COGILITY
SOFTWARE

Installing Cogility Studio

Cogility Studio version 7.0

Document version number 7.0

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Installing Cogility Studio

Contents

Preface

Cogility Studio provides the tools to create a model for an enterprise information system, and deploy it as a J2EE application. The Cogility Studio documentation provides support for this endeavor.

Cogility Studio documentation

Cogility Studio comes with several volumes of documentation to help you.

- *Installing and Configuring Cogility Studio* describes the installation and configuration of your application server, database and Cogility Studio.
- *Getting Started with Cogility Studio* is a brief overview of Cogility Studio.
- *Modeling with Cogility Studio* tells you how to build a model-driven enterprise application using Cogility Modeler and associated tools.
- *Using Actions in Cogility Studio* provides a reference to modeling action semantics for use with Cogility Studio.
- *Change Management in Cogility Studio* describes the change management system for models and model artifacts.
- *Model Deployment & Execution in Cogility Studio* is a guide to application monitoring, maintenance and migration, and describes the utilities that you can use to test and monitor your model deployed as a enterprise application.

Several white papers on various topics are also available to further your understanding of enterprise application integration, business process management, model driven architecture and other related topics. See the Cogility website:

http://www.cogility.com.

1 Cogility Studio

Welcome to Cogility Studio! It is assumed you have an installation CD along with these instructions and that your system meets the hardware and software requirements described below. The software requirements describe the supported J2EE application servers and databases. You may install Cogility Studio, the application server for Cogility Studio and the database in any order. This chapter describes Cogility Studio installation. See the following for specific application server and database installation and configuration instructions:

- "Application servers" on page 15
- "Databases" on page 43

For any configuration, first install Cogility Studio, then configure the application server, and finally configure the database.

Hardware requirements

To install and run Cogility Studio your system must have the following:

- At least 256 MB of hard disk storage
- 1 GB RAM (2 GB is recommended)

> **Note:** Your application server and database have additional memory requirements. Consider all requirements before installing the software.

Software requirements

Cogility Studio is a Java application built to run on Microsoft Windows. The application server and database you run with Cogility Studio must be compatible with the operating system.

Operating system

To run Cogility Studio, your computer must have one of the following Windows operating systems:

- Windows 2000 Professional
- Windows 2000 Server
- Windows 2003 Server
- Windows XP Professional
- Windows Vista
- Red Hat Enterprise Linux AS v 4.2x

Database

Cogility Studio uses a persistent repository, called the Persistent Element Attributes and Relationships (PEAR) repository, that may be created on the following databases. For each database, there are installation and configuration instructions also cited below.

- IBM DB2 8.2
- Microsoft SQLServer 2000
- MySQL 5.1
- Oracle 9i, 10g

The application server must be able to access this database. You must create a user with the roles of **connect** and **DBA**. The user name, password and the location of the database are needed prior to configuring and loading the persistent repository (see below). See "Databases" on page 43.

Application server

You may use any of the following J2EE application servers:

- BEA WebLogic 9.x, 10.0
- IBM WebSphere 6.1 and Cumulative Fix 9
- Oracle Application Server 10g

See "Application servers" on page 15.

Java

The Java run-time environment required to run Cogility Studio is bundled with the installation. Cogility Studio runs on JRE version 1.5x. For installations running OAS (standalone), the Java SDK (or JDK) is also required, but not bundled with Cogility Studio.

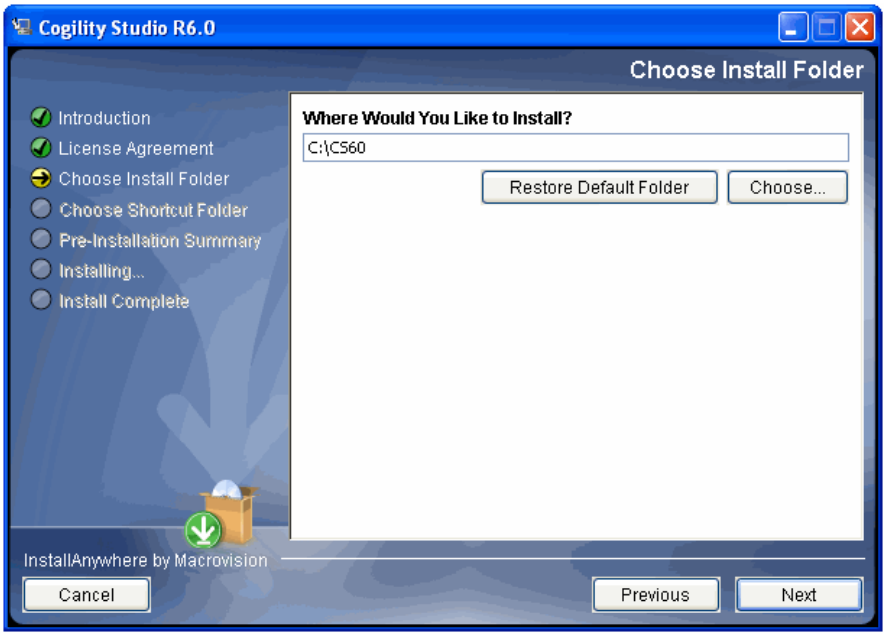
Installing Cogility Studio

You may install Cogility Studio and run it independently of any application server or database. However, to run the composite application you create in Cogility Studio, you must have installed your application server (see "Application server" on page 8) and database (see "Database" on page 8).

To install Cogility Studio:

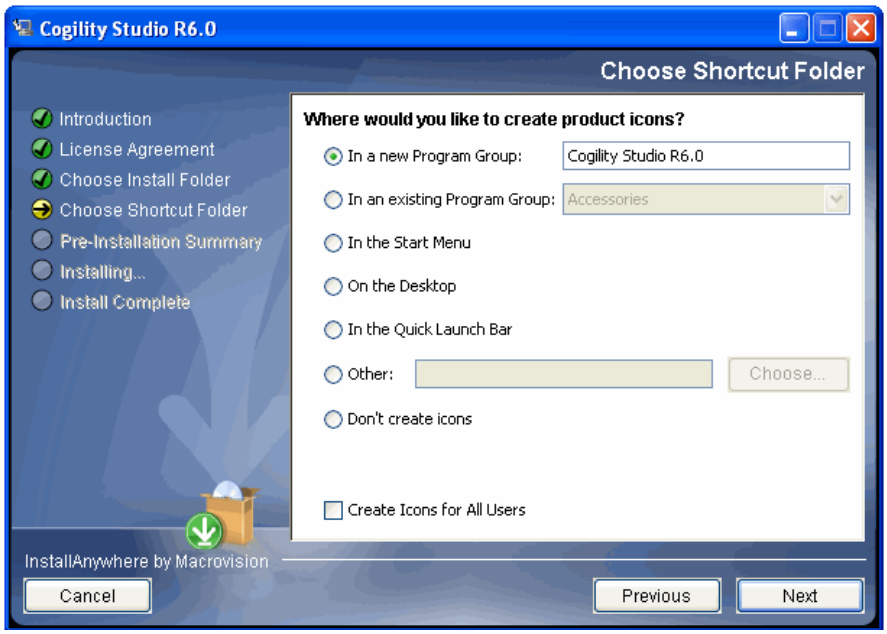
1. Insert the Cogility Studio installation CD into your CD drive.
2. If the installation program does not start automatically, from the **Start** menu, select **Run** on the windows task bar.
   a. Select **Browse**, navigate to your drive with the CD and then to **Disk1\InstData\VM**.
   b. Select **install.exe** and click **Open**.
3. In the Cogility Studio installer's first screen, click **Next**.
4. Click the radio button next to **I accept the terms of the License Agreement** and click **Next**.
5. Enter the location at which to install Cogility Studio and click **Next**.

You may also click **Choose** to navigate to and specify another location. **Do not** install at the top of your drive. Use the location \CS60 or a location within some other folder on the drive. Do not include spaces in folder names you create for the path to the Cogility software.



6. Specify the location for the product icons and click **Next**.

   Check the box for **Create Icons for All Users** if the operating system image allows more than one user and you want all users to see the icons in their views.



7. Review the installation specifications and click **Install** to complete the installation.

   You may also click **Previous** and change the settings you have specified.

8. Click **Done** to exit the installer and complete the installation.

Several temporary files created during the installation are deleted.

Configuration parameters

Note: In this manual, DCHOME refers to the directory in which you installed Cogility Studio. The default directory is CS60. Cogility Studio uses DCHOME to refer to the install directory.

The DCHOME\MB\Config\Files folder contains several default configuration files, and these are summarized in the file DCHOME\MB\Config\defaultConfigurations.txt. **Do not edit these files**.

Instead, to customize your configuration, create a customConfigurations.txt file located in the DCHOME\MB\Config folder. When you start Cogility Modeler, the customConfigurations.txt file is read last; its settings supercede the defaults of the files in the DCHOME\MB\Config\Files folder.

For more information about setting custom configurations, see "Customizing installation configuration" on page 13 of the guide, *Model Deployment & Execution in Cogility Studio*.

Creating the repositories

There are two types of repositories that you work with in Cogility Modeler: an authoring repository and a run-time repository. The authoring repository is the file-based repository that contains all versions of the model artifacts. The run-time repository is the database that holds not only the model application metadata, but the persistent business objects created during the execution of your enterprise application.

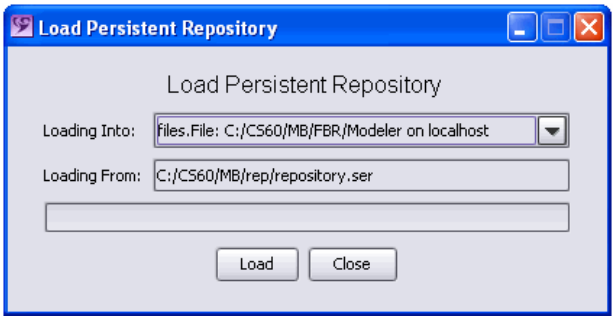
Loading the default authoring repository

The authoring repository is the persistent repository that maintains source control over a model in production. Changes you make to your model are immediately written to the repository, saving your work in case of a system failure. The authoring repository is file-based and you may configure your system to load any of several distinctly named authoring repositories. See "Authoring repository" on page 19 of the guide, *Modeling with Cogility Studio*.

The default configuration includes the settings for one file based repository. The following instructions take you through loading the default repository.

To load a default persistent repository:

1. From the **Start** menu, select **All Programs > Cogility Studio > Cogility Modeler > Load Persistent Repository**.



2. Click **Load**.
3. When Load Persistent Repository completes, close the command window.

> **Note:** Each time you run the Load Persistent Repository utility, a new, empty repository is created. The old repository and all models and versions stored there are deleted.

Creating a user for the run-time repository

When you push your model into execution, the model objects and data are located in the run-time repository on the database you have installed to work with Cogility Studio. For each of the supported databases, instructions for creating the user are included. See "Databases" on page 43.

You can use any name for the user and database. However, the default deployment configurations for Cogility Studio use PEAR for both the user and database name. If you use different names, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

Verifying your installation

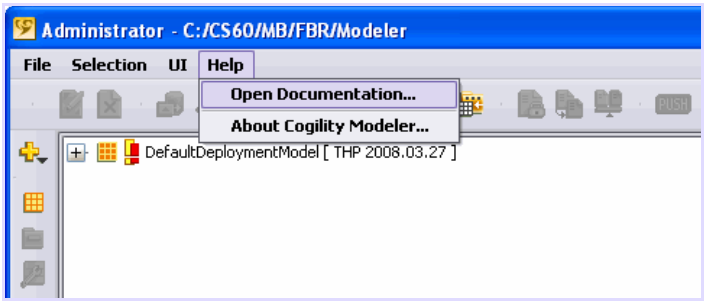
Following the installation of Cogility Studio, your application server, and database, you can verify that Cogility Studio is working properly by following the quick tour in the guide, *Getting Started with Cogility Studio*.

To start Cogility Modeler and verify your installation:

1. From the Windows **Start** menu, select **All Programs** > **Cogility Studio** > **Cogility Modeler** > **Cogility Modeler Login**.

   The Cogility Modeler login window displays. You do not have to log in or specify a model. Cogility Modeler then displays with only a default deployment model.

2. In Cogility Modeler, from the **Help** menu, select **Open Documentation**.



You can also access the documentation through the Start menu.

3. Navigate to **Getting Started > Getting Started with Cogility Studio**.

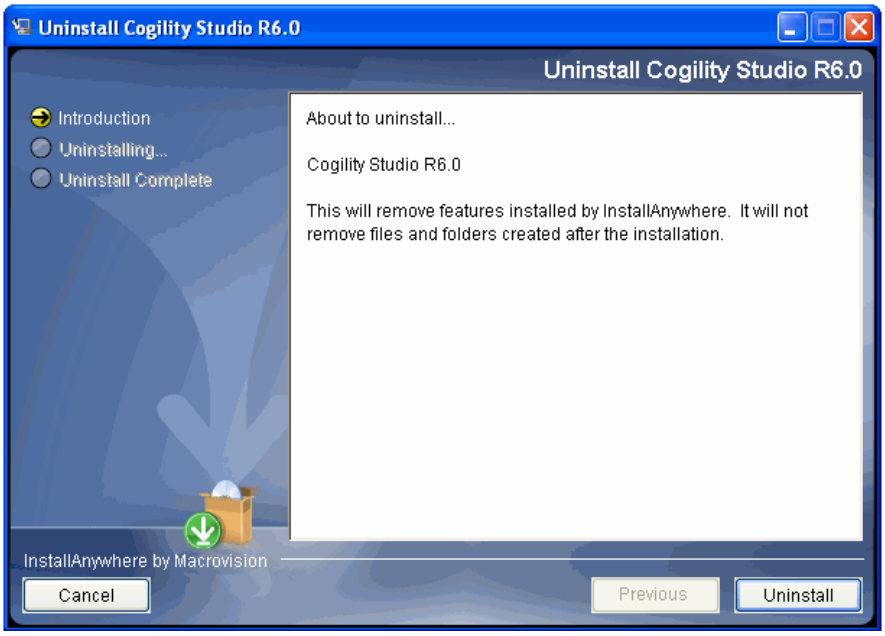
You can also follow the quick tour in the PDF version of the guide, *Getting Started with Cogility Studio* available on the Cogility website: **http://www.cogility.com**.

Uninstalling Cogility Studio

The steps here guide you through removing Cogility Studio and its components from your system.

To uninstall Cogility Studio:

1. From the **Start** menu, select **All Programs > Cogility Studio > Uninstall Cogility Studio**.
2. Click **Uninstall** and **Done**.



After uninstallation, the following folders and files remain on your system:

- \CS6.0\Config
- \CS6.0\Engagement
- \CS6.0\MB\FBR

- \CS6.0\Config\cogility.lic
- \CS6.0\MB\Config\customConfigurations.txt
- \CS6.0\MB\Config\Files\macros.txt
- \CS6.0\MB\Config\Files\pear-params.txt
- \CS6.0\MB\Config\Files\userprefs.txt
- Anything you have created in \CS6.0\ or any of its subdirectories.

If you are uninstalling prior to installing an upgrade, do not remove any folders or files within the DCHOME directory or change the Cogility Studio environment variables you created to work with your application server.

2

Application servers

You may run Cogility Studio with BEA WebLogic 11 and *10 version 3*, IBM WebSphere 6.1, or Oracle Application Server 10g.

BEA WebLogic

Install WebLogic *11*. If you are running BEA WebLogic for your J2EE applications, you can create a WebLogic domain for Cogility Studio.

> **Note:** The following screen shots are from WebLogic 11 and help document its manual configuration.

Installation

Download Oracle WebLogic Server software for you platform from http://www.oracle.com

Install Oracle WebLogic Server according to Oracle instructions.

Configuration

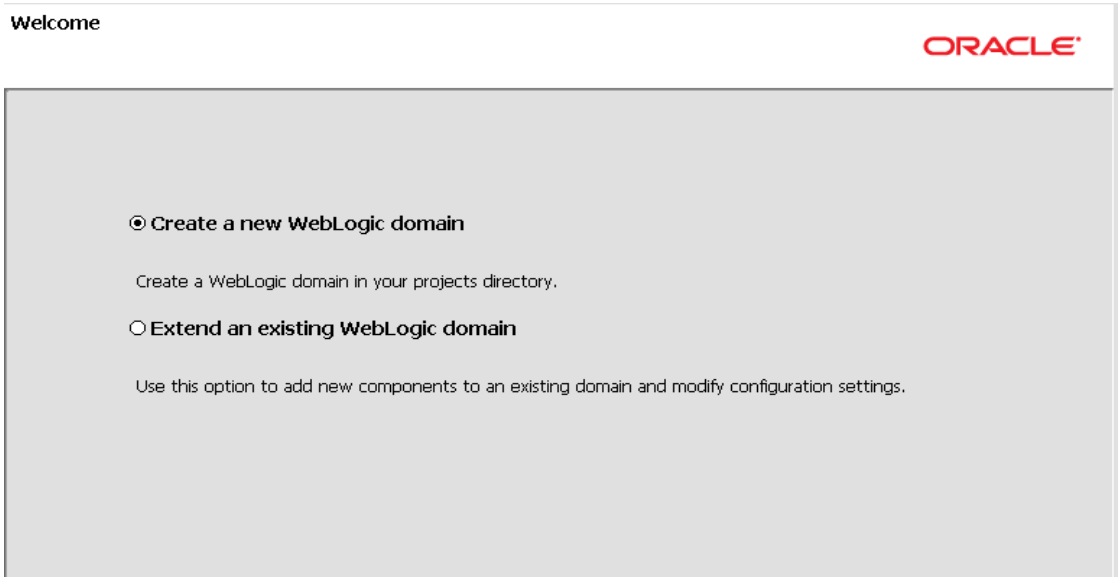
If you have a WebLogic server for a previous version of Cogility Studio, you must delete it before following these instructions.

Create and configure a WebLogic Cogility Domain:

1. Install WebLogic according to your requirements.

   See the WebLogic product documentation for more information.
2. From the Windows **Start** menu, select **All Programs > BEA Products > Tools > Configuration Wizard**.

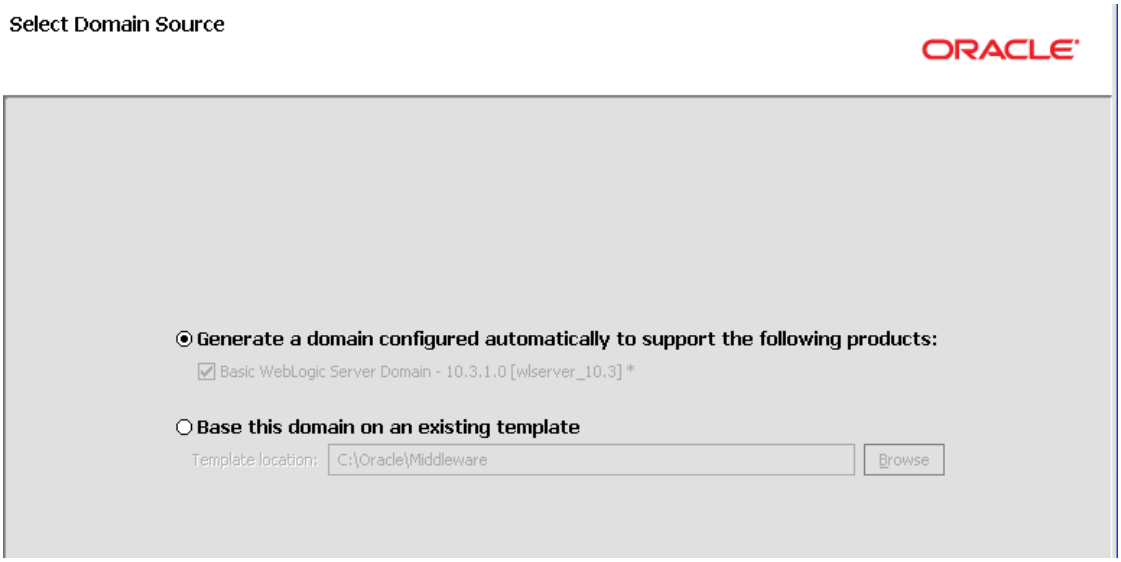
3. In the **Welcome** screen, select **Create a new WebLogic domain** and click **Next**.



4. In the **Select Domain Source** screen, you are given the option to create the domain using an existing Template or to define it manually.

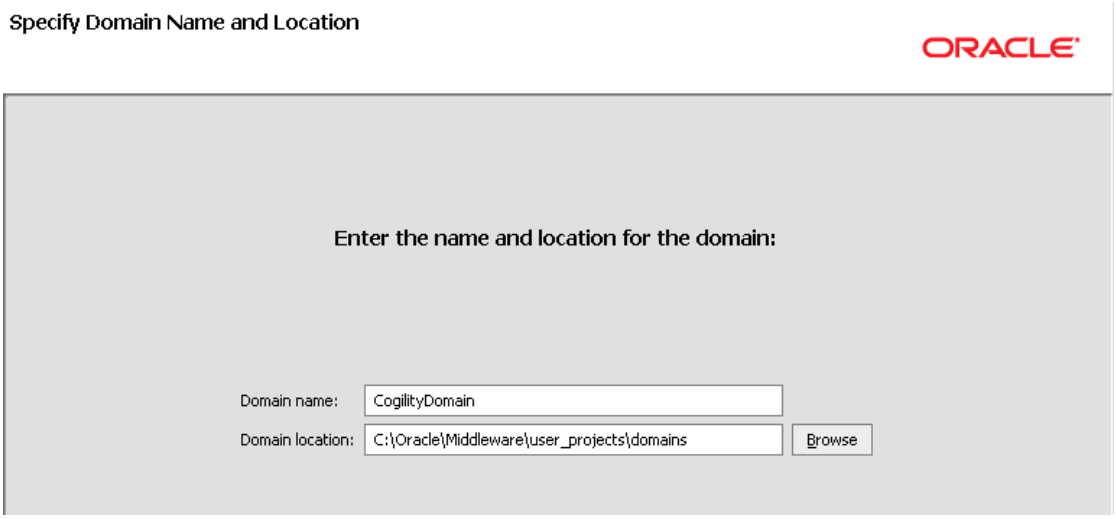
Note: Either option can be chosen to create a Cogility domain. CogilityStudio provides two templates to create a standalone domain, with and without support for SSL, and a template which supports Managed Servers. The templates are located in DCHOME/scripts/Weblogic/Templates. Selecting a template will automate most of the following steps.

The following instructions document the process for manually creating a Stand Alone Cogility Domain. The same results can be obtained by using the StandAlone template provided by the Cogility Studio installer. Select the **Generate a domain configured automatically to support the following products** and click **Next**.



