



Installation Guide for Siebel Billing Manager

For Microsoft Windows 2003 Operating System,
BEA WebLogic Server, and Oracle® Database

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1 Preface

About This Guide

This guide is intended for system administrators and other IT professionals and describes how to install and, configure the third-party platforms that support the Siebel Billing Manager production environment and deploy Billing Manager J2EE web applications. See “Billing Manager System Requirements” on page 10 for details on the platforms this guide is intended for.

It assumes in-depth understanding of and practical experience with system administrator responsibilities, including:

Operating System Administration Requirements

- Start up and shut down the system
- Log in and out of the system
- Determine software patch/pack levels
- Install software & patches/packs
- Manipulate text files
- Create files and directories
- Use basic network commands
- Transfer files with FTP
- Monitor processes & system resource usage
- Perform system backups and recovery
- Implement system security

Database Administration Requirements

- Install and configure your database server
- Start and stop your database server and database instances
- Use administrative tools
- Manage users, privileges, and resources
- Create an operational database
- Manage database files
- Manage tables and indexes
- Back up and restore databases

- Monitor database performance

Application Server Administration Requirements

- Install and configure your application server
- Start and stop your application server
- Use administrative tools
- Manage users, privileges, and resources
- Configure Java resources
- Package and deploy web applications
- Monitor application server performance

This guide does *not* describe general Windows system administration. See the appropriate Windows user documentation.

If you are unfamiliar with any of these tasks, please consult the related documentation for your system requirements.

Related Documentation

A PDF version of this guide is also available on SupportWeb.

This guide is part of the Billing Manager documentation set. For more information about using Billing Manager, see the following guides:

<i>Developer's Guide for Siebel Billing Manager</i>	How to customize J2EE web applications for deployment with Billing Manager.
<i>Data Definition (DefTool) Guide for Siebel Billing Manager</i>	How to create Data Definition Files (DDFs) for use in indexing your application and extracting data for live presentment.
<i>Presentation Design (Composer) Guide for Siebel Billing Manager</i>	How to create Application Logic Files (ALFs) to present statement data for dynamic online display.
<i>Administration Guide for Siebel Billing Manager</i>	How to set up and run a live Billing Manager application in a J2EE environment.

2

Getting Started

Preparing Your Platform

Before installing Billing Manager, verify that your platform is ready:

- Install and test required hardware and software for your platform.
- Define required user and group permissions for your database server and application server.
- Start and test your database server. For details, see your server documentation.
- Start and test your application server. For details, see your server documentation.
- For distributed environments, make sure you have any required database client software installed on your application server and any other client machines of your database server.
- Install Xwindows software on your database, application servers, and Windows machine (for Tools) to support the InstallAnywhere GUI.

Overview of the Installation Process

The process of installing and setting up Billing Manager includes the following steps:

- 1 Installing Siebel Platform Services and Billing Manager on your database and application servers using InstallAnywhere. You can install these individually, running InstallAnywhere twice (once to install each feature), or together using the Custom install feature.
NOTE: If you are installing Platform Services and Billing Manager on different servers, you should install Platform Services and get it running before installing Billing Manager.
- 2 Installing Siebel Tools on a Windows 2000 machine. Run InstallAnywhere here and exclusively install Tools.
- 3 Configuring the database server.
- 4 Configuring the application server.
- 5 Follow the chapters in this guide in sequence, consulting your third-party documentation as needed.
- 6 Follow the chapters in this guide in sequence, consulting your third-party documentation as needed.

Once you successfully install Billing Manager and configure your database and application servers, you can customize and deploy your J2EE application.

Configuring your database server requires you to

- 1 Define database server environment variables.
- 2 Create and configure the Billing Manager database with the Ant task.
- 3 Connect to your Billing Manager database before configuring your application server.

Configuring your application server requires you to

- 1 Define application server environment variables.
- 2 Configure JDBC resources for Billing Manager on your application server.
- 3 Configure JMS resources for Billing Manager on your application server.
- 4 Install Windows Services for your application server and the Billing Manager Scheduler.

Customizing and Deploying J2EE Applications

After installing Billing Manager and configuring your database and application servers, you can:

- 1 Customize your J2EE web application(s) for Billing Manager.
- 2 Deploy J2EE web applications for Billing Manager.
- 3 Deploy your custom J2EE web application.

Billing Manager System Requirements

This guide assumes you are installing Billing Manager on a Windows 2003 Server operating system, Oracle database, and WebLogic application server.

OPERATING SYSTEM

- Microsoft Windows 2003 Server

HARDWARE

- CD-ROM
- Disk space (database) 10 GB
- Disk space (for Billing Manager software) 500 MB (in addition to the space required for the application server)

- Intel Pentium or compatible processor at 850 MHz or higher
- Swap space 1 GB per CPU (2 GB recommended)
- RAM 1 GB per CPU (2 GB recommended)

JAVA/C++

- Sun Java 2 SDK Standard Edition 1.4.1 (version shipped with WebLogic)

SUPPORTED DATABASE SERVERS

New installation of Billing Manager

- Oracle 9i Release 2 (Oracle 9.2.0)
- Oracle 9i client software (for application server)
- Oracle 9i JDBC driver

SUPPORTED APPLICATION SERVERS

- BEA WebLogic Server 8.1 SP4

SUPPORTED BROWSERS

- Netscape Navigator 7.0 or higher
- Microsoft Internet Explorer 6 or higher (on networked PC)
- Firefox 1.0.1

Siebel Tools (Windows)

OPERATING SYSTEM

- Microsoft Windows 2000/Server SP4 or higher

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Installing Billing Manager

This chapter provides a step-by-step guide to installing Billing Manager with InstallAnywhere. It assumes that you have an in-depth understanding of and practical experience with administrating your operating system. Consult your system documentation as necessary.

Installing Billing Manager Using InstallAnywhere

InstallAnywhere is a graphical cross-platform wizard that lets you install Billing Manager in a distributed environment:

- **Siebel Platform Services** – Install on all database and application servers.
- **Billing Manager (Consumer or Business)** – Install on all application servers.
- **Siebel Tools** – Install on a Windows machine accessible to the servers on your network.

Siebel recommends that you install and configure Billing Manager in the same top-level directory structure, first on the database server, then on the application servers.

Siebel Platform Services and Billing Manager

You must install both Siebel Platform Services and Billing Manager using InstallAnywhere. You can install them individually or create a custom install to install at once.

To install Siebel Platform Services and/or Billing Manager with InstallAnywhere

- 1 Obtain and locate the InstallAnywhere installer.
- 2 Launch InstallAnywhere by double-clicking the TBMI ns. exe icon.
- 3 **INTRODUCTION:** InstallAnywhere recommends that you quit all programs before installing.
- 4 **LICENSE AGREEMENT:** Review the License Agreement and click “**I accept the terms of the License Agreement**” to accept the terms.
- 5 **ENTER THE SERIAL NUMBER** provided when you purchased Billing Manager.
- 6 **CHOOSE INSTALL FOLDER:** Click **Next** to accept the default or specify another directory. Siebel recommends that you install and configure Billing Manager in the same top-level directory structure, first on the database server, then on the application server.

- 7 CHOOSE PRODUCT FEATURES: Choose which feature you want to install first, or click **Custom** and choose to install Billing Manager and Siebel Platform services at the same time.
 - **Billing Manager (Consumer or Business)** - Installs all components for Billing Manager.
 - **Platform Services** (default) - Installs the components for Siebel Core Services only, including e-Billing, Hierarchy, Payment, and Reporting.
 - **Siebel Tools** - Installs DefTool and Composer (on a Windows machine only)
- 8 CHOOSE SHORTCUT FOLDER: Click **Next** to install Billing Manager in the Siebel program group.
- 9 PRE-INSTALLATION SUMMARY: Review the screen to confirm your product and version, install folder, product components, and disk space required and available and click **Install**.
- 10 InstallAnywhere sets up a directory hierarchy on each server and copies files to the appropriate directories.
- 11 INSTALL COMPLETE: If installation is successful, you see a congratulatory message. Click **Done**.
- 12 Repeat the installation for other Billing Manager servers on your network as necessary.

Tools

To install Siebel Tools on a Windows machine on your network

- 1 Obtain and locate the InstallAnywhere installer.
- 2 Launch InstallAnywhere by double-clicking the **TBmins.exe** icon.
- 3 Follow the steps in the procedure above for installing Billing Manager, selecting the Siebel Tools feature to install.

