exigen

Installation Guide

process backbone

Exigen Workflow 5.6

Process Control Services

Document number: TP_EWF_5.6_Install_4.7_JO
Revised: 9/6/2005
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Table of Contents

Preface

This preface is an introduction to the *Exigen Workflow Installation Guide*.

The following topics are included in this preface:

Audience

This guide is intended for all users who install Exigen Workflow.

To effectively use this guide, a good understanding of database systems and general computer terminology is required.

Related Information

The following table lists guides that provide related information about Exigen Workflow:

Related Information	
Document title	**Contents**
Exigen Workflow User's Guide	Describes how to work with specific Exigen Workflow features. It is useful as a reference for the Exigen Workflow end user.
Exigen Workflow Administrator's Guides I-III	Describes how to administer Exigen Workflow. Administrators can manage users within the system and change basic workflow features and project tables. It also describes several utilities within Exigen Workflow.
Exigen Workflow Web User's Guide	Describes how to use the Exigen Workflow Internet solution.
Exigen Workflow Web Administrator's Guide	Describes how to administer Exigen Workflow Web.

Typographic Conventions

The following styles and conventions are used in this guide:

Typographic styles and conventions	
Convention	**Description**
Bold	• Represents user interface items such as check boxes, command buttons, dialog boxes, drop-down list values, field names, menu commands, menus, option buttons, perspectives, tabs, tooltip labels, tree elements, views, and windows. • Represents keys, such as **F9** or **CTRL+A.** • Represents a term the first time it is defined.
`Courier`	Represents file and directory names, code, system messages, and command-line commands.
`Courier Bold`	Represents emphasized text in code.
Select **File > Save As**	Represents a command to perform, such as opening the **File** menu and selecting **Save As.**
Italic	• Represents any information to be entered in a field. • Represents documentation titles.
< >	Represents placeholder values to be substituted with user specific values.
Hyperlink	Represents a hyperlink. Clicking on this field takes you to the identified place in this guide.

Chapter 1: Introducing Exigen Workflow

This section introduces the Exigen Workflow system.

The following topics are described in this section:

What is Exigen Workflow?

Exigen Workflow is a Windows® based work management system that provides software for document imaging, indexing, routing, and archiving. Exigen Workflow is a customizable system enabling system administrators to create workflow applications to solve document management problems.

Exigen Workflow System Overview

The following diagram shows a graphical overview of Exigen Workflow:

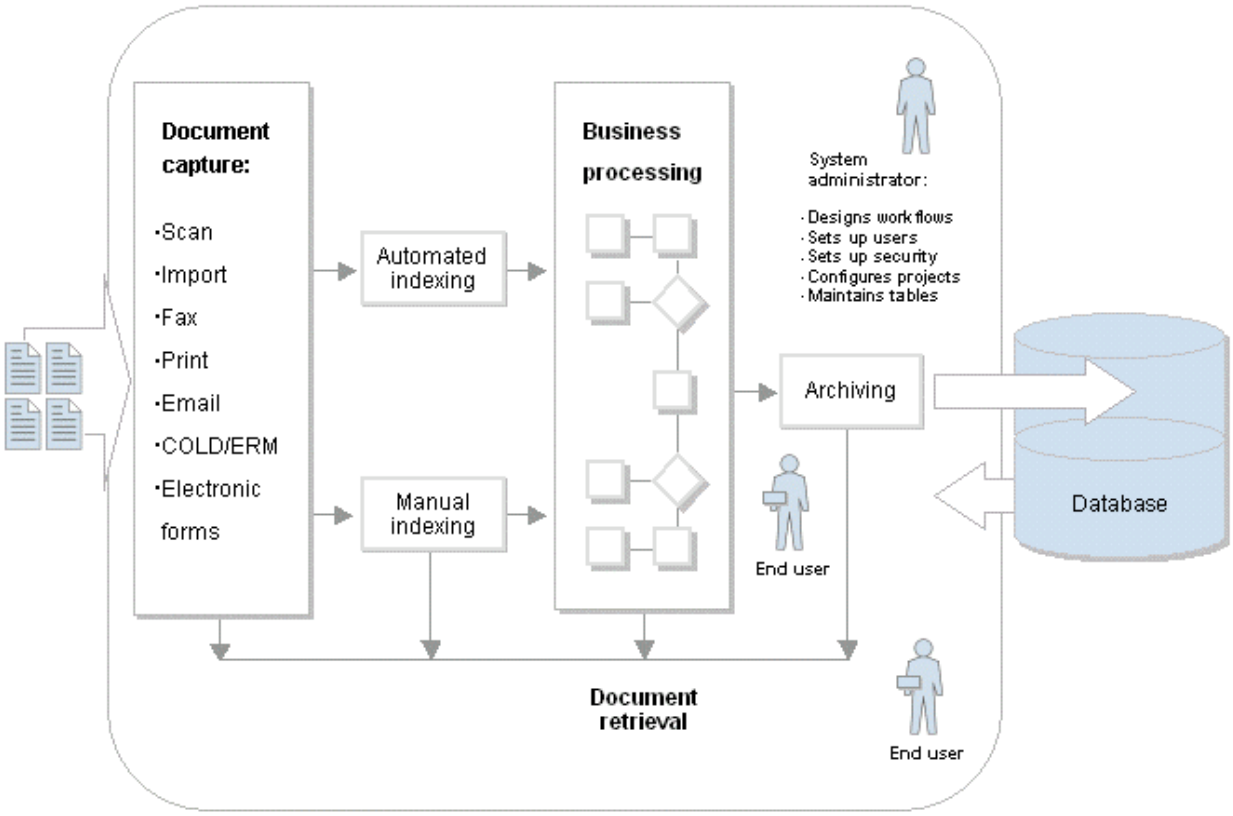

Figure 1: Exigen Workflow system overview

Chapter 2: Installing Exigen Workflow

The following topics are described in this section:

Exigen Workflow System Requirements

For information on Exigen Workflow hardware and software requirements, see the Exigen Workflow readme file.

Third Party Software

The following third party software is required by several Exigen Workflow components and may be delivered as part of the main Exigen Workflow installation:

Third party software used by Exigen Workflow components		
Third party software	**Owner**	**Dependant Exigen Workflow components**
ABBYY FineReader Engine	ABBYY Software House	• FTS Preprocessor • Form OCR Server • generic OCR recognition • Enhanced Form OCR
Adobe Libraries	Adobe Systems Incorporated	• Import Server when importing PDF files as images • Conversion Engine • E-Capture • Interactive Document Capture
Centura Runtime	Centura Software Corporation	Exigen Workflow Windows based objects
PCLTool SDK Runtime	Page Technology Marketing Inc.	E-Capture working with PCL files
Axtel AX-4 Barcode Recognition Runtime	Axtel Applied Technology	• Barcode Server • Form OCR Server • Image Viewer

Third party software used by Exigen Workflow components		
Third party software	**Owner**	**Dependant Exigen Workflow components**
Pegasus Smartscan Xpress BARCODE Runtime	Pegasus Imaging Corp.	• Barcode Server • Form OCR Server • Image Viewer
ScanFix Runtime	TMSSequoia	• Image Enhancement Server • Image Viewer
NED Image Printer Driver	Northeast Data Corp.	Exigen Workflow
SPRINTA 2000 Driver for SQL Server	i-net Software	Exigen Workflow Web using SQL Server
WDD Port Driver	We Do Drivers Inc.	Print Server

If the preceding components are not included in the Exigen Workflow installation package, they can be ordered separately from Exigen.

Exigen Installer Overview

Exigen Workflow installation is performed by a tool named Exigen Installer. **Exigen Installer** is similar to a standard installation wizard but can be customized for each Exigen client according to its individual needs. Exigen Installer also verifies the compatibility of new Exigen Workflow components with those components that are already installed on the client's workstation and informs the user if incompatibilities or problem situations are detected.

Exigen Installer is automatically installed on the client's workstation when the user runs the Exigen Workflow installation for the first time. When a user runs the Exigen Workflow installation repeatedly or upgrades the solution to a new version, Exigen Installer is not reinstalled. The version that is already installed on the client's workstation is used.

Exigen Installer is also used for installing other Exigen solutions.

General Installation Steps

To install Exigen Workflow, proceed as follows:

1. Insert the Exigen Workflow installation CD into your CD drive.
2. If the installation does not start automatically, from the Exigen Workflow installation CD, launch the `Setup.exe` file located in the `Windows` directory.

   The **Exigen Installer Setup** window appears.

Figure 2: Exigen Installer startup window

3. Wait while Exigen Installer verifies the list of installed Exigen Workflow components.

   The **Exigen Installer Setup** window is updated and displays the solution name and version.

Figure 3: Exigen Installer window displaying the solution name and version

4. Click **Next.**

   If personalization information is required, the **User Information** window appears.

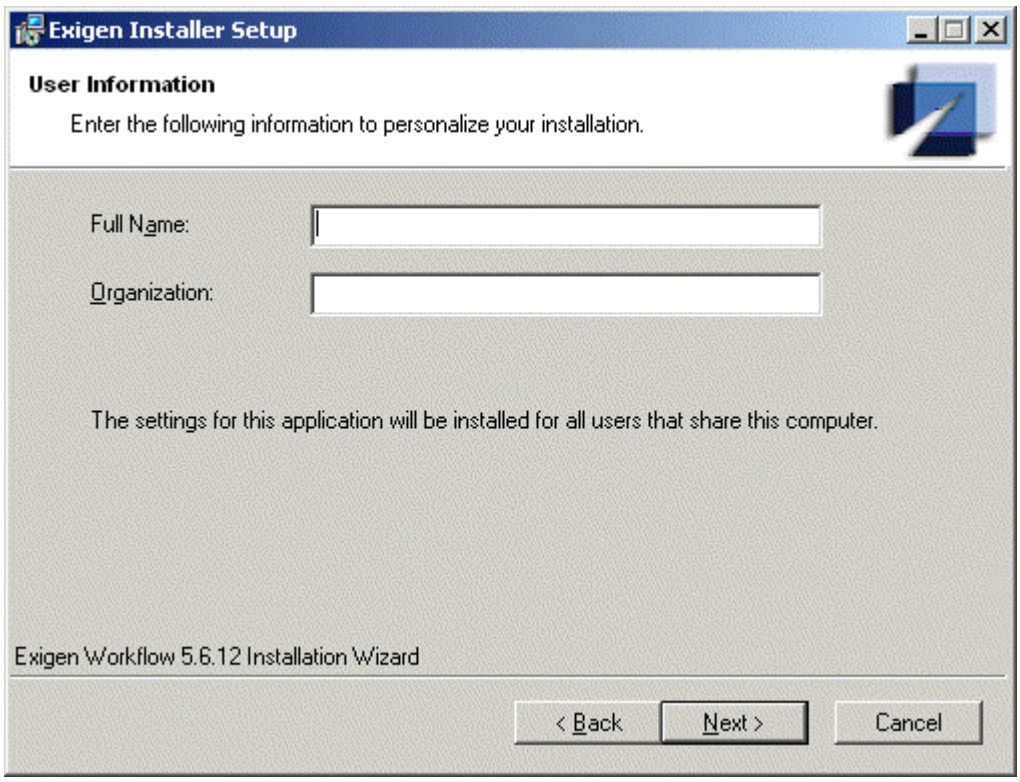

Figure 4: User Information window

5. If the **User Information** window appears, enter the full user name and organization name.
6. Click **Next.**

   The **Select Installation Type** window appears.

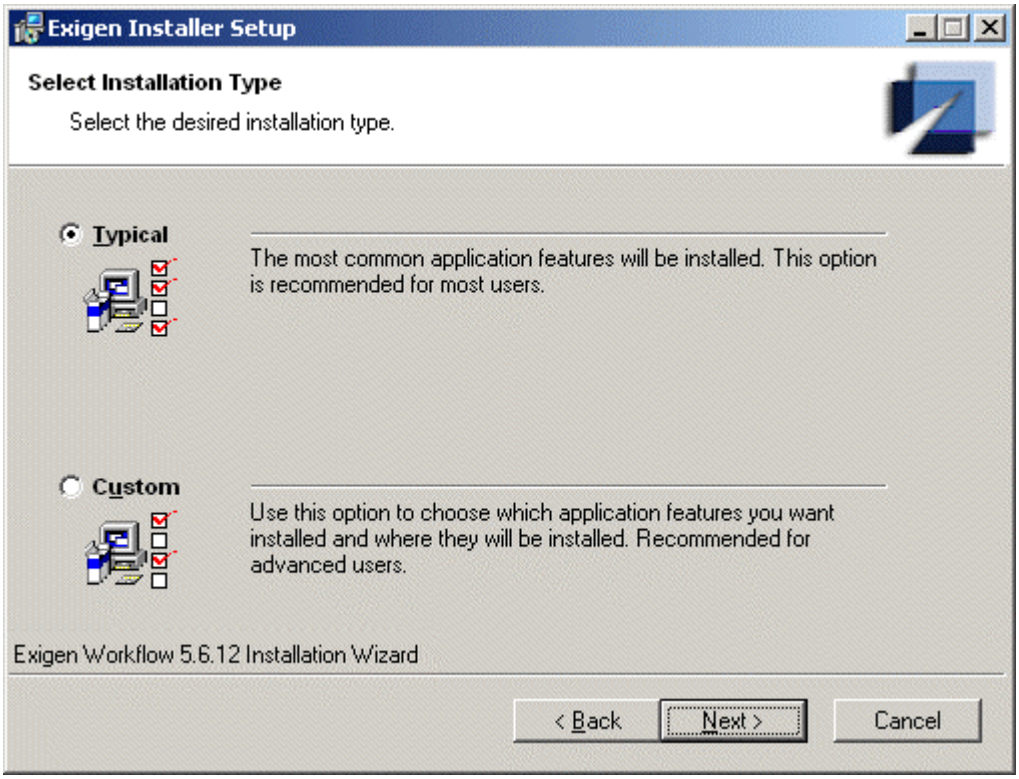

Figure 5: Selecting the installation type

7. Select one of the following installation types as required:

Installation types	
Type	**Description**
Typical	Installs Exigen Workflow components that are required for most users. If this installation type is selected and the list of installed components displayed in the **Selected Options** window does not match requirements, to return to the **Select Installation Type** window, the user can click **Back** and select **Custom.** In this case, the list of components is preconfigured as in a typical configuration, but the user can modify the selection as appropriate.
Custom	Users can specify which Exigen Workflow components must be installed. If this option is initially selected, there are no components selected to install. However, if this option is selected after the **Typical** option is used, the list of components to be installed is preconfigured according to the typical installation type.

8. If the typical installation type is selected, click **Next** and follow instructions as described in Finishing the Installation.
9. If the custom installation type is selected, click **Next** and follow instructions as described in Customizing the Exigen Workflow Installation.

Customizing the Exigen Workflow Installation

If the custom installation type is selected, proceed as follows:

1. To change the location of Exigen Workflow setup files, in the **Setup Folder** window, click **Browse** and select the location.

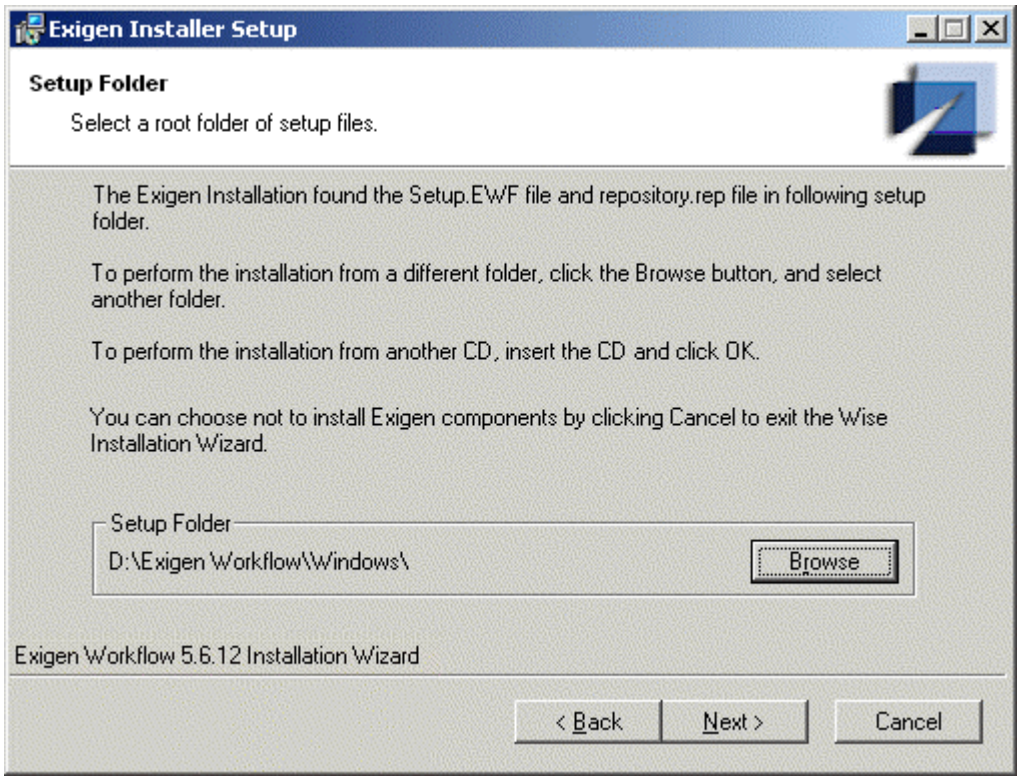

Figure 6: Setup Folder window

The default location is the directory from which the `Setup.exe` file is launched.

2. Click **Next.**

The **Exigen Workflow** window appears, displaying all Exigen Workflow component groups.

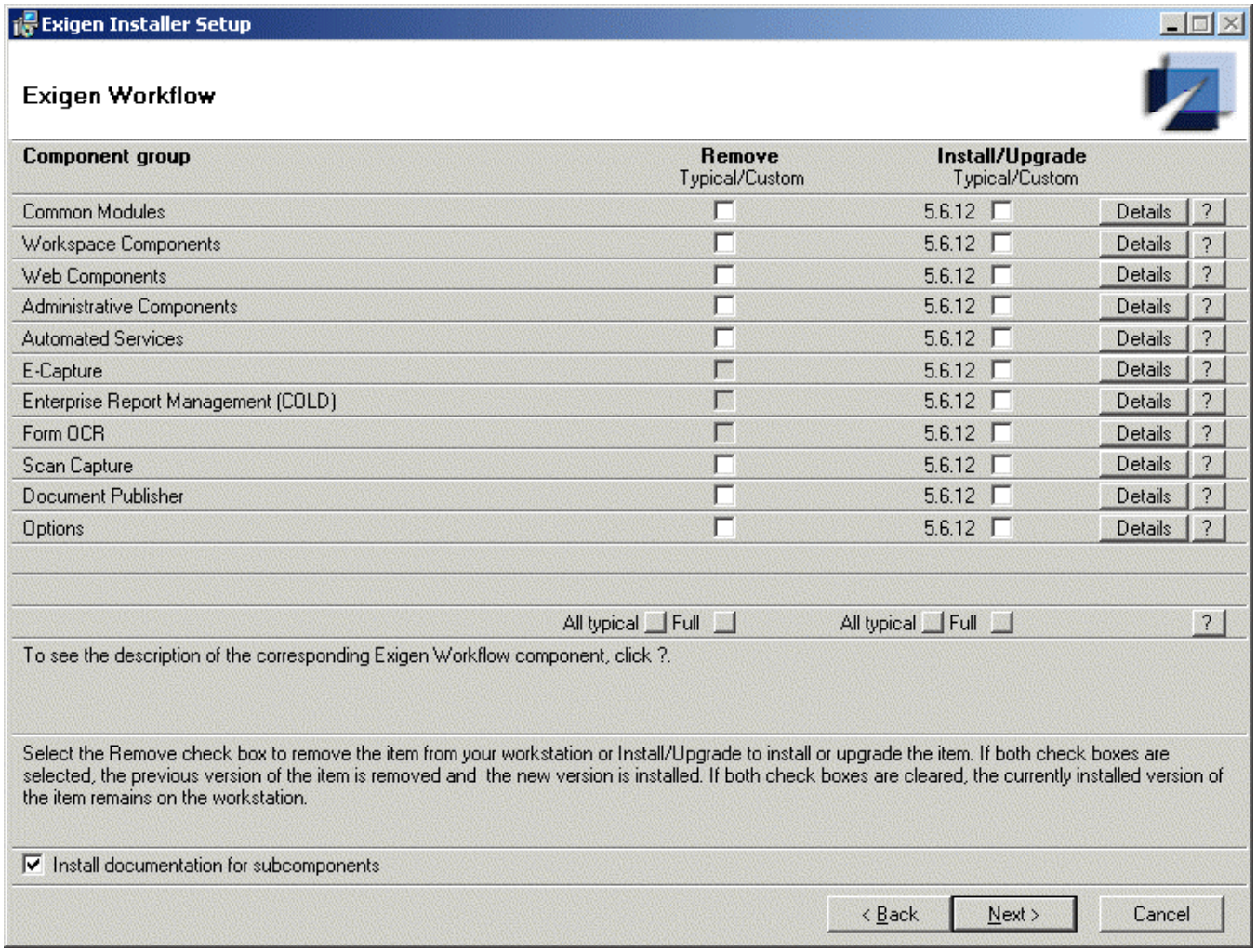

Figure 7: Exigen Workflow window

The list of component groups in the **Exigen Workflow** window you see may differ because Exigen Installer is customized for each customer.

Each component group contains one or more Exigen Workflow components or other component groups.

The **Exigen Workflow** window contains the following columns:

Exigen Workflow window columns	
Column	**Description**
Component group	Lists Exigen Workflow component groups that can be installed, upgraded, or uninstalled on the client's workstation.

Exigen Workflow window columns

Column	Description
Remove	Contains check boxes for uninstalling each component group. The appearance of check boxes identifies the status of the component group and actions to be taken with components as follows:

Check box status	Description
☐	Some components of the component group are already installed on the workstation.
☑ Typical	Typical selection of components in the component group is selected for removal from the workstation. **Note:** This option does not mean that all components in the component group are selected for removal.
☑ Custom	Custom selection of components in the component group is selected for removal from the workstation.
☐	No components of the component group are installed on the workstation.

Column	Description
Install/Upgrade	Contains check boxes for installing or upgrading each component group. The appearance of check boxes identifies the status of the component group as follows:

Check box status	Description
☐	No components of the component group will be installed or upgraded.
☑ Typical	Typical selection of components in the component group is selected for installing or upgrading on the workstation. **Note:** This option does not mean that all components in the component group are selected.
☑ Custom	Custom selection of components in the component group is selected for installing or upgrading on the workstation.

The **Remove** and **Install/Upgrade** columns may contain some additional component group information displayed to the left of the check box. This information usually shows the version or build number.

3. To see a description of a component or component group, click **?.**
4. Select the component groups that must be installed, upgraded, or removed as required.
5. To remove all installed Exigen Workflow components, in the **Remove** column, click **Full.**
6. To remove all installed typical components in all component groups, in the **Remove** column, click **All typical.**

   This option has the same effect as selecting each individual check box in the **Remove** column.
7. To install or upgrade all Exigen Workflow components, in the **Install/Upgrade** column, select **Full.**
8. To install or upgrade all typical components in all component groups, in the **Install/Upgrade** column, click **Select all.**

   This option has the same effect as selecting each individual check box in the **Install/Upgrade** column.

9. To install the main Exigen Workflow documentation, in the **Options** component group, in the **Exigen Workflow Documentation** row, in the **Install/Upgrade** column, select the check box.
10. To install documentation for the selected Exigen Workflow subcomponents, select the **Install documentation for subcomponents** check box.

    Additional documentation is provided for the following subcomponents:

    - Exigen Workflow Web
    - Task Oriented Workflow
    - Exigen Publisher Cabinet
    - Usage Logging Server
11. To configure components in an individual component group, click **Details.**

    The list of components and subgroups in the selected component group appears.

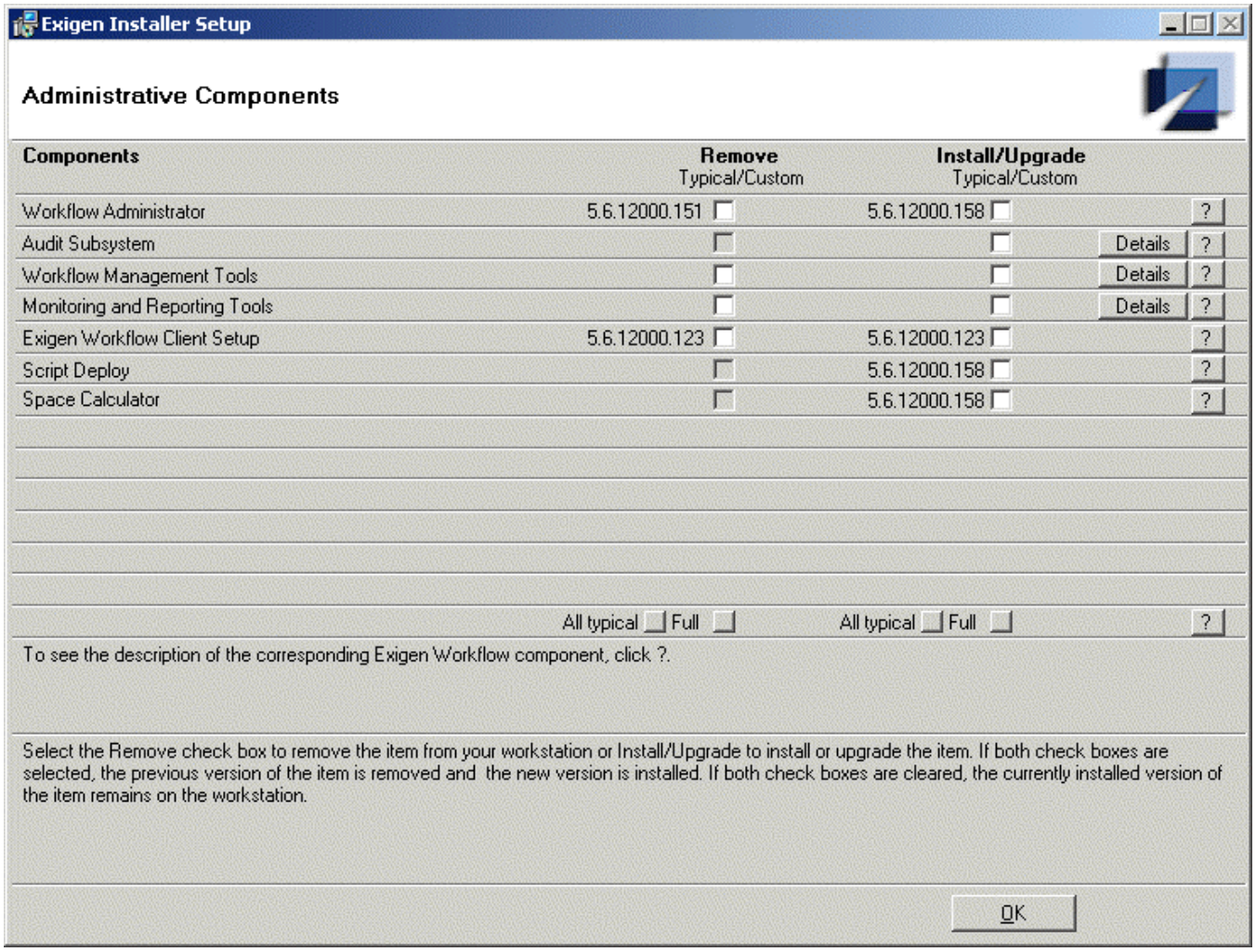

Figure 8: Example of components and subgroups in the Administrative Components group

12. Configure components in the group as follows:
    - To install or upgrade a component, in the **Install/Upgrade** column, select the check box.

- To leave the currently installed component on the workstation, in the **Install/Upgrade** column, clear the check box.
- To uninstall a component, in the **Remove** column, select the check box.

You can also select both check boxes for a component. This means that the currently installed component will be uninstalled and the new version will be installed.

Subgroups can be configured in the same way as the main Exigen Workflow component groups.

13. To apply changes and return to the main list of Exigen Workflow component groups, click **OK.**
14. To finish the installation, click **Next** and follow instructions as described in Finishing the Installation.

Finishing the Installation

If any of the following components is selected to be installed, additional installation windows appear:

- Application Services
- Automatic Queue Server

For information on installing Application Services, see Chapter 8: Installing Application Services.

For information on installing Automatic Queue Server, see Chapter 9: Installing Automatic Queue Server.

After all required components are selected, to finish the installation, proceed as follows:

1. Wait until Exigen Installer finishes checking discrepancies in the selected components.
2. If information about any discrepancies is displayed, click **Back** and correct the selection as required.

   The **Destination Folder** window appears.

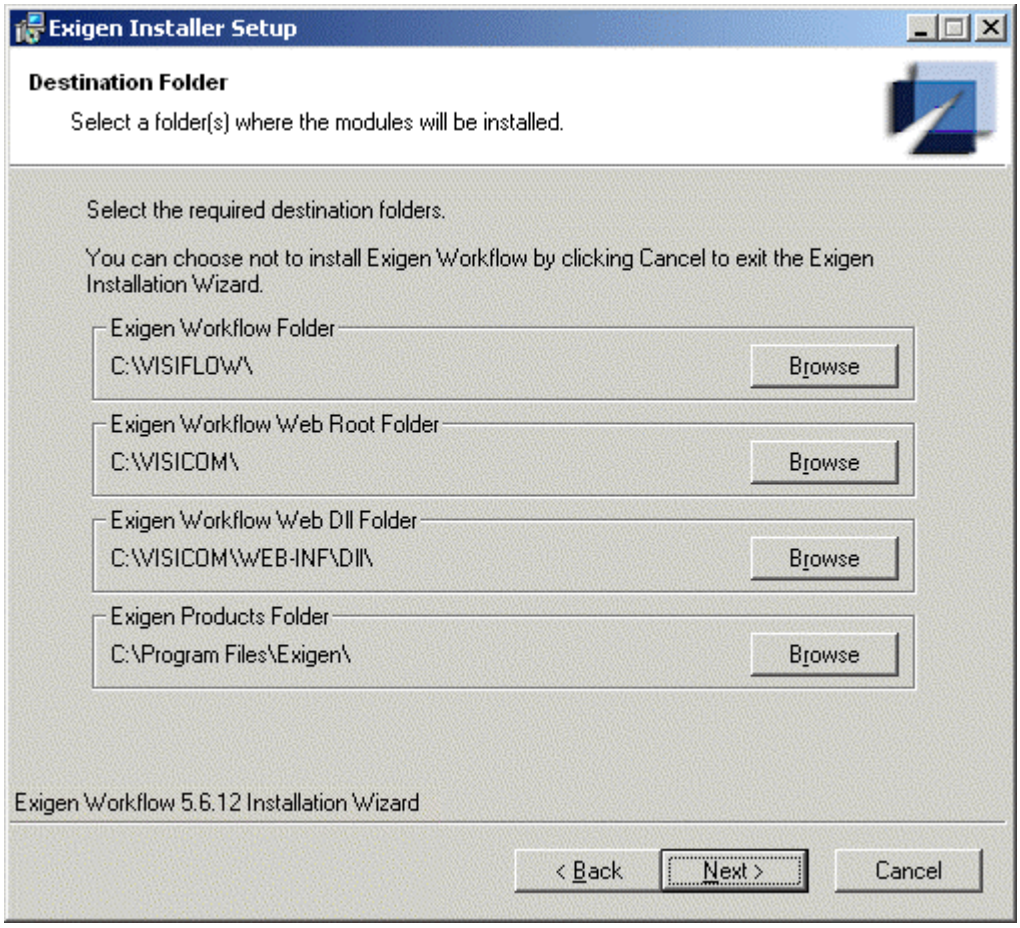

Figure 9: Destination Folder window

The **Destination Folder** window is used to specify the destination directories for selected Exigen Workflow components. Some of the fields can be disabled if the related components are not selected.

3. Select the following destination directories as required:

Exigen Workflow destination directories	
Directory	**Description**
Exigen Workflow Folder	Main Exigen Workflow destination directory.
Exigen Workflow Web Root Folder	Exigen Workflow Web destination directory.
Exigen Workflow Web Dll Folder	Destination directory for Exigen Workflow Web DLL files.
Exigen Products Folder	Exigen products directory.

4. Click **Next.**

The **Selected Options** window appears, listing all options the user selected.

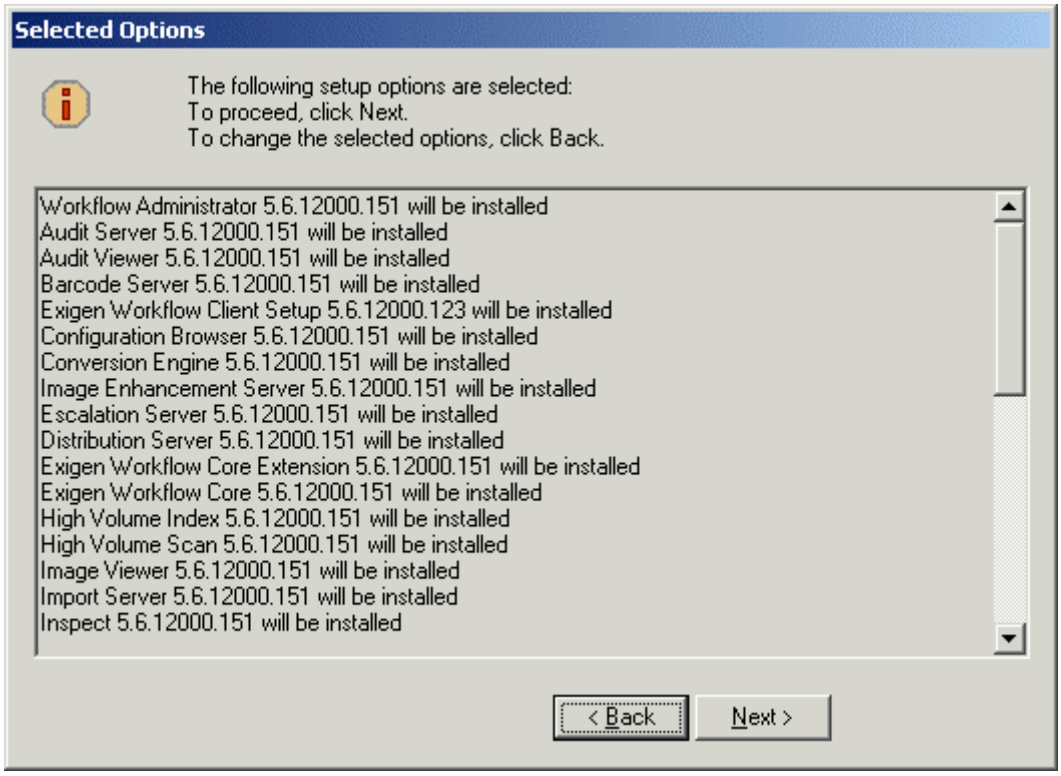

Figure 10: List of selected actions

5. Carefully review the list of actions.
6. If you find any actions in the list that are incorrect or may damage your business environment, click **Back** and make changes to the component configuration.
7. To accept the selected actions, click **Next.**

   The **Ready to Install the Application** window appears.

