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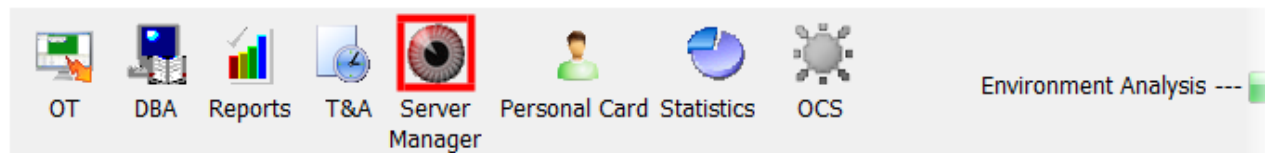
4. Central Server Manager

The **Central Server Manager** network service module is used to modify some parameters of the database management system and maintain the Orion Pro Databases

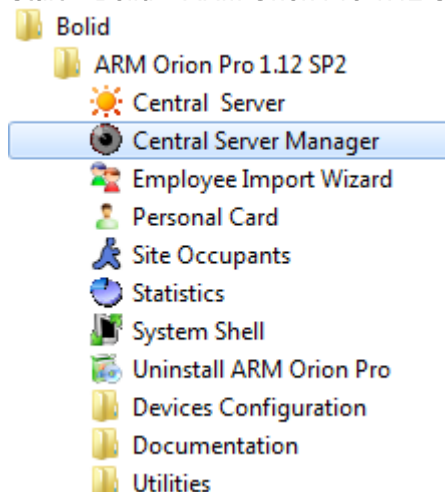
Further, this section describes how to perform the following database-related procedures using this application:

- Create and delete databases
- Register and unregister databases
- Upgrade or merge existing Orion databases (version 7.3 or higher) or Orion Pro databases (version 1.9 or higher)
- Verify databases
- Update database defaults
- Remove data from the Database (Clean logs)
- Reindex databases
- Backup databases
- Configure database replication

The Central Server Manager can be launched in the System Shell. Please start the System Shell first, then click the Server Manager icon on the left part of a launcher bar (this icon is active if you are authorized to run the Central Server Manager on this workstation):



You can use the Start menu of the operating system to start up The Central Server Manager. Choose **Start > Bold > ARM Orion Pro 1.12 SP2 > Central Server Manager**:

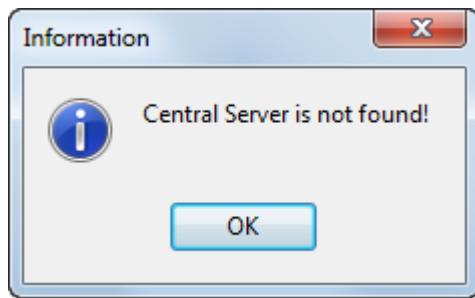


Or open the  ServerManager.exe file located in the folder with installed Orion Pro.

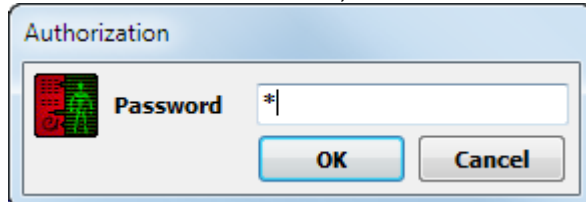
4.1 Connecting to the Central Server

All Orion Pro network clients shall be connected to the Central Server to provide functions as intended. When started, the Central Server Manager is connected automatically to the Central Server. By default, the application attempts to connect to the Central Server using IP address as set in the System Shell for all software modules.

If a connection attempt fails, the following message box will appear:



If a connection is successful, the **Authorization** request box will appear:

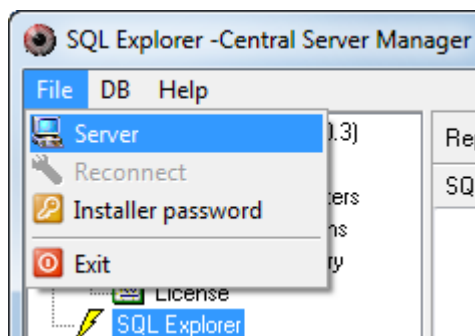


Please, type a software password that gives rights to administer the Database (rights to work with the Central Server Manager). The default user of the clean and demo Databases is “**Smith J.K.**” with maximum privileges and password “**1**”

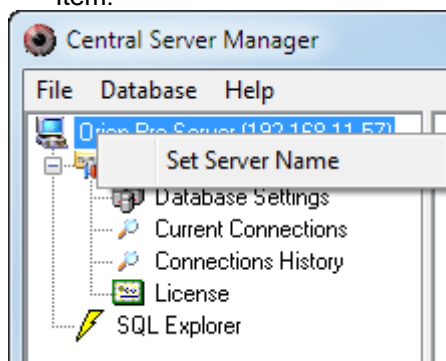
If case of wrong database parameters, use the installer password: **73173100**.


If you need to set a connection between the Central Server Manager and another workstation rather than the default one, please specify the network name of the Central Server workstation in the application settings.

Choose **File>Server** to open the **Server** dialog box:

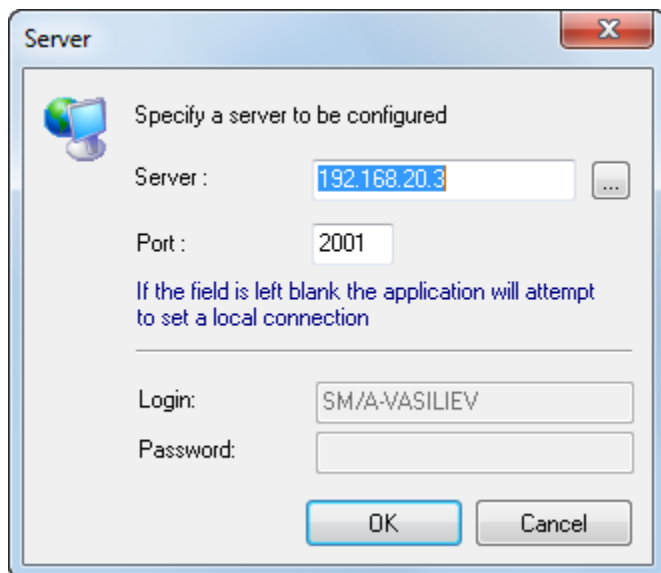


Or write-click the **Orion Pro Server** tree node in the main window and choose the **Set Server Name** item:



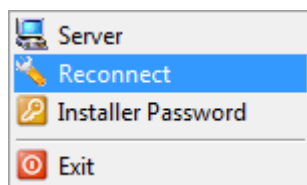
The **Server** settings box will appear. Please type the network name or IP address of a computer where the Central Server is installed or click the  button and select a database server name from the appeared dialog box. If you leave a blank server name, the application will attempt to establish a local connection to the Central Server.

In the **Port** field (under **Server**), please specify the port to be used by the Central Server Manager



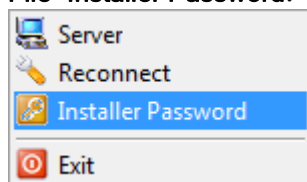
When the server name has been specified, please click **OK**. The application will attempt to connect to the Central Server.

Sometimes, you may have to reconnect to the Central Server. To do that, please choose the **File>Reconnect** item.

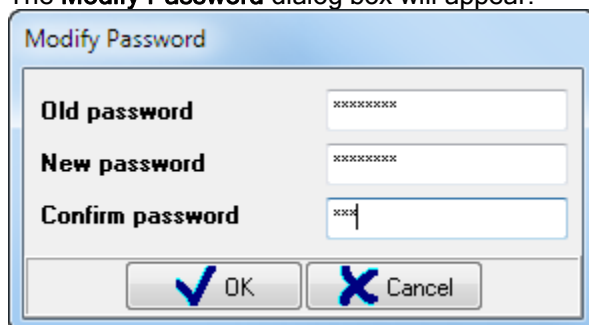


4.2 Installer Password

You can change the default Installer Password (73173100) of the Central Server Manager. Choose **File>Installer Password**:



The **Modify Password** dialog box will appear:

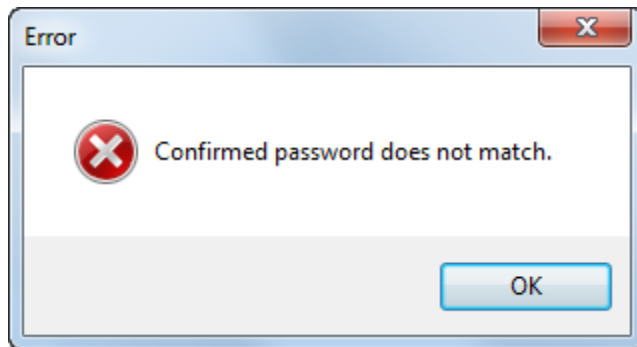


Please type the old installer password and your new Password, and re-enter the new password for confirmation in **Confirm password**. Click **OK** to save the changes.

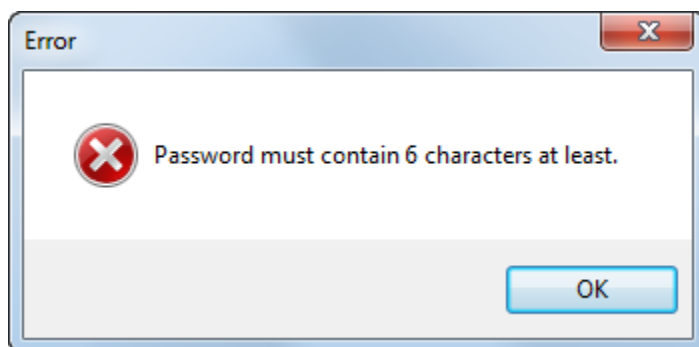
If the old password is wrong, the following message will appear:



If the confirmed password mismatches your new password, the following error message will appear:



Note that the Installer Password must contain six characters at least. If you enter less than that, the following message will appear:

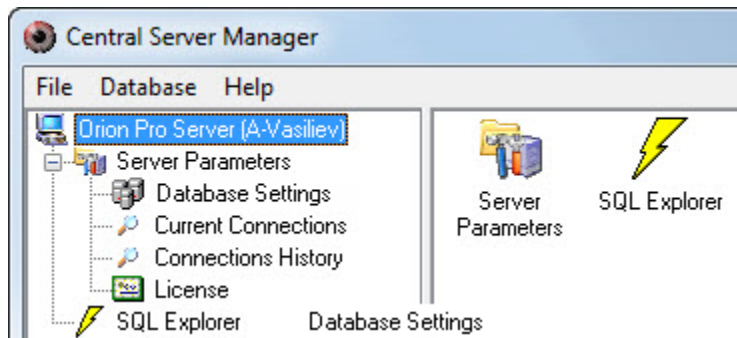


4.3 User Interface: Main Window

Upon successful connection to the Central Server, please proceed with the following:

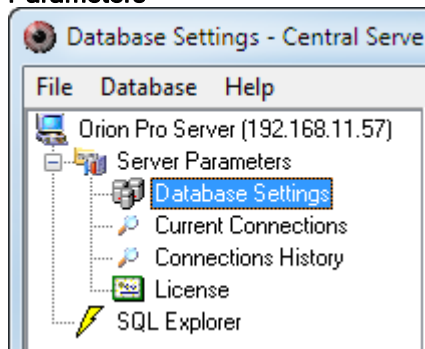
- Database Parameters
- Current Connections viewing
- Connections History viewing
- License information
- SQL Explorer

The main window includes the left pane with the tree and nodes providing the above services:



4.3.1 Database Parameters

To specify the main database settings, please select **Orion Pro Server>Server Parameters>Database Parameters**



The available database parameters depend on the type of used Database


4.3.1.2 SQL Server Database

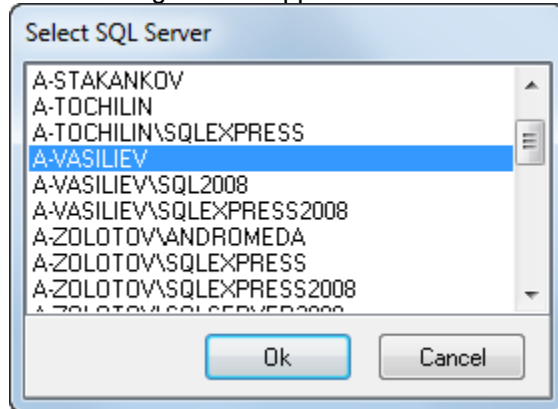
Using the Central Server Manager, you can configure the ADO drivers to access and manipulate data of SQL Server. However, the Central Server Manager cannot modify DBMS settings

Configurable Parameters:


Database Access	Must have the ADO value
Drivers	Must have the MSSQL
DATABASE NAME	Alias of Orion Pro database in the settings of SQL Server
SERVER NAME	The name of SQL Server's instance.
USER NAME	Login and password of the user account for SQL Server. By default, a user name "sa" with password "123456" will be added to the installed SQL server. If you use already installed SQL Server, type here the login and password of the user account that will be used to access and manipulate the Orion Pro database.
PASSWORD	

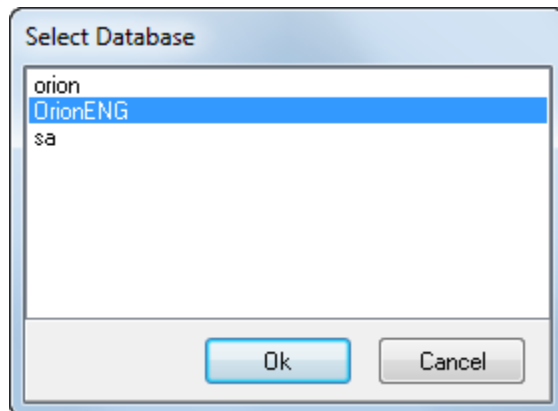
CommandTimeout	This parameter value defines a maximum SQL request timeout (in seconds). When the value of a timeout is reached, the request will be deemed as failed, and the connection to the server will be terminated. An infinite timeout is "0" It is highly recommended <u>NOT</u> to change the value of this parameter without consulting the Technical Support.
----------------	---

1. You can type an SQL Server instance name or select it using auto-search option. To select an SQL Server instance name, choose **SERVER NAME** and click the  button. The **Select SQL Server** dialog box will appear to show available servers:



The servers are searched within the local network.

2. The Database name (alias) are also can be entered manually or selected using the auto-search option. To select a database in the list of registered ones, when all other parameter values have been entered, please choose **DATABASE NAME** and click the  button. The **Select Database** dialog box will appear showing all databases registered on this SQL Server.
- 3.



When all settings for **Database Settings** have been completed, this will have the similar view as below:

Database Settings

Set database parameters

PASSWORD	123456
USER NAME	sa
DATABASE NAME	OrionENG
Drivers	MSSQL
Database Access	ADO
SERVER NAME	A-VASILIEV\SQL2008
CommandTimeout	0

(All parameters except for **Drivers** and **Database Access** can have other values).

With database and some other parameters entered, selecting another tree node or clicking any name of the menu will trigger an attempt to connect the Central Server to the specified Database:

- If you entered the wrong name of the SQL Server or the SQL Server is unavailable at the moment (in case of network failure), the following message will appear:



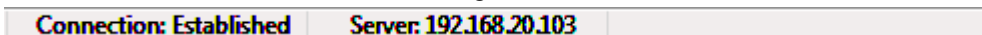
- If you typed the wrong login and password, the following message will appear:



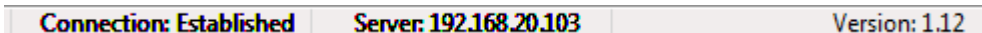
- If you entered a wrong database alias, the following message will appear:



and the status bar will show the following information:

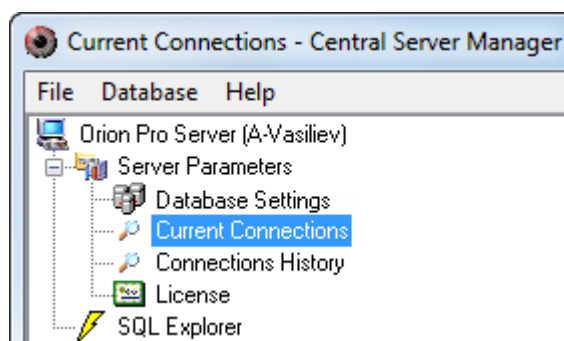


- If all entered database parameters are correct, the status bar will show the following information:



4.3.2 Current Connections

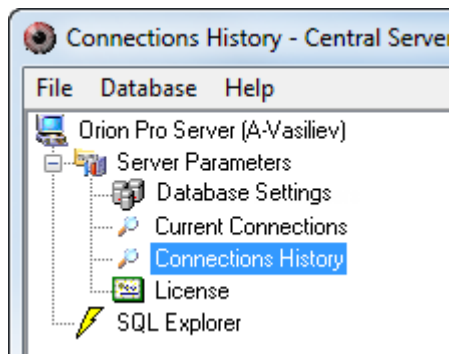
To view current connections to the Central Server, please choose the **Orion Pro Server/Server Parameters/Current Connections** tree node:



Information displayed in the Connected Users pane is used by developers to resolve any potential incorrect system actions in the course of functioning.

4.3.3 Connections History

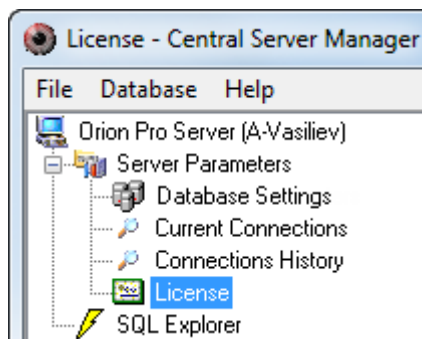
To view the history of connections to the Central Sever, please choose **Orion Pro Server/Server Parameters/Connections History** tree node:



Information displayed in the Disconnected Users pane is used by developers to resolve any potential incorrect system actions in the course of functioning.

4.3.4 License

To view the license information, please choose **Orion Pro Server/Server Parameters/License** tree node:



The license window shows the information on the Server's protection key (dongle) (ID, type and version), and the number of licensed workstations:

Dongle ID:	709393220			
Licensed Workstations:				
Time and Attendance:	5	Operative Task:	2	
Monitor:	8	Database Administrator	3	
Report Generator :	5			

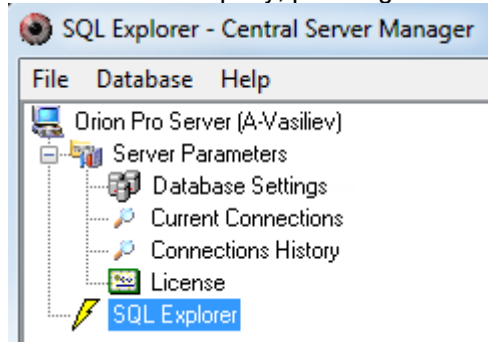
Attention! Orion Pro 1.12 supports the protection key of version # 1.10

4.3.5 SQL Explorer

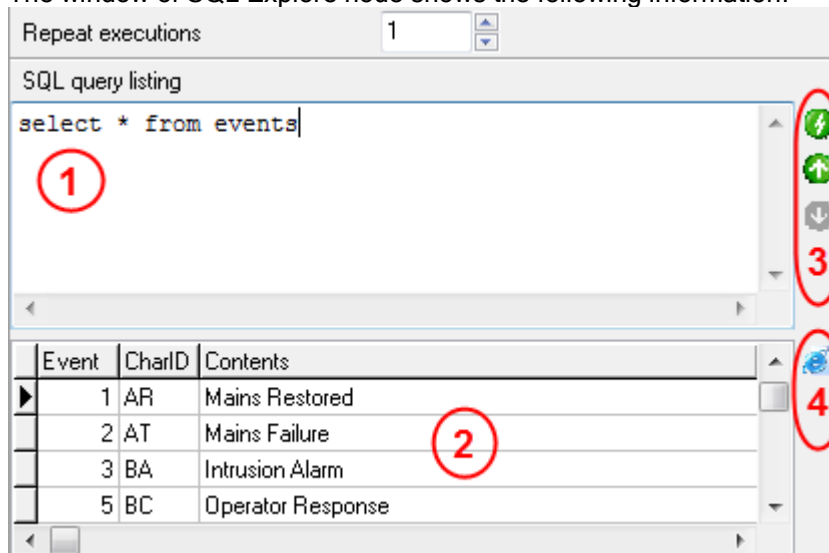
The Central Server Manager supports SQL querying.

*Attention! Bolid highly recommends that you **NOT** use SQL querying except for the **Select** operator. The database integrity can be damage by the only one SQL query, and the recovery often takes a lot of efforts or can be even impossible.*

To enter an SQL query, please go to **Orion Pro Server>SQL Explorer**:



The window of SQL Explore node shows the following information:



1 - SQL query entry box

2 - SQL query results box

3 - SQL query control buttons:

- To execute entered (or selected) SQL query

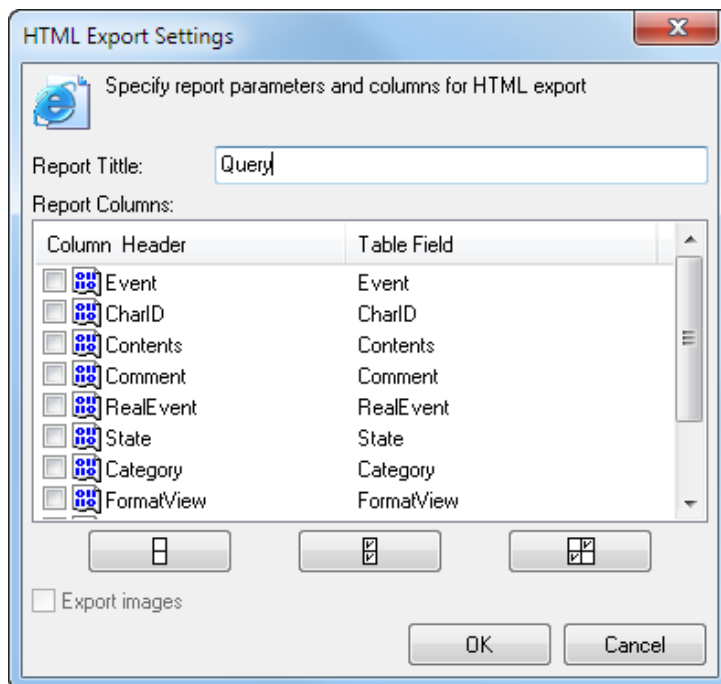
- To go to the previous SQL query

- To go to the next SQL query

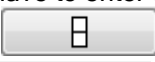
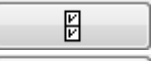
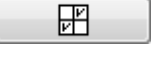
4 -Query results control button:

- Exports Query results to HTML

When the HTML export is selected, the following window will appear:



The user will have to enter the header of an exported report or select fields to be included in a report.

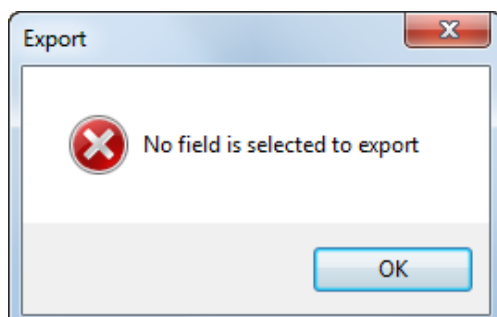
- This  button clears selections
- This  selects all fields
- This  inverts selections

The users can modify the header of each reported field. Please choose a required field, and then click it again to modify its header:

Report header	Table field
<input checked="" type="checkbox"/> Event	Event
<input type="checkbox"/> CharID	CharID

To export the selected data to HTML, please click the **OK** button. The Windows dialog box will appear to specify the name and location of a report file.

If no field is selected, the following message will be displayed:



4.4 Creating and Deleting Databases

The Central Server Manager enables the user to:

- Create a new database containing initial information to use it in the Orion Pro Suite
- Delete an existing database

4.4.1 Creating a New Database

Using the Central Server Manager, you can create a new database for the Orion Pro Suite.

A new database will include initial data as follows:

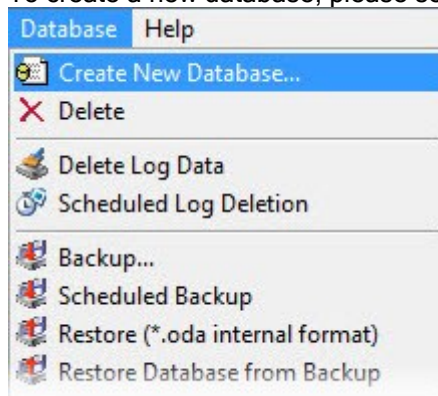
- Time zone: **Always**
- Access levels: **Maximum** and **Ban**
- Default user: **Smith J.K.** with the **Owner** status
- Access Zone: **0 -Outside World**
- Software password '1' providing the full set of privileges for Smith J.K
- Database version, events, group of events, system entities, and workstation properties.

Orion Pro Suite 1.12 supports only SQL Server databases. Thus, you can create SQL Server databases only.

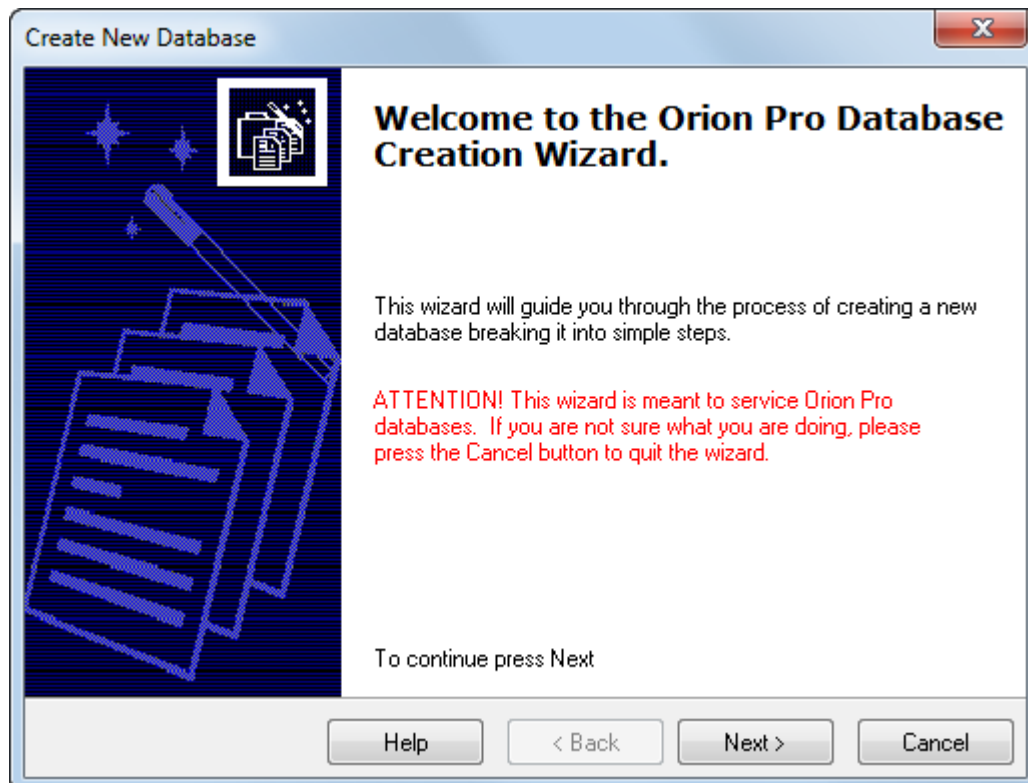
The Orion Pro Suite supports the ADO that is recommended to the use as the support of the BDE is discontinued globally

Attention. Before creating a new database, you must shut down all Orion Pro software modules with the system but for the Central Sever and Central Server Manager Modules.

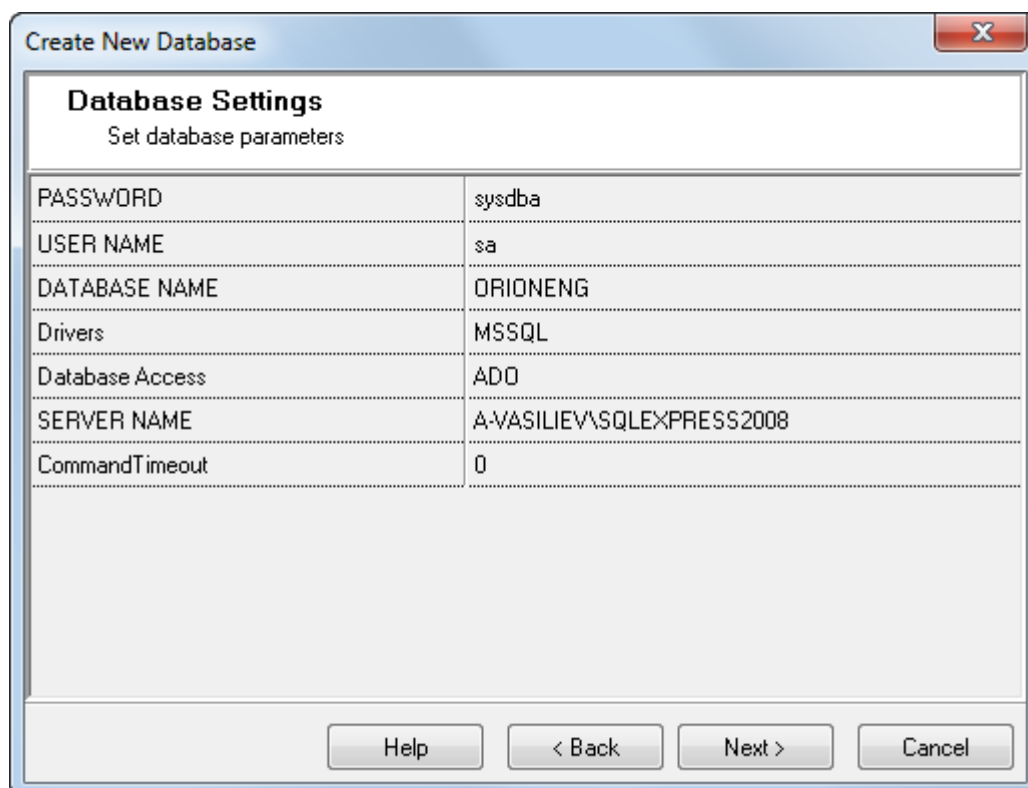
To create a new database, please select the **Create New Database** item in the Database menu:



The welcome window of the Database Creation Wizard will appear:




Click the Next button to proceed to the **Database Settings** box:

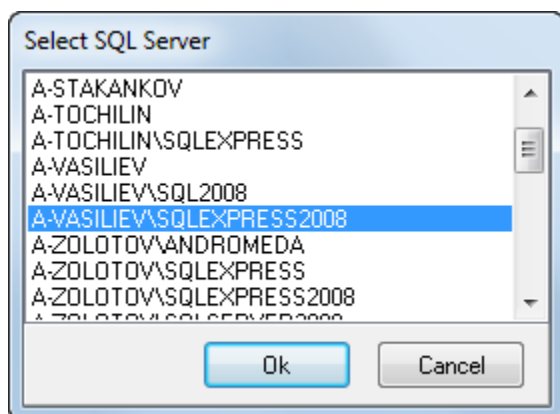


Please enter the following parameters for the new database:


Database Access	Must have the ADO value
Drivers	Must have the MSSQL
DATABASE NAME	Alias of Orion Pro database in the settings of SQL Server
SERVER NAME	The name of SQL Server's instance.
USER NAME	Login and password for user account of SQL Server. By default, a user name "sa" with password "123456" will be added to the installed SQL server. If you use already installed SQL Server, please type here the login and password of the user account that will be used to access and manipulate the Orion Pro database.
PASSWORD	
CommandTimeout	This parameter value defines a maximum SQL request timeout (in seconds). When the value of a timeout is reached, the request will be deemed as failed, and the connection to the server will be terminated. An infinite timeout is "0" It is highly recommended NOT to change the value of this parameter without consulting the Technical Support.

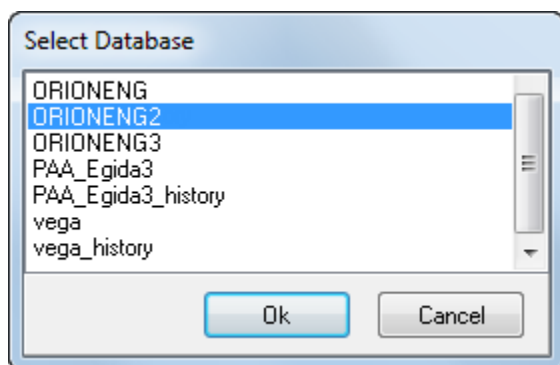
Attention!

1. You can type SQL Server instance name or select it using auto-search option. To select SQL Server instance name, choose **SERVER NAME** and click the  button. the **Select SQL Server** dialog box will appear to show available servers:



The servers are searched within the local network computers.

2. The Database name (alias) are also can be entered manually or selected using the auto-search option. To select a database from the list of registered ones, when all other parameter values have been entered, please choose **DATABASE NAME** and click the  button. The **Select Database** dialog box will appear with all databases registered on the selected SQL Server:

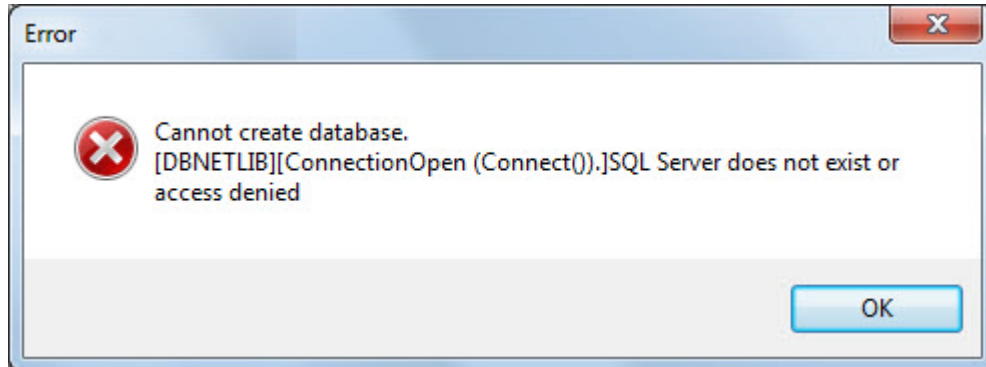


Attention! When you create a new Database, the Database alias (DATABASE NAME) has to be different from other database aliases registered on the SQL Server.

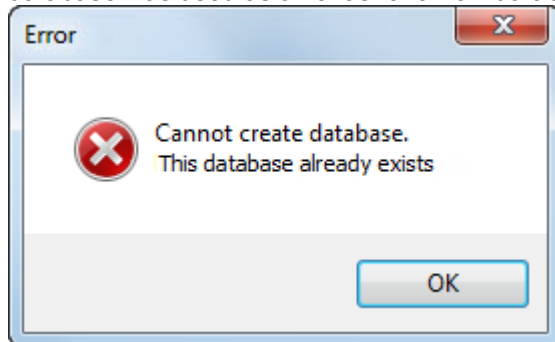
The alias (name) can be Alpha-numeric and underscore (_). The first character of the name should be alphabetical (recommended) or numeric. The maximum length of any alias name is 30 characters.

To start the process of database creating, please click the **Next** button:

If there is no connection to the SQL Server or wrong SERVER NAME settings, the following message will appear:

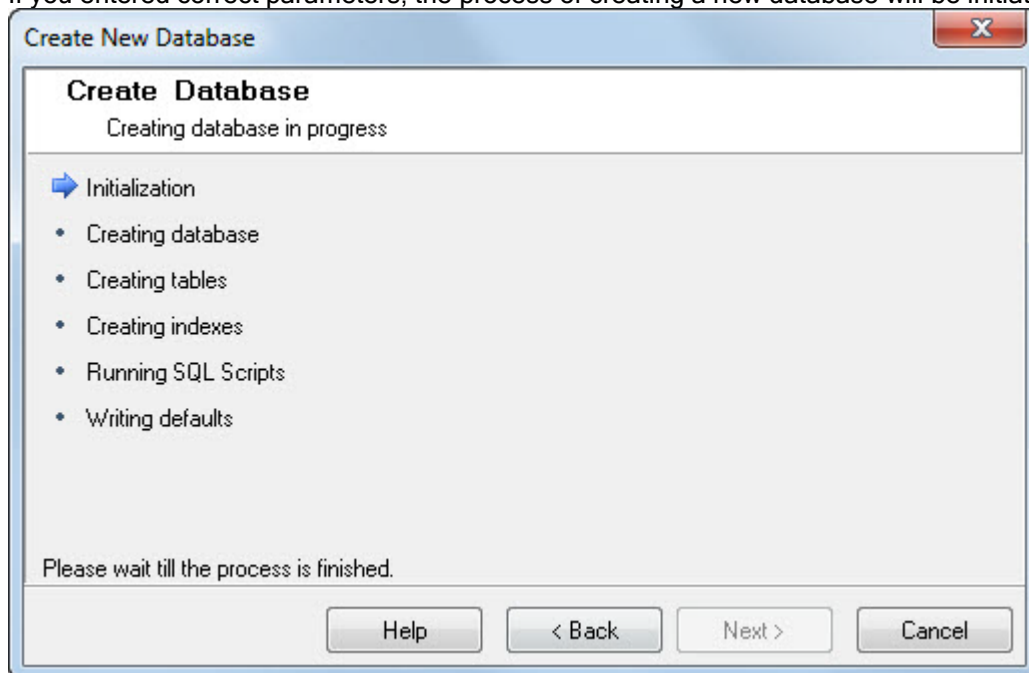


If the parameters of the database used before were left unchanged or the name of SQL Server-registered database was used as an alias for a new database, the following will appear:

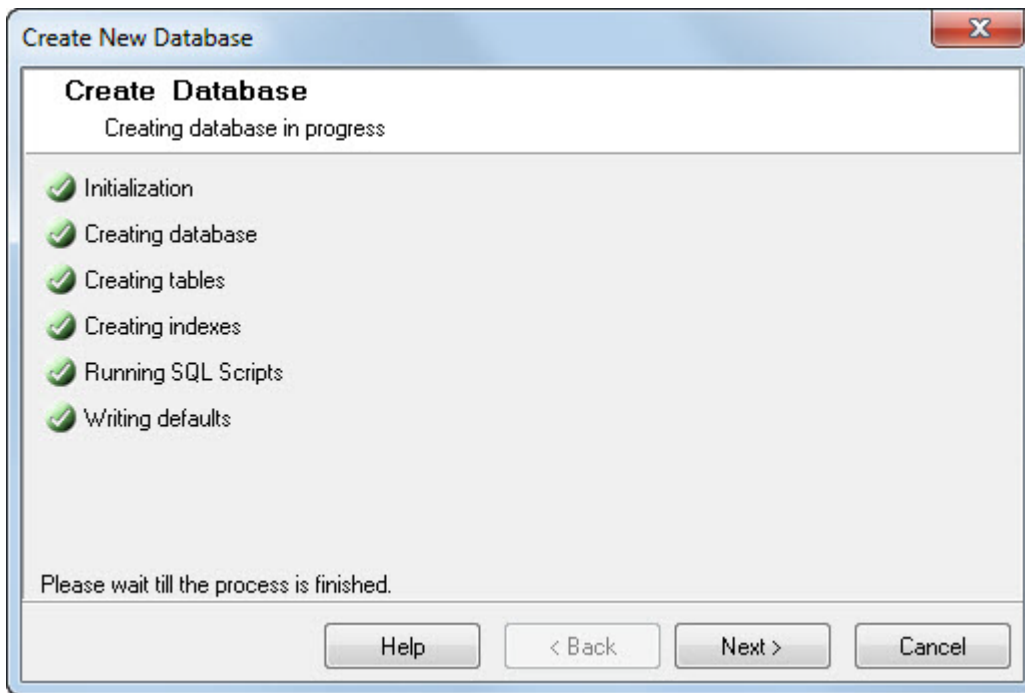


In this case, click the **Back** button and enter the correct parameter values for the new database.

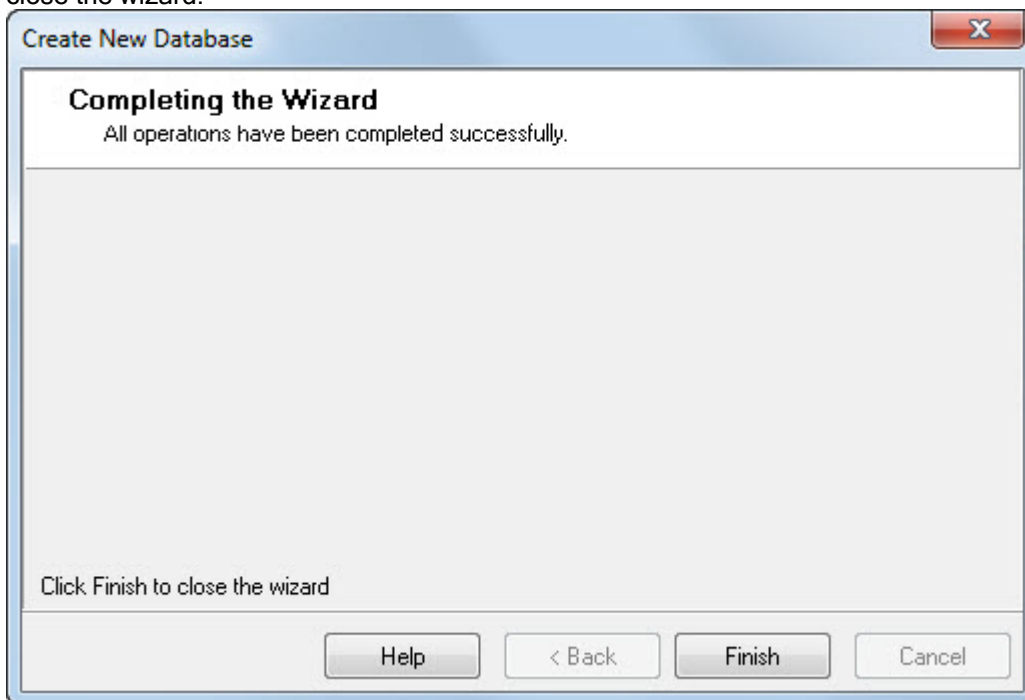
If you entered correct parameters, the process of creating a new database will be initiated:



When the process of database creation will be completed, click the **Next** button:



When the last window with a message on a success completion appears, please click the **Finish** button to close the wizard:



As soon as the Database is created, the Central Server will switch over to the this new Database while the Database Settings window will show the parameters of this the new database.

Note that the new Database of SQL Server consists of two files such as *.mdf and *.ldf with the same name as the alias name used for the new Database. If the SQL Server is installed on the same workstation where the Central Server run, the files of the Database created will placed in the following folder "C:\BOLID\MSDE2005" or "C:\BOLID\MSDE2008" (depending on a type of installation).

If the SQL Server and the Central Server are installed on different computers, the files of a Database will be placed to the default folders of the SQL Server.

4.4.2 Deleting a Database

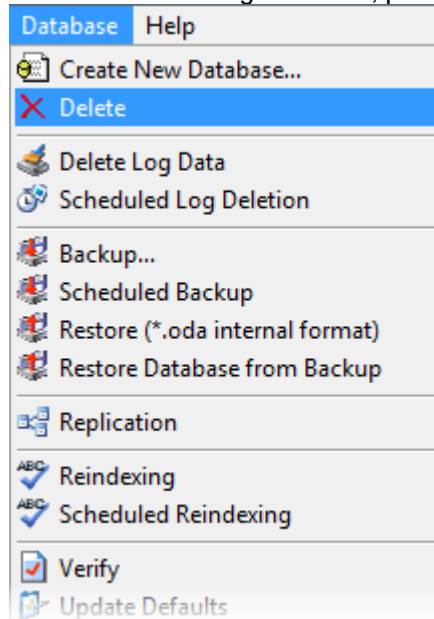
Using the Central Server Manager you can delete the existing Orion Pro Database.

Attention! When the database is deleted, it is physically removed. If you want only to detach a database from the SQL Server (remove from the list), use the **Detach Database from Server** item of the **Database** menu.

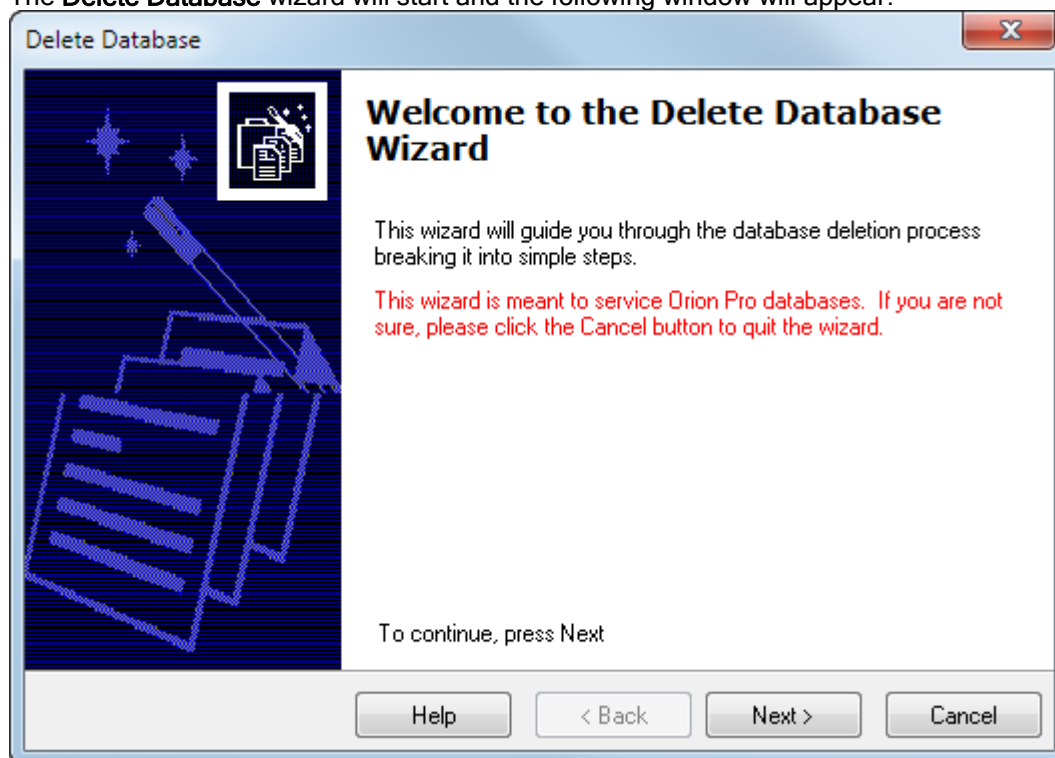
Before creating a new database, you must shut down all Orion Pro software modules within the system but for the Central Sever and Central Server Manager modules.

If the database to be deleted is not used currently in the Orion Pro system, you don't have to close the software modules.

