

Oracle Utilities Customer Care and Billing

Optional Products Installation Guide

Release 2.3.1

E18366-01

September 2010

Oracle Utilities Customer Care and Billing Optional Products

E18366-01

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Preface

This guide provides instructions for installing and configuring optional products that can be used with Oracle Utilities Customer Care and Billing.

This preface contains these topics:

- **Audience**
- **Related Documents**
- **Updates to this Documentation**
- **Conventions**

Audience

Oracle Utilities Customer Care and Billing Products is intended for anyone who needs to install and configure optional products, such as Web Self-Service or Reporting, for Oracle Utilities Customer Care and Billing

Related Documents

For more information, see these Oracle documents:

- *Oracle Utilities Customer Care and Billing Quick Install Guide*
- *Oracle Utilities Customer Care and Billing Installation Guide*
- *Oracle Utilities Customer Care and Billing Database Administrator's Guide*

Updates to this Documentation

Refer to article 1191393.1 on My Oracle Support for up-to-date additional information.

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.

Chapter 1

Overview

This chapter provides an overview of the optional products available for Oracle Utilities Customer Care and Billing, including:

- **Optional Products for Oracle Utilities Customer Care and Billing**
- **What is this book?**

Optional Products for Oracle Utilities Customer Care and Billing

This document discusses the following optional products that can be used with Oracle Utilities Customer Care and Billing

- Oracle Utilities Web Self Service
- Oracle BI Publisher
- Business Objects Reporting
- Business Objects XI 3.1 Edition
- DOC1
- Oracle Documaker
- Point-of-Sale Printer software

What is this book?

This book describes the installation and configuration of optional products for Oracle Utilities Customer Care and Billing, including the following:

- **Chapter 1: Overview** (this chapter) provides an overview of the optional products used with Oracle Utilities Customer Care and Billing.
- **Chapter 2: Installing and Configuring Oracle Utilities Web Self Service Sample Application** discusses the Oracle Utilities Web Self Service software that can be used in conjunction with Oracle Utilities Customer Care and Billing.
- **Chapter 3: Reports Configuration** discusses the reporting features of the software that can be used by Oracle Utilities Customer Care and Billing. It covers Oracle BI Publisher and Business Objects Enterprise.
- **Chapter 4: Additional Products** discusses other software products, including Business Objects XI 3.1, DOC1, Oracle Documaker, and Point-of-Sale Printer software.

Chapter 2

Installing and Configuring Oracle Utilities Web Self Service Sample Application

This section discusses the installation and configuration of Oracle Utilities Web Self Service, including:

- **Oracle Utilities Web Self Service Installation Package**
- **Web Server Configuration - WebLogic**
- **Web Server Configuration - WebSphere**
- **Oracle CCB Web Self Service Sample Application Configuration**

Oracle Utilities Web Self Service Installation Package

Overview

Web Self Service can be installed on any server/Web Server combination listed in the *Oracle Utilities Customer Care and Billing Installation Guide*.

Perl and Java must be installed on the target server as per the requirements for the above combination.

Preparing for the Web Self Service Installation

The following steps describe how to download and unzip the installation file:

1. Copy the delivery file CCB-V231-WebSelfService.jar from the Oracle Utilities Customer Care and Billing V2.3.1 Web Self Service package on the installation media to a directory on your application server box where you would like to install the application.
2. Decompress the file by typing:

```
jar -xvf CCB-V231-WebSelfService.jar
```

A directory Release-SelfService-V2.3.1 with following substructure is created under the directory where you placed the jar file:

File/Folder	Description
../etc	Contains templates for the generation of WSS
../perllib	Oracle Perl libraries
../product	Apache Ant 1.70 (required to build WSS)

Installing Oracle Utilities Web Self Service

Follow these steps to install Oracle Utilities Web Self Service:

For Unix Web Self Service Installation:

1. Change directory to Release-SelfService-V2.3.1
2. Execute the install utility:

```
ksh ./install.sh -d <Self Service installation destination directory>
```

Note: The Self Service installation destination directory must exist prior to installing Web Self Service. This directory cannot be the same directory where you are conducting the installation.

For Windows Web Self Service Installation

1. Change directory to Release-SelfService-V2.3.1
2. Execute the install utility:

```
./install.cmd -d <Self Service installation destination directory>
```

Note: The Self Service installation destination directory must exist prior to installing Web Self Service. This directory cannot be the same directory where you are conducting the installation.