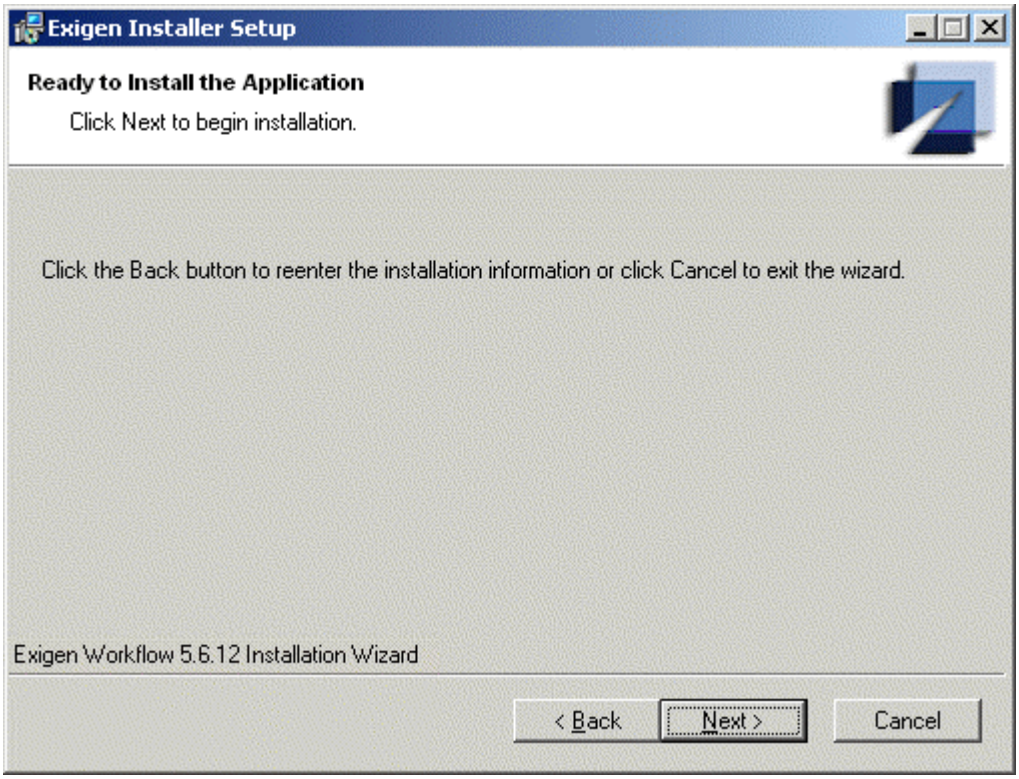

Figure 11: Ready to Install the Application window

8. To revise the selected options, click **Back** and make any necessary changes to the configuration.
9. To execute the selected actions, click **Next.**

   Exigen Installer removes, installs, or upgrades the selected Exigen Workflow components.

   When the installation is finished, a message box appears.

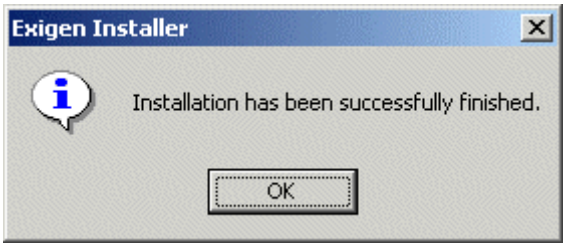

Figure 12: Successful completion message

10. Click **OK.**
11. Set up a connection to the database server as described in Chapter 3: Setting Up the Database Connection.

Creating or Upgrading the Exigen Workflow Database Structure

When Exigen Workflow is installed or upgraded and the connection to the database is correctly configured, the required Exigen Workflow tables must be created and populated with the default values in the database. If the database structure was previously created with an older Exigen Workflow version, database tables and records may need to be upgraded. To find out if the database structure must be upgraded in your business environment, consult Exigen Support Services.

Before upgrading the database structure, it is recommended that you make a backup of the previously created Exigen Workflow database structure.

To create or upgrade the Exigen Workflow database structure, proceed as follows:

1. Select **Start > Programs > Exigen Solution > Exigen Workflow > Workflow DB Startup.**

   The **Workflow Database Installation/Upgrade Wizard** window appears.

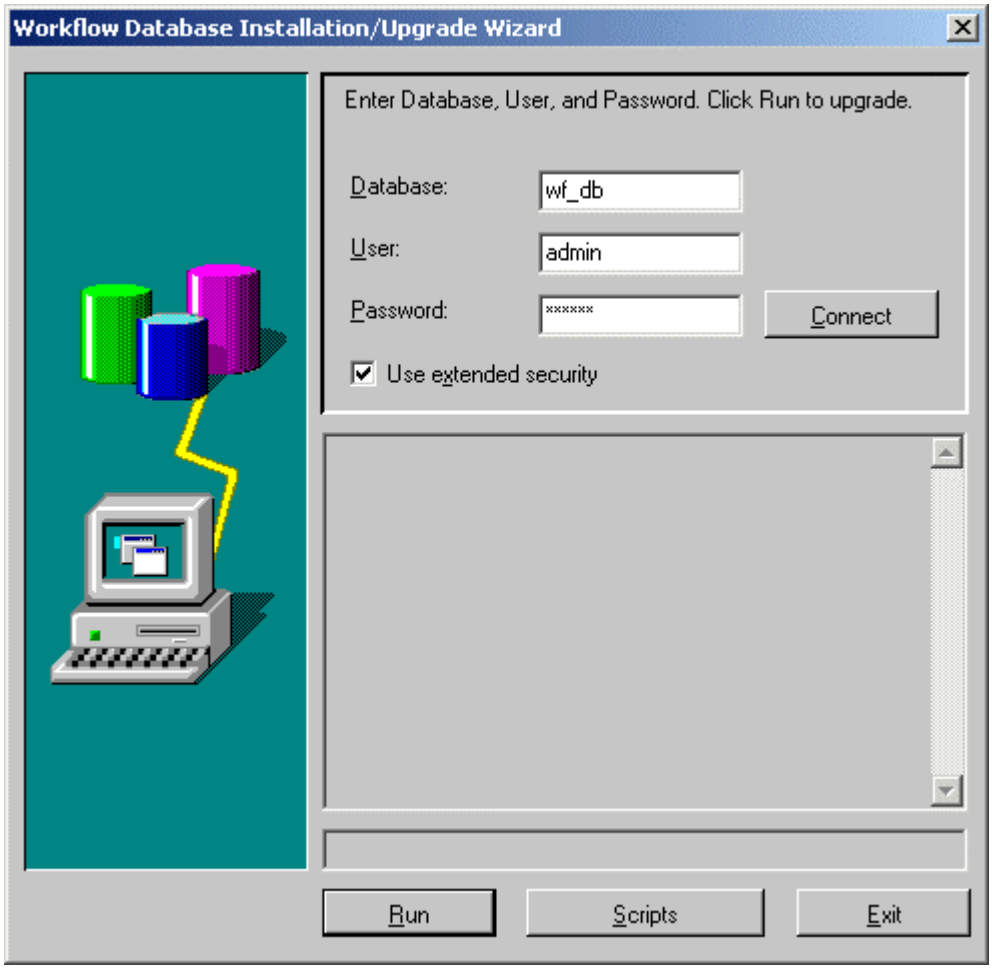

Figure 13: Workflow Database Installation/Upgrade Wizard window

The Workflow Database Installation/Upgrade Wizard creates or upgrades Exigen Workflow system tables by running data structure creation scripts.

2. Enter values in the following fields:

Connect dialog fields	
Field	**Description**
Database	Exigen Workflow database name if you access the database through client software, or the Exigen Workflow database data source name (DSN) if you use the ODBC connection.
User	Database server user login name.
Password	Database server user password.

3. To connect to the database, click **Connect.**
4. To enable extended user authentication and authorization in this database, select the **Use extended security** check box.

   The extended authentication can be performed on a database user or Windows domain level.

Note: Enabling the **Use extended security** check box requires administrator rights.

5. Click **Run.**

   If you are using an Oracle, DB2 z/OS, or AIX database, the **Server** window appears.

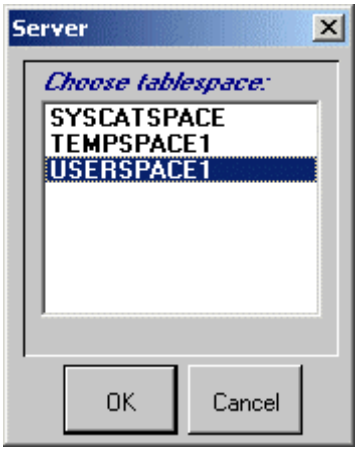

Figure 14: Server window

6. In the **Server** window, select a tablespace and click **OK.**

   The application creates or upgrades the Exigen Workflow system tables.

7. Wait until the Exigen Workflow system tables are created or upgraded.
8. To view the log file, click **Log File.**
9. To exit the Workflow Database Installation/Upgrade Wizard, click **Finish.**
10. If an Oracle database is used and Workflow DB Startup is not run on the workstation, the projects cannot be imported. To enable the projects to be imported, add the following line to `VISI.INI` file after the `DBS_MASTER` entry:

```
DBS_ORA_SCHEMA=<schema in which the Exigen Workflow tables are located>
```

Note: The DBS_ORA_SCHEMA parameter is case sensitive and the value must be the same as the database user schema name.

Running Exigen Workflow

1. To run Exigen Workflow, select **Start > Programs > Exigen Solution > Exigen Workflow > Workflow Explorer.**
2. Enter the login and password.

   The default login user is *DTM*, and the password is *dtm*.

Modifying Exigen Workflow Components

To modify or remove installed Exigen Workflow components, proceed as follows:

1. Insert the Exigen Workflow installation CD into your CD drive.
2. If the installation does not start automatically, from the Exigen Workflow installation CD, launch the `Setup.exe` file located in the `Windows` directory.

   The **Application Maintenance** window appears.

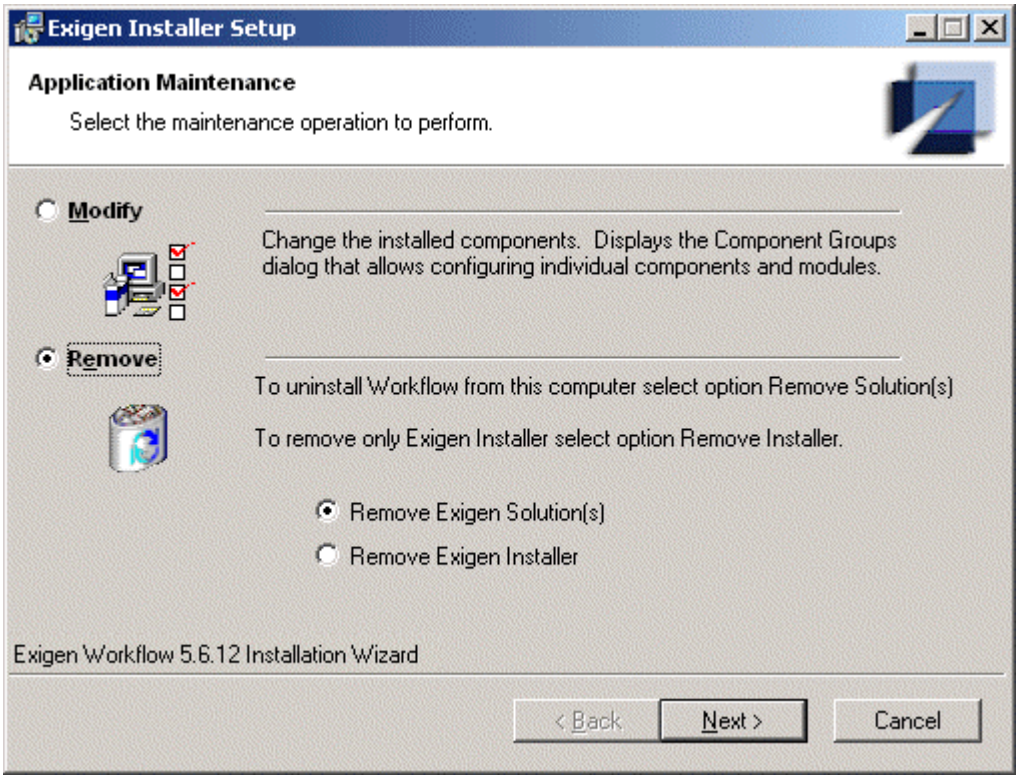

Figure 15: Application Maintenance window

3. Select one of the following options as required:
   - To modify installed Exigen Workflow components, select **Modify.**
   - To remove Exigen Workflow components, select **Remove** and select one of the following options as required:
     - **Remove Exigen Solution(s)** uninstalls all Exigen Workflow components.
       Warning: If Exigen Installer is not launched from the original Exigen Workflow installation location but from another location, this option may cause all installed Exigen solutions to be uninstalled.
     - **Remove Exigen Installer** uninstalls only Exigen Installer.
4. Click **Next.**

   If **Modify** is selected, the **Select Installation Type** window appears.

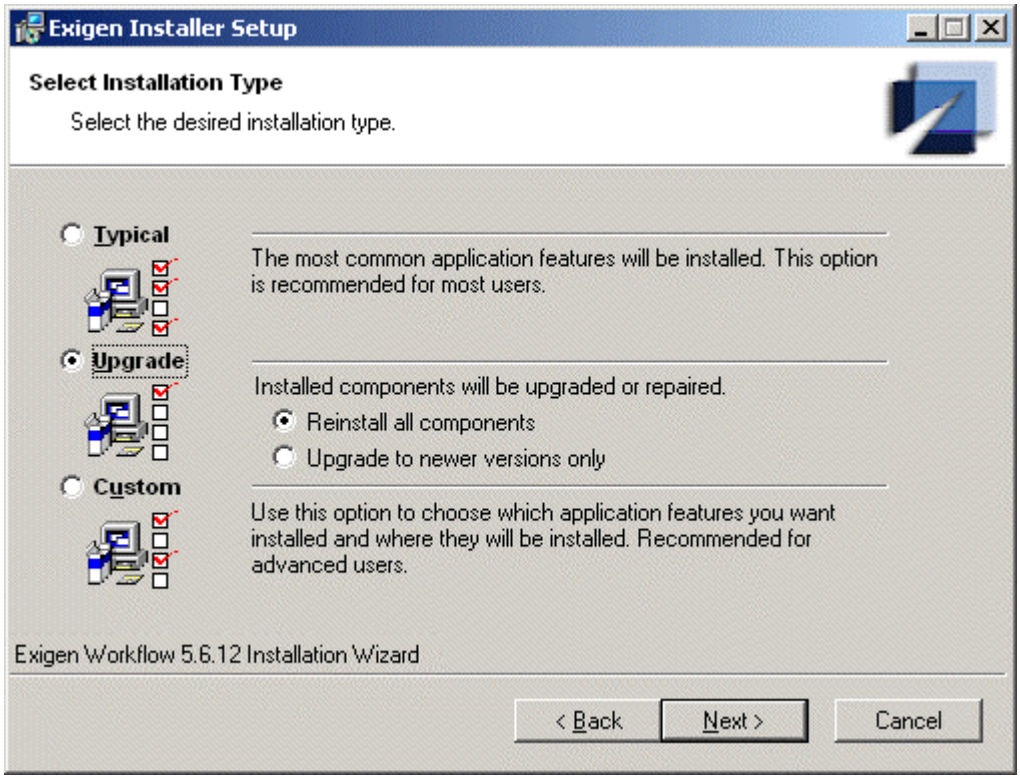

Figure 16: Selecting the installation type

5. Select one of the following installation types as required:

Installation types	
Type	**Description**
Typical	Installs typical Exigen Workflow components that are required for most users. If this installation type is selected and the list of installed and upgraded components displayed in the **Selected Options** window is incorrect, to return to the **Select Installation Type** window, the user can click **Back** and select **Custom.** In this case, the list of components is preconfigured as in a typical configuration but the user can modify the selection as appropriate.

<table>
<tr><th colspan="2">Installation types</th></tr>
<tr><th>Type</th><th>Description</th></tr>
<tr><td>Upgrade</td><td>Performs one of the following actions as selected by the user:
<table>
<tr><th>Action</th><th>Description</th></tr>
<tr><td>Reinstall all components</td><td>Reinstalls all installed Exigen Workflow components.</td></tr>
<tr><td>Upgrade to newer versions only</td><td>Upgrades those installed Exigen Workflow components that have an older version than the one available in the installation.</td></tr>
</table>
If this installation type is selected and Exigen Installer displays any component discrepancies, to return to the Select Installation Type window, the user can click Back and select Custom. In this case, the list of components is preconfigured as in the previous installation type, but the user can modify the selection as appropriate.</td></tr>
<tr><td>Custom</td><td>Users can specify which Exigen Workflow components must be installed, upgraded, or removed.
If this option is selected initially, there are no components selected to install or upgrade. However, if this option is selected after the Typical or Upgrade option is used, the list of components to be installed and upgraded is preconfigured according to the previously selected installation type.</td></tr>
</table>

6. Click **Next.**
7. If **Custom** is selected, follow instructions as described in Customizing the Exigen Workflow Installation.

Upgrading Exigen Workflow from a Previous Version

Newer Exigen Workflow versions include new components. To use these components, new dependencies are added for components available in previous Exigen Workflow versions. Therefore, if a component that requires new components is selected to be upgraded, Exigen Installer reports discrepancies between the components.

To successfully upgrade Exigen Workflow from a previous version, proceed as follows:

1. From the Exigen Workflow installation CD, launch the `Setup.exe` file located in the `Windows` directory.
2. Follow the instructions in the installation wizard until the **Select Installation Type** window appears.
3. Depending on the existing configuration, perform one of the following steps:
   - If the typical installation was used in the previous Exigen Workflow version, select **Typical.**
   - If a customized installation was used in the previous Exigen Workflow version, select **Upgrade** and **Reinstall all components.**
4. Click **Next** and follow the instructions in the installation wizard until one of the following occurs:
   - List of component discrepancies is displayed.
   - The **Selected Options** window is displayed.
5. If a list of component discrepancies is displayed, proceed as follows:
   - Record the discrepancies, and click **Back** until the **Select Installation Type** window is displayed.

- Select **Custom** and click **Next.**

  A list of Exigen Workflow components is displayed.

- To resolve the component discrepancies, configure Exigen Workflow components as described in Customizing the Exigen Workflow Installation.
- If any Exigen Workflow Client/Server components are installed, ensure that at least the typical selection of the **Common Modules** component group is selected to be installed.
- To finish the upgrade process, click **Next** and follow the instructions in the installation wizard.

6. In the **Selected Options** window, carefully review the list of components to be installed and upgraded.
7. If the list of changes in the **Selected Options** window does not match requirements, follow instructions as described in step 5.

Installing Exigen Workflow in Silent Mode

Typical Exigen Workflow components can be installed in silent mode without using the graphical user interface. This functionality is useful when the same Exigen Workflow components must be installed on many user workstations.

The following topics are described in this section:

- Silent Installation Parameters
- Configuring the Custom Configuration File
- Reconfiguring the Set of Typical Components
- Identifying Component Dependency

Silent Installation Parameters

To install typical Exigen Workflow components in silent mode, on the user's workstation, at the command prompt, execute the following command:

```
msiexec /i "<full path>\Setup.msi" /q <parameters>
```

`where <full path>` is a full path to the installation directory where the `Setup.msi` file is located and `<parameters>` is a list of parameters described in the following table:

Silent installation parameters	
Parameter	**Description**
`FR`	Full path to the directory containing the `Exigen.EWF` file. Typically, this is the same directory in which the `Setup.msi` file is located.
`DOC_INST`	Optional parameter that identifies if the subcomponent documentation must be installed. The value can be *Yes* or *No*. If the parameter is not specified, the default value is *Yes*.
`INI_PATH`	Optional parameter that identifies a full path to the `Setup.ewf` file if it differs from the location specified in the `FR` parameter.

Silent installation parameters	
Parameter	**Description**
HISTORY_PATH	Full path and file name of the installation log file. If the parameter is not specified, the log file is created in the Windows directory with the name SETUP_HISTORY.txt.
REP_PATH	Optional parameter that identifies a full path to the repository.rep file if it differs from the location specified in the FR parameter.
CUST_INI_PATH	Optional parameter that identifies the location and file name of the custom configuration file that contains Exigen Workflow silent installation parameters. The configuration file can contain parameters described in this table. For information on the custom configuration file, see Configuring the Custom Configuration File.
LOCATION	Optional parameter that identifies the directory in which all component installation directories are located if it differs from the location specified in the FR parameter. By default, it is the same directory in which the Setup.msi file is located.
Q	Optional parameter that specifies silent installation mode. This parameter can have one of the following values:

Value	Description
q	Users do not see anything on the screen during installation.
qb!	Users see the progress of the installation for each component. The **Cancel** button is not available. This is the default value.
qb	Users see the progress of the installation for each component. The **Cancel** button is available.

INSTALLDIR	Exigen Workflow destination directory. The following is the default value: C:\VISIFLOW
INSTALLDIR2	Exigen Workflow Web destination directory. The following is the default value: C:\VISICOM
INSTALLDIR3	Exigen Workflow Web Dll destination directory. The following is the default value: C:\VISICOM\WEB-INF\Dll
INSTALLDIR4	Exigen programs directory. The following is the default value: C:\Program Files\Exigen
LOGINNAME	User name required for Application Services and Automatic Queue Server. The following is the default value: .\visiflow
PWD	Password required for Application Services and Automatic Queue Server. The following is the default value: exigensrv

Silent installation parameters	
Parameter	**Description**
CONN_STR	Default connection string to Exigen Workflow database required for Application Services and Automatic Queue Server.

If any parameters are not specified, their default value is used.

The following are examples of the command entered to install typical Exigen Workflow components in silent mode:

Example 1

```
msiexec /i "E:\Windows\Setup.msi" /q Q=q FR="E:\Windows"
```

The preceding command installs all typical Exigen Workflow components in their default directories from the specified installation source directory.

Example 2

```
msiexec /i "E:\Windows\Setup.msi" /q Q=q FR="E:\Windows" DOC_INST=No
INI_PATH="C:\Custom Installation\Setup.ewf" REP_PATH="C:\Custom
Installation\repository.rep" CUST_INI_PATH="C:\Custom Installation\Setup_PARAM.ini"
```

The preceding command installs all typical Exigen Workflow components with the following exceptions:

- Components are installed in directories specified in the custom configuration `Setup_PARAM.ini` file.
- Documentation for subcomponents is not installed.
- The `Setup.ewf` file is taken from a specific directory, `C:\Custom Installation`.
- The `repository.rep` file is taken from a specific directory, `C:\Custom Installation`.

Configuring the Custom Configuration File

A custom configuration file can be defined to contain Exigen Workflow silent installation parameters. The custom configuration file is useful in cases when the same Exigen Workflow components must be installed on many workstations. In this case, one common custom configuration file can be defined to ensure that the same installation configuration is used.

The custom configuration file is a text file in the following format:

```
[INSTALL_PARAMETERS]

<parameter 1>

<parameter 2>

...
```

Each line in the `[INSTALL_PARAMETERS]` section is a silent installation parameter. For information on silent installation parameters, see Silent Installation Parameters.

This file can be specified during the silent installation using the `CUST_INI_PATH` parameter.

Reconfiguring the Set of Typical Components

The silent installation mode installs only typical Exigen Workflow components. The set of typical components is defined in the `Setup.ewf` configuration file, which is delivered together with the installation.

To reconfigure the set of typical components, proceed as follows:

1. Open the `Setup.ewf` file.
2. For the required component, locate the corresponding `[s#]` section, where # is a number.

   The component to which the section is related is identified in the `Caption` parameter.
3. Configure the section as follows:
   - To add the component to the set of typical components, add the `Install=Yes` line to the section.
   - To remove the component from the set of typical components, remove the `Install=Yes` line from the section.
   - To always uninstall any previously installed version of this component before installing the current version, add the `Remove=Yes` line to the section.

   The silent installation does not automatically install those components that are required by the typical components. This means that if component A requires component B to be installed, and component A is set as a typical component, component B must also be set as a typical component. The silent installation cannot be performed if the set of typical components does not also include all dependent components.
4. Ensure that all dependent components are also set as typical.

   For information on how to find a component's dependent components, see Identifying Component Dependency.
5. Save and close the `Setup.ewf` file.

Identifying Component Dependency

This section describes how to identify a component's dependent components, which are required by the component. This is important when Exigen Workflow is installed in silent mode. Exigen Workflow cannot be installed in silent mode if the set of typical components does not also include all dependent components. For information on defining typical Exigen Workflow components, see Reconfiguring the Set of Typical Components.

Procedures described in this section do not provide information about the dependency and compatibility of those components that are already installed on the workstation. For example, it is not possible to install an older version of a component if a newer version is already installed. In this case, the previously installed component must be uninstalled. One way to resolve this problem is to add the `Remove=Yes` parameter in the `Setup.ewf` file for the component as described in Reconfiguring the Set of Typical Components.

The following topics are described in this section:

Identifying Component Dependency Using the repository.rep File

Component dependency is defined in the `repository.rep` file, which is usually located in the same directory where the `Setup.exe` file is located.

Warning: The `repository.rep` file must not be modified. It can only be viewed to determine dependency of Exigen Workflow components.

To determine a component's dependent components, the administrator must identify the following information about the component:

- component identifier used in the installation configuration files
- component version number delivered in the installation package

The following procedure describes how to identify this information and determine a component's dependent components:

1. To locate the component identifier, in any plain text editor, open the `Setup.ewf` file and locate the section `[sX]` that contains the following line:

   ```
   Caption=<component name>
   ```

   where X is the component identifier.

   For example, the following section means that the identifier for Clear Cache Utility is 12.

   ```
   [S12]

   Caption=Clear Cache Utility
   ```

2. Close the `Setup.ewf` file.
3. To identify the component version number, go to the directory where the component's installation `.msi` file is located.
4. In the component's installation directory, using any plain text editor, open the component's `.ver` file.

   In the `.ver` file, the component version number is specified by the `Version` parameter as follows:

   ```
   Version=<version number>.<build number>
   ```

   The version number is three numbers separated by a period. The build number is not important to identify a component's dependencies.

   In the following example, the component version number is 5.6.12000:

   ```
   Version=5.6.12000.137
   ```

5. Close the component's `.ver` file.

6. Using any plain text editor, open the `repository.rep` file.
7. In the `repository.rep` file, locate the following section:

   `[s<component's identifier>V<component's version>]`

   For example, if the component identifier is 12 and its version is 5.6.12000, the required section in the `repository.rep` file is the following:

   `[s12V5.6.12000]`

   This section defines other components that are required by this component to work.

   If there is no such section in the `repository.rep` file, the component does not have any dependencies and there are no restrictions on installing this component in silent mode.
8. To identify the dependent components, examine the section.

   The following two parameters in this section identify this component's dependant components:

Parameters for identifying a component's dependency

Parameter	Description

`RequiredX`	Identifies a required component as follows:
	`RequiredX=<identifier of the required component used in the Setup.ewf file>`
	`RX_V1=<minimal required version>`
	`RX_V2=<maximal required version>`
	where X is a sequence number that is used to list multiple required components. All listed dependent components are mandatory for this component to work.
	The RX_V1 parameter is the minimal required version of the dependent component. It means that the dependent component must not be older than the specified version.
	The RX_V2 parameter is the maximal allowed version of the dependent component. It means that the dependent component must not be later than the specified version.
	The RX_V2 parameter can be blank. In this case, there is no limitation on the maximal dependent component version.
	In the following example, component S20 requires components S19 and S50 to be installed:
	`[S20V5.6.10000]`
	`Required1=S19`
	`R1_V1=5.5.11000`
	`R1_V2=5.6.12000`
	`Required2=S50`
	`R2_V1=5.5.11000`
	`R2_V2=`

Parameters for identifying a component's dependency	
Parameter	**Description**

`DeputyX_Y`	Parameter similar to the `RequiredX` parameter that specifies a set of alternative components rather than one required component. At least one of the listed alternative components must be installed, but not necessarily all.
	The `DeputyX_Y` parameter is as follows:
	`DeputyX_1=<identifier of the first alternative component>`
	`DX_1_V1=<minimal required version>`
	`DX_1_V2=<maximal required version>`
	
	`DeputyX_2=<identifier of the second alternative component>`
	`DX_2_V1=<minimal required version>`
	`DX_2_V2=<maximal required version>`
	
	`...`
	
	X is a sequence number that lists multiple sets of alternative dependent components. The component requires at least one dependent component from each alternative component set.
	Y is a sequence number that lists multiple alternative components within a component set.
	In the following example, the component S50 requires either component S106 or component S51:
	
	`[S50v5.6.12000]`
	`Deputy1_1=S106`
	`D1_1_V1=5.6.10000`
	`D1_1_V2=`
	
	`Deputy1_2=S51`
	`D1_2_V1=5.6.10000`
	`D1_2_V2=`

9. Close the `repository.rep` file.
10. To perform the silent installation successfully, ensure that all identified dependant components are also set as typical components as described in Reconfiguring the Set of Typical Components.
11. Repeat this procedure again for each identified dependant component to identify its dependent components.

Identifying Component Dependency Using the Main Exigen Workflow Installation

To verify the validity of a configured set of typical components using the main Exigen Workflow installation, proceed as follows:

1. On a workstation that does not have any Exigen Workflow components installed, run the main Exigen Workflow installation.

2. Select the typical installation type.
3. Click **Next** until a dependency problem window appears listing all other components that must also be installed for the selected components to work.
4. Reconfigure the set of typical components so that the listed dependent components are also set as typical as described in Reconfiguring the Set of Typical Components.
5. Repeat this procedure until no dependency problems are displayed.

Chapter 3: Setting Up the Database Connection

This section describes how to set up the connection to the database server for Exigen Workflow.

The following topics are described in this section:

Database Connection Overview

To run Exigen Workflow, the target database server must be running and the appropriate database client must be installed and configured.

Before connecting to the database, make sure that the following prerequisites are met:

- All required client software is installed on the client workstation, including the database communication software.
- The database server and drivers are running.
- The name of the database used by Exigen Workflow does not exceed 8 characters.

Exigen Workflow uses a common initialization file named `SQL.INI` to store the database client connection settings. The `SQL.INI` file is located in the `VISIFLOW\SYSTEM` directory.

SQL.INI File Structure

The **`SQL.INI`** file is a simple text file that contains database connection configuration parameters. Applications find database connection settings by looking through the file for the section identifiers that apply. Each section has a brief description after the section identifier.

Note: In the `SQL.INI` file, the semicolon is used to indicate a comment line.

To configure the client parameters in the SQL.INI file, proceed as follows:

6. In the [win32client.dll] section, specify the communication DLLs that the Windows applications intend to use. To access more than one database, specify or uncomment the comdll entries for all the databases as described in the following table:

Servers and parameters	
Server name	**Parameter**
Oracle	comdll=sqlora32
SQL Server	comdll=sqlodb32
DB2 UDB	comdll=sqlodb32

7. For SQL Server or DB2 UDB server, select the following section:

```
[odbcrtr]

remotedbname=<Exigen Workflow database alias>,dsn=<ODBC data source name>

buffrow=0

odbctrace=off

odbctracefile=sql.log
```

8. If creating a connection to a new Exigen Workflow system, select a name for the Exigen Workflow database.

   If you are connecting to the Exigen Workflow system and it is already running, you must ask your system administrator for the appropriate Exigen Workflow database name.

9. If you are going to connect to multiple databases through ODBC, in the [odbcrtr] section create a separate remotedbname=<Exigen Workflow DB alias>,dsn=<ODBC data source name> statement for each database.

10. For Oracle server, edit the following section:

```
[oragtwy]

remotedbname=<Exigen Workflow DB alias>,@<Oracle database service name>

longbuffer=32767

substitute=",

substitute=SYSSQL.,

fetchrow=20
```

11. For Oracle server, delete any quotation marks appearing in the substitute line.

12. After modifying the SQL.INI file, delete the GUPTA.INI file if it is present in the same directory.

    The GUPTA.INI file is created automatically by Centura if the ODBC router is loaded, and contains information about previously configured database connections. If the GUPTA.INI file is present, Centura runtime may use the parameters specified in this file instead of SQL.INI.

Normally Centura Routers scan the `remotedbname` records of the `SQL.INI` file to connect to the database with the requested Centura database name. When the requested `remotedbname` value is located, the information specified after the comma is used to connect to the database.

In cases where Centura ODBC Router is loaded, Centura scans for the DSN value matching the requested Centura database name first and uses this parameter for the connection. Only if a matching DSN value is not found does Centura scan for the requested `remotedbname` value.

If Centura ODBC Router is commented in the `winclient.dll` section of the `SQL.INI` file, it is not loaded.

Connecting to SQL Server Using ODBC

To connect to the SQL Server database using ODBC, proceed as follows:

1. To set up the ODBC Connection in Windows 2000, select **Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC).**
2. In the **ODBC Data Source Administrator** window, select the **System DSN** tab.
3. Click **Add.**
4. In the **Create New Data Source** window, select **SQL Server** and click **Finish.**
5. In the **Create a New Data Source to SQL Server** window, set the **Name** to your database name and **Server** to your database server name, and click **Next.**
6. In the **Create a New Data Source to SQL Server** window, select the authentication method and enter a user name and password.
7. Click **Next.**
8. Check **Change Default Database to** and select your database name.
9. Click **Next.**
10. Click **Finish.**
11. To confirm that your connection is correct, click **Test Data Source.**
12. Modify the `SQL.INI` file as follows:

```
[win32client]
clientname=Win32Client

[win32client.comments]

[win32client.dll]
comdll=sqlodb32
[odbcrtr]
remotedbname=<Exigen Workflow DB name>,dsn=<ODBC data source name>
buffrow=0
odbctrace=off
odbctracefile=sql.log
```

The [`odbcrtr`] section specifies parameters for the ODBC Router.

13. Enter your database alias used by the Exigen Workflow system and the ODBC reference name.

    Only letters and digits are permitted in the `remotedbname` name.

Connecting to SQL Server Using OLE DB

This section describes how to set up an OLE DB connection to the SQL Server. This functionality is supported by the following components:

- Retention Server
- Configuration Browser
- Audit Viewer

To set up a connection to the SQL Server database using the OLE DB connection, proceed as follows:

1. Open the `SQL.INI` file.
2. If the `SQL.INI` file does not contain a section named `[OLEDB],` create the `[OLEDB]` section.

   The `[OLEDB]` section must be located before the `[odbcrtr]` section.
3. In the `[OLEDB]` section, add the following parameters:

   ```
   remotedbname=<Exigen Workflow database name>, Provider=SQLOLEDB;Initial
   Catalog=<default database name>;Data Source=<SQL Server address or name>
   ```
4. Save and close the `SQL.INI` file.

Connecting to DB2 UDB Using ODBC

This section describes how to set up an ODBC connection to the DB2 UDB database server.

Warning: Exigen Workflow requires the Read Committed transaction isolation level when using the DB2 UDB database.

To connect to DB2 UDB, proceed as follows:

1. Select **Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC).**
2. Select the appropriate driver and follow the instructions in the window.
3. In the `SQL.INI` file, find the corresponding `[odbcrtr]` section and make the necessary corrections.
4. To configure your data source, proceed as follows:
   1. In the **ODBC Data Source Administrator** window, select the **System DSN** tab.
   2. Select the data source, and click **Configure.**

      The **DB2 Message** dialog appears.
   3. Click **No.**

The **CLI/ODBC Settings** dialog appears.

4. Click **Advanced.**

The **Advanced CLI/ODBC Settings** dialog appears.