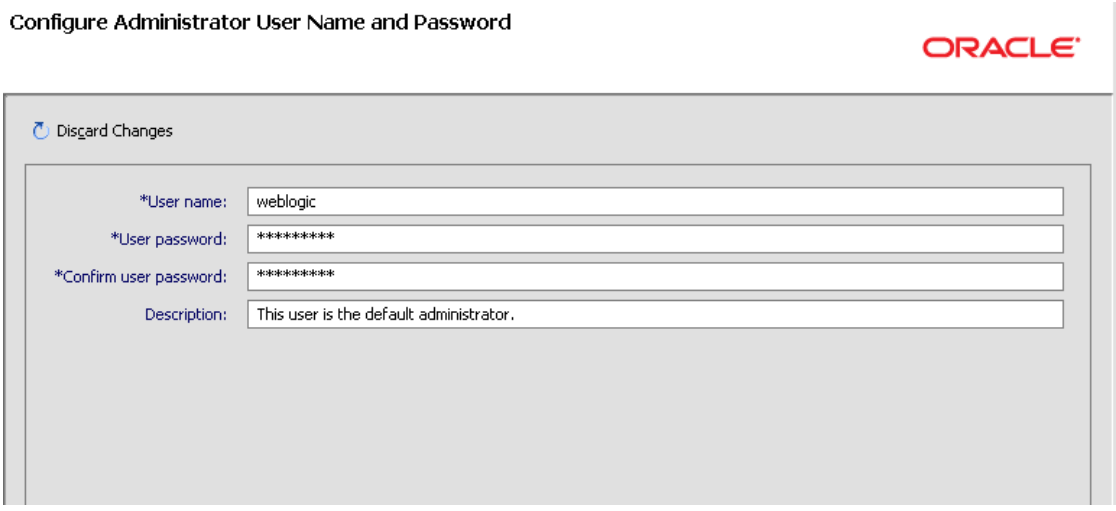
5. In the **Specify Domain name and Location** screen, enter the appropriate values for Domain name and Domain location.

   The Domain name should be named **CogilityDomain**.

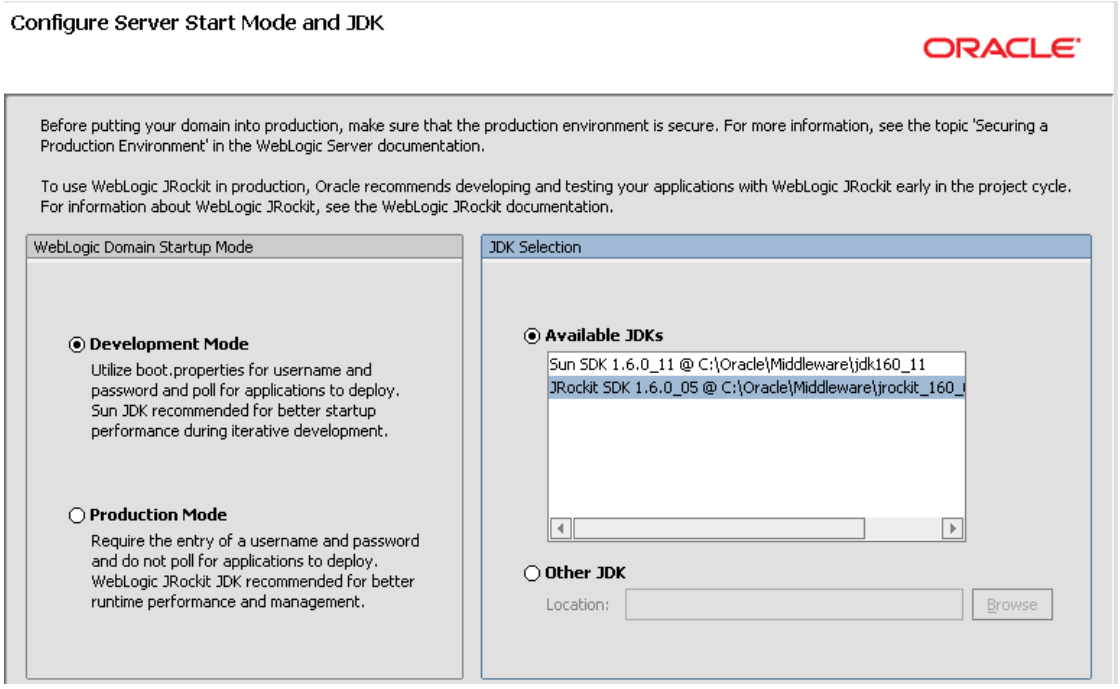


6. In the **Configure Administrator User Name and Password** screen, enter the desired username and password and click **Next**.

   The default username is **weblogic** and **cogility1** is used for the password, however any desired values can be entered as long as they are supported by WebLogic.



7. In the **Configure Server Start Mode and JDK** screen, select the startup mode and choose or browse to the desired JDK, then click **Next**.

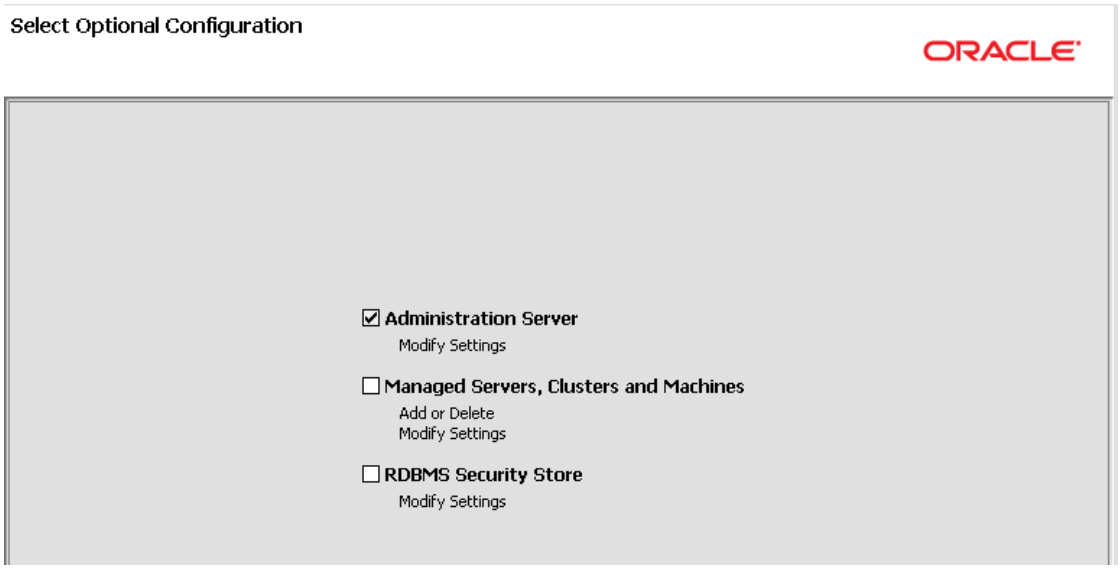


Note: You can specify another **JDK**, but it must be version **1.6.0_x**.

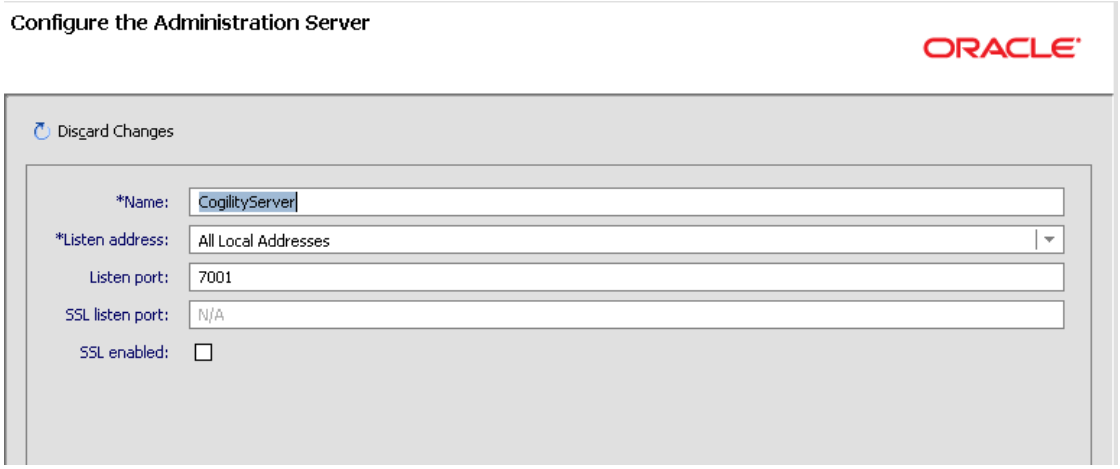
8. In the **Select Optional Configuration** screen, check the **Administration Server** checkbox and click **Next**.

Note: For Standalone configurations, you only need to configure the Administration Server. It is not optional. For a Managed Server configuration, both Administration Server and Managed Servers, Clusters and Machines should be checked.

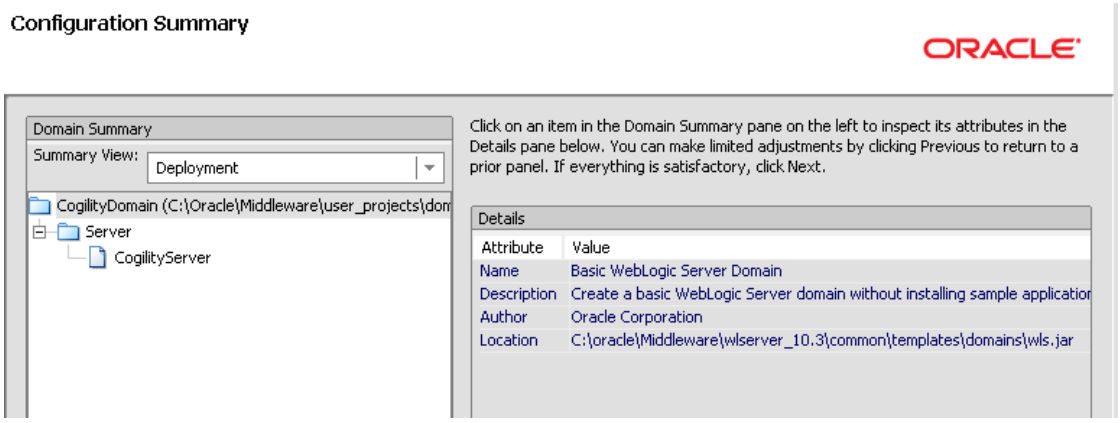
Standalone Configuration



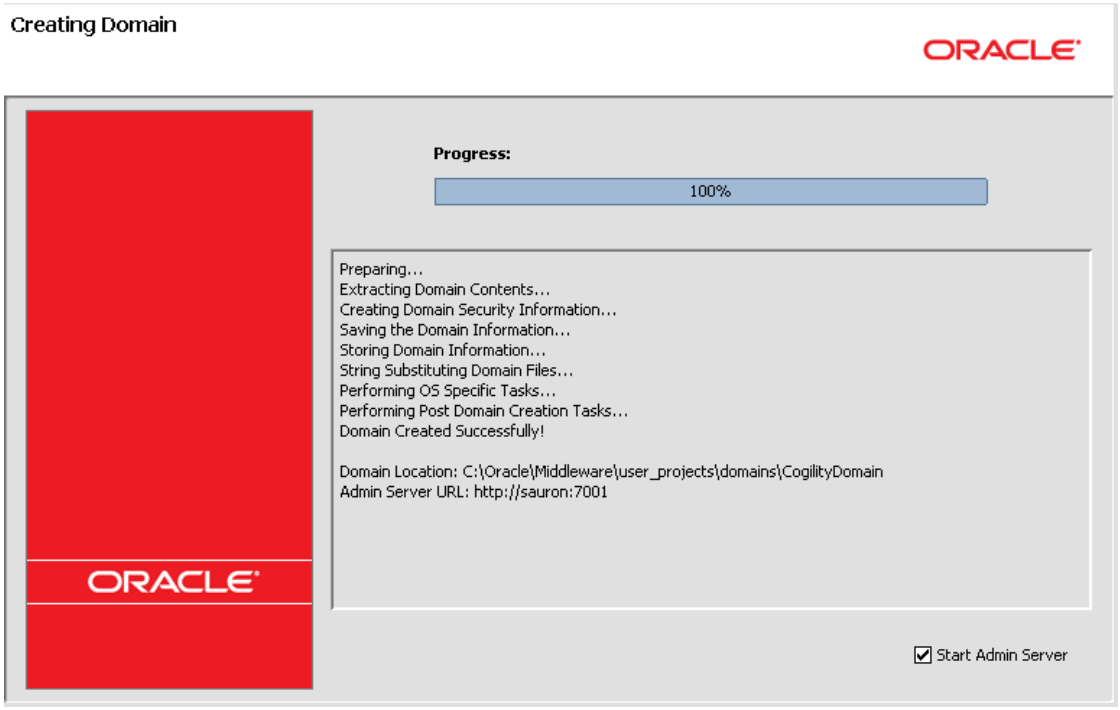
9. In the **Configure the Administration Server** screen, specify the name **CogilityServer.** By default, the Listen port is **7001** and this is the default port number in the Cogility Default Deployment Mode. You can change the port number if desired, but it is then required to be changed in the model. If SSL is desired, check the SSL enabled checkbox, enter the desired SSL listen port , and click **Next**.



10. In the **Configuration Summary** screen, review the details for accuracy. If changes need to be made, click the **Previous** button to return to the problem area to make your corrections. If you are satisfied, click **Create**.

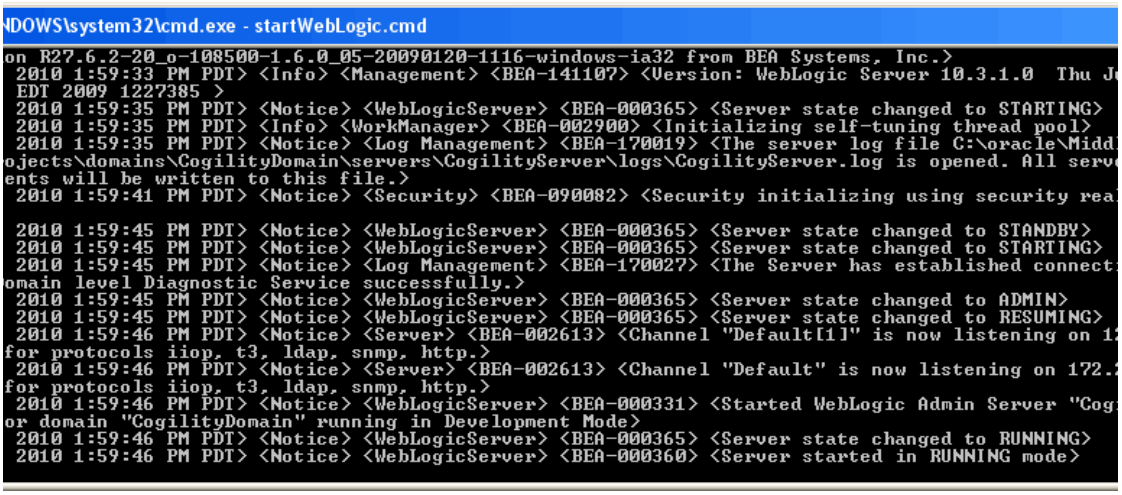


11. In the **Creating Domain** screen, check the **Start Admin Server** checkbox and click **Done**.



Pressing Done will dismiss the Configuration Wizard and start the Admin Server. A console window is displayed. In order to start the Admin Server, the username and password defined above (step 5) must be supplied.

When the logging indicates that the **Server started in RUNNING mode**, the Admin Server is started.



12. Launch the **Admin Server Console**.

    If the Cogility Domain is created manually, then a link to the Admin Server Console should be create in the BEA menu, under the Windows Start menu.

    From the Windows **Start** menu, select **All Programs > BEA > User Projects > CogilityDomain > Admin Server Console**.

    If the menu doesn't exist, the Admin Server Console can be launched by using the following Address in a web browser:

    http://targethost:listenPort/console

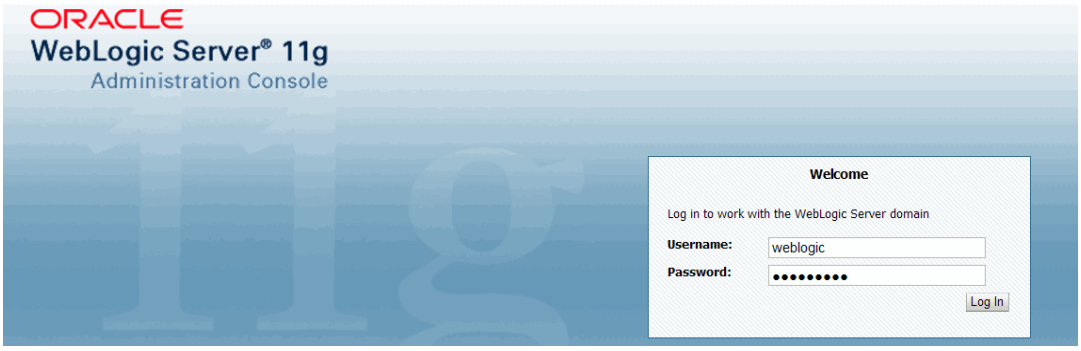
    where targethost is host computer. This value can be the hostname or ip address of the computer or localhost, and listenPort is the value defined on the **Configure the Administration Server** screen (step 8).

    For example

    http://localhost:7001/console

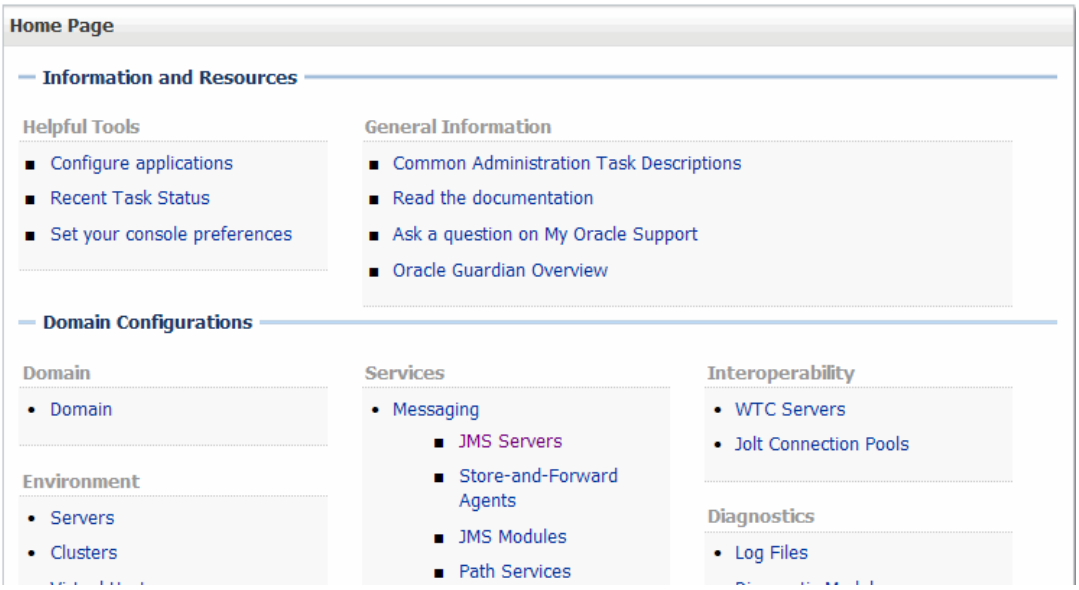
Configure the JMS Server for Cogility

On the login page, enter the username and password define above (step 6).

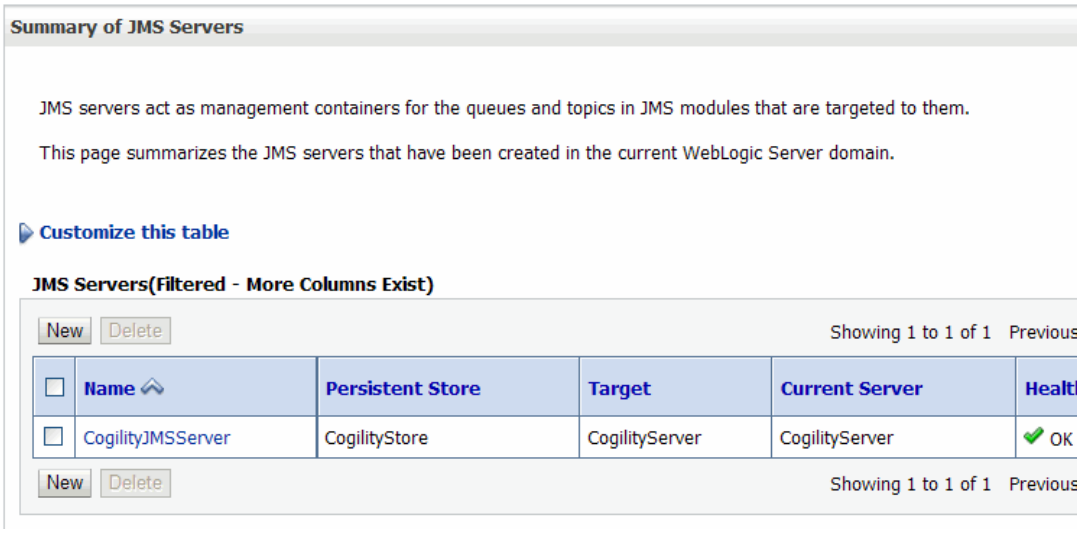


This will display the Oracle Weblogic Server Administration Console home page.

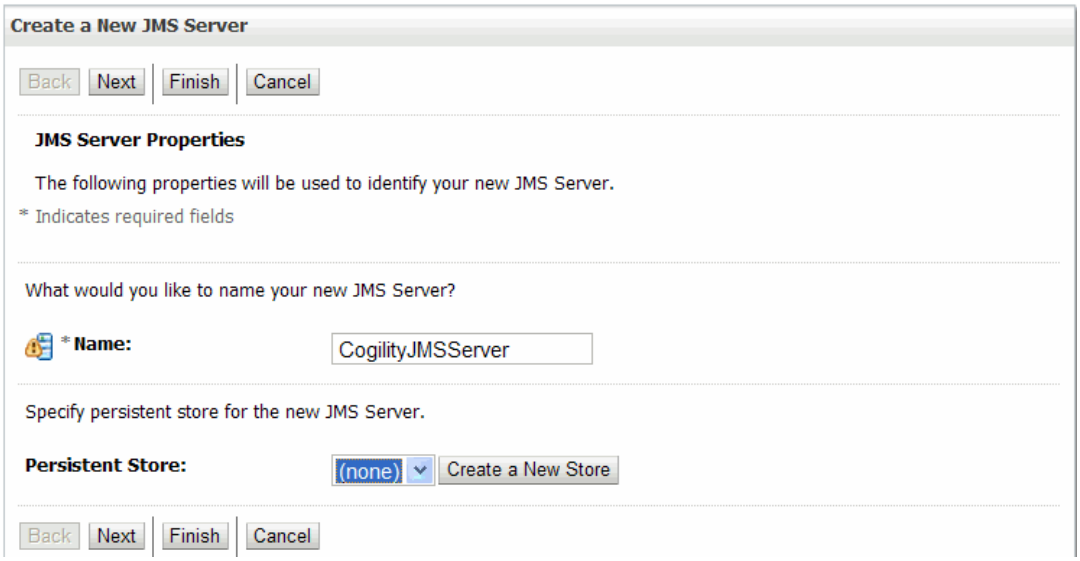
13. In the center of the **Home Page**, under **Services > Messaging**, click on the **JMS Servers** link.



