

**Oracle Utilities Customer Care and Billing
Integration to Oracle E-Business Suite
Financials for General Ledger and
Accounts Payable**

Implementation Guide

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Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable, Release 12.1 Implementation Guide

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Preface

This document is intended for anyone implementing the Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

Documentation and Resources

For more information regarding this integration, foundation technology and the edge applications, refer to the following documents:

Product Documentation

Topic	Description
Integration documentation:	
Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable Release Notes	
Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable Implementation Guide	Refer to the Oracle Utilities applications documentation page: http://docs.oracle.com/cd/E72219_01/documentation.html
Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable Installation Guide	
Edge application documentation:	
Oracle Utilities Customer Care and Billing	
Oracle E-Business Suite Financials for General Ledger and Accounts Payable	

Additional Documentation

Resource	Location
SOA Suite 12c documentation	Refer to the SOA documentation at: http://www.oracle.com/technetwork/middleware/soasuite/documentation/index.html
Oracle Support	Visit My Oracle Support at https://support.oracle.com regularly to stay informed about updates and patches. Access the support site for the Edge Application Certification Matrix for Oracle Utilities Products (Doc ID 1454143.1) or refer to the Oracle Utilities Integrations page at http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm
Oracle Technology Network (OTN) Latest versions of documents	http://www.oracle.com/technetwork/index.html
Oracle University for training opportunities	http://education.oracle.com/
Web Services Security	For more information about Web services security using Oracle Fusion Middleware 12c refer to https://docs.oracle.com/middleware/12211/cross/webservicetasks.htm .
Oracle Fusion Middleware 12c documentation	Refer to the Oracle applications documentation page: http://docs.oracle.com/en/middleware/
Oracle Fusion Middleware “What's New In Oracle WebLogic Server” Section: Standards Support, Supported Configurations and WebLogic Server Compatibility, Database Interoperability For additional information on the type of database to use.	http://docs.oracle.com/middleware/1221/wls/NOTES/toc.htm
Instructions on installing this integration on non-Windows/ Linux platforms	Refer to Oracle Support Knowledge Article ID 1349320.1.

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	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.

Abbreviations

The following table lists the commonly used abbreviations in this guide.

Abbreviation	Expanded Form
AIA	Application Integration Architecture
AP	Accounts Payable
AP Data	Accounts Payable Data
AP Request	Accounts Payable Request
BPEL	Business Process Execution language
DVM	Domain Value Map
EBF	Enterprise Business Flow
EBS	Oracle E-Business Suite
EM	Enterprise Manager
FT	Financial Transactions
GL	General Ledger
MDS	Meta Data Store

OHS	Oracle HTTP Server
OUCCB or CCB	Oracle Utilities Customer Care and Billing
SOA	Service Oriented Architecture
UMS	User Messaging Service

Part 1

Understanding the Integration

This section provides an overview of the participating applications and information regarding the business processes addressed by this integration.

This section contains the following chapters:

- [Overview](#)
- [Understanding the Integration Process](#)

Chapter 1

Overview

This document provides configuration and administration information for the integration between Oracle Utilities Customer Care and Billing (CCB) and Oracle E-Business Suite Financials for General Ledger and Accounts Payable .

- [Prerequisites](#)
- [About the Integration Product](#)
- [Supported Business Processes](#)
- [Process Scheduling](#)
- [Best Practices](#)

Prerequisites

All participating applications must be installed, set up, and working properly.

About the Integration Product

This section provides general information about the functionality and processing of the Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable. This is an AIA Direct Integration using SOA and does not require AIA Foundation Pack to be installed. The following products are involved in the integration:

- [Oracle Utilities Customer Care and Billing](#)
- [Oracle E-Business Suite Financials for General Ledger and Accounts Payable](#)

Oracle Utilities Customer Care and Billing

Oracle Utilities Customer Care and Billing (CCB) is a customer and billing system that manages all aspects of customer service needed by most utilities to operate their business. Basic objects form the core of the system: person, account, premise, service agreement, and service point. These objects hold demographic, geographic, and financial information about a company's customers and properties. Related to these objects are the processes that they manage: bills, payments, meter readings, field activities, etc.

Note: Refer to the [Documentation and Resources](#) section for a reference to the product matrix which provides current application version details.

Oracle E-Business Suite Financials for General Ledger and Accounts Payable

Oracle E-Business Suite (EBS) is a resource-planning software which enforces industry best-practice controls on data input and process flows as tasks are completed within the system. Processes are separated into modules, and each module consists of a collection of forms where data is entered at each stage of the business process.

As part of the Enterprise Resource Planning functionality, Oracle E-Business Suite Financials for General Ledger and Accounts Payable offers flexible ledger architecture, consistent financial and operational information, dynamic planning, budgeting and forecasting, and multi-dimensional profitability analysis.

Note: Refer to the [Documentation and Resources](#) section for a reference to the product matrix which provides current application version details.

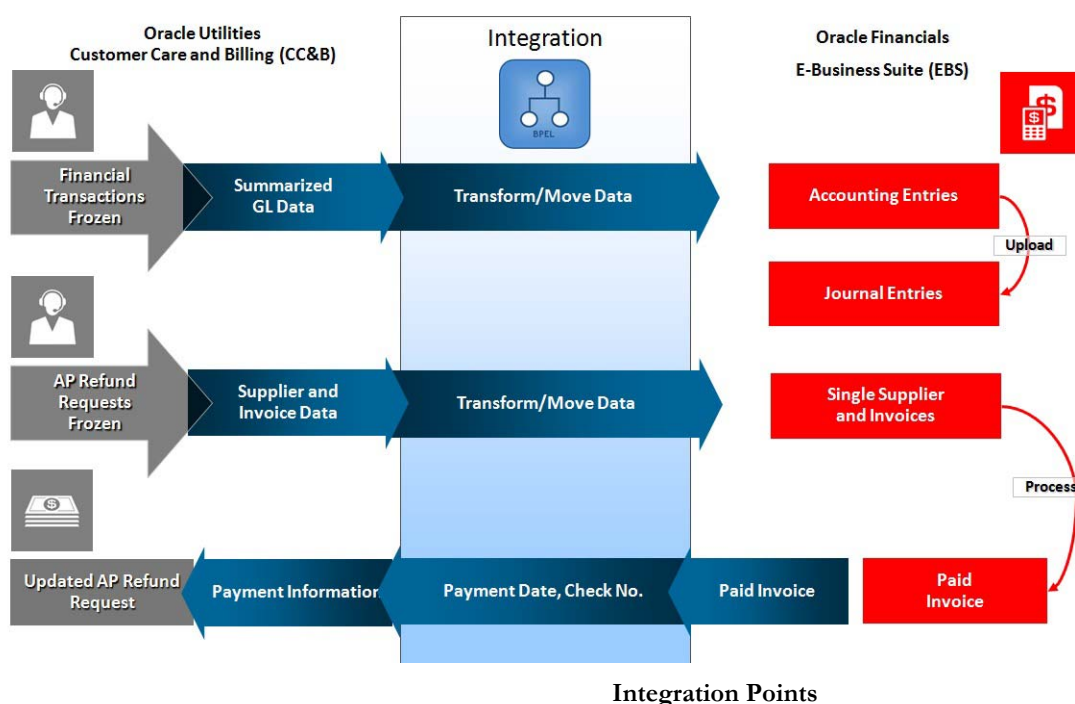
Supported Business Processes

This integration of products incorporates three areas of key functionality to facilitate the transfer of information between two applications. Data is sent from Oracle Utilities Customer Care and Billing to Oracle E-Business Suite Financials for General Ledger and Accounts Payable and vice versa to support the following transactions and actions:

Oracle Utilities Customer Care and Billing	Oracle E-Business Suite
A bill is created/ cancelled	The general ledger is updated with the journal information.
A payment is created/ cancelled	
An adjustment is created/ cancelled	Customer and AP Request information is used to create a one-time supplier and supplier site. An accounts payable Invoice is created and associated with this supplier and supplier site.
An adjustment whose type indicates AP Request is created	

Oracle E-Business Suite	Oracle Utilities Customer Care and Billing
A payment is created for an invoice related to an Oracle Utilities Customer Care and Billing AP request.	Payment information is sent from Oracle E-Business Suite Financials for General Ledger and Accounts Payable to Oracle Utilities Customer Care and Billing. The AP Request is updated with the payment information.
A check related to an invoice linked to an AP request is re-issued.	The AP request and its associated adjustment are cancelled.
A check related to an invoice linked to an AP request is voided and the liability is closed.	

The flow of data between the two systems is illustrated below:



Process Scheduling

Depending on the size and complexity of your accounting system and business practices, transactions generated in either of the participating applications are sent to the alternate application on a daily or weekly schedule. Schedule the transfer of this information between applications to occur according to a frequency that is most appropriate for your organization.

Best Practices

The following sections provide business information that helps achieve accurate and error-free movement of data between Oracle Utilities Customer Care and Billing and Oracle E-Business Suite Financials for General Ledger and Accounts Payable:

- [One-Time Configuration Settings](#)

- [General Ledger Integration](#)
- [Accounts Payable \(AP\) Request and AP Data Integrations](#)

Note: Information on how to configure settings that are specific to the integration is provided in the chapter titled [Configuring the Integration](#). Refer to product specific documentation for information on how to complete product specific configuration tasks.

One-Time Configuration Settings

Some one-time configuration settings must be coordinated manually to ensure proper results from the movement of data between the two applications.

General Ledger Configuration

Oracle E-Business Suite Financials for General Ledger and Accounts Payable is the source of truth for all General Ledger information. Oracle Utilities Customer Care and Billing is considered to be the sub-ledger. It is assumed that the General Ledger has already been configured to accommodate your business needs.

Distribution Codes

Oracle Utilities Customer Care and Billing uses distribution codes to map sub-ledger transactions to the General Ledger Accounts. As part of your Oracle Utilities Customer Care and Billing configuration, it is assumed that you have properly mapped your distribution codes to the General Ledger chart of accounts.

General Ledger Divisions for Non-Integrated Transactions

If some of the transactions created in Oracle Utilities Customer Care and Billing must not be integrated to your General Ledger, you must configure a separate General Ledger Division for these transactions. You must then configure the integration product to distinguish which General Ledger Division must be integrated with the General Ledger (it ignores all others).

General Ledger Integration

Oracle E-Business Suite Financials for General Ledger and Accounts Payable accounts are structured using account segments. These are set up in your existing Oracle E-Business Suite Financials for General Ledger and Accounts Payable Flexfield according to your business practices. Oracle Utilities Customer Care and Billing distribution codes must be configured to mirror the segments in Oracle E-Business Suite Financials for General Ledger and Accounts Payable. The segment positions are separated by dots '.' in Oracle Utilities Customer Care and Billing according to the Oracle E-Business Suite Financials for General Ledger and Accounts Payable segments defined in the Accounting Flexfield.

Create your Accounting Flexfield in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable General Ledger (if it does not exist) then set up your Oracle Utilities Customer Care and Billing distribution codes to map to the General Ledger account structure using dot separators.

There is a dual use of the word “account” for the Oracle E-Business Suite general ledger accounts and the Oracle Utilities Oracle Utilities Customer Care and Billing customer billing accounts. A customer billing account is a collection of information associated with a customer that is used in the Oracle Utilities Customer Care and Billing payment and

billing process, and does not relate to the Oracle E-Business Suite accounting definition of account (General Ledger Account). The Oracle Utilities Customer Care and Billing distribution code is used to map to the Oracle E-Business Suite general ledger account.

This section includes information on:

- [Oracle E-Business Suite Financials for General Ledger and Accounts Payable General Ledger Settings](#)
- [Oracle Utilities Customer Care and Billing General Ledger Settings](#)
- [General Ledger Settings in Integration Layer](#)
- [Accounting](#)

Oracle E-Business Suite Financials for General Ledger and Accounts Payable General Ledger Settings

Configure General Ledger settings in Oracle E-Business Suite Financials for General Ledger and Accounts Payable according to the following guidelines, keeping in mind that Oracle E-Business Suite Financials for General Ledger and Accounts Payable is the source of truth for the general ledger:

- **Journal Import Process:** Schedule the Journal import process to create journals from Oracle Utilities Customer Care and Billing information inserted into Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface tables by the integration software. When you configure Oracle E-Business Suite Financials for General Ledger and Accounts Payable to run this process automatically at a preset time, ensure you have matched this timing with the timing of other actions completed by Oracle Utilities Customer Care and Billing and the integration product. Alternatively, you may use the Standard Request Submission (SRS) within Oracle E-Business Suite Financials for General Ledger and Accounts Payable to run the Journal Import process manually.
- **Accounting Entry Definition:** If not already configured, pre-configure an Accounting Flexfield definition in Oracle E-Business Suite Financials for General Ledger and Accounts Payable to indicate the staging table where incoming accounting entries must be stored. Ensure that all mandatory fields on the staging tables are mapped.
- The integration software relies on other Oracle E-Business Suite Financials for General Ledger and Accounts Payable configuration information including: Calendars, Ledger, Journal source, Journal Category. These are usually already configured as part of your implementation. If these do not already exist, configure them for the integration software to run correctly.

Oracle Utilities Customer Care and Billing General Ledger Settings

The Configure General Ledger settings in Oracle Utilities Customer Care and Billing according to the following guidelines, keeping in mind that Oracle E-Business Suite Financials for General Ledger and Accounts Payable is the overriding source for the general ledger:

- Schedule the GLASSIGN and GLS batch processes to run at an appropriate time of day. These processes get sub ledger information in Oracle Utilities Customer Care and Billing and all information that has not been posted to the General Ledger, making them ready to extract, transform and load to the

General Ledger. When you configure Oracle Utilities Customer Care and Billing to run this process automatically at a preset time, ensure you have coordinated this timing with the timing of other actions done by Oracle E-Business Suite Financials for General Ledger and Accounts Payable and the integration product. (Alternatively, you may use the standard user interface within Oracle Utilities Customer Care and Billing to run these batch processes manually).

- Ensure that Distribution Codes are configured in Oracle Utilities Customer Care and Billing to properly reflect the General Ledger accounts that must be debited and credited for each type of financial transaction created.

General Ledger Settings in Integration Layer

As part of the technical configuration, you must configure the following information:

- The E-mail address of the person who must be notified if the integration software detects and logs an error while performing the integration.
- The Ledger ID, Ledger Source, and Ledger Category to use for journals in Oracle E-Business Suite Financials for General Ledger and Accounts Payable that came from Oracle Utilities Customer Care and Billing through the integration. These are configured from the Integration Lookup table.
- The Ledger Category passed to Oracle E-Business Suite Financials for General Ledger and Accounts Payable can also be dynamically assigned based on the Financial Transaction (FT) Type Flag of the entry coming from the Oracle Utilities Customer Care and Billing. The new DVM CCB_EBS_CategoryName must be configured. If the DVM is not configured or the value is not found in the DVM, it will get the default value from the Integration Lookup table.

Note: This enhancement is only available if Patch 25758196 is applied.

- If you enter an Oracle Utilities Customer Care and Billing GL Division name in the Integration configuration table (INTEGRATION_LOOKUP_TABLE), then only financial transactions associated with this GL Division are extracted for integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL.

If all Oracle Utilities Customer Care and Billing financial transactions must come across the integration, then do not specify any General Ledger Divisions in the integration product configuration table.

Accounting

The following shows the basic accounting debits and credits that can be achieved through the configuration indicated above:

Oracle Utilities Customer Care and Billing Event	Debit Account	Credit Account
Charges generated by billing	Accounts Receivable	Revenue
Customer making payment	Cash	Accounts Receivable
AP Request adjustment	Accounts Receivable	Accounts Payable Clearing

Accounts Payable (AP) Request and AP Data Integrations

This section covers:

- [Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Settings](#)
- [Oracle Utilities Customer Care and Billing AP Settings](#)
- [AP Settings in Integration Layer](#)
- [Accounting](#)

Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Settings

The Oracle E-Business Suite Financials for General Ledger and Accounts Payable Payables Open Interface Import (APXIIMPT) process must be run to read the data from the AP Invoice Interface tables and create invoices corresponding to the Oracle Utilities Customer Care and Billing AP Requests. This process can be run manually or scheduled to run at a pre-determined time.

Configuration needed for AP Request and AP Payment integrations includes:

- **Payables Open Interface Import (APXIIMPT):** Schedule this process to create AP Invoices for the Oracle Utilities Customer Care and Billing information inserted into Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface tables by the integration product software. When you configure Oracle E-Business Suite Financials for General Ledger and Accounts Payable to run this process automatically at a preset time, ensure you have matched this timing with the timing of other actions done by Oracle Utilities Customer Care and Billing and the integration product. (Alternatively, you can use the Standard Request Submission (SRS) within Oracle E-Business Suite Financials for General Ledger and Accounts Payable to run the Payables Open Interface Import (APXIIMPT) process manually).
- **Payment Terms Code:** Create a new payment terms code for processing the payments for Oracle Utilities Customer Care and Billing customers. These codes are used to define defaults such as when payments must be made based on the invoice date, which status must be paid, any applicable discounts, rebates and other pertinent payment information.
- **Invoice Source:** Create an Invoice Source so that all the invoices that come from Oracle Utilities Customer Care and Billing are identified with this source in Oracle E-Business Suite Financials for General Ledger and Accounts Payable system.

Note: Refer to the Oracle E-Business Suite Financials for General Ledger and Accounts Payable User documentation for specific guidelines on configuring these settings.

Oracle Utilities Customer Care and Billing AP Settings

Configure Accounts Payable settings in Oracle Utilities Customer Care and Billing according to the following guidelines, keeping in mind that Oracle E-Business Suite Financials for General Ledger and Accounts Payable is the overriding source for the general ledger account information.

- **CIS Division:** The Oracle Utilities Customer Care and Billing CIS Division characteristic value for AP Operating Unit must match the AP Org Id in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

Note: Refer to the Oracle Utilities Oracle Utilities Customer Care and Billing User documentation for more information on the configuration settings referenced in this section.

AP Settings in Integration Layer

The integration product extracts the AP Requests that have not been processed yet from Oracle Utilities Customer Care and Billing. After the necessary translations and transformations on the Supplier/Invoice data extracted from Oracle Utilities Customer Care and Billing are applied, the data is loaded into the Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables.

This integration product requires you to configure the following:

- E-mail address of the person who must be notified if the integration software detects and logs an error while performing the AP Request and AP Data integrations.
- Oracle Utilities Customer Care and Billing characteristic type holding the Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Org ID.
- The AP Invoice information required by Oracle E-Business Suite Financials for General Ledger and Accounts Payable including Vendor, Vendor Site, Invoice Source, Payment terms, Payment Method, and AP Org ID.
- By default, the AP Request integration process uses a hyphen “-” as a delimiter when passing the GL accounting string to Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables. Your implementation can modify this to use the delimiter that is passed from Oracle Utilities Customer Care and Billing as required by your business processes. Most of the time, Oracle Utilities Customer Care and Billing passes the GL Account with dots as the delimiter.

Accounting

The following shows the basic accounting debits and credits that can be achieved through the above AP configuration:

Event	Debit Account	Credit Account
AP Request Adjustment in Oracle Utilities Customer Care and Billing (As part of the General Ledger Integration)	Accounts Receivable	Accounts Payable Clearing

Event	Debit Account	Credit Account
AP Invoice Created in Oracle E-Business Suite Financials for General Ledger and Accounts Payable	Accounts Payable Clearing	AP Liability
AP Invoice Payment in Oracle E-Business Suite Financials for General Ledger and Accounts Payable	AP Liability	Cash

Chapter 2

Understanding the Integration Process

This section provides detailed business process overview and technical overview of each of the business processes facilitated by this integration. These include the following:

- [Technical Overview](#)
- [Integration Points](#)

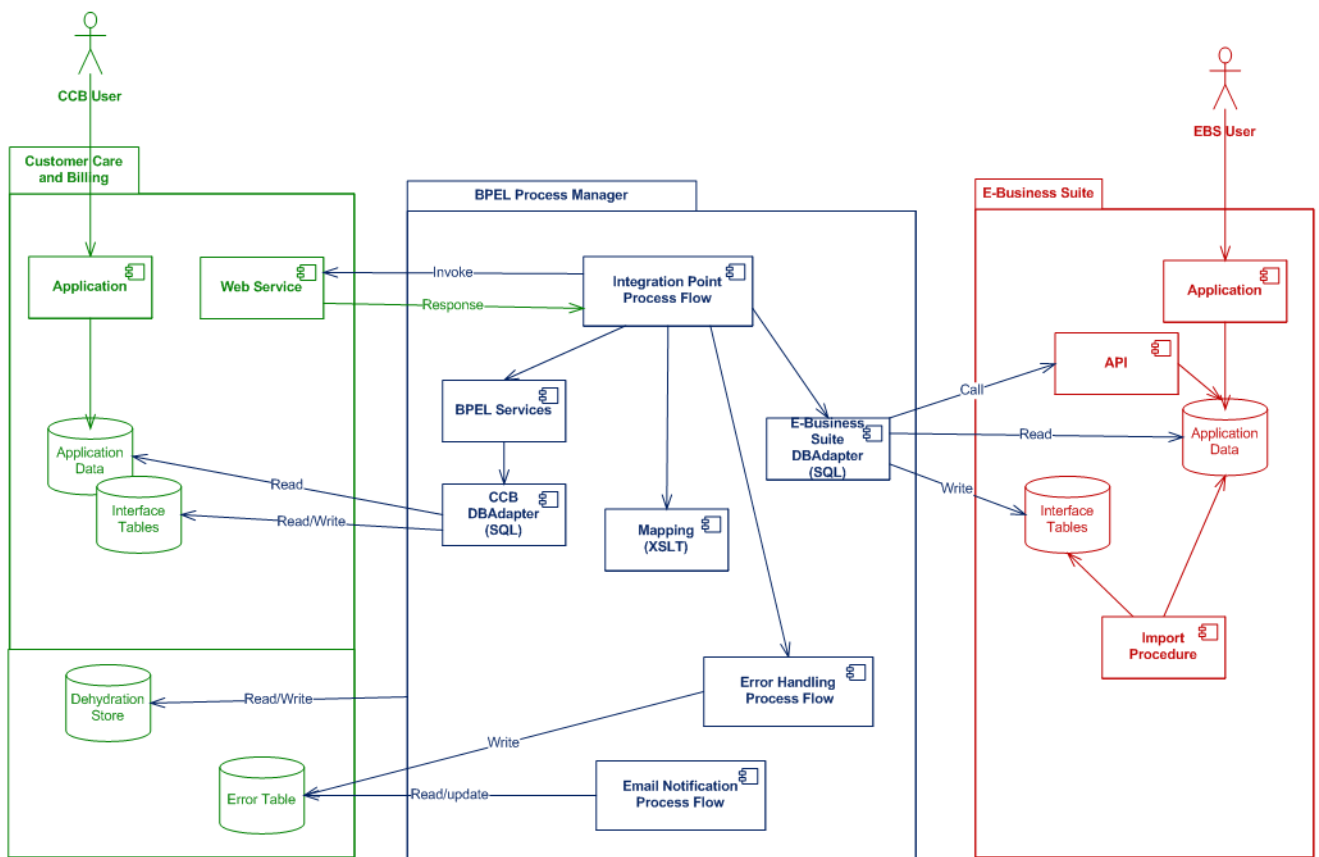
Technical Overview

This is a direct integration between Oracle Utilities Customer Care and Billing and Oracle E-Business Suite.

- This integration use two types of end-to-end integration processes: Asynchronous and Synchronous.
- Most of the integration processes interact with edge applications using data base adapters except for CCBCancellationWebService process where it invokes the Oracle Utilities Customer Care and Billing webservice. These integration processes extract data from source application data base tables and convert the data extracted from source data base table into an xml format.
- Then the source XML data is transformed into target application format using XSLT.
- Transformed data is inserted into target application data base tables.
- When the target system receives this data, it validates and converts imported data into the appropriate format of entries in the target application.
- In case of any error in the process, the error data is inserted into INTEGRATION_ERROR_STORE table and an optional email notification is sent based on the configuration.
- For the main integration processes extension callouts have been provided.
- The pre & post extension scopes are executed based on the extension flags enabled in INTEGRATION_LOOKUP_TABLE.
- The extension point flags are defaulted to 'false' in INTEGRATION_LOOKUP_TABLE table.

The following table shows the integration points, source and target applications, tables, and process used to load the data that is imported from the other system:

Integration Points	Source System	Target System	Process	Target Table
General Ledger	CCB	EBS	Journal Import	GL_INTERFACE
AP Request	CCB	EBS	Payables Open Interface Import	AP_INVOICES_INTERFACE AP_INVOICE_LINES_INTERFACE
AP Data	EBS	CCB		The appropriate AP Request within Oracle Utilities Customer Care and Billing.