To delete an existing database, please choose the **Delete** item in the Database menu:



The **Delete Database** wizard will start and the following window will appear:



Then, click the **Next** button to go **Database Settings**:


Database Settings	
Set database parameters	
PASSWORD	sysdba
USER NAME	sa
DATABASE NAME	ORIONENG12
Drivers	MSSQL
Database Access	ADO
SERVER NAME	A-VASILIEV\SQLXPRESS2008
CommandTimeout	0

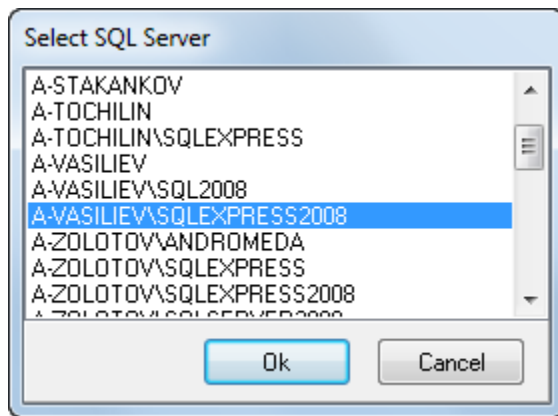
Help < Back Next > Cancel

Please enter the following parameters for the database to be deleted:


Database Access	Must have the ADO value
Drivers	Must have the MSSQL
DATABASE NAME	Alias of Orion Pro database in the settings of SQL Server
SERVER NAME	The name of SQL Server's instance.
USER NAME	Login and password for a user account of SQL Server. By default, a user name "sa" with password "123456" will be inducted to the installed SQL server. If you use already installed SQL Server, please type here the login and password of the user account that will be used to access and manipulate the Orion Pro database
PASSWORD	
CommandTimeout	This parameter value defines a maximum SQL request timeout (in seconds). When the value of a timeout is reached, the request will be deemed as failed, and the connection to the server will be terminated. An infinite timeout is "0" It is highly recommended NOT to change the value of this parameter without consulting the Technical Support

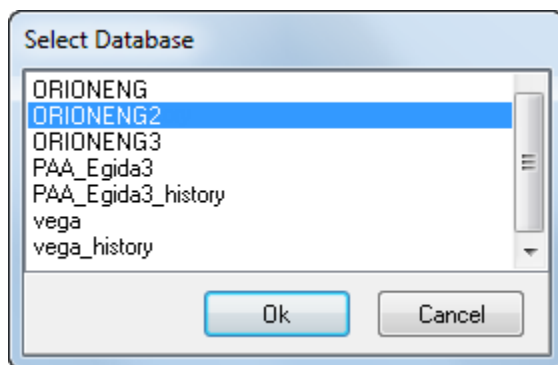
Attention!

1. You can type an SQL Server instance name or select it using auto-search option. To select SQL Server instance name, choose **SERVER NAME** and click the  button. the **Select SQL Server** dialog box will appear to show available servers:

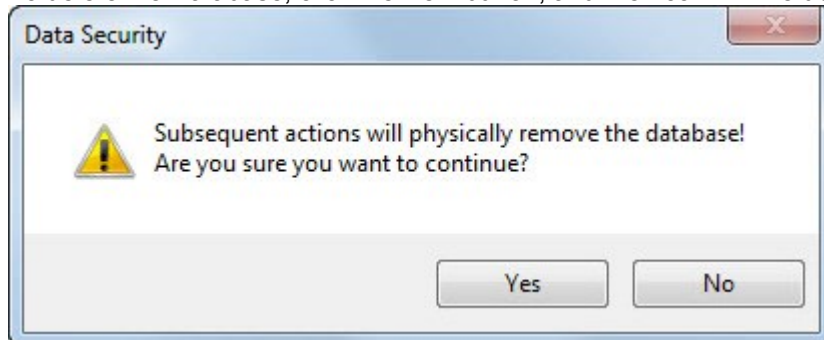


The servers are searched within the local network.

2. The Database name (alias) are also can be entered manually or selected using the auto-search option. To select a database from the list of registered ones, when all other parameter values have been entered, please choose **DATABASE NAME** and click the  button. The **Select Database** dialog box will appear with all databases registered on the selected SQL Server:

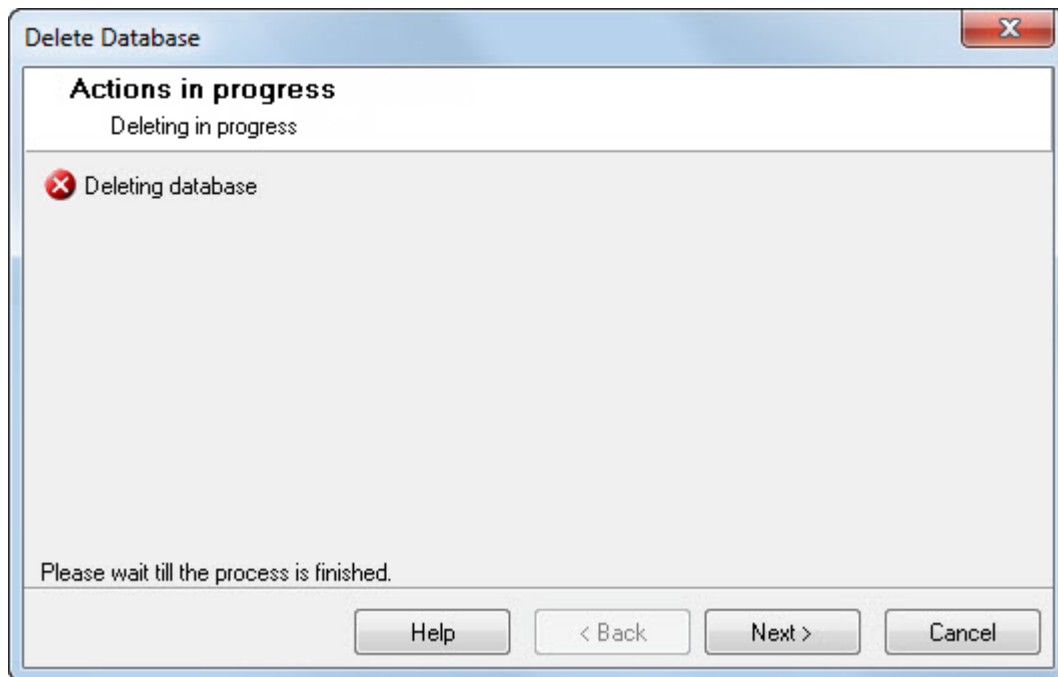


To delete the Database, click the Next button, and then confirm the deletion by clicking **Yes**:

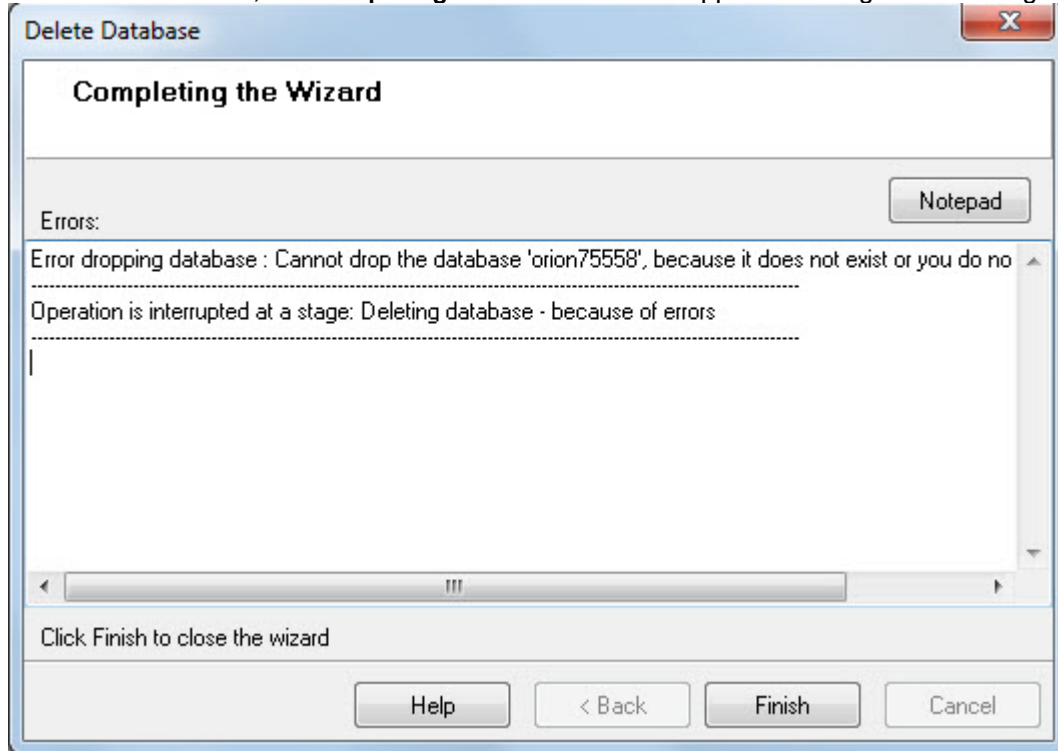


It will attempt to delete the Database with parameters you specified.

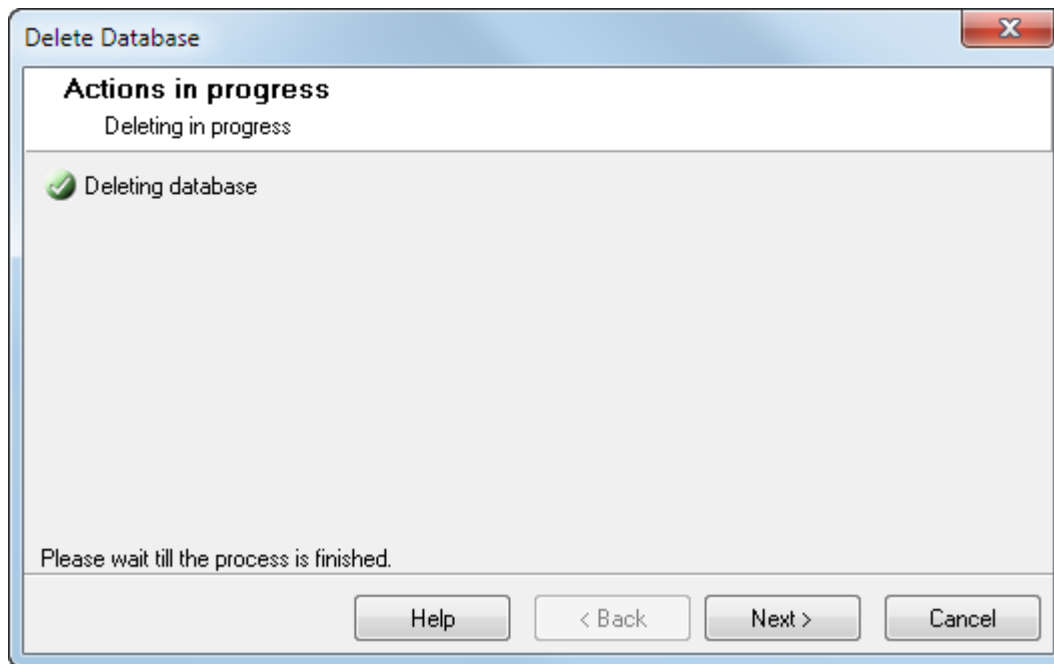
If a non-existent database's parameters were entered, the Database will not be deleted:



Click the Next button, the **Completing Wizard** window will appear showing error message:



If you entered correct parameters of the Databases (registered in the SQL Server), the database will be deleted:



Then click the **Next** button, the **Completing the Wizard** window will display the message on the Database deletion success:



To close the wizard, please click the **Finish** button.

If you deleted the currently used Database, please enter the parameter values of another Orion Pro Database or create a new Database.

4.5 Deleting Log Data from the Database (Event Logs, Alarms Logs, Statistics Records)

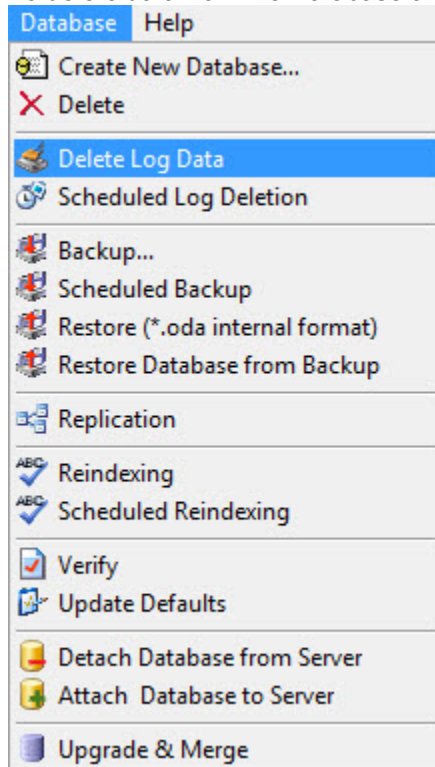
The Central Server Manager offers the following to delete old information from the Database:

- Deleting data from event log, alarm log and statistics log completed or within the specified period, as well as the transaction log (it cleans the *.ldf file of the Database);
- Configuring schedules for automatic cleaning the event log, alarm log and statistics log using the SQL Server service.

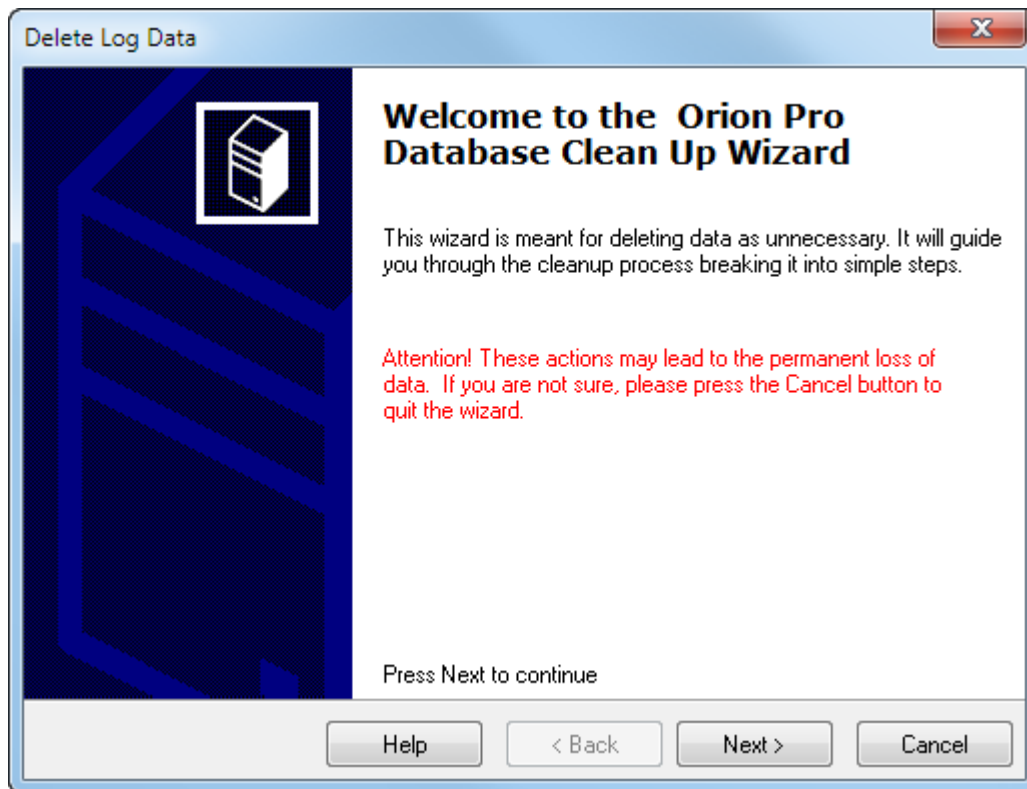
Note that the deletion of log data and configuration of scheduled log deletion are effective for the currently used Orion Pro Database.

4.5.1 Deleting Data from the Database

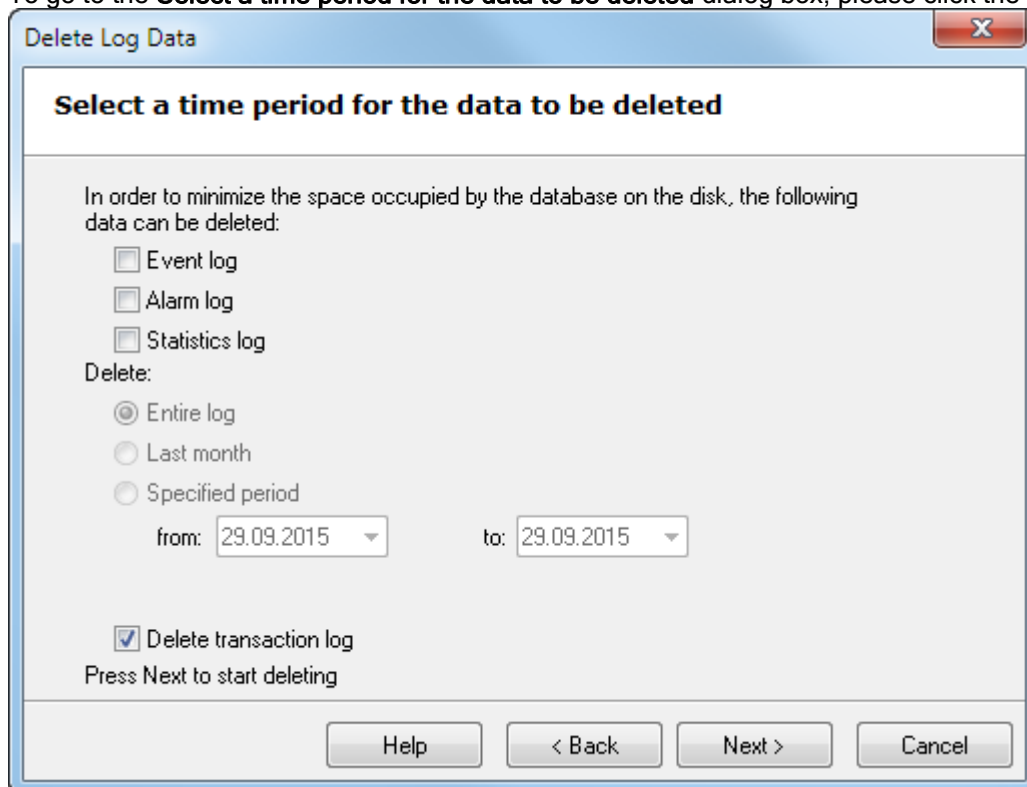
To delete data from the Database and/or delete an event log, choose **Database/Delete Log Data**:



The welcome window of the **Database Cleanup Wizard** will appear:



To go to the **Select a time period for the data to be deleted** dialog box, please click the **Next** button:

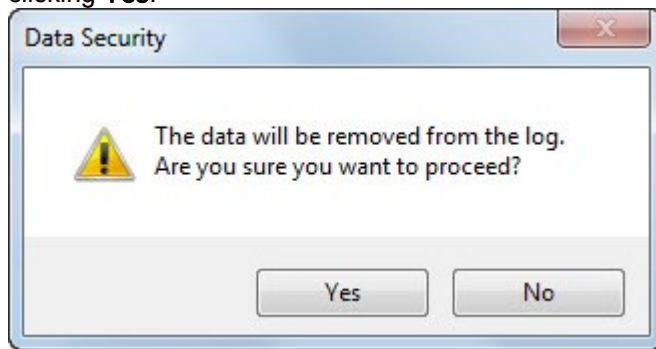


- - Select a log you want to clean:
 - ☒ Event log
 - ☐ Alarm log
 - ☐ Statistics log
 - (No logs can be selected, if you need to delete a transaction log.
- Choose a period to clean selected data within:

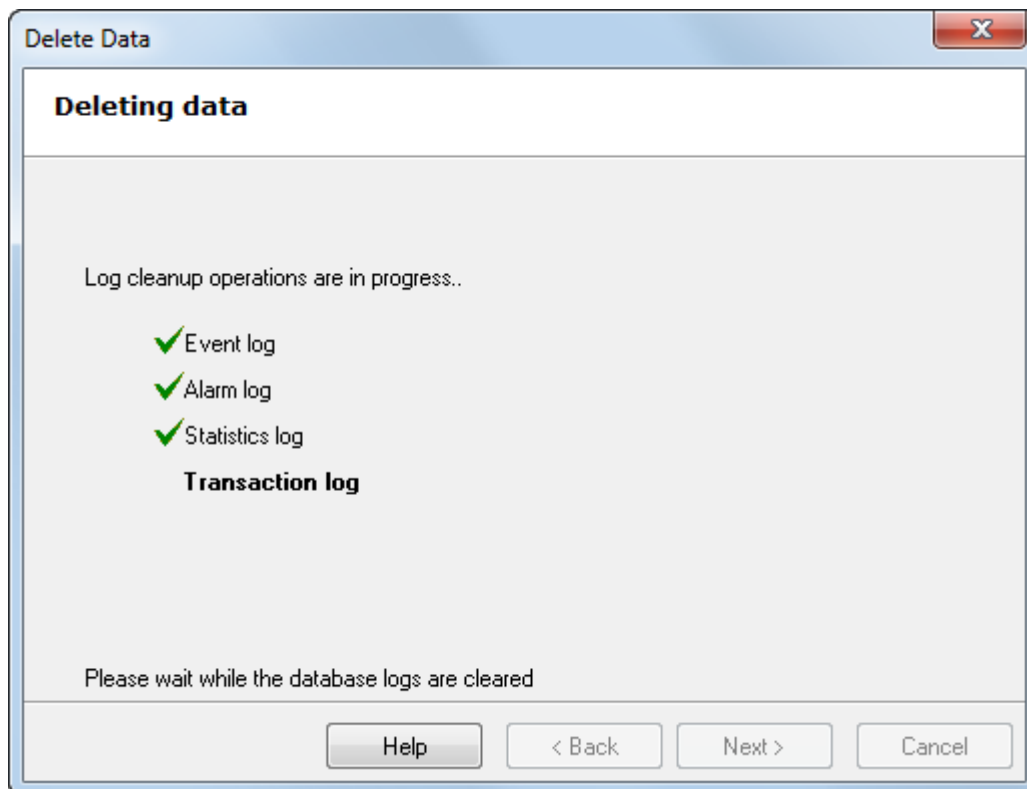
☒ Entire log
☐ Last month
☐ Specified period
 from: 29.09.2015 to: 29.09.2015

- Check whether to delete (clean) the transaction log (*.ldf):
☒ Delete transaction log

To delete the selected data, please click the **Next** button and confirm the data deletion in the dialog box by clicking **Yes**:

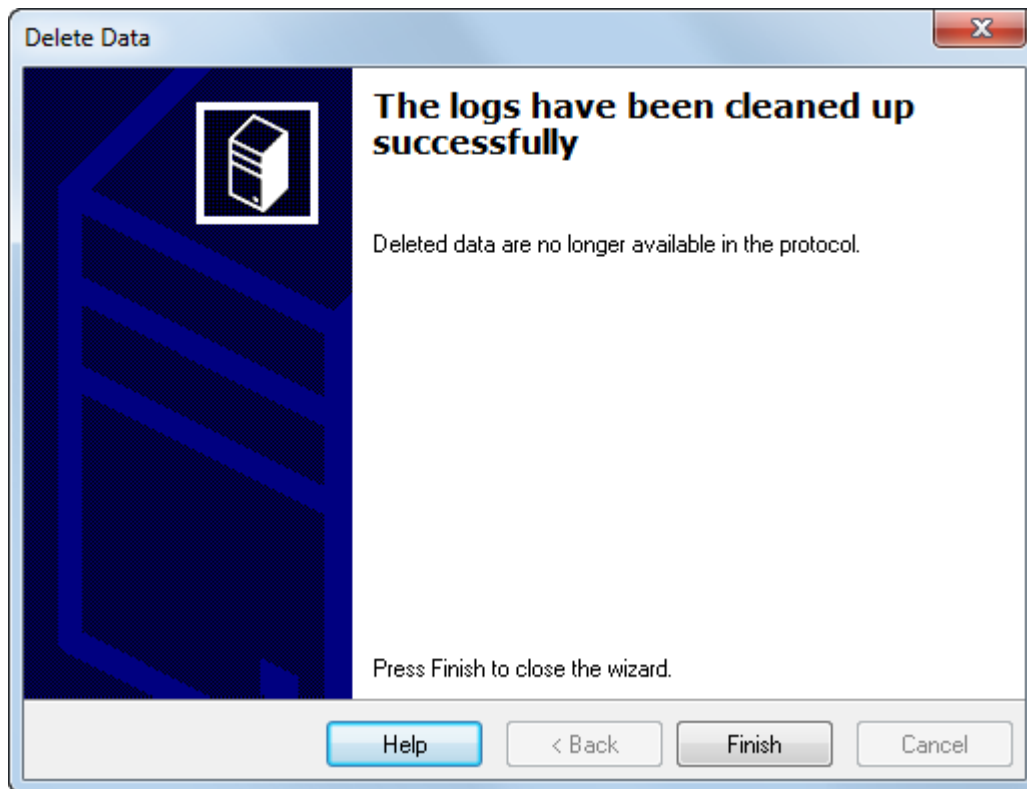


As soon as the deletion is confirmed the data will be deleted:



It will take some time when logs are large or a long period is selected.

Upon completion, the Wizard will reports on the completion of a delete process.



To close the Wizard, please click the **Finish** button.

4.5.2 Configuring Log Cleanup Schedule

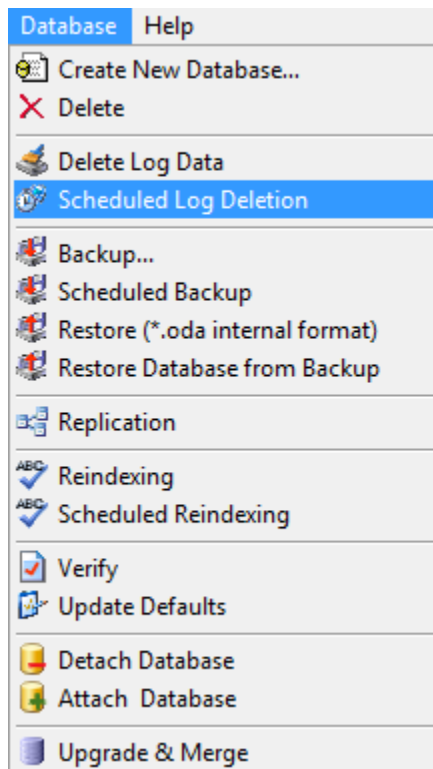
Using the Central Server Manager, you can configure to clean up alarm, event, and statistics logs with SQL Server's services.

Two approaches are available:

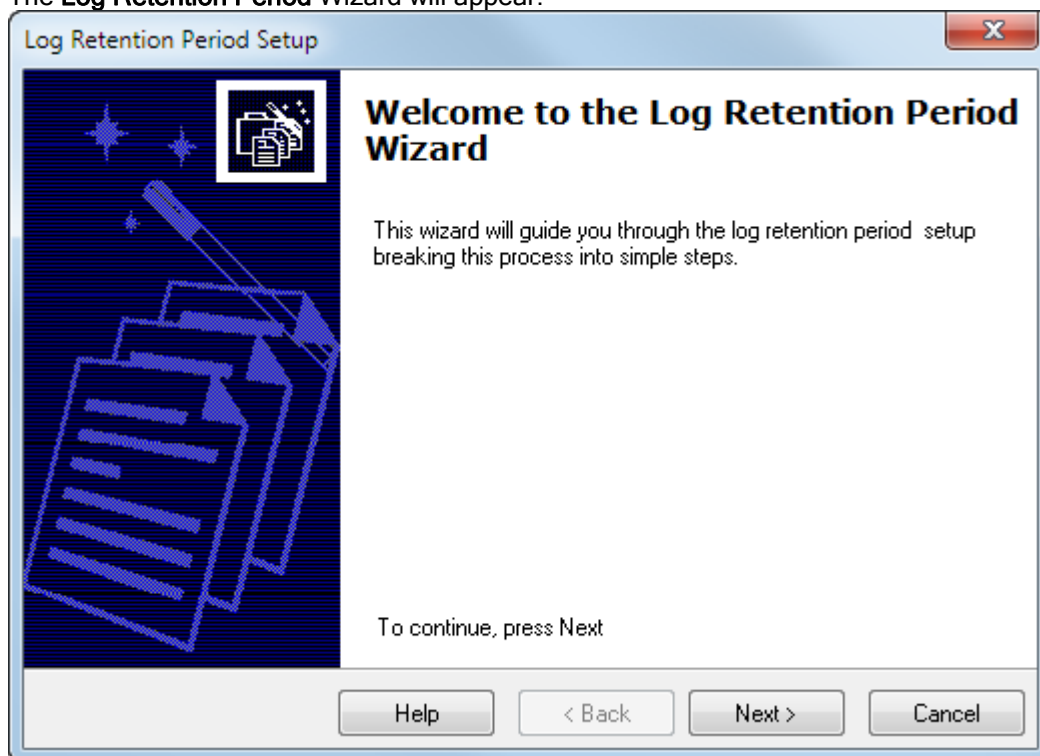
1. Using SQL Server service:
In this case, the installed SQL Server version must support the job execution (the Orion Pro installation package includes a paid-free SQL Server that does not support this functionality)

Data deletion from the database using SQL Server services requires a permanently running SQL Agent of the operated SQL Server instance.
2. Using the Task Scheduler of Windows OS:
In this case, the full version of SQL Server is not required

To configure the schedules for cleaning database logs, please choose **Database/Scheduled Log Deletion**:



The **Log Retention Period Wizard** will appear:



Then click the **Next** button to go to the **Log Cleanup Settings** window.

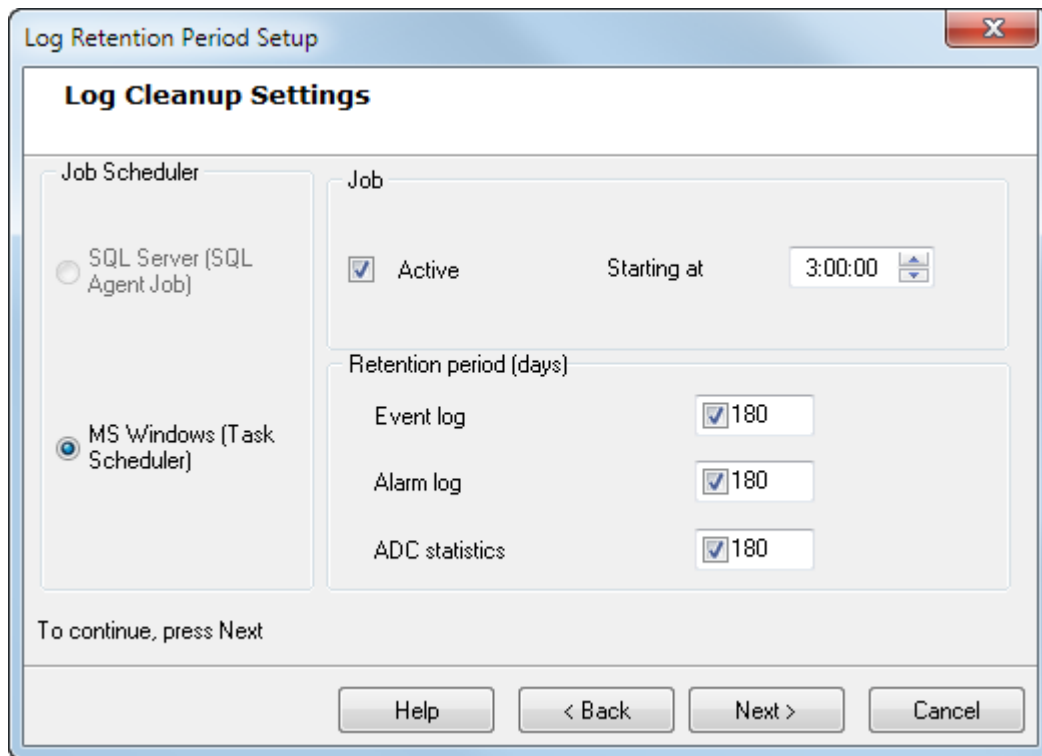
If the log retention period is configured for the first time, the Log Cleanup Settings will look as the following:

Please select what service you want to use **SQL Server (Agent Job)** or **MS Windows (Task Scheduler)**:

The log will be cleaned every day. To specify the time of daily cleanup, enter a required time value in the **Starting at** field:

Select what logs will be cleaned and specify the **Retention Period (days)** for each selected log:

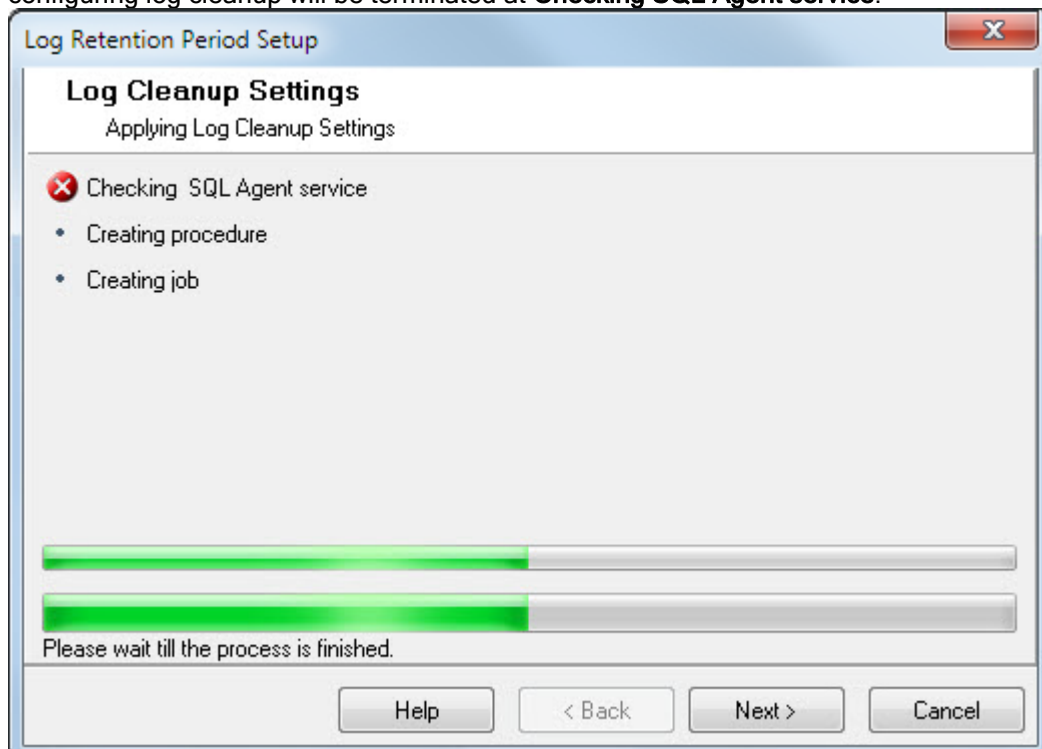
If it is not the first time when you configure a retention period, the **Log Cleanup Settings** window will look as follows:



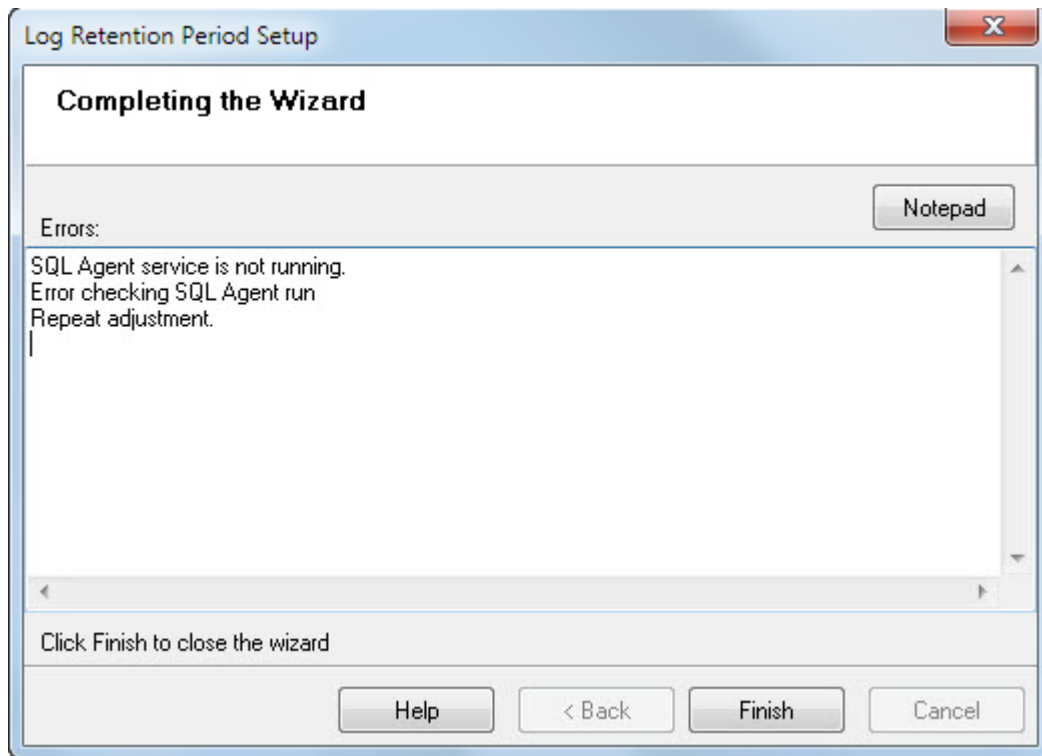
The figure shows that further selection of another Job Scheduler's service is not accessible (the current selection is used). It also includes the new parameter **Active** that is responsible for enabling or disabling the scheduled log cleanups.

Click the **Next** button to save changes for the log cleanup settings.

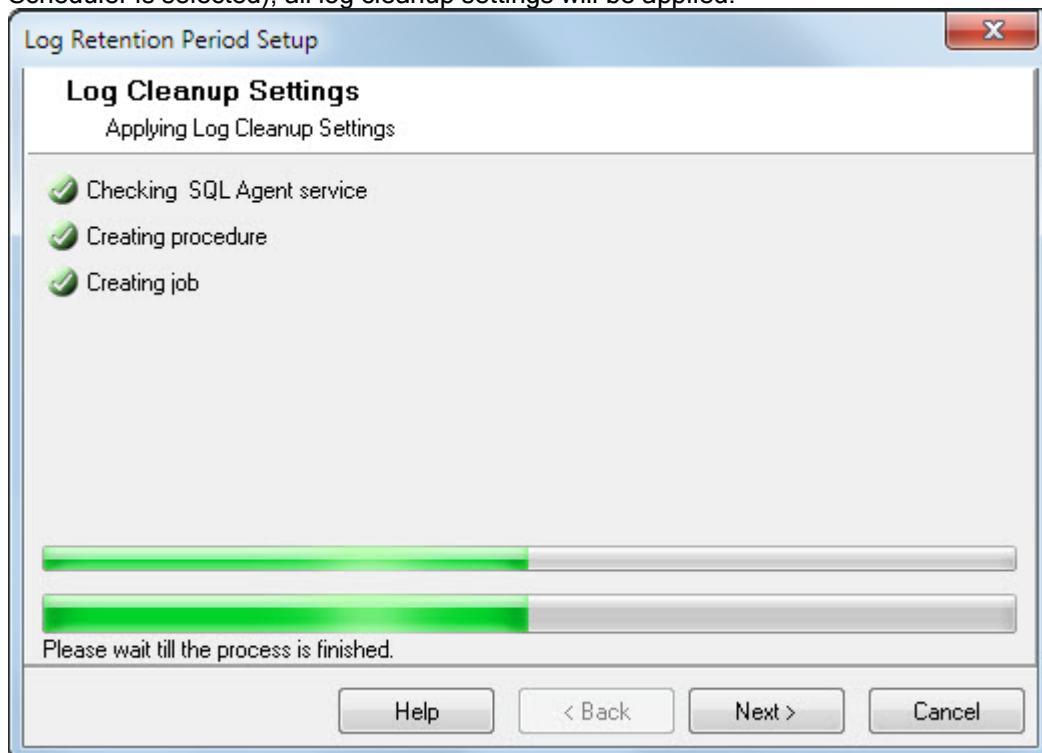
If the SQL Agent service is not running (in case of using SQL Server job scheduler), the process of configuring log cleanup will be terminated at **Checking SQL Agent service**:



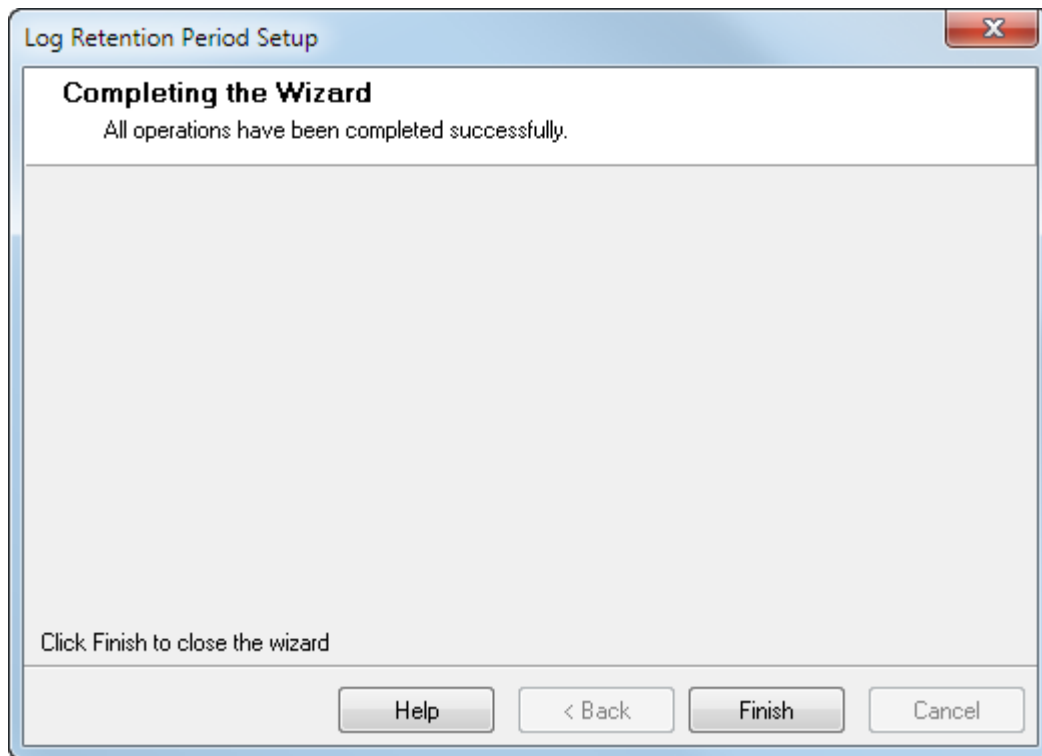
Then click the **Next** button, the last Completing the Wizard window will appear to show the relevant information:



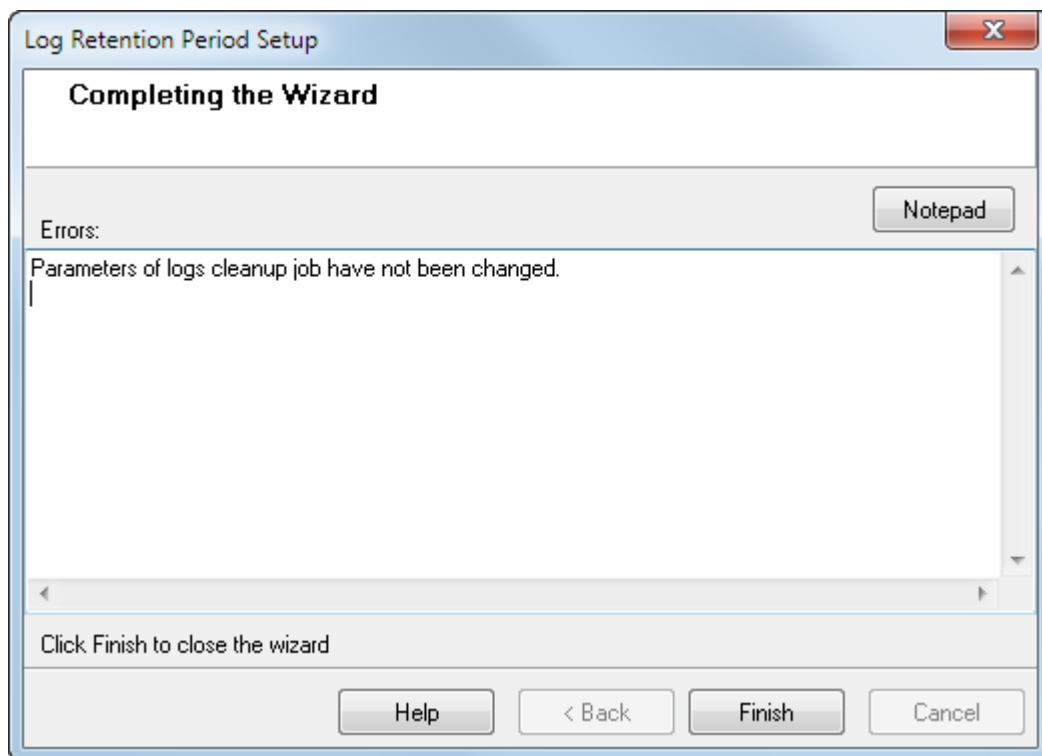
When Windows' Task Scheduler is selected or SQL Agent Service is launched (if SQL Server Job Scheduler is selected), all log cleanup settings will be applied:



Then click the **Next** button to go to the **Completing Wizard** window with a message on a successful setup process:



If you already run the scheduled log cleanup wizard before and didn't make any changes this time, the stage of settings will be skipped but the Completing the Wizard window will appear:



To close the Log Retention Period Setup Wizard, please click the **Finish** button.

4.6 Database Backup

Using the Central Sever Manager you can provide the following:

- Create database backups
- Configure backup schedules by SQL Server tools
- Restore a database from the *oda (internal format)

- Restore a database from a backup file

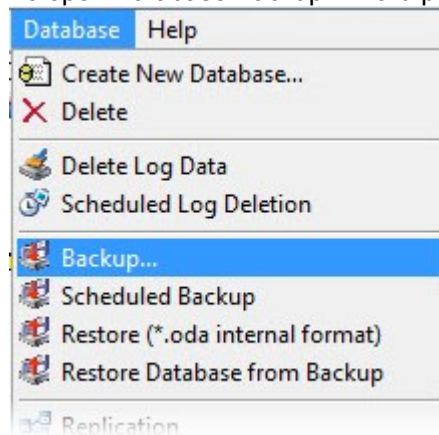
To back up and restore SQL Server databases, you can use the relevant software.