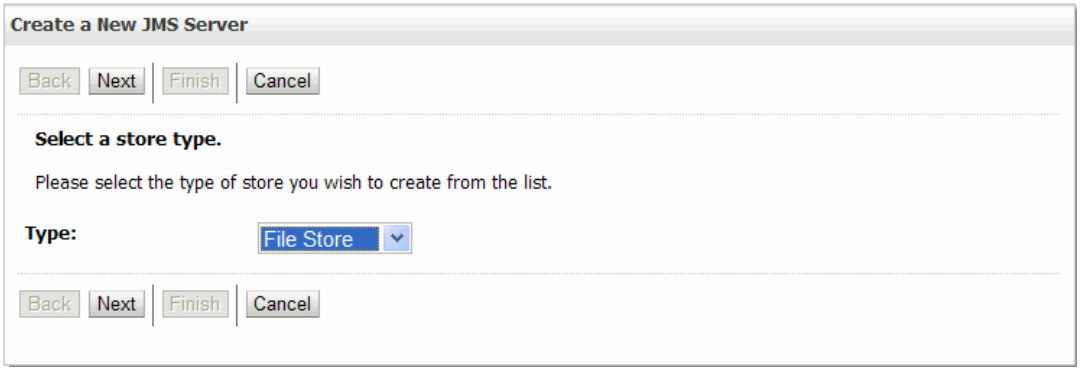
14. On the **Summary of JMS Servers** page, click **New**.



15. In the **Create a New JMS Server - JMS Server Properties** screen and in the **Name** field, enter **CogilityJMSServer**. In the Persistent Store field, click **Create a New Store**.

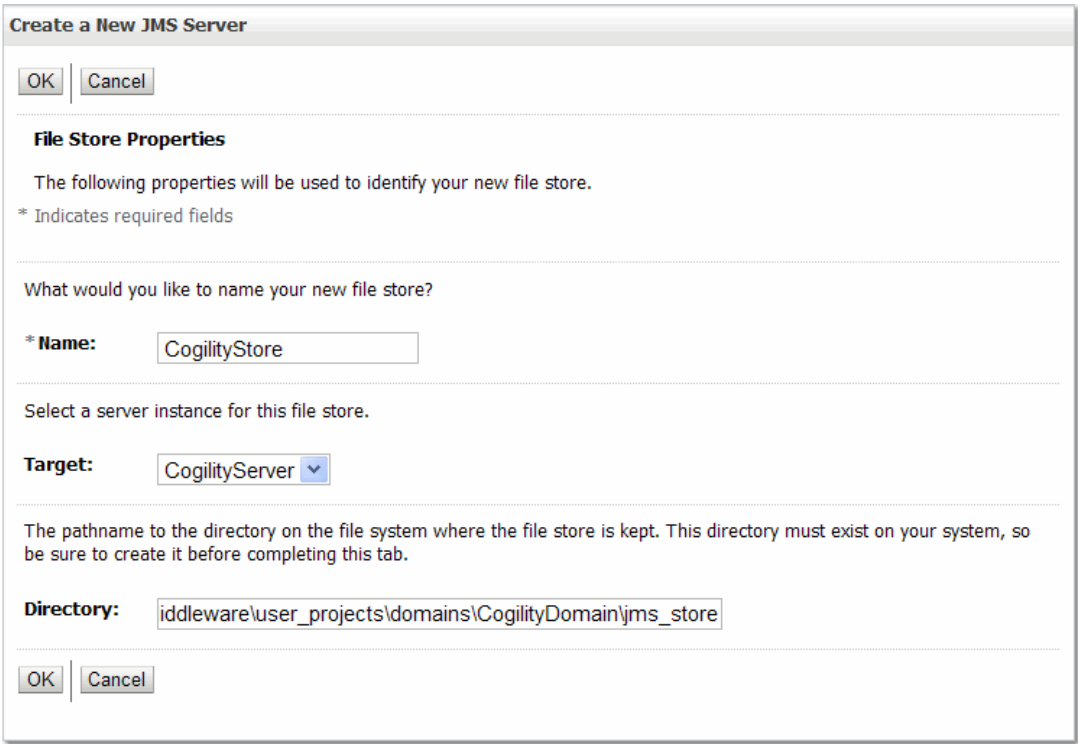


16. In the **Create a New JMS Server - Select a store type** screen, select **File Store** and click **Next**.

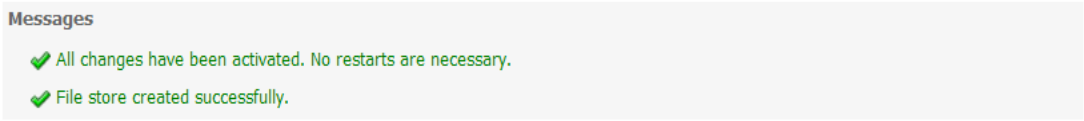


17. In the next **Create a New JMS Server - File Store Properties** screen,
    a. change the **Name** of the file store to **CogilityStore**
    b. verify that the **Target** is **CogilityServer**
    c. enter the name of an existing **Directory** where the file store will reside, then click **OK**

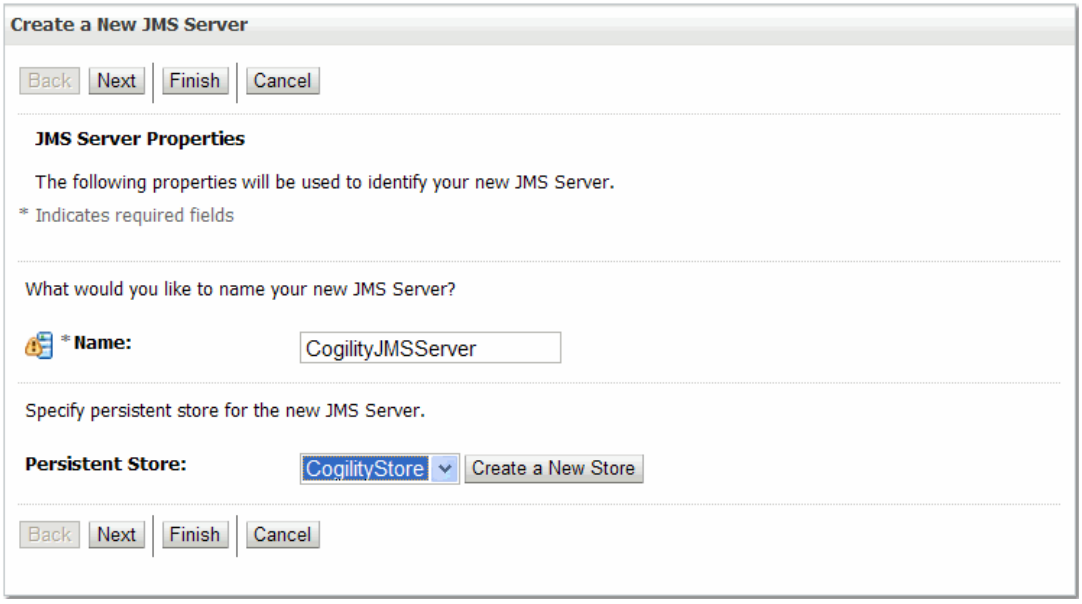
Note: The Standalone Template will create a directory named **jms_store** in the ..\user_projects\domains\CogilityDomain directory.



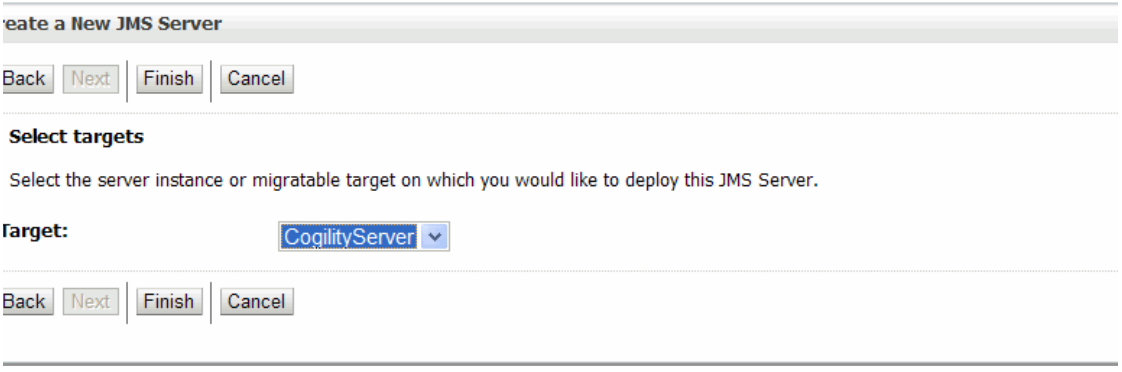
At this point, the Administration Console should display a message that all changes have been activated and that the File store was successfully created.



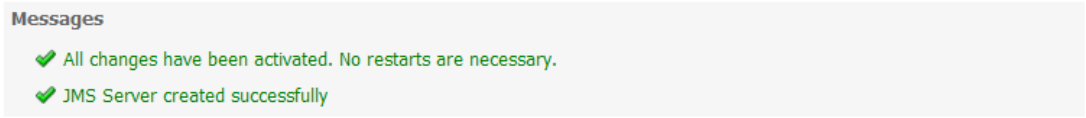
18. In the next **Create a New JMS Server - JMS Server Properties** screen, select **CogilityStore** as the **Persistent Store**, and click **Next**



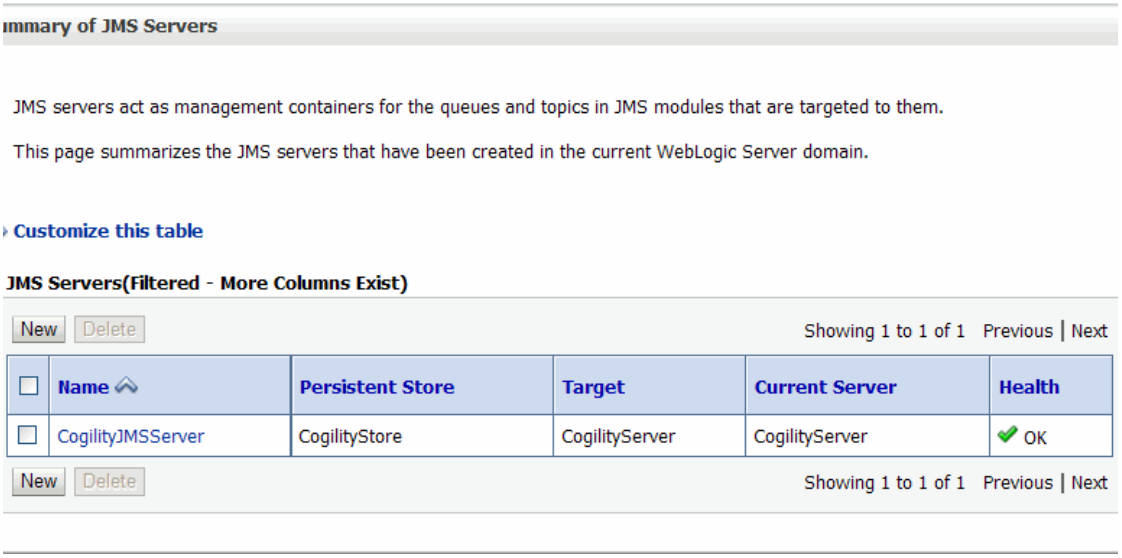
19. In the next **Create a New JMS Server - JMS Server Properties** screen, select **CogilityServer** as the **Target** and click **Finish**.



At this point, the Administration Console should display a message that all changes have been activated and that the JMS Server was successfully created.



20. The **Summary of JMS Servers** screen is displayed stating that the JMS Server was created successfully. Verify that the CogilityJMSServer has a persistent store, a target server, and a current server.



(Optional) Create boot identity file for server instance

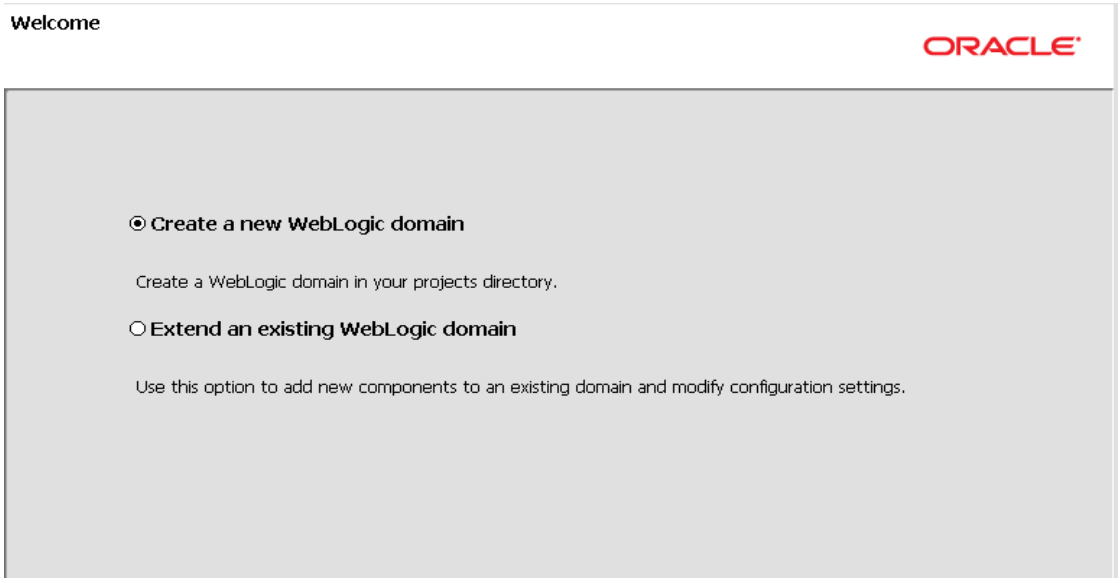
> **Note:** This step is not required for version 11. It is performed automatically.

1. Create a new directory named **security** in ../user_projects/domains/CogilityDomain/servers/CogilityServer
2. In the **security** directory, create a new file named **boot.properties**.
3. In the boot.properties file, enter:
   username=*specified_username* (from Step 6)
   password=*specified_password* (from Step 6)
4. Start the WebLogic Admin Server

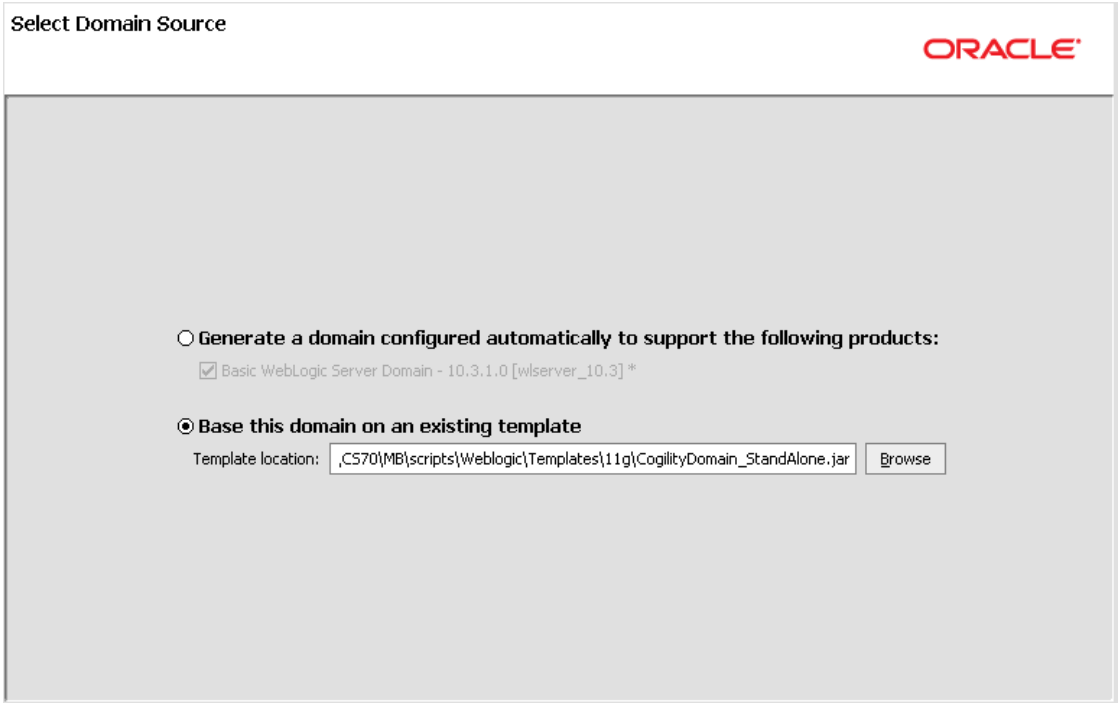
Using Cogility Templates

1. Install WebLogic according to your requirements.
   See the WebLogic product documentation for more information.

2. From the Windows **Start** menu, select **All Programs > BEA Products > Tools > Configuration Wizard**.
3. In the **Welcome** screen, select **Create a new WebLogic domain** and click **Next**.



4. In the **Select Domain Source** screen, Select the **Base this domain on en existing template**, browse to the location of the Cogility Domain Template, and click **Next**.



The templates are located in DCHOME/scripts/Weblogic/Templates.

The Configuration screens that follow will be populated with values defined in the Template. Some of these values can be changed, but changes may require changes elsewhere. If a cusomized configuration is desired, it is suggested to perform a manual configuration and not a Template-based configuration.

WebLogic environment variables

Cogility Studio requires that two environment variables be defined when working with WebLogic. These variables are defined and set using scripts installed with CogilityStudio. For Windows platforms, update the file DCHOME\MB\scripts\subroutines\SET_WL_ENV.bat, and UNIX-Linux platforms, update the file DCHOME/MB/bin/subroutines/set_WL_env.sh.

Environment variable	Value
WL_HOME	The path to installation location of BEA WebLogic vX.x (for example, C:\oracle\Middleware\wlserver_10.3) This document uses %WL_HOME% to refer to this variable
WL_DOMAIN	**CogilityDomain** This document uses %WL_DOMAIN% to refer to this variable. The deafualt value is CogilityDomain.

Note: These variables can be edited manually in the file or by using the Project Configuration Editor.

Starting and Stopping WebLogic Server

When starting the WebLogic Server, user credentials must be provided. With version 11 (10.3.x and later), username and password for the administrator's account are captured, encrypted,and saved. Credentials are saved to a file named **boot.properties**, located in the directory associated to the WebLogic Domain (the CogilityDomain). By deafault, the file is located in BEA_HOME\user_projects\domains\CogilityDomain\servers\CogilityServer\security.

The WebLogic Server can be run either as an application or a service (a daemon on unix platforms).

Running as an application

For Windows installation, the Cogility installer creates shortcuts to start and stop WebLogic. These shortcuts are located in **Start > Cogility Studio x.x > Application Server > WebLogic**.

WebLogic can also be started from the command line.

For Windows platforms, navigate to the **DCHOME\MB\scripts\WebLogic** directory and execute **startWLAdminServer.cmd**. To stop the WebLogic server, execute **stopWLAdminServer.cmd**. The stop script also requires user credentials, but it does not utilize the boot.properties file. When stopping the WebLogic server from the command line either supply the username and password as agruments or respond to the prompts. The script can also be edited to include these values.

For UNIX platforms, navigate to the DCHOME/MB/bin/WL directory and execute **startAdminServer.sh** and **stopAdminSever.sh** to stop the WebLogic server.

Running as a Windows service

The CogilityStudio install includes scripts to install and uninstall a Windows WebLogic service. These scrips are located in the **DCHOME\MB\scripts\WebLogic** directory.

Prior to installing the Windows WebLogic service, the WebLogic environment variables **WL_HOME** and **WL_DOMAIN** must first be defined. The script **installWLSvc.cmd** creates a Windows service named **beasvc CogilityDomain_CogilityServer**, when the CogilityDomain is created using default values. This is an automatic service, but the computer must be restarted or the service manually started initially.

The Windows service can be uninstalled by executing the script **uninstallWLSvc.cmd**.

Defining the output log file

Configure logging when running as an application

When running WebLogic as a Windows application, logging can either be output to the console, from which the WebLogic application was launched or it can be written to a user defined text file. By default, logging is written to a text file. The logging configuration can be modified by editing the startWLAdminServer.cmd script.

1. Edit the file %DCHOME%\MB\scripts\Weblogic\startWLAdminServer.cmd
   - The LOGGING_CHOICE variable determines if output is written to a file or the console.
   - The WLS_STDERR_LOG variable determines the location and name for standard error logs.
   - The WLS_STDOUT_LOG variable determines the location and name for standard out logs.
2. Save and close the file.

Configure logging when running as a Windows Service

When running WebLogic as a Windows service, logging is written out to text files. The standard output file and location is maintained by WebLogic. It defaults to the %USERDOMAIN_HOME%\servers\CogilityServer\logs. The WebLogic Admin Console can be used to specify a new location and/or filename. See the WebLogic documentation for more information regarding this process. The standard error file is specified in the script that installs the Windows service. If a new location and/or filename is required, make the changes to that file prior to installing the service. Keep in mind, the service can always be uninstalled and reinstalled once script changes have been made.

IBM WebSphere

Cogility Studio supports IBM WebSphere version 6.1. If you have a WebSphere server for a previous version of Cogility Studio, you must delete it before following these instructions. Cogility provides configuration scripts that run in a batch file and automatically set up WebSphere 6.1 for use with Cogility Studio. Follow the instructions in "Scripted configuration" on page 29. You can also manually configure WebSphere 6.1 following the instructions in "Manual configuration" on page 30.

Scripted configuration

To install and configure Cogility Studio for WebSphere:

1. Install IBM WebSphere 6.1 according to your requirements.

   See the WebSphere product documentation for more information.

   Note: If you intend to run WebSphere as a service, select this option during installation.

2. Install any updates, fix packs or refresh packs, as necessary.

3. Open a console window, navigate to DCHOME\MB\scripts\was, and enter the following command:

   ```
   configure_was.bat
   ```

If the script fails, follow the steps in "Manual configuration" on page 30, next.