High Level Architecture Diagram

Integration Schema

The integration requires a database to host the required integration schema. This schema can be created in any of the following:

- An integration database, if one exists.
- As part of the Oracle Utilities Customer Care and Billing database.
- As part of another database as determined by your specific technical needs.

The tables listed here are created in the integration schema defined during installation, for the purpose of this integration product.

Note: The integration does not require any database objects to be added to Oracle Utilities Customer Care and Billing or Oracle E-Business Suite Financials for General Ledger and Accounts Payable databases other than the objects mentioned here.

The following database tables are required to operate the Oracle Utilities Customer Care and Billing process integration for the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Financials product:

Table Name	Description
INTEGRATION_LOOKUP_TABLE	A lookup table to store all the configuration parameters used by the integration processes. This table is also used to configure the email addresses to be notified if errors occur. This table is seeded with data at the time of integration product installation.
INTEGRATION_PROCESS_ACTIVATION	This table is used to activate or de-activate various integration points available in the Integration product. This table is seeded with data at the time of integration pack installation and is by default populated to activate all the available integration points in the product.
INTEGRATION_ERROR_STORE	The table is used to hold the information regarding the errors encountered during integration transactions. A record is inserted for each error encountered by the integration process. The MailNotification process, accesses this table to get the error information needed to construct the notification email. This table is delivered with no data.

Integration Points

This integration supports the following integration points:

- [General Ledger](#)
- [AP Request](#)
- [AP Data](#)

General Ledger

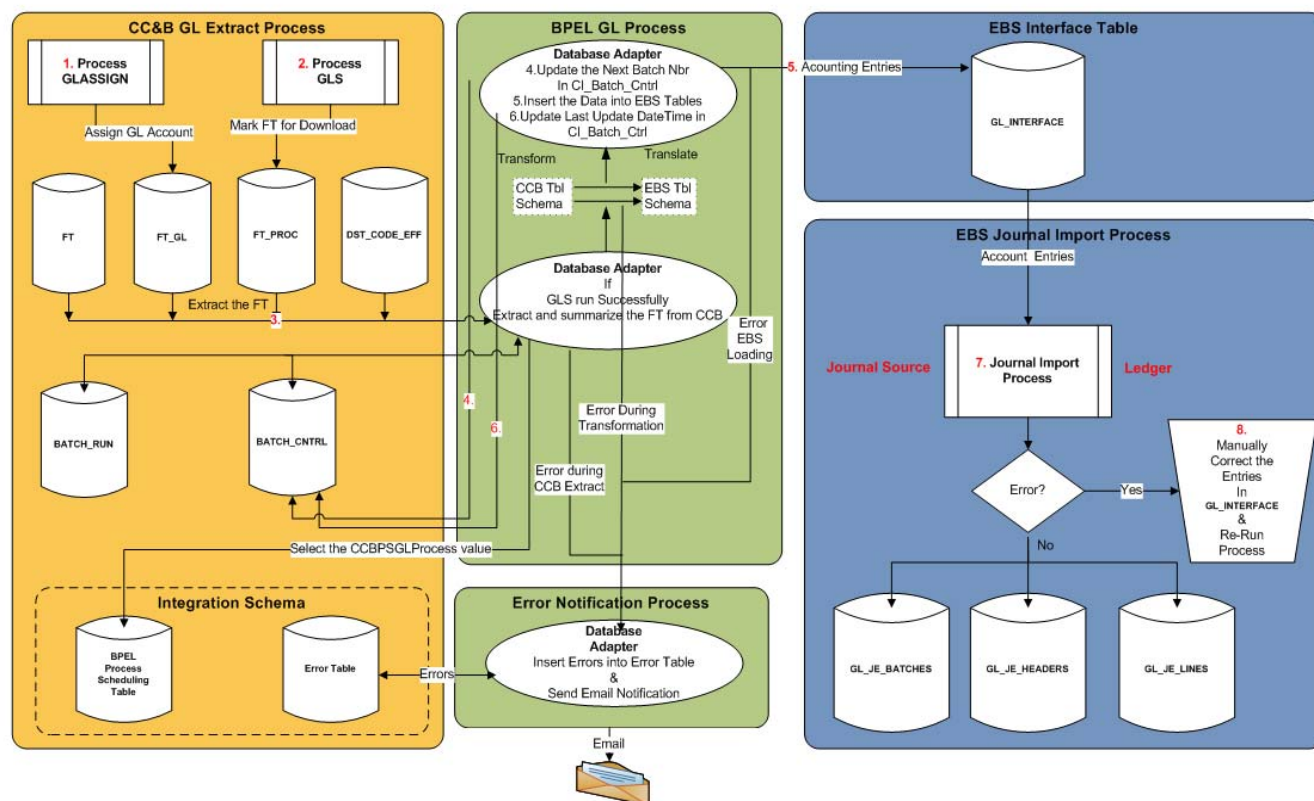
For general ledger transactions, Oracle Utilities Customer Care and Billing is considered the sub-ledger and Oracle E-Business Suite Financials for General Ledger and Accounts Payable considered the general ledger:

- The General Ledger transactions are written in one direction; from Oracle Utilities Customer Care and Billing to Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

- The financial transactions are moved from the sub-ledger to the general ledger when two consecutive Oracle Utilities Customer Care and Billing batch processes, GLASSIGN and GLS, are run according to a set schedule. These are standard processes released with Oracle Utilities Customer Care and Billing.
- The GLASSIGN and GLS processes group all the financial transactions in Oracle Utilities Customer Care and Billing that must be included in a batch. The Integration Point looks for batches of financial transactions that are ready to be sent, extracts and summarizes the data, translates the data from a sub-ledger format to the format required by the general ledger, and writes it to the Oracle E-Business Suite Financials for General Ledger and Accounts Payable General Ledger integration table. The standard General Ledger integration table released with the Oracle E-Business Suite Financials for General Ledger and Accounts Payable product is used.
- Once the entries are created in Oracle E-Business Suite Financials for General Ledger and Accounts Payable staging tables, the journal creation, editing and posting to the ledger must be executed within Oracle E-Business Suite Financials for General Ledger and Accounts Payable. The standard Journal Import process must be executed to create the necessary journal entries within the General Ledger.

You can accomplish this by scheduling the standard Oracle E-Business Suite Financials for General Ledger and Accounts Payable Journal Import process or by manually running this process through the Standard Request Submission (SRS) provided within the Oracle E-Business Suite Financials for General Ledger and Accounts Payable product.

Note: Refer to the Oracle Utilities Customer Care and Billing documentation for more information on GLASSIGN and GLS.



GL Process Diagram

These are the steps for the GL process flow:

1. Run the GLASSIGN batch program in Oracle Utilities Customer Care and Billing.
2. Run the GLS batch program in Oracle Utilities Customer Care and Billing.
3. The BPEL process extracts FT information from Oracle Utilities Customer Care and Billing.
4. The BPEL process updates the Next_Batch_Nbr for GDL in CI_Batch_Ctrl table in Oracle Utilities Customer Care and Billing.
5. The BPEL process transforms and inserts the data into Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface tables.
6. The BPEL process updates the Last_Update_DateTime in CI_Batch_Ctrl table in Oracle Utilities Customer Care and Billing.
7. Run the Journal Import process in Oracle E-Business Suite Financials for General Ledger and Accounts Payable to import FTs.
8. Any errors in interface tables must be corrected in Oracle E-Business Suite Financials for General Ledger and Accounts Payable and Journal Import process must be re-run.

Logic used in GL integration Point:

1. BPEL Polls to verify that FTs are ready for extraction

GetCCBGldata integration process polls Oracle Utilities Customer Care and Billing to verify whether financial tractions are ready for extraction.

```
If GLS has run since the last run of the integration
AND the GLS run has completed successfully
Retrieve the Batch of Rows identified in CI_BATCH_RUN (created by
GLS)
Else
Do nothing
```

2. Update the NEXT BATCH NUMBER in CI_BATCH_CTRL

UpdateCCBGLControlTable runs the below query to update the batch number in Oracle Utilities Customer Care and Billing batch control table:

```
Increment by 1 the NEXT_BATCH_NBR in CI_BATCH_CTRL WHERE BATCH_CD
is GLDL
```

3. Extract Financial Transactions from Oracle Utilities Customer Care and Billing

GetCCBGLData process runs the below query to extract the FT's from Oracle Utilities Customer Care and Billing

```
Select the information shown in the table below:
FROM CI_FT_PROC, CI_FT_GL, CI_FT FT, CI_DST_CODE_EFF
WHERE the rows were marked by GLS as belonging to the latest batch
that is ready to be integrated
```

```
Summarize and group the rows
BY FTPR.BATCH_NBR, FTGL.DST_ID, FTGL.GL_ACCT, FT.CIS_DIVISION,
FT.GL_DIVISION, FT.CURRENCY_CD, FT.FT_TYPE_FLG, DST.STATISTICS_CD,
FT.ACCOUNTING_DT, DST.FUND_CD
```

Extract Information

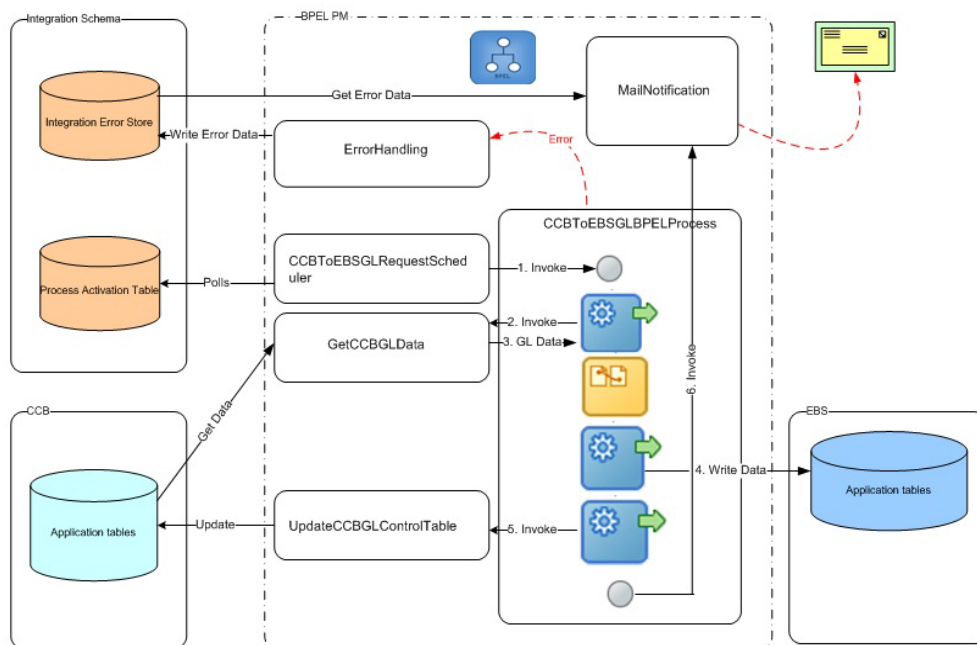
Field	Description
Source System	Set to CCB
BATCH_NBR	The batch number for the group of FTs extracted. The batch number is assigned to the financial transaction when GLS is run
DIST_ID	The distribution code used in Oracle Utilities Customer Care and Billing to derive the GL account information. A sample data example is R – ELERES for electric residential revenue financial transactions
GL_ACCT	The actual GL account with ‘.’ separating the substructure numbers like department. For example 101.73653.8873..87
CIS_DIVISION	The CIS Division
GL_DIVISION	The GL Division
CURRENCY_CD	The currency type, such as USD
STATISTICS_CD	The identifier of the type of statistical amount being sent to GL such as KWH for electricity or CCF for gas
ACCOUNTING_DT	The effective accounting date for the GL transactions
AMOUNT	The dollar amount of the GL debit or credit
STATISTIC_AMOUNT	The quantity associated with the Statics Code
FT_TYPE_FLG	The Financial Type Flag. For example, Payment, Billing or Adjustment. Note: FT_TYPE_FLG is only retrieved from CCB if Patch 25758196 is applied.

When the above is executed successfully, continue by executing the following:

Update the LAST UPDATE TIME FOR GLDL in CI_BATCH_CTRL

Set the last update date and time by setting

```
CI_BATCH_CTRL LAST_UPDATE_DTTM to SYSDATE WHERE BATCH_CD = 'GLDL'
```



Composites

The following is the list of composite processes that comprise the GL Integration between Oracle Utilities Customer Care and Billing and Oracle E-Business Suite Financials for General Ledger and Accounts Payable:

Composite Name	Description
CCBToEBSGLRequestScheduler	Used to poll the INTEGRATION_PROCESS_ACTIVATION table at set intervals for GL interface
CCBToEBSGLBPELProcess	Main process of the GL Integration. Get the GL data from Oracle Utilities Customer Care and Billing and inserts into Oracle E-Business Suite
GetCCBGLData	To verify that GL data is available for transfer.
UpdateCCBGLControlTable	To update the Oracle Utilities Customer Care and Billing batch control table when applicable

Integration Process/ Composite name	CCBToEBSAPRequestScheduler
Description	Polls the INTEGRATION_PROCESS_ACTIVATION table in the Integration Schema at predefined intervals and invokes the CCBToEBSAPBPELProcess.
Calls to	CCBToEBSAPBPELProcess ErrorhandlingProcess (if an error occurs)

Calls from	None
Inputs	None
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions - None

Integration Process/ Composite name	CCBTtoEBSAPBPELProcess
Description	<p>Main process of the AP Integration. Gets the AP Data from Oracle Utilities Customer Care and Billing, transforms it, and inserts it into Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables (AP_INVOICES_INTERFACE, AP_INVOICE_LINES_INTERFACE).</p> <p>Additionally, updates status in two of the Oracle Utilities Customer Care and Billing tables. Invokes services for error handling and email notification.</p>
Calls to	GetCCBAPData UpdateCCBAPControlTable ErrorhandlingProcess (if an error occurs) MailNotification
Calls from	CCBTtoEBSAPRequestScheduler
Inputs	None
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions – None

Integration Process/ Composite name	GetCCBGLData
Description	Verify that GL data is available in Oracle Utilities Customer Care and Billing for transfer. If data is available, it returns a dataset to the calling program.
Calls to	
Calls from	CCBTtoEBSGLBPELProcess
Inputs	Input String object contains the Integration Point name invoking this BPEL process. Example: EBS
Outputs	SelectCCBGLRecordsOutput xml object

Interaction pattern	Synchronous
Exceptions/Errors	Possible Exceptions – BPEL Remote Fault, BPEL Binding Fault

Integration Process/ Composite name	UpdateCCBGLControlTable
Description	Update the next batch number in the GL Batch Control table available in Oracle Utilities Customer Care and Billing database
Calls to	
Calls from	CCBTtoEBSGLBPELProcess
Inputs	None
Outputs	None
Interaction pattern	Synchronous
Exceptions/Errors	Possible Exceptions – BPEL Remote Fault, BPEL Binding Fault

Database tables involved in General Ledger

The following Oracle Utilities Customer Care and Billing tables are used when extracting Financial Transaction data for sending to the GL as Journal Vouchers.

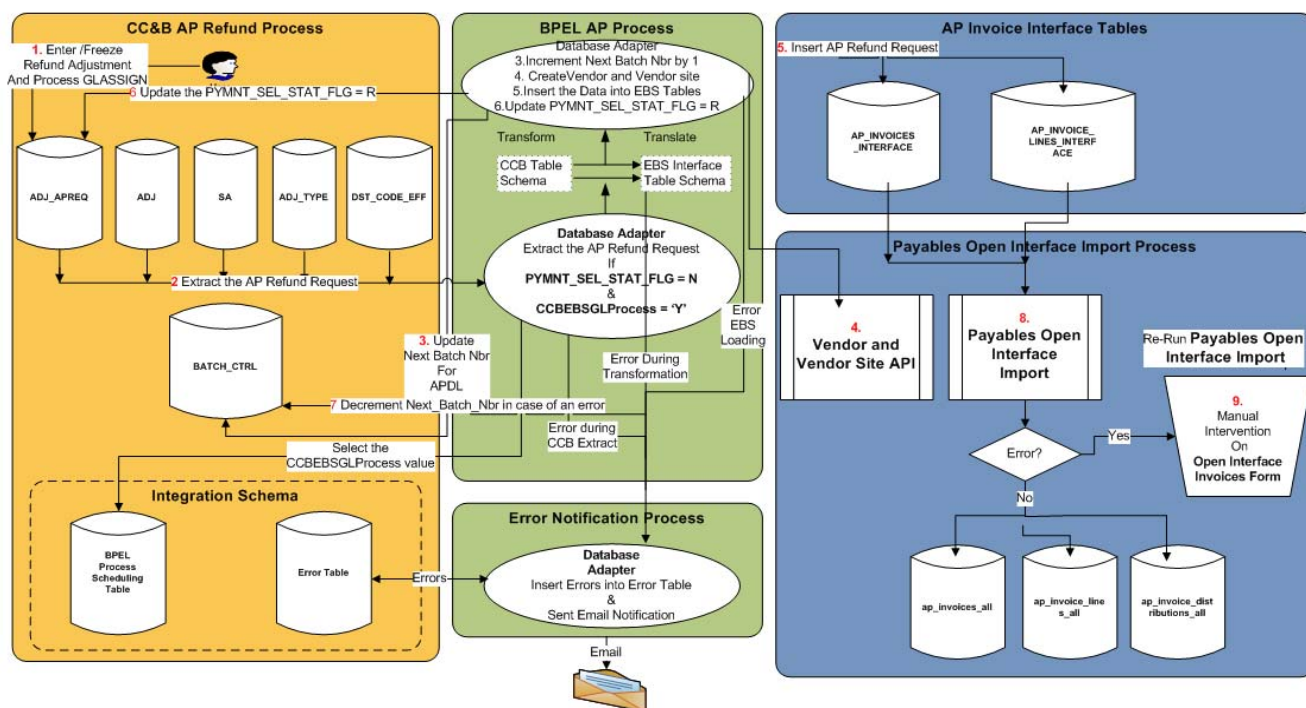
Table Name	Description	Application Name
CL_FT	Financial Transaction	OUCCB
CL_FT_GL	Financial Transaction General Ledger	OUCCB
CL_DST_CODE_EFF	Distribution Code GL Account	OUCCB
CL_FT_PROC	FT Process	OUCCB
CL_BATCH_CTRL	Batch Control	OUCCB
CL_BATCH_RUN	Batch Run	OUCCB
CL_BATCH_JOB	Batch Job	OUCCB
GL_INTERFACE	Is used to stage the incoming accounting entries from Oracle Utilities Customer Care and Billing	EBS

AP Request

- The AP Request transactions are written in one direction from Oracle Utilities Customer Care and Billing to Oracle E-Business Suite Financials for General

Ledger and Accounts Payable. Customer, customer account, and AP Request information is extracted from Oracle Utilities Customer Care and Billing and imported to the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Payables as Invoice import information. Customer and AP Request information is used to create a one-time supplier and supplier site that is used for invoice creation.

- The integration extracts AP Requests from Oracle Utilities Customer Care and Billing where the status of the AP Request is 'N' which indicates that the AP Request is 'Not Selected for Payment'. Once the data has been integrated, the integration software updates the AP Request status in Oracle Utilities Customer Care and Billing to 'R' indicating it has been 'Requested for Payment'.
- Once the customer and refund request data is loaded into Oracle E-Business Suite Financials for General Ledger and Accounts Payable by the integration product, the standard **Payables Open Interface Import (APXIIMPT)** process must be executed to create invoices. This can be accomplished using a scheduled process or by manually running the process through the standard user interface provided within the Oracle E-Business Suite Financials for General Ledger and Accounts Payable product.



Account Payable Request Process Diagram

These are the steps in AP request flow:

1. Create and freeze an adjustment in Oracle Utilities Customer Care and Billing and run the GLASSIGN batch program.
2. The integration process extracts AP Refund Request information from Oracle Utilities Customer Care and Billing.

3. BPEL process updates the Next_Batch_Nbr for APDL in CI_Batch_Ctrl table in Oracle Utilities Customer Care and Billing.
4. The BPEL process invokes Vendor and Vendor Site API in Oracle E-Business Suite Financials for General Ledger and Accounts Payable to create/update Vendor and Vendor Site.
5. The BPEL process transforms and inserts the data into Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface tables.
6. The BPEL updates the status of A/P Request in Oracle Utilities Customer Care and Billing.
7. In case of an error, the BPEL decrements the Next_Batch_Nbr for APDL batch code in CI_Batch_Ctrl table in Oracle Utilities Customer Care and Billing.
8. Run the Payables Open Interface Import process in Oracle E-Business Suite Financials for General Ledger and Accounts Payable to import the invoices.
9. Any errors in Interface tables must be corrected in Oracle E-Business Suite Financials for General Ledger and Accounts Payable and the Payables Open Interface Import process must be re-run.

Logic Used for the AP Request Integration Point

1. Update the NEXT BATCH NUMBER in the CI_BATCH_CTRL.

Increment by 1 the NEXT_BATCH_NBR in CI_BATCH_CTRL where the BATCH_CD is APDL

2. BPEL Polls to Verify whether AP Requests are ready for Extraction.

GetCCBAPData integration process polls Oracle Utilities Customer Care and Billing to verify whether AP Requests are ready for extraction

If there are AP Requests where the CI_ADJ_APREQ PYMNT_SEL_STAT_FLG is N (Not selected for Payment) AND the associated adjustment is in a frozen status

Process the AP Requests that have not been integrated before and mark them all with the next APDL Batch Number

Else do nothing.

3. Extract of Customer and AP Refund Request.

An extract of Customer and AP refund request is made from Oracle Utilities Customer Care and Billing.

Select the following information:

AP_REQ_ID, GL_ACCT, CHAR_VAL, SA_ID, ADJ_ID, CRE_DT, ADJ_TYPE_CD, CIS_DIVISION, CHAR_VAL, ENTITY_NAME, COUNTRY, ADDRESS1, ADDRESS2, ADDRESS3, ADDRESS4, CITY, NUM1, NUM2, COUNTY, HOUSE_TYPE, STATE, POSTAL, CURRENCY_CD, CURRENCY_PYMNT, GEO_CODE, IN_CITY_LIMIT, PYMNT_METHOD_FLG, ADJ_AMT, SCHEDULED_PAY_DT

(Refer to the mapping table within this document for more details)

FROM CI_ADJ_APREQ, CI_ADJ, CI_SA, CI_ADJ_TYPE, CI_DST_CODE_EFF, CI_DST_CD_CHAR, CI_CIS_DIV_CHAR

Where the PYMNT_SEL_STAT_FLG status flag is N (Not Selected for Payment)

AND the Adjustment is frozen

4. Updating CI_ADJ_APREQ Status.

In UpdateCCBAPAdjReqTable integration process payment status flag is updated to R.

```
UPDATE CI_ADJ_APREQ
SET PYMNT_SEL_STAT_FLG to R (Requested for Payment)
```

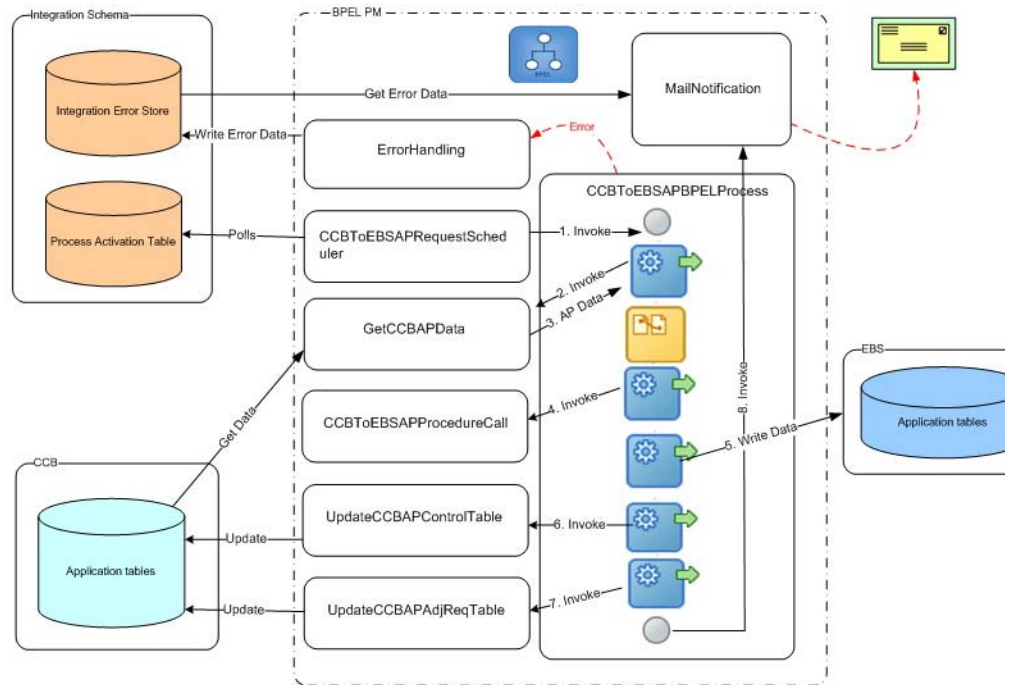
5. Decrement the BATCH NUMBER in CI_BATCH_CTRL and CI_ADJ_APREQ tables in case of an error.

