eaDirect™ Installation and Configuration Guide

eaDirect is a member of the eaSuite™ product line

**Microsoft Windows NT/2000® Operating Systems
and the BEA WebLogic® Server**

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Preface

About Customer Self-Service and eaSuite™

eaSuite

edocs has developed the industry's most comprehensive software and services for deploying Customer Self-Service solutions. eaSuite™ combines electronic presentment and payment (EPP), order management, knowledge management, personalization and application integration technologies to create an integrated, natural starting point for all customer service issues. eaSuite's unique architecture leverages and preserves existing infrastructure and data, and offers unparalleled scalability for the most demanding applications. With deployments across the healthcare, financial services, energy, retail, and communications industries, and the public sector, eaSuite powers some of the world's largest and most demanding customer self-service applications. eaSuite is a standards-based, feature rich, and highly scalable platform, that delivers the lowest total cost of ownership of any self-service solution available.

eaSuite is designed to support how organizations approach designing and deploying Customer Self-Service applications:

Customer-Facing Solutions present customers with the sophisticated functionality to meet customers' self-service needs. eaSuite offers a full set of capabilities to enable the range of business and consumer customer service activities, along with the flexibility to completely customize the solution to meet vertical industry and specific company requirements.

Enterprise-Facing Solutions empower employees within an organization and external partners to leverage the edocs platform to facilitate self-service and to support assisted service. Customer service representatives (CSRs), sales agents, account managers, marketing managers, broker-dealers and channel partners all play a role in delivering customer service, creating content, accessing information and performing activities for the benefit of customers.

Platform and Development Tools are designed to meet the rigorous infrastructure demands of the most technologically advanced organizations. These components of the eaSuite power edocs solutions with the functionality and development tools necessary to make account data available, and to create the customer- and enterprise-facing applications that enable customer self-service.
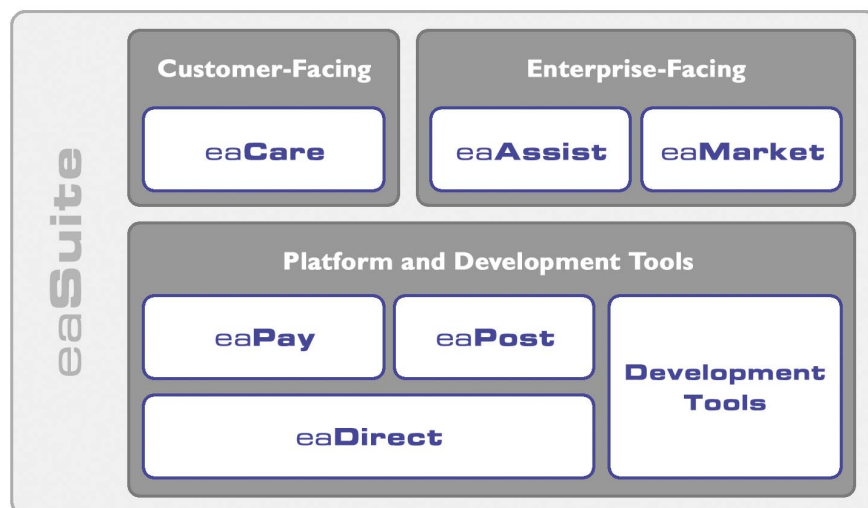
eaAssist

eaAssist™ reduces interaction costs and increases customer satisfaction by enabling enterprise agents – customer service representatives (CSRs), sales agents, broker-dealers and others – to efficiently access critical account data and service-related information to effectively service customers. Through its browser interface designed especially for the enterprise agent, eaAssist enables agents to take advantage of customer-facing online capabilities to provide better service by more efficiently resolving customer account inquiries at the point of customer contact.

eaMarket

eaMarket™ is the personalization, campaign and content management solution that enables organizations to increase revenue and improve customer satisfaction by weaving personalized marketing and customer service messages throughout the Customer Self-Service experience. The transactional account data that provides the foundation for a Customer Self-Service solution – such as transaction activity, service or usage charges, current task and prior service history – bring valuable insight into customers and can help optimize personalized marketing and customer service campaigns. eaMarket leverages that data to present relevant marketing and customer service messages to customers.

eaDirect

eaDirect™ is the core infrastructure of enterprise Customer Self-Service solutions for organizations large and small with special emphasis on meeting the needs of organizations with large numbers of customers, high data volumes and extensive integration with systems and business processes across the enterprise. Organizations use eaDirect with its data access layer, composition engine, and security, enrollment and logging framework to power complex Customer Self-Service applications.

eaPay

eaPay™ is the electronic payment solution that decreases payment processing costs, accelerates receivables and improves operational efficiency. eaPay is a complete payment scheduling and warehousing system with real-time and batch connections to payment gateways for Automated Clearing House (ACH) and credit card payments, and payments via various payment processing service providers.

eaPost

eaPost® is the account content distribution system that handles all the complexities of enrollment, authentication and secure distribution of summary account information to any endpoint, while also bringing customers back the organization's Website to manage and control their self-service experience.

Development Tools

eaSuite Development Tools™ are visual development applications that provide intuitive graphical user interface (GUI) environments for designing and developing Customer Self-Service solutions. The Development Tools encompass data management, workflow authoring, rules management and accounts receivable integration, as well as a full Software Developers Kit for custom application development.

About This Guide

This guide describes how to install eaDirect and configure the third-party applications that make up the eaDirect production environment. This guide is intended for system administrators and other technical personnel responsible for installing, configuring, and maintaining eaDirect. It contains the following chapters:

Preparing to Install eaDirect describes the hardware and software requirements for supporting products, walks you through the **InstallAnywhere** installation process, and discusses the recommended user and group accounts you need to create for your environment.

Setting Up a Database Server for eaDirect provides instructions for installing eaDirect on your database server and configuring your database server environment.

Setting Up an Application Server for eaDirect provides instructions for installing eaDirect on your application server and configuring your application server environment.

Migrating To a New Version of eaDirect describes how to migrate previous versions of an eaDirect database, check for errors, reset directory permissions, and migrate existing eaDirect applications.

Uninstalling eaDirect Components describes how to uninstall eaDirect on your database and application servers.

Appendix A: Using eaSample describes how to deploy and view the sample application and data provided with eaDirect.

Related Documentation

Online Help (for Composition Tools) and a PDF of this guide are also available.

Online	How to Access
Help	Select Help > Help Topics in DefTool or Composer.
A PDF of this guide	A PDF of this guide is available on the eaDirect product CD-ROM.

This guide is part of the eaDirect documentation set. For more information about implementing your eaDirect application, see one of the following guides:

Print Document	Description
eaDirect Installation and Configuration Guide	How to install eaDirect and configure it in a distributed environment.
eaDirect Production Guide	How to set up and run a live eaDirect application in a J2EE environment.

Print Document	Description
eaDirect Developer's Guide	Provided with the eaDirect Software Developer's Kit (SDK), describes eaDirect application server components and related applications; defines the public interfaces for customizing and extending the functionality of an eaDirect application.

If You Need Help

Technical support is available to customers who have valid maintenance and support contracts with edocs. Technical support engineers can help you install, configure, and maintain your edocs application.

To reach the U.S. Service Center, located in Natick, MA (Monday through Friday 8:00am to 8:00pm EST):

- Telephone: 508.652.8400

- Toll Free: 877.336.3362

- E-support: support.edocs.com (This requires a one-time online registration)

- E-mail: support@edocs.com

When you report a problem, please be prepared to provide us the following information:

- What is your name and role in your organization?

- What is your company's name?

- What is your phone number and best times to call you?

- What is your e-mail address?

- In which edocs product did a problem occur?

- What is your Operating System version?

- What were you doing when the problem occurred?

- How did the system respond to the error?

- If the system generated a screen message, please send us that screen message.

- If the system wrote information to a log file, please send us that log file.

If the system crashed or hung, please tell us.

Preparing to Install eaDirect

1

Before installing eaDirect, you must confirm that your system meets or exceeds recommended hardware and software requirements. During installation, you will ensure that all supporting software is correctly configured and functioning smoothly and that your environment is set up properly for eaDirect.

Follow the steps in this guide carefully and in sequence to ensure a successful installation of eaDirect.

Hardware and Software Requirements

Confirm that your system meets or exceeds the minimum recommended hardware and software requirements for installing eaDirect. Check the release notes for any updates to these requirements.

Type	Vendor	Product	Version	Notes
OS	Microsoft	Windows	2000 Server	SP2
	Microsoft	Windows	2000 or NT	supported for Windows-based composition tools only
HARDWARE		CD-ROM	for Windows	
		disk space (database)	2.2 GB	
		disk space (software)	60 MB	
		Pentium	III or higher	or compatible processor
		RAM	512 MB	per CPU (1 GB recommended)
JAVA/C++	Sun	Java 2 SDK Standard Edition	1.3.1	shipped with your application server

Type	Vendor	Product	Version	Notes
DATABASE SERVER	Microsoft	SQL Server	2000	
APPLICATION SERVER	BEA	WebLogic Server	6.1	SP3
BROWSER (either)	Microsoft	Internet Explorer	5.5 SP2 or 6	
BROWSER	Netscape	Navigator	6.2	

Installing eaDirect Product Components

The installation of eaDirect product components is done through the InstallAnywhere installer. The tool is provided with eaDirect on its distribution CD-ROM. The following screen shows where you select the eaDirect components to install. Note that the features you will see depends on which features you purchased.

With the InstallAnywhere easy-to-follow graphical user interface, you can choose to do a full or custom install of eaDirect components on a single server or on multiple servers in a distributed environment. The following tables describe the various eaDirect installation options:

Installation Option	Components Installed
Full	Installs eaDirect application server components, eaDirect database server components, application server J2EE files for eaDirect, eaDirect composition tools, and online product Help. This is the default installation option for eaDirect. **Note**: Use this installation option to install eaDirect on a single machine. See *Installing eaDirect on a Single Machine.*
Database	Installs the eaDirect database server components and online product Help.
App Server	Installs eaDirect application server components, application server J2EE files for eaDirect, sample applications (as licensed), and online product Help.
Custom	Gives users the option to install eaDirect application server components, eaDirect database server components, eaDirect J2EE applications, eaDirect composition tools, and sample eaDirect applications.
SDK	Provides Javadoc, documentation and samples for the eaDirect API. This component will only appear if you have purchased a license for the SDK.

InstallAnywhere copies eaDirect files from the distribution CD-ROM to the appropriate directories, and sets up the directory hierarchy for database server and application server components.

A Windows installation (for Composition Tools) also adds icons (including the tool to uninstall eaDirect) to the eaDirect program group in the Windows Start menu.

For details about installing eaDirect components using InstallAnywhere, see the topics: *Installing the eaDirect Composition Tools*, *Installing the eaDirect Database Components* and *Installing the eaDirect Application Server Components*.

Installing eaDirect on a Single Machine

This guide is organized to show how to install eaDirect in a distributed environment that has at least one dedicated database server and application server. However, using the InstallAnywhere 'Full' installation option, you can choose to install all the eaDirect product components on a single machine. The following procedure describes how to do this.

To install eaDirect on a single machine:

1. From the installation CD-ROM, navigate to the subdirectory for your platform (for example Windows, Solaris, or AIX) and run the command to invoke InstallAnywhere. For example (Windows):

   ```
   Dirins.exe
   ```

   Or, you may double-click the **Dirins.exe** icon.

   A start-up screen appears.

2. On the Introduction screen, read the eaDirect introductory information. Then click **Next**.

3. On the License Agreement screen, carefully read and accept the terms of the license agreement (use the scroll bars to move up and down on the screen) by clicking the appropriate radio button. Then click **Next**.

4. On the Enter Serial Number screen, enter your product serial number. It is stapled to the inside front cover of this guide (if your serial number has been misplaced, contact edocs Technical Support). Then click **Next**.

5. On the Owner of Web Application Server screen, enter the name of the application server owner (the recommended 'owner' is *nobody*). Then click **Next**.

6. On the Group of Web Application Server screen, enter the name of the group for the application server (the recommended group is *nobody*). Then click **Next**.

7. On the Choose Install Folder screen, accept the default installation folder (*opt/EDCSbd*), or click **Choose** to specify another installation folder. Then click **Next**.

8. On the Choose Product Features screen, click **Full**. Then click **Next.**

9. On the Pre-Installation Summary screen, confirm that the information is accurate. Then click **Install**.

   At this point, the eaDirect database and application server components are copied to the designated installation folder. A status bar on the bottom of the screen shows each server component being installed. No user intervention is required.

10. The Install Complete screen reports a successful installation and the directory that contains the eaDirect database and application server components.

11. Click **Done** to exit the installer.

Where to Go From Here

If you have installed eaDirect using the 'Full' installation option, you can ignore the database server components installation procedure at the beginning of Chapter 2, and proceed directly to the topic *Configuring Your Database for eaDirect*. Similarly, you can ignore the application server components installation procedure in Chapter 3.

Setting Up a Database Server for eaDirect

2

Overview

This chapter provides instructions for installing eaDirect on a database server and configuring the third-party software that works with it. If you have not completed the prerequisite tasks for installing eaDirect as described in the topic, *What You Need to Know When Installing eaDirect*, do so now. This will help to ensure a smooth and successful installation.

Setting up a database server to support eaDirect involves completing the following tasks:

- Confirm that Microsoft SQL Server 2000 is installed

- Install eaDirect using the provided installation executable

- Run the database creation and configuration tool to configure SQL Server for eaDirect

The installation and configuration examples shown in this chapter uses default eaDirect pathnames. If you choose not to accept the default pathnames, make sure your pathnames are consistent throughout the installation of eaDirect on the database and application servers.

Caution — When installing Microsoft SQL Server 2000, it is recommended that you select Mixed Mode (Windows Authentication and SQL Server Authentication) as your default authentication mode. Selecting Windows Authentication Mode **only** might cause database creation and configuration to fail.

Installing eaDirect Database Server Components

If you have not completed the tasks in *What You Need to Know Before Installing eaDirect*, do so now. This will help to ensure a smooth and successful installation.

To install the eaDirect database server components:

1. From the *\Windows* subdirectory on the installation CD-ROM, double-click the command to invoke the InstallAnywhere GUI:

   Dirins.exe

   A start-up screen appears.

2. On the Introduction screen, read the eaDirect introductory information. Then click **Next**.

3. On the License Agreement screen, carefully read the terms of the agreement (use the scroll bars to move up and down on the screen) and accept the terms of the license agreement by clicking the appropriate radio button. Then click **Next**.

4. On the Enter Serial Number screen, enter your product serial number. It is stapled to the inside front cover of this guide (if your serial number has been misplaced, contact edocs Technical Support). Then click **Next**.

5. On the Choose Install Folder screen, accept the default installation folder or click **Choose** to specify another installation folder. Then click **Next**.

6. On the Choose Product Features screen, click **Database**. Then click **Next**.

7. On the Choose Shortcut Folder screen, specify where you want to create product icons. You can accept the default or click the **Other** radio button then **Choose** and specify a different location for the product icons. Then click **Next**.

8. On the Pre-Installation Summary screen, confirm that the information is accurate. Then click **Install**.

At this point, the eaDirect database server components are copied to the designated installation folder. No user intervention is required.

9. The Install Complete screen reports a successful installation and directory that contains the database server components.

    If the installation fails, determine the cause of the problem and reinstall.

10. Click **Done** to exit the installer.

Understanding the eaDirect Directory Structure on the Database Server

The eaDirect home directory on the database server contains all the files needed to create and configure the eaDirect production database. When you install the eaDirect database server components, you are prompted to specify a 'destination' directory. By default, this directory is *C:\EDCSbd* and it has a pre-defined hierarchical directory structure.
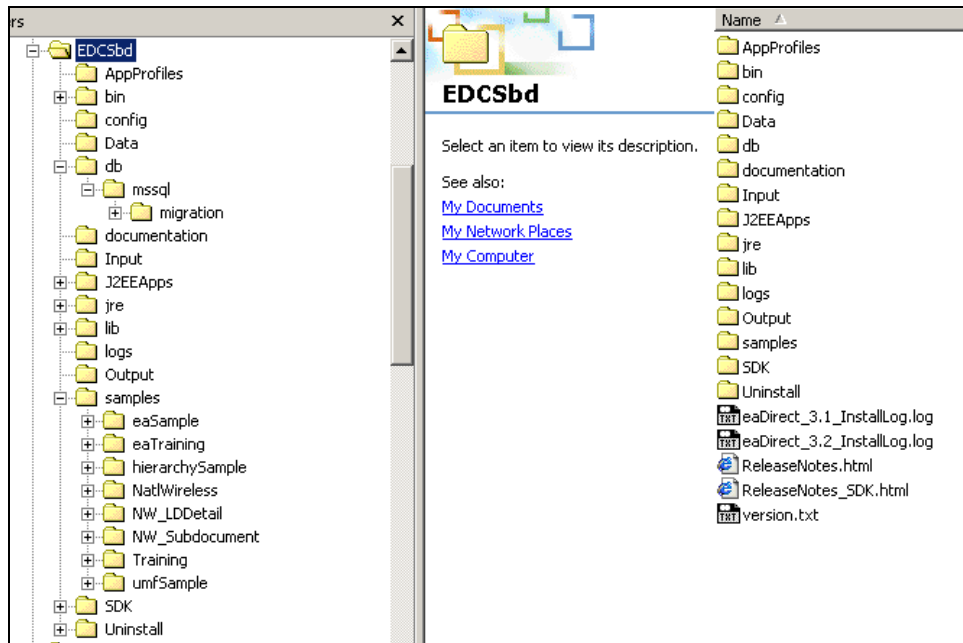
At the top of the directory hierarchy is *EDCSbd*. Below *EDCSbd* is the subdirectory *\db\mssql* (which contains a subdirectory named *migration*). This subdirectory stores files for database creation, configuration, and migration.

```
<EDCSbd>
        \db\mssql
        \db\mssql\migration
```

To designate a different destination directory for the eaDirect database server components, enter the pathname to the directory when prompted during installation.

edocs recommends that you install eaDirect in the same top-level directory on both the database server and the application server.