Manual configuration

To install and configure Cogility Studio for WebSphere:

1. Install IBM WebSphere 6.1 according to your requirements.

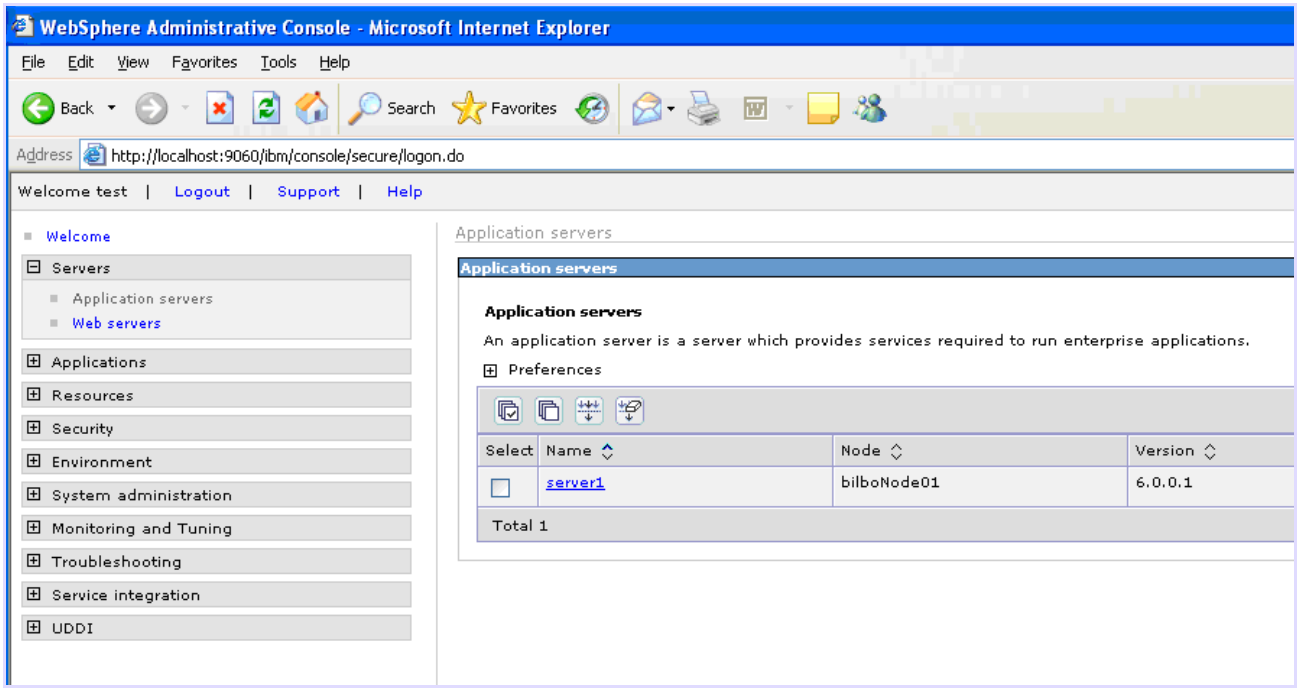
   See the WebSphere product documentation for more information.

   Note: If you intend to run WebSphere as a service, select this option during installation.

2. Install any updates, fix packs or refresh packs, as necessary.
3. From the **Start** menu, select **All Programs > IBM WebSphere > Application Server > Start the Server**.
4. Launch the Administrative Console.

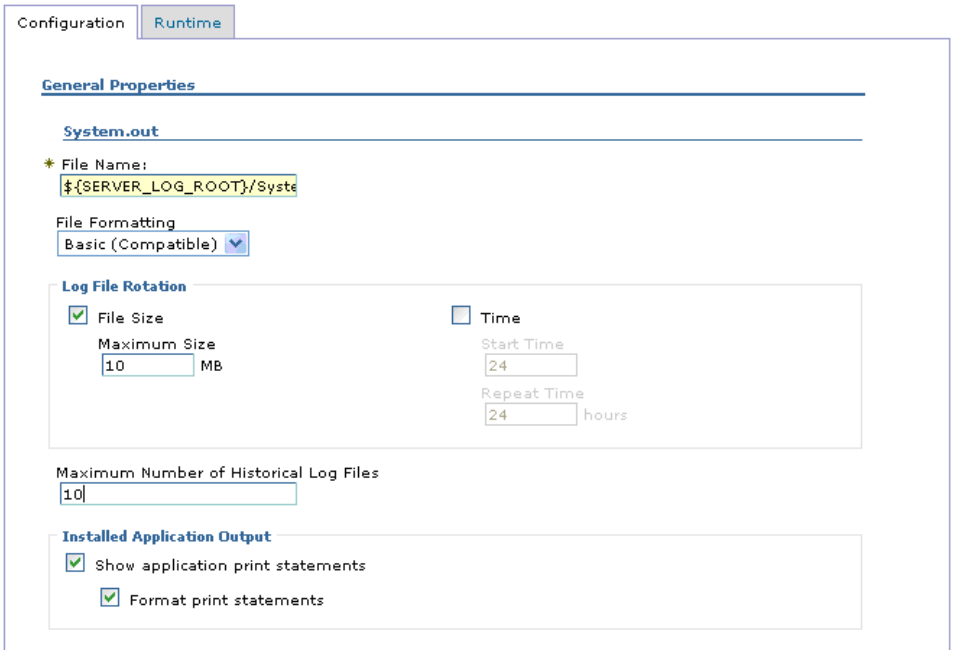
   For version 6.1, from the **Start** menu, select **All Programs > IBM WebSphere > Application Server v6.1 > > Profiles > (profile) > Administrative Console**.
5. In the server console, enter the user name and press **Enter**.
6. In the **Administrative Console**, in the left pane, expand **Servers** and click on **Application Servers**.
7. In the right pane, click on the **Server1** link.

   A typical installation sets up Server1 as the default server.



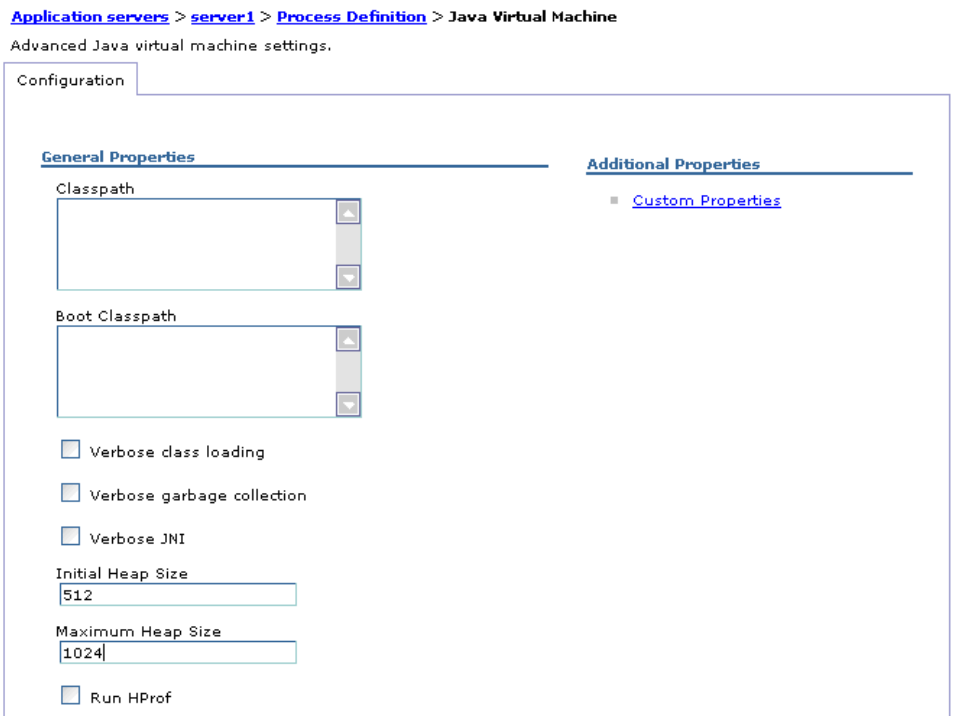
8. In the right pane, under **Troubleshooting**, click the **Logging and Tracing** link.
9. In the right pane, under **General Properties**, click the **JVM Logs** link.

10. Under the Configuration tab, under General Properties, for the System.out log file, set the following values.
    a. Under **Log File Rotation** check **File Size** and, in the **Maximum Size** field, enter **10**.
    b. In the **Maximum Number of Historical Log Files** field, enter **10**.



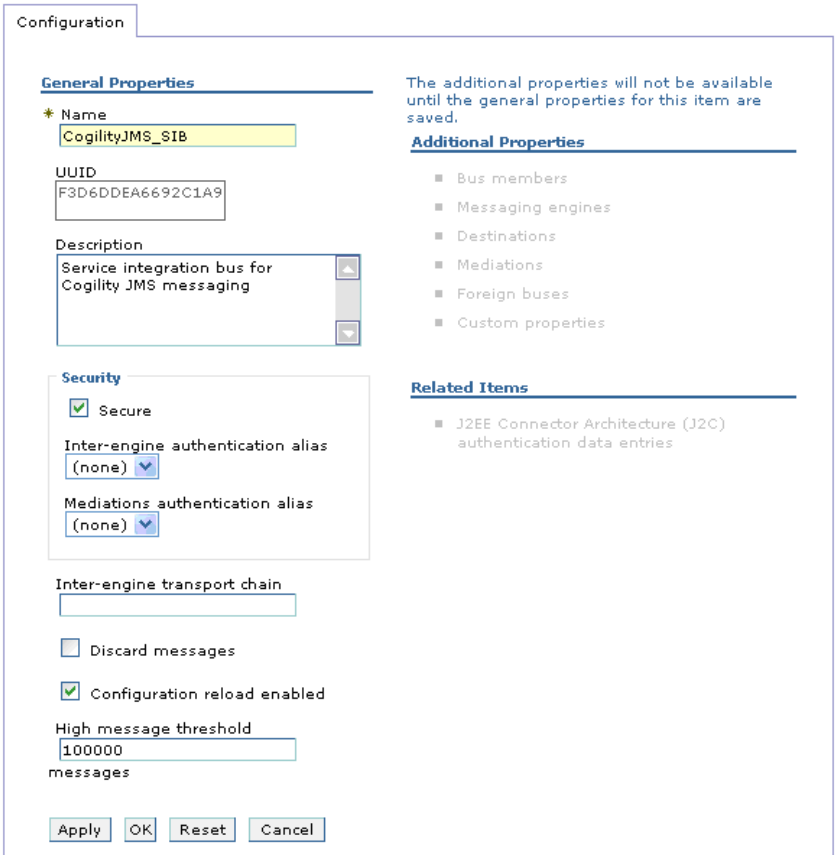
11. Scroll to the bottom of the **Configuration** window, click **Apply** and click **Save**.
12. In the **Administrative Console**, in the left pane, expand **Servers** and click on **Application Servers**.
13. In the right pane, click on the **Server1** link.
14. In the right pane, under **Server Infrastructure**, click the **Process Definition** link.
15. Under **Additional Properties**, click the **Java Virtual Machine** link.
16. Under **General Properties**, set the following values:
    a. In the **Initial Heap Size** field, enter **512**.

b. In the **Maximum Heap Size** field, enter **1024**.



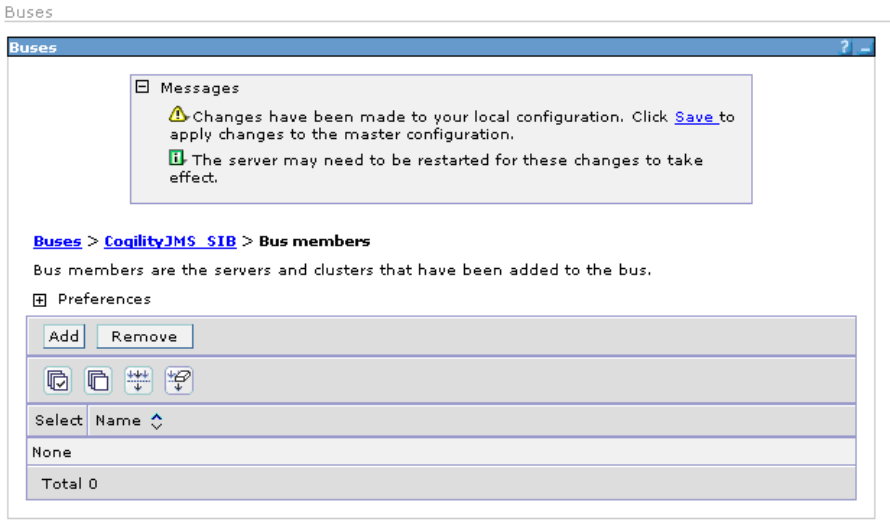
17. Scroll to the bottom of the **Configuration** window, click **Apply** and click **Save**.
18. In the left pane, expand **Service Integration** and click on the **Buses** link.
19. In the Configuration tab, under **General Properties**, enter the following values:
    a. In the **Name** field, enter **CogilityJMS_SIB**.
    b. In the **Description** field, enter **Service integration bus for Cogility JMS messaging.**
    c. In the **High message threshold** field, enter **100000**.

d. At the bottom of the window, click **Apply** and click **Save**.



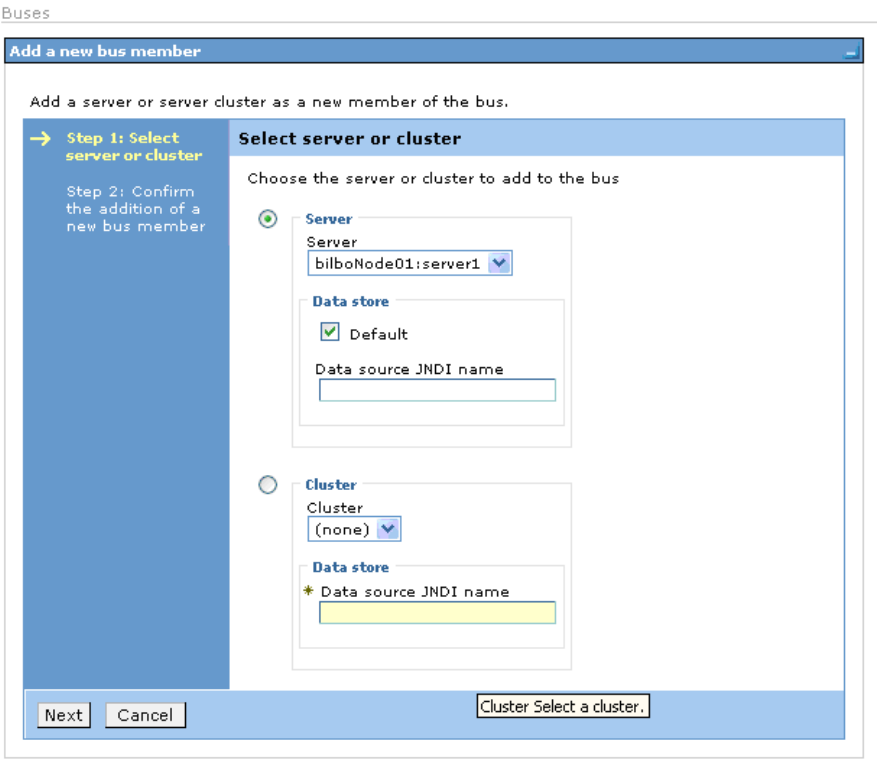
20. In the Configuration tab, under **Additional Properties**, click the **Bus Members** link.

21. In the **Buses** window, click **Add**.



a. Under **Select server or cluster**, select **Server** and click **Next**.

b. Click **Finish**.



22. At the top of the **Administrative Console** window, click **Logout**.
23. Stop the WebSphere application server.

    For version 6.1, from the **Start** menu, select **All Programs > IBM WebSphere > Application Server v6.1 > Profiles > (profile) > Stop the Server**.
24. For version 6.0 only, copy DCHOME\MB\3p-lib\jwsdp-1_5-endorsed.jar to the %WAS_HOME%\lib\ext directory.

    For the above, DCHOME is the location where you installed Cogility Studio, and %WAS_HOME% is the location where you have installed the IBM WebSphere application server.
25. Back up the WebSphere configuration files as follows:
    a. Navigate to %WAS_HOME%\profiles\%WAS_PROFILE%\bin.
    b. Save the configuration to a .zip file by entering the following in the command line:

    ```
    backupConfig savedConfig.zip
    ```

    If the configuration files are corrupted, they can be restored by entering the following command in this location:

    ```
    restoreConfif savedConfig.zip
    ```

Configure WebSphere connections

Following initial installation and configuration, you may establish or reestablish the connection pools for IBM WebSphere. Your integration environment (hardware profile, amount of load and usage patterns) will dictate how this parameter changes. You perform these steps after first pushing a model into execution.

To configure the WebLogic connection pools:

1. In Cogility Modeler, push your model into execution.

   See "Pushing the model into execution" on page 271 of the guide, *Modeling with Cogility Studio*.
2. Launch the WebSphere Administrative Console, as follows:

   For version 6.1, from the **Start** menu, select **All Programs > IBM WebSphere > Application Server v6.1 > Profiles > (profile) > Administrative Console**.
3. In the server console login, enter the user name and press **Enter**.
4. In the **Administrative Console**, in the left pane, expand **Resources > JMS Providers** and click on **Default Messaging**.
5. In the **Default messaging provider** window, under **Connection Factories**, click on **JMS topic connection factory**.
6. In the **JMS topic connection factory** window, click on the **DemoConnectionFactory** link.
7. In the **DemoConnectionFactory** window, under **Additional Properties**, click on **Connection pool properties**.
8. In the **Maximum connections** field, you can update the value. The default is 10.

WebSphere environment variables

Following installation and configuration, create the following environment variables (under Start > Control Panel > System > Advanced).

Environment variable	Value
WAS_HOME	The path to the location of IBM WebSphere where you want to deploy the application (the target machine).[1]
WAS_HOME_LOCAL	The location of IBM WebSphere from where you are deploying the application (the source machine).[1]
WAS_CELL	The name of the computer where IBM WebSphere is installed (case sensitive). This is set during installation.
WAS_NODE	The name of the computer where IBM WebSphere is installed (case sensitive). This is set during installation.
WAS_SERVER	The name of the server running Cogility Studio, defined as **server1** for a default installation. This is set during installation.
WAS_PROFILE	The name for the profile under which the %WAS_SERVER% is run, defined as **default** for a default installation.. This is set during installation.

1 WAS_HOME and WAS_HOME_LOCAL have the same value unless you are performing a remote deployment. See Chapter 8, "Remote Deployment." of the guide, *Model Deployment & Execution in Cogility Studio.*

Insight and WebSphere conflicts

In order for Cogility Insight to work properly with IBM WebSphere, you must rename two of the Java libraries installed with it. These libraries are incompatible with Cogility Insight; renaming them prevents Cogility Insight from using them.

1. Rename the following files located in WAS_HOME\lib:
   - `ws_jsf.jar` - rename to `ws_jsf.jar.old`
   - `jsf_api.jar` - rename to j`sf_api.jar.old`

2. Push the model application.

   See "Pushing the model into execution" on page 271 of the guide, *Modeling with Cogility Studio*. The Cogility Insight application runs on the application server and must be re-pushed with the files re-named so that it will run properly.

Watchdog

Cogility WatchDog monitors time events in state machines. It is already available as an application that you can run from the Start menu. These steps give you the option to install the utility as a service that runs when you run WebSphere.

1. From the **Start** menu, select **All Programs > Cogility Studio > Application Server > WebSphere > WatchDog NT Service > Install WatchDog**.
2. Click **Install**, and when the installation completes, click **OK**.

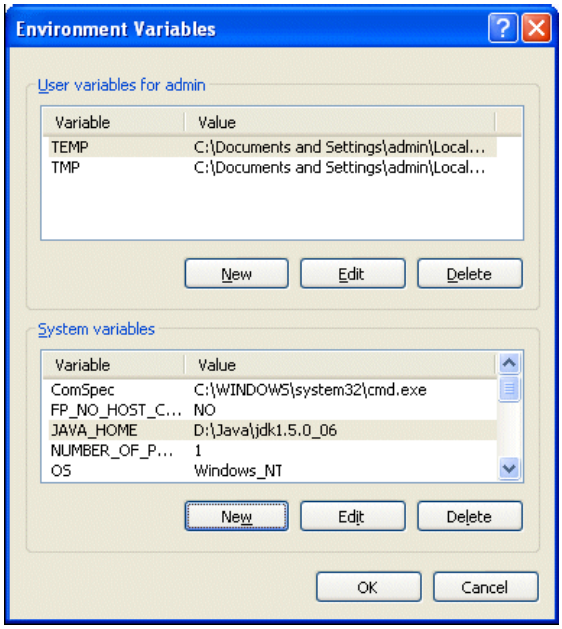
Start the Cogility WatchDog for WebSphere from the Windows Services console after starting the application server.

Oracle Application Server (Standalone Mode)

Cogility Studio supports Oracle 10g. If you have a Oracle server for a previous version of Cogility Studio, you must delete it before installing Oracle Application Server (OAS) in standalone mode.In addition, JDK (v1.5x) must be installed.

To install JDK:

1. Download the JDK from www.java.sun.com.
2. Double-click on the executable, jdk-1_5_0_07-windows-i586-p.exe , and follow the instructions to install the JDK.
3. Create a new System Environment variable named JAVA_HOME. The variable must point to the location where the JDK was installed.



Install and Configure OC4J

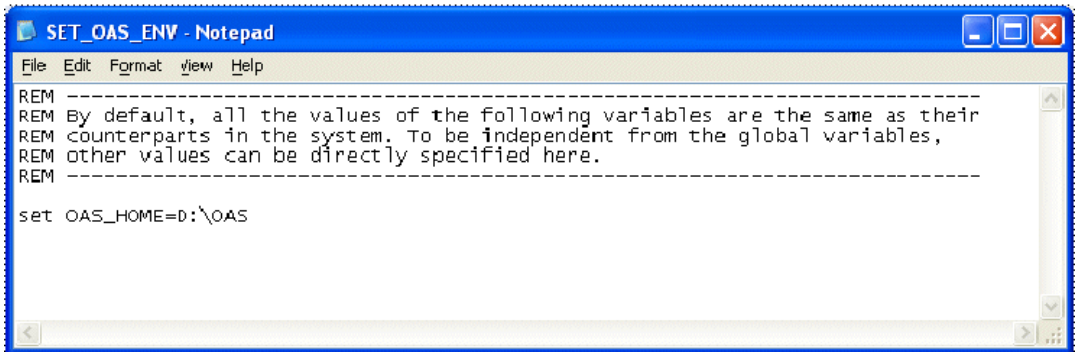
Before you can push a model to an Oracle application server instance, you must set up certain configuration data for the target OC4J. While all these configuration tasks can be done manually through the web-based administration console, they can be laborious. Cogility provides a utility to make this process less cumbersome.