In case of an error:

Decrement by 1 the NEXT_BATCH_NBR in CI_BATCH_CTRL where the BATCH_CD is APDL

Update the Batch Number in CI_ADJ_APREQ table to previous value so that the same set of records can be processed again

The BPEL flow for AP Request Integration Point is shown below:



Composites

The following is the list processes that comprise the AP Request Integration between Oracle Utilities Customer Care and Billing and Oracle E-Business Suite Financials for General Ledger and Accounts Payable:

Composite Name	Description
CCBtoEBSAPRequestScheduler	Used to poll the INTEGRATION_PROCESS_ACTIVATION table at set intervals for AP interface.

CCBToEBSAPBPELProcess	Main process of the AP Integration. Gets the AP Data from Oracle Utilities Customer Care and Billing and inserts into Oracle E-Business Suite.
GetCCBAPData	Checks if AP Data is available in Oracle Utilities Customer Care and Billing for transfer.
CCBToEBSAPProcedureCall	Process to create/update Supplier and site in Oracle E-Business Suite.
UpdateCCBAPControlTable	To update the next batch number in the AP Batch Control table.
UpdateCCBAPAdjReqTable	To update payment flag to R in the Oracle Utilities Customer Care and Billing CI_ADJ_APREQ table.

Integration Process/ Composite name	CCBToEBSAPRequestScheduler
Description	Polls the INTEGRATION_PROCESS_ACTIVATION table in the Integration Schema at predefined intervals and invokes the CCBToEBSAPBPELProcess.
Calls to	CCBToEBSAPBPELProcess
Calls from	None
Inputs	None
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions - None

Integration Process/ Composite name	CCBToEBSAPBPELProcess
Description	Main process of the AP Integration. Gets the AP Data from Oracle Utilities Customer Care and Billing, transforms it, and inserts it into Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables (AP_INVOICES_INTERFACE, AP_INVOICE_LINES_INTERFACE). Additionally, updates status in two of the Oracle Utilities Customer Care and Billing tables. Invokes services for error handling and email notification.

Calls to	<ul style="list-style-type: none"> • GetCCBAPData • UpdateCCBAPControlTable • UpdateCCBAPAdjReqTable • ErrorhandlingProcess (if an error occurs) • MailNotification
Calls from	CCBToEBSAPRequestScheduler
Inputs	None
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions – BPEL Remote Fault, BPEL Binding Fault.

Integration Process/ Composite name	GetCCBAPData
Description	Checks if AP Data is available in Oracle Utilities Customer Care and Billing for transfer. If data is available, it returns a dataset to the calling process.
Calls to	
Calls from	CCBToEBSAPBPELProcess
Inputs	Input String object containing the Integration Point name invoking this BPEL process. For example: EBS
Outputs	SelectCCBRecordsWithTemplate xml object
Interaction pattern	Synchronous
Exceptions/Errors	Possible Exceptions - BPEL Remote Fault, BPEL Binding Fault

Integration Process/ Composite name	CCBToEBSAPProcedureCall
Description	Process to create/update Supplier and site in Oracle E-Business Suite. Invokes Integration package CCB_EBS_SUPPLIERS_IMPORT_PKG. Invokes services for error handling and email notification
Calls to	
Calls from	CCBToEBSAPBPELProcess
Inputs	CCBToEBSAPProcedureCallProcessRequest xml object
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions – BPEL Remote Fault, BPEL Binding Fault.

Integration Process/ Composite name	UpdateCCBAPControlTable
Description	Updates the next batch number in the AP Batch Control table available in the Oracle Utilities Customer Care and Billing Database.
Calls to	
Calls from	CCBToEBSAPBPELProcess
Inputs	None
Outputs	None
Interaction pattern	Synchronous
Exceptions/Errors	Possible Exceptions – None

Integration Process/ Composite name	UpdateCCBAPAdjReqTable
Description	Updates PYMNT_SEL_STAT_FLG to R in the Oracle Utilities Customer Care and Billing AP Adjustment Request table CI_ADJ_APREQ for the provided AP Request ID.
Calls to	
Calls from	CCBToEBSAPBPELProcess
Inputs	CIAdjApreqCollection xml object
Outputs	None
Interaction pattern	Synchronous
Exceptions/Errors	Possible Exceptions – None

Database tables involved in AP Request

The Oracle Utilities Customer Care and Billing APREQ table is considered an interface table for this integration point even though it is a core table within Oracle Utilities Customer Care and Billing. BPEL extracts the data directly from the core tables. The following tables are used when extracting AP Request information from Oracle Utilities Customer Care and Billing.

Table Name	Description	Application Name
CI_ADJ_APREQ	A/P Check Request	OUCCB
CI_ADJ	Adjustment	OUCCB
CI_SA	Service Agreement	OUCCB
CI_ACCT	Account	OUCCB
CI_ACCT_PER	Account Person Relationship	OUCCB
CI_PER	Person	OUCCB
CI_PER_NAME	Person Name	OUCCB

AP_INVOICES_INTERFACE	Used to stage the incoming AP Requests from Oracle Utilities Customer Care and Billing	EBS
AP_INVOICE_LINES_INTERFACE	Used to stage the incoming AP Requests from Oracle Utilities Customer Care and Billing	EBS
AP_INTERFACE_REJECTIONS	Error messages are stored in this table	EBS

Oracle Application API's to create/update Vendor and Vendor Site:

- AP_VENDOR_PUB_PKG.CREATE_VENDOR
- AP_VENDOR_PUB_PKG.CREATE_VENDOR_SITE
- AP_VENDOR_SITES_PKG.UPDATE_ROW

AP Data

- The AP Data transactions are written in one direction from Oracle E-Business Suite Financials for General Ledger and Accounts Payable to Oracle Utilities Customer Care and Billing.
- The payment information for system-generated checks to customers is generated and processed in Oracle E-Business Suite Financials for General Ledger and Accounts Payable and then exported to Oracle Utilities Customer Care and Billing.
This Payment information corresponds to the AP Refund Requests originally generated in Oracle Utilities Customer Care and Billing and exported to Oracle E-Business Suite Financials for General Ledger and Accounts Payable for payment processing. The Integration Point updates the original AP Request in Oracle Utilities Customer Care and Billing with the details of the payment including the check number and date.
- Once a payment has been created in Oracle E-Business Suite Financials for General Ledger and Accounts Payable and the information is integrated to Oracle Utilities Customer Care and Billing, the AP Request status in Oracle Utilities Customer Care and Billing is updated to 'P' indicating that the AP Request has been paid. Additional statuses that can occur include 'C' - Closed or on Hold and 'X' - Cancelled.

Refer to the table below to review how canceled payments are handled:

Oracle E-Business Suite Financials for General Ledger and Accounts Payable Action	Oracle Utilities Customer Care and Billing AP Request Resulting Action	Oracle Utilities Customer Care and Billing Adjustment Resulting Action
Payment is completed	Payment information updated and status changes to "P" for Paid	No change
Payment stopped and placed on hold	Payment status changes to "C" for Closed	No change
Payment is re-issued	Payment information updated and status changes to "P" for Paid	No change
Payment is cancelled and the liability is closed	Payment status changes to "X" for Cancelled	Adjustment is cancelled

Payment Cancellation

When a payment is cancelled in Oracle E-Business Suite Financials for General Ledger and Accounts Payable, the following options are available:

- [Re-Issue](#)
- [Initiate Stop](#)
- [Void Hold](#)
- [Void Cancel](#)

Re-Issue

If a check is re-issued for any reason in Oracle E-Business Suite Financials for General Ledger and Accounts Payable, the new information is sent across the integration and is updated on the AP Request in Oracle Utilities Customer Care and Billing and the AP Request status is set to 'P' indicating that the AP Request has been paid.

The AP Request in Oracle Utilities Customer Care and Billing only holds the most recent check information sent (no history of checks re-issued).

Initiate Stop

If a payment is stopped, the cancellation information is sent to Oracle Utilities Customer Care and Billing as updates to the AP Request. The AP Request payment status flag in Oracle Utilities Customer Care and Billing is set to 'C' indicating a 'Closed' status. Only the AP Request is affected, the adjustment in Oracle Utilities Customer Care and Billing is not impacted.

Void Hold

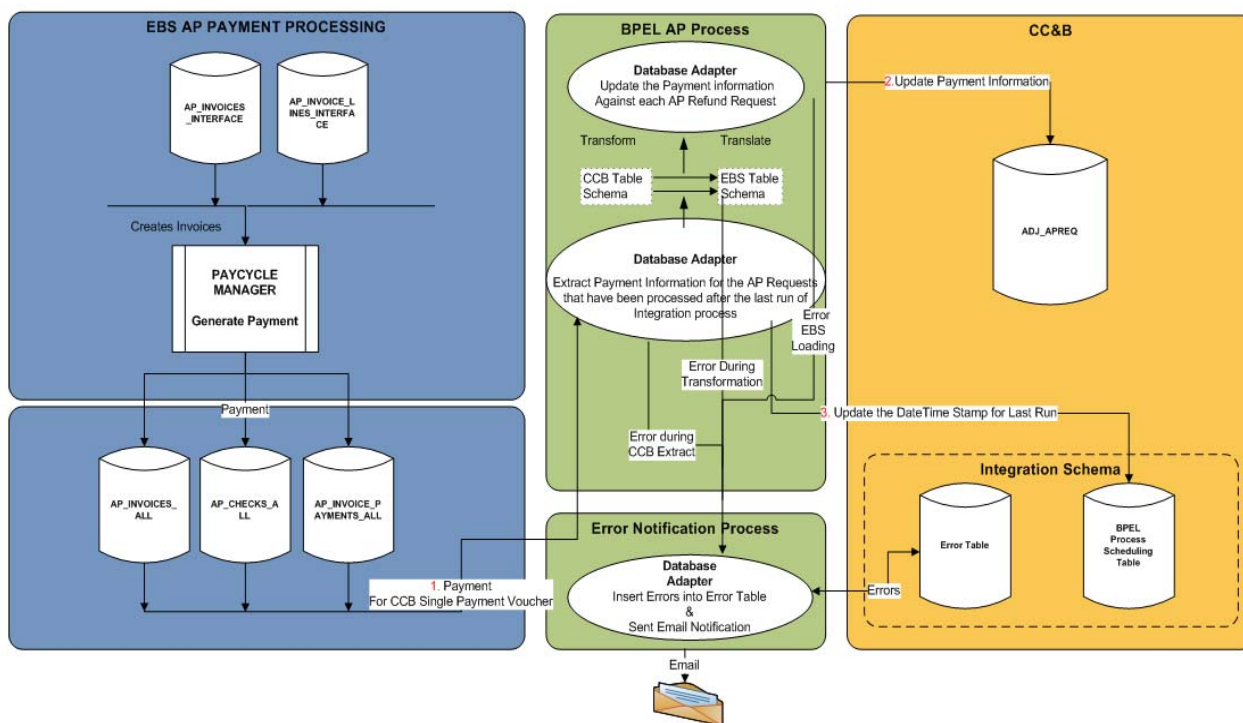
If an invoice is put on hold, the cancellation information is sent to Oracle Utilities Customer Care and Billing as updates to the AP Request. The AP Request payment status flag in Oracle Utilities Customer Care and Billing is set to 'C' indicating a 'Closed' status. Only the AP Request is affected, the adjustment in Oracle Utilities Customer Care and Billing is not impacted.

Void Cancel

If the payment is void cancelled and all liability is closed, the integration cancels the AP Request and then calls an Oracle Utilities Customer Care and Billing service to cancel the adjustment related to the request. The AP Request payment status flag in Oracle Utilities Customer Care and Billing is set to 'X' indicating a 'Cancelled' status. The adjustment is also cancelled using the standard adjustment maintenance object within the Oracle Utilities Customer Care and Billing application software.

An Oracle Utilities Customer Care and Billing algorithm CL_ADCA-CRTD 'Adjustment Cancellation - Create To Do Entry' can be configured to create a 'To Do List' entry to notify the users about the cancellation of the adjustment and AP Request within Oracle Utilities Customer Care and Billing.

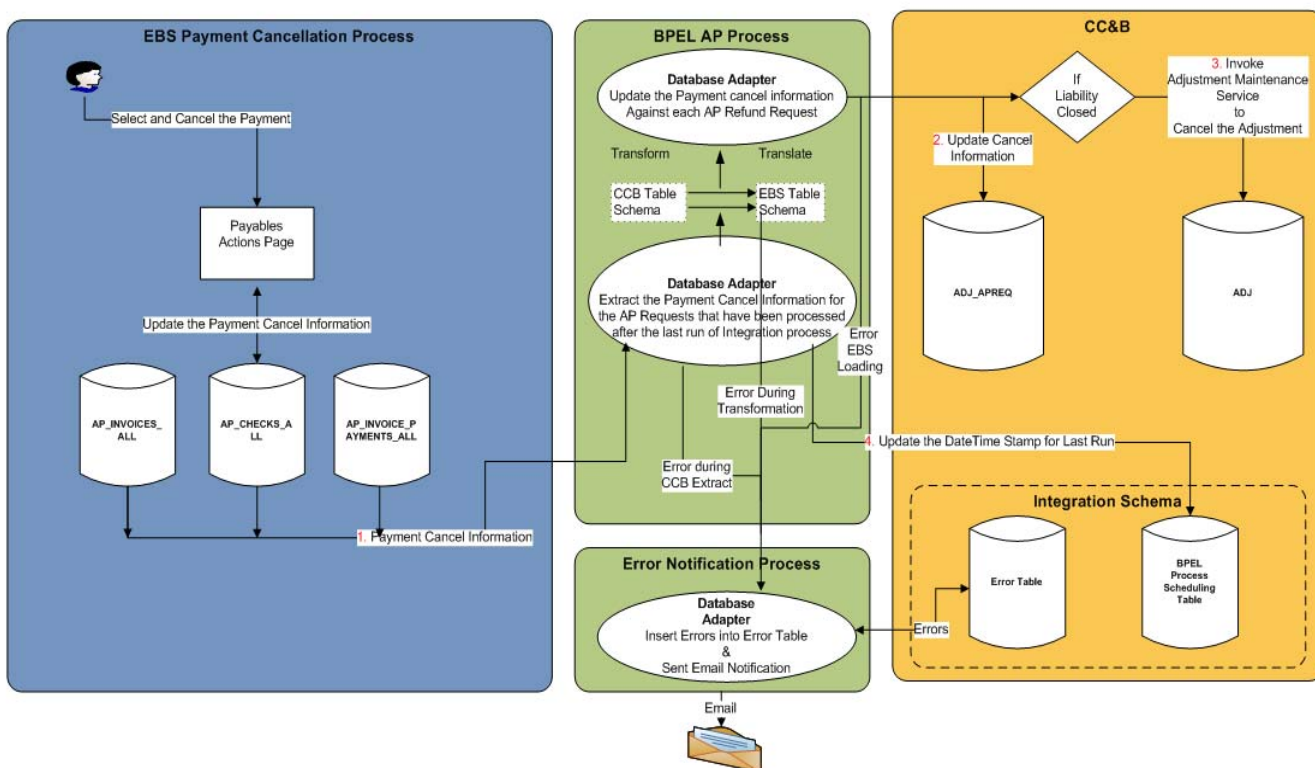
The adjustment cancellation algorithm is shipped and documented as part of standard Oracle Utilities Customer Care and Billing application software.



AP Data Process Diagrams

These are the steps in AP Data process flow when a payment is made in Oracle E-Business Suite Financials for General Ledger and Accounts Payable:

- Payment is made in Oracle E-Business Suite Financials for General Ledger and Accounts Payable for Invoices originated from Oracle Utilities Customer Care and Billing.
- The BPEL process transforms and updates the Payment information in Oracle Utilities Customer Care and Billing.
- The BPEL process updates the Last Run Date of the AP Data process in Integration schema.



AP Data Cancellation Diagrams

These are the steps in the AP Data process flow when a payment is cancelled in Oracle E-Business Suite Financials for General Ledger and Accounts Payable:

- Payment is cancelled in Oracle E-Business Suite Financials for General Ledger and Accounts Payable for invoices originated from Oracle Utilities Customer Care and Billing.
- The BPEL process updates the Cancellation information in Oracle Utilities Customer Care and Billing.
- The BPEL process invokes AdjustmentMaintenance Web Service in Oracle Utilities Customer Care and Billing to cancel the adjustment.
- The BPEL process updates the Last Run Date of AP Data process in the integration schema.

Logic Used in AP Data Integration Point

Extract the Payment Information from Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

```
Select APA.invoice_id
, APA.invoice_num ADJ_ID
, APA.invoice_date
, APA.PAYMENT_STATUS_FLAG
, APA.POSTING_STATUS
, APA.CANCELLED_BY
, APA.CANCELLED_DATE
, APA.CANCELLED_AMOUNT
```

```

,AIPA.BANK_ACCOUNT_NUM
,AIPA.REVERSAL_FLAG
,AIPA.REVERSAL_INV_PMT_ID
,ACA.CHECK_DATE payment_date
,ACA.CHECK_NUMBER payment_number
,ACA.STATUS_LOOKUP_CODE
,ACA.VOID_DATE
,ACA.STOPPED_BY
, ACA.STOPPED_DATE
, APA.PAYMENT_REASON_COMMENTS AP_REQ_ID (for Release 11.5.10
ATTRIBUTE15 is used)
, ACA.CHECK_ID
,ACA.amount
, ACA.released_date
FROM ap_invoices_all APA
, AP_INVOICE_PAYMENTS_all AIPA
, ap_checks_all ACA
WHERE APA.invoice_id = AIPA.invoice_id
AND AIPA.check_id = ACA.check_id
AND APA.source = 'CCB'
AND (APA.CANCELLED_DATE >= TO_DATE ('2008-01-31','YYYY-MM-DD') --
last date the interface was run
OR APA.CREATION_DATE >= TO_DATE ('2008-01-31','YYYY-MM-DD')-- last
date the interface was run
OR ACA.stopped_date >= TO_DATE ('2008-01-31','YYYY-MM-DD')-- last
date the interface was run
OR ACA.released_date >= TO_DATE ('2008-01-31','YYYY-MM-DD')-- last
date the interface was run
OR ACA.void_date >= TO_DATE ('2008-01-31','YYYY-MM-DD') -- last
date the interface was run
UNION
Select APA.invoice_id
,AIPA.invoice_num ADJ_ID
,null released_date
,APA.invoice_date
,APA.PAYMENT_STATUS_FLAG
,APA.POSTING_STATUS
,APA.CANCELLED_BY
,APA.CANCELLED_DATE
,APA.CANCELLED_AMOUNT
,null BANK_ACCOUNT_NUM
,null REVERSAL_FLAG
,null REVERSAL_INV_PMT_ID
,null payment_date
,null payment_number
,null STATUS_LOOKUP_CODE
,null VOID_DATE
,null STOPPED_BY
,null STOPPED_DATE
,APA.PAYMENT_REASON_COMMENTS AP_REQ_ID
,null CHECK_ID
,null AMOUNT
FROM ap_invoices_all APA
WHERE APA.CANCELLED_DATE >= #LastRunDate6
AND APA.SOURCE = #invoice_source1
and apa.invoice_id not in (SELECT invoice_idFROM
ap_invoice_payments_all aipa1 )

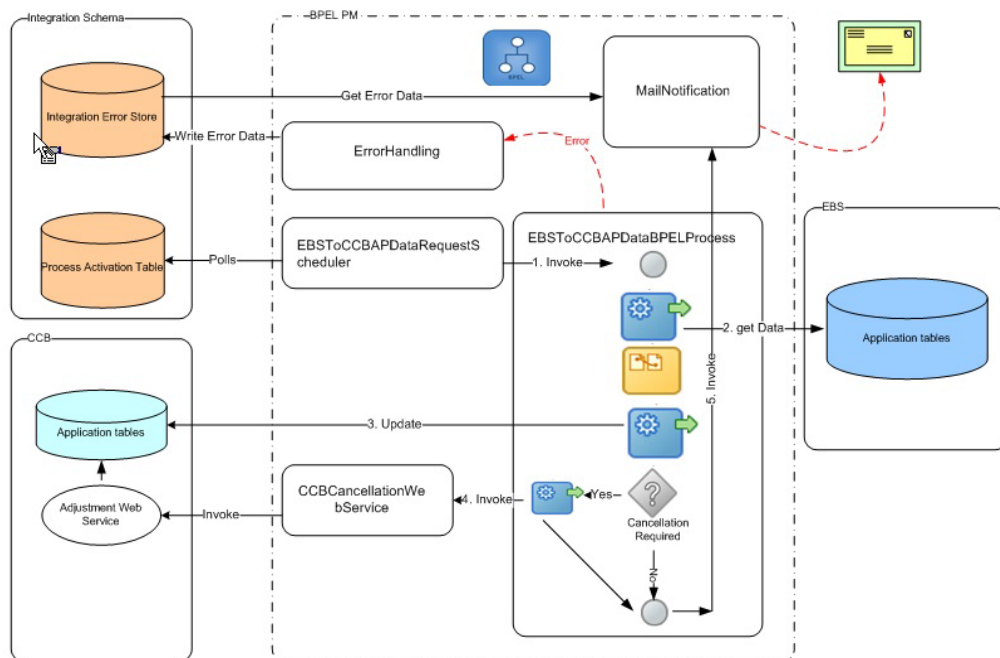
```

For each payment selected above, verify that this payment is already applied in Oracle Utilities Customer Care and Billing.

If AP_INVOICES_ALL.CANCELLED_DATE <> NULL and AP_INVOICES_ALL.PAYMENT_STATUS_FLAG<>'Y' (Payment is void /cancelled)

If the Payment has been canceled in Oracle E-Business Suite Financials for General Ledger and Accounts Payable, update the CI_ADJ_APREQ. PYMNT_SEL_STAT_FLG to 'X' (Canceled) and invoke ClAdjustmentMaintenance service to cancel the Adjustment corresponding to this payment.

BPEL flow for AP Data Integration Point is shown below:



Composites

The following is the list of composites involved in GL integration point.

Composite Name	Description
EBSToCCBAPDataRequestScheduler	Polls the INTEGRATION_PROCESS_ACTIVATION table at predefined intervals for AP Data interface
EBSToCCBAPDataBPELProcess	Main process of the AP Data Integration which collects the payment information from Oracle E-Business Suite and sends it to Oracle Utilities Customer Care and Billing
CCBCancellationWebService	To cancel an adjustment in Oracle Utilities Customer Care and Billing

Integration Process/ Composite name	EBSToCCBAPDataRequestScheduler
Description	Polls the INTEGRATION_PROCESS_ACTIVATION table in the Integration Schema at predefined intervals and invokes the EBSToCCBAPDataBPELProcess
Calls to	<ul style="list-style-type: none"> • EBSToCCBAPDataBPELProcess • ErrorhandlingProcess (if an error occurs)
Calls from	None
Inputs	None
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions – None

Integration Process/ Composite name	EBSToCCBAPDataBPELProcess
Description	Main process of the AP Data Integration. Collects all the Oracle E-Business Suite Financials for General Ledger and Accounts Payable payment information from Oracle E-Business Suite Financials for General Ledger and Accounts Payable application tables (AP_INVOICES_ALL, AP_CHECKS_ALL, and AP_INVOICE_PAYMENTS_ALL), transforms the data, and updates the information in the Oracle Utilities Customer Care and Billing table application table CI_ADJ_APREQ.
Calls to	<ul style="list-style-type: none"> • CCBCancellationWebService • ErrorhandlingProcess (if an error occurs) • MailNotification
Calls from	EBSToCCBAPDataRequestScheduler
Inputs	None
Outputs	None
Interaction pattern	Asynchronous
Exceptions/Errors	Possible Exceptions - BPEL Binding fault, BPEL Remote Fault

Integration Process/ Composite name	CCBCancellationWebService
Description	This process is a BPEL wrapper to call the Adjustment Maintenance web service in Oracle Utilities Customer Care and Billing to cancel the Adjustment ID corresponding to the AP Request ID for the given payment
Calls to	ErrorhandlingProcess (if an error occurs).
Calls from	EBSToCCBAPDataBPELProcess
Inputs	String object - AdjustmentID
Outputs	String result – containing APRequest ID for success or error messages
Interaction pattern	Synchronous
Exceptions/Errors	Possible Exceptions - BPEL Binding Fault, BPEL Remote Fault.