Creating and Configuring Your eaDirect Database

Setting up the SQL Server database for eaDirect consists of the following configuration procedures:

- Increasing the default width for SQL numeric columns

- Configuring the eaDirect production database

The following topics describe each procedure.

Increasing the Default Width for Numeric Columns (SQL Server)

By default, the width for SQL Server numeric columns is 28 characters long. However, eaDirect **requires** that the width of numeric columns be a minimum of 38 characters long. This means you must increase the default width for numeric columns in SQL Server in order for the database creation and configuration tool to run successfully.

To increase the default width of numeric columns:

1. From the Start menu, select **Programs** and **Microsoft SQL Server,** and click **Enterprise Manager**. The SQL Enterprise Manager window appears.

2. In the left pane, expand **Microsoft SQL Servers** and **SQL Server Group** to show your server. The sample screen shows a SQL server named DOC_HUGHES.
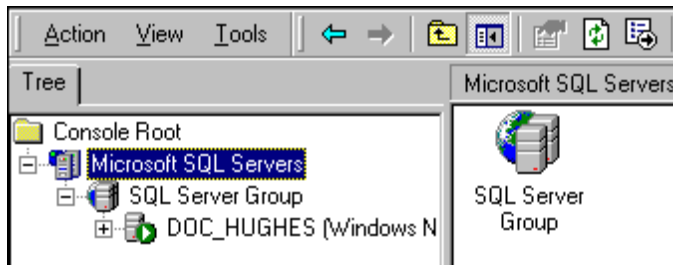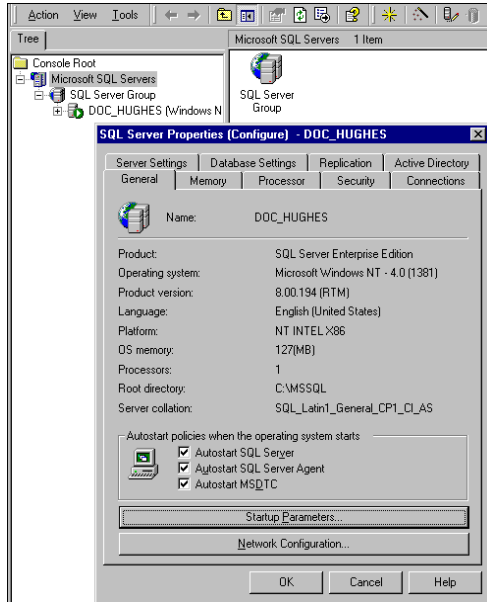

3. In the left pane, highlight your SQL server by right clicking on its name, and then click **Properties** from the menu.
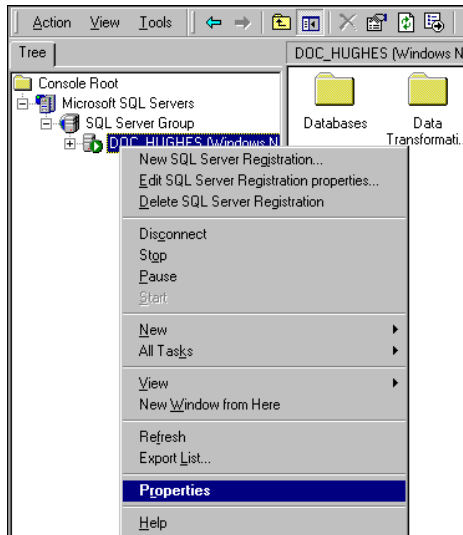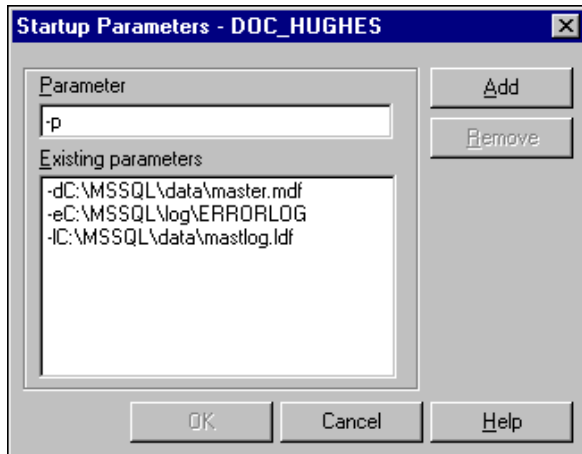

The SQL Server Properties dialog appears.

4. Click **Startup Parameters** at the bottom of the dialog. The Startup Parameters dialog appears showing the name of the server.

5. Enter the startup parameter **-p** in the Parameter text field.

6. Click **Add.** The new startup parameter is added to the list of existing parameters.
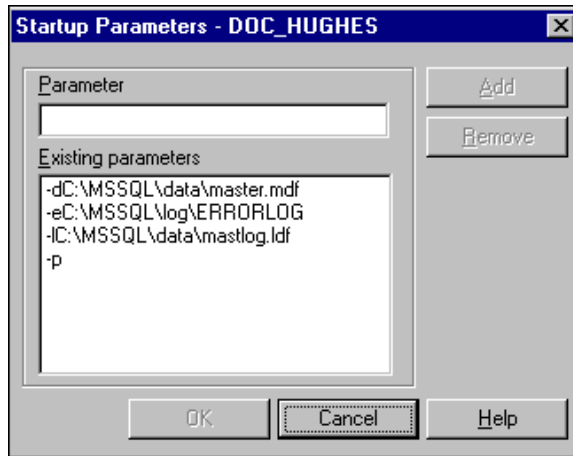
7. Click **OK** to close the dialog.

8. Stop and start the SQL server for the new startup parameter to take effect. Right-click the server name and select **Stop** from the menu.
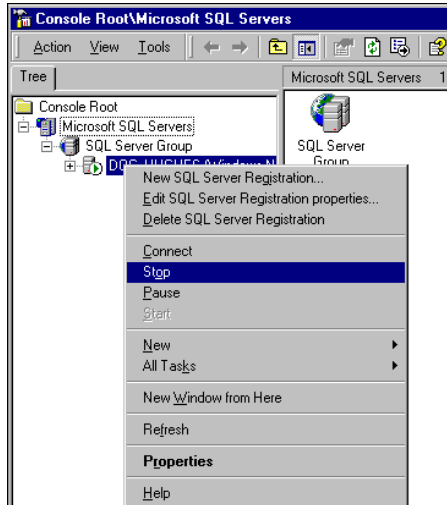
9. To start the SQL server, right-click the server name and select **Start** from the menu.

Creating and Configuring the eaDirect Database with the DBConfigTool

Creating and configuring the eaDirect production database consists of a series of screens where you specify information about the database including the username and password needed to access it, the name of the database, the server on which it is installed, and the pathnames for the SQL Data and Log files. You use the Java database configuration tool, *DBConfigTool.jar*, to create and configure the production database.

You will need the required Java SDK (see the topic *Software and Hardware Requirements* for more information) on the machine from where you will be running *DBConfigTool.jar*. This could be the machine your database is on, or another machine. Again, the machine that has your database on it does not need the Java SDK unless you will be running *DBConfigTool.jar* from it.

However, if you are doing a single-server installation of eaDirect, make sure that the required Java SDK has been installed.

> **Caution** When installing Microsoft SQL Server 2000, it is recommended that you select Mixed Mode (Windows Authentication and SQL Server Authentication) as your default authentication mode. Selecting Windows Authentication Mode **only** might cause the database creation and configuration procedure to fail.

### To create and configure the eaDirect production database:

1. Open a Command Prompt window and change directory to *%EDX_HOME%\db\mssql* (where *%EDX_HOME%* is the eaDirect installation directory). Run the Java database creation and configuration tool *DBConfigTool.jar*:

   ```
   C:\> cd EDCSbd\db\mssql
   java –jar DBConfigTool.jar
   ```

   The Database Configuration screen appears.
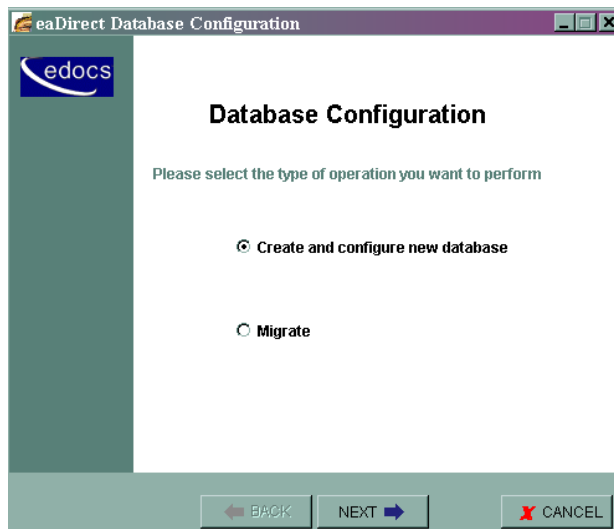
2. Select **Create and configure new database** (default)**,** and then click **Next**. A second database configuration screen appears.
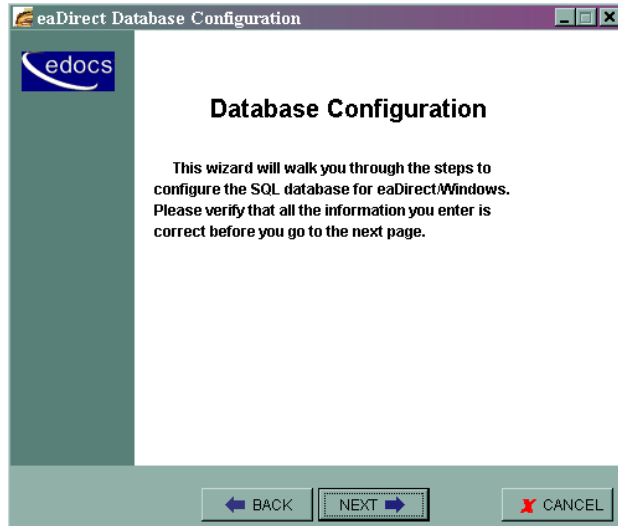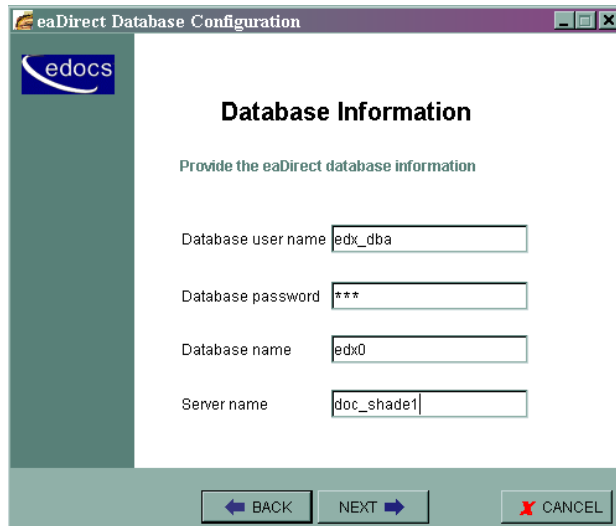
3. Click **Next**. The Database Administrator Information screen appears.

4. Enter the Admin Name and Admin Password (if your database has one) for the SQL database. The default Admin Name is 'sa'.
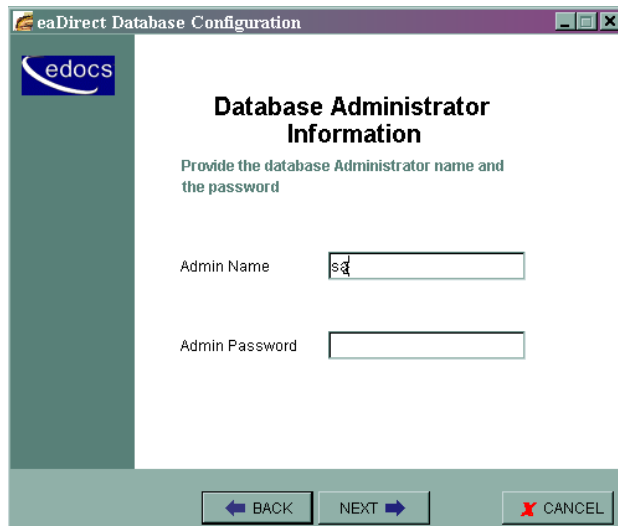
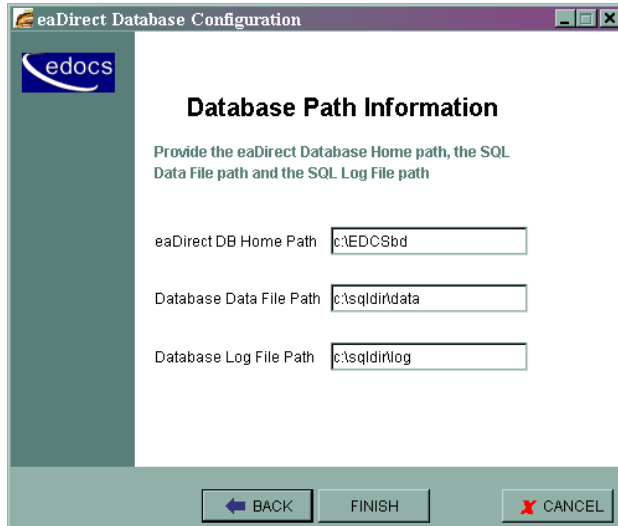5. Click **Next**. The Database Information screen appears.

6. Specify a new database user name, database password, and database name for the new database. Also, enter the name of the server on which the database will be created. For example:
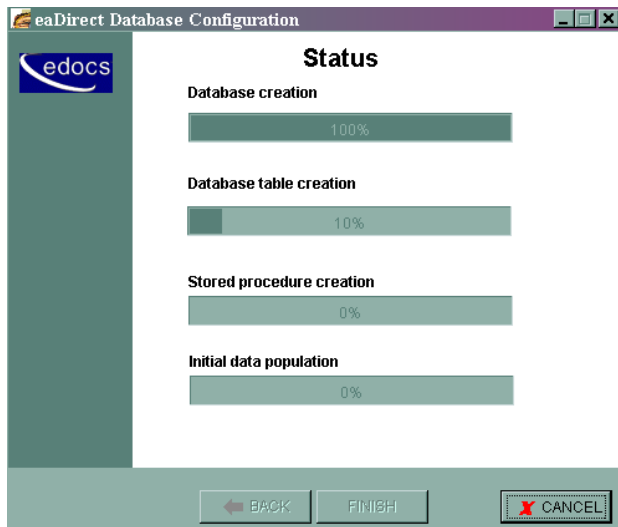

7. Click **Next**. The Database Path Information screen appears.

8. Specify the pathname to the database installation directory, location of the SQL data file, and the location of the SQL log file. For example:
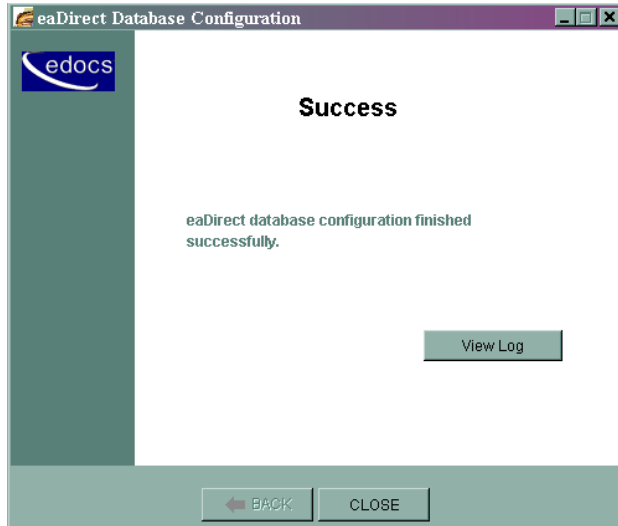
9. Click **Finish**. A status screen appears showing the progress of each task performed by the database creation and configuration tool.

10. A confirmation screen appears if the database is configured successfully.

11. Click **Close** to exit from the database creation and configuration tool.

Recovering from a Failed Database Configuration

If you have to abort the database creation and configuration procedure, or if it fails to create and configure the database (generates a "Failure" screen), do the following steps before running the database tool again.

To recover from a failed database configuration:

1. From the Start menu, select **Programs** and **Microsoft SQL Server**, and click **Enterprise Manager**. The Enterprise Manager screen appears.

