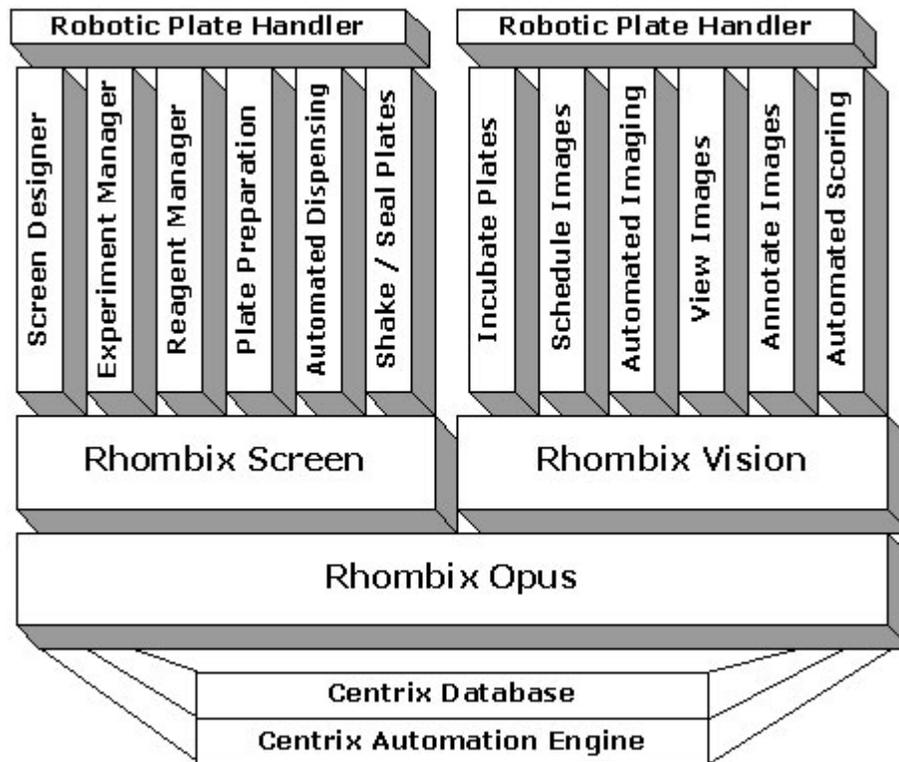




Getting Started

Overview

The Rhombix Series of products includes Rhombix Screen which provides automated crystal plate preparation, and Rhombix Vision which provides automated storage, retrieval and imaging of crystal plates. Each of these products may be sold separately, or they may be integrated together into Rhombix Opus. Interwoven with each product is the Centrix Database (a Microsoft SQL or Oracle based relational database) and the Centrix Automation Engine, which controls the robotic plate handler(s), the automated liquid handler(s), the imager and other automated devices.



Also available, is a scaled down version of the Rhombix Screen product, called Rhombix Screen LT. It provides user tools for screen design, experiment management, reagent management, and an automated liquid handler for plate preparation, but does not include the robotic plate handler to move the crystal plates to the shaker, sealer and imaging stations. A scaled down version of the Rhombix Vision product, called Rhombix Vision LT is also available. It provides for semi-automated and manual imaging of crystal plates and includes Clarix, the image viewing and annotation tool; however, it does not include a robotic plate handler nor automated storage and retrieval of plates in a temperature and humidity controlled enclosure, nor image scheduling.

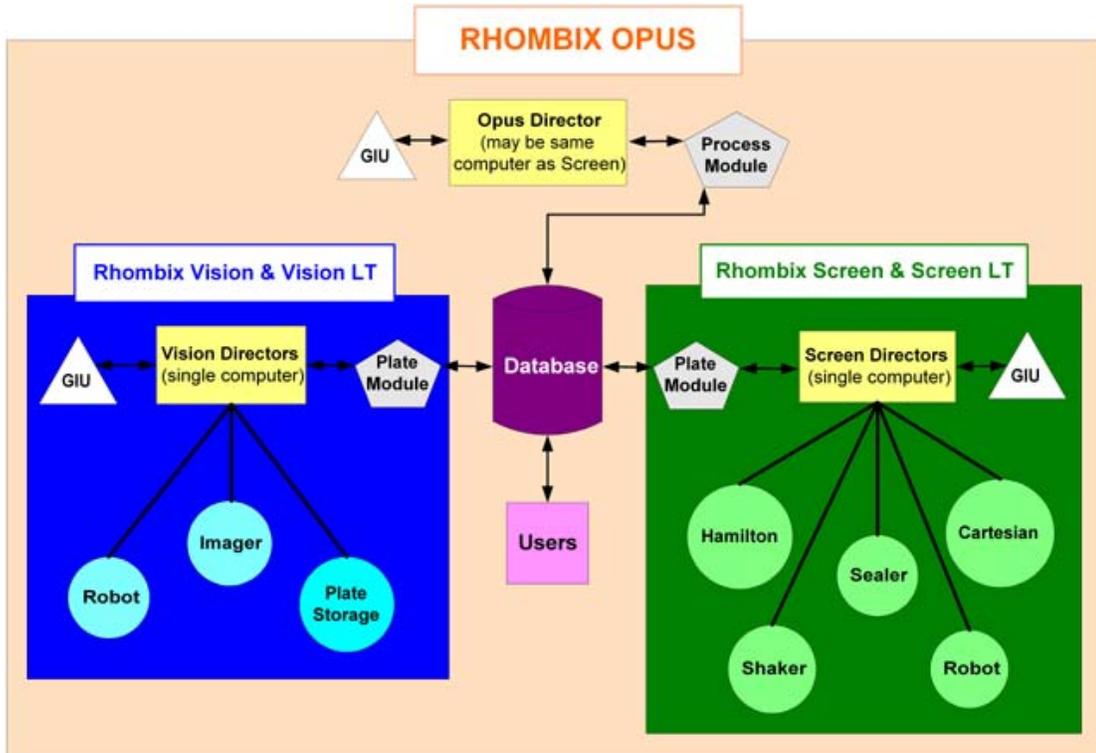
Depending on the particular product(s) you purchased, portions of this documentation may not apply to your installation. At the beginning of each section, watch for the "Applies to:" box, to verify if the topic being described applies to your particular product installation.