Also you can use the relevant software solutions to configure scheduled backup and restore of SQL Databases

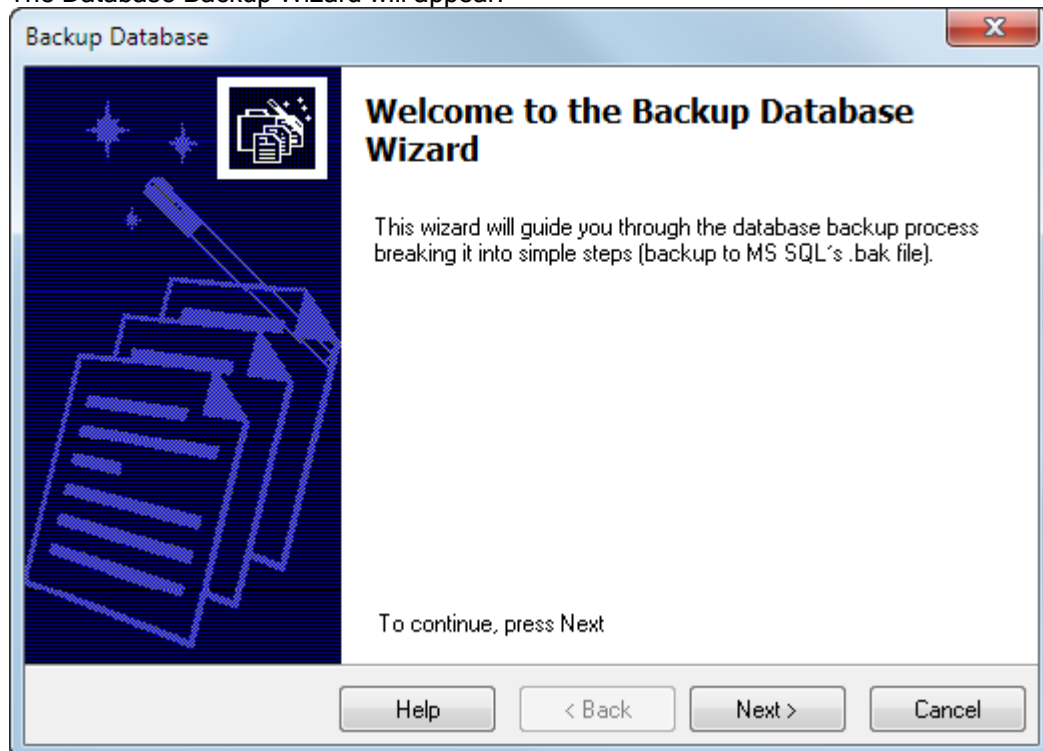
4.6.1 Backing up Databases

Please note that it is the currently active database will be backed up.

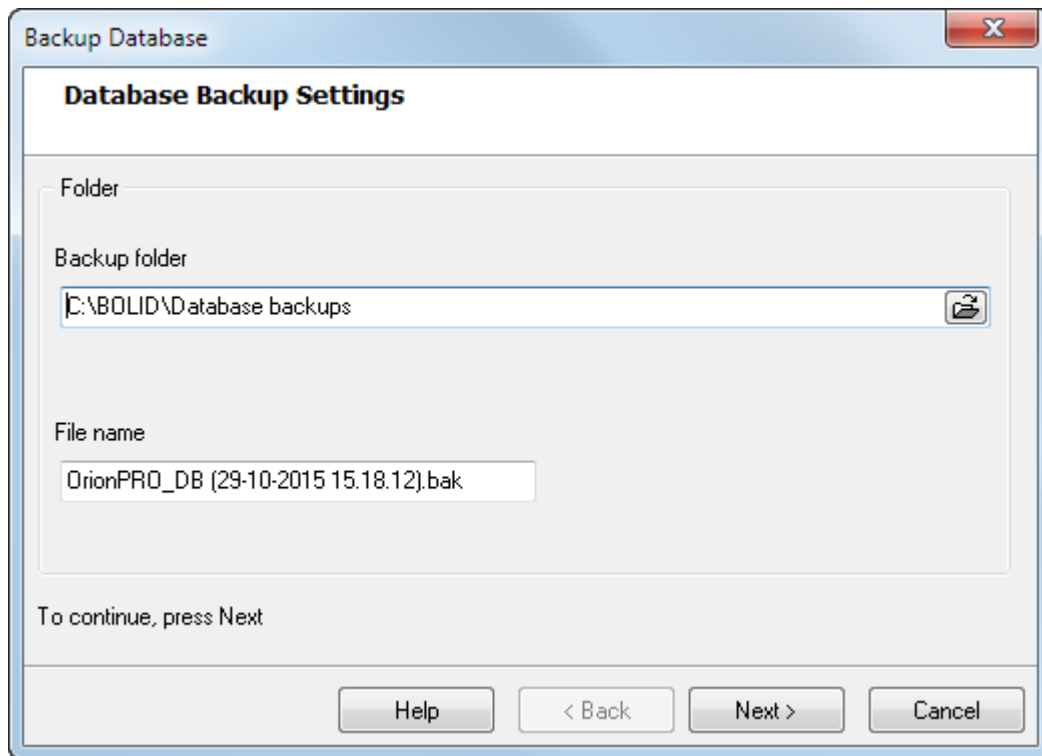
To open Database Backup Wizard please choose **Database/Backup**:



The Database Backup Wizard will appear:

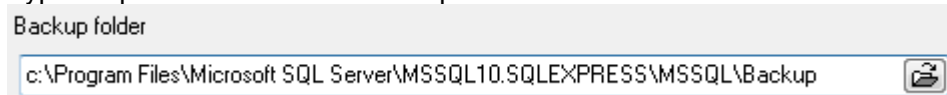



Please click the **Next** button to go to the **Database Backup Settings** window:

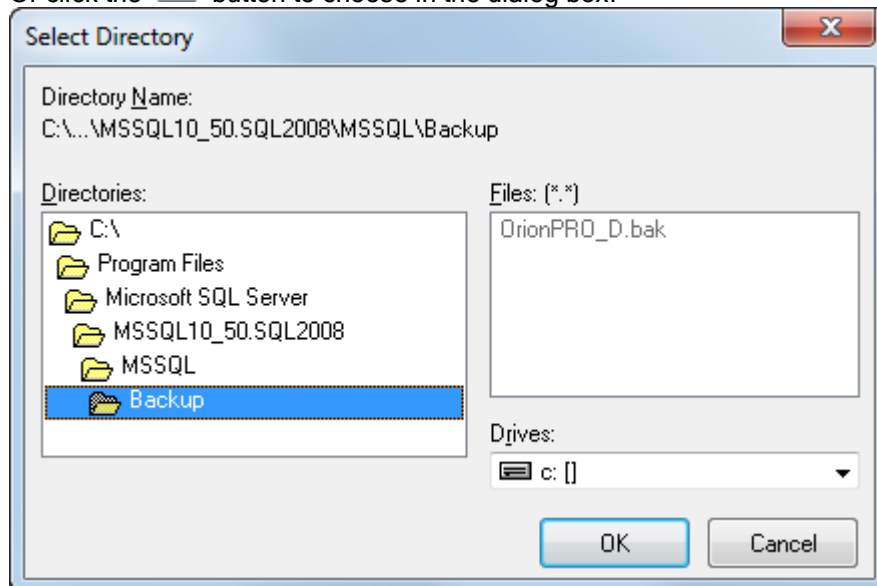


Parameters that should be specified in the window are as follows:

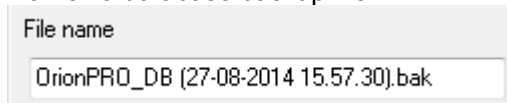
- Type the path to the database backup folder:



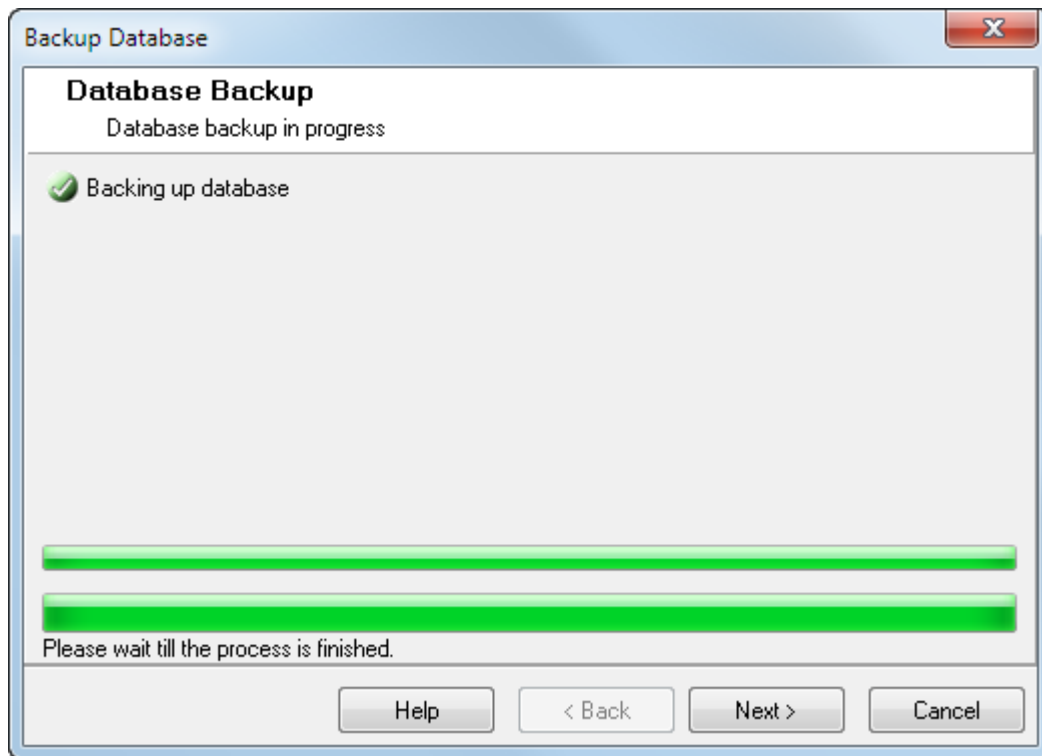
Or click the  button to choose in the dialog box:



- Name a database backup file:

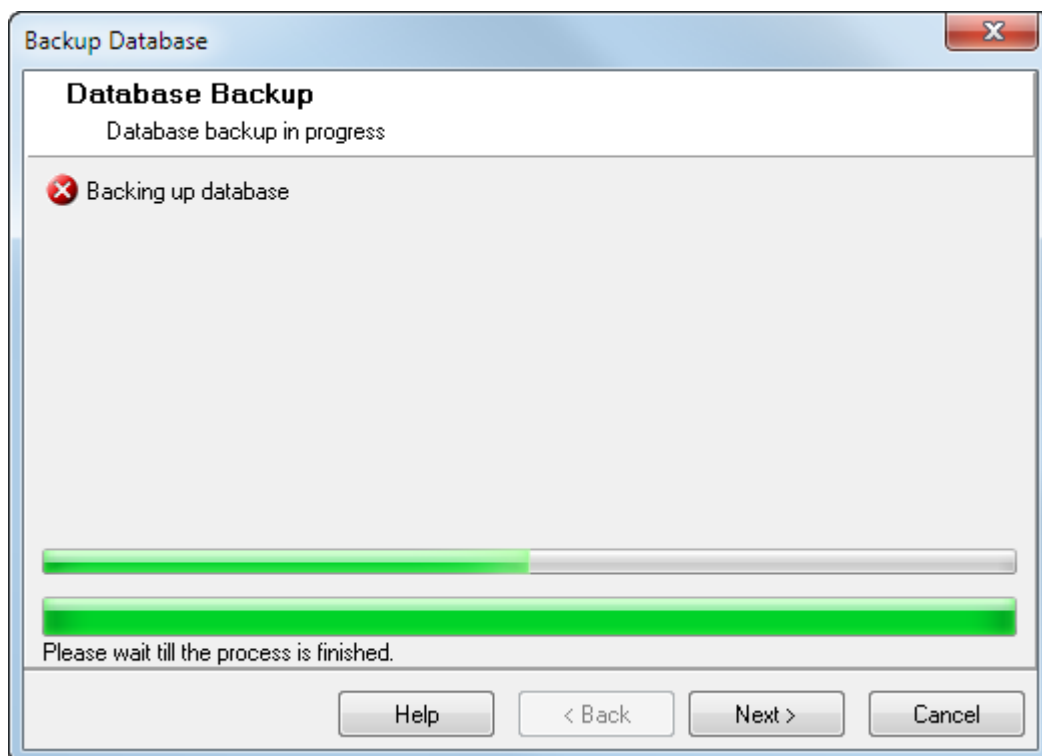


Click the Next button to start the backup process:

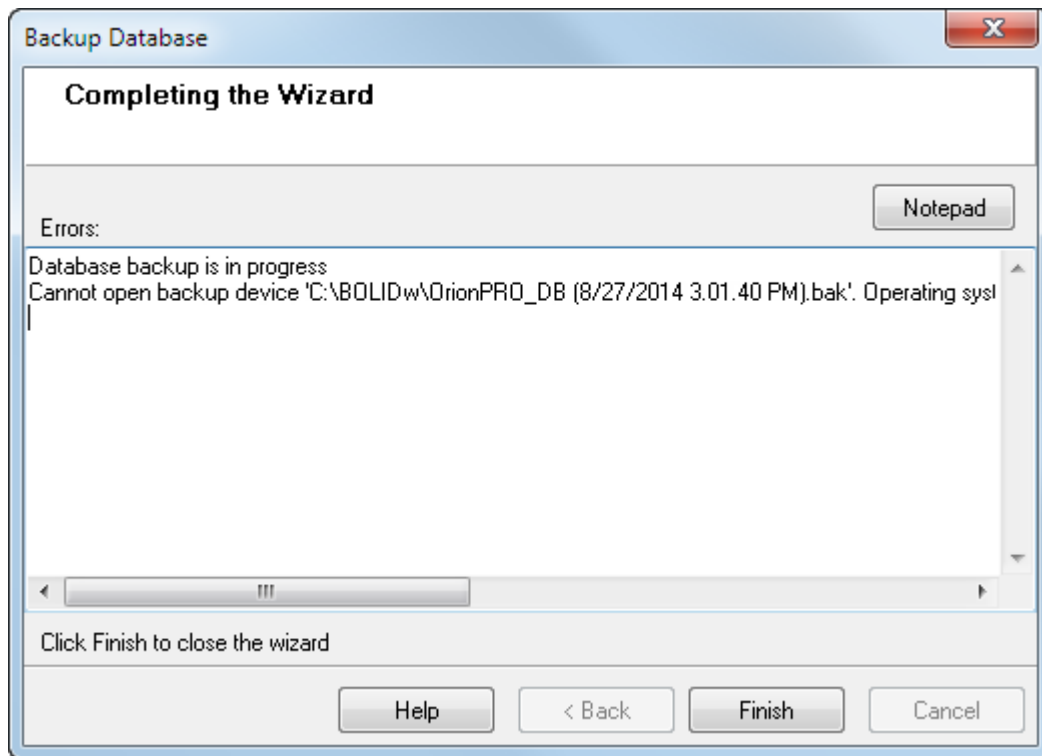


Please wait till backup process is completed.

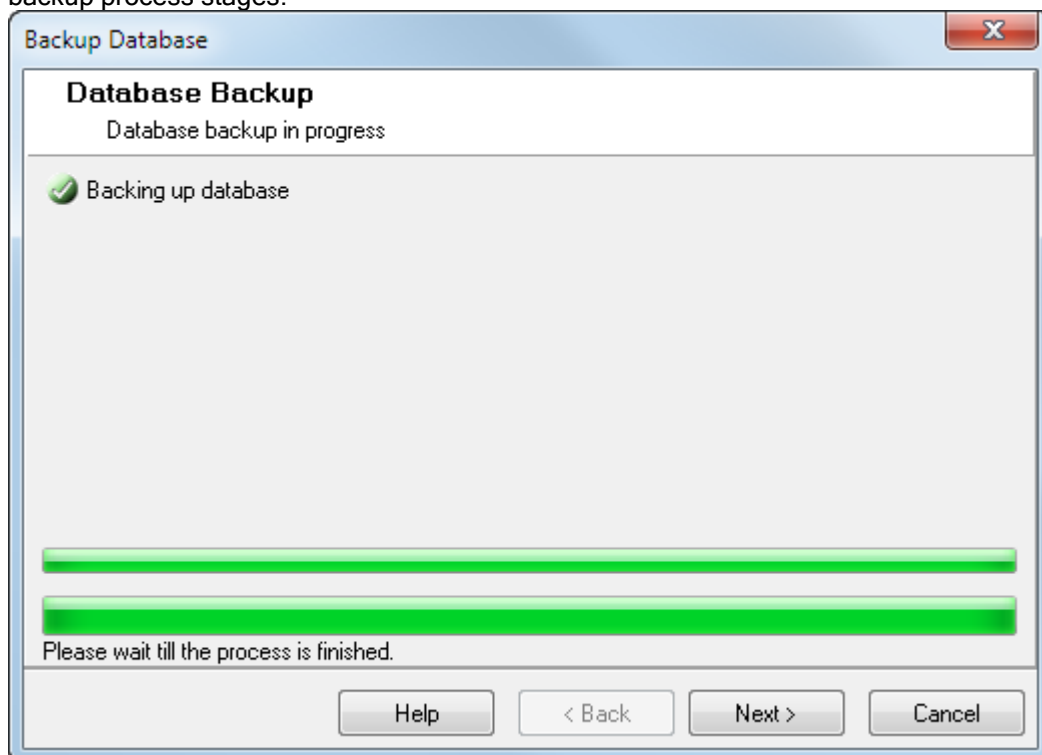
You specified a wrong path to the backup folder or incorrect name of a backup file, the process will be terminated:



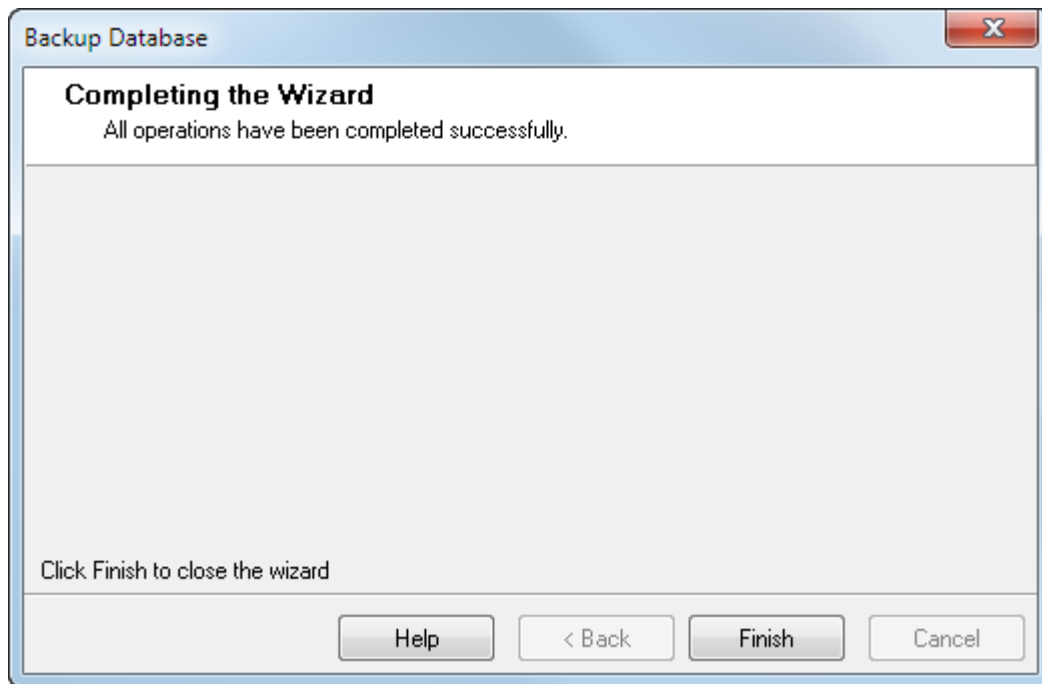
Click the Next window to see what caused an error:



If the database backup was created, the Database Backup Wizard will tell you about completion of all backup process stages:



Click the Next button to go to see the backup success message in the Completing the Wizard window:



To close the Database Backup Message, please click the finish button.

4.6.2 Configuring Scheduled Database Backup

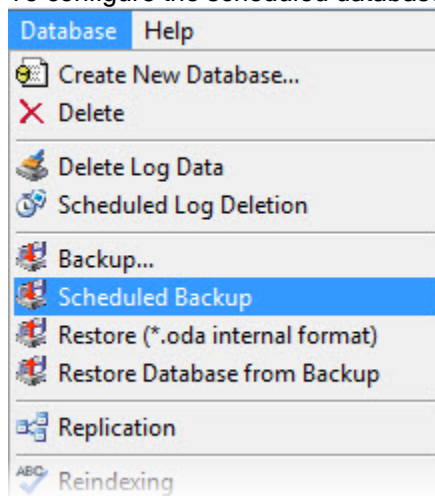
The Central Server Manager offers options to configure scheduled database backups by the SQL tools

Two approaches are available:

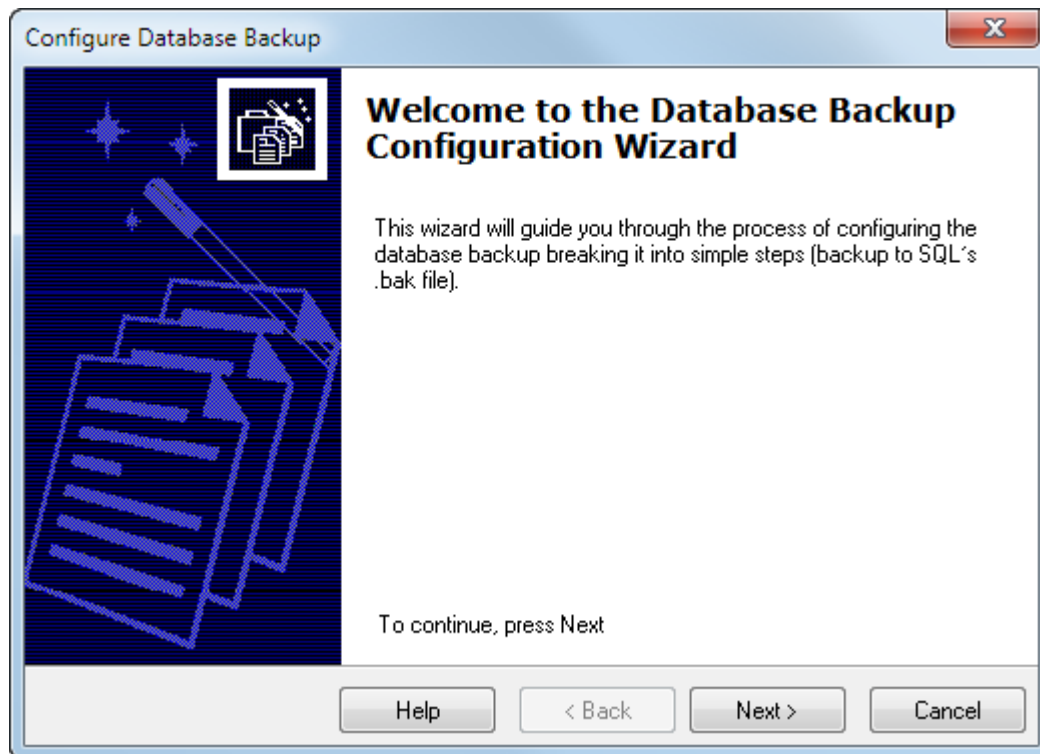
- Using SQL Server service:
In this case, the installed SQL Server version must support the job execution (the Orion Pro installation package includes a paid-free SQL Server that does not support this functionality)
Database backup using SQL Server services requires a permanently running SQL Agent of the operated SQL Server instance.
- Using the Task Scheduler of Windows OS:
In this case, the full version of SQL Server is not required

Please note the scheduled database backup affects the currently used database of the Orion Pro System.

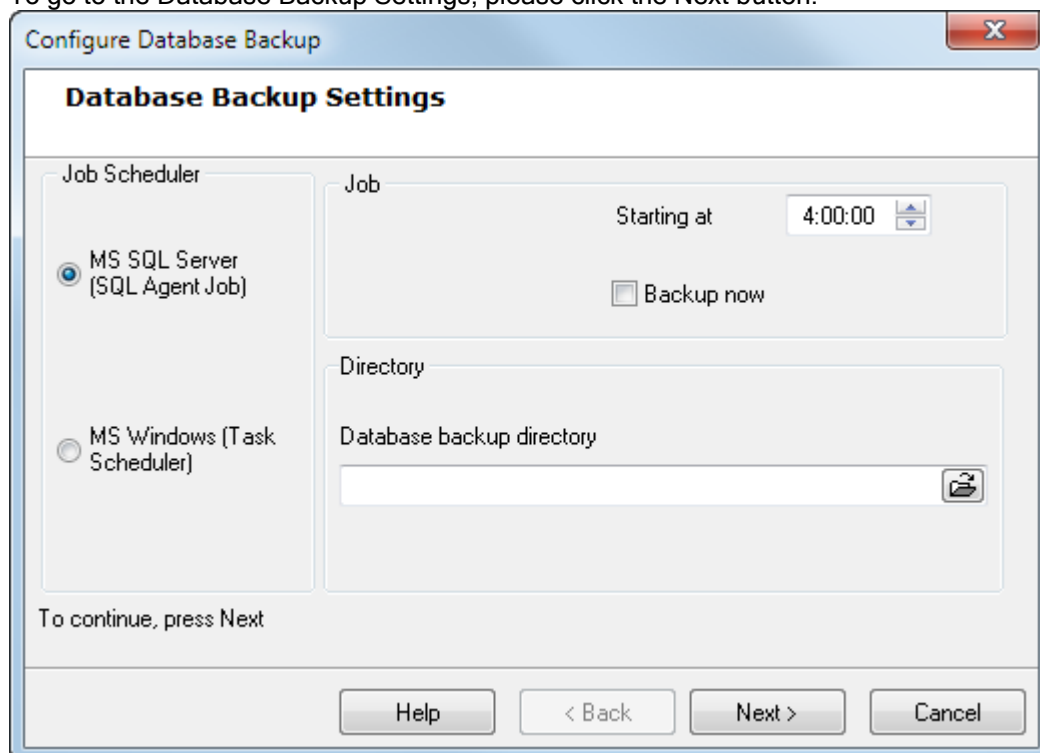
To configure the scheduled database backup, please choose **Database/Scheduled Backup**:



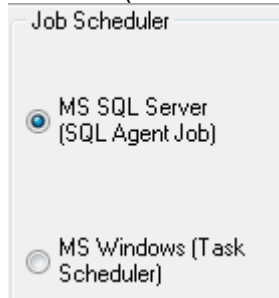
The Welcome window of **Database Backup Configuration Wizard** will appear:



To go to the Database Backup Settings, please click the Next button:



Select the method (service) to be used to back up the database: MS SQL Server (SQL Agent Job) or MS Windows (Task Scheduler):

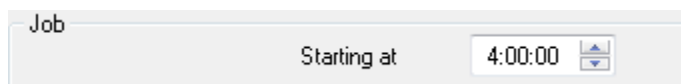


Job Scheduler

☒ MS SQL Server (SQL Agent Job)

☐ MS Windows (Task Scheduler)

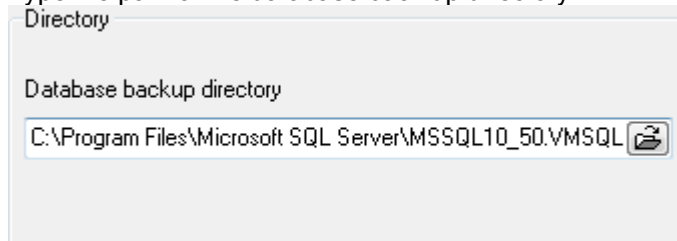
The database will be backed up once a day. To specify the time of a backup job startup, please select time value in the Starting at field:



Job

Starting at 4:00:00


Type the path of the database back up directory:

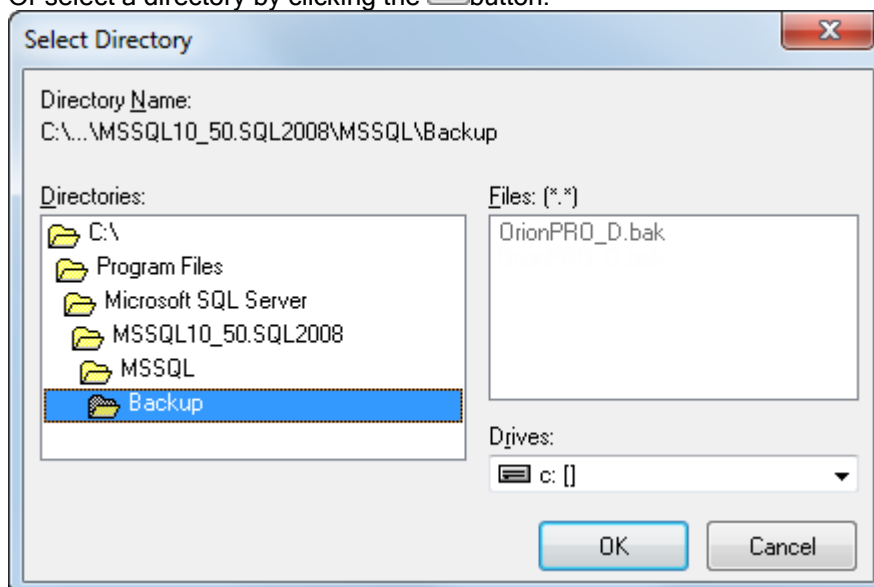


Directory

Database backup directory

C:\Program Files\Microsoft SQL Server\MSSQL10_50\MSSQL

Or select a directory by clicking the  button:



Select Directory

Directory Name:
C:\...\MSSQL10_50.SQL2008\MSSQL\Backup

Directories:

- C:\
- Program Files
- Microsoft SQL Server
- MSSQL10_50.SQL2008
- MSSQL
- Backup

Files: (*.*)

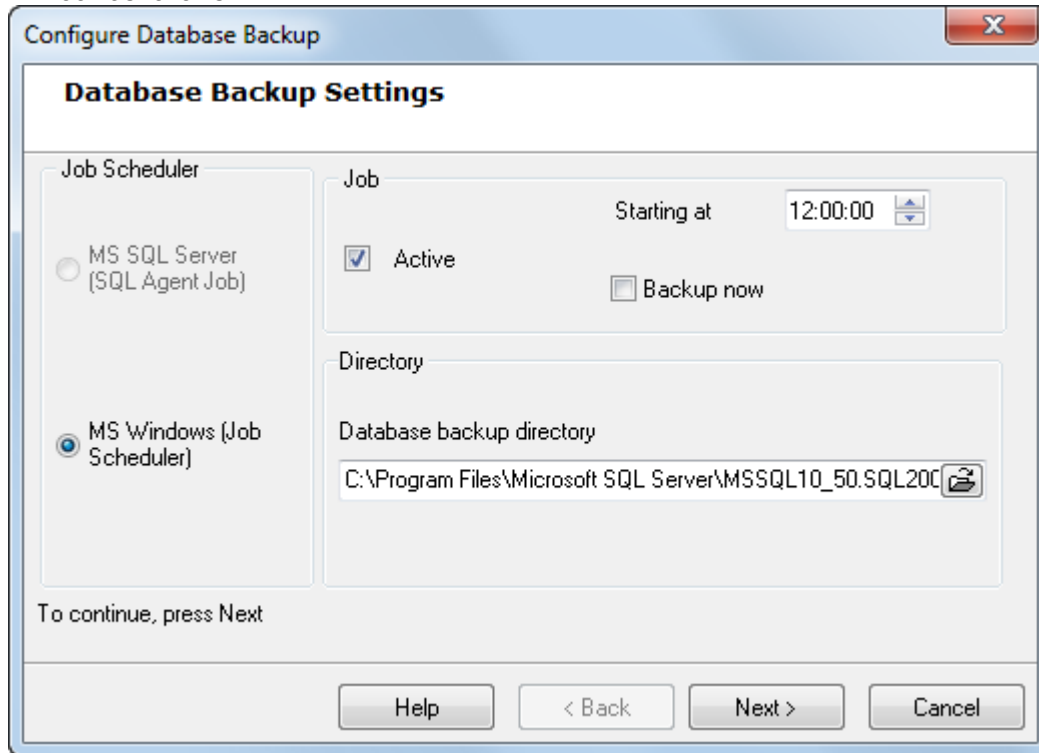
OrionPRO_D.bak

Drives:

c: []

OK Cancel

If it is not the first time when you configure the database backup, the **Database Backup Settings** window will look as follows:



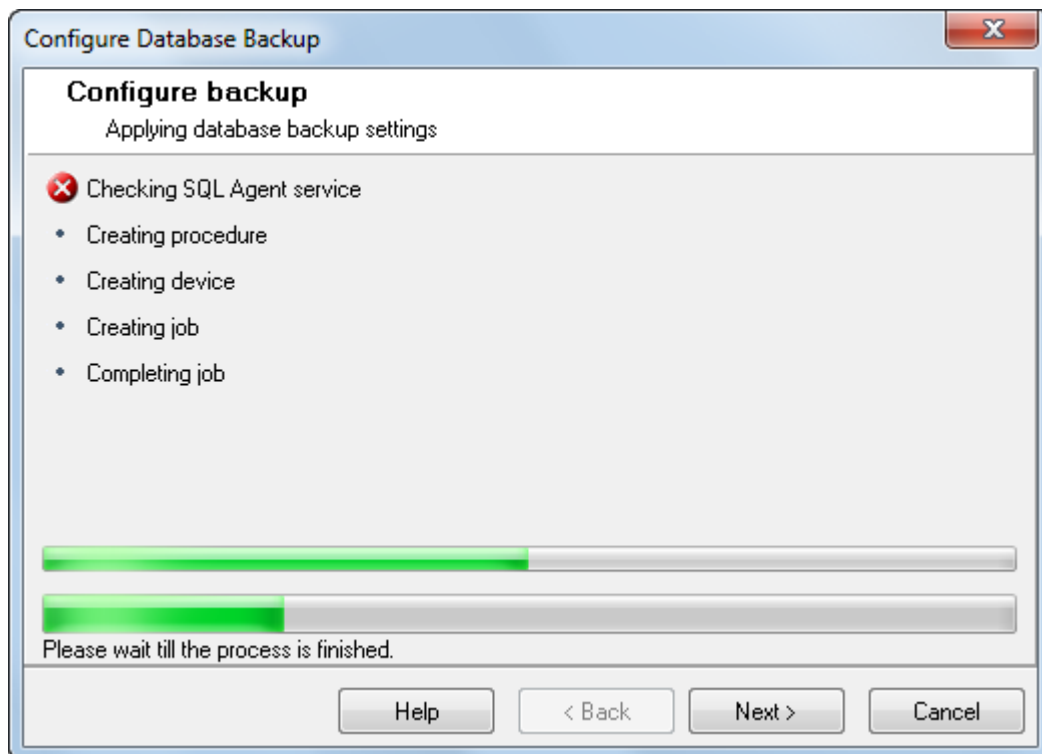
The figure shows that further selection of another Job Scheduler's service is not accessible (the current selection is used). It also includes the new parameter ☒ **Active** that is responsible for enabling /disabling the scheduled database backup.

The ☐ **Backup now** option used to create a backup copy immediately when the database backup configuration settings are applied.

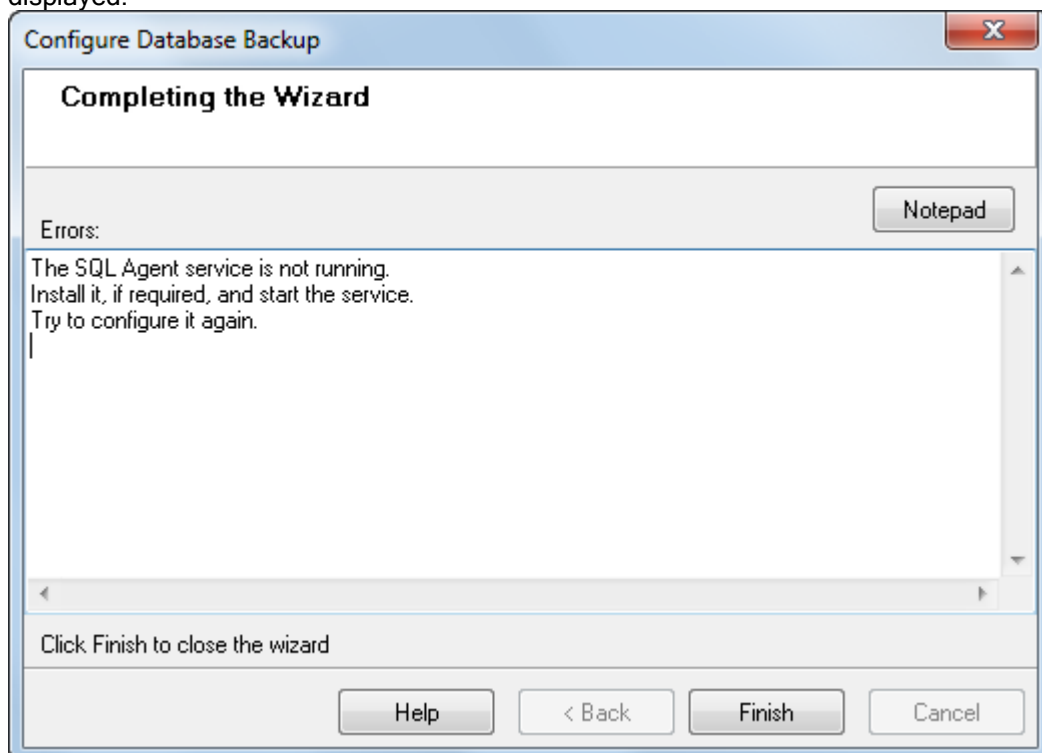
Please be aware that the system will keep **seven** backup files (*OrionBackup1, OrionBackup2, ... , OrionBackup7*) according to the day of the week when a backup file is saved . Each backup copy is kept for seven days, and replaced with a new one when this period expires.

To save the settings for a backup schedule, please click the **Next** button.

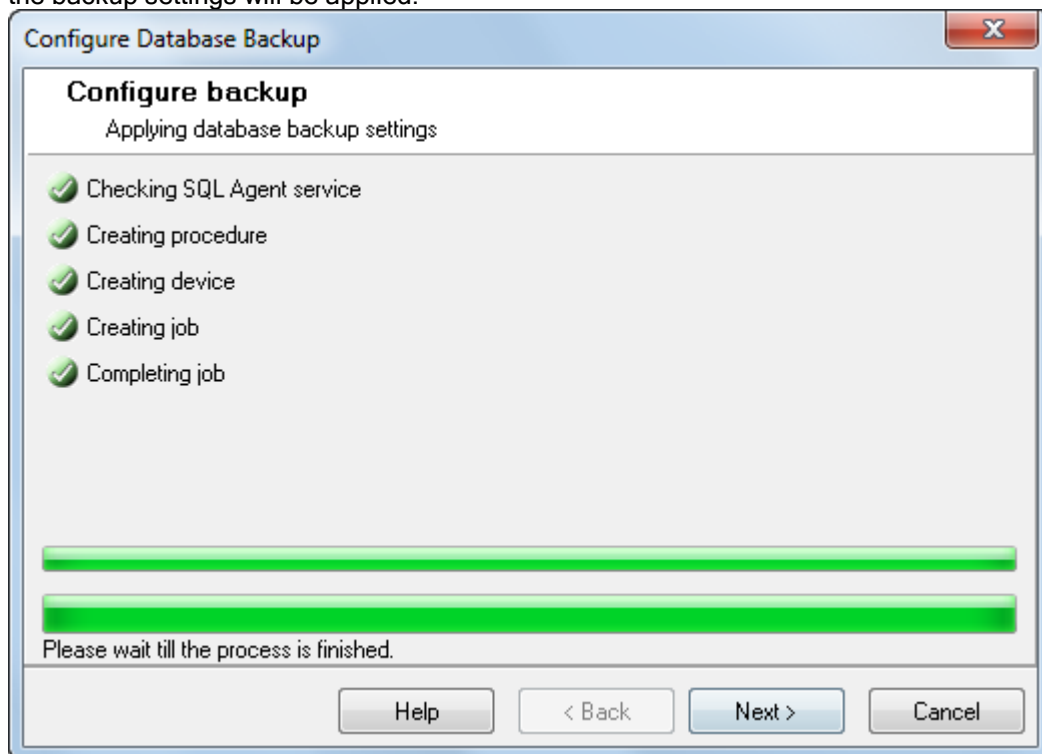
If the SQL Agent is not running during the configuration process (if MS SQL Server is selected), the configuration process will be terminated at the **Checking SQL Agent service** stage:



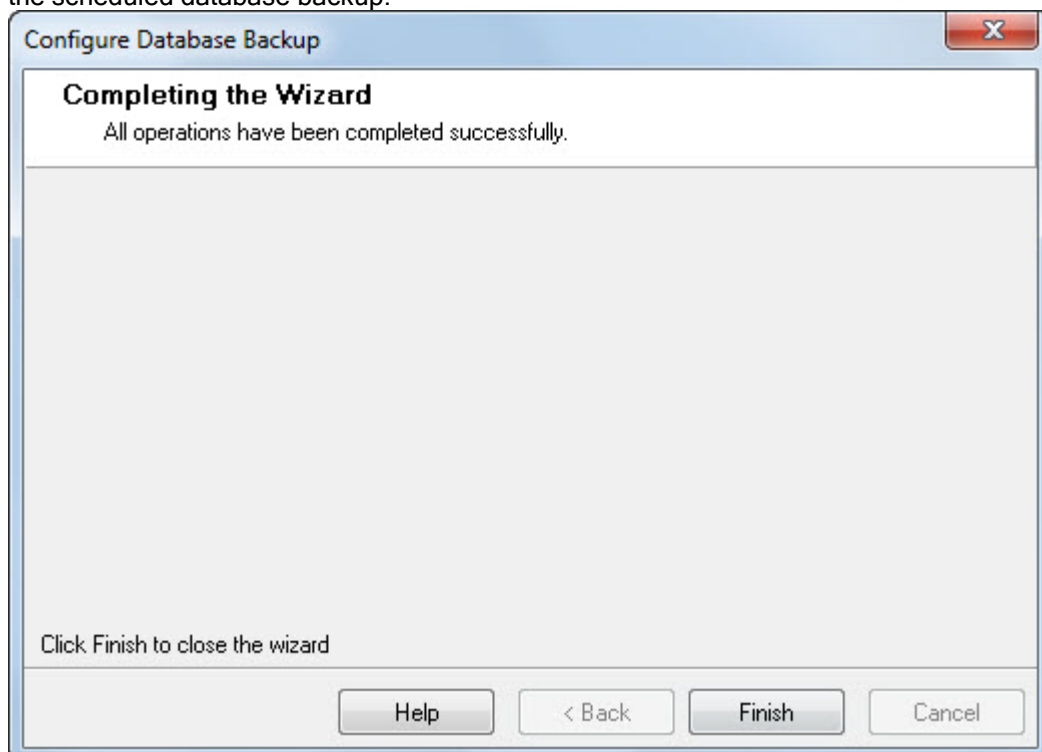
Click the Next button to go to **Completing the Wizard** window where the corresponding information will be displayed:



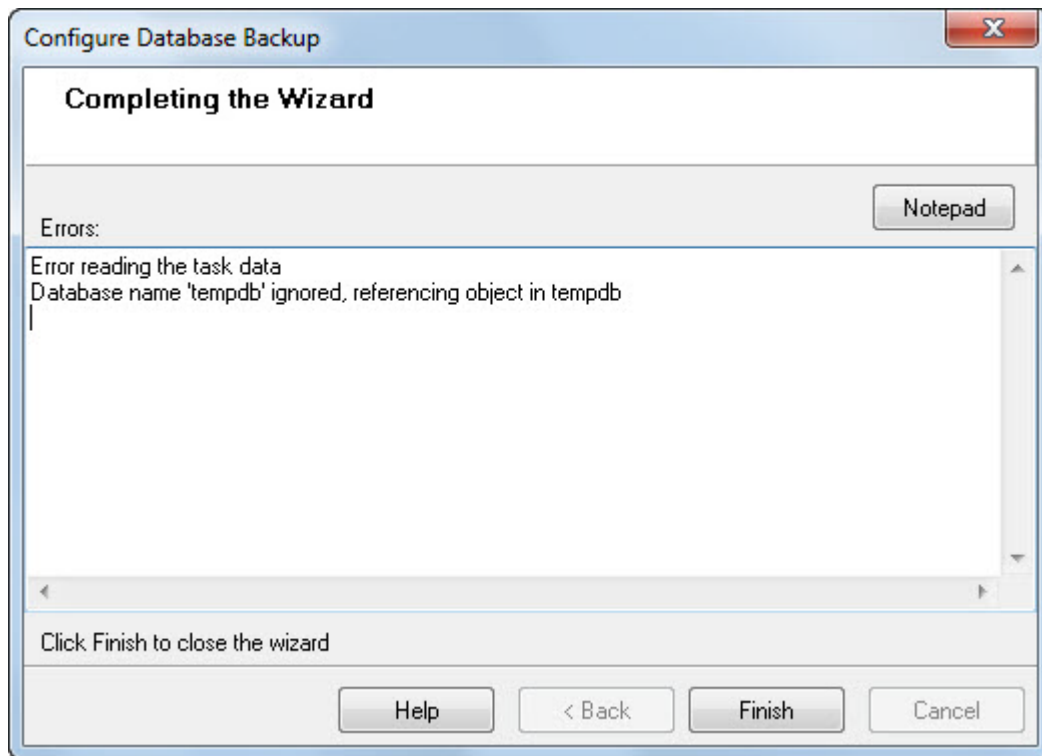
If Windows (Task Scheduler) is selected or the SQL Agent is running (if the SQL Agent Job is selected), the backup settings will be applied:



Click the Next button, the **Completing the Wizard** window will appear notifying on success configuration of the scheduled database backup:



If it is not the first time, when you use the scheduled database backup wizard and no parameters have been modified in the Database Backup Settings, the configuration process will be skipped and the **Completing the Wizard** window will appear with the relevant message:



To close the Scheduled Database Backup Wizard, please click the Finish button.

4.6.3 Restoring the database from the Orion ODA File

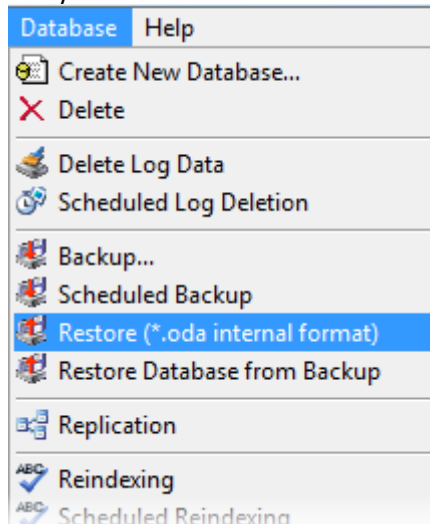
Please note, when you restore the database from an ODA (Orion Database Archive) file, a new Database will be created. In other words, it will be restored to a new database created during a restoration process, rather than to a currently used one.

It should be noted that when the database is restored from an archive copy, it will be upgraded as well.

Attention! Before starting the restoration, please shut down all Orion Pro modules on all workstations except for the Central Server and currently used Central Server Manager.

