling the HTTP path of the Platform Service user
- Registering the thumbprint of the SSL certificate

### Enabling the HTTP path of the Platform Service user

The HTTP path of the user under which the Platform Service is running must be enabled in the operating system. Use this procedure:

1. Log on as Administrator.
2. Open a command prompt and execute the following command:

```
netsh http add urlacl https://+:443/ user=<User>
```

Example:

```
netsh http add urlacl https://+:443/ user=ReadSoft\XboundTest1
```

## Registering the thumbprint of the SSL certificate

Because only HTTPS is supported, the thumbprint of the SSL certificate must be registered with the operating system. Use this procedure:

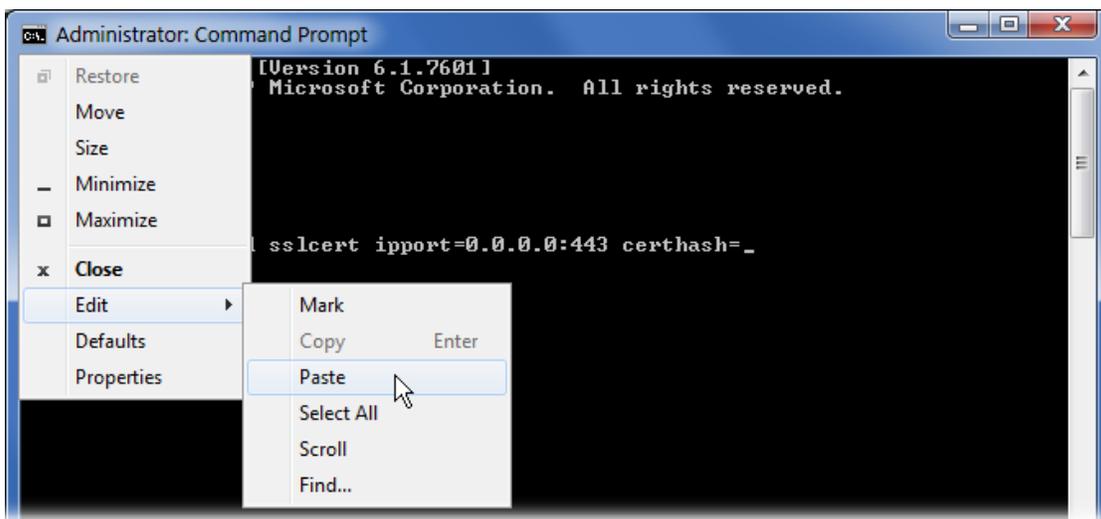
1. Click the Windows **Start** button.
2. Type `mmc.exe` and press **Return**. Microsoft Management Console (MMC) is displayed.
3. In the MMC console, select **File > Add/Remove Snap-in**. The **Add or Remove Snap-ins** dialog is displayed.
4. In the left side of the dialog, select **Certificates** and click **Add**. The **Certificates snap-in** dialog is displayed.
5. Select **Computer account** and click **Next**. The **Select Computer** dialog is displayed.
6. Accept the default setting (**Local computer**) by clicking **Finish**.
7. Click **OK** to close the **Add or Remove Snap-ins** dialog.
8. Under **Console Root**, expand **Certificates (Local Computer)**.
9. Expand **Personal** and select **Certificates**.
10. Under **Issued To**, double-click the certificate. The **Certificate** dialog is displayed.
11. On the **Details** tab, scroll down and click **Thumbprint**. The thumbprint code is displayed in a box, where you can select and copy it.
12. Return to the command line and execute the following command, replacing `<thumbprint>` with the thumbprint you copied:

```
netsh http add sslcert ipport=0.0.0.0:443 certhash=<thumbprint>
appid={00000000-0000-0000-0000-000000000000}
```

Example:

```
netsh http add sslcert ipport=0.0.0.0:443
certhash=817ee3a4c95ab5536c720cfa5d24d360c9d4e796 appid={00000000-0000-0000-
0000-000000000000}
```

**Tip:** Use the menu to paste in the thumbprint:



## Initializing the XBOUND platform

The below procedure does three things:

- It adds activities to the **Activities** area (the right pane) in the Process Designer. (Activities can of course be added manually, as well, using the procedure described on page 50.)
- It makes XBOUND collectors available in the **Tools > Collectors** menu in the Process Designer. (Collectors can of course be added manually, as well – see *XBOUND Help* topic “Adding a collector”.)
- It starts the Security Wizard, where you can (optionally) set up role-based privileges.

Follow these steps:

1. Start XBOUND Management Center by selecting **Start > All Programs > ReadSoft > XBOUND > XBOUND Management Center**.
2. Load the Process Designer plug-in.
3. Select **Tools > Initialize Platform**.
4. Click the **XML file** folder icon next to the edit box.
5. Select **xboundInitialize.xml** and click **Open**.
6. Click **OK**. A confirmation message is displayed.
7. Click **OK** again.
8. The Security Wizard starts automatically. Here you can (optionally) set up role-based privileges. If needed, press **F1** for help.
9. Close the XBOUND Management Center.

## Initializing RCF data

If you installed ReadSoft Capture Framework, use this procedure to “migrate” the database for ReadSoft Capture Framework. Among other things, this procedure adds the RCF activities to the **Activities** area (the right pane) in the Process Designer.

1. Open the XBOUND installation folder.
2. In the `xboundOcfMigration.cmd` file, adjust the connection parameter.
3. Ensure that all processes are checked in, and exit XBOUND Management Center.
4. Execute the `xboundOcfMigration.cmd` file. After it runs, you should see a message like “Migration successfully completed.”

If execution is not successful, adjust the connection parameter and try again.

5. After successful execution, restart XBOUND Management Center and add the Validation Designer plug-in:
  - a) Click the **Add/remove Plug-ins** button . The **Add or Remove Plug-Ins** dialog is displayed.
  - b) Click the **New Plug-In** button  below the left pane.
  - c) Select the DLL file for the Validation Designer (`XBOUNDPlugInOcfValidationDesigner.dll`) and click **Open**.

- d) Click the arrow (➡) to move the plug-in to the right pane. The **XBOUND Connection Assistant** dialog is displayed.
- e) To use the default connection settings, click **Next**.
- f) Click **Finish**.

## Setting up licensing

Licenses are necessary for using XBOUND in production. They are managed by the XBOUND license server using a separate database.

There are different types of licenses:

- A volume license counts pages. (Front page + back page counts = two pages.) These two types of volume licenses are sometimes combined:
  - Annual volume license: A specific annual volume is purchased. Each year the volume is automatically reset on the purchase date to the initial value, regardless of how many pages were processed.
  - One-time volume license: A specific volume is purchased without an expiration date. When the volume is used up, a new license must be purchased.
- Non-volume license: This type of license is purchased once and is always valid (regardless of the volume and time).

**Important:** License files cannot be reused. DO NOT remove a license that has already been loaded!

Use the below procedures to install the license server and apply your licenses.

### Installing the license server

1. Follow the XBOUND installation procedure described on pages 10–12. In step 11, select only **XBOUND License Service** for installation.
2. Start the XBOUND License Service. (There are instructions on page 61.)

### Applying a preliminary license file

**Warning:** Do not apply the license before the platform and database are initialized as described on pages 34–34.

A preliminary license file is included with the delivery of XBOUND. It is valid for 30 days from the date of issue. This enables you to immediately start production and gather the information that Lexmark needs to create the permanent license file (see “Requesting a permanent license file” on page 36).

Use this procedure to import the preliminary license file:

1. Start XBOUND Management Center by selecting **Start > All Programs > ReadSoft > XBOUND > XBOUND Management Center**.
2. Load the License Information plug-in.
3. Click **Add License** ()
4. In the **License Server Address** box, enter the base URL to the license server in this format, replacing `host` with the license server's host name: `tcp://host:3333`

You can enter base URLs to more than one license servers separated by the pipe symbol ( | ) in order to provide a backup. Example: `tcp://host1:3333 | tcp://host2:3333`  
In this case, the license server on `host1` is tried first. If it fails, the license server on `host2` is used.

5. In **XBOUND License File**, select the preliminary license file that you received from Lexmark and click **OK**.
6. A dialog is displayed where you enter details for connecting to the license database. Enter all necessary data. Then click **Check connection** to ensure that connection succeeds. If so, click **OK**. Otherwise, check the details that you specified and try again.
  - 📘 **Note:** If you are using Windows authentication (recommended), be aware that this connection test is done from your Windows session. Make sure that the user who runs the XBOUND License Service is authorized to access the database.
7. Click **OK**. A message is displayed, saying that the license file was loaded successfully.

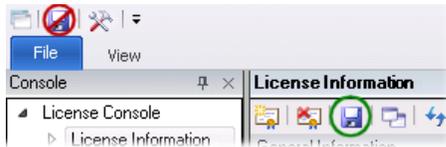
## Requesting a permanent license file

The preliminary license file is valid for 30 days after its date of issue. Check the expiration date by selecting **Help > License information** in the XBOUND Process Designer.

- 🚫 **The permanent license file must be loaded by the expiry date to avoid interrupting production. Therefore, request a permanent license file from Lexmark without delay.**

Request your license file as follows:

1. Start XBOUND Management Center by selecting **Start > All Programs > ReadSoft > XBOUND > XBOUND Management Center**.
2. Load the License Information plug-in.
3. Click **Save license information**:



4. In the dialog that is displayed, click **Save** to save `xboundLicenseInformation.xml`.
5. Email the `xboundLicenseInformation.xml` file to Lexmark.

## Loading the permanent license file

- 🚫 **Warning:** Do not apply the license before the platform and database are initialized as described on page 34.

Load the permanent license file as soon as you receive it. Use this procedure:

1. Start XBOUND Management Center by selecting **Start > All Programs > ReadSoft > XBOUND > XBOUND Management Center**.
2. Load the License Information plug-in.
3. Click **Add License** (  ).
4. In **XBOUND License File**, select the permanent license file that you received and click **OK**.
5. Check the license by selecting **Help > License information** in the XBOUND Process Designer.

## Installing XBOUND clients

The server-side XBOUND components are now installed and ready to process requests from *XBOUND clients*, which are services and applications that process documents in the XBOUND system. The following sections describe how to install these services and applications.