Rhombix Architecture

The Rhombix system is comprised of many devices that are interconnected to work together as a single system.

The Network and Networked PCs: The network is the series of computers and wiring that connect the Centrix database (usually installed on a separate computer) to all other portions of Rhombix, including the automation devices. For you (a user) to run Rhombix applications from your desktop, your desktop computer must access this same network and the Centrix database.

The Automation: The Rhombix Screen computer is wired to the liquid handlers and robot used in the plate preparation process. The Rhombix Vision computer is wired to an imager, robot and plate storage device within a temperature-controlled and humidity-controlled chamber (the computer resides outside of the chamber). Each of these computers runs special applications, called "Directors," which enable the automation equipment to communicate with the database, and vice versa. Users in the laboratory can control the various automation devices from these special "Director" computers. The graphical user interface (GUI) and/or the application modules running on these computers are different than those on the desktop computers.



If your installation has multiple Rhombix Vision systems - for example, two separate imagers each with its own enclosure - you would have one automation PC for each one. Likewise, if you had multiple Hamilton MicroLab Star automated liquid dispensing devices in your Rhombix Screen system, you would have one automation PC for each one. However, it is possible for a Rhombix Screen installation to have two plate shakers or two sealers, and still have only a single Rhombix Screen automation computer. A good rule of thumb is that the number of automation PCs is equal to the number of robots.

How Rhombix Applications Are Organized

Rhombix applications are organized into two main types: desktop applications and automation applications. Desktop applications may be installed on any PC that can access the Rhombix database, and provide user tools for interacting with the database and data. Automation applications are only installed on the "control PC" attached to one or more pieces of automation equipment (for example, a liquid handler or imager), and provide tools for accessing the Rhombix database and controlling the equipment.

Within each application type, there are many different modules (plug-ins). The modules you see are dependent upon:

- The product(s) you purchased (see [Overview](#)) and thus the particular configuration of your installation,
- The user name and role (admin, user, or operator) you have been assigned in the Rhombix database, and
- The presence of a config file on the PC.

Example 1: Suppose the product you purchased is Rhombix Vision LT. The desktop application would include the Clarix module, but would not include the modules for screen design and experiment management. The automation application would include the imager module, but would not include the automation modules for robotic storage and retrieval of plates.

Example 2: Suppose the product you purchased is Rhombix Opus (Screen + Vision). Let's also suppose you are a typical user without the role of administrator. The desktop applications for you would include the modules for screen design, experiment management, and image viewing and annotation, but would not include the modules for defining new plate types or user/role administration.

Example 3: Same situation as example 2, but suppose you also had the role of "operator" in addition to "user." You log in from an automation control PC (a PC attached to the equipment, with a special config file). In this case, the plug-ins you would see would include all those normally present at your desktop (as in example 2), plus those plug-ins specified by the config file. This config file holds the names of the plug-ins that are required to run the automation equipment.

How to Install the Rhombix Desktop Applications Modules

Installing the Rhombix Desktop Applications requires two major tasks: (1) installation of the DCA Centrix database on the database server, and (2) installation of the Desktop Application Module on users' PCs.

Rhombix Screen and its associated control PC is shipped to you with all the necessary software pre-installed. The fluidics machines' control PC and the users' desktop PCs must "point to" the same instance of the DCA database, which is typically installed on a separate PC (the database server).

Rhombix Vision and its associated control PC is shipped to you with all the necessary software pre-installed. The imager's control PC and the users' desktop PCs must "point to" the same instance of the DCA database, which is typically installed on a separate PC (the database server).

First, install the DCA Centrix database on your database server. For technical requirements of the database server, refer to [Technical Requirements](#). Next, install the Desktop Applications Module on each users' PC who will need to view or annotate images taken from [Rhombix Vision](#), or who will need access to any of the [Rhombix Screen](#) components (for experiment design). Note: For technical requirements of the desktop PCs, refer to [PC Technical Requirements](#).