When the upgrade process comes to the statistics (ADC table), alarm (m_alarm) or event (pLogData) logs, the software modules can be started regardless a still running upgrade process. These tables are the last to be upgraded.

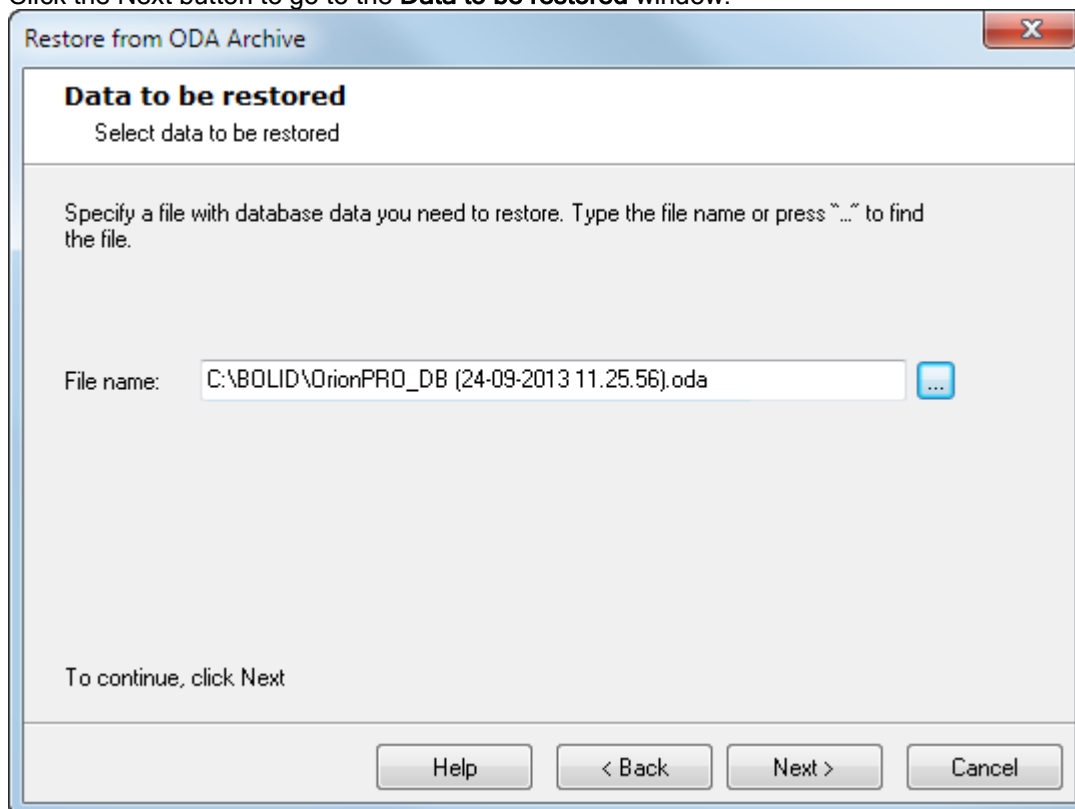
*To open the Database Restoration Wizard, please select the **Database/Restore (*.oda internal format file)**:*



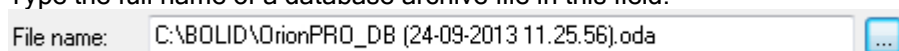
Data Restoration Wizard will be launched:




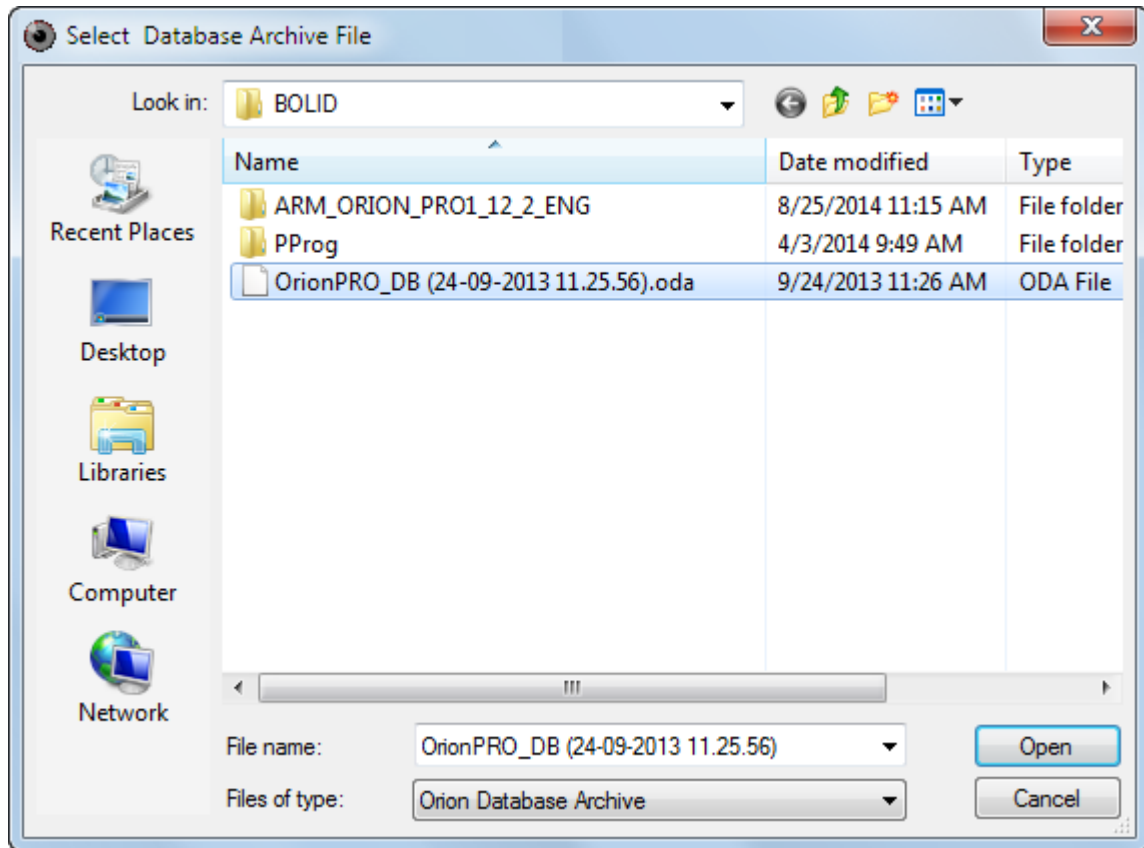
Click the Next button to go to the **Data to be restored** window:



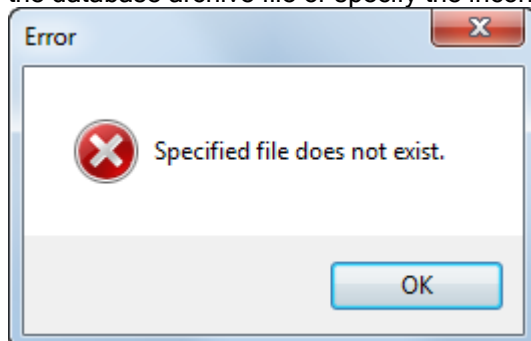
Type the full name of a database archive file in this field:



Or click the  button to open the dialog box to find the file location:



Then click the **Next** button to continue with the Data Restoration Wizard. If you type the wrong name for the database archive file or specify the incorrect path to the file the following message will appear:



If your specified file name or part is correct, the Database Settings window will look as follows:


Database Settings	
Set database parameters	
Database Access	ADO
Drivers	MSSQL
DATABASE NAME	Orion1
SERVER NAME	A-VASILIEV\SQL2008
USER NAME	sa
CommandTimeout	0
PASSWORD	123456

Help < Back Next > Cancel

Please enter parameters files for a new database where the archive data will be copied:

Database Access	Must have the ADO value
Drivers	Must have the MSSQL
DATABASE NAME	Alias of Orion Pro database in the settings of SQL Server
SERVER NAME	The name of SQL Server's instance.
USER NAME	Login and password for user account of SQL Server. By default, a user name "sa" with password "123456" will be added to the installed SQL server. If you use already installed SQL Server, please type here the login and password of the user account that will be used to access and manipulate the Orion Pro database
PASSWORD	
Command Timeout	This parameter value defines a maximum SQL request timeout (in seconds). When the value of a timeout is reached, the request will be deemed as failed, and the connection to the server will be terminated. An infinite timeout is "0" It is highly recommended <u>not</u> to change the value of this parameter without consulting our Technical Support team

Attention!

- You can type SQL Server instance name or select it using auto-search option. To select SQL Server instance name, choose SERVER NAME and click the  button. The Select SQL Server dialog box will appear to show available servers:

Select SQL Server

- A-STAKANKOV\SQLEXPRESSR2_SP2
- A-TOCHILIN
- A-TOCHILIN\SQLEXPRESS
- A-VASILIEV
- A-VASILIEV\SQL2008**
- A-VASILIEV\SQLEXPRESS2008
- A-ZOLOTOV
- A-ZOLOTOV\ANDROMEDA
- A-ZOLOTOV\SQLEXPRESS
- A-ZOLOTOV\SQLEXPRESS2008

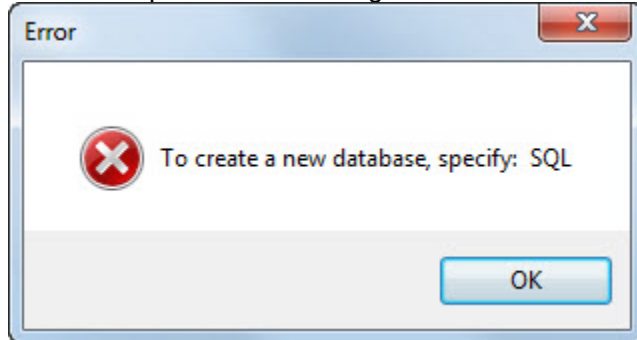
Ok Cancel

The servers are searched within the local network computers.

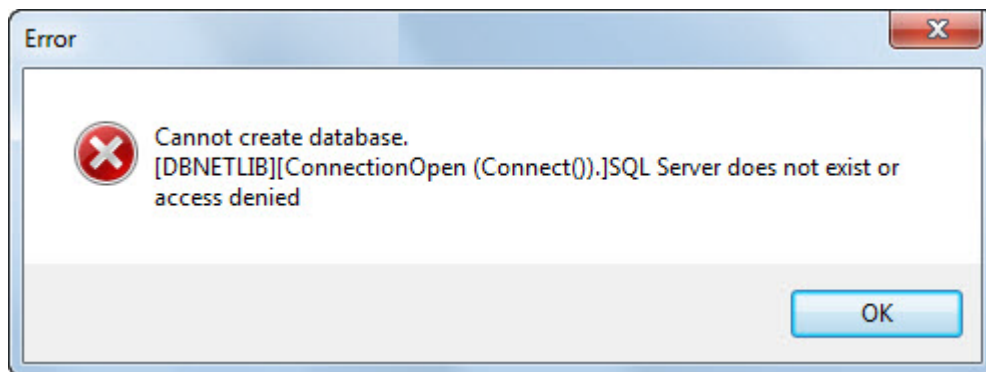
Attention! Since a new database is to be created, the Database alias (DATABASE NAME) has to be different from other database aliases registered on the SQL Server.

The alias (name) characters can be Alpha-numeric and underscore (_). The first character of the name should be alphabetical (recommended) or numeric. The maximum length of any alias name is 30 characters.

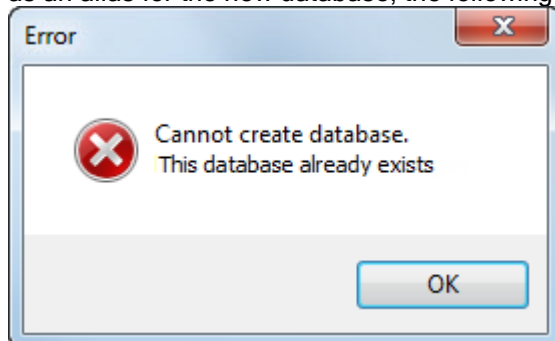
To start the process of restoring the database from the Orion archive, please click the **Next** button:



If the SQL Server is offline or you typed the wrong name for the **SERVER NAME** parameter, the following message box will appear:

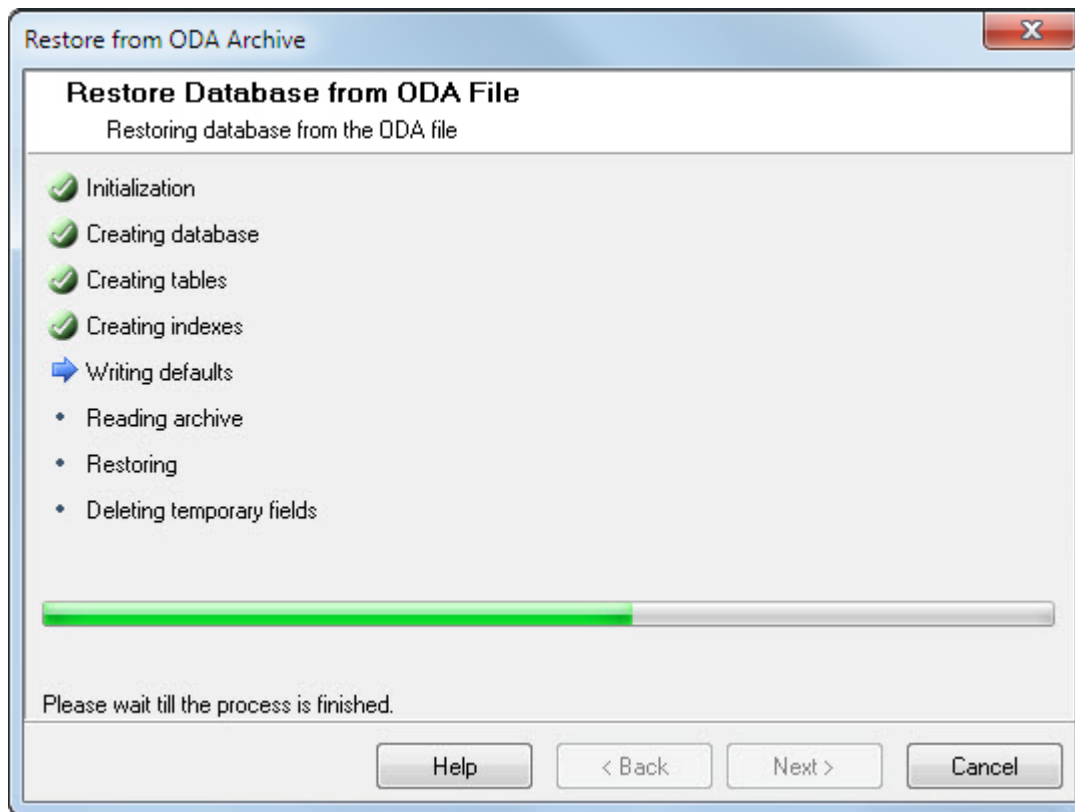


If the previous database parameters were left unchanged or already registered database name were used as an alias for the new database, the following error message will appear:



In such cases, please click the **Back** button and enter correct values for new database parameters.

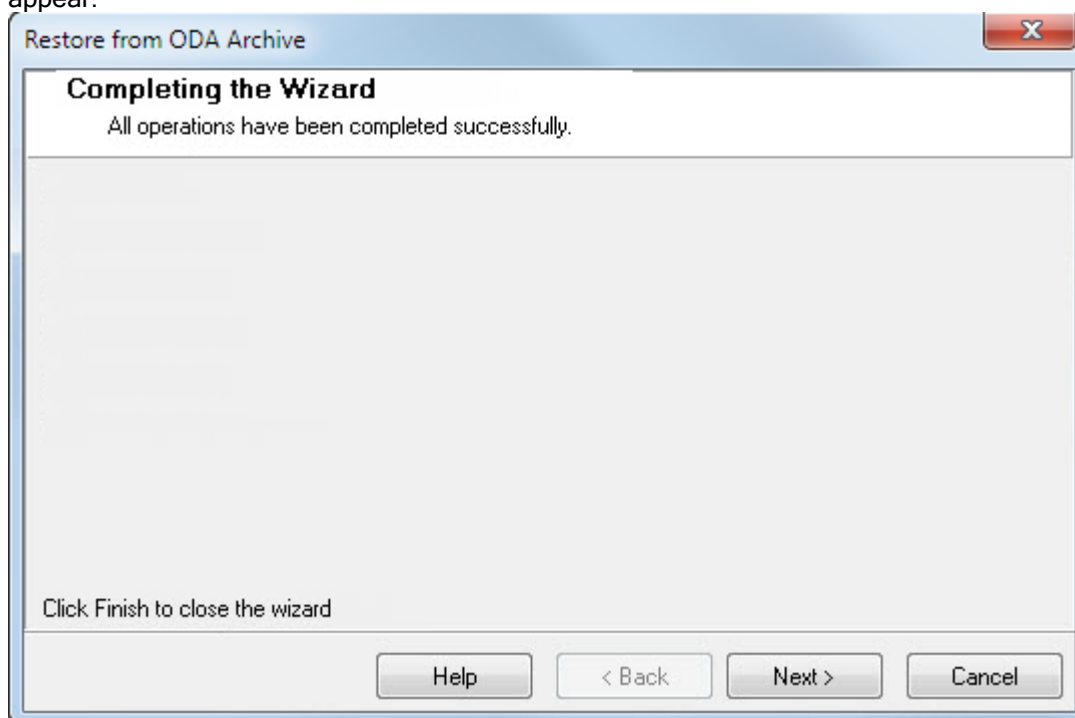
If you provided correct database settings, the Database will be restored using the ODA archive file:



Please be aware: your Database will be upgraded during restoration from the ODA archive file. If the database you want to restore has a large size, this process can take long time.

Do not stop the restoration process until this process comes to statistics (ADC table), alarm (m_alarm table), or event (pLogData table) logs, otherwise the resulted database may be unavailable to use.

Wait till all process are completed and click the **Next** button, the Completing the Wizard window will appear:



To close the Data Restoration Wizard, click the **Finish** button.

As soon as the Database is created, the Central Server will switch over to the new Database while the Database Settings window will show the new database parameters to be used in operations.

Note that the new SQL Server Database will consist of two files such as *.mdf and *.ldf with the same name as the alias name used for the new Database. If the SQL Server is installed on the same workstation where the Central Server runs, the files of the Database created will be placed in the following folder "C:\BOLID\MSDE2005" or "C:\BOLID\MSDE2008" (depending on a type of installation).

If the SQL Server and the Central Server are installed on different computers, the files of a Database will be placed to the SQL Server's default folder

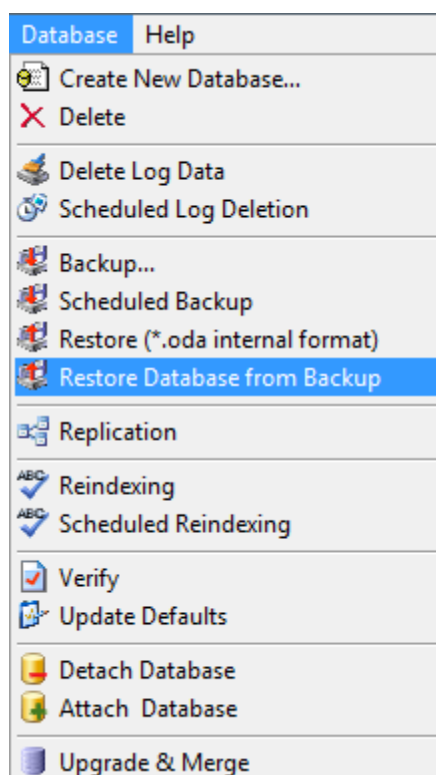
4.6.4 Restoring a Database from the Backup Copy

Please note that a new Database can be created while restoring data from a backup copy.

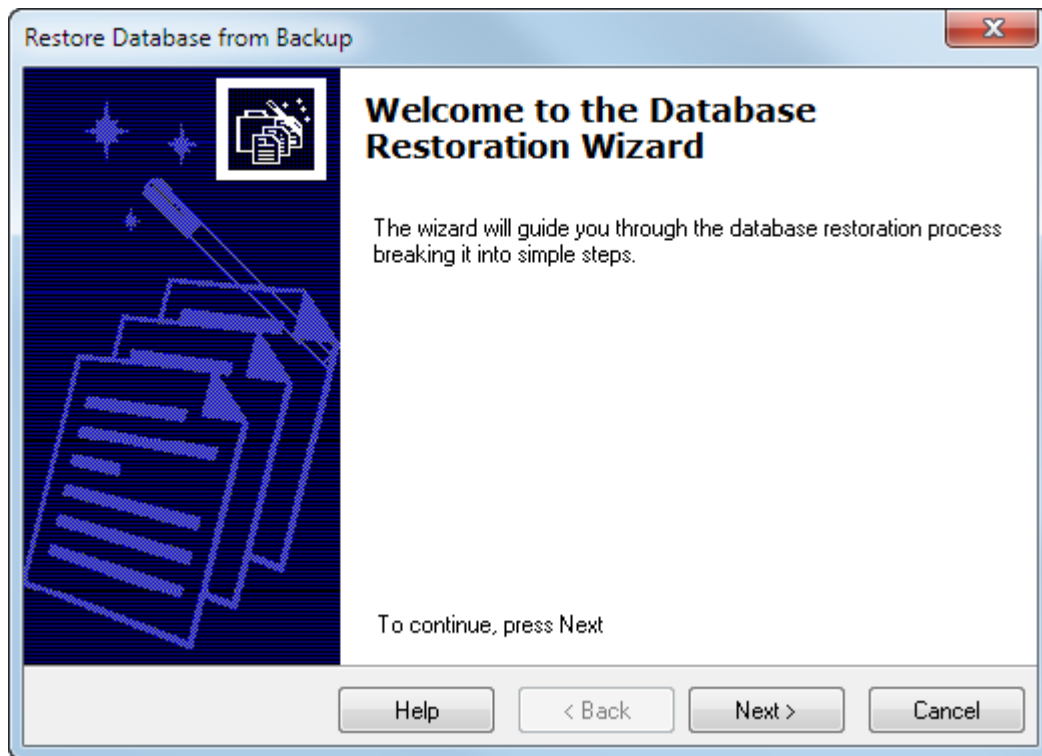
Attention! To restore the Database from a backup copy, please shut down all Orion Pro modules on all workstations except for the Central Server and currently used Central Server Manager.

Please do not restore the data from the backup file to the currently used Orion Pro database.

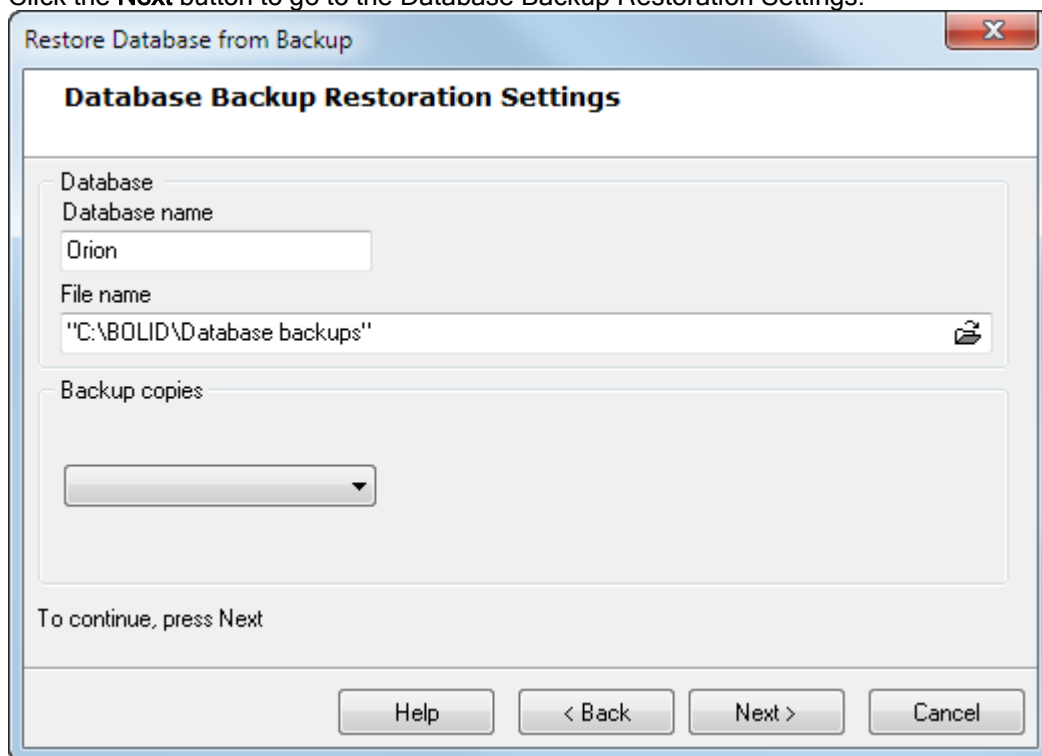
To open the Database Restoration Wizard, please choose **Database /Restore Database from Backup**



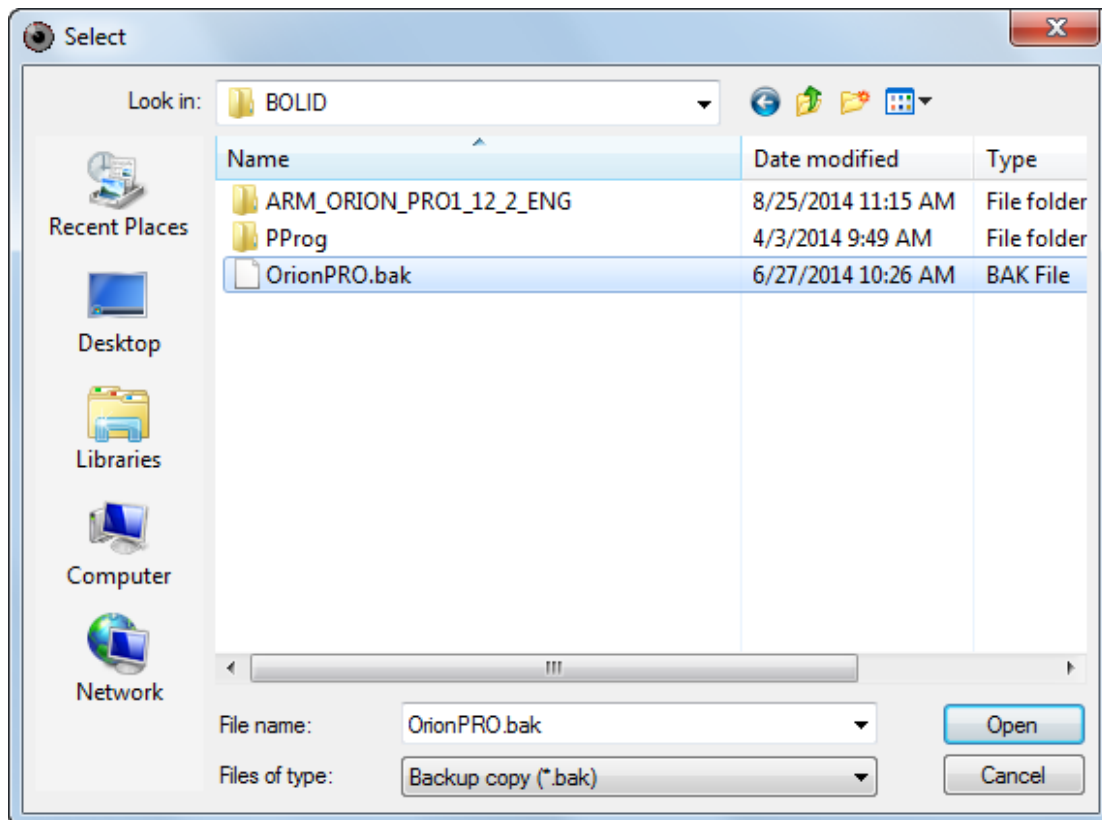
The Database Restoration Wizard window will appear:



Click the **Next** button to go to the Database Backup Restoration Settings:



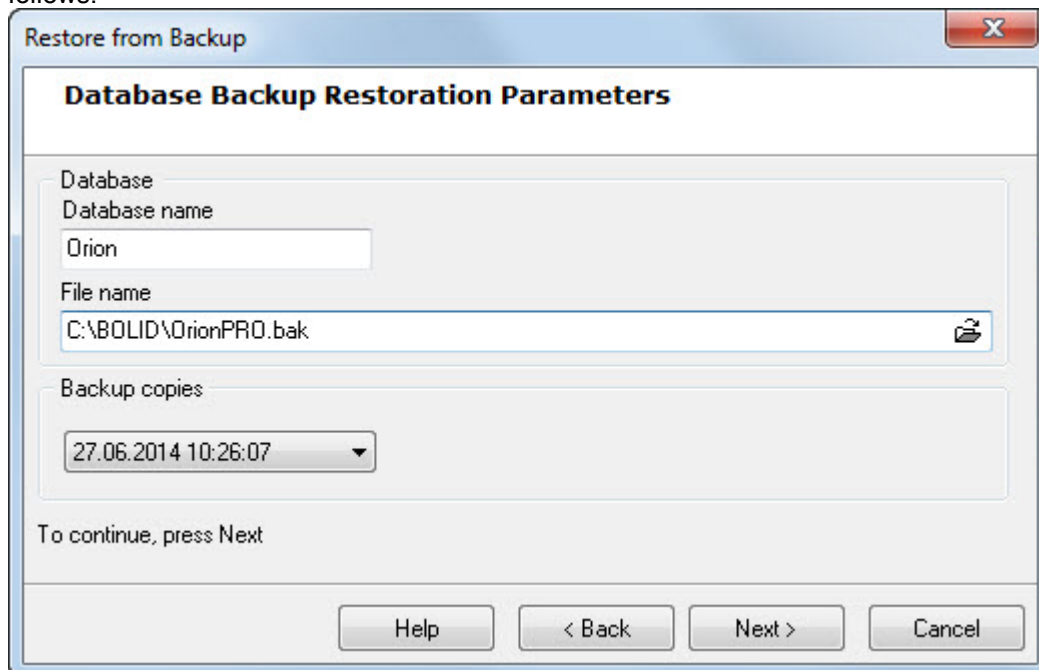
Then click the  button to open the dialog box to select a database backup copy:



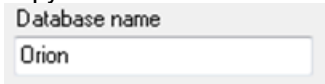
If the selected file is not a backup file of the SQL Server, the following will appear:



When the database backup file is selected, the Database Backup Restoration Settings window will look as follows:



Next, specify the name of a database where the data will be restored from your selected database backup copy

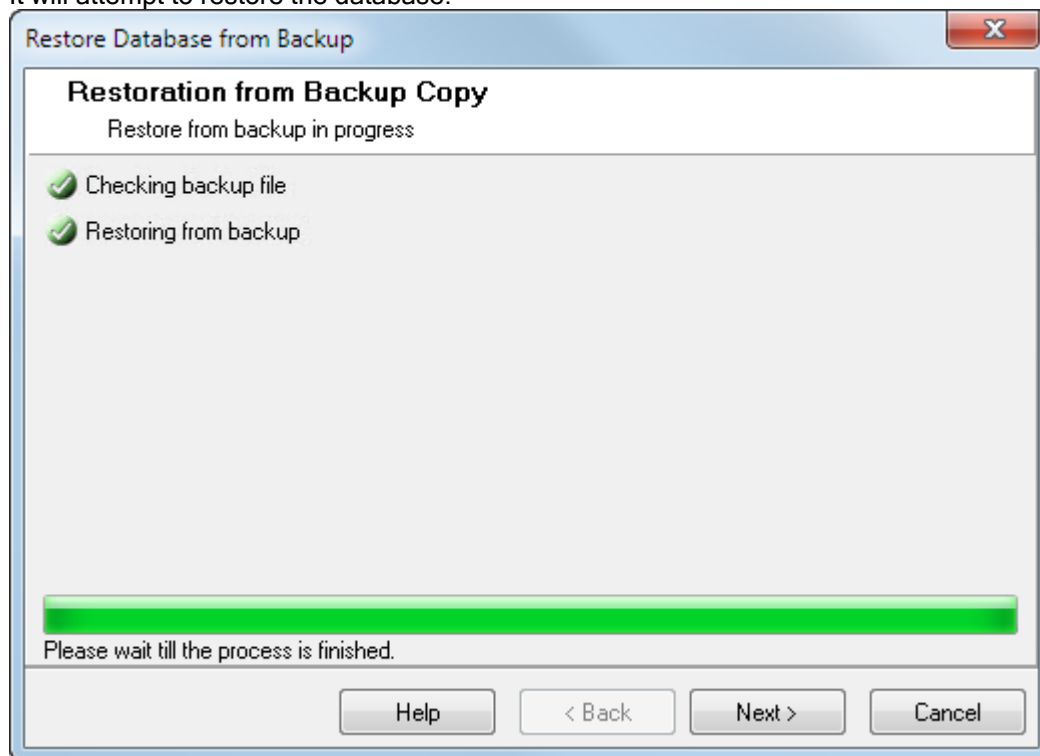


*Please be aware that if you use the alias of a registered database, the backup will be restored to this database and delete all existing data in it. The created SQL database consists of two files such as *.mdf and *.ldf which have the same name as the alias for the new database specified. If the SQL Server is installed on the same workstation where the Central Server is installed, the files of the created database will be placed in the folder found in **C:\BOLIDIORIONBASE\MSDE2005** or in **C:\BOLIDIORIONBASE\MSDE2008** (it depends on the installation type). If the SQL Server and the Central Server are installed on different computers, the files of a Database will be placed to the SQL Server's default folder.*

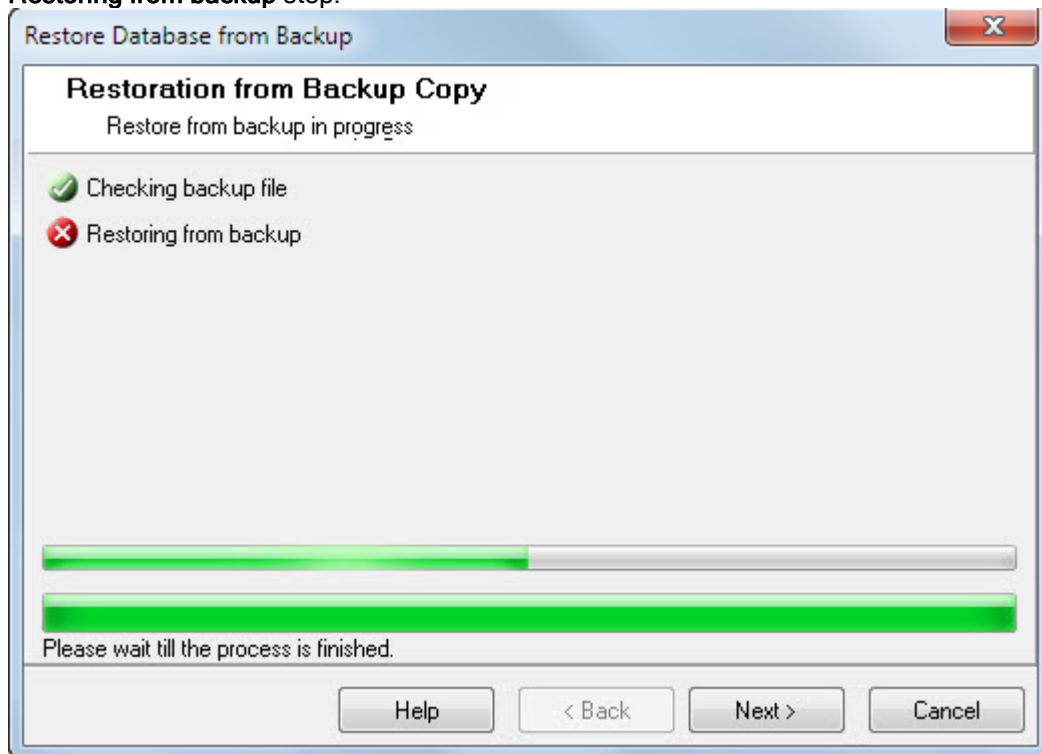
The alias (name) characters can be Alpha-numeric and underscore (_). The first character of the name should be alphabetical (recommended) or numeric. The maximum length of any alias name is 30 characters.

Click the **Next** button to continue operations of the Database Restoration Wizard.

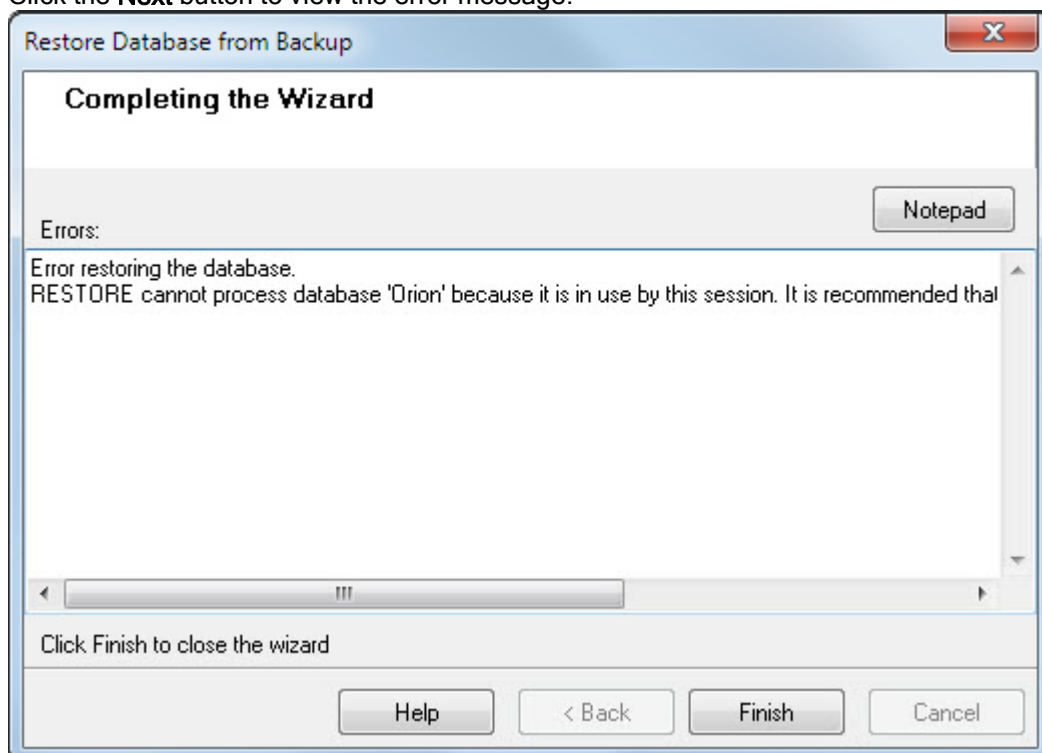
It will attempt to restore the database:



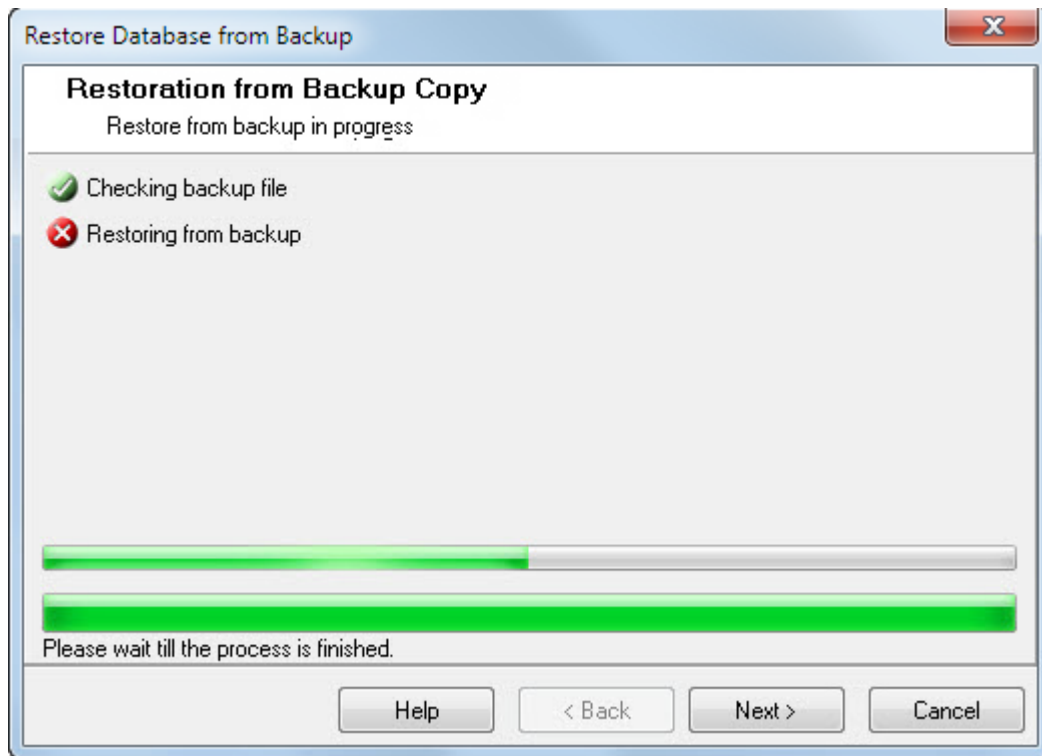
If the currently active database was selected to restore, the restoration process will be terminated at the **Restoring from backup** step:



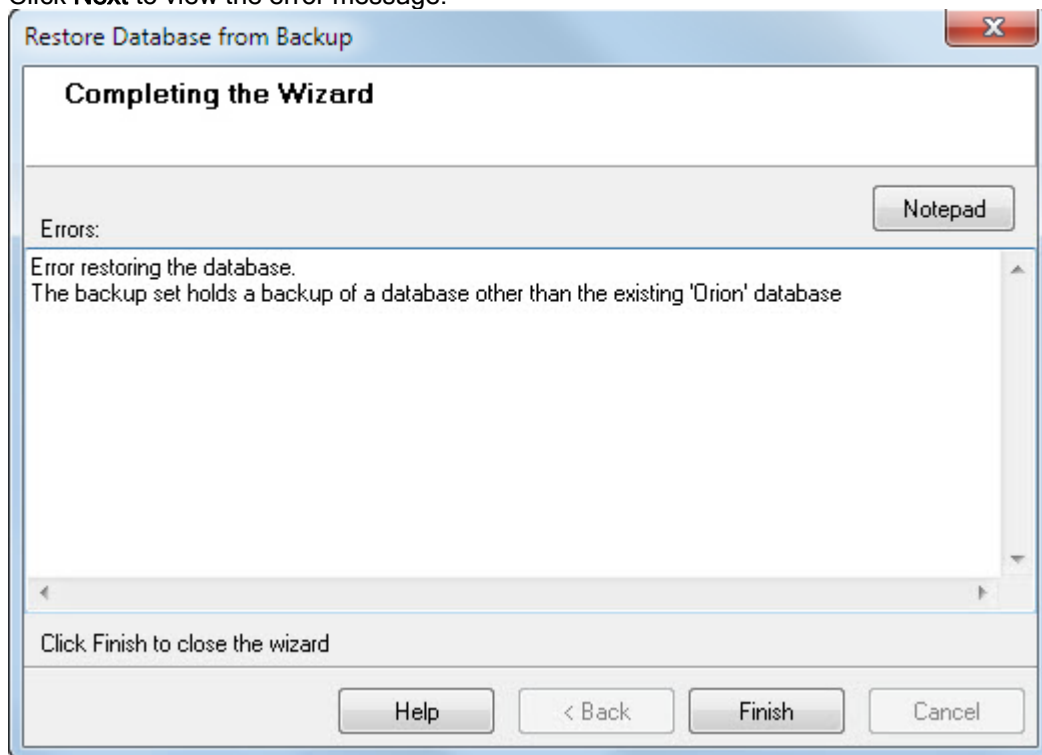
Click the **Next** button to view the error message:



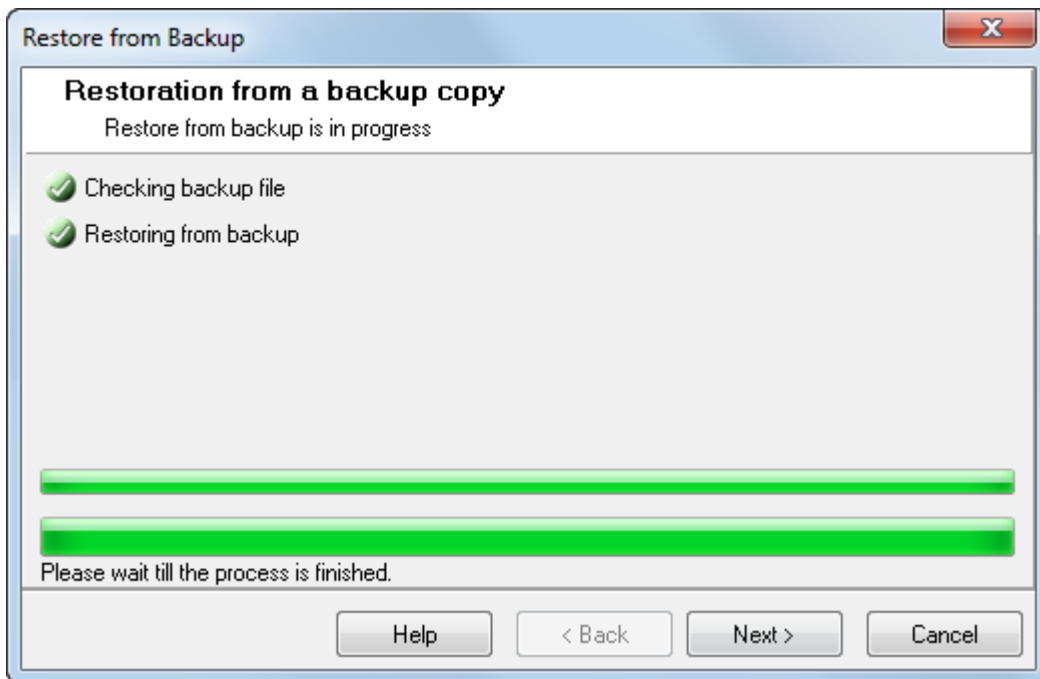
If the database specified for restoration does not match the database backup file, the restoration process will be terminated at the **Restoring from backup** stage:



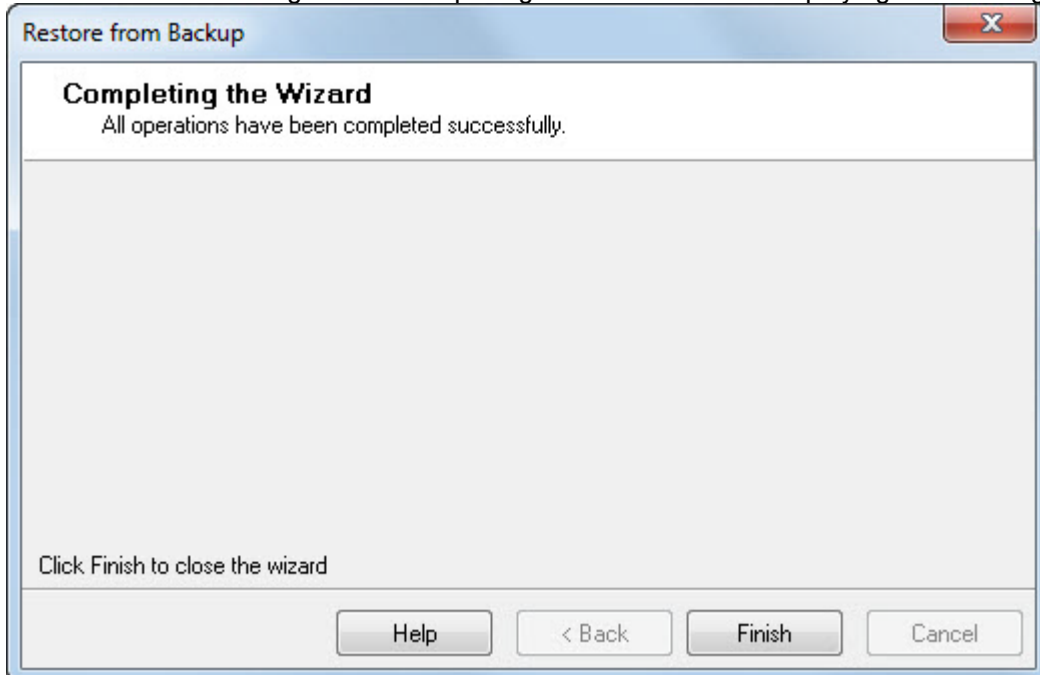
Click **Next** to view the error message:



If the destination (selected) database matches a backup file and the destination database is not the currently used database, the database restoration process will be completed:



Click the Next button to go to the Completing the Wizard window displaying the following:



To close the Database Restoration Wizard, please click **Finish**

*Please note that if you use the alias of the registered database, the backup will be restored to this database and delete all existing data in it. The created SQL database will consist of two files such as *.mdf and *.ldf having the same name as the alias for the new database specified.*

*If the SQL Server is installed on the same workstation where the Central Server is installed, the files of the created database will be placed in the folder found in **C:\BOLIDIORIONBASE\MSDE2005** or in **C:\BOLIDIORIONBASE\MSDE2008** (it depends on the installation type). If the SQL Server and the Central Server are installed on different workstations, the Database will be placed in the SQL Server's default folder.*

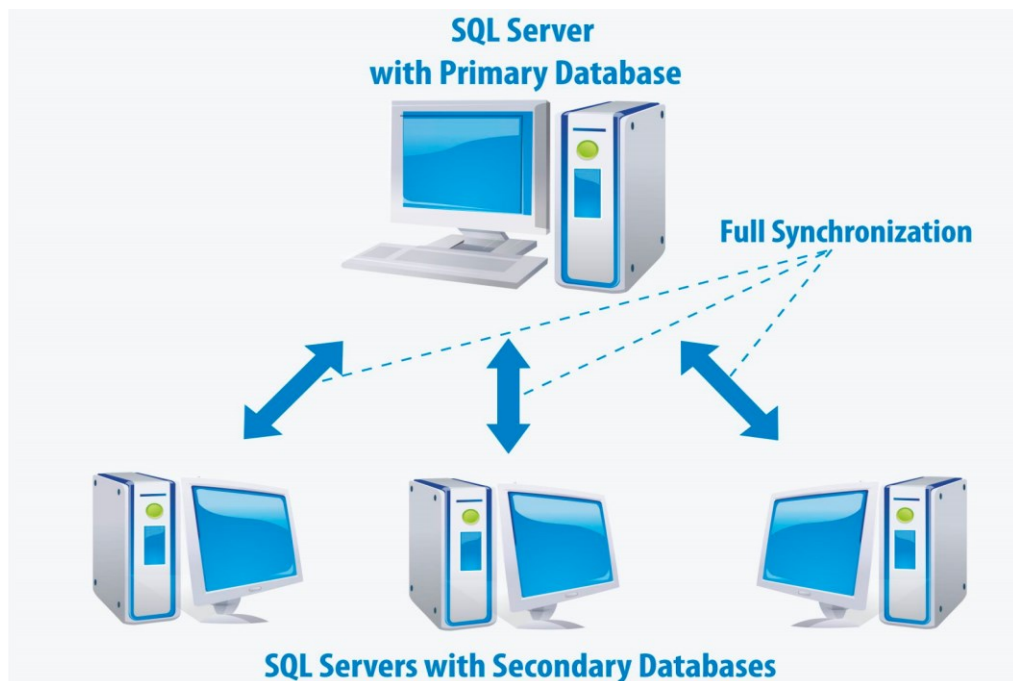
As soon as the restoration is completed, the Central Server will switch over to the database where the selected backup has been restored. The Database Settings pane will display the parameter of this restored database.