Payment

The Billing Manager installation procedure automatically installs and configures Payment with Platform Services.

By default, Payment is installed in: *C:\Siebel\CBM\Payment*.

(The default installation path for Payment is also referred to as PAYMENT_HOME, or *CBM_HOME/Payment*)

The Billing Manager Directory Structure

The Billing Manager home directory contains all the files you need to create and configure the Billing Manager production database. When you install Billing Manager components, InstallAnywhere prompts you to specify a destination directory. You can use the default or specify another directory.

The default Billing Manager installation directories are:

- Billing Manager: `C:\Siebel\CBM\`
- Platform Services: `C:\Siebel\CBM\estatement`
- Siebel Tools: `C:\Siebel\CBM\estatement\bin`

TIP: Siebel recommends that you install Billing Manager in the same top-level directory on both the database server and the application servers.

Where to Find Database Components

`C:\Siebel\CBM\estatement\db` and `C:\Siebel\CBM\payment\db` contain platform-specific subdirectories for database creation and configuration.

`C:\Siebel\CBM\db` contains platform-specific directories for database creation and configuration.

Where to Find Application Server Components

`C:\Siebel\CBM\J2EEApps` contains platform-specific subdirectories for Siebel J2EE and web applications to be deployed to your application server. Be sure to deploy the correct version for your platform.

Where to Find Input and Output Data

`C:\Siebel\CBM\estatement\AppProfiles` stores information on each new Billing Manager application created in the Command Center.

`C:\Siebel\CBM\estatement\Input` is the default input directory used by each Command Center job. `C:\Siebel\CBM\estatement\Data` stores data processed by the Siebel Command Center. `C:\Siebel\CBM\estatement\Output` stores the output of jobs.

An additional directory, `C:\Siebel\CBM\estatement\Store`, appears when the first Command Center job runs. The Store directory holds temporary files created during job run time. When the job completes, Billing Manager automatically cleans up these temporary files.

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Configuring Your Oracle Database on Windows

Overview

To set up your Oracle database on Windows, you must first configure Oracle Services, set Oracle environment variables, then use the ANT build scripts to create the following databases:

- 1 The eStatement database instance and schema
- 2 The Payment database schema
- 3 The Billing Manager database schema

Configuring Oracle Services

The next step in setting up the database server is to edit two Oracle configuration files that control access to the Billing Manager production database.

TIP: Always consult with your onsite DBA and your Siebel Professional Services representative to configure database connectivity, to make sure you comply with client standards for the enterprise.

- You need to modify `listener.ora` on the **database server** machine.

`listener.ora` includes service names and address of all listeners on a computer, the instance names of the databases for which they listen, and listener control parameters. The address for a server in `listener.ora` requires the SID (SID_NAME) of a database server in `tnsnames.ora`.

- You need to modify `tnsnames.ora` on the **database client** machine.

`tnsnames.ora` includes a list of service names of network databases that are mapped to connect descriptors. It is used by clients and distributed database servers to identify potential server destinations. The address of a given database server in `tnsnames.ora` matches the address of a listener for that server in `listener.ora`.

By default, these files are installed to the network administration directory of your database server, `%ORACLE_HOME%\network\admin`.

To configure Oracle services for Windows

- 1 Change directory to the network administration directory of your **database server**. For example:

```
cd C:\oracl e\product\9. 2. 0\network\admi n
```

- 2 Open listener.ora and edit the SID_LIST_LISTENER section to reflect your Oracle SID and database home directory. For example:

```
(SID_DESC =
  (SID_NAME = edx0)
  (ORACLE_HOME = C:\oracle\product\9.2.0)
)
```

- 3 Save and close listener.ora.

- 4 Change directory to the network administration directory of your **database client**. For example:

```
cd C:\oracle\product\9.2.0\network\admin
```

- 5 Open tnsnames.ora and edit the database service that identifies your protocol, host, and port. This example uses the service name edx.db (your service name might be different), installed on the database server localhost.

```
edx.db =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    )
  (CONNECT_DATA =
    (SID = edx0)
  )
)
```

- 6 Save and close tnsnames.ora.

- 7 Repeat Steps 4-6 if the application server is not also the database server

- 8 Stop and restart the Oracle listener with the listener control commands.

```
lsnrctl stop
lsnrctl start
```

- 9 After the Oracle listener has been restarted, you should see a service handler for the Billing Manager instance.

```
Services Summary...
PLSExtProc has 1 service handler(s)
edx0 has 1 service handler(s)
```

This service handler should match the name you entered for the Oracle SID during database configuration, in this example edx0.

Setting Oracle Environment Variables

Before running the database scripts, you must first set the following Oracle environment variables in the same DOS window where you will run the database scripts:

1 Open a DOS window.

2 Run the following commands:

```
set ORACLE_BASE=C:\oracle
set ORACLE_HOME=%ORACLE_BASE%\OraHome1
set LD_LIBRARY_PATH=%ORACLE_HOME%\lib
set PATH=%ORACLE_HOME%\bin;%PATH%
set ORACLE_SID=<Your instance name, which you will use for the
statement/payment/CSM databases>
```

You can proceed to run the database setup scripts.

Editing Oracle Initialization Parameters

Before running the Oracle database install script for Billing Manager, follow these steps to add the following parameters to the init<oraclesid>.ora file, located in %ORACLE_HOME%/dbs.

1 In init<oraclesid>.ora, set the following database parameters:

```
QUERY_REWRITE_INTEGRITY = TRUSTED
```

```
QUERY_REWRITE_ENABLED = TRUE
```

```
COMPATIBLE = 8.1.0.0.0 (or higher)
```

2 Shut down and restart the database.

3 Connect as sysdba and execute the following command:

```
GRANT CREATE ANY INDEX, QUERY REWRITE TO <tbmuser>
```

Creating the eStatement Database Instance and Schema

To create the eStatement database instance and schema

- 1 Edit the `estausr.properties` file in the `%CBM_HOME%\estatement\db\Oracle` folder and change the following property values as appropriate.

CAUTION: When creating an Oracle database, limit its name to eight characters. The name must also start with an alpha character. Defining or entering an Oracle SID with more than eight characters causes Oracle database configuration to fail.

TIP: Oracle installations should adhere to the Optimal Flexible Architecture (OFA) for database file locations. See your Oracle documentation for more information.

```
ORACLE_BASE
ORACLE_HOME
ORACLE_SID
SYS_PASSWORD
DB_USERNAME
DB_PASSWORD
DB_CONTROL_FILE_LOCN1
DB_CONTROL_FILE_LOCN2
DB_CONTROL_FILE_LOCN3
SYSTEM_FILE_LOCN
TEMP_FILE_LOCN
REDO_LOG1_FILE_LOCN
REDO_LOG2_FILE_LOCN
UNDO_FILE_LOCATION
TRACE_FILE_LOCN
L_DB_EDX_DATA_TB_FILE_LOC
L_DB_EDX_IDX_TB_FILE_LOC
L_DB_EDX_DATA_TB_FILE_LOC
L_DB_EDX_IDX_TB_FILE_LOC
L_DB_APP_DATA_TB_FILE_LOC
L_DB_APP_IDX_TB_FILE_LOC
L_DB_APP_DATA_TB_FILE_LOC
L_DB_APP_IDX_TB_FILE_LOC
L_DB_LOAD_DATA_TB_FILE_LOC
L_DB_LOAD_IDX_TB_FILE_LOC
L_DB_FS_DATA_TB_FILE_LOC
L_DB_FS_IDX_TB_FILE_LOC
L_DB_STG_DATA_TB_FILE_LOC
L_DB_STG_IDX_TB_FILE_LOC
```

- 2 At the command prompt, navigate to the Oracle database directory:
`%CBM_HOME%\estatement\db\Oracle.`

- 3 At the command prompt, run the following commands:

```
set JAVA_HOME=C:\bea81sp4\jdk142_05
set ANT_HOME=%CBM_HOME%\ant
set PATH=%JAVA_HOME%\bin;%ANT_HOME%\bin;%PATH%
```

- 4 Execute the ant build script:

```
ant
```

The following menu appears:

```
e-Statement Database Server Administration Main Menu
```

```
-----
[1]. Create Oracle Instance
[2]. Shutdown Database
[3]. Startup Database
[4]. Create eStatement Tablespaces
[5]. Create eStatement Schema
[6]. Create Objects
[7]. Install Application Database
[8]. Import Initial Data Set
[9]. Export eStatement Database Schema
[10]. Run all steps at once (Steps 1, 2, 3, 4, 5...8)
[0]. Quit
```

Enter your selection (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, q, 0)

- 5 You can create the database instance and schema in one of two ways:
- Step-by-step: Run options 1-8 in sequence. After completing each option, the system returns to the Command Prompt. Execute the ant build script again and proceed to the next option.
 - Or run all steps at once: Choose Option 10, "Run all steps at once (Steps 1, 2, 3, 4, 5...8)."