(1) Installation of the DCA Centrix database on the database server.

Follow the steps listed below in order. For technical support, refer to [Technical Support](#).

- Obtain administrative access to the database server.
 - Create a new, empty database called **rhombix**.
 - Create a database server user with the username **dca** and password of **dca**.
 - Assign DB_OWNER privileges to user **dca** and database **rhombix**.
 - Verify that user **dca** has access to the **rhombix** database.
 - Run the db script **dcainstall**. This will create the needed tables and initial data for the Rhombix. This step may be performed by an on-site installation engineer.
 - Perform a backup of the **rhombix** database and verify that it is good. It is highly recommended that you schedule a database backup to occur automatically at regular intervals (for example, daily).
- *DCA is not responsible for regular database maintenance and administration tasks, and is not responsible for data loss due to inadequate or poor database administration or failure to backup the data regularly.*

(2) Installation of the Desktop Applications Module on a desktop PC

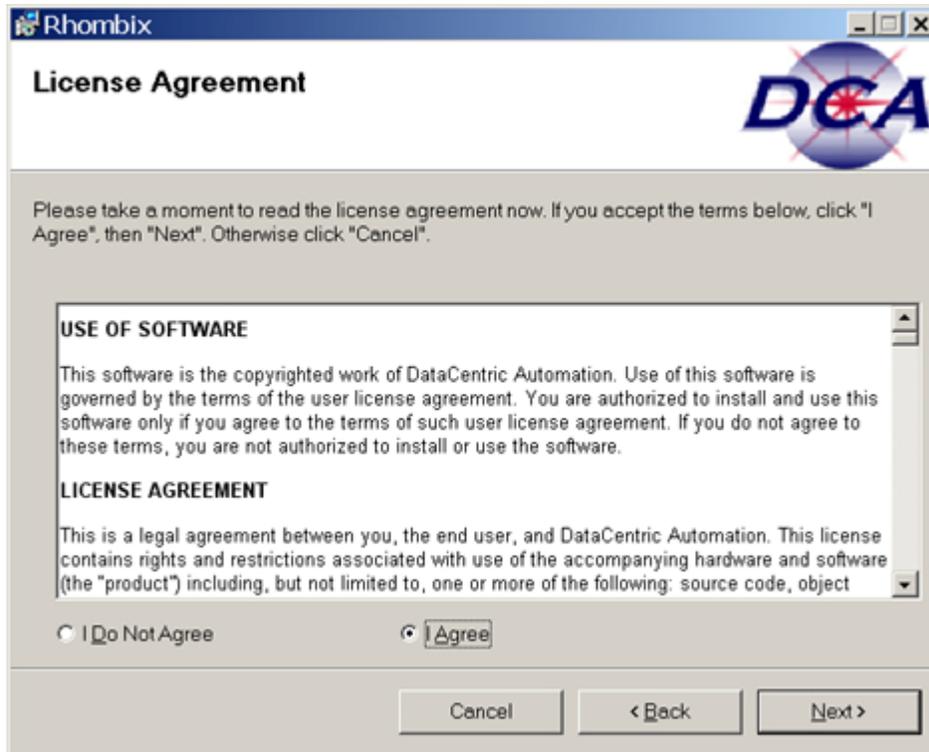
Follow the steps listed below in order. For technical support, refer to [Technical Support](#).

- Be sure all applications are closed on the PC, and that you have administrative access to the PC.

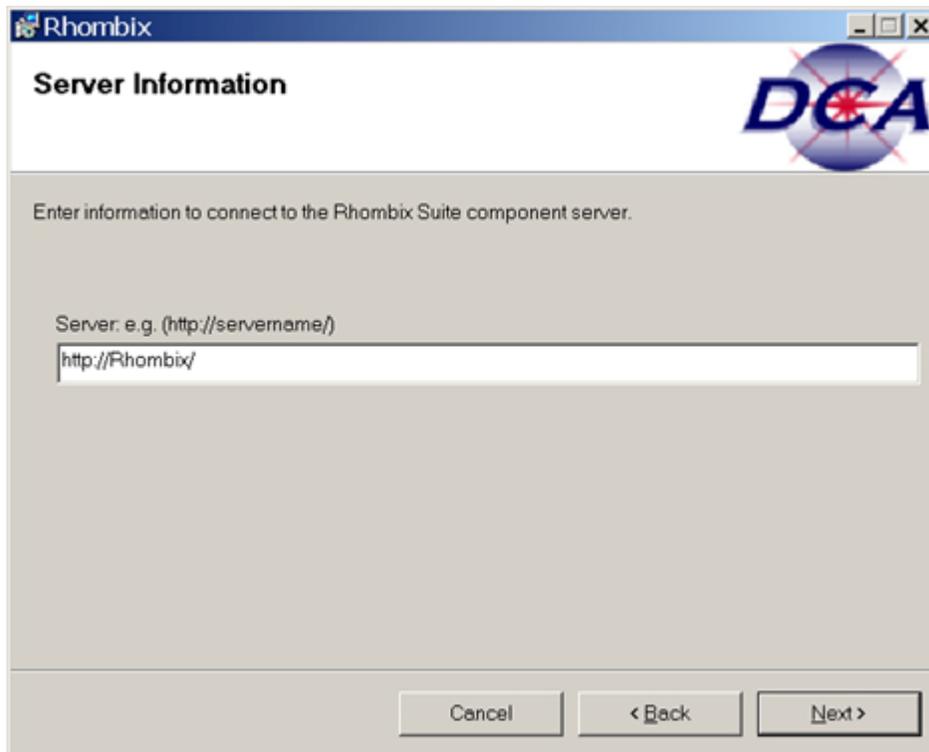
- Insert the CD labeled Rhombix Desktop Applications into your PC's CD drive.
- Double-click on the Setup.exe installer application.
- Follow the steps below for each screen:



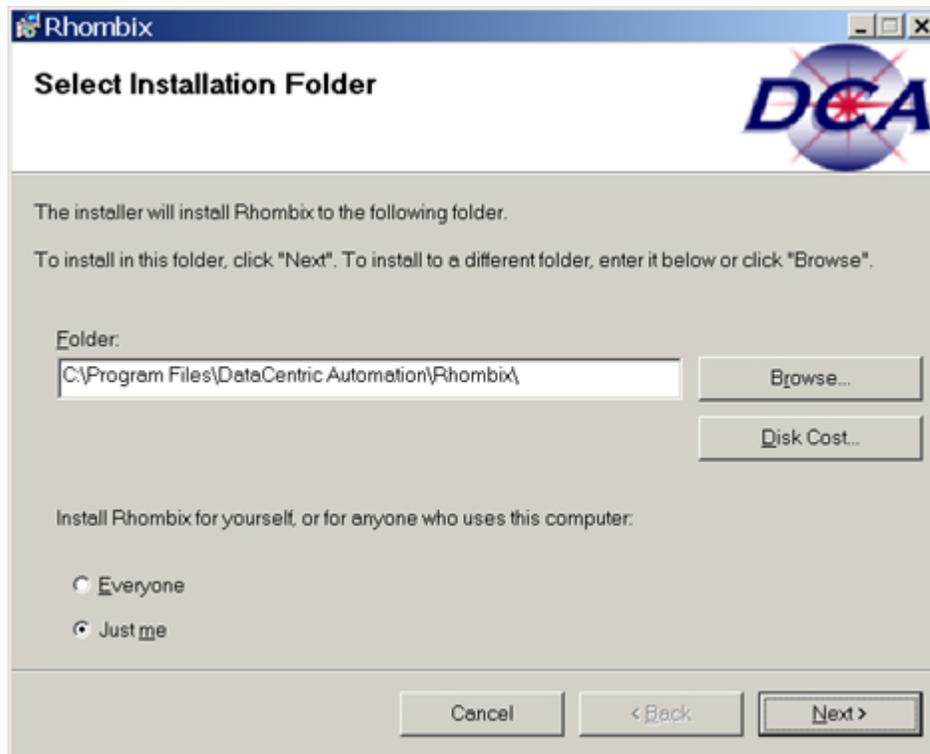
1. Click 'Next.'



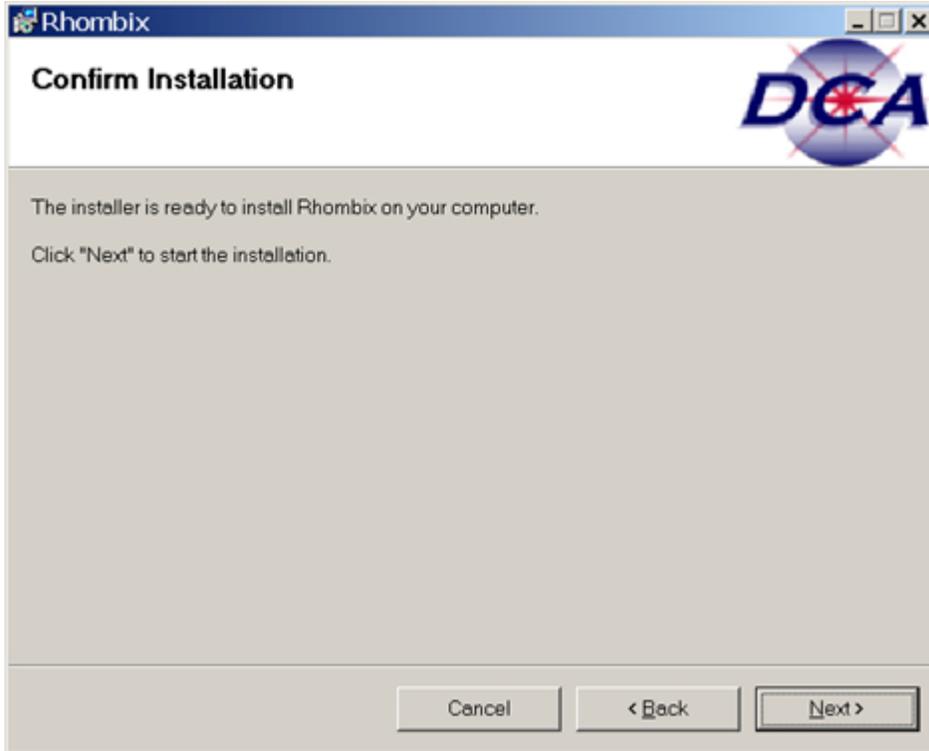
2. Click on the "I Agree" radio button after reading the license agreement. Then click 'Next.' If you do not agree to the terms of the license agreement, you may exit without installing the application by clicking on 'Cancel.'