### Installing XBOUND services

The XBOUND services manage all non-interactive processes within XBOUND. Use this procedure to install them:

1. Follow the XBOUND installation procedure described on pages 10–12. In step 11, select for installation all XBOUND services and all subcomponents *except* Platform Service and License Service.
2. Assign an application server. The procedure is the same as on the administration workstation (see page 32).
3. Start the following services. (There are instructions on page 61.)
  - o XBOUND Collect Service
  - o XBOUND Activities
  - o XBOUND System Agent Service
  - o XBOUND Web Application Service (if Web Verification is to be used – see page 38)

If any of these services does not start because of an incorrect login, open the service in the service manager and reenter the [XBOUND user account](#) data. Then restart the services.

#### If one of the services stops immediately

1. Move the XBOUND user to the group of the application server's local administrators. (In the case of the Collect Service, it is enough to move the XBOUND user to the group of main users.)
2. Restart the service.

### Installing an XBOUND workstation

The interactive processes with documents are done at XBOUND workstations. Install each XBOUND workstation as follows:

1. Run the XBOUND software setup as described in “Installing XBOUND” on page 10. Select **XBOUND Clients** and all subcomponents *except* XBOUND Process Designer and XBOUND Process Monitor Client.
2. Assign an application server. The procedure is the same as on the administration workstation (see page 32).

## Post-installation tasks

### Setting up Web Verification (part of RCF)

1. We recommend using HTTPS for secure communication. In that case, you must install a certificate – see “Registering the thumbprint of the SSL certificate” on page 33.
2. Add these web applications in XBOUND:

- `xboundAppFramework.dll`
- `xboundAppWebVerifier.dll`

Use this procedure:

- a) Using the XBOUND Management Center, open a console containing the Process Designer.
  - b) Select **Tools > Manage Web Applications**. The **Manage Web Applications** dialog is displayed.
  - c) Click the plus button (+) to add a web application. The **New Web Application** dialog is displayed.
  - d) Select the first DLL (`xboundAppFramework.dll`) and click **OK**.
  - e) Click the plus button (+) again.
  - f) Select the second DLL (`xboundAppWebVerifier.dll`) and click **OK**.
  - g) Click **OK** again to save the changes.
3. It may be necessary to edit the configuration file of the XBOUND Web Application Service.

File name: `xboundWebApplicationService.exe.config`

Default location: `C:\Program Files (x86)\ReadSoft\xbound\app`

Check the following keys in that file (shown here with their default values):

```
<add key="Xbound.Services.ApplicationServerBaseAddress" value="http://+/" />
<add key="Xbound.Services.ApplicationServerFileSystem" value="C:\Program
Files\ReadSoft\xbound\app" />
```

`ApplicationServerBaseAddress`: If you use HTTPS, replace `http` with `https` in the value. If you use non-default ports, specify your port as follows: `value="http://+:8080/"`

`ApplicationServerFileSystem`: This specifies the `app` path of the web application. The XBOUND installation program creates the `app` folder directly in the XBOUND installation folder. If XBOUND is not installed in the default location, this value must be changed.

4. Restart the XBOUND Web Application Service.

To access Web Verification, open a web browser and enter the URL:

`https://ApplicationServerName/app/#verification`

...where `ApplicationServerName` is the fully qualified name of the server where the XBOUND Web Application Service is running.

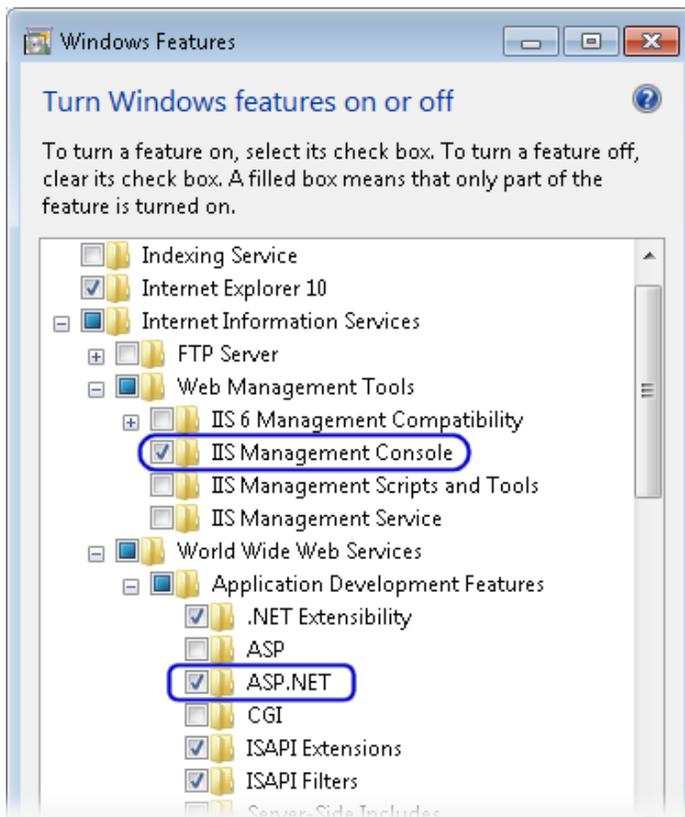
Instructions for using Web Verification are found in separate online help that can be accessed from that application.

## Setting up XBOUND for mobile apps

The following procedures are needed if Mobile Rescan or Monitoring is to be used with XBOUND. The instructions assume a Microsoft Windows 7 operating system. The actual steps vary according to the operating system.

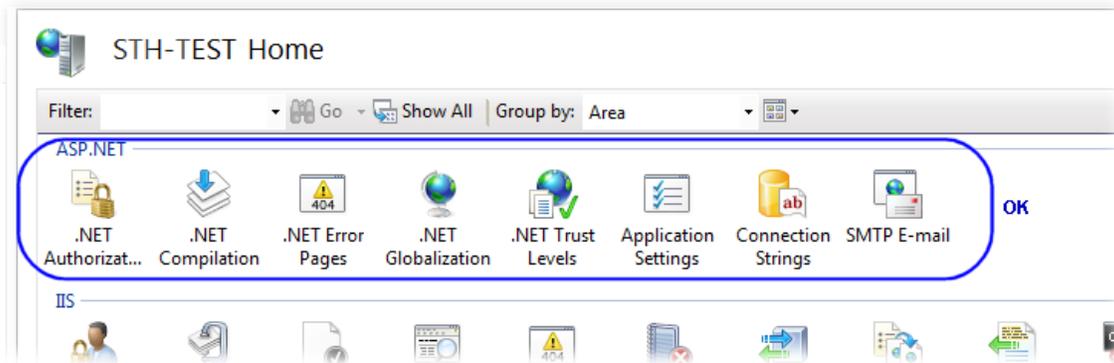
### Activate and configure IIS

1. Select **Control Panel > All Programs > Windows Features > Turn Windows Features on or off**.
2. Expand **Internet Information Services > Web Management Tools** and select **IIS Management Console**.



3. Expand **World Wide Web Services > Application Development Features** and select **ASP.NET**.
4. Click **OK** to close the **Windows Features** dialog.
5. Select **Control Panel > System and Security > Administrative Tools > Internet Information Services (IIS) Manager**.

6. In the **Internet Information Services (IIS) Manager** dialog, ensure that there is an **ASP.NET** section:



7. In the right panel (under **Actions**), click **Change .NET Framework Version**.
8. In the dialog that is displayed, select **v4.0.30319**.
9. Click **OK** to close the **Change .NET Framework Version** dialog. (Keep the IIS Manager open for upcoming steps.)
10. Open a command prompt and execute the following commands to register .NET Framework for IIS:
- ```
cd C:\Windows\Microsoft.NET\Framework\v4.0.30319
aspnet_regiis.exe -i
```
11. After completion of the ASP.NET installation, close the command prompt.

## Set up xboundWebService as an application in IIS

1. If you are performing these steps on a 64-bit computer:
  - a) In the **Internet Information Services Manager (IIS)** dialog, in the right panel (under **Actions**), click **View Application Pools**.
  - b) Right-click **ASP.NET v4.0** and select **Advanced Settings**.
  - c) Set **Enable 32-Bit Applications** to **True**.
  - d) Click **OK** to close the dialog.
2. Using Windows Explorer, copy the `xboundWebService` folder from the XBOUND installation path (normally `C:\Program Files\ReadSoft\XBOUND`) to `C:\inetpub\wwwroot`.
3. In the **Internet Information Services Manager (IIS)** dialog, in the left panel (under **Connections**), expand **Sites**.
4. Right-click **xboundWebService** and select **Convert to Application**. There is nothing more to do in the dialog that is displayed; click **OK** to close it.  
(If `xboundWebService` is already converted to an application, the command is not visible, and you can skip this step.)
5. Right-click **xboundWebService** and select **Manage Application > Advanced Settings** (or **Manage Web Site > Advanced Settings**).
6. Select **Application Pool** and click  to open the **Select Application Pool** dialog.

7. Select **ASP.NET v4.0** and click **OK**.
8. Select **xboundWebService** in the left pane (under **Connections**).
9. In the middle pane, double-click **Connection Strings** in the **ASP.NET** section.
10. Double-click **Xbound.Server.XboundDB** to open the **Edit Connection String** dialog.
11. Select **SQL Server** and specify the location and name of the main XBOUND database. (If you are using an Oracle or DB2 database, this step and the next one are a little different.)
12. If the database is set up to use Windows Authentication, select **Windows Integrated Security**. Otherwise, select **Specify credentials**, click **Set**, and specify the user name and password.
13. Test the function by using a local browser to visit this address:

<http://localhost/xboundWebService/Mobile.aspx>

The **WebMobile** page should display a list of operators.

14. Test the function from another computer by visiting this address (replacing *ComputerName* with the name of the computer where you configured Mobile Rescan):

<http://ComputerName/xboundWebService/Mobile.aspx>

 **Note:** The firewall on the computer where the web service is running must be correctly configured. (Http must be permitted.)

15. If HTTPS is to be used, install a certificate and configure IIS to use the certificate.

## More on Monitoring

- You must possess a valid XBOUND SLA Reporting license.
- In order to see the log messages, you must add this entry to the C\_DBInfo table in the main XBOUND database:  
Item=LoggingServer  
Val=the Platform service by which the log messages are retrieved, for example  
tcp://localhost:4445
- The Platform service that retrieves the log messages must be active.
- Microsoft Windows 8.1 is required on the mobile device.
- In order to find the app in the Store, the **Region** of the mobile device must be set to United Kingdom.