To extract the OC4J instance:

1. Create a folder, for example D:\OAS.
2. Extract the contents of oc4j_extended_101330 into this folder.

To define OAS_HOME:

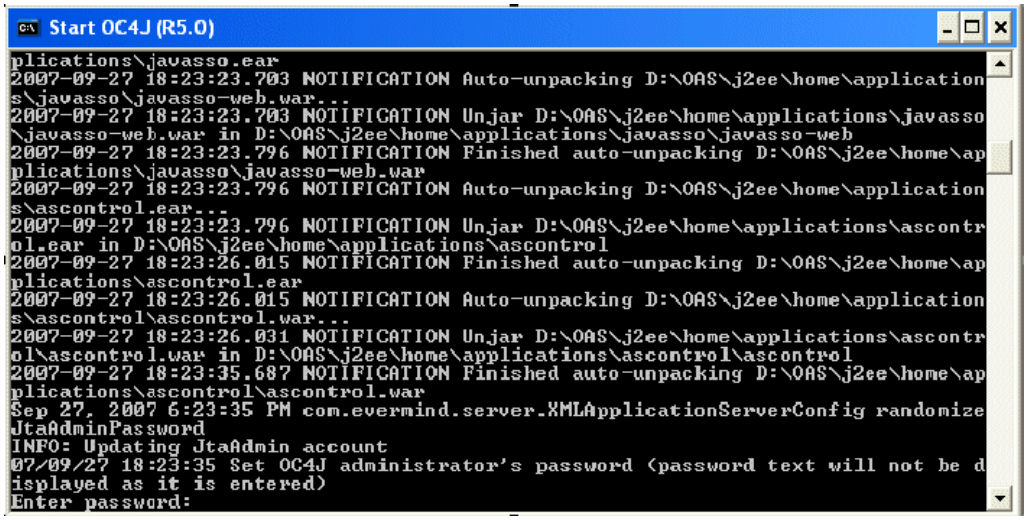
1. Edit DCHOME\MB\scripts\subroutines\SET_OAS_ENV to set OAS_HOME. The value of OAS_HOME is the folder to which you extracted oc4j_extended_101330.



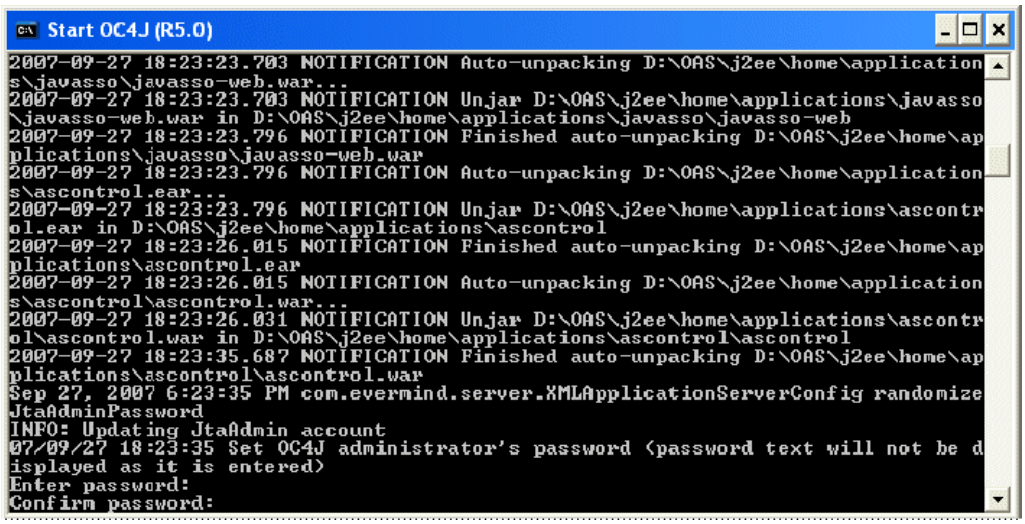
To initialize OAS_HOME:

1. **Run** DCHOME\MB\scripts\Oracle\appserver\start_standalone_oc4.cmdj.

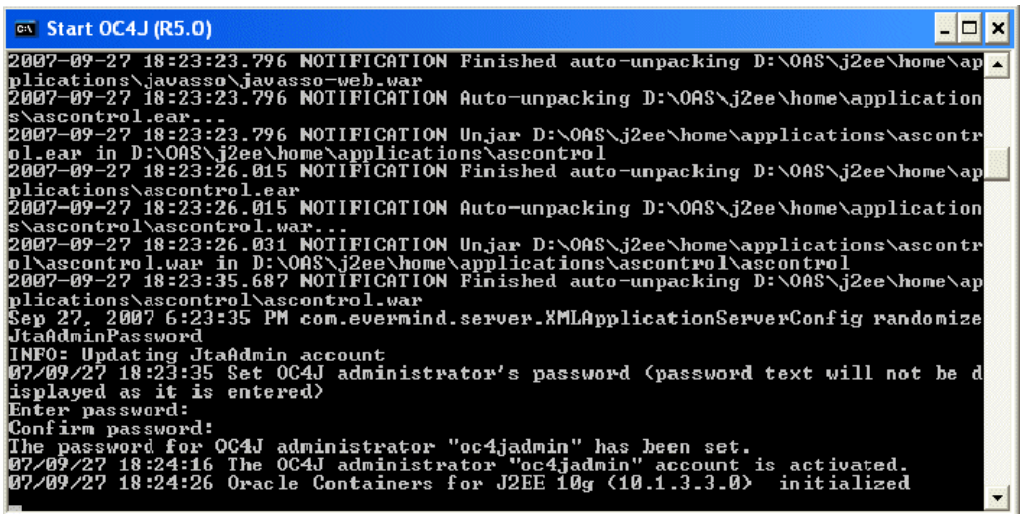
   Running this script allows you to define a password, while starting OAS for the first time. The default password is oc4jadmin.
2. Enter the password and press the return key.



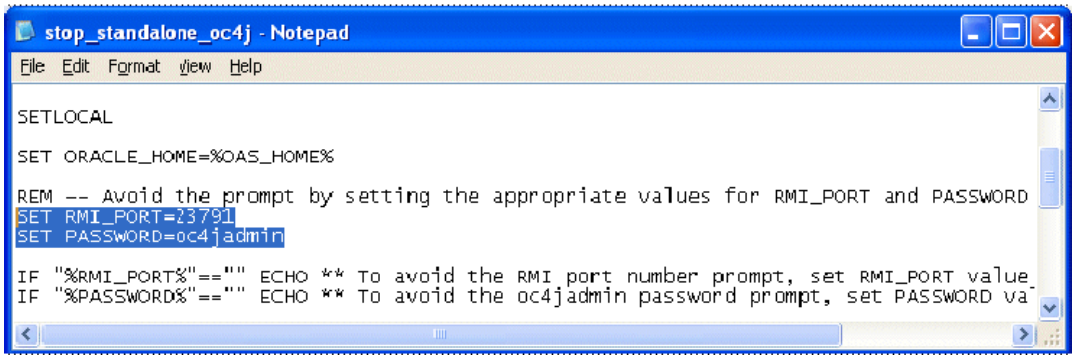
3. Confirm the password and press the return key.



4. When finished starting for the first time, OAS indicates that is has been **initialized**.



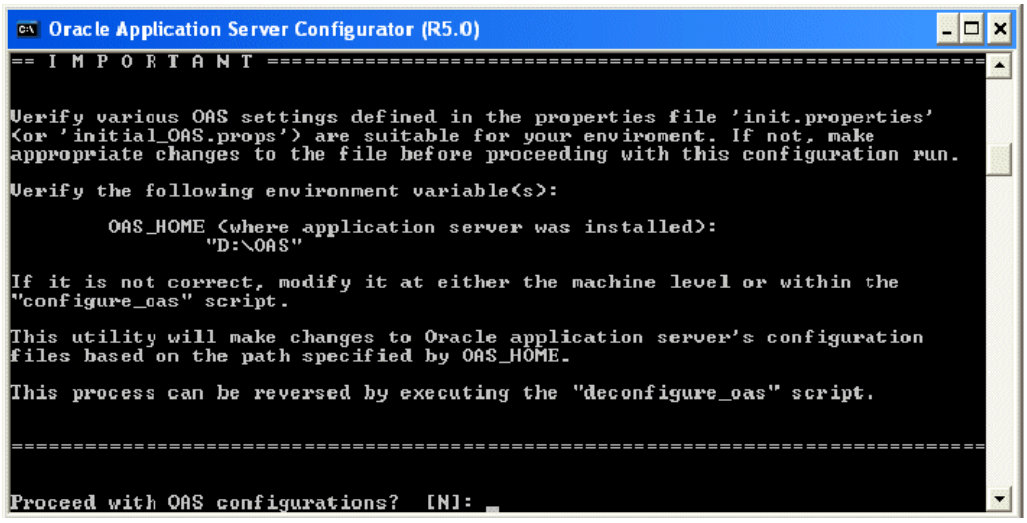
5. Edit DCHOME\MB\scripts\Oracle\appserver\stop_standalone_oc4j.cmd. This script must be edited in order to stop OAS



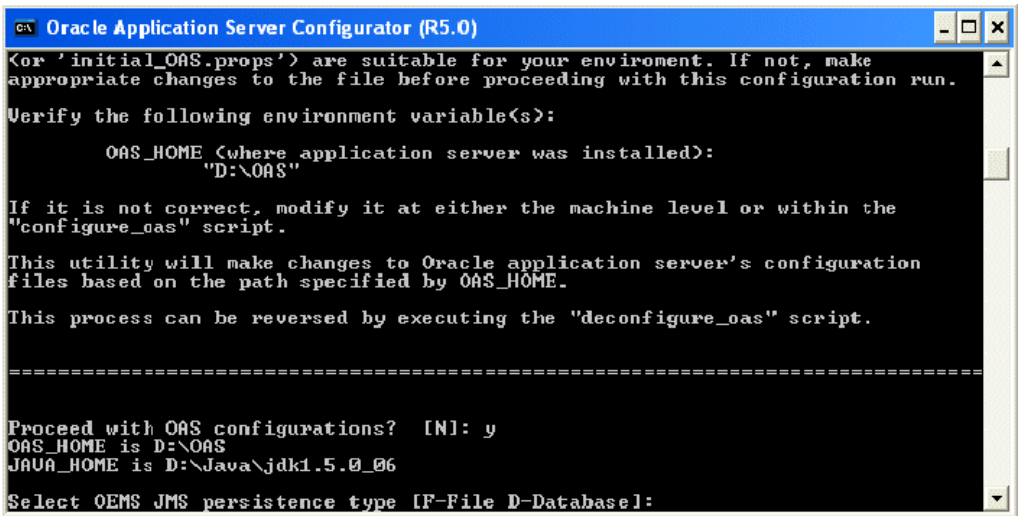
6. Run DCHOME\MB\scripts\Oracle\appserver\stop_standalone_oc4j.cmd. Make sure that OAS is stopped.

To configure OAS_HOME:

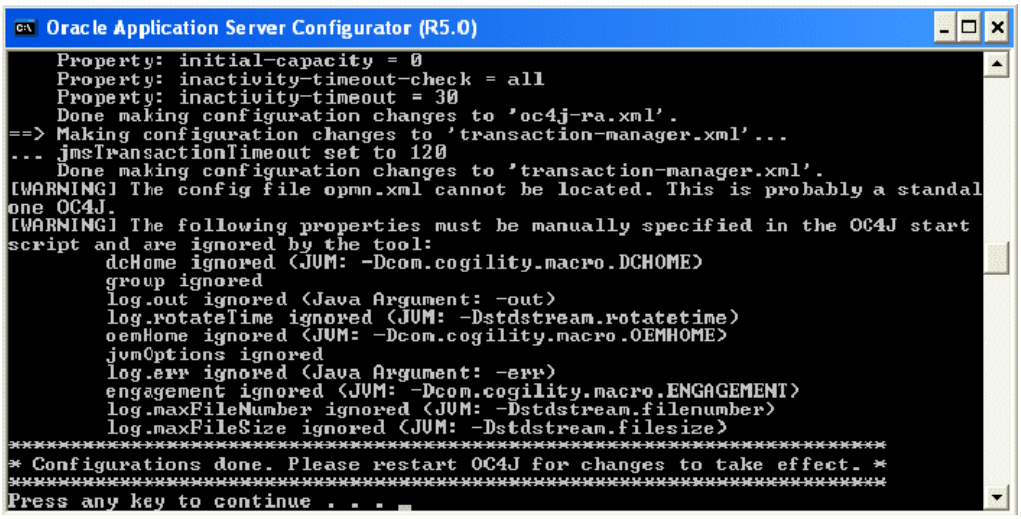
1. Run DCHOME\MB\scripts\Oracle\appserver\configure_oas.cmd.
2. When prompted to proceed with the OAS configuration, enter Y and press the return key.



3. When prompted to select OEMS JMS persistence type, enter F and press the return key.



4. When the configuration is compete, press any key to dismiss the command window.



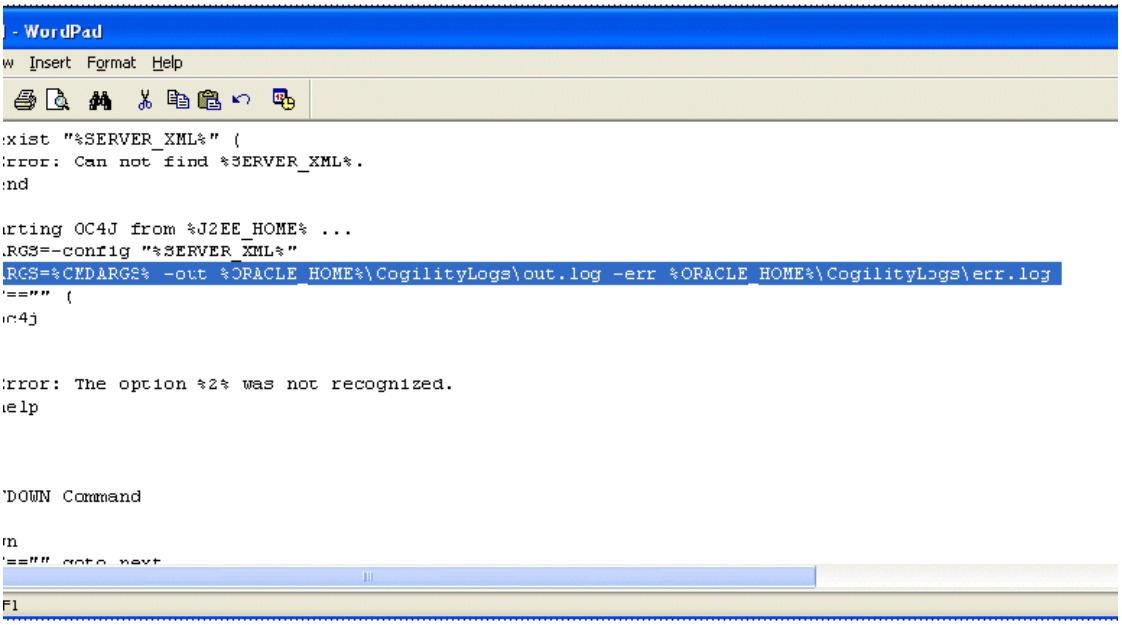
5. **Edit** D:\OAS\bin\oc4j.cmd.

   After the line: `set CMDARGS=-config "%SERVER_XML%"`

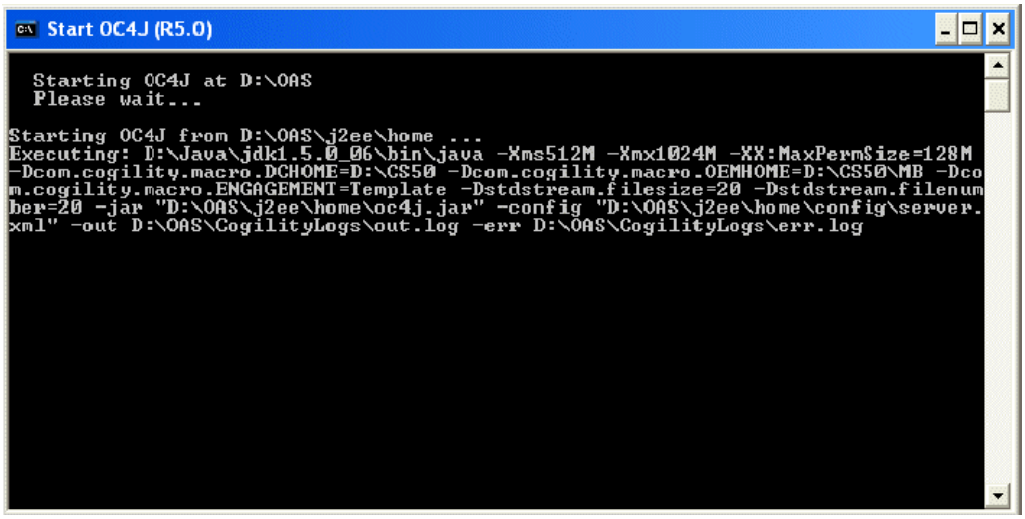
   Add the following line:

```
   set CMDARGS=%CMDARGS% -out %ORACLE_HOME%/CogilityLogs/out.log -err
%ORACLE_HOME%/
   CogilityLogs/err.log
```

   .



6. **Run** DCHOME\MB\scripts\Oracle\appserver\start_standalone_oc4.cmdj.



Note: References to the log file will appear in the command window.

A standalone instance of the Oracle Application Server is now configured and running.

In order to push a model to OAS, you must first update the Default Deployment Model within Cogility Modeler.

The Default Deployment Model is pre-loaded into Modeler.

3 Databases

Cogility Studio supports the IBM DB2, MySQL and Oracle 9i and 10g databases. For each of these, you install the database using a typical installation, then create a user for Cogility Studio.

IBM DB2

Version 8.2 is supported.

Installation

To install IBM DB2 for use with Cogility Studio:

1. Install DB2 using a typical installation.

   See the DB2 documentation for more information.
2. On the Windows system where you have installed DB2, create a folder for custom containers.

   For example, you might name the folder C:\DB2_CONT.
3. On the Windows system where you have installed DB2, create a Windows user named PEAR with local administrator privileges.

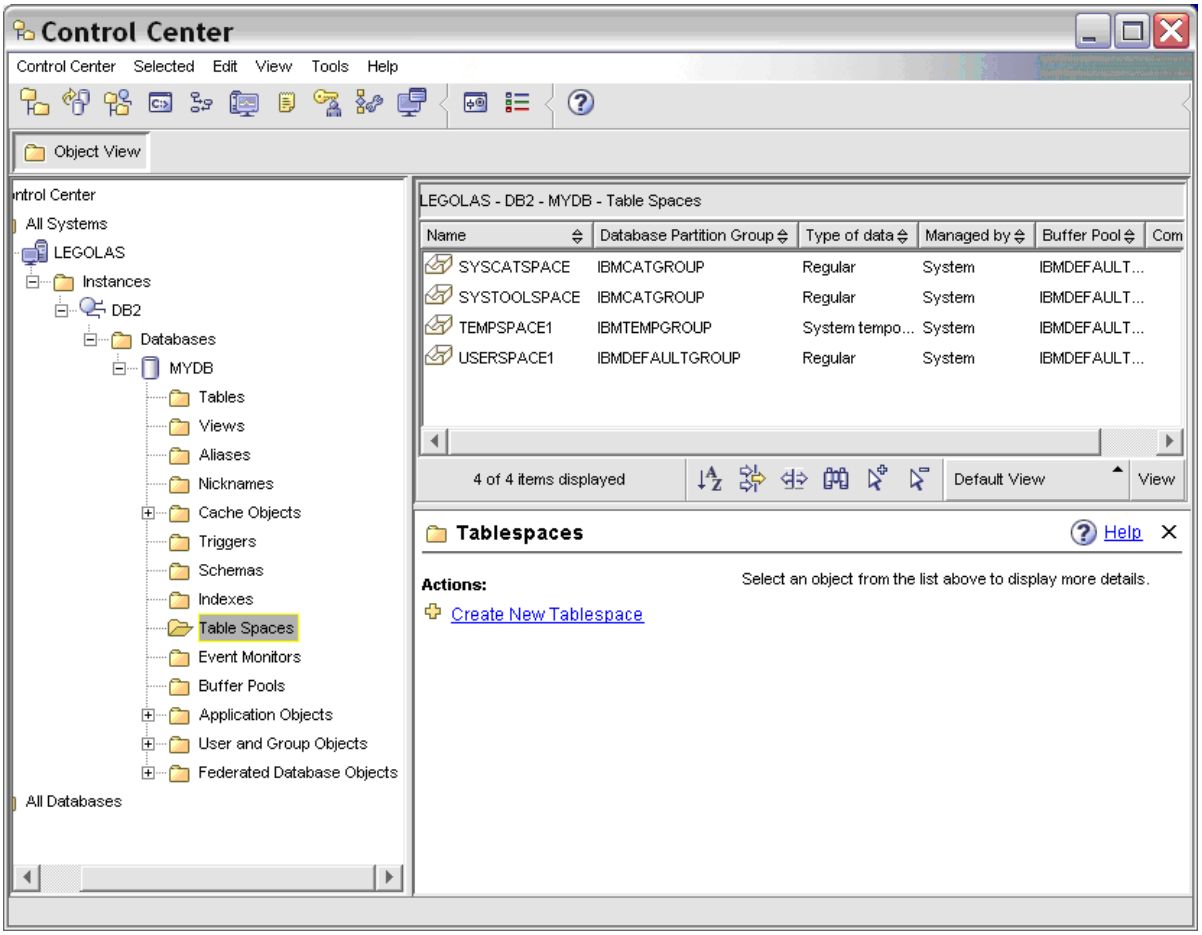
   You can use any name. However, the default deployment configurations for Cogility Studio use PEAR for both the user and database name. If you use different names, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

Creating the table space

To create a DB2 table space for the PEAR user:

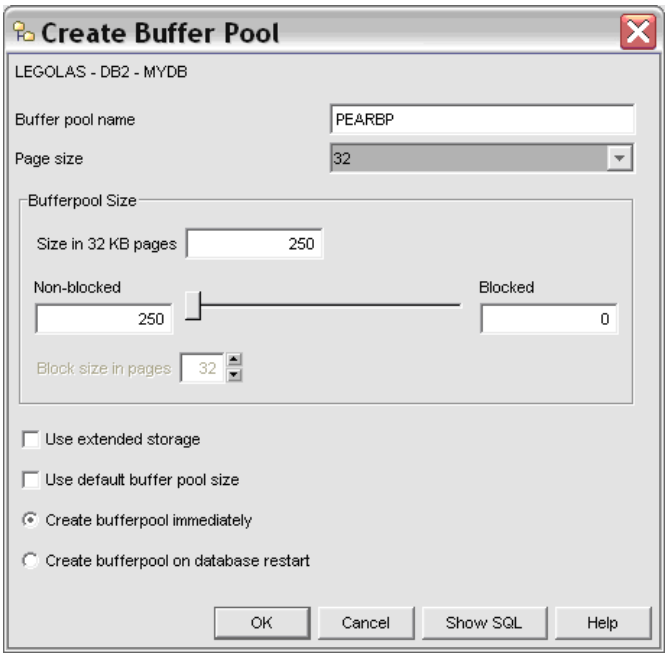
1. In the **DB2 Control Center**, in the left pane, expand the database you created for your installation and select the **Table Spaces** node.