Database tables involved in AP Data

Table Name	Description	Application Name
AP_INVOICES_ALL	The Payment Information is extracted from this table	EBS
AP_CHECKS_ALL	The Payment Information is extracted from this table	EBS
AP_INVOICE_PAYMENTS_ALL	The Payment Information is extracted from this table	EBS
CI_ADJ_APREQ	This table is updated with the Payment Information received from Oracle E-Business Suite.	OUCCB

Shared Integration Points

These BPEL processes are used across multiple integration points within this integration product.

Process Name	Error Handling Process
Description	Invoked only when errors occur. Inserts data into error table INTEGRATION_ERROR_STORE in the Integration Schema.
Calls To	None

Calls From	<ul style="list-style-type: none"> CCBToEBSGLBPELProcess UpdateCCBAPControlTable CCBToEBSAPBPELProcess CCBCancellationWebService EBSToCCBAPDataBPELProcess
Inputs	ErrorHandlingProcessRequest xml object
Outputs	String result
Synch/Asynch	Synchronous
Exceptions/Errors	Possible Exceptions - None

Process Name	MailNotification
Description	This process is invoked at the end of each batch run. If there was any error generated, it assimilates all these messages into an e-mail and sends the email to configured email address.
Calls To	None
Calls From	<ul style="list-style-type: none"> CCBToEBSGLBPELProcess CCBToEBSAPBPELProcess EBSToCCBAPDataBPELProcess
Inputs	MailNotificationInputParameters xml object
Outputs	None
Synch/Asynch	Asynchronous
Exceptions/Errors	Possible Exceptions - None

Part 2

Implementing the Integration Product

This section provides details on how to configure the participating applications and middleware layer for this integration. It also includes information on error handling, monitoring, customization options, and data mapping.

This section contains the following chapters:

- [Configuring the Integration](#)
- [Monitoring and Troubleshooting](#)
- [Customization Options](#)

Chapter 3

Configuring the Integration

This section provides details regarding the configuration settings required for the integration, including:

- [Integration Configuration Checklist](#)
- [Oracle E-Business Suite Financials for General Ledger and Accounts Payable Configuration](#)
- [Oracle Utilities Customer Care and Billing Configuration](#)
- [Integration Product Configuration](#)
- [Verifying the Implementation](#)

Integration Configuration Checklist

Extensive configuration is required to implement the integration between Oracle Customer Care and Billing and Oracle E-Business Suite. This section provides a list of configuration tasks, including:

- [Oracle E-Business Suite Financials for General Ledger and Accounts Payable Configuration](#)
- [Oracle Utilities Customer Care and Billing Configuration](#)
- [Integration Product Configuration](#)

Oracle E-Business Suite Financials for General Ledger and Accounts Payable Configuration

The following table provides details for configuring in Oracle E-Business Suite Financials.

Step	Information	Comments
A1	Accounting Flexfield	Identify and document the Accounting Flexfield to be used with the integrated data. You must decide this at the start of the integrations so all the journals are accounted and posted to these accounts.
A2	Ledger ID / Set of Books ID	Document the ledger(s) to which all the accounting entries are to be created and posted. In E-Business Suite Release12, the Ledger ID is used.
A3	Journal Source	Specify the Source of the journal from which it is created.
A4	Journal Category	Specify the Category to which all the journals belong.
A5	Organization ID	Document the AP Operating Unit(s) to be used with the integrated data. Example: ' Vision Operations '. Derive the Organization ID with respect to the Operating Unit. Example: ' 204 '. This is used in checklist step B3 .
A6	Payment Terms Code	Create or document the payment terms code(s) to be used for paying AP vouchers coming from Customer Care and Billing. Example: Net07 (CCBREFUND).
A7	Invoice Source	Create the invoice source to be used in Payables Import program Example: 'CCB' to group all invoices coming from Oracle Utilities Customer Care and Billing.
A8	Lookup for Multi-Org setup	Populate values in INT_CCB_EBS_MORG_SETUPS lookup for Multi-Org setup.
A9	Country and State Codes	Define/Identify the Country and State codes for addresses. These should match the codes in Customer Care and Billing.
A10	Currency Codes	Currency Codes should match with the currency codes in Customer Care and Billing.

Oracle Utilities Customer Care and Billing Configuration

The following table provides details for configuring in Oracle Utilities Customer Care and Billing.

Step	Information	Comments
B1	GL Division	Configure the GL Division(s) to be used in the integration. Example: US1 . This must match the GL Division specified in Integration_Lookup_table.
B2	Distribution Codes	Configure your distribution codes. For example: 01.520.5250.0000.000 with '01' corresponding to Company, '520' corresponding to Department and so on. Refer to details of all mapping segments later in this document. This needs to be set up in sync with the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Flexfield.
B3	Operating Unit Characteristic Type	Configure a characteristic type to hold the value of the Operating Unit to be used. Example characteristic type: EBSORGID. The value you create in this characteristic (Example: 204) must match what you documented in step A5 .
B4	Create Cancel Reason Code	Create a Cancel Reason code.
B5	Link the characteristic type created in step B3 with the CIS Division	The CIS Division you are using (Example: CA) now has a characteristic type linked to it (Example: EBSORGID) that holds the name of the Org ID to use (Example: 204).
B6	General Ledger Characteristic Type	Configure a characteristic type to hold the value of the General Ledger ID for E-Business Suite Release 12. Example characteristic type: GLEDGER. The value you create in this characteristic (Example: 1) must match what you documented in step A2 .
B7	Link the characteristic type created in step B6 with the CIS Division	Add the characteristic type (Example: GLEDGER) to all CIS Divisions and specify the Ledger/Set of Books value to be used (Example: 1).
B8	Payment Terms Characteristic Type	Configure a characteristic type to hold the value of the Payment Terms ID to be used when creating Invoices in E-Business Suite. The value you create in this characteristic must match what you documented in step A6 .
B9	Link the characteristic type created in step B8 with the CIS Division	Add the characteristic type (Example: TERMS) to all CIS Divisions and specify the Payment Terms ID value to be used.

Integration Product Configuration

This section provides details on configuration settings for the integration product.

Task	Description
Setting Configuration Properties	Set configurations properties that are used by integration processes. Configuration is done in the INTEGRATION_LOOKUP_TABLE and INTEGRATION_PROCESS_ACTIVATION tables.
Setting BPEL Preference GL_AccountTransformationRequired	This configuration is used by the AP Request Integration Process to determine the delimiter of the GL Account string passed to Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables. By default GL_AccountTransformationRequired is set to Y which translate the delimiter to a hyphen. If this is the delimiter that your implementation needs then nothing needs to be done. If the GL Account obtained from Oracle Utilities Customer Care and Billing needs to be pass as is, then set it to N.
Setting Domain Value Maps	Set domain value maps (DVMs) to map codes and other static values across applications
Setting Error Handling for the integration	Set up error notification

Oracle E-Business Suite Financials for General Ledger and Accounts Payable Configuration

Configure GL accounts (Accounting Flexfield) and other information in Oracle E-Business Suite:

- [GL Integration Point](#)
- [AP Request Integration Point](#)
- [AP Data Integration Point](#)

Refer to your product-specific user documentation for steps to configure the GL.

GL Integration Point

As long as the Accounting Flexfield and respective segments and other GL definitions and settings (Ledger) are configured in Oracle E-Business Suite, there are no new settings required for the GL integration point.

AP Request Integration Point

It includes the following:

- [Configuring the Payment Terms in Oracle E-Business Suite Financials for General Ledger and Accounts Payables](#)
- [Configuring the Invoice Source in Oracle E-Business Suite Financials for General Ledger and Accounts Payables](#)

- [Configuring the Journal Source in Oracle E-Business Suite Financials for General Ledger and Accounts Payables](#)
- [Configuring the Journal Category in Oracle E-Business Suite Financials for General Ledger and Accounts Payables](#)
- [Configuring the Lookup for Multi-Org in Oracle E-Business Suite Financials for General Ledger and Accounts Payables](#)

Configuring the Payment Terms in Oracle E-Business Suite Financials for General Ledger and Accounts Payables

To configure the Payment Terms follow the steps below:

1. Open Oracle E-Business Suite and navigate to **Payables Vision Operations (USA)** Responsibility.
Go to **Setup > Invoice > Payment**.
2. Define the payment terms as per the table below:

Field Label	Value
Name	Net 07
Description	Payment Due after 7 Days
Effective Date From	01-JAN-1990
% Due	100
Days	7

3. Capture the TERMS_ID by navigating to **Help->Diagnostics->Examine**. Change the **Field Name** to 'TERM_ID'. This value must be specified in Step A6 of the checklist.

Configuring the Invoice Source in Oracle E-Business Suite Financials for General Ledger and Accounts Payables

To Configure the Invoice Source follow these steps:

1. Open Oracle E-Business Suite and Navigate to Payables Vision Operations (USA) Responsibility.
Go to **Setup > Lookups > Payable**.
2. Search for lookup type 'SOURCE' and add a new lookup code as follows:

Field Label	Value
Code	CCB
Meaning	Oracle Utilities Customer Care and Billing
Description	Oracle Utilities Customer Care and Billing

3. The Code value must be specified in Step **A7** of the checklist.

Configuring the Journal Source in Oracle E-Business Suite Financials for General Ledger and Accounts Payables

To Configure the Journal Source follow these steps:

1. Open Oracle E-Business Suite and Navigate to General Ledger, Vision Operations (USA) Responsibility.
Go to **Setup > Journal > Sources**.
2. Add a new source as follows:

Field Label	Value
Code	CCB
Meaning	Oracle Utilities Customer Care and Billing
Description	Oracle Utilities Customer Care and Billing

3. The Source value must be specified in Step **A3** of the checklist.

Configuring the Journal Category in Oracle E-Business Suite Financials for General Ledger and Accounts Payables

To Configure the Journal Category follow these steps:

1. Open Oracle E-Business Suite and navigate to General Ledger, Vision Operations (USA) Responsibility.
Go to **Setup > Journal > Categories**.
2. Add a new Category as follows:

Field Label	Value
Source	CCB EBS
Source Key	CCB EBS
Description	CCB EBS Journals
Import Journal References	Select the checkbox

The Category value must be specified in Step **A4** of the checklist.

Configuring the Lookup for Multi-Org in Oracle E-Business Suite Financials for General Ledger and Accounts Payables

User and Responsibility are required to set the Org Context in the pl/sql procedure to create a Supplier and Site.

To set up the values in the Lookup follow these steps:

1. Open Oracle E-Business Suite and navigate to Applications Developer Responsibility.
Go to **Application > Lookups > Common**.

2. Search for **INT_CCB_EBS_MORG_SETUPS** Lookup Type:s

Code	Meaning	Comments
INT_USER	OPERATIONS	Provide the User Name.
INT_PAYABLES_RESP	Payables, Vision Operations (USA)	Provide the Payables Responsibility Name.

AP Data Integration Point

No configuration is required in Oracle E-Business Suite Financials for General Ledger and Accounts Payable for this integration point. Standard application tables are used for selecting data from Oracle E-Business Suite Financials for General Ledger and Accounts Payable to export payment information to Oracle Utilities Customer Care and Billing.

Oracle Utilities Customer Care and Billing Configuration

To configure the Oracle Utilities Customer Care and Billing portion of the integration you must define settings for all three integration points:

- [GL Integration Point](#)
- [AP Request Integration Point](#)
- [AP Data Integration Point](#)

Refer to your user documentation for instructions regarding specific steps in Oracle Utilities Customer Care and Billing.

GL Integration Point

To enable this integration point, you must configure the following information in Oracle Utilities Customer Care and Billing:

- [Configuring GL Division](#)
- [Configuring Distribution Codes](#)
- [GL Account String](#)
- [Configuring GLASSIGN, and GLS for Oracle Utilities Customer Care and Billing Extract](#)
- [Configuring the General Ledger ID Characteristic Type](#)

Configuring GL Division

If you decide to integrate the financial transactions for a specific GL Division in Oracle Utilities Customer Care and Billing to E-Business Suite, identify the GL Division. This must match the GL Division specified in `Integration_Lookup_table`.

Configuring Distribution Codes

You must map your distribution codes in Oracle Utilities Customer Care and Billing to the appropriate GL Accounts in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL. First configure the distribution codes and then assign them to various entities within Oracle Utilities Customer Care and Billing.

The following table shows a sample configuration of one distribution code. Only fields relevant to the integration are included in this table.

Field Label	Value	Comment
Distribution Code	Example: R-ELERES	The distribution code to be used for financial transactions of a certain type.
Description	Example: Electric residential revenue	A description of how the distribution code is used.
GL Account Algorithm	GLCNST-DFLT	The standard product, or customer modified, algorithm you use for determining the GL Account String from the distribution code.
GL Account Details	1 of 1	Create at least one set of account details as needed by your chosen algorithm above. Only one is used based on status and effective date.
Effective Date	01-01-1900	The date you wish the following GL Account string to become active and used by the system, and therefore the integration software.
Status	Active	Only active status accounts are used by the product and therefore the integration.
GL Account	01.520.5250.0000.000	Input the GL Account String as explained below.

The distribution code links the GL Account to activities. As in the example above, a bill payment receives the code R-ELERES so that this revenue for electric residential service is applied to the account 01.520.5250.0000.000. The Algorithm, GLCNST-DFLT provides the hook which allows the integration to get the GL Account from the distribution code and recognize it in Oracle E-Business Suite to the correct GL Journal entry.

GL Account String

Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL accounts are structured using account segments. These are set up in your existing Oracle E-Business Suite Financials for General Ledger and Accounts Payable system according to your business practices.

Oracle Utilities Customer Care and Billing GL Account positions must be configured to mirror the segments & values in Oracle E-Business Suite Financials for General Ledger and Accounts Payable. The segment positions are fixed in Oracle Utilities Customer Care

and Billing so that the first segment is Company, the second segment is Department ID, and so on, as shown in the following table.

Oracle E-Business Suite Financials for General Ledger and Accounts Payable Account Column name	Oracle Utilities Customer Care and Billing Distribution (GL_ACCT) segment position
Company	Position 1
Department	Position 2
Account	Position 3
Sub-Account	Position 4
Product	Position 5

As you configure the segments, separate each with a dot (.).

Example:

A sample GL Account string is 01.520.5250.0000.000.

When interpreted by the standard mapping in the product, this GL Account String in the sub ledger equates to the following in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL:

- Company - 01
- Department - 520
- Account - 5250
- Sub-Account - 0000
- Product -000

Refer to the data mapping table for details on how the segments must be mapped.

Configuring GLASSIGN, and GLS for Oracle Utilities Customer Care and Billing Extract

To successfully execute extracts from Oracle Utilities Customer Care and Billing, two processes must be configured with the appropriate batch parameters and set to run on a scheduled basis. These processes can be scheduled using the Oracle Utilities Customer Care and Billing scheduling tool or an enterprise scheduler that meets the open architecture standards used by Oracle Utilities Customer Care and Billing.

Configuring the General Ledger ID Characteristic Type

For each CIS Division used in Oracle Utilities Customer Care and Billing, you must configure a Characteristic Value to have the General Ledger ID to be used in Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL.

1. Create a Characteristic Type.

Admin menu>>C>>Characteristic Type

The value for this characteristic type stores the value of the Ledger ID for Release 12.0 in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

2. Set up the details on the Characteristic Type as follows:

Field Label	Value	Comment
Characteristic Type	GLEDGER	The code associated with your characteristic type.
Description	General Ledger ID	A description of the use for this characteristic type.
Type of Char Value	Predefined Value	No freeform text is allowed, only a predefined set of values.
Allow Search by Char Val	Allowed	Allow Searches
Characteristic Value	xxx	

3. Select the Characteristic Entities tab to allow the Characteristic Type to be associated with the CIS Division:

Field Label	Value	Comment
Characteristic Entity	CIS Division	This characteristic type can be inserted on a CIS Division.

4. Attach the Characteristic Type, created above, to any CIS Divisions that are used.
Admin menu>>C>>CIS Division.

Field Label	Value	Comment
CIS Division	Example: CA	The CIS Division to be used.
Description	Example: California	A description of how the CIS Division is used.
Characteristic Tab		
Effective Date	Example: 01-01-1900	The date you wish the characteristic type and value to become active and used by the system, and therefore the integration software.
Characteristic Type	GLEDGER	The characteristic type you created above.
Characteristic Value	xxx	The characteristic value created above.

AP Request Integration Point

This includes the following:

- [Language to fetch the Adjustment Description](#)
- [Configuring the AP Operating Unit Characteristic Type](#)
- [Configuring the Payment Terms ID Characteristic Type](#)

Language to fetch the Adjustment Description

The language to be used to fetch the Adjustment Description will be obtained from the Account's Main Person's Language Preference.

Configuring the AP Operating Unit Characteristic Type

For each CIS Division used in Oracle Utilities Customer Care and Billing, you must configure a Characteristic Value to have the AP Operating Unit to be used in Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL.

Complete the following configuration in Oracle Utilities Customer Care and Billing to reference the AP Operating Unit corresponding to the CIS Division as follows.

1. Create a Characteristic Type.

Admin menu>>C>>Characteristic Type

The value for this characteristic type stores the value of the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Org ID. In this example it is EBSORGID. Add the Org Id of Oracle E-Business Suite Financials for General Ledger and Accounts Payable as a Characteristic value.

2. Set up the details on the Characteristic Type as follows:

Field Label	Value	Comments
Characteristic Type	EBSORGID	The code associated with your characteristic type. This will be used in future steps.
Description	EBS Org ID	A description of the use for this characteristic type.
Type of Char Value	Predefined Value	No freeform text is allowed, only a predefined set of values.
Allow Search by Char Val	Allowed	Allow Searches
Characteristic Value	204	The name of the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Org ID to be used.
Description	Oracle E-Business Suite Financials for General Ledger and Accounts Payable Operating Unit	

- Select the **Characteristic Entities** tab to allow the Characteristic Type to be associated with the CIS Division:

Field Label	Value	Comments
Characteristic Entity	CIS Division	This characteristic type can be inserted on a CIS Division.

- Attach the Characteristic Type, created above, to any CIS Divisions that are used for AP Request Adjustments. In sample data an example is provided as the CA - CIS Division.

Admin menu>>C>>CIS Division

Field Label	Value	Comments
CIS Division	Example: CA	The CIS Division to be used.
Description	Example: California	A description of how the CIS Division is used.
Characteristic Tab		
Effective Date	Example: 01-01-1900	The date you wish the characteristic type and value to become active and used by the system, and therefore the integration software.
Characteristic Type	Oracle E-Business Suite Financials for General Ledger and Accounts Payable Org ID	The characteristic type you created above.
Characteristic Value	Example: 204	The value you gave to the characteristic type created above.

Configuring the Payment Terms ID Characteristic Type

For each CIS Division used in Oracle Utilities Customer Care and Billing, you must configure a Characteristic Value to have the Payment Terms ID to be used in Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL.

- Create a Characteristic Type.

Admin menu>>C>>Characteristic Type

The value for this characteristic type stores the value of the Payment Terms ID in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

- Set up the details on the Characteristic Type as follows:

Field Label	Value	Comments
Characteristic Type	TERMS_ID	The code associated with your characteristic type.
Description	Payment Terms ID	A description of the use for this characteristic type.

Field Label	Value	Comments
Type of Char Value	Predefined Value	No freeform text is allowed, only a predefined set of values.
Allow Search by Char Val	Allowed	Allow Searches
Characteristic Value	xxx	Payment Terms ID in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

3. Select the Characteristic Entities tab to allow the Characteristic Type to be associated with the CIS Division:
4. Attach the Characteristic Type, created above, to any CIS Divisions that are used for AP Request Adjustments.

Admin menu>>C>>CIS Division

Field Label	Value	Comments
CIS Division	Example: CA	The CIS Division to be used.
Description	Example: California	A description of how the CIS Division is used.
Characteristic Tab		
Effective Date	Example: 01-01-1900	The date you wish the characteristic type and value to become active and used by the system, and therefore the integration software.
Characteristic Type	Oracle E-Business Suite Financials for General Ledger and Accounts Payable Org ID	The characteristic type you created above.
Characteristic Value	Example: 204	The value you gave to the characteristic type created above.

Note: Only fields relevant to the integration are included in this table.

AP Data Integration Point

AP payment data is extracted from Oracle E-Business Suite Financials for General Ledger and Accounts Payable when an AP Request invoice is paid. This data is then translated by EBSToCCBAPDataBPELProcess and inserted into the Oracle Utilities Customer Care and Billing AP Request that originally initiated the invoice.

The CCBCancellationWebService invokes the Oracle Utilities Customer Care and Billing service, **CIAdjustmentMaintenance**, when a payment is canceled and the liability is closed in Oracle E-Business Suite Financials for General Ledger and Accounts Payable. The service uses the cancel reason specified in the integration lookup table when canceling the adjustment associated with an AP Request. The sample data cancel reason

comes pre-configured as APVC (Accounts Payable Void Check) in Oracle Utilities Customer Care and Billing version 2.2.0.2 and later.

Verify that the following are configured correctly in Oracle Utilities Customer Care and Billing.

Adjustment Cancel Reason

Create the Adjustment Cancel Reason to be used when canceling an adjustment.

1. Navigate to the **Adjustment Cancel Reason** portal on the **Admin** menu.
2. Provide the **Cancel Reason** and **Description**.

Cancel Adjustment Service (C1AdjustmentMaintenance)

1. Navigate to the **Inbound Service** portal on the **Admin** menu.
2. Verify the **XAI Inbound Service** details.

Field Label	Value	Comments
XAI Inbound Service Name	Adjustment Maintenance	This service is used to change data associated with adjustment transactions.
Description	Adjustment Maintenance for AP Cancel	
Long Description	Adjustment Maintenance for AP Cancel	
Active	Checked	Active checkbox checked.
Request Schema	C1AdjustmentMaintenance.xsd	Used by BPEL to call this service.
Response Schema	C1AdjustmentMaintenance.xsd	Used by BPEL to receive the response from this service.
Transaction Type	Update	Service used to update an existing adjustment transaction.

In Oracle Utilities Customer Care and Billing v2.5.0.x, there is an option to use **C1AdjustmentMaintenance IWS** (Inbound WebService).

1. Navigate to the **Inbound Web Service Deployment** portal on the **Admin** menu.
2. Verify that the **Inbound Web Service C1AdjustmentMaintenance** is deployed

- Click the **WSDL** link to view **C1AdjustmentMaintenance** IWS WSDL.

Integration Product Configuration

At this time, there is no user interface for entering the configuration parameters associated with the integration. You must update configuration parameters from the database using a database access tool.

This section includes the following:

- [Setting Configuration Properties](#)
- [Setting BPEL Preference GL_AccountTransformationRequired](#)
- [Setting Domain Value Maps](#)
- [Error Handling](#)

Setting Configuration Properties

Set configuration properties that are used by specific integration processes. Scheduler process configuration is done in INTEGRATION_PROCESS_ACTIVATION table and remaining process configuration is done in INTEGRATION_LOOKUP_TABLE.

Process Activation

The table INTEGRATION_PROCESS_ACTIVATION controls the activation or deactivation of the specific integration points. The initial install defaults all of the START_PROCESS values to 'Y'. Set the START_PROCESS value to 'N' for any given PROCESS_NAME that you do not plan to use.

Set the run frequency to the time interval you wish to have between integration runs for each of the integration points.

PROCESS_NAME	START_PROCESS (Y/N)	RUN_FREQU NCY (Seconds)	NEXT_RUN_IN TERTVAL (System Use)
CCB_EBS_GL	Y	0	0
CCB_EBS_AP	Y	0	0
EBS_CCB_APDATA	Y	0	0

Note: You cannot use APDATA if you do not use AP Request.

Process Scheduling

You may schedule these processes independently or using an enterprise scheduling tool. To schedule the processes independently, you may schedule the Oracle Utilities Customer Care and Billing processes using the standard tools available with the Oracle Utilities Customer Care and Billing product. You may schedule the Oracle E-Business Suite Financials for General Ledger and Accounts Payable processes using the standard tools shipped with the Oracle E-Business Suite Financials for General Ledger and

Accounts Payable product. You may schedule the BPEL processes to the time intervals you have configured. Each of the main BPEL processes that form this process integration have been designed to verify that data that must be extracted exists. If data exists, it is extracted, transformed, and loaded to the target system. If data does not exist, then the process does nothing until the next time it tries again.