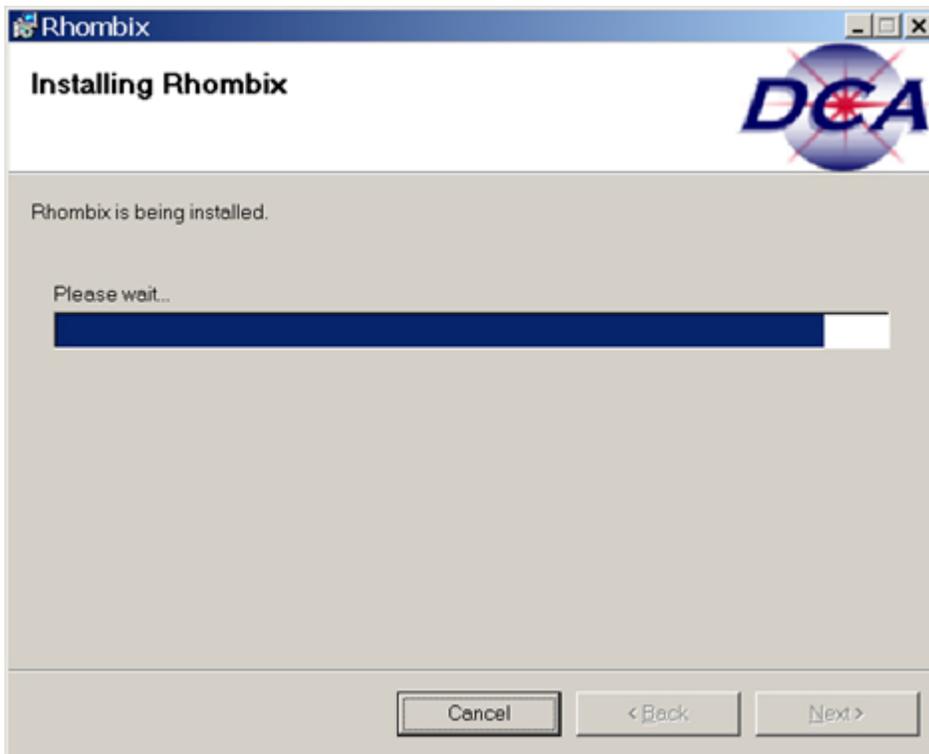
3. Enter the name of your database server. Click 'Next.'



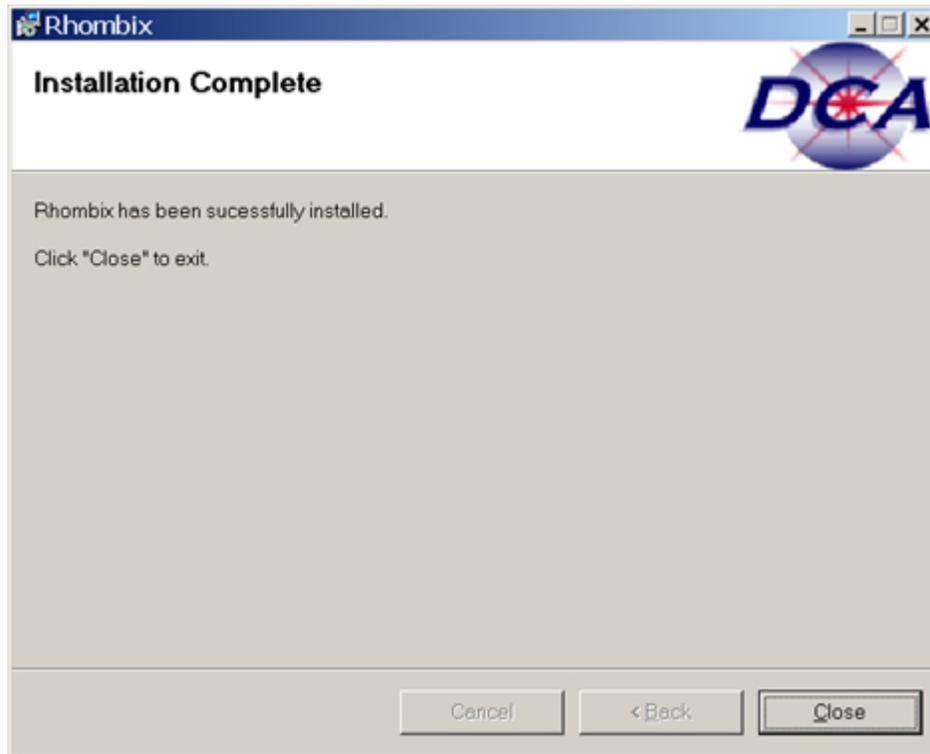
4. Enter the path for the directory in which you wish to install the Rhombix program. The default (recommended) directory is C:\Program Files\DataCentric Automation\Rhombix\. You may click on the 'Browse' button to enter another directory. You may click on the 'Disk Cost' button to review the amount of disk space available. If you want all users who use this PC to be able to access Rhombix, click on the 'Everyone' radio button. Otherwise, only you (the currently logged in user) will be able to access Rhombix. Click 'Next.'