5. Select the **Service** tab.
6. In the **Parameter** pane, select **Known workarounds PATCH1.**
7. In the **Value** pane, select **MS Visual Basic fix for empty searched update/delete.**
8. In the **Parameter** pane, select **Warnings.**
9. In the **Value** pane, select the **Ignore warnings** check box.
10. To accept these settings, click **OK.**

5. To save the configuration, click **OK.**
6. Open the `VISI.INI` file.
7. In the `VISI.INI` file, add the following section:

```
[DB2_OS]
<data source>=<operating system>
```

- `<data source>` is the name of the DB2 database. It must be identical to the value specified in the DBS_MASTER parameter in the same `VISI.INI` file.
- `<operating system>` is one of the following values representing the operating system on the database server:

Operating system values	
Value	**Operating system**
4	AS400
A	AIX
O	OS390
X	Other

If the operating system is not specified, the system assumes that the value is X.

8. Save and close the `VISI.INI` file.

Connecting to DB2 UDB Using OLE DB

This section describes how to set up an OLE DB connection to the DB2 UDB. This functionality is supported by the following components:

- Retention Server
- Configuration Browser

To set up a connection to the DB2 UDB database using the OLE DB connection, proceed as follows:

1. Open the `SQL.INI` file.
2. If the `SQL.INI` file does not contain a section named `[OLEDB]`, create the `[OLEDB]` section.

The [OLEDB] section must be located before the [odbcrtr] section.

3. In the [OLEDB] section, add the following parameters:

```
remotedbname=<Exigen Workflow database name>, Provider=IBMDA400;Data Source=<DB2 server address>
```

4. Save and close the SQL.INI file.
5. Open the VISI.INI file.
6. In the VISI.INI file, add the following section:

```
[DB2_OS]
<data source>=<operating system>
```

- <data source> is the name of the DB2 database. It must be identical to the value specified in the DBS_MASTER parameter in the same VISI.INI file.
- <operating system> is one of the following values representing the operating system on the database server:

Operating system values	
Value	**Operating system**
4	AS400
A	AIX
O	OS390
X	Other

If the operating system is not specified, the system assumes that the value is X.

7. Save and close the VISI.INI file.

Connecting to DB2 UDB Using IBM iSeries Access for Windows

The connection to the database is performed through the ODBC Data Source Administrator.

Warning: Exigen Workflow requires the Read Committed transaction isolation level when using the DB2 UDB database.

To connect to DB2 UDB using IBM iSeries Access for Windows, proceed as follows:

1. Select the appropriate driver and follow the instructions in the window.
2. In the SQL.INI file, find the corresponding [odbcrtr] section and make the necessary corrections.
3. In the **ODBC Data Source Administrator** window, select the **System DSN** tab.
4. Select the data source and click **Configure.**

   The **iSeries Access for Windows ODBC Setup** window appears.

5. Select the **Translation** tab.
6. Click **Advanced.**

   The **Advanced translation options** window appears.
7. In the **SQL statement CCSID** list box, select **Unicode (UCS-2) CCSID.**
8. To accept the settings, click **OK.**
9. To save the configuration, click **OK.**
10. Open the `VISI.INI` file.
11. In the `VISI.INI` file, add the following section:

```
[DB2_OS]
<data source>=<operating system>
```

- `<data source>` is the name of the DB2 database. It must be identical to the value specified in the DBS_MASTER parameter in the same `VISI.INI` file.
- `<operating system>` is one of the following values representing the operating system on the database server:

Operating system values	
Value	**Operating system**
4	AS400
A	AIX
O	OS390
X	Other

If the operating system is not specified, the system assumes that the value is X.

12. Save and close the `VISI.INI` file.

Connecting to Oracle

This section describes how to set up a connection to the Oracle database server.

The following topics are described in this section:

- Installing Oracle Client
- Setting Up a Connection for the Main Exigen Workflow Components
- Setting Up a Connection Using the ODBC or OLE DB Driver

Installing Oracle Client

Oracle Client must be installed on the user's workstation before connecting to the Oracle database.

To install Oracle Client, proceed as follows:

1. From the Oracle installation source, launch the Oracle Client setup application.

2. Select to install either the ODBC driver or the OLE DB driver as required.
3. After a successful Oracle Client installation, modify the registry information by adding the following string variables in `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE`:

String variables in registry	
Name	**Value**
Name	oraoci
Data	oraclientX.dll where X is the Oracle Client version.

Setting Up a Connection for the Main Exigen Workflow Components

Most Exigen Workflow components use the native Oracle driver to connect to the Oracle server. For information on components that do not support this type of connection, see Setting Up a Connection Using the ODBC or OLE DB Driver.

To set up a connection using the native Oracle driver, proceed as follows:

1. Open the `SQL.INI` file.
2. In the `[win32client.dll]` section uncomment the following line:

   ```
   comdll=sqlora32
   ```

3. In the `[oragtwy]` section, add or edit the following line as required:

   ```
   remotedbname=<Exigen Workflow database name>,@<Oracle database service name>
   ```

4. Save and close the `SQL.INI` file.

Setting Up a Connection Using the ODBC or OLE DB Driver

The following Exigen Workflow components do not support the database connection using the native Oracle driver:

- Retention Server
- Configuration Browser
- Audit Viewer
- Component Configuration Manager
- ADSync

To use the preceding components, one of the following additional connection types must be configured in addition to the standard connection configuration:

- Setting Up an ODBC Connection
- Setting Up an OLE DB Connection

Setting Up an ODBC Connection

To set up an ODBC connection, proceed as follows:

1. Open the `SQL.INI` file.
2. In the `[win32client.dll]` section, uncomment the following line:

   ```
   comdll = sqlodb32
   ```

   This line must be located after the following line:

   ```
   comdll = sqlora32
   ```

3. Save and close the `SQL.INI` file.
4. To finish the configuration, perform one of the following procedures depending on the connection type:
   - Setting Up the Oracle ODBC Driver with the DSN Alias
   - Setting Up the Oracle ODBC Driver without the DSN Alias
   - Setting Up the Microsoft ODBC Driver with the DSN Alias
   - Setting Up the Microsoft ODBC Driver without the DSN Alias

Setting Up the Oracle ODBC Driver with the DSN Alias

To set up the Oracle ODBC driver with the DSN alias, proceed as follows:

1. Select **Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC).**
2. Select the **System DSN** tab.
3. Click **Add.**
4. In the driver list, select the Oracle ODBC driver.
5. Click **Finish.**

   The setup window appears.

6. Specify the following parameters as required:
   - DSN, which must be different from the Exigen Workflow database name
   - Oracle database service name
   - user ID
   - description if required
7. Click **OK.**
8. Open the `SQL.INI` file.
9. If the `SQL.INI` file does not contain a section named `[odbcrtr]`, create the `[odbcrtr]` section.
10. In the `[odbcrtr]` section, add the following parameters:

    ```
    remotedbname=<Exigen Workflow database name>,dsn=<ODBC data source name>
    ```

11. Save and close the `SQL.INI` file.

Setting Up the Oracle ODBC Driver without the DSN Alias

To set up the Oracle ODBC driver without the DSN alias, proceed as follows:

1. Open the `SQL.INI` file.
2. If the `SQL.INI` file does not contain a section named `[odbcrtr]`, create the `[odbcrtr]` section.
3. In the `[odbcrtr]` section, add the following parameters:

   ```
   remotedbname=<Exigen Workflow database name>,driver={<Oracle ODBC driver
   name>};dbq=<Oracle database service name>
   ```

4. Save and close the `SQL.INI` file.

Setting Up the Microsoft ODBC Driver with the DSN Alias

To set up the Microsoft ODBC driver with the DSN alias, proceed as follows:

1. Select **Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC).**
2. Select the **System DSN** tab.
3. Click **Add.**
4. In the list, select **Microsoft ODBC for Oracle.**
5. Click **Finish.**

   The setup window appears.

6. Specify the following parameters as required:
   - DSN, which must be different from the Exigen Workflow database name
   - description if required
   - user name
   - Oracle database service name
7. Click **OK.**
8. Open the `SQL.INI` file.
9. If the `SQL.INI` file does not contain a section named `[odbcrtr]`, create the `[odbcrtr]` section.
10. In the `[odbcrtr]` section, add the following parameters:

    ```
    remotedbname=<Exigen Workflow database name>,dsn=<data source name>
    ```

11. Save and close the `SQL.INI` file.

Setting Up the Microsoft ODBC Driver without the DSN Alias

To set up the Microsoft ODBC driver without the DSN alias, proceed as follows:

1. Open the `SQL.INI` file.
2. If the `SQL.INI` file does not contain a section named `[odbcrtr]`, create the `[odbcrtr]` section.
3. In the `[odbcrtr]` section, add the following parameters:

   ```
   remotedbname=<Exigen Workflow database name>,driver={Microsoft ODBC for
   Oracle};server=<Oracle database service name>
   ```

4. Save and close the `SQL.INI` file.

Setting Up an OLE DB Connection

To set up an OLE DB connection, proceed as follows:

1. Open the `SQL.INI` file.
2. If the `SQL.INI` file does not contain a section named `[oledb],` create the `[oledb]` section.

   The `[oledb]` section must be located before the `[odbcrtr]` section.
3. In the `[oledb]` section, add the following parameters:

   ```
   remotedbname=<Exigen Workflow database name>, Provider=OraOLEDB.Oracle; Data
   Source=<Oracle database service name>
   ```
4. Save and close the `SQL.INI` file.

Configuring the Database Connection Using Connect DB Wizard

Exigen Workflow includes a tool named Connect DB Wizard for configuring the `SQL.INI` file by using a graphical user interface. However, Connect DB Wizard does not allow administrators to configure some specific configuration settings.

To configure the database connection using Connect DB Wizard, proceed as follows:

1. Select **Start > Programs > Exigen Solution > Exigen Workflow > Connect DB Wizard.**

   The **Centura Connectivity Administrator** window appears.

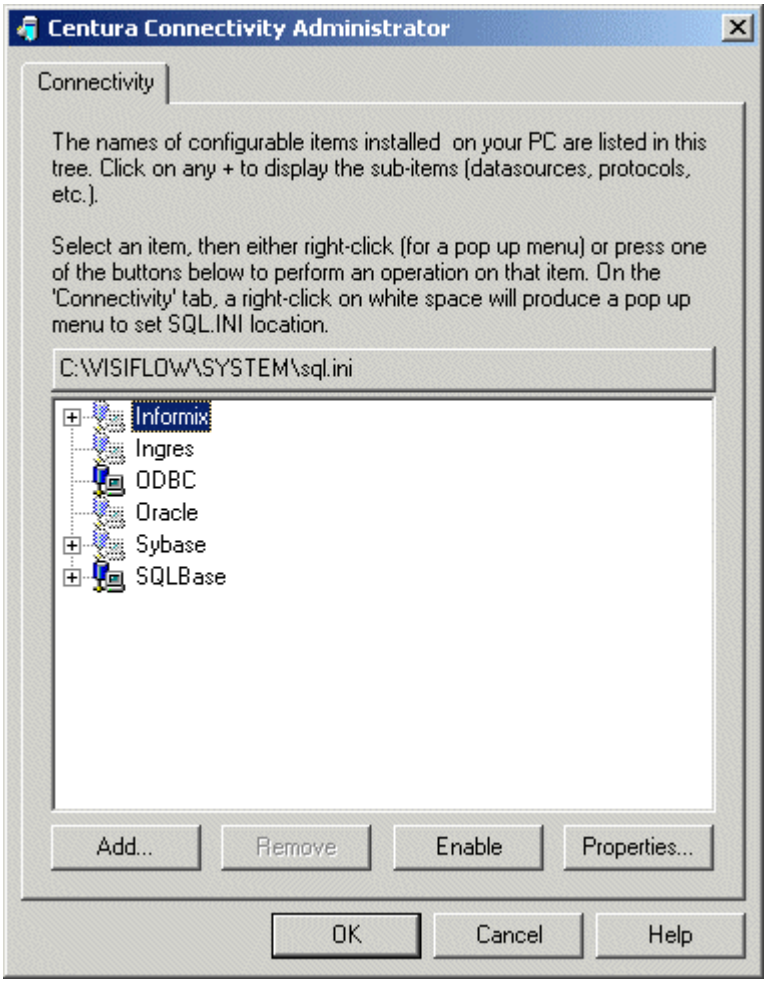

Figure 17: Connect DB Wizard

All data source items configured on the workstation are listed in a tree structure divided into related groups.

2. To examine the configured data source items, expand the tree structure as required.
3. To add a new database connection item, select the related data source group and click **Add.**

   The **Data Source Configuration** window appears.

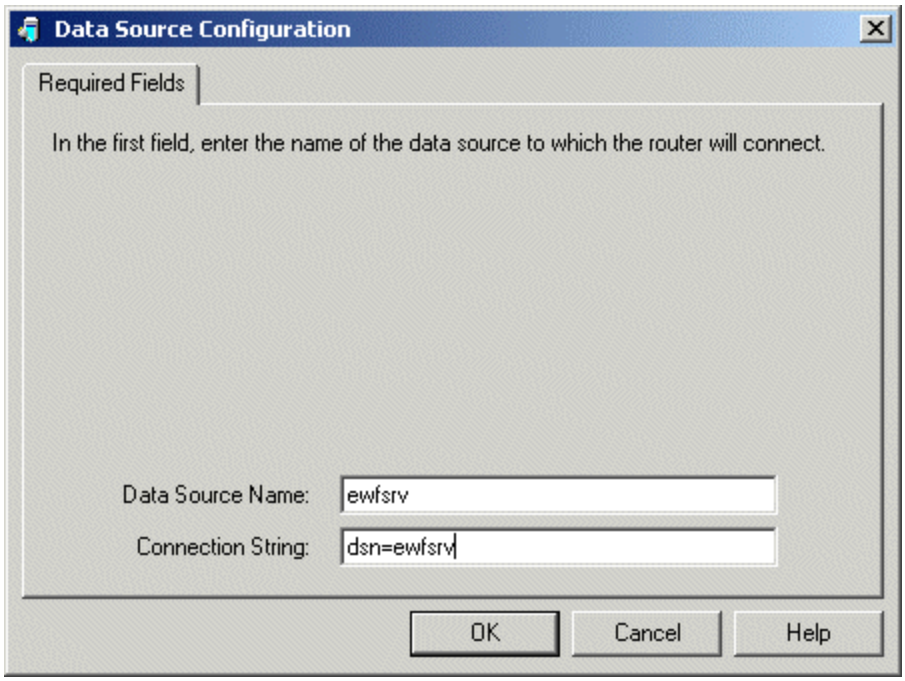

Figure 18: Adding a new data source

The window may differ depending on the selected data source type.

4. In the **Data Source Name** field, enter the database alias.
5. In the **Connection String** field, enter the data source name.

   For information on the data source definition syntax in each specific case, click **Help.**
6. To add the new data source item, click **OK.**
7. To remove a configured data source item, select the item and click **Remove.**
8. To modify a configured data source item, select the item and click **Properties.**
9. To disable a configured data source item, select the item and click **Disable.**
10. To enable a disabled data source item, select the item and click **Enable.**
11. To apply changes made to the data source items, click **OK.**

Chapter 4: Installing Exigen Workflow Web

This section describes how to install Exigen Workflow Web. The following topics are described in this section:

What is Exigen Workflow Web?

Exigen Workflow Web is an application that provides web access to the basic workflow objects and administration tools. Once the Exigen Workflow Web server is installed and configured properly, clients can perform most of their daily duties through the Internet.

Exigen Workflow Web has a different interface and it does not support all functions available in the main Exigen Workflow system.

Exigen Workflow Web System Requirements

For information on Exigen Workflow Web hardware and software requirements, see the Exigen Workflow readme file.

Installing the Exigen Workflow Web Server

To install the Exigen Workflow Web server, proceed as follows:

1. Insert the Exigen Workflow installation CD into the CD drive.
2. If the installation does not start automatically, from the CD, launch the `Setup.exe` file.
3. Follow the installation instructions until you reach the **Exigen Workflow** window as described in General Installation Steps.
4. In the **Exigen Workflow** window, in the **Install/Upgrade** column, select the **Web Components** check box.

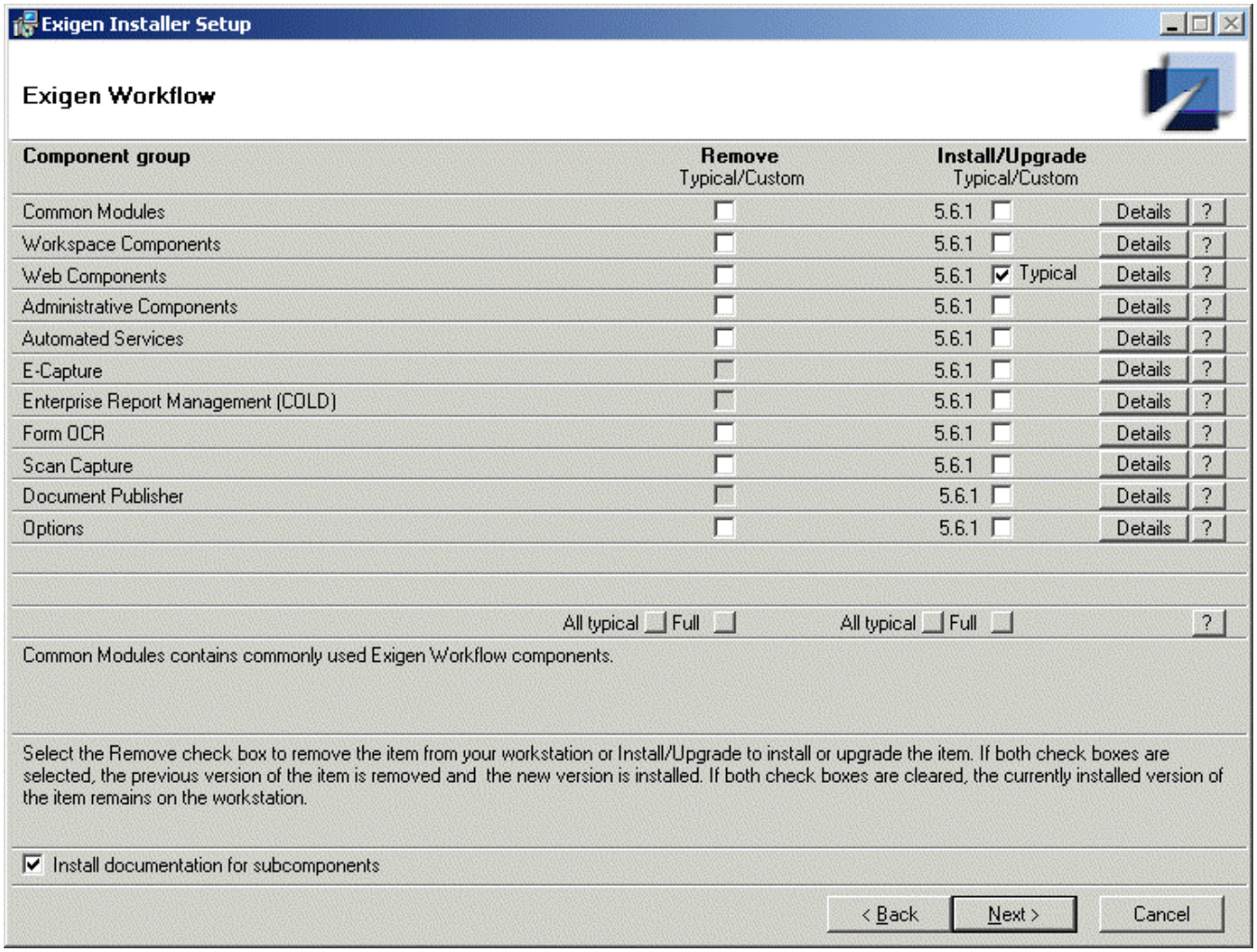

Figure 19: Installing Exigen Workflow Web

5. To select which Exigen Workflow Web components to install or upgrade, click **Details** and configure the components as required.
6. To install Exigen Workflow Web documentation, select the **Install documentation for subcomponents** check box.
7. Click **Next.**

   The **Destination Folder** window appears.

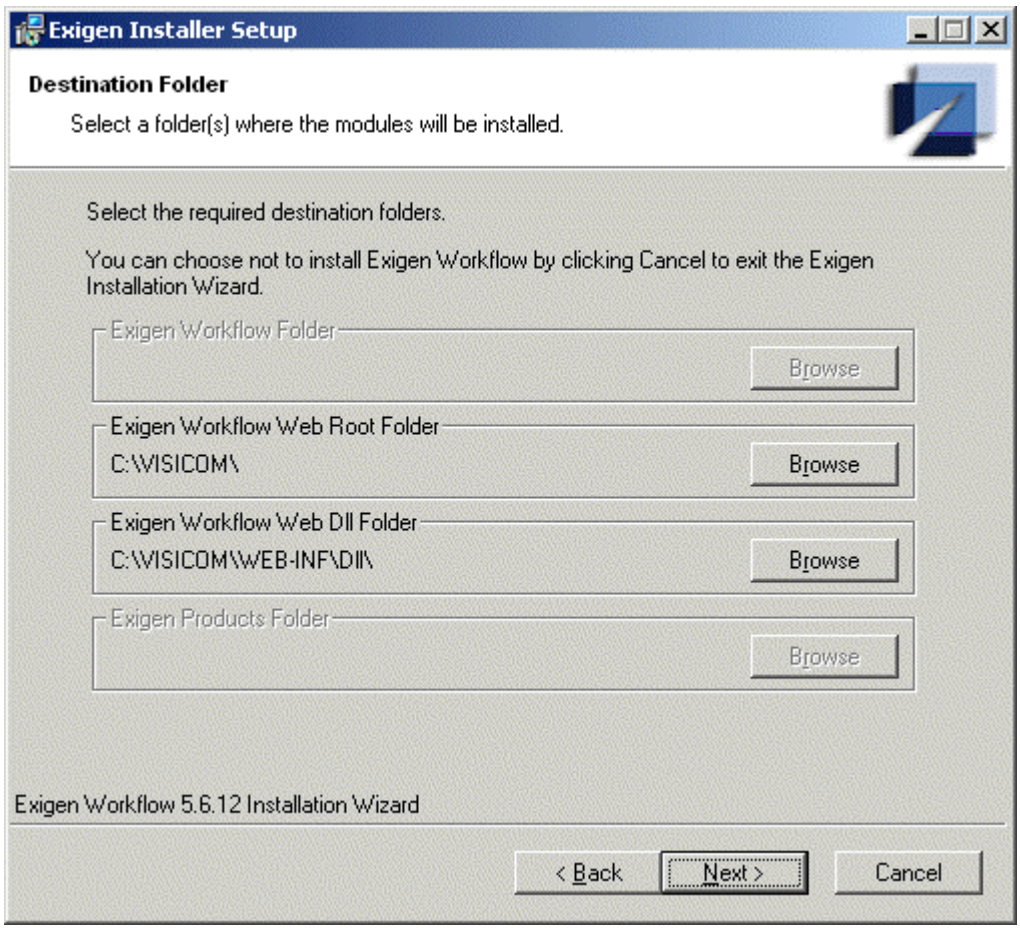

Figure 20: Specifying Exigen Workflow Web installation directories

8. To set the directory in which to install the main Exigen Workflow Web files, in the **Exigen Workflow Web Root Folder** box, click **Browse** and select the required directory.
9. To set the directory in which to install Exigen Workflow Web DLL libraries, in the **Exigen Workflow Web Dll Folder** box, click **Browse** and select the required directory.
10. Click **Next.**
11. To complete the installation process, follow the instructions as described in General Installation Steps.

Warning: To avoid the user credentials being sent through the network as a plain text, it is recommended to use Secure Socket Layer (SSL) in Exigen Workflow Web.

General Steps for Configuring the Application Server

Exigen Workflow Web is run as a web application on an application server. The application server and Exigen Workflow Web server environment must be configured for users to be able to access Exigen Workflow Web.

The following procedure describes general steps for configuring the application server and Exigen Workflow Web server environment:

1. Before installing the application server, install JDK.
2. Ensure that the `web.xml` file located in the `VISICOM\WEB-INF` directory is in the correct format for the application server.
3. If it is not in the correct format, rewrite all settings of this file in the correct format for your application server as described in your application server's documentation.
4. Ensure the application server can find the document root location by specifying the document root for Exigen Workflow Web as described in the application server's documentation.
5. Ensure the application server can find Exigen Workflow Web Java classes and libraries.

   For most application servers, this can be achieved by specifying Java libraries and class files location as the `WEB-INF` directory inside the document root directory.
6. If it still does not work with your application server, specify the CLASSPATH variable for it as described in the application server's documentation.
7. Ensure the application server can find the native libraries location by modifying the PATH environment variable of your application server to point to the Exigen Workflow Web native libraries directory as described in the application server's documentation.

   The PATH environment variable must be modified before starting the application server.
8. Ensure that the application server can find your database driver by adding the location of your database driver to the application server's CLASSPATH variable.

   For more information on configuring database drivers and application servers, see your application server and database driver documentation.
9. To improve the performance of Exigen Workflow Web, configure the initial and maximal memory heap size used for the Java virtual machine according to the system load and available memory.

   For information on configuring specific application servers, see Configuring Application Servers.

   The Exigen Security Services package that supports NT LAN Manager (NTLM) authentication for Exigen Workflow Web is not included in the Exigen Workflow installation package. For information on the Exigen Security Services package that supports NTLM, contact Exigen Support Services.

Configuring Application Servers

This section describes how to install Exigen Workflow Web as a default application for a given application server with minimal changes to the default server's settings.

The following topics are described in this section:

Tomcat 4.1.27 Standard Edition Application Server

This section describes how to install Exigen Workflow Web as a default application for the Tomcat 4.1.27 Standard Edition Application Server.

The following topics are described in this section:

Configuring Tomcat 4.1.27 as a Standalone Java Process

To configure Tomcat 4.1.27 as a standalone Java process, proceed as follows:

1. From the Exigen Workflow installation CD, launch the `Setup.exe` file.
2. Install the Exigen Workflow Web server as described in Installing the Exigen Workflow Web Server.
3. Ensure the following location is selected as the Exigen Workflow Web root directory:

   ```
   <Tomcat installation directory>\webapps\visicom
   ```

   The location for native libraries is updated as follows:

   ```
   <Tomcat installation directory>\webapps\visicom\WEB-INF\Dll
   ```

4. Perform one of the following steps:
   - Copy your database driver to the `VISICOM\WEB-INF\lib` directory.
   - Specify the location of your database driver in the application server's CLASSPATH variable.
5. To specify the native libraries path for Tomcat, go to Tomcat's `bin` directory and open the `startup.bat` file.
6. Modify the `doneSetArgs` label as follows:

   ```
   :doneSetArgs

   SETLOCAL

   set path=%CATALINA_HOME%\webapps\visicom\WEB-INF\Dll;%path%

   call "%EXECUTABLE%" start %CMD_LINE_ARGS%

   ENDLOCAL
   ```

```
:end
```

7. To improve the performance of Exigen Workflow Web, add the following line before the application server startup command:

   ```
   set JAVA_OPTS=-Xms<initial heap size> –Xmx<maximal heap size>
   ```

   This command sets the initial and the maximal memory heap size used for the Java virtual machine.

   For example, if 512 MB of memory is available, it is recommended to add the following line to the `startup.bat` file:

   ```
   set JAVA_OPTS=-Xms128m –Xmx328m
   ```

   However, these parameters must be configured according to the system load and available memory.

8. Save and close the file.
9. Start Tomcat.
10. Open the Web browser and in the address bar, enter the following:

    ```
    http://localhost:8080/visicom
    ```

    The Exigen Workflow Web login page appears.

Configuring Tomcat 4.1.27 as a Service

The following procedure describes how to configure Tomcat 4.1.27 as a service.

Prerequisite: The **NT Service** component must be selected in the Tomcat setup during the Tomcat 4.1.27 installation.

1. From the Exigen Workflow installation CD, launch the `Setup.exe` file.
2. Install the Exigen Workflow Web server as described in Installing the Exigen Workflow Web Server.
3. Ensure the following location is selected as the Exigen Workflow Web root directory:

   ```
   <Tomcat installation directory>\webapps\visicom
   ```

   The location for native libraries is updated as follows:

   ```
   <Tomcat installation directory>\webapps\visicom\WEB-INF\Dll
   ```

4. Perform one of the following steps:
   - Copy your database driver to the `VISICOM\WEB-INF\lib` directory.
   - Specify the location of your database driver in the application server's CLASSPATH variable.
5. Add the location of Exigen Workflow Web native libraries to the system PATH variable.

   Exigen Workflow Web native libraries are located in the `VISICOM\WEB-INF\Dll` directory.

6. In the service console, start Tomcat as a service named **Apache Tomcat 4.1.**

7. Open the Web browser and in the address bar, enter the following:

   `http://localhost:8080/visicom`

   The Exigen Workflow Web login page appears.

Tomcat 5.5.6 Standard Edition Application Server

This section describes how to install Exigen Workflow Web as a default application for the Tomcat 5.5.6 Standard Edition Application Server.

Prerequisite: To run Tomcat 5.5.6 using JDK 1.4.2, the Tomcat compatibility package must be installed. It can be retrieved from the following website:

http://jakarta.apache.org/tomcat/

The following topics are described in this section:

Configuring Tomcat 5.5.6 as a Standalone Java Process

To configure Tomcat 5.5.6 as a standalone Java process, proceed as follows:

1. From the Exigen Workflow installation CD, launch the `Setup.exe` file.
2. Install the Exigen Workflow Web server as described in Installing the Exigen Workflow Web Server.
3. Ensure the following location is selected as the Exigen Workflow Web root directory:

   `<Tomcat installation directory>\webapps\visicom`

   The location for native libraries is updated as follows:

   `<Tomcat installation directory>\webapps\visicom\WEB-INF\Dll`

4. Perform one of the following steps:
   - Copy your database driver to the `visicom\WEB-INF\lib` directory.
   - Specify the location of your database driver in the application server's CLASSPATH variable.
5. Add the location of Exigen Workflow Web native libraries to the system PATH variable.

   Exigen Workflow Web native libraries are located in the `visicom\WEB-INF\Dll` directory.

6. To configure Tomcat, go to Tomcat's `bin` directory and launch the `tomcatw` executable.
7. To improve the performance of Exigen Workflow Web, in the Java tab, modify the following memory parameters as required:
   - `Initial memory pool`
   - `Maximum memory pool`

   These parameters set the initial and the maximum memory heap size used for the Java virtual machine.

For example, if 512 MB of memory is available, it is recommended to set the memory parameters as follows:

Java virtual machine memory parameter values	
Parameter	**Value**
Initial memory pool	128 MB
Maximum memory pool	328 MB

8. Click **OK.**
9. Start the Tomcat application server.
10. Open the Web browser and, in the address bar, enter the following address:

    http://localhost:8080/visicom

    The Exigen Workflow Web login page appears.

Configuring Tomcat 5.5.6 as a Service

The following procedure describes how to configure Tomcat 5.5.6 as a service.

Prerequisite: The NT Service component must be selected in the Tomcat setup during the Tomcat 5.5.6 installation.

1. From the Exigen Workflow installation CD, launch the `Setup.exe` file.
2. Install the Exigen Workflow Web server as described in Installing the Exigen Workflow Web Server.
3. Ensure the following location is selected as the Exigen Workflow Web root directory:

    `<Tomcat installation directory>\webapps\visicom`

    The location for native libraries is updated as follows:

    `<Tomcat installation directory>\webapps\visicom\WEB-INF\Dll`

4. Perform one of the following steps:
    - Copy your database driver to the `visicom\WEB-INF\lib` directory.
    - Specify the location of your database driver in the application server's CLASSPATH variable.
5. Add the location of Exigen Workflow Web native libraries to the system PATH variable.

    Exigen Workflow Web native libraries are located in the `visicom\WEB-INF\Dll` directory.

6. To start the Tomcat service, perform one of the following steps:
    - In the Windows Services console, start the Apache Tomcat service.
    - In the Tomcat configuration manager, in the **General** tab, start the Apache Tomcat service.
7. Open the Web browser and, in the address bar, enter the following address:

    http://localhost:8080/visicom

    The Exigen Workflow Web login page appears.

WebLogic 8.1 Application Server

This section describes how to configure WebLogic 8.1 application server to run Exigen Workflow Web.

The following topics are described in this section:

Prerequisites

The following requirements must be met before configuring the WebLogic 8.1 application server:

- WebLogic 8.1 must be installed.
- Exigen Workflow Web must be installed.
- The path to the Exigen Workflow Web DLL directory must be defined in the system PATH variable.

Configuring WebLogic 8.1 Application Server

To configure the WebLogic 8.1 application server, proceed as follows:

1. Run BEA WebLogic Configuration Wizard.

   The **Create or Extend a Configuration** window appears.

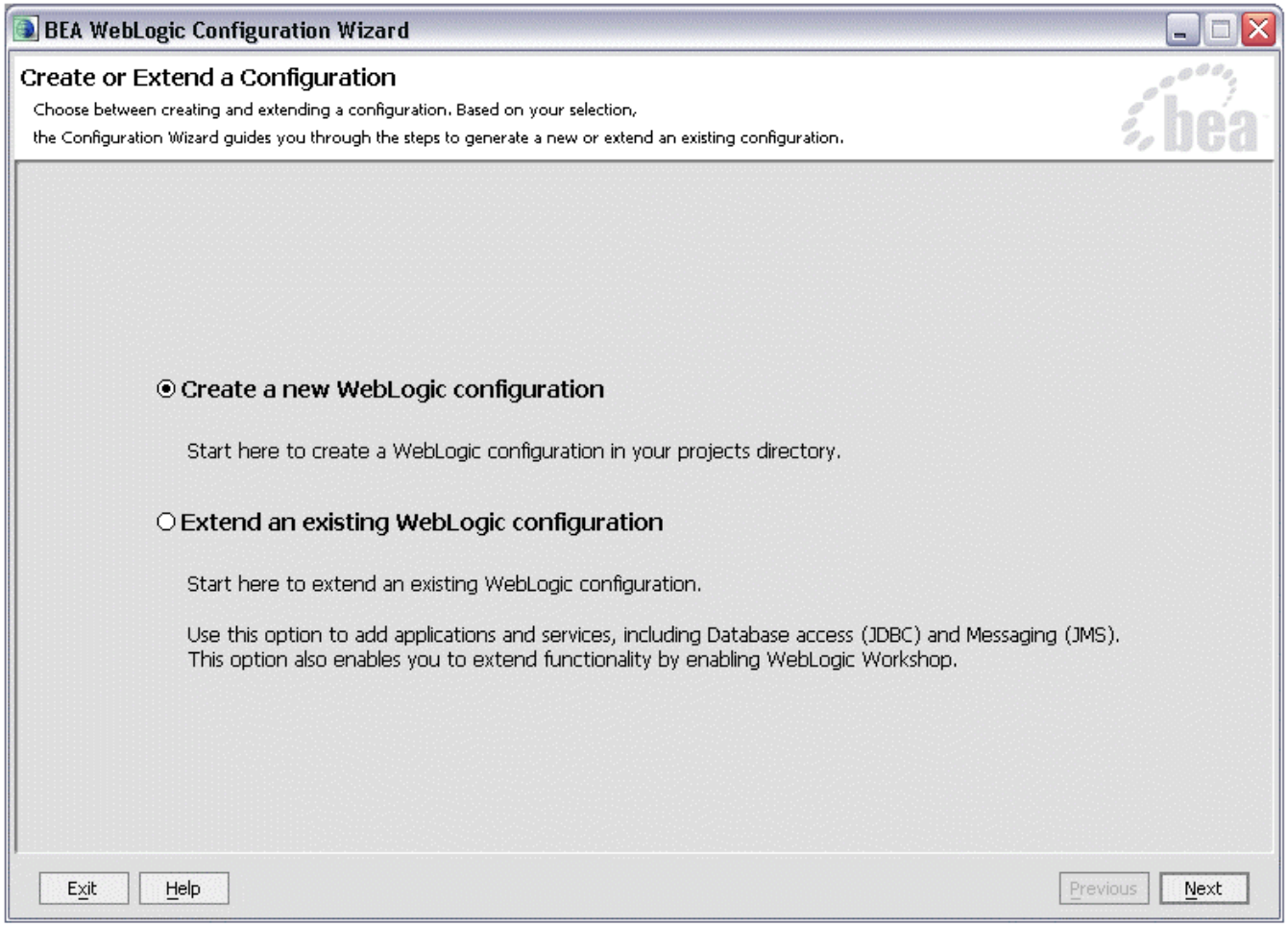

Figure 21: WebLogic Configuration Wizard

2. Select **Create a new WebLogic configuration** and click **Next.**

   The **Select a Configuration Template** window appears.