For example, schedule the Oracle Utilities Customer Care and Billing GL processes to run at 6:00 A.M. each weekday. Then initiate the BPEL GL process at 7:00 AM and have it run every 4 hours to see if data exists. Accounting staff could then schedule the Journal Generator to run at 9:00 AM each morning using the Oracle E-Business Suite Standard Request Submission (SRS).

You may run the integration manually by initiating each process using the tools provided with each application. Or you can use an enterprise scheduler to initiate all, or some, of the processes mentioned above.

The frequency of the run for each integration point is at the client's discretion. As a default, each integration point runs every two minutes from the time you start them the first time. If data exists the integration is completed for the integration point. Otherwise, the system does nothing and tries again two minutes later.

If you wish to extend the time between runs, insert a value of time, in seconds, in the RUN_FREQUENCY column of the INTEGRATION_PROCESS_ACTIVATION table for the appropriate integration point. This column controls the timing of the integration points 'waking up' to see if there is data to integrate. The integration points only check this table every two minutes so you cannot schedule the runs in less than two minute increments. Set the run frequency to the time interval, in 120 second increments, you wish to have between integration runs for each of the integration points.

PROCESS_NAME	START_PROCESS (Y/N)	RUN_FREQUEN CY (Seconds)	NEXT_RUN_IN TERVAL (System Use)
CCB_EBS_GL	Y	14400	0
CCB_EBS_AP	Y	7200	0
EBS_CCB_APDATA	Y	7200	0

In the above example, the GL integration point looks for data every four hours (14,400 seconds), and the AP Request and AP Data integration points look for data to integrate every two hours (7200 seconds).

Every two minutes each integration point checks this table with the following logic:

```

If START_Process flag is NOT Y do nothing
else
  If Run Frequency is 0 run the IP
  else
    If next run interval is =< 0 run the integration point AND set
    Next_run_interval = run_frequency
    else
      DO not run the Integration Point, just set Next_run_interval =
      Next_run_interval - 120 (the polling interval set in BPEL)

```

General Ledger (GL)

The following processes must be run in sequence to extract, transform, and load GL transactions from Oracle Utilities Customer Care and Billing to Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

Product	Process Name	Description
CCB	GLASSIGN	Assigns GL account numbers to the GL details associated with financial transactions by referencing the distribution code that calls the appropriate assignment algorithm.
CCB	GLS	Follows GLASSIGN to create financial transaction (FT) download staging records for all financial transactions that are ready to be posted to the GL.
BPEL	CCBToEBSGLBPELProcess	Extracts financial transactions from Oracle Utilities Customer Care and Billing into BPEL to be transformed and prepared for upload to Oracle E-Business Suite Financials for General Ledger and Accounts Payable.
EBS	EBS Journal Import Process	Reads the staged data in the GL_INTERFACE Interface Table and creates journal entries in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL. This process can be scheduled or run manually.

AP Request

The following processes must be run in sequence to extract, transform, and load AP Requests from Oracle Utilities Customer Care and Billing to Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

Product	Process Name	Description
BPEL	CCBToEBSAPBPELProcess	Extracts AP Requests from Oracle Utilities Customer Care and Billing into BPEL to be transformed and prepared for upload to Oracle E-Business Suite Financials for General Ledger and Accounts Payable.
EBS	Payables Open Interface Import (APXIIMPT)	Creates Invoices in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

AP Data

The following process must be run sometime after the Oracle E-Business Suite Financials for General Ledger and Accounts Payable check run, to extract, transform,

and load AP Data from Oracle E-Business Suite Financials for General Ledger and Accounts Payable to Oracle Utilities Customer Care and Billing.

Product	Process Name	Description
BPEL	EBSToCCBAPDataBPELProcess	Extracts all payments and cancellations created during pay cycle processing.

Note: The BPEL processes mentioned above are exposed as standard, stand-alone SOAP Web Services. They can therefore be invoked as regular web services by the BPEL console or any platform supporting scheduling web service invoke activities. These services do not require any external inputs to run. Industry standard enterprise scheduling tools that support this capability may therefore be used to initiate these processes if desired.

There is an open-source tool bundled with the SOA Suite called Quartz, which can be used as a scheduler.

Lookup Table

The database table INTEGRATION_LOOKUP_TABLE contains configurable parameters used in the integration for the GL, AP Data, and AP Request integration points. The values for these parameters must be set to match your configuration of Oracle Utilities Customer Care and Billing and Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

INTEGRATION_KEY	INTEGRATION_VALUE	Comments
CCB.EBS.GL.LEDGER_ID	1	General Ledger ID
CCB.EBS.GL.EMAIL	abc.gl@xyz.com	Enter the e-mail address to be notified if errors occur in the GL integration point. Example: abc.gl@xyz.com.
CCB.EBS.GL.CUSTOMGLDATA.ENDPOINT	(space)	Custom GL component end point
CCB.EBS.GL.USER_JE_CATEGORY_NAME	CCB EBS	This is journal category. Example: 'CCB EBS'
CCB.EBS.GL.USER_JE_SOURCE_NAME	CCB EBS	This is the Journal Source. Example: 'CCB EBS'
CCB.EBS.GL.ACTUAL_FLAG	A	To create the Actual Journals. Example: 'A'

INTEGRATION_KEY	INTEGRATION_VALUE	Comments
CCB.EBS.GL.GL_DIVISION	US1 or Leave Blank	If this value is blank, then financial transactions associated with all GL divisions in Oracle Utilities Customer Care and Billing are integrated. If this column has a value, then only financial transactions associated with this specific GL Division indicated are integrated. Examples: blank or US1.
CCB.EBS.GL.XFORMCCBCOLL.PRE.EXTN.FLAG	false	If set to true, the pretransformation extension service is invoked at the collection level after retrieving all the FT records from Oracle Utilities Customer Care and Billing and before any transformation is done.
CCB.EBS.GL.AFTEREBS COLLINSERT.POST.EXTN.FLAG	false	If set to true, the posttransformation extension service is invoked after all the record are inserted in the Oracle E-Business Suite GL_INTERFACE table.
CCB.EBS.AP.REQUEST.EMAIL	abc@oracle.com	Enter the e-mail address to be notified if errors occur in the AP Request integration point. Example: abc.ap@oracle.com.
CCB.EBS.AP.REQUEST.INVOICE_SOURCE	CCB	Invoice Source to use when the integration creates invoices in Oracle E-Business Suite.
CCB.EBS.AP.CHAR_TYPE_CD_TERMSID	TERMS_ID	Characteristic Type to store Payment Terms ID of E-Business Suite. This must match what you documented in step B8.
CCB.EBS.AP.CHAR_TYPE_CD_ORGID	EBSORGID	Characteristic Type to store Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Operating Unit. This must match what you documented in step B3. Example: EBSORGID.
CCB.EBS.AP.REQUEST.ORG_ID	204	Valid ID for Organization code in E-Business Suite to be used when integration creates vendors in E-Business Suite Release 11.5.10. For E-Business Suite Release 12, the Org ID will be retrieved from the CIS Division Characteristic value.

INTEGRATION_KEY	INTEGRATION_VALUE	Comments
CCB.EBS.APREQUEST.PAYMENT_METHOD	CHECK	Specifies the payment method for the invoices created by the integration. The supported value is 'CHECK'. Do not modify this default value.
CCB.EBS.APREQUEST.DEFAULT.HEADER.DESCRPTION	Refund Request from CCB	Default Header description for Invoices in EBS.
CCB.EBS.APREQUEST.DEFAULT.LINE.DESCRPTION	Refund Request from CCB	Default Line description for Invoices in Oracle E-Business Suite.
CCB.EBS.APREQUEST.VENDOR.NAME.SUFFIX	ADJ_ID	The column whose value is suffixed to the vendor name when creating a supplier in EBS. Possible values are PER_ID,ACCT_ID, ADJ_ID, SA_ID,AP_REQ_ID.
CCB.EBS.APREQUEST.XFORMCCBCOLL.PRE.EXTN.FLAG	false	If set to true, the pre transformation extension service is invoked at the collection level after retrieving all the AP Request records from Oracle Utilities Customer Care and Billing and before any transformation is done.
CCB.EBS.APREQUEST.XFORMCCBRECORD.PRE.EXTN.FLAG	false	If set to true, the pre transformation extension service is invoked at the record level before transforming the AP Request record from Oracle Utilities Customer Care and Billing to Oracle E-Business Suite format.
CCB.EBS.APREQUEST.XFORMEBSRECORD.POST.EXTN.FLAG	false	If set to true, the post transformation extension service is invoked at the record level after the record is inserted in the Oracle E-Business Suite Invoice Interface tables.
CCB.EBS.APREQUEST.XFORMCCBSPI.PRE.EXTN.FLAG	false	If set to true,the pre invoke extension service is invoked before the EBS Stored procedure is executed in CCBToEBSAPPcedureCall process.
CCB.EBS.AP.INVOKE_ALT_EBS_TABLE_FLAG	false	Flag to enable the extensible scope , using which the composite can be customized.

INTEGRATION_KEY	INTEGRATION_VALUE	Comments
CCB.EBS.CCB.ADJ.MAINT.URL	http:// hostname:port/ouaf/ XAIApp/xaiserver/ C1AdjustmentMaintenance (XAI) or http:// /hostname:port/ ouaf/webservices/ C1AdjustmentMaintenance (IWS)	For cancellation of an adjustment, place the correct URL here.
CCB.EBS.ADMIN_EMAIL	abc@xyz.com	
CCB.EBS.CCB.LANGUAGE.CODE	ENG	Language Code
CCB.EBS.AP.CHAR_TYPE_CD_GLEDGERID	GLEDGER	Characteristic Type to store Ledger ID for E-Business Suite Release 12. This must match what you documented in the step B6.
EBS.CCB.APDATA.EMAIL		Enter the e-mail address to be notified if errors occur in the AP Request integration point. Example: abc.ap@oracle.com.
EBS.CCB.APDATA.LASTRUNDTTM	11-02-2008 10:01:01	Last Updated time of BPEL process run. This is used to determine the payment data to be extracted and moved across the integration.
EBS.CCB.CANCEL.CANCEL_REASON	APVC	Valid cancel reason code to be passed to CC&B when canceling the adjustment associated with the AP Request.
EBS.CCB.APDATA.XFORMEBSPAYMENTS COLL.PRE.EXTN.FLAG	false	If set to true, the pre transformation extension service is invoked at the collection level after retrieving all the payment records from EBS and before any transformation is done.
EBS.CCB.APDATA.XFORMEBSPAYMENTS RECORD.PRE.EXTN.FLAG	false	If set to true, the pre-transformation extension service is invoked at the record level before transforming the Oracle E-Business Suite payment record from Oracle E-Business Suite to Oracle Utilities Customer Care and Billing format.

INTEGRATION_KEY	INTEGRATION_VALUE	Comments
EBS.CCB.APDATA.PROCESSPAYMENTINFO.PRE.EXTN.FL AG	false	If set to true, the pre processing extension point is invoked. Base payment and cancellation processing are not invoked.
EBS.CCB.APDATA.PROCESSPAYMENTINFO.POST.EXTN.F LAG	false	If set to true, the post processing extension point is invoked. After the base payment and cancellation processing are invoked, additional processing can be done here.

Note: The INTEGRATION_PROCESS_ACTIVATION and INTEGRATION_LOOKUP_TABLE tables are created in the integration schema, during installation, for the BPEL processes to access these tables.

Setting BPEL Preference GL_AccountTransformationRequired

Preferences are name-value pair properties that are added to a BPEL process to hold configurable parameters. These preferences are accessed at run time by the BPEL process. The value of a preference can be changed at run time in Oracle Enterprise Manager (EM) Console, without having to redeploy the BPEL process.

Updating GL_AccountTransformationRequired Preference at Runtime

In the AP Request Integration process, GL_AccountTransformationRequired preference property determines the delimiter of the GL Account string passed to Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables.

By default, GL_AccountTransformationRequired is set to Y; this means GL Accounts use a hyphen "-" as a delimiter. If your implementation wants to modify this to use the delimiter that is passed from Oracle Utilities Customer Care and Billing, set the value to N. Most of the time, Oracle Utilities Customer Care and Billing passes the GL Account with dots as the delimiter.

Use the Enterprise Manager (EM) console to change the setting of the GL_AccountTransformationRequired process as needed.

1. Login to enterprise manager (em) console.
2. Go to the System MBean browser.
Example - using 12c em console:
3. Right click to SOA-Infra --> Administration --> System MBean Browser.
4. Drill down to the CCBToEBSAPBPELProcess composite following this path:
oracle.soa.config-->Manage Server (ex.soa_server1)--> SCAComposite-->
CCBToEBSAPBPELProcess -->ScaComponent.SCAComposite-->
CCBToEBSAPBPELProcess

5. In the **Attribute** tab, click on the **Properties**.
6. Change the value of preference.GL_AccountTransformationRequired property and click **Apply**.
7. Test your interface again and you should see they expected delimiter in the GL Account string.

Note: The settings are reset to default once the application server is restarted.

8. To retain the change values of the preference, do the following:
After you apply the change to the bpel.preference.<PREFERENCE_NAME>, click **Return**.
 - Click the **Operations** tab.
 - Click **Save**.
 - Click the **Invoke** button.
 - Click **Return**.

Setting Domain Value Maps

Domain value maps (DVMs) are a standard feature of the Oracle SOA Suite which maps codes and other static values across applications.

Example: “US” and “USA”

DVMs are static in nature, though Administrators can add additional maps as needed. Transactional business processes never update DVMs - they only read from them. They are stored in XML files and cached in memory at runtime.

To maintain information within the domain value maps:

1. Open a browser and access the SOA Composer application.
Example: `http://soa_host:soa_managerServer_Port/soa/composer/`
2. Select the relevant DVM you wish to maintain from the Deployment View pane.
3. To edit the selected DVM, click **CreateSession** in the top navigation bar.
4. Once the DVM has been edited, click **Save** in the navigation bar. This saves the DVM data for that session.
5. Click **Publish** after updating each DVM. This saves the DVM data in MDS.

DVMs

For more information about Domain Value Maps, refer to the chapters *Working with Domain Value Maps* and *Using SOA Composer with Domain Value Maps* in *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

DVM	Integration Point	ComPOSITE	Description
CCB_EBS_Country	Ap request	CCBToEBSAP ProcedureCall	Transforms the Oracle Utilities Customer Care and Billing Country code to an Oracle E-Business Suite country code.

CCB_EBS_State	AP request	CCBToEBSAP ProcedureCall	Transforms the Oracle Utilities Customer Care and Billing state code to an Oracle E-Business Suite state code.
CCB_EBS_Currency	AP request	CCBToEBSAP BPELProcess	Transforms the Oracle Utilities Customer Care and Billing currency code to an Oracle E-Business Suite currency code.
CCB_EBS_Category Name	GL	CCBToEBSGL BPELProcess	Transforms the Oracle Utilities Customer Care and Billing financial type flag to an Oracle E-Business Suite the category name.

CCB_EBS_Country

This DVM is used by the integration code to transform Oracle Utilities Customer Care and Billing country code to Oracle E-Business Suite country code.

CCB_Country	EBS_Country
This is valid country code defined in Oracle Utilities Customer Care and Billing. Example: USA	This is valid country code defined in Oracle E-Business Suite. Example: US

CCB_EBS_State

This DVM is used by the integration code to transform Oracle Utilities Customer Care and Billing state code to Oracle E-Business Suite state code.

CCB_State	EBS_State
This is valid state code defined in Oracle Utilities Customer Care and Billing. Example: CA	This is valid state code defined in Oracle Utilities Customer Care and Billing. Example: CA

CCB_EBS_Currency

This DVM is used by the integration code to transform Oracle Utilities Customer Care and Billing currency code to Oracle E-Business Suite currency code.

CCB_Currency	EBS_Currency
This is valid currency code defined in Oracle Utilities Customer Care and Billing. Example: USD	This is valid currency code defined in Oracle Utilities Customer Care and Billing. Example: USD

CCB_EBS_CategoryName

This DVM is used by the integration code to transform Oracle Utilities Customer Care and Billing financial transaction flag to Oracle E-Business Suite journal category name.

CCB_FTTypeFlag	EBS_userJeCategoryName
This is valid financial transaction type flag in Oracle Utilities Customer Care and Billing. Example: AD, AX, BS, PS	This is valid currency code defined in Oracle Utilities Customer Care and Billing. Example: USD

Error Handling

If errors occur during the main integration processes, they are logged in the Integration Error table, INTEGRATION_ERROR_STORE and the Mail Notification sub process is invoked.

The integration has an error table in the integration schema which keeps a record of all transactions that have failed either during BPEL processing, including insertion of data in the target system.

When errors are found during data extraction integration process inserts errors into the error table, INTEGRATION_ERROR_STORE. There is no user interface to access this table; however, the MailNotification process, if configured, notifies the user by e-mail of the error and the error details. The layout of the error table INTEGRATION_ERROR_STORE is shown below:

Column	Data Type
SOURCE_SYSTEM	VARCHAR2 (3)
INT_BATCH_NUMBER	NUMBER
INTERFACE_NAME	VARCHAR2 (30)
BPEL_INSTANCE_ID	NUMBER
ERROR_CODE	VARCHAR2(400)
ERROR_SUMMARY	VARCHAR2 3000)
ERROR_MESSAGE	VARCHAR2 3000)
NOTIFIED	VARCHAR2 (1)
LAST_UPDATE_DATE_TIME	DATE

If errors occur during the extraction or load process for any of the integration points, the system logs an error in `INTEGRATION_ERROR_STORE`. Business data is stored in the `ERROR_MESSAGE` field of the table, and the information is also included in the notification email.

The e-mail notification sub process reads the information in the error table and sends an e-mail notification, based on settings configured for the integration layer.

Each time the e-mail notification process runs, it picks up records from the integration error table where `NOTIFIED = 'N'` (meaning that notifications have not yet been sent). It loops through all the distinct `INTERFACE_NAME` entries and sends one email to the corresponding email address (specific to the interface name) with the error information of all the entries in the table. So if there are 6 records with `INTERFACE_NAME="GL"` one e-mail is sent out to the email address corresponding to the GL interface. After the email is sent, the system updates the indicator so that `NOTIFIED = 'Y.'`

This e-mail contains the following information about each of the 6 GL transactions that failed:

- Subject: “Source System” “Target System” “Interface Name” “Process Instance”
- Body
- Source system
- Integration batch number
- BPEL Instance ID
- Error Code
- Error Summary
- Error Message

Error Notification Set Up

Enable email notification for the error handling module.

1. Log in to the Enterprise Manager console.
2. Expand **SOA** and then right-click **SOA Infra**. From the menu, click **SOA Administration** and then click **Workflow Properties**.
3. From the drop-down list, select **EMAIL**.
4. Enter the Email IDs in the ‘**From**’ address field.

Verifying the Implementation

The best way to verify the implementation is to start each application individually then manually running the integration points:

- [GL Integration Point](#)
- [AP Request Integration Point](#)
- [AP Data Integration Point](#)

GL Integration Point

1. Identify Financial Transactions in CI_FT table that must be sent to Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL for creating Journal Entries. If needed, generate a bill, adjustment, or payment event to create financial transactions.
2. Run the GLASSIGN process to assign the Account Number to the FT in CI_FT.
3. Run the GLS process to mark the FTs in the CI_FT table for download. The staging process to create a GL download (GLS) creates a staging record for every financial transaction that is ready for download. This process populates the FT / Batch Process table with the unique ID of all financial transactions to be interfaced to the GL. This process marks each staging record with the batch process ID (defined on the installation record) for the GL interface. It also stamps the current run number for the respective batch control record.

Note: The integration BPEL process uses the information on this staging table to create the consolidated journal entries that are interfaced to your GL. The integration process reads the CI_BATCH table to check for new BATCH_JOB_ID and BATCH_JOB_STAT_FLG.

4. Run the GLS process.
5. Invoke the GL Integration Point process from enterprise manager or wait for its next run to occur. The package does the following:
 - Select the FT in the CI_FT table based on the batch code and the run number provided to it by Oracle BPEL Process Manager.
 - Extract and group (summarize) the Financial Transactions (FT) and push them into Oracle BPEL Process Manager.
 - Update the Distribution status to 'D' after extracting the FT and increment the NEXT_BATCH_NBR in the CI_BATCH_CTL table.
 - Data is transformed by the BPEL process and written to the GL journal staging table in Oracle E-Business Suite financials for General Ledger and Accounts Payable.
6. Use the Oracle E-Business Suite GL Journal import Process to load the GL data into the Oracle E-Business Suite financials for General Ledger and Accounts Payable GL base tables.

AP Request Integration Point

1. Create an AP Request for a refund customer in Oracle Utilities Customer Care and Billing. You must generate an adjustment of the appropriate type to do this.
2. Run the GLASSIGN process to assign the Account Number to the FT in CI_FT.
3. Invoke the AP Request Integration Point to extract the AP Request Information, and the corresponding customer information from Oracle Utilities Customer Care and Billing, transform it, and load it into Oracle E-Business Suite Financials for General Ledger and Accounts Payable AP Invoice Interface tables.
4. Run the Payables Open Interface Import (APXIIMPT) in Oracle E-Business Suite Financials for General Ledger and Accounts Payable to create Invoices from the AP Check Request and Customer data that is staged in the Invoice Interface tables.

AP Data Integration Point

1. Generate a payment in Oracle E-Business Suite Financials for General Ledger and Accounts Payable Payables for an Invoice created by the Oracle Utilities Customer Care and Billing AP Request process above.
2. Invoke the AP Data Integration Point to update the AP Check Request table (CI_ADJ_APREQ) with the Payment Information from Oracle E-Business Suite Financials for General Ledger and Accounts Payable.
3. If you wish to further test a cancellation of payment functionality, cancel the Payment you made above in Oracle E-Business Suite Financials for General Ledger and Accounts Payable Payables.
4. Invoke the integration process to update the AP Check Request table (CI_ADJ_APREQ) with the Payment Information from Oracle E-Business Suite Financials for General Ledger and Accounts Payable. This cancels the AP Request and adjustment.

Chapter 4

Monitoring and Troubleshooting

If your integration is configured properly and your data is entered correctly into Oracle Utilities Customer Care and Billing and Oracle E-Business Suite Financials for General Ledger and Accounts Payable, you must not experience errors related to the integration. The following sections address some common scenarios which may produce errors and offer possible solutions toward error resolution.

This section provides information on the following:

- [Monitoring from Oracle Utilities Customer Care and Billing](#)
- [Monitoring from Oracle E-Business Suite](#)
- [Monitoring from Integration](#)
- [Troubleshooting](#)

Monitoring from Oracle Utilities Customer Care and Billing

Errors related to the online integration invocation from Oracle Utilities Customer Care and Billing are stored in the CCB_ENVIRONMENT_NAME/logs/system folder.

Example: V24_V24020_CCB_SOA12C_CERT_LIN_ORA_WLS /logs/system

Errors related to batch integration invocation from Oracle Utilities Customer Care and Billing are stored in the \$SPLOUTPUT/ CCB_ENVIRONMENT_NAME folder.

Example: /spl/sploutput/V24020_CCB_SOA12C_CERT_LIN_ORA_WLS

Example: If any error occurs when GLASSIGN or GLS batches are run are reported in Oracle Utilities Customer Care and Billing product batch run tree. Then you must correct the underlying condition causing the error and then rerun the batch processes. The rest of the integration cannot occur until the two Oracle Utilities Customer Care and Billing batch processes have successfully completed.

For more information about errors and notifications, see the Oracle Utilities Customer Care and Billing documentation.

Monitoring from Oracle E-Business Suite

Any error occurs during the execution of the journal generator process are reported in Oracle E-Business Suite Financials for General Ledger and Accounts Payable process monitor. The monitor shows the status of the process and an error log.

Monitoring from Integration

Use any of the following to monitor the integration:

- [Monitoring Using WebLogic SOA Enterprise Manager](#)
- [Monitoring Using WebLogic Logs](#)
- [Monitoring Using Integration Error Store table](#)

Monitoring Using WebLogic SOA Enterprise Manager

Perform the following steps to monitor through WebLogic SOA Enterprise Manager:

1. Log in to the WebLogic SOA Server Enterprise Manager, and then navigate to **SOA** -> **SOA-Infra** -> **CCB-EBS**.

All composite processes deployed for integration are available under the partition CCB-EBS.

2. Select the appropriate process to list all the instances for the processes sorted by time of execution.
3. Click the appropriate process instance and it displays the flow for the process. The composite flow lists all activities in the process instance.