In the example below, the Table Spaces node for the installed database, MYDB is selected.



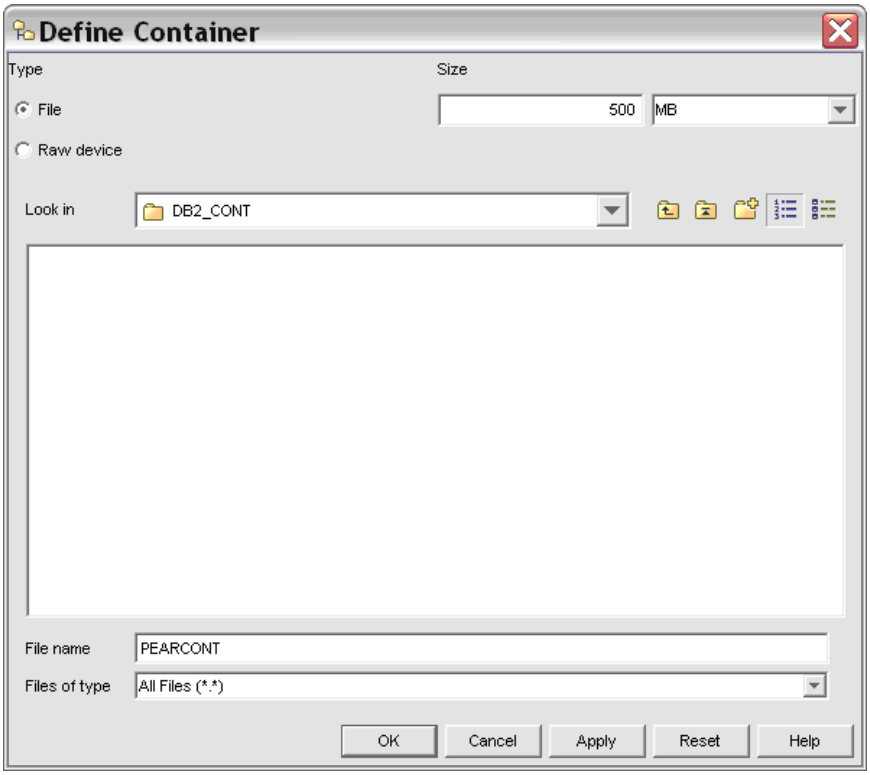
2. In the bottom pane, click **Create New Tablespace**.
3. In the **Create Table Space Wizard**, in the **Table space name** field, enter **PEARSPACE** and click **Next**.
4. In the **Specify a buffer pool..** pane, click **Create**.
   a. In the **Buffer pool name** field, enter **PEARBP**.
   b. In the **Page size** field, from the pull-down menu, select **32**.

c. Leave the other options at the defaults and click **OK**.



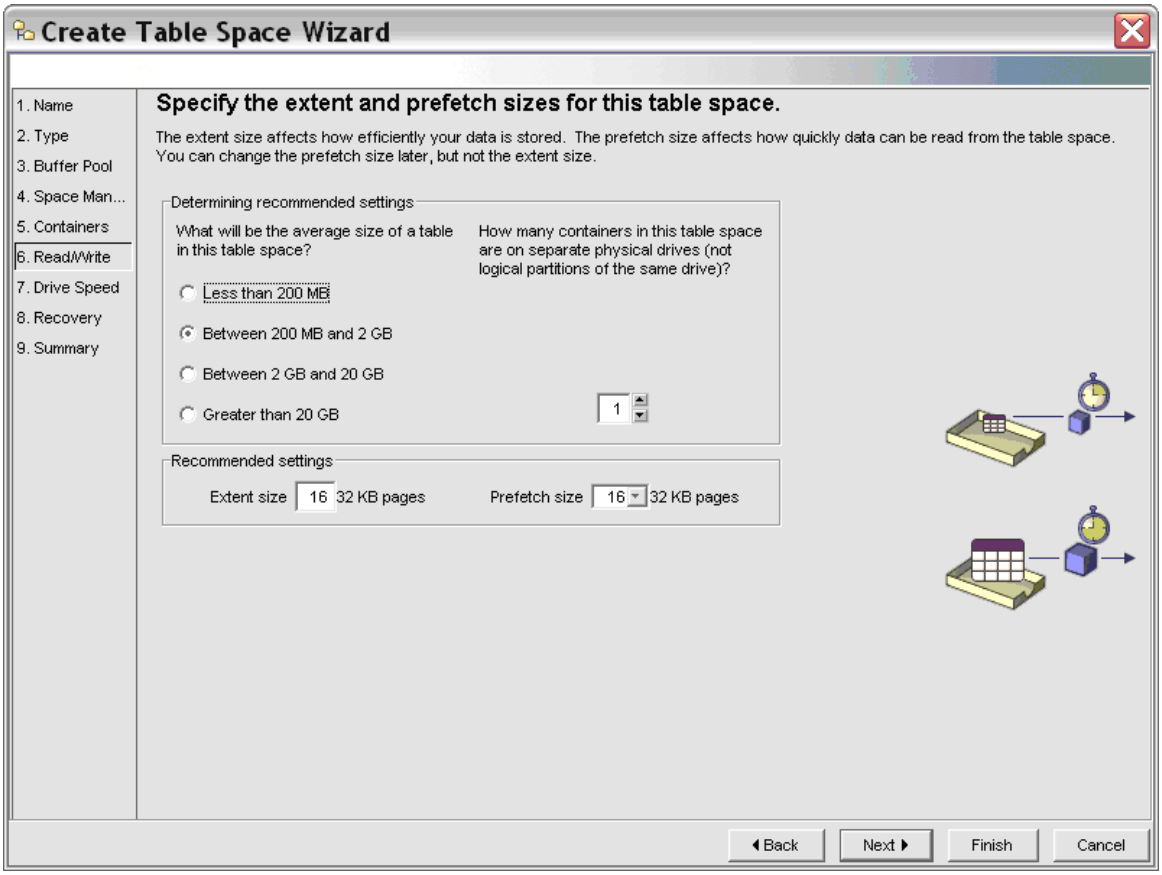
5. In the **Create Table Space Wizard**, click **Next**.
6. In the **Select the space management system...** pane, select **Database-managed space** and click **Next**.
7. In the **Define containers for this table space** pane, click **Add**.
   a. In the **Define Container** window, under **Type**, select **File**.
   b. In the **Size** field, from the pull-down menus, select **500** and **MB**.
   c. In the **Look in** field, from the pull-down menu, select the container folder you created in step 2 under "Installation" on page 43.

d. In the **File name** field, enter **PEARCONT** and click **OK**.



8. In the **Create Table Space Wizard**, click **Next**.

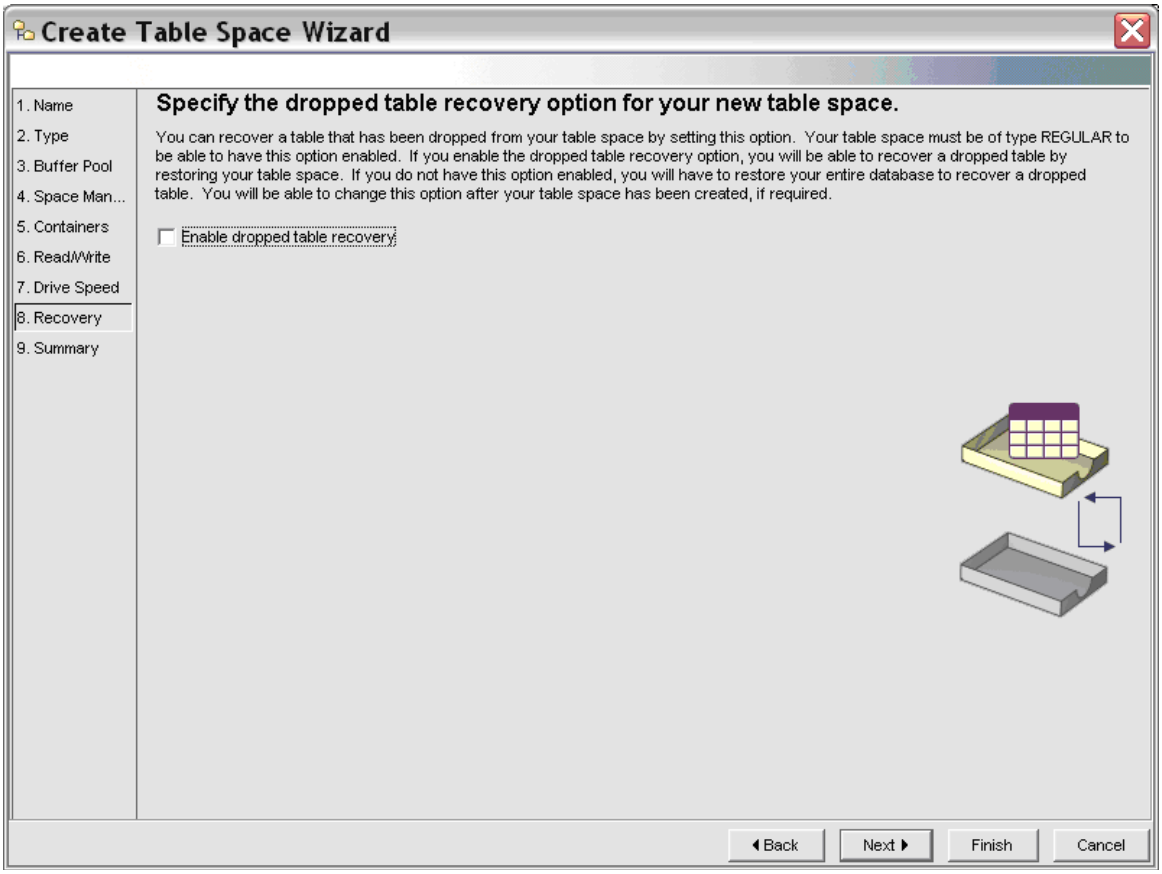
9. In the **Specify the extent and prefetch...** pane, select **Between 200 MB and 2 GB** and click **Next**.



10. In the **Describe hard drive specifications** pane, enter the information appropriate for the hard drive for the system where you have installed DB2, and click **Next**.

    Refer to your system's documentation for information about the hard drive.

11. In the **Specify the dropped table recovery...** pane, uncheck **Enable dropped table recovery** and click **Next**.



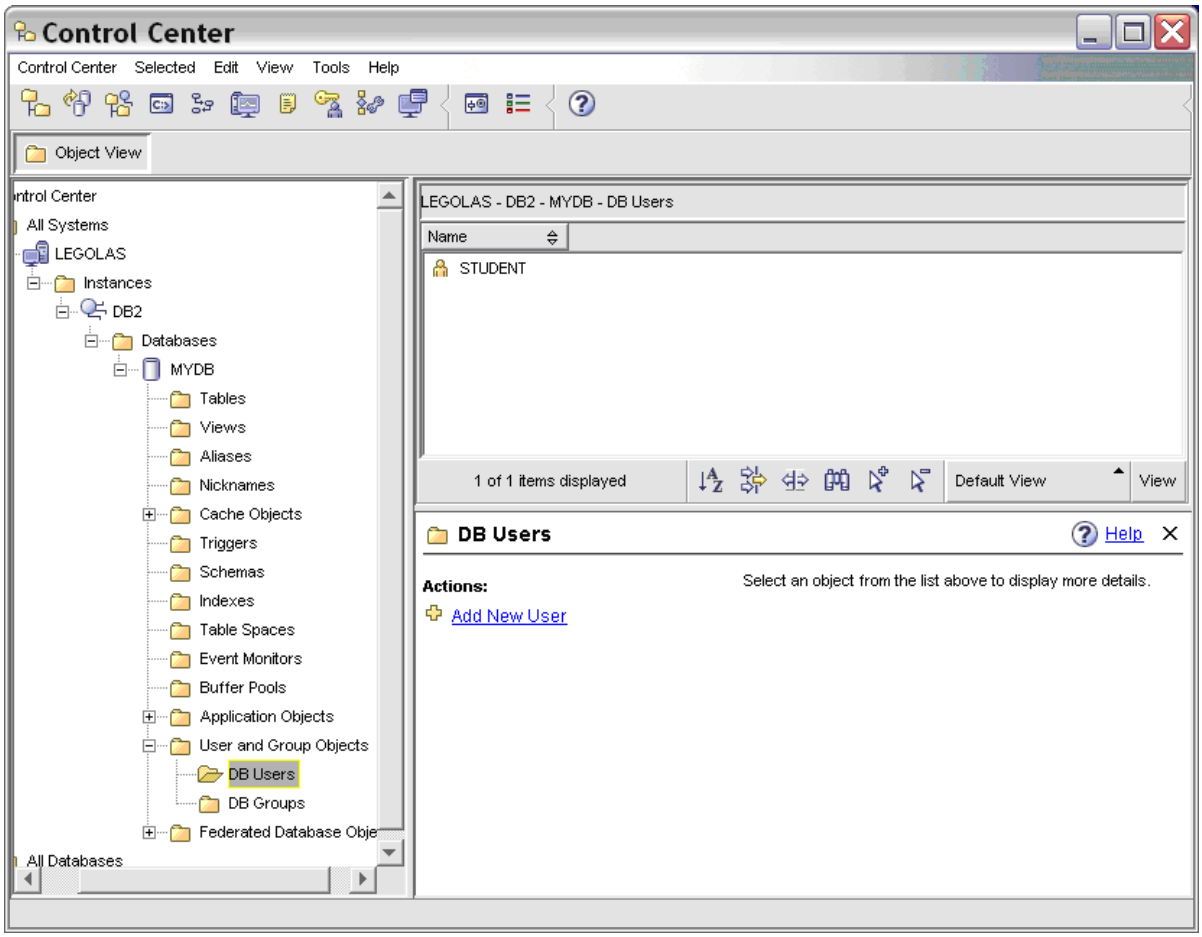
12. In the **Create Table Space Wizard**, click **Finish**.

Adding the user

To add a new user to the database:

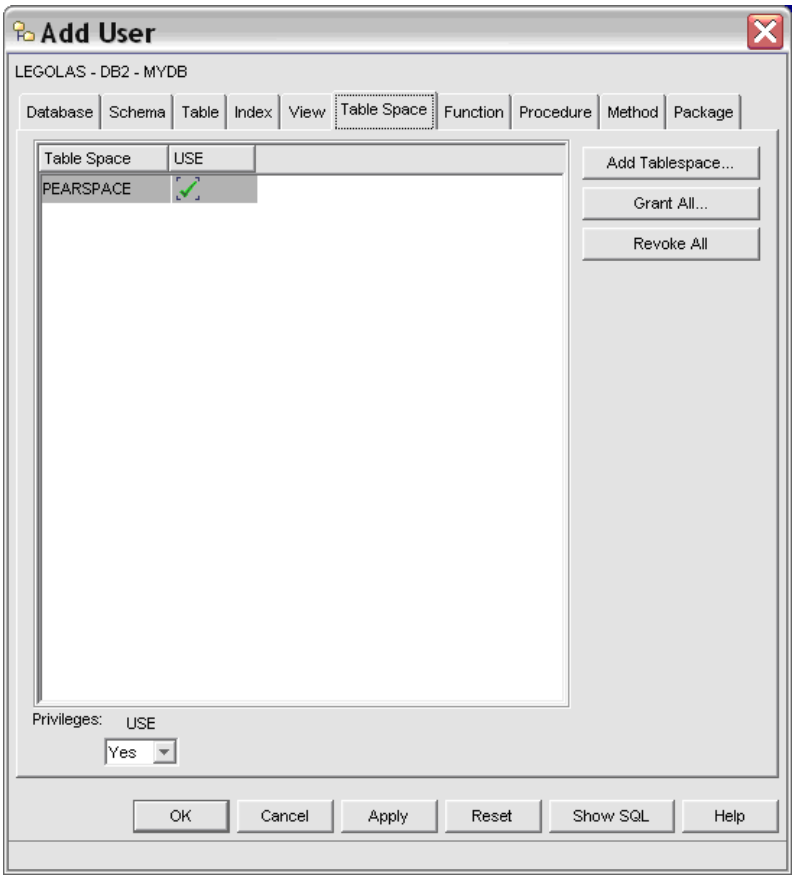
1. In the DB2 **Control Center**, in the left pane, under the database you created for your installation, expand **User and Group Objects** and select **DB Users**.

2. In the bottom right pane, click **Add New User**.



3. In the **Add User** window, click the **Database** tab, and from the **User** drop-down list, select the **PEAR** user you created in step 3 under "Installation" on page 43.
4. Click the **Table Space** tab, and click **Add Tablespace**.
5. Select **PEARSPACE** and click **OK**.
6. In the **Table Space** list, select **PEARSPACE**, and under **Privileges: USE**, from the drop-down menu, select **Yes**.

7. Click **OK**.



8. Close the DB2 **Control Center** window.

PM metamodel file

For IBM DB2, owing to size limits for table records, your installation must use a special PMmetamodel.xml file. This file represents the fixed schema for the pushed application.

To use the DB2 PMmetamodel.xml file:

1. Navigate to the directory, DCHOME\..\MB\Config\Files.
2. Rename the existing PMmetamodel.xml to PMmetamodel.xml.old (or some other name).
3. Rename PMmetamodel-DB2.xml to PMmetamodel.xml.

The PMmetamodel-DB2.xml file is identified by the words, THIS VERSION IS FOR DB2 ONLY at the top of the file.

Microsoft SQL Server

Cogility Studio supports Microsoft SQL Server 2000.

Installation

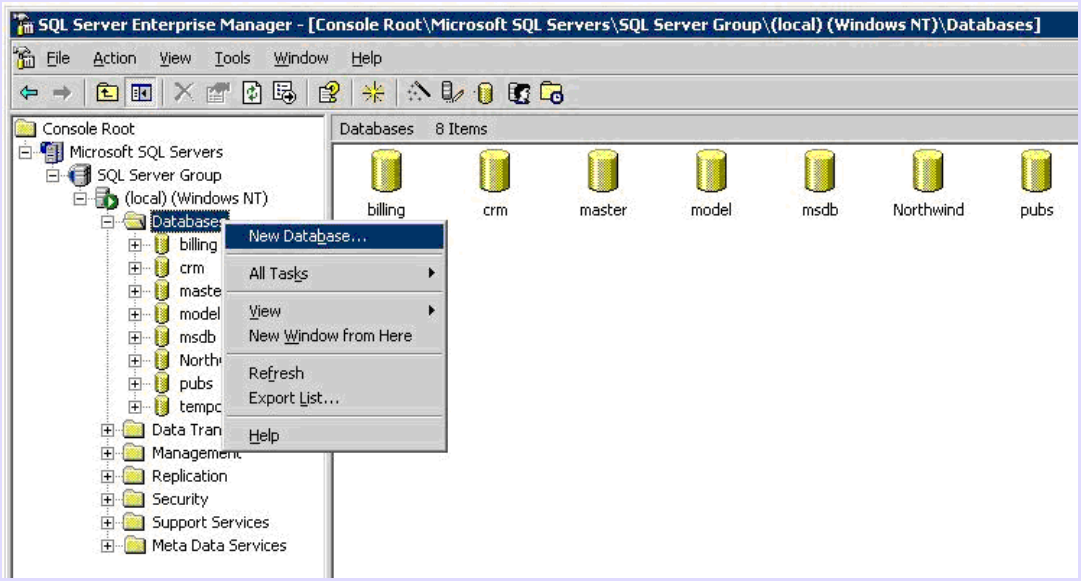
To install Microsoft SQL Server:

- Install the software according to your requirements.
  See the Microsoft SQL Server 2000 documentation for more information.

Creating the database

To create the database:

1. Start SQL Server or verify that it is running.
2. From the **Start** menu, select **Microsoft SQL Server > Enterprise Manager**.
3. In the **SQL Server Enterprise Manager** console, in the left pane, select the **Databases** node.
4. Right-click and select **New Database**.



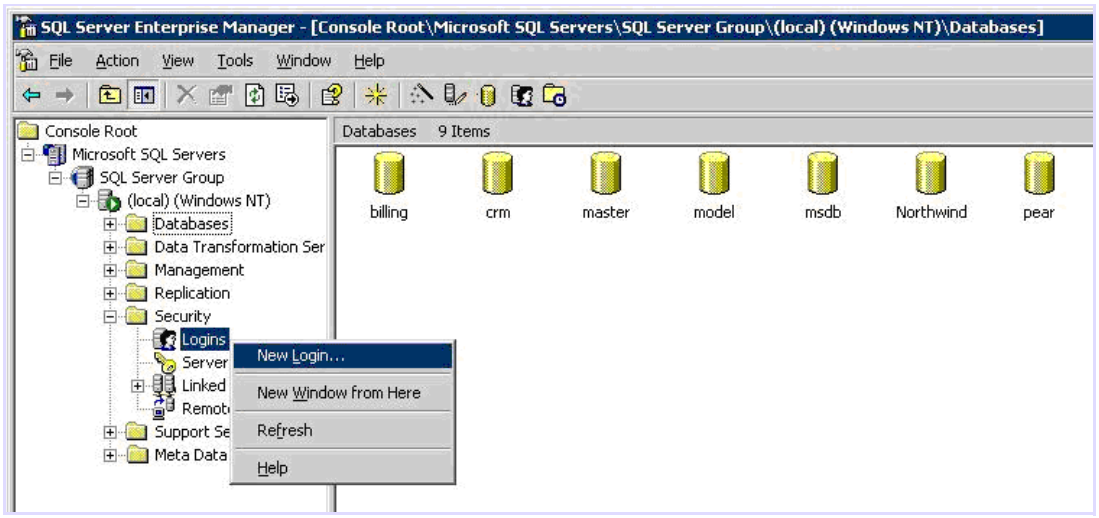
   a. In the **Database Properties** dialog, in the **Name** field, enter **pear**.

      You can use any name. However, the default deployment configurations for Cogility Studio use PEAR for both the user and database name. If you use different names, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

   b. Leave the remaining information unchanged and click **OK**.

5. In the **SQL Server Enterprise Manager** console, in the left pane, expand the branches through **Security** and select the **Login** node.

6. Right-click and select **New Login**.



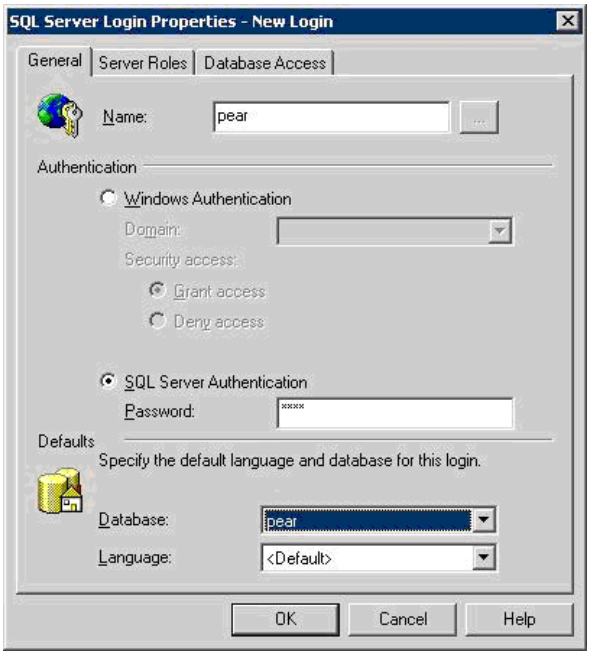
a. In the **SQL Server Login Properties** dialog, in the **Name** field, enter the same name as entered in step 4a, above. Use the value **pear** if you want the database to work with the default deployment.

b. Select the **SQL Server Authentication** radio button.