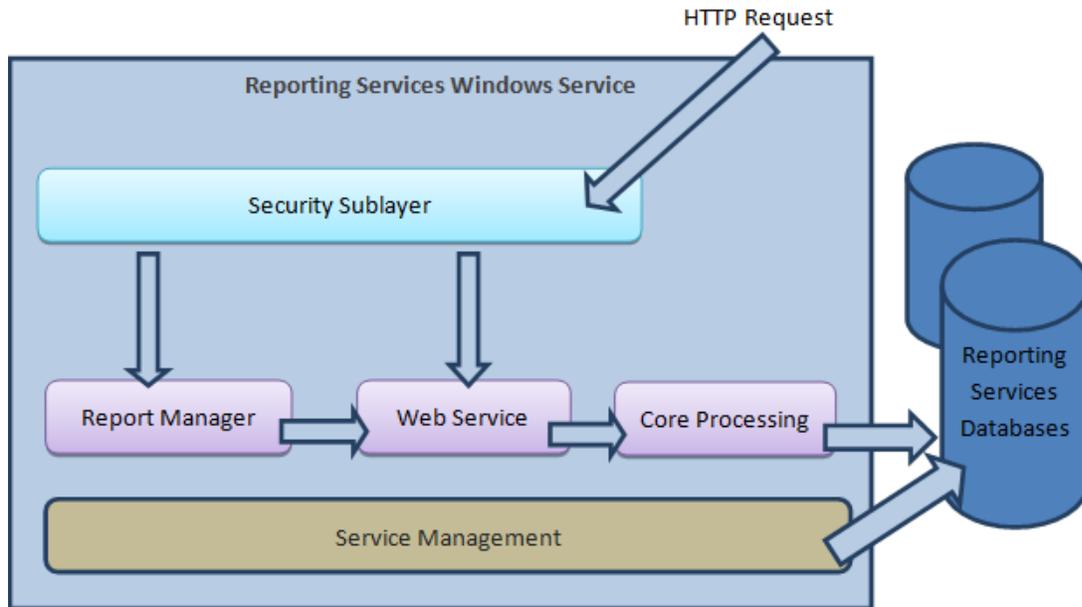
For further information please see the [Microsoft app web page](#).

## Setting up the report server for viewing SSRS-based reports in XBOUND

*Reports* is one of the XBOUND Report Manager's two sub-programs. Based on Microsoft SQL Server Reporting Services (SSRS), it is directly linked to the report server and displays reports from the specified folder.

If you want to view these reports in XBOUND, use the below setup procedure described further below. SSRS is required.

### Schematic of the Reporting Services Windows service



The **security sublayer** is responsible for determining the requestor's identity and whether the user has the required rights for the request to be fulfilled.

All requests sent via HTTP are targeted to the **Report Manager** and the **Web Service** applications. Both applications are hosted from within the Reporting Services Windows service.

Reporting Services' **core processing** features – scheduling, subscription management, delivery and reporting processing – are performed by a collection of components hosted within the Reporting Services service.

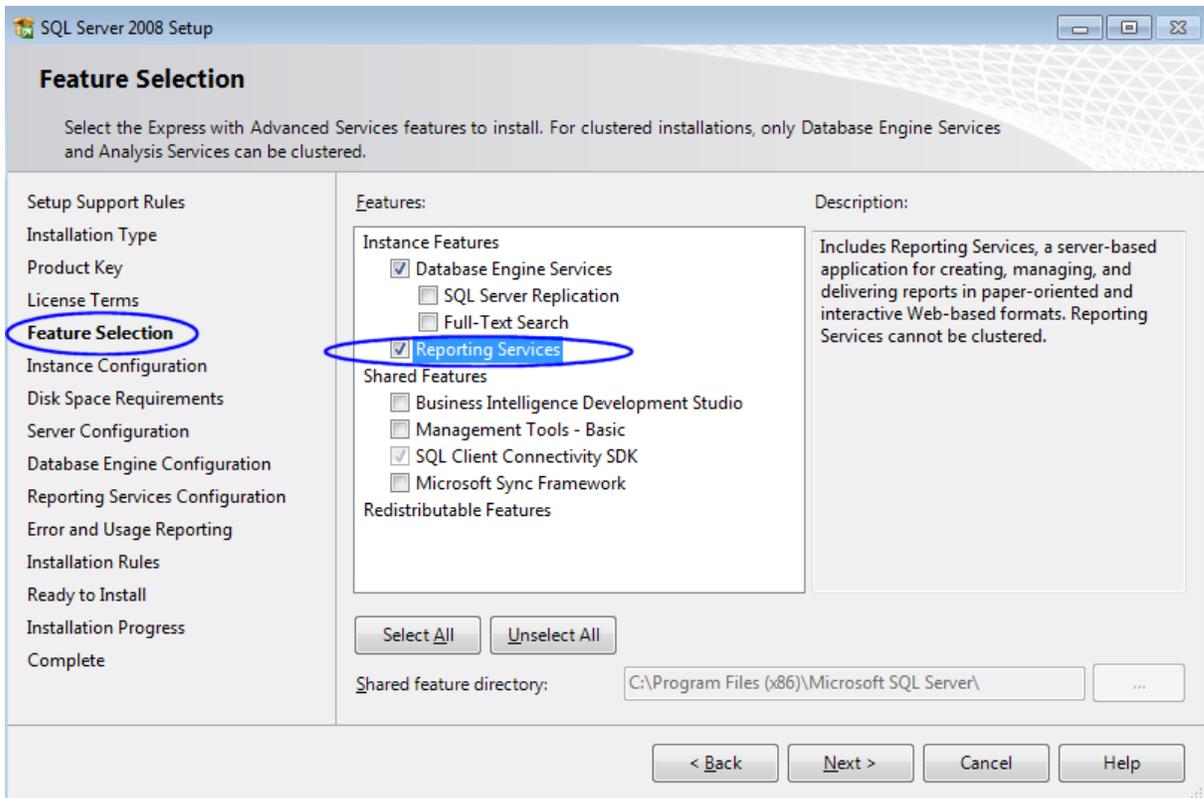
**Service Management** ensures that resources are available and that the service works properly.

## Setting up Microsoft SQL Server

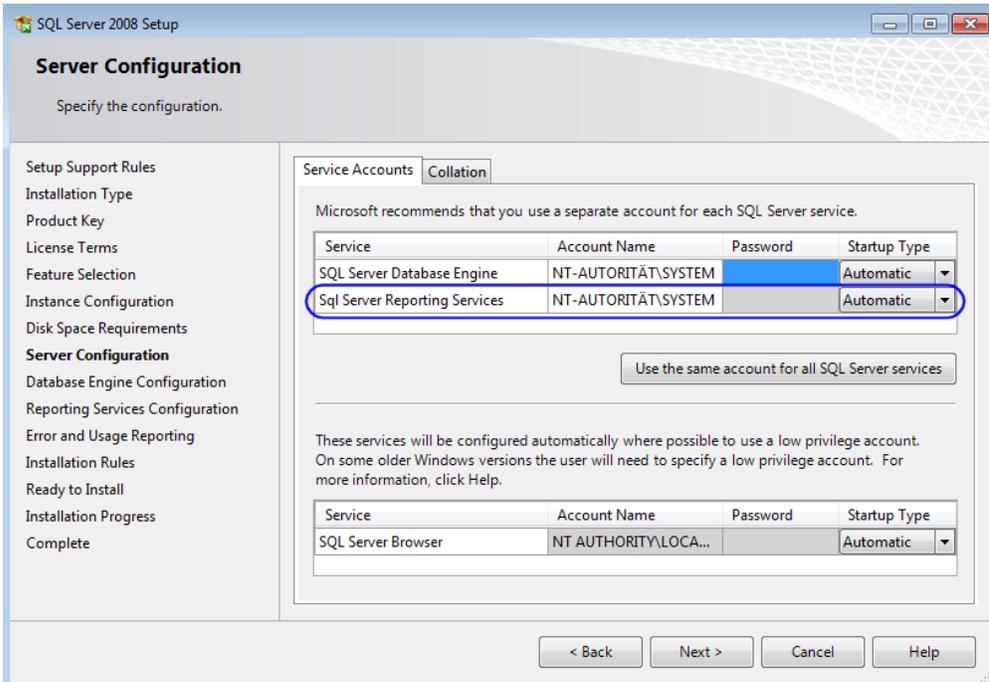
Reporting Services is included in all versions of Microsoft SQL Server version 2005 and later. If you use the Express Edition, select the version with Advanced Services.

Install SQL Server according to the instructions from Microsoft, also taking into consideration the following details:

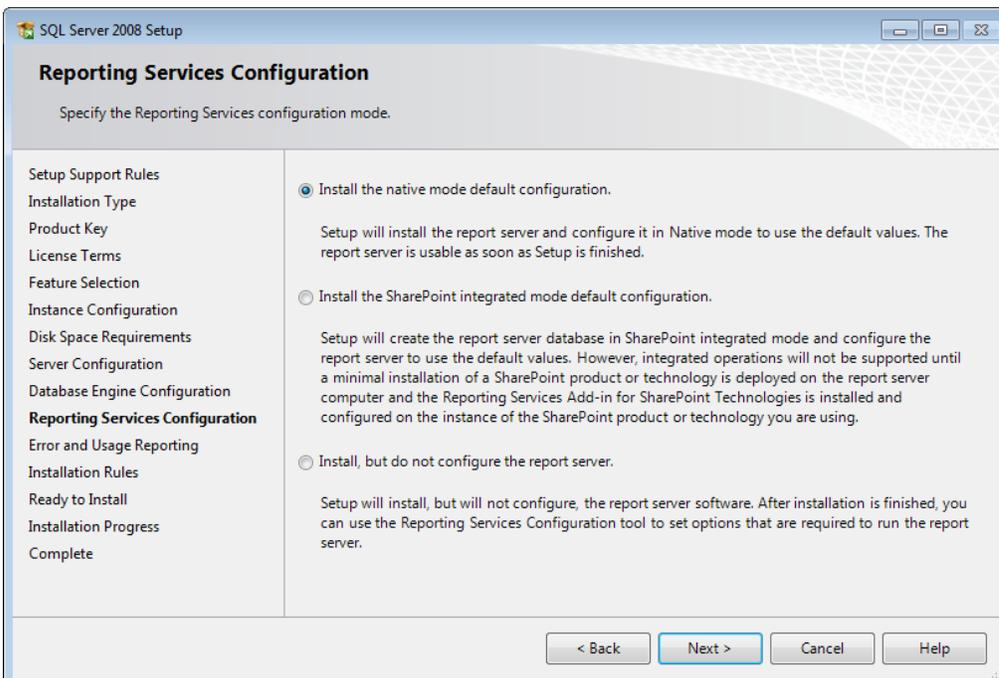
- Be sure to select **Reporting Services** in **Feature Selection**:



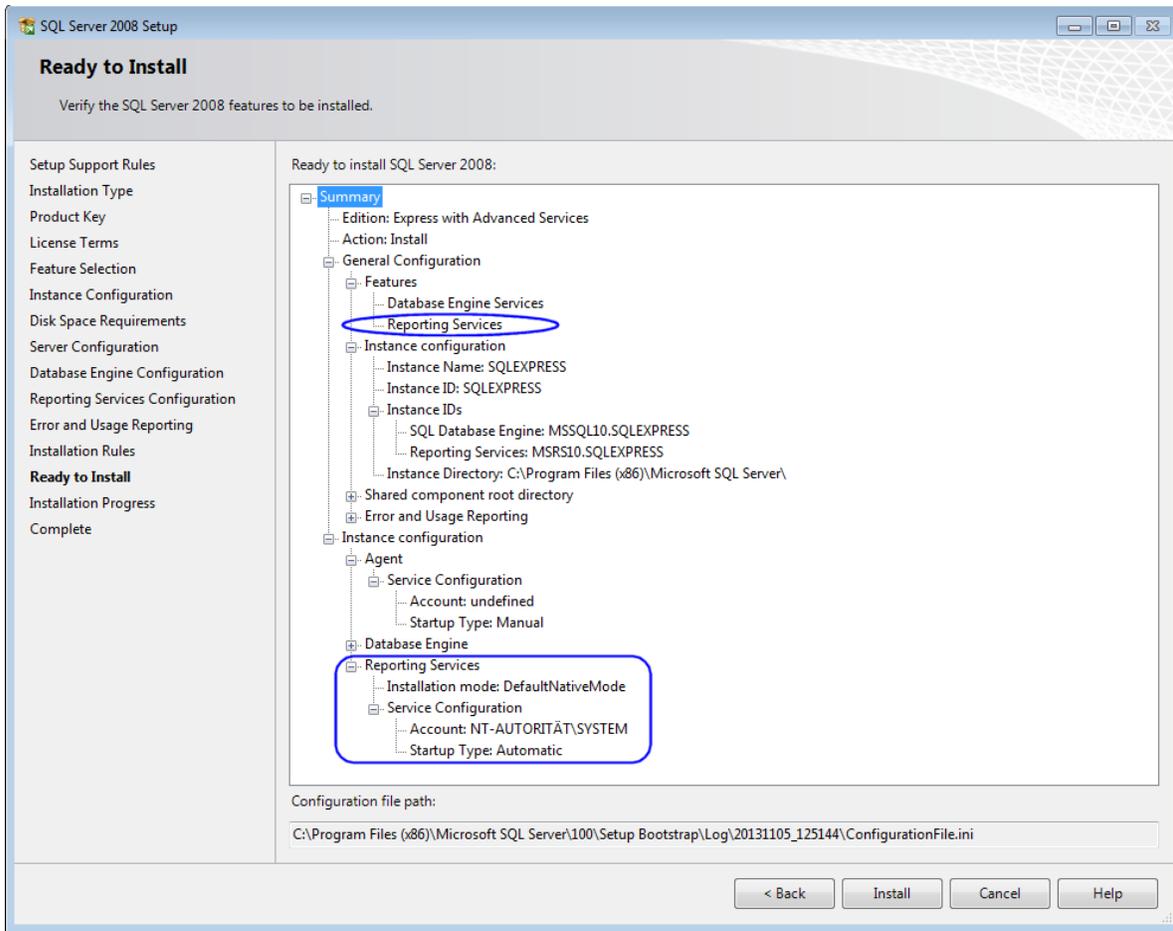
- Configure the service accounts to be used for each service to be installed. It is generally recommended that you use the local service or (generated) network service accounts for the **SQL Server Database Engine** and **SQL Server Reporting Services** Windows service. If needed, you can change the service account after installation.



- In **Reporting Services Configuration** you can select from three installation options. For most basic installations, the best choice is **Install the native mode default configuration**.



- In **Ready to Install**, review the selected options carefully:



## About SSRS Report Manager

SSRS Report Manager is a web-based report access and management tool that allows you to:

- View, search, and subscribe to reports
- Create and manage folders, linked reports, report history, schedules, data source connections, and subscriptions
- Set properties and report parameters
- Manage role definitions and assignments that control user access to reports and folders

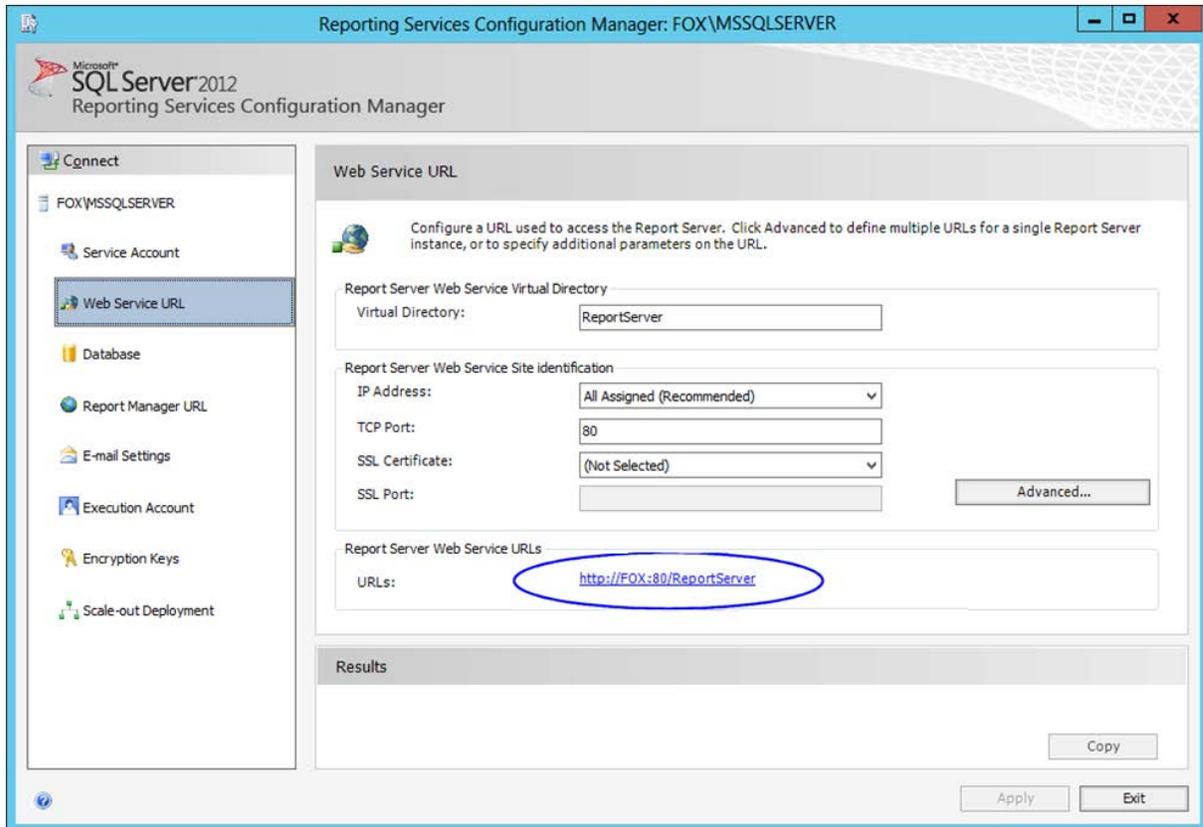
SSRS Report Manager provides access to your report server via web pages and controls. There are pages for viewing items, setting properties, and creating and modifying subscriptions, schedules, shared data sources, and roles. You access items that are stored in a report server by navigating the folder hierarchy and clicking items to view or update.

Depending on how you configure role assignments, viewing and navigation operations can be exposed to users who have minimal access to a report server. Management features are available to users who have appropriate permissions.

**Tip:** You can also perform management operations using Microsoft SQL Server Management Studio.

## Setup procedure

1. Start SSRS Configuration Manager.
2. The server name and instance of the SSRS server are displayed in the **Reporting Services Configuration Connection** dialog. You can change them if they are not correct for some reason.
3. Click **Connect**.
4. Click **Web Service URL** in the navigation pane (on the left) of the Configuration Manager.



5. In SSRS, URLs are used to access the Report Server Web Service and [SSRS Report Manager](#). Before you can use either application, you must configure at least one URL each for the web service and SSRS Report Manager.

If you installed the default configuration, URLs were created automatically using the default values. If not, you must configure a URL for the Report Server Web Service by specifying all of the fields in the above dialog. For more information how to configure a URL, please see <http://technet.microsoft.com/en-us/library/bb630447.aspx>.

## Creating a role assignment

In SSRS, *role assignments* determine access to stored items and to the report server itself. A role assignment consists of:

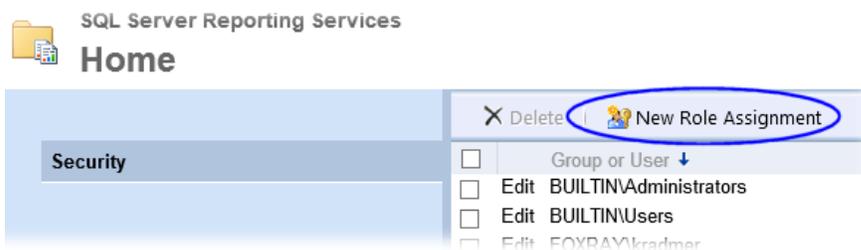
- A securable item for which you want to control access. Examples of securable items include folders, reports, and resources.
- A user or group account that can be authenticated by Windows security or another authentication mechanism.
- Role definitions that define a set of tasks.