2. Expand the SQL Server Group and click the **Database** folder.

3. Highlight the name of the newly created database and delete it from the list of installed databases. The sample screen shows the database, edx0, being deleted.
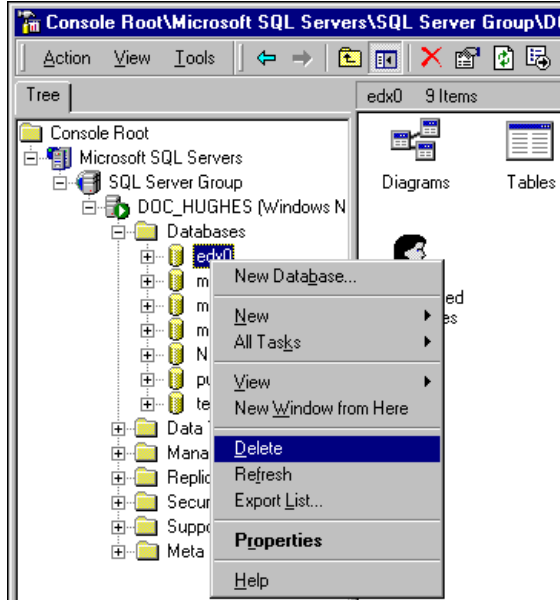
4. Scroll down to the Security folder and expand it to show Logins. Delete the user for the database that you just deleted. The sample screen shows the database user *edx_dba* being deleted.
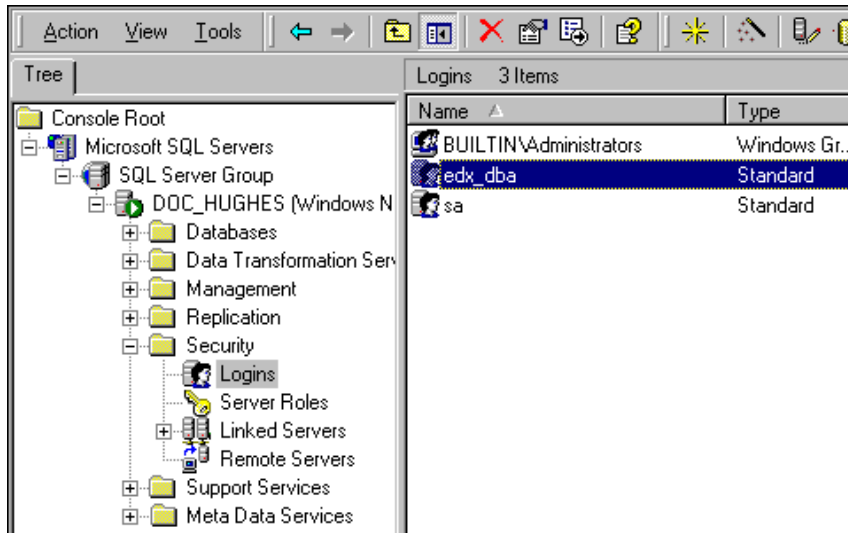
5. Open a Command Prompt window and run the database creation and configuration tool again, making sure that the values on a screen are correct before proceeding to the next screen.

Creating Database Tables for Order Capture

In order to use the Order Capture feature in eaSample, you must manually execute a script **on your database machine** that creates the appropriate database tables for the sample application. The command syntax is:

```
create_demo_oc_table.bat database_name database_username
database_password
```

This procedure must be done **before** you deploy the sample application. For more information about order capture, see *eaSDK: Order Capture and Management*.

To create database tables for Order Capture:

1. Open a Command Prompt window.

2. Change directory to **%EDX_HOME%\samples\eaSample\db\mssql**

3. Run the Create_demo_oc_table.bat file providing the database username, database SID, and database password. For example:

```
C:\> create_demo_oc_table.bat edx0 edx_dba edx
```

This script connects to the database, drops any existing order capture schema objects, and creates a new order capture schema for your database.

4. When the batch file has completed, you are returned to the command prompt. No additional user input is required.

5. Close the Command Prompt window.

Setting Up an Application Server for eaDirect

3

Overview

This chapter provides instructions for installing eaDirect on an application server and configuring supporting software. Configuring an application server for eaDirect involves the following tasks:

- Confirm that third-party software is correctly installed and configured

- Install the eaDirect application components using InstallAnywhere

- Define your eaDirect environment

- Configure Java resources for eaDirect

- Enable connectivity to the database

The installation and configuration examples shown in this chapter use default pathnames for eaDirect, for example */opt/EDCSbd*.

To designate a different destination directory for the eaDirect application server components, enter the pathname to the directory when prompted during installation.

edocs recommends that you install eaDirect in the same top-level directory on both the database server and the application server.

Tip	If you have not already installed the database server components and configured the database server for eaDirect, do so now.

Defining Your eaDirect Environment

eaDirect provides several configuration files that you use to define your environment for WebLogic Server. Among these files are *edx_env.bat* and *edx_bcp.config*, which are used to provide specific information about your environment. During installation of eaDirect, all the configuration files are copied to *%EDX_HOME%\config*.

Setting up the eaDirect environment for WebLogic Server involves modifying the eaDirect configuration files *edx_env.bat* and *edx_bcp.config.bat* for your environment.

Capturing Environment Data with *edx_env.bat* and *edx_bcp.config.bat*

When modifying *edx_env.bat*, you will have to define values for the following undefined environment variables:

Environment Variable	Description	Your Value Here
APP_SERVER	Specifies which application server you are using, **wl** (WebLogic) or **ws** (WebSphere)	
EDX_HOME	Pathname to the eaDirect installation directory	
WL_HOME	Pathname to the WebLogic Server installation directory	
WL_DOMAIN	WebLogic Server domain name	
JAVA_HOME	Pathname to the installed JDK	

To modify *edx_env.bat*:

1. From Windows Explorer, navigate to *%EDX_HOME%\config*.

2. Right-click to open *edx_env.bat*, and select **Edit** from the menu. The default *edx_env.bat* file will look like this:

```
@rem define APP_SERVER begin
@rem define APP_SERVER end

@rem define EDX_HOME begin
@rem define EDX_HOME end

@rem define JAVA_HOME
@rem define JAVA_HOME

@rem define WL_HOME
@rem define WL_HOME

@rem define WL_DOMAIN
@rem define WL_DOMAIN
```

3. Modify *edx_env.bat* to reflect your eaDirect environment by inserting your own environment variables between the @rem (remark) lines for each of the five required values APP_SERVER, EDX_HOME, WL_HOME, WL_DOMAIN, and JAVA_HOME. For example:

```
@rem define APP_SERVER begin
@set APP_SERVER=wl
@rem define APP_SERVER end

@rem define EDX_HOME begin
@set EDX_HOME=C:\EDCSbd
@rem define EDX_HOME end

@rem define JAVA_HOME
@set JAVA_HOME=C:\bea\jdk131
@rem define JAVA_HOME

@rem define WL_HOME
@set WL_HOME=C:\bea\wlserver6.1
@rem define WL_HOME

@rem define WL_DOMAIN
@set WL_DOMAIN=mydomain
@rem define WL_DOMAIN
```

4. Save and close *edx_env.bat*.

To modify edx_bcp.config.bat:

1. From Windows Explorer, navigate to *%EDX_HOME%\config*.

2. Open *edx_bcp.config.bat* by right clicking on it, and selecting **Edit** from the menu.

3. The default *edx_bcp.config.bat* file contains default settings that you might have to change for your environment. The values for User and Password should match the *username:password* combination entered during the database creation and configuration process. The value for SQL server is the name of the SQL server on which you created the eaDirect database.

```
@set JAVA_OPTIONS=%JAVA_OPTIONS% -
Dcom.edocs.tasks.loader.user=sql_username
@set JAVA_OPTIONS=%JAVA_OPTIONS% -
Dcom.edocs.tasks.loader.password=sql_password
@set JAVA_OPTIONS=%JAVA_OPTIONS% -
Dcom.edocs.tasks.loader.server=sql_servername
```

4. Modify *edx_bcp.config.bat* for your environment. For example:

```
@set JAVA_OPTIONS=%JAVA_OPTIONS% -
Dcom.edocs.tasks.loader.user=edx_dba
@set JAVA_OPTIONS=%JAVA_OPTIONS% -
Dcom.edocs.tasks.loader.password=edx
@set JAVA_OPTIONS=%JAVA_OPTIONS% -
Dcom.edocs.tasks.loader.server=doc_hughes
```

5. Save and close *edx_bcp.config.bat*.

Starting and Stopping Your Application Server

You can start WebLogic Server for eaDirect in two ways:

- From a Command Prompt window

- As a Windows Service

Depending on how you choose to start WebLogic Server, you will have to modify either the *startWebLogic.cmd* or *InstallNtService.cmd* command to allow WebLogic Server to process environmental variables and database settings for your environment each time it starts up. The following topics describe how to pass your eaDirect environment to WebLogic Server at start up from a Command Prompt window, or as a Windows Service.

Starting WebLogic Server from a Command Prompt Window

To start WebLogic Server from a Command Prompt window:

1. From Windows Explorer, navigate to *%WL_HOME%\config\mydomain*.

2. Open *startWebLogic.cmd* by right clicking its name and selecting **Edit**. Add the following lines of code at the top of the 'user-defined variables' section:

   ```
   @Set EDX_HOME=<your_eaDirect_installation_directory>
   @call %EDX_HOME%\config\edx_env.bat
   ```

3. Remove any other entries that might be in the 'user-defined variables' section.

4. In the **runWebLogic** section, add the following lines of code just beneath the 'set CLASSPATH' command:

   ```
   @call %EDX_HOME%\config\edx.config.bat
   ```

   Note that the file *edx.config.bat* calls *edx_bcp.config.bat*, which contains the SQL Server database settings you defined earlier.

5. In the same section, add your WebLogic Server password. This is the password that you specified when you installed WebLogic Server.

   ```
   @rem Set WLS_PW equal to your system password for no password
   prompt at server startup.
   set WLS_PW=<your_WebLogic_password>
   ```

6. In the same section, replace the current Java command with the following lines of code (all on one line):

   ```
   "%JAVA_HOME%\bin\java" %JAVA_OPTIONS% -classpath
   "%CLASSPATH%" -Dweblogic.Domain=%WL_DOMAIN%
   -Dweblogic.Name=myserver "-Dbea.home=C:\bea"
   -Dweblogic.management.password=%WLS_PW%
   -Dweblogic.ProductionModeEnabled=%STARTMODE%
   "-Djava.security.policy=C:\bea\wlserver6.1\lib\weblogic.
   policy" weblogic.Server
   ```

7. Save and close *startWebLogic.cmd*.

8. Open a Command Prompt window, and change directory to *%WL_HOME%\config\mydomain.* For example:

```
C:\> cd bea\wlserver6.1\config\mydomain
```

9. At the command prompt, run the command to start WebLogic Server:

```
C:\> startWebLogic.cmd
```

Starting WebLogic Server as a Windows Service

If you are upgrading from a 2.x version of eaDirect,

Tip	If you are upgrading from a version prior to 3.x. you will need to uninstall and then reinstall the WebLogic Service to include the new classpath (*edx_common.jar*). You should also delete the Logger service if you had installed it.

To start WebLogic Server as a Windows Service:

1. From Windows Explorer, navigate to *%WL_HOME%\config\mydomain* (where *%WL_HOME%* is the WebLogic installation directory).

2. Make a copy of *InstallNtService.cmd* in case you have to go back to the original settings.

3. Open *InstallNtService.cmd* by right clicking on its name, and selecting **Edit**.

4. Add the following lines of code in the 'SETLOCAL' section:

```
@set EDX_HOME=<your_eaDirect_installation_directory>
@call %EDX_HOME%\config\edx_env.bat

SETLOCAL
@set EDX_HOME=C:\EDCSbd
@call %EDX_HOME%\config\edx_env.bat
```

5. In the 'Set Classpath to load WebLogic Classes' section, add the following line of code after the Set CLASSPATH command:

```
@call %EDX_HOME%\config\edx.config.bat

rem *** Set Classpath to load Weblogic Classes
```

```
Set CLASSPATH=.;C:\bea\wlserver6.1\lib\weblogic_sp.jar;
C:\bea\wlserver6.1\lib\weblogic.jar
@call %EDX_HOME%\config\edx.config.bat
```

Note that the file *edx.config.bat* calls *edx_bcp.config.bat*, which contains the SQL database settings you defined earlier.

6. In the 'Set Command Line' section, replace the original settings:

```
-ms64m -mx64m
```

With the variable:

```
%JAVA_OPTIONS%
```

```
set CMDLINE="%JAVA_OPTIONS% -classpath \"%CLASSPATH%\"
-Dweblogic.Domain=mydomain -Dweblogic.Name=myserver
-
Djava.security.policy==\"C:\bea\wlserver6.1/lib/weblogic.policy
\"
-Dbea.home=\"C:\bea\" weblogic.Server"
```

7. In the 'Install the service' section, change the name of the service (-svcname:<*your_service_name*>) if necessary. The default service name is **myserver**.

```
rem *** Install the service
"C:\bea\wlserver6.1\bin\beasvc" -install -svcname:myserver
-javahome:"%JAVA_HOME%" -execdir:"C:\bea\wlserver6.1"
-extrapath:"C:\bea\wlserver6.1\bin;C:\EDCSbd\lib" -
cmdline:%CMDLINE%
```

8. In the same section, replace the current setting:

```
-javahome:"c:\bea\jdk131"
```
(where *-javahome* points to your installed JDK)

```
with the following:
```

-javahome:"%JAVA_HOME%"

```
rem *** Install the service
"C:\bea\wlserver6.1\bin\beasvc" -install -svcname:myserver
-javahome:"%JAVA_HOME%" -execdir:"C:\bea\wlserver6.1"
-extrapath:"C:\bea\wlserver6.1\bin;C:\EDCSbd\lib" -
cmdline:%CMDLINE%
```

9.   In the same section, add your WebLogic Server password after the
'-cmdline' setting.

```
-cmdline:%CMDLINE% -password:<your_WebLogic_password>

rem *** Install the service
"C:\bea\wlserver6.1\bin\beasvc" -install -svcname:myserver
-javahome:"%JAVA_HOME%" -execdir:"C:\bea\wlserver6.1"
-extrapath:"C:\bea\wlserver6.1\bin;C:\EDCSbd\lib"
-cmdline:%CMDLINE% -password:lovelyday
```

10. In the same section, add the path *C:\EDCSbd\lib* as an extra path
(substituting your drive where necessary).

```
rem *** Install the service
"C:\bea\wlserver6.1\bin\beasvc" -install -svcname:myserver
-javahome:"%JAVA_HOME%" -execdir:"C:\bea\wlserver6.1"
-extrapath:"C:\bea\wlserver6.1\bin;C:\EDCSbd\lib"
-cmdline:%CMDLINE% -password:documentation
```

11. Save and close *installNtService.cmd*.

12. Open a Command Prompt window, and change directory to
%WL_HOME%\config\mydomain. For example:

```
C:\bea\wlserver6.1\config\mydomain
```

13. Run installNtService.*cmd* to install WebLogic Server as a Windows Service.

```
C:\> installNtService.cmd
```

14. A confirmation message is shown in the Command Prompt window if the
server is installed successfully.

15. From the Control Panel, open the Services dialog, and then start the
WebLogic Server service.
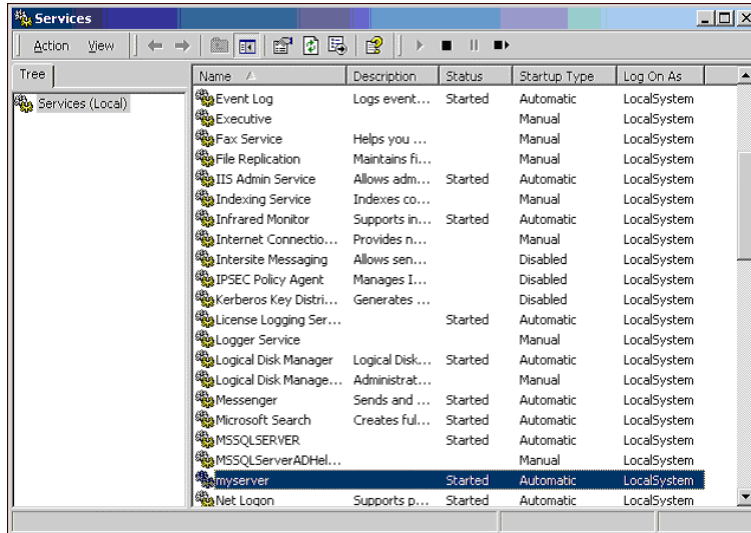
16. Allow some time for WebLogic Server to start up.

Installing eaDirect Application Server Components

If you have not completed the prerequisite tasks for installing eaDirect as described in the topic, *What You Need to Know Before Installing eaDirect*, do so now. This will help to ensure a smooth and successful installation.

When you install eaDirect, you are prompted to specify a 'destination' directory. By default, the eaDirect application server components are installed in *C:\EDCSbd*.