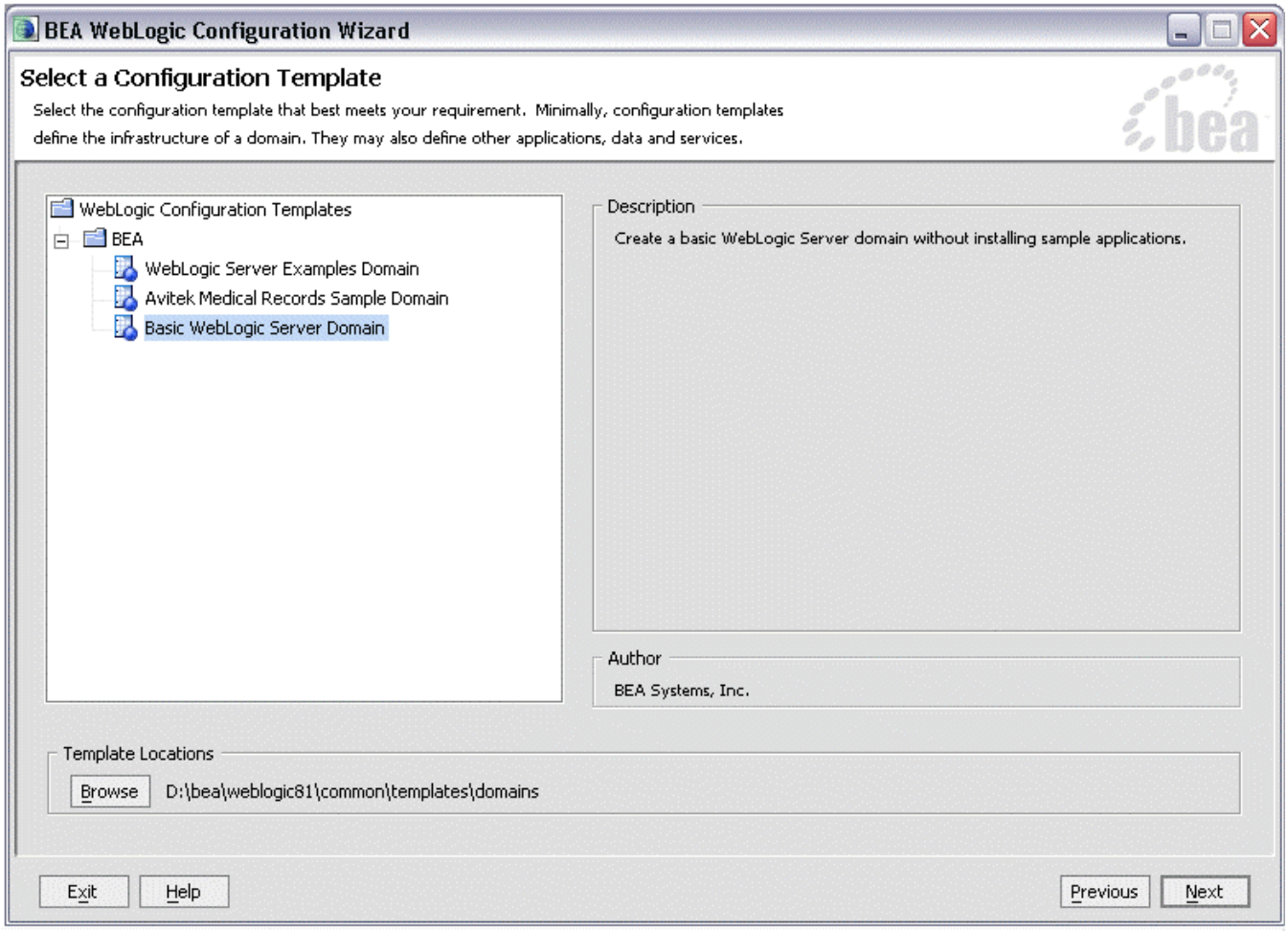

Figure 22: Selecting a configuration template

3. In the tree, expand the **BEA** folder and select **Basic WebLogic Server Domain.**
4. Click **Next.**

   The **Choose Express or Custom Configuration** window appears.

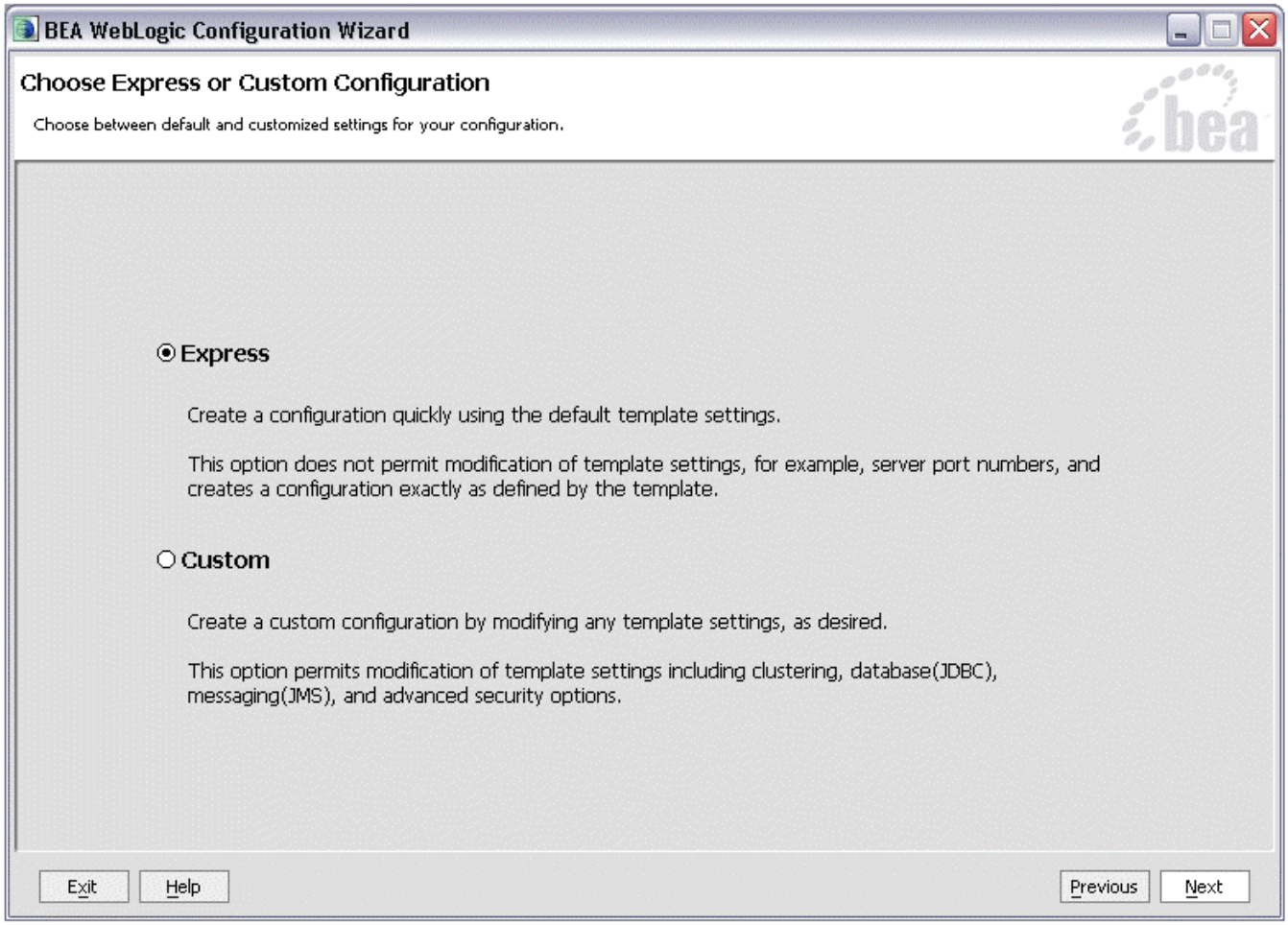

Figure 23: Selecting a configuration type

5. Select **Express** and click **Next.**

   The **Configure Administrative Username and Password** window appears.

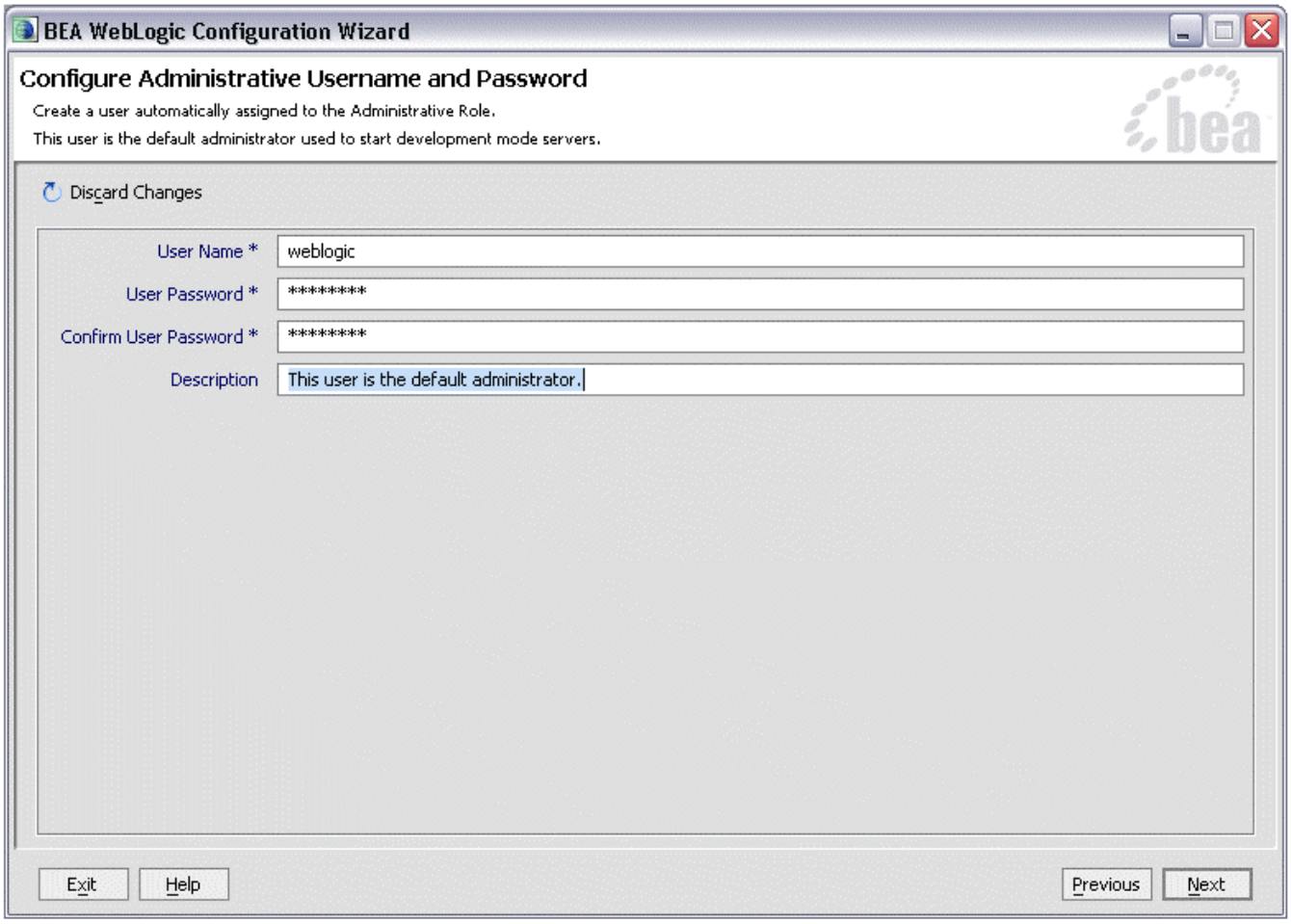

Figure 24: Configuring the administrative account

6. Enter values in the following fields as required:

Administrative account fields	
Field	**Description**
User Name	Administrator user name.
User Password	Administrator password.
Confirm User Password	Confirmation of administrator password.
Description	Administrative account description.

7. Click **Next.**

   The **Configure Server Start Mode and Java SDK** window appears.

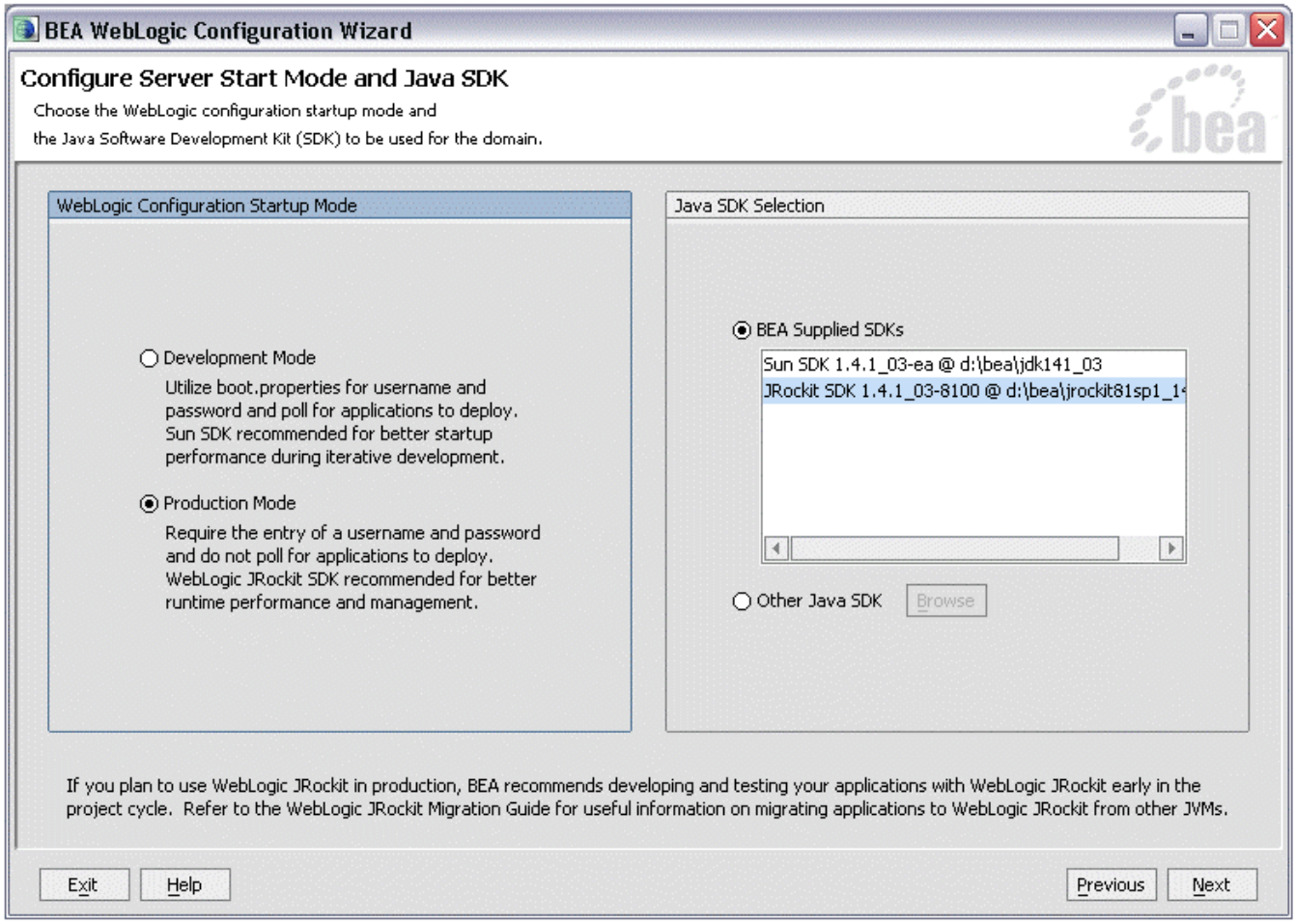

Figure 25: Configuring the server start mode and Java SDK

8. Select the required configuration startup mode and click **Next.**

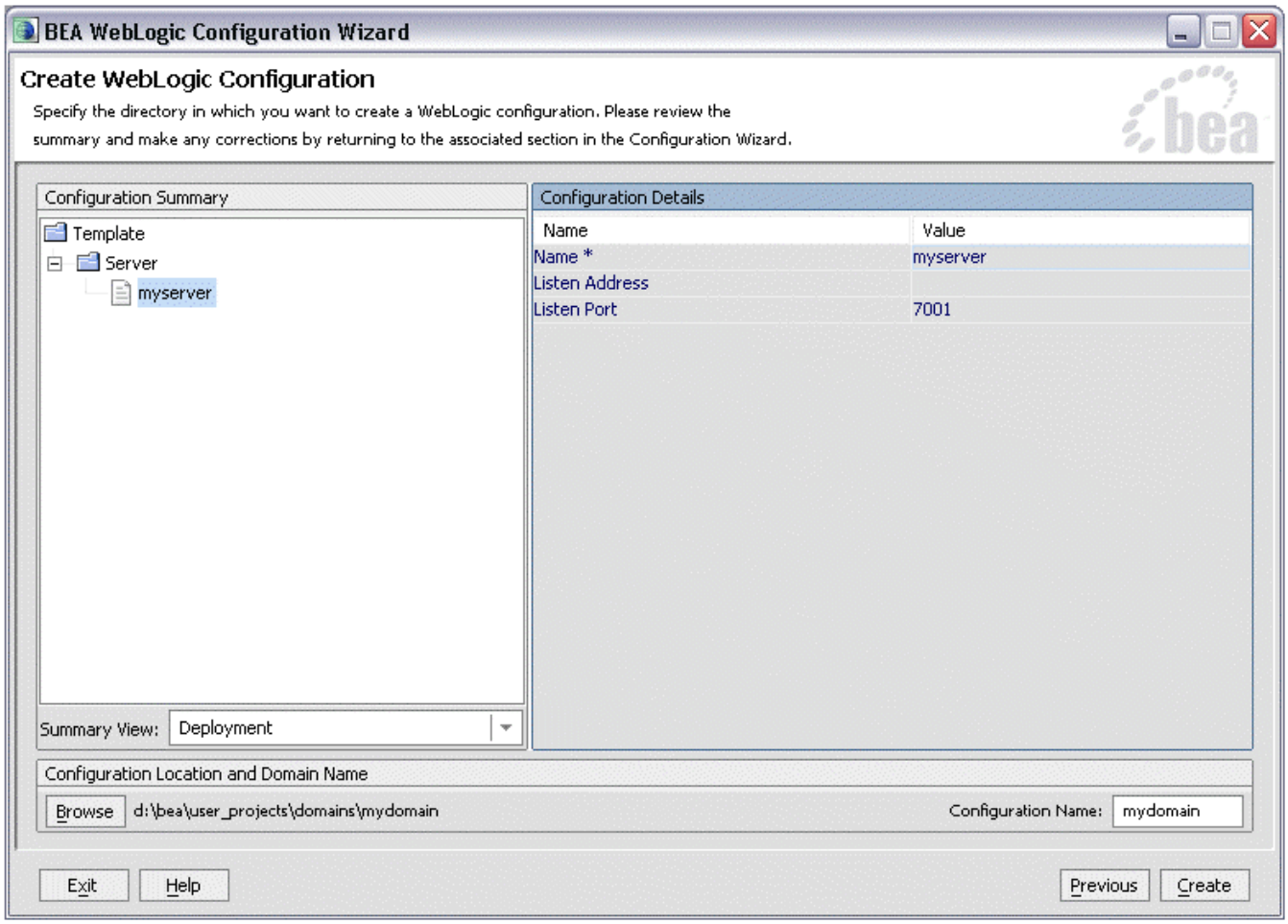

Figure 26: Creating the WebLogic configuration

9. In the tree, select your server and configure the server name, listen address, and port as required.
10. Click **Create.**

    The configuration creation process starts.
11. When the configuration is created, click **Done.**
12. Open the `config.xml` file located in the created domain directory.
13. In the `<Domain>` section, add the following record:

```
<Application

Name="VISICOM"

Path="D:\"

StagingMode="nostage"

TwoPhase="true">

<WebAppComponent
```

```
Name="VISICOM"

PreferWebInfClasses="true"

Targets="myserver" URI="VISICOM"/>

</Application>
```

14. Configure the `Path`, `Name`, and `URI` parameters as appropriate for your production environment.
15. Save and close the `config.xml` file.
16. To start the server, in the domain directory, perform one of the following tasks as required:
    - To start the server as a service, run the `installService.cmd` file.
    - To start the server manually, run the `startWebLogic.cmd` file.
17. Enter the administrator user name and password.
18. To test the configuration, in your Web browser address bar, enter the following address:

    `http://localhost:7001/VISICOM`

    If the server is configured correctly, the Exigen Workflow Web login window appears.

WebSphere 5.1 Application Server

This section describes how to configure the WebSphere 5.1 application server to run Exigen Workflow Web.

The following topics are described in this section:

Prerequisites

The following steps must be performed before configuring the application server:

- The WebSphere 5.1 application server must be installed.
- The Exigen Workflow Web for WebSphere component must be installed.

  The Exigen Workflow Web for WebSphere component is delivered as the `WorkflowWEBWebsphere.msi` installation package. It contains the `visicom.ear` file, which is used in the application server configuration.

Setting Up the Application Server

To configure the WebSphere application server to run Exigen Workflow Web, proceed as follows:

1. Start the WebSphere application server.
2. Open the WebSphere Administrative Console.
3. Enter the login name and click **OK.**

4. In the navigation tree, select **Applications > Install New Application.**
5. Select **Local file system** and, in the **Specify path** field, enter the path to the `visicom.ear` file.

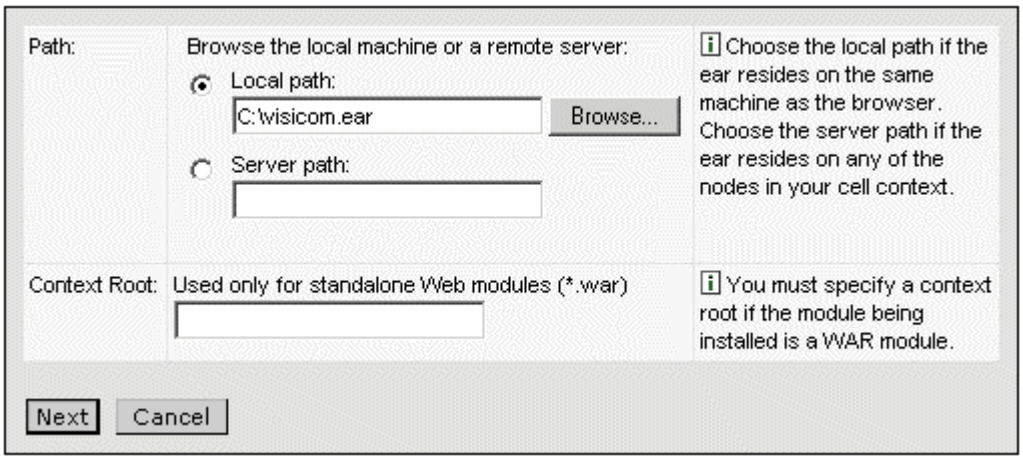

Figure 27: Selecting the visicom.ear file

6. Click **Next** twice.
7. In the **Application Name** field, enter *visicom*.

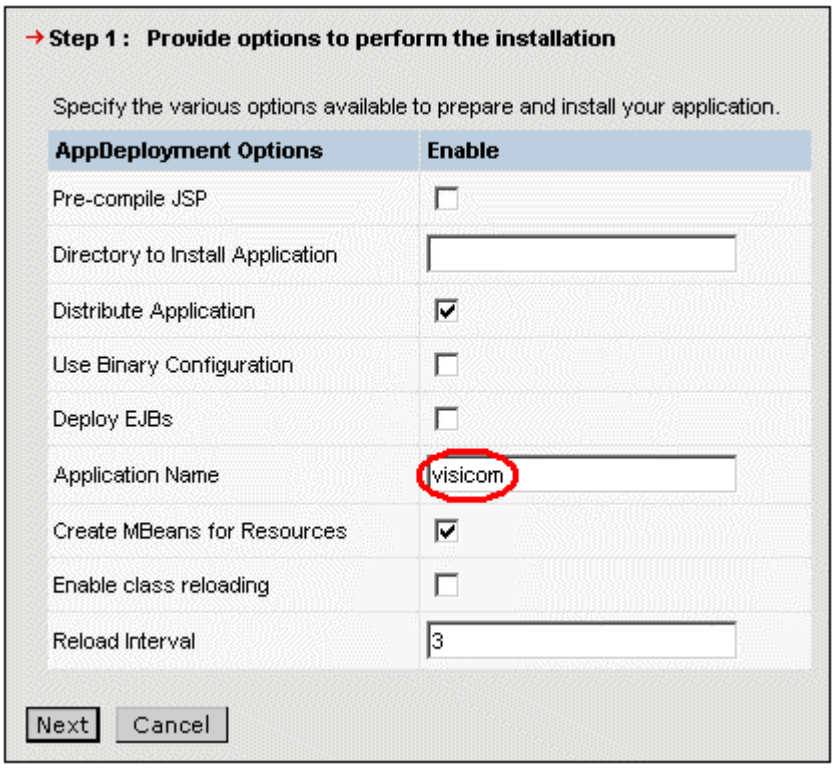

Figure 28: Changing the application name

8. Click **Next** three times.
9. Click **Finish.**

WebSphere installs the application.

10. When the application is installed successfully, click **Save to Master Configuration.**
11. In the **Save to Master Configuration** window, click **Save.**

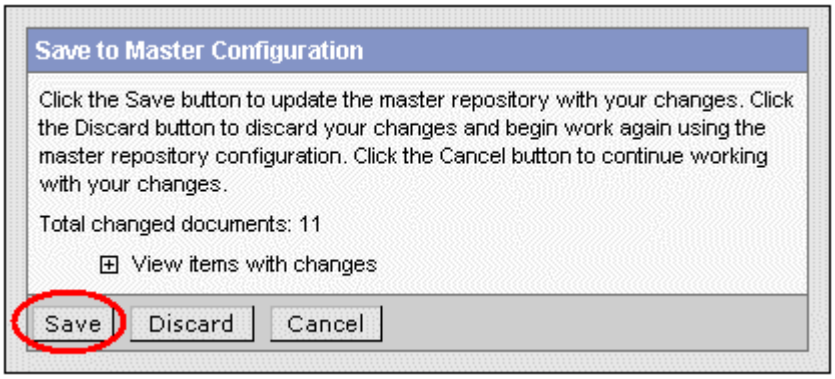

Figure 29: Saving changes to the master configuration

Do not click any buttons until the application is fully saved. The application is completely saved when the window contents are updated.

12. In the navigation tree, select **Applications > Enterprise Applications.**
13. In the **Enterprise Applications** window, click **visicom.**

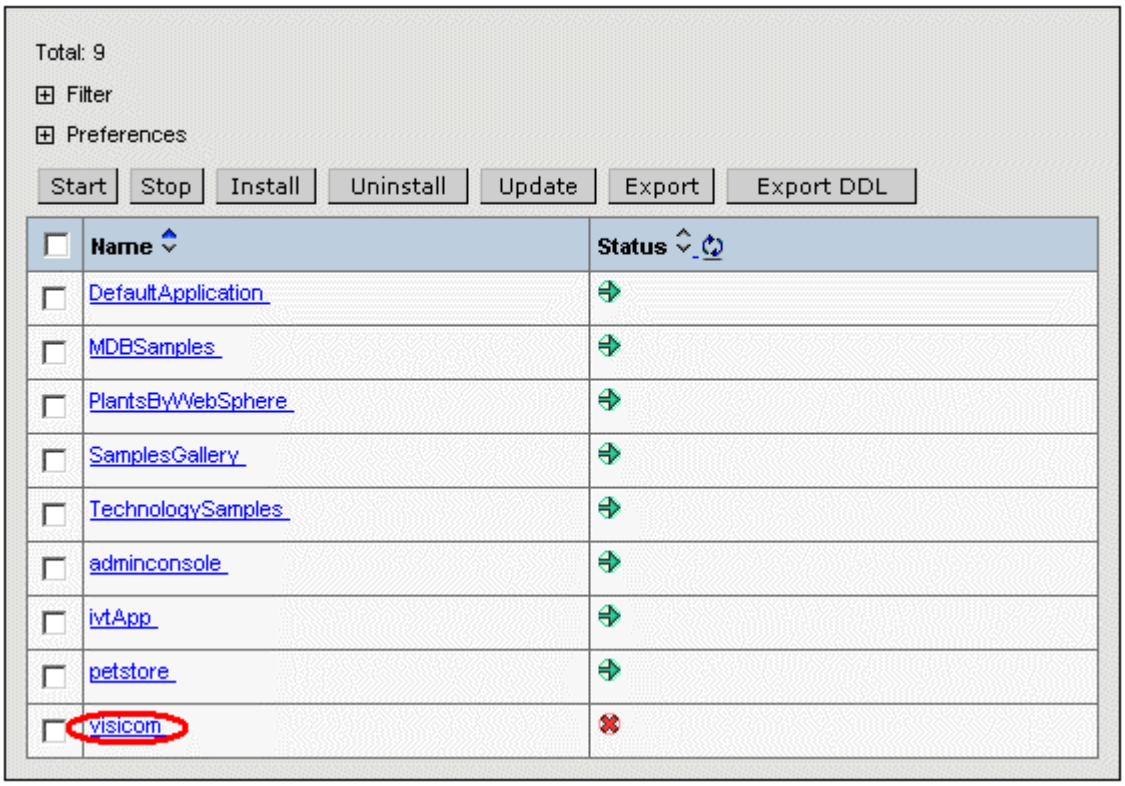

Figure 30: Viewing enterprise applications

14. In the **Additional Properties** list, click **Session management.**

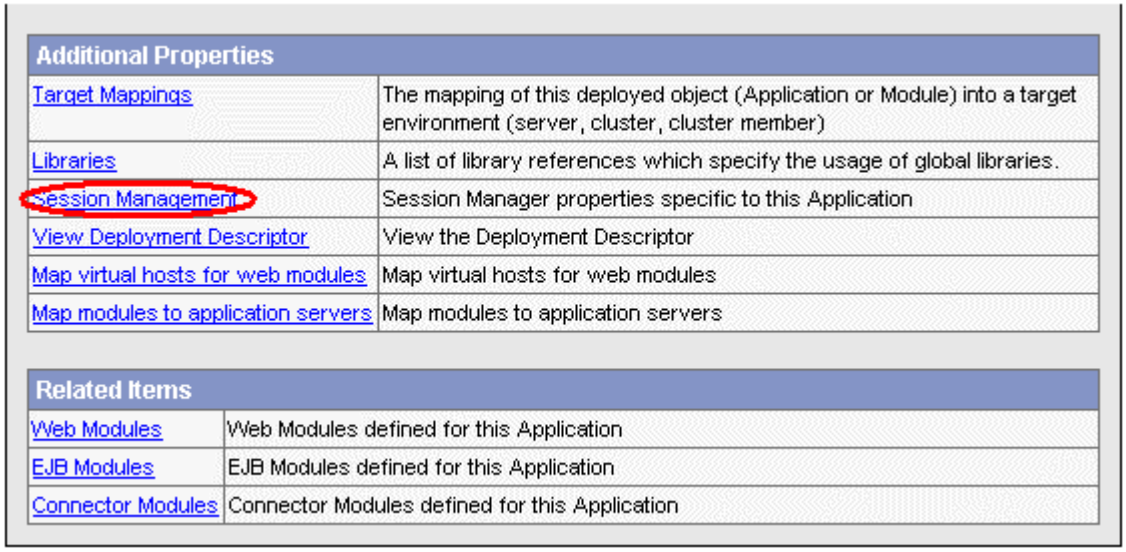

Figure 31: Configuring the application

15. Make the following changes to the configuration:
    - Select the **Override** check box.
    - Clear the **Enable Cookies** check box.
    - Select the **Enable URL Rewriting** check box.

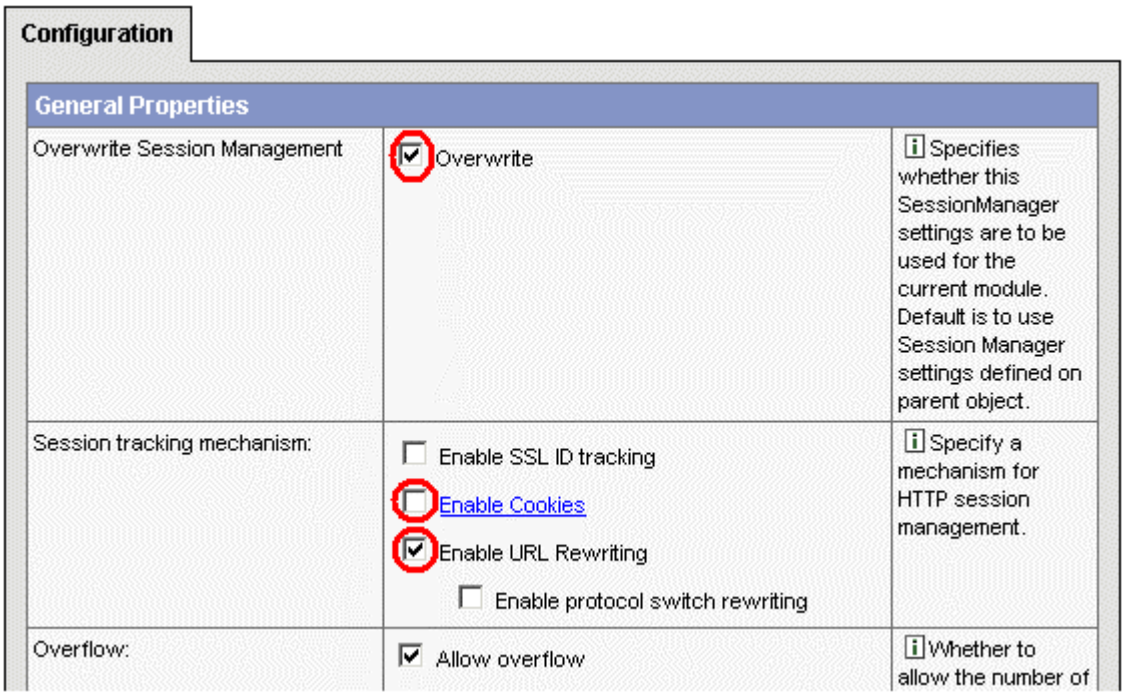

Figure 32: Configuring session settings

16. Click **OK.**

17. When the page is reloaded, click **Save.**

18. In the **Save to Master Configuration** window, click **Save.**

    Do not click any buttons until the application is fully saved. The application is completely saved when the window contents are updated.