Role assignments are inherited within the folder hierarchy. The role assignment that is defined for a folder is automatically inherited by all reports, shared data sources, resources, and subfolders contained within that folder.

Each user who requires access to a report server must have a role assignment that defines the level of access. You can create role assignments at the root node, or on a specific report, model, folder, resource, or shared data source.

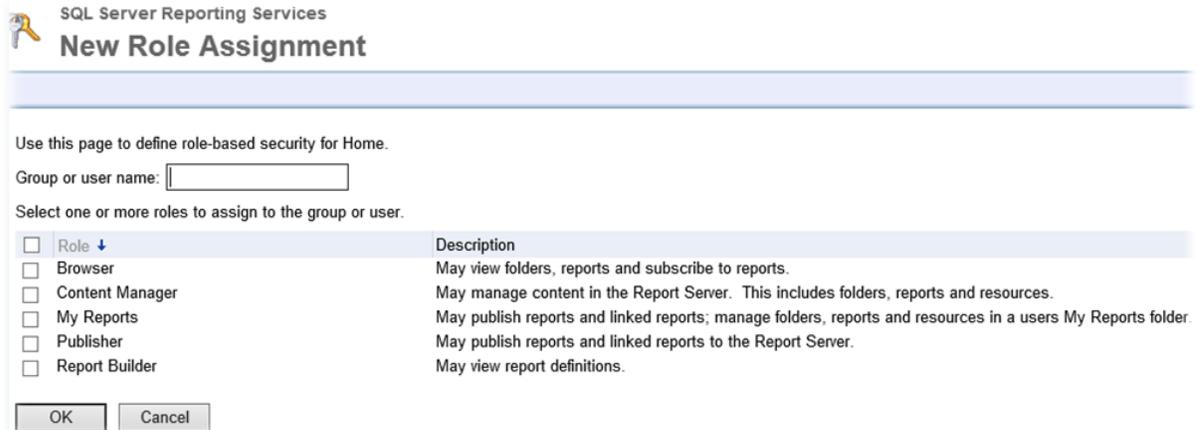
SSRS security is enforced through role assignments that you apply to items. A role assignment matches a group or user to a role definition, where each role definition identifies the tasks that groups or users can perform with regards to a specific item.

1. Using SSRS Configuration Manager, click **Report Manager URL** in the navigation pane (on the left).
2. If needed, configure or modify the URL used to access SSRS Report Manager. By default, the prefix, IP address, and port of the Report Server Web Service URL are inherited.
3. Click the URL to access [SSRS Report Manager](#), which opens in the default browser. (You can also access the Report Manager by typing its URL in the address bar of a browser.)
4. Click **Folder Settings**.
5. Click **New Role Assignment**.



6. To perform an action against a Reporting Services item, you must have permission to do so. Reporting Services supports a fixed set of permissions associated with each type of item. To simplify things, Reporting Services organizes these permissions into a more condensed set of item-level tasks:
  - Browser (for running reports and navigating through the folder structure)
  - Content Manager (for defining a structure for storing reports and other items, setting security at the item level, and viewing and managing the items stored by the server)
  - Report Builder (for building and editing reports in Report Builder)
  - Publisher (for publishing content to a report server)
  - My Reports (for build reports for personal use or storing reports in a user-owned folder)

Create the role assignments that suit your organization.



## Uploading reports to a report server

Use this procedure to add reports (.rdl files) to the report server:

- Using SSRS Configuration Manager, click **Report Manager URL** in the navigation pane (on the left). Then click the URL.

Alternatively, access the Report Manager by typing its URL in the address bar of a browser.

- Most Reporting Services items are housed within a folder hierarchy. This provides a simple, familiar structure for organizing content. To create a folder for the reports, click **New Folder**. Then type a folder name and click **OK**.



- Click **Upload File**.
- Type a new name for the item, for example Backlog Report or Processing Report.
- Click **Browse** and navigate to the location of the reports that are provided with XBOUND. By default, they are located in this folder:

C:\Program Files (x86)\ReadSoft\xbound\Reports

6. Select the desired report and click **Open**.



7. Click **OK**.

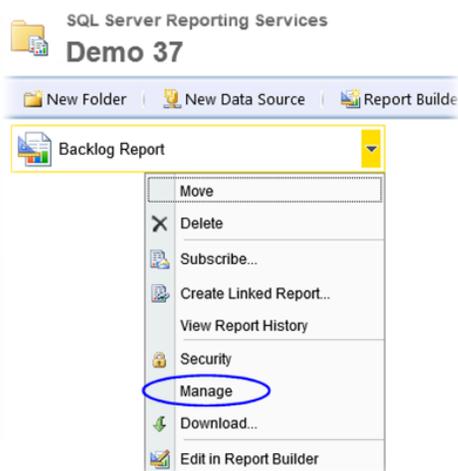
## Adjusting report properties

After a report is published, check the properties that specify:

- The text that appears in the XBOUND Report Manager user interface.
- How users access the report.
- How the report server connects to external data sources. (The connection string is important because it establishes the initial connection to an external data source. You must change the connection string if you move a data source to another computer, or if you created reports using test data but you want to deploy the reports with a production database. See screenshot on page 50.)
- Whether the report runs on demand or on a schedule.

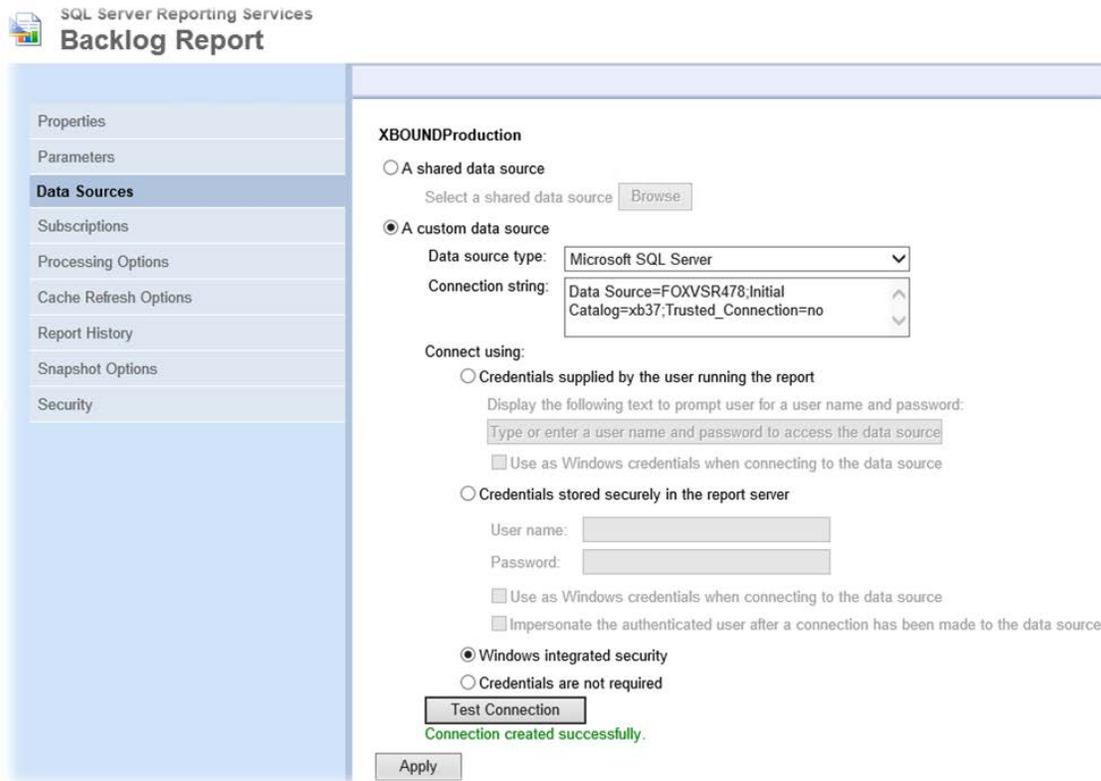
Use this procedure:

1. Still using SSRS Report Manager, click the drop-down arrow of a report and select **Manage**.



2. Adjust the properties as desired.

For example, if needed, adjust how the report connects to its data source: Click **Data Sources** in the left pane and define how the current report connects to an external data source.



## Adding reports in XBOUND

Before SSRS-based reports can be viewed for the first time, you must add them to XBOUND using the XBOUND Reports plug-in. Please refer to the *XBOUND Help* topic “Setting up a report to display in the Reports plug-in” for instructions.

## RCC Document Capture

### Adding activities to the Process Designer

If you need them, these RCC Document Capture activities must be added manually to the Process Designer:

- Knowledge Processing – `xBoundActivityKSFeedback.dll`
  - **Knowledge Processing must be added first. The others can be added in any order.**
- Classification – `xBoundActivityDU.dll`
- Inspection – `xboundActInspectClient.dll`
- Interpretation – `xboundActExtract.dll`
- (The Import Solution activity will be added in a different way – see the next section).

Use the this procedure:

1. Create an XBOUND Process Designer console:
  - a) Start the XBOUND Management Center by selecting **Start** menu > **All Programs** > **ReadSoft** > **ReadSoft XBOUND Management Center**.
  - b) When the Management Center is displayed, click the link for adding a new console.
  - c) Double-click **Process Design**.
2. In the Process Designer, select **File** > **New Activity**.
3. In the **Choose Activity Group** dialog, select an activity group to add the new activity to. (The far right pane of the Process Designer is divided into different activity groups.)
4. In the **New Activity** dialog, after **Path to DLL**, select the path to the DLL file containing the activity. Then the system fills in the name, version, and class name. Adjust the other settings if desired.
5. Click **OK**.
6. Assign the activity to at least one instance of the XBOUND Activities Service.

### Adding the Import Solution activity to the XBOUND global parameter set

1. Using the XBOUND Process Designer, select **Tools** > **Global Parameter Sets**.
2. Right-click in the left pane and select **New Activity**.
3. In the dialog that is displayed, select `xBoundActDOXImport.dll` and click **Open**.

This registers the Import Solution activity in XBOUND. It can now be used in all clients and processes.