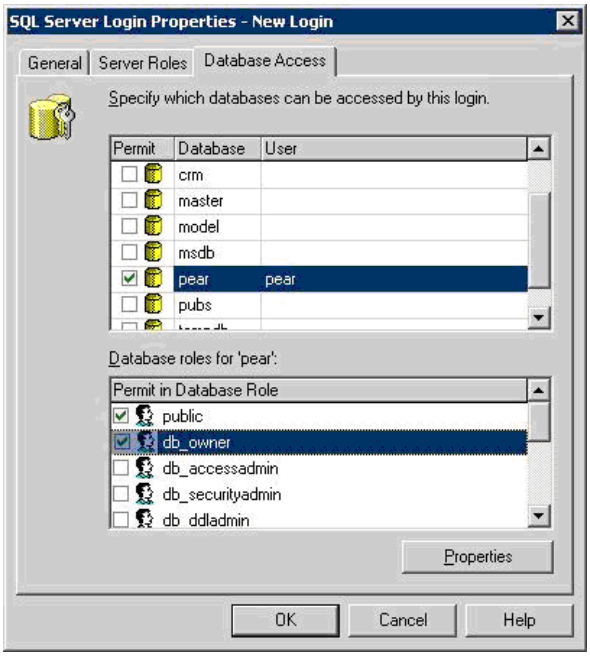
c. In the **Password** field, enter **pear**.

   You can use any string for the password. However, the default deployment configurations for Cogility Studio use PEAR for both the user name and password. If you use different strings, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

d. In the **Database** field, from the pull-down menu, select the name you entered in step 5a, above. The default is **pear**.



7. Click the **Database Access** tab.
   a. Under **Specify which databases...**, check the database you created in step 4a, above. The default is **pear**.
   b. In the **Permit in Database Role** pane, check the **public** and **db_owner** checkboxes.



8. In the **Confirm Password** dialog, in the **Confirm new password** field, enter the value from step 5c, above and click **OK**. The default is **pear**.
9. Close the **SQL Server Enterprise Manager** console window.

MySQL

Version 4.1 is supported.

Installation

To install MySQL:

1. Install MySQL Essential 4.1.12a for Windows.
2. Install MySQL Administrator 1.0.20 for Windows.

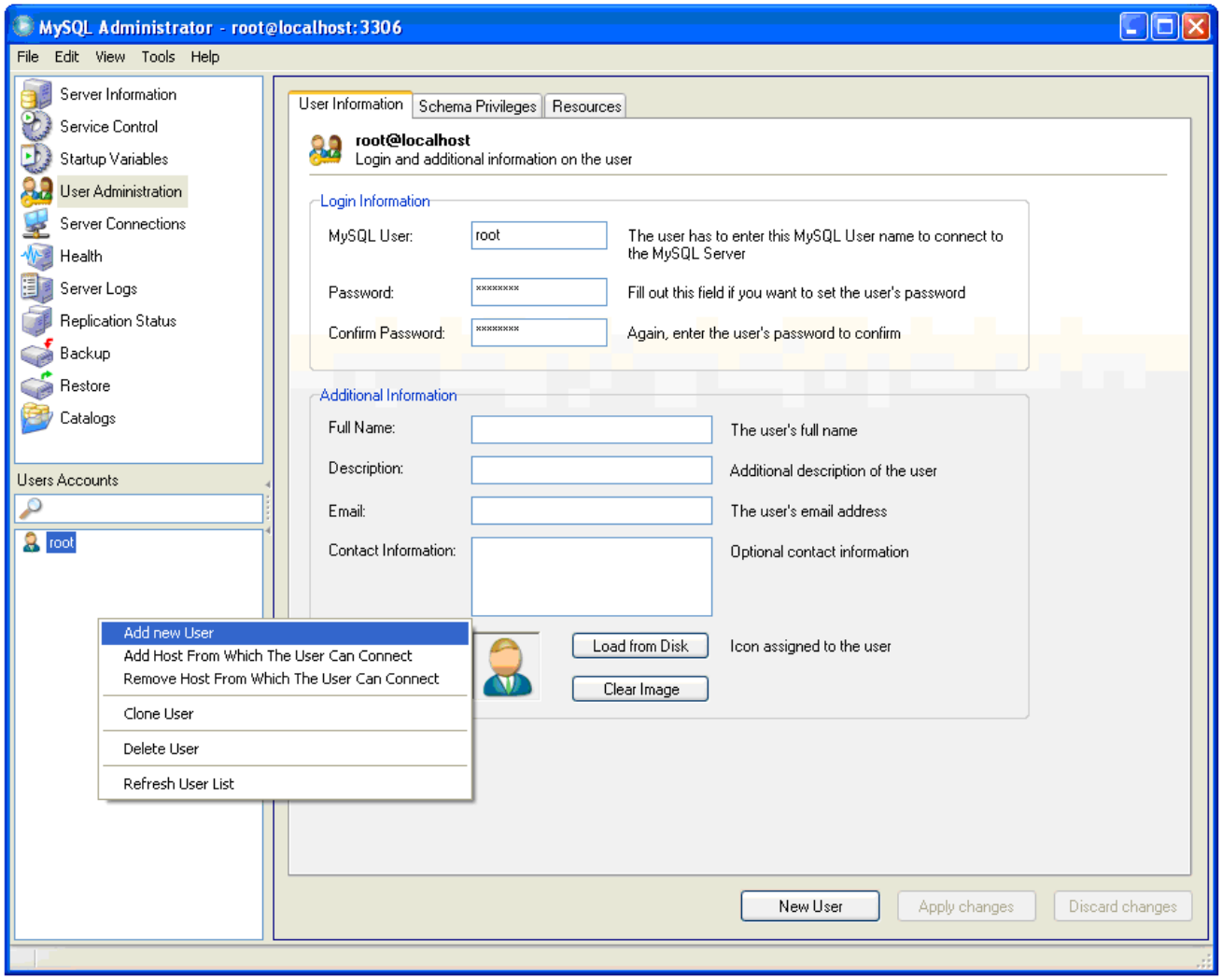
Use a typical installation for these. For more information see the MySQL product documentation.

Creating the user and database

To create the MySQL user and database:

1. From the Windows **Start** menu, select **All Programs > MySQL > MySQL Administrator**.
2. Enter your administrator password and click **OK**.

3. In the left pane, select **User Administration**, right-click and select **Add new user**.



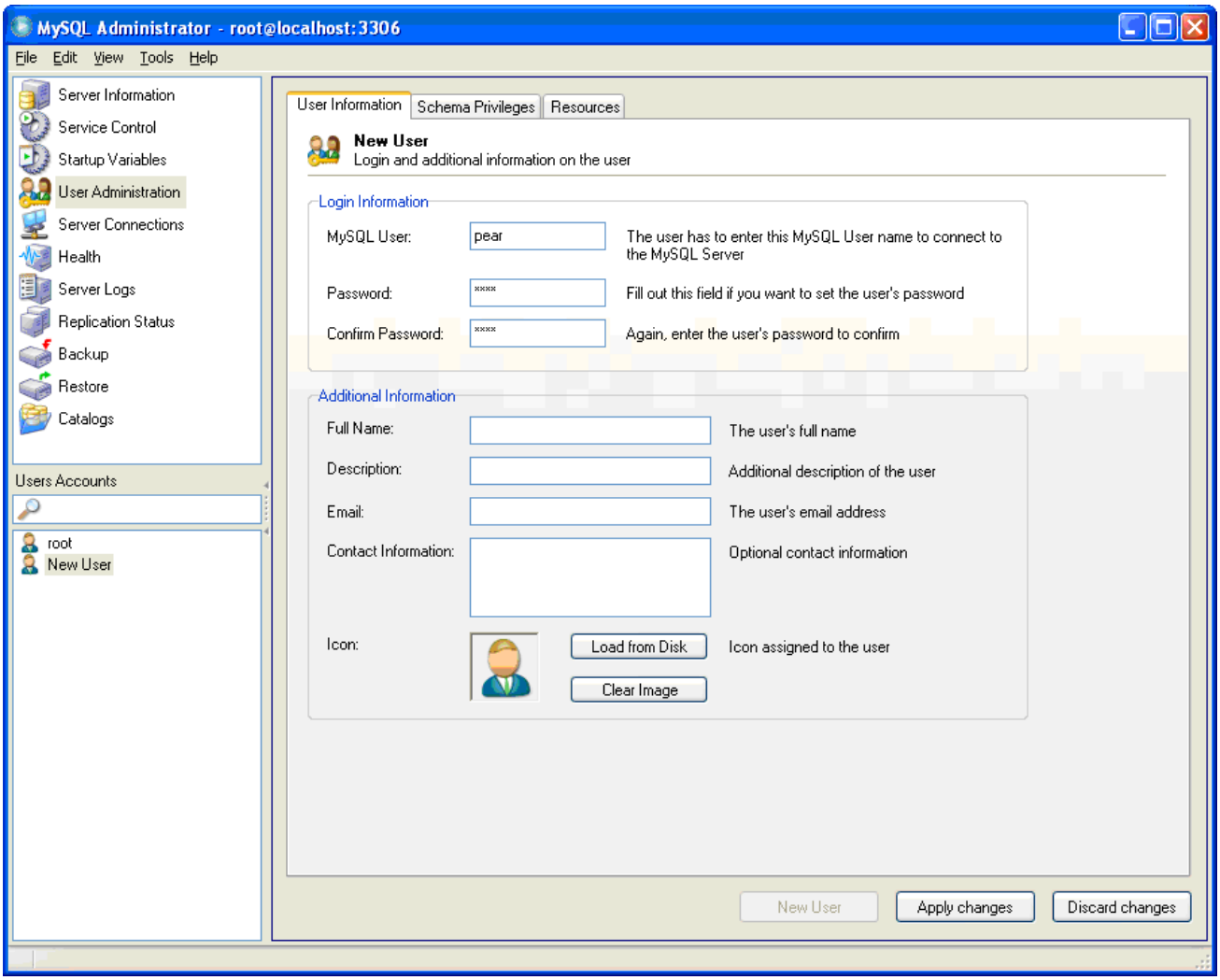
4. In the lower left pane, select the new user.
   a. In the **MySQL User** field, enter **pear**.

      You can use any name. However, the default deployment configurations for Cogility Studio use PEAR for both the user and database name. If you use different names, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

   b. In the **Password** fields, enter **pear**.

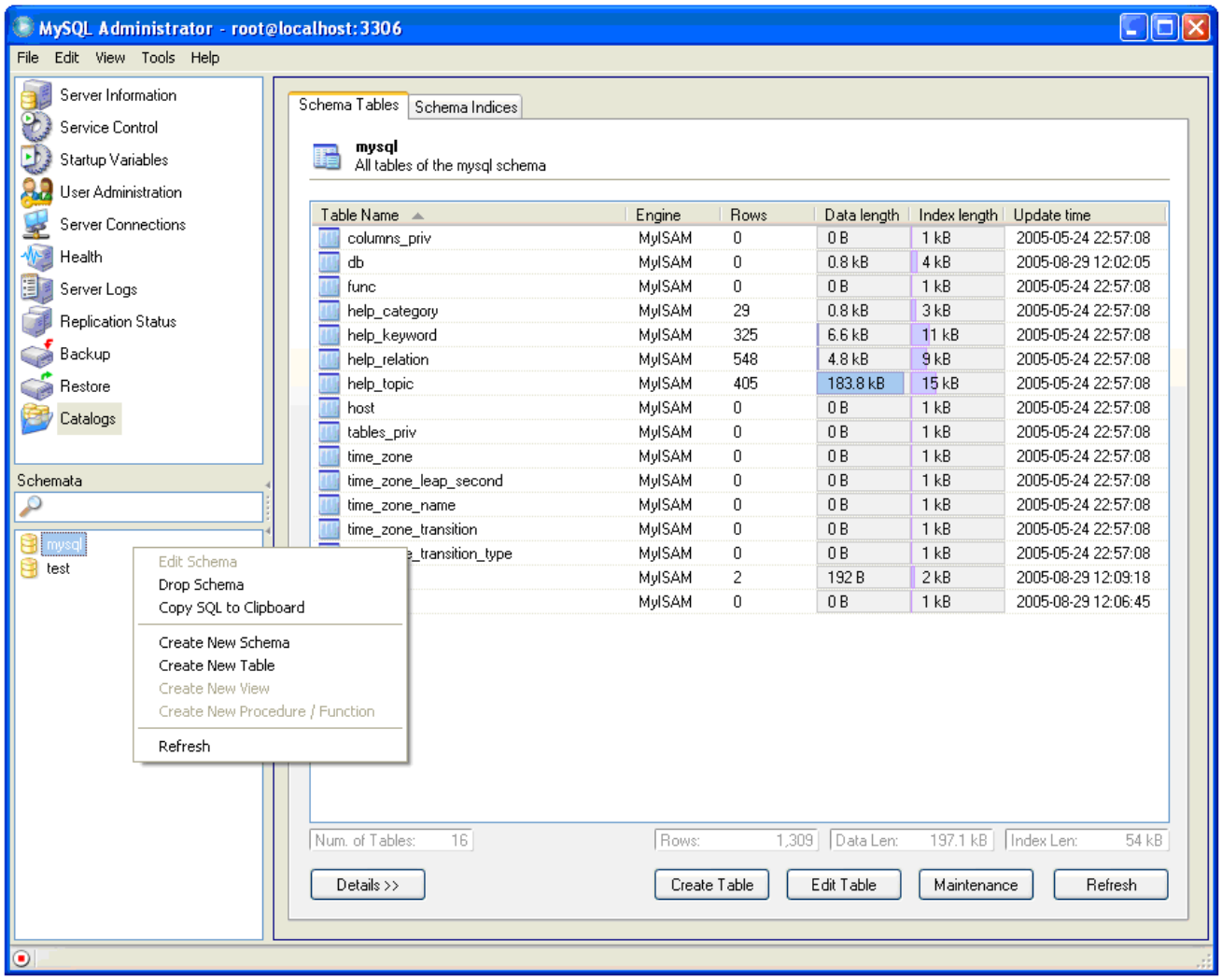
      You can use any string. However, the default deployment configurations for Cogility Studio use PEAR for both the user name and password. If you use different strings, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

c. Click **Apply Changes**.



5. In the upper left pane, select the **Catalogs** object.

6. In the **Schemata** pane (lower left), select **mysql**, right-click and select **Create New Schema**.

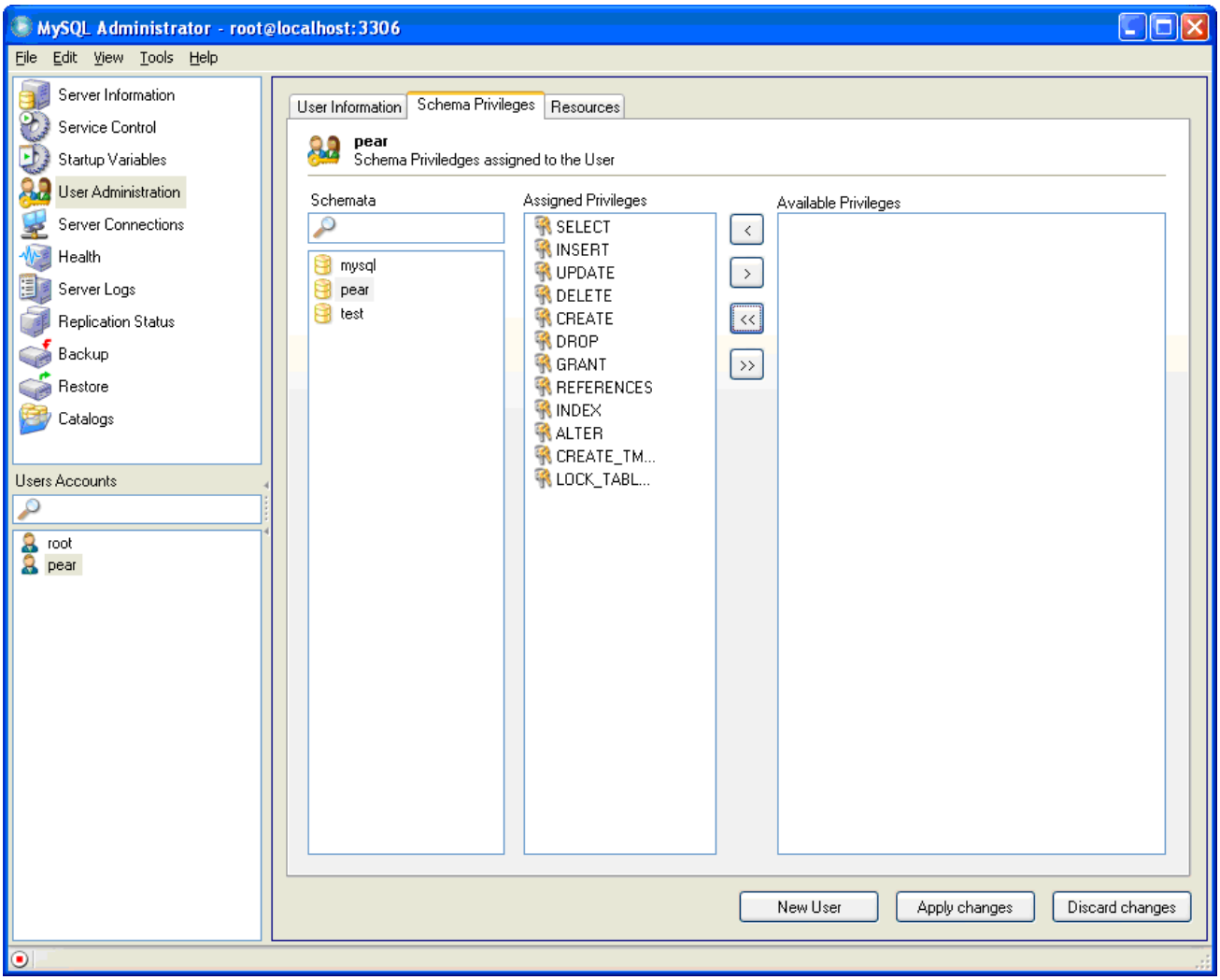


7. In the dialog, for **Schema name**, enter **PEAR** and click **OK**.

   You can use any name. However, the default deployment configurations for Cogility Studio use PEAR for both the user and database name. If you use different names, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

8. In the upper left pane, select the **User Administration** object.
9. In the **User Accounts** pane (lower left), select the user you created in step 4, above. The default is **pear**.
10. In the right pane, select the **Schema Privileges** tab.
11. In the **Schemata** pane, select the schemata named in step 7, above. The default is **PEAR**.

12. Click the **Assign All** button << to assign all privileges to the pear schemata.



13. Exit MySQL Administrator.

Oracle

Cogility Studio supports both Oracle 9i and 10g. The default is Oracle 10g. The jar files for both versions are located in ..\MB\3p_lib directory, and are clearly labeled. An additional file, OracleJDBC.jar is also located in the same directory. This file is a copy the Oracle 10g jar file. The OracleJDBC.jar file is added to the CLASSPATH.

In order to toggle from one jar file to the other, you should use the Project Config Editor. From the right-button menu in the far-left pane, select the “Define preferred Oracle JDBC...” menu to select the desired jar file.

Oracle 10g

Before installing the Oracle database, determine if you target computer is using DHCP or if it has a static IP address.

If the target computer for Oracle is using DHCP, You must first install the Microsoft Loopback Adaptor. If the computer IP address is static, proceed with the next step.

To create a PEAR user on Oracle 10g:

1. Install the database for a typical installation.

   See the Oracle product documentation for complete instructions.

2. To bring up the Oracle Enterprise Manager Console, in your web browser, enter the following URL:

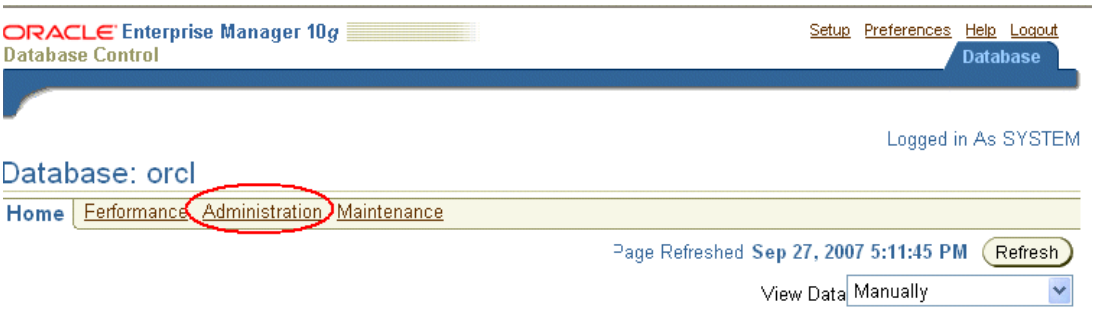
   http://<OracleServer>:<port>/em

   In the above <OracleServer> is the machine where Oracle 10g is installed and <port> is the port where it listens.

3. In the Login to Database page:

- Enter a User Name and Password for a user with DBA privileges
- Select Connect as **Normal.**
- Click **Login**.

4. On the next page, scroll to the bottom of the page, and click **I Agree**.
5. On the **Home** page, click the **Administration** hyperlink.



6. On the **Enterprise Manager Administration** screen, under the Security heading, click on the **Users** hyperlink.

7.

8. In the **Users** page, click the **Create** button.

   a. For **Name** enter a name.