19. In the **Enterprise Applications** window, click **visicom.**

20. Select the **Local Topology** tab and click **visicom.war.**

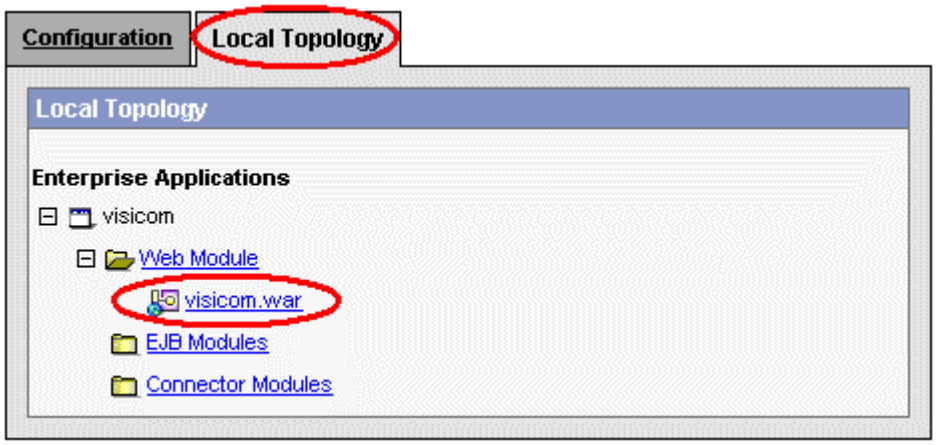

Figure 33: Selecting the visicom.war web module

21. In the **Classloader mode** list box, select **PARENT_LAST.**

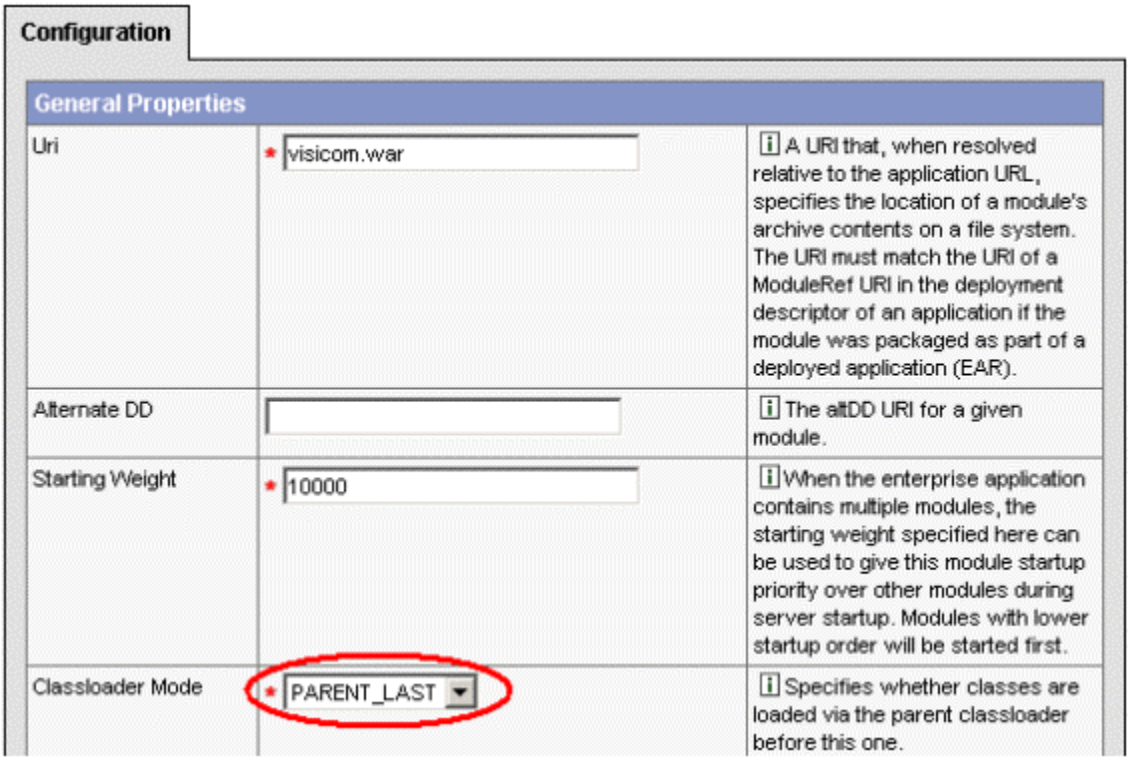

Figure 34: Selecting the class loader mode

22. Click **OK.**
23. Click **Save** twice.
24. Stop the WebSphere application server.
25. To register the `document.dll` file, at the command prompt, enter and execute the following command:

    ```
    regsvr32 "WebSphere\AppServer\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\Dll\document.dll"
    ```

    If it is required that the `document.dll` file must be upgraded, it must first be unregistered using the `regsvr32` command. After the upgrade, the file must be registered again.

26. To register the `dtmstg.dll` file, at the command prompt, execute the following command:

    ```
    regsvr32 "WebSphere\AppServer\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\Dll\dtmstg.dll"
    ```

    If it is required that the `dtmstg.dll` file must be upgraded, it must first be unregistered using the `regsvr32` command. After the upgrade, the file must be registered again.

27. Ensure that all DLL files required by Exigen Workflow Web are specified in the PATH environment variable.
28. Ensure that the `visicom.properties` file is located in the following directory:

    ```
    WebSphere\AppServer\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\Config
    ```

29. Delete the `commons-logging.jar` file from the following directory:

    ```
    WebSphere\AppServer\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\lib
    ```

30. Start the WebSphere application server.
31. To test Exigen Workflow Web, in the web browser's address bar, enter the following address:

    http://localhost:9080/visicom

    If everything is configured correctly, the Exigen Workflow Web login page appears.

WebSphere 6.0 Application Server

This section describes how to configure the WebSphere 6.0 application server to run Exigen Workflow Web.

The following topics are described in this section:

Prerequisites

The following steps must be performed before configuring the application server:

- The WebSphere 6.0 application server must be installed.
- The Exigen Workflow Web for WebSphere component must be installed.

  The Exigen Workflow Web for WebSphere component is delivered as the `WorkflowWEBWebsphere.msi` installation package. It contains the `visicom.ear` file, which is used in the application server configuration.

Setting Up the Application Server

To configure the WebSphere application server to run Exigen Workflow Web, proceed as follows:

1. Start the WebSphere application server.
2. Open the WebSphere Administrative Console.
3. Enter the login name and click **OK.**
4. In the navigation tree, select **Applications > Install New Application.**
5. Select **Local file system** and, in the **Specify path** field, enter the path to the `visicom.ear` file.

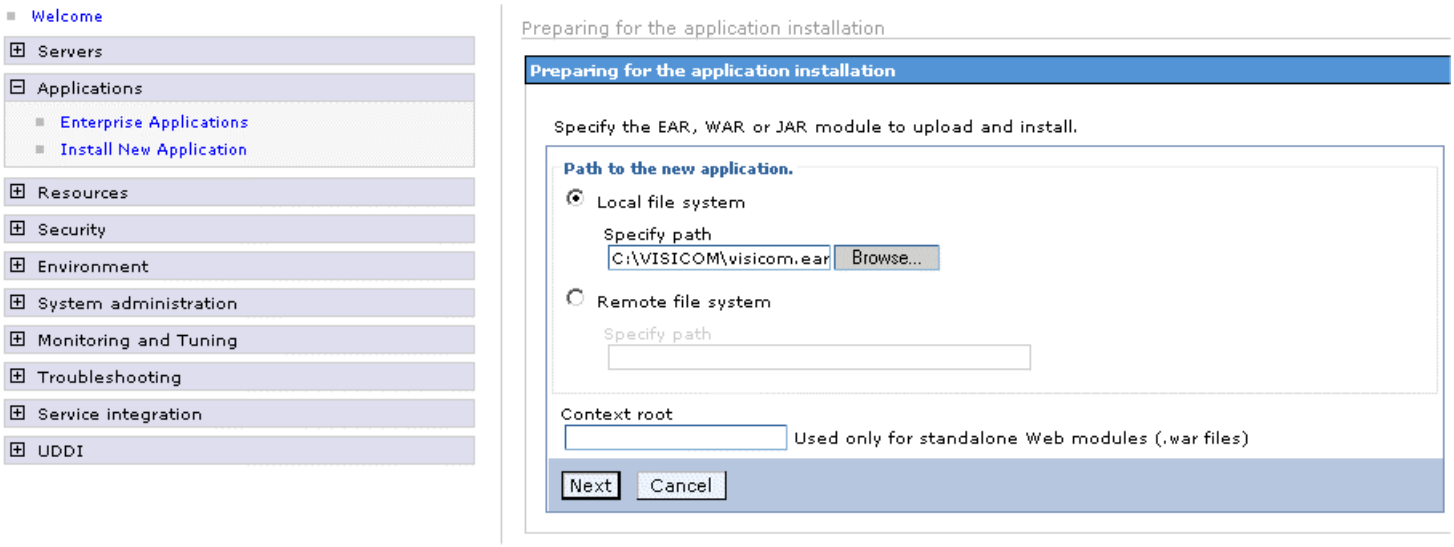

Figure 35: Selecting the visicom.ear file

6. Click **Next** twice.
7. In the **Application name** field, enter *visicom*.

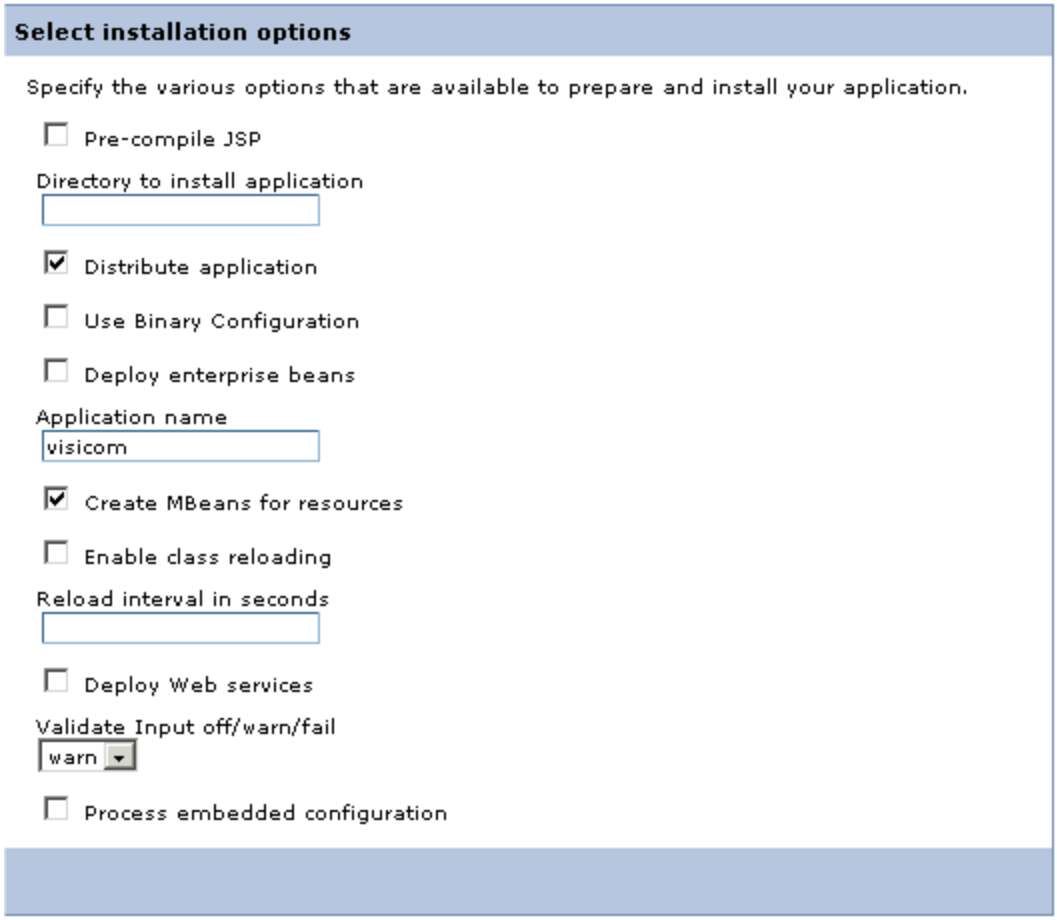

Figure 36: Changing the application name

8. Click **Next** three times.
9. Click **Finish.**

   WebSphere installs the application.
10. When the application is installed successfully, click **Save to Master Configuration.**
11. In the **Save** window, click **Save.**

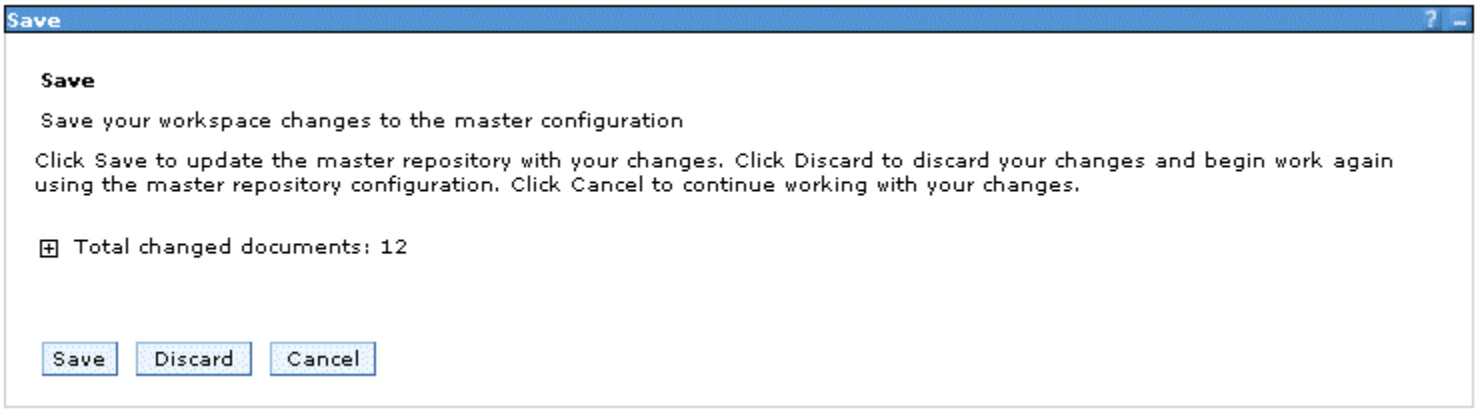

Figure 37: Saving changes to the master configuration

Do not click any buttons until the application is fully saved. The application is completely saved when the window contents are updated.

12. In the navigation tree, select **Applications > Enterprise Applications.**
13. In the **Enterprise Applications** window, click **visicom.**

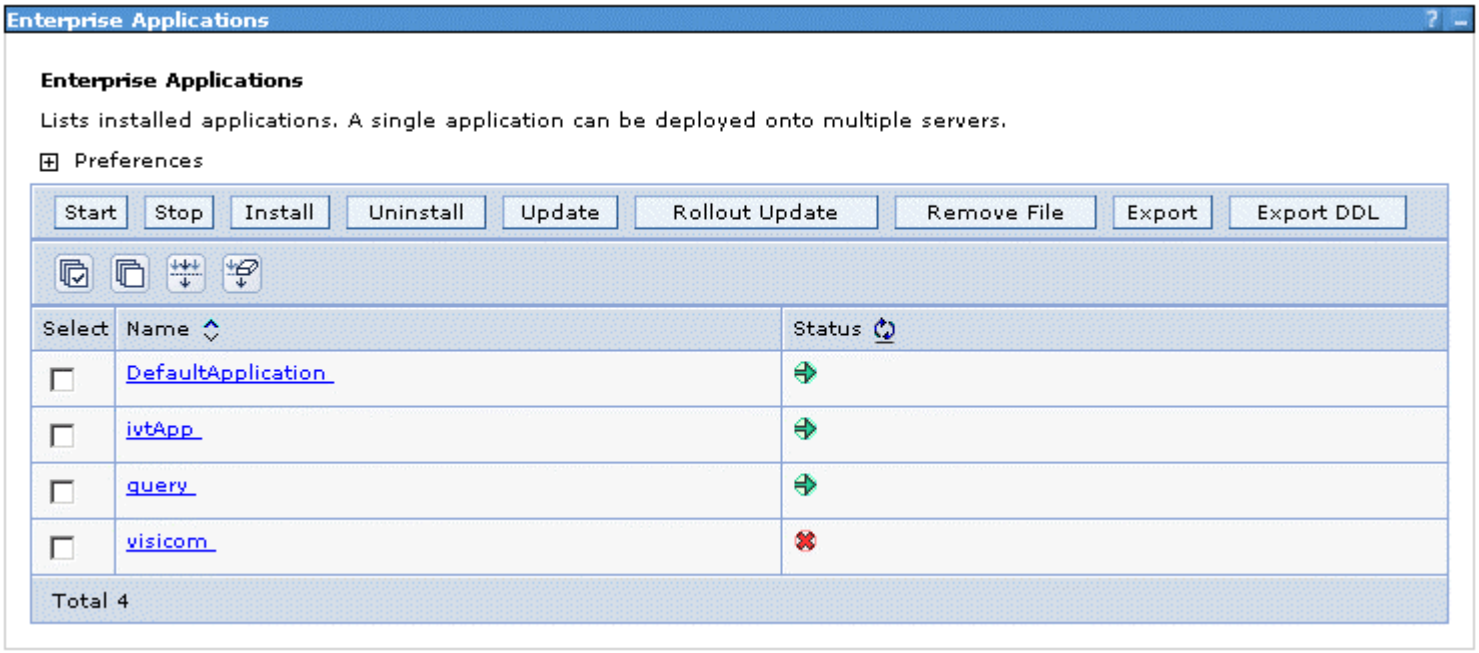

Figure 38: Viewing enterprise applications

14. In the **Additional Properties** list, click **Session management.**

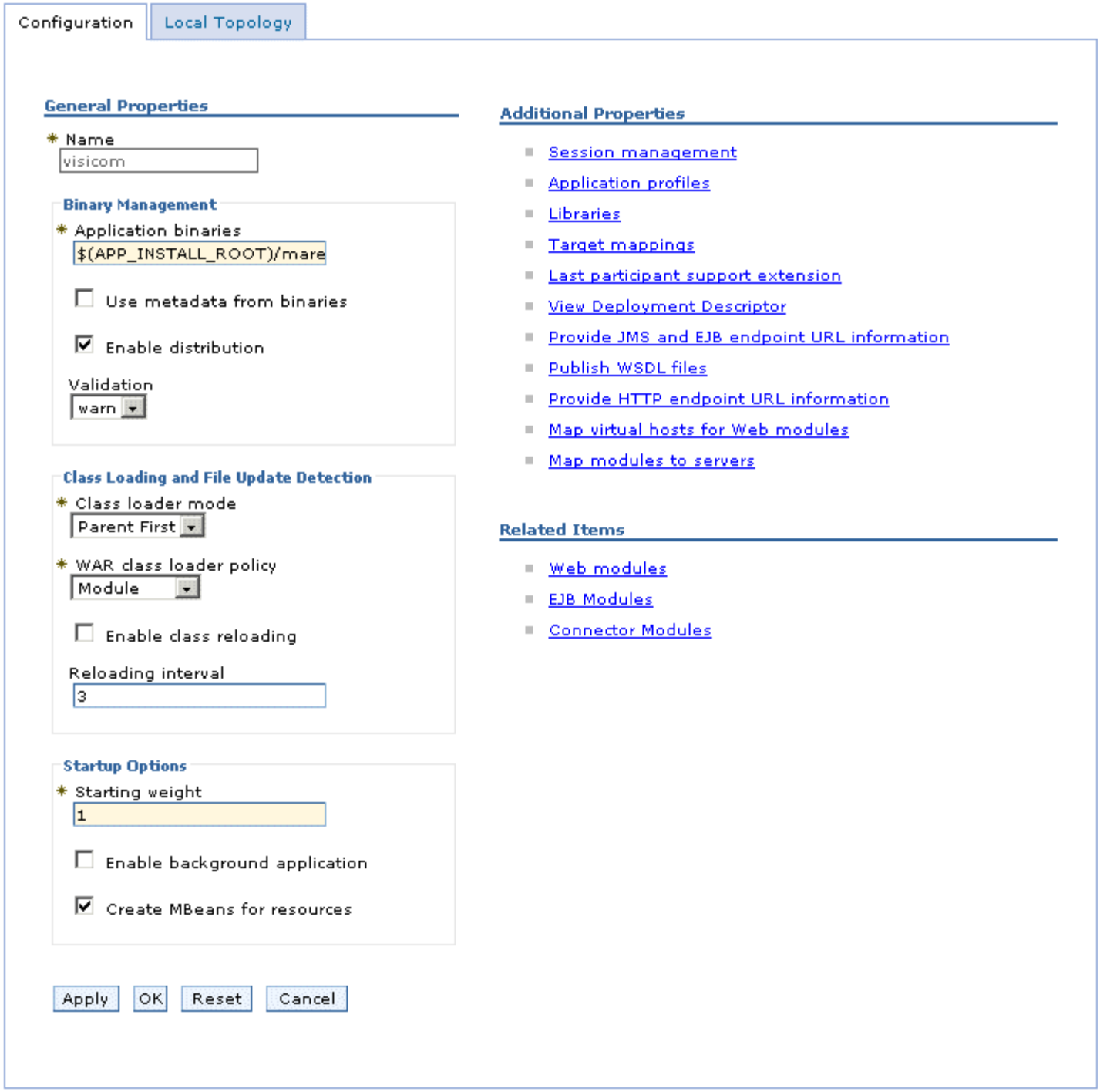

Figure 39: Configuring the application

15. Make the following changes to the configuration:
    - Select the **Override session management** check box.
    - Clear the **Enable cookies** check box.
    - Select the **Enable URL rewriting** check box.

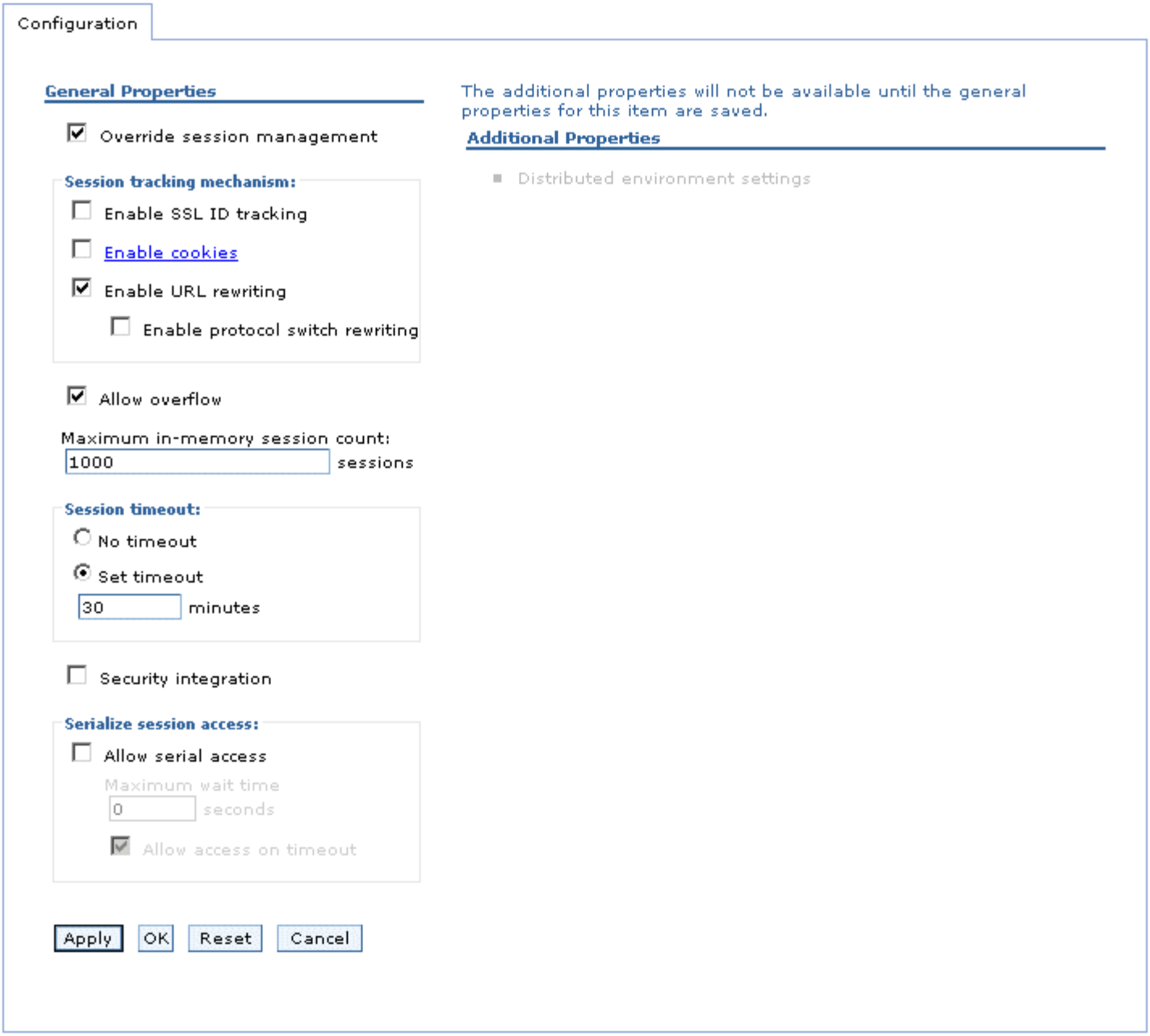

Figure 40: Configuring session settings

16. Click **OK.**
17. When the page is reloaded, click **Save.**
18. In the **Enterprise Applications** window, click **Save.**

    Do not click any buttons until the application is fully saved. The application is completely saved when the window contents are updated.

19. In the **Enterprise Applications** window, click **visicom.**
20. Select the **Local Topology** tab and click **visicom.war.**

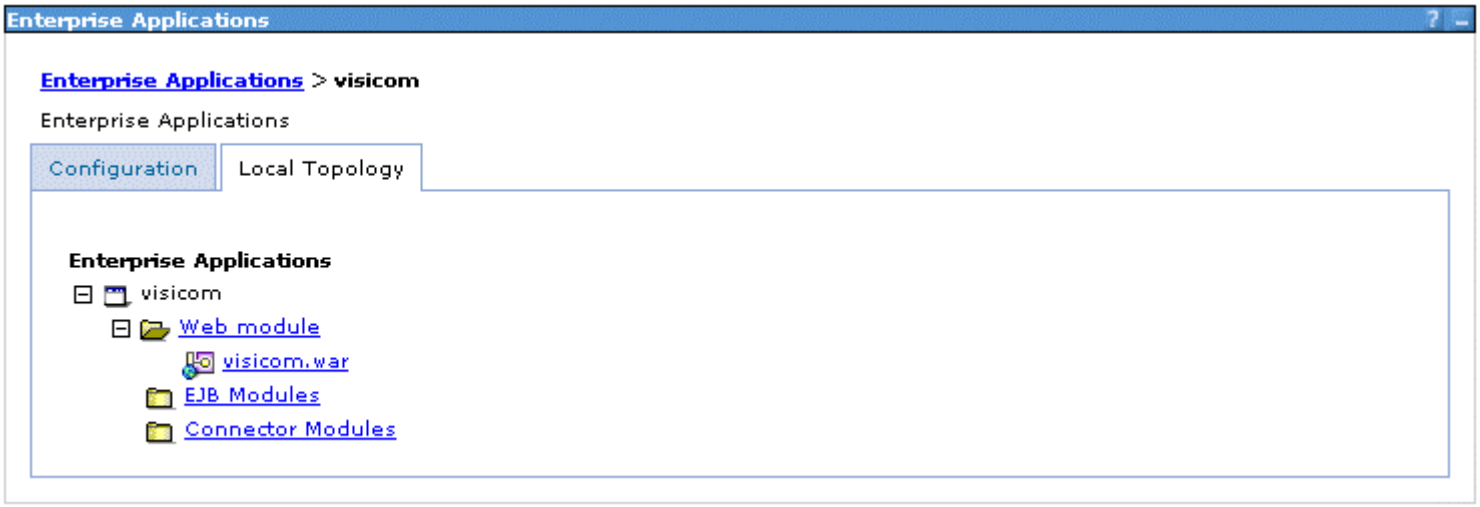

Figure 41: Selecting the visicom.war web module

21. In the **Class loader mode** list box, select **PARENT_LAST.**

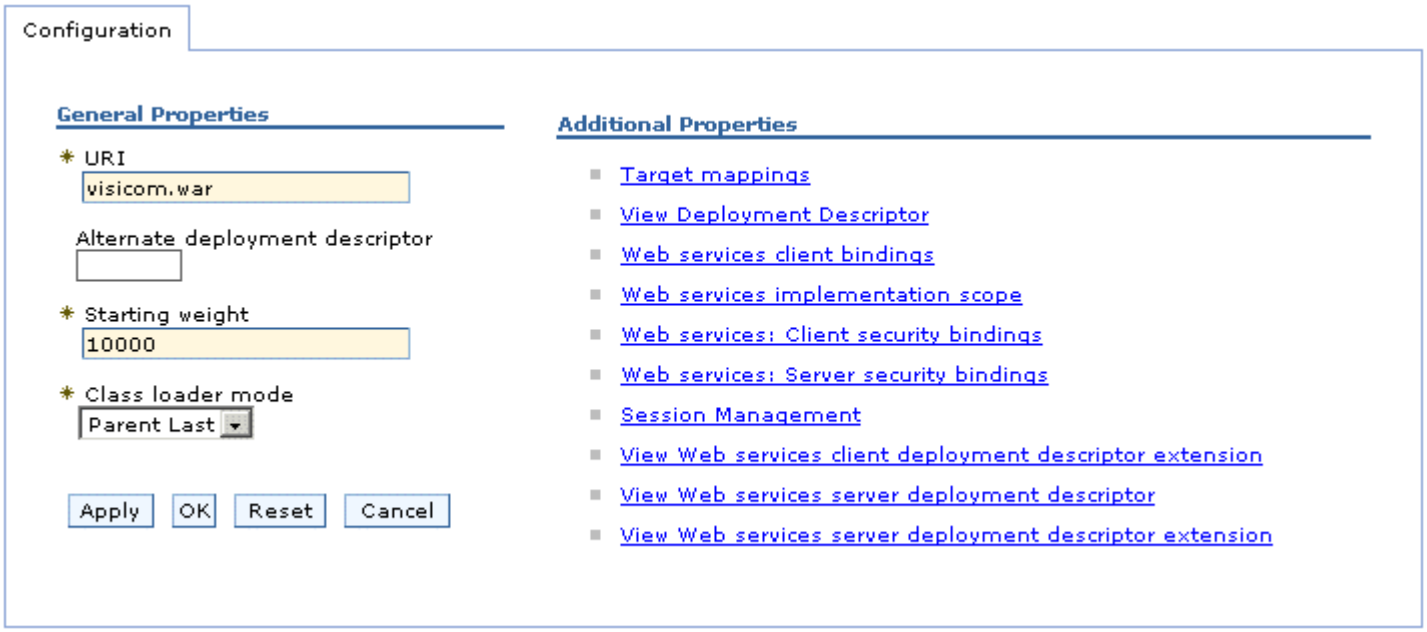

Figure 42: Selecting the class loader mode

22. Click **OK.**
23. Click **Save** twice.
24. Stop the WebSphere application server.
25. To register the `document.dll` file, at the command prompt, enter and execute the following command:

```
regsvr32 "WebSphere\AppServer\installedApps\<your server
name>\visicom.ear\visicom.war\WEB-INF\Dll\document.dll"
```

If it is required that the `document.dll` file must be upgraded, it must first be unregistered using the `regsvr32` command. After the upgrade, the file must be registered again.

26. To register the `dtmstg.dll` file, at the command prompt, execute the following command:

    ```
    regsvr32 "WebSphere\AppServer\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\Dll\dtmstg.dll"
    ```

    If it is required that the `dtmstg.dll` file must be upgraded, it must first be unregistered using the `regsvr32` command. After the upgrade, the file must be registered again.

27. Ensure that all DLL files required by Exigen Workflow Web are specified in the PATH environment variable.
28. Ensure that the `visicom.properties` file is located in the following directory:

    ```
    WebSphere\AppServer\profiles\default\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\Config
    ```

29. Delete the `commons-logging.jar` file from the following directory:

    ```
    WebSphere\AppServer\profiles\default\installedApps\<your server
    name>\visicom.ear\visicom.war\WEB-INF\lib
    ```

30. Start the WebSphere application server.
31. To test Exigen Workflow Web, in the web browser's address bar, enter the following address:

    http://localhost:9080/visicom

    If everything is configured correctly, the Exigen Workflow Web login page appears.

Using the Exigen Workflow Web Configuration Page

The main Exigen Workflow Web server configuration parameters are stored in the `visicom.properties` file located in the `VISICOM\WEB-INF\Config` directory. Parameters in this file are configured using the Exigen Workflow Web configuration page.

This section describes only the basic steps for configuring Exigen Workflow Web using the Exigen Workflow Web configuration page. For full information on using the Exigen Workflow Web configuration page, see *Exigen Workflow Web Administrator's Guide,* Chapter 9: Configuring an Exigen Workflow Web Session.

To configure Exigen Workflow Web, proceed as follows:

1. Start the application server.
2. Open your web browser and enter the following address in the address bar:

    ```
    http://<host name>:<port number>/VISICOM/Config/VisiConfig.jsp
    ```

    The Exigen Workflow Web configuration page appears.

3. In the list, select the database or define a new one.

4. Specify the JDBC connection URL.

   The URL depends on the JDBC driver selected. You must follow the URL specification rules described in your JDBC driver documentation.

5. Specify the JDBC driver.

   The JDBC driver depends on the selected database brand. For information on the selected DB Brand, see the database and application server documentation.

6. Specify the user name and password for the master database.
7. If necessary, specify the required Exigen Workflow Web settings as described in *Exigen Workflow Web Administrator's Guide,* Chapter 9: Configuring an Exigen Workflow Web Session.
8. Click **Apply Settings.**
9. Restart the application server.
10. Test the master database connection.

It is recommended to restrict access to the Exigen Workflow Web configuration page either by IP address or by using another method. For information on restricting access to Exigen Workflow Web configuration page, see your application server documentation.

Note: Not all Exigen Workflow Web settings are available in the configuration page. Several parameters can be modified only by editing the `visicom.properties` file manually. For information about the `visicom.properties` file, see *Exigen Workflow Web Administrator's Guide,* Chapter 9: Configuring an Exigen Workflow Web Session.

