

**Oracle® Revenue Management and Billing for  
Financial Services**

**Version 2.2.3.0**

Installation Guide

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## Oracle Revenue Management and Billing Installation Guide

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# Preface

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## Purpose

This document will help you to understand what are the pre-requisites, supported platforms, and hardware and software requirements for installing the Oracle Revenue Management and Billing (ORMB) application. It contains procedures that you should know for installing the Oracle Utilities Application Framework, ORMB application and the related user documentation.

## Intended Audience

The following are the intended audience of this document:

- Users
- Consulting staff
- Administrators

## Organization of the Document

The information in this document is organized into the following chapters and appendices:

Chapter No.	Chapter Name	Chapter Description
Chapter 1	Planning for the Installation	Provides an overview, prerequisites and checklists for installing the ORMB application.
Chapter 2	Supported Platforms and Hardware Requirements	Provides an overview of the application tiers and lists the software and hardware requirements for each tier.
Chapter 3	Software Requirements	Lists the software that needs to be installed for each of the supported operating system and application server combinations.
Chapter 4	Installing the Oracle Utilities Application Framework	Provides an overview, prerequisites, and the procedure for installing the Oracle Utilities Application Framework.
Chapter 5	Installing Oracle Revenue Management and Billing	Provides an overview, prerequisites, and the procedure for installing the ORMB application and its related user documentation.
Chapter 6	Additional Tasks	Lists and describes the additional tasks that need to be completed post installation.
Appendix A	Known Issues with V2.2.3.0	Lists the known issues in the current release of the ORMB application.
Appendix B	System Program Upgrade Guide	Provides reference to the documents that should be used while upgrading from the previous release to the current release.
Appendix C	New Objects	Lists all the new objects added to the current release.

Chapter No.	Chapter Name	Chapter Description
Appendix D	License and Copyright Notices	Lists all the notices with reference to usage of the various third party products.

## Conventions

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary
<i>italic</i>	Italic type indicates book titles, emphasis or placeholder variables for which you supply particular values
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen or text that you enter

## Related Documents

The following documents are related to this document:

- *Oracle Revenue Management and Billing Release Notes* - Provides information about release notes and known issues.

# Contents

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<b>Chapter 1: Planning for the Installation</b>	<b>1</b>
Planning Your System Architecture	1
Installation and Configuration Overview	2
Installation Checklist	3
Prerequisite Third-Party Software Overview	4
Installation and Configuration Worksheets	4
Environment Installation Options Worksheet	5
<b>Chapter 2: Supported Platforms and Hardware Requirements</b>	<b>21</b>
Tier Overview	21
Tier 1: Software and Hardware Requirements	21
Tier 2: Software and Hardware Requirements	22
Tier 3: Software and Hardware Requirements	23
Supported Platforms	23
Support for Vendor Software Patches and Upgrades	25
<b>Chapter 3: Software Requirements</b>	<b>26</b>
AIX Application Server	27
Windows Application Server	34
Linux Application Server	38
<b>Chapter 4: Installing the Oracle Utilities Application Framework</b>	<b>42</b>
Installation Overview	43
Preinstallation Tasks	45
Installing Oracle Utilities Application Framework	47
Service Pack Preinstallation Tasks	51
Applying Framework Service Pack on Application Server	53
<b>Chapter 5: Installing Oracle Revenue Management and Billing</b>	<b>54</b>
Preinstallation Tasks	55
Installing User Documentation	59
Additional Tasks Required for WebSphere	62
Operating the Application	66
<b>Chapter 6: Additional Tasks</b>	<b>67</b>
Customizing Configuration Files	68
Executing Batch Programs Interactively on Windows	69
Executing Batch Programs Interactively on UNIX/Linux	70
Integrating Customer Modifications into the Upgraded Environment	71
Generating the Application Viewer	72
Batch Daemon Submission Options	73
Building Javadocs Indexes	76
<b>Appendix A: Known Issues with V2.2.3.0</b>	<b>77</b>
<b>Appendix B: System Program Upgrade Guide</b>	<b>78</b>
<b>Appendix C: New Objects</b>	<b>79</b>
<b>Appendix D: License and Copyright Notices</b>	<b>94</b>
Third Party Products	94

Notice concerning usage of ANTLR .....	94
Notice concerning usage of Apache Software.....	94
Notice concerning usage of ASM .....	97
Notice concerning usage of CruiseControl .....	98
Notice concerning usage of dom4j .....	99
Notice concerning usage of Ehcache .....	99
Notices concerning usage of Hibernate and c3p0 .....	100
Notice concerning usage of International Components for Unicode (ICU4J).....	106
Notice concerning usage of fcrypt .....	107
Notice concerning usage of Jaxen .....	108
Notice concerning usage of JOSSO .....	109
Notice concerning usage of libjpeg.....	109
Notice concerning usage of libproj4 .....	110
Notice concerning usage of libtiff .....	110
Notice concerning usage of MX4J .....	111
Notice concerning usage of PicoContainer .....	111
Notice concerning usage of QDox .....	112
Notice concerning usage of XStream .....	113
Notice concerning usage of Perl.....	113
Notice concerning usage of Mime-Base64 Perl Module .....	115
Notice concerning usage of Mime-Lite Perl Module .....	115

# Chapter 1: Planning for the Installation

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This chapter provides information for planning an Oracle Revenue Management and Billing installation, including:

- Planning Your System Architecture
- Installation and Configuration Overview
- Installation Checklist
- Prerequisite Third-Party Software
- Installation and Configuration Worksheets

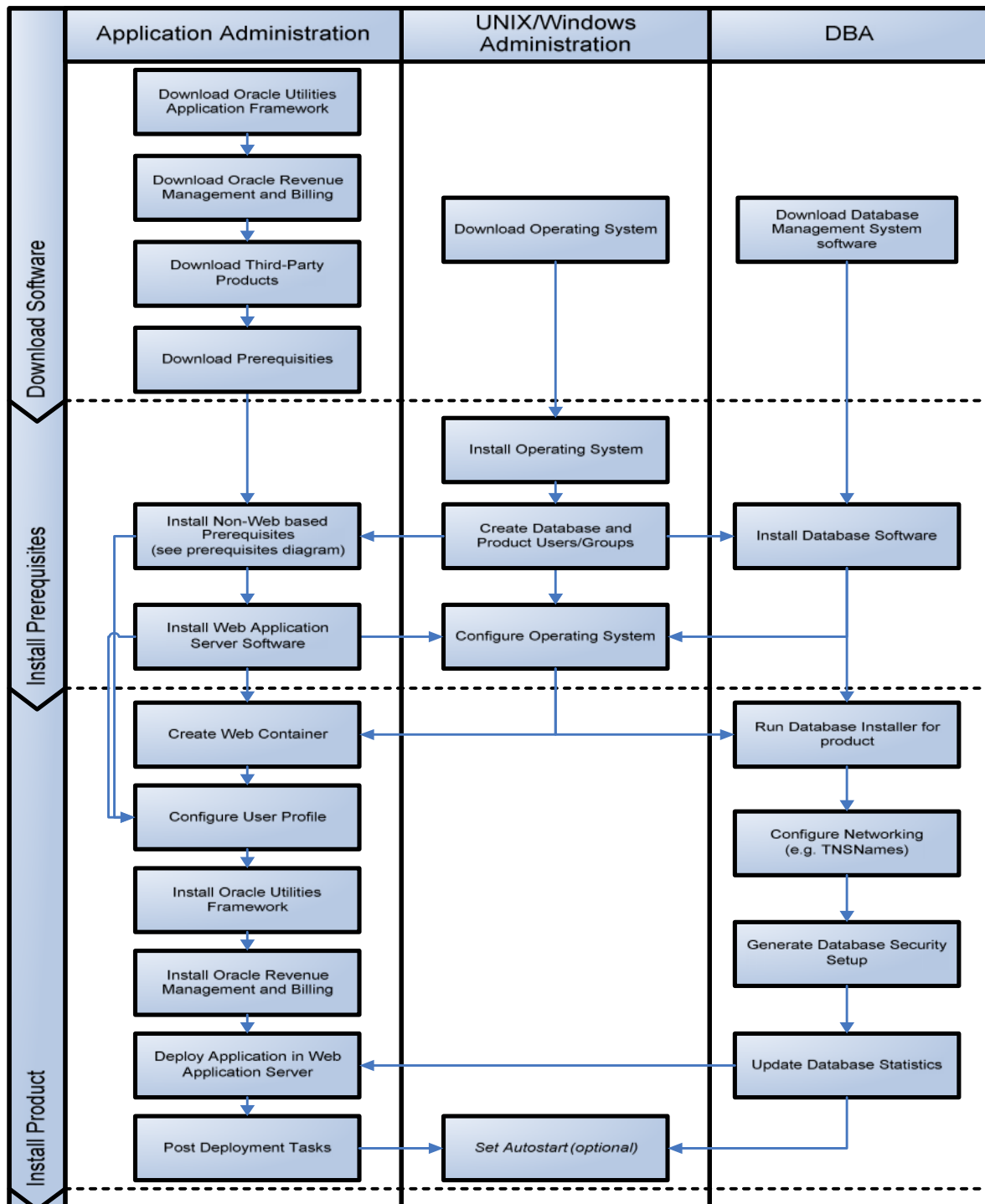
## Planning Your System Architecture

The following questions should be answered before beginning the installation:

- On which hardware platform and operating system will Oracle Revenue Management and Billing application be deployed?
- On which application server will Oracle Revenue Management and Billing be deployed on?
  - Oracle WebLogic Server
  - WebSphere Application Server
- Do you plan to deploy multiple Oracle Revenue Management and Billing instances on the same physical server?
- How do you plan to deploy the Oracle Revenue Management and Billing application?
  - Web/Application/Database on the same physical server
  - Web/Application on one server and Database on separate server
  - Each component on its own server

# Installation and Configuration Overview

The following diagram provides an overview of the steps that need to be taken to install and configure Oracle Revenue Management and Billing:





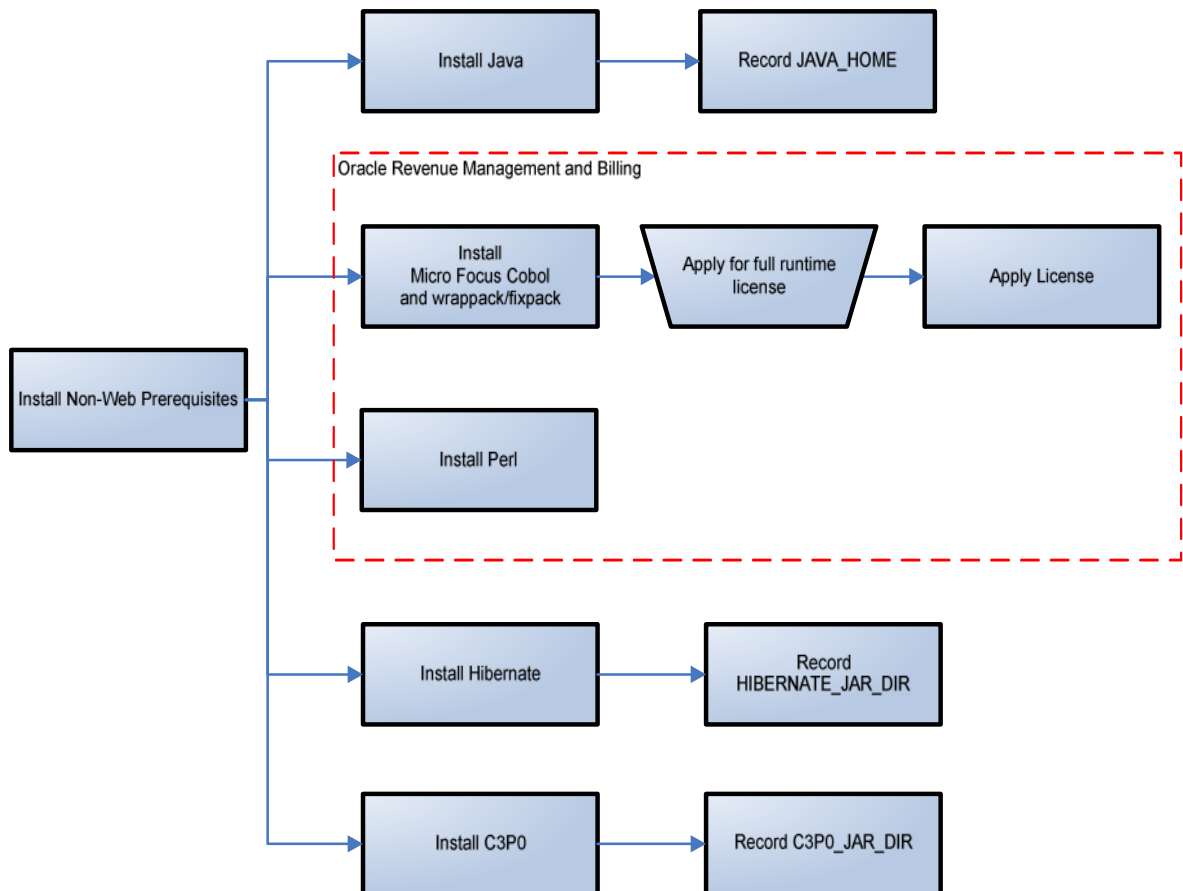
# Installation Checklist

The following checklist will help guide you through installation process. The details for each step are presented in subsequent chapters.

1. Create Group and User ID on the UNIX/Linux systems.
2. Install the following prerequisite software (see Prerequisite Third-Party Software Overview for more information):
  - Oracle client (for connecting to Oracle database)
  - Micro Focus Server 5.1
  - Micro Focus Server 5.1 WrapPack 3 (for Windows, UNIX and Linux)
  - Perl
  - Java
  - JRockit (if using WebLogic on Linux as an application server)
  - Hibernate
  - C3P0
3. Install the following application servers:
  - Oracle WebLogic
  - WebSphere
  - Tomcat (for development only)
4. Verify that the software is installed and then set up environment variables.
5. Install Oracle Utilities Application Framework (“the framework”) and apply the Oracle Utilities Framework Service Pack 8.
6. Install Oracle Revenue Management and Billing application.

# Prerequisite Third-Party Software Overview

For complete details about installing and configuring the prerequisite third-party software for your specific platform, see **Chapter 3: Software Requirements**. The following diagram represents an overview of the prerequisite software.



## Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework, as described in **Chapter 4: Installing the Oracle Utilities Application Framework**. No Customer Install Value fields should be left blank.

The first time you enter the customer values the passwords will be visible. But the installation process will then mask the passwords in the configuration files.

**Note:** Some web application server information will not be available until the software installation steps have been completed as described in **Chapter 3: Software Requirements**.

## Environment Installation Options Worksheet

This worksheet will assist you in completing the main installation options menu as shown below.

\*\*\*\*\*

Environment Installation options:

\*\*\*\*\*

```

1. Application Mount Point.          | /spl
2. Log Mount Point.                 | /spl/sploutput
3. Environment name.                 | QA01
4. Database type.                   | Oracle
5. Web Application Server.           | WLS
6. Will RMB product be
installed on this environment [Y/N]? | Y

```

P. Process the installation.

X. Exit.

Menu Option	Name used in this Documentation	Usage	Customer Install Value
Application Mount Point	<SPDIR>	<p>A mount point (typically /spl for UNIX or c:\spl for Windows) into which the application is installed.</p> <p>This mount point MUST exist and the Oracle Utilities Framework administrator userid MUST be able to write to this directory (this is the userid that is created specifically to administer the Oracle Utilities Framework environments: the default is cissys). The installation sets permissions on all subdirectories installed under this directory.</p> <p>See &lt;SPENVIRON&gt; below for more information on how this mount point is used.</p>	
Log Mount Point	<SPDIROUT>	<p>A mount point that will contain any application output or application logs that (default /spl/sploutput for UNIX installations or c:\spl\sploutput for Windows).</p> <p>Before you start the install, ensure that this mount point exists and that the Oracle Utilities Framework administrator userid (cissys) can write to this directory.</p> <p>For each environment initialized, the application logs will be written to the directory &lt;SPDIROUT&gt;/&lt;SPENVIRON&gt;</p> <p><b>Note:</b> Later in the installation, the splenvron.sh (splenvron.cmd) script will set the \$SPLOUTPUT (%SPLOUTPUT%) environment variable to point to</p>	

Menu Option	Name used in this Documentation	Usage	Customer Install Value
		<SPLDIR>/<SPLENVIRON>.	
Environment name	<SPLENVIRON>	<p>A descriptive name (to be used as both a directory name under the mount point &lt;SPLDIR&gt; and an environment descriptor) that typically identifies the purpose of the environment (e.g. DEV01 or QA01)</p> <p>On installation a directory &lt;SPLDIR&gt;/&lt;SPLENVIRON&gt; is created under which all of the Framework and Application software resides. When multiple environments are set up on the machine you will typically have directories like:</p> <p>/spl/QA01/.....</p> <p>/spl/DEV01/.....</p> <p>Each of which contains a complete version of the Oracle Utilities Framework and Oracle Revenue Management and Billing Application code.</p> <p><b>Note:</b> Later in the installation, the splenvron.sh (splenvron.cmd) script will set the \$SPLEBASE (%SPLEBASE%) environment variable to point to &lt;SPLDIR&gt;/&lt;SPLENVIRON&gt;.</p>	
Database type	<CMPDB>	<p>Type of a database to connect an environment to: Oracle</p> <p>For complete details regarding which database types are supported on what, please refer to Supported Platforms section.</p>	
Web Application Server	<SPLWAS>	<p>A Web Application Server for environment to setup with. One of the following values corresponding to third-party product options must be selected:</p> <p>WLS: WebLogic</p> <p>WAS: WebSphere</p> <p>TCAT: Apache Tomcat</p> <p>OC4J - OC4J Standalone</p> <p>Not all Web Application servers are supported on all platforms; refer to Supported Platforms section for details.</p>	
Will RMB product be installed on this	<IFCCB>	If you are installing Oracle Revenue Management and Billing you should enter "Y".	