Creating the Payment Database Schema

To create the Payment database schema

- 1 Edit the payusr.properties file in the CBM_HOME\payment\db\Oracle folder and change the following property values as appropriate:

```
ORACLE_SID
DB_USERNAME
DB_PASSWORD
```

- 2 At the Command Prompt, navigate to the Oracle database directory

```
cd CBM_HOME\payment\db\Oracle.
```

- 3 At the command prompt, run the following commands:

```
set JAVA_HOME=C:\bea81sp4\jdk142_05
set ANT_HOME=%CBM_HOME%\ant
set PATH=%JAVA_HOME%\bin;%ANT_HOME%\bin;%PATH%
```

- 4 Execute the ant build script:

```
ant
```

The following menu appears:

```
Payment Database Server Administration Main Menu
-----
[1]. Install Application Database I
[2]. Install Application Database II
[3]. Initial Data Population
[4]. Run all steps at once (Steps 1, 2, 3)
[Q]. Quit
```

Enter your selection (1, 2, 3, 4, q, Q)

- 5 You can create the database instance and schema in one of two ways:
 - Step-by-step: Run options 1-3 in sequence. After completing each option, the system returns to the Command Prompt. Execute the ant build script again and proceed to the next option.
 - All steps at once: Choose Option 4, "Run all steps at once (Steps 1,2,3)."

Creating the Billing Manager Database Schema

To create the Billing Manager database schema

- 1 Edit the cbmusr.properties file in the %CBM_HOME%\db\Oracle folder and change the following property values as appropriate:

```
ORACLE_SID
DB_USERNAME
DB_PASSWORD
```

- 2 At the Command Prompt, navigate to the Oracle database directory:

```
%CBM_HOME%\db\Oracle.
```

- 3 At the command prompt, run the following commands:

```
set JAVA_HOME=C:\bea81sp4\jdk142_05
set ANT_HOME=%CBM_HOME%\ant
set PATH=%JAVA_HOME%\bin; %ANT_HOME%\bin; %PATH%
```

4 Execute the ant build script:

```
ant -f dbinstall.xml
```

The following menu appears:

```
      CBM Enhancement Main Menu
      -----
[1]. Create CBM Objects
[2]. Initial data population
[3]. Run all steps at once(Steps 1,2)
[Q]. Quit
```

Enter your selection (1, 2, 3, q, Q)

5 You can create the database schema in one of two ways:

- Step-by-step: Run options 1-2 in sequence. After completing each option, the system returns to the Command Prompt. Execute the ant build script again and proceed to the next option.
- All steps at once: Choose Option 3, "Run all steps at once (Steps 1 and 2)."

6 Edit the tnsnames.ora and listener.ora files appropriately.

5

Configuring the WebLogic Server for Windows

Overview

This chapter assumes in-depth understanding of and practical experience with application server administration. Consult WebLogic Server documentation at <http://edocs.bea.com> as necessary.

You must start your WebLogic Server instance and bring up the Administration Console before you begin this chapter.

CAUTION: If you cannot bring up the WebLogic Console, you will be unable to proceed with configuring your application server for Billing Manager.

Siebel recommends that you install and configure Billing Manager in the same top-level directory structure, first on the database server, then the application server.

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

For distributed environments, ensure that you have any required database client software installed on WebLogic Server and any other client machines of your database server.

This chapter provides instructions for configuring WebLogic Server to support Billing Manager. It includes:

- Starting and Stopping WebLogic Server
- Capturing your Windows environment for Billing Manager
- Passing Windows Environment Data to WebLogic
- Windows Services for Billing Manager

CAUTION: The installation and configuration examples shown in this guide use default Billing Manager pathnames, privileges, and permissions. If you choose not to accept the default values, make sure your values are consistent on all servers across your installation of Billing Manager.

About the Sample Windows Domain Used in This Guide

This guide uses the default WebLogic domain `%WL_HOME%\user_projects\domains\mydomain` (`%WL_HOME%` is the directory path where you installed WebLogic). WebLogic users may use the Domain Configuration Wizard to create this domain or replace these pathnames with a custom domain created by your system administrator.

CAUTION: When creating WebLogic domains, do not use the default JRockit JVM; Use Sun's JDK.

CAUTION: If you use a custom domain, the examples in this guide must be changed accordingly or they may not work. Siebel does not recommend that you accept the default path of `\user_projects`.

Starting and Stopping WebLogic Server

Developers and system administrators need to be familiar with how to stop and start WebLogic Server and any active web applications for your platform. Consult your BEA WebLogic documentation for instructions on how to do this.

Sourcing Your Configuration

About Sourcing Your Configuration

Before you start your WebLogic server instance, you must edit its startup script to source your customized version of the configuration file `edx.config.bat`, which passes your Billing Manager environment to WebLogic Server at startup.

Starting and Stopping an Active Application Server

Improperly starting or stopping an application server in an active Billing Manager production environment can produce unexpected and unintended results. You can create custom startup and shutdown scripts that include all your command parameters, as well as the command used to start or stop the Scheduler, to schedule and run jobs in the Siebel Command Center.

The default command-line startup shell scripts are fine for an inactive production environment where there are no running jobs. However, the startup process will stop immediately if you enter a `Ctrl+C` (often used to force a hard shutdown of the server) in the startup directory, or if you close the terminal session.

By default, if you use the Windows Control Panel to stop a server instance, the Windows Service Control Manager (SCM) kills the server's Java Virtual Machine (JVM). If you kill the JVM, the server immediately stops all processing. Any session data is lost. If you kill the JVM for an Administration Server while the server is writing to the `config.xml` file, you can corrupt the `config.xml` file. See BEA Documentation for Enabling Graceful Shutdowns from the Control Panel .

Capturing Your Windows Environment for Billing Manager

Billing Manager installs several configuration files that you use to define your Billing Manager environment. These configuration scripts are required **only on the application server**:

<code>%EDX_HOME%\config\edx_load.config.bat</code>	Editable configuration file stores database Java options required by your application server
<code>%EDX_HOME%\config\edx.config.bat</code>	Script passes the environment data in <code>edx_env.bat</code> and <code>edx_load.config.bat</code> to your application server when called in your startup script

This section describes how to run `edx.config.bat` to capture your environment variables.

Using `edx.config.bat`, `edx_env.bat`, and `edx_load.config.bat` to Store Environment Data

You must edit the configuration file `edx_load.config.bat` to set values for your database user, password, and server name. Then you must run `edx.config.bat` file from WebLogic startup script.

Use the Appendix Quick Reference to enter application server environment variables for your platform for each of the specified parameters. You may want to print the *Environment Variables* sections for easy reference. You can accept the default values, if appropriate, or enter your own.

You may want to make backup copies of the following files:

- `edx.config.bat`
- `edx_env.bat`
- `edx_load.config.bat`

To edit Windows environment data with `edx.config.bat`

- 1 Navigate to `%EDX_HOME%\config` and edit `edx.config.bat`.

- 2 Add the following lines to the :wlMain section. (Add Verisign.jar to the CLASSPATH only if you are implementing credit card payment functionality.)

```
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\lib\log4j-1.2.8.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\lib\commons-logging-1.0.3.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\lib\deprotocol.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\lib\Configuration.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\lib\dom4j-1.4.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\lib\javachart.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\config
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\estatement\lib\jakarta-oro-2.0.7.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\estatement\lib\jsp3_1_1_2.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\estatement\lib\edx_common.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\estatement\lib\edx_system.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\estatement\lib\edx_client.jar
```

(Specify the following jar files only if you are going to implement credit card functionality using Verisign)

```
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\payment\lib\Verisign.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\payment\lib\jnet.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\payment\lib\jsse.jar
@set CLASSPATH=%CLASSPATH%; C:\Siebel\CBM\payment\lib\jcert.jar
```

- 3 Still in *edx.config.bat*, add |com.edocs.domain.telco.lde.protocol to the following line:

```
@set JAVA_OPTIONS=%JAVA_OPTIONS% -Dedx.home=%EDX_HOME% -
Djava.protocol.handler.pkgs="com.edocs.protocol "
```

to make:

```
@set JAVA_OPTIONS=%JAVA_OPTIONS% -Dedx.home=%EDX_HOME% -
Djava.protocol.handler.pkgs="com.edocs.protocol |com.edocs.domain.telco.lde.p
rotocol "
```

- 4 Add the following line to *edx.config.bat*:

```
@set JAVA_OPTIONS="%JAVA_OPTIONS% -
Dcom.edocs.tasks.statementscanner.skiptResolver=true"
```

NOTE: This is not used in live production; it is for use with sample data only.