 **At this point, close all programs and reboot the computer.**

## RCC Administration

### User authorization

RCC Administration has a user authorization system (login system) that is disabled by default. The default user **Administrator**, which has no password, should be deleted after you set up your own users. Adjust user management settings according to instructions in *Capture Components Administration Help*.

### Additional setup

The *Capture Components Administration Help* topic “Setting up the system after installation” describes the necessary steps.

 **Tip:** To view online help at any time while using RCC Administration, press **F1**. You can also access help by selecting **Start** menu > **All Programs** > **ReadSoft** > **Capture Components** > **Admin Help**.

## Knowledge Processing

Follow the instructions below if your XBOUND system includes Knowledge Processing (described on page 5).

### Starting the Knowledge Processing Service

Initially, you must start “ReadSoft Knowledge Processing Service” on the server where you installed it. (See instructions on page 61). After that, the service should restart automatically if the PC is rebooted.

❗ **Important:** As stated under “Prerequisites” on page 9, the ReadSoft Knowledge Processing service must run on a 64-bit operating system.

### Enabling Knowledge Processing

Activate Knowledge Processing in the **Global policies > Persistence policy** dialog. Please refer to the *Capture Components Administration Help* topic “Using Knowledge Processing to aid extraction.”

## Upgrading from Version 3.x

The current release allows an upgrade from any XBOUND 3.x version (3.0, 3.1, etc.). Older XBOUND installations must be updated to a 3.x version before upgrading to this version.

The upgrade process is divided into these procedures, which are described in the sections that follow:

1. Preparing to upgrade.
2. Stopping the production process
3. Backing up the databases
4. Installing the new software
5. Upgrading the databases
6. Updating an ABBYY installation
7. Migrating the database contents.
8. Continuing the production process.

### Preparing to upgrade

If you run XBOUND in production, plan the upgrade carefully. It is important to note the following:

- Before the upgrade is scheduled, all processes run by XBOUND should be thoroughly tested in a test system of the new version to resolve possible questions or problems before upgrading. Budget and schedule these tests sufficiently.
- Production must be stopped before the upgrade begins. Plan the production stop and give all XBOUND users sufficient notice. Do not forget remote users.
- A complete database backup should be done before upgrading. Ensure that all media for saving and recovery (storage medium, backup tools, etc.) are kept ready.

## If upgrading RCC Document Capture

Recommended: Save a copy of the `ReadSoft.Du.KnowledgeStore.Service.exe.config` file in your existing installation. By default, the file is located in `C:\Program Files (x86)\ReadSoft\Capture Components`.

 The above file is overwritten during the upgrade process. Therefore, do not skip that step unless you know that you are using a default version of the file.

If upgrading a previous version of RCC Document Capture, you will need to know the names, location, passwords, and type of authentication of *all of the databases used by your system*:

Required databases:

- XBOUND database<sup>6</sup>
- License database
- Logging database
- RCC configuration database
- RCC production database

Optional databases:

- Statistics database
- Audit trail database
- Knowledge Processing database

## Stopping the production process

Before upgrading, production must be stopped:

1. Give all users sufficient notice about stopping the production process.
2. If RCC Document Capture is included in the upgrade, process or delete all documents in your XBOUND system.
3. Recommended if RCC Document Capture is included in the upgrade: Back up the installed XBOUND processes and Capture Components solutions.
4. Exit all XBOUND clients, application servers, and related programs including RCC applications and RCC Administration.
5. Stop all XBOUND-related Windows services. (There are instructions on page 61.) Do not forget the ReadSoft Knowledge Processing Service and the XBOUND WebService, if used.

## If upgrading RCC

1. Using Windows **Control Panel > Add or Remove Programs**, uninstall ReadSoft Capture Components (Document Capture).

---

<sup>6</sup> These first three databases are sometimes combined into a single database – see page 20.

## Backing up the databases

- 🔴 **Back up all XBOUND-related databases, including the Knowledge Processing database, if used.**

## Installing the new software

Using the setup program, update the software on all computers where the old XBOUND version was running. Follow the on-screen instructions.

- 📘 **Note:** During an upgrade you must run the Custom installation and *manually select* all of the components you need, including third-party components such as ABBYY or RecoStar. For RCC Document Capture you must install OmniPage.

Then, if it was not done in advance, set up licensing (see “Setting up licensing” on page 35).

## Upgrading the databases

### Upgrading the XBOUND database (main database)

- 🔴 **Important:** In order to upgrade an IBM DB2 database from a version older than 3.7 to 3.9, both the main database and the statistics database must have a page size greater than 4 KB. If the page size is smaller, no update is possible. (Note that the page size of an existing DB2 database cannot be changed, as IBM does not support this procedure.)

Select and execute one of the following SQL scripts on your XBOUND database, depending on the database supplier and previous XBOUND version. (Upgrading from 2.0 is not supported.) The scripts update tables, indices, and stored procedures corresponding to the new software. They are found in C:\Program Files\ReadSoft\xbound\Sql.

| To do this:                          | Use this script:                         |
|--------------------------------------|------------------------------------------|
| Upgrade from 3.8.2 on SQL Server     | XBOUND_update_3.8.2.0_3.9.0.0.sql        |
| Upgrade from 3.8.2 on Oracle         | XBOUND_update_oracle_3.8.2.0_3.9.0.0.sql |
| Upgrade from 3.8.2 on DB2            | XBOUND_update_db2_3.8.2.0_3.9.0.0.sql    |
| Upgrade from 3.8.1 SP1 on SQL Server | XBOUND_update_3.8.1.1_3.9.0.0.sql        |
| Upgrade from 3.8.1 SP1 on Oracle     | XBOUND_update_oracle_3.8.1.1_3.9.0.0.sql |
| Upgrade from 3.8.1 SP1 on DB2        | XBOUND_update_db2_3.8.1.1_3.9.0.0.sql    |
| Upgrade from 3.7.0.1 on SQL Server   | XBOUND_update_3.7.0.1_3.9.0.0.sql        |
| Upgrade from 3.7.0.1 on Oracle       | XBOUND_update_oracle_3.7.0.1_3.9.0.0.sql |
| Upgrade from 3.7.0.1 on DB2          | XBOUND_update_db2_3.7.0.1_3.9.0.0.sql    |
| Upgrade from 3.7 on SQL Server       | XBOUND_update_3.7.0.0_3.9.0.0.sql        |
| Upgrade from 3.7 on Oracle           | XBOUND_update_oracle_3.7.0.0_3.9.0.0.sql |
| Upgrade from 3.7 on DB2              | XBOUND_update_db2_3.7.0.0_3.9.0.0.sql    |
| Upgrade from 3.6 on SQL Server       | XBOUND_update_3.6.0.0_3.9.0.0.sql        |
| Upgrade from 3.6 on Oracle           | XBOUND_update_oracle_3.6.0.0_3.9.0.0.sql |
| Upgrade from 3.6 on DB2              | XBOUND_update_db2_3.6.0.0_3.9.0.0.sql    |
| Upgrade from 3.5 on SQL Server       | XBOUND_update_3.5.0.0_3.9.0.0.sql        |
| Upgrade from 3.5 on Oracle           | XBOUND_update_oracle_3.5.0.0_3.9.0.0.sql |
| Upgrade from 3.5 on DB2              | XBOUND_update_db2_3.5.0.0_3.9.0.0.sql    |

|                                |                                          |
|--------------------------------|------------------------------------------|
| Upgrade from 3.1 on SQL Server | XBOUND_update_3.1.0.0_3.9.0.0.sql        |
| Upgrade from 3.1 on Oracle     | XBOUND_update_oracle_3.1.0.0_3.9.0.0.sql |
| Upgrade from 3.1 on DB2        | XBOUND_update_db2_3.1.0.0_3.9.0.0.sql    |
| Upgrade from 3.0 on SQL Server | XBOUND_update_3.0.0.1_3.9.0.0.sql        |
| Upgrade from 3.0 on Oracle     | XBOUND_update_oracle_3.0.0.1_3.9.0.0.sql |
| Upgrade from 3.0 on DB2        | XBOUND_update_db2_3.0.0.1_3.9.0.0.sql    |

- Important:** If you have distributed tablespaces on Oracle, you must adjust the script accordingly before use. Change the `TABLESPACE_DATA` and `TABLESPACE_IND` variables on lines 2 and 3 of the script from `USERS` to your new tablespace names.

## Upgrading the RCC databases

When upgrading from ReadSoft Capture Components 1.2 or earlier to RCC 1.2.3, use the following procedure to upgrade the configuration and production databases.

- Note:** If upgrading RCC 1.2.1 or earlier, the Knowledge Processing database must be recreated. For help with migrating an existing Knowledge Processing database, contact your Lexmark representative.

1. Open Microsoft SQL Server Management Studio as database administrator.
2. Open this SQL script (for example using drag and drop) from the XBOUND installation directory:

```
\Capture Components\SqlScripts\Upgrade.sql
```

3. Replace the placeholder **\$(database)** with the name of the configuration database.
4. Replace the placeholder **\$(user)** with the name of the database user that will log in to the database.
5. Execute the script (press **F5**).
6. Change the database name to the name of corresponding production database.
7. Execute the script again.

## Adjusting the isolation level of SQL databases

Beginning with XBOUND 3.9, the isolation level of new XBOUND databases on Microsoft SQL Server is set to *snapshot*. After upgrading to 3.9, you can do this manually by running the below script. It should result in improved performance.

- Note:** You must have the appropriate rights and execute the script in single-user mode.

You can read more about the snapshot isolation level on [the MSDN website](#).