Monitoring Using WebLogic Logs

Log in to the machine where SOA server is installed. The SOA logs are stored in:

<WebLogic installation folder>/user_projects/domains/<SOA Domain name>/servers/<SOA Server name>/logs

Example: /Oracle/Middleware/Oracle_Home/user_projects/domains/soa_domain/servers/soa_server1/logs

Monitoring Using Integration Error Store table

Errors occurring during the integration such as when financial transactions are extracted or summarized, when data formats are translated, or when data is inserted into one of the edge applications are logged and reported by the integration product in the INTEGRATION_ERROR_STORE table.

Use standard database (SQL based) tools to view the error information in the table if necessary, however the e-mail notification you receive must include all of the information necessary to investigate and correct the error.

If errors occur during the extraction or load process for any of the integration points, the system logs an error in INTEGRATION_ERROR_STORE. Business data is stored in the ERROR_MESSAGE field of the table, and the information is also included in the notification email.

The following sections indicate where to locate error messages and logged error data in each of the integration point:

- [GL Integration Point](#)
- [AP Request Integration Point](#)

- [AP Data Integration Point](#)

GL Integration Point

If errors occur during the extraction of Financial Transactions from Oracle Utilities Customer Care and Billing tables or during loading these transactions into Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL_INTERFACE table, integration process inserts the error into INTEGRATION_ERROR_STORE.

The following business data is stored in the ERROR_MESSAGE field of INTEGRATION_ERROR_STORE. This information is included in the notification email.

The GL integration point utilizes set based processing. If there is an error, with any part of the batch, the entire batch is rejected.

Table	Column	Data Type
CI_FT_PROC	BATCH_NBR	NUMBER (10)
CI_FT_GL	DST_ID	CHAR (10)
CI_FT_GL	GL_ACCT	VARCHAR2 (48)
CI_FT	CIS_DIVISION	CHAR (5)
CI_FT	GL_DIVISION	CHAR (5)

AP Request Integration Point

If errors occur during the extraction of Financial Transactions from Oracle Utilities Customer Care and Billing tables or during loading these transactions into Oracle E-Business Suite Financials for General Ledger and Accounts Payable Invoice Interface tables, BPEL inserts the error into INTEGRATION_ERROR_STORE.

The following business data is stored in the ERROR_MESSAGE field of INTEGRATION_ERROR_STORE. This information is included in the notification email:

Table	Column	Data Type
CI_ADJ_APREQ	AP_REQ_ID	CHAR (12)
	BATCH_NBR	NUMBER (10)
	ENTITY_NAME	VARCHAR2 (64)
	SCHEDULED_PAY_DT	DATE
CI_ADJ	ADJ_ID	CHAR (12)
	CRE_DT	CHAR (12)
	ADJ_TYPE_CD	CHAR (8)
	ADJ_AMT	NUMBER (15,2)
CI_SA	CIS_DIVISION	CHAR (5)

AP Data Integration Point

The following business data is stored in the ERROR_MESSAGE field of INTEGRATION_ERROR_STORE. This information is included in the notification email:

Table	Column	Data Type
AP_CHECKS_ALL	CHECK_NUMBER	NUMBER (15)
	CHECK_ID	NUMBER (15)
	CHECK_DATE	DATE
	AMOUNT	NUMBER
	BANK_ACCOUNT_NUM	VARCHAR2 (50)
AP_INVOICES_ALL	INVOICE_NUM	VARCHAR2 (50)
	PAYMENT_REASON_COMMENTS	VARCHAR2 (240)
	INVOICE_ID	NUMBER (15)
	VENDOR_ID	NUMBER (15)
	VENDOR_SITE_ID	NUMBER (15)

Troubleshooting

The following sections detail error scenarios which may occur, and how to resolve them. Usually when errors occur, you must correct configuration settings, data errors, or both:

- The General Ledger Integration uses set based processing. This means that either all or none of the transactions in a batch are successful.
- The AP Request Integration uses row-by-row processing.
- The AP Data Integration uses row-by-row processing.

Error	Interface Name	Application/process	Error Details	Error Resolution
GL Account mapping inconsistency	GL Integration point	CCB	When the Journal Voucher is created in Oracle E- Business Suite Financials for General Ledger and Accounts Payable, the Accounting information is incorrect.	Since the source of truth is Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL, the user needs to correct the Accounting Structure in the Oracle Utilities Customer Care and Billing distribution code using information from the Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL.
Wrong GL Operating Unit	GL Integration point	CCB	The financial information being sent to Oracle E- Business Suite Financials for General Ledger and Accounts Payable has the wrong Operating Unit associated with it.	Correct the GL Division set up in Oracle Utilities Customer Care and Billing to match the GL Operating Unit in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.

Data in AP Request row and BPEL process does not fail.	AP request integration point	CCB	If a particular AP Request has an error in Oracle Utilities Customer Care and Billing, it is not picked by the integration process but the remaining requests of that BPEL run are picked up and inserted into the interface tables and the BPEL process status is successful. If one or more rows have failed at any point in the integration, the information is logged in the integration log table and an error email is generated.	Correct the specific AP Request in error using the tools provided by Oracle Utilities Customer Care and Billing. Then rerun the BPEL integration process.
Data successfully inserted in Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface table, but data has errors.	GL integration point	EBS	If the integration process completes successfully and data is inserted into the Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface tables, but the data has errors in it, the Journal Generator process may not be able to process the data and create journal vouchers from it.	Correct the information directly in Oracle E- Business Suite Financials for General Ledger and Accounts Payable and load the journal voucher using the online tools provided in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.
Journal Generator process cannot complete successfully.	GL integration point	EBS	When the Journal Generator process encounters errors, the error status/reason associated with the Journal Generator process is also identified in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Process monitor. All the rows in the interface table remain unprocessed and the Distribution Status remains unchanged as 'N'.	Correct the information directly in Oracle E- Business Suite Financials for General Ledger and Accounts Payable and load the journal voucher using the online tools provided in Oracle E-Business Suite Financials for General Ledger and Accounts Payable.
Journal Generator process completes successfully with bad data.	GL integration point	EBS	In this instance, journals are created for the row of bad data, which can be detected and rectified by viewing, editing, and loading the journal online.	Correct the information directly in Oracle E- Business Suite Financials for General Ledger and Accounts Payable and load the journal voucher using the online tools provided in Oracle E-Business Suite Financials for General Ledger and Accounts Payable. After the process is successfully completed, the Distribution Status of all the rows in the Interface table is updated to 'D'.

Row of bad data in Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface table does not get picked up.	GL integration point	EBS	The Journal Generator process does not error out and the row of bad data in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface table does not get picked up. This situation can occur if the Accounting Date lies outside the Open Period.	Correct the Accounting Date manually in Oracle E- Business Suite Financials for General Ledger and Accounts Payable. After the process has completed successfully, the Distribution Status of the row still remains in 'N'.(does not change to 'D').
Error Data in Oracle E-Business Suite Financials for General Ledger and Accounts Payable staging table and the process fails.	AP Request integration point	EBS	All the data is successfully inserted into the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Interface tables, but there is an error while running the Invoice build process.	Load the Invoices directly into Oracle E- Business Suite Financials for General Ledger and Accounts Payable and resolve any incorrect data.
Error Data in Oracle E-Business Suite Financials for General Ledger and Accounts Payable staging table and the process does not fail.	AP Request integration point	EBS	Oracle E-Business Suite Financials for General Ledger and Accounts Payable Invoice Build process ends successfully but the Invoices are in recycle status.	Load the Invoices directly in Oracle E- Business Suite Financials for General Ledger and Accounts Payable and resolve any incorrect data.
System or Network Down	Any integration Point	Integration BPEL Process	If server goes down in the middle of an integration process.	If server goes down in the middle of a long running process, it can be restarted and will resume where it went down. A retry policy can be set up in the Oracle BPEL Process Manager which administratively enables BPEL process instances to retry adapter connectivity.
Data failed to insert in the Oracle E-Business Suite Financials for General Ledger and Accounts Payable interface table.	GL integration point	Integration BPEL Process	If one row fails to insert into the Oracle E-Business Suite Financials for General Ledger and Accounts Payable Interface table during a batch, the entire batch rolls back. In this instance, the BPEL process shows a status of error and an error notification is sent via email.	Re-establish the connections between BPEL and the edge applications if necessary. Correct the configuration and/or transactional data in the Oracle Utilities Customer Care and Billing database if necessary. Make sure that the GLASSIGN and GLS processes are run again. The Integration process must also be re-run once you have taken the above actions.

GL Account Mapping inconsistency	GL integration point	Integration BPEL Process	When the Journal Voucher is created in Oracle E-Business Suite Financials for General Ledger and Accounts Payable, the Accounting information is incorrect.	Since the source of truth is Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL, the user needs to correct the Accounting Structure in the Oracle Utilities Customer Care and Billing distribution code using information from the Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL.
The integration is unable to update the AP Request table with payment information.	AP Data integration point	Integration BPEL Process	It is likely that the error is technical in nature (data mapping etc).	Review BPEL error table and product error logs. Update BPEL and/or product configurations as needed to correct the errors reported. Re-run the integration once corrections have been made.
The integration is unable to invoke the Adjustment Maintenance Service.	AP Data integration point	Integration BPEL Process	It is likely that the error is technical in nature (service retired etc).	Review BPEL error table and product error logs. Update BPEL and/or product configurations as needed to correct the errors reported. Re-run the integration once corrections have been made.

Chapter 5

Customization Options

This chapter provides information on the various methods that can be used to extend or customize the integration:

- [Extension Methods](#)
- [Implementing Extension Points](#)
- [Implementing Custom Transformations](#)
- [Migrating Custom Components](#)
- [Customizing SOA Composite Applications](#)

Extension Methods

The integration process allows extensibility of transaction messages using the following methods:

- [Custom Extension Points](#)
- [Custom Transformations](#)
- [Customizable Scopes](#)

Custom Extension Points

The integration layer defines an external call from each extension point which accepts the source/target XML as input and gives the source /target XML as output. The integration layer points to an abstract WSDL and can be plugged in by a concrete WSDL by the implementation team.

This helps the implementation to invoke any external web service and transform the respective XML.

Pre-transformation Extension Point

The pre-transformation extension point is invoked before the main transformation is executed. This transformation helps in transforming the source XML coming as an input to the integration process and helps the implementation to invoke external web services and/or transform the input XML.

Post-transformation Extension Point

The post transformation extension point is invoked after the main transformation is executed. It aids in the transformation of the target XML that is input into the target system and helps the implementation to invoke external web services and/or transform the output XML. Refer to [Implementing Extension Points](#) for more instructions and examples.

Custom Transformations

This integration has placeholders for custom elements in the incoming schema and outgoing schema at record level. When querying data into incoming message, the custom elements will be empty. This can be populated through the extension points.

The custom transformations have custom templates to map custom elements and map existing fields that are still unmapped. These mappings are done in the custom transformation files which are invoked by the main transformation. Empty custom transformations are shipped with the product.

Note: If custom elements are added to an outgoing or target schema, the custom elements in the target schema are not passed to the database adapter but they are passed to post collection extension point for implementation to use.

Customizable Scopes

The integration layer provides an option to customize the composite at each extension point. These custom scopes are empty by default.

In order to customize a composite or add code in the custom scopes, login to jdeveloper using 'Customization Developer' role. Only then you can customize the composite.xml file, .bpel file (for Oracle BPEL Process Manager), .xsl map file, and .mplan file (for Oracle Mediator).

For example: bpel can be customized at scopes which has "customizable='true'".

Refer to the [Customizing SOA Composite Applications](#) section for instructions on how to customize a composite.

Note: Refer to the SOA Documentation for more information: <http://docs.oracle.com/middleware/12212/soasuite/develop/GUID-46083A5B-B61C-41BA-A9EE-5CEE758BC7C7.htm#SOASE85064>.

Implementing Extension Points

To implement extension points, perform the following:

1. Each process in the integration has pre and post transformation extension points which can be used to invoke web services and transform the payload.
2. The desired extension point can be triggered from the process by enabling the pre and post transformation extension flags defined in the integration lookup table.
3. The processes that include extension points have their own concrete wsdl. This is used to read the endpoint location for the extension service.

4. The binding and service elements for the extension service needs to be added to the concrete wsdl in the product home at CCB-EBS/MDS-Artifacts/ MetaData/ ExtensionServiceLibrary and the wsdl needs to be updated in MDS.
5. These concrete wsdl files are located in MDS under the directories /apps/CCB-EBS/MetaData/ExtensionServiceLibrary. Refer to the instructions in the Installation Guide for updating MDS.
6. Re-deploy the composite or restart the SOA server for the extension point to invoke the web service in the concrete wsdl.

For example: To enable the extension points for CCBToEBSAPBPPELProcess add the binding and service elements to the CCBToEBSAPBPPELProcessExtensionConcrete.wsdl

```

    <binding
name="CCBToEBSAPBPPELProcessV1ExtensionServiceSOAP11Binding"
    type="tns:CCBToEBSAPBPPELProcessV1ExtensionService">
    <soap:binding style="document"
    transport="http://schemas.xmlsoap.org/soap/
http"/>
    <operation name="PreXformCollectionCCBtoEBS">
    <soap:operation style="document"
    soapAction="http://xmlns.oracle.com/
CCBToEBSAPBPPELProcess/CCBToEBSAPBPPELProcessExtension/V1/
PreXformCollectionCCBtoEBS"/>
    <input>
    <soap:body use="literal" parts="CollectionCCBtoEBS"/
>
    </input>
    <output>
    <soap:body use="literal" parts="CollectionCCBtoEBS"/
>
    </output>
    <fault name="fault">
    <soap:fault name="fault" use="literal"/>
    </fault>
    </operation>
    <operation name="InvokeInsertInvoiceExt">
    <soap:operation style="document"
    soapAction="http://xmlns.oracle.com/
CCBToEBSAPBPPELProcess/CCBToEBSAPBPPELProcessExtension/V1/
InvokeInsertInvoiceExt"/>
    <input>
    <soap:body use="literal" parts="EBSRecord"/>
    </input>
    <output>
    <soap:body use="literal" parts="EBSRecord"/>
    </output>
    <fault name="fault">
    <soap:fault name="fault" use="literal"/>
    </fault>
    </operation>
    </binding>

    <service name="CCBToEBSAPBPPELProcessV1ExtensionService">
    <port name="CCBToEBSAPBPPELProcessV1ExtensionService"

binding="tns:CCBToEBSAPBPPELProcessV1ExtensionServiceSOAP11Binding"
>

```

```

        <soap:address location="http://xyz.us.oracle.com:0000/
soa-infra/services/default/APReqExtensionService/
CCBToEBSAPBPELProcessV1ExtensionService"/>
    </port>
</service>

```

7. For the custom BPEL process invoked from the extension point to be in the same global transaction as the main BPEL process, make sure that the transaction flag on the Custom BPEL component is set to "Required".

Example:

In the Custom BPEL process' composite xml, add the `bpel.config.transaction` property set to "Required" into the `bpel` component.

```

<property name="bpel.config.transaction"
many="false" type="xs:string">required</property>

```

8. Also, if security policies are attached to the composites, then "oracle/Utilities_wss_http_token_service_policy_OPT_ON" must be attached to the service and "oracle/Utilities_wss_http_token_client_policy_OPT_ON" must be attached to all the references of the custom composite invoked from the Extension Points.

Implementing Custom Transformations

To implement custom transformations, perform the following:

1. Each process in the integration has its own XSD files for the incoming and outgoing messages. The messages have custom elements at record level which can be used to pass additional data.
2. Each XSD has a corresponding CustomType xsd in which the complexType elements for each customElements tag are defined.
3. To pass additional elements in the customElements tag the corresponding complexType needs to be modified. Add the additional elements required in both the complexType elements i.e. XSD for both edge applications.
4. The custom XSD files are located in the product home under the directories CCB-EBS/MDS-Artifacts/MetaData/ApplicationObjectLibrary/OUCCB/V1/schemas and CCB-EBS/MDS-Artifacts/MetaData/ApplicationObjectLibrary/EBS/schemas/
5. The custom elements in the incoming message can be populated through the Extension points.
6. Each transformation file has a corresponding custom XSL. Custom templates are defined in the custom XSL.
7. Each transformation invokes the custom templates at the record level.
8. The custom XSL has a custom template to map custom elements.
9. The custom XSL files are located in the product home under the directory CCB-EBS/services/industry/Utilities/EnterpriseBusinessFlow/<Process Name>/xsl
10. After updating the XSD and XSL files in the product home, update MDS using the ant scripts and restart the SOA server.

Refer to the instructions for updating MDS located in the Installation Guide.

Example:

CCB Schema: GetCCBAPData.xsd

EBS Schema: InsertIntoEBSAPIInvoiceInterfaceTable_table.xsd

To modify the AP Request integration process to map a GEO_CODE from Oracle Utilities Customer Care and Billing to ATTRIBUTE2 of INVOICE_INTERFACE in Oracle E-Business Suite:

Modify TransformationCCBPaymentTOEBSInvoice_Custom.xml as shown below.

```
<xsl:template name="ApInvoicesInterface_customElements">
  <ns0:attribute2>
    <xsl:value-of select="/ns1:GetCCBAPDataProcessResponse/
ns1:result/ns2:SelectCCBAPRecordsWithTemplateOutput/
ns2:B.GEO_CODE" />
  </ns0:attribute2>
</xsl:template>
<!-- Customers add transformations for custom elements here -->
</xsl:stylesheet>
```

Migrating Custom Components

This section includes:

- [Migrating Custom Composites](#)
- [Migrating Custom XSL](#)

Migrating Custom Composites

All integration services provided with this integration pack have extension points available to extend the functionality using custom composites. All custom extension composites can be migrated from 11g to 12c. Ensure you have a proper backup of the 11g process before doing the upgrade from 11g to 12c.

Open the 11g composite in Jdeveloper 12.1.3 and save the composite. The directory structure of the composite changes and some files are added and deleted.

Perform these manual changes when migrating from 11g to 12c:

1. All the transformations currently are either in xsl folder or under the composite directory, should be moved to Transformations folder and all references in the .bpel file should be changed accordingly.
2. All the WSDL's should be moved to WSDLs folder manually.
3. bpel should be moved to BPEL folder
4. All XSD's should be moved to a Schemas folder
5. All the adapter related files should be moved to Adapters folder
6. All human task related artifacts should be moved to HumanTasks folder
7. All the mediator artifacts should be moved to Mediators folder.

Ensure that there are no errors and deploy directly from JDev or using DeploUndeployUtility.xml file.

Perform the following steps to deploy individual composites using DeploUndeployUtility:

1. Execute the following commands in the Command prompt for Linux and Windows respectively:

Linux:

```
cd $PRODUCT_HOME/bin
ant -f DeployUndeployUtility.xml -DInstallProperties=$PRODUCT_HOME/
config/InstallProperties.xml DeployComposite
```

Windows:

```
cd %PRODUCT_HOME%\bin
ant -f DeployUndeployUtility.xml -
DInstallProperties=%PRODUCT_HOME%/config/InstallProperties.xml
DeployComposite
```

2. Validate the following parameters when prompted with default values during deployment. Press ENTER to use the default prompted value.
 - **Composite Name:** Name of the custom composite to be deployed to SOA server. This parameter does not have a default value.
 - **Composite folder location:** The folder name should be an absolute path beginning with %PRODUCT_HOME%/services/industry/Utilities/<EBF/utility>.

For example: to deploy the composite from %PRODUCT_HOME%/services/industry/Utilities/EBF, then pass %PRODUCT_HOME%/services/industry/Utilities/EBF to this property.

The default value for this property is %PRODUCT_HOME%/services/industry/Utilities/EBF, as most of the business-specific composites reside in this folder.

Note: make sure the custom composite is located on the server physical directory/PRODUCT_HOME where the integration is running.

- **Partition Name:** The SOA partition name to which the composite should be deployed.

For more information on deploying/undeploying individual composites refer to the *Oracle Utilities Customer Care and Billing Integration to Oracle E-Business Suite Financials for General Ledger and Accounts Payable Release 12.1 Media Pack Installation Guide*, under *Deploying/Undeploying Individual Composites*.

Note: It is not mandatory for customers to migrate their custom/extension composite from 11g to 12c. The 11g custom composite service can still be called by the 12c CCB-EBS flows.

Migrating Custom XSL

The same custom XSL which was previously available in 11g are available in 12c. In order to ensure that the source/target mapping feature is not lost, do not copy the XSL as is from 11g to 12c but instead manually merge those changes from the 11g version of XSL to 12c version of XSL. Redeploy the modified processes either from JDEV or using the DeploUndeployUtility file as specified above.

Customizing SOA Composite Applications

To implement custom SOA Composites, refer to section [52.4 Customizing the Customer Version](#) in the SOA Documentation for more information: <http://docs.oracle.com/middleware/12212/soasuite/develop/GUID-46083A5B-B61C-41BA-A9EE-5CEE758BC7C7.htm#SOASE85064>.

This section provides a summary of the required steps:

1. Obtain the Composite Archive (SAR) file for the base composite that is to be customized. This SAR file may be obtained in one of a few ways:
 - If the composite has already been installed and deployed as part of a process integration pack (PIP), the composite project may be found under the CCB-EBS\services\industry\Utilities\EBF\CCBTtoEBSGLBPELProcess/... directory tree and within the project's deploy subdirectory you may find the SAR file.
 - If the composite has already been deployed, you can export the SAR from the server using EM console or WLS/T or Ant commands
 - Open the project in JDeveloper (default role) and deploy it to a SAR file
2. Open JDeveloper (default role) and create a new SOA application and then create a new SOA Project with an empty composite.
The SOA Project should be named with a distinguishing prefix (such as "XX") followed by the original project or composite name. For example:
XXCCBTtoEBSGLBPELProcess
3. In the **Application Navigator** pane, click the project name to select it.
4. Select **File > Import...** from the main JDeveloper menu.
5. Choose **SOA Archive Into SOA Project**.
6. Browse for the SAR file obtained in step 1.
The composite name will populate automatically after selecting the SAR file. Verify that it is correct.
7. Select the **Import for Customization** checkbox, and click Finish. The project is now ready for customization.

Note: In case of any compilation errors like MDS-00054 : MDS Exception, make sure adf-config.xml has the MDS database (where CCB-EBS integration is deployed) details
8. Customization class jar "ugbucust.jar" must be added to your SOA composite project. This file is located in \$PRODUCT_HOME/install/util/lib/ugbucust.jar
9. The SOA Application in JDeveloper must be configured to use the customization class and layer
 - In the Applications window, expand Application Resources > Descriptors > ADF META_INF.
 - Open the adf-config.xml file and select the MDS tab.

- Click the Add icon to add "UGBUCustomerExtensionCustomizationClass" customization class.
- To add application-specific layer values, click the "Configure Design Time Customization Layer Values" link.
- Add the below snippet to add "UGBUCustomizationLayer" value in CustomizationLayerValues.xml.

```
<cust-layers xmlns="http://xmlns.oracle.com/mds/dt">
<cust-layer name="UGBUCustomizationLayer" id-
prefix="ugbuext">
<cust-layer-value value="UGBUCustomizationLayer" display-
name="UGBU Customer Extension"/>
</cust-layer>
</cust-layers>
```

10. Save all the changes.

11. From the **Tools** menu, select **Switch Roles > Customization Developer**.

12. Restart Oracle JDeveloper.

The Customization Context dialog displays the available customization layers and layer values.

13. Select "UGBUCustomizationLayer" layer and value to customize.

14. Customize the BPEL process. You can make required changes to the composite and its BPEL components.

Note: Only scopes that have been marked as customizable in BPEL will be editable. Non-editable activities appear greyed out.

After making the customizations, the project can be deployed to the SOA server and/or a SAR file.

For more information about implementing custom SOA composites, refer to section **52.4 Customizing the Customer Version** in the SOA documentation at: <http://docs.oracle.com/middleware/12212/soasuite/develop/GUID-46083A5B-B61C-41BA-A9EE-5CEE758BC7C7.htm#SOASE85064>.