- 5 Modify the LD_LIBRARY_PATH to:

```
@set LD_LIBRARY_PATH=%EDX_HOME%\bin
```

- 6 If the MEM_ARGS variable has been set in *startWebLogic.cmd*, comment out the following line (otherwise *ecs-ejb.jar* will fail to deploy because of insufficient memory):

```
@set JAVA_OPTIONS=%JAVA_OPTIONS% -ms128m -mx128m -Xnoclassgc
```

- 7 Save and close all files.

To edit Windows environment data with edx_env.bat

- 1 Navigate to %EDX_HOME%\confi g and open edx_env. bat.
- 2 Modify the default settings to reflect your environment. For example:

```
@rem defi ne APP_SERVER
@set APP_SERVER=wl
@rem defi ne APP_SERVER

@rem defi ne EDX_HOME
@set EDX_HOME=C:\Siebel\CBM\statement
@rem defi ne EDX_HOME

@rem defi ne JAVA_HOME
@set JAVA_HOME=C:\bea\jdk142_05
@rem defi ne JAVA_HOME

@rem defi ne WL_HOME
@set WL_HOME=C:\bea\wl\ogic81
@rem defi ne WL_HOME
```

CAUTION: Make sure you set all paths to the appropriate point releases/patches for WebLogic Server and JDK, if necessary. Check the Release Notes and your system documentation for updated requirements.

To edit Windows Java Options in edx_load.config.bat

- 1 Navigate to %EDX_HOME%\confi g and open edx_l oad. confi g. bat .
- 2 Modify the default settings for com. edocs. tasks. l oader to reflect your database user, password, and server name. Use the settings for your database as described in the previous chapter. For example:

```
@set JAVA_OPTI ONS=%JAVA_OPTI ONS% -Dcom. edocs. tasks. l oader. user=edx_dba
@set JAVA_OPTI ONS=%JAVA_OPTI ONS% -Dcom. edocs. tasks. l oader. password=edx
@set JAVA_OPTI ONS=%JAVA_OPTI ONS% -Dcom. edocs. tasks. l oader. al i as=edx0
```

Where edx0 is the alias mentioned in the tnsnames.ora file.

- 3 Save and close the file.

CAUTION: Make sure you set all paths to the appropriate point releases/patches for WebLogic Server and JDK, if necessary. Check the Release Notes and your system documentation for updated requirements.

Passing Windows Environment Data to WebLogic

edx.config.bat is a script you call and process in your application server startup script to pass your Billing Manager environment (stored in edx_env.bat and edx_load.config.bat) to WebLogic.

CAUTION: Do not confuse edx.config.bat with edx_env.bat, in which you enter the environment data to pass to the server.

This section describes how to use edx.config.bat to pass your environment data to WebLogic at server startup.

To pass your Billing Manager environment to WebLogic (overview)

- 1 Determine whether you wish to start WebLogic as a Windows Service or directly from the startup script. Use the appropriate procedure for your service or startup scripts.
- 2 In your domain service or startup script, set your Billing Manager home directory, %CBM_HOME%.
- 3 In your domain service or startup script, call and process the configuration script edx.config.bat. This procedure is called sourcing your configuration.
- 4 In the **master** service or startup script, set your CLASSPATH, to use the classpath defined in edx.config.bat.

Passing Your Configuration to WebLogic Running as a Windows Service

Siebel recommends installing WebLogic Server as a Windows Service, and modifying the script that calls that service. For WebLogic, this file is %WL_HOME%\user_projects\domains\mydomain\InstallService.cmd. This script calls the master startup script InstallSvc.cmd.

Before editing either of these files, be sure to save a backup copy **in a different directory**.

Example InstallService.cmd for WebLogic:

Bold indicates text that you should add or change from the default. Note that you can set MEM_ARGS to a value appropriate for your Windows machine.

·
·
·

```

@rem Set WLS_USER equal to your system username and WLS_PW equal
@rem to your system password for no username and password prompt
@rem during server startup. Both are required to bypass the startup
@rem prompt.

set WLS_USER=
set WLS_PW=

.
.
.

set EDX_HOME=C:\Siebel\CBM\statement
call %EDX_HOME%\config\edx.config.bat

@rem Set JAVA_OPTIONS to the java flags you want to pass to the vm. i.e.:
@rem set JAVA_OPTIONS=-Dweblogic.attribute=value -Djava.attribute=value

set JAVA_OPTIONS=%JAVA_OPTIONS%

@rem Set JAVA_VM to the java virtual machine you want to run. For instance
@rem set JAVA_VM=-server

set JAVA_VM=

@rem Set MEM_ARGS to the memory args you want to pass to java. For instance
@rem set MEM_ARGS=-Xms32m -Xmx200m

set MEM_ARGS=-Xss1m -noclassgc -server -Xms512m -Xmx1024m -
XX: MaxPermSize=384m -XX: NewSize=128m -XX: MaxNewSize=128m -
XX: +UseLWPSynchronization -XX: +UseThreadPriorities -Xconcurrentio -Xrs

.
.
.

:installSvc

rem *** Set up extra path for win32 and win64 platform separately

if not "%WL_USE_64BITDLL%" == "true" set
EXTRAPATH=%WL_HOME%\server\bin;%JAVA_HOME%\jre\bin;%JAVA_HOME%\bin;%WL_HOME%\
server\bin\oci920_8;%EDX_HOME%\lib

if "%WL_USE_64BITDLL%" == "true" set
EXTRAPATH=%WL_HOME%\server\bin\win64;%WL_HOME%\server\bin;%JAVA_HOME%\jre\bi
n;%JAVA_HOME%\bin;%WL_HOME%\server\bin\win64\oci920_8;%EDX_HOME%\lib

rem *** Install the service

"%WL_HOME%\server\bin\beasvc" -install -svcname:"beasvc
%DOMAIN_NAME%_%SERVER_NAME%" -javahome:"%JAVA_HOME%" -
execdir:"%USERDOMAIN_HOME%" -extrapath:"%EXTRAPATH%" -password:"%WLS_PW%" -
cmdline:%CMDLINE%

:finish

ENDLOCAL

```

To edit *InstallService.cmd* for WebLogic

See the example above for default settings. Make sure to change these as needed for your environment.

CAUTION: Make sure you set all paths to the appropriate point releases/patches for WebLogic Server and JDK, if necessary. Check the Release Notes and your system documentation for updated requirements.

- 1 Stop WebLogic Server and all application server instances.
- 2 Navigate to the %WL_HOME%\user_project\domains\mydomain subdirectory of your application server home directory.
- 3 Open *InstallService.cmd* by right clicking on its name, and selecting **Edit**.
- 4 Before the **JAVA_OPTIONS** definition, set **EDX_HOME** and call *edx.config.bat*. For example:

```
set EDX_HOME=C:\Siebel\CBM\statement
call %EDX_HOME%\config\edx.config.bat
```
- 5 Optimize JVM Memory by increasing the memory arguments allocated to the Java Virtual Machine (JVM) on the application server. For example (quotes are optional):

```
set MEM_ARGS="-Xss1m -server -Xms1052m -Xmx3072m -XX:MaxPermSize=184m -
XX:+UseLWPSynchronization -XX:+UseThreadPriorities -Xconcurrentio"
```
- 6 Add your **CBM\lib** directory to the **EXTRAPATH** setting. See the examples above.
- 7 (Optional) You can set your application server user and password in the script (to bypass entering it in a console window) by specifying them for **WLS_USER** and **WLS_PW**.
- 8 Save and close *InstallService.cmd*.

To edit *InstallSvc.cmd* for WebLogic

CAUTION: This procedure is required by a defect in WebLogic that does not correctly pass classpath settings from the domain to the master when the master script is called. Consult your WebLogic administrator when editing scripts that control multiple domains.