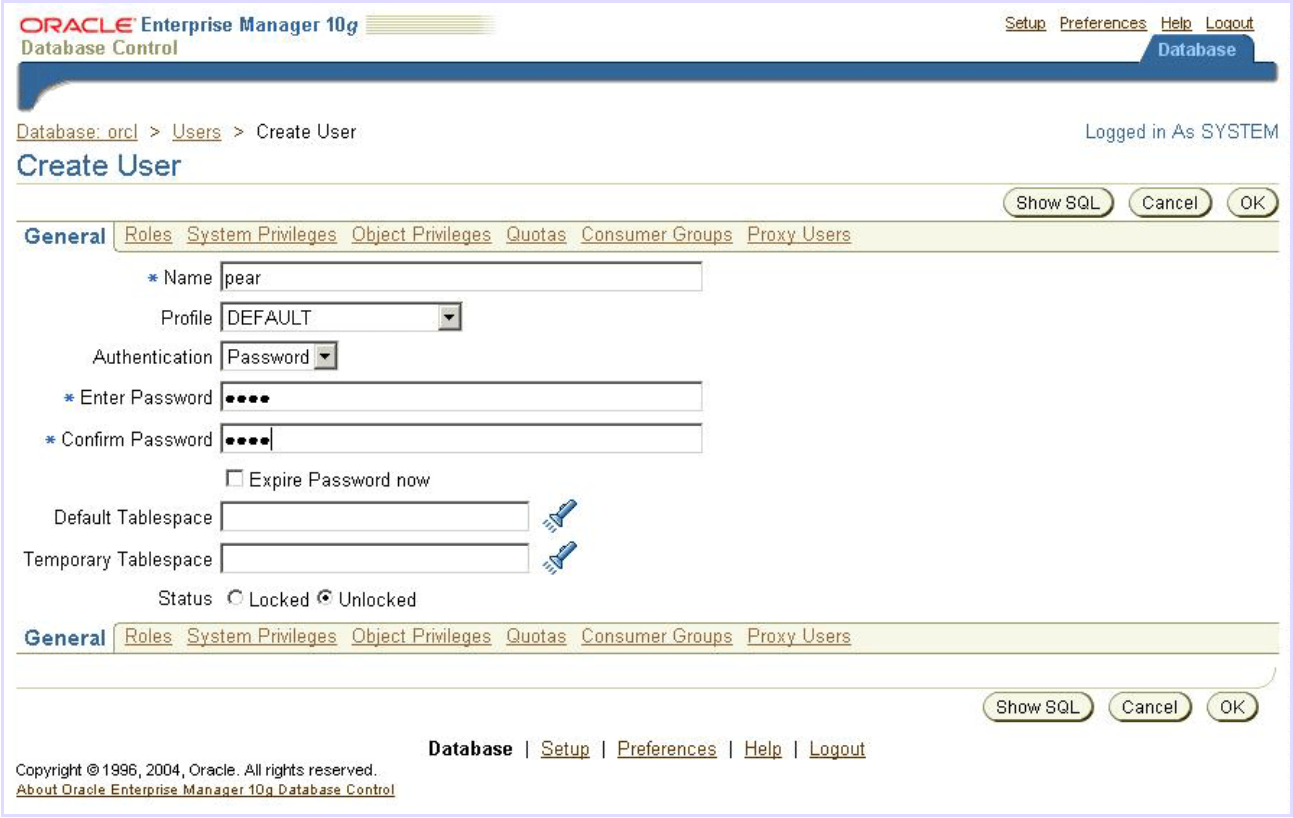
      You can use any name and password. However, the default deployment configurations for Cogility Studio use **PEAR** for both the user name and password. If you use different strings, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

   b. For **Profile**, select **Default**.

   c. For **Authentication**, select **Password**.

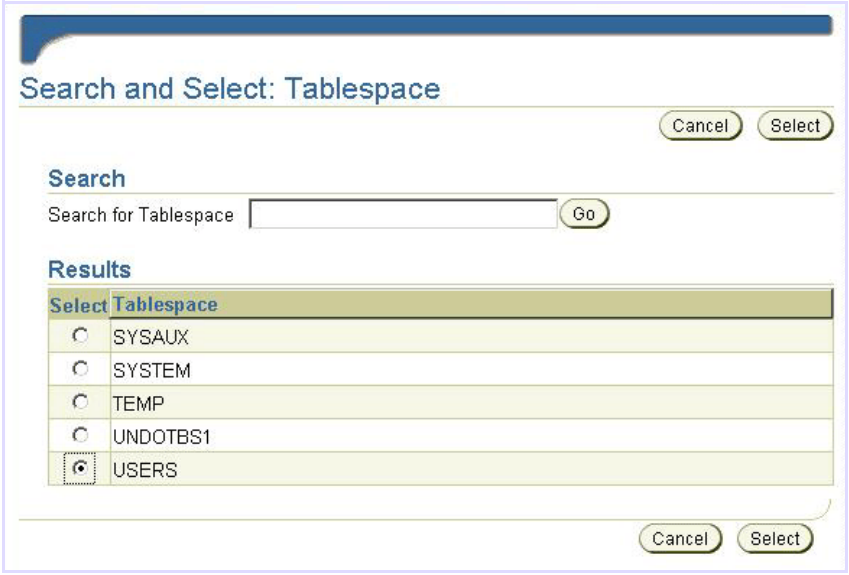
   d. For **Enter a Password**, enter a password.

e. For **Confirm Password**, enter the same password.



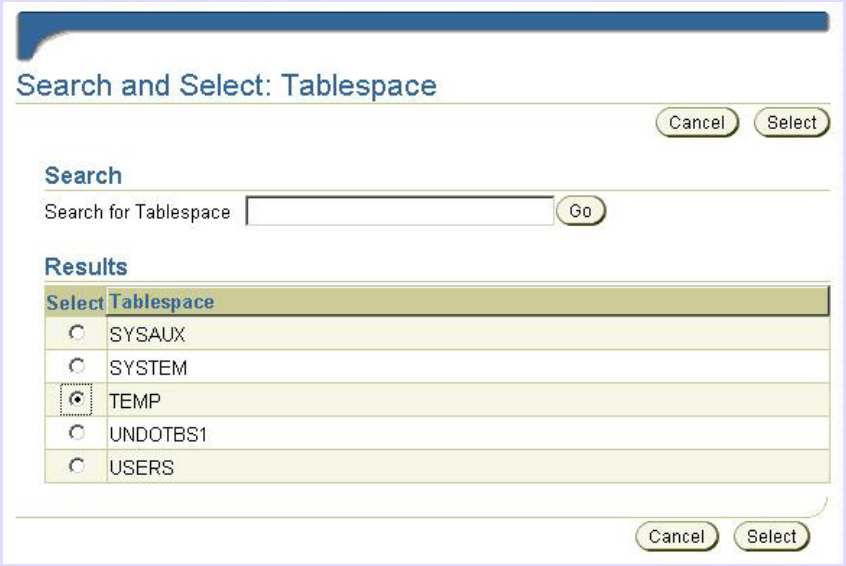
9. Next to the **Default Tablespace** field, click the **Search** icon .

10. In the **Search and Select** page, under **Results**, select **USERS** and click the **Select** button.

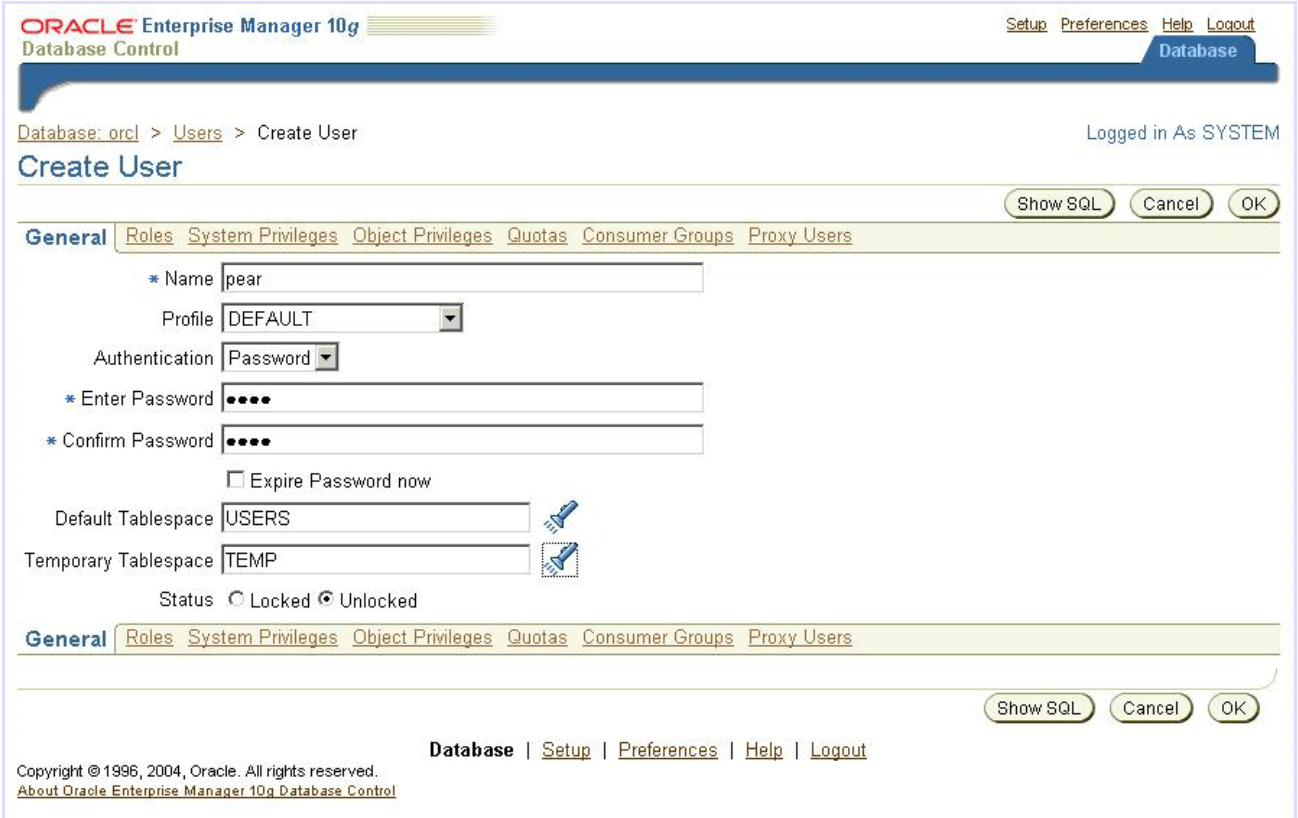


11. Next to the **Temporary Tablespace** field, click the **Search** icon .

12. In the **Search and Select** page, under **Results**, select **TEMP** and click the **Select** button.

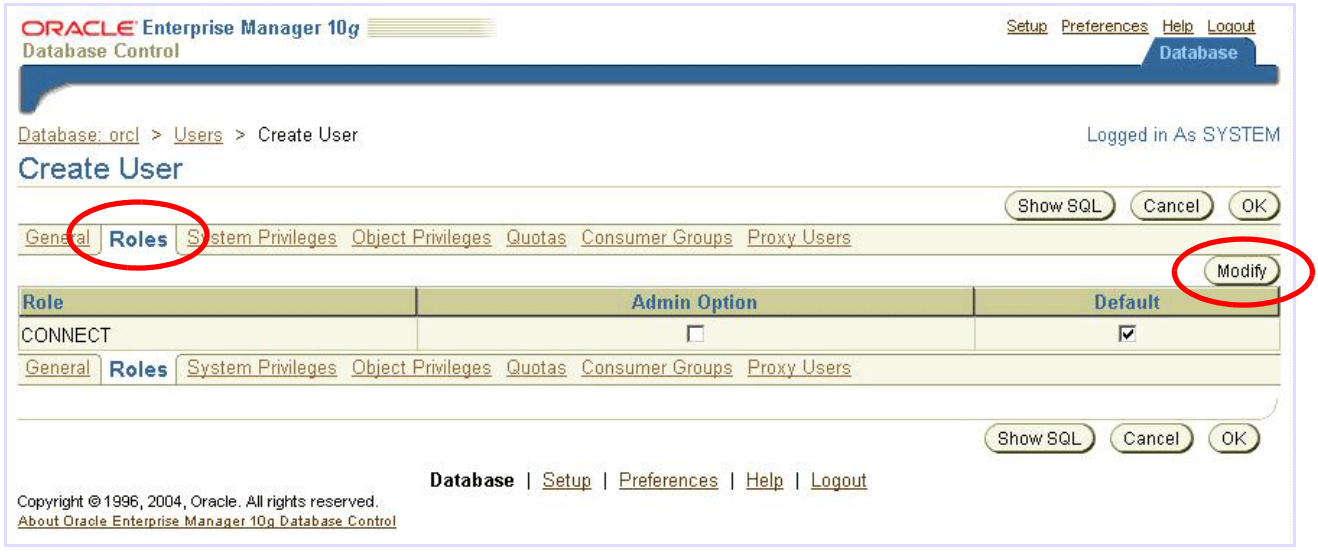


13. In the **Create User** page, for **Status**, click **Unlocked**.
Your selections should look like the following:



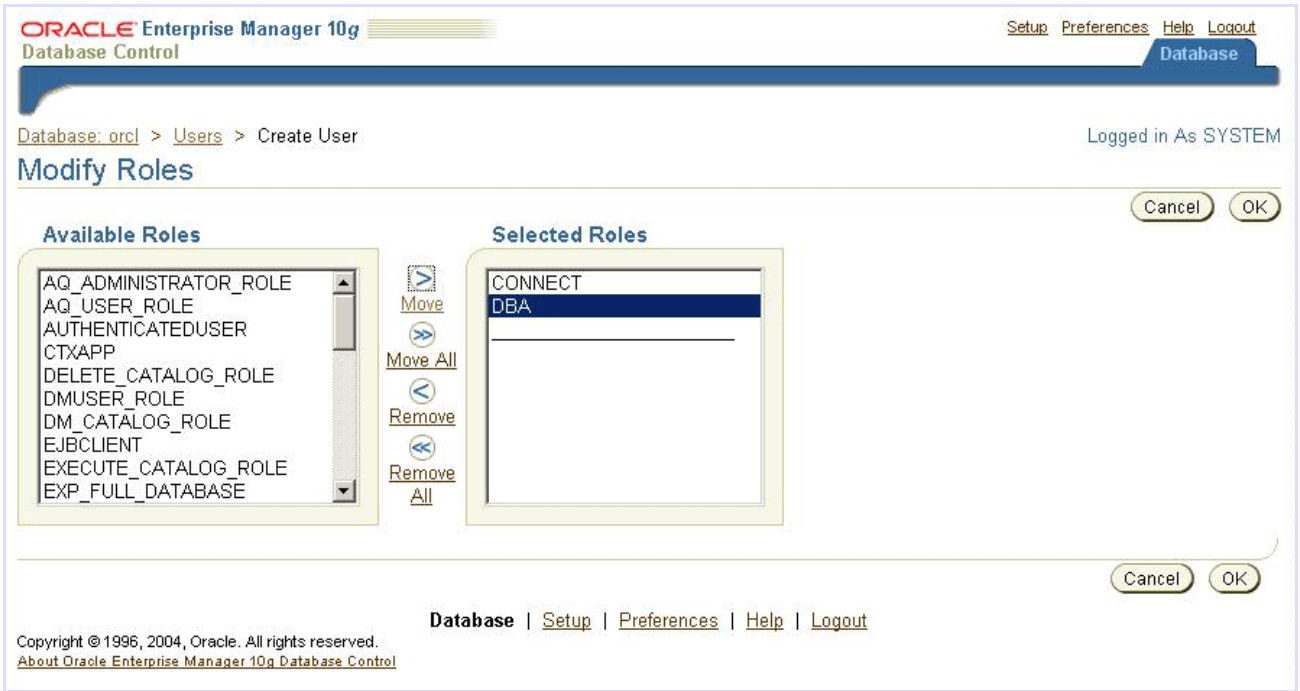
14. Click the **Roles** tab.

15. In the **Roles** tab, for the **CONNECT** role, make sure **DEFAULT** is selected and click the **Modify** button.



16. In the **Modify Roles** page, under **Available Roles**, select **DBA** and click the **Move** button .

    To the default granted roles (usually CONNECT is already granted), you need to add DBA privileges. Cogility Studio creates database tables for this user when you push a model into execution.



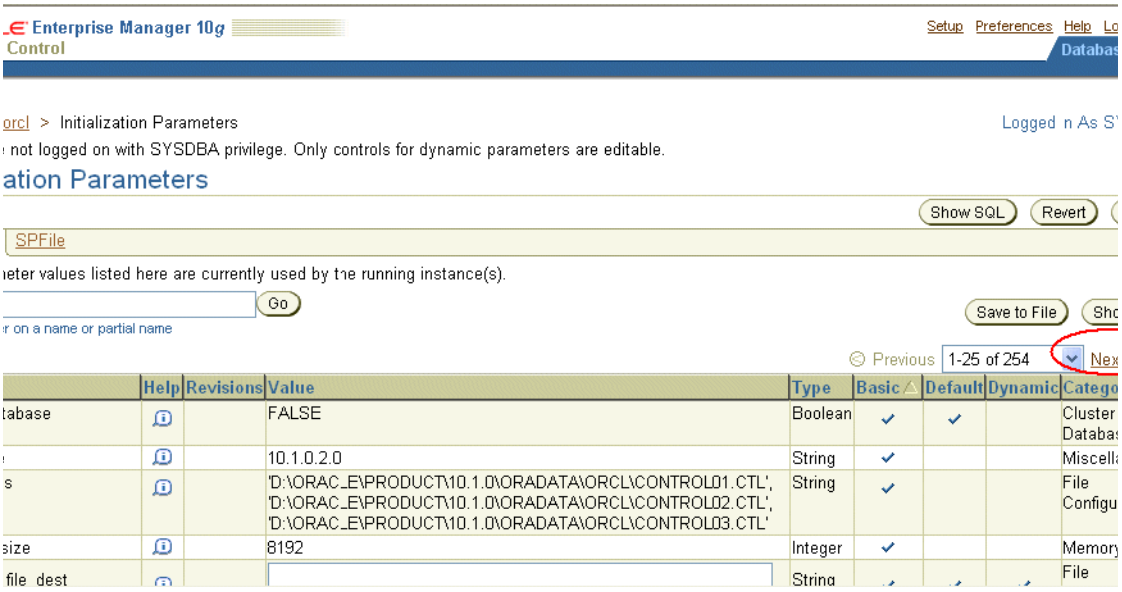
17. Click **OK**.

    The PEAR user appears in the Users list.

To set the Open Cursors size:

1. On the Enterprise Manager Administration page, under the Instance heading, click on the **All Initialization Parameters** hyperlink.

2. The Initialization Parameters screen displays the parameters for the **Currently** running database. Defaults are stored in a file, which can be changed by clicking the SPFile hyperlink.
3. On the Initialization Parameters screen, click on the Next 25 (parameters) hyperlink.



4. Scroll to the **open_cursors** parameter and set the value. The suggested value is **450**, but you should consult your database administrator for the appropriate value for your installation.

5.

rchive_dest_state_10		enable	String	✓	✓	✓
rchive_dest_state_2		enable	String	✓	✓	✓
rchive_dest_state_3		enable	String	✓	✓	✓
rchive_dest_state_4		enable	String	✓	✓	✓
rchive_dest_state_5		enable	String	✓	✓	✓
rchive_dest_state_6		enable	String	✓	✓	✓
rchive_dest_state_7		enable	String	✓	✓	✓
rchive_dest_state_8		enable	String	✓	✓	✓
rchive_dest_state_9		enable	String	✓	✓	✓
nguage		AMERICAN	String	✓	✓	
rritory		AMERICA	String	✓	✓	
_cursors		450	Integer	✓		✓
ggregate_target		25165824	Big Integer	✓		✓
sses		150	Integer	✓		

6. Scroll down and click **Apply**.
7. Repeat these steps for the **SPF** file.
8. Logout of the Oracle Enterprise Manager console.

Oracle 9i

To create a PEAR user on Oracle 9i:

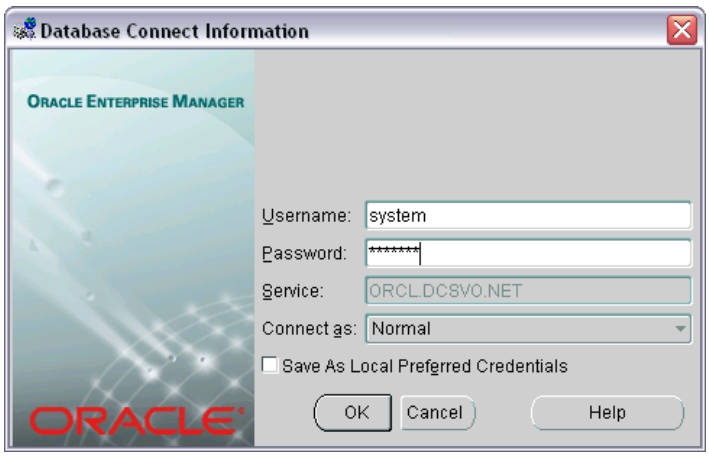
1. Install the database for a typical installation.

   See the Oracle product documentation for complete instructions.
2. From the Start menu, select **All Programs** > **Oracle - OraHome92** > **Enterprise Manager Console**.

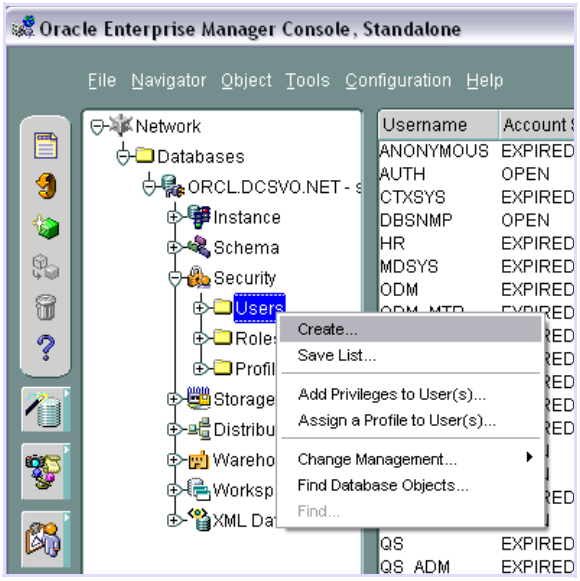
   This brings up the Oracle Enterprise Manager Console login.
3. In the Oracle Enterprise manager Console select **Launch Standalone** and click **OK**.

   These instructions assume that you are logging into Oracle at the location where it is installed. If you are logging into Oracle remotely, there may be additional steps. Following these steps, the Oracle Enterprise Manager Console displays.
4. In the left pane, under Network, click the plus signs (+) to expand the **Databases** folder and the installation for your database's location (ORCL.DCSVO.NET in the figure below).

5. In the Database Connect Information dialog, log in as a user with DBA privileges.



6. In the left pane, click the plus signs (+) to expand the **Security** folder.
7. Select the **Users** folder, right-click and select **Create**.



   a. For **Name** enter a name.
   b. For **Password**, enter a password.

      You can use any name and password. However, the default deployment configurations for Cogility Studio use PEAR for both the user name and password. If you use different strings, you must edit the default deployment model or create a new deployment model. See "Configuration Parameters" on page 25 of the guide, *Modeling with Cogility Studio*.

8. Select the **Roles** tab.

   To the default granted roles (usually CONNECT is already granted), you need to add DBA privileges. Cogility Studio creates database tables for this user when you push a model into execution.

9. Select **DBA**, click the down arrow and click **Create** and click **OK**.

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