Using the Proxy Server

If the business environment uses a proxy server to access Exigen Workflow Web, add the following parameters in the `visicom.properties` file located in the `VISICOM\WEB-INF\Config` directory:

Proxy server parameters in the `visicom.properties` file	
Parameter	**Description**
VISICOM_EXTERNAL_HOST	Proxy server name.
VISICOM_EXTERNAL_PATH	Path of the proxy server.
VISICOM_EXTERNAL_PORT	Proxy server port.
VISICOM_EXTERNAL_PROTOCOL	Protocol used to access the proxy server.

The following example shows how to implement these parameters in the `visicom.properties` file:

```
#Workflow working with proxy

VISICOM_EXTERNAL_HOST=proxy

VISICOM_EXTERNAL_PATH=path1

VISICOM_EXTERNAL_PORT=443
```

```
VISICOM_EXTERNAL_PROTOCOL=https
```

Running Exigen Workflow Web

To run Exigen Workflow Web, proceed as follows:

1. Start the application server.
2. Open the web browser and enter the corresponding URL in the address bar:

   ```
   http://<host name>:<port number>/VISICOM/VisiLogin.jsp
   ```

   The Exigen Workflow Web login page appears.

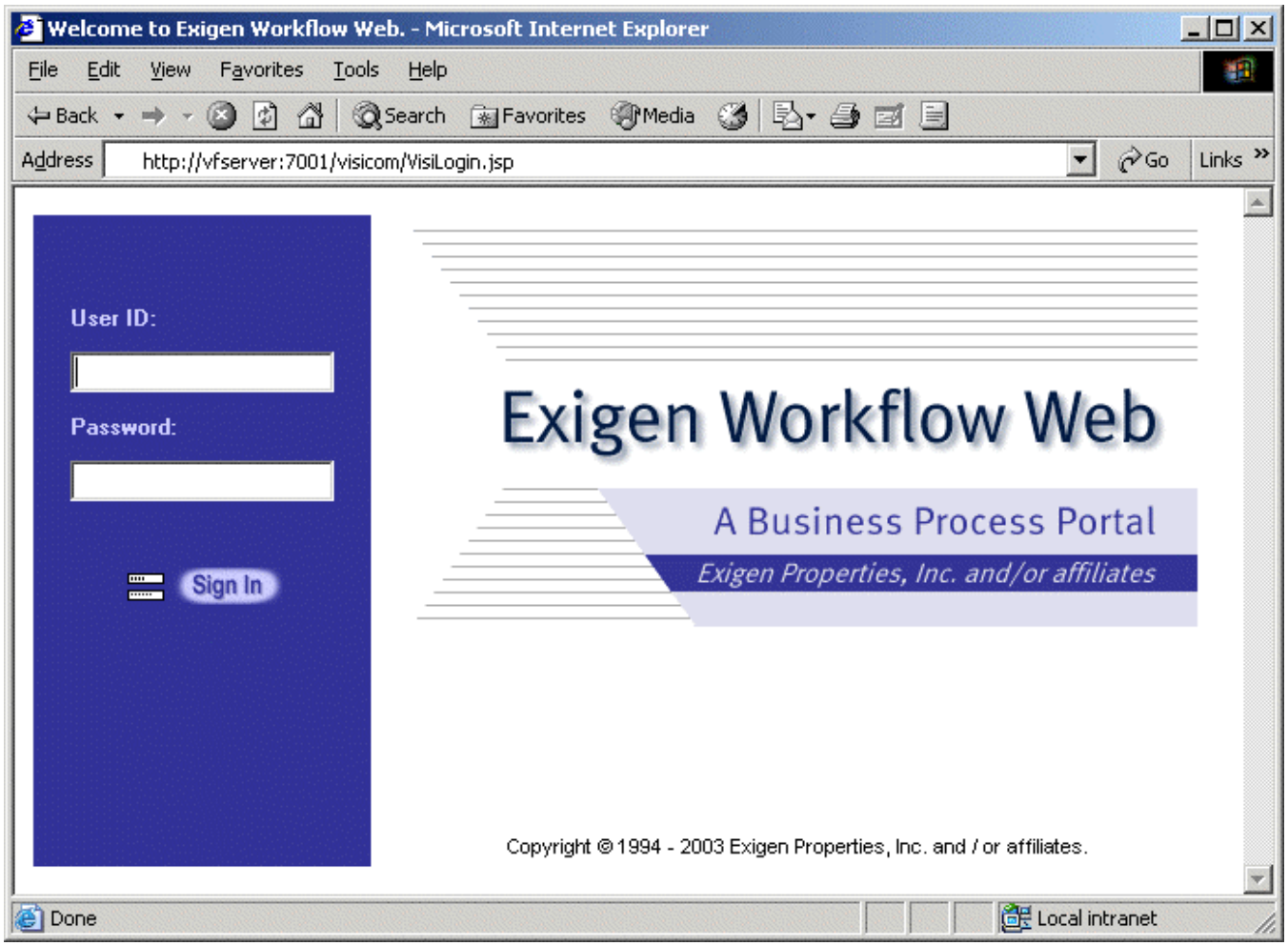

Figure 43: Exigen Workflow Web login page

Chapter 5: Integrating Exigen Workflow with Other Exigen Products

This section describes the following topics:

Integrating Exigen Workflow with Exigen E-Forms

Exigen Workflow enables integration with Exigen E-Forms. The integration allows viewing, creating, and editing electronic forms from within Exigen Workflow.

Note: You must have administrator rights to perform this operation.

To integrate Exigen Workflow with Exigen E-Forms, proceed as follows:

1. Make sure that the JDBC settings of your database are correct.

   This applies only to Exigen Workflow Web. JDBC settings can be modified in the Exigen Workflow Web configuration page. For information on configuring Exigen Workflow Web, see Using the Exigen Workflow Web Configuration Page.

2. In Exigen Workflow, in **Database Tools,** start **Project Builder.**
3. In the menu of the project in which you want to use Exigen E-Forms, select **Project > Create E-Forms Tables.**
4. To perform actions with Exigen E-Forms from within Exigen Workflow, in the Workflow Builder, create a queue node for a workflow in which you want to use Exigen E-Forms.
5. In the **E-Forms** tab, specify the actions to be performed with the forms.

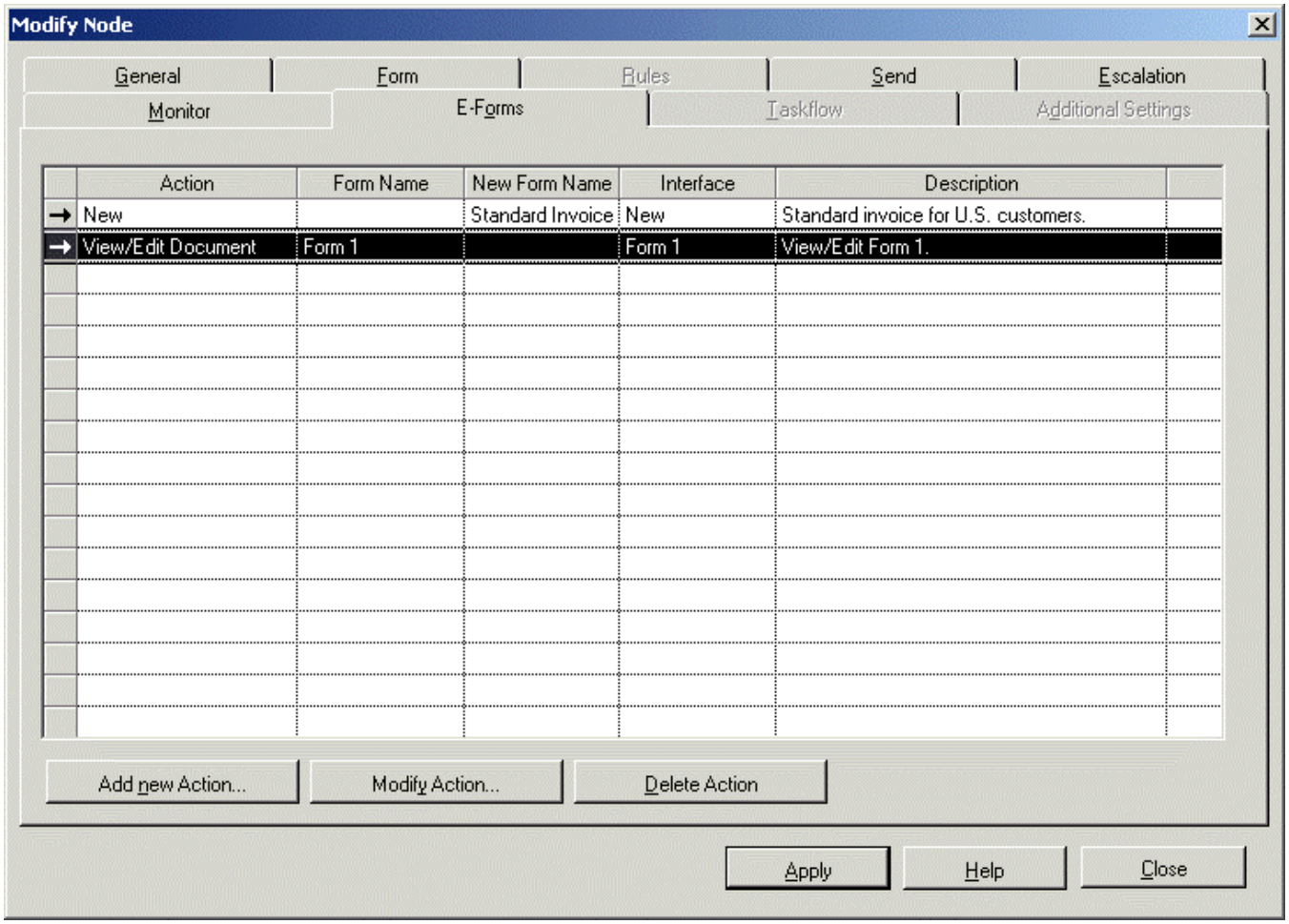

Figure 44: Modify Node window: E-Form tab

6. To add a new action, click **Add new Action.**

   The **Action** window appears.

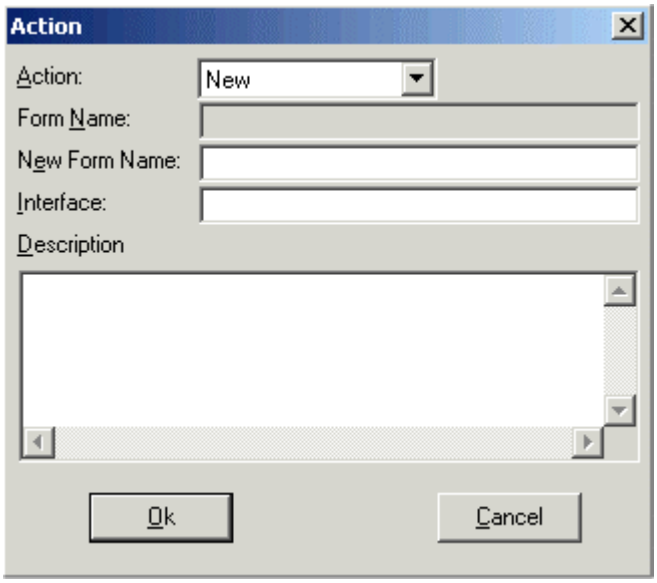

Figure 45: Action window

7. In the **Action** list box, select an action.
8. Enter the form name and interface name.
9. Enter a description if appropriate.

   The description is optional.
10. Click **OK.**
11. To modify existing actions, click **Modify Action.**
12. To delete an action, click **Delete Action.**
13. To specify the path to Exigen E-Forms server in Exigen Workflow, start Project Builder.
14. For the project in which to use Exigen E-Forms, select **Project > Project Configuration.**

    The **Project Configuration** page appears.
15. Select the **E-Forms** tab.

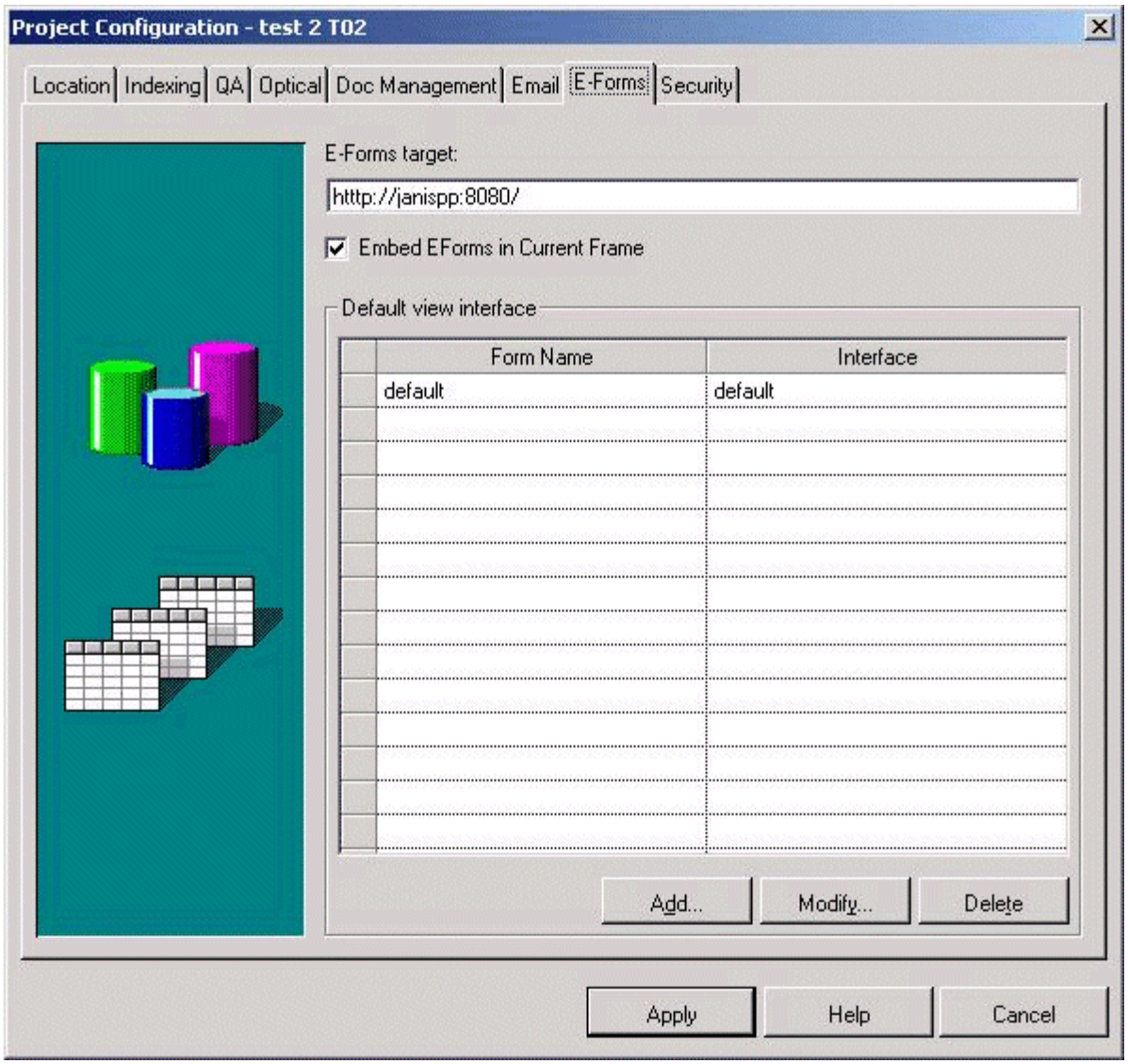

Figure 46: Project Configuration page: E-Forms tab

16. In the **E-Forms target** field, enter the path to your Exigen E-Forms server.
17. Click **Apply.**

    New Exigen E-Forms buttons are now available, when you select a queue from a workflow of the configured project depending on the selected Exigen E-Forms actions.

    The following figure shows an Exigen Workflow Web node with a **New Form** button.

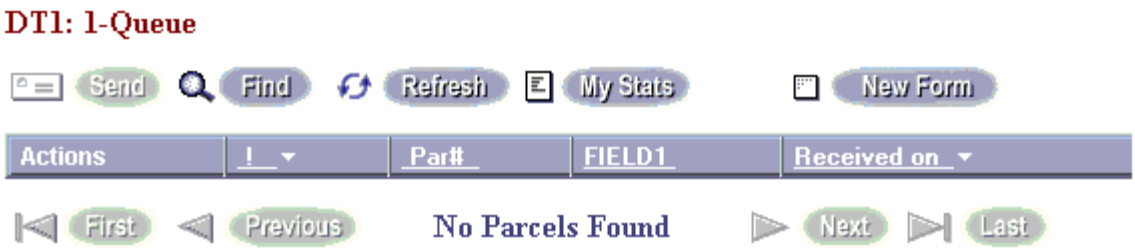

Figure 47: New Form button

Integrating Exigen Workflow with Exigen E-Mail

This section describes how to integrate Exigen Workflow with Exigen E-Mail.

The Exigen Workflow integration with Exigen E-Mail enables users to send Exigen E-Mail documents to Exigen Workflow and import them as documents in parcels. After a successful integration, Exigen E-Mail documents can be accessed and viewed in Exigen Workflow in the following workflow nodes:

- Queue
- Retrieve
- Inspect
- Work Item Submitter
- Low Volume Scan
- High Volume Scan
- High Volume Index

To integrate Exigen E-Mail with Exigen Workflow, proceed as follows:

1. In the Exigen Workflow project that uses Exigen E-Mail documents, in the DOCUMENT table, create a custom integer field called A_EMAIL_ID.

   For information on creating custom table fields, see *Exigen Workflow Administrator's Guide, Part I*.

2. In Workflow Explorer, open the **Administrator** utility.
3. Select **Administrator > Exigen E-Mail Settings.**

   The **Exigen E-Mail Settings** window appears.

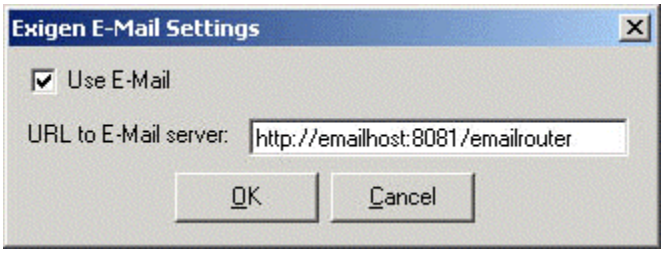

Figure 48: Enabling Exigen E-Mail in Exigen Workflow Client/Server

4. Select the **Use E-Mail** check box.
5. In the **URL to E-Mail server** field, enter the address to your Exigen E-Mail server, which contains the following parameters:
   - protocol
   - host name
   - port
   - path to the Exigen E-Mail server

   The following is an example of the Exigen E-Mail server URL:

   ```
   http://email_host:8081/emailrouter
   ```
6. Click **OK.**

Chapter 6: Installing Remote Storage Server

This section describes how to install and configure Remote Storage Server.

The following topics are described in this section:

Remote Storage Server Overview

Remote Storage Server is an application that provides access to Exigen Workflow documents on a remote location. It also complements the security model within the Exigen Workflow environment.

Remote Storage Server provides restricted access to document files. When Remote Storage Server is configured, the clients can access document files only through the Exigen Workflow system and not through file sharing.

Remote Storage Server can be started either in console mode or in service mode. Console mode is used for troubleshooting or in special configuration environments. Generally, in a production environment, Remote Storage Server must be configured to run as a Windows service.

For optimal performance, it is recommended to install Remote Storage Server on the same workstation where the file server is stored.

Remote Storage Server uses the standard Remote Procedure Call (RPC) mechanism for network communications. For information on RPC, see the following web pages:

- http://www.microsoft.com/technet/prodtechnol/windowsserver2003/library/TechRef/4dbc4c95-935b-4617-b4f8-20fc947c7288.mspx
- http://support.microsoft.com/default.aspx?scid=kb;en-us;154596

The main service that Remote Storage Server uses is the RPC Endpoint Mapper. This service uses the following ports:

- TCP 135
- UDP 135

Installing Remote Storage Server on the Server

This section describes how to install and configure Remote Storage Server on the file server.

Prerequisite: The Remote Storage Server component must be installed from the Exigen Workflow installation CD.

After installing Remote Storage Server, the following files are located in the `VISIFLOW\RSS\Server` directory:

- `rss.exe`
- `rssmsg.dll`

To install Remote Storage Server, proceed as follows:

1. To configure Remote Storage Server registry entries, launch the Registry editor.
2. Open the following registry section:

   `HKEY_LOCAL_MACHINE/SOFTWARE/Exigen/RSS/CurrentVersion/RSS Server`

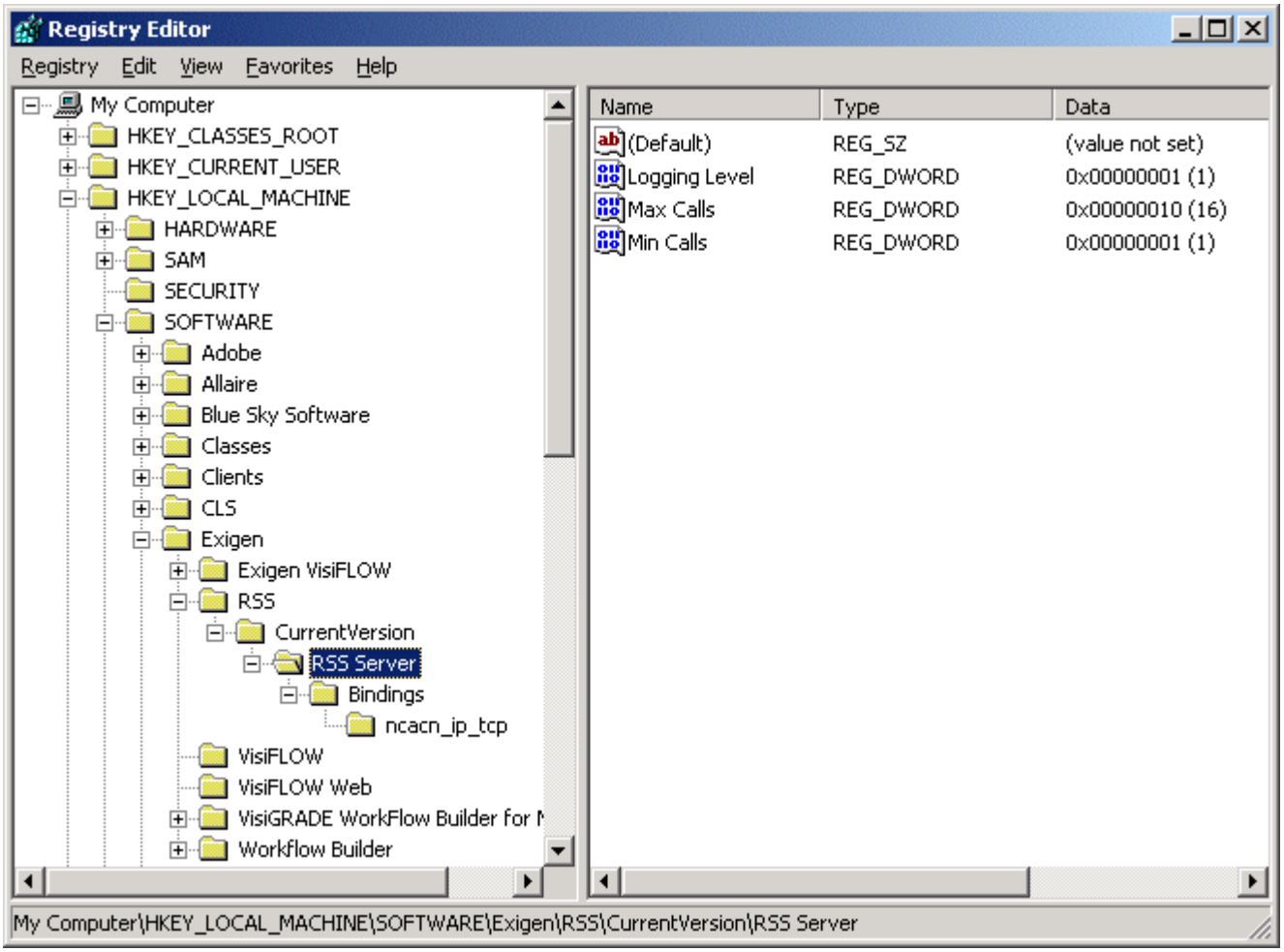

Figure 49: Remote Storage Server registry settings

   The `Bindings` section contains communication protocols. The TCP/IP protocol is added to the `Bindings` section during installation.

3. To use a different protocol, in the `Bindings` section, add a corresponding protocol key.

   The following table lists supported protocols:

Supported protocols	
Protocol	**Protocol key**
TCP/IP based protocol	ncacn_ip_tcp
HTTP based protocol	ncacn_http
Named Pipes based protocol	ncacn_np
SPX based protocol	ncacn_spx
Local RPC based protocol	ncalrpc

4. To configure Remote Storage Server, modify the following registry entries as required:

Remote Storage Server registry entries	
Registry entry	**Description**
`Min calls`	Minimum calls according to the number of users. The default value is 0000000.
`Max calls`	Maximum number of open threads.
`Audit Log Directory`	Directory in which the log is created. An example of an audit log directory is `c:\\rss\\logs`. This entry is optional.
`Logging Level`	Logging level. Possible values for this parameter are from 0 to 4 as follows: • Value 0 produces no logging. • Value 4 enables complete logging. • Value 1 is recommended for production because it logs only critical errors.

5. If Remote Storage Server is run as a service, to configure the Remote Storage Server logon account, proceed as follows:
   - Select **Start > Settings > Control Panel > Administrative Tools > Services.**
   - Right-click **Exigen Remote Storage Server** and select **Properties.**
   - Select the **Log On** tab.
   - Select **This account.**
   - Specify the account that has access to the remote file system.

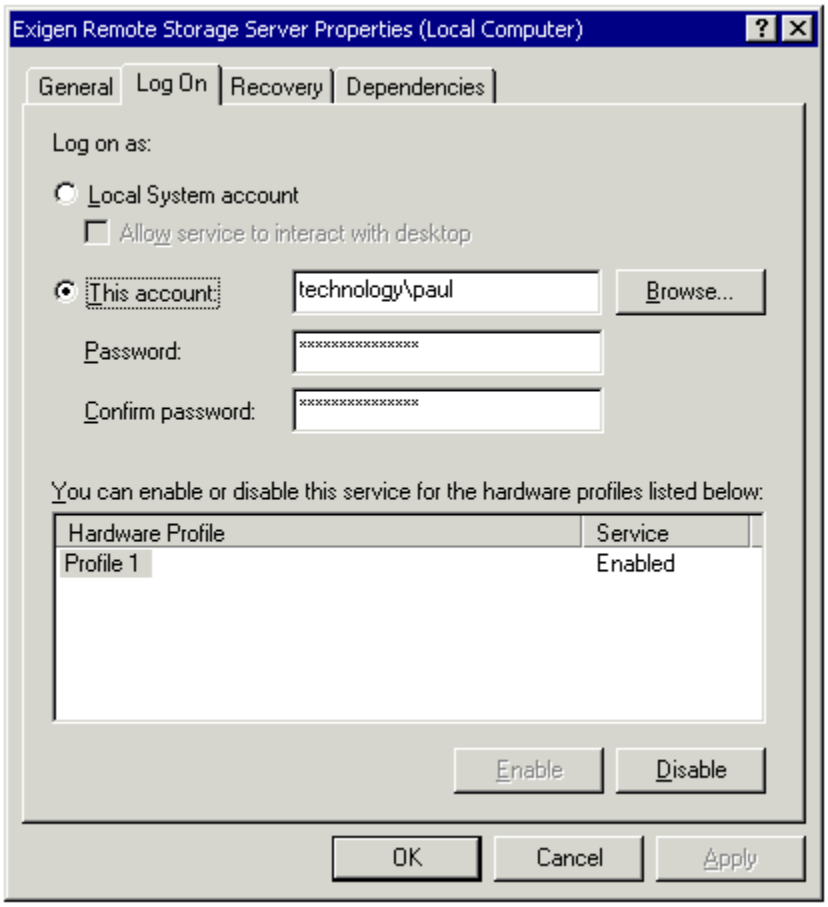

Figure 50: Configuring the Remote Storage Server logon account

6. Launch Remote Storage Server using one of the following methods:
   - To start Remote Storage Server as a service, perform one of the following actions:
     - Select **Start > Settings > Control Panel > Administrative Tools > Services** and start **Exigen Remote Storage Server.**

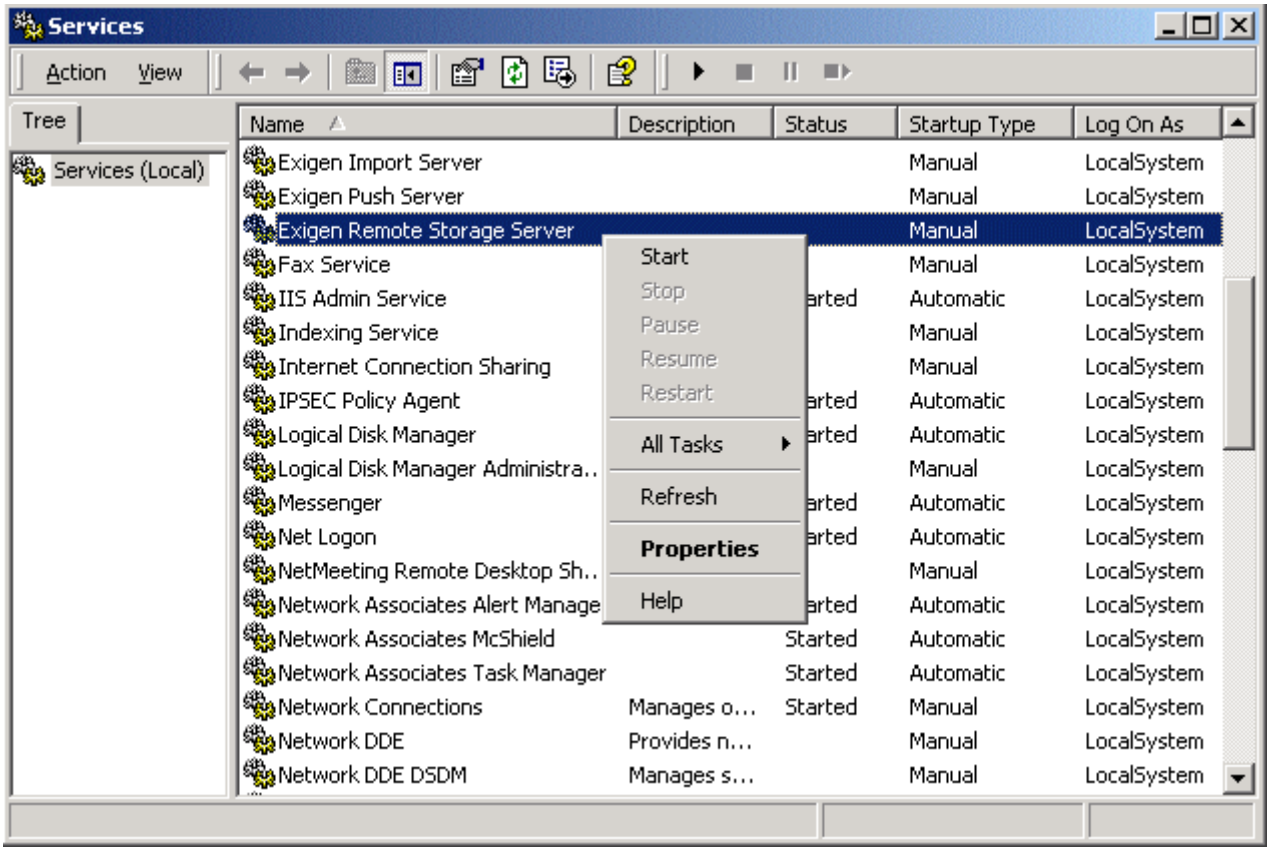

Figure 51: Launching Remote Storage Server as a service

- At the command prompt, execute the following command:
  `net start rsserver`

- To start Remote Storage Server in a console mode, launch the `rss.exe` file located in the `VISIFLOW\RSS\Server` directory.

Installing Remote Storage Server on the Client

This section describes how to install Remote Storage Server on the client. A workstation can be a server and a client simultaneously.

Prerequisite: The Remote Storage Server component must be installed from the Exigen Workflow installation CD.

To install Remote Storage Server on the client, proceed as follows:

1. To configure the Remote Storage Server client for Exigen Workflow Client/Server, locate the `VISIFLOW\INI` directory and copy the `rsc.ini` and `remote.ini` files to the `VISIFLOW\SYSTEM` directory.
2. To configure the Remote Storage Server client for Exigen Workflow Web, perform the following actions depending on the document access mode:

- If remote access mode is used, on the Exigen Workflow Web server, locate the `VISIFLOW\INI` directory and copy the `rsc.ini` and `remote.ini` files to the `VISICOM\WEB-INF\Dll` directory.
- If the local access mode is used, on the Exigen Workflow Web client workstation, locate the `VISIFLOW\INI` directory and copy the `rsc.ini` and `remote.ini` files to the directory where Web DMS Viewer is installed.

3. Open the `rsc.ini` file for editing.
4. In the `rsc.ini` file, add or modify a configuration section that defines the Remote Storage Server location and communication protocol.

   This configuration section is referenced by the `remote.ini` file to automatically substitute the actual location on the server for the document location defined in the database.

   The following table describes parameters in the `rsc.ini` file:

rsc.ini file parameters	
Parameter	**Description**
`Network Address`	Server name where Remote Storage Server is running. This name must be entered according to the specifications of the communication protocol that is used.
`Protocol Sequence`	Communication protocol used by Remote Storage Server. For information on protocol syntax, see Installing Remote Storage Server on the Server.
`Domain`	Domain in which Remote Storage Server is running. This parameter is required only if the server and the client are in different domains.
`Authentication Level`	Authentication level used for the remote procedure call. This parameter is optional and can have values from 0 to 5. The default value is 0. For more information on authentication levels, see http://msdn.microsoft.com/library/default.asp?url=/library/en-us/rpc/rpc/authentication_level_constants.asp. If the client is working on Windows NT 4 with a Windows 2000 domain server, the authentication level must be set to 1.

   There can be several configuration sections in the `rsc.ini` file, but each section must have a unique name.

   The following is an example of a configuration section:

```
[SERVER1_TCPIP]

Network Address=fileserver.domain.com

Protocol Sequence=ncacn_ip_tcp

Domain=DOMAIN2

Authentication Level=1
```

5. Save and close the `rsc.ini` file.
6. Open the `remote.ini` file for editing.

Exigen Workflow uses information in the `remote.ini` configuration file to communicate with Remote Storage Server. Within the system, the actual location on the server is automatically substituted for a document location defined in the database.

The following types of document location substitution are supported by Remote Storage Server:

Document location substitution types supported by Remote Storage Server	
Type	**Description**
Drive substitution	Substitutes the actual document location on the server for a logical drive in the database. For example, if in the project configuration, the document location is defined to be on drive `E` and the `remote.ini` file associates drive `E` with a remote file server, instead of accessing documents on drive `E`, the system accesses documents on the specified remote file server. From the system's point of view, documents are still stored on drive `E`. This substitution type is defined in the `[Drives]` section as follows: `<drive to be replaced>:=<section in the rsc.ini file>,<timeout in milliseconds>` The associated configuration section in the `rsc.ini` file defines the configuration for the actual location on the server.
Network location substitution	Similar to the drive substitution type, but instead of substituting a logical drive, it substitutes a network location specified according to UNC. This substitution type is defined in the `[UNCs]` section as follows: `<location to be replaced>=<section in the rsc.ini file>,<timeout in milliseconds>` The associated configuration section in the `rsc.ini` file defines the configuration for the actual location on the server. The `[UNCs]` section must contain only the computer name and share name. Share subdirectories cannot be used.
Path substitution	Replaces one document location path with another. This is particularly useful when the document location is changed but the information in the database remains the same. This substitution type is defined in the `[Substitute]` section as follows: `<previous location>=<new location>`

There can be more than one entry in each section, and all lines starting with `?` are ignored.