4.7 Data Replication

Attention! The database synchronization (replication) requires that the full version of MS SQL Server to be used on a computer where the primary database is installed. The MS SQL Server supplied with the Orion Pro Suite is a non-paid version and does not support the replication.

Chapter 1.2.3.2 *System with Failover Support* describes a system structure with a failover support. This chapter discusses how to configure synchronization (replication) using the Central Server Manager.

The primary database SQL Server has to be installed on the same workstation with the Central Server. The instances of the SQL Server are installed on other workstations where secondary databases will be created or select for the replication. The full synchronization is provided between the primary and secondary databases:



The Central Server and MS SQL Server with registered primary database can be installed on different computers. However, it is not quite logical for the failover support that is meant for preventing from data loss in the event of network disconnection.

In case of full synchronization between two databases, any data changes in one database will be replicated to other database.

With respect to Orion Pro's failover support structure, it means that any changes occurred in one database will be reflected in all other databases within the system.

*In the Orion Pro System, secondary databases that are synchronized with the primary database are called **operational** databases.*

It's clear that in case of disconnection and workstations' switchover to the secondary databases, the database data can be modified (it is usually limited to new records in event, alarm, or statistics logs). When a network connection is recovered, all such database changes will be shared with all other databases within a system.

Taking into account this logic, the following limitations become clear.

- If the system uses two or more Database Administrator modules, it is **NOT recommended** using the Database Administrator modules to manipulate data in case of disconnection as it may cause an unrepairable conflict between changed data in these databases.
- If the Scheduled Log Cleanup option is used, you cannot define different log retention periods for two databases due to the full synchronization between these databases. It is recommended that the Scheduled Log Cleanup option is applied for the primary database only.

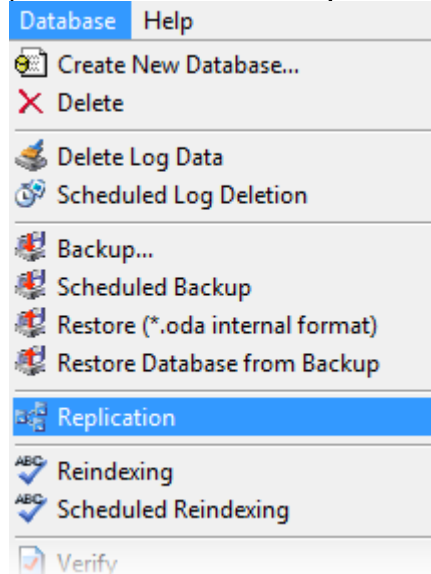
Further, the chapter discusses how to configure the synchronization (replication) in the Central Server Manager.

Please note when you open the Database Replication wizard, you can configure replication between two databases only: the Primary database and one Operational (Secondary) database only

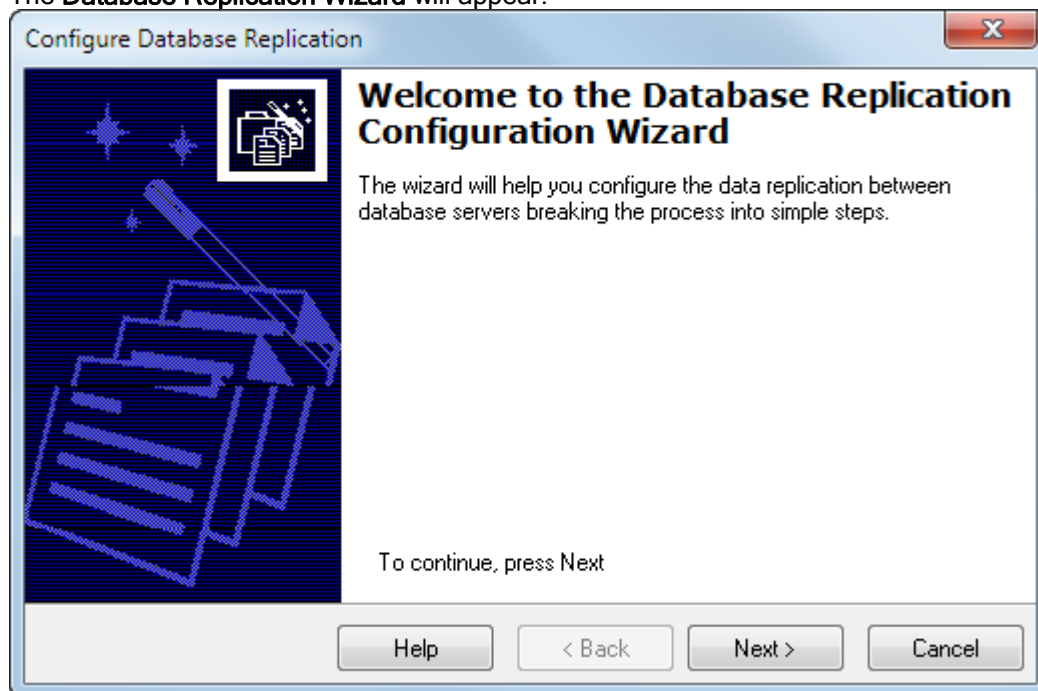
In other words, if you need to configure replication between the primary and more than one operational database you will have to open the wizard each time to add a new operational database.

4.7.1 Configuring Operational Database

To configure the data synchronization (replication) between the primary and operational databases, please select **Database/Replication**:

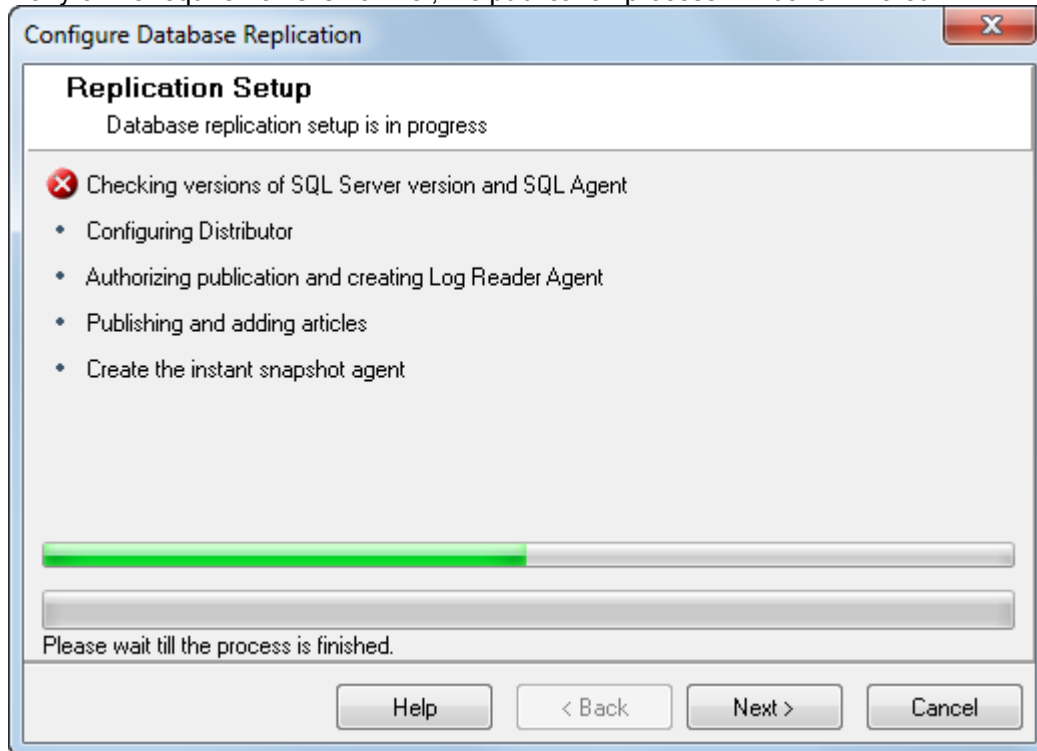


The **Database Replication Wizard** will appear:

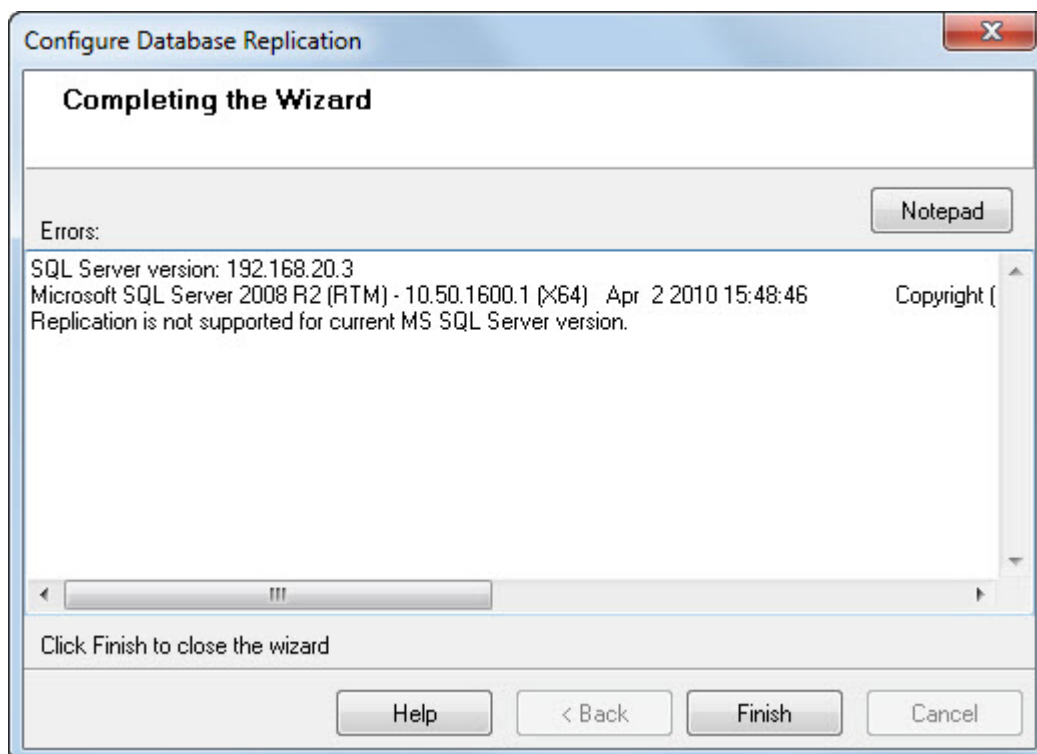


Then click the **Next** button. If you configure an Operational Database for the first time and there is no operational database publication, the processes of operational database publication will start up. In plain language, publication of operational databases is the specific settings in the Primary Database to synchronize (replicate to) data with operational databases.

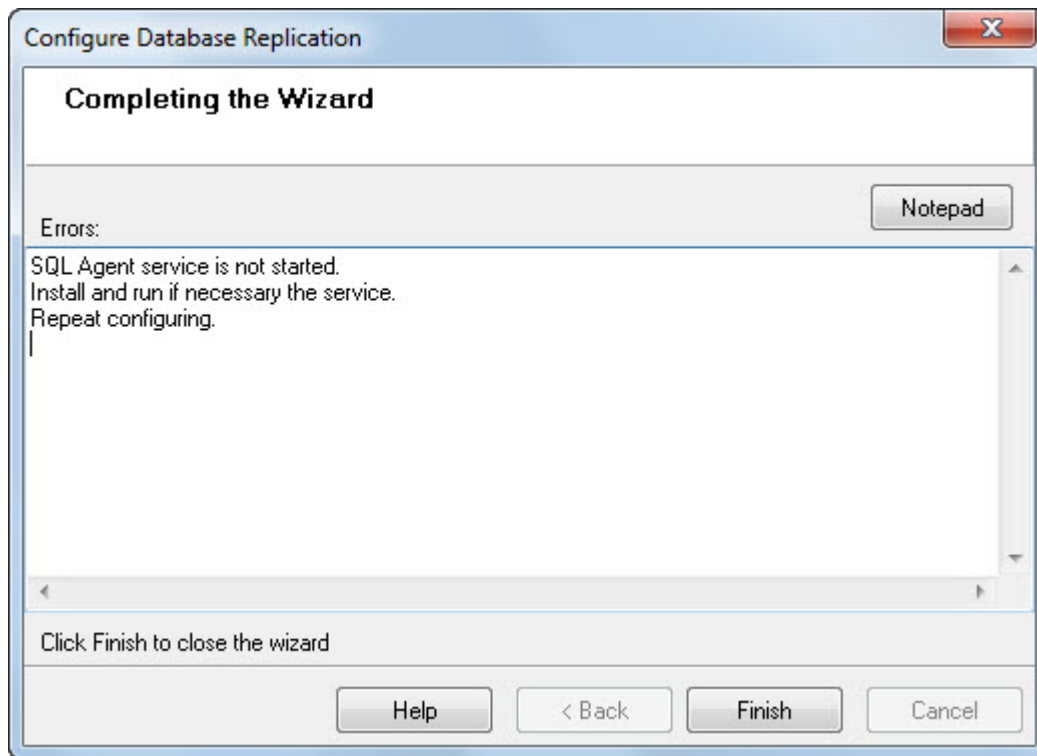
Before publishing, it will check for the right version of the MS SQL Server and running SQL Agent service. If any of the requirements is not met, the publication process will be terminated:



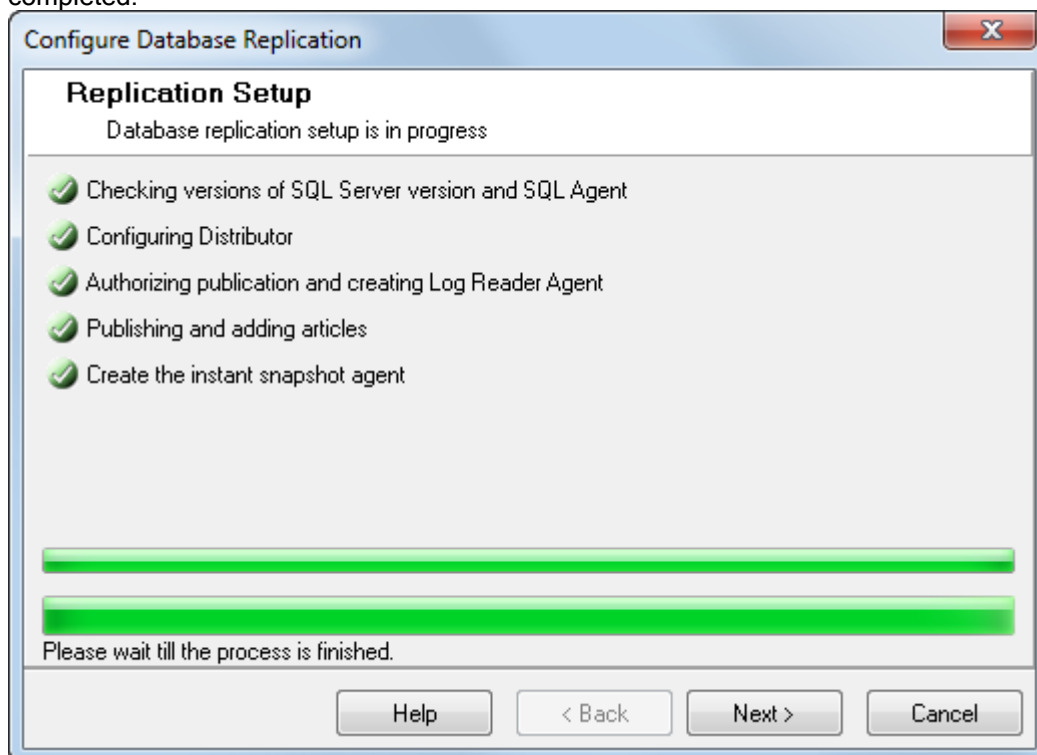
If this case, click the **Next** button to open the Completing Wizard window with relevant error message:



Or

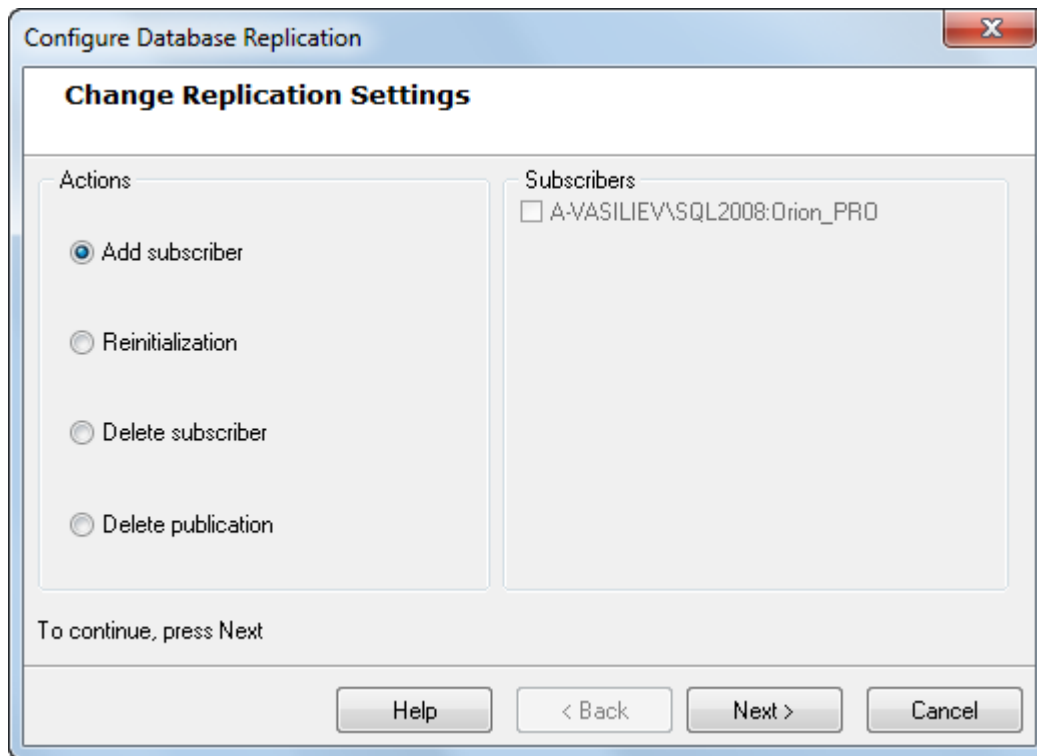


If you use the proper version of MS SQL Server with running SQL Agent, the publication will be completed:



Further, click the **Next** button. The **Configure Database Replication** window will appear. This window includes settings for a new subscriber (as described further)

If a publication was completed in previous sessions of the Database Replication Setup Wizard, the publication process will be skipped, and the Change Replication Settings window will appear:

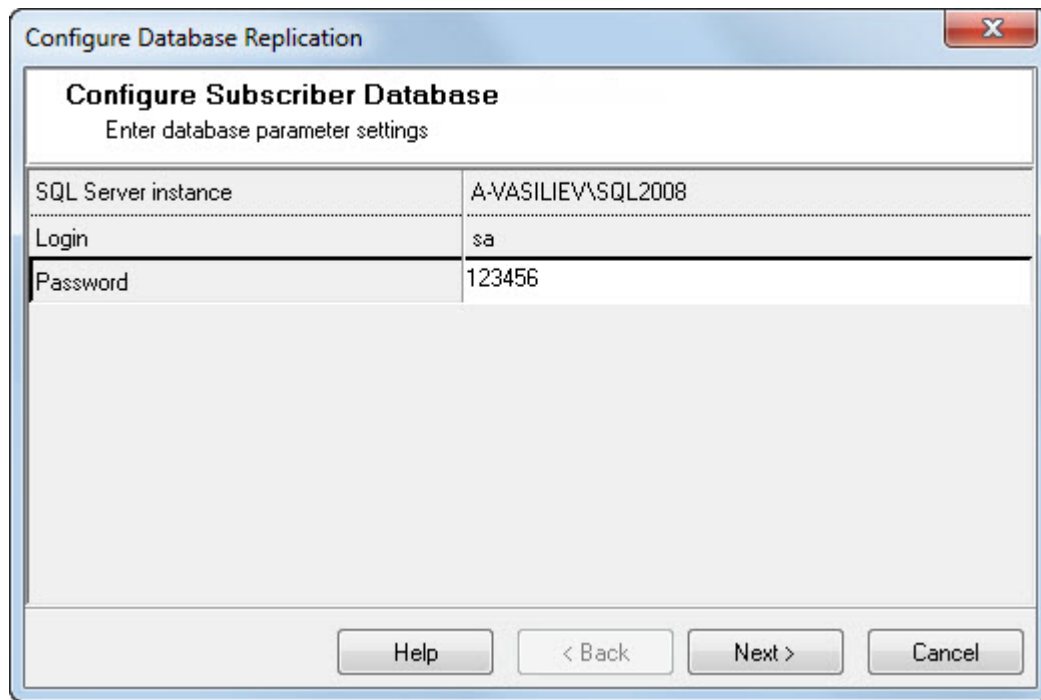


One of the following actions can be selected in this window:

1. ☒ Add subscriber
 Configures the data synchronization (replication) between the primary database and a specific operational (secondary) database (subscriber)
 Subscriber is a database that receives replicated data from the primary database. When a subscriber is added, one must specify an SQL Server instance where an operational database is created or selected, and then the database itself must be defined. The synchronization (replication) is to be provided between the created (selected) database and the primary database.
 When a subscriber is added, all data of an operational database is erased to copy replicated data of the primary database.
One SQL Server can accommodate one operational database only.
2. ☐ Reinitialization
 When re-initialization is applied, all data of a target operation database will be replaced with the replicated data of the primary database.
3. ☐ Delete subscriber
 This option cancels synchronization (replication) between the primary and an operational database (subscriber)
4. ☐ Delete publication
 Deletes publication for operational databases with pre-deletion of all subscribes. In other words it overrides specific settings in the Primary Database that are used to copy replicated data to operational database.

Let's discuss each of these actions in detail:

1. **Add subscriber:**
 This item is selected to add a new subscriber (i.e to configure synchronization (replication) between the primary database and specific operational database).
 With this item selected, please click the **Next** button. The **Configure Subscriber Database** window will appear:



Configure Database Replication

Configure Subscriber Database
Enter database parameter settings

SQL Server instance	A-VASILIEV\SQL2008
Login	sa
Password	123456

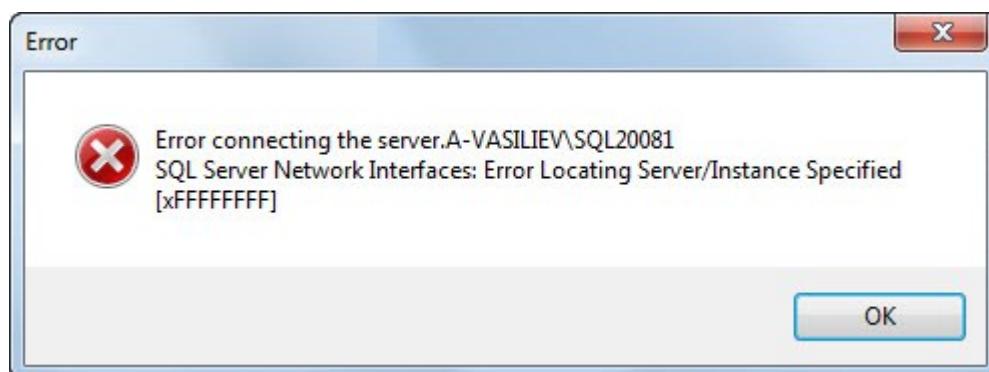
Help < Back Next > Cancel

Please enter the following in this box:

The instance of MS SQL Server	MS SQL Server's Name
Login	Login and password of SQL Server's user account that will be used to operate the Orion Pro Database.
Password	

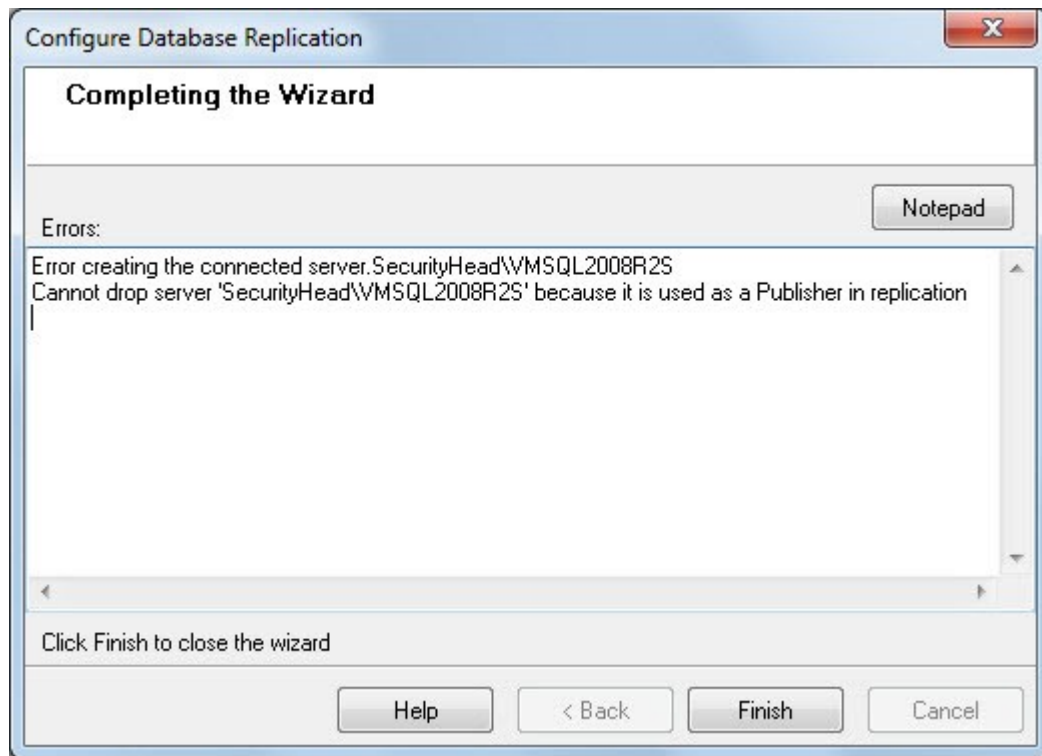
Click the Next button. It will trigger an attempt to connect to the specified MS SQL Server's instance to retrieve the list of registered databases.

If you entered the wrong instance name of the server or it is disconnected, the following box will appear with the relevant message:



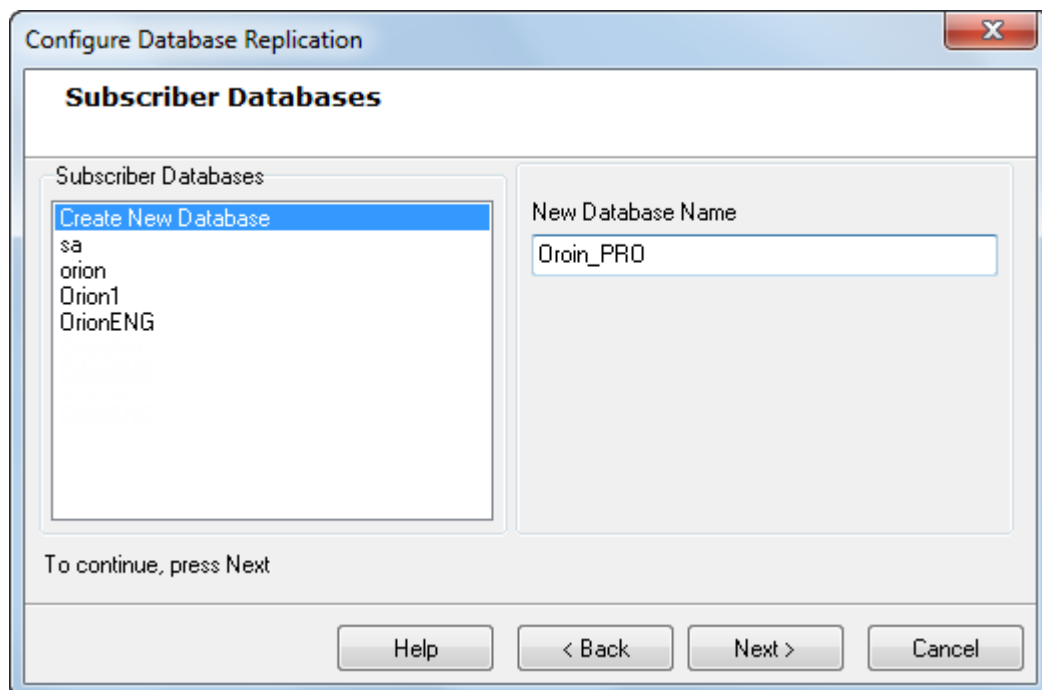
In such a case, please check whether the SQL Server's instance name is correct, the SQL Server is running, and the local network connectivity with it is established.

If you entered a correct name for the SQL Server's instance where one of the bases is used as a primary database, the Completing Wizard window will appear with the relevant error message:

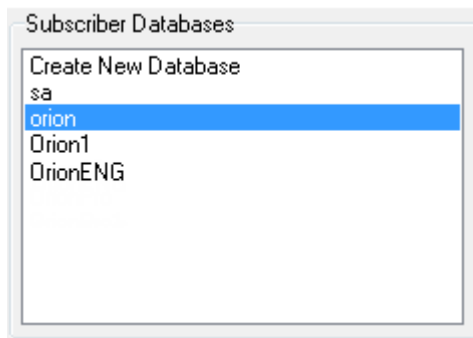


Then click the **Finish** button to close the Database Replication Setup Wizard

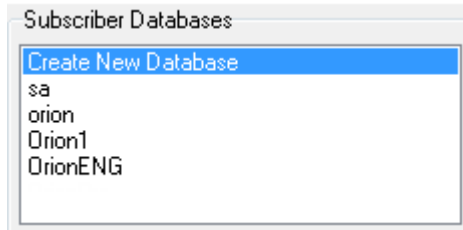
If you entered the correct name of a SQL Server, and this SQL Server is online, and this subscriber do not use any registered database as a primary database, the Subscriber Databases window will appear to show the list of databases registered on the SQL Server's instance:



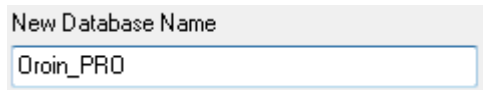
Select a database you want to use as an operational (secondary) database:



Or choose the **Create New Database** item:

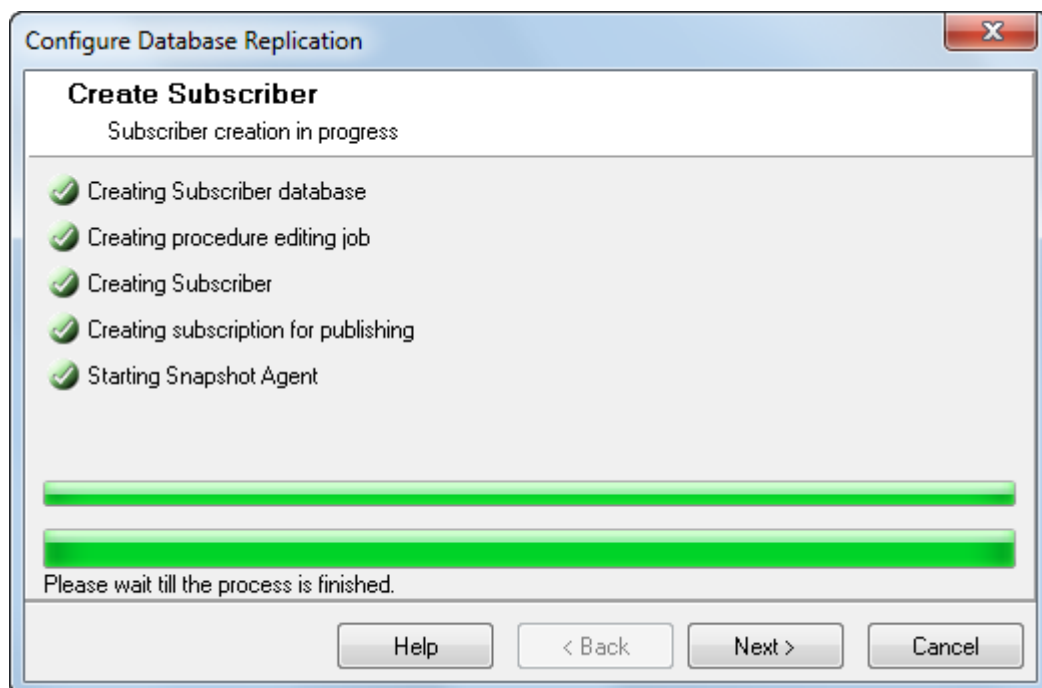


Then enter a name for a new database in the New **Database Name** field:

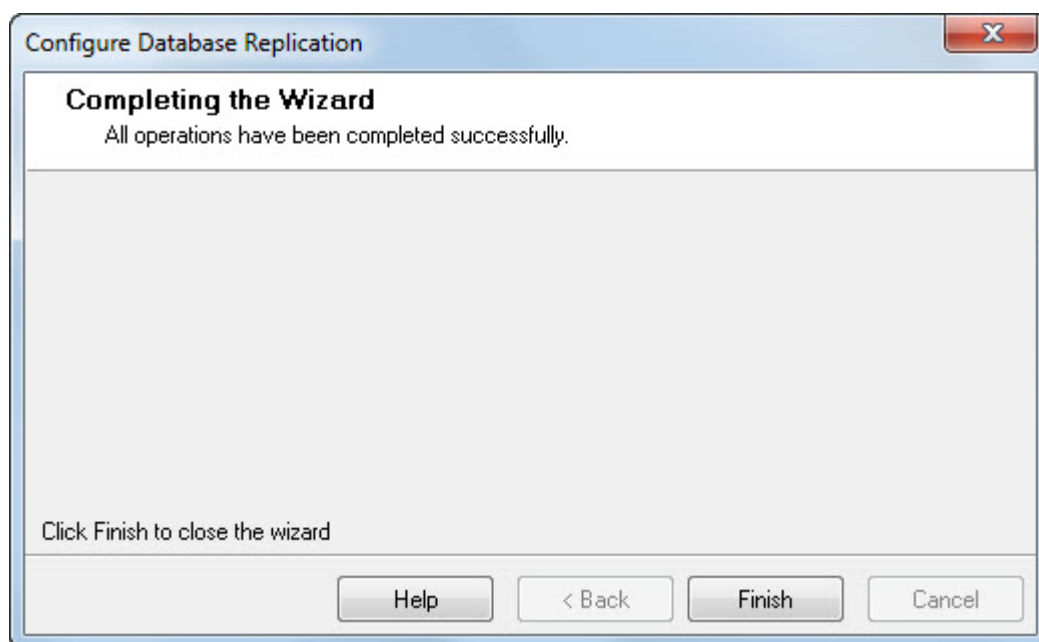


Please note that when the data synchronization (replication) between primary and operations databases is configured, all data of operational database are erased to copy replicated primary database to an operational one.

Further, click the **Next** button to start the process of creating a subscriber (i.e. it will set data synchronization (replication) between the primary and specific operational databases and copy the replicated data of primary database to the operational database.



Then click the **Next** button to open the **Completing the Wizard** window:



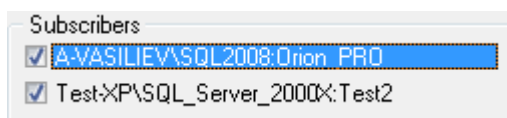
To close the Database Replication Wizard, please click the **Finish** button.

Attention! All configuration data sent to SQL Server will be applied in the background mode after closing Database Replication Wizard. The results can be noticed after a while.

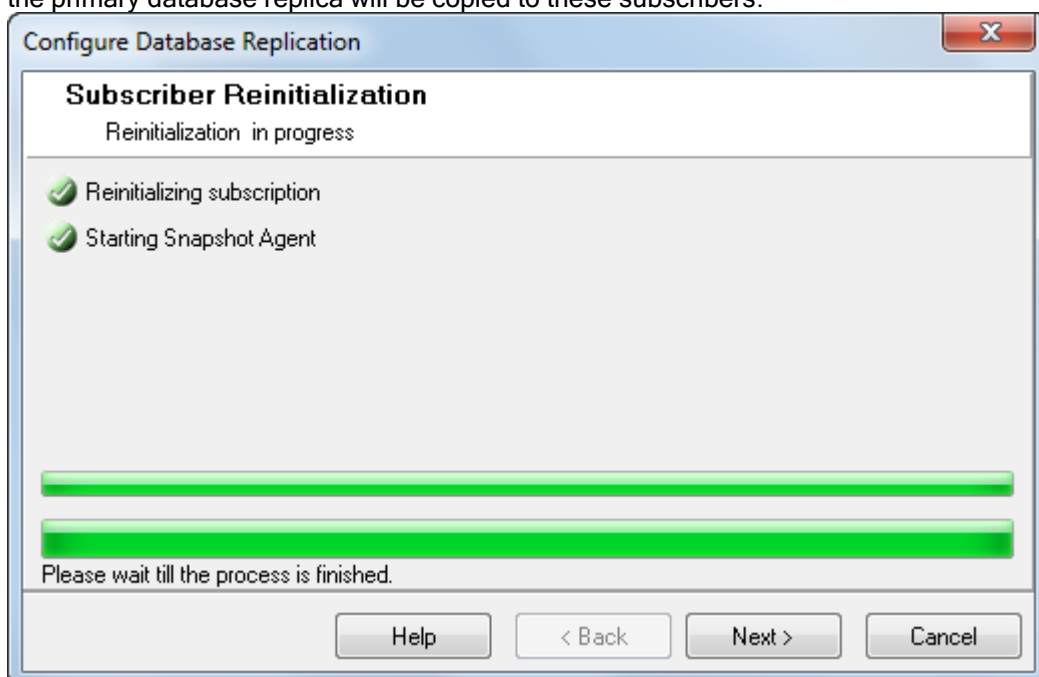
2. Re-initialization

This reinitializes one or more subscribers by erasing all data in operational data bases to copy the replicated data of the primary database to operational databases.

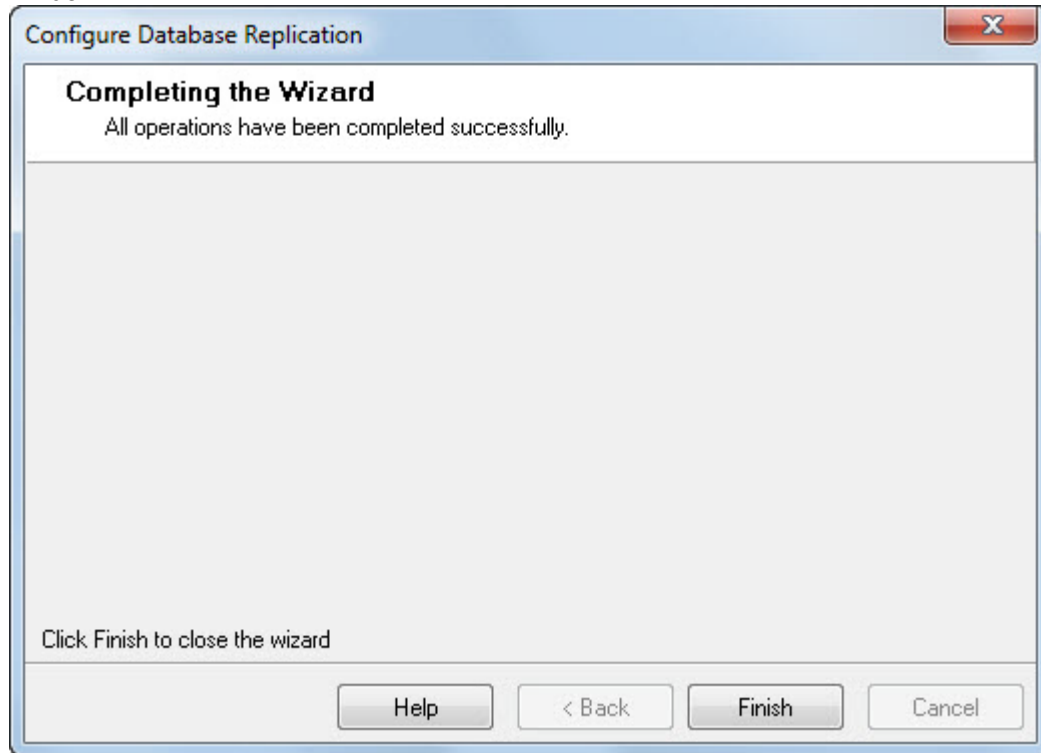
With this item chosen, please select one or more subscribers to be reinitialized:



Then click the **Next** button. The re-initialization will be applied to the selected subscribers, and the primary database replica will be copied to these subscribers:



When the process is completed, please click the **Next** button to go to the Completing Wizard window:



To close the Completing Wizard, please click the **Finish** button.

Attention! All settings provided for the SQL Server will applied in the background mode after closing the Database Replication Setup Wizard. The results can be seen after a while only.

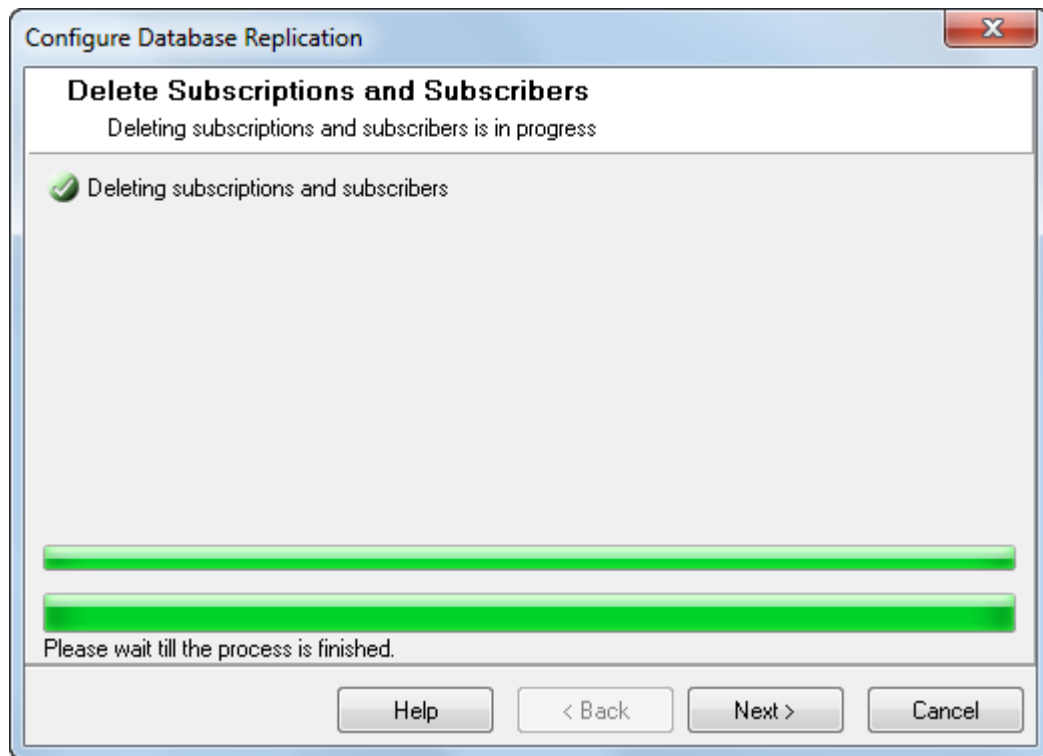
3. Deleting Subscriber

This option is used to delete one or more subscribers by cancelling all settings required for synchronization between the primary and a specific operational database(s). However the operational databases will **not** be physically removed.