Menu Option	Name used in this Documentation	Usage	Customer Install Value
environment [Y/N]?			

## Environment Description Worksheet

### 1. Environment Description

**Environment Description:** **QA environment**

Menu Option	Name used in this Documentation	Usage	Customer Install Value
Environment Description	DESC	Environment Description	

## General Business App Server Configuration Worksheet

### 2. Business App Server Configuration

**Business Server Host:** **sf-win**  
**JVM Child process starting Port Number:** **6503**  
**Number of JVM Child processes:** **2**  
 WebLogic System Userid: system  
 WebLogic System Password: spladmin

**Note:** The WebLogic parameters above are for a WebLogic installation. The parameters for your installation will include your type of application server.

Menu Option	Name used in this Documentation	Usage	Customer Install Value
Business Server Host	BSN_WLHOST	Defaults to the name of the machine that the installation program is running on. The host name on which Business Application Server resides.	
JVM Child process starting Port Number	BSN_RMIPORT	Default: 6503 Required only for ORMB	
Number of JVM Child processes	BSN_JVMCOUNT	Default: 2 Required only for ORMB	

## General Web Server Configuration Worksheet

### 3. Web Server Configuration

```

Web Server Host: sf-win
Web Server Port Number: 6500
WebLogic SSL Port Number: 6501
WebLogic System Userid: system
WebLogic System Password: spladmin
Will this environment be used for development: false
Deploy appViewer module to the Web Server: true
Exploded directory (true) or archive format (false): false
Preload All Pages on startup: false
Maximum age of a cache entry for text (s): 28800
Maximum age of a cache entry for images (s): 28800
Interval (s) to check recompiling of JSPs: 43200
To switch to basic Login Page enter: BASIC: FORM
Application Admin Userid: SYSUSER
Application Admin Userid Password: sysuser00
Additional Runtime Classpath:
<Instance_Path>\<ENV_NAME>\splapp\standalone\lib\ojdbc5-11.1.0.7.0.jar

```

#### Note:

You must replace the <Instance Path> placeholder with the path where the application has been installed.

The WebLogic parameters above are for a WebLogic installation. The parameters for your installation will include your type of application server.

Menu Option	Name used in this Documentation	Usage	Customer Install Value
Web Server Host	WEB_WLHOST	Defaults to the name of the machine that the installation program is running on.  The host name on which Web Application Server resides.	
Web Server Port Number	WEB_WLPORT	Default: 6500  A unique port number within the system that is assigned to the HTTP port.  This is the port number that is used as a part of the client URL request to connect to the host.	
Is this environment will be used for development	WEB_isDevelopment	Default: false  If the value is "true", the web application may be used for application development, which will trigger certain generation processes.  If the value is "false" (the default)	

Menu Option	Name used in this Documentation	Usage	Customer Install Value
		the environment will be used as a runtime environment.	
Deploy appViewer module to the Web Server	WEB_isAppViewer	Default: true <b>Note:</b> If you set it to false, the module won't be deployed to the Web Server. However, the module will still exist and managed by upgrade processes.	
Exploded directory or archive format	WEB_isExpanded	Default: false Only change to true if installing on Tomcat. If the value is "true", the web application will be deployed in exploded directory format, If the value is "false" (the default), the web application will be deployed in ear file format. <b>Note:</b> WebLogic, WebSphere and Oracle Application Server require deployment in ear file format only.	
Preload All Pages on startup	WEB_preloadall	Default: false	
Maximum age of a cache entry for text (s)	WEB_maxAge	Default: 28800	
Maximum age of a cache entry for images (s)	WEB_maxAgeI	Default: 28800	
Interval (s) to check recompiling of JSPs	WEB_wlpageCheckSeconds	Default: 43200	
To switch to basic Login Page enter: BASIC	WEB_WLAUTHMETHOD	Default: FORM Specifies which authentication mode should be used. To switch off Oracle Revenue Management and Billing login Page enter: BASIC	
Application Admin Userid	WEB_SPLUSER	Default: SYSUSER This is the default userid to login to the application through the browser.	
Application Admin Userid Password	WEB_SPLPASS	Default: sysuser00	
Additional Runtime	ADDITIONAL_CLASSPATH	Default: Blank	



Menu Option	Name used in this Documentation	Usage	Customer Install Value
Classpath		This parameter is mandatory only for Windows platform.	

## WebLogic Specific Parameters Worksheet

### Business App Server Configuration

#### 2. Business App Server Configuration

Business Server Host: sf-win  
 JVM Child process starting Port Number: 6503  
 Number of JVM Child processes: 2  
**WebLogic System Userid:** system  
**WebLogic System Password:** spladmin

Menu Option	Name used in this Documentation	Usage	Customer Install Value
WebLogic System Userid	BSN_WLSYSUSER	Default: system  Userid to login to WebLogic console and to administer WebLogic. The WebLogic startup script uses this userid.	
WebLogic System Password	BSN_WLSYSPASS	Default: spladmin  The system is installed with the default password for the "system" userid as "spladmin". On the configuration step of install process you can change this password to a different value. This should only be done if you have changed the password on an existing system following the Oracle WebLogic instructions.  <b>Note:</b> For a new install, keep the password spladmin.	

## Web App Server Configuration

### 3. Web Server Configuration

```

Web Server Host:                sf-win
Web Server Port Number:         6500
WebLogic SSL Port Number:    6501
WebLogic System Userid:     system
WebLogic System Password:   spladmin
Is this environment will be used for development:  false
Deploy appViewer module to the Web Server:         true
Exploded directory (true) or archive format (false): false
Preload All Pages on startup:                     false
Maximum age of a cache entry for text (s):         28800
Maximum age of a cache entry for images (s):       28800
Interval (s) to check recompiling of JSPs:        43200
To switch to basic Login Page enter: BASIC:        FORM
Application Admin Userid:                         SYSUSER
Application Admin Userid Password:                 sysuser00
  
```

Menu Option	Name used in this Documentation	Usage	Customer Install Value
WebLogic SSL Port Number	WEB_WLSSLPORT	<p>Default: 6501</p> <p>The port number assigned to WebLogic Secure Sockets connection. This is the port number that is used for Secure sockets connecting to the WebLogic server.</p> <p>The Secure Sockets implementation is disabled in the default configuration.</p>	
WebLogic System Userid	WEB_WLSYSUSER	<p>Default: system</p> <p>Userid to login to WebLogic console and to administer WebLogic. The WebLogic startup script uses this userid.</p>	
WebLogic System Password	WEB_WLSYSPASS	<p>Default: spladmin</p> <p>The system is installed with the default password for the "system" userid as "spladmin". On the configuration step of install process you can change this password to a different value. This should only be done if you have changed the password on an existing system following the Oracle</p>	

Menu Option	Name used in this Documentation	Usage	Customer Install Value
		WebLogic instructions. <b>Note:</b> For a new install, keep the password spladmin.	

## WebSphere Specific Parameters Worksheet

### Business App Server Configuration

#### 2. Business App Server Configuration

Business Server Host: sf-aix-02  
 JVM Child process starting Port Number: 8303  
 Number of JVM Child processes: 2  
**Bootstrap port:** 2810  
**WebSphere Server Name:** server1  
**WebSphere Application Name:** SPLService  
**WebSphere Deployment userid:** wasadmin  
**WebSphere Deployment password:** admin

Menu Option	Name used in this Documentation	Usage	Customer Install Value
Bootstrap port	BSN_WASBOOTSTRAPPORT	Default: 2810  BOOTSTRAP_ADDRESS. This port number allows the Web module (SPLWeb.ear file) to communicate with the EJB module (SPLService.ear).	
WebSphere Server Name	BSN_SVRNAME	Default: server1  Each Oracle Utilities Framework Application must be installed in a unique WebSphere server. Each WebSphere server has a default HTTP port which value will be stored in the variable WLPORT	
WebSphere Application Name	BSN_WASAPP	Default: SPLService  WebSphere Application Name. It is used within the scripts that start, stop and deploy the environment to WebSphere.	
WebSphere Deployment userid	BSN_WASUSER	Default: wasadmin  WebSphere admin console userid. It is used within the scripts that start, stop and deploy the environment to WebSphere.	
WebSphere Deployment password	BSN_WASPASS	WebSphere admin console password.	

## Web App Server Configuration

### 3. Web Server Configuration

```

Web Server Host:                sf-aix-02
Web Server Port Number:         9081
WebSphere Server Name:         server1
WebSphere Application Name:     SPLWeb
WebSphere Deployment userid:    wasadmin
WebSphere Deployment password:  admin
Is this environment will be used for development:  false
Deploy appViewer module to the Web Server:         true
Exploded directory (true) or archive format (false): false
Preload All Pages on startup:                      false
Maximum age of a cache entry for text (s):          28800
Maximum age of a cache entry for images (s):        28800
To switch to basic Login Page enter: BASIC:         FORM
Application Admin Userid:                          SYSUSER
Application Admin Userid Password:                  sysuser00
  
```

Menu Option	Name used in this Documentation	Usage	Customer Install Value
WebSphere Server Name	WEB_SVRNAME	Default: server1  A unique server name within WebSphere installation where Oracle Utilities application will be installed. Each WebSphere server has a default HTTP port which value will be stored in the variable WLPORT.	
WebSphere Application Name	WEB_WASAPP	Default: SPLWeb  WebSphere Application Name. It is used within the scripts that start, stop and deploy the environment to WebSphere.	
WebSphere Deployment userid	WEB_WASUSER	Default: wasadmin  WebSphere admin console userid. It is used within the scripts that start, stop and deploy the environment to WebSphere.	
WebSphere Deployment password	WEB_WASPASS	WebSphere admin console password.	

**Note:** The Web Server Port Number is the WC\_defaulthost port defined in your WebSphere installation.

## Apache Tomcat Specific Parameters Worksheet

### Web App Server Configuration

#### 3. Web Server Configuration

```

Web Server Host:                SF-WIN-01
Web Server Port Number:         6500
Tomcat shutdown port          6501
Is this environment will be used for development:  false
Deploy appViewer module to the Web Server:         false
Exploded directory (true) or archive format (false): true
Preload All Pages on startup:                      false
Maximum age of a cache entry for text (s):         28800
Maximum age of a cache entry for images (s):       28800
To switch to basic Login Page enter: BASIC:        FORM
Application Admin Userid:                          SYSUSER
Application Admin Userid Password:                 sysuser00
  
```

Menu Option	Name used in this Documentation	Usage	Customer Install Value
Tomcat shutdown port	WEB_TCATSHUTPORT	Tomcat shutdown port	

## Oracle Database Parameters Worksheet

### 4. Database Configuration

**USERID of the User of the Database:** CISADM  
**Password of the User of the Database:** CISADM  
**Oracle Database Name:** QA01  
**Oracle Client Character Set NLS\_LANG:** AMERICAN\_AMERICA.UTF8  
**Host name of database server:** sf-lin  
**Port name for database connection:** 1521

Menu Option	Name used in this Documentation	Usage	Customer Install Value
USERID of the User of the Database	DBUSER		
Password of the User of the Database	DBPASS		
Oracle Database Name	ORACLE_SID	ORACLE DATABASE NAME (ORACLE_SID)	
Oracle Client Character Set NLS_LANG	NLS_LANG	<p>The Oracle Database Character Set</p> <p>Select the Language and Territory that are in use in your country. UTF8 is a default character set ("Language_Territory.UTF8").</p>	
Host Name of database server	DBSERVER	Host name of the server where database resides.	
Port name for database connection	DBPORT	Port name on the database server used for connection to the database	



## MPL & Batch Environment Configuration Options Worksheet

### 5. Environment Configuration

```

MPL Admin Port:                6502
MPL Automatic startup:         N
XAI Startup "wait" time seconds: 90
JVM Child Memory Allocation:   512
Batch Server Enabled:          true
Batch Threads Number:          5
Batch Scheduler Daemon:        true
Release COBOL Thread Memory:   true

```

Menu Option	Name used in this Documentation	Usage	Customer Install Value
MPL listener Port	MPLADMINPORT	Default: 6502	
MPL Automatic startup	MPLSTART	Default: N  Automatically start the MPL Listener whenever environment starts.	
XAI Startup "wait" time seconds	XAISTARTWAITTIME	Default: 90  The number of seconds to wait before the XAI server is started.	
JVM Child Memory Allocation	JVMMEMORYARG	Default: 512  The initial and maximum memory heap size allocated to each of the batch java processes.	
Batch Server Enabled	BATCHENABLED	Default: false  When starting a web application server JVM, this property can be set to TRUE to allow the on-line application server to also act as a batch worker in the grid.	
Batch Threads Number	BATCHTHREADS	Default: 5  The maximum number of batch processing threads to be executed within a worker JVM when no explicit Distributed Thread Pool is specified. The "DEFAULT" distributed thread pool is used by the batch-scheduling daemon	

Menu Option	Name used in this Documentation	Usage	Customer Install Value
		when it initiates processing on batch jobs (typically added via the online system) where no thread pool is specified.	
Batch Scheduler Daemon	BATCHDAEMON	<p>Default: false</p> <p>In a distributed batch environment, this property can be set to TRUE to allow a worker JVM to host the batch-scheduling daemon. The daemon accepts on-line batch submission requests and automatically submits the work for them.</p>	
Release COBOL Thread Memory	REL_CBL_THREAD_MEM	<p>Default: false</p> <p>Allow for child JVMs to be optionally configured to release thread-bound memory when each thread is returned to its thread pool. This will increase the number of memory allocations and memory free calls performed by the Micro Focus runtime but will also lower the amount of C-heap memory consumed by child JVMs.</p>	

## Chapter 2: Supported Platforms and Hardware Requirements

---

This section first gives an overview of the tiers on which the product is implemented, and secondly it reviews the requirements of each of the Operating System/Database combinations that the product is certified for. It includes the following

- Tier Overview
- Supported Platforms
- Support for Upgrade and Patches

### Tier Overview

The application is split into multiple tiers:

- Tier 1 Presentation – Implemented in a browser based client
- Tier 2 Business Logic – Implemented in the application server ( If required, Web and application servers can be hosted on separate servers)
- Tier 3 Persistence – Implemented in the database server

### Tier 1: Software and Hardware Requirements

---

The central facility in the Oracle Revenue Management and Billing Browser-based client is Internet Explorer. When sizing the machine it is important to install sufficient capacity to run Internet Explorer concurrently with any other company software. The below requirement sections should be used as a guide and not a definitive solution for all installs. The requirement sections are categorized into Minimum and Recommended.

- Minimum defines the configuration for which a user will experience acceptable performance.
- Recommended defines the configuration for which a user will experience very good performance and have up-to-date operating system improvements
- In those cases where there is a minimum and recommended platform, please be aware that the best performance will be on the recommended platform.

## Hardware Requirements

	Processor	Memory (RAM)	Monitor Display
Minimum	Pentium IV – 2.0 GHz	1024 MB	1024X768 16-bit Color
Recommended	Pentium IV – 3.0+ GHz, Or any Core 2 Duo, Or any Athlon X2	2048 MB	1280X1024* 32-bit Color

## Software Requirements

The following operating system and Web browser software are supported:

- Windows XP with Internet Explorer 7.0

# Tier 2: Software and Hardware Requirements

Oracle WebLogic and IBM WebSphere Application Server integration are provided in this release. Please consult the **Supported Platforms** section in this document to determine which Application Servers are supported for your Operating System

**Memory Requirements:** The each application server environment a minimum of 3 GB of real memory is required plus 6 GB of swap space

**Disk Requirements:** The following table illustrates the minimum requirements

Location	Size	Usage
\$SPLEBASE	5 GB Minimum	Space where application and framework are installed. Startup, Shutdown and online logs are stored here so this should be monitored
\$SPLAPP	2 GB	Batch Job log file location
Location of the application Web work files on the Web servers	1.5 GB	Location where Web Server vendors expand the application. Refer to Web Server documentation to determine the location of the temporary files
Installation Temp area	4 GB	Space is where the application gets installed. You need sufficient space to uncompress the application
Oracle data area	4 GB Minimum	Oracle database data files are stored here. Size your production environment and set this appropriately. For the demo database install 4 GB should suffice

## **Tier 3: Software and Hardware Requirements**

---

Specific Database Server requirements are documented in further detail in the “Supported Platforms” section below.