Appendix A

Data Mapping

This section provides mapping details for each integration point, including:

- [GL Transaction](#)
- [AP Request](#)
- [AP Data](#)

GL Transaction

Oracle E-Business Suite Financials for General Ledger and Accounts Payable GL Table Mapping to Oracle Utilities Customer Care and Billing

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
STATUS	VARCHAR2 (50)	Journal Import status (Required field)				'NEW', for all new transactions
LEDGER_ID (Release 12) SET_OF_BOOK_ID (Release 11.5.10)	NUMBER	Ledger defining column				Derived from BPEL Identifies the account ledger to use for posting Value = 1 (Corresponds to 'Vision Operations (USA) ' Ledger Name)
ACCOUNTING_DATE	DATE	Effective date of the transaction (Required)	CI_FT	ACCOUNTING_D T	DATE	Date used by GL to define the accounting period into which the Financial Transaction is booked.
CURRENCY_CODE	VARCHAR2 (15)	Currency (Required)	CI_FT	CURRENCY_CD	CHAR (3)	

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
DATE_CREATED	DATE	Standard Who column (Required)				Derived from BPEL Value =sysdate
CREATED_BY	NUMBER	Standard Who column (Required)				Value= -1
ACTUAL_FLAG	VARCHAR2 (1)	Balance type (actual, budget, or encumbrance)(Required)				'A'
USER_JE_CATEGORY_NAME	VARCHAR2 (25)	Journal entry category user defined name (Required)				'CCB EBS'
USER_JE_SOURCE_NAME	VARCHAR2 (25)	Journal entry source user defined name (Required)				'CCB EBS'
CURRENCY_CONVERSION_DATE	DATE	Date of exchange rate				Leave blank
ENCUMBRANCE_TYPE_ID	NUMBER	Encumbrance type defining column				
BUDGET_VERSION_ID	NUMBER	Budget version defining column				
USER_CURRENCY_CONVERSION_TYPE	VARCHAR2 (30)	Type of exchange rate				
CURRENCY_CONVERSION_RATE	NUMBER	Foreign currency exchange rate				
AVERAGE_JOURNAL_FLAG	VARCHAR2 (1)	Average journal flag				
ORIGINATING_BAL_SEG_VALUE	VARCHAR2 (25)	Originating balancing segment value				
SEGMENT1	VARCHAR2 (25)	COMPANY	CI_FT_GL	GL_ACCT Position 1	Varchar2 (254)	Use dot (.) as the delimiter to extract this information from the GL_Acct. 2 dots (..) indicate skip or null.
SEGMENT2	VARCHAR2 (25)	DEPARTMENT	CI_FT_GL	GL_ACCT Position 2	Varchar2 (254)	
SEGMENT3	VARCHAR2 (25)	ACCOUNT	CI_FT_GL	GL_ACCT Position 3	Varchar2 (254)	
SEGMENT4	VARCHAR2 (25)	SUB-ACCOUNT	CI_FT_GL	GL_ACCT Position 4	Varchar2 (254)	
SEGMENT5	VARCHAR2 (25)	PRODUCT	CI_FT_GL	GL_ACCT Position 5	Varchar2 (254)	
SEGMENT6	VARCHAR2 (25)	PROGRAM CODE	CI_FT_GL	GL_ACCT Position 6	Varchar2 (254)	

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
SEGMENT7	VARCHAR2 (25)	ALTERNATE ACCOUNT	CI_FT_GL	GL_ACCT Position 7	Varchar2 (254)	
SEGMENT8	VARCHAR2 (25)	PROJECT	CI_FT_GL	GL_ACCT Position 8	Varchar2 (254)	
SEGMENT9	VARCHAR2 (25)	AFFILIATE	CI_FT_GL	GL_ACCT Position 9	Varchar2 (254)	Use dot (.) as the delimiter to extract this information from the GL_Acct. 2 dots (..) indicate skip or null.
SEGMENT10	VARCHAR2 (25)	FUND AFFILIATE	CI_FT_GL	GL_ACCT Position 10	Varchar2 (254)	
SEGMENT11	VARCHAR2 (25)	OPERATING UNIT AFFILIATE	CI_FT_GL	GL_ACCT Position 11	Varchar2 (254)	
SEGMENT12	VARCHAR2 (25)	BUDGET REFERENCE	CI_FT_GL	GL_ACCT Position 12	Varchar2 (254)	
SEGMENT13	VARCHAR2 (25)	CHARTFIELD1	CI_FT_GL	GL_ACCT Position 13	Varchar2 (254)	
SEGMENT14	VARCHAR2 (25)	CHARTFIELD2	CI_FT_GL	GL_ACCT Position 14	Varchar2 (254)	
SEGMENT15	VARCHAR2 (25)	CHARTFIELD3	CI_FT_GL	GL_ACCT Position 15	Varchar2 (254)	
SEGMENT16	VARCHAR2 (25)	FUND CODE	CI_DST_CODE_E FF	FUND_CD	Varchar2 (12)	Only used when fund accounting is enabled in Oracle Utilities Customer Care and Billing.
SEGMENT17	VARCHAR2 (25)	Key flexfield segments				Derived from BPEL Leave blank
SEGMENT18	VARCHAR2 (25)					
SEGMENT19	VARCHAR2 (25)					
SEGMENT20	VARCHAR2 (25)					
SEGMENT21	VARCHAR2 (25)					

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
SEGMENT22	VARCHAR2 (25)					
SEGMENT23	VARCHAR2 (25)	Key flexfield segments				Derived from BPEL Leave blank
SEGMENT24	VARCHAR2 (25)					
SEGMENT25	VARCHAR2 (25)					
SEGMENT26	VARCHAR2 (25)					
SEGMENT27	VARCHAR2 (25)					
SEGMENT28	VARCHAR2 (25)					
SEGMENT29	VARCHAR2 (25)					
SEGMENT30	VARCHAR2 (25)					
ENTERED_DR	NUMBER	Transaction debit amount, entered currency	CI_FT_GL	AMOUNT	NUMBER (15,2)	Base Currency Amount Leave blank if the Amount is negative
ENTERED_CR	NUMBER					Leave blank if the amount is positive
ACCOUNTED_DR	NUMBER					Base Currency Amount Leave blank if the Amount is negative
ACCOUNTED_CR	NUMBER					Leave it Bank if the Amount is Positive
TRANSACTION_DATE	DATE	Date of transaction				Leave blank
PERIOD_NAME	VARCHAR2 (15)	Accounting period				Leave blank
REFERENCE1	VARCHAR2 (100)	Journal Import reference columns.				Leave blank
REFERENCE2	VARCHAR2 (240)					
REFERENCE3	VARCHAR2 (100)					
REFERENCE4	VARCHAR2 (100)					
REFERENCE5	VARCHAR2 (240)					
REFERENCE6	VARCHAR2 (100)					
REFERENCE7	VARCHAR2 (100)					

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
REFERENCE8	VARCHAR2 (100)					
REFERENCE9	VARCHAR2 (100)					
REFERENCE10	VARCHAR2 (240)					
REFERENCE11	VARCHAR2 (240)					
REFERENCE12	VARCHAR2 (100)					
REFERENCE13	VARCHAR2 (100)					
REFERENCE14	VARCHAR2 (100)					
REFERENCE15	VARCHAR2 (100)	Journal Import reference columns.				
REFERENCE16	VARCHAR2 (100)					Leave blank
REFERENCE17	VARCHAR2 (100)					
REFERENCE18	VARCHAR2 (100)					
REFERENCE19	VARCHAR2 (100)					
REFERENCE20	VARCHAR2 (100)					
REFERENCE21	VARCHAR2 (240)					
REFERENCE22	VARCHAR2 (240)					
REFERENCE23	VARCHAR2 (240)					
REFERENCE24	VARCHAR2 (240)					
REFERENCE25	VARCHAR2 (240)					
REFERENCE26	VARCHAR2 (240)					
REFERENCE27	VARCHAR2 (240)					
REFERENCE28	VARCHAR2 (240)					
REFERENCE29	VARCHAR2 (240)					
REFERENCE30	VARCHAR2 (240)					
JE_BATCH_ID	NUMBER	Journal entry batch defining column				Leave blank. Populated by the Import Process when the Record errors

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
JE_HEADER_ID	NUMBER	Journal entry header defining column				Leave blank. Populated by the Import Process when the Record errors.
JE_LINE_NUM	NUMBER	Journal entry line number				Leave blank Populated by the Import Process when the Record errors
CHART_OF_ACCOUNTS_ID	NUMBER	Key flexfield structure defining column				Leave blank
FUNCTIONAL_CURRENCY_CODE	VARCHAR2 (15)	Ledger base currency				Leave blank
CODE_COMBINATION_ID	NUMBER	Key flexfield combination defining column				Derived from the Segments Entered Above
DATE_CREATED_IN_GL	DATE	Date Journal Import created batch				Leave blank
STATUS_DESCRIPTION	VARCHAR2 (240)	Journal import status description				Leave blank Populated by the Import Process when the Record errors
STAT_AMOUNT	NUMBER	Statistical amount				Leave blank
GROUP_ID	NUMBER	Interface group defining column	CI_FT_PROC	BATCH_NBR	NUMBER (10)	This is the CCB GLDL Batch Number.
REQUEST_ID	NUMBER	Concurrent program request ID				Leave blank Populated by the Import Process when the Record errors
SUBLEDGER_DOC_SEQUENCE_ID	NUMBER	Sequential numbering sequence defining column				Leave blank
SUBLEDGER_DOC_SEQUENCE_VALUE	NUMBER	Sequential numbering sequence value				
ATTRIBUTE1	VARCHAR2 (150)	Descriptive flexfield segment				
ATTRIBUTE2	VARCHAR2 (150)	Descriptive flexfield segment				
GL_SL_LINK_ID	NUMBER	Link to associated subledger data				
GL_SL_LINK_TABLE	VARCHAR2 (30)	Table containing associated subledger data				

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
CONTEXT	VARCHAR2 (150)	Descriptive flexfield context column				
CONTEXT2	VARCHAR2 (150)	Descriptive flexfield context column				
INVOICE_DATE	DATE	Value added tax descriptive flexfield column				
TAX_CODE	VARCHAR2 (15)	Value added tax descriptive flexfield column				
INVOICE_IDENTIFIER	VARCHAR2 (20)	Value added tax descriptive flexfield column				
ATTRIBUTE3	VARCHAR2 (150)	Descriptive flexfield segment				
ATTRIBUTE4	VARCHAR2 (150)					
ATTRIBUTE5	VARCHAR2 (150)					
ATTRIBUTE6	VARCHAR2 (150)					
ATTRIBUTE7	VARCHAR2 (150)					
ATTRIBUTE8	VARCHAR2 (150)	Descriptive flexfield segment				Leave blank
ATTRIBUTE9	VARCHAR2 (150)					
ATTRIBUTE10	VARCHAR2 (150)					
ATTRIBUTE11	VARCHAR2 (150)					
ATTRIBUTE12	VARCHAR2 (150)					
ATTRIBUTE13	VARCHAR2 (150)					
ATTRIBUTE14	VARCHAR2 (150)					
ATTRIBUTE15	VARCHAR2 (150)					
ATTRIBUTE16	VARCHAR2 (150)					
ATTRIBUTE17	VARCHAR2 (150)					
ATTRIBUTE18	VARCHAR2 (150)					
ATTRIBUTE19	VARCHAR2 (150)					
ATTRIBUTE20	VARCHAR2 (150)					
INVOICE_AMOUNT	NUMBER	Value added tax descriptive flexfield column				
CONTEXT3	VARCHAR2 (150)	Descriptive flexfield context column				
USSGL_TRANSACTION_CODE	VARCHAR2 (30)	Government transaction code				Leave blank

Column	Data Type	Description	CCB Table	Column	Data Type	Remarks
DESCR_FLEX_ERROR_MESSAGE	VARCHAR2 (240)	Descriptive flexfield error message				
JGZZ_RECON_REF	VARCHAR2 (240)	Global reconciliation reference				
REFERENCE_DATE	DATE	Reference Date				
SET_OF_BOOKS_ID	NUMBER	Ledger defining column				
BALANCING_SEGMENT_VALUE	VARCHAR2 (25)	Balancing segment value				
MANAGEMENT_SEGMENT_VALUE	VARCHAR2 (25)	Management segment value				
FUNDS_RESERVED_FLAG	VARCHAR2 (1)	Reserved for Oracle internal use				

AP Request

This section includes the following:

- [AP_INVOICES_INTERFACE](#)
- [AP_INVOICE_LINES_INTERFACE](#)

AP_INVOICES_INTERFACE

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
INVOICE_ID	Number	Invoice identifier				AP_INVOICE S_interface_S.n extval
INVOICE_NUM	VARCHAR2 (50)	Invoice number	CI_ADJ	ADJ_ID	CHAR (12)	
INVOICE_TYPE_LOOKUP_CODE	VARCHAR2 (25)	Type of Invoice (can be STANDARD or CREDIT)				'STANDARD'
INVOICE_DATE	DATE	Invoice date	CI_ADJ	CRE_DT	DATE	
PO_NUMBER	VARCHAR2 (20)	Purchase order number				Leave blank
VENDOR_ID	NUMBER (15)	Supplier identifier. Validated against PO_VENDORS.VENDOR_ID				Example Value =40182 Set to the ID of the vendor created by this integration point.
VENDOR_NUM	VARCHAR2 (30)	Supplier number				Leave blank
VENDOR_NAME	VARCHAR2 (240)	Supplier name				Leave blank
VENDOR_SITE_ID	NUMBER (15,0)	Supplier site identifier. Validated against PO_VENDOR_SITES_ALL.VENDOR_SITE_ID				Example Value =7004 Set to the ID of the vendor site created by this integration point.

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
VENDOR_SITE_CODE	VARCHAR2 (15)	Supplier site code				
INVOICE_AMOUNT	NUMBER	Invoice amount	CI_ADJ	ADJ_AMT	Number (15,2)	
INVOICE_CURRENCY_CODE	VARCHAR2 (15)	Currency of invoice. Validated against FND_CURRENCIES.CURRENCY_CODE				Leave blank
EXCHANGE_RATE	NUMBER	Exchange rate for foreign currency invoices				
EXCHANGE_RATE_TYPE	VARCHAR2 (30)	Exchange rate type for foreign currency invoices. Validated against GL_DAILY_CONVERSION_TYPES.CONVERSION_TYPE				
EXCHANGE_DATE	DATE	Date exchange rate is effective, usually accounting date of a transaction				
TERMS_ID	NUMBER (15,0)	Payment terms identifier. Validated against AP_TERMS_TL.TERM_ID				This will come from CCB's configuration, keep the appropriate terms_id in CCB.
TERMS_NAME	VARCHAR2 (50)	Payment terms name				Leave blank
DESCRIPTION	VARCHAR2 (240)	Invoice description	CI_ADJ_APREQ	ENTITY_NAME CITY COUNTRY ADDRESS1 COUNTY STATE POSTAL	VARCHAR2 (240)	
AWT_GROUP_ID	NUMBER (15,0)	Withholding tax group identifier. Validated against AP_AWT_GROUPS.AWT_GROUP_ID				
AWT_GROUP_NAME	VARCHAR2 (25)	Withholding tax group name				
LAST_UPDATE_DATE	DATE	Standard Who column - date when a user last updated this row.				Sysdate
LAST_UPDATED_BY	NUMBER (15,0)	Standard who column - user who last updated this row (foreign key to FND_USER.USER_ID).				Leave blank
LAST_UPDATE_LOGIN	NUMBER (15,0)	Standard who column - operating system login of user who last updated this row (foreign key to FND_LOGINS.LOGIN_ID).				Leave blank
CREATION_DATE	DATE	Standard who column - date when this row was created				Sysdate
CREATED_BY	NUMBER (15,0)	Standard who column - user who created this row (foreign key to FND_USER.USER_ID).				Leave blank
ATTRIBUTE_CATEGORY	VARCHAR2 (150)	Descriptive flexfield structure definition column.				Leave blank

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
ATTRIBUTE1	VARCHAR2 (150)	Descriptive flexfield segment				Leave blank
ATTRIBUTE2	VARCHAR2 (150)					
ATTRIBUTE3	VARCHAR2 (150)					
ATTRIBUTE4	VARCHAR2 (150)					
ATTRIBUTE5	VARCHAR2 (150)					
ATTRIBUTE6	VARCHAR2 (150)					
ATTRIBUTE7	VARCHAR2 (150)					
ATTRIBUTE8	VARCHAR2 (150)					
ATTRIBUTE9	VARCHAR2 (150)					
ATTRIBUTE10	VARCHAR2 (150)					
ATTRIBUTE11	VARCHAR2 (150)					
ATTRIBUTE12	VARCHAR2 (150)					
ATTRIBUTE13	VARCHAR2 (150)					
ATTRIBUTE14	VARCHAR2 (150)					
ATTRIBUTE15 (Release 11.5.10)	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE_CATEGORY	VARCHAR2 (150)	Reserved for country-specific functionality				Leave blank
GLOBAL_ATTRIBUTE1	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE2	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE3	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE4	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE5	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE6	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE7	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE8	VARCHAR2 (150)					

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
GLOBAL_ATTRIBUTE9	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE10	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE11	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE12	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE13	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE14	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE15	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE16	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE17	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE18	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE19	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE20	VARCHAR2 (150)					
STATUS	VARCHAR2 (25)	Status of the data in or after the Payables Open Interface Import				Import Process inserts Value = PROCESSED/ REJECTED
SOURCE	VARCHAR2 (80)	Prepayment Reference				Derived from BPEL Value = 'CCB'
GROUP_ID	VARCHAR2 (80)	Group identifier				Leave blank
REQUEST_ID	NUMBER	Concurrent Program who column - concurrent request ID of the program that last updated this row (foreign key to FND_CONCURRENT_REQUESTS.REQUEST_ID).				
PAYMENT_CROSS_RATE_TYPE	VARCHAR2 (30)	Cross currency payment rate type (must be EMU Fixed in Release 11)				
PAYMENT_CROSS_RATE_DATE	DATE	Cross currency payment rate date				
PAYMENT_CROSS_RATE	NUMBER	Exchange rate between invoice and payment; in Release 11 the value is always 1 unless they are associated fixed-rate currencies				
PAYMENT_CURRENCY_CODE	VARCHAR2 (15)	Cross currency payment currency. Validated against FND_CURRENCIES.CURRENCY_CODE				
WORKFLOW_FLAG	VARCHAR2 (1)	Flag that indicates if the Payables Open Interface Workflow must process the record (Y or N)				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
DOC_CATEGORY_CODE	VARCHAR2 (30)	Sequential numbering (voucher number) document category. Validated against FND_DOC_SEQUENCE_CATEGORIES.CODE				
VOUCHER_NUM	VARCHAR2 (50)	Voucher number; validated (Sequential Numbering enabled), or non-validated (Sequential Numbering not enabled)				
PAYMENT_METHOD_LOOKUP_CODE	VARCHAR2 (25)	Name of payment method				
PAY_GROUP_LOOKUP_CODE	VARCHAR2 (25)	Name of pay group				
GOODS_RECEIVED_DATE	DATE	Date invoice items received				
INVOICE_RECEIVED_DATE	DATE	Date invoice received				
GL_DATE	DATE	Accounting date to default to invoice distributions				Derived from BPEL Leave blank
ACCTS_PAY_CODE_COMBINATION_ID	NUMBER (15,0)	Accounting Flexfield identifier for AP liability account. Validated against GL_CODE_COMBINATIONS.CODE_COMBINATION_ID				
USSGL_TRANSACTION_CODE	VARCHAR2 (30)	Default transaction code for creating US Standard GL journal entries (Oracle Public Sector Payables). Validated against GL_USSGL_TRANSACTION_CODES.USSGL_TRANSACTION_CODE				Leave blank
EXCLUSIVE_PAYMENT_FLAG	VARCHAR2 (1)	Flag that indicates whether to pay invoice on a separate payment document				
ORG_ID	NUMBER (15,0)	Organization identifier	CI_CIS_DIV_CHAR	CHAR_VAL	CHAR (16)	The Value Picked from the Mapping existing in the CCB system.
AMOUNT_APPLICABLE_TO_DISCOUNT	NUMBER	Amount of invoice applicable to a discount				
PREPAY_NUM	VARCHAR2 (50)	The invoice number of an existing, fully paid prepayment to be applied to the imported invoice				
PREPAY_DIST_NUM	NUMBER (15,0)	No longer used				
PREPAY_APPLY_AMOUNT	NUMBER	The amount of prepayment that the user wants to apply to the invoice. This amount has to be positive.				
PREPAY_GL_DATE	DATE	The accounting date to be used for the prepayment application. If left null, the invoices GL_DATE is used				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
INVOICE_INCLUDES_PREPAY_FLAG	VARCHAR2 (1)	Prorate Discount				
NO_XRATE_BASE_AMOUNT	NUMBER	Invoice amount in the functional currency. Used only when the Calculate User Exchange Rate option is enabled, and used only for foreign currency invoices when the exchange rate type is User. The system uses this value and the invoice amount to calculate the exchange rate.				Leave blank
VENDOR_EMAIL_ADDRESS	VARCHAR2 (2000)	Supplier e-mail address for XML invoice rejections				
TERMS_DATE	DATE	Date used with payment terms to calculate scheduled payment of an invoice				
REQUESTER_ID	NUMBER (10,0)	Requester of invoice is used by the Invoice Approval Workflow process to generate the list of approvers				
SHIP_TO_LOCATION	VARCHAR2 (40)	Ship to location for purchase order matching. Used for XML invoices				
EXTERNAL_DOC_REF	VARCHAR2 (240)	Internal document reference number from Accounts Receivables system. Used for XML invoices				
PREPAY_LINE_NUM	NUMBER	The invoice line of an existing Prepayment to be applied to the imported invoice				
REQUESTER_FIRST_NAME	VARCHAR2 (150)	The first name of the employee who requested goods or services on the invoice line. This value is used to derive the requester ID. If you use Invoice Approval Workflow then you can define rules that use the requester ID to generate a hierarchical list of approvers for the line				
REQUESTER_LAST_NAME	VARCHAR2 (150)	The last name of the employee who requested goods or services on the invoice line. This value is used to derive the requester ID. If you use Invoice Approval Workflow then you can define rules that use the requester ID to generate a hierarchical list of approvers for the line				
APPLICATION_ID	NUMBER (15,0)	Application Identifier				
PRODUCT_TABLE	VARCHAR2 (30)	Product source table name				
REFERENCE_KEY1	VARCHAR2 (150)	Primary key information that uniquely identifies a record in other products view				
REFERENCE_KEY2	VARCHAR2 (150)					
REFERENCE_KEY3	VARCHAR2 (150)					Leave blank
REFERENCE_KEY4	VARCHAR2 (150)					
REFERENCE_KEY5	VARCHAR2 (150)					
APPLY_ADVANCES_FLAG	VARCHAR2 (1)	A value of Y indicates that applicable advances are applied against expense reports and other invoices				
CALC_TAX_DURING_IMPORT_FLAG	VARCHAR2 (1)	Indicates whether tax must be calculated for the imported invoice				
CONTROL_AMOUNT	NUMBER	Allows user to enter total tax amount to be prorated by E-Business Tax				
ADD_TAX_TO_INV_AMT_FLAG	VARCHAR2 (1)	Indicates whether the invoice amount must be grossed up by the calculated tax				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
TAX_RELATED_INVOICE_ID	NUMBER (15,0)	Tax Driver: Invoice ID of related document for tax purposes.				
TAXATION_COUNTRY	VARCHAR2 (30)	Replaces a GDFP: This country sets the context for other tax drivers. The value defaults to the LE country but can be overridden by the user				
DOCUMENT_SUB_TYPE	VARCHAR2 (150)	Replaces a GDFP: In certain countries, a tax or governmental authority defines and classifies document types for reporting purposes				
SUPPLIER_TAX_INVOICE_NUMBER	VARCHAR2 (150)	Replaces a GDFP: In some countries such as Thailand, there is a requirement to report on a supplier issued "tax" invoice that is distinct from the regular invoice. The tax invoice is either attached to the standard Supplier Invoice (when the value = Goods); or, the supplier may issue it when he receives the payment.				
SUPPLIER_TAX_INVOICE_DATE	DATE	Replaces a GDFP: To satisfy reporting requirements in certain countries, the company-issued Tax Invoice Date and Number. This field is used to record the company-specific tax invoice number, in sequence, issued by the company for a supplier-issued tax invoice. This is required to comply with reporting requirements				
SUPPLIER_TAX_EXCHANGE_RATE	NUMBER	Replaces a GDFP: The supplier exchange rate is entered in online invoices to calculate the supplier tax amount for foreign currency invoices. The gain/loss in the tax amount for foreign currency invoices is the difference between the in-house tax amount using the in-house exchange rate and the supplier tax amount using the supplier exchange rate that you enter here. A manual journal entry is posted to the GL to incorporate the gain/loss.				
TAX_INVOICE_RECORDING_DATE	DATE	Replaces a GDFP: To satisfy reporting requirements in certain countries, the company-specific Tax Invoice Date and Number needs to be captured. This field is used to record the date the company receives/ records the supplier-issued tax invoice and is required to comply with reporting requirements.				
TAX_INVOICE_INTERNAL_SEQ	VARCHAR2 (150)	Replaces a GDFP: To satisfy reporting requirements in certain countries, the company-issued Tax Invoice Date and Number. This field is used to record the company-specific tax invoice number, in sequence, issued by the company for a supplier-issued tax invoice. This is required to comply with reporting requirements				
LEGAL_ENTITY_ID	NUMBER (15,0)	Legal Entity Identifier				
LEGAL_ENTITY_NAME	VARCHAR2 (50)	Legal Entity Name				
REFERENCE_1	VARCHAR2 (30)	A reference to a record in another application				
REFERENCE_2	VARCHAR2 (30)	A reference to a record in another application				
OPERATING_UNIT	VARCHAR2 (240)	Organization name				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
BANK_CHARGE_BEARER	VARCHAR2 (30)	Bearer of bank charge cost. Bank charge bearers are defined as the lookup IBY_BANK_CHARGE_BEARER				
REMITTANCE_MESSAGE1	VARCHAR2 (150)	Remittance message for use in payment processing				
REMITTANCE_MESSAGE2	VARCHAR2 (150)	Remittance message for use in payment processing				
REMITTANCE_MESSAGE3	VARCHAR2 (150)	Remittance message for use in payment processing				
UNIQUE_REMITTANCE_IDENTIFIER	VARCHAR2 (30)	Unique remittance identifier provided by the payee				
URI_CHECK_DIGIT	VARCHAR2 (2)	Unique remittance identifier check digit				Leave blank
SETTLEMENT_PRIORITY	VARCHAR2 (30)	The priority with which the financial institution or payment system must settle payment for this document. The available values for this column come from the FND lookup IBY_SETTLEMENT_PRIORITY				
PAYMENT_REASON_CODE	VARCHAR2 (30)	Payment reason code				
PAYMENT_REASON_COMMENTS (Release R12)	VARCHAR2 (240)	Free text field available for entering a reason for the payment	CI_ADJ_APREQ	AP_REQ_ID	CHAR (12)	
PAYMENT_METHOD_CODE (not available for Release 11.5.10)	VARCHAR2 (30)	Payment method identifier				Value = CHECK
DELIVERY_CHANNEL_CODE	VARCHAR2 (30)	Delivery channel code				Leave blank
PAID_ON_BEHALF_EMPLOYEE_ID	NUMBER (15,0)	When an expense report gets split in Both Pay scenario, the new expense report's paid_on_behalf_employee_id gets populated with the original expense report's employee_id				
NET_OF_RETAINAGE_FLAG	VARCHAR2 (1)	Flag to indicate invoice amount is net of retainage				
REQUESTER_EMPLOYEE_NUM	VARCHAR2 (30)	The employee number of the employee who requested goods or services on the invoice line				
CUST_REGISTRATION_CODE	VARCHAR2 (30)	Customer legal registration code				
CUST_REGISTRATION_NUMBER	VARCHAR2 (30)	Customer legal registration number				
PARTY_ID	NUMBER (15,0)	Party identifier				Leave blank
PARTY_SITE_ID	NUMBER (15,0)	Party Site identifier				
PAY_PROC_TRXN_TYPE_CODE	VARCHAR2 (30)	Type of payment processing transaction or document				
PAYMENT_FUNCTION	VARCHAR2 (30)	The function or purpose of the payment				
PAYMENT_PRIORITY	NUMBER (2,0)	Number representing payment priority of a scheduled payment (1 to 99)				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
PORT_OF_ENTRY_CODE	VARCHAR2 (30)	Customs location code				
EXTERNAL_BANK_ACCOUNT_ID	NUMBER (15,0)	External bank account identifier				Leave blank