5. If you are ready to proceed with the installation, click 'Next.' If you wish to change any of your previous answers (from previous screens), this is your last chance to click 'Back' to return to a previous screen.



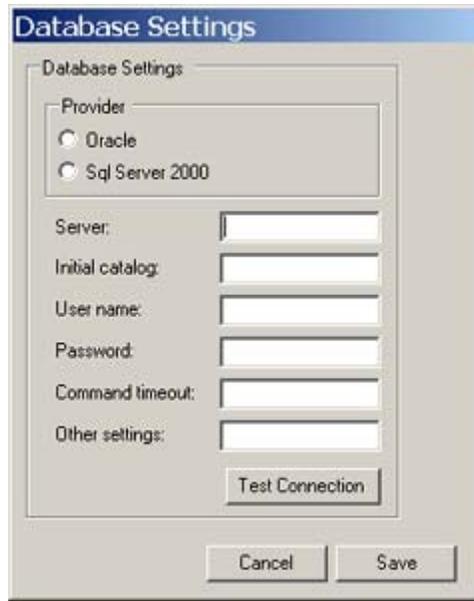
6. While the installation is progressing, you can view its progress. Do not interrupt this process. When it has finished, you will see the following screen:



7. Click 'Close' to close the installer application. There should now be a Rhombix icon on your desktop similar the one shown below:



8. Double click on this icon to start up Rhombix. It will automatically sense that it is not connected to your database, and will display the following Database Settings dialog for you to complete:



9. Select the type of database you are using, by clicking on either Oracle or SQL Server. Next, enter the name of your server in the field provided. Next, enter the User name and Password you have been assigned. Note: the password is case sensitive! The remainder of the fields on this screen are not required.

*10. When you start up the application for the very first time, you will need to use the default user name of **dca** and the default password of **dca**, which are initially loaded in the system. It is recommended that you change these once you have logged in. The dca user has administrative privileges. See [User Administration](#) for more information about configuring users, passwords, and privileges.*

10. Click on the "Test Connection" button. This will use the server, user name and password you have entered, to test the connection to the database. If successful, you should see a confirmation similar to this:



11. Click OK. This will return you to the Database Settings screen. If you did not get a successful connection, you may re-enter the server, user name and password, and try again. Once the connection is successful, click the "Save" button on the Database Settings dialog.
12. The next screen you will see will be the Rhombix login dialog.



11. Enter the user name and password you were assigned. The password is case sensitive, and will not display on the screen as you type it. Then click "OK". Rhombix will make the connection to the database, and will download any plug-ins you are entitled to, based on your role within the system (see [User Administration](#) for a discussion of Users and Roles). Then, it will startup the Rhombix framework (see [Rhombix Framework](#)).

In the future, when you double-click on the Rhombix icon on your desktop, the Rhombix log in screen will display, and you will only need to execute step 11 above. All the other settings are remembered by the system.

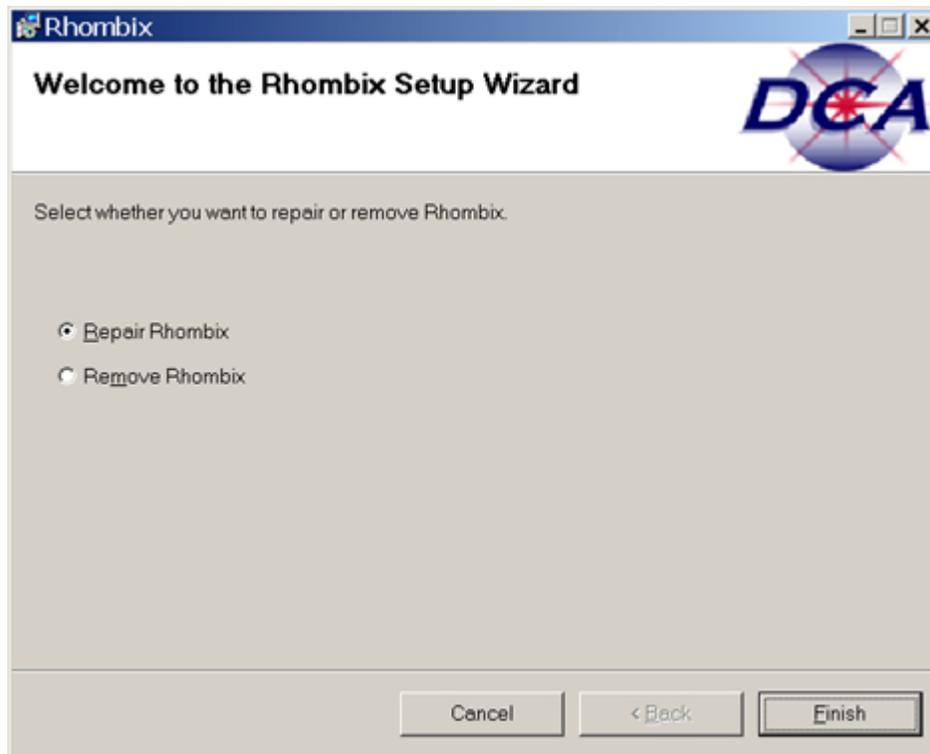
 See also [Un-installing Rhombix](#).