The following is an example of `remote.ini` file contents:

```
[Drives]

E:=SERVER1_TCPIP,9000

[UNCs]

\\FILESERVER1\SHARE1\=SERVER1_TCPIP,9000
```

```
[Substitute]

\\FILESERVER5\DOCS\=\\FILESERVER3\NEW\
```

7. Save and close the `remote.ini` file.

Chapter 7: Setting Up Exigen Workflow with Terminal Server and Citrix MetaFrame

This section describes how to configure Terminal Server and the Citrix MetaFrame server to provide an Exigen Workflow application environment.

Although some Exigen Workflow customers use Citrix MetaFrame, formal quality assurance of such configurations is not in the scope of quality assurance plans for Exigen Workflow. Experience shows that problems can arise when a solution or individual solution components depend on the use of local directories or locally stored configuration files. Such problems are usually solved in the scope of individual customer solutions by creating redirect scripts in Citrix MetaFrame, and they must not affect the core product. However, since it is not possible to predict all possible variations of customer-specific solutions, Citrix MetaFrame support requirements must be examined on a case-by-case basis within the scope of specific solution requirements.

Warning: Exigen Workflow server components cannot be used in the Terminal Server and Citrix MetaFrame environment.

To configure Terminal Server and Citrix MetaFrame, proceed as follows:

1. Install Citrix on Terminal Server.
2. Create users as described in the Microsoft support documentation for Terminal Server.
3. Ensure that the user profile directory and home directory are not the same.

   For information on user profiles and home directories, see Microsoft support documentation.
4. Go to the **Active Directory Users and Computers** window.
5. Select a user.
6. To open the **Citrix Track Properties** window, right-click the user.
7. Ensure that all Terminal Server user workstations have a common network drive, for example, Q.
8. Send each user a request to send you their `visiclt.ini` file from their local Windows directory.
9. Request that each user logs into Terminal Server via Citrix MetaFrame or straight into Terminal Server using the remote login.
10. Do not run Exigen Workflow, but perform a remote login and logout.
11. Verify that the user Windows directory is created for the user.

Note: Do not create this directory using scripts unless you know how to change user permissions with scripts, because valid user permissions for each directory must be created.

12. From each user's local Windows directory, copy the `visiclt.ini` file into the appropriate home Windows directory.

Note: The appearance of the window in Exigen Workflow, such as window size and location, can differ.

For example, for a user named john2, user profiles are stored in the following directory:

```
\\server\citrix\profile\john2
```

The following is the home directory:

```
\\server\citrix\home\john2
```

This directory can also be added to user search paths and used for all other programs that require individual user settings.

Chapter 8: Installing Application Services

This section describes how to install and configure Application Services.

The following topics are described in this section:

Application Services Overview

Application Services is a middleware application with a COM interface that provides access to the Exigen Workflow data store and aggregates functionality related to the Exigen Workflow resources.

Application Services is required by Automatic Queue Server.

Before using Application Services, you must configure the database client to support Transaction Server as described in Chapter 10: Configuring the Database Client to Support Transaction Server.

Installing Application Services from the Main Exigen Workflow Installation

To install Application Services from the main Exigen Workflow installation, proceed as follows:

1. Insert the Exigen Workflow installation CD into the CD drive.
2. If the installation does not start automatically, from the CD, launch the `Setup.exe` file.
3. Follow the installation instructions until you reach the **Exigen Workflow** window as described in General Installation Steps.
4. In the **Install/Upgrade** column, in the **Automated Services** row, click **Details.**
5. In the **Automated Services** window, in the **Install/Upgrade** column, select the **Workflow Application Services** check box.

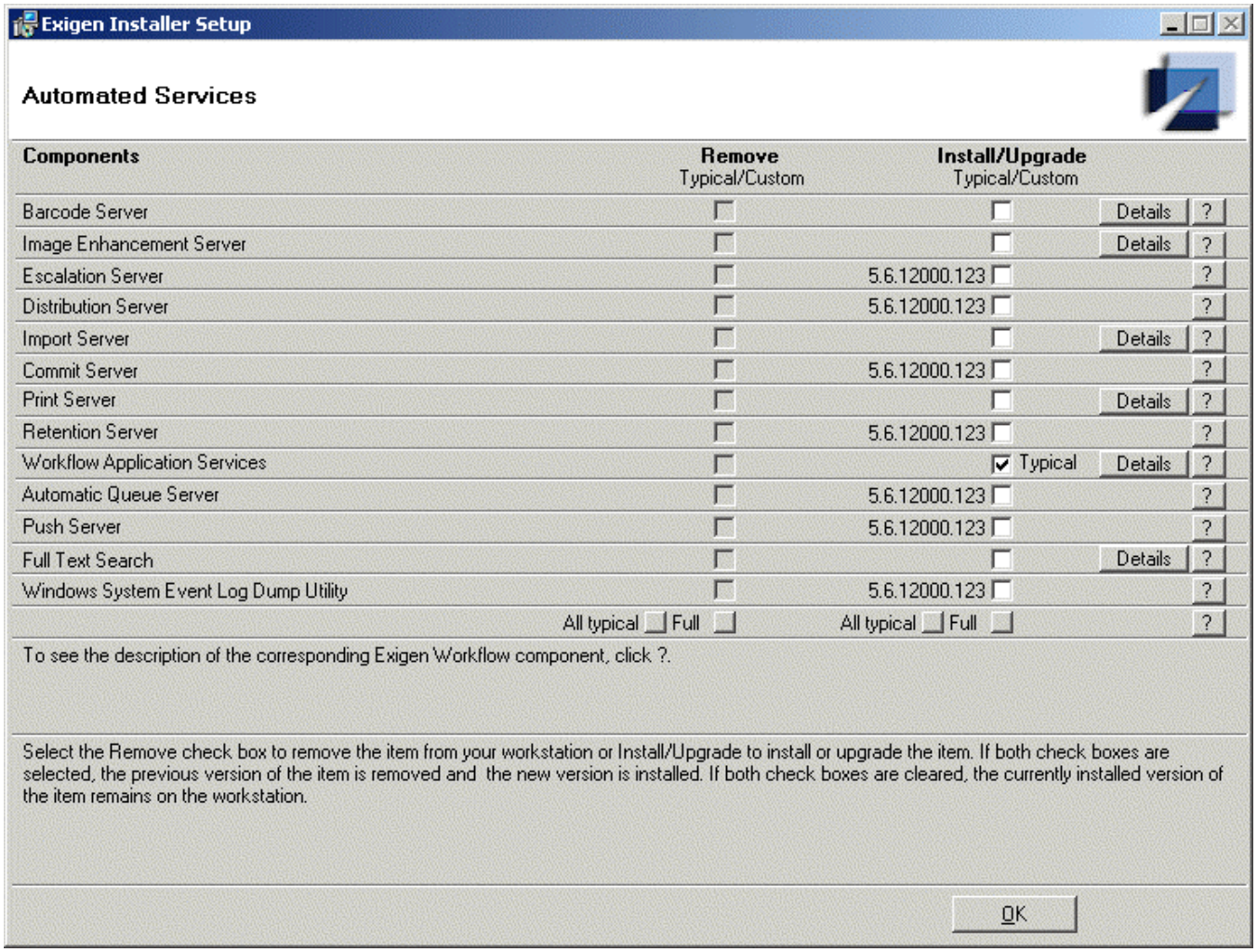

Figure 52: Installing Application Services

6. Click **OK.**
7. Click **Next.**

   The **Account information** window appears.

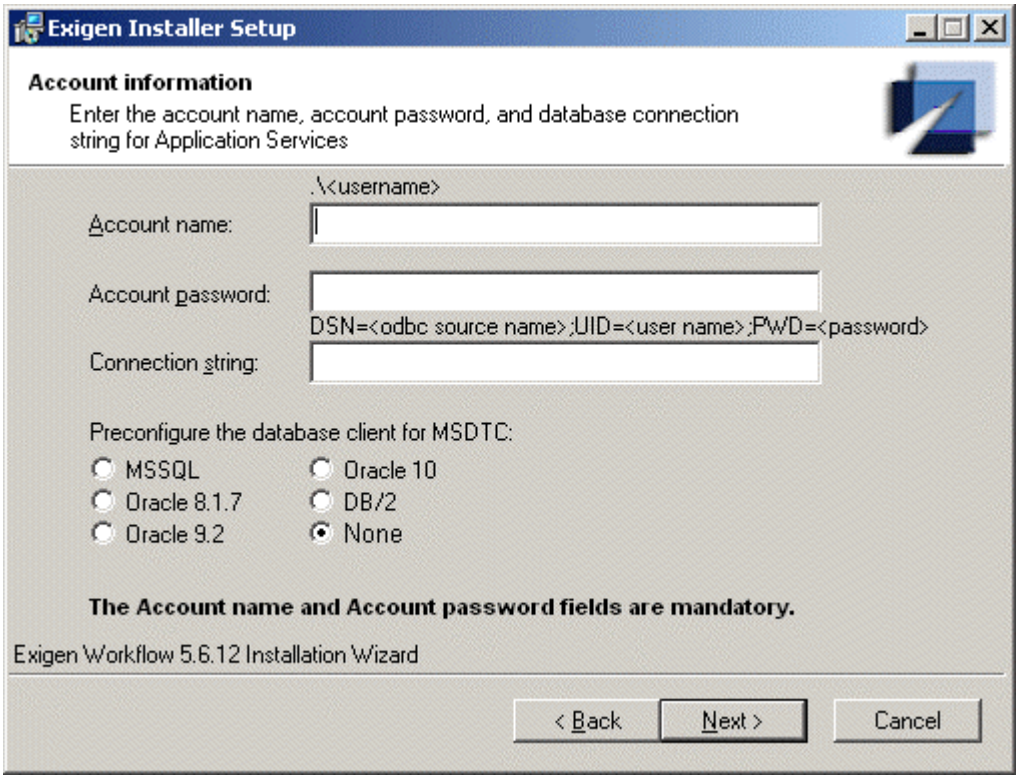

Figure 53: Account information window

The **Account information** window is used to define the following:

- user account required by the Application Services COM+ application
- default connection string for the Exigen Workflow project database
- predefined configuration of registry settings for the database client to support Distributed Transaction Coordinator (MSDTC)

In most cases, the user account is a local user account on the workstation where Application Services is run.

8. In the **Account information** window, enter the user name and password to be used by Application Services as follows:
   - For domain users, specify the user name as follows:

     `<domain>\<user>`
   - For local users, specify only the user name.

   If the account fields are left blank, the system creates a default user with user name *visiflow* and password *exigensrv*.

   If the specified local user does not exist, the installation creates the user. The following rights are granted automatically to local and domain users:

   - log on as service
   - log on as batch job
   - default COM security access permission
   - default COM security access permission for interactive user

The **Connection string** field specifies the default connection string for the Exigen Workflow project database, and can be left blank.

For information on the connection string syntax and examples, see Application Services Connection String Examples.

9. To set up the required registry entries for the database client to support MSDTC, select the brand of your database client.

   The database brand can be selected only if Application Services is not currently installed on the workstation. If there is a previous version of Application Services installed on the workstation, the list of database brands is in read-only mode and cannot be modified.

   To change the selected database brand, the previous version of Application Services must be removed.

   If **None** is selected, no registry entries are modified and the user must configure them manually if required.

10. Click **Next.**
11. To complete the installation process, follow the instructions as described in Finishing the Installation.
12. If you did not define a default connection string, in the Application Services Console, add connection strings for the projects and workflows to be used by Application Services after installation.

    For more information on the Application Services Console, see Configuring Application Services.

Installing Application Services from a Standalone Installation

If you have a standalone Application Services MSI installation, you can install it separately from Exigen Workflow.

To install Application Services using a standalone installation, proceed as follows:

1. Run the `AppServer.msi` file.

   The **Exigen Application Services Setup** window appears.

2. Click **Next.**

   The **User information** window appears.

3. Specify the personalization information as required.
4. Click **Next.**

   The **Destination Folder** window appears.

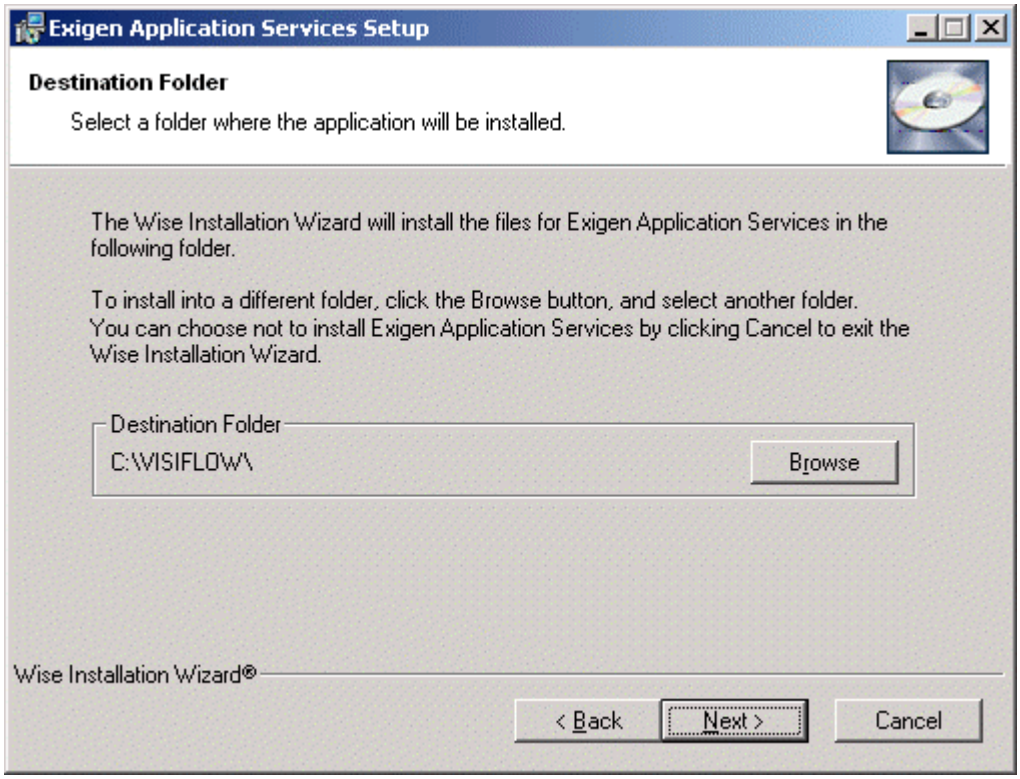

Figure 54: Selecting the destination directory

5. In the **Destination Folder** window, click **Browse** and select the location where to install Application Services.
6. Click **Next.**

   The **Installation parameters** window appears.

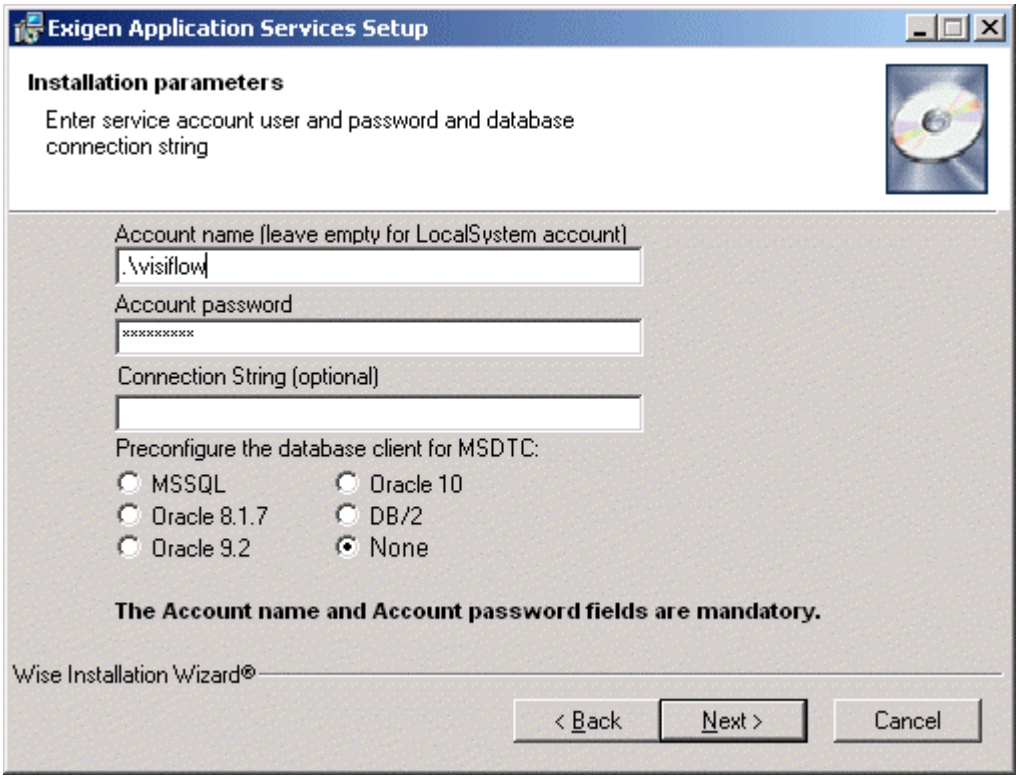

Figure 55: Specifying account information

7. In the **Installation parameters** window, enter the account name and password under which the service and COM+ application is running.

   The default account user name is *visiflow* and password is *exigensrv*.

8. To set up the required registry entries for the database client to support MSDTC, select the brand of your database client.

   The database brand can be selected only if Application Services is not currently installed on the workstation. If there is a previous version of Application Services installed on the workstation, the list of database brands is in read-only mode and cannot be modified.

   To change the selected database brand, the previous version of Application Services must be removed.

   If **None** is selected, no registry entries are modified and the user must configure them manually if required.

9. Click **Next.**

10. To complete the installation, follow the instructions that appear on the screen.

Installing Application Services in Silent Mode

To install Application Services in silent mode, at the command prompt, execute the following command:

```
msiexec /i "<installation file location>\AppServer.msi" LEGACPROJ="<connection
string>" SERVICE_ACCOUNT_NAME="<login name>" SERVICE_ACCOUNT_PASSWORD="<password>"
INSTALLDIR="<full path 1>" INSTALLDIR3="<full path 2>" /q
```

If the INSTALLDIR parameter is specified, all Application Services files are installed in the `<full path 1>\AppServer` directory:

If the INSTALLDIR3 parameter is specified, all Application Services files are installed in the `<full path 2>` directory.

Reinstalling Application Services in Silent Mode

To reinstall Application Services in silent mode, at the command prompt, execute the following command:

```
msiexec /fvomus "<installation file location>\AppServer.msi" LEGACPROJ="<connection
string>" SERVICE_ACCOUNT_NAME="<login name>" SERVICE_ACCOUNT_PASSWORD="<password>"
REINSTALL=ALL  /q
```

Uninstalling Application Services in Silent Mode

To uninstall Application Services in silent mode, at the command prompt, execute one of the following commands:

- `msiexec /x {E95C0646-040A-48CC-918B-D5C435CD8A7A} /q`
- `msiexec /x "<installation file location>\AppServer.msi" /q`

Changing the Application Services User Account

To change the user name for Application Services after the installation, proceed as follows:

1. To change the user account for the Application Services COM+ application, open the **Component Services** console by selecting **Start > Settings > Control Panel > Administrative Tools > Component Services.**
2. In the tree on the left side of console, select **Component Services > Computers > My Computer > COM+ Applications.**
3. Right-click the EWF Engine COM+ application and select the **Properties** submenu.
4. In the **EWF Engine Properties** dialog, select the **Identity** tab.
5. Select the **This User** radio button and specify new user credentials.
6. To save the changes, click **OK.**

Configuring Application Services

This section describes how to configure Application Services. All configuration steps describes in this section are performed using Application Services Console.

To launch Application Services Console, select **Start > Programs > Exigen Solution > Exigen Workflow > Application Services Console.**

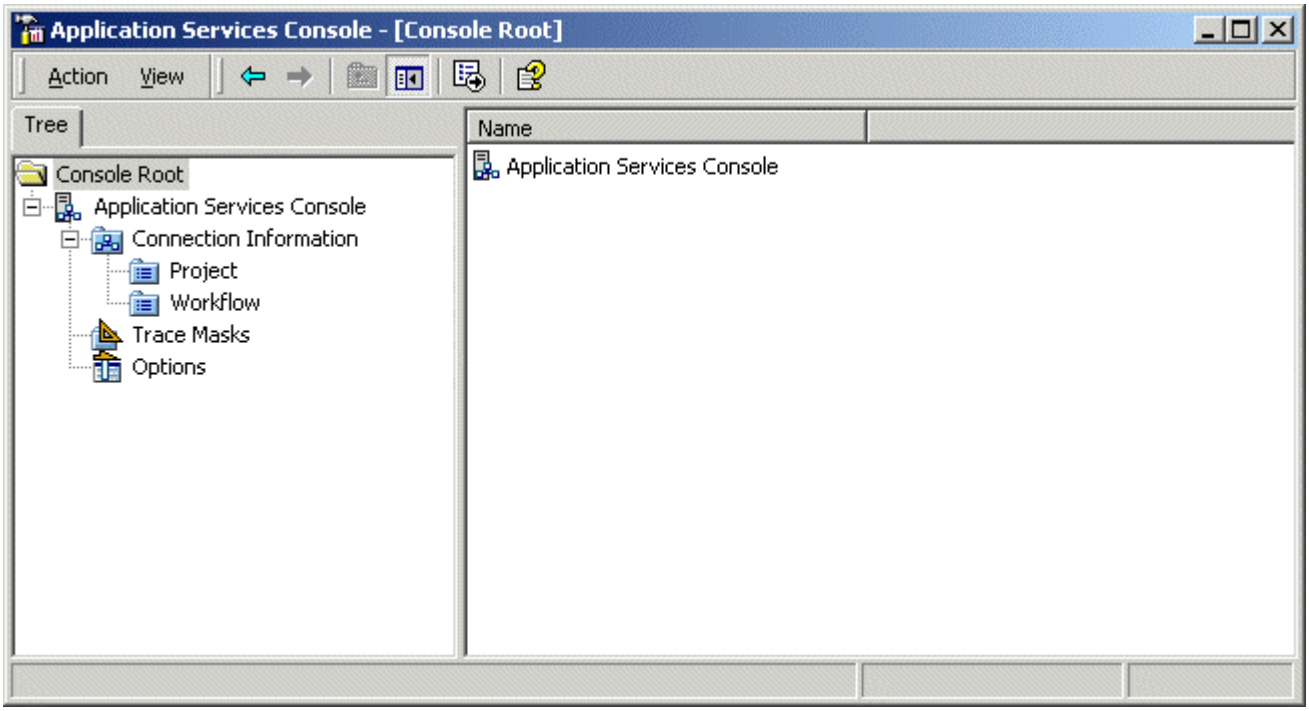

Figure 56: Application Services Console

The following topics are described in this section:

- Defining Connection Strings
- Setting Up the Event Trace Service
- Defining Trace Masks
- Configuring Application Services Options

Defining Connection Strings

If a default connection to the Exigen Workflow database is not defined for Application Services, a separate connection string must be defined for each project and workflow to be accessed from Application Services.

Note: If all projects and workflows can be accessed via one connection string, it is advisable to set this connection string as the default.

If the audit project is located in a database that is different from the one specified in the default project connection string, a separate connection string must be set up for the audit project.

The following topics are described in this section:

Defining Project Connection Strings

To define project connection strings, proceed as follows:

1. In Application Services Console, in the left pane, select **Console Root > Application Services Console > Connection Information > Project.**

   All project connection strings defined for Application Services are displayed in the right pane.

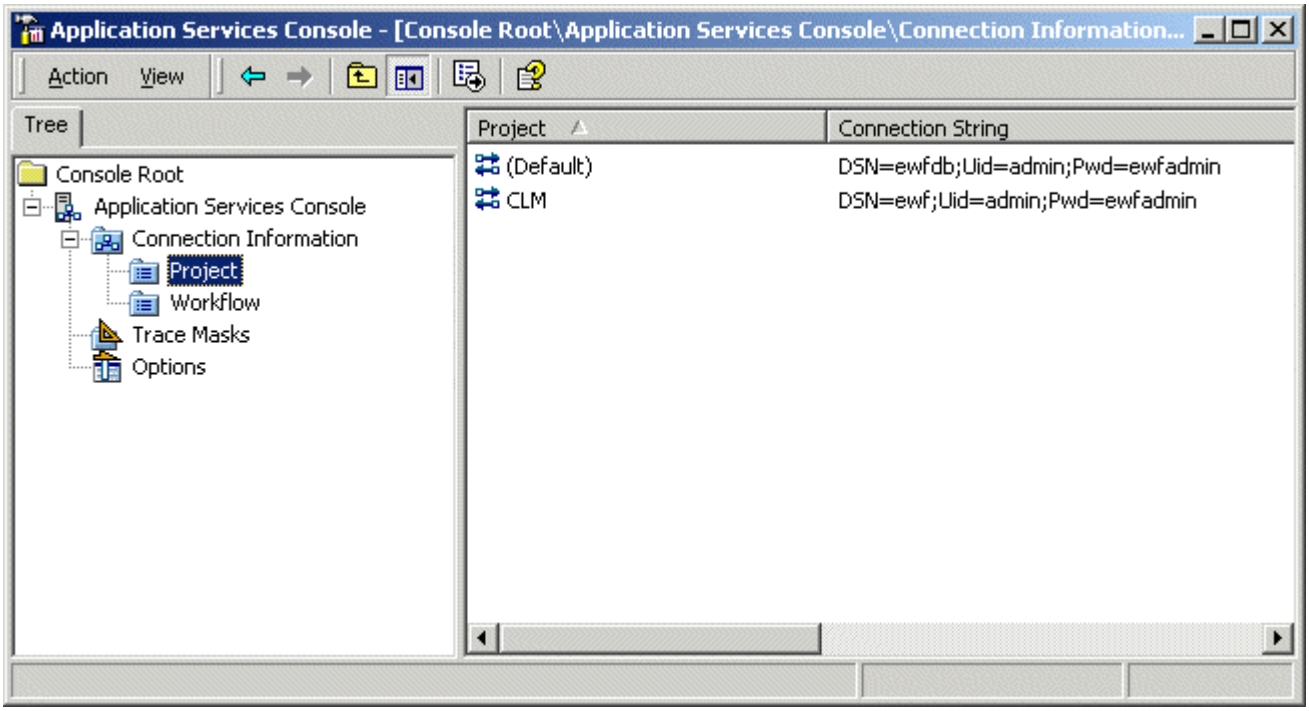

Figure 57: List of project connection strings

2. To create a new project connection string, in the right pane, right click the blank space and select **New > Project Connection.**

   The **Create New Project Connection** window appears.

Figure 58: Defining a new project connection string

3. In the **Project ID** field, enter the project ID for which the connection string must be defined.
4. In the **Connection String** field, enter the connection string.

   The following table provides examples of Application Services connection strings:

Application Services connection string examples	
Type	**Example**
OLE DB provider for Oracle	`Provider=MSDAORA;Password=user_password; User ID=user_name;Data Source=ora_service;`
ODBC data source	`DSN=dsn_name;UID=user_name;pwd=user_password;`

OLE DB provider for SQL Server	`Provider=SQLOLEDB;Data Source=server_name;`
	`Initial Catalog=database_name;`
	`User ID= user_name;Password= user_password;`

   It is possible to override the default services provided by the OLE DB provider for ODBC by specifying the following settings in the connection string:

Connection string default service override parameters	
Value in the connection string	**Services enabled**
`OLE DB Services = -1;`	All services. This is the default value.
`OLE DB Services = -4;`	All services except pooling and automatic transaction enlistment.
`OLE DB Services = -5;`	All services except Client Cursor Engine.
`OLE DB Services = -8;`	All services except pooling, automatic transaction enlistment, and Client Cursor Engine.
`OLE DB Services = -3;`	Only pooling and automatic transaction enlistment services with a session level aggregation.
`OLE DB Services = 0;`	None.

   The following is a sample connection string with the `OLE DB Services` parameter:

   ```
   DSN=dsn_name;UID=user_name;pwd=user_password;OLE DB Services = -4;
   ```

5. Click **OK.**

   The new connection string appears in Application Services Console.

6. To modify a connection string, in the right pane, right click a project connection string and select **Properties.**

The **Project Connection Properties** window appears.

7. Make the required changes and click **OK.**
8. To delete a connection string, in the right pane, right click a project connection string and select **Delete.**

Defining Workflow Connection Strings

To define workflow connection strings, proceed as follows:

1. In Application Services Console, in the left pane, select **Console Root > Application Services Console > Connection Information > Workflow.**

   All workflow connection strings defined for Application Services are displayed in the right pane.

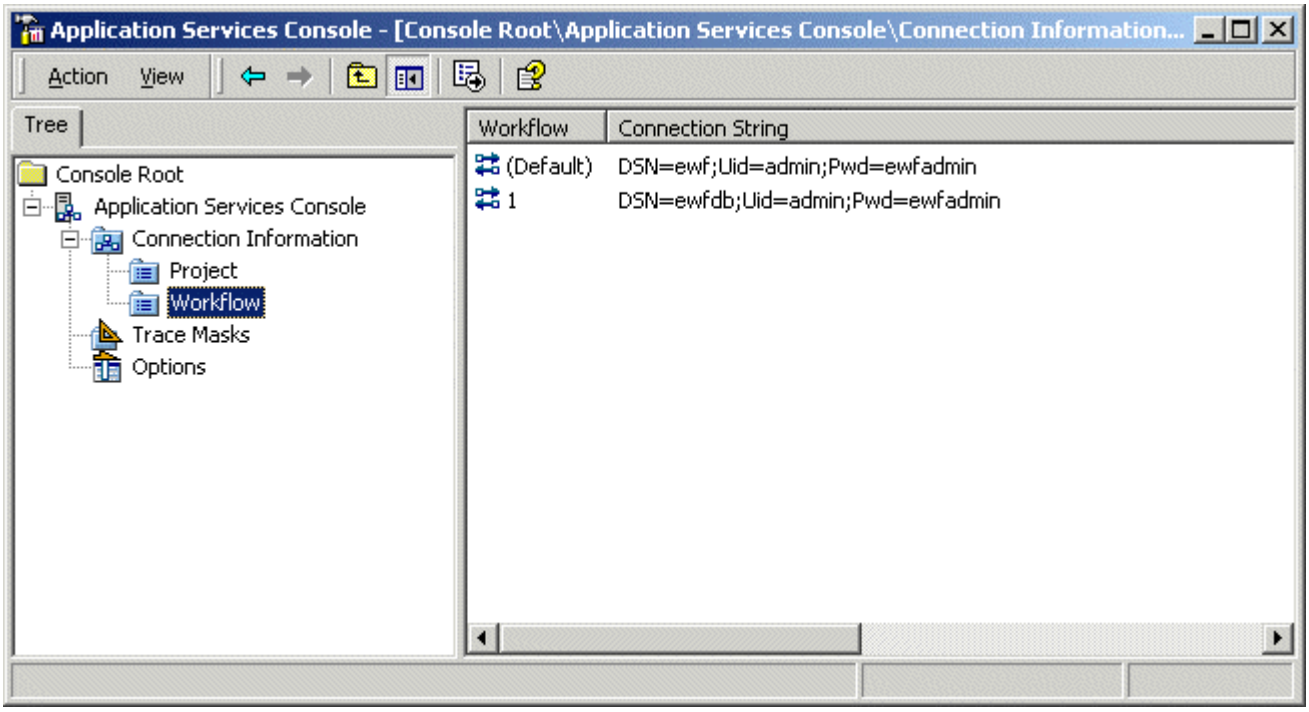

Figure 59: List of project connection strings

2. To create a new workflow connection string, in the right pane, right click the blank space and select **New > Workflow Connection.**

   The **Create New Workflow Connection** window appears.

Figure 60: Defining a new workflow connection string

3. In the **Workflow ID** field, enter the workflow ID for which the connection string must be defined.
4. In the **Connection String** field, enter the connection string.
5. Click **OK.**

   The new connection string appears in Application Services Console.
6. To modify a connection string, in the right pane, right click a workflow connection string and select **Properties.**

   The **Workflow Connection Properties** window appears.
7. Make the required changes and click **OK.**
8. To delete a connection string, in the right pane, right click a workflow connection string and select **Delete.**

Setting Up the Event Trace Service

Application Services generates various event messages during run-time. Administrators can view these event messages to monitor and debug Application Services applications. To record and view Application Services event trace messages, the Event Trace Service must be set up.

The **Event Trace Service** is a Windows service that writes Application Services event messages in text files according to defined trace parameters.

Note: It is also possible to use an application named DebugView for viewing Application Services event messages. However, DebugView is not recommended when Application Services is running in a production environment.

To set up the Event Trace Service, proceed as follows:

1. In Application Services Console, in the left pane, right click **Application Services Console** and select **Configure Event Trace Service.**

   If the Event Trace Service is not installed, a message window appears.

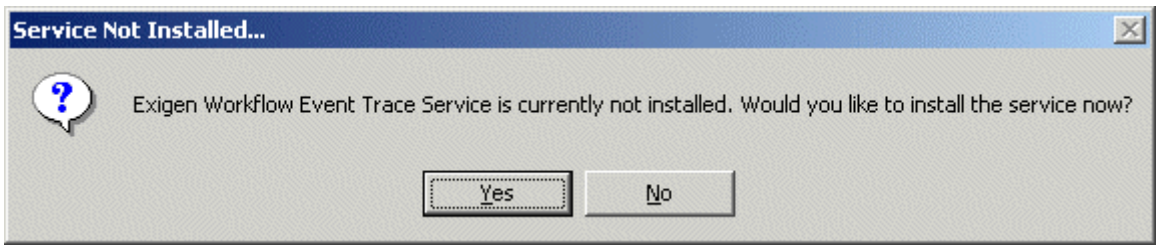

Figure 61: Event Trace Service message

2. To install the Event Trace Service, click **Yes.**

   The Event Trace Service is installed and a confirmation message appears.

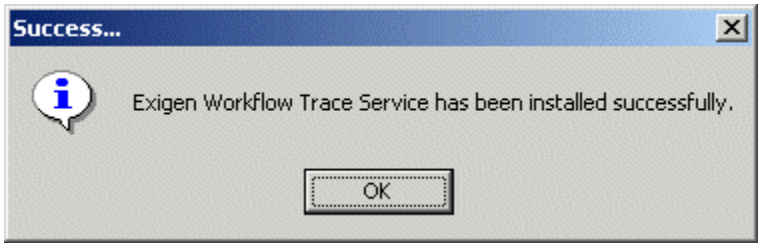

Figure 62: Confirmation message

3. To close the confirmation message window, click **OK.**

   The **Exigen Workflow Event Trace Service Settings** window appears.