To install the eaDirect application server components:

1. From the *\Windows* subdirectory on the eaDirect installation CD-ROM, double-click the command to invoke the InstallAnywhere GUI:

   Dirins.exe

   A start-up screen appears.

2. On the Introduction screen, read the eaDirect introductory information. Then click **Next**.

3. On the License Agreement screen, carefully read the terms of the agreement (use scroll bars to move up and down on the screen) and accept the terms of the license agreement by clicking the appropriate radio button. Then click **Next**.

4. On the Enter Serial Number screen, enter your product serial number. It is stapled to the inside front cover of this guide (if your serial number has been misplaced, contact edocs Technical Support). Then click **Next**.

5. On the Choose Install Folder screen, accept the default installation folder (*C:\EDCSbd*) or click **Choose** to specify another installation folder. Then click **Next**.

6. On the Choose Product Features screen, click **App Server**. Then click **Next**.

7. On the Choose Shortcut Folder screen, specify where you want to create product icons. You can accept the default folder or click the **Other** radio button, and then click **Choose** to specify a different location for the product icons. Then click **Next**.

8. On the Pre-Installation Summary screen, confirm that the information is accurate. Then click **Install**.

   At this point, the eaDirect application server components are copied to the designated installation folder. A status bar on the bottom of the screen shows each application server component being installed. No user intervention is required.

9. The Install Complete screen reports a successful installation and the name of the directory that contains the application server components.

10. Click **Done** to exit the installer.

Understanding the eaDirect Directory Structure on the Application Server

The eaDirect home directory on the application server contains all the files that are needed and created by the eaDirect application. When you install the eaDirect application server components, you are prompted to specify a 'destination' directory. By default, this directory is C:*EDCSbd* and it has a pre-defined hierarchical directory structure.
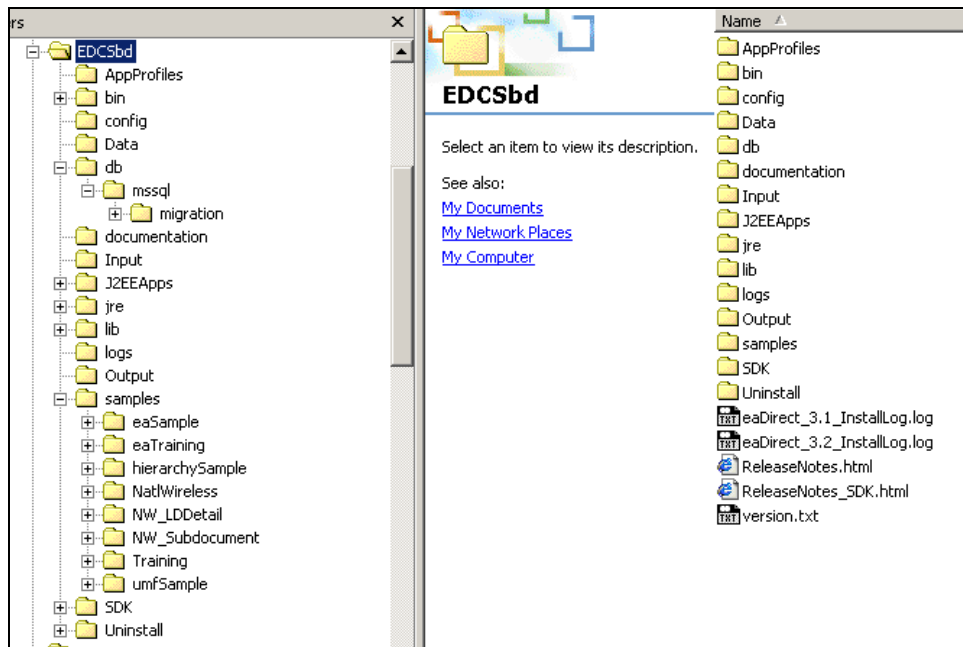
It is recommended that you install eaDirect in the same directory on the application and database servers.

Tip   When installing eaDirect on a single machine with the InstallAnywhere 'Full' option, the database subdirectories (as mentioned in the topic *Understanding the eaDirect Directory Structure on a Database Server* in Chapter 2) are included in the eaDirect directory hierarchy shown above.

Directory	Contents
AppProfiles	Contains the Versioned Sets (configuration and HTML template files created in the design environment) that are published to the production environment.
bin	Contains dynamic link libraries (.*dll*), eaDirect composition tools DefTool and Composer, batch files (.*bat*) to start the Scheduler from a command prompt window, and an executable (.*exe*) to start the Scheduler as a Windows service.
config	Contains configuration files that are used to define the eaDirect environment.
data	Contains files that are copied to this directory after the Scanner finds them in the Input directory for an application and moves them here. The other production tasks use these files to process the input data from a service provider.
input	Contains the input data files from a service provider that are needed by the Scanner production task.
J2EEApps	Contains the eaDirect J2EE EAR file *ear-eadirect.ear*. This file also contains the WAR files for the eaPay, eaPost, and eaXchange add-on modules.
jre	Contains library and binary files that are used by the Java Runtime Environment.
lib	Contains several executable java archive (.*jar*) files and Dynamic Link Libraries (.*dll*).
logs	Contains application log files.
output	Contains any output files generated by the application and its jobs.
samples	Contains the *ear-easample.ear* and *ear-eatraining.ear* sample applications in subdirectories labeled *eaSample* and *eaTraining*. Also contains sample files that can be used with *ear-easample.ear* and *ear-eatraining.ear*. Also includes *hierarchySample* (if licensed) and *umfSample* (if licensed).
Uninstall	Contains the eaDirect uninstall script and related files.

Configuring Java Resources for eaDirect

After you have successfully configured the SQL database for eaDirect, you must create and configure several Java Database Connectivity (JDBC) and Java Message Service (JMS) resources on WebLogic Server. These resources enable the manipulation of existing data from relational databases and other data sources, and enable application components to asynchronously send and receive messages.

Specifically, you will be doing the following:

- Configure JDBC Connection Pools

- Configure JDBC Transaction (Tx) Data Sources

- Configure JMS Connection Factories

- Configure JMS JDBC Stores

- Configure JMS Servers

- Configure JMS Topics

- Configure Session Pools

Starting the WebLogic Server Console

You configure WebLogic Java resources through the web-based WebLogic Server Console. By default, WebLogic copies the Java configuration settings to *%WL_HOME%\config\mydomain\config.xml* (where *%WL_HOME%* represents the directory in which you installed WebLogic Server).

Caution   When entering required attribute values for Java resources, be particularly mindful of case sensitivity. Failure to heed case sensitivity can result in problems later on, including not being able to log into the eaDirect Command Center.

To start the WebLogic Server Console:

1. Start WebLogic Server if it is not already running. (You can start the default WebLogic server by going to the Start menu and selecting **Programs** and **Bea WebLogic E-Business Platform** and **WebLogic Server 6.1**. Then click **Start Default Server**.)

2. From the Start menu, select **Programs** and **Bea WebLogic E-Business Platform** and **WebLogic Server 6.1**, and click **Start Default Console**.

   You can also open the WebLogic Server Console from a web browser by entering a URL with the following syntax:

   `http://<host>:<port>/console`

   For example:

   `http://doc_hughes:7001/console`

3. In the Enter Network Password dialog, enter a user name and password. The default user name is 'system' and the password is the one you specified during installation of WebLogic Server.

4. Click **OK**. The WebLogic Server Console appears.
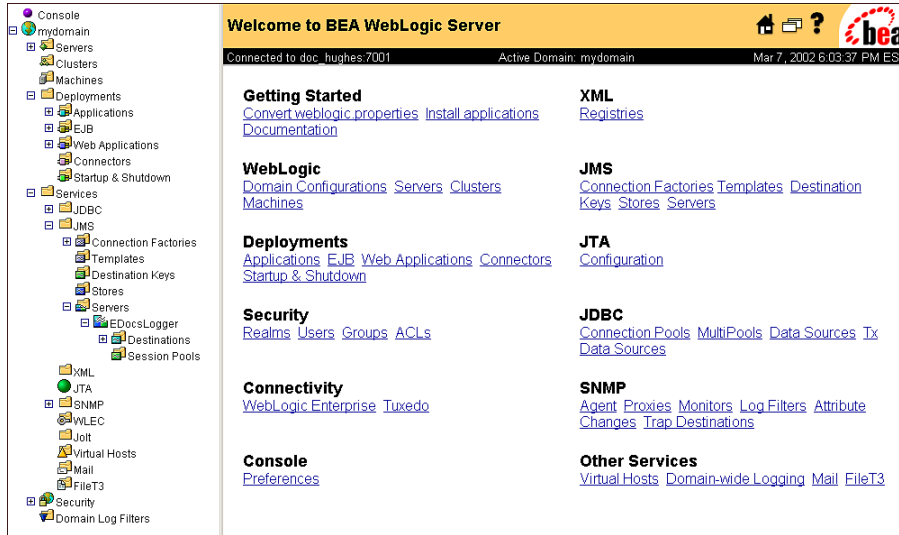
Configuring JDBC Connection Pools

A connection pool contains named groups of JDBC connections that are created when the connection pool is registered, usually when starting up WebLogic Server. WebLogic Server opens JDBC connections to the database during the startup process and adds the connections to the pool.

Your application borrows a connection from the pool, uses it, and then returns it to the pool by closing it. For more information about how WebLogic Server uses JDBC connection pools, refer to the WebLogic programming and user documentation at http://bea.com/.

You will create three JDBC Connection Pools. The next section describes how to create the first JDBC Connection Pool. After that procedure, the values for the remaining two connection pools are listed. Create those connection pools following the procedure shown for the first connection pool.

To configure the first JDBC connection pool:

1. From your domain in the left pane, select **Services** and **JDBC and Connection Pool**.

2. In the right pane, click the **`Configure a New JDBC Connection Pool`** link. A tabbed dialog for configuring a new connection pool appears.

3. On the Configuration/General tab, enter values for the Name, URL, Driver Classname, and Properties attributes, as shown in the following table:

Name	Value
Name	**`edxUserConnectionPool`**
URL	**`jdbc:inetpool:inetdae7://<SQL_server_name>:1433:<dbinstance>`** For example: **`jdbc:inetpool:inetdae7://doc_hughes:1433:edx0`**
Driver Classname	**`com.inet.pool.PoolDriver`**
Properties	**`user=<SQL_server_db_username>`** **`poolurl=jdbc:inetpool:inetdae7://<SQL_server_name>:1433`** **`password=<SQL_server_db_password>`** The user and password values correspond to the *username:password* combination specified during the eaDirect database creation and configuration procedure. Also, WebLogic Server automatically adds information to this attribute.

4. Click **`Create`** to create a JDBC connection pool instance named **`edxUserConnectionPool`**. The new instance is added to your domain under Connection Pool node in the left pane.

5. On the Configuration/Connections tab, enter values for the attributes shown in the following table:

Name	Value
Initial Capacity	**`1`**
Maximum Capacity	**`20`**
Capacity Increment	**`5`**
Login Delay Seconds	**`1`**

Name	Value
Refresh Period	**1**
Allow Shrinking	**true** (checked)
Shrink Period	**15**
Prepared Statement Cache Size	**300**

6. Click **Apply** for the attribute values to take effect the next time you restart WebLogic Server.

7. On the Configuration/Testing tab, enter values for the Test Table Name and Test Reserved Connection attributes shown in the following table:

Name	Value
Test Table Name	**job**
Test Reserved Connections	**true** (checked)
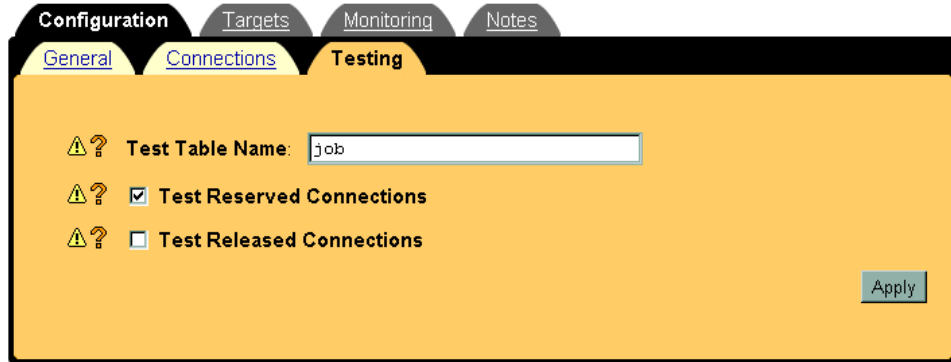
8. Click **Apply** for the attribute values to take effect the next time you restart WebLogic Server.

9. On the Targets/Servers tab, move your target server from **Available** to **Chosen**.
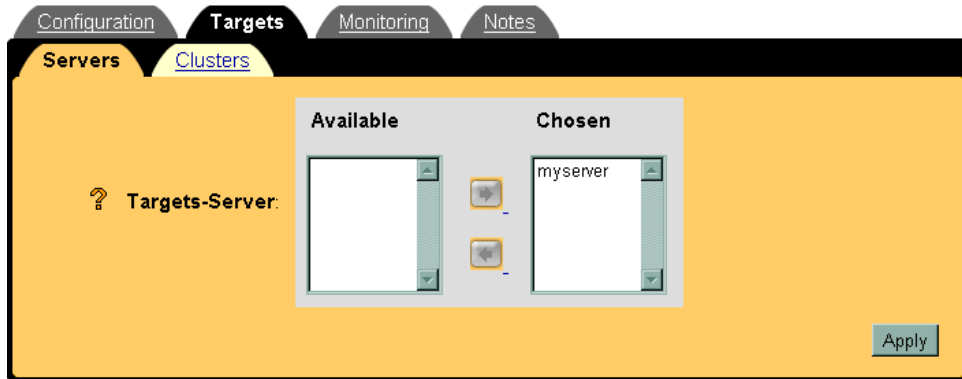
10. Click **Apply** for the new value to take effect the next time you restart WebLogic Server.

To configure edxLoggerConnectionPool:

Configuration/General Tab

Name	Value
Name	`edxLoggerConnectionPool`
URL	`jdbc:inetpool:inetdae7://<SQL_server_name>:1433`
Driver Classname	`com.inet.pool.PoolDriver`

Properties	`user=<SQL_server_db_username>`
	`poolurl=jdbc:inetpool:inetdae7://<SQL_server_name>:1433`
	`password=<SQL_server_db_password>`
	
	The user and password values correspond to the *username:password* combination specified during the eaDirect database creation and configuration procedure. Also, WebLogic Server automatically adds information to this attribute.

Configuration/Connections Tab

Name	Value
Initial Capacity	`1`
Maximum Capacity	`10`
Capacity Increment	`2`
Login Delay Seconds	`1`
Refresh Period	`1`
Allow Shrinking	`true` (checked)
Shrink Period	`15`
Prepared Statement Cache Size	`300`

Configuration/Testing Tab

Name	Value
Test Table Name	`job`
Test Reserved Connections	`true` (checked)

> **Tip** Remember to move the Targets-Server from Available to Chosen for each pool as you configure it.

To configure edxAdminConnectionPool:

Configuration/General Tab

Name	Value
Name	`edxAdminConnectionPool`
URL	`jdbc:inetpool:inetdae7://<SQL_server_name>:1433`
Driver Classname	`com.inet.pool.PoolDriver`

Properties	`user=<SQL_server_db_username>`
	`poolurl=jdbc:inetpool:inetdae7://<SQL_server_name>:1433`
	`password=<SQL_server_db_password>`
	
	The user and password values correspond to the *username:password* combination specified during the eaDirect database creation and configuration procedure. Also, WebLogic Server automatically adds information to this attribute.

Configuration/Connections Tab

Name	Value
Initial Capacity	`1`
Maximum Capacity	`10`
Capacity Increment	`2`
Login Delay Seconds	`1`
Refresh Period	`1`
Allow Shrinking	`true` (checked)
Shrink Period	`15`
Prepared Statement Cache Size	`300`

Configuration/Testing Tab

Name	Value
Test Table Name	`job`
Test Reserved Connections	`true` (checked)

Configuring JDBC Transaction (Tx) Data Sources

A transaction data source enables JDBC clients to obtain a connection to a Database management System (DBMS). Each data source points to the value specified for the Name attribute when a JDBC connection pool was configured. For more information about how WebLogic Server uses transaction data sources, see the WebLogic programming and user documentation at http://bea.com.

You will configure three TX Data Sources. After that procedure, the values for the remaining two TX Data Sources are listed. Create those TX Data Sources following the procedure shown for the first TX Data Sources.

To configure the first JDBC transaction data source:

1. From your domain in the left pane, select **Services** and **JDBC** and **Tx Data Sources**.

2. In the right pane, click the `Configure a New JDBC Tx Data Source` link. A tabbed dialog for configuring a new JDBC transaction data source appears.

3. On the Configuration tab, enter values for the Name, JNDI Name, and Pool Name attributes shown in the following table:

Name	Value
Name	`edxUserDataSource`
JNDI Name	`edx.user.databasePool`
Pool Name	`edxUserConnectionPool`

4. Click `Create` to create a JDBC transaction data source named edxUserDataSource. The new transaction data source is added to your domain under Tx Data Sources in the left pane.