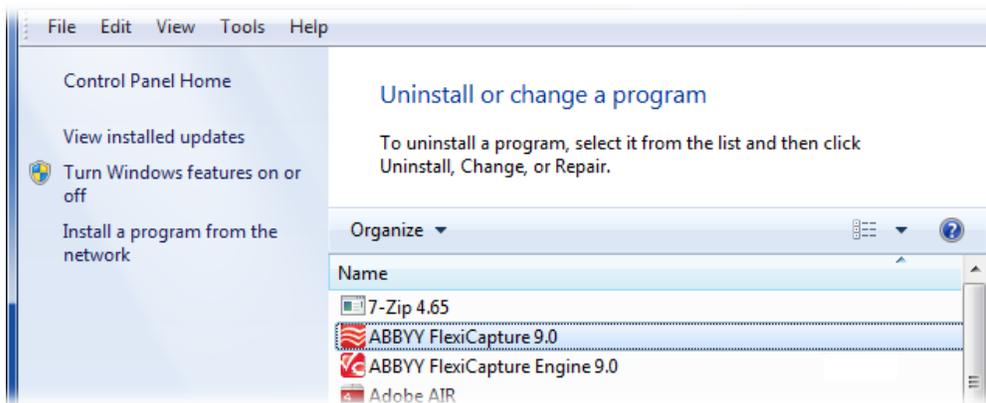
```
ALTER DATABASE Database_Name
SET ALLOW_SNAPSHOT_ISOLATION ON
go
ALTER DATABASE Database_Name
SET READ_COMMITTED_SNAPSHOT ON
Go
```

## Updating an ABBYY installation

This section describes what you must do before and after updating an ABBYY installation in connection with an update from XBOUND 3.6.0.1 to the most recent version. (These steps are not needed if you upgrade from XBOUND 3.6 R2 or later.)

### Before updating ABBYY

1. Uninstall ABBYY FlexiCapture 9.0 and ABBYY FlexiCapture 9.0 Engine (if you use it). Do this from the Windows **Control Panel > Add or Remove Programs**:



2. Uninstall ABBYY FineReader Engine 10 (if you use it):
  - o Stop the “ABBYY FineReader Engine 10 License Server” service. (There are instructions on page 61.)
  - o Uninstall the “ABBYY FineReader Engine 10 License Server” service. To do this, go to this folder in case of a 32-bit OS:

`Program Files\Common files\ABBYY\SDK\10\Licensing`

Or this folder in case of a 62-bit OS:

`Program Files(x86)\Common files\ABBYY\SDK\10\Licensing`

- o From the `\Licensing` folder run this command:

`DeinstallLicensingService.cmd`

3. After that all the FlexiCapture Engine-related folders can be deleted:

`Program Files\ABBYY SDK\10\FineReader Engine`

`Program Files\Common Files\ABBYY\SDK\10\Licensing`

Or

`Program Files(x86)\Common Files\ABBYY SDK\10\FineReader Engine`

`Program Files(x86)\Common Files\ABBYY\SDK\10\Licensing`

## After updating ABBYY

1. Using Windows Explorer, check whether this file is present:

Program Files (x86)\ABBYY SDK\10\FineReader Engine\frengine.ini

2. If you cannot find this file, copy it from XBOUND setup subfolder xFC\_2 to the folder shown above.

## Migrating the database contents

Several database records must be adjusted to the new software.

**!** **Important:** This is absolutely required. Ensure that it is done without any errors.

1. Open a command prompt.
2. Change directory to `C:\Program Files (x86)\ReadSoft\xbound`.
3. Enter the command `xboundMigration` with these parameters:
  - `Eventlog`, if the program is to log in the Event Log, or another string if the program output is to be done on a console.
  - `Native` if the application server is available via the XBOUND Native Protocol, `Remoting` if the application server is available via remoting, or `WebService` if it is available via WebService.
  - The URL of the application server.

(The last two arguments can be copied from the `foxconfig` configuration file and pasted into the command line.)

If statistical data is to be acquired, set up a new statistics database and link it to the production database. The necessary steps are described “Collecting statistical data” in *XBOUND Help*.

The statistics collector of older XBOUND versions and the statistical databases created with it are no longer supported.

## Additional procedure if you upgraded RCF

The RCF configuration and runtime data must be migrated to the current version. You must do this after upgrading the installation or importing older XBOUND processes. Use this procedure:

1. **Important:** At this point the `xboundOcfMigration.exe` program must be run once. This program requires call-up parameters. Therefore, adjust the file `xboundOCFMigration.cmd` file and then start `xboundOcfMigration.exe`.
2. Now `xboundOcfValidationBase` must be updated:
  - a) Open the Validation Designer and select **File > Libraries**.
  - b) Open `xboundOcfValidationBase`.
  - c) In the dialog that is displayed, enter the path of `xboundOcfValidationBase.dll` (normally `C:\Program Files\ReadSoft\xbound`).
  - d) Update by clicking **OK**.

- Note:** If “OCR Mapping” does not work in the RecoStar parameter set or at runtime, see “Known Problems” in *XBOUND RCF Release Notes*.
- Note:** If you import processes that were exported from the old system, you must again execute `XBOUNDMigration.exe` and then `xboundOcfMigration.cmd` (adjusted for your system).

## Additional procedure if you upgraded RCC

1. If you upgraded from RCC 1.1 (otherwise skip to step 2): Using the Process Designer, open each RCC Document Capture process step, select **DOX** in the **Parameter set** drop-down list, and click **OK**.
2. Ensure that the ReadSoft Knowledge Processing service is stopped.
3. If you upgraded from RCC 1.2.1 or earlier: Recreate the Knowledge Processing database using the SQL script provided. Follow the step-by-step instructions that begin on page 24.
4. If you upgraded from RCC 1.2.1 or earlier: Looking at the `ReadSoft.Du.KnowledgeStore.Service.exe.config` file that you saved from your previous installation (see page 53): If you previously changed any of the values in the following elements, make the corresponding changes in the new `.config` file:

```
<add key="ConfidenceInClassWords" value="2" />
<add key="ConfidenceCertainWordsToBeGood" value="3" />

<!-- Settings for LDPData -->
<add key="MaxNumber" value="100000" />
<add key="MaxNumberPerClass" value="110" />
<add key="RemoveActiveNumber" value="100" />
<add key="RemoveActiveNumberPerClass" value="10" />
```

5. Select **Start** menu > **All Programs** > **ReadSoft** > **Capture Components** > **Configuration**.
6. In the navigation panel, select **Capture Components** > **Database Configuration**.
7. Add the settings for the configuration database.
8. Test and save.

## Continuing the production process

If the upgrade was successful, the system should be tested briefly. Then production with XBOUND can be continued:

1. Restart all XBOUND clients and application servers, and restart all XBOUND-related Windows services. (There are instructions on page 61.) Do not forget the ReadSoft Knowledge Processing Service and the XBOUND WebService, if used.
2. Inform users that production can resume.

## Additional information

### Silent installation

#### XBOUND and RCF

If XBOUND is to be installed in the uncontrolled mode, then start installation using the following command. The possible values for “para” are shown in the table below.

```
Setup.exe /s TARGETDIR="C:\Program Files\ReadSoft\xbound" para1 para2 ...
```

🔴 Ensure that you run the console as an Administrator.

Value	Meaning
INSTALL_GAC_4_0=TRUE	Installs the XBOUND runtime environment in the global assembly cache as well. These object use Microsoft .NET Framework 4.0.
INSTALL_REGISTRATION=TRUE	Installs the XBOUND Registration.
INSTALL_PROCESSDESIGNER=TRUE	Installs the XBOUND Process Designer.
INSTALL_PROCESSMONITOR=TRUE	Installs the XBOUND Process Monitor.
INSTALL_DOCUMENTVERIFIER=TRUE	Installs the XBOUND Document Verifier.
INSTALL_RCF=TRUE	Installs ReadSoft Capture Framework (RCF).
INSTALL_RCFPLUGINS=TRUE	Installs the RCF plug-ins (Business logic Designer, Form Designer, Master Data Designer, Validation Designer).
INSTALL_RCFVERIFY=TRUE	Installs RCF Verification.
INSTALL_CAPTURECOMPONENTS=TRUE	Installs RCC Document Capture.
ICE_DEFAULT_OCRENGINE=TRUE ICE_DEFAULT_OCRENGINE=FALSE	Sets OmniPage or (if FALSE) ABBYY as the default interpretation engine. If the parameter is not included, OmniPage is used.
INSTALL_OP=TRUE	Installs OmniPage.
INSTALL_DOCUMENTATION=TRUE	Installs the XBOUND documentation.
INSTALL_SDKTEMPLATES=TRUE	Installs the samples for the SDK.

Example that installs the XBOUND Process Monitor on the D drive in the ReadSoft\xbound directory:

```
Setup.exe /s TARGETDIR="D:\ReadSoft\xbound" INSTALL_PROCESSMONITOR=TRUE
```

Example that creates a local XBOUND Activities Service with the Sc.exe command-line program. The service will be operated under the “Domain\acct” user with the password “123”:

```
Sc.exe create "xbound Activity Service"  
binPath="D:\ReadSoft\xbound\xboundActivities.exe xbound Activity Service"  
obj=Domain\acct password=123
```

Example that installs RCF Verification on the D drive in ReadSoft\xbound directory:

```
Setup.exe /s TARGETDIR="D:\ReadSoft\xbound" INSTALL_RCFVERIFY=TRUE
```

## RCC Document Capture

To install RCC Document Capture and all its components in the uncontrolled mode, use the following command:

```
msiexec /i "RCC Document Capture.msi" /L*v log.txt /qn
```

To install only certain RCC components, use the following command and change the `ADDLOCAL` value depending on which components are to be installed. The possible values are shown in the table below.

```
msiexec /i "RCC Document Capture.msi"
  ADDLOCAL=Activities,KnowledgeProcessingService /qn /L* install.log
```

The above examples install RCC Document Capture and its components completely silently. To display a progress bar, change `/qn` to `/qb`.

**!** Ensure that you run the installer as an Administrator.

ADDLOCAL values	Meaning
Activities	Installs the RCC activities.
KnowledgeProcessingService	Installs the ReadSoft Knowledge Processing Service.
KnowledgeProcessingExplorer	Installs the Knowledge Processing Explorer.
Inspection	Installs the Inspection client.
DatabaseConfiguration	Installs the Database Configuration tool.

Example that installs the RCC activities and the Knowledge Processing Service:

```
msiexec /i "RCC Document Capture.msi"
  ADDLOCAL=Activities,KnowledgeProcessingService /qn /L* install.log
```

Example that removes the Knowledge Processing Service component:

```
msiexec /i "RCC Document Capture.msi" REMOVE=KnowledgeProcessingService /qn /L*
  install.log
```

## Error message and rollback

Installing RCC Document Capture using `ReadSoft.Capture.Components.msi` can cause the following error to be displayed and the installation to roll back:

```
Calling custom action CreateDiagnosticsCategory!CreateDiagnosticsCategory.CustomActions.
CreatePerformanceCounterCategory
```

This error is caused by corrupt performance counters in the operating system. Although it is not related to any Lexmark product, it prevents RCC Document Capture from installing.