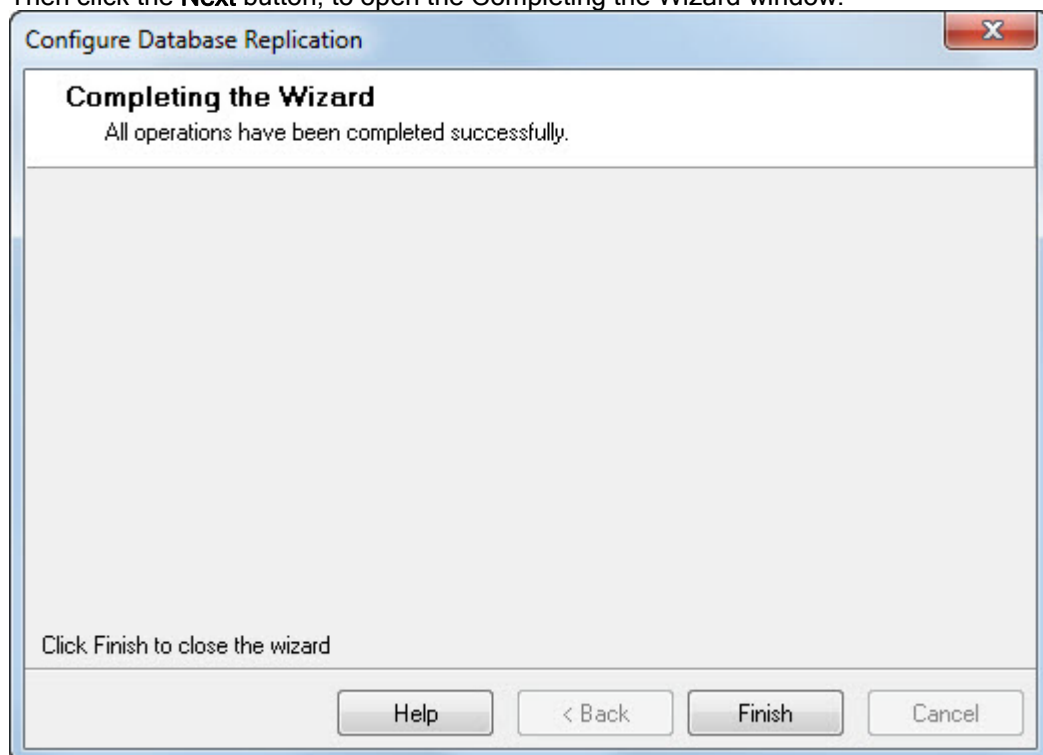
With this item chosen, please select a subscriber(s) you want to delete:



Then click the **Next** button. The selected subscribers will be deleted:



Then click the **Next** button, to open the Completing the Wizard window:

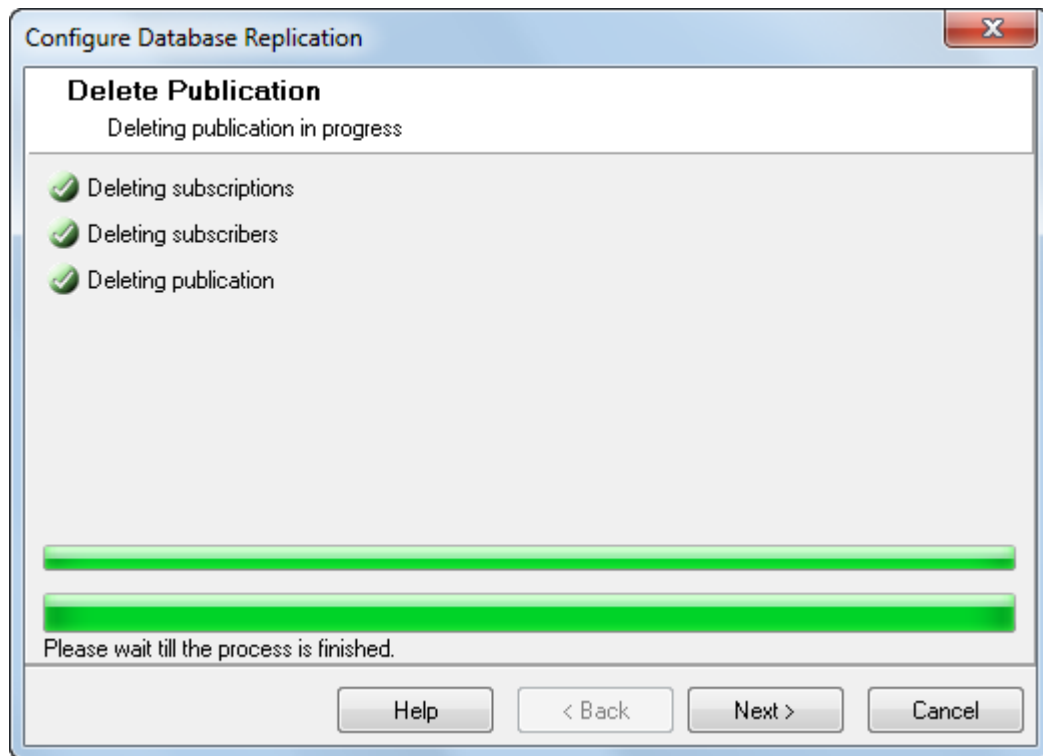


To close the Database Replication Wizard, please click the **Finish** button.

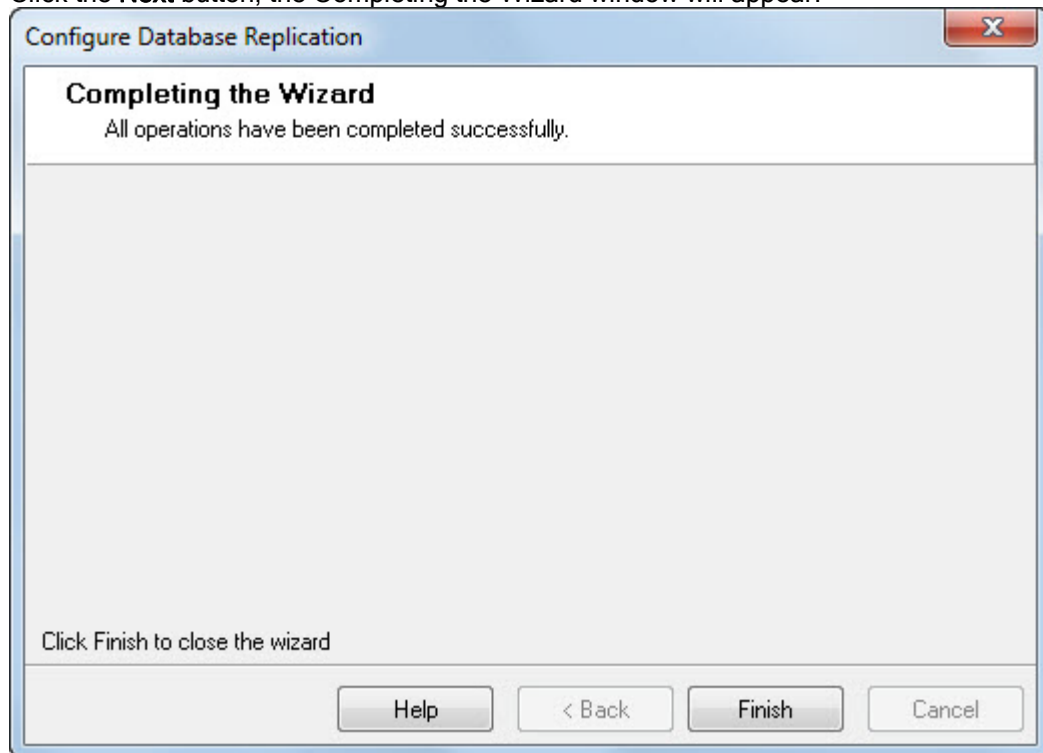
4. Delete Publication

This option is used to delete publication for operational databases (i.e. resetting specific settings in the Primary Database related to the synchronization (replication) with deleting all subscribers first.

When this option selected, please click the **Next** button. The publication and all subscribers will be deleted:



Click the **Next** button, the Completing the Wizard window will appear:



To close the Database Replication Setup Wizard, please click the **Finish** button.

4.8 Reindexing Database

Your Database can grow up to a significant size during operation of the Orion Pro system. This slows down the database performance.

To cure this, the SQL Server database can be re-indexed. Reindexation will completely rebuilt database table indexes to improve much the database performance. We recommend that you reindex database tables from time to time.

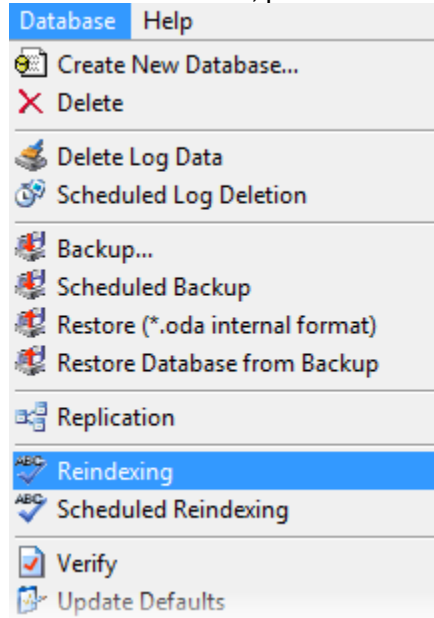
The Central Server Manager offers the following capabilities to reindex a database:

- Reindexing
- Scheduled reindexing using the MS SQL Server tools.

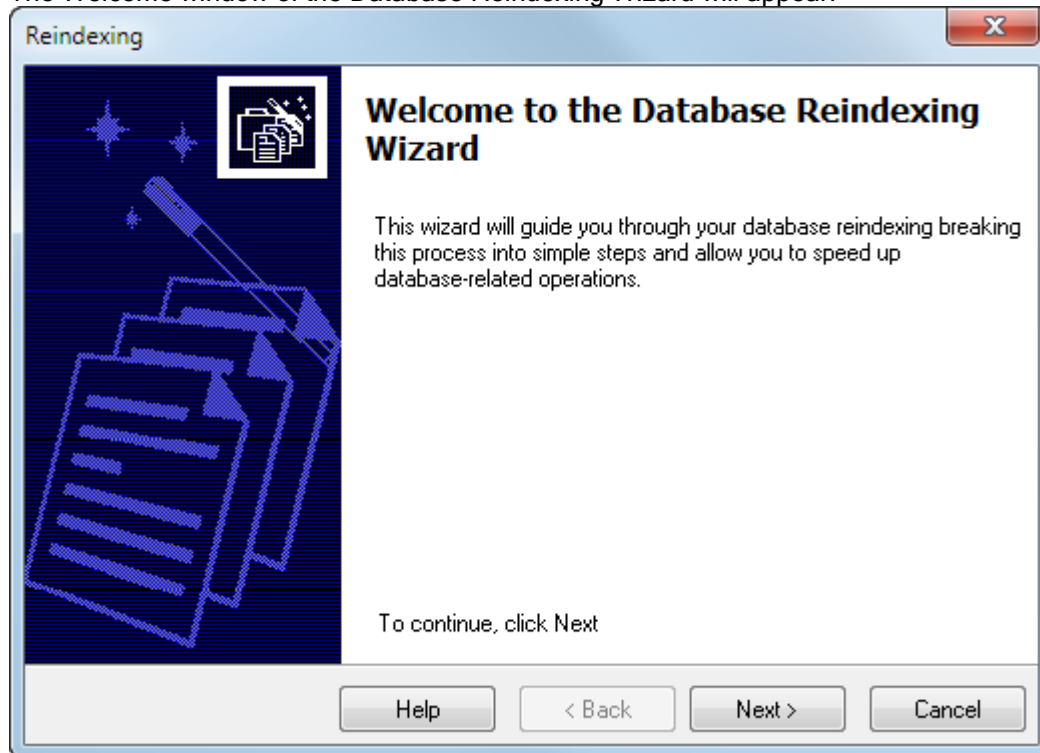
Please note that reindexing and scheduled reindexing is applied to the database currently used in the Orion Pro System.

4.8.1 Reindexing Database

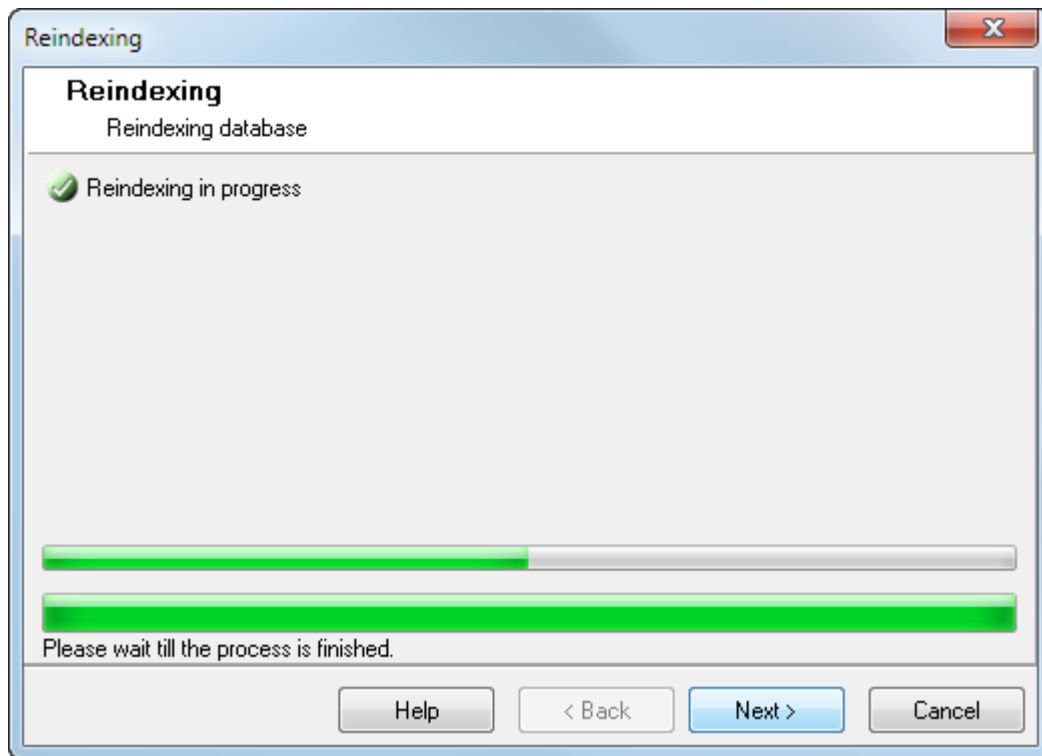
To reindex database, please choose **Database/Reindexing**:



The Welcome window of the Database Reindexing Wizard will appear:

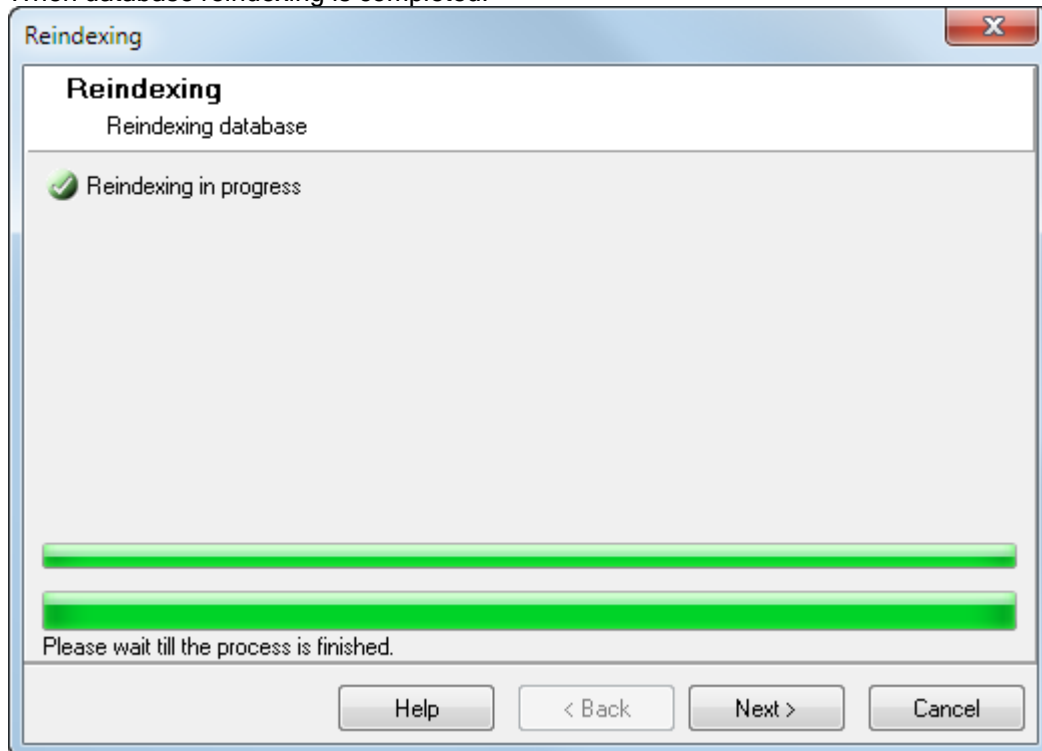


To start reindexing, please click the **Next** button:

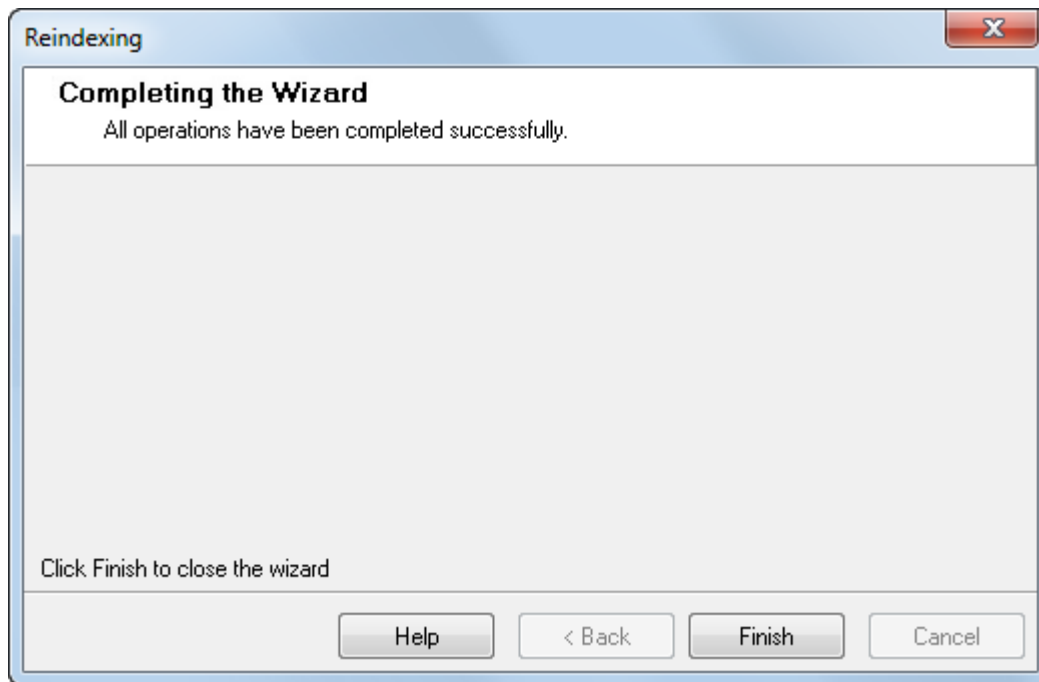


The re-indexation can take some time with database logs of large size.

When database reindexing is completed:



Click the Next button to open the Completing the Wizard:



To close the Database Reindexing Wizard, please click the **Finish** button:

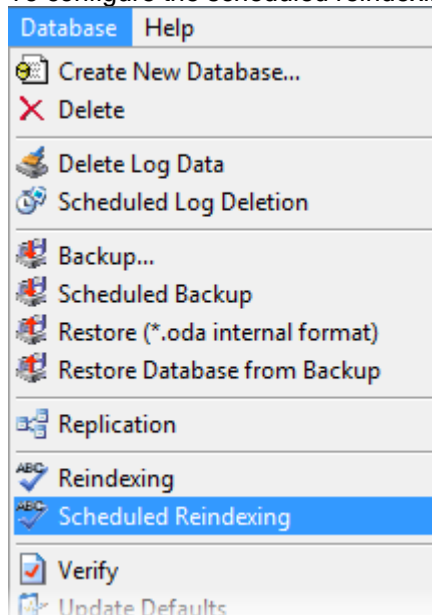
4.8.2 Scheduled Reindexing

The Central Server Manager offers capabilities of configuring scheduled reindexing:

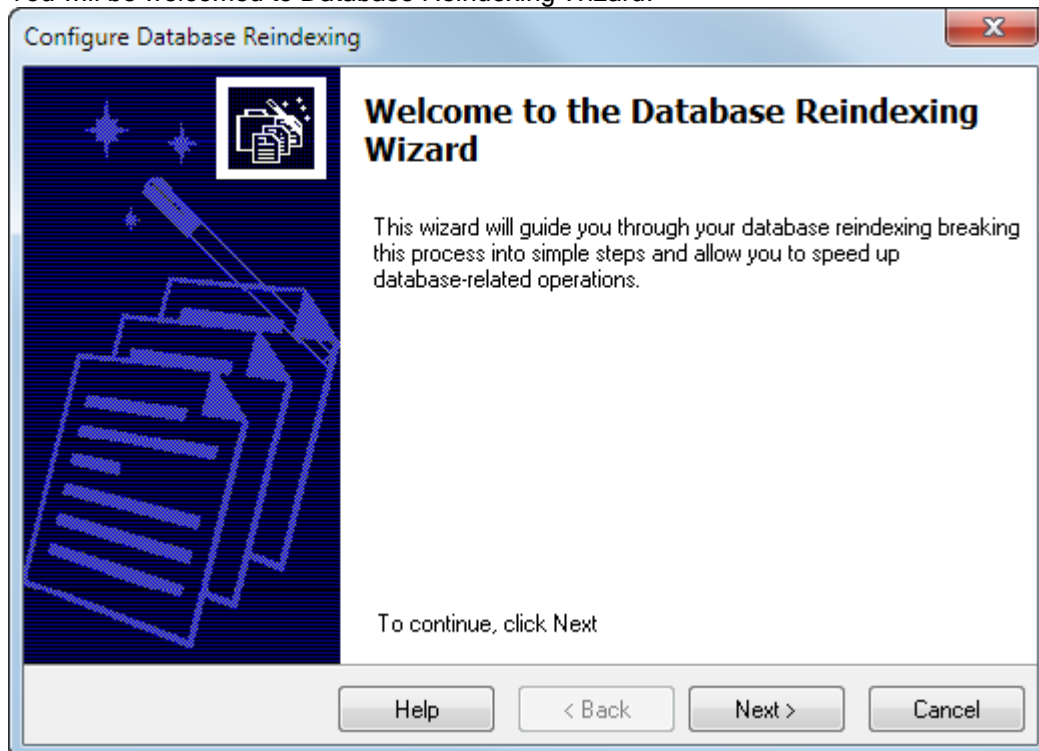
The scheduled reindexing can be achieved by any of the two approaches:

1. Using SQL Server service:
In this case, the installed SQL Server version must support the job execution (the Orion Pro installation package includes a paid-free SQL Server that does not support this functionality)
To reindex a database by SQL Server tools, you will require the SQL Agent permanently running on the operated SQL Server instance.
2. Using the Task Scheduler of Windows OS:
In this case, the full version of SQL Server is not required

To configure the scheduled reindexing choose **Database/Scheduled Reindexing**:

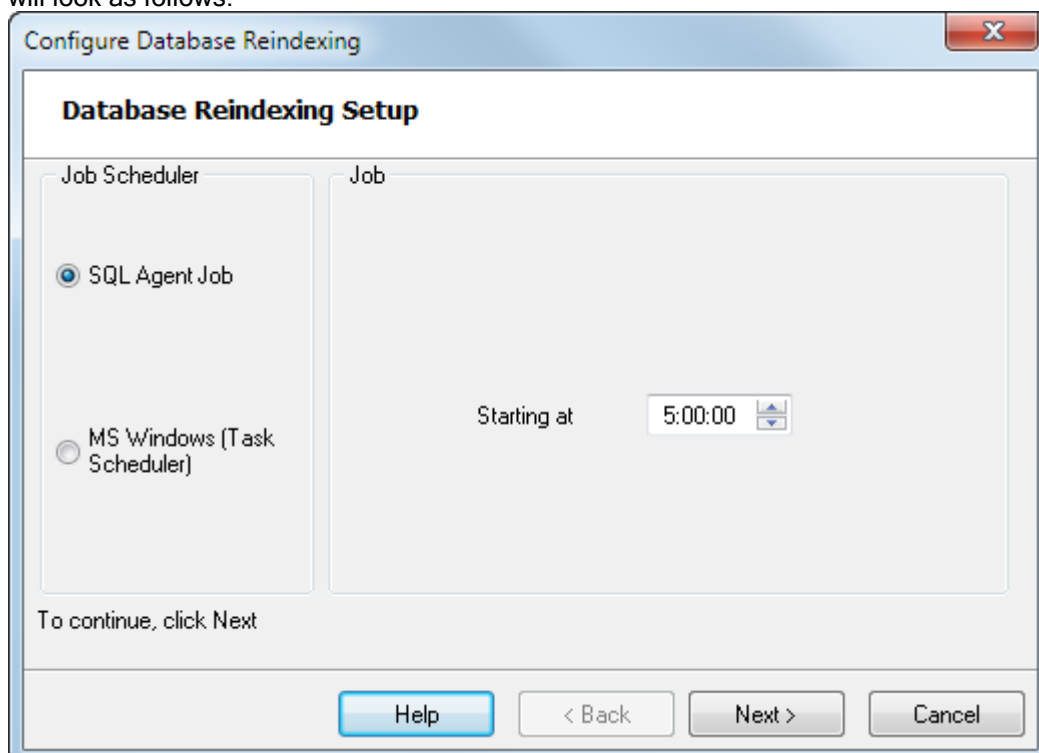


You will be welcomed to Database Reindexing Wizard:

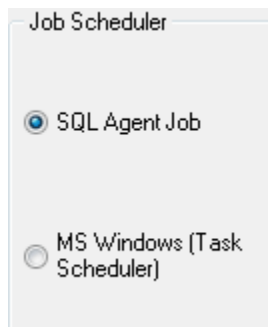


Please click the next button to go to the Database Reindexing Setup window,

If you try to configure the database reindexing for the first time, the Database Reindexing Setup Window will look as follows:



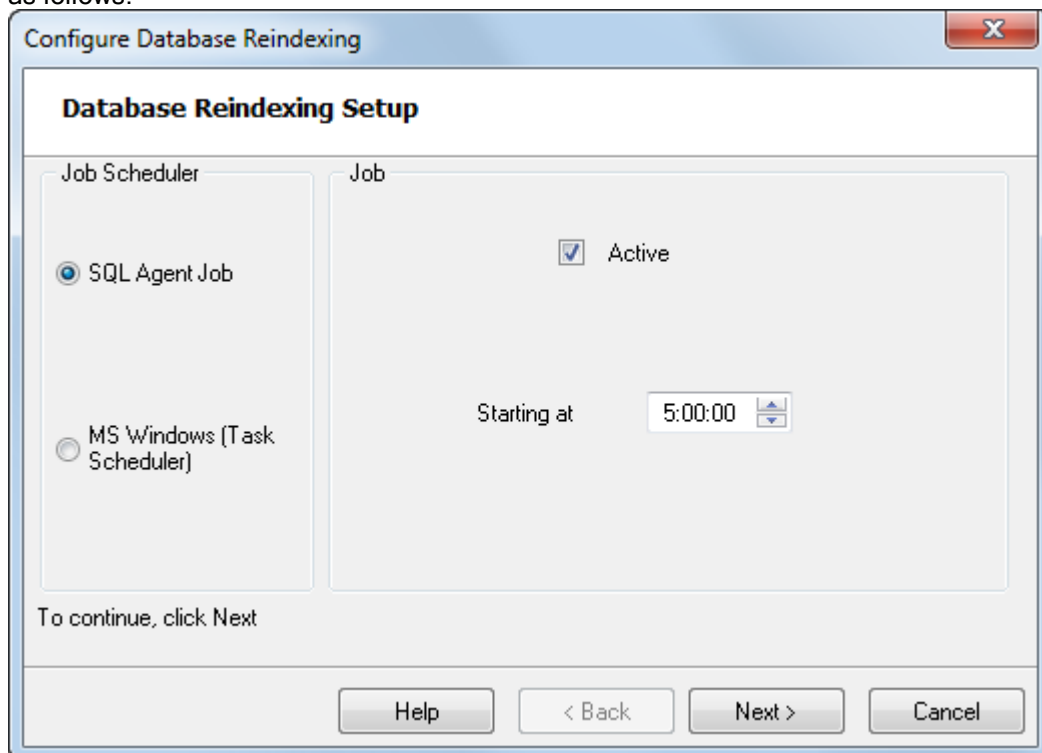
Please select whether SQL Agent or Task Scheduler is to be used for scheduled reindexing:



a database will be indexed once a day at the time defined in the **Starting at** fields:



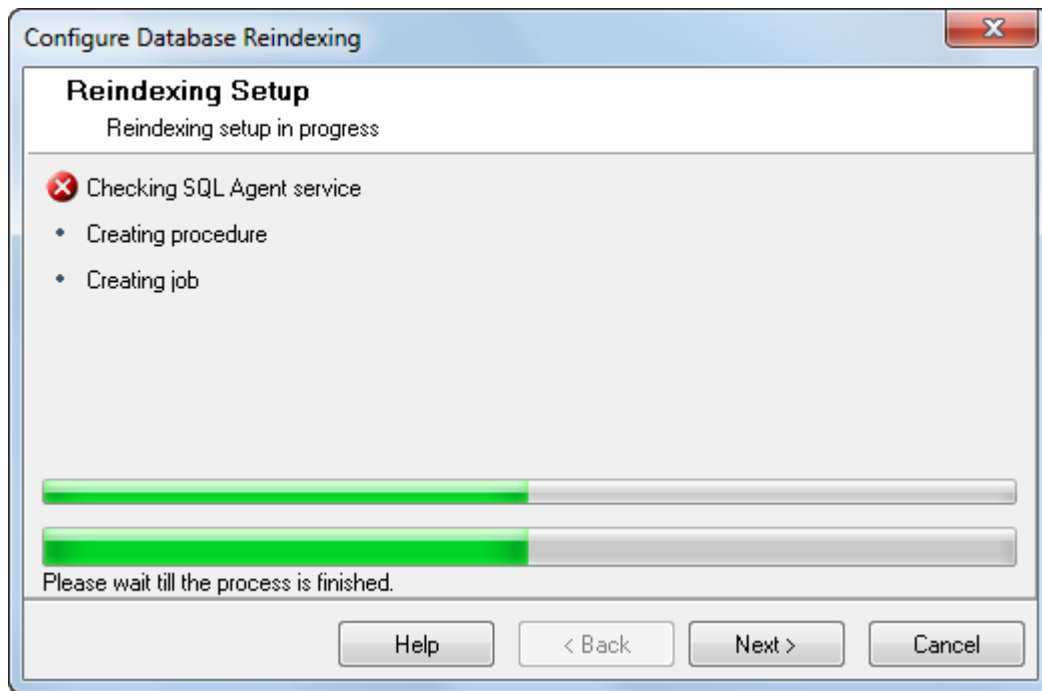
If it is not the first time when you configure reindexing, the **Database Reindexing Setup** window will look as follows:



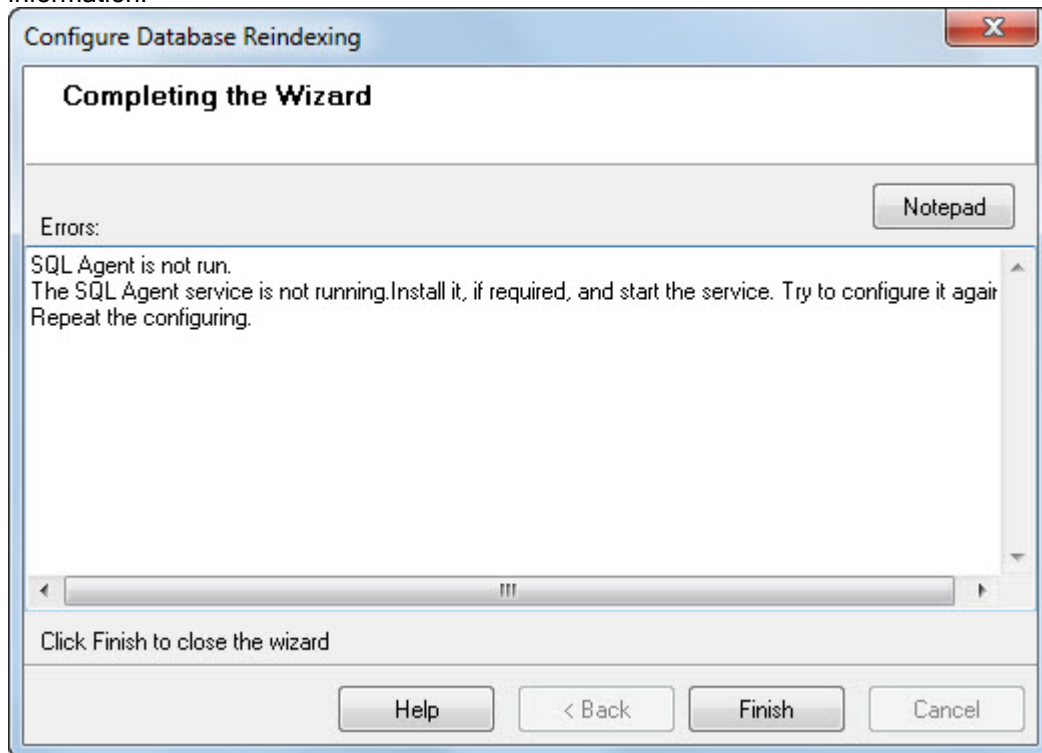
The figure shows that further selection of another Job Scheduler's service is not accessible (the current selection has been used). It also includes a new parameter **Active** used to enable/disable scheduled reindexing .

Click the **Next** button to save changes for the scheduled reindexing settings.

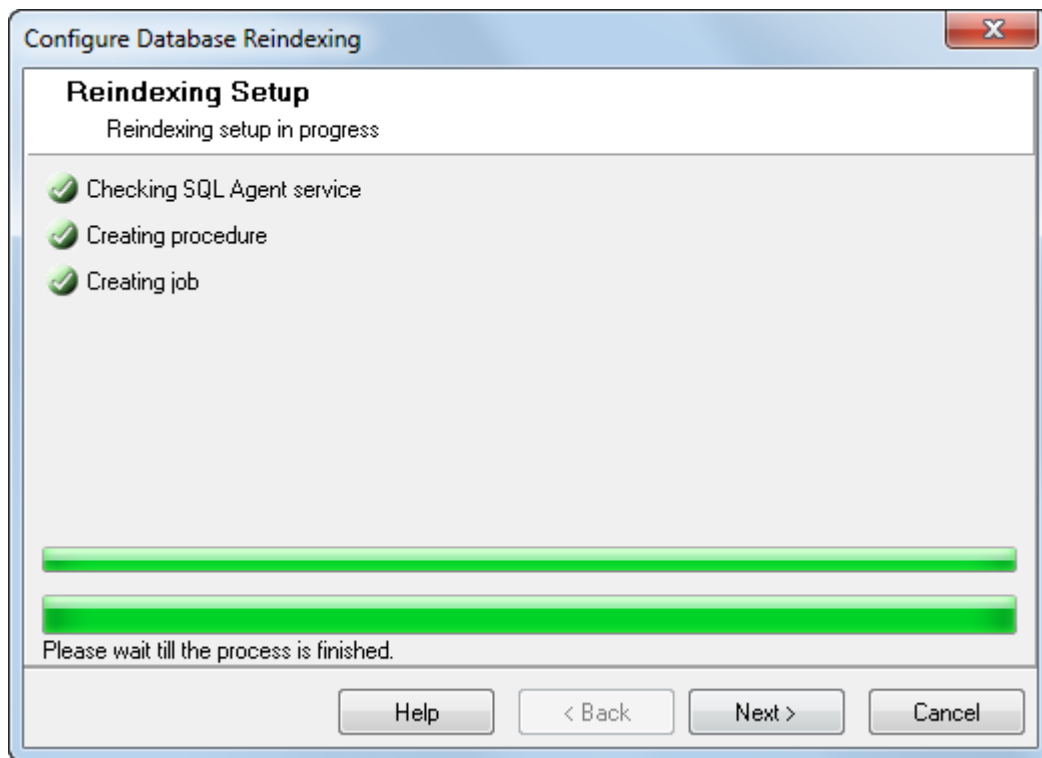
If the SQL Agent service is not running (it is required for reindexing if SQL Server job scheduler is used), the process of configuring scheduled reindexing will be terminated at the Checking SQL Agent service stage:



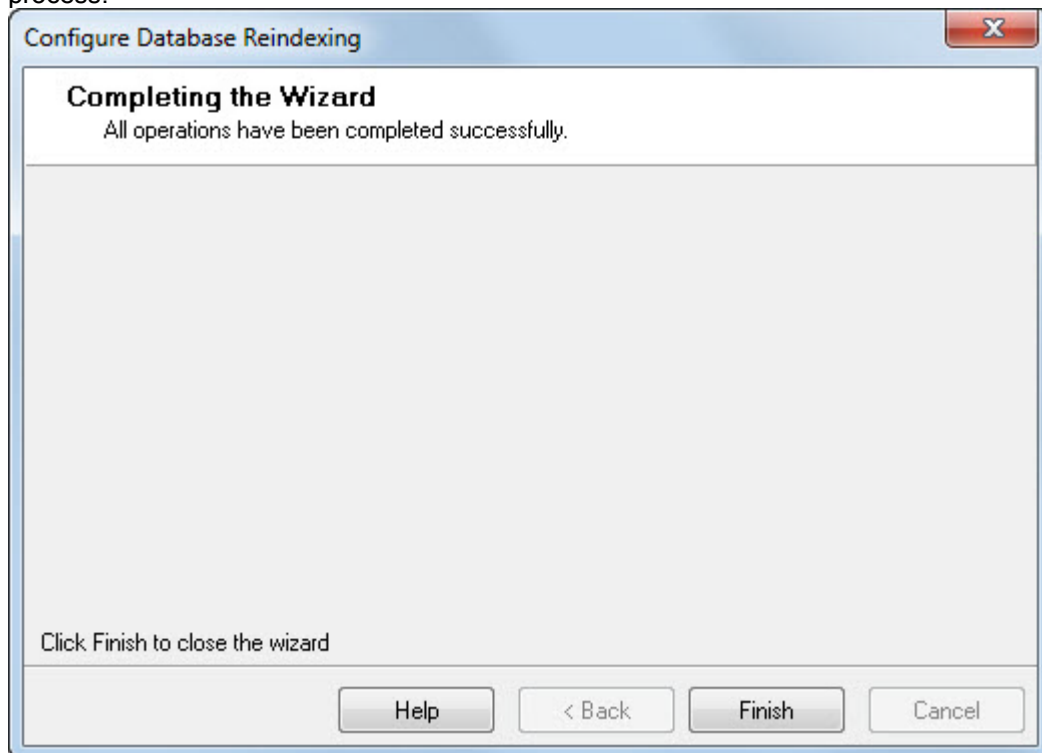
Then click the **Next** button, the Completing the Wizard window will appear to show the relevant information:



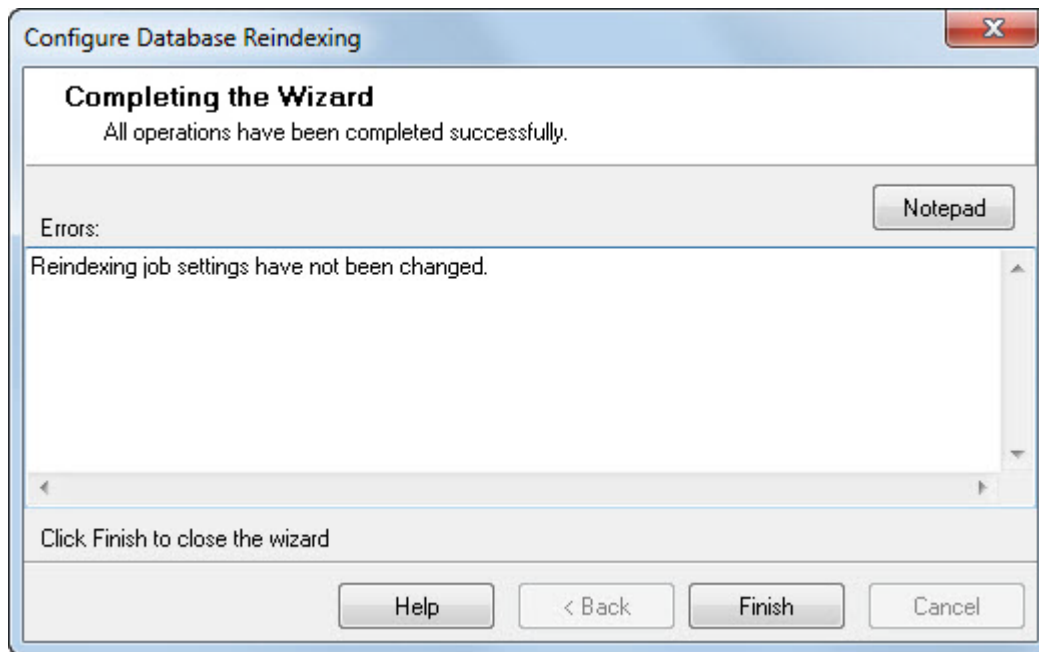
If Windows' Task Scheduler is selected to launch reindexing or SQL Agent Service is launched (if SQL Server Job Scheduler is selected), all selections for database reindexing will be applied:



Then click the **Next** button to go to the **Completing Wizard** window with a message on a successful setup process:



If it is not the first time, when you use **Scheduled Reindexing Wizard** and no parameters have been modified in the Database Reindexing Settings before, the configuration step will be skipped and the **Completing the Wizard** window will appear with the relevant message:



To close the Database Reindexing Wizard, please click the **Finish** button.

4.9 Verifying Database and Removing Dangling References

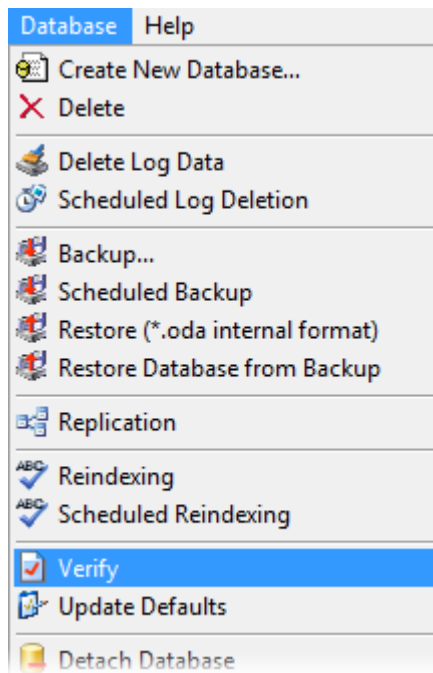
The Central Server Manager offer capabilities to verify the database and remove dangling references:
The verification check for the following:

- Availability of all database tables
- Necessary fields in the database tables
- Superfluous fields in the database tables
- Dangling references in the database tables

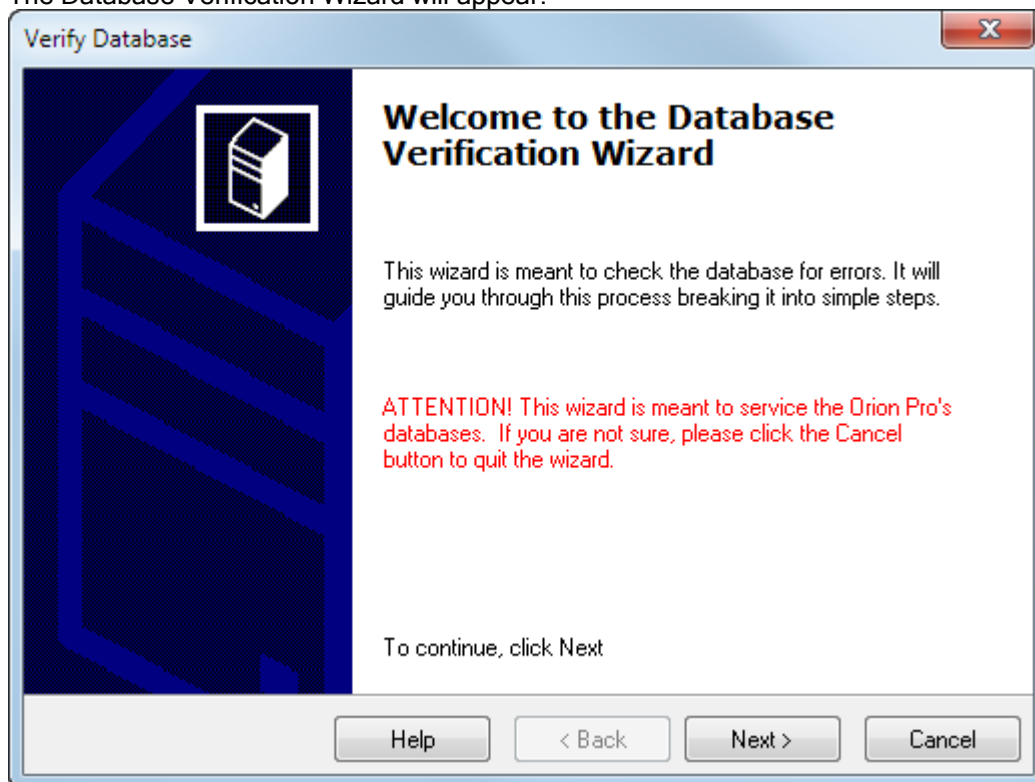
When checking for hanging links in the database tables, it searches records with references to non-existent records of other tables. When such links are found, they can be deleted

Please note, verification and deleting of dangling references is effective for the database currently selected for the use the Orion Pro System.