 See also [Repairing a Rhombix Installation](#).

Repairing a Rhombix Installation

If, for some reason, your Rhombix desktop application gets corrupted, partially deleted, or otherwise needs to be repaired, follow these steps:

- Be sure the Rhombix application is closed on the PC, and that you have administrative access to this PC.
- Insert the CD labeled Rhombix Desktop Applications into your PC's CD drive.
- Double-click on the Rhombix installer application.
- The installer will sense that the Rhombix application is already installed on your PC and will offer you two choices: Repair or Remove.
- Click on Repair. Then click 'Finish.'

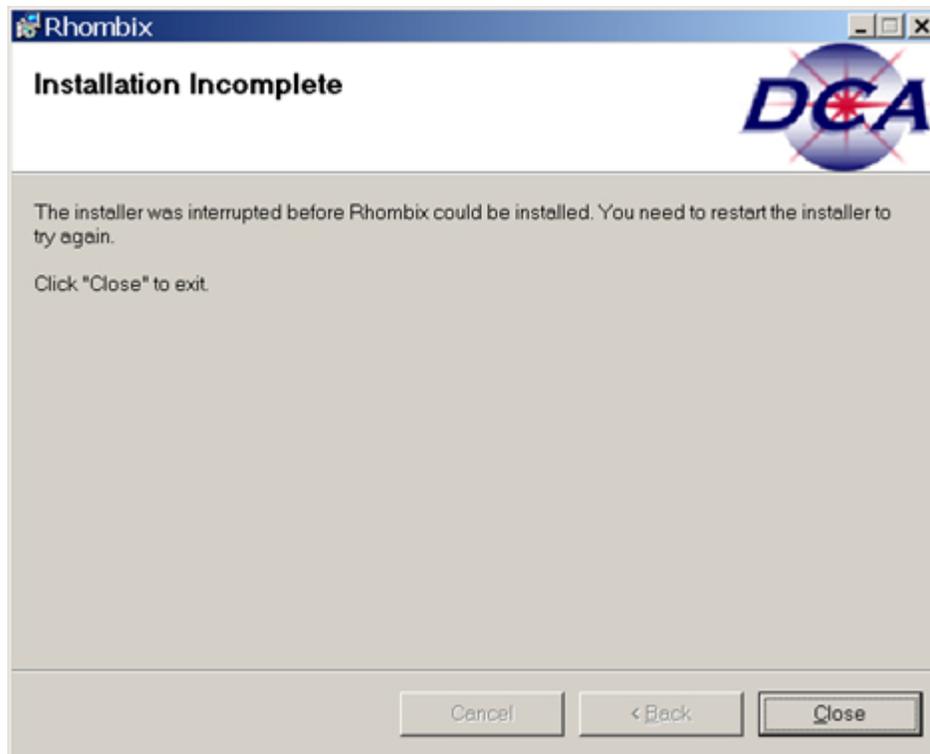


- Wait while the application is being re-installed on your PC. Do not interrupt this process. When it is finished, you will receive a message telling you it has been successfully repaired.
- Click 'Close.'

You are now ready to begin using Rhombix, just as if it was a "fresh" install. Keep in mind, that all data is stored in the DCA Centrix database (on the database server), so there is no data loss due to re-installation.

Incomplete Installation:

If you interrupted the install or repair process, or if the repair process was unsuccessful, you will see the following message:



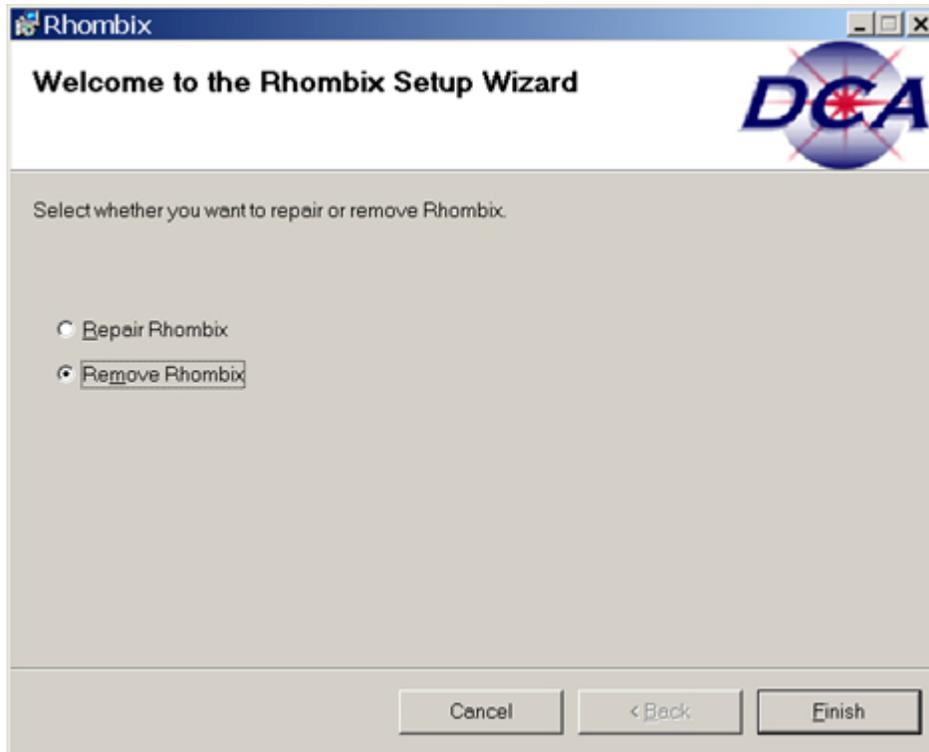
If repeated attempts at repair fail in this way, you will need to un-install Rhombix (see [Un-installing Rhombix](#)) and re-install Rhombix as if it was a "fresh" install. Keep in mind, that all data is stored in the DCA Centrix database (on the database server), so there is no data loss due to de-installation and re-installation.

Un-installing Rhombix

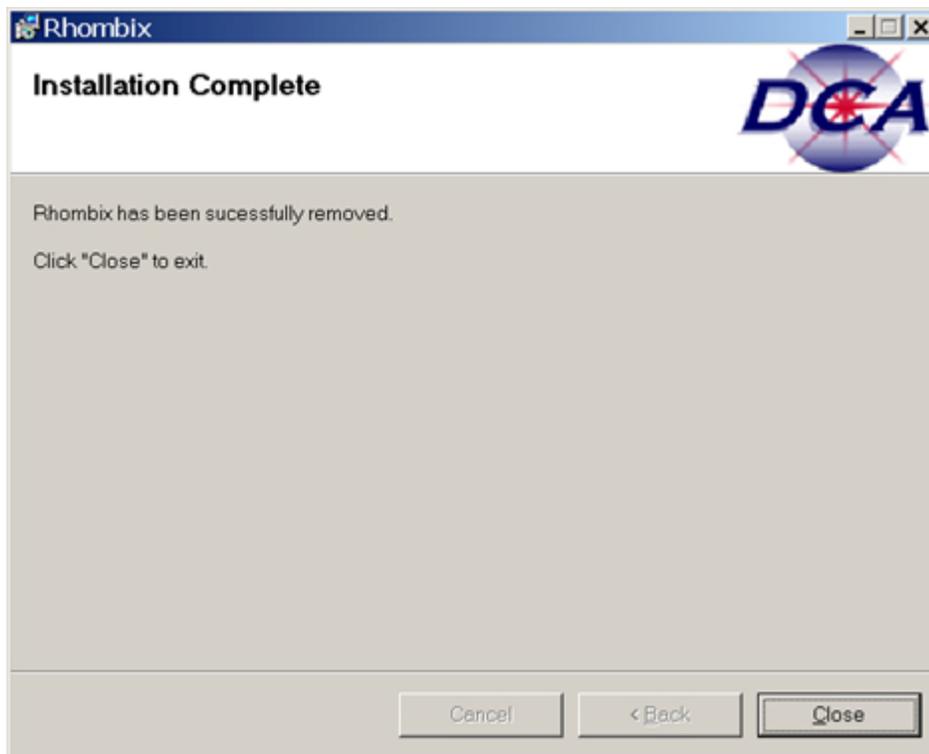
When you un-install the Rhombix desktop application, you are simply removing the application from the PC's hard drive. This does not affect any data already stored in the database (on the database server).

To un-install (remove) Rhombix, follow these steps:

- Be sure the Rhombix application is closed on the PC, and that you have administrative access to this PC.
- Insert the CD labeled Rhombix Desktop Applications into your PC's CD drive.
- Double-click on the Rhombix installer application.
- The installer will sense that the Rhombix application is already installed and will offer you two choices: Repair or Remove.
- Click on Remove. Then click 'Finish.'



Wait while the application is being removed. Do not interrupt this process. When it is finished, you will receive a message telling you it has been successfully removed.



- Click 'Close.'

Un-installing Rhombix removes its icon from the desktop, and removes the Windows registry settings it was using. However, there may still be some log files (having a ".txt" extension) left behind in the folder in which Rhombix was installed, that are not removed by the "Remove" process. These can be manually deleted.

NOTE: If you have difficulty with the "Remove" program, or no longer have access to the Rhombix Desktop Installation CD, you may remove Rhombix from your PC by using the "Add/Remove Programs" feature in Windows' Control Panel.