### **Supported Platforms**

The installation has been certified to operate on many Operating System/Database Server combinations.

This section details the requirements for each Operating System, Application servers and Database combination that the product is certified for.

## Operating Systems and Application Servers

Operating System	Chipset	Application Server		
		Oracle WebLogic 10 MP2	IBM WebSphere Application Server 6.1.0.25	Tomcat 6.0.13
AIX 5.3(64-bit)	Power 64-bit	32-bit version	32-bit version	N/A
Windows 2003 Server R2 SP2 (64-bit)	X86_64	32-bit version	N/A	32 -bit version development only. No production support
Oracle Enterprise Linux 5.2 Server (64-bit)	X86_64	32-bit version	N/A	N/A

## Database Servers

Database	Version
Oracle Database Server	11.1.0.6
Oracle Database Server	10.2.0.3

**Note:** All Operating Systems noted above are supported. Oracle 11.1.0.6 client is required regardless of the version of the database server. Both Oracle 11g and Oracle 10g database servers require the use of an Oracle 11 client.

# Support for Vendor Software Patches and Upgrades

Software improves over time and vendors will issue patches and service packs of the operating systems, application servers and database servers on top of the version which have been certified with Oracle Revenue Management and Billing. Please check with Oracle Support prior to applying any vendor based updates or patches that may not guarantee backward compatibility.

**Note:** Hibernate and C3PO updates, please install the exact versions mentioned in this guide and do not apply updates.

## Chapter 3: Software Requirements

---

This chapter describes the software that needs to be installed for each of the supported operating system and application server combinations. The sections include:

- AIX Application Server
- Windows Application Server
- Oracle Enterprise Linux



# AIX Application Server

This section describes the software requirements for operating the application using the AIX application server.

## Supported Application Servers

Operating System	Chipsets	Application Server		
		Oracle WebLogic 10 MP2	IBM WebSphere Application Server 6.1.0.25	Tomcat 6.0.13
AIX 5.3 (64-bit) TL6 AIX 6.1 (64-bit)	Power 64-bit	32-bit version	32-bit version	N/A

## Web/Application Server Tier

### AIX 5.3 TL 6 or AIX 6.1 Operating System Running on Power5 and Power6 Architecture

#### UNIX Administrator UserID

The following user groups and accounts have to be created to install and administer the application:

Description	Default Value	Customer Defined Value
Administrator UserID	cissys	
User Group	cisusr	

**Note:** It is recommended that you change the default values for security reasons.

Throughout this document the administrator user id is often referred to as the "cissys" user id. You should substitute that with the customer defined user id when not using the default value. After the initial install, the software should always be managed using that user id.

By default, the cissys userid is the only one given access to the installed files.

1. Create a group called cisusr (user group).
2. Create a user called cissys. Primary group cisusr. Set the primary shell for the cissys user to Korn Shell.
3. Ensure that LD\_LIBRARY\_PATH is set to \$COBDIR/lib:/<Base\_DIR>/<Micro Focus\_Install\_DIR>/mflmf/lib:/<Java\_Install\_DIR>/lib:/lib in the .profile file.

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

### Oracle 11.1.0.6 Client

The Java JDBC drivers must be installed as part of the client install.

Use the following command to ensure that the cissys userid is able to communicate with the Oracle database:

```
tnsping $ORACLE_SID
```

The Oracle 11.1.0.6 client is required regardless of the version of the database server. Both Oracle 11 and Oracle 10 database servers require the use of an Oracle 11 client.

### Micro Focus Server Express 5.1 with WrapPack 3

Micro Focus Server Express is required only for environments where COBOL code will be compiled.

See the Micro Focus section in the Chapter 5: Installing Third Party Software of the Quick Install Guide for more information on the installation and licensing of this product.

After installing Server Express, ensure that the COBDIR environment variable is set to point to the directory where Server Express is installed.

### Micro Focus Server 5.1 with WrapPack 3

Micro Focus Server is required for Oracle Revenue Management and Billing runtime environments. It is required on the tier that will be hosting the application server where Oracle Revenue Management and Billing application code will be deployed.

Micro Focus Server must be installed in the following directory: /opt/SPLcobAS51

See the Micro Focus section in the Chapter 5: Installing Third Party Software of the Quick Install Guide for more information on the installation and licensing of this product.

Please ensure that you edit /etc/cobdir.txt to include the Micro Focus server path once you finish installing ORMB application.

### Perl 5.8.9

Install Perl 5.8.9 prior to executing any installation scripts.

Execute the following command to ensure that the correct version of Perl is in the cissys user profile PATH.

```
perl -V
```

If Perl is installed and in the path, the above command should return Perl diagnostic and version information.

Installation scripts were tested with ActivePerl Build 820.

### IBM Java Software Development Kit Version 5.0 Service Release SR9a4 32-bit

Installation of Java as a prerequisite is only needed if you are using Oracle WebLogic as a Web application server. If you use OAS or WebSphere the Java runtime engine from the Web application server is used.

At the time of release, AIX Java packages could be obtained from:

<http://www.ibm.com/developerworks/java/jdk/aix/service.html>

The web server requires the 32-bit Java platform in order to function. The main prerequisite for the web server is the version of java mentioned above.

For the Administrator userid (cissys), ensure that the environment variable JAVA\_HOME is set up, and that "java" can be found in cissys' PATH variable.

### **Hibernate 3.2.7**

Hibernate must be installed prior to the installation of Oracle Revenue Management and Billing

Please download the file hibernate-3.2.7.ga.zip from the following link:

<http://prdownloads.sourceforge.net/hibernate/>

or from the following link:

[http://sourceforge.net/project/showfiles.php?group\\_id=40712&package\\_id=127784](http://sourceforge.net/project/showfiles.php?group_id=40712&package_id=127784)

It is very important that you download the exact version, as the product has only been certified with this exact release.

You will need to create a permanent directory to place one of the files from hibernate-3.2.7.ga.zip. (e.g. /opt/hibernate3.2.7).

For the Administrator userid (cissys), ensure that the environment variable HIBERNATE\_JAR\_DIR is setup and points to the above directory.

Extract the file hibernate3.jar from hibernate-3.2.7.ga.zip to the location pointed to by \$HIBERNATE\_JAR\_DIR.

Ensure that the file \$HIBERNATE\_JAR\_DIR/hibernate3.jar exists.

### **C3PO 0.9.1.2**

C3PO is an easy-to-use library for augmenting traditional JDBC drivers with JNDI-bindable DataSources, including DataSources that implement Connection and Statement Pooling, as described by the jdbc3 specification and jdbc2 std extension. C3PO must be installed before installing Oracle Revenue Management and Billing application code.

Please download c3p0-0.9.1.2.bin.zip from the following link:

[http://sourceforge.net/project/showfiles.php?group\\_id=25357&package\\_id=88527](http://sourceforge.net/project/showfiles.php?group_id=25357&package_id=88527)

It is very important that you download the exact version, as the product has only been certified with this exact release.

You will need to create a permanent directory to place one of the files from c3p0-0.9.1.2.bin.zip. (for example, /opt/c3p0-0.9.1.2).

For the Administrator userid (cissys), ensure that the environment variable C3P0\_JAR\_DIR is setup and points to the above directory.

Extract the file c3p0-0.9.1.2.jar from c3p0-0.9.1.2.bin.zip to the location pointed to by \$C3P0\_JAR\_DIR.

Ensure that the file \$C3P0\_JAR\_DIR/c3p0-0.9.1.2.jar exists.

### **IBM WebSphere Application Server 6.1.0.25 32-bit**

This software must be purchased from IBM. It must be installed and configured prior to the Oracle Revenue Management and Billing installation.

A single WebSphere server represents single Oracle revenue Management and Billing Environment. You can install multiple environments on a single WebSphere Installation by creating additional WebSphere servers. (Please see sample WebSphere server creation script below).

Install the 6.1.0.25 patch with its accompanying Java Runtime update. This patch fixes problems with class loading.

Satisfy the following requirements on WebSphere installation prior to deploying Oracle Revenue Management and Billing:

- Ensure that the cissys userid (\$\$SPLUSER) or WebSphere deployment userid (\$WASUSER) have write permissions to log files under the \$WAS\_HOME/profiles/<yourprofile>/logs and \$WAS\_HOME/profiles/<yourprofile>/logs/<yourserver> directory.
- WAS\_HOME environment variable should be set pointing to the WebSphere installation directory. For example, if you installed WebSphere into /opt/webSphere then put something similar to the following into your login script:

```
WAS_HOME=/opt/webSphere; export WAS_HOME
```

- Due to the size of the web application, and to ensure a successful deployment, increase the following WebSphere defaults.

Modify the following file:

```
$WAS_HOME/profiles/<yourprofile>/<appServer1/properties/soap.client.props
```

Change the following Timeout parameter to an unlimited value:

```
com.ibm.SOAP.requestTimeout=0
```

- Increase java heap size for wsadmin tool, by modifying the following part of the line in \$WAS\_HOME/bin/wsadmin.sh script:

From

```
PERF_JVM_OPTIONS="-Xms256m -Xmx256m"
```

To

```
PERF_JVM_OPTIONS="-Xms380m -Xmx380m"
```

- Increase max data size in your shell before starting WebSphere:

```
export IBM_JVM_LDR_CNTRL_NEW_VALUE=MAXDATA=0XB0000000@DSA
export LDR_CNTRL=MAXDATA=0XB0000000@DSA
```

### Creation of Additional servers in WebSphere - sample script

Below are sample scripts that demonstrate a way of creating additional servers using the wsadmin.sh tool. There are several other ways to accomplish this task.

- Initialize a wsadmin.sh session:

```
<$WAS_HOME>/bin/wsadmin.sh -host localhost -port <SoapConnectorPort> -conntype SOAP -username
<webSphereUserName> -password <webSphereUserPassword>
```

**Note:** Substitute \$WAS\_HOME, webSphereUserName, SoapConnectorPort, webSphereUserPassword, with values that are appropriate for your installation. For example, /spl/IBM/WebSphere61/AppServer/bin/wsadmin.sh -host localhost -port 8889 -conntype SOAP -username websphere -password webSphere123

- Create the server instance:

```
wsadmin> $AdminTask createApplicationServer <nodeName> {-name <serverName>}
```

**Note:** Substitute nodeName and serverName with appropriate values.eg. wsadmin> \$AdminTask createApplicationServer sf-aiX1Node02 {-name server3 }

- Save your changes with the wsadmin tool.

```
wsadmin> $AdminConfig save
```

- Exit the wsadmin tool.

```
wsadmin> exit
```

### Configuration in the WebSphere console

**Note:** When working within the WebSphere Console make sure to apply and save your changes to the Master Configuration when appropriate.

**General Security Configuration:** Please use the WebSphere Console to set security. Select **Security, Secure administration, applications and infrastructure**.

- Under the section **Application security**:
  - Select **Enable application security**.
- Under the section **User Account repository**:
  - Select **Local operating system** from the list.
  - Click **Set as current**.
- Click **Configure**:
  - On the **Configuration Page**, select **Secure administration, applications, and infrastructure, Local operating system**
  - Under the section **General Properties**:
    - Enter the Primary administrative user name.
  - Under the section **Server user identity**
    - Select *Automatically generated server identity*

### Server Port Configuration:

- Obtain server Ports information for the Oracle Framework Installation.
  - Select **Servers, Application servers, <server\_Name>, Ports**.
  - Once you have navigated to this page, make a note of the BOOTSTRAP\_ADDRESS and the WC\_defaulthost Port numbers.

**Note:** Replace server\_Name with the server name you have created in the previous section.

- Set up a new virtual host for your server:
  - Select **Environment, Virtual Hosts, default\_host, Host Aliases, New**.
  - Under the section **General Properties**:
    - Host Name: \*
    - Port: WC\_defaulthost Port Number

### Server Configuration:

- Update the Parallel start option and Run development mode options.
  - Select **Server, Application servers, <server\_Name>**

- Under the section **General Properties:**
- Select **Run in development mode.**
- Deselect **Parallel start**
- Configure the Java Virtual Machine Options.
  - Select **Servers, Application servers, < server\_Name >, Java and Process Management, Process Definition, Java Virtual Machine**

**Note:** Substitute \$DB2DIR with appropriate values for your installation. e.g.  
 /opt/IBMdb2/db291/sqllib/java/db2jcc.jar:  
 /opt/IBMdb2/db291/sqllib/java/db2jcc\_license\_cisuz.jar

- Under the section: **General Properties, Initial Heap Size and Maximum Heap Size**, Enter the following:  
 Initial Heap Size: 1024  
 Maximum Heap Size: 1024
- Configure the Java Virtual Machine Custom Properties.
  - Select **Application servers, <server\_Name>, Java and Process Management, Process Definition, Java Virtual Machine, Custom Properties**

Add the following entries:

**Name:** com.ibm.websphere.security.util.CredentialCacheEnabled  
**Value:** false

**Name:** com.ibm.websphere.security.util.authCacheEnabled  
**Value:** BasicAuthDisabled

**Name:** javax.xml.transform.TransformerFactory  
**Value:** org.apache.xalan.processor.TransformerFactoryImpl
- You should increase the following timeout parameters for a successful deployment. These settings will vary from site to site, so you will need to make the adjustments according to your environment. The following section outlines where some of those time out settings can be found.

**Note:** The default values for the timeout settings described below were utilized successfully during the QA Cycle.

- Timeout setting for the Web Container.
 

Select **Servers, Application servers, < server\_Name >, Container Settings, Session management**

Under the section **Session timeout**
- Transaction lifetime timeout and client inactivity timeout.
 

Select **Servers, Application servers, <server\_Name>, Container Service, Transaction Service**

Under the section **Total transaction lifetime timeout**

Under the section **Client inactivity timeout**

- ActivitySession Service timeout setting.

Select **Servers, Application servers, < server\_Name >, Business Process Services, ActivitySession service**

Under the section **Default timeout**

- Set Maximum send and Receive size in Work area server.

Select **Servers, Application servers, < server\_Name >, Business Process Services, Work area service**

Under the section **Maximum send size and Maximum receive size**

Enter the following: 0 (no limit)

**Note:** Once the above steps have been completed and the other third-party software has been installed and configured, you are now able to install the Oracle Utilities Framework. Before deploying the application, follow the instructions in the section **Additional Tasks Required for WebSphere** on page 6-10.

## Oracle WebLogic Server 10.0 MP2 - 32-bit

The following products are supported: Oracle WebLogic Server Standard Edition and Oracle WebLogic Server Enterprise Edition. Oracle WebLogic software can be downloaded from the Oracle Web site. This application server will run as a 32-bit application.

- Download and install 32-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 10.0 MP2.
- After installing WebLogic, ensure that the BEADIR environment variable is set to point to the WebLogic installation directory for the cissys userid

For example, if you installed WebLogic into /opt/bea you would need to put something similar to the following into cissys login script:

```
BEADIR=/opt/bea; export BEADIR
```

# Windows Application Server

This section describes the software requirements for operating the application using the Windows application server.

## Supported Application Servers

Operating System	Chipsets	Application Server		
		Oracle WebLogic 10 MP2	IBM WebSphere Application Server 6.1.0.25	Tomcat 6.0.13
Windows 2003 Server SP2 (64-bit)	x86_64	32-bit version	N/A	32-bit version development only no production support

## Web/Application Server Tier

### Oracle 11.1.0.6 Client

The Java JDBC drivers must be installed as part of the client install.

Ensure that the userid cissys has been setup to be able to communicate with the Oracle database. Use the command

```
tnsping $ORACLE_SID
```

The Oracle 11.1.0.6 client is required regardless of the version of the database server. Both Oracle 11 and Oracle 10 database servers require the use of an Oracle 11 client.

### Micro Focus Net Express 5.1 with WrapPack 3

Micro Focus Net Express is required only for environments where COBOL code will be compiled.

See the Micro Focus section in the Chapter 5: Installing Third Party Software of the Quick Install Guide for more information on the installation and licensing of this product. Note that WrapPack 3 is installed after the base Micro Focus Net Express is installed.

After installing Net Express, ensure that the COBDIR environment variable is set to point to the directory where Net Express is installed.

### Micro Focus Server 5.1 with WrapPack 3

Micro Focus Server is required for Oracle Revenue Management and Billing runtime environments.

See the Micro Focus section in the Chapter 5: Installing Third Party Software of the Quick Install Guide for more information on the installation and licensing of this product. Note that WrapPack 3 is installed after the base Micro Focus Server is installed.

After installing Micro Focus Server, ensure that the COBDIR environment variable is set to point to the directory where Micro Focus Server is installed.

Please ensure that you edit /etc/cobdir.txt to include the Micro Focus server path once you finish installing ORMB application.