To solve this problem, recreate the corrupted performance counters by running this command from the command prompt: `run lodctr /r`

## OmniPage

OmniPage is the interpretation engine used by RCC Document Capture.

By default, OmniPage is installed in `Program Files\ReadSoft\Engines`. To install it in a different folder, you can use the `OMNIPAGE_19_11` parameter in a silent install. Example:

```
msiexec /i "Omnipage Ultimate 19.msi" OMNIPAGE_19_11="d:\temp" /L*v instlog.txt /qn
```

## (Re)starting or stopping Windows Services

XBOUND services manage all non-interactive (automatic) processes within XBOUND. At different times while installing, uninstalling, or setting up XBOUND, you need to start, stop, or restart Windows Services. Use this procedure:

1. Select **Start** menu > **Control Panel** > **Administrative Tools** > **Services**.
2. In the list of services that is displayed, right-click the service and select **Start** or **Stop** or **Restart**.

These are the XBOUND-related Windows services. For a description of these services, see *XBOUND Help*.

- XBOUND Collect Service
- XBOUND Activities
- XBOUND System Agent Service
- XBOUND License Service
- XBOUND Platform
- XBOUND WebService
- XBOUND Web Application Service
- ReadSoft Knowledge Processing Service
- ABBYY FineReader Engine 10 License Server

## Reinstalling the same version

If you need to reinstall the same version of XBOUND, RCF or RCC, there is no need to uninstall it, delete databases, etc. Simply run the installation program again.

## Uninstalling XBOUND and related components

If XBOUND was installed to a non-default location (that is, not `C:\Program Files (x86)\ReadSoft`), then RCC (if present) must be uninstalled first. The orders listed below are best practice even if XBOUND was installed in the default location.

### Installation order

1. XBOUND
2. ReadSoft Capture Framework (RCF)
3. OmniPage (can also be installed after RCC components)
4. RCC Document Capture

### Uninstallation order

1. RCC Document Capture
2. OmniPage
3. XBOUND
4. ReadSoft Capture Framework (RCF)

If XBOUND is uninstalled first, the information about where it was located is no longer available, and the system will try to uninstall RCC from the default location (`C:\Program Files (x86)\ReadSoft`).

## Encrypting communication

You can encrypt the communication between XBOUND applications and the XBOUND server. The Native protocol offers two additional communication modes in addition to the standard communication over an unencrypted TCP connection:

- TCPE: Windows supports encrypting the communication in addition to authentication.
- TCPS: The communication is encrypted using an additional Secure Socket Layer (SSL).

### Encryption by Windows (TCPE)

The mechanism used for authentication is also used for encrypting the communication channel. The encryption parameters are adjustable in Windows. For details, contact your IT department.

To use TCPE encryption:

1. In the `xboundPlatform.exe.config` file, comment the entry containing `Xbound.Server.TcpPort` to inhibit unencrypted communication.
2. Uncomment the entry containing `Xbound.Server.TcpePort` to activate encrypted communication.
3. Restart the XBOUND Platform service. (There are instructions on page 61.)
4. Configure the XBOUND applications to use a Unified Resource Identifier (URI) with the `tcpe` scheme and the configured port when logging in. Example: `tcpe://myserver:5555`

### Encryption by SSL (TCPS)

In this case, encryption is done by an additional SSL (Secure Socket Layer). The encryption parameters are defined by the certificate that you use.

To use TCPS encryption:

1. Create a certificate for encrypting on the computer running the XBOUND Platform service in the certificate store of the local computer, in `My Certificates`.
2. Start XBOUND Management Center by selecting **Start > All Programs > ReadSoft > XBOUND > XBOUND Management Center**.
3. Load the Common Configuration Manager plug-in.
4. Click **XBOUND Platform Service** and select the **XBOUND Connection** tab.
5. Select **Use SSL**.
6. In the **Certificates** list, select the certificate that you created.
7. Click **Save**.
8. Restart the XBOUND Platform service. (There are instructions on page 61.)
9. Configure the XBOUND applications to use a Unified Resource Identifier (URI) with the `tcps` scheme and the configured port when logging in. Example: `tcps://myserver:6666`

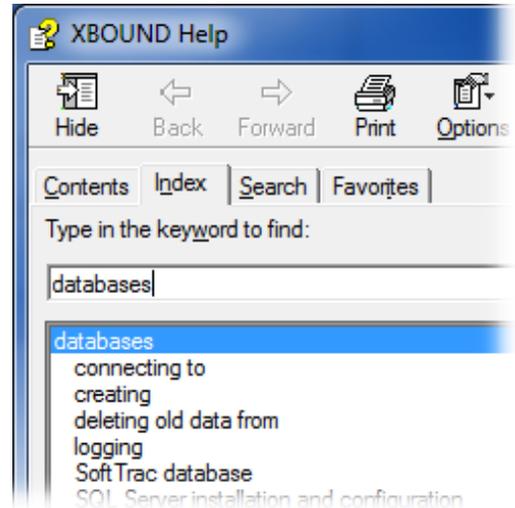
## Database maintenance and backup

It is essential that you establish and carry out maintenance and backup routines that are appropriate to your system.

RCC: For information about maintenance and backup, as well as error prevention and troubleshooting, please refer to *Installing and Configuring Microsoft SQL Server For Use With ReadSoft Capture Components*, a Lexmark document that is available in the same folder as this installation guide.

If there is a power failure, or if an RCC Administration process is terminated unnaturally for any other reason, the databases can become corrupt. In most cases, the network database server handles such situations and you need only restart the process.

Additional information about databases can be found in the different help files (see page 65). For a list of topics related to databases, click the **Index** tab in a help file and type *databases* in the box.

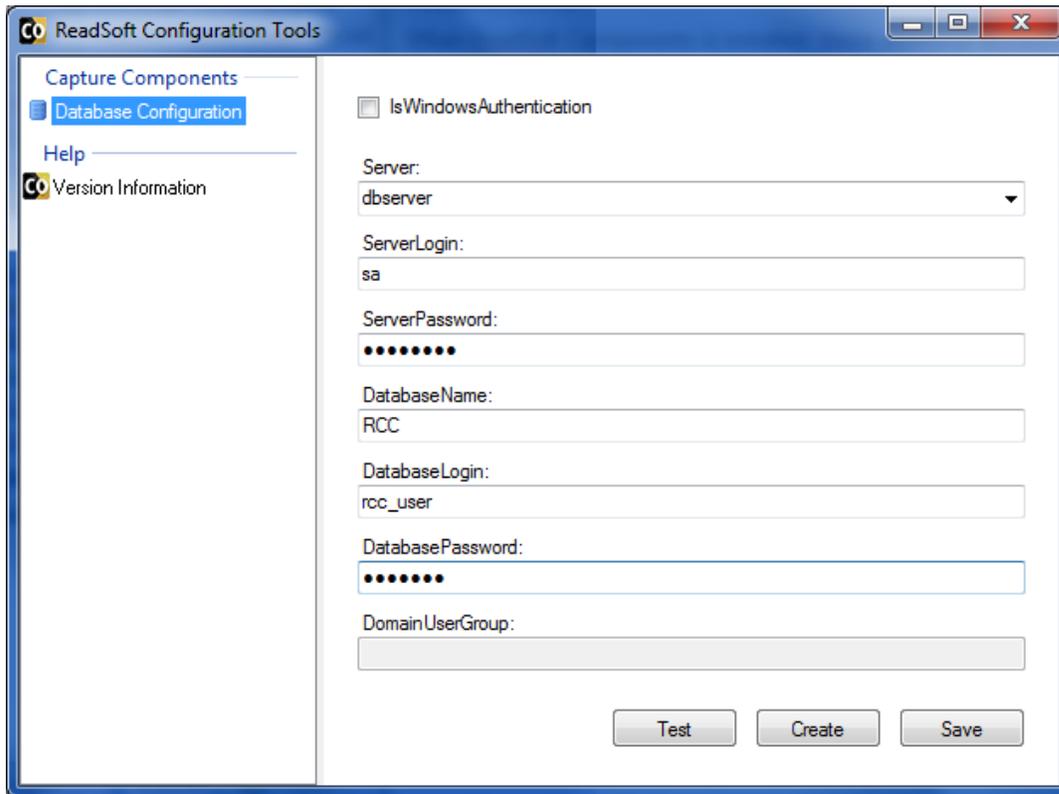


## Switching between RCC databases

If you have two or more pairs of RCC Document Capture databases (see page 20), for example a test system and a production system, use the below procedure to switch.

**Note:** The database configuration tool currently cannot be used to switch between Knowledge Processing databases.

1. If it is open, close RCC Administration.
2. Select **Start** menu > **All Programs** > **ReadSoft** > **Capture Components** > **Configuration**.
3. In the navigation panel, select **Capture Components** > **Database Configuration**.
4. Adjust the settings to reflect the database that you want to switch to. The settings are described in detail starting on page 20.



5. Click **Test** to test the connection.
6. Click **Save**. This updates the Windows Registry.

## Restarting Windows services

After switching databases, you must restart all relevant Windows services, namely ReadSoft Knowledge Processing Service and/or XBOUND Activities.

Instead of clicking **Restart**, we recommend this procedure:

1. Click **Stop**.
2. Wait 10 seconds.
3. Click **Start**.

## Additional SQL scripts

The following additional scripts can be found in the `sql` folder in your XBOUND installation (default location `C:\Program Files\ReadSoft\xbound\Sql`).

### `xbound_sequence_update_oracle_3.9.0.0.sql`

This helper script can be used if for any reason the sequences in your Oracle database do not reflect the maximum ID of your records.

### `DocManager_Oracle.sql`

This script creates helper indices which can improve the performance of DocManager in an upgraded database (since the upgrade scripts do not create them).

### `*_drop_*.sql`

These scripts delete all database objects that the `xbound_create_*.sql` scripts create.

## Where to find more product information

Various help files (CHM files) and other documents (PDF files) are available in each installation of XBOUND. Select **Start** menu > **All Programs** > **ReadSoft** > ....

The help files also contain a topic called "Additional documentation." That topic contains links to most available documents.