5. On the Targets/Servers tab, move the target server from Available to Chosen.
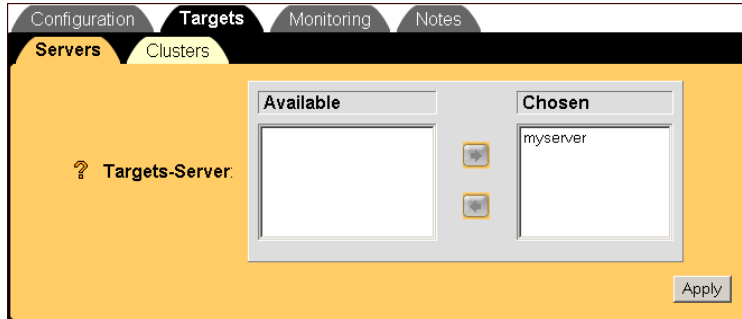
6. Click **Apply** for the new value to take effect the next time you restart WebLogic Server.

To configure edxLoggerDataSource:

Using the procedures shown for edxUserDataSource, add the following TX Data Source:

Name	Value
Name	**edxLoggerDataSource**
JNDI Name	**edx.logger.databasePool**
Pool Name	**edxLoggerConnectionPool**

Tip   Remember to move the Targets-Server from Available to Chosen for each data source as you configure it.

To configure edxAdminDataSource:

Using the procedures shown for edxUserDataSource, add the following TX Data Source:

Name	Value
Name	**edxAdminDataSource**
JNDI Name	**edx.databasePool**

Pool Name	**edxAdminConnectionPool**

Configuring JMS Connection Factories

Connection factories are data objects that enable Java Messaging Service (JMS) clients to create JMS connections. You define and configure one or more connection factories to create connections with predefined attributes. WebLogic Server adds the connection factories to the JNDI space during startup, and the application retrieves a connection factory using WebLogic JNDI.

For more information about how WebLogic Server uses JMS connection factories, see the WebLogic programming and user documentation at http://bea.com.

You will create three JMS connection factories. The next section describes how to create the first JMS connection factory. After that procedure, the values for the remaining two JMS connection factories are listed. Create those JMS connection factories following the procedure shown for the first.

To configure the JMS connection factories:

1. From your domain in the left pane, select **Services** and **JMS** and **Connection Factories**.

2. In the right pane, click the **Configure a New JMS Connection Factory** link. A tabbed dialog for configuring a new JMS connection factory appears.

3. On the Configuration/General tab, enter values for the Name and JNDI Name attributes shown in the following table:

Name	Value
Name	**edxLoggerTCF**
JNDI Name	**edx/tcf/log**
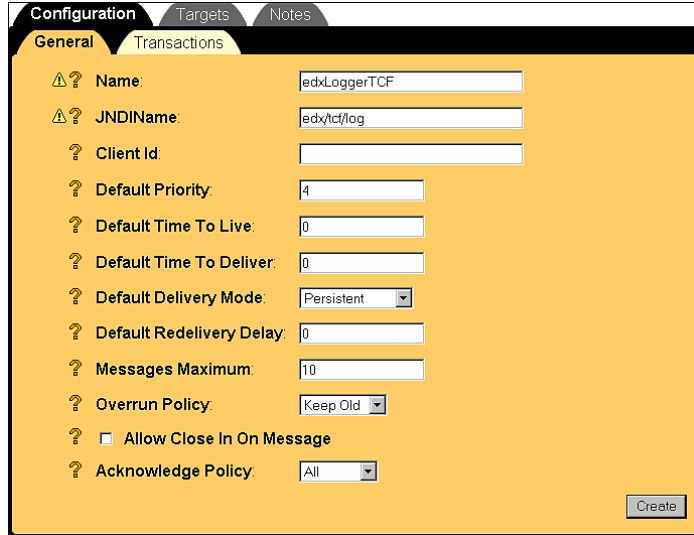
4. Click **Create** to create a JMS connection factory instance named edxLoggerTCF. The new instance is added to your domain under the Connection Factories node in the left pane.

5. On the Targets/Servers tab, move the target server from Available to Chosen.
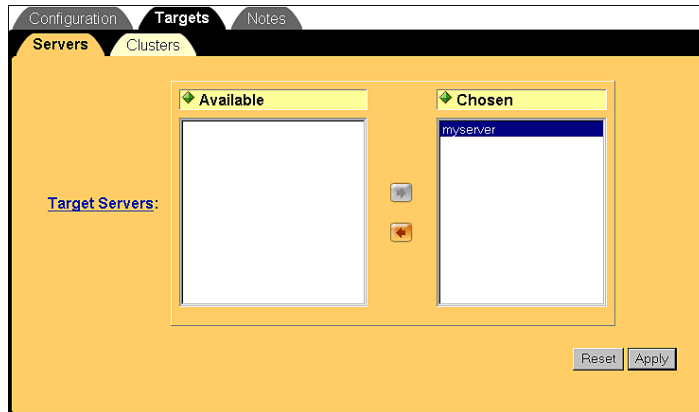
6. Click **Apply** for the new value to take effect the next time you restart WebLogic Server.

7. Configure two more JMS connection factories, one for annotations and one for disputes, repeating Steps 1 to 6. In Step 3, replace the values for the Name and JNDI Name attributes with those in the following table:

Name	Value
Name JNDI Name	`edxAnnotationTCF` `edx/tcf/annotate`
Name JNDI Name	`edxDisputeTCF` `edx/tcf/dispute`

8. Click **Create** on the Configuration/General tab after configuring each additional JMS connection factory. Move the target server from Available to Chosen on the Targets/Servers tab, and then click **Apply**. The new connection factories are added to your domain under the Connection Factories node in the left pane.
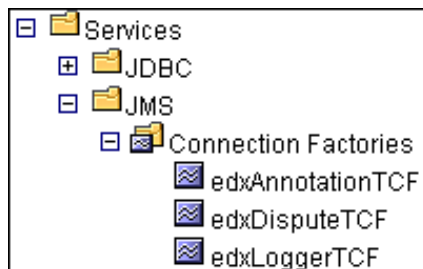
Configuring JMS Stores

With JDBC, JMS enables you to store persistent messages in a database, which is accessed through a designated JDBC connection pool. The JMS database can be any database that is accessible through a WebLogic-supported JDBC driver.

When creating a JMS Store, you must define the following configuration attributes:

- Name of the backing store

- JDBC connection pool and database table name prefix for use with multiple instances

For detailed information about creating JMS JDBC Stores, see the WebLogic Server 6.1 programming and user documentation at http://bea.com.

To configure a JMS store:

1. From your domain in the left pane, select **Services** and **JMS** and **Stores**.

2. In the right pane, click **Configure a new JMSJDBCStore**. A tabbed dialog for configuring a new JMS store appears.

3. On the Configuration tab, enter values for the Name and Connection Pool attributes as shown in the following table:

Name	Value
Name	**edxAnnotationStore**
Connection Pool	**edxUserConnectionPool** (selected from drop-down menu)
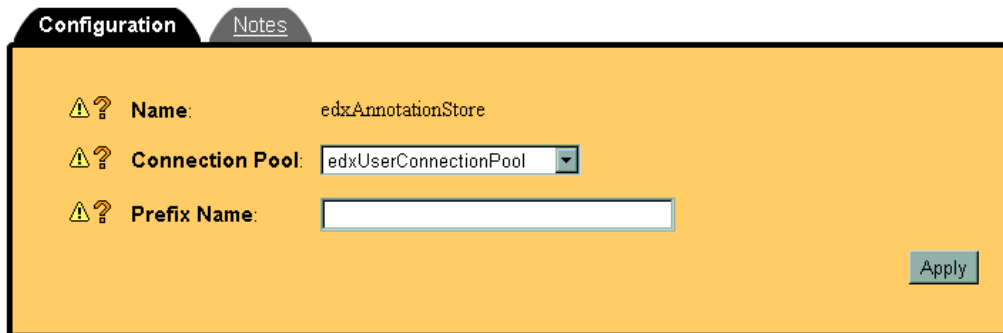
4. Click **Create** to create a JMS store instance named edxAnnotationStore. The new instance is added to your domain under the Stores node in the left pane.

5. Configure two more JMS stores, one for disputes and one for logger, repeating Steps 1 to 4. In Step 3, replace the values for the Name and Connection Pool attributes with those in the following table:

Name	Value
Name Connection Pool	**edxDisputeStore** **edxUserConnectionPool**
Name Connection Pool	**edxLoggerStore** **edxLoggerConnectionPool**

6. Click **Create** on the Configuration tab after configuring each additional JMS store. The new instances are added to your domain in the left pane under the Stores node.
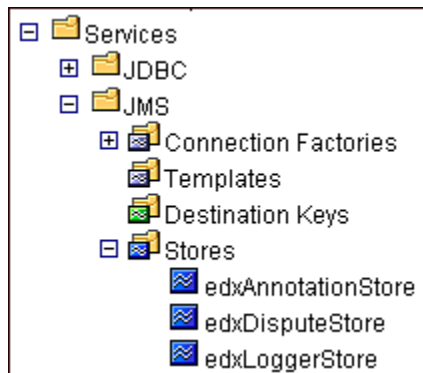
Configuring JMS Servers

A JMS server manages connections and message requests on behalf of clients. For more information about how WebLogic Server uses JMS Servers, see the WebLogic programming and user documentation at http://bea.com.

To configure a JMS server:

1. From your domain in the left pane, select **Services** and **JMS** and **Servers**.

2. In the right pane, click the **Configure a New JMSServer** link. A tabbed dialog for configuring a new JMS server appears.

3. On the Configuration/General tab, enter a value for the Name and Store attributes, as shown in the following table:

Name	Value
Name	`edxLoggerServer`
Store	`edxLoggerStore` (selected from the drop-down menu)

4. Click `Create` to create a JMS server instance named `edxLoggerServer`. By default, a JMS Destinations node and a Session Pools node are automatically added under the new JMS Server. The new instance is added to your domain under the Servers node in the left pane.

5. On the Targets/Servers tab, select your server from the Target drop-down menu.

6. Click `Apply` for the new value to take effect the next time you restart WebLogic Server.

7. Configure two more JMS servers, one for annotations and one for disputes, repeating Steps 1 to 6. In Step 3, replace the values for the Name and Store attributes with those in the following table:

Attribute	Value
Name Store	**edxAnnotationServer** **edxAnnotationStore**
Name Store	**edxDisputeServer** **edxDisputeStore**

8. Click **Create** on the Configuration/General tab after configuring each additional JMS server. Move the target server from Available to Chosen on the Targets/Servers tab, and then click **Apply**. The JMS servers are added to your domain under the Servers node in the left pane.
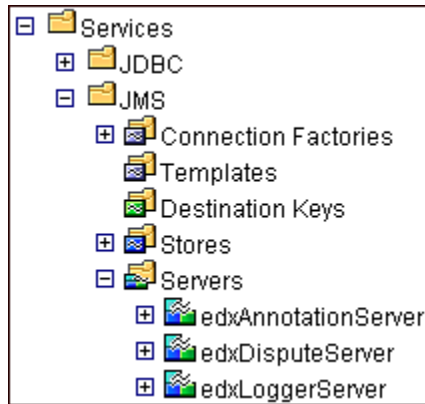
Configuring JMS Topics

Before you can configure a JMS Topic, you must have first created a JMS server (as described in the topic *Configuring a JMS Server*).

A JMS topic can be one of two destinations that you can configure for a JMS server. The other destination is a JMS queue. WebLogic Server allows you to configure one or more destinations for the JMS server.

You can configure destinations explicitly (as is done in this topic), or by way of configuring a destination template that can be used to define multiple destinations with similar attribute values. For more information about how WebLogic Server 6.1 uses JMS destinations, see the WebLogic programming and user documentation at http://bea.com.

To configure a JMS Topic:

1. From your domain in the left pane, select `Services` and `JMS` and `Servers`.

2. Select the server for which you want to configure a JMS Topic, in this example `edxLoggerServer`, and select `Destinations`.

Caution When configuring additional JMS Topics, make sure that you select the matching JMS Server. For example, select `edxAnnotationServer` to configure `edxAnnotationTopic`, and `edxDisputeServer` to configure `edxDisputeTopic.`

---

3. In the right pane, click the `Configure a new JMSTopic` link. A tabbed dialog for configuring a new JMS topic appears.
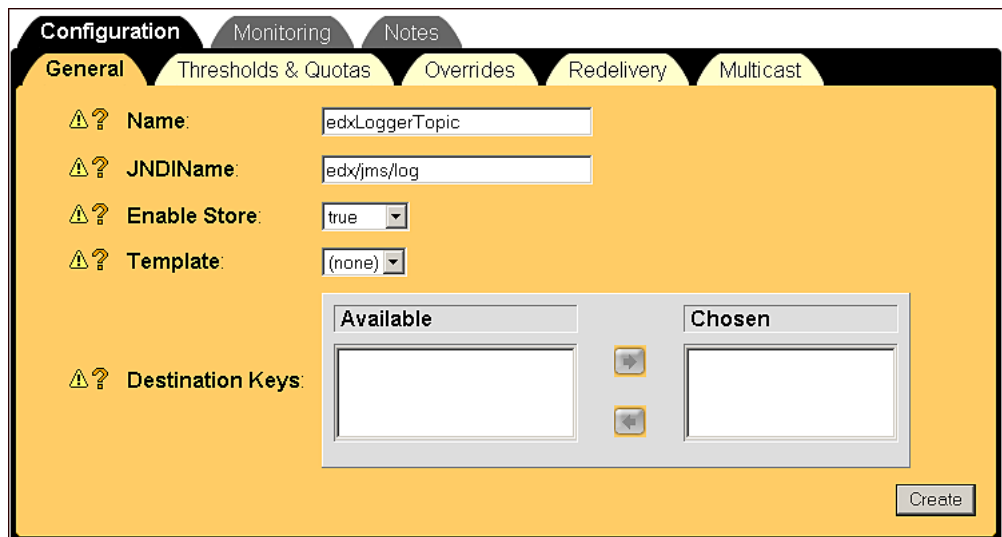
4. On the Configuration/General tab, enter values for the Name, JNDI Name, and Enable Store attributes, as shown in the table below.

Name	Value
Name	**edxLoggerTopic**
JNDI Name	**edx/jms/log**
Enable Store	**True** (selected from the drop-dowm menu)

5. Click **Create**. The new instance is added to your domain under the Destinations node in the left pane.
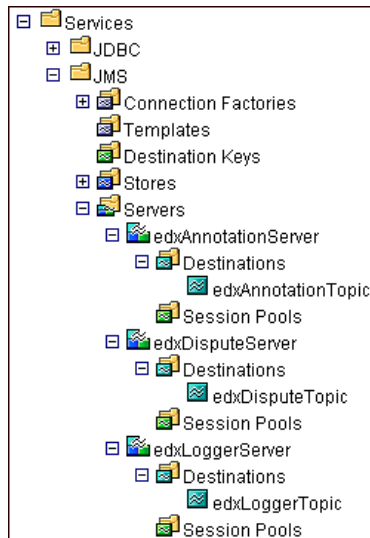
6. Repeat Steps 2 to 5 to configure two more JMS Topics, **edxAnnotationTopic** and **edxDisputeTopic**. In Step 2, be sure to select **edxAnnotationServer** to configure **edxAnnotationTopic**, and **edxDisputeServer** to configure **edxDisputeTopic.**

In Step 4, use the values in the following table:

Name	Value
Name	**edxAnnotationTopic**

JNDI Name	`edx/jms/annotate`
Enable Store	`true`
Name	`edxDisputeTopic`
JNDI Name	`edx/jms/dispute`
Enable Store	`true`

Configuring Session Pools and Connection Consumers

A session pool will allow a listener (called a connection consumer in WebLogic) to have multiple threads that will improve performance under heavy load. A session pool must be created for each connection consumer.

Caution   If you upgraded WebLogic 6.1 SP2 to SP3, you may encounter a known issue in the WebLogic Server Console when configuring a session pool. You may see an `InstanceNotFoundException` message. If an exception occurs, try to configure the session pool again.

If the exception still occurs, you may need to restart the WebLogic server. However, you can also try clicking on the left pane and refreshing it. If you see that the session pool has been added, then you do not need to restart the server. You should now be able to add the consumer.

This issue does not apply if did the full installation of WebLogic 6.1 SP3, and did not upgrade from SP2.

There are currently seven connection consumers in eaDirect. There are five connection consumers for logging, one for disputes, and one for annotations. The following provides an example of how to create a session pool and connection consumer for annotations:

To create a JMS session pool:

1. From your domain in the left pane, select **Services** and **JMS** and **Servers**, and expand the **edxAnnotationServer** node. Then click **Session Pools**.

2. In the right pane, click the **Configure a new JMS Session Pool** link. A tabbed dialog for configuring a new JMS session pool appears.

3. On the Configuration tab, enter values for the Name, JNDI Name, Listener Class, Acknowledge Mode, and Sessions Maximum attributes as shown in the following table:

Name	Value
Name	`edxAnnotationPool`
Connection Factory	`edx/tcf/annotate`
Listener Class	`com.edocs.services.annotation.Listener`
Acknowledge Mode	`Auto`
Sessions Maximum	`-1` **Note:** Session Maximum is set to the number of sessions. –1 indicates there is no session maximum. This attribute should be adjusted to accommodate the maximum number of threads for this pool.