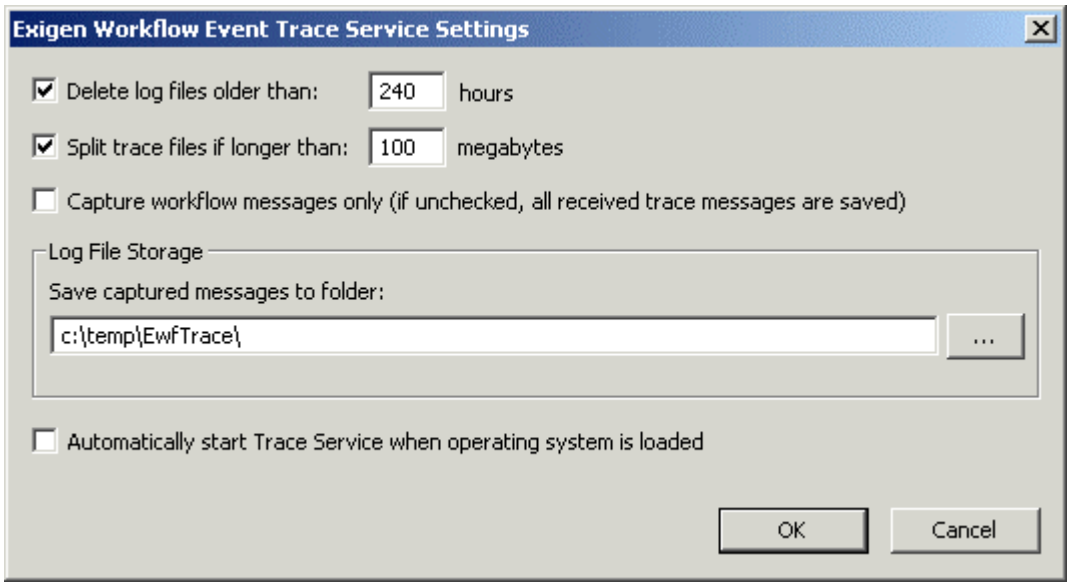

Figure 63: Configuring the Event Trace Service

   The Event Trace Service writes event messages in log files that have the following name:

   `EWFTrace_<date>_<time>.trc`

4. To automatically delete old log files, proceed as follows:

- Select the **Delete log files older than** check box.
- In the field, enter the number of hours after which log files must be deleted.

5. To automatically split log files that reach a specific size, proceed as follows:
   - Select the **Split trace files if longer than** check box.
   - In the field, enter the maximum size in megabytes.
6. To write only those event messages that are recorded in Exigen Workflow, select the **Capture workflow messages only** check box.
7. To define the location where log files must be saved, in the **Save captured messages to folder** field, specify the location.
8. To start the Event Trace Service automatically when the operating system is loaded, select the **Automatically start Trace Service when operating system is loaded** check box.
9. To apply changes, click **OK.**
10. To filter event messages that are produced by Application Services, define trace masks as described in Defining Trace Masks.

Defining Trace Masks

A **trace mask** is a filter that defines which event messages produced by Application Services must be captured and recorded in Event Trace Service log files.

To define trace masks, proceed as follows:

1. In Application Services Console, in the left pane, select **Console Root > Application Services Console > Trace Masks.**

   All trace masks defined in Application Services are displayed in the right pane.

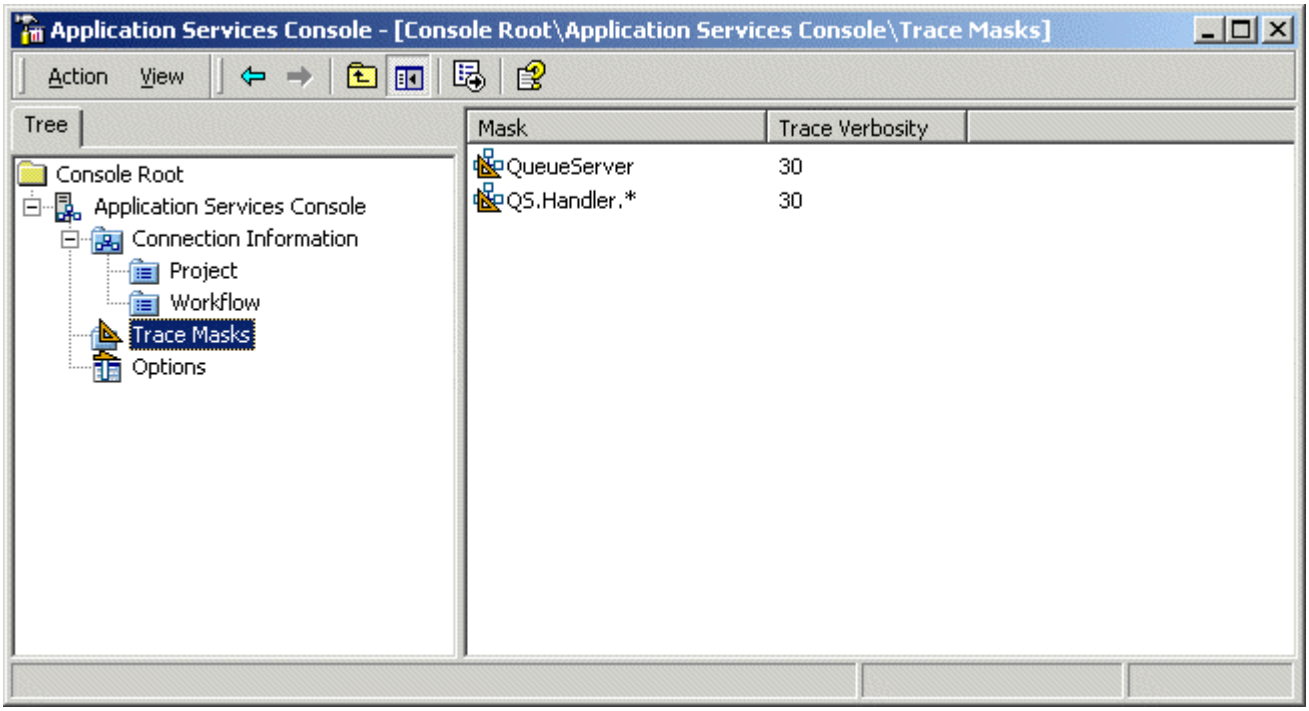

Figure 64: List of trace masks

2. To create a new trace mask, in the right pane, right click the blank space and select **New > Trace Mask.**

   The **New Trace Mask** window appears.

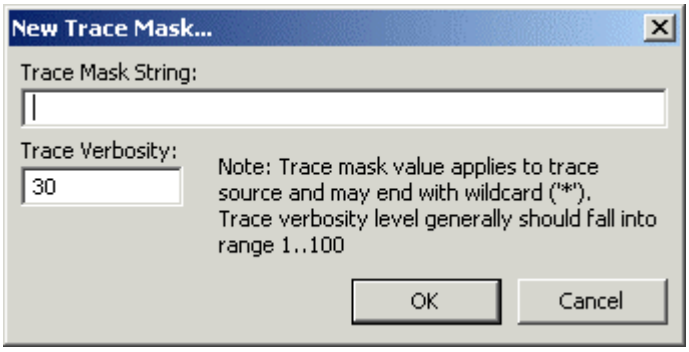

Figure 65: Creating a new trace mask

3. To define the source from which event messages must be recorded, in the **Trace Mask String** field, enter the trace source string.

   The following table describes available trace sources:

Available trace sources	
String	**Trace source**
CacheOA	Cache access, commit, get, and put messages from the `cacao.dll` library.
CacheAccessor	Accessor interface from the `Accessor.dll` library.

Available trace sources	
String	**Trace source**
CacheBinder	Supervisor service from the `Binder.exe` application.
StoreLI	Index store from the `StoreLI.dll` library.
StoreLW	Workflow store from the `StoreLW.dll` library.
ObjectPad	Object pad from the `vfobjpad.dll` library.
CognomenObj	Public `Cognomen.dll` interface.
CognomenMoniker	Internal Cognomen calls.
QueueServer	Automatic Queue Server messages.
QS.Handler.*	Messages of the productized Automatic Queue Server handlers.
QS.Filter.*	Messages of the productized Automatic Queue Server handler filters.

The * symbol can be used as a substitute for any text string to define a trace mask that filters messages from a group of sources. For example, the *Cache** string filters messages from the CacheOA, CacheAccessor, and CacheBinder sources.

4. To define the minimal priority of messages that must be recorded, in the **Trace Verbosity** field, enter a value from 1 to 100.

   A 1 is the highest priority. A 100 is the lowest priority. All messages whose trace verbosity value is equal to or less than the specified value are recorded in log files. A 30 is an optimal value that can be used in most cases.

5. Click **OK.**

   The new trace mask appears in the right pane of Application Services Console.

6. To modify an existing trace mask, in the right pane, right click a trace mask, select **Properties,** and make the required changes to the configuration.
7. To delete a trace mask, in the right pane, right click a trace mask and select **Delete.**

Configuring Application Services Options

Application Services Console is also used for configuring miscellaneous Application Services options.

To configure Application Services options, proceed as follows:

1. In Application Services Console, in the left pane, select **Console Root > Application Services Console > Options.**

   All options are displayed in the right pane.

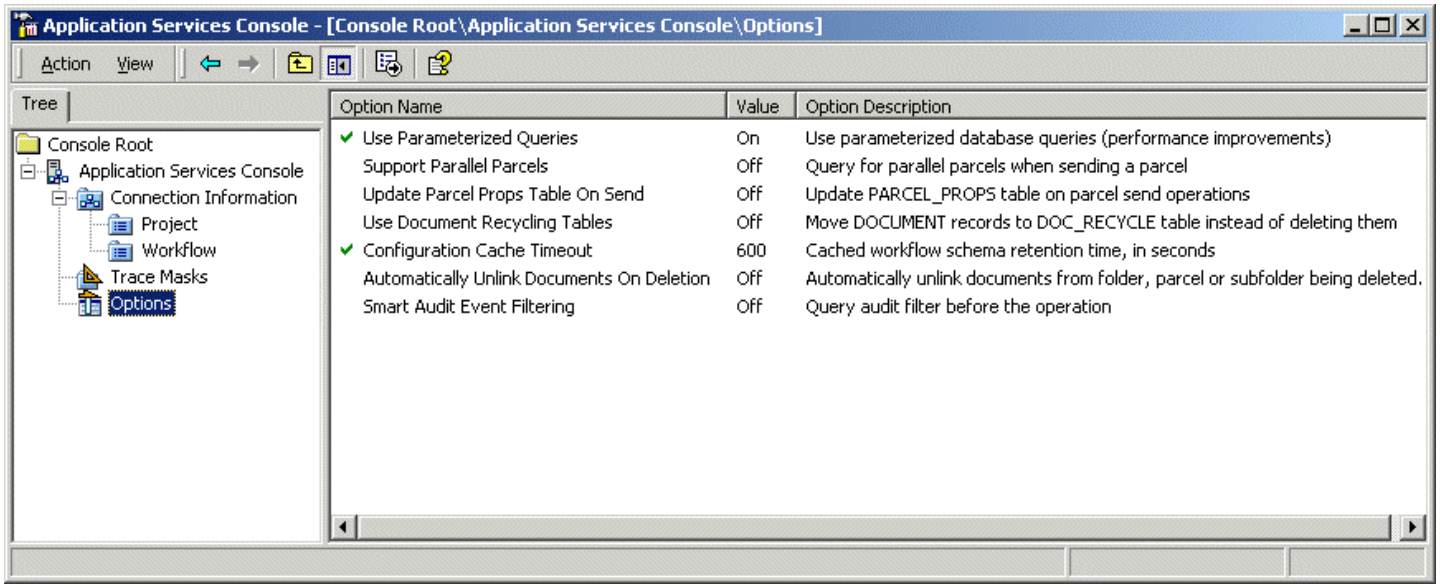

Figure 66: Configuring Application Services options

The following table describes the Application Services options:

Application Services options	
Option	**Description**
Use Parameterized Queries	If selected, improves performance for high volume operations.
Support Parallel Parcels	If selected, enables support of parallel parcels. To improve performance, this option must be cleared if parallel parcels are not used.
Update Parcel Props Table On Send	Must be selected if the project uses the PARCEL_PROPS table and a correct NODE_ID value is important. This option is required if parallel parcels are used.
Use Document Recycling Tables	If selected, moves DOCUMENT table records to the DOC_RECYCLE table instead of deleting them. This option is required to support the Centera document storage.
Configuration Cache Timeout	Time in seconds for which retrieved workflow data is cached locally. The value must be increased if the database connection has high latency. Higher cache retention time reduces the network communication overhead and improves application performance.
Automatically Unlink Documents on Deletion	If selected, automatically unlinks documents from folders, parcels, or subfolders that are deleted. This option must be selected to ensure database consistency and simplify the application code.
Smart Audit Event Filtering	If selected, queries the audit filter before performing audited operations. This option must be selected to avoid expensive database queries where auditing is not necessary, and increase performance on high volume systems.

2. To configure an option, in the right pane, right click the option and select **Properties.**

   The properties window appears.

3. Change the option value as appropriate.

Chapter 9: Installing Automatic Queue Server

This section describes how to install Automatic Queue Server.

Automatic Queue Server is an Exigen Workflow module for background processing of workflow items. Automatic Queue Server can be mapped to multiple custom scripts that implement customer-specific business logic. Access to workflow data store and actions with workflow items are performed via Application Services.

For information on using Automatic Queue Server, see Chapter 21: Automatic Queue Server in *Exigen Workflow Administrator's Guide, Part 2: Business Component Reference.*

The following topics are described in this section:

Automatic Queue Server Requirements

The following topics are described in this section:

Operating System Requirements

Automatic Queue Server uses the Message Queuing (MSMQ) technology, which is available in Windows 2000 and later Windows versions. Automatic Queue Server does not function on older Windows versions.

Before using Automatic Queue Server, you must configure the database client to support Transaction Server as described in Chapter 10: Configuring the Database Client to Support Transaction Server.

Required Components

The following table lists all components required by Automatic Queue Server and describes how to install them:

Automatic Queue Server required components	
Component	**Installation source**
Application Services	Before running Automatic Queue Server, Application Services must be installed and configured as described in Configuring Application Services.

Automatic Queue Server required components	
Component	**Installation source**
MSMQ	• In Windows 2000, MSMQ is an optional component and can be installed in the **Add/Remove Windows Components** window. • In Windows XP, MSMQ is included in the operating system. Unless there are specific requirements for MSMQ installation, MSMQ must be installed in workgroup mode. Integration with Active Directory® is supported but it requires advanced administrative operating system skills. For information on MSMQ, see the Microsoft support web site.
.NET Framework Redistributable	Download and install .NET Framework Redistributable and service packs from the Microsoft website: http://msdn.microsoft.com/netframework/downloads/updates/default.aspx
MDAC	Download and install MDAC from the Microsoft website: http://msdn.microsoft.com/data/

Installing Automatic Queue Server from the Main Exigen Workflow Installation

To install Automatic Queue Server from the main Exigen Workflow installation, proceed as follows:

1. Insert the Exigen Workflow installation CD into the CD drive.
2. If the installation does not start automatically, from the CD, launch the `Setup.exe` file.
3. Follow the installation instructions until you reach the **Exigen Workflow** window as described in General Installation Steps.
4. In the **Install/Upgrade** column, in the **Automated Services** row, click **Details.**
5. In the **Automated Services** window, in the **Install/Upgrade** column, select the **Automatic Queue Server** check box.

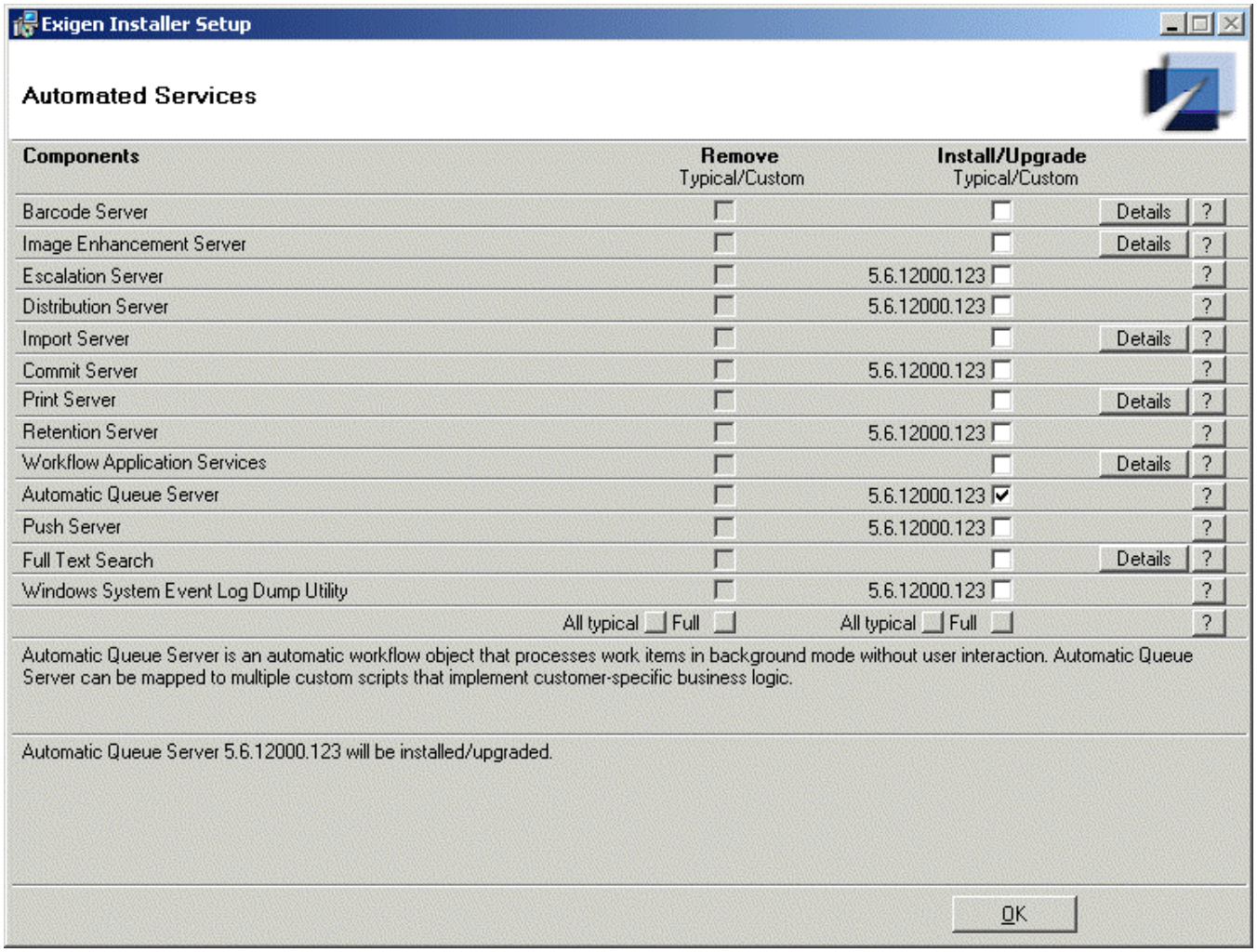

Figure 67: Installing Automatic Queue Server

Automatic Queue Server requires that Application Services is installed. For information on installing Application Services, see Chapter 8: Installing Application Services.

6. Click **OK.**
7. Click **Next.**

   The **Account information** window appears.

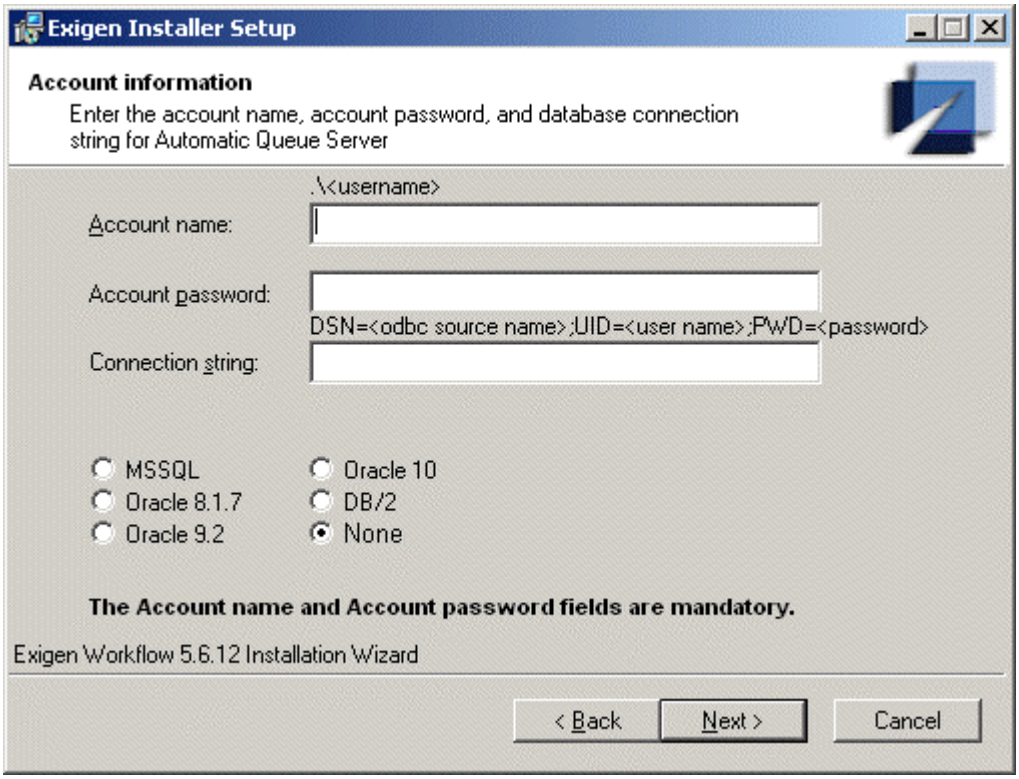

Figure 68: Account information window

8. In the **Account information** window, enter the following:
   - account name and password under which the Automatic Queue Server COM+ application is run
   - default database connection string
   - predefined configuration of registry settings for the database client to support Distributed Transaction Coordinator (MSDTC)

   The default account user name is *visiflow* and the password is *exigensrv*.

9. To set up the required registry entries for the database client to support MSDTC, select the brand of your database client.

   The database brand can be selected only if Automatic Queue Server is not currently installed on the workstation. If there is a previous version of Automatic Queue Server installed on the workstation, the list of database brands is in read-only mode and cannot be modified.

   To change the selected database brand, the previous version of Automatic Queue Server must be removed.

   If **None** is selected, no registry entries are modified and the user must configure them manually if required.

10. Click **Next.**
11. To complete the installation, follow instructions as described in General Installation Steps.

Installing Automatic Queue Server from a Standalone Installation

If you have a standalone Automatic Queue Server MSI installation file, it can be installed separately from Exigen Workflow.

To install Automatic Queue Server using a standalone installation, proceed as follows:

1. Make sure Application Services is installed on the workstation.

   For information on installing and configuring Application Services, see Chapter 8: Installing Application Services.

2. Run the `QueueServer.msi` file.

   The **Exigen Automated Queue Server Setup** window appears.

3. Click **Next.**

   The **User information** window appears.

4. Specify the personalization information as required.
5. Click **Next.**

   The **Destination Folder** window appears.

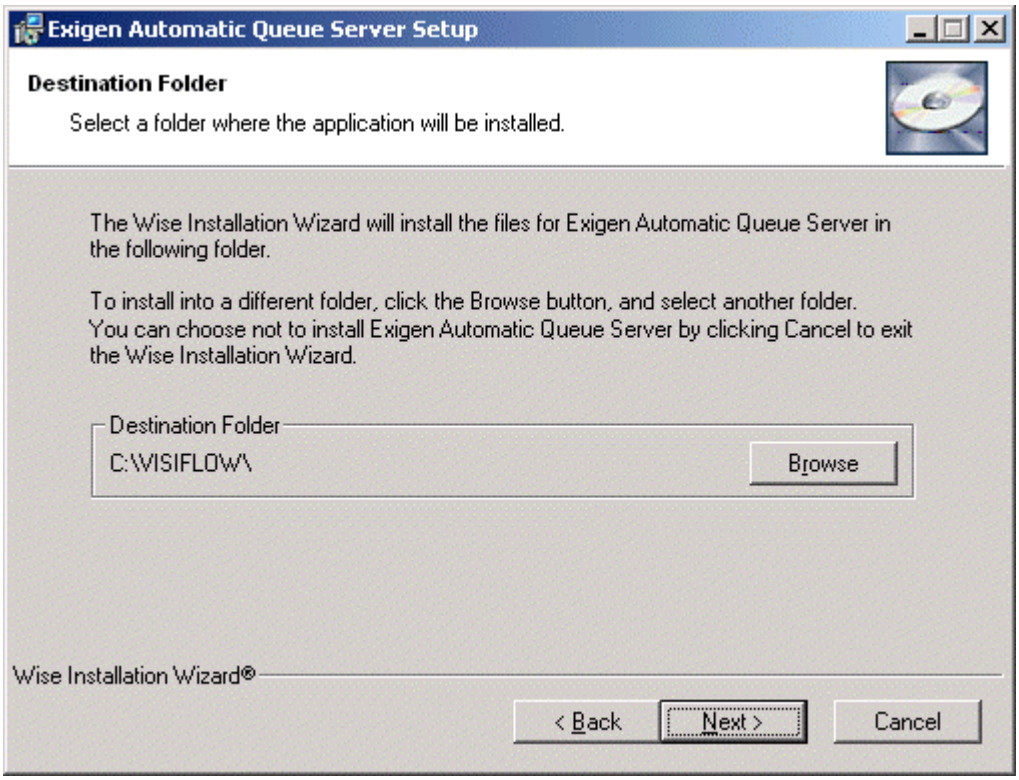

Figure 69: Selecting the destination directory

6. In the **Destination Folder** window, click **Browse** and select the location to install Automatic Queue Server.
7. Click **Next.**

   The **Service account** window appears.

Figure 70: Specifying the account parameters

8. In the **Service account** window, enter the account name and password under which the Automatic Queue Server COM+ application is run.

   The default account user name is *visiflow* and the password is *exigensrv*.

   If Automatic Queue Server handlers include a code that requires access to some shared resources in the local network, such as the remote file server, the Automatic Queue Server user account must have permission to access those resources.

   For example, if you must access files on a remote server from the Automatic Queue Server handler and the remote server is a member of some domain, the Automatic Queue Server COM+ application must be running under a user account that has access to the remote server. In this case, the usual approach is to use a service account with logon rights to that particular domain.
9. Click **Next.**
10. To complete the installation, follow the instructions.

Configuring the Number of Concurrent MSMQ Listener Threads

The maximum number of concurrent MSMQ listener threads defines the maximum number of Automatic Queue Server handler threads. By default, the value for this setting is calculated as follows:

```
16 * <number of CPUs on the server>
```

If the environment or Automatic Queue Server handler implies any restrictions, the setting must be changed. For example, in the Oracle database, the maximum number of concurrent distributed transactions may be required to be a smaller number.

To configure the maximum number of concurrent MSMQ listener threads, proceed as follows depending on the operating system:

- To configure the maximum number of concurrent MSMQ listener threads on Windows 2000, follow instructions as described in Configuring MSMQ Listener Threads on Windows 2000.
- To configure the maximum number of concurrent MSMQ listener threads on Windows XP or Windows Server 2003, follow instructions as described in Configuring MSMQ Listener Threads on Windows XP and Windows Server 2003.

Configuring MSMQ Listener Threads on Windows 2000

To set the maximum number of concurrent MSMQ listener threads on Windows 2000, proceed as follows:

1. Open Registry Editor.
2. Create a registry key `HKLM\Software\Microsoft\COM3\Debug`.
3. Add a new DWORD value named *QCListenerMaxThread*.
4. Set the *QCListenerMaxThread* value to the required maximum number of concurrent MSMQ listener threads.

   The recommended value is 4.

Note: This procedure sets the number of concurrent MSMQ listener threads for all applications on the server.

Configuring MSMQ Listener Threads on Windows XP and Windows Server 2003

To set the maximum number of concurrent MSMQ listener threads on Windows XP or Windows Server 2003, proceed as follows:

1. Select **Start > Settings > Control Panel > Administrative Tools > Component Services.**
2. Locate and right click the **EWF Automatic Queue Server** application.
3. In the pop-up menu, select **Properties.**
4. Select the **Queuing** tab.

5. In the **Queuing** tab, set the required maximum number of concurrent MSMQ listener threads. Automatic Queue Server installation automatically sets this property to 4.

Chapter 10: Configuring the Database Client to Support Transaction Server

This section describes how to configure the database client environment and Transaction Server to support Application Services and Automatic Queue Server functionality for several target database types.

Application Services and Automatic Queue Server use Transaction Server as a transaction coordinator. In Windows 2000, Transaction Server is part of a standard Windows installation.

If Exigen Workflow is installed on Windows Server 2003 or Windows XP SP2, the XA Transaction Support must be enabled as described in article KB817066 at the following website:

http://support.microsoft.com/default.aspx?scid=kb;EN-US;817066

It is recommended to use the latest available version of Data Access Components (MDAC).

The following topics are described in this section:

Configuring the Database Client for Oracle Database

To access an Oracle database, it is necessary to use the Microsoft ODBC driver for Oracle. The Oracle ODBC driver does not fully support Transaction Server.

If Exigen Workflow is installed on Windows Server 2003 or Windows XP SP2, access must be granted to the Oracle folder for the NetworkServices account as described in article KB816633 at the following website:

http://support.microsoft.com/default.aspx?scid=kb;en-us;816633

For additional information on using Oracle with Transaction Server and COM+, see http://support.microsoft.com/support/complus/mtsandoracle.asp?SD=GN&LN=EN-US&gssnb=1.

To configure the Distributed Transaction Coordinator (MSDTC) service, proceed as follows:

1. Start Windows Registry Editor.
2. Open the following registry section:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC\MTxOCI
   ```

3. Configure the appropriate Oracle XA libraries by changing the appropriate registry string values for your Windows and Oracle versions as described in the following table:

Oracle XA library registry strings	
Oracle Client	**Registry keys**

9.x	`"OracleXaLib"="oraclient9.dll"`
	`"OracleSqlLib"="orasql9.dll"`
	`"OracleOciLib"="oci.dll"`

10.x	`"OracleXaLib"="oraclient10.dll"`
	`"OracleSqlLib"="orasql0.dll"`
	`"OracleOciLib"="oci.dll"`

4. Restart the MSDTC service.

Note: If there are any applications that depend on MSDTC, such as MSMQ, they may stop.

5. If any applications stopped, restart them after MSDTC is restarted.
6. If any problems occur with the Oracle server and distributed transactions, consider increasing the following Oracle server configuration parameter values:
   - `sessions`
   - `distributed_lock_timeout`
   - `distributed_transactions`
   - `dml_locks`
   - `max_transaction_branches`
   - `open_cursors`
   - `processes`
   - `queuesize`

Configuring the Database Client for SQL Server

Application Services and Automatic Queue Server function without any modifications with SQL Server with Service Pack 3, and no special configuration steps are required for the database client.

Configuring the Database Client for the DB2 UDB for iSeries

The following topics are described in this section:

Requirements

For information on DB2 UDB for iSeries database client software requirements, see the Exigen Workflow readme file.

Configuring the Database Client

To configure the database client to use the iSeries Access ODBC driver for Transaction Server, proceed as follows:

1. To turn off the OLE DB session pooling for MSDASQL, proceed as follows:
   - Start Windows Registry Editor.
   - In the `HKEY_CLASSES_ROOT\CLSID\{c8b522cb-5cf3-11ce-ade5-00aa0044773d}\` registry key, double-click the **OLEDB_SERVICES** value.
   - Change the **OLEDB_SERVICES** value to *0xfffffffc*.
   - Close Windows Registry Editor.

   Warning: This is a global setting for the whole system and it may affect other applications.

2. If you do not want to change a global setting, to achieve the same result, specify the `OLE DB Services = -4;` parameter in the connection string as described in Application Services Connection String Examples.

   This option affects only connections opened with this connection string.

3. To turn on ODBC connection pooling, proceed as follows:
   - Open ODBC Administrator.
   - Select the **Connection Pooling** tab.
   - Double-click the 32-bit iSeries Access ODBC driver.

     The **Set Connection Pooling Attribute** window appears.

   - Select the **Pool Connections to this driver** option.
   - Set the timeout setting as required.

     A value larger than 60 seconds is recommended, but this setting depends on your specific system requirements.

4. To set the required transaction isolation level, proceed as follows:
   - Open the **iSeries Access Express ODBC setup** window.
   - Select the **Server** tab.
   - Click **Advanced.**
   - Set the commit mode to **CHG*.

Configuring the Database Client for DB2 UDB

The following topics are described in this section:

Requirements

For information on DB2 UDB database client software requirements, see the Exigen Workflow readme file.

Configuring the Database Client

To configure the database client to use Transaction Server, proceed as follows:

1. To turn off the OLE DB Session Pooling for MSDASQL, proceed as follows:
   - Start Windows Registry Editor.
   - In the `HKEY_CLASSES_ROOT\CLSID\{c8b522cb-5cf3-11ce-ade5-00aa0044773d}\` registry key, double-click the **OLEDB_SERVICES** value.
   - Change the **OLEDB_SERVICES** value to *0xfffffffc*.
   - Close Windows Registry Editor.

   Warning: This is a global setting for the whole system and it may affect other applications.

2. If you do not want to change a global setting, to achieve the same result, specify the `OLE DB Services = -4;` parameter in the connection string as described in Application Services Connection String Examples.

   This option affects only connections opened with this connection string.

3. To turn on ODBC Connection Pooling, proceed as follows:
   - Open ODBC Administrator.
   - Select the **Connection Pooling** tab.
   - Double-click the IBM DB2 ODBC driver.

     The **Set Connection Pooling Attribute** window appears.
   - Select the **Pool Connections to this driver** option.
   - Set the timeout setting as required.

     A value larger than 60 seconds is recommended but this setting depends on your specific system requirements.

4. To set the required transaction isolation level, proceed as follows:
   - Open the **IBM DB2 ODBC setup** window.
   - Click **Advanced.**
   - Select the **Transaction** tab.
   - Set the **Isolation Level** parameter to *Serializable or Repeatable Read*.

Application Services Connection String Examples

The following table provides examples of Application Services connection strings:

Application Services connection string examples	
Type	**Example**
OLE DB provider for Oracle	`Provider=MSDAORA;Password=user_password;` `User ID=user_name;Data Source=ora_service;`
ODBC data source	`DSN=dsn_name;UID=user_name;pwd=user_password;`

Application Services connection string examples	
Type	**Example**

OLE DB provider for SQL Server	`Provider=SQLOLEDB;Data Source=server_name;`
	`Initial Catalog=database_name;`
	`User ID= user_name;Password= user_password;`

It is possible to override the default services provided by OLE DB provider for ODBC by specifying the following settings in the connection string:

Connection string default service override parameters	
Value in the connection string	**Services enabled**
`OLE DB Services = -1;`	All services. This is the default value.
`OLE DB Services = -4;`	All services except pooling and automatic transaction enlistment.
`OLE DB Services = -5;`	All services except Client Cursor Engine.
`OLE DB Services = -8;`	All services except pooling, automatic transaction enlistment, and Client Cursor Engine.
`OLE DB Services = -3;`	Only pooling and automatic transaction enlistment services with a session level aggregation.
`OLE DB Services = 0;`	None.

The following is a sample connection string with the `OLE DB Services` parameter:

```
DSN=dsn_name;UID=user_name;pwd=user_password;OLE DB Services = -4;
```

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