To start database verification, please choose **Database/Verify**:

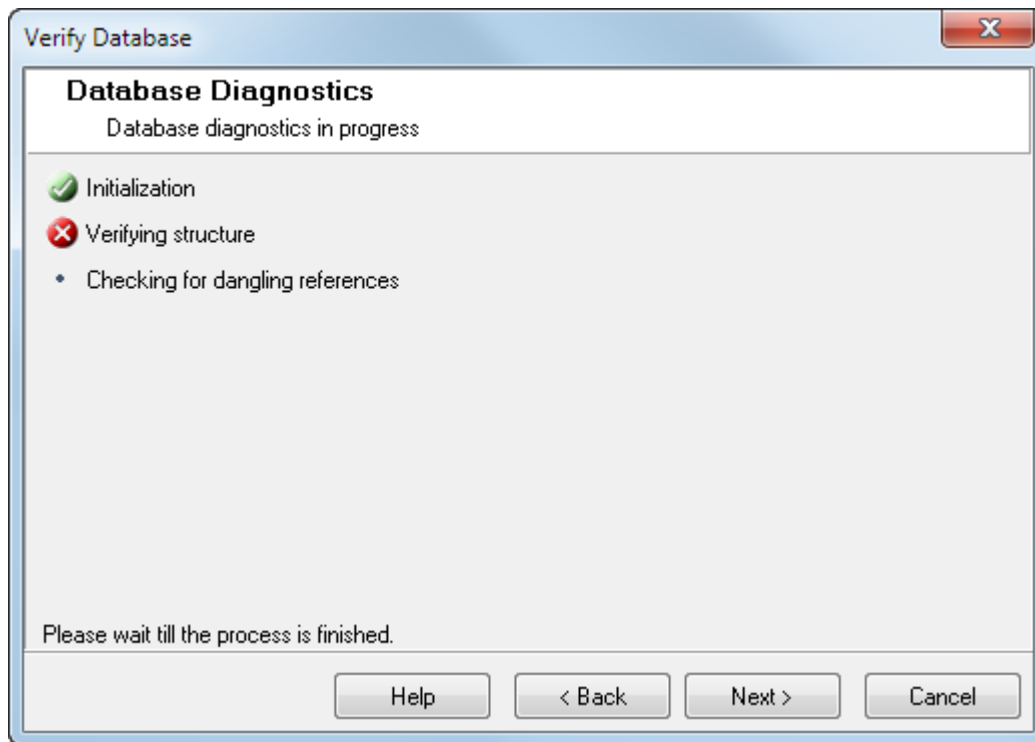


The Database Verification Wizard will appear:

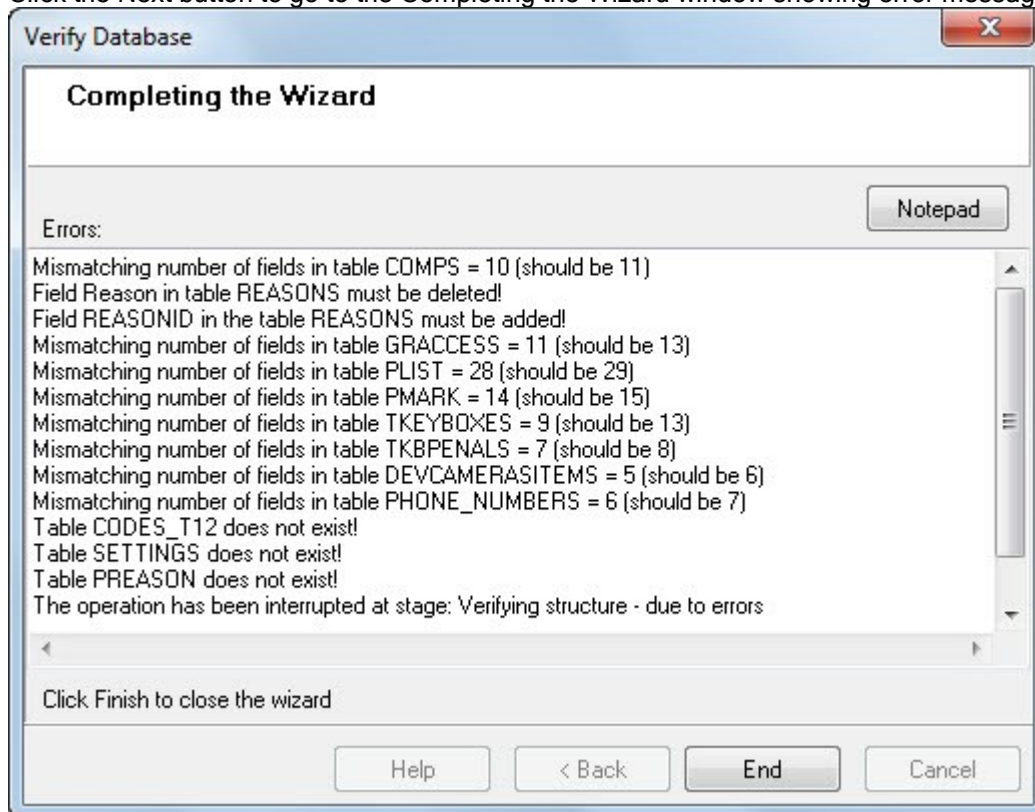


Then click the **Next** button to start the process of database verification.

If the verification process finds any issues in a table structure, the check for dangling references will be skipped:



Click the Next button to go to the Completing the Wizard window showing error messages:



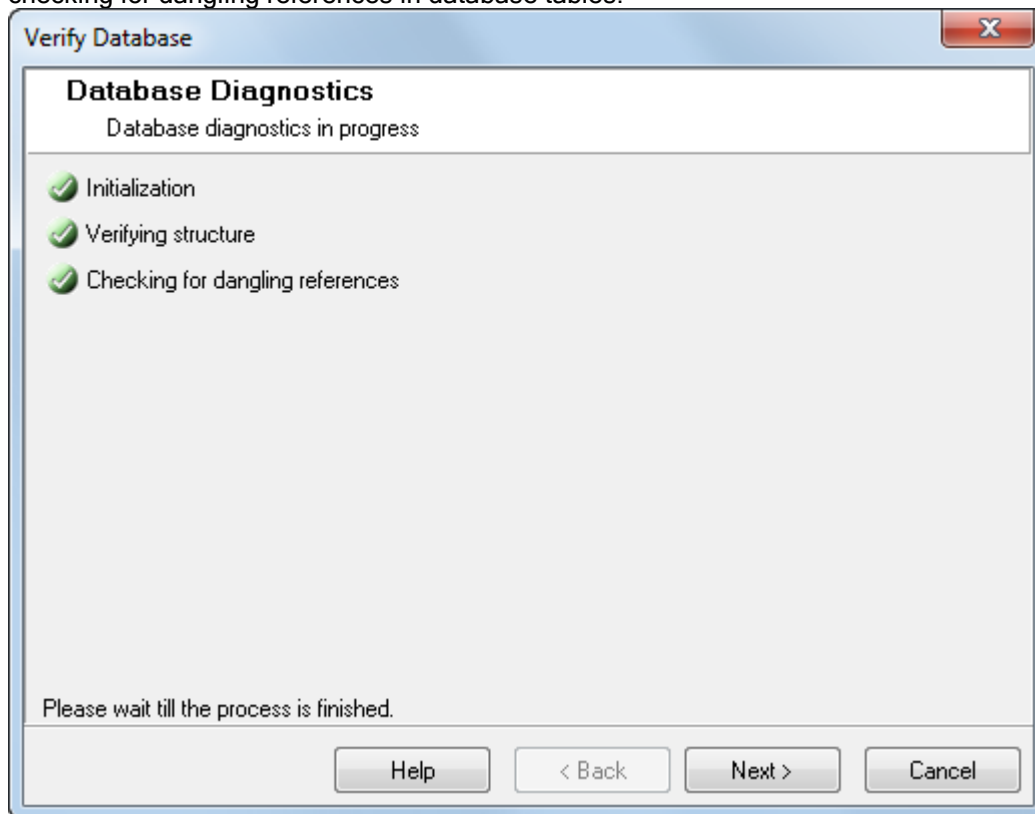
Please note that if you use secondary databases (i.e. the synchronization (replication) is enabled), the above window will include messages notifying on an excess field "msrepl_tran_version" in each table.

Example:

Mismatching number of fields in table DTYPES = 9 (should be 8)
Field msrepl_tran_version in table DTYPES must be deleted!

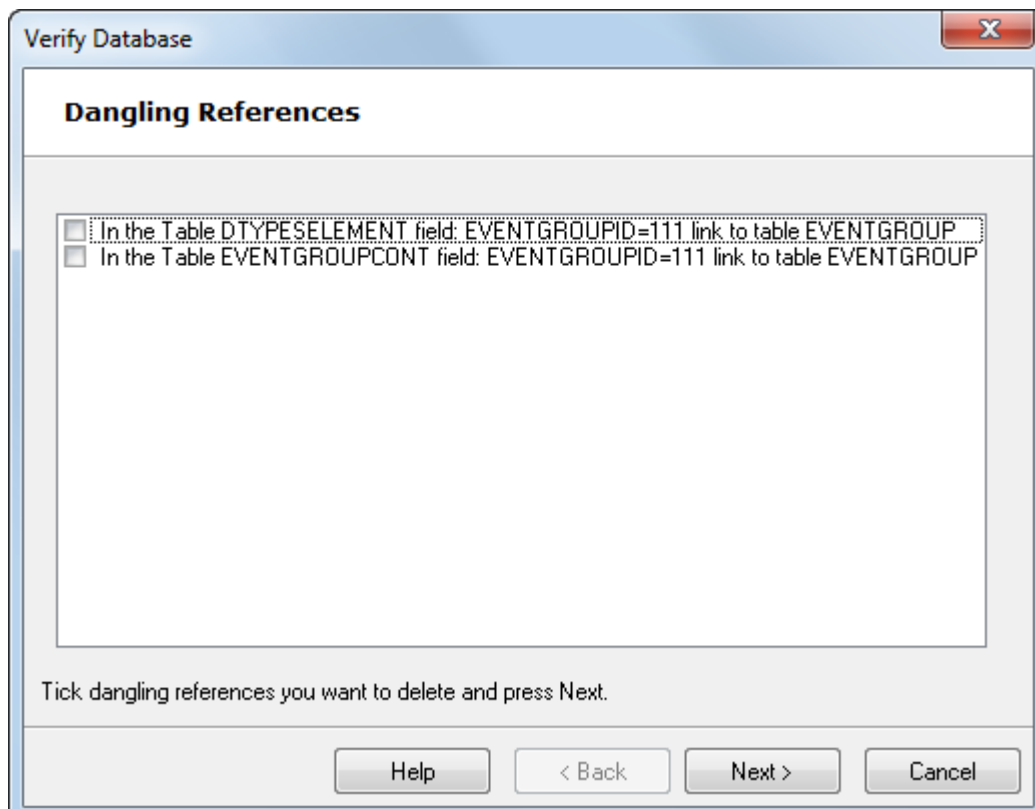
Please ignore these messages, this is not an error.

If no errors are found in a table structure during verification, the Database Diagnostics will proceed with checking for dangling references in database tables:

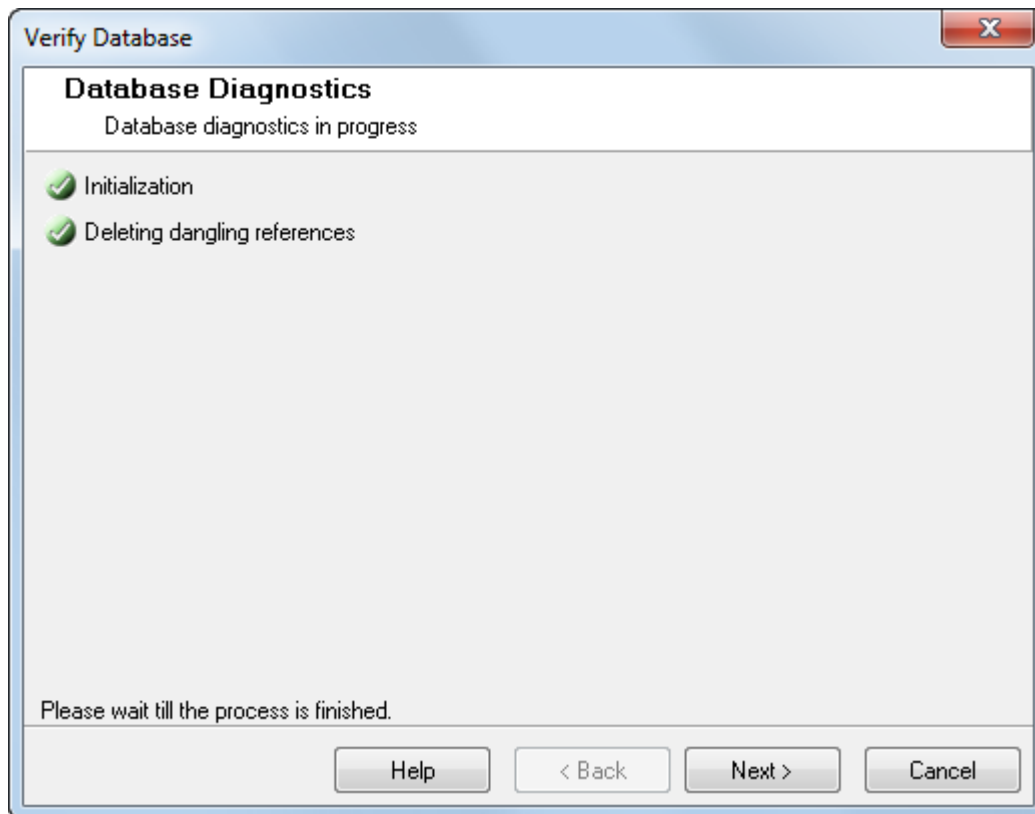


If no error is found by the dangling check, the **Completing the Wizard** will be displayed right after clicking the **Next** button

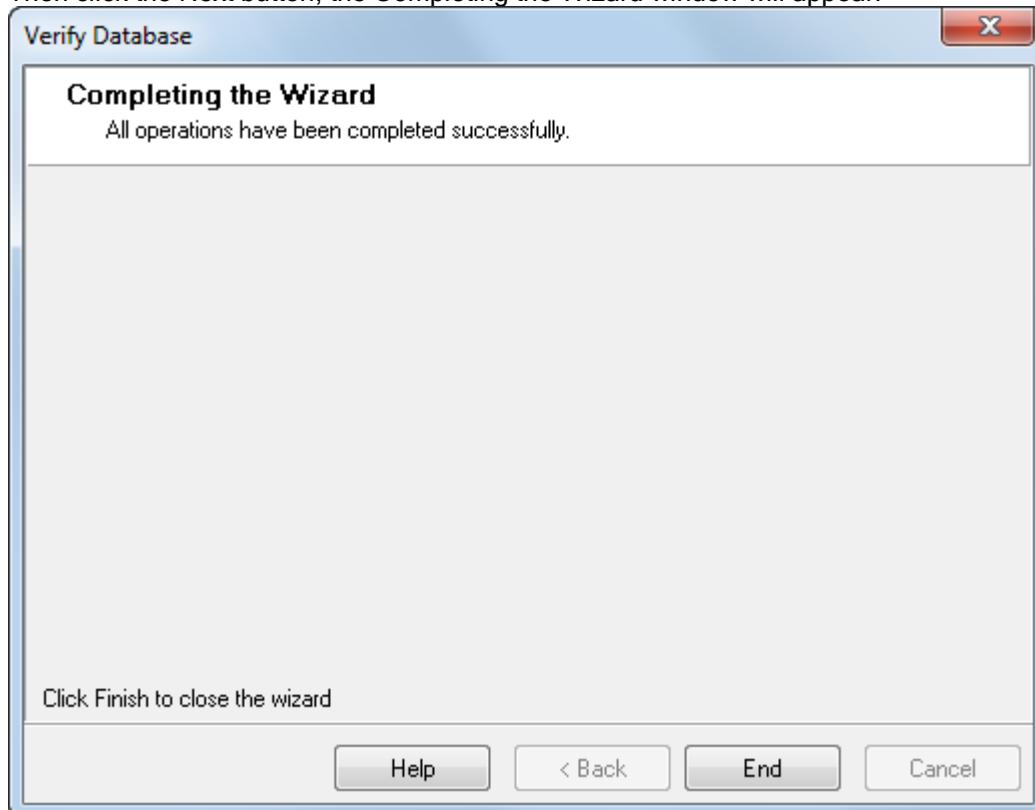
If any error is found by the dangling check, the click on the **Next** button will display the **Dangling References**:



Please select the check boxes of the dangling references you want to delete and click **Next**:
If no dangle references are selected the Completing the Wizard window will appear.
If some dangling references are selected, the window with deleting process will be shown:



Then click the Next button, the Completing the Wizard window will appear:



To close the Database Verification Wizard, please click the Finish button.

It should be noted, that errors usually occur if the database version mismatches the version of Orion Pro Suite. To cure this, such a database must be upgraded.

4.10 Updating Defaults

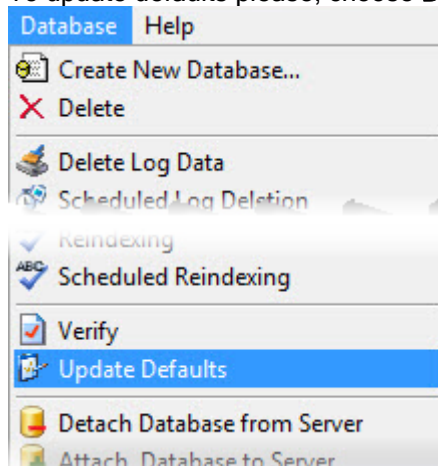
*Attention! The **Update Defaults** is a specific action performed in rare cases for example, when your need to integrate a support of a new device to the Orion Pro System, or add a new event. The Bolid Company highly recommends **NOT** to update defaults without a critical need and consultation with the Technical Support team*

If applied, the Update Default action updates the following database tables”

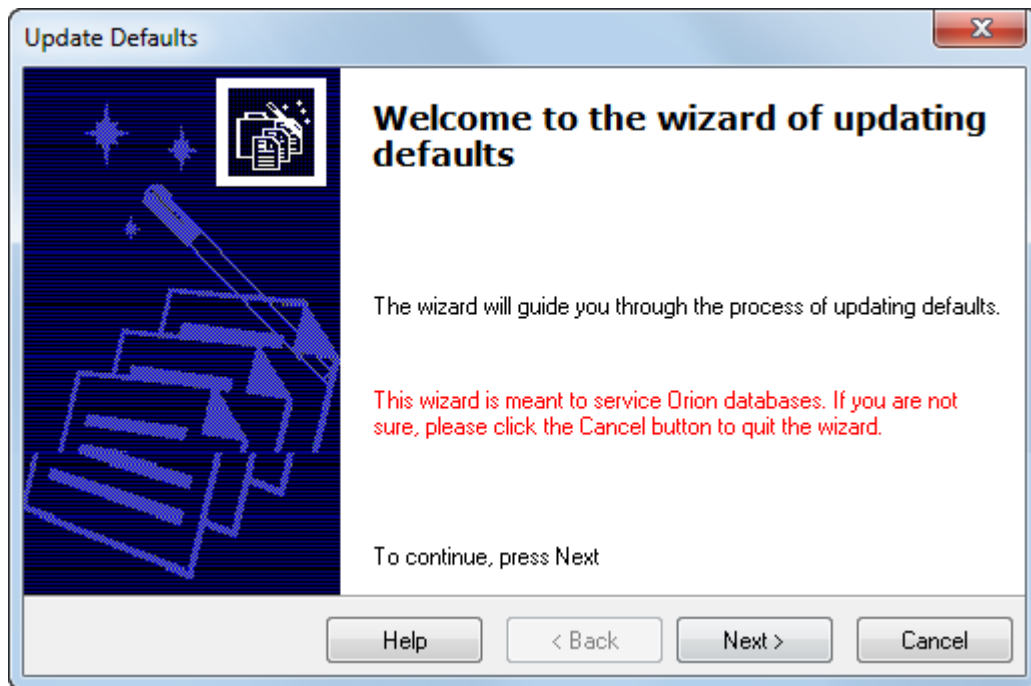
- **VersionDB**: a database version
- **Events**: the list of system events
- **EventGroup** and **EventGroupCont**: event groups for the systems entities
- **Sys**— properties of workstations;
- **dTypesElement**: list of standard types of entities (modules (devices), loops (points), relay outputs
- **vInspTypes**— list of supported video systems
- **Interfaces**, **Protocols** and **InterfaceProtocol** – list of supported interfaces, protocols and their linkages;
- **pListNetPorts**: list of ports used by software modules

Please note, that Update Defaults function will be effective only for the database currently selected for the use in the Orion Pro System.

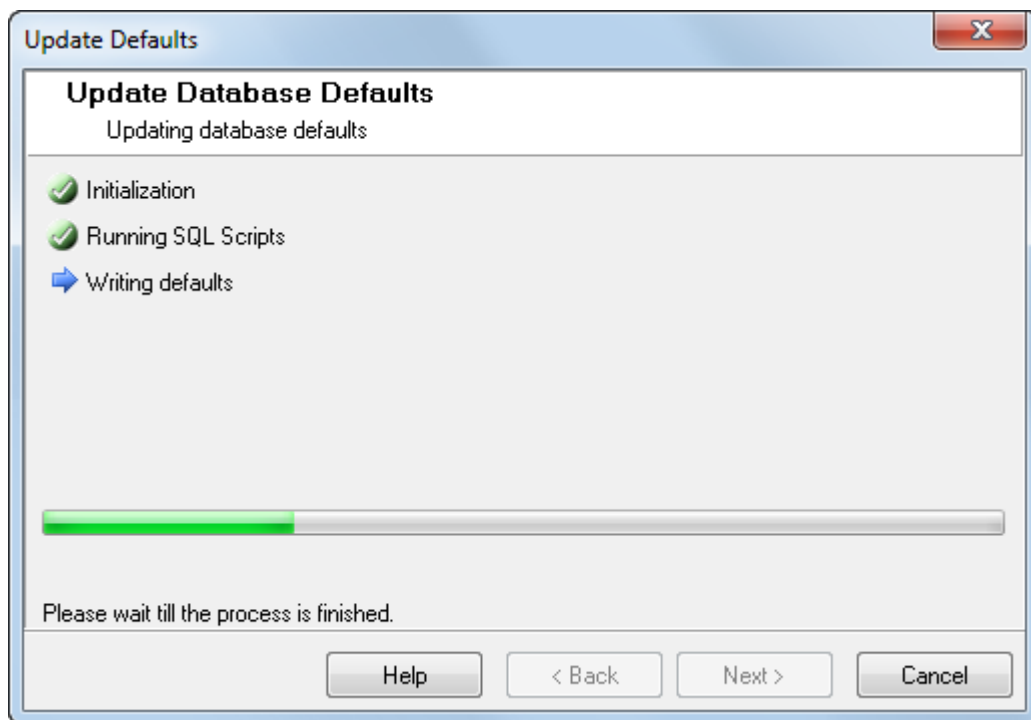
To update defaults please, choose **Database/Update Defaults**:



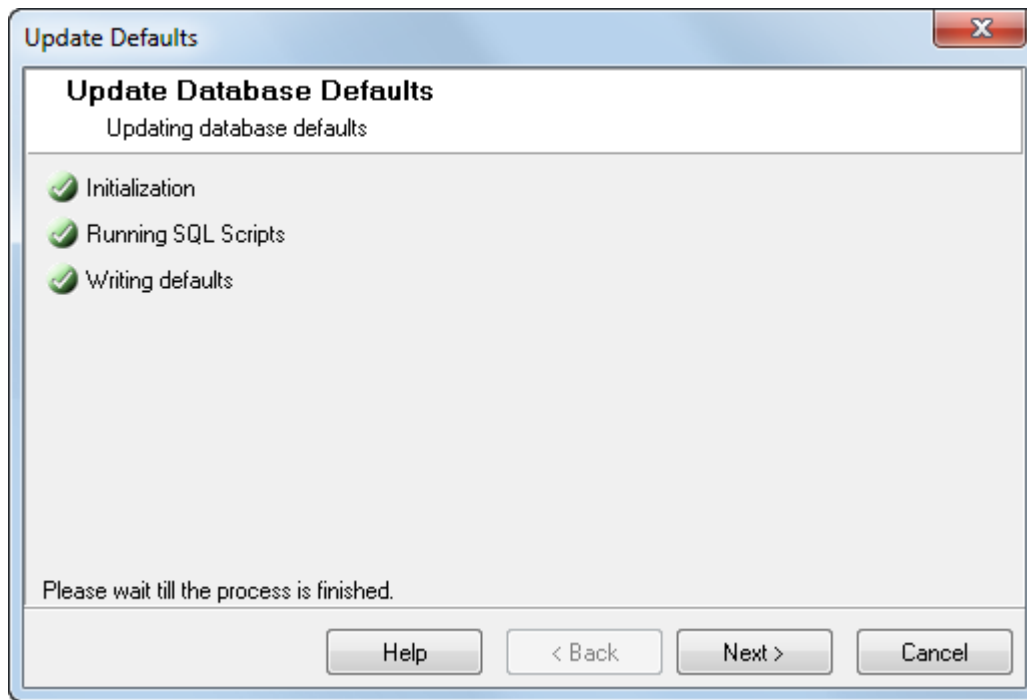
The Update Defaults Wizard will appear:



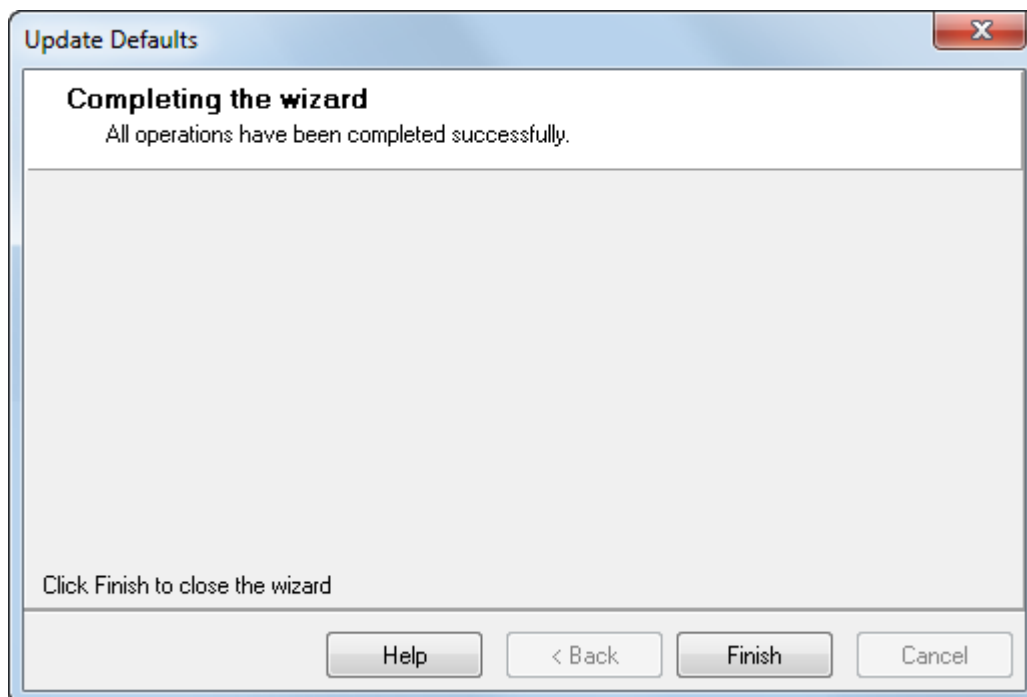
Then click the **Next** button to start the process of updating defaults:



When the process will be completed:



Please click the Next button to go to the Completing Wizard window:



To close the Update Defaults Wizard, click the **Finish** button.

4.11 Registering Database, Unregistering Database

Now, the Orion Pro Suite uses MS SQL Server databases. It is enough for applications to know a database alias (name) only to work with the database. A database alias is defined when a database is created or registered in the MS SQL Server. Thus, a database can be physically deleted from the MS SQL Server or unregistered. When a database is unregistered, it is not physically deleted and can be reregistered, if needed.

Please be aware that:

- Registration of a database is called “**Attach Database**”
- Unregistration of a database called “**Detach Database**”

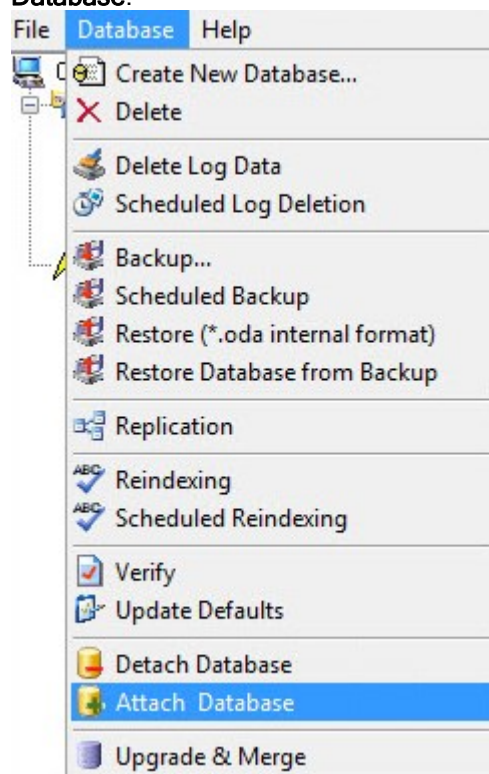
To complete the above actions, you can use Enterprise Manager (included in the full version of MS SQL Server) or SQL Server Management Studio (included in the Orion Pro Suite)

Further, this guide discusses how to use Orion Pro Central Server Manager for the above actions.

4.11.1 Registering Database in MS SQL Server

Attention! To register a Database in the SQL Server, make sure that you shut down all Orion Pro modules all workstations but for the Central Server and currently used Central Server Manager

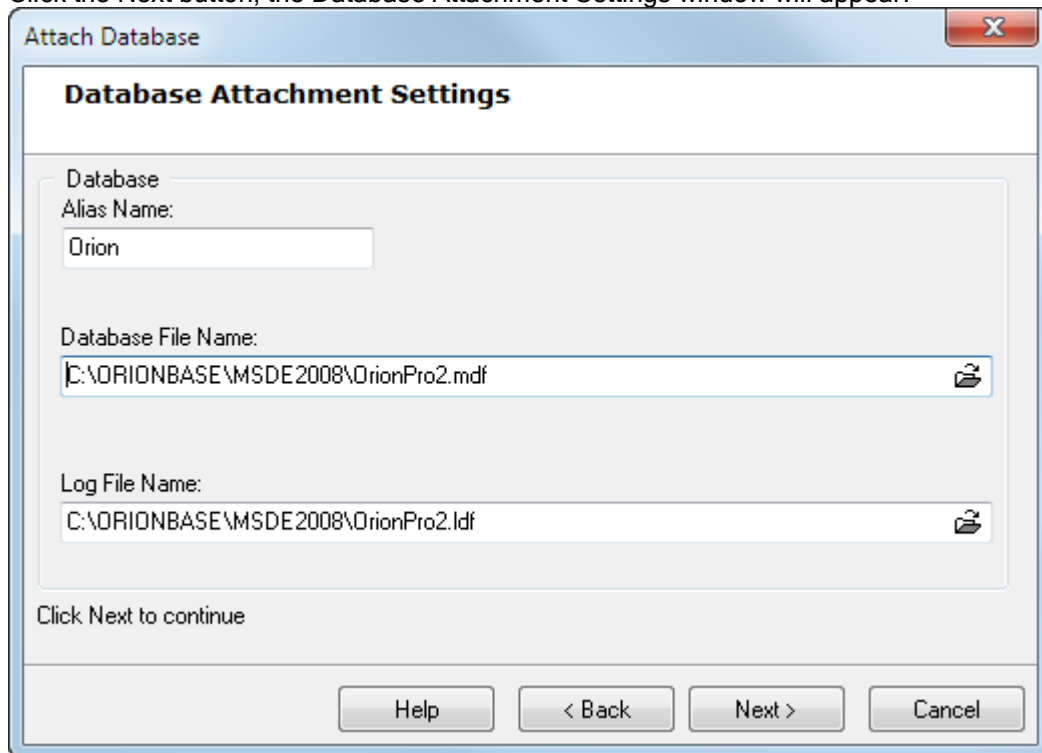
To register a Database (**Attach Database**) in the MS SQL Server, please choose **Database/Attach Database**:



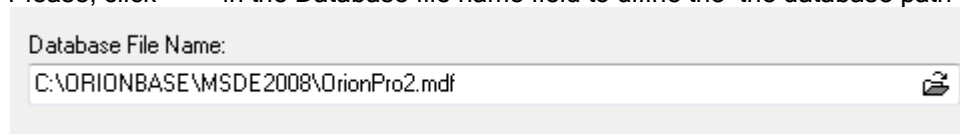
The Attach Database Wizard will appear:



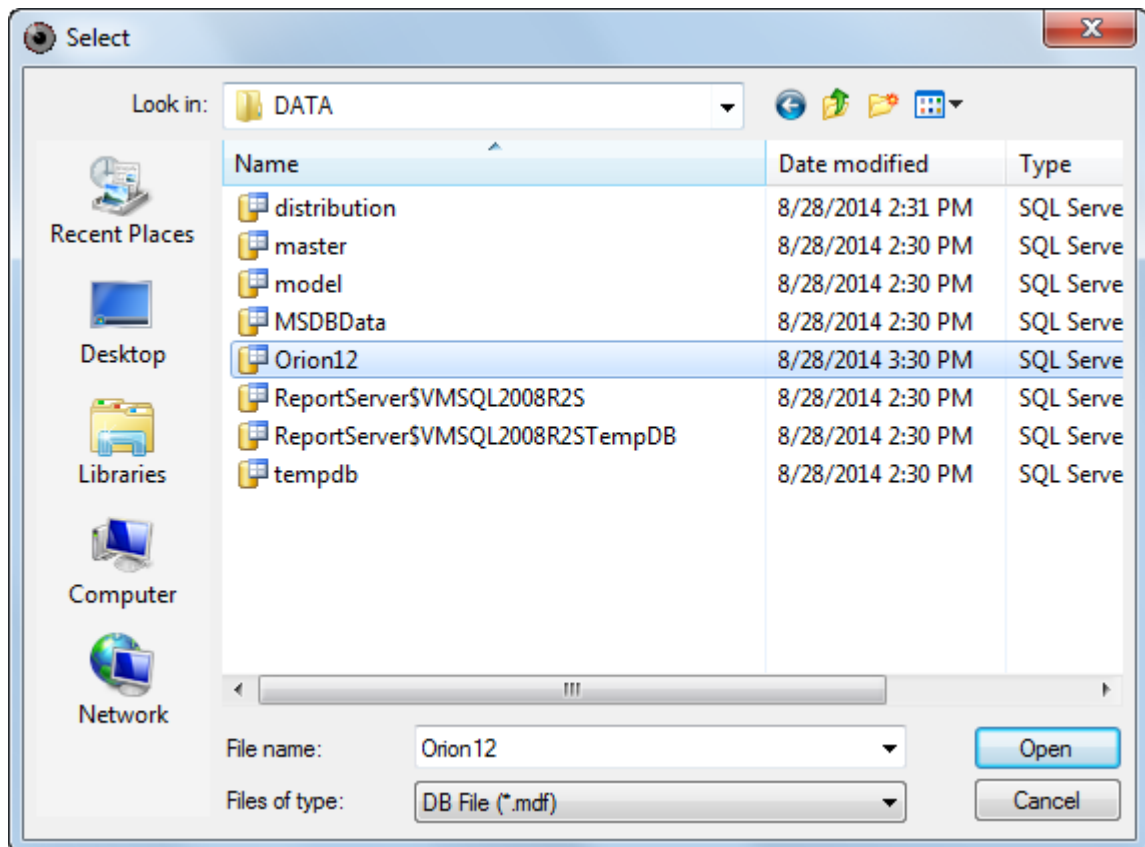
Click the Next button, the Database Attachment Settings window will appear:



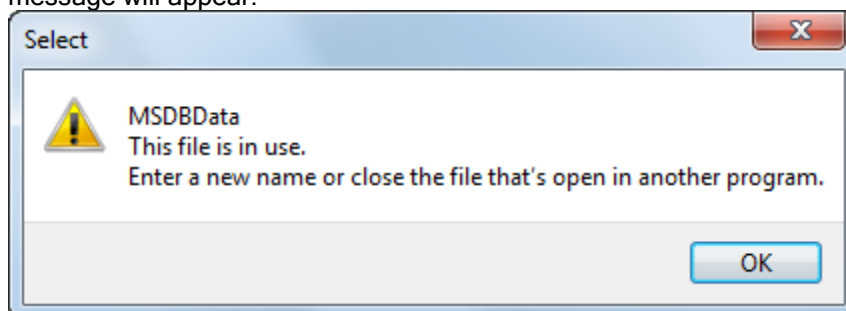
Please, click  in the Database file name field to define the the database path an name:




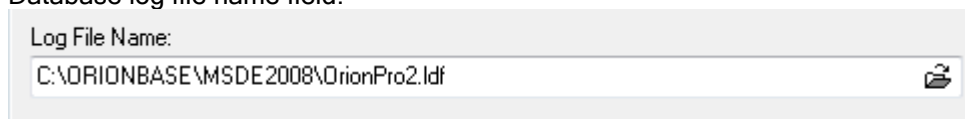
Then select file name (*.mdf) of the database you want to attach (register):



Attention! If you select a SQL Server-registered database and click the **Open** button, the following message will appear:

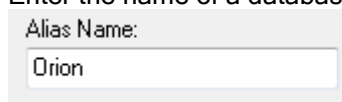


If the folder with the specified *.mdf file of contains the *.ldf log file with the same name, the Database log file will be filled automatically. If the .ldf and mdf files have different names, click the  button in the Database log file name field:



and select a required file in Windows standard dialog box:

Enter the name of a database you want to attach in the Alias name field:

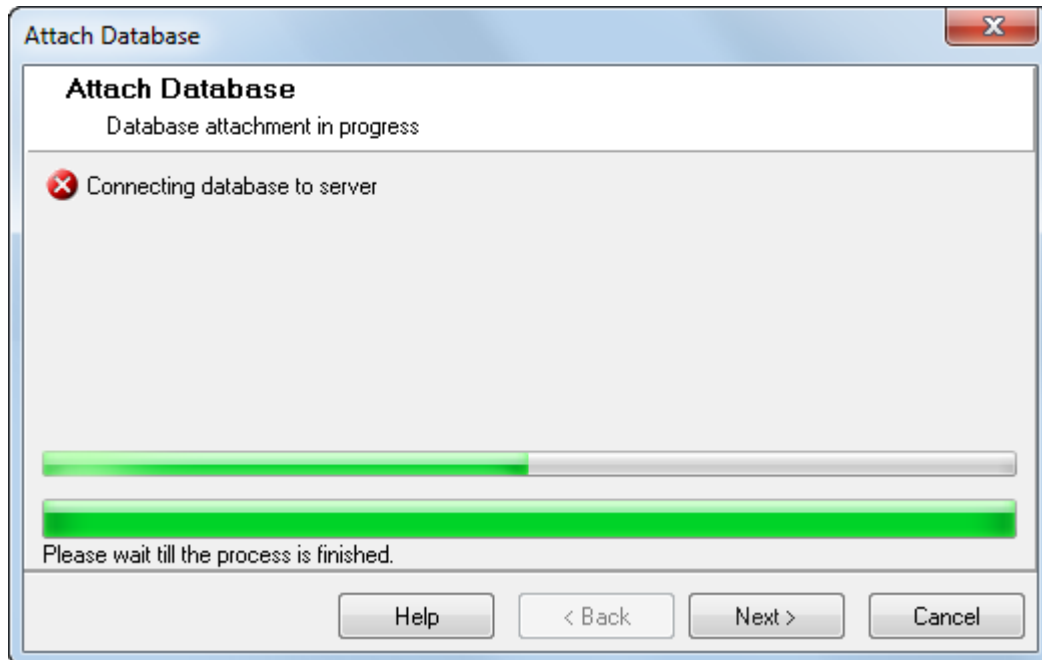


Please note that a new alias entered for the database attachment (registration) can differ from the originally defined one when the database was created.

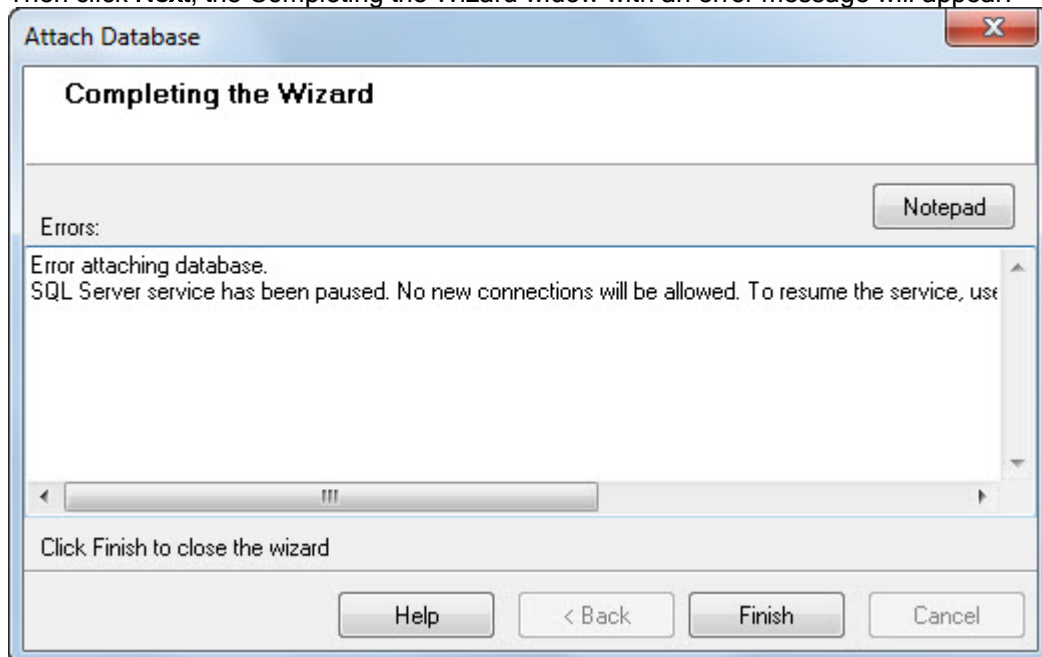
Then click the **Next** button to attempt to register database in the MS SQL Server:

A database registration attempt fails if one of the following occurs:

1. A database server is not running
2. The wrong names of a data (*.mdf) file or log (*.ldf) files
3. You entered the incorrect value for the database alias (the alias characters can be English alphanumeric and underscore only; the alias can be started with alphabetical (recommended) or numeric character with a maximum name length of 30 characters)
4. You entered the alias of a registered database

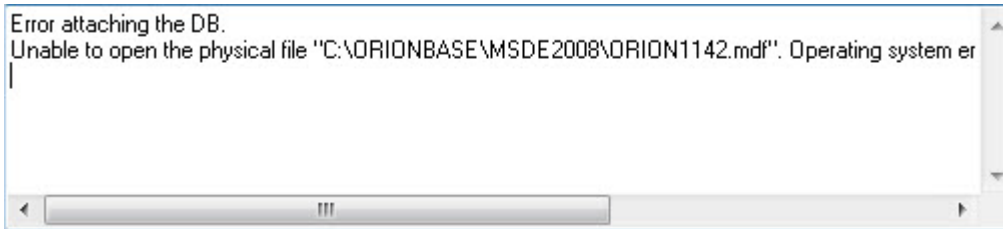


Then click **Next**, the Completing the Wizard window with an error message will appear:

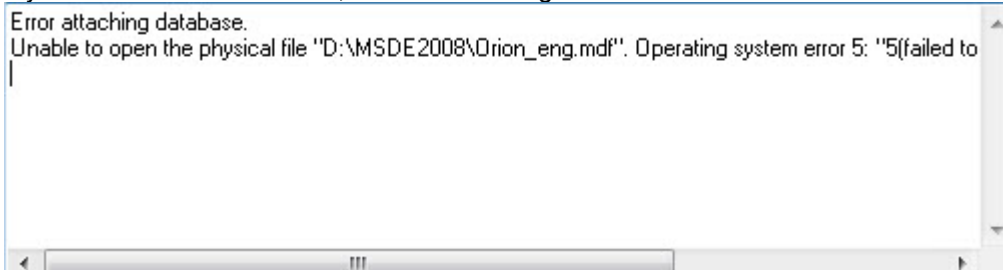


The above example contains error message resulted if the SQL Server is not running.