### Perl 5.8.9

Install Perl 5.8.9 prior to executing any installation scripts.

Execute the following command to ensure that the correct version of Perl is in the cissys user profile PATH.

```
perl -V
```

If Perl is installed and in the path the above command should return Perl diagnostic and version information.

Installation scripts were tested with ActivePerl Build 820.

### Sun Java Development Kit Version 5.0 Update 17

At time of release, Solaris Java packages could be obtained from:

<http://java.sun.com/products/archive/index.html>

The Web server requires the 32-bit Java platform. The main prerequisite for the Web server is the version of java mentioned above.

For the userid cissys, ensure that the environment variable JAVA\_HOME is setup, and that "java" can be found in cissys' PATH variable.

### Hibernate 3.2.7

Hibernate must be installed prior to the installation of .

Please download the file hibernate-3.2.7.ga.zip from the following link:

<http://prdownloads.sourceforge.net/hibernate/>

or from the following link:

[http://sourceforge.net/project/showfiles.php?group\\_id=40712&package\\_id=127784](http://sourceforge.net/project/showfiles.php?group_id=40712&package_id=127784)

It is very important that you download the exact version, as the product has only been certified with this exact release.

You will need to create a permanent directory to place one of the files from hibernate-3.2.7.ga.zip. (e.g. \opt\hibernate3.2.7).

For the Administrator userid (cissys), ensure that the environment variable HIBERNATE\_JAR\_DIR is setup and points to the above directory.

Extract the file hibernate3.jar from hibernate-3.2.7.ga.zip to the location pointed to by \$HIBERNATE\_JAR\_DIR.

Ensure that the file \$HIBERNATE\_JAR\_DIR\hibernate3.jar exists.

### C3PO 0.9.1.2

C3PO is an easy-to-use library for augmenting traditional JDBC drivers with JNDI-bindable DataSources, including DataSources that implement Connection and Statement Pooling, as described by the jdbc3 spec and jdbc2 std extension. C3PO must be installed before installing .

Please download c3p0-0.9.1.2.bin.zip from the following link:

[http://sourceforge.net/project/showfiles.php?group\\_id=25357&package\\_id=88527](http://sourceforge.net/project/showfiles.php?group_id=25357&package_id=88527)

It is very important that you download the exact version, as the product has only been certified with this exact release.

You will need to create a permanent directory to place one of the files from c3p0-0.9.1.2.bin.zip. (for example, \opt\c3p0-0.9.1.2).

For the Administrator userid (cissys), ensure that the environment variable C3P0\_JAR\_DIR is setup and points to the above directory.

Extract the file c3p0-0.9.1.2.jar from c3p0-0.9.1.2.bin.zip to the location pointed to by \$C3P0\_JAR\_DIR.

Ensure that the file \$C3P0\_JAR\_DIR\c3p0-0.9.1.2.jar exists

### Tomcat 6.0.13

Tomcat is supplied as part of the Apache Jakarta Project.

Download and unzip tomcat 6.0.13 from the Jakarta Tomcat Web site to x:\installdir. A directory named apache-tomcat-6.0.13 will be created.

Download v1.0.1 jta from <http://java.sun.com/products/jta/> and follow these steps:

1. Click link Class Files 1.0.1a.
2. Extract jta.jar from jta-1\_0\_1a.zip.
3. Copy jta.jar to apache-tomcat-6.0.13\lib.
4. Modify the following file:  
...\apache-tomcat-6.0.13\bin\setclasspath.bat
5. Change the following line in the file:

FROM:

```
set CLASSPATH=%JAVA_HOME%\lib\tools.jar
```

TO:

```
set CLASSPATH=%JAVA_HOME%\lib\tools.jar;%CLASSPATH%
```

6. Ensure that the shell has the CATALINA\_HOME environment variable set to point to the base location of where you installed tomcat.

### Oracle WebLogic Server 10.0 MP2 - 32-bit

The following products are supported: Oracle WebLogic Server Standard Edition and Oracle WebLogic Server Enterprise Edition.

WebLogic is not integrated into the installation media. WebLogic must be installed before installing

This application server will run as a 32-bit application.

- Download and install 32-bit Java (as documented above) before installing WebLogic.

- Download and install 'WebLogic Server 10.0 MP2'.

After installing WebLogic, ensure that the BEADIR environment variable is set to point to the WebLogic installation directory.

For example, if you installed the software into C:\bea\wls10, put something similar to the following into cissys user profile logon script:

```
SET WL_HOME=C:\bea\wls10
```

# Linux Application Server

This section describes the software requirements for operating the application using the Oracle Enterprise Linux application server.

## Supported Application Servers

Operating System	Chipsets	Application Server		
		Oracle WebLogic 10 MP2	IBM WebSphere Application Server 6.1.0.25	Tomcat 6.0.13
Oracle Enterprise Linux 5.2 (64-bit)	x86_64	32-bit version	N/A	N/A

## Web/Application Server Tier

### Oracle Enterprise Linux 5.2 Operating System running on x86\_64 64-bit Architecture

#### UNIX Administrator UserID

The following user groups and accounts have to be created to install and administer the application:

Description	Default Value	Customer Defined Value
Administrator UserID	cissys	
User Group	cisusr	

**Note:** It is recommended that you change the default values for security reasons.

Throughout this document the administrator user id is often referred to as the "cissys" user id. You should substitute that with the customer defined user id when not using the default value. After the initial install, the software should always be managed using that user id.

By default, the cissys userid is the only one given access to the files installed.

1. Create a group called cisusr (user group)
2. Create a user called cissys. Primary group cisusr. Set the primary shell for the cissys user to Korn Shell.
3. Ensure that LD\_LIBRARY\_PATH is set to \$COBDIR/lib:/<Base\_DIR>/<Micro Focus\_Install\_DIR>/mflmf/lib:/<Java\_Install\_DIR>/lib:/lib in the .profile file.

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

### Oracle 11.1.0.6 Client

The Java JDBC drivers must be installed as part of the client install.

Use the following command to ensure that the cissys userid is able to communicate with the Oracle database:

```
tnsping $ORACLE_SID
```

The Oracle 11.1.0.6 client is required regardless of the version of the database server. Both Oracle 11 and Oracle 10 database servers require the use of an Oracle 11 client.

### Micro Focus Server Express 5.1 with WrapPack 3

Micro Focus Server Express is required for environments where COBOL code will be compiled.

See the Micro Focus section in the Chapter 5: Installing Third Party Software of the Quick Install Guide for more information on the installation and licensing of this product.

After installing Server Express, ensure that the COBDIR environment variable is set to point to the directory where Server Express is installed.

### Micro Focus Server 5.1 with WrapPack 3

Micro Focus Server is required for Oracle Revenue Management and Billing runtime environments. It is required on the tier that will be hosting the application server where Oracle Revenue Management and Billing application code will be deployed.

Micro Focus Server must be installed in the following directory: /opt/SPLcobAS51

See the Micro Focus section in the Chapter 5: Installing Third Party Software of the Quick Install Guide for more information on the installation and licensing of this product.

Please ensure that you edit /etc/cobdir.txt to include the Micro Focus server path once you finish installing ORMB application.

### Perl 5.8.9

Install Perl 5.8.9 prior to executing any installation scripts.

Execute the following command to ensure that the correct version of Perl is in the cissys user profile PATH.

```
perl -V
```

If Perl is installed and in the path the above command should return Perl diagnostic and version information.

Installation scripts were tested with ActivePerl Build 820.

### Sun Java Development Kit Version 5.0 Update 16

At time of release, Solaris Java packages could be obtained from:

<http://java.sun.com/products/archive/index.html>

The Web server requires the 32-bit Java platform in order to function. The main prerequisite for the Web server is the version of java mentioned above.

For the userid cissys, ensure that the environment variable JAVA\_HOME is setup, and that java\_home/bin and java\_home/lib can be found in cissys' PATH variable.

## Oracle JRockit 5.0 R27.5 Java Development Kit

This is only required if you are using Oracle WebLogic as an application server.

The Web server requires the 32-bit Java platform in order to function. The main prerequisite for the Web server is the version of java mentioned above.

For the userid cissys, ensure that the environment variable JAVA\_HOME is set up, and that “java” can be found in cissys’ PATH variable.

Ensure that the JROCKIT\_HOME environment variable exists and points to your JRockit installation. For example:

```
JROCKIT_HOME=/spl/java/jrockit-R27.5.0-jdk1.5.0_12
```

## Hibernate 3.2.7

Hibernate must be installed prior to the installation of .

Please download the file hibernate-3.2.7.ga.zip from the following link:

<http://prdownloads.sourceforge.net/hibernate/>

or from the following link:

[http://sourceforge.net/project/showfiles.php?group\\_id=40712&package\\_id=127784](http://sourceforge.net/project/showfiles.php?group_id=40712&package_id=127784)

It is very important that you download the exact version, as the product has only been certified with this exact release.

You will need to create a permanent directory to place one of the files from hibernate-3.2.7.ga.zip. (e.g. /opt/hibernate3.2.7).

For the Administrator userid (cissys), ensure that the environment variable HIBERNATE\_JAR\_DIR is setup and points to the above directory.

Extract the file hibernate3.jar from hibernate-3.2.7.ga.zip to the location pointed to by \$HIBERNATE\_JAR\_DIR.

Ensure that the file \$HIBERNATE\_JAR\_DIR/hibernate3.jar exists.

## C3PO 0.9.1.2

C3PO is an easy-to-use library for augmenting traditional JDBC drivers with JNDI-bindable DataSources, including DataSources that implement Connection and Statement Pooling, as described by the jdbc3 spec and jdbc2 std extension. C3PO must be installed before installing.

Please download c3p0-0.9.1.2.bin.zip from the following link:

[http://sourceforge.net/project/showfiles.php?group\\_id=25357&package\\_id=88527](http://sourceforge.net/project/showfiles.php?group_id=25357&package_id=88527)

It is very important that you download the exact version, as the product has only been certified with this exact release.

You will need to create a permanent directory to place one of the files from c3p0-0.9.1.2.bin.zip. (e.g. /opt/c3p0-0.9.1.2).

For the Administrator userid (cissys), ensure that the environment variable C3P0\_JAR\_DIR is setup and points to the above directory.

Extract the file c3p0-0.9.1.2.jar from c3p0-0.9.1.2.bin.zip to the location pointed to by \$C3P0\_JAR\_DIR.

Ensure that the file \$C3P0\_JAR\_DIR/c3p0-0.9.1.2.jar exists

## Oracle WebLogic Server 10.0 MP2 - 32-bit

The following products are supported: Oracle WebLogic Server Standard Edition and Oracle WebLogic Server Enterprise Edition. Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 32-bit application.

- Download and install 32-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 10.0 MP2.
- After installing WebLogic, ensure that the BEADIR environment variable is set to point to the WebLogic installation directory for the cissys userid

For example, if you installed WebLogic into /opt/bea you would need to put something similar to the following into cissys login script:

```
BEADIR=/opt/bea; export BEADIR
```

# Chapter 4: Installing the Oracle Utilities Application Framework

---

Installing the Oracle Utilities Application Framework (“the framework”) is the prerequisite and foundation for installing a framework-based application such as Oracle Revenue Management and Billing.

For a brand new installation of ORMB v2.2.3.0 application, install Oracle Utilities Application Framework Service Pack 3 followed by Framework Service Pack 8 (patch ID 9855486) installation. This is mandatory for installing the version 2.2.3.0 of the ORMB product.

This section describes the process for installing the Oracle Utilities Application Framework, including:

- Installation Overview
- Framework Preinstallation Tasks
- Installing Oracle Utilities Application Framework
- Service Pack Preinstallation Tasks
- Applying Framework Service Pack on Application Server



# Installation Overview

This process replaces any previously delivered and installed version of the Oracle Utilities Application Framework Server. Before you proceed:

- Make sure that you have installed all the required third-party software as described in **Chapter 3: Software Requirements**.
- Complete the database installation (refer to the Oracle Revenue Management and Billing Database Installation guide)
- If you plan to upgrade a previously installed application server make a backup before you start a new installation.

The application server installation process of any framework-based application consists of the following architecture:

1. Oracle Utilities Application Framework installation(tailored for Oracle Revenue Management and Billing)
2. Oracle Utilities Application Framework Service Pack 8 installation
3. Framework-based application installation(Oracle Revenue Management and Billing)

As a first step of the application server installation, the framework application server installation package must be downloaded and installed. The application server environment is created and configured by the framework installation process.

As a pre-requisite for installing version 2.2.3.0 of the Oracle Revenue Management and Billing application, we need to apply the Oracle Utilities Framework Service Pack 8 . This is mandatory and needs to be completed before going ahead with installing the application.

Once the Oracle Utilities Application Framework installation is successfully completed and the framework application environment is created, the framework-based application (such as Oracle Revenue Management and Billing) can be installed on top of the framework environment. Only one framework-based application can be installed on the particular framework environment.

Before installing a framework-based application, ensure that its version is compatible with the Oracle Utilities Application Framework version that you have installed. Download the framework-based product package of your choice that is compatible with your Oracle Utilities Application Framework version, connect to the created framework application environment, and proceed with the installation.

You can download the installation packages from <http://edelivery.oracle.com>.

The Oracle Utilities Application Framework package (**Release-FW-V2.2.0\_rmb.jar**) for Oracle Revenue Management and Billing consists of and will install the following components:

1. Framework GA – Oracle Utilities Framework V2.2.0
2. Framework Service Packs
  - i. Framework V2.2.0 Service Pack 1
  - ii. Framework V2.2.0 Service Pack 2
  - iii. Framework V2.2.0 Service Pack 3
3. Framework Single Fixes
  - i. 7012282
  - ii. 7342235
  - iii. 7620966

iv.	7690217
v.	7706375
vi.	7715778
vii.	7924537
viii.	8219387
ix.	8235022
x.	8248932
xi.	8268700
xii.	8274035
xiii.	8275035
xiv.	8279731
xv.	8288126
xvi.	8292102
xvii.	8301128
xviii.	8302101
xix.	8308051
xx.	8316955
xxi.	8551233
xxii.	8469477

You need to download the **Framework V2.2.0 Service Pack 8** with the patch ID 9855486 from Metalink.

**IMPORTANT:** Please contact Oracle support before applying any additional Framework fixes to your environment in order to avoid an unsupported application.

Oracle Utilities Framework Application Server may run under one of the following Web Application servers: Oracle WebLogic, IBM WebSphere, Apache Tomcat (for development only). Please refer to the Supported Platforms section for details regarding certified platforms for each Web server.

This section describes how to install a working Oracle Utilities Application Server, which can then be further configured manually to allow for production performance levels.

Application server installation packages delivered for this version are multi-platform and are ready to install on any supported platform (as described in the Supported Platforms section). We recommend that you complete the database installation before installing the application server.

# Preinstallation Tasks

## Hardware and Software Version Prerequisites

The Supported Platforms section contains all of the available platforms that are required with this release of the product.

## Database Installation

Verify that the database has been installed and is operational. See Oracle Revenue Management and Billing Database Installation guides for your target database for more information.

## Installation Prerequisites

**Chapter 3: Software Requirements** describes all preparations that need to be done on the server prior to installing the application server. Please read carefully the server setup requirements and make sure that all prerequisite software is installed and that all required environment variables are set. Correct server setup and proper environment variable settings are an essential prerequisite for successful environment installation.

## System Architecture Overview

Oracle Utilities Application Framework V2.2.0 is a decoupled system architecture involving a Business Service Application tier and a Web Application tier. Typically both will run on the same server, but the design does allow each tier to be installed on separate servers.

The design implements a stateless session bean (EJB technology, under Java EE 5), to provide remote access to service invocations. The root Web app and XAI Web apps can be configured to access service processing locally (as in previous versions), or to make a remote EJB call to perform the service request. In the latter case, the served containers, effectively, run as very thin servlet wrappers around the remote call.

For all supported application servers except for Tomcat the deployment is in the form of two Enterprise Archive (ear) Files: SPLService.ear and SPLWeb.ear. Web Archive (war) files are created during the installation process but are not deployed.

## Copying and Decompressing Install Media

The installation file is delivered in zip format for both UNIX and Windows platforms.

If you are planning to install multiple Oracle Utilities Framework environments operated by different Oracle Utilities Administrator user ids, you must complete each of the following installation steps for each Administrator userid.

1. Log in as the Oracle Utilities Framework administrator userid (default cissys).
2. Create a temporary directory such as c:\temp or /temp. (Referred to below as <TEMPDIR>.)  
  