AP_INVOICE_LINES_INTERFACE

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
INVOICE_ID	NUMBER (15,0)	Invoice identifier. Validated against AP_INVOICES_INTERFACE.INVOICE_ID				AP_INVOICES_interface_S.currval
INVOICE_LINE_ID	NUMBER (15,0)	Invoice line identifier				AP_INVOICE_lines_interface_S.nextval
LINE_NUMBER	NUMBER (15,0)	Invoice line number				Value =1
LINE_TYPE_LOOKUP_CODE	VARCHAR2 (25)	Type of invoice line (Item, Freight, Tax, Miscellaneous)				'MISCELLANEOUS'
LINE_GROUP_NUMBER	NUMBER	Value to identify each item line to which you want to prorate				Leave blank
AMOUNT	NUMBER	Line amount	CL_ADJ	ADJ_AMT	Number (15,2)	
ACCOUNTING_DATE	DATE	Accounting date				SYSDATE
DESCRIPTION	VARCHAR2 (240)	Description				Value ='Refund Request from Oracle Utilities Customer Care and Billing'
AMOUNT_INCLUDES_TAX_FLAG	VARCHAR2 (1)	No Longer Used				
PRORATE_ACROSS_FLAG	VARCHAR2 (1)	Prorate indicator for this line to be prorated across all lines with the same LINE_GROUP_NUMBER				Leave blank
TAX_CODE	VARCHAR2 (15)	Tax code. Validated against AP_TAX_CODES_ALL.NAME				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
FINAL_MATCH_FLAG	VARCHAR2 (1)	Final match indicator for distribution line matched to purchase order				'N', Since we are not matching to PO
PO_HEADER_ID	NUMBER	Purchase order header identifier used for PO matching. Validated against PO_HEADERS_ALL.PO_HEADER_ID				
PO_NUMBER	VARCHAR2 (20)	Purchase order number used for PO matching. Validated against PO_HEADERS_ALL.SEGMENT1				
PO_LINE_ID	NUMBER	Purchase order line identifier used for PO matching. Validated against PO_LINES_ALL.PO_LINE_ID				
PO_LINE_NUMBER	NUMBER	Purchase order line number used for PO matching. Validated against PO_LINES_ALL.PO_LINE_NUM				
PO_LINE_LOCATION_ID	NUMBER	Purchase order line location identifier used for PO matching. Validated against PO_LINE_LOCATIONS_ALL.LINE_LOCATION_ID				
PO_SHIPMENT_NUM	NUMBER	Purchase order shipment number used for PO matching. Validated against PO_LINE_LOCATIONS_ALL.SHIPMENT_NUM				
PO_DISTRIBUTION_ID	NUMBER	Purchase order distribution line identifier used for PO matching. Validated against PO_DISTRIBUTIONS_ALL.PO_DISTRIBUTION_ID				Leave blank
PO_DISTRIBUTION_NUM	NUMBER	Purchase order distribution line number used for PO matching. Validated against PO_DISTRIBUTIONS_ALL.PO_DISTRIBUTION_NUM				
PO_UNIT_OF_MEASURE	VARCHAR2 (25)	No longer used				
INVENTORY_ITEM_ID	NUMBER	Inventory item identifier. Validated against MTL_SYSTEM_ITEMS.INVENTORY_ITEM_ID				
ITEM_DESCRIPTION	VARCHAR2 (240)	Inventory item description				
QUANTITY_INVOICED	NUMBER	Quantity invoiced against purchase order shipment				
SHIP_TO_LOCATION_CODE	VARCHAR2 (60)	Ship to location code				
UNIT_PRICE	NUMBER	Unit price for purchase order matched invoice items				
DISTRIBUTION_SET_ID	NUMBER (15,0)	Distribution set identifier. Validated against AP_DISTRIBUTION_SETS_ALL.DISTRIBUTION_SET_ID				
DISTRIBUTION_SET_NAME	VARCHAR2 (50)	Distribution set name. Validated against AP_INVOICE_DISTRIBUTION_SETS_ALL.DISTRIBUTION_SET_NAME				Leave blank

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
DIST_CODE_CONCATENATED	VARCHAR2 (250)	Accounting flexfield for account associated with a distribution line	CI_DST_CODE_E FF	GL_ACCT	VARCHAR2 (48)	Extract all the segments that comes from the CCB side and separate them by ‘-‘
DIST_CODE_COMBINATION_ID	NUMBER (15,0)	Accounting flexfield identifier for account associated with a distribution line. Validated against GL_CODE_COMBINATIONS.CODE_COMBINATION_ID				
AWT_GROUP_ID	NUMBER (15,0)	Withholding tax group identifier. Validated against AP_AWT_GROUPS.GROUP_ID				
AWT_GROUP_NAME	VARCHAR2 (25)	Withholding tax group name				
LAST_UPDATED_BY	NUMBER (15,0)	Standard who column - user who last updated this row (foreign key to FND_USER.USER_ID).				
LAST_UPDATE_DATE	DATE	Standard Who column - date when a user last updated this row.				
LAST_UPDATE_LOGIN	NUMBER (15,0)	Standard who column - operating system login of user who last updated this row (foreign key to FND_LOGINS.LOGIN_ID).				
CREATED_BY	NUMBER (15,0)	Standard who column - user who created this row (foreign key to FND_USER.USER_ID).				
CREATION_DATE	DATE	Standard who column - date when this row was created				
ATTRIBUTE_CATEGORY	VARCHAR2 (150)	Descriptive flexfield structure definition column.				
ATTRIBUTE1	VARCHAR2 (150)	Descriptive flexfield segment				
ATTRIBUTE2	VARCHAR2 (150)					
ATTRIBUTE3	VARCHAR2 (150)					
ATTRIBUTE4	VARCHAR2 (150)					
ATTRIBUTE5	VARCHAR2 (150)					
ATTRIBUTE6	VARCHAR2 (150)					
ATTRIBUTE7	VARCHAR2 (150)					
ATTRIBUTE8	VARCHAR2 (150)					
ATTRIBUTE9	VARCHAR2 (150)					
ATTRIBUTE10	VARCHAR2 (150)					
ATTRIBUTE11	VARCHAR2 (150)					
ATTRIBUTE12	VARCHAR2 (150)					

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
ATTRIBUTE13	VARCHAR2 (150)					
ATTRIBUTE14	VARCHAR2 (150)					
ATTRIBUTE15	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE_CATEGORY	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE1	VARCHAR2 (150)	Reserved for country-specific localizations				Leave blank
GLOBAL_ATTRIBUTE2	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE3	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE4	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE5	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE6	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE7	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE8	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE9	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE10	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE11	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE12	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE13	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE14	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE15	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE16	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE17	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE18	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE19	VARCHAR2 (150)					
GLOBAL_ATTRIBUTE20	VARCHAR2 (150)					
PO_RELEASE_ID	NUMBER	Blanket purchase order release identifier used for PO matching. Validated against PO_RELEASES_ALL.PO_RELEASE_ID				Leave blank

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
RELEASE_NUM	NUMBER	Blanket purchase order release number used for PO matching. Validated against PO_RELEASES_ALL.RELEASE_NUM				
ACCOUNT_SEGMENT	VARCHAR2 (25)	Value for account segment of accounting flexfield. Payables overlays this value on the accounting flexfield during import				
BALANCING_SEGMENT	VARCHAR2 (25)	Value for balancing segment of accounting flexfield. Payables overlays this value on the accounting flexfield during import				
COST_CENTER_SEGMENT	VARCHAR2 (25)	Value for cost center segment of accounting flexfield. Payables overlay this value on the accounting flexfield during import				
PROJECT_ID	NUMBER (15,0)	Identifier for project used to build default accounting flexfield. Validated against PA_PROJECTS_ALL.PROJECT_ID				
TASK_ID	NUMBER (15,0)	Identifier for project task used to build default accounting flexfield. Validated against PA_TASKS.TASK_ID				
EXPENDITURE_TYPE	VARCHAR2 (30)	Project expenditure type used to build default accounting flexfield. Validated against PA_EXPENDITURE_TYPES.EXPENDITURE_TYPE				
EXPENDITURE_ITEM_DATE	DATE	Project expenditure item date used to build default accounting flexfield				
EXPENDITURE_ORGANIZATION_ID	NUMBER (15,0)	Identifier for project organization used to build default accounting flexfield. Validated against PA_EXP_ORGS_IT.ORGANIZATION_ID				
PROJECT_ACCOUNTING_CONTEXT	VARCHAR2 (30)	No longer used				
PA_ADDITION_FLAG	VARCHAR2 (1)	Flag that indicates if project related invoice distributions have been transferred into Oracle Projects (Y or N)				
PA_QUANTITY	NUMBER (22,5)	Project item quantity used to build accounting flexfield for project-related distribution line				Leave blank
USSGL_TRANSACTION_CODE	VARCHAR2 (30)	USSGL transaction code for creating US Standard GL journal entries (Oracle Public Sector Payables). Validated against GL_USSGL_TRANSACTION_CODES.USSGL_TRANSACTION_CODE				
STAT_AMOUNT	NUMBER	Amount associated with a distribution line for measuring statistical quantities				
TYPE_1099	VARCHAR2 (10)	1099 type				
INCOME_TAX_REGION	VARCHAR2 (10)	Reporting region for distribution line for 1099 supplier. Validated against AP_INCOME_TAX_REGIONS.REGION_SHORT_NAME				
ASSETS_TRACKING_FLAG	VARCHAR2 (1)	Flag that indicates if distribution line is tracked in Oracle Assets (Y or N)				
PRICE_CORRECTION_FLAG	VARCHAR2 (1)	Flag that indicates if line produces price correction				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
ORG_ID	NUMBER (15,0)	Organization identifier				
RECEIPT_NUMBER	VARCHAR2 (30)	The receipt number to which an invoice is matched. Validated against RCV_SHIPMENT_HEADERS.RECEIPT_NUM				
RECEIPT_LINE_NUMBER	VARCHAR2 (25)	The receipt line number to which an invoice is matched. Validated against RCV_SHIPMENT_LINES.LINE_NUM				
MATCH_OPTION	VARCHAR2 (25)	The value of the Invoice Match option on the PO shipment				
PACKING_SLIP	VARCHAR2 (25)	Packing slip identifier				
RCV_TRANSACTION_ID	NUMBER	Receipt identifier used for Receipt matching. Validated against RCV_TRANSACTIONS.TRANSACTION_ID				
PA_CC_AR_INVOICE_ID	NUMBER (15,0)	Identifier of the corresponding receivable intercompany invoice in Oracle Receivables				
PA_CC_AR_INVOICE_LINE_NUM	NUMBER (15,0)	Line number of the corresponding receivable intercompany invoice in Oracle Receivables				
REFERENCE_1	VARCHAR2 (30)	A reference to a record in another application	CI_ADJ_APREQ	AP_REQ_ID	CHAR (12)	
REFERENCE_2	VARCHAR2 (30)	A reference to a record in another application				
PA_CC_PROCESSED_CODE	VARCHAR2 (1)	Indicates the processing status of this invoice line by Oracle Projects in the Receiver Operating Unit				
TAX_RECOVERY_RATE	NUMBER	No Longer Used				Leave blank
TAX_RECOVERY_OVERRIDE_FLAG	VARCHAR2 (1)	No Longer Used				Leave blank
TAX_RECOVERABLE_FLAG	VARCHAR2 (1)	No Longer Used				
TAX_CODE_OVERRIDE_FLAG	VARCHAR2 (1)	No Longer Used				
TAX_CODE_ID	NUMBER (15,0)	Tax code identifier for the tax code to be used. Validated against AP_TAX_CODES_ALL.TAX_ID				
CREDIT_CARD_TRX_ID	NUMBER (15,0)	Credit card transaction ID if the line is a credit card charge				
AWARD_ID	NUMBER (15,0)	Grants requirement to store award				
VENDOR_ITEM_NUM	VARCHAR2 (25)	Optional. Validated against PO_LINES_ALL.VENDOR_PRODUCT_NUM				
TAXABLE_FLAG	VARCHAR2 (1)	A value of Y indicates that the line is taxable				
PRICE_CORRECT_INV_NUM	VARCHAR2 (50)	Number of the invoice that this price correction invoice is correcting. Validated against AP_INVOICES_ALL.INVOICE_NUM				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
EXTERNAL_DOC_LINE_REF	VARCHAR2 (240)	Internal document reference number from Accounts Receivables system. Used for XML invoices				
SERIAL_NUMBER	VARCHAR2 (35)	Serial number for item				
MANUFACTURER	VARCHAR2 (30)	Name of the manufacturer				
MODEL_NUMBER	VARCHAR2 (40)	Model information				
WARRANTY_NUMBER	VARCHAR2 (15)	Warranty number				
DEFERRED_ACCTG_FLAG	VARCHAR2 (1)	Flag that indicates whether to generate deferred accounting for this line				
DEF_ACCTG_START_DATE	DATE	The start date of the deferred expense period				
DEF_ACCTG_END_DATE	DATE	The end date of the deferred expense period				
DEF_ACCTG_NUMBER_OF_PERIODS	NUMBER	Number of periods to generate deferred expenses. Used in combination with PERIOD_TYPE. Alternative to END_DATE				
DEF_ACCTG_PERIOD_TYPE	VARCHAR2 (15)	Period type used in combination with NUMBER_OF_PERIODS to generate deferred expenses. Validated against XLA_LOOKUPS with lookup type XLA_DEFERRED_PERIOD_TYPE				
UNIT_OF_MEAS_LOOKUP_CODE	VARCHAR2 (25)	Unit of Measure for quantity invoiced. Validated against MTL_UNITS_OF_MEASURE.UNIT_OF_MEASURE				Leave blank
PRICE_CORRECT_INV_LINE_NUM	NUMBER	Invoice line subject to the price correction				
ASSET_BOOK_TYPE_CODE	VARCHAR2 (15)	Asset Book Defaults to the distributions candidate for transfer to Oracle Assets				
ASSET_CATEGORY_ID	NUMBER (15,0)	Asset Category Defaults to the distributions candidate for transfer to Oracle Assets				
REQUESTER_ID	NUMBER (15,0)	Requester identifier. Valid values from active HR employees. Validated against PER_ALL_PEOPLE_F.PERSON_ID				
REQUESTER_FIRST_NAME	VARCHAR2 (150)	The first name of the employee who requested goods or services on the invoice line. This value is used to derive the requester ID. If you use Invoice Approval Workflow then you can define rules that use the requester ID to generate a hierarchical list of approvers for the line				
REQUESTER_LAST_NAME	VARCHAR2 (150)	The last name of the employee who requested goods or services on the invoice line. This value is used to derive the requester ID. If you use Invoice Approval Workflow then you can define rules that use the requester ID to generate a hierarchical list of approvers for the line				
REQUESTER_EMPLOYEE_NUM	VARCHAR2 (30)	The employee number of the employee who requested goods or services on the invoice line. This value is used to derive the requester ID. If you use Invoice Approval Workflow then you can define rules that use the requester ID to generate a hierarchical list of approvers for the line				
APPLICATION_ID	NUMBER (15,0)	Application Identifier				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
PRODUCT_TABLE	VARCHAR2 (30)	Product source table name				
REFERENCE_KEY1	VARCHAR2 (150)	Primary key information that uniquely identifies a record in other products view				
REFERENCE_KEY2	VARCHAR2 (150)	Primary key information that uniquely identifies a record in other products view				
REFERENCE_KEY3	VARCHAR2 (150)	Primary key information that uniquely identifies a record in other products view				
REFERENCE_KEY4	VARCHAR2 (150)	Primary key information that uniquely identifies a record in other products view				
REFERENCE_KEY5	VARCHAR2 (150)	Primary key information that uniquely identifies a record in other products view				
PURCHASING_CATEGORY	VARCHAR2 (2000)	Item category concatenated segments				
PURCHASING_CATEGORY_ID	NUMBER (15,0)	Item category unique identifier				
COST_FACTOR_ID	NUMBER (15,0)	Identifier of the cost component class. Cost Component Classes are used to identify the individual buckets or component costs that make up the total cost of an item, for example, direct material costs, freight costs, labor costs, production or conversion costs and so on				
COST_FACTOR_NAME	VARCHAR2 (80)	Cost component class name. Cost Component Classes are used to identify the individual buckets or component costs that make up the total cost of an item, for example, direct material costs, freight costs, labor costs, production or conversion costs and so on.				Leave blank
CONTROL_AMOUNT	NUMBER	Optional, user-enterable value to ensure that the calculated tax is the same as on the physical document				
ASSESSABLE_VALUE	NUMBER	User-enterable amount to be used as taxable basis				
DEFAULT_DIST_CCID	NUMBER (15,0)	Already addressed by lines project Tax Driver: Code combination identifier of the GL account associated with the transaction line. Note that this is necessary to support the Account Method VAT feature				
PRIMARY_INTENDED_USE	VARCHAR2 (30)	Tax Driver: The purpose for which a product may be used. The actual use is stored at the distribution level.				
SHIP_TO_LOCATION_ID	NUMBER (15,0)	Tax Driver: Ship to location ID. Value entered by user only if line is not PO matched.				
PRODUCT_TYPE	VARCHAR2 (240)	Tax Driver: Type of product. Possible values are: Goods, Service. This value will default from Inventory Item attributes. Otherwise, value is entered by user.				
PRODUCT_CATEGORY	VARCHAR2 (240)	Tax Driver: Product category				
PRODUCT_FISC_CLASSIFICATION	VARCHAR2 (240)	Tax Driver: Product fiscal classification				
USER_DEFINED_FISC_CLASS	VARCHAR2 (240)	Tax Driver: Fiscal Classification.				
TRX_BUSINESS_CATEGORY	VARCHAR2 (240)	Tax Driver: Transactions category assigned by user.				

Columns	Data Type	Description	CCB Table	Column	Data Type	Remarks
TAX_REGIME_CODE	VARCHAR2 (30)	Tax Regime Code: The set of tax rules that determines the treatment of one or more taxes administered by a tax authority. e.g., VAT Regime in Argentina				
TAX	VARCHAR2 (30)	A classification of a charge imposed by a government through a fiscal or tax authority.				
TAX_JURISDICTION_CODE	VARCHAR2 (30)	Internal ID of the Tax Jurisdiction				
TAX_STATUS_CODE	VARCHAR2 (30)	Tax status code. e.g., taxable standard rate, zero rated, exempt, non-taxable				
TAX_RATE_ID	NUMBER (15,0)	Internal identifier for tax rate effective on the invoice date.				
TAX_RATE_CODE	VARCHAR2 (150)	Tax rate name associated with tax rate identifier. Tax_rate_id is unique while a tax_rate_code may have different tax rates based on date ranges				
TAX_RATE	NUMBER	The rate specified for a tax status in effect for a period of time.				
INCL_IN_TAXABLE_LINE_FLAG	VARCHAR2 (1)	Flag to indicate if the amount in the tax line is included or not in the taxable line				Leave blank
SOURCE_APPLICATION_ID	NUMBER	Source document application identifier				
SOURCE_ENTITY_CODE	VARCHAR2 (30)	Source document entity code				
SOURCE_EVENT_CLASS_CODE	VARCHAR2 (30)	Source document event class code				
SOURCE_TRX_ID	NUMBER	Source document transaction identifier				
SOURCE_LINE_ID	NUMBER	Identifier of the lowest level for which Tax is calculated				
SOURCE_TRX_LEVEL_TYPE	VARCHAR2 (30)	Source document transaction level type				
TAX_CLASSIFICATION_CODE	VARCHAR2 (30)	Tax Classification Code				

AP Data

Oracle E-Business Suite Financials Table Mapping to Oracle Utilities Customer Care and Billing

CCB Table	Columns	Data Type	Description	EBS Table	Columns	Data Type	Remarks
CL_ADJ_APREQ	PAY_DOC_ID	VARCHAR2 (20)	Advice ID	AP_CHECKS_ALL	CHECK_ID	NUMBER (15)	
CL_ADJ_APREQ	PAY_DOC_DT	DATE	Advice Date	AP_CHECKS_ALL	CHECK_DATE	DATE	
CL_ADJ_APREQ	PYMNT_ID	CHAR (10)	Payment Number	AP_CHECKS_ALL	CHECK_NUMBER	NUMBER (15)	
CL_ADJ_APREQ	PAID_AMT	NUMBER (15,2)	Paid Amount	AP_CHECKS_ALL	AMOUNT	NUMBER	
CL_ADJ_APREQ	PYMNT_SEL_STAT_FLG	CHAR (1)	Payment Selections Status	Derived from BPEL. Value = 'P' (For valid Payment) Value ='C' (For Void hold or Initiate stop) And Value ='X' (For Void Cancel)			
CL_ADJ_APREQ	AP_REQ_ID	CHAR (12)	AP Request ID	AP_INVOICES_ALL	PAYMENT_REASON_COMMENTS	VARCHAR2 (240)	
CL_ADJ_APREQ	ADJ_ID	CHAR (12)	Adjustment ID	AP_INVOICES_ALL	INVOICE_NUM	VARCHAR2 (50)	If liability is closed the 'Adjustment Maintenance' service is invoked for this Adjustment ID.
CL_ADJ_APREQ	PYMNT_SEL_STAT_FLG	CHAR (1)	Payment Selections Status	Derived from BPEL. When AP_CHECKS_ALL.STOPPED_DATE IS NOT NULL or AP_CHECKS_ALL.VOID_DATE IS NOT NULL then Value='C' When AP_INVOICES_ALL.CANCELLED_DATE IS NOT NULL then Value='X'			
CL_ADJ	CAN_RSN_CD	CHAR (4)	Cancel Reason Code				APVC