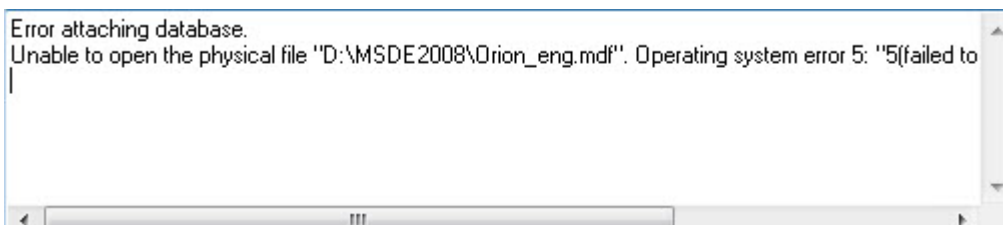
For the wrong name of (*.mdf) or (*.ldf) files the error description will be the following:



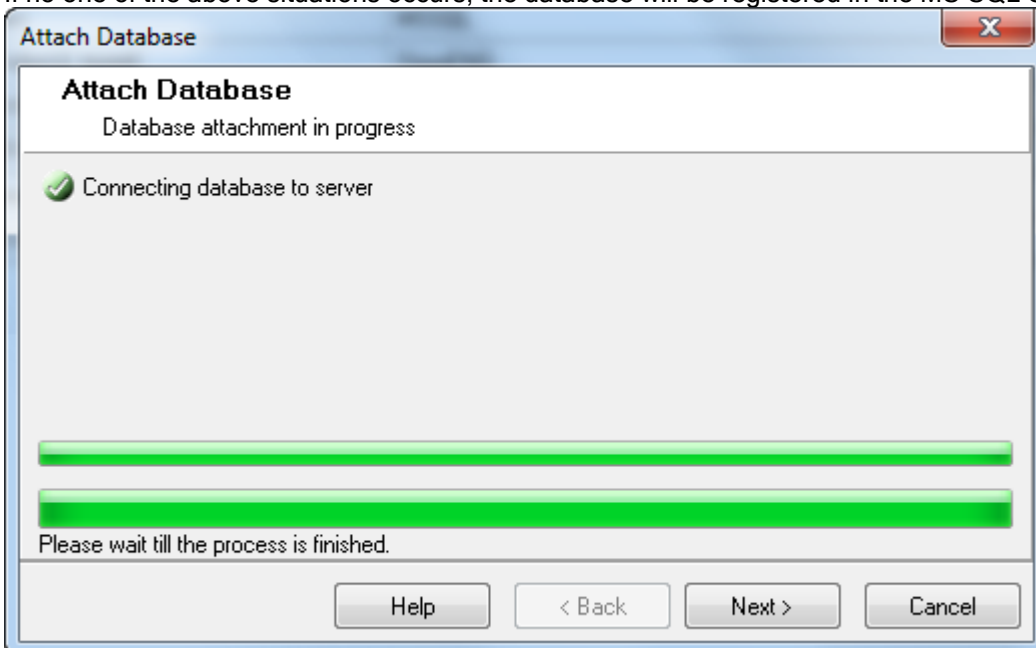
If you entered incorrect alias, the error message will be as follows:



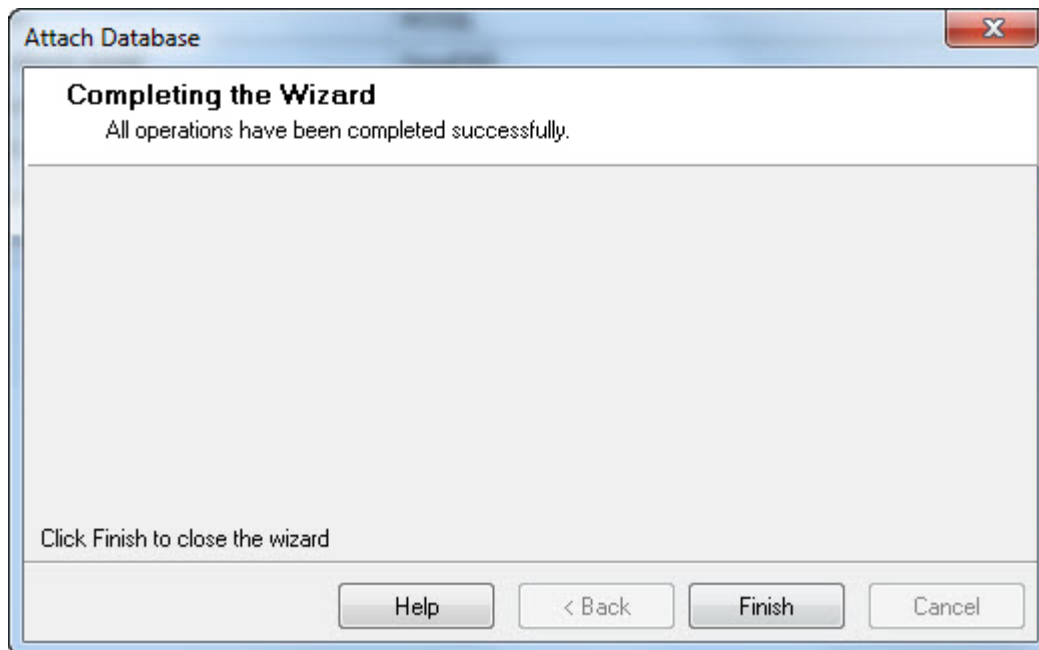
If you entered an alias of a database already registered in the MS SQL Server the error message will be as follows:



If no one of the above situations occurs, the database will be registered in the MS SQL Server:



Then click the **Next** button, the **Completing the Wizard** window will appear with the success message:



To complete the Attach Database Wizard, please click the **Finish** button.

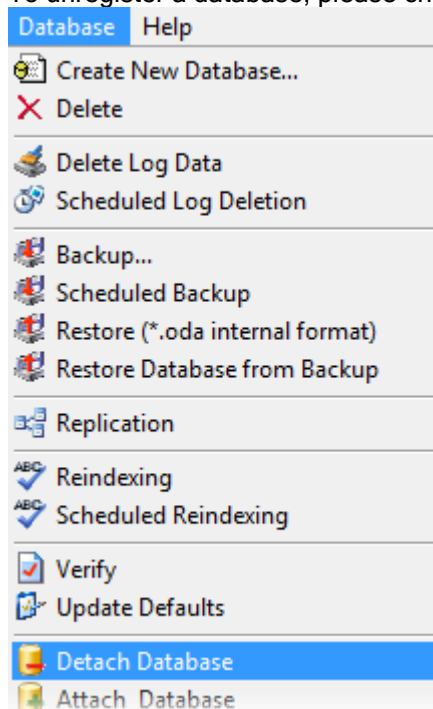
As soon as the database is registered in the SQL Server, the Central Server will immediately switch over to this database while the Database Settings window will include this new database parameters.

4.11.2 Unregistering Database

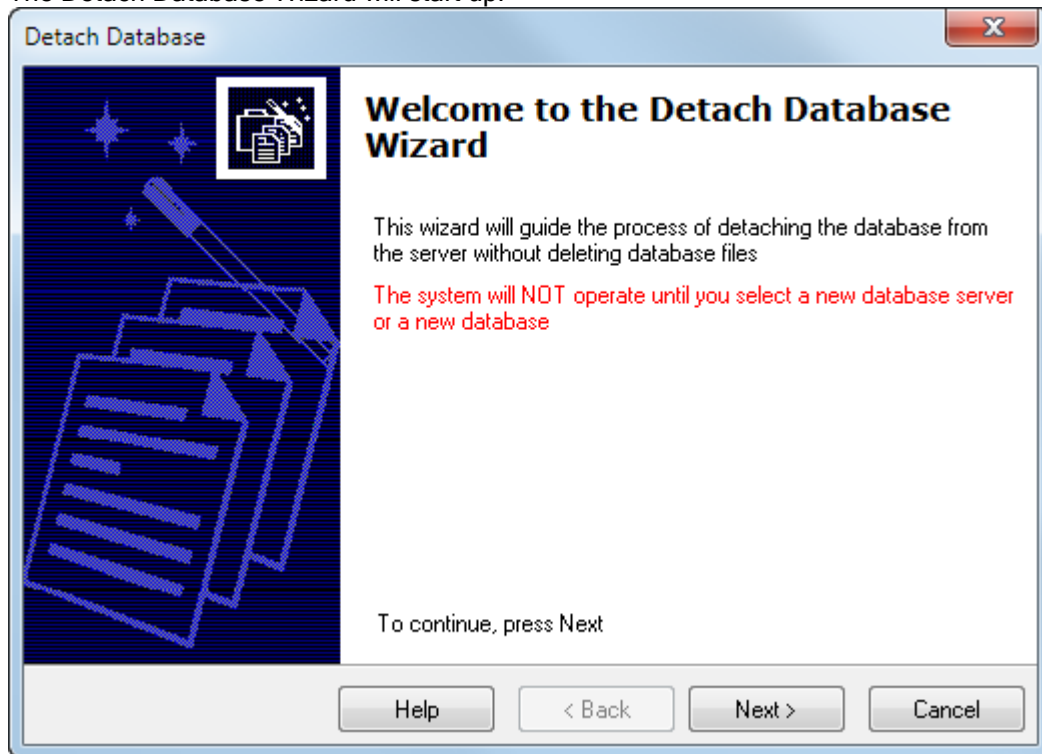
Attention! Before unregistering a database, shut down all Orion Pro software modules on all workstations but for the Central Server and currently used Central Server Manager.

Please note when you unregister (detach) a database, it will concerns a database currently selected in the Orion Pro System

To unregister a database, please choose **Database/Detach Database** as show in the figure:

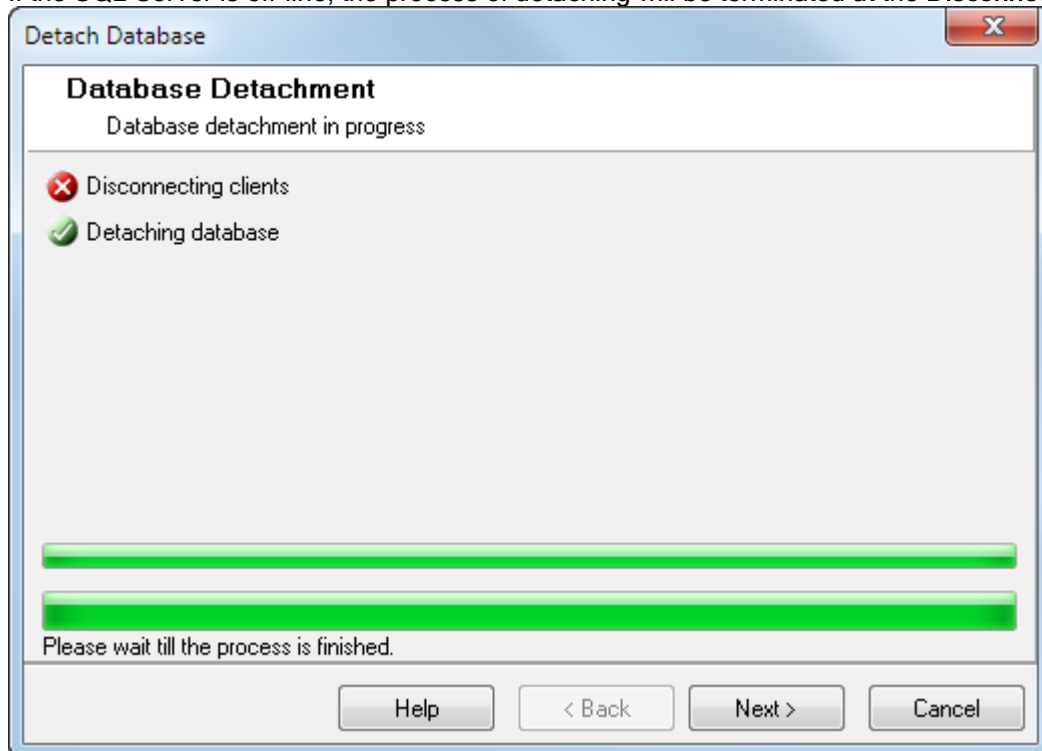


The Detach Database Wizard will start up:

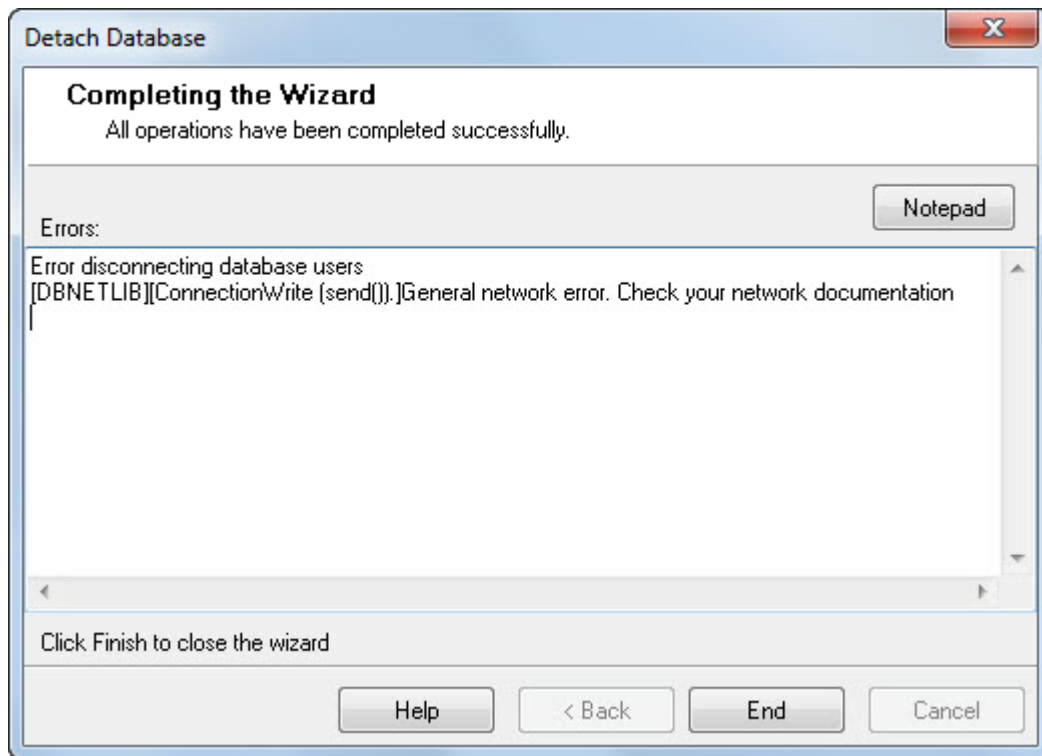


Then click the Next button, the database detachment will be attempted

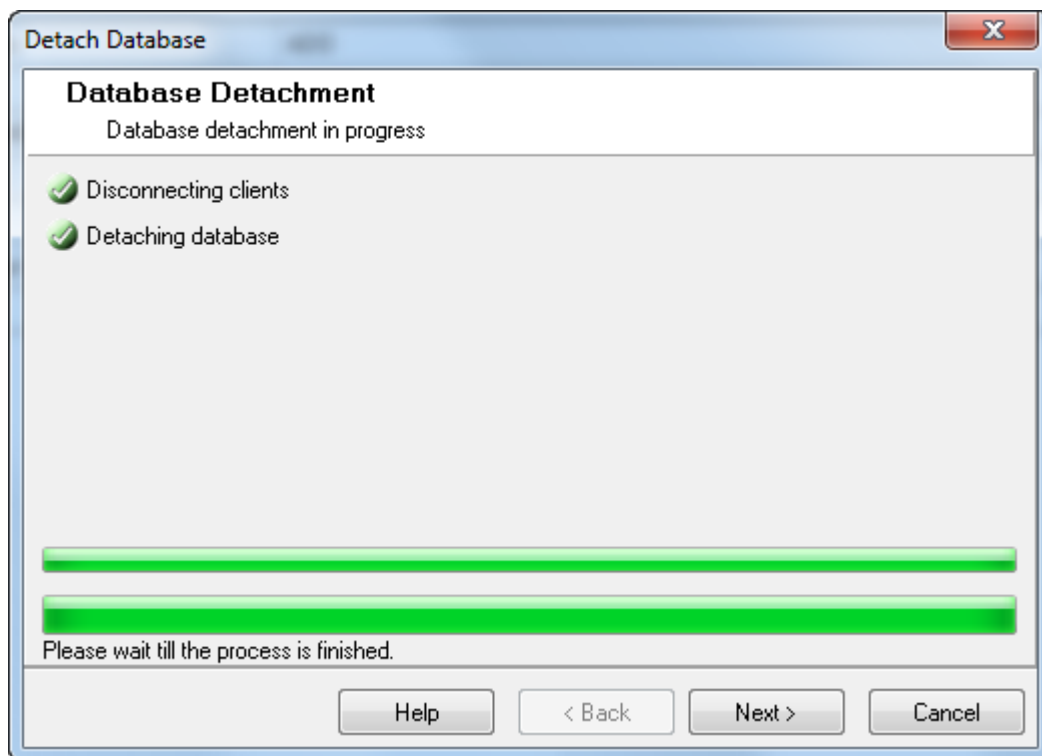
If the SQL Server is off-line, the process of detaching will be terminated at the **Disconnecting clients** step:



Then click Next to see an error description in the **Completing the Wizard** window:



If the MS SQL Server is on-line the database will be registered:



Then click the Next button, the Completing the Wizard window with detachment success message will appear:



To close the Detach Database Wizard, please click the **Finish** button

If you unregister the database currently used by the Orion Pro System, please specify parameters of another database in the Database Settings window, or create a new database

4.12 Upgrading Database, Merging Database

Upgrading or merging is necessary when the Orion Pro software is updated.

The procedure of upgrading is meant for converting the existing Orion Database (version 7.3 or higher) or Orion Pro database (version 1.8 or higher) into the format of current Orion Pro's version (the version of updated Orion Pro).

Conversion of Orion Databases with versions lower than 7.3 or Orion Pro lower than 1.8 is not supported.
The procedure of merging is meant for merging two or more database into a single database with preliminary database upgrade, if required.

In Orion Pro, the database where the data imported from a source databases is called a Single Database.

Only two databases can be merged for one time. If you need to merge more databases, you have to repeat the merging process (as described below) as many times as required with adding another database data to the Single Database each time.

Please note that during the upgrading process, a new database is created. However, when you merge databases, the information from one database is added to an existing database.

The Single Database where the information will be added from the upgraded database during the process of merging must have the same version as the currently installed Orion Pro Suite.

Attention. Before starting the process of upgrading, please shut down all Orion Pro software modules on all workstation, but for the Central Server and currently used Central Server Manager.

To upgrade a database the following sequence of actions has to be completed:

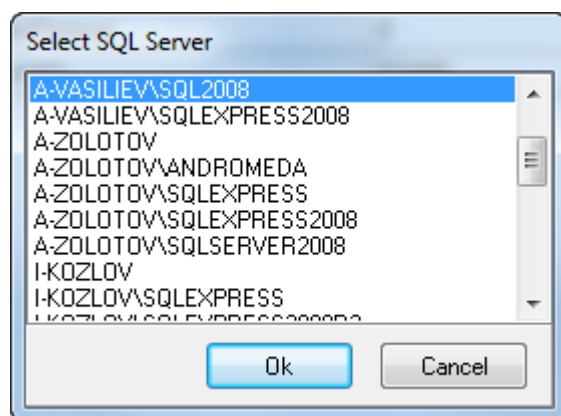
First, specify the database you want to upgrade (source database) or the information of which you want to add (with preliminary upgrade) to the Single Database:

Please enter the database parameters:


Database Access	Must have the ADO value
Drivers	Must have the MSSQL
DATABASE NAME	Alias of Orion Pro database in the settings of SQL Server
SERVER NAME	The name of SQL Server's instance.
USER NAME	Login and password for user account of SQL Server. By default, a user name "sa" with password "123456" will be added to the installed SQL server. If you use already installed SQL Server, please type here the login and password of the user account that will be used to access and manipulate the Orion Pro database
PASSWORD	
Command Timeout	This parameter value defines a maximum SQL request timeout (in seconds). When the value of a timeout is reached, the request will be deemed as failed, and the connection to the server will be terminated. An infinite timeout is "0" It is highly recommended NOT to change this parameter value without consulting the Technical Support

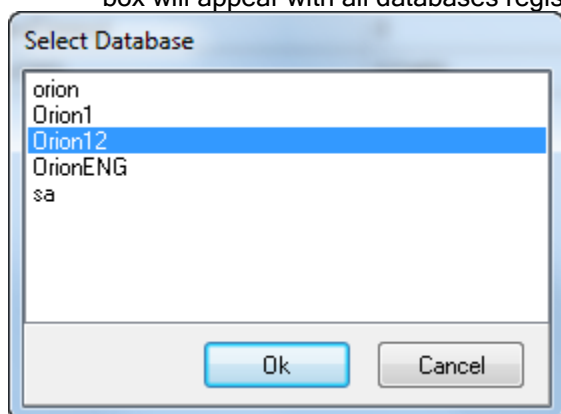
Attention!

1. You can type SQL Server instance name or select it using auto-search option. To select SQL Server instance name, choose **SERVER NAME** and click the button. The **Select SQL Server** dialog box will appear to show available servers:

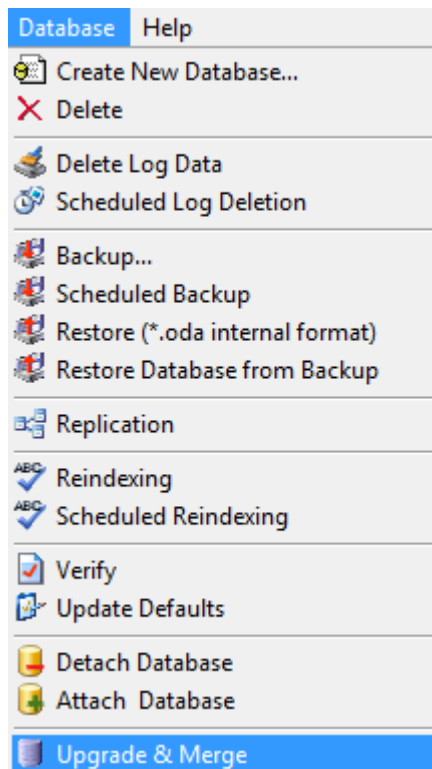


The servers are searched within the local network computers.

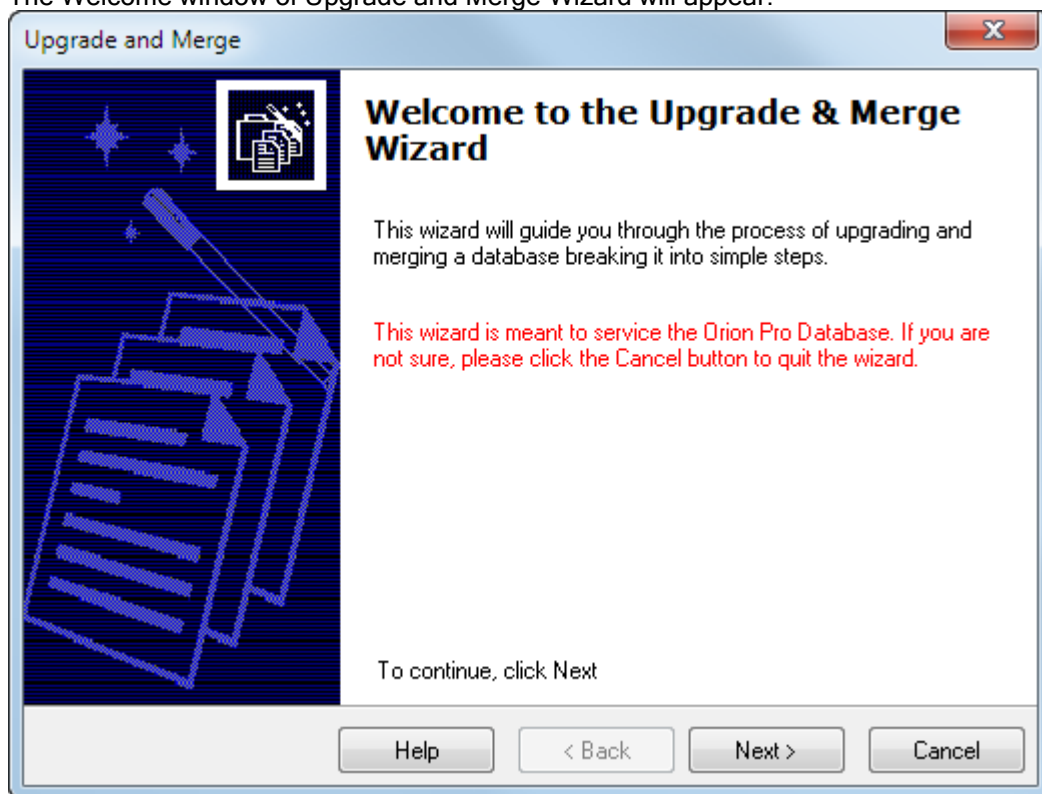
2. The Database name (alias) can be entered manually or selected using the auto-search option. To select a database from the list of registered ones, when all other parameter values have been entered, please choose **DATABASE NAME** and click the  button. The **Select Database** dialog box will appear with all databases registered on the selected SQL Server:



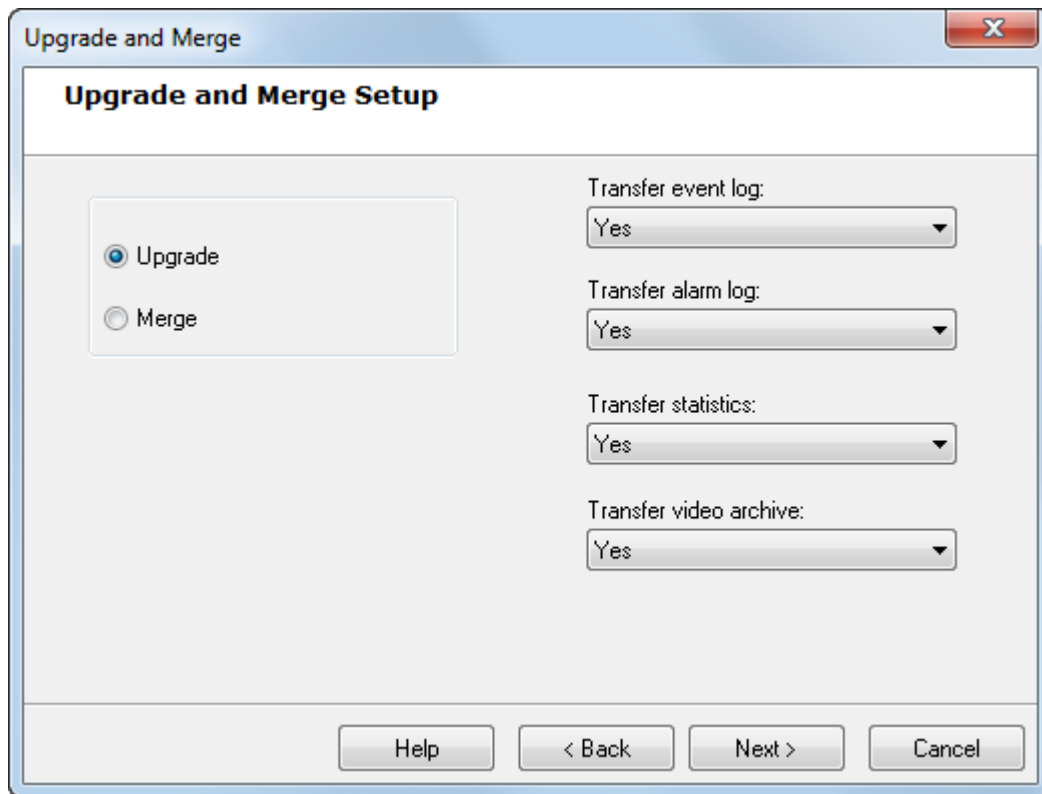
Then choose **Database/Upgrade & Merge**:



The Welcome window of Upgrade and Merge Wizard will appear:



Click the next button to go to **Upgrade and Merge Setup** dialog box:

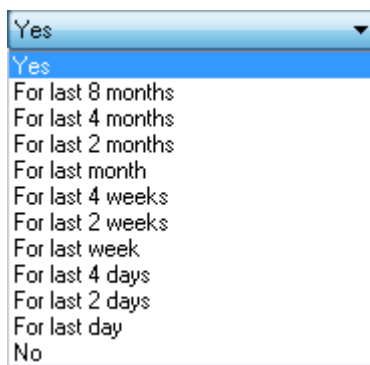


Then select:

- An action to be applied to a database :

- Select the **Upgrade** item, if you want to upgrade your database. In this case, the resulted database will include converted data of the current database;
 - If you select the **Merge** item, the process of merging will be completed. The resulted database will include its old data plus the converted data of the currently upgraded database
- Select whether an event, alarm, statics or/and video archive logs are to be upgraded; if **Yes**, the period of transferred data

Possible values for each log are as follows:



If the **Orion** Database is to be upgraded, the Upgrade and Merge Setup will include the field “Define the computer name:

Define the computer name:

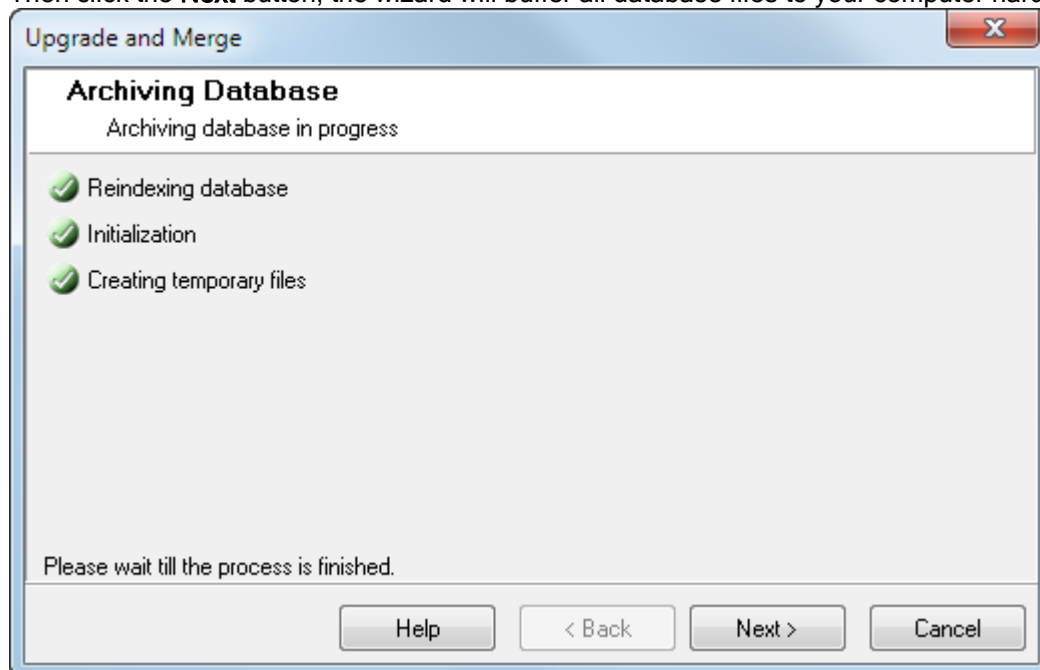
This field is available, when the **Merge** item is selected.

The name of a computer is used to specify the computer in the single (master) database where relevant entities of a source database will be assigned.

It is important to understand that:

- If you enter the name of a computer that does not exist in the master database, a new computer with such a name will be created in the master database, and relevant entities of a source database will be associated to this computer (partitions, partition groups, maps, as well as devices for which COM Port 1 will be created on this new computer)
- If you enter the name of a computer that exists in the master database, this computer will accommodate all relevant entities of a source database (partitions, partition groups, maps, as well as devices for which COM Port with an available number will be created on the computer)

Then click the **Next** button, the wizard will buffer all database files to your computer hard disc:



Click the **Next** button to go to the Database Settings window:

Upgrade and Merge

Database Settings
Set database parameters

Database Access	ADO
Drivers	MSSQL
DATABASE NAME	OrionPro2
SERVER NAME	SUPPORT-11-57\SQLSERVER2008
USER NAME	sa
CommandTimeout	0
PASSWORD	123456

Help < Back Next > Cancel

Here, please enter the database parameter values:

- In case of upgrading, it will be parameters of a new database that will be created and where converted data of the current (source) database will be written
- In case of merging, it will be parameters for the master database where converted data of the current (source) database will be added

Please, make sure that the version of the master database where the current (source) database will be merged to is the same as the version of the currently used Orion Pro Suite.

Please enter the database parameters:

Database Access	Must have the ADO value
Drivers	Must have the MS SQL
DATABASE NAME	Alias of Orion Pro database in the settings of SQL Server
SERVER NAME	The name of SQL Server's instance.
USER NAME	Login and password for user account of SQL Server. By default, a user name "sa" with password "123456" will be added to the installed SQL server. If you use already installed SQL Server, please type here the login and password of the user account that will be used to access and manipulate the Orion Pro database
PASSWORD	
Command Timeout	This parameter value defines a maximum SQL request timeout (in seconds). When the value of a timeout is reached, the request will be deemed as failed, and the connection to the server will be terminated. An infinite timeout is "0" It is highly recommended NOT to change this parameter value without consulting the Technical Support

Attention!

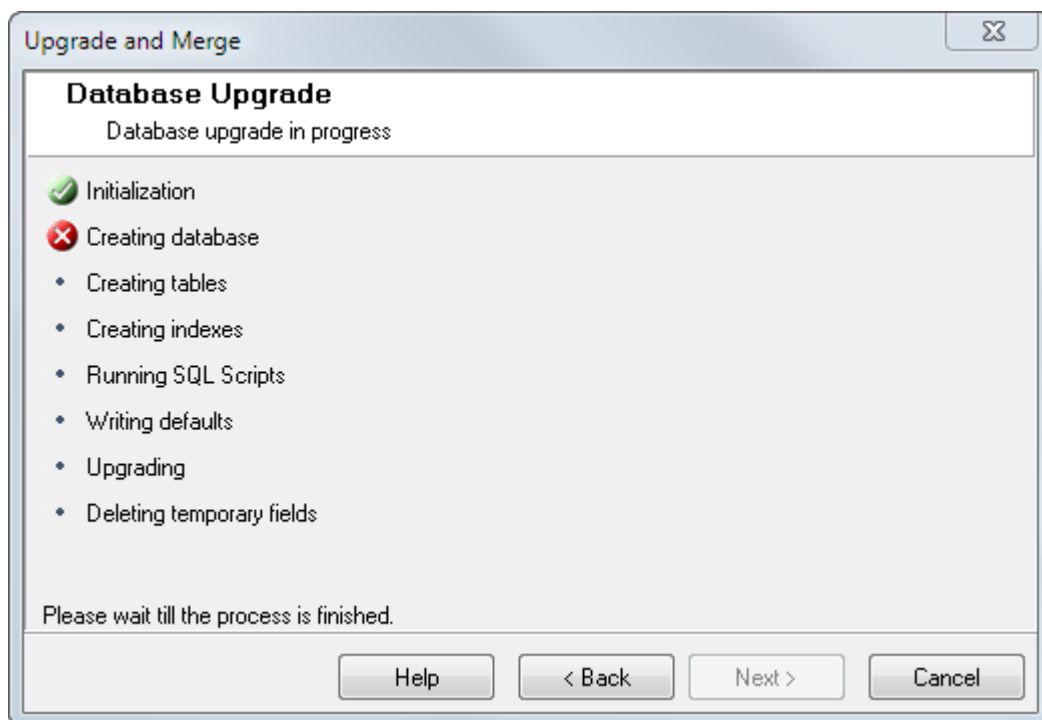
*If case of merging databases, no new database is created but the database alias name (**DATABASE NAME**) must be the same as one of the single database.*

*In case of upgrading a database, a new database is created but the alias of this database (**DATABASE NAME**) must differ from the aliases of the databases registered on the MS SQL Server.*

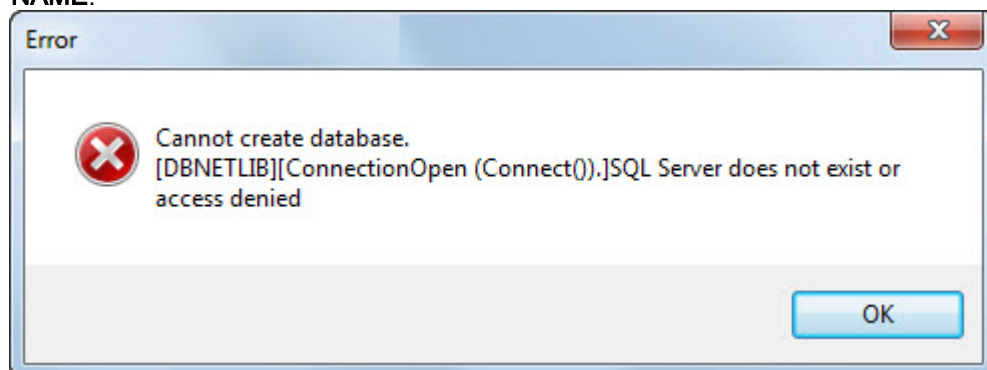
A database alias (name) can include alphabetic (English only), numeric, and underscore characters. The alias name must start with an alphabetic (recommended) or numeric character; the length of an alias must not exceed 30 characters.

When the database parameters are filled, please click **Next** to start the process of database upgrading.

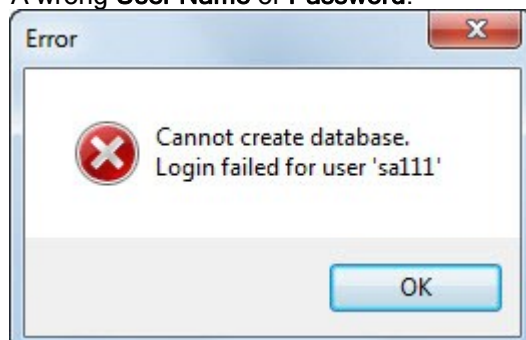
Under any conditions as described below, the process of upgrading or merging will be interrupted at the **Creating database** step (or at the **Checking connection** step respectively):



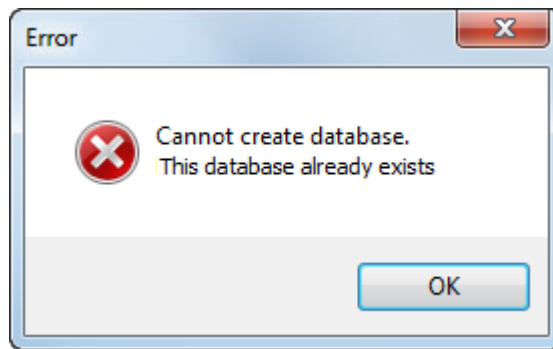
- No connection with the SQL Server or wrong parameter values for **SERVER NAME** and **HOST NAME**:



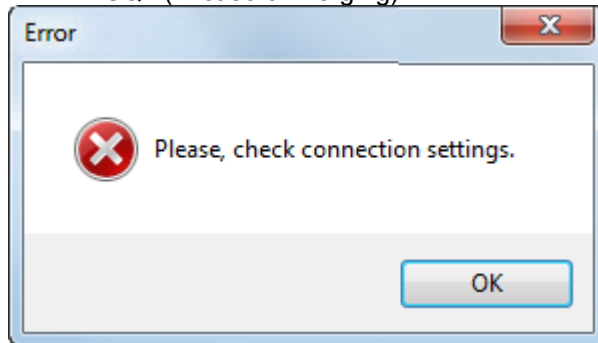
- A wrong **User Name** or **Password**:



- You entered the alias of a registered database (in case of upgrading):

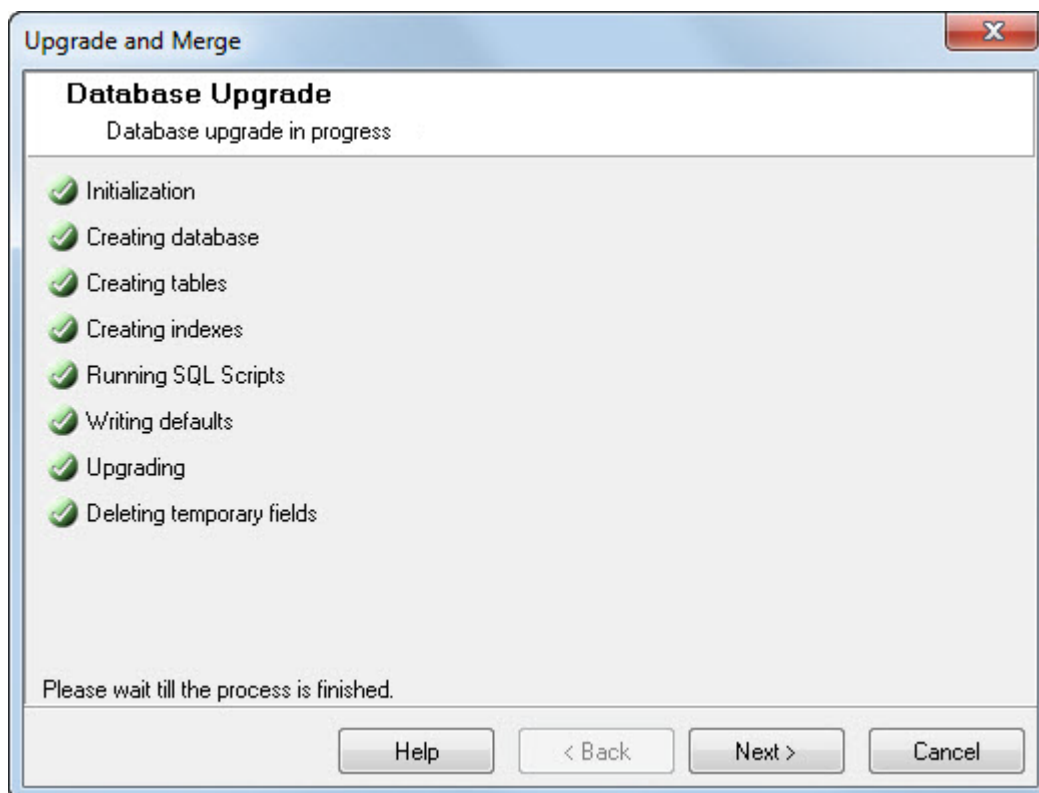


- Your entered an unknown alias, i.e. there is no registered database with such an alias on the MS SQL (in case of merging):

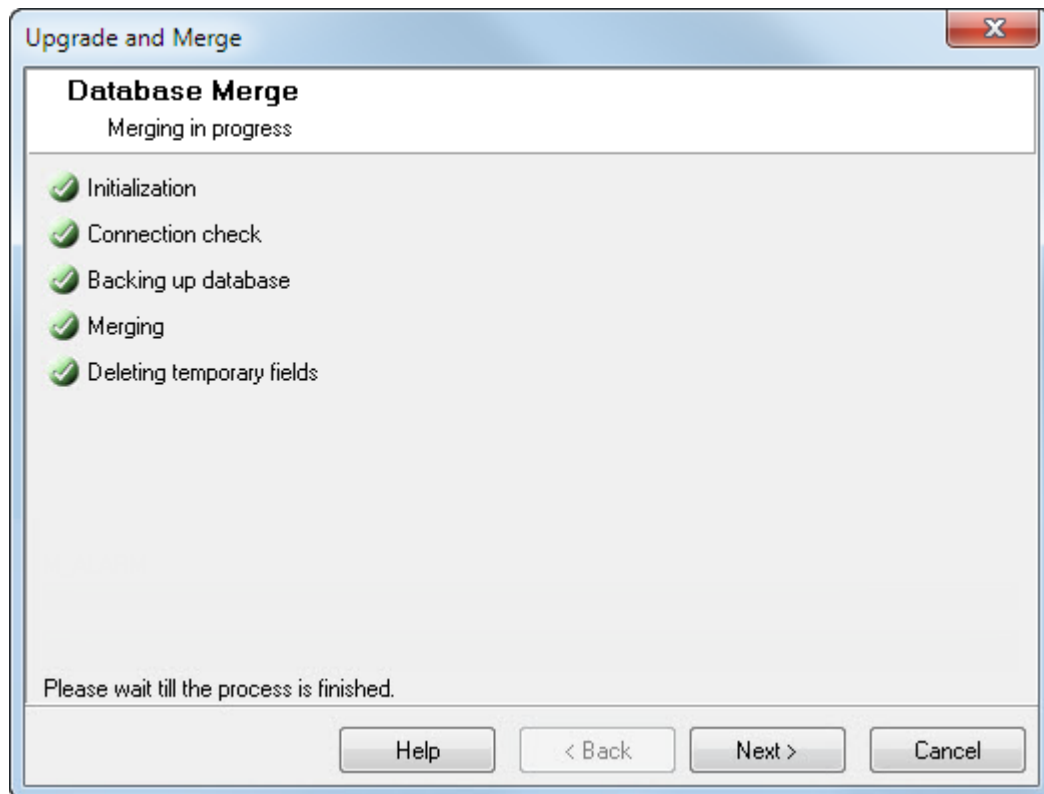


If none of the above conditions holds, the upgrading process will be initialized:

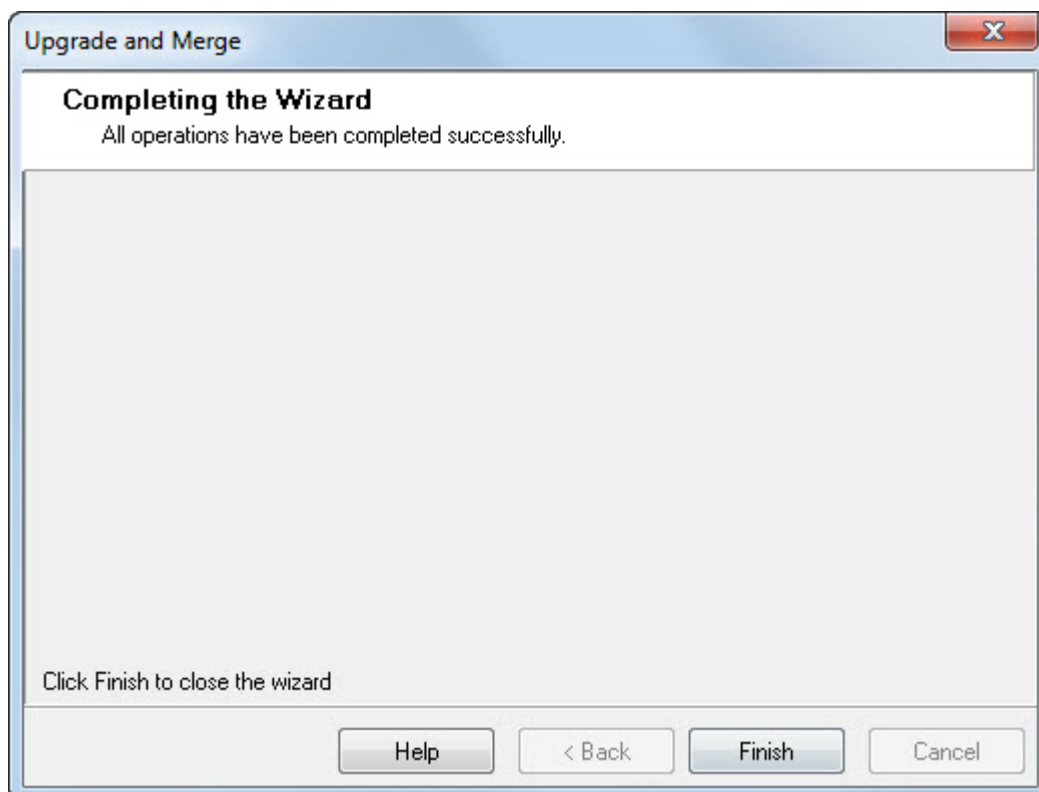
- In case of upgrading, the Wizard will create a new database where the data of the current database will be imported



- In case of merging, the Wizard will upgrade data of the source database to import it to the master database



Click the **Next** button, to go the Completing the Wizard window:



To close the Upgrade and Merge Wizard, click the **Finish** button

When the database upgrading (merging) has been completed, the Central Server will immediately switch over to the upgraded database (or the single (master) database respectively) and Database Settings window will display the parameters of the upgraded (or master) database

Appendix 4.A.Upgrade Non-Portable Database Information

In case of upgrading the Orion database, unportable data due to structural differences are as follows:

- User events are not portable
- The settings of the My Computer entity are not portable
- GSM modems and their related settings are not portable
- The Single-Channel Video system are not portable
- Only some parts of Orion-Video video system and settings can be imported
- Temperature Readings and Smoke Readings of Partitions are non-portable
- Smoke and temperature statistics are non-portable
- Only titles of scenarios can be imported
- Scenario associations to events are non-portable
- The Management Tree are not portable
- The Schedule of Scenarios cannot be imported
- Holidays are not portable

In case of upgrading the database of Orion Pro 1.8, non-portable data due to the structural incompliances are as follows:

- Only names of scenarios are portable
- Scenario associations to events are not portable
- The Schedule of Scenarios is not portable

In case of upgrading the database of Orion Pro 1.8 - 1.10:

- Custom changes in event groups are not portable. Respectively, the associations of scenarios to custom events added to an event group are not portable either.
- Video systems, cameras are not portable.