This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
3. Copy the file Release-FW-V2.2.0\_rmb.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>

jar -xvf Release-FW-V2.2.0_rmb.jar
```

**Note:** You will need to have Java JDK installed on the application server. This is the location of Java packages: <http://java.sun.com/products/archive/index.html>

Navigate to the sub-directory named "FW.V2.2.0". It contains the installation software for the Oracle Utilities framework application server. This Oracle Utilities Framework package includes all the Framework bug fixes needed as a prerequisite for installing Oracle Revenue Management and Billing V2.2.3.0.

## Set Permissions for the cistab File in UNIX

Every Oracle Utilities Application Framework environment installed on a server must be registered in the `/etc/cistab` file located on that server. On UNIX servers, generally only the root userid has write permissions to the `/etc` directory. Since the installation process is run by the Oracle administrator userid (cissys), this userid may not be able to write to `/etc/cistab` table.

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the `<TEMPDIR>/.../FW.V2.2.0` directory named `cistab_<SPLENVIRON>.sh`. Run the generated script using the root account before continuing with the installation process. The script initializes the `cistab` file in `/etc` directory (if it is the first Oracle Utilities Framework application environment on the server) and registers a new environment.

The generated script also changes the owner of `/etc/cistab` file to the Oracle Utilities Framework administrator userid, so that the next time a new environment is created by the same Oracle Utilities Framework administrator userid, you do not need to run the generated script with the root userid. Instead the install utility itself proceeds with the registration.

If you are reinstalling an existing environment, only the validation of `/etc/cistab` entry is done by the install utility, no new registration occurs. The install utility interactively instructs you about every step that needs to occur in each specific case.

If you are planning to upgrade an existing environment, it is your responsibility to take a backup prior to the installation process. The installation utility does not create backup of the existing environment.

# Installing Oracle Utilities Application Framework

This section outlines the steps for installing the Application Framework.

## Brief Description of the Installation Process

1. Log on as the Oracle Utilities Framework administrator (cissys on UNIX) or as a user with Administrator privileges (on Windows)
2. Configure your application server and any third-party software required for your platform, as outlined in **Chapter 3: Software Requirements**.

For example, create all environment variables such as HIBERNATE\_JAR\_DIR, C3P0\_JAR\_DIR, JAVA\_HOME, and create a server for WebSphere.

3. Navigate to the <TEMPDIR>/FW.V2.2.0 directory.
4. Start the application installation utility by executing the appropriate script:

**UNIX:** ./install.sh

**Windows:** install.cmd

**Linux:** ./install.sh

Follow the messages and instructions that are produced by the application installation utility. Use the completed worksheets in the section **Installation and Configuration Worksheets** on page 3-6 to assist you.

5. Installation of Oracle Utilities Framework Application Server is complete if no errors occurred during installation.

## Detailed Description of the Installation Process

1. Logon as Oracle Utilities administrator.  
Logon as cissys (on UNIX) or as a user with Administrator privileges (on Windows)

2. Configure application server and third-party software.

Complete all steps outlined in **Chapter 3: Software Requirements** such as setting the required environment variables (such as HIBERNATE\_JAR, C3P0\_JAR\_DIR, and JAVA\_HOME) and depending on your application server, creating a WebSphere server instance. You will need to obtain specific information for the install.

3. Start application installation utility by executing the appropriate script:

**UNIX:** ./install.sh

**Windows:** install.cmd

**Linux:** ./install.sh

4. Complete the Environment Installation Options.

- Use the completed Environment Installation Options Worksheet to assist you to complete this step. See **Installation and Configuration Worksheets** given in chapter 1.

**Note:** You must create the directory for output called **sploutput** (the Log Mount Point). The installation process fails if this directory does not exist.

- Specify the environment name and the environment directory names for a new installation on a menu screen.
  - Specify the type of the database your environment will be connected to (the default will be Oracle).
  - Specify the Web Application Server your environment will run with (the default will be WebLogic).
  - Specify if this environment will be used for the Oracle Revenue Management and Billing product.
  - Enter P to accept the selected options and process the installation.
  - During this step, the specification of a new environment is checked for validity against /etc/cistab and the permissions on mount points and directories.
5. The application installation utility copies the installation media to a new environment.
- The installation utility copies the new version software from the temporary installation media directory to the new environment.
  - If any manual or electronic interruption occurs during this step, you can rerun the install utility from the beginning and follow the interactive instructions. The application installation utility will be able to recover from such a failure.
6. Configure environment parameters.
- During this step you will configure environment parameters such as Web server hosts and ports, database name, and userid.
  - The application installation utility shows default values for some configuration options.
  - Use the completed Environment Configuration Worksheet given in chapter 1 to assist you.

**Note:** Every option requires a value for a successful install. It is important to provide all values.

- When you are done with the parameters setup, proceed with the option P. Write Configuration File
  - You will be warned if you did not edit a section. You may proceed if you want to keep the default settings.
  - On completion of this step, \$SPLEBASE/etc/ENVIRON.INI file is created. This file contains the specific environment profile parameters and their values.
7. Set up environment variables.

Once \$SPLEBASE/etc/ENVIRON.INI file is created and contains the correct environment parameters, the application installation utility starts a sub shell to the current process by executing the splenvron.sh (on UNIX) or splenvron.cmd (on Windows) script, located in \$SPLEBASE/bin directory. This script sets up all the necessary environment variables and shell settings for the application server to function correctly.

From this point, a number of environment variables have been set up. Some key ones are:

- \$PATH - an adjustment to \$PATH is made so that all of the environment scripts and objects will be in the path.
- \$SPLEBASE (%SPLEBASE%) - stands for <SPLDIR>/<SPLENVIRON> directory
- \$SPLOUTPUT (%SPLOUTPUT%) - stands for <SPLDIROUT>/<SPLENVIRON> directory

**Note:** Make sure that this directory exists. Otherwise the installation script will fail.

- `$SPLENVIRON (%SPLENVIRON%)` - environment name

For future operations or any post installation steps, you need to first execute the following command to connect your session to the new environment:

**UNIX:** `$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON`

**Windows:** `%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%`

**Linux:** `$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON`

You need to execute this script each time you want to be connected to the specific environment before performing manual operations such as shutdown, startup or performing an additional application product installation.

When you have finished the install process, your current online session will be connected to the new environment.

8. Generate environment configuration parameters:

The application installation utility executes the script `initialSetup.sh` (on UNIX and Linux) or `initialSetup.cmd` (on Windows) located in `$SPLEBASE/bin` (`%SPLEBASE%\bin` on Windows) directory. This script populates different application configuration files with the new environment variables values and completes the rest of the installation steps.

**Note:** The `initialSetup` script encrypts the user ID and password values in the configuration files that it creates.

There will be two ear files created for WebSphere, WLS, and OC4J Standalone. See the section **Chapter 3: Software Requirements** for settings and configuration.

Once the `initialSetup` is complete, it will ask for user input:

Do you wish to start the environment? Y/N: **N**

9. Deployment for WebSphere:

The installation utility will prompt you to deploy the ear files for WebSphere. If you will be installing ORMB enter **N** and proceed to the next step.

**Note:** Prior to deployment of the ear files you should check **Chapter 3: Software Requirements** of this document, for the configuration settings.

10. Start up the environment

The final step of the installation process will ask if you would like to start the environment, you should select **N** if you are planning on installing ORMB on top of the Oracle Utilities Framework.

When you select **Y**:

The install utility executes the command:

**UNIX:** `./spl.sh start`

**Windows:** `spl.cmd start`

**Linux:** `./spl.sh start`

Follow the messages on the screen along with the logs in `$SPLSYSTEMLOGS` directory to ensure that the environment was started successfully.

If the startup failed, identify the problem by reviewing the logs. Resolve any issues before attempting to restart the environment.

You should postpone the startup process until you are done with post installation steps.

Use the following utility to stop the environment:

**UNIX:** `./spl.sh stop`

**Windows:** `spl.cmd stop`

**Linux:** `./spl.sh stop`



# Service Pack Preinstallation Tasks

## Download Framework Service Pack

You can download the Framework Service Pack from [Metalink](#) by searching for the appropriate patch number.

## Copying and Decompressing Install Media

The installation file is delivered in zip format for UNIX, Windows and Linux platforms.

The Oracle Utilities Application Framework Service Pack is delivered as a separate installation package, common for all platforms.

Download the installation package for your operating system and proceed with the following instructions.

1. Log in to the host server as the Oracle Revenue Management and Billing administrator userid (default cissys).
2. Create a <TEMPDIR> directory on the server, which is independent of any current or other working Oracle Revenue Management and Billing application environment (preferably on the C or D drive on windows or the root folder in UNIX/Linux).
3. Copy the zip file in the delivered package to a <TEMPDIR> on your Windows/UNIX/Linux box. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Unzip the file using the command  

```
unzip <filename>.zip
```
5. This will extract a jar file which can be decompressed using the command  

```
jar -xvf <filename>.jar
```
6. This will create a new folder which will have the service pack contents. It will have a database component and an application component.

## Preparing for the Installation

1. Log on to the application server as administrator
2. Initialize the Framework environment that you want to install the product into.

### UNIX:

```
$SPLEBASE/bin/splenvron.sh -e $SPLENVIRON
```

### Windows:

```
$SPLEBASE\bin\splenvron.cmd -e %SPLENVIRON%
```

### Linux:

```
$SPLEBASE/bin/splenvron.sh -e $SPLENVIRON
```

## Prerequisites for Applying Service Pack 8

As a pre-requisite, we need to ensure that the database component for FW2.2.0 Service Pack 8 have been applied on the database. If we are directly

1. Log on to the application server as administrator
2. Initialize the Framework environment that you want to install the product into.

**Note:** Ensure that the database component for the framework service pack and single fixes are applied on the database before going ahead with applying it on the application server per steps mentioned in the DBA Guide.

# Applying Framework Service Pack on Application Server

This installation software will install a single fix Service Pack on top of the existing FW V2.2.0.0 application server.

The file SERVICEPACK.txt contains a list of single fixes that are included in this Service Pack.

The README.txt file contains the description for each fix included in the Service Pack/Roll Up

The Single Fix group installation process is used to install all the fixes to the target environment.

When the installation is completed check carefully the logs in each single fix directory inside a Service Pack directory. A utility script is included in this package that will scan each single fix installation log file for errors.

## Installation

1. Logon as Oracle Utilities administrator. Logon as cissys (on UNIX) or as a user with Administrator privileges (on Windows)
2. Configure application server and third-party software.
3. Change to the <TEMPDIR>/FW-V220-SPx (Unix) or <TEMPDIR>\FW-V220-SPx (Windows).
4. Run the installation script.

UNIX: `ksh ./installSPack.sh`

Windows: `installSPack.cmd`

5. Run the error checker script which will scan all single fix installation log files and report any errors found
6. IMPORTANT! The following commands need to be executed when the install completes:

`splenviron.sh -e <ENV_NAME>`

`configureEnv.sh`

Type "P" and <ENTER> (you don't need to change anything)

`splenviron.sh -e <ENV_NAME>`

`initialSetup.sh`

## Service Pack Install Verification

1. The installation script completes the rest of the steps. A log file is created in the installation directory for each environment on which you installed the fix. If for any reason the script fails, the errors and error diagnosis steps are reported on the screen and in the log file.
2. The installation utility does not allow the installation of the same single fix twice, since the historical order of the single fix installation is essential for correct application functionality. You can see the list of single fixes installed on your environment in the order of their installation in the file <SPLEBASE>/etc/installed\_fixes.txt.

**Note:** Repeat the installation steps mentioned above for applying Framework Service Pack 8.

# Chapter 5: Installing Oracle Revenue Management and Billing

---

This section describes the procedure for installing Oracle Revenue Management and Billing on top of the previously created Oracle Utilities Application Framework environment. This section includes:

- Preinstallation Tasks
- Installing the Application
- Installing User Documentation
- Additional Tasks Required for WebSphere
- Operating the Application

You can download the installation package from <http://edelivery.oracle.com/>. If the Framework installation was processed on previously existing Oracle Revenue Management and Billing environment, then customer modifications relevant for this version and compliant with the proper naming conventions (as described in the *Oracle Revenue Management and Billing Database Administrator's Guide*) have been preserved in the new environment by the Framework installation process.

To proceed with the Oracle Revenue Management and Billing installation you need to be connected to the target framework application environment. See the detailed installation instructions in the following section.

You *must* initialize the Framework environment along with the required Patch Set prior to proceeding with Oracle Revenue Management and Billing Application product installation. For detailed instructions see **Preparing the installation** section below.

# Preinstallation Tasks

This section describes the steps that should be taken before installing Oracle Revenue Management and Billing.

## Copying and Decompressing Install Media

The installation file is delivered in zip format for UNIX, Windows and Linux platforms.

Oracle Revenue Management and Billing is delivered in a separate installation package for each supported Operating System. Please refer to the **Supported Platforms** for version and installation details regarding the database and operating system versions. Also see **Software Requirements** for prerequisite third-party software installation instructions.

Download the installation package for your operating system and proceed with the following instructions.

1. Log in to the host server as the Oracle Revenue Management and Billing administrator userid (default cissys).
2. Create a <TEMPDIR> directory on the server, which is independent of any current or other working Oracle Revenue Management and Billing application environment (preferably on the C or D drive on windows or the root folder in UNIX/Linux).
3. Copy the file RMB\_V223[Build\_Number].zip in the delivered package to a <TEMPDIR> on your Windows/UNIX/Linux box. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:  

```
cd <TEMPDIR>
```

```
unzip RMB_V223[Build_Number].zip
```
5. This will create a new folder RMB.V2.2.3 in <TEMPDIR> and extract the install files and the Readme.txt.
6. For UNIX and Linux environments, edit the cobdir.txt file to include the path where you have installed Micro Focus 5.1.

On UNIX, Linux and Windows platforms, for the RMB build, a sub-directory named RMB.V2.2.3 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

## Preparing for the Installation

1. Log on as Oracle Revenue Management and Billing Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

### UNIX:

```
$SPLEBASE/bin/splenvron.sh -e $SPLENVIRON
```

### Windows:

```
$SPLEBASE\bin\splenvron.cmd -e %SPLENVIRON%
```

### Linux:

```
$SPLEBASE/bin/splenvron.sh -e $SPLENVIRON
```

3. Stop the environment if running.

**UNIX:**

```
$SPLEBASE/bin/spl.sh stop
```

**Windows:**

```
$SPLEBASE%\bin\spl.cmd stop
```

**Linux:**

```
$SPLEBASE/bin/spl.sh stop
```

4. On Windows, set the following on command prompt:

```
set ANT_OPTS= -Xms512m -Xmx1024m -XX:PermSize=256M
```

## Installing the Application

1. Change to the <TEMPDIR>/RMB.V2.2.3 Directory.
2. Execute the script:

**UNIX:**

```
ksh ./install.sh
```

**Windows:**

```
install.cmd
```

**Linux:**

```
ksh ./install.sh
```

You will be prompted to answer the following question:

```
Do you wish to proceed with the installation? Y/N: Y
```

If you are upgrading an existing environment, you will be prompted to answer the following question:

```
Product CCB is already installed in the environment $SPLENVIRON. Do you want to  
reinstall it? [Y/N]
```

```
Enter Choice : Y
```

**Note:** On UNIX, ensure that you have the proper execute permission on install.sh.

3. Follow the messages and instructions that are produced by the install utility. Please note that some of the steps (such as the genAppViewer) will take some time to complete.
4. If the install utility execution was not stopped due to errors and you did not interrupt the execution, you have finished the installation of the Oracle Revenue Management and Billing Application product.
5. Once the install utility has finished successfully, it will again ask for user inputs  
Do you wish to start the environment? Y/N: N  
Before starting the application, you will need to execute the following steps:

**UNIX:**

```
./splenviron.sh -e <ENV_NAME>
./configureEnv.sh
```

Type **P** and <ENTER> (you don't need to change anything)

```
./splenviron.sh -e <ENV_NAME>
./initialSetup.sh
```

**Windows:**

```
splenviron.cmd -e <ENV_NAME>
configureEnv.cmd -e <ENV_NAME>
```

Type **P** and <ENTER> (you don't need to change anything)

```
splenviron.cmd -e <ENV_NAME>
initialSetup.cmd
```

**Linux:**

```
./splenviron.sh -e <ENV_NAME>
./configureEnv.sh
```

Type **P** and <ENTER> (you don't need to change anything)

```
./splenviron.sh -e <ENV_NAME>
./initialSetup.sh
```

**Note:**

Please ensure that the cobdir path points to the location where Micro Focus 5.1 is installed on the system.

At the end of WebSphere environment installation, you will be prompted whether you want to deploy the application on the WebSphere server. You can either reply N and deploy the application on the WebSphere server manually using WebSphere admin console or reply Y and use WebSphere deployment script (i.e. genwasdeploy.sh) provided as a part of the installation. Steps to install the application ear files to WebSphere using the console are mentioned in the [Additional Tasks Required for WebSphere](#) section.

6. Start up the environment.

The final step of the installation process is the environment startup. The install utility executes the command spl.sh start (for UNIX or Linux) or spl.cmd start (for Windows) to start up the environment. You may start the environment by this command any time from the following location:

```
(%SPLEBASE%\bin) spl.cmd start or ./spl.sh start
```

Follow the messages on the screen and check the logs in \$SPLSYSTEMLOGS (%SPLSYSTEMLOGS% on Windows) directory to ensure that the environment was started successfully. If the startup failed, identify the problem by reviewing the logs, and start up the environment manually while you are connected to the new environment in your online session.

**Note:** Since the WebSphere server usually runs under root userid, it needs to be restarted with the new environment variable settings after Oracle Revenue Management and Billing environment installation and deployment into WebSphere. To do this switch to root userid, setup \$WAS\_HOME environment variable (and the rest of environment variables as described in Boldparatext: Boldparatext ), initialize the newly installed environment by executing the command: \$SPLEBASE/bin/splenvron.sh -e \$SPLENVIRON and after that shutdown and startup WebSphere server using WebSphere commands, e.g. \$WAS\_HOME/bin/startServer.sh server1. After the initial server restart you may start the application by the environment startup/shutdown commands or through WebSphere Admin console.



# Installing User Documentation

This section provides instructions for installing the Oracle Revenue Management and Billing user documentation that is supplied with the system. Oracle Revenue Management and Billing user documentation in printable format is provided as PDF documents. The zip file located in the Oracle Revenue Management and Billing installation package contains all of these documents.

User documentation is provided in English (ENG).

## Installing Stand-Alone Online Help

You can also use the Oracle Revenue Management and Billing online help in stand-alone mode (that is, you do not have to launch it from the Oracle Revenue Management and Billing application or access it on the application server).

To install the Oracle Revenue Management and Billing help for stand-alone operation, copy the help.war from the Oracle Revenue Management and Billing (environment on the server) or from the Oracle Revenue Management and Billing installation package to the server or machine on which you want to access the help. If you want to copy the file from any installed Oracle Revenue Management and Billing environment, you can locate the file in the \$SPLEBASE/splapp/ applications directory on the server.

Unzip the help.war file to any directory on your machine. To launch the Oracle Revenue Management and Billing help in stand-alone mode, open the SPLHelp.html file (located inside the language directory that you wish to use).

**Note:** Do not change the subdirectory names. The documents use relative path names to link to other documents. Changing the subdirectory names will result in broken links.

## Customizing Help for Stand-Alone Operation

You can customize the SPLHelp.html file to open to the file and topic that you most frequently use. To do so, edit the SPLHelp.html file and change the DEFAULT\_BOOKMARK to the desired location. The default DEFAULT\_BOOKMARK is 'helpHome.html'.

## Installing Stand-Alone Help Under Web Server

You can also install Oracle Revenue Management and Billing online help as a stand-alone web application. Use any Web Application server like WebLogic, Tomcat or WebSphere. Configure the configuration file for your web application server to use web application help.

For example,

- For WebLogic, configure config.xml file for deployed application Name="help" with URI="help.war" and set WebServer DefaultWebApp="help"
- For WebSphere, configure application.xml with module id="WebModule\_help" and <web-uri>help.war</web-uri>
- For Tomcat, configure server.xml with Context path="/help" and docBase= full path of help.war file

Access the documentation from the browser by the following URL: `http://<host name>:<port name>/<Lang>/SPLHelp.html`, where <hostname>:<portname> is the URL of the web server, <Lang> is the name of the language directory, for example, ENG.

**Note:** Stand-alone online help files are not automatically updated when changes are made to the help files on the application server. You will have to re-install the stand-alone online help files.

## Integrating Customer Modifications into the Upgraded Environment

If you are upgrading or installing into an existing environment that had customer modifications, the install utility will have backed up all your customer modifications in a temporary installation area and copied them back into the environment at the end of the upgrade process. The Oracle Revenue Management and Billing Database Administrator's Guide describes the rules supported by the installation utility to preserve customer modifications. It also discusses the naming conventions for implementing custom modules.

The configuration files of the existing environment are backed up in the directory \$SPLEBASE/ etc on UNIX and %SPLEBASE%\etc on Windows during installation by the install scripts to preserve any customer changes. Since technologically the framework of this version differs significantly from all previous versions, all configuration files are regenerated from the new templates by the installation process and any previous customer modifications to these configuration files will need to be reapplied manually where applicable, using the backed up files as a reference.

The upgraded version of Oracle Revenue Management and Billing base product may require significant changes to integrate into the new version.

In case no code changes are required to be applied to the upgraded environment, it is necessary to rebuild the CM Java sources. In order to run this build, follow these steps:

1. Execute applyCM from corresponding Oracle Revenue Management and Billing Software Development Kit version on the upgraded environment with option "-b" (full build) option. For more details, see the document 02Cookbook.doc within Oracle Revenue Management and Billing Software Development Kit documentation:

### UNIX:

```
cd $SPLEBASE
<SDK bin folder>/applyCM.sh -b
```

### Windows:

```
cd %SPLEBASE%
<SDK bin folder>\applyCM.cmd -b
```

### Linux:

```
cd $SPLEBASE
<SDK bin folder>/applyCM.sh -b
```

The script initialCMSetup utility is provided for your convenience to help complete the reintegration of your custom modifications into the new environment. The script compiles all custom implementation COBOL modules (prefixed with CMP or CML).

To execute initialCMSetup utility:

2. Login to the host server with Oracle Revenue Management and Billing administrator userid.
3. Connect your session to the target environment with the following command:

### UNIX:

```
$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
```

**Windows:**

```
%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
```

**Linux:**

```
$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
```

4. Execute the following command:

**UNIX:**

```
./initialCMSetup.sh
```

**Windows:**

```
initialCMSetup.cmd
```

**Linux:**

```
./initialCMSetup.sh
```

# Additional Tasks Required for WebSphere

## Configure the Environment Entry

Under **Application servers**, <server\_Name>, **Java and Process Management**, **Process Definition**, **Environment Entries**, Add the entry:

**Name:** LIBPATH

**Value:** <\$SPLEBASE>/runtime

**Note:** Substitute \$SPLEBASE with appropriate values for your installation. You will need to restart the server\_Name before you attempt to start the application on the server.

**Note:** For deploying ORMB application to WebSphere, it is recommended that you DO NOT deploy into server1. We reserve this exclusively for admin console.

## Application Deployment

You will need to deploy the application after running the application installation utility.

You can manually deploy the ear files, which the application installation utility has created.

## Deployment via the Admin Console

Follow these steps to deploy the application using the Admin Console. If the SPLService.ear and SPLWeb.ear files are already installed to the websphere server, then they need to be uninstalled before proceeding with the following steps.

### Deployment Order

The application needs to be deployed in the following order:

1. SPLService.ear
2. SPLWeb.ear

**Note:** The SPLService.ear should be successfully deployed before deploying SPLWeb.ear.

### Deploying SPLService.ear

1. Stop the server instance if running and log into the websphere admin console.
2. Select the ear file to deploy.
3. Select **Applications, Install New Application**.
4. Select **Remote file system**.
5. Browse to the SPLService.ear or enter the full path to the file. The ear files can be found under \$SPLEBASE/splapp/applications.
6. Click **Next**.

7. On “Select Installation Options” screen, no actions are required. Click on **Next**.
8. Assign the module to the WebSphere server instance from the “Map Modules to Servers” screen.
9. Select the server from *Clusters and Servers*.
10. Check the Select check-box against the module ServiceBean. Click **Apply** and **Next**.
11. On “Provide JNDI Names” screen, specify the JNDI name.  
  
The JNDI name is `spl-<server name>/servicebean`  
  
For example, `spl-server6/servicebean`. The JNDI name can be found in the `spl.properties` in `SPLApp/web-inf/classes/ spl.properites`.
12. Review the summary page.
13. Review the installation options.
14. Click **Finish** - the application will then deploy. The deployment process takes about 5 minutes.
15. Click **Save** to save the changes to master configuration. The save process can take about 20 minutes.

### Deploying SPLWeb.ear

1. Select the ear file to deploy.  
  
Select **Applications, Install New Application**.  
  
Select **Remote file system**. Browse to the SPLWeb.ear or enter the full path. Click on **Next**.
2. On “Select Installation Options” screen, no actions are required. Click on **Next**.
3. Assign the module to the WebSphere server instance from “Map Modules to Servers” screen.  
  
When deploying an application from the console make sure you select the correct server, check all Select check boxes. Click **Apply** and click **Next**.
4. On “Map virtual hosts for Web modules” no actions are required. Click on **Next**.
5. Review the summary page.
6. Click **Finish** - the application will then deploy. The deployment process above can take 5 minutes or more
7. Click **Save** to save the changes to the master configuration. The save process can take 20 minutes.

### Configure the applications

Following steps need to be done to configure the SPLWeb and SPLService applications.

#### Configure SPLService.ear

1. Navigate to Applications --> Enterprise Applications --> SPLService-server2 --> Manage Modules --> ServiceBean
2. Enter Starting weight as 1, click OK and Save to Master Configuration.

### Configure SPLWeb.ear

1. Navigate to Applications --> Enterprise Applications --> SPLWeb-server2 --> Startup behavior
2. Set Startup order: **2**
3. Click **OK** and **Save** to Master Configuration.
4. Navigate to Applications --> Enterprise Applications --> SPLWeb-server2 --> Class loading and update detection
5. Set Polling interval: **0**
6. Set Class loader order: Classes loaded with application class loader first
7. Click **OK** and **Save** to Master Configuration.
8. Navigate to Applications --> Enterprise Applications --> SPLWeb-server2 --> Manage Modules
9. Select SPLApp.war
10. Set Starting weight: **10000**
11. Set Class loader order: **Classes loaded with application class loader first**
12. Click **OK**
13. Repeat above for the other 3 war files.
14. **Save** to Master Configuration.

### Configure Application Security

After using the supplied script to deploy the application to WebSphere you will need to configure each application's security before starting the application.

Using the WebSphere administration console select **Applications, Enterprise Applications, SPLService-<server name>** (for example, SPLService-server2), **Security role to user/group mapping**.

For role cisusers:

- Check **All Authenticated**.
- Check **Select** and click **Look up users**:
  - Search for SYSUSER and add to the **Selected users** list.
  - Click **OK**
  - Click **OK**
  - **Save** to Master Configuration.

**Note:** Be sure to configure security for both SPLService and the SPLWeb applications.

## Restart the WebSphere Server

It is recommended to stop and then restart the WebSphere server.

If the application is deployed in server1 you can use the admin console to stop and start the server. If the application is deployed in another server you will need to use the scripts that are supplied with WebSphere (stopServer.sh, startServer.sh).

**Note:** WebSphere admin console runs under server1.

## Application URL

The Web link to the WebSphere application will be:

http://<hostname>:<WebSphere Port No>/spl-<server name>/cis.jsp

For example: http://sf-aixapp-02:9081/spl-server2/cis.jsp

# Operating the Application

At this point your installation and custom integration process is complete.

Be sure to refer to the Oracle Revenue Management and Billing User Guides for more information on further configuring and operating the system.



## Chapter 6: Additional Tasks

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This section describes the additional tasks that should be completed after installing Oracle Revenue Management and Billing including:

- Customizing Configuration Files
- Executing Batch Programs Interactively on Windows
- Executing Batch Programs Interactively on UNIX
- Integrating Customer Modifications into the Upgraded Environment and ensuring you have the latest ORMB service packs applied
- Generating the Application Viewer
- Batch Daemon Submission Options
- Building Javadocs Indexes

# Customizing Configuration Files

You may wish to make customer modifications to various configuration files. To proceed, you should locate the configuration file you want to customize and edit it manually.

Configuration files are generated from delivered templates in the Oracle Utilities installation and are populated by values entered by the installation utility during the configuration process. In future upgrades of Oracle Utilities application software versions, some templates may be changed to reflect new software version requirements. In this case, the upgrade process will back up your customized configuration file and will regenerate a configuration file based on a new template. You will need to review the new configuration file and apply your customized changes back if still applicable for the new version.

For configuration files that are located in a web application (for example, web.xml, hibernate.properties), of the web application during installation process, you will not be able to edit configuration files directly.

You will need to follow the procedure:

- Locate configuration file you want to customize in the directory \$SPLEBASE/etc/conf
- Apply your changes
- Update application war file with the latest changes by executing the command:

**UNIX:** \$SPLEBASE/bin/genupdatewar.sh

**Windows:** %SPLEBASE%\bin\genupdatewar.cmd

**Linux:** \$SPLEBASE/bin/genupdatewar.sh

# Executing Batch Programs Interactively on Windows

Executing a batch job interactively is a process involving two steps.

## Initializing a Windows command shell

Most command files and scripts that are provided with the system need to be run from a Windows command prompt.

Before such scripts can be run, a Windows command window must be opened and that command window must be 'initialized' by running the splenviron.cmd script provided with the system.

The command window should be opened on the Windows server that you installed the application on.

In the below example you should replace the variables:

%SPLEBASE% with the Full directory name that you installed the application into

and

%SPLENVIRON% with the name you gave to the environment at installation time.

To initialize the environment type the following in your command prompt:

```
%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
```

e.g. D:\spl\TEST\_ENVIRON1\bin\splenviron.cmd -e TEST\_ENVIRON1

## Executing a batch program

After initializing the shell you simply need to type

```
%SPLEBASE%\bin\SPLBATCH.cmd
```

You will see a number of output lines before you are interactively prompted for the "Batch Code" as well as every other parameter that is relevant to that batch code.

# Executing Batch Programs Interactively on UNIX/Linux

Executing a batch job interactively is a process involving two steps.

## Initializing a UNIX/Linux Shell

The scripts that are provided with the system need to be run from a UNIX shell prompt on the machine that you installed the application on.

Before such scripts can be run the UNIX shell must be 'initialized' by running the splenviron.sh script provided with the system.

You will need to logon to your UNIX box as the Oracle Utilities Administrator (default cissys) and open a shell prompt.

In the below example you should replace the variables

\$SPLEBASE with the Full directory name that you installed the application into

and

\$SPLENVIRON with the name you gave to the environment at installation time.

To initialize the environment type:

```
$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
```

```
e.g. /SPL/TEST_ENVIRON1/bin/splenviron.sh -e TEST_ENVIRON1
```

## Executing a batch program

After initializing the shell you simply need to type

```
$SPLEBASE/bin/SPLBATCH.sh
```

You will see a number of output lines before you are interactively prompted for the "Batch Code" as well as every other parameter that is relevant to that batch code.

# Integrating Customer Modifications into the Upgraded Environment

If the installation utility was executed on a previously existing environment, it will preserve customer modifications according to the rules described in the Naming Conventions for Tailoring Oracle Utilities application Implementation section of the *Oracle Revenue Management and Billing Database Administrator's Guide*. In most cases, additional development or configuration actions need to be taken to adjust and integrate upgraded customer modifications to the new version.

Refer to Application Product Installation section of this document and to SDK documentation for more information.

# Generating the Application Viewer

The Application Viewer that is delivered with the system includes COBOL source code and xml services. You may extend Application Viewer capabilities within an environment by generating additional items. The additional items that can be generated include algorithm type and related algorithm information, maintenance object information and data dictionary information.

This section details the steps necessary to generate the additional items.

1. Initialize a command shell

Follow the steps in the sections

**Initializing a [Windows command shell](#)**

Or

**Initializing a [UNIX shell](#)**

2. Execute the script to generate all information
3. Execute the following command for your operating system

**UNIX:** ksh \$SPLEBASE/bin/genappvieweritems.sh

**Windows:** %SPLEBASE%\bin\genappvieweritems.cmd

**Linux:** ksh \$SPLEBASE/bin/genappvieweritems.sh

4. Redeploy your application

After you have performed the above steps you will need to redeploy the application into the web application server.

You may use supplied scripts genwasdeploy.sh for WebSphere or use a rapid deployment method supplied with your particular web application server.

# Batch Daemon Submission Options

## Batch Submission using the Online JVM

**Note:** The functionality provided in previous releases with the scripts `submitbatch.plx` and `cdxcronbatch.sh` is no longer supported. These scripts have been deprecated in favor of the following multithreaded java batch daemon.

This step is necessary only if your organization uses Oracle Revenue Management and Billing 's batch scheduler or if you wish to submit ad-hoc batch jobs from the online application. This option is a good choice for low-volume, low activity environments.

Before jobs can be submitted from the on-line Batch Job Submission page, two batch components need to have been started: 1) a batch "worker" and 2) the batch-scheduling daemon. A "worker" node is responsible for running the batch jobs that are requested by the daemon.

The following describes how to start a worker and the daemon to allow for job submissions from the on-line system.

A batch worker node can be started as part of the application server, or as a standalone process.

### Starting the batch worker

A batch worker node can be started as part of the application server, or as a standalone process.

When using the Online JVM option you should have the following settings when you run `configureEnv.sh /cmd:`

```
Batch Server Enabled:      true
Batch Threads Number:      5
Batch Scheduler Daemon:    true
```

### Batch worker as part of the application server

For low-volume, low-activity environments (e.g. development, testing), this is a good choice because of the smaller resource footprint. To start it like this, simply specify the following application server properties:

```
com.splwg.grid.online.enabled=true
com.splwg.grid.distThreadPool.threads.DEFAULT=5
```

The first property allows the application server JVM to run batch jobs. See Thread Pool below for a description of the second property.

### Standalone batch worker

To start a worker node as a standalone process, a JVM is started with the following properties:

```
com.splwg.batch.submitter=false
com.splwg.grid.distThreadPool.threads DEFAULT=5
```

The first property specifies that the JVM being started is a "worker" JVM (i.e. it is not a "submitter" JVM). See Thread Pool below for a description of the second property.

### Thread Pool

The distributed thread pool property in the examples above assign the worker to thread pool "DEFAULT" and permits it to run 5 threads concurrently. Unless explicitly overridden at time of submission, the "DEFAULT" thread pool is where the online submissions automatically get directed to, so this should in most cases not be changed; if it is set to anything else, the online submissions may not be picked up. The number of threads, specified as "5" above, can be adjusted.

### Starting the batch-scheduling daemon

The batch-scheduling daemon can be started as part of the application server, or in a standalone batch worker node. In either case, add the following property to enable the JVM to also be a scheduler:

```
com.splwg.batch.scheduler.daemon=true
```

## Batch Submission using Thread Pool Worker

This step is necessary if your organization uses either Oracle Revenue Management and Billing's batch scheduler or you wish to submit ad-hoc batch jobs from the online application.

When using the Thread Pool Worker option you should have the following settings when you run configureEnv.sh / cmd:

```
Batch Server Enabled: false
```

```
Batch Threads Number: 5
```

```
Batch Scheduler Daemon: false
```

### Starting the Tread Pool Worker on UNIX

Once you have initialized an environment shell with splenvron.sh, the application threadpoolworker.sh should be executed as a background task.