4. Click **Create** to create a JMS session pool instance named edxAnnotationPool. The new instance is added to your domain under the Session Pools node in the left pane.

To create a connection consumer:

1. From your domain in the left pane, select `Services` and `JMS` and `Servers` and `edxAnnotationServer` and `Session Pools` and `edxAnnotationPool`, and then click the `Consumers` node.

2. In the right pane, click the `Configure a new JMS Connection Consumer` link. A tabbed dialog for configuring a new JMS connection consumer appears.

3. On the Configuration tab, enter values for the Name, Messages Maximum, Selector, and Destination attributes as shown in the following table:

Name	Value
Name	`edxAnnotationConsumer`
Messages Maximum	`10`
Selector	`JMSType='USER'`
Destination	`edx/jms/annotate`

4. Click `Create` to create a JMS connection consumer instance named edxAnnotationConsumer. The new instance is added to your domain under Session Pools in the left pane.

5. Repeat the procedures above to configure session pools and connection consumers for edxDisputeServer and edxLoggerServer, using the values in the tables below. After configuring each additional session pool and connection consumer, click `Create` on the Configuration tab.

To configure edxDisputeServer:

Session Pool Configuration:	
Name	**edxDisputePool**
Connection Factory	**edx/tcf/dispute**
Listener Class	**com.edocs.services.dispute.Listener**
Acknowledge Mode	**Auto**
Sessions Maximum	**-1**

Consumer Configuration:	
Name	**edxDisputeConsumer**
Messages Maximum	**10**
Selector	**JMSType='USER'**
Destination	**edx/jms/dispute**

To configure edxLoggerServer:

Five session pools must be created.

edxLoggerAdminActivityPool

Session Pool Configuration:	
Name	`edxLoggerAdminActivityPool`
Connection Factory	`edx/tcf/log`
Listener Class	`com.edocs.fs.logging.sub.AdminActivityListener`
Acknowledge Mode	`Auto`
Sessions Maximum	`-1`

Consumer Configuration:	
Name	`edxLoggerAdminActivityConsumer`
Messages Maximum	`10`
Selector	`JMSType='ADM'`
Destination	`edx/jms/log`

edxLoggerCSRActivityPool

Session Pool Configuration:	
Name	`edxLoggerCSRActivityPool`
Connection Factory	`edx/tcf/log`
Listener Class	`com.edocs.fs.logging.sub.CSRActivityListener`
Acknowledge Mode	`Auto`
Sessions Maximum	`-1`

Consumer Configuration:	
Name	`edxLoggerCSRActivityConsumer`
Messages Maximum	`10`
Selector	`JMSType='CSR'`
Destination	`edx/jms/log`

edxLoggerMessageLogPool

Session Pool Configuration:	
Name	`edxLoggerMessageLogPool`
Connection Factory	`edx/tcf/log`
Listener Class	`com.edocs.fs.logging.sub.MessageLogListener`
Acknowledge Mode	`Auto`
Sessions Maximum	`-1`

Consumer Configuration:	
Name	`edxLoggerMessageLogConsumer`
Messages Maximum	`10`
Selector	`JMSType='MSG'`
Destination	`edx/jms/log`

edxLoggerSystemActivityPool

Session Pool Configuration:	
Name	`edxLoggerSystemActivityPool`
Connection Factory	`edx/tcf/log`
Listener Class	`com.edocs.fs.logging.sub.SystemActivityListener`
Acknowledge Mode	`Auto`
Sessions Maximum	`-1`

Consumer Configuration:	
Name	`edxLoggerSystemActivityConsumer`
Messages Maximum	`10`
Selector	`JMSType='SYS'`
Destination	`edx/jms/log`

edxLoggerUserActivityPool

Session Pool Configuration:	
Name	`edxLoggerUserActivityPool`
Connection Factory	`edx/tcf/log`
Listener Class	`com.edocs.fs.logging.sub.UserActivityListener`
Acknowledge Mode	`Auto`
Sessions Maximum	`-1`

Consumer Configuration:	
Name	`edxLoggerUserActivityConsumer`
Messages Maximum	`10`
Selector	`JMSType='USER'`
Destination	`edx/jms/log`

This completes the configuration of WebLogic Server Java resources for eaDirect.

Stop and restart WebLogic Server in order for the new Java configuration settings to take effect. From the WebLogic Server Console, expand your domain and right-click your server (default is **myserver**). Then select **Stop this server** from the menu.
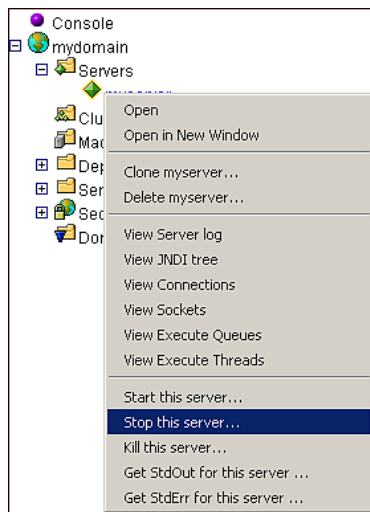
Deploying J2EE Web Applications for eaDirect

When you install eaDirect, you will find Enterprise Application aRchives (EAR files) for sample web applications in the /**EDCSbd/samples/j2eeapps** directory of your eaDirect installation. You deploy these applications using your application server's administrative console.

In general, deploying a web application involves three distinct phases:

1. Component creation, typically done by application developers

2. Application assembly, typically done by application developers (although they may not have participated in the 'component creation' phase)

3. Application deployment, typically done by both application developers and system administrators

During development and testing, it is common for web developers to deploy their own applications. However, when the application has been assembled and is ready for production, a system administrator most likely will deploy it.

Web Applications Included with eaDirect

J2EE Application	Description
ear-eadirect.ear	Core functionality of eaDirect, including the Command Center and the eaDirect engine. Also contains placeholder files for other components of the eaSuite. By default, installed to: *$EDX_HOME/J2EEApps/weblogic*
ear-easample.ear	Demonstrates the core features of eaDirect, including non-hierarchical enrollment model using edocs Common Directory Access (CDA); content access to statement summary and detail data; line item dispute and annotation; order capture and management. **Note:** In order to use the eaSample application, you must first run the file *create_demo_oc_table.sh*, which creates the database tables for Order Capture. See *Appendix A: Using eaSample* for more information.
ear-eatraining.ear	Demonstrates more advanced features of eaDirect, including hierarchical user enrollment using edocs Common Directory Access (CDA).
ear-hierarchysample.ear	Contains the Hierarchy Console, an intuitive user interface for enterprise profile management. Administrators can use the Hierarchy Console to organize and edit accounts and subaccounts into account groups that can control access privileges, statement viewing, editing user profiles, and other online account management. **Requires a separate license.**
ear-reportSample.ear	Supports customized reports on account data for phone call usage. *WebLogic only*.
ear-umfsample.ear	Implements a non-directory enrollment model that customizes the edocs user management framework as an interface to enrollment information already stored in a separate repository. **Requires a separate license.**

To deploy a web application to your application server:

1. Start WebLogic Server if it is not already running. This can be done from the Services dialog, or by clicking **Start Default Server** in the WebLogic Server program folder.

2. Open the WebLogic Server Console. From the Start menu, select **Programs** and **Bea WebLogic E-Business Platform** and **WebLogic Server 6.1,** and click **Start Default Console**.

    You can also open the WebLogic Server Console from a browser using the URL syntax: http://*<host>:<port>*/console. For example:

    ```
    http://doc_hughes:7001/console
    ```

3. In the Enter Network Password dialog, enter a user name and password. The default user name is 'system' and the password is the one specified when WebLogic Server was installed.

4. Click **OK**. The WebLogic Server Console appears.

5. From **mydomain** in the left pane, select **Deployments**>**Applications**.

6. In the right pane, click the **Install a New Application** link. The Install or Update an Application screen appears.

7. On the Install or Update an Application screen, use the Browse button to locate the eaDirect J2EE application *ear-eadirect.ear*, which by default is located in *%EDX_HOME%\J2EEApps\weblogic*.

8. Upload *ear-eadirect.ear*. It is added to the list of 'Application files currently installed' at the bottom of the screen.
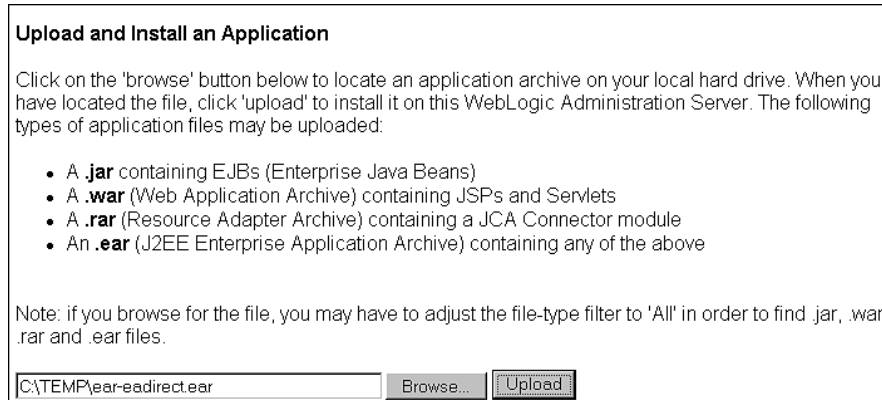
9. After *ear-eadirect.ear* has been uploaded and installed, the Deployments folder in the left pane should look like:

10. Before leaving the WebLogic Server Console, you might want to take time to make sure that all required EJBs and WAR files have been deployed to the target server. Doing this can possibly prevent problems from arising later that can interfere with the normal operation of eaDirect.

11. Expand each J2EE application in the left pane to show its EJBs and WAR file. Click on either an EJB or the WAR file, and then click the **Targets/Servers** tab in the dialog that appears in the right pane. If necessary, move the target server from Available to Chosen. Click **Apply** for the change to take effect the next time the server is started.

> **Caution** If you choose to deploy eaSample at this time, you must first run *create_demo_oc_table.bat*, which creates the database tables needed for the Order Capture feature. Failure to do so will result in errors when you start WebLogic Server. *See Appendix A: Using eaSample* for more information.

12. Stop WebLogic Server. You can do this from the WebLogic Server Console by right-clicking on **myserver**, and selecting **Stop this server** from the menu.

13. Restart WebLogic Server. You can start the default WebLogic server by going to the Start menu and selecting **Programs** and **Bea WebLogic E-Business Platform** and **WebLogic Server 6.1**. Then click **Start Default Server**.

    If you have installed WebLogic as a Windows service, you can stop and restart WebLogic Server through the Services dialog.

Starting the eaDirect Scheduler

After all the eaDirect EAR files have been deployed to the application server, you must start the eaDirect Scheduler in order to schedule and run jobs in the eaDirect Command Center. If you attempt to run a new job with the Scheduler not running, the job will not run and you will see 'Not yet started' as its status.

You can start the Scheduler in two ways:

- From a Command Prompt window

- As a Windows Service

Starting the Scheduler from a Command Prompt Window

To start the Scheduler from a Command Prompt window:

1. Open a Command Prompt window and change directory to *%EDX_HOME%\bin*.

2. Start the Scheduler using the following command syntax:

   ```
   C:\> wl_scheduler –start –url t3://<localhost>:<port>
   ```

    For example:

   ```
   C:\> wl_scheduler –start –url t3://doc_hughes:7001
   ```

3.   If the Scheduler starts successfully, a start-up message with the name of the log file appears in the Command Prompt window where you entered the command. **Do not close this window while eaDirect is running,** as closing it will stop the Scheduler. A log file is created in *%EDX_HOME%\Logs*.

Starting the Scheduler as a Windows Service

When starting the Scheduler as a Windows Service, you will be required to modify *SCH.txt* (Scheduler template file), which is copied to *%EDX_HOME%\bin* when you install eaDirect.

To install and start the Scheduler as a Windows Service:

1.   In Windows Explorer, navigate to *%EDX_HOME%\bin*.

2.   Open the file *SCH.txt* by right clicking on its name, and then selecting `Open` from the menu.

3.   Modify the Java Classpath information in *SCH.txt* to reflect your active Java environment. For example:

```
classpath=c:\jdk131\lib\tools.jar;c:\bea\wlserver6.1\lib
\weblogic.jar;c:\EDCSbd\lib\edx_client.jar;c:\EDCSbd\lib
\edx_common.jar
```

4.   Confirm that the following line of code is present in the file:

```
-Djava.naming.provider.url=t3://localhost:<port>
```

  For example:

```
-Djava.naming.provider.url=t3://localhost:7001
```

5.   If you want the Scheduler to log information to a file rather than to the console, add the following value in *SCH.txt*:

```
-Dcom.edocs.pwc.debug=true <scheduler_logfile>
```

6.   Confirm that all the directory references in *SCH.txt* are correct.

7.   Save and close *SCH.txt*.

Tip	If you have a 2.x or earlier version of the Scheduler installed as a Windows service, you must remove it before installing the new version of the Scheduler.

---

8. Open a command window, and then change directory to *%EDX_HOME%\bin*. Install the Scheduler as a Windows Service, for example:

   ```
   C:\> Schedulersvc -install C:\EDCSbd\bin\SCH.txt
   ```

9. If the Scheduler service is installed successfully, a confirmation message is shown.

10. From the Control Panel, open the Services dialog and start the Scheduler service. WebLogic Server must be running before you start the Scheduler.

Routing and Remot...	Offers routing services to businesses in local area an...		Disabled	LocalSystem
RunAs Service	Enables starting processes under alternate credentials	Started	Automatic	LocalSystem
Scheduler Service	eDocs Scheduler service	Started	Manual	LocalSystem

Logging In to the Command Center

You can test the installation and configuration of eaDirect on the application server by logging in to the eaDirect Command Center, the edocs web-based production environment. The Command Center is the administrative 'hub' of the eaDirect production environment and it is where you create applications and jobs, configure and schedule them to run, and monitor their activity.

The Command Center is also password protected, requiring a valid username and password to enter. For detailed information about the activities that take place within the Command Center, see the *eaDirect Production Guide*.

To log into the Command Center:

1. Start the application and database servers if they are not running. Both can be started from their individual program folders, or from the Services dialog.

2. Start the Scheduler, if it is not already running.

3. Open a web browser and enter the URL to invoke the Command Center. The default URL syntax takes the form:

   `http://<host>:<port>/eaDirect`

    For example:

   `http://doc_hughes:7001/eaDirect`

4. A successful connection opens the Command Center Login Administrator page.

5. Log into the Command Center using the default user ID and password:

   Administrator ID: **admin**
   Password: **edocs**

6. A successful login opens an empty Main Console page until you have created an application and scheduled a job. For detailed information about creating eaDirect applications and jobs, see the *eaDirect Production Guide*.

Tip   In order to run jobs in the Command Center, the eaDirect Scheduler **must** be running.

---
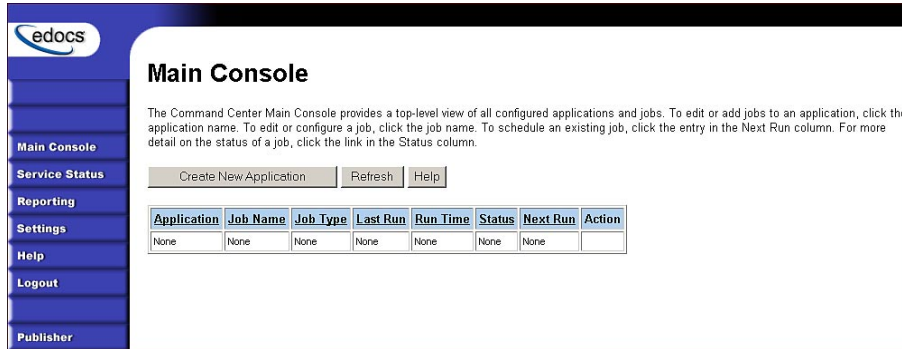
7. If you are unable to log in, click **`Service Status`** on the menu to see what the problem is. For example, a database configuration problem might prevent a user from logging in to the Command Center.
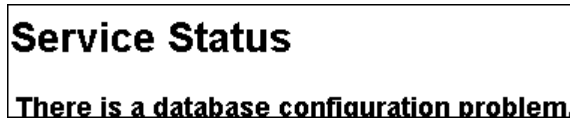
8. Troubleshoot the problem by carefully reviewing what you have done up to this point. In particular, you will want to:

   - Verify that the SQL 2000 database is running

   - Verify that the database has been setup properly (sometimes this may mean re-running the eaDirect database set up script *DBConfigTool.jar*)

   - Verify that the Java JDBC and JMS resources configured in the WebLogic Server Console are correct

   - Verify that the eaDirect EAR file has been properly deployed

   - Verify that all required EJBs and WAR files have been deployed correctly

   - Verify that a target server has been chosen for all required EJBs, EAR, and WAR files

9. After this is done, stop and restart the application server, then try logging into the Command Center again.

Additionally, if the Indexer and Formatter jobs are not recognized in the Command Center after you have started WebLogic as a Windows Service, do the following:

10. In the Command Center, open the Job Configuration page.

11. If the *.dlls* are not being identified, as shown by an error message in the DDF Path field and the Indexer task's indexed fields not being displayed, add the path **C:\EDCSbd\lib** as a system variable in the System dialog (accessible through the Control Panel).