- 1 Stop WebLogic Server and all application server instances.
- 2 Navigate to the %WL_HOME%\weblogic81\server\bin subdirectory of your application server home directory.
- 3 Open *InstallSvc.cmd* by right clicking on its name, and selecting **Edit**.
- 4 Set your Billing Manager home directory and call your Billing Manager environment script right after the **CLASSPATH** setting. For example:

```
set EDX_HOME=C:\Siebel\CBM\statement
call %EDX_HOME%\config\edx.config.bat
```

- 5 Save and close InstallSvc.cmd.

Passing Your Configuration in a Startup Script for WebLogic

You can also choose to start WebLogic Server directly by modifying the server startup script to source your configuration. WebLogic recommends that you start up the server from your domain, using `%WL_HOME%\user_projects\domains\mydomain\startWebLogic.cmd`.

Before editing either of these files, be sure to save a backup copy **in a different directory**.

Example startWebLogic.cmd for WebLogic

```
.
.
.

@REM Initialize the common environment.

set WL_HOME=C:\bea\weblogic81
for %%i in ("%WL_HOME%") do set WL_HOME=%%~fsi

set PRODUCTION_MODE=true

set JAVA_VENDOR=Sun

set JAVA_HOME=C:\bea\jdk142_05

for %%i in ("%JAVA_HOME%") do set JAVA_HOME=%%~fsi

set MEM_ARGS=-Xss1m -noclassgc -server -Xms512m -Xmx1024m -
XX:MaxPermSize=384m -XX:NewSize=128m -XX:MaxNewSize=128m -
XX:+UseLWPSynchronization -XX:+UseThreadPriorities -Xconcurrentio -Xrs

@REM Call commEnv here AFTER setting the java_vendor to get common
environmental settings.

call "%WL_HOME%\common\bin\commEnv.cmd"

@REM Set SERVER_NAME to the name of the server you wish to start up.

set SERVER_NAME=myserver

set CLASSPATH=%WEBLOGIC_CLASSPATH%;%POINTBASE_CLASSPATH%;%JAVA_HOME%\jre\
lib\rt.jar;%WL_HOME%\server\lib\webservices.jar;%CLASSPATH%

set EDX_HOME=C:\Siebel\CBM\estatement
call %EDX_HOME%\config\edx.config.bat

.
.
.
```

To edit `startWebLogic.cmd` for WebLogic

See the example above for default settings. Make sure to change these as needed for your environment.

- 1 Stop WebLogic Server and all application server instances.
- 2 Edit `%WL_HOME%\user_projects\domains\mydomain\startWebLogi c. cmd.`
- 3 Set your Siebel home directory `%EDX_HOME%` and call `edx. confi g. bat` just after the `set CLASSPATH` statement. For example:


```
set EDX_HOME=C:\Siebel\CBM\statement
call %EDX_HOME%\confi g\edx. confi g. bat
```
- 4 Add the `classpath` parameter to the `java` command at the end so it uses the paths to the Billing Manager classes. For example:


```
%JAVA_HOME%\bin\j ava %JAVA_VM% %MEM_ARGS% %JAVA_OPTI ONS% -cl asspath
"%CLASSPATH%" -Dwebl ogi c. Name=%SERVER_NAME% -
Dwebl ogi c. Producti onModeEnabl ed=%PRODUCTI ON_MODE% -
Dj ava. securi ty. poli cy="%WL_HOME%\server\I i b\webl ogi c. poli cy" webl ogi c. Server
```
- 5 Save and close `startWebLogi c. cmd.`

Windows Services for Billing Manager

Setting up a WebLogic Server Instance as a Windows Service

If you want a WebLogic Server instance to start automatically when you boot a Windows host computer, you can set up the server as a Windows service.

For detailed instructions on setting up WebLogic Server as a Windows Service, see the BEA documentation.

Setting Up the Platform Services Scheduler as a Windows Service

After all Billing Manager EAR files have been deployed to the application server **and** WebLogic is running, you must start the Billing Manager Scheduler in order to schedule and run jobs in the Siebel 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.

To install the Scheduler as a Windows Service, you must modify the Scheduler template file `SCH.txt`, installed in the `bin` directory for Billing Manager.

To install the Scheduler as a Windows Service

- 1 Navigate to the `bin` directory for Platform Services, or `%EDX_HOME%\bin`.
- 2 Open the Scheduler template file `SCH.txt` and modify the Java classpath to reflect your active Java environment. For example:


```
classpath=C:\bea\jdk142_05\lib\tools.jar;c:\bea\wlserver\lib\weblogic.jar;c:\Siebel\CBM\estatement\lib\edx_client.jar;c:\Siebel\CBM\estatement\lib\edx_common.jar
```

CAUTION: Make sure you set all paths to the appropriate point releases/patches for WebLogic Server and JDK, if necessary. Check the Release Notes and your system documentation for updated requirements.
- 3 Confirm that the following line of code is present in the file for your host and port:


```
-Djava.naming.provider.url=t3://localhost:7001
```
- 4 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_name
```
- 5 Confirm that all the directory references in `SCH.txt` are correct.
- 6 Save and close `SCH.txt`.
- 7 Open a command prompt window, and then change directory to `%EDX_HOME%\bin`. Use the `schedulervc` command to install the Scheduler as a Windows Service, for example:


```
C:\> schedulervc -install C:\Siebel\CBM\estatement\bin\SCH.txt
```
- 8 If the Scheduler service is installed successfully, a confirmation message appears.

Configuring Payment

To update the Payment and Billing Manager configuration files

- 1 Change your working directory to `%PAYMENT_HOME%\config`, for example:


```
cd \Siebel\CBM\Payment\config
```
- 2 If you are not using the default Billing Manager and Payment directories, then edit the `edx_payment.config` file, and correct the entry that defines `PAYMENT_HOME`.
- 3 Copy the updated `edx_payment.config` file to `%EDX_HOME%\config`.

Configuring Support for VeriSign Processing

If you are going to use a VeriSign credit card gateway, then you must edit the classpath in your application server startup script, and configure your java security file.

To edit the classpath in the application server startup script

Edit the startup script for your application server to add *jsse.jar*, *jnet.jar* and *jcet.jar*. These files are located in the lib subdirectory of *%CBM_HOME%\payment*.

These JSEE JAR files must be added to the classpath **before** the WebLogic JAR files. For example,

```
set
CLASSPATH=<JSSE_PATH>\jsse.jar; <JSSE_PATH>\jcet.jar; <JSSE_PATH>\jnet.jar; %CLASSPATH%
```

Where <JSSE_PATH> is the path to the JSEE JAR files.

Configuring Java Security

Modify the *java.security* file to configure Java to use the JSSE, which is located in *%JAVA_HOME%\jre\lib\security* to add the following entries:

```
security.provider.1=sun.security.provider.Sun
security.provider.2=com.sun.net.ssl.internal.ssl.Provider
```

If the file already uses the numbers shown above, then use the next available numbers that maintain a contiguous sequence.

CAUTION: Be sure that you edit the correct java security file. Many installations have more than one JDK installed. Edit the one that the application server uses.

Implementing Payment

After configuring the database and the application server for Payment, the following steps are required to implement online bill payment:

- 1 Configure a payment gateway for online check and/or credit card processing.
- 2 Enroll customers for online bill viewing and payment.
- 3 Set up Payment jobs to process payments and optionally send reminders.

Administration Guide for Siebel Billing Manager for information about configuring a payment gateway, enrolling customers and other operational issues.

Troubleshooting Tips for WebLogic on Windows

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

Add the path `-extrapath: C:\bea\webl ogi cXX\server\bi n; %PATH%` to `instal l NtServi ce. cmd` (substituting your drive where necessary). For example

```
"C:\bea\webl ogi c81\server\bi n\beasvc" -i nstal l -svcname: myserver
-j avahome: "%JAVA_HOME%" -execdi r: "C:\bea\webl ogi c81"
-extrapath: "C:\bea\webl ogic81\server\bi n;%PATH%" -cmdl i ne: %CMDLI NE%
-password: l ovel yday
```

If you encounter problems when running customized Web pages:

- 1 From your domain in the WebLogic Server Console, select **Servers** and **myserver 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 the JDK installed **with WebLogic Server**.
- 3 Restart WebLogic Server.

CAUTION: Make sure you set all paths to the appropriate point releases/patches for WebLogic Server and JDK, if necessary. Check the Release Notes and your system documentation for updated requirements.

Editing Property Files

You may need to edit the following files in `%CBM_HOME%\Config`:

- a. `hibernate.properties` and `hierarchy.hibernate.properties`
- b. `app-config.properties`
- c. `log4j.xml`
- d. `tsm.hibernate.properties`
- e. `tsm.xma.xml`

a. `hibernate.properties` and `hierarchy.hibernate.properties`

If you are installing a system which contains large hierarchies (that is, many accounts and/or service agreements per company), you can tune the performance of your system by adjusting this setting:

```
hi bernate. querythreshol d=XX
```

For more information, please refer to the *Developer's Guide for Siebel Billing Manager*.

NOTE: Restart your application server after updating `hibernate.properties` and `hierarchy.hibernate.properties` files.

b. app-config.properties

Edit `app-config.properties` and change the parameter in the following line to 6 as follows:

```
tbmb2b.onetimepay.statement_search_months=6
```

If you are installing a system which contains large hierarchies (that is, many accounts and/or service agreements per company), you can tune the performance of your system by adjusting these settings:

```
#Threshold levels for hierarchy
#maximum size for CCM drop-down menu
tbm.ccm.dropDown.threshold=XX

#number of records per page in paged screens
ps.ri.config.MAX_ENTRIES=XX

#display tree threshold
displayTreeThreshold=XX

#large enterprise user threshold
largeEnterpriseUserThreshold=XX
```

Also edit the SMTP server statement to set your SMTP host for email notification for enrollment.

For more information, please refer to the *Developer's Guide for Siebel Billing Manager*.

c. log4j.xml

If you installed Billing Manager in a directory other than the default `%CBM_HOME%\Config`, you must edit `log4j.xml` in `%CBM_HOME%/config`. Edit the following line and change the log file path as necessary.

Caution: This Windows path requires **forward** slashes. Also be sure to type case exactly as shown.

```
<param name="File" value="c:/Siebel/CBM/estatement/logs/log4j.log"/>
```

d. tsm.hibernate.properties

Check that the database connection parameters match your settings. If you used settings other than the default, you will need to edit the `hibernate.connection.url`, `hibernate.connection.username`, and/or `hibernate.connection.password` parameters.

e. tsm.xma.xml

If necessary, edit the following JNDI URL and replace "localhost" with your server name. Also edit the WebLogic port number if different from 7001:

```
<!-- Hibernate jndi url for WebLogic -->  
  <prop key="hibernate.jndi.url">t3://localhost:7001</prop>
```


6

Configuring Java Resources for WebLogic for Oracle

Overview

This chapter assumes in-depth understanding of and practical experience with application server administration. It is designed for experienced WebLogic administrators and primarily presents only the steps and settings specific to Billing Manager.

See WebLogic Server documentation at <http://edocs.bea.com/> for detailed step-by-step instructions on Java resource configuration, performance, and tuning. You must also consult your application server administrator for settings that may be specific to your configuration.

You must start your WebLogic Server instance and bring up the Administrative Console before you begin this chapter.

CAUTION: If you cannot bring up the WebLogic Console, you will be unable to proceed with configuring your application server for Billing Manager.

Configuring Java Database Connectivity (JDBC) for Billing Manager

After you have successfully configured the Billing Manager database, you must configure Java Database Connectivity (JDBC) resources on the Billing Manager application server. JDBC Connections on the application server support data retrieval from relational databases and other data sources.

WebLogic Environment Variables

CAUTION: Make sure you set all paths to the appropriate point releases/patches for WebLogic Server and JDK, if necessary. Check the Release Notes and your system documentation for updated requirements to these environment variables.

VARIABLE	DESCRIPTION	WINDOWS
APP_PORT	app server port	7001
ADMIN_PORT	app server admin port	7002
JAVA_HOME	Java home directory	%WLHOME%\jdk142_05

About JDBC Connections for Billing Manager

JDBC connection pools contain 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 startup and adds these connections to the pool. A J2EE web application borrows a connection from the pool, uses it, and then returns it to the pool by closing it.

JDBC data sources enable 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.

Platform Services requires three sets of **JDBC Connection Pools** and related **JDBC Data Sources**:

- **edxAdmin** supports the Command Center through the Billing Manager web application
- **edxLogger** supports Billing Manager logging through the Billing Manager web application
- **edxUser** supports user data retrieval through custom web applications

For more details on configuring JDBC Connections, please see the JDBC documentation for your application and database servers.

CAUTION: **edxAdmin** connection pools support concurrency for scheduling multiple jobs. Tuning **edxAdmin** connection capacity and threads can improve Billing Manager email performance.

Configuring JDBC Connections for WebLogic

You must create three sets of JDBC connection pools and three sets of transaction datasources. Their names are specific to Siebel across all platforms, but JDBC properties vary by both application server and database server.

You must enter the same information six times: one connection pool and one data source each for **Admin**, **User**, and **Logger**. Make sure you have chosen the correct properties for your application server and database server, and that each datasource and its properties maps to the connection pool of the same name.

CAUTION: Make sure you are using the correct properties for your combination of application server, database, and JDBC resource.

For more details on how to configure JDBC connections, see WebLogic Server documentation at <http://edocs.bea.com>.

To configure JDBC Connections for WebLogic

- 1 Create a JDBC Connection Pool each for **edxAdmin**, **edxLogger**, and **edxUser**. Use the appropriate JDBC values for your database server.
- 2 Create a JDBC Data Source each for **edxAdmin**, **edxLogger**, and **edxUser**. Use the appropriate JDBC values for your database server.

- 3 Review your connections. Each data source should target the connection pool of the same name (**Admin**, **User**, or **Logger**).
- 4 When you are finished, proceed to the next section to configure Java Messaging Service (JMS) for Billing Manager.

JDBC Resources

TIP: You can save time by **cloning** additional Java resources. Right-click a resource and select **Clone <name>**, then change the resource name and properties as required.

JDBC Connection Pools for WebLogic

Create three JDBC Connection Pools, using WebLogic Server documentation at <http://edocs.bea.com>. Use the same **Properties** for all three connection pools. Make sure to deploy them to the server you are configuring for Billing Manager (in the examples of this guide, the default **myserver**).

WebLogic creates a new JDBC Connection Pool using a wizard. Follow the prompts, and enter:

- **Database type** = Oracle
- **Database Driver** = Oracle's Driver (Thin)

For each of three connection pools, using the following names and properties:

Pool 1: Admin	Pool 2: User	Pool 3: Logger
<code>edxAdminConnectionPool</code>	<code>edxUserConnectionPool</code>	<code>edxLoggerConnectionPool</code>

General Tab	
URL	<code>jdbc:oracle:thin:@DB_host:DB_port:DB_SID</code> . For example, <code>jdbc:oracle:thin:@localhost:1521:edx0</code>
Driver Classname	<code>oracle.jdbc.driver.OracleDriver</code>
Database User	Enter the database user name. This document uses <code>edx_dba</code> .
Password	Enter the password for the database user. This document uses <code>edx</code> .

After the wizard completes, go to the Configuration page to make adjustments using the values shown in the following table (on the Connections tab, click **show** for Advanced Options):

Connections Tab	
Initial Capacity	1
Maximum Capacity	20
Capacity Increment	5
Login Delay	1
Statement Cache Size	300
Test Frequency	60
Allow Shrinking	True (box checked)
Shrink Frequency	15
Test Reserved Connections	TRUE (checked)
Test Released Connections	FALSE (unchecked)
Test Table Name	dual

Click **Apply** to save these values for each connection pool.

JDBC Data Sources for WebLogic

Create three transaction data sources, using WebLogic Server documentation at <http://edocs.bea.com>.

	Datasource 1: Admin	Datasource 2: User	Datasource 3: Logger
Name	edxAdminDataSource	edxUserDataSource	edxLoggerDataSource
JNDI Name	edx.databasePool	edx.user.databasePool	edx.logger.databasePool
Pool Name	edxAdminConnectionPool	edxUserConnectionPool	edxLoggerConnectionPool

Configuration Tab - Advanced Options (use defaults)	
Emulate Two-Phase Commit for non-XA Driver	FALSE (unchecked)
Row Prefetch Enabled	FALSE (unchecked)
Stream Chunk Size: bytes	256

On the **Targets** tab, select the server that will use this Data Source.

Configuring Java Messaging Service (JMS) for Billing Manager

After you have successfully configured JDBC Connections, you must now configure Java Messaging Service (JMS) on the application server for Billing Manager. Billing Manager requires three sets of JMS resources:

- **edxAnnotation** supports Line Item Dispute and Annotation features.
- **edxDispute** supports Line Item Dispute and Annotation features.
- **edxLogger** supports Billing Manager logging through the Billing Manager web application. It requires **five** JMS consumers and session pools.

TIP: If your web application does not implement Line Item Dispute and Annotation, you need only configure JMS resources for **edxLogger**.

About JMS Resources

JMS enables web application components to asynchronously send and receive messages.

- **JMS 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 each J2EE web application retrieves a connection factory using the JNDI on the application server.
- **JMS Stores** store persistent messages in a database 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 name of the **backing store**, and the **JDBC connection pool** and **database table name prefix** for use with multiple instances.
- **JMS Servers** manage connections and message requests on behalf of clients.
- **JMS Topics** 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 or with a **destination template** (useful for multiple destinations with similar attribute values).
- **JMS Session Pools** allow a JMS listener (called a **Consumer** in WebLogic) to have multiple threads that improve performance under heavy load. Each JMS consumer requires its own session pool.

Configuring JMS Resources for Platform Services

You must enter very similar information many times: one set of JMS resources each for annotation and dispute, and FIVE sets for logging. Make sure you have chosen the correct properties for the resource you are creating, and that each resource maps to others of the **same name**.

Use the JMS settings in Appendix A to configure JMS settings for WebLogic Server. For general information about configuring Java resources for WebLogic, see WebLogic Server documentation at <http://edocs.bea.com>.

TIP: If your web application does not use Line Item Dispute and Annotation, you need only configure JMS for `edxLogger`

To configure JMS

- 1 Create one JMS Connection Factory each for `edxAnnotation`, `edxDispute`, and `edxLogger`
- 2 Create one JMS Store each for each for `edxAnnotation`, `edxDispute`, and `edxLogger`.
- 3 Create one JMS Server each for each for `edxAnnotation`, `edxDispute`, and `edxLogger`.
- 4 Create one JMS Topic each for the JMS servers of each for `edxAnnotation`, `edxDispute`, and `edxLogger`.
- 5 Create one JMS Session Pool each for `edxAnnotation` and `edxDispute`.
- 6 Create one JMS Consumer each for `edxAnnotation` and `edxDispute`.
- 7 Create FIVE session pools and consumers for `edxLogger` as listed.

TIP: You can **clone** additional Java resources. Right-click a resource and select **clone <name>**, then change the resource name and properties as required

JMS Connection Factories

Create the following JMS connection factories, using WebLogic Server documentation at <http://edocs.bea.com>. You can accept the default **Properties** for all three connection factories, or consult your application server administrator to tune these values.

	1: Annotation	2: Dispute	3: Logger
Name	<code>edxAnnotationTCF</code>	<code>edxDisputeTCF</code>	<code>edxLoggerTCF</code>
JNDI Name	<code>edx/tcf/annotate</code>	<code>edx/tcf/dispute</code>	<code>edx/tcf/log</code>

On the Targets tab, select the Servers that will use each JMS Connection Factory.

JMS (JDBC) Stores

Create the following JMS JDBC Stores, using WebLogic Server documentation at <http://edocs.bea.com>. You can accept the default **Prefix Name=<NULL>** for all three stores, or consult your application server administrator to tune these values.

Name (of JMS Store)	Connection Pool
edxAnnotationStore	edxUserConnectionPool
edxDisputeStore	edxUserConnectionPool
edxLoggerStore	edxLoggerConnectionPool

JMS Servers

Create the following JMS Servers, using WebLogic Server documentation at <http://edocs.bea.com>. You can accept the default **Properties** for all three servers, or consult your application server administrator to tune these values.

	1: Annotation	2: Dispute	3: Logger
Name	edxAnnotationServer	edxDisputeServer	edxLoggerServer
(Persistent) Store	edxAnnotationStore	edxDisputeStore	edxLoggerStore

Targets Tab	
Targets-Server	[select myserver from drop-down menu]

JMS Topics

Create three JMS Topics, using WebLogic Server documentation at <http://edocs.bea.com>. For WebLogic 7 select **Destinations** under each defined Server, then click on **Configure a new JMSTopic**. Make sure to create the matching topic for each server.

	1: Annotation	2: Dispute	C3: Logger
Name	edxAnnotationTopic	edxDisputeTopic	edxLoggerTopic
JNDI Name	edx/jms/annotate	edx/jms/dispute	edx/jms/log
Enable Store	True		

JMS Session Pools and Consumers for Annotation and Dispute

TIP: If your deployment does not use annotation and dispute, you can skip to configuring session pools and consumers for Logger.

Create one pair of JMS Session Pools and Consumers each for Annotation and Dispute, using WebLogic Server documentation at <http://edocs.bea.com>. Set **Acknowledge Mode** to **auto** and **Sessions Maximum** to **-1** for all three Session Pools.

TIP: For each session pool, -1 specifies no session maximum. Tune each Session Maximum to the maximum number of threads for each pool.

Session Pool	1: Annotation	2: Dispute
Name	edxAnnotationPool	edxDisputePool
Connection Factory	edx/tcf/annotate	edx/tcf/dispute
Listener Class	com.edocs.services.annotatio n.Listener	com.edocs.services.dispute. Listener

Consumer	1: Annotation	2: Dispute
Name	edxAnnotationConsumer	edxDisputeConsumer
Messages Maximum	10	10
Selector	JMSType='USER'	JMSType='USER'
Destination	edx/jms/annotate	edx/jms/dispute

JMS Session Pools and Consumers for Logging

Create FIVE pairs of **JMS Session Pools and Consumers** for **Logger**, using WebLogic Server documentation at <http://edocs.bea.com>. Set **Acknowledge Mode** to **auto** and **Sessions Maximum** to **-1** for all five Session Pools.

TIP: For each session pool, -1 specifies no session maximum. Tune each Session Maximum to the maximum number of threads for each pool.

Admin Activity

JMS session pool - Configuration Tab

Property	Value
Name	edxLoggerAdminActivityPool
Connection Factory	edx/tcf/log
Listener Class	com.edocs.fs.logging.sub.AdminActivityListener

Property	Value
Acknowledge Mode	auto
Sessions Maximum	-1

JMS Consumer- Configuration Tab

Property	Value
Name	edxLoggerAdminActivityConsumer
Messages Maximum	10
Selector	JMSType= 'ADM'
Destination	edx/jms/log

CSR Activity

JMS session pool- Configuration Tab

Property	Value
Name	edxLoggerCSRActivityPool
Connection Factory	edx/tcf/log
Listener Class	com.edocs.fs.logging.sub.CSRActivityListener
Acknowledge Mode	auto
Sessions Maximum	-1

JMS consumer- Configuration Tab

Property	Value
Name	edxLoggerCSRActivityConsumer
Messages Maximum	10
Selector	JMSType= 'CSR'
Destination	edx/jms/log

Message Log

JMS session pool- Configuration Tab

Property	Value
Name	edxLoggerMessageLogPool
Connection Factory	edx/tcf/log
Listener Class	com.edocs.fs.logging.sub.MessageLogListener
Acknowledge Mode	auto
Sessions Maximum	-1

JMS consumer- Configuration Tab

Property	Value
Name	edxLoggerMessageLogConsumer
Messages Maximum	10
Selector	JMSType= 'MSG'
Destination	edx/jms/log

System Activity

JMS session pool- Configuration Tab

Property	Value
Name	edxLoggerSystemActivityPool
Connection Factory	edx/tcf/log
Listener Class	com.edocs.fs.logging.sub.SystemActivityListener
Acknowledge Mode	auto
Sessions Maximum	-1

JMS consumer

Property	Value
Name	edxLoggerSystemActivityConsumer
Messages Maximum	10

Property	Value
Selector	JMSType= 'SYS'
Destination	edx/jms/log

UserActivity

JMS session pool

Property	Value
Name	edxLoggerUserActivityPool
Connection Factory	edx/tcf/log
Listener Class	com.edocs.fs.logging.sub.UserActivityListener
Acknowledge Mode	auto
Sessions Maximum	-1

JMS consumer

Property	Value
Name	edxLoggerUserActivityConsumer
Messages Maximum	10
Selector	JMSType= 'USER'
Destination	edx/jms/log

JTA Timeout Configuration

If pmtCheckSubmit will process a large number of checks, the JTA timeout value in WebLogic must be increased to keep the connection open long enough to process all the checks. For every 1500 checks to be processed, the timeout value should be increased by 30 seconds.

The JTA timeout value allows the system to recover a "lost" transaction. Your application code should handle commit and rollback of database transactions. But, if there is a programming error such that transactions are not committed or rolled back, a timeout provides a way for the application server to release those transactions.

The default timeout (30 seconds) is fine for web-based transactions, but it is too small for batch based transactions.

To configure the JTA Timeout setting

- 1 Enter the URL to log on to the WebLogic console
- 2 Click on the <domain-name>->Services->JTA in the left window.
- 3 Change the Timeout Seconds field to the multiple of 30 seconds that you require, and click the **Apply** button.

Deploying Billing Manager

After configuring your WebLogic domain server, you can deploy the EAR files to the appropriate servers:

- **Application servers:** Deploy the Siebel Platform Services (ear-eStatement.ear) and the Billing Manager ears.

The ear files are located at:

Feature	Location	File Name
Siebel Platform Services	%CBM_HOME%\J2EEApps\weblogic	ear-eStatement.ear
Billing Manager	%CBM_HOME%\J2EEApps\weblogic	Billing Manager (Consumer): ear-tbm.ear Billing Manager (Business): ear-tbm-b2b.ear
Billing Manager CSR	%CBM_HOME%\J2EEApps\weblogic	ear-tbm-csr.ear

Consult your BEA WebLogic documentation on how to deploy applications.

After successfully deploying the application, you can log into the Siebel Command Center.

To log into the command center

- 1 In your browser, point to <http://localhost:7001/edocs> (where localhost:7001 is your server name if you are on a different machine). The initial default Administrator ID is **admin** and the Password is **edocs**.
- 2 Once in the Command Center, change your password. Click the Help button in the Command Center for information on changing passwords.

You must set up the necessary applications and jobs in the Command Center before you can run the Billing Manager and CSR applications successfully. See the *Administration Guide for Siebel Billing Manager* for details.

To run Billing Manager (after setting up the system using Command Center):

- 1 Use the following link, substituting the name of the application server in place of `localhost`:

<http://localhost:7001/tbmb/>

- 2 Log on to the application.
- 3 Select the Self-Service tab.

To run the CSR application (after setting up the system using Command Center):

- 1 Use the following link, substituting the name of the application server in place of `localhost`:

<http://localhost:7001/tbmcsr>

- 2 Log on to the application.

Starting the Scheduler

You can start the Scheduler from a command line or as a Windows service (as described in the previous chapter). Before starting the Scheduler, check the file to make sure it has the correct `JAVA_HOME` value.

Edit `wl_scheduler.bat`

In `%EDX_HOME%\bin`, edit `wl_scheduler.bat` to set correct value for `JAVA_HOME`.

To start the Scheduler from a Windows command prompt

- 1 Open a command prompt window and change directory to the `bin` directory of your Billing Manager installation, `%EDX_HOME%\bin`.
- 2 Run the Scheduler command for WebLogic Server (`wl_scheduler`), host, and port. This example shows the Scheduler command for WebLogic:


```
C:\Siebel\CBM\statement\bin> wl_scheduler.bat -start -url
t3://localhost:7001
```
- 3 If the Scheduler starts successfully, a start-up message with the name of the log file appears in the command prompt window. **Do not close this window while Billing Manager is running**, as closing it will stop the Scheduler. A log file is created in `%EDX_HOME%\Logs`.
- 4 You can stop the Scheduler by replacing the `-start` parameter with the `-stop` parameter, or simply by closing the command prompt window.

To start the Billing Manager Scheduler as a Windows Service

- 1 Install the Scheduler as a Windows Service if you have not already done so.
- 2 Start WebLogic Server if it is not already running.
- 3 From the Start menu, select **Settings>Control Panel**.
- 4 Double-click **Administrative Tools**, then double-click **Services**.
- 5 Right-click **Scheduler Service** and select **Start**. You can also click the Start icon.
- 6 To start the Scheduler automatically at startup, right-click the service and select **Properties**. From the Startup Type menu, select **Automatic**.

Where to Go from Here

Once you have successfully configured the WebLogic Server and deployed the Billing Manager application, you can proceed to deploying any custom J2EE applications. This requires customizing each web application's deployment code for your environment and platform. For details, see WebLogic Server documentation at <http://edocs.bea.com> and *Deploying and Customizing J2EE Applications*.

To set up and run the Foundation Application for Billing Manager, see Chapter 2, "Setting up the Foundation Application" in the *Administration Guide for Siebel Billing Manager*.

7

Appendix A: Uninstalling Billing Manager

You can uninstall and remove Billing Manager components, deployed J2EE applications, and Windows services using the Billing Manager Uninstaller.

Uninstall Billing Manager from the **database server** first, then the **application server**.

The uninstaller does **not** delete any directories that contain files modified since installation. Instead, it lists these items, which you must then remove manually.

Before uninstalling Billing Manager components, you must:

- Stop your application server.
- Stop your database instance.
- Stop your database server.

To uninstall Billing Manager

- 1 Start the database server and application server.
- 2 Navigate to the application server console. Stop the EARs and uninstall them.
- 3 Stop the database server and delete the current database instances in the ORACLE_HOME.
- 4 Stop the application server.
- 5 Navigate to the Uninstall folder of your Billing Manager home directory, %CBM_HOME%.
- 6 Windows users can run the command-line script **Uninstall_TBM.exe**, or select Start Menu>Programs>Siebel>Uninstall Billing Manager.
- 7 Click **Uninstall**. A second uninstall screen appears showing Billing Manager components being removed from your machine.

When the uninstaller is finished, a screen appears listing any items that could not be removed.
- 8 Change the directory to your Billing Manager home directory and manually remove any remaining files and directories as necessary.
- 9 Click **Done** to close the uninstaller.
- 10 Repeat this procedure on your application server and any other installations.

Uninstalling Windows Services

This information applies to all Windows platforms

Uninstalling WebLogic Server as a Windows Service

Uninstalling this Windows Service will require that you start and stop WebLogic Server from the command line or the administrative console.

To uninstall WebLogic Server as a Windows Service

- 1 Open a Command Prompt window, and change directory to the domain directory of your application server home directory.

```
C: \> cd %WL_HOME%\config\mydomain
```

- 2 Uninstall WebLogic Server as a Windows Service with the `uninstall NtService` command:

```
C: \> uninstall NtService.cmd
```

You do not have to specify the WebLogic service name on the command line, because it is named in `uninstall NtService.com`.

Uninstalling the Billing Manager Scheduler as a Windows Service

Uninstalling this Windows Service will require that you start and stop the Scheduler from the command line.

To uninstall the Scheduler as a Windows Service

- 1 Open a command prompt window, and change directory to the `\bin` directory of your Billing Manager home directory.

```
C: \> cd %CBM_HOME%\bin
```

- 2 Uninstall the Scheduler as a Windows Service with the `-remove` command:

```
C: \> SchedulerSvc -remove
```

Removing the Billing Manager Database

Follow the steps below to remove Billing Manager database tables and indexes. The process involves running SQL scripts as the owner of the database. You should be aware that this procedure **completely** removes the Billing Manager database elements and should be used with care.

To remove the Billing Manager database for Oracle

- 1 Change your working directory to the `%CBM_HOME%\db\oracle` directory.
- 2 Run the `sqlplus` command on your Billing Manager database, with arguments for your database username, password, and connection string (database alias). For example:

```
sqlplus edx_dba/edx@edx0
```

- 3 If the database is connected successfully, a connection message appears:
- 4 Connected to: Oracle9i Enterprise Edition Release 9.2.0.0.0
- 5 At the SQL prompt, execute the SQL file to drop the schema. For example:

```
SQL> @drop_bsl_schema.sql
```

```
SQL> @drop_hierarchy_schema.sql
```

Uninstalling Payment

Removing the Payment Database

Follow the steps below to remove the Payment database tables and indexes. The process involves running an SQL script as the as the owner of the database. You should be aware that this procedure **completely** removes the payment database elements and should be used with care.

CAUTION: If you wish to remove the Payment database tables and indexes, you must do that before removing the Payment database package.

To remove the Payment database for Oracle

- 1 Change your working directory to the `%PAYMENT_HOME\db\oracle` directory.
- 2 Run the file `drop_payment_db.bat`.

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