```
nohup threadpoolworker.sh -p DEFAULT=5 -d Y
```

This will start a standalone threadpool worker process that offers 5 threads in threadpool DEFAULT ("-p DEFAULT=5") and hosts a scheduler daemon for online job submissions ("-d Y"). Threadpool DEFAULT is the default threadpool name that is used for jobs submitted from the online; if set to anything else, online submissions may not be picked up. The number of threads, specified as "5" here, can be adjusted.

The batch scheduler should be running as a background daemon under UNIX. To verify that it is running you can use a command similar to "ps -ef |grep threadpool".

### Starting the Thread Pool Worker on Windows

```
threadpoolworker.cmd -p DEFAULT=5 -d Y
```

**Note:** If the JAVA\_HOME environment variable is set, the script can be launched from Windows Explorer.

This will start a standalone threadpool worker process that offers 5 threads in threadpool DEFAULT ("-p DEFAULT=5") and hosts a scheduler daemon for online job submissions ("-d Y"). Threadpool DEFAULT is the default threadpool name that is used for jobs submitted from the online; if set to anything else, online submissions may not be picked up. The number of threads, specified as "5" here, can be adjusted.



**Note:** For AIX/UNIX, you would need to change the LDR\_CNTRL parameter in the threadpoolworker.sh file and change it to "0XB0000000". This will help in improving threadpool performance.

## Building Javadocs Indexes

The following script allows rebuilding the Javadocs Indexes in the appViewer java module. This is needed after Customer Modification's have been applied to an environment; this needs to be run only if the Customer Modification includes Java Code.

**Windows:** %SPLEBASE%\bin\buildJavadocsIndex.cmd

**UNIX:** ksh \$SPLEBASE/bin/buildJavadocsIndex.sh

**Linux:** ksh \$SPLEBASE/bin/buildJavadocsIndex.sh

## Appendix A: Known Issues with V2.2.3.0

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The known issues with the Oracle Revenue Management and Billing product “General Availability” release are listed in the release notes document. Please refer to the release notes document **ORMBReleaseNotes223.pdf**

# Appendix B: System Program Upgrade Guide

This section contains information that may be useful for custom implementations that are impacted by base changes. If you have customizations please review this information to see if there is any impact to you:

**Note:** Please refer to the Oracle Revenue Management and Billing Upgrade Guide for further steps to upgrade prior releases to current releases.

## Files Deprecated in V2.2.3

No COBOL files have been deprecated in the V2.2.3 release

## Appendix C: New Objects

This section contains all the new objects added to the current release that may be useful for implementation teams for customizing Oracle Revenue Management and Billing.

### Application Services

Application Service	Description
APPTXNDATAFETCH	Approval Transaction Data Fetch
APPTXNKEYPOP	Approval Transaction Key Population
APPTXNPASG	Validation Service for Price Assignment
APPTXNPRICE	Approval Transaction Pricing Service
APPTXNREASON	Approval Transaction Reason Service
APPTXNSERVICE	Approval Transaction
APPTXNVAL	Validation for Approval Transaction
APTXPASGKEYPOP	Key Population Service for Price Assignment
AXUSRVAL	Pre-validation for User
C1-APPTXN	Approval Transaction
C1-APPTXNLOG	Approval Transaction Log
C1-MKRCKR	Maker Checker
C1APPCHN	Approval Workflow Chain
C1APPCRT	Approval Workflow Criteria Type
C1APPRESP	Approval Transaction Responsibility
C1APPTXNBOCHN	Approval Transaction BO Chain
C1APPTXNCHAIN	Approval Transaction Chain
C1APPTXNCLSTODO	Approval Transaction Close to do
C1APPTXNCRI	Approval Transaction Criterion
C1APPTXNCRT	Approval Transaction Criterion Type
C1APPTXNGRP	Approval Transaction Group
C1BOCHN	Approval Workflow Group Chain Linkage
C1COMPAREPAGE	Compare Page Service
C1EXCHRATE	Business Service for Exchange Rate Algorithm
C1GETDESC	Get Description for Display Pattern
C1IGNAUD	Ignore Audit on Service Agreement
C1LTBOJS	Business Object Search
C1MAKERCHECKER	Maker Checker Service Program
C1MANAPP	Approve
C1MANLOG	Logs
C1MANMOD	Modify
C1MANRES	Resolve
C1PASGAPPROVE	Price Assign Approve

Application Service	Description
C1PASGREAD	Price Assign Read
C1PASGREADMODIFY	Service for Price Assign Modify Read
C1PASGREADRESOLVE	Approval Transaction Pricing resolve service
C1PSNAPP	Approve Price Assignment
C1PSNMOD	Modify Price Assignment
C1PSNRES	Resolve Price Assignment
C1UIGENERATOR	Auto Generation for UI for Maker Checker
C1_ACUNV	Account Current
C1_APPAD	Approval Workflow Settings
C1_APPWF	Approval Workflow
C1_GRP	Approval Workflow Group
C1_RSN	Approval Workflow Reason
CIAPPCHELGBL	Service for C1-APP-CH-EL
CIAPPCRT	Service for Approval Transaction Criteria Type
CIAPPTXNMSG	Service Program for Approval Transaction message
CIAPPTXNRSN	Approval Transaction Reason
CILCHFLG	Fetch Characteristic Type Flag
CIMOAPPCHAIN	Service for MO Approval Transaction Chain
CIPBRSCH	Division Business Object Search Service
CIPTCIDR	Row Maintenance for CIS_DIVISION
CIUIMAPSCHEMA	Retrieve UI Map Schema for Approval Transaction
CIUSRCHK	Approval Workflow User Access Check
CREATEETUSER	Create User Entity (Approval Transaction)
CREATEETY	Create Entity Using Business Object
CREATIGA	Create Invoice Group Account
CREATPATY	Creation of Price Assignment
CREATPITY	Create Price Item Entity
CREATPLTY	Service to Create Pricelist in Approval Transaction
IGAKEYPOP	Invoice Group Key Population Service
IGAVAL	Invoice Group Validation

### **Business Objects**

Business Object	Description
C1-AccessGroup	Access Group Business Object
C1-AppBOChain	Approval Transaction Chain Linkage BO
C1-AppGrp	Approval Workflow Group
C1-AppReason	Approval Workflow Reject and Cancel Reason
C1-AppTxn	Approval Transaction
C1-AppTxnCriteriaType	BO for Approval Transaction Criteria Type

Business Object	Description
C1-AppTxnInvoiceGroup	Approval Transaction Invoice Group
C1-AppTxnLog	Approval Transaction Log
C1-ApprovalChainEligible	Approval Workflow Settings
C1-ApprovalTransactionChain	Approval Workflow Chain
C1-ToDoEntry	To Do Entry
C1-UserBo	User BO
C1-UserGroup	User Group Business Object

### **Algorithm Types**

Algorithm Type	Description
APPCHSEQ	Approval Workflow Chain Sequence Algorithm
APPDATARET	Approval Transaction Data Retrieval Algorithm
APPGRPSEQ	Approval Transaction Group Sequence Algorithm
C1-ADMVAL	Approval Workflow Settings Validation
C1-APCHNPEND	Chain - Pending Transaction Validation
C1-APCHRVAL	Approval Transaction Reason Validation
C1-APCHVALID	Approval Workflow Chain Validation
C1-APGBYPORT	Settings - Pending Transaction Validation
C1-APGCHLNSE	Approval Workflow Group Chain Linkage Sequence
C1-APLKCT	Approval Workflow Criteria Type Validation
C1-APPALG	Approval Workflow Generic Approval Algorithm
C1-APPALGUSR	Approval Algorithm for User
C1-APPCHAIN	Selects Approval Workflow Chain based on Criteria
C1-APPGROUPV	Group- Pending Transaction Validation
C1-APPGRPCHL	Group Chain Linkage-Pending transaction Validation
C1-APPIGA	Invoice Group Account Approval
C1-APPIGDR	Invoice Group Approval Transaction Data Retrieval
C1-APPPASG	Approval for Price Assignment
C1-APPPERPOS	Sample Post Processing Algorithm for Person Group
C1-APPPL	Approval Algorithm for Pricelist
C1-APPPROD	Approval for Product
C1-APPTXN	Approval Transaction BusObj Access Permissions
C1-APPTXNBAS	Approval Transaction for Base Screens
C1-APPTXNPL	Approval Transaction Pricelist Audit
C1-APPTXNPRI	Approval Transaction Price Assignment and Comp
C1-AXCREATE	Default Approval Transaction Creation Algorithm
C1-AXPRICEOV	Price Assignment Data Retrieval
C1-CREATEUI	Create UI Maps for Approval Workflow
C1-GRPCHNVAL	Approval Workflow Group Chain Linkage Validation

Algorithm Type	Description
C1-GRPVAL	Approval Transaction Group Validation
C1-POSTFTCRE	Post FT Create - FT GL Generation
C1-REASONPEN	Approval Transaction Reason Validation
C1-RSNCDAT	Approval workflow Reason Code Validation
C1_APPTXNNA	Approval Transaction Notification Action Algo Type
RCVAL_RNDXRE	Rate Component Value - Round Xref Amount

### **Algorithms**

Algorithm	Description
C1-ADMALG	Approval Workflow Settings Validation Algorithm
C1-APCHALGO	Approval Workflow Chain Validation
C1-APCHELIAL	Determine BO Approval Workflow by Group List
C1-APCHNPEND	Chain - Pending Transaction Validation
C1-APCHTXN	Determine BO for Approval Chain Transaction
C1-APGBYPORT	Settings - Pending Transaction Validate
C1-APGCLDB	Determine BO for Group Chain Linkage
C1-APLCDBAL	Determine BO Approval Workflow Linkage Criterion
C1-APLKCT	Approval Workflow Criteria Type Validation
C1-APPALG	Approval Algorithm
C1-APPALGUSR	Approval Algorithm for User
C1-APPASGCR	Approval Transaction Creation for Price Assignment
C1-APPCHAIN	This Chain Selects Approval Chain
C1-APPCTVAL	Determine BO for Approval Workflow Criteria Type
C1-APPGROUPV	Group Pending transaction Validation
C1-APPGRP	Determine BO for Approval Workflow Group
C1-APPGRPCHL	Group Chain Linkage-Pending Transaction Validate
C1-APPIGA	Invoice Group Account Approval
C1-APPIGDR	Invoice Group Data Retrieval
C1-APPPASG	Approval for Price Assignment
C1-APPPERPOS	Sample Post Processing Algorithm for Person Group
C1-APPPL	Approval Algorithm for Pricelist
C1-APPPROD	Approval for Product
C1-APPREASON	Approval Transaction Reason
C1-APPRSNPEN	Validation Algorithm for Reason Screen
C1-APPTXN	Approval Transaction Entity Access
C1-APPTXNBAS	Approval Workflow for Base Screens
C1-APPTXNPL	Approval Transaction Creation for Pricelist
C1-APPTXNPRI	Approval Transaction for Pricing
C1-APRSVAL	Approval Transaction Reason Validation



Algorithm	Description
C1-AXCREATE	Default Approval Transaction Creation Algorithm
C1-AXPRICEOV	Data Retrieval Algorithm for Price Assignment
C1-AXPROD	Approval Transaction Creation for Price Item
C1-AXUSR	Approval Transaction Creation for User
C1-CREATEUI	Create UI for Approval Workflow
C1-GRPALG	Approval Transaction Group Validation Algorithm.
C1-GRPCHNALG	Approval Workflow Group Chain Linkage Algorithm
C1-IGCREATE	Invoice Group Approval Transaction Creation
C1-POSTFTCRE	Post FT Create - FT GL Generation
C1-RSNCDALG	Algorithm for Approval Workflow Reason Code Valid
C1-USRGDET	Determine BO for User Group
C1_APPDATA	Default Approval Transaction Data Retrieval
C1_APPTXNNA	Approval Transaction Notification Action Algorithm
RATE_ALGO	Determine BO for Rate Component
SEQAGCL	Sequence For Group Chain Linkage.
SEQALGO	Approval Workflow Chain Sequence Algorithm
SEQALGRP	Sequence for Approval Transaction Group BO

### **Foreign Key References**

Foreign Key Reference	Description
C1-ACHCD	Approval Chain Code
C1-ACRCD	Approval Chain Code
C1-APAL	Algorithm
C1-APBO	Business Object
C1-APBOG	BO Group
C1-APDUI	UI Map
C1-APFLD	Field
C1-APROL	To Do Role
C1-APSCR	Script
C1-APTD	To Do Type
C1-APUI	UI Map
C1-BPA	UI Map
C1-RSN	Reason

### **Maintenance Objects**

Maintenance Object	Description
C1-APP-BOCHN	Approval Transaction BO Chain
C1-APP-CH-EL	Approval Workflow Settings

Maintenance Object	Description
C1-APP-CHAIN	Approval Workflow Chain
C1-APP-CRIT	Approval Transaction Criteria Type
C1-APPGRP	Approval Transaction Group
C1-APPTXN	Approval Transaction
C1-APPTXNLOG	Approval Transaction Log
C1_APPREASON	Approval Workflow Reason
RATE	RATE

### Tables

Table	Description
CI_APPTXN	Approval Transaction
CI_APPTXN_BOCHAIN	Approval Transaction BO Chain
CI_APPTXN_BOCHAIN_CRIT	Approval Transaction BO Chain Criteria
CI_APPTXN_BOCHAIN_K	Approval Transaction BO Chain Key
CI_APPTXN_CHAIN	Approval Transaction Chain
CI_APPTXN_CHAIN_L	Approval Transaction Chain Language
CI_APPTXN_CHAIN_TODO	Approval Chain To do
CI_APPTXN_CHAR	Approval Transaction Characteristics
CI_APPTXN_CH_ELIGIBLE	Approval Transaction Chain Eligible
CI_APPTXN_CRIT_TYPE	Approval Transaction Criteria Type
CI_APPTXN_CRIT_TYPE_L	Approval Transaction Criteria Language
CI_APPTXN_GROUP	Approval Transaction Group
CI_APPTXN_GROUP_BO	Approval Transaction Group BO
CI_APPTXN_GROUP_BO_RELATION	Approval Transaction Group BO Relation
CI_APPTXN_GROUP_L	Approval Transaction Group Language
CI_APPTXN_ITEM	Approval Transaction Item
CI_APPTXN_ITEM_CHAR	Approval Transaction Item Char
CI_APPTXN_K	Approval Transaction Key
CI_APPTXN_LOG	Approval Transaction Log
CI_APPTXN_REASON	Approval Transaction Reason
CI_APPTXN_REASON_L	Approval Transaction Reason Language
CI_MO_APPTXN_CHAIN	Maintenance Object Approval Transaction Chain
CI_PRICEASGN_CHAR	Price Assignment Characteristics

### Scripts

Script	Description
C1-APPNOTIFY	Notify Approval Transaction
C1-APPTRNS	Pay Plan Buttons (FS)

Script	Description
C1-APPTXNCHN	Approval Transaction Chain - Add Chain
C1-APPTXNCTR	Approval Transaction Criteria Type - Add Criteria
C1-ActCurNav	Script to Navigate to Statement Specific Account Current
C1-AdGBOSSE	Approval Transaction Group BO Relation add
C1-AdTDSS	Add To Do Service Script
C1-AddTODO	Approval Chain- Add To Dos
C1-Agrphelp	Approval Transaction
C1-ApChainSS	Delete chain Service Script
C1-ApGBORSS	Approval Transaction Group BO Relation