12. Start WebLogic again and return to the Job Configuration page in the Command Center. If the DDF Path fields for the Indexer and Formatter jobs do not contain error messages and you can see the indexed fields in the Indexer, then the WebLogic service is now able to recognize the Indexer.dll and Formatter.dll correctly.

13. The WebLogic service might also not be able to recognize the Index.dll and Formatter.dll due to the length of a pathname. If this happens, add the following line to the 'cmdline' path in *installNtService.cmd*:

```
-Djava.library.path=\"%PATH%;C:\EDCSbd\lib;\"
```

Troubleshooting Tips

If the WebLogic service is unable to find *edx_bcp.config.bat* at startup:

Add the path *-extrapath:C:\bea\wlserver6.1\bin;%PATH%* to *installNtService.cmd* (substituting your drive where necessary):

```
"C:\bea\wlserver6.1\bin\beasvc" –install –svcname:myserver
–javahome:"%JAVA_HOME%" –execdir:"C:\bea\wlserver6.1"
-extrapath:"C:\bea\wlserver6.1\bin;%PATH%" –cmdline:%CMDLINE%
-password:lovelyday
```

If you encounter problems when running customized Web pages:

1. From your domain in the WebLogic Server Console, select **Servers** and <**your_server**>. A tabbed dialog with the name of your server appears in the right pane.

2. On the Configuration/Compilers tab, change the Java Compiler value from the default 'javac' to the location of 'javac' in your installed JDK. For example: *C:\JDK131\bin\javac*.

3. Restart WebLogic Server.

If the scheduler is running before starting WebLogic:

When starting WebLogic, if you get the error:

```
<Error> <ConnectionManager>
<Closing: 'weblogic.rjvm.t3.T3JVMConnection@7387aa'
because of: 'Server received a message over an
uninitialized connection: 'JVMMessage from: 'null'
```

Shut down the eaDirect scheduler process and restart WebLogic.

Migrating to a New Version of eaDirect

4

Migrating eaDirect Databases

To migrate an existing eaDirect database to a newer version, you will use the Java database setup tool *DBConfigTool.jar*. This Wizard tool has a Database Version Migration option that allows you to select from available migration paths for your version and platform.

Preparing to Migrate an eaDirect Database

Before you run the database setup tool *DBConfigTool.jar*, you should:

- Make a full backup of your current database.

- Start the database instance that accesses the database you are upgrading.

- Confirm that all login sessions using the eaDirect database user have logged out of the instance.

- Check the status of all user objects. If any of them indicate an INVALID status, contact the database administrator to correct this problem before migrating.

- Have the password for user SYS available. You will need it during the database migration process.

Migrating a Database

Caution   A minimum of 2.2 GB of disk space is required for eaDirect. Make sure you have enough space before migrating.

To migrate an eaDirect database to a newer version:

1. Open a command window and change directory to *%EDX_HOME%\db\mssql*.

2. Run the Java database creation and configuration tool, *DBConfigTool.jar*.

    `C:\> `**`java -jar DBConfigTool.jar`**

3. The Database Configuration screen appears. Click **Migrate**, and then click **Next**.
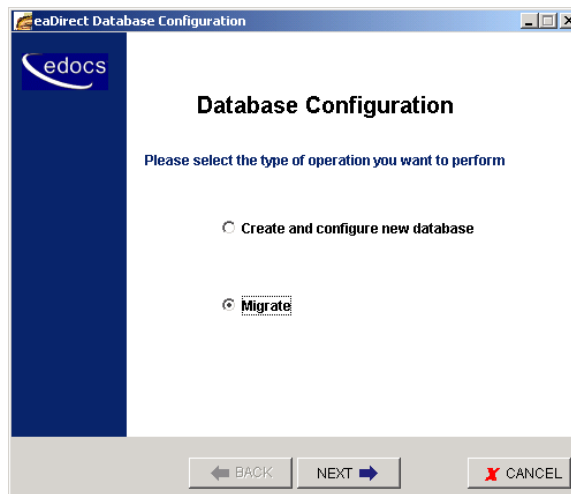
The Database version migration screen appears.

4. Read the information concerning version migration, and then click **Next**.
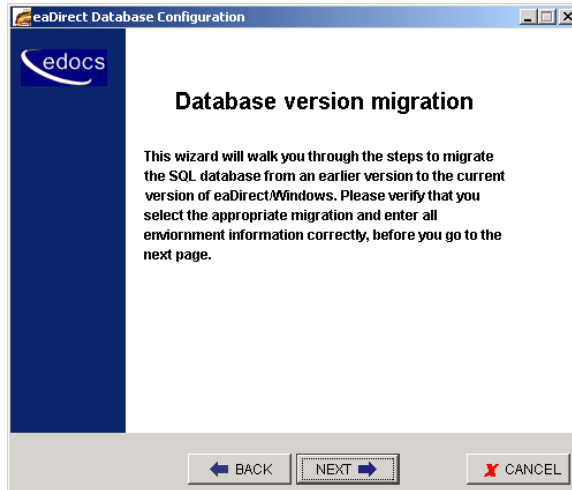
> The Database Information screen appears.

5. Enter your database user name, password, database name, and the name of the machine on which the database resides. For example:
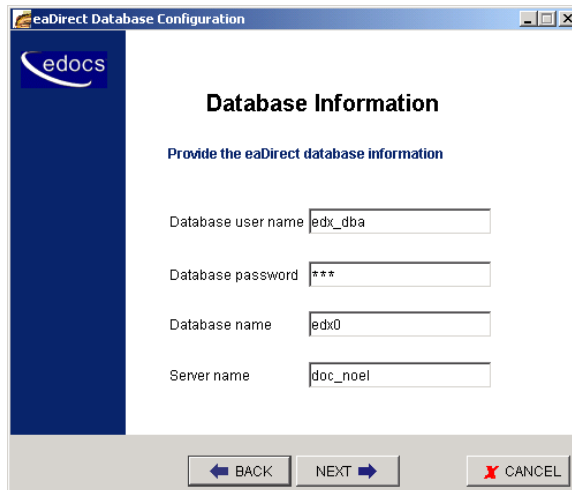
6. Click **Next**. The Database Path Information screen appears.

7. Enter the pathname to the eaDirect installation directory, and then click **Next**.
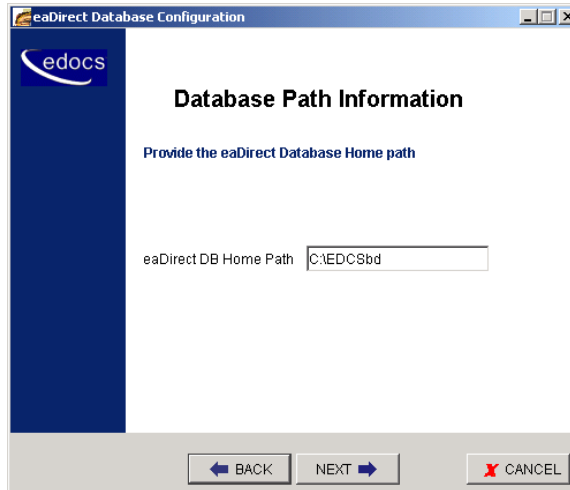
The Migration Version Selection screen appears.

8. Select the version of the database you want to migrate from the drop-down menu, and then click **Next**.
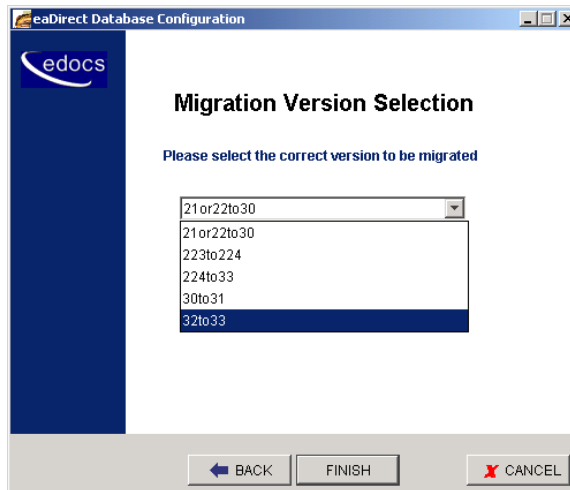
A Status screen appears showing the database being migrated.
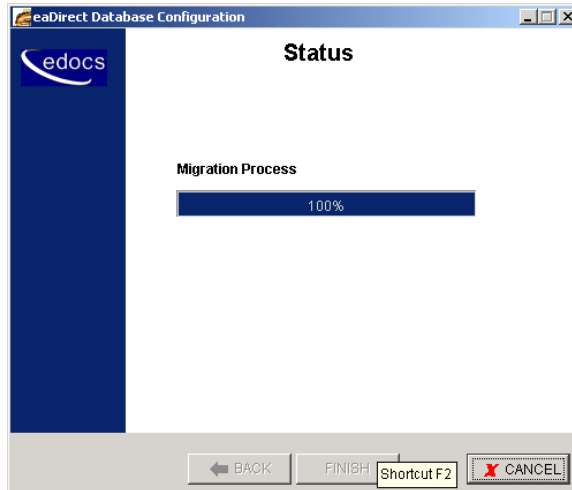
9. A Success dialog appears if the database migration process completed without errors.
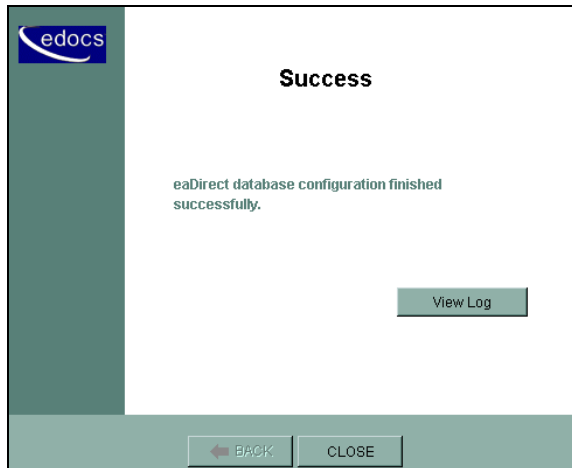
Tip   Upon completion of the database migration process, check the migration log files in *%EDX_HOME%\db\mssql\migration*.log* to make sure that all the database tables were created, including tables for annotations and disputes.

Migrating eaDirect Applications

When upgrading to a new version of eaDirect, you must migrate your J2EE and Web applications to accommodate the new version. The sample applications provided with each version of eaDirect provide examples of how to use the current features of eaDirect.

- See the *Release Notes* for your version for important information about specific migration requirements and settings.

- See *What's New in eaDirect* for information about new features, and information about how to add support for those features to your application.

- See *eaSDK: Customizing and Deploying Applications* for information about the components that make up the J2EE and Web applications, and the procedures for recreating EAR and WAR files.

- Merge your custom code into the sample application, and rename it. For more information, see *eaSDK: Customizing and Deploying Applications*.

- Redeploy your custom application.

Migrating To a Custom Data Source

You must specify a datasource EJB for each eaDirect application (DDN) you create in the Command Center. When creating an eaDirect application in the Command Center, a datasource refers to an EJB in your application (EAR file) that specifies summary information and location of your document data.

During database migration, the `edx_admin.sh` script maps DDNs to the default datasource `edx/ejb/EdocsDataSource`, packaged in `ear-eadirect.ear`. For more information about datasource mapping, see *What's New in eaDirect*.

To change the DataSource value to point to a custom DataSource, or to another DataSource in a different deployed application, you can edit and run the SQL script `update_data_source.sql` on the database server. This script is located in the `/migration` subdirectory of the database directory in your eaDirect installation.

Tip	You do not need to run this script if you are using the default datasource.

You will need to edit `update_data_source.sql` to replace the placeholder values for datasource name and document definition name (DDN) with your own values. Since each DDN may now have its own datasource, you can copy and paste the update sequence for each DDN. Save and close `update_data_source.sql` and run this SQL script to update your DDNs.

Caution	Consult the Release Notes for your version and platform to locate the correct version of `update_data_source.sql.`

Uninstalling eaDirect   5

Perform the following post-installation tasks as necessary:

- Uninstall eaDirect

- Uninstall WebLogic Server as a Windows Service

- Uninstall the Scheduler as a Windows Service

Uninstalling eaDirect

To uninstall eaDirect:

1. From the Start menu, navigate to the eaDirect program folder and run the
    eaDirect Uninstall tool. An uninstall screen appears.
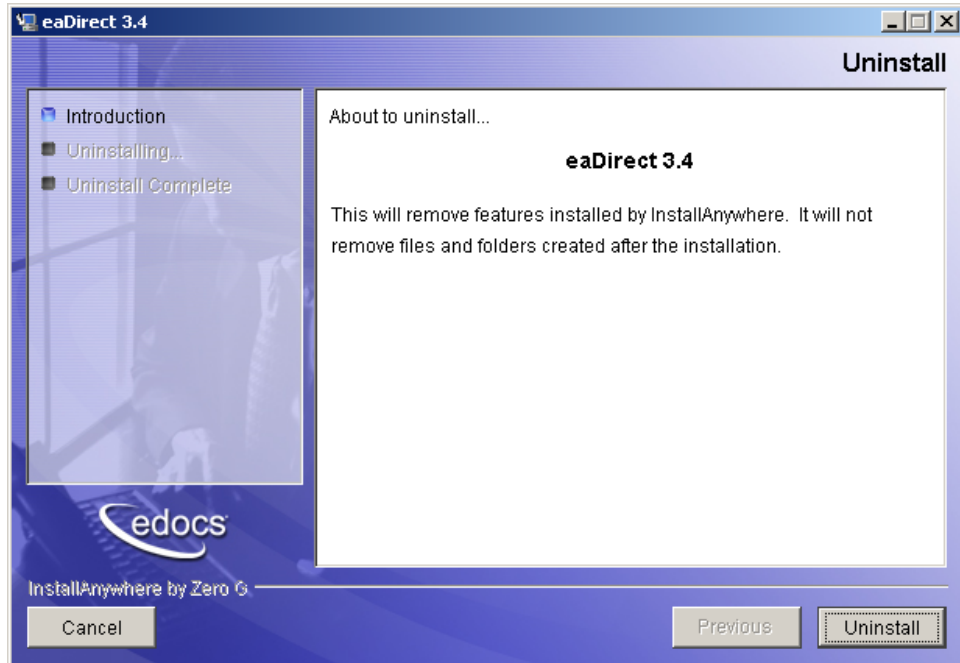
2. Click **Uninstall**. A second uninstall screen appears showing the eaDirect components that will be removed from your machine.
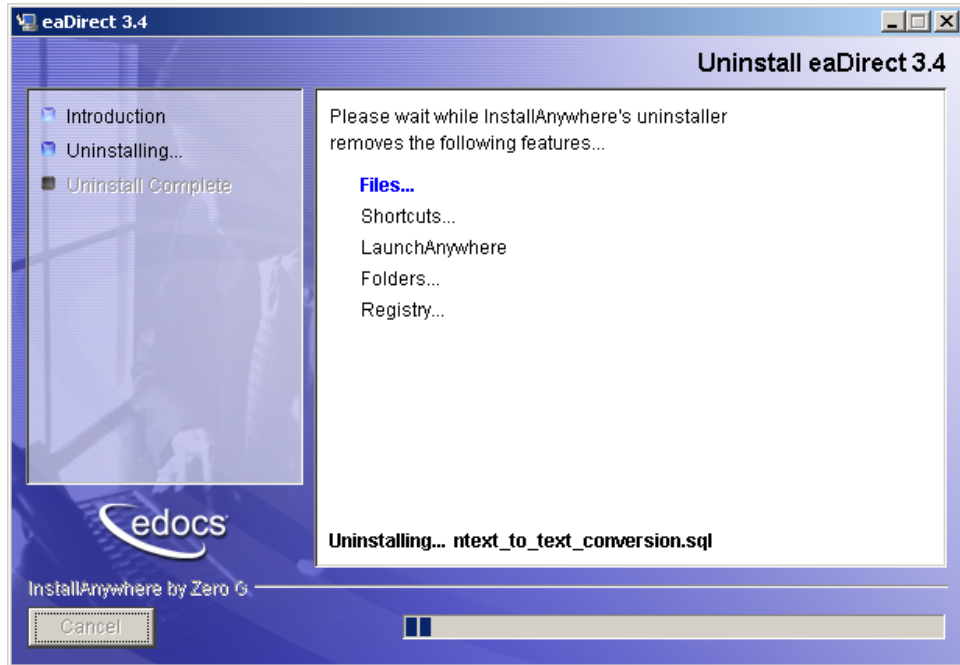
3. Upon completion of the uninstall procedure, a screen appears notifying you that the application server components have been remove successfully.
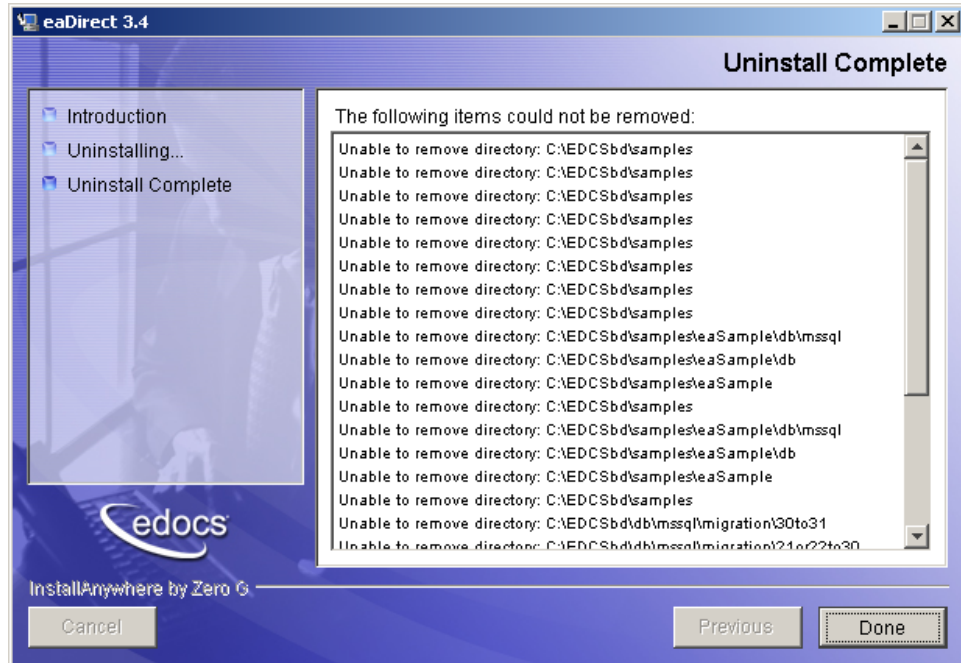
If you have modified any files since installation, the directories that contain those files will not be deleted by the uninstaller.

4. Click **Quit** to close the screen.

Uninstalling WebLogic Server as a Windows Service

To uninstall WebLogic Server as a Windows Service:

1. Open a Command Prompt window, and change directory to *%WL_HOME%\config\mydomain*.

2. Uninstall WebLogic Server as a Windows Service:

   ```
   C:\> uninstallNtService.cmd
   ```

3. You do not have to specify the WebLogic service name on the command line because it is named in *uninstallNtService.com*.

Uninstalling the Scheduler as a Windows Service

To uninstall the Scheduler as a Windows Service:

1. Open a command prompt window, and change directory to *%EDX_HOME%\bin*.

2. Uninstall the Scheduler as a Windows Service:

```
C:\> Schedulersvc -remove
```

Appendix A: Using eaSample

About eaSample

eaSample is a sample J2EE application that eaDirect provides as part of its software distribution. You can use it as a framework for developing a custom EJB application, as it contains all the Java Server Pages (JSPs), HTML, image files, scripts, and templates you need to get started. eaSample deploys as *ear-easample.ear*.

You can use eaSample to view the sample NatlWireless, Training, and NW_LDDetail applications provided with eaDirect. You can use the data and design files in these sample applications to become familiar with eaDirect by creating sample billing applications and jobs, publishing data and design files in the form of *version sets*, and scheduling the jobs to run in the Command Center, the administrative 'hub' for the eaDirect production environment.

eaSample demonstrates the following types of data presentment:

- Dynamic HTML views

- Detail data extraction (DetailExtractor job)

- Annotations

- Disputes

- Order capture

The following steps describe how to use **eaSample** to view the sample eaDirect application called **NatlWireless**. NatlWireless is a set of example design and data files that demonstrate the features of an eaDirect presentment application.

You must set up NatlWireless in the eaDirect Command Center (production environment), then enroll and log in to eaSample to view sample bills.

Setting Up NatlWireless

1. Create a new **application** for NatlWireless in the eaDirect Command Center.

2. Create a new **Indexer job**, publishing the application DDF for the job to use, configure the four tasks that run sequentially as part of the Indexer job, and run the job. Then publish the NatlWireless application (dynamic HTML view) files designed to display the statement summary.

3. Create and configure a **DetailExtractor job**, publishing the DDF, database table XML file, and statement XSLT stylesheet view files designed for the DetailExtractor job, and run the job. Then publish the three dynamic XML Query files (views) designed to display the extracted NatlWireless data and demonstrate the disputes and annotations features.

To create a new eaDirect application for NatlWireless:

1. Start your application server and the Scheduler, if not already running.

2. Open a web browser and enter the URL to the eaDirect Command Center, for example:

    ```
    http://dusky:7001/eaDirect
    ```

3. Create a new application for NatlWireless. Click `Create New Application` at the Main Console. The Create New Application screen appears.

4. Enter `NatlWireless` as the application name. Click `Create Application and Continue`. eaDirect displays the Create New Job screen.

To create and configure an Indexer job:

1. The Create New Job screen appears after you create a new application:
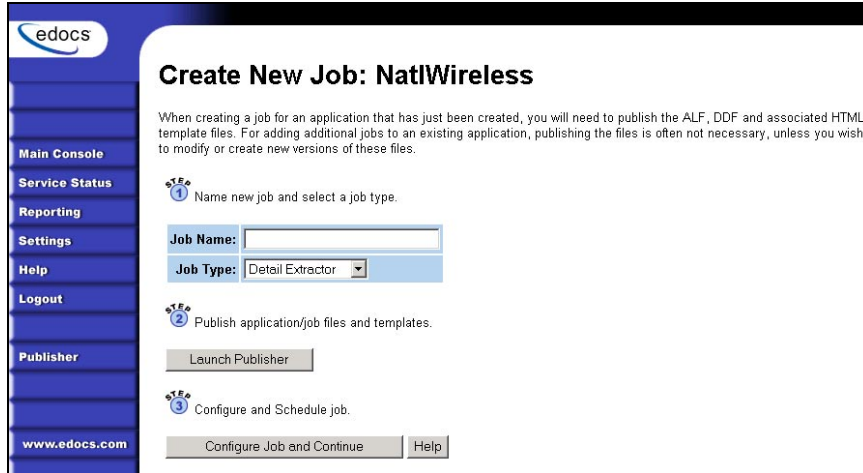
2. Enter **Indexer** for the Indexer job name, select the **Indexer** job type from the drop-down menu. Click **Launch Publisher** to publish the design files for NatlWireless. Click **Create**. The Publisher displays the Select a Version Set Type screen:

3. Under Batch Jobs, next to Indexer, click 0 (Number of Auxiliary files). The Publisher displays the Create a Version Set For Indexer screen:

4. Select **NatlWireless** from the list of application names, and browse to the *$EDX_HOME/samples/NatlWireless* directory and select **NatlWireless.DDF** file for the Indexer job.

5. Click **Submit**. The Publisher displays the Submission screen with details about the DDF file. Close the Publisher window.

6. At the Create New Job screen in Command Center, click **Configure Job and Continue**. eaDirect displays the job configuration screen. For each task, specify the configuration parameters listed below:

Task 1: Scanner Task Configuration	
Input File Path	Use the default (**EDX_HOME/Input/NatlWireless**).
Input File Name	Specify **NatlWireless.txt**.
Output File Path	Use the default (**EDX_HOME/Data/NatlWireless**).

Task 2: Indexer Task Configuration	
DDF Path	(Not editable.)

Doc Date	(Not editable.)
Index Field List	Select the **CustName** field for indexing.
	To select a field, highlight the field name and click the right arrow button. Use the scroll bar to view more fields. To unselect a field, highlight the field name and click the left arrow button.

Task 3: IXLoader Task Configuration	
Skip Rows	Use the default (**0**).
Split Size	Use the default (**0**).
Optional Field Count	Use the default (**0**)
Load Method	Use the default (**Direct Load**)
Task 4: AutoIndexVolAccept Task Configuration	
Action on Index Volume	Use the default (**AutoAccept**).

7. When finished entering the configuration parameters, click **Submit Changes and Schedule**. EaDirect asks "OK to submit this configuration?" Click **OK**. EaDirect submits the job configuration parameters and displays the Schedule screen.

8. In the left pane, click **Main Console**. On the Main Console's left pane, click **Publisher**, and then click **Create**. The Publisher displays the Select a Version Set Type screen:

9. Next to HTML under Dynamic Web Views, click 0. The Publisher displays the Create a Version Set for HTML screen:

10. Select **NatlWireless** from the drop-down list of application names. Enter **HtmlDetail** for the view name. Browse to *$EDX_HOME/samples/NatlWireless* and select the **NatlWireless.DDF**, **NatlWireless.ALF**, and **NatlWireless.HTM** design files. Then click **Submit**. The Publisher displays the Submission screen showing the files you published:

11. Close the Publisher.

12. Move the NatlWireless data file (*NatlWireless.txt)*, which is located in *$EDX_HOME/samples/NatlWireless/datafile*, to *$EDX_HOME/Input/NatlWireless*. This is the same data file that you specified when you configured the job.

13. On the Main Console, click the **Run Now** button next to the NatlWireless Indexer job. Monitor the job's progress by clicking **Refresh** on the Main Console window. The Indexer job completes successfully when the job status on the Main Console changes to "Done."

To create and configure a DetailExtractor job:

1. On the Main Console, click the application name, **NatlWireless**, listed under Applications in the table.

2. Click **Add New Job**. eaDirect displays the Create New Job screen.

3. Enter a job name (the job name can be whatever you want it to be), and then select job type **Detail Extractor**.

4. Click **Launch Publisher**. EaDirect displays the Publisher screen. Click **Create**. The Publisher displays the Select a Version Set Type screen.

5. Under Batch Jobs, next to Detail Extractor, click **0** (Number of Auxiliary files). The Publisher displays the Create a Version Set For Detail Extractor screen.

6. Select the **NatlWireless** application from the drop-down list. Enter the view name **dtlextr** (this name is hard coded in several JSPs for detail, disputes, and annotations).

7. Browse to select **NatlWireless.DDF**. (The default location for this file is *$EDX_HOME/samples/NatlWireless/NatlWireless.DDF*.)

8. Browse to select **summary_info.XML**, the database table XML view file created for this job. (The default location for this file is *$EDX_HOME/samples/NatlWireless/DetailExtractor*.)

9. Browse to select **summary_info.XSL**, the statement XSLT stylesheet. The default location for this file is *$EDX_HOME/samples/NatlWireless/DetailExtractor*.

10. Click **Submit** and close the Publisher.

11. On the Create New Job screen in the Command Center, click **Configure Job and Continue**. EaDirect displays the Detail Extractor job configuration screen.

12. Specify the configuration parameters (listed below) for each of the three tasks that run as part of the Detail Extractor job:

Task 1: IVNScanner Task Configuration	
Field	**What to enter/select**
Index Volume Status	Choose the default, **Accepted**.
Scan Starting From (Number of Days)	Use the default (**7**).

Task 2: StatementsToIR Task Configuration	
Field	**What to enter/select**
View Name	**dtlextr**
Enroll Model	Leave blank.
Output File Path	Use the default (your data output directory, which you specified in the Scanner task for the Indexer job).

Task 3: DXLoader Configuration	
Field	**What to enter/select**
Load Method	Use the default (**Direct**).

13. Click **Submit Changes and Schedule**. eaDirect asks "OK to submit this configuration?" Click **OK**. eaDirect submits the job configuration parameters and displays the Schedule screen.

14. On the Schedule screen, click **Run Now**.

15. On the left pane, click **Main Console**.

16. Publish the XMLQuery dynamic web views that use the data extracted by the DetailExtractor; click **Publisher**.

17. Click **Create**. The Publisher displays the Select a Version Set Type screen. Under Dynamic Web Views, click the **0** next to the XML Query job type. The Publisher displays the Create a Version Set for XML Query screen.

18. Select the **NatlWireless** application. Enter **DetailQuery** as the view name, and browse *%EDX_HOME%\samples\NatlWireless\XMLQuery* to select the **detail_sql.xml** XML query file. (The DetailQuery view name is hard coded in your JSP HTML pages as the specific name the Web browser looks for in the code.) Click **Submit**. The Publisher displays the Submission screen

19. Click **Create** and repeat the previous two steps twice to publish two additional XML Query views (both view names are hard coded in your JSP HTML pages as the specific names the Web browser looks for in the code):

View Name	File
DisputeQuery	*dispute_sql.xml*
AnnotationQuery	*annot_sql.xml*

20. Close the Publisher. You can proceed to use eaSample to display the data.

21. On the Main Console, monitor the job's progress by clicking **Refresh** on the Main Console window. The DetailExtractor job completes successfully when the job status on the Main Console changes to **Done**.

Viewing NatlWireless Statements in eaSample

When the Indexer job completes successfully (status changes to "Done"), you are ready to view your online statements in eaSample.

To use eaSample to view NatlWireless statements:

1. Open a Web browser and access eaSample, substituting your own server name (host) and port number:

   ```
   http://dusky:7001/eaSample/User?app=UserMain&jsp=
   /user/jsp/HistoryList.jsp&ddn=NatlWireless
   ```

   The eaSample User Login page appears.

2. Click the **Enroll Now** link. The sample enrollment page appears.

3. You can enter any user name and any password. However, you must enter a valid email address and a valid NatlWireless customer account number, such as one of the following: 0331734, 4191463, or 8611250. (Use **Reset** to clear the text fields, if necessary.) Click **Submit** to save the subscription information. eaDirect displays a message to let you know you have subscribed successfully. Click **OK** to display the User Login page.

4. Enter the username (Subscriber ID) and password (the same combination you entered during enrollment).

5. Click **Submit**. The sample statement summary page for the account appears. (**Note:** You must have eaPay, the eaDirect payment module, installed to view the payment screens and functionality.)
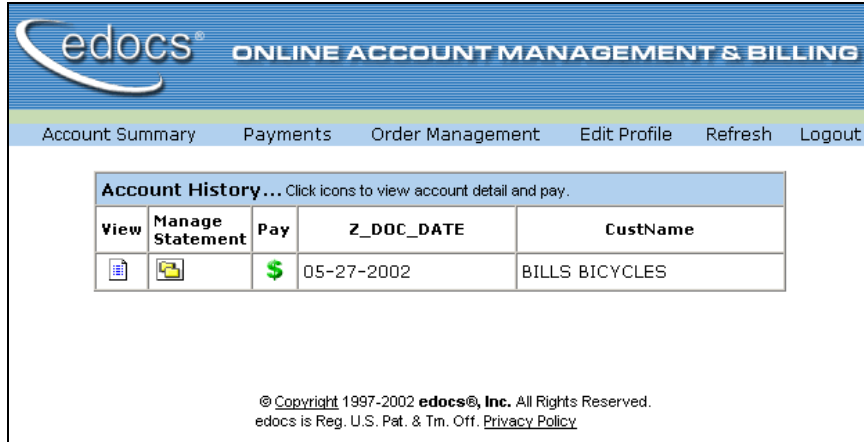
6. To view the statement summary, click the View icon [icon].
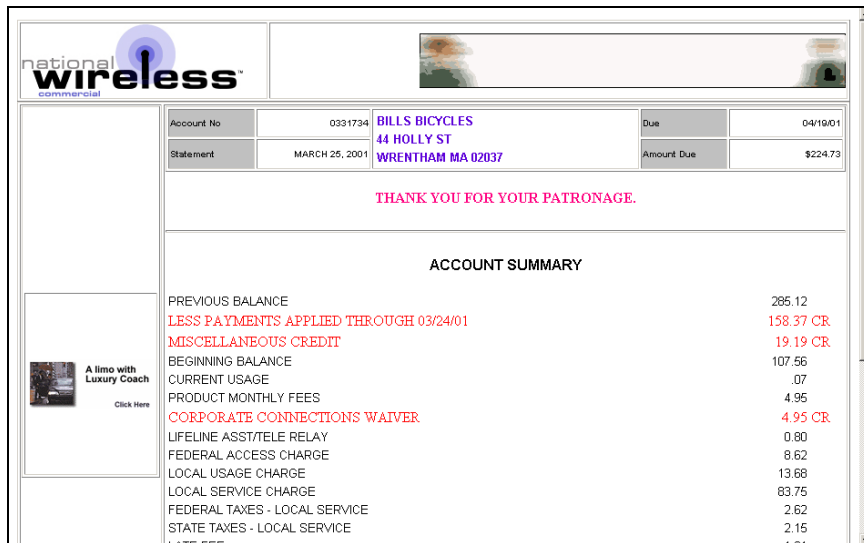
7. To view the Manage Statement page, click [icon] from the History page.

- Click ✎ next to an item to display the Add Note page where you can add comments (annotations) regarding that item.

- Click ● to display the Dispute Your Statement page where you can dispute the item:

Dispute your statement:	
Disputed Item:	Summary Info Amount
Current Amount:	4.95
Adjusted Amount:	
Comments:	

Submit   Reset

Where to Go From Here

For more information about creating design files for publishing data with eaDirect, see the *eaDirect User's Guide.*

For more information about creating and configuring applications and jobs in the Command Center, see the *eaDirect Production Guide*.

For more information about developing a custom web application to work with eaDirect, see the *eaDirect Software Developers Kit (SDK)*.

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