C1-ApGBORel	Approval Transaction Group BO Relation-Add
C1-ApGBOSSE	Approval Transaction Group BO Relation Edit Service Script
C1-ApViewLog	Approval work Flow pricing View log
C1-ApWKFLTD	Service Script for Approval Workflow To Do
C1-ApWLCT	Validation Script for Approval Workflow Linkage Criterion
C1-AppBOChn	Approval Transaction BO Chain-Add
C1-AppByGrp	Approval Transaction by Group-Add
C1-AppGrp	Approval Transaction Group-Add
C1-AppGrpECL	Service Script to edit Approval Group Child elements
C1-AppGrpRsl	Approval Transaction group zone 2 -Add
C1-AppProd	Approval Transaction pricing product display
C1-AppRsltEd	Approval Transaction group result-Edit
C1-AppRsn	Approval Transaction reason-Add
C1-AppTxnPrc	rejection for maker checker for Pricing
C1-AppTxnPsg	Pricing Resolve/Modify script
C1-BOChnAdd	Approval Transaction BO Chain-Add
C1-BOChnDel	Approval Transaction BO Chain-Delete
C1-BOChnEd	Approval Transaction BO Chain-Edit
C1-BOChnRslt	Approval Transaction BO Chain Result-Add
C1-DEFCONF	Account Current - Edit Items
C1-DelAPGBS	Approval Transaction Group BO Relation Delete
C1-DelApGBOR	Approval Transaction Group BO Relation-Delete
C1-DelApGpCL	Approval Transaction Group Chain Linkage-Delete
C1-DelAppCT	Approval Transaction Criteria Type-Delete
C1-DelAppChn	Approval Transaction Chain-Delete
C1-DelAppGpR	Approval Transaction Group Result-Delete
C1-DelAppGrp	Approval Transaction Group-Delete
C1-DelAppRsn	Approval Transaction Reason-Delete
C1-DelAppTD	Approval Transaction Add To Do-Delete
C1-DelChainS	Delete Chain

Script	Description
C1-DelGBORel	Approval Transaction Group BO Relation-Delete
C1-DelGrpChl	Approval Transaction Group Child-Delete
C1-EBOCHSS	Service Script for Approval Workflow To Do
C1-EBOChnRst	Approval Workflow BO Chain Group Linkage-Edit
C1-EDITCHN	Approval Transaction Chain To Do - Edit
C1-EDITCTR	Approval Transaction - Edit Criteria
C1-EDITODO	Approval Transaction - Edit Add To Do
C1-EDTODOCL	Edit To Do
C1-EXITNBCHK	Display Warning if Status of Account Current Item is Not Booked.
C1-EXTREC	BPA to Reconcile External Statement. External Items Presence Checked.
C1-EdApGBORe	Approval Transaction Group BO Relation-Edit
C1-EditBOCHN	Approval Workflow BO Chain Group Linkage-Edit
C1-GenerUI	Generate UI Maps BPA
C1-GrpEdit	Approval Transaction Group Edit
C1-GrpRsltEd	Approval Transaction Group Result Edit Service Script
C1-LogComp	Maker Checker Compare
C1-MkkCkComp	Maker Checker Compare
C1-NOTIPOP	Notify Approval Transaction
C1-RECTFY	Account : Main Search Validation Script
C1-RSNBPA	BPA Script to Search the Reason Code
C1-RSNCVAL	Plug-In Script for Reason Code Validation
C1-Rectify-m	Rectification for Maker
C1-Reject-mk	Resolve
C1-RejectPrc	Rejection for Maker Checker for Pricing
C1-RolDSearc	Validation Script for Role ID Search Screen
C1-RsnEdit	Approval Transaction Reason Edit
C1-SrchAlgo	Validation Script for Algorithm search screen
C1-SrchBOCD	Validation Script for BO Search Screen
C1-SrchBOGrp	Validation Script for BO Group Search Screen
C1-SrchBPA	Validation Script for BPA Search Screen
C1-SrchChnCD	Validation Script for Chain Code Search Screen
C1-SrchCrCd	Validation Script for Criteria Code Search Screen
C1-SrchFld	Validation Script for Field Search Screen
C1-SrchRsn	Validation Script for Reason Search Screen
C1-SrchTDcod	Validation Script for TD Search Screen
C1-SrchUI	Validation Script for UI Map Code Search Screen
C1-SuprtScpt	Support Service Script
C1-UPDUOM	Update UOM
C1-ViewLog	Maker Checker Compare

Script	Description
C1-WITHDRAW	Delete Approval Transaction
C1-delete-MK	Delete for Maker Checker
C1-getUser	Approval Workflow Get Current User
C1-log-edit	View Details
C1-supportSS	Approval Workflow Group BO Add
C1-viewReco	Approval Workflow View Record
C1-withdrawP	Delete Approval Transaction of Pricing
C1_ADMEDIT	Edit the Approval Transaction Admin
C1_APPTXN_AD	Add Approval Transaction Admin
C1_CALENDAR	Calendar
C1_CHARVALSS	Service Script for Characteristic Value
C1_CHSRCH	Search Characteristic Script
C1_COPY_ASG	Copy Price List
C1_COPY_PL	Copy Price List
C1_DELCOMP	Delete Price Component
C1_DELE_POP	Approval Transaction Delete Pop-up
C1_DeleteAPP	Delete Record of Approval Transaction Admin Screen
C1_F_APPSARCH	Maker Checker Approve Search
C1_F_AlgoGro	Approval Workflow Algorithm Group
C1_F_MKRSRCH	Maker Checker
C1_F_MRKAPPR	Maker Checker Search for Approve
C1_F_RECTSRC	Maker Checker Rectify Search
C1_F_RESOLVE	Resolve
C1_F_VAL	Maker Checker Admin UI Map Search
C1_F_V_APPRC	Validation for Maker Checker Pricing Search
C1_F_V_APPSAR	Validation for Maker Checker Approve Search
C1_F_V_LOGSR	Validation Maker Checker Log
C1_F_V_RECTS	Validation Maker Checker Rectify Search
C1_F_V_RESOL	Validation Resolve
C1_INS_SRCH	Validation Script for Insurance Control Central ID Type Search
C1_MKR_SRCH	Maker Checker Search
C1_MRK_SRCH	Maker Checker Search
C1_PRC_DISP	Display Information of a Product
C1_SRCHMKR	General Search
C1_SRCH_AW	Search Product Script
C1_SRCH_CHAR	Display Information of a Characteristic
C1_SRC_PR_AW	Search Product
C1_SR_APPWF	Search Product Script
C1_VIEW_IMG	Return Button with Label

Script	Description
C1_searchCH	Search Approval Transaction Chain Code
C1_searchOBJ	Search Group Code for Approval Transaction Admin
F1-PrcShwZn	Zone Visibility - Should Display Zone in Portal
c1_rolidsear	Validation Script for TD Role Search Screen

### **Zones**

Zone	Description
C1-APP-ACTIV	Approval Transaction Active Check
C1-APP-LOG	Log
C1-APP-PRICE	Search
C1-APP-PROD	List of Price Assignments (Product)
C1-APP-RCT	Search
C1-APP-RSLV	Search
C1-APPCHNCD	Search Approver Chain Code
C1-APPGPBORZ	Group BO Relation
C1-APPGRP	Approval Workflow Groups
C1-APPGRPR	Business Objects
C1-APPOVE	Approve
C1-APPPRICEL	List of Price Assignments
C1-APPROVE	Search
C1-APPTODO	Approval Levels
C1-APPTXNCHN	Approval Workflow Chains
C1-APPTXNCRT	Approval Workflow Criteria Types
C1-APPTXNRSN	Approval Workflow Reasons
C1-APPTXNSET	Approval Workflow Settings
C1-APTCRTYCD	Search Approver Criteria Type Code
C1-BOCHAIN	Approval Workflow Group Chain Linkages
C1-BOGRPDOWN	Approval Workflow Reason Code
C1-BPADESC	Search: Script Zone
C1-BPASEARCH	Search: Script Zone
C1-DESCZ	Search Role ID Zone
C1-FIELDZN	Search Field for Approval Workflow
C1-GOACCUR	Account Current
C1-LOG-SRCA	Log
C1-LOG-SRCH	Search
C1-MKRLZ	Search Maker Role ID Zone
C1-PROD-RCT	List of Price Assignments(Product modify)
C1-RECTIFYSR	Search
C1-RECTPL	List of Price Assignments

Zone	Description
C1-RESLVPL	List of Price Assignments
C1-RESOLVE	Search
C1-ROLEZ	Search Role ID Zone
C1-UIMPSRZN	Search Input and Display UI Map
C1-UIMPSRZND	Search Input and Display UI Map
C1-VIEWLOG	Log
C1APPTXNBOCH	Approval Workflow Criteria
C1_ACCTYPE_L	Account Type List Dropdown
C1_ALGOZ	Search Algorithm Code for Application Transaction
C1_APPHISTOR	History
C1_APPROVWKF	Manage Approval Workflow
C1_BOCODEZ	Search BO Object Code for Application Transaction
C1_BOGROUPCD	Search BO Group Code for Approval Transaction Admin
C1_BOOBJCODE	Search BO Object Code for Application Transaction
C1_BUSOBJCD	bus object code for approval transaction admin
C1_CHAIN_ADM	Search Algorithm Code
C1_GET_CHAR	Characteristic List
C1_RESASON_C	Approval Workflow Reason Code
C1_RSNCODEZ	Search Reason Codes for the Compare UI
C1_SRCH_CHAR	Populate Characteristics
C1_TODOZ	Search To Do Type Code for Application Transaction

### UI Maps

UI Map	Description
Approval Transaction Add	Add Approval Transaction
C1-APPROVE-SEARCH	Approval Transaction Search HTML Fragment
C1-AccCurDeferConfirm	Confirmation to Defer
C1-AccessGroupAppTxnDisplay	Maker Checker Access Group BO Display UI
C1-AccessGroupAppTxnInput	Maker Checker Access Group BO Input UI
C1-AddApptxui	Add Approval Admin Screen
C1-ApGBORelUI	Approval Transaction Group BO Relation UI
C1-App-Product	Approval Transaction Rectify Search HTML Fragment
C1-App-ProductRectify	Approval Transaction Rectify Search HTML Fragment
C1-AppBOChnUI	Approval Transaction BO Chain
C1-AppGroupRslt	Approval Transaction Group
C1-AppPriceAsgn	Approval Transaction Pricing
C1-AppPriceViewLog	View Log
C1-AppTxn-PriceAsgn	Approval Transaction Price Assignment Search
C1-AppTxn-PriceAssignment	Approval Transaction Price Assignment

UI Map	Description
C1-AppTxn-Rectify-Srch	Approval Transaction Rectify Search HTML Fragment
C1-AppTxn-RectifySrch	Approval Transaction Rectify Search
C1-AppTxn-ResolveSrch	Approval Transaction Resolve Search HTML Fragment
C1-AppTxnChain	Approval Transaction Chain UI
C1-AppTxnChainToDo	Approval Transaction Chain To Do UI
C1-AppTxnCrit	Approval Workflow Criteria Type UI
C1-AppTxnExchRateDisplay	Exchange Rate Display UI for Maker Checker
C1-AppTxnExchRateInput	Exchange Rate Input UI for Maker Checker
C1-AppTxnGroup	Approval Transaction Group
C1-AppTxnInvoiceGrpAddDisplay	Add Member – UI Map for Display
C1-AppTxnInvoiceGrpAddInput	Add Member – UI Map for Input
C1-AppTxnInvoiceGrpEditDisplay	Edit Member – UI Map for Display
C1-AppTxnInvoiceGrpEditInput	Edit Member – UI Map for Input
C1-AppTxnPriceAssignDisplay	Display UI Map for Pricing
C1-AppTxnPriceAssignInput	Input UI Map for Pricing
C1-AppTxnPriceItemDisplay	Display UI Map for Product
C1-AppTxnPriceItemInput	Input UI Map for Product
C1-AppTxnPricelistDisplay	Display UI Map for Price List
C1-AppTxnPricelistInput	Input UI Map for Price List
C1-AppWFSettingEdit	Add Approval Admin Screen
C1-BOChnRslt	Approval Transaction BO Chain Result
C1-CompareUI	Comparison UI for Maker Checker
C1-ConfirmDelete	Delete Confirmation
C1-ConfirmOverride	Revision Action Confirmation
C1-DivisionAppTxnDisplay	Maker Checker Division BO Display UI
C1-DivisionAppTxnInput	Maker Checker Division BO Input UI
C1-ErrorUI	Approval Workflow Error Message for User Not Found
C1-IncorrectWithdraw	Invalid Withdraw for Approval Transaction
C1-ListOfPriceAssgn	List of Price Assignments
C1-ListOfPriceAssgnModify	Modify List of Price Assignments
C1-ListOfPriceAssgnResolve	Resolve List of Price Assignments
C1-LogCompareUI	Comparison UI for Maker Checker
C1-PersonAppTxnDisplay	Maker Checker Person BO Display UI
C1-PersonAppTxnInput	Maker Checker Person BO Input UI
C1-REASON-COMMENT	Reason Comment
C1-RejectComentUi	Approval Workflow Rejection UI
C1-SAApTxnDisplay	Maker Checker SA BO Display UI
C1-SAApTxnInput	Maker Checker SA BO Input UI
C1-SearchAPCRTYCD	Search Approval Transaction Type Code



UI Map	Description
C1-SearchBPA	Search Script
C1-SearchROLEID	Search Maker Role Id
C1-UIMAPCD	Search for UI Map Code and Description
C1-UserGroupAppTxnDisplay	Maker Checker User Group BO Display UI
C1-UserGroupAppTxnInput	Maker Checker User Group BO Input UI
C1-deleNTmodify	Approval Transaction Delete Mode Cannot Modify
C1-deleNTresolve	Approval Transaction Delete Mode Cannot Resolve
C1-deleteMK	Delete UI Map
C1_ADD_PRICECHAR	Add Price Assignment Characteristic
C1_AddApptxUi	Add Approval Transaction Chain Code.
C1_AppTxnReason	Approval Transaction Reason UI Map
C1_EXCH_RATE	Exchange Rate Search Panel
C1_LOG_SEARCH	Log Search for Approval Workflow
C1_LOG_SRCH	Search Log from Approval Workflow
C1_OVRD_PRICECHAR	Add Price Assignment Characteristic
C1_PRC_UIMAP	UI Map to Edit Pricing for the Product
C1_Recall_ERROR	Approval Workflow Recall Error Message
C1_SRCH_CHARVAL	UI Map for Search Characteristic Value
C1_SearchAPPCHNCD	Search Approver Chain Code
C1_SearchAICD	Search Approver Action Algorithm Code
C1_SearchBOcode	Search BO Group Code for Approval Transaction Chain Admin
C1_SearchBOcodeCT	Search BO Code
C1_SearchFieldCT	Search Field and Description
C1_SearchTDcode	Search To Do Type Code
C1_msg	Transaction ID Removed Message
c1-delHelp	Approval Workflow Delete Confirmation Pop-up

### Lookups

Lookup	Value
APPTXN_ACTION_FLG	DEL
	ADD
	UPD
APPTXN_BO_STATUS	Pending
	Recalled
	Inprocess
	Rejected
	Approved
	Cancelled
APPTXN_REASON_TYPE	CANCELED

Lookup	Value
	REJECT
APPTXN_STATUS_FLG	APPROVED
	CANCELLED
	DELETED
	INITIAL
	INPROCESS
	PENDING
	REJECTED
	RECALLED
APP_REQ_ACTION_FLG	DEL
	ADD
	UPD
C1AX_OPT_TYP_FLG	Approval Transaction Entity Access Algorithms
	Display UI XSL
	Approval Transaction Compare Value Changed Color
	Approval Transaction Resolve To Do Type
	Approval Transaction Compare New or Missing Entry Color
	Input UI XSL
C1_COPY_TYPE	All
	None
ENABLE_FLAG	NO
	YES
EXCO_OPT_TYP_FLG	End Date Required for Division Override
EXPR_OPT_TYP_FLG	Expire Override Switch
LIST_FLG	FALSE
	TRUE
MCFC_OPT_TYP_FLG	Transfer Adjustment Type for Currency Conversion
	Cancel Reason Code for Currency Conversion Adjustm
	Payment Distribution To-Do
	Currency Conversion Algorithm
	Allow Multi-Currency Accounts
ORDR_OPT_TYP_FLG	Crawl Order
OWNER_TYPE_FLG	Account
	Person
	Prielist
PRCT_OPT_TYP_FLG	Effective Pricing RecordSet Limit
PREVALIDATION_FLG	NO
	YES

**Feature Configurations**

Feature Configuration	Description
C1_AXENTITY	Approval Workflow Configuration
C1_EXCHRATE	Currency Exchange Rate Specific Options
C1_EXP_OVRD	Expire Override Switch
C1_MLTCURACC	Allow Accounts with Multiple Currencies
C1_PRASNORDR	Global Person Crawling Order
C1_PR_REC	Effective Pricing Record Set

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