Web Self Service Installation Menu

An interactive screen appears. You must populate each item with your environment values. For example:

```
*****
Pick your installation options:
*****
1. Destination directory name for installation.      | /spl/WSS
2. Web Server Host.                                | /sf-lin
3. Web Server Port Number.                          | 8200
4. Mail SMTP Host.                                  | mail.server
5. Web Application Server Type.                      | WLS
6. When OAS: SPLWeb OC4J instance name is required. | OC4J1
7. When WAS: SPLWeb server instance name is required. | server2
```

P. Process the installation.

Each item in the above list should be configured for a successful installation.

Choose option to configure or (P) to process the installation:

Option (6) is the Web Application Server where the Oracle Utilities Customer Care and Billing environment is running. You can choose one of the following:

```
CONFIGURATION OPTION: Web Application Server Type.
You may choose one of the following products as a Web
Application Server:
WLS - WebLogic
WAS - Websphere
TCAT - Tomcat
Enter Choice (WAS) :
```

Option (7) is required if you selected "WAS" in option (5).

When you have specified the installation options, press **P** to continue with the installation.

Each item in the list above must be configured for a successful install.

You may deploy the Web Self Service application on any Web server supported by the application. You must have Java and Perl installed prior to the installation of Web Self Service.

Note: Oracle Application Server and OC4J Standalone are not supported for new installs of Oracle Utilities Customer Care and Billing V 2.3.1. If you are upgrading from an existing install that runs on Oracle Application Server or OC4J Standalone, please contact your Global Support Representative.

Web Server Configuration - WebLogic

Setting Up the Web Application - WebLogic

The following are specific instructions for WebLogic. For more details, please refer to the following link: <http://edocs.bea.com/wls/docs100/index.html>

For other web servers with JSP capability, you need to perform similar actions. If you are familiar with a structure of WebLogic config.xml file, you may configure the Self Service application by directly editing this file. If you prefer to use WebLogic console, follow the instructions:

1. Start the WebLogic Console: http://server_url:server_port/console
2. Within the console, go to the **Deployments** link. You should see a list of applications that probably does not include SelfService. (If it does, it must be the previous version of SelfService. Delete it by clicking the trash can to the right of **SelfService**.)
3. Click **Lock & Edit**, then **Install**. You will then get the **Install Application Assistant** page. You can browse the directories using the console interface and select the SelfService.ear that you wish to deploy. Confirm all the defaults.
4. Click **Next**. to get the **Choose Targeting Style** page. Select **Install this deployment as an application**.
5. Click **Next** to get the **Optional Settings** page. Keep the default values.
6. Click **Next** and click **Finish**: Review the changes and click **Save**, and then click **Activate Changes**.

Once the changes have been activated you need to start the SelfService module. Go back to the **Summary of Deployments** page. Select the **SelfService** module and start it by clicking **Start**, then selecting **Servicing all requests**.

Target Self Service to the Web Server

If this is the first time you are installing Self Service on this version of Oracle Utilities Customer Care and Billing, you'll have to target the application to the particular Web server (there is only one defined, it's called 'myserver').

1. While still in the WebLogic console, click on the **Targets** tab.
2. Make sure the Current Target for SelfService is "myserver".

Create WEB User in WebLogic

Defining the User in WebLogic. You may choose to define a user other than WEB, if desired. However, the user ID for accessing Oracle Utilities Customer Care and Billing must match the user ID for WebLogic. The Oracle Utilities Customer Care and Billing user is defined in the properties file. Refer to **Oracle Utilities Customer Care and Billing User Id** on page 2-6 for more information on how to override this setting. In addition, the authorization string to be added to the HTTP authorization connection request must be modified in the properties file. Refer to **Authorization String** on page 2-7 for more information on how to override this setting.

1. While still in WebLogic console, click **Security Realms** in the Domain Structure tree on the left. Click **myrealm**, then select the **Users and Groups** tab.
2. Click **New** and create user WEB and password selfservice (all lowercase, without a space).

Defining the Password in WebLogic. You may choose to define a user id and password other than WEB and selfservice, if desired. However, the authorization string to be added to the HTTP authorization connection request must be modified in the properties file. Refer to **Authorization String** on page 2-7 for more information on how to override this setting.

Web Server Configuration - WebSphere

The following are specific instructions for WebSphere

For other web servers with JSP capability, you need to perform similar actions. In order to use WebSphere console, follow these instructions:

Setting Up the Web Application - WebSphere

1. Start the WebSphere Console: `https://server_url:server_port/ibm/console`
2. From the **Integrated Solutions Console**, select **Applications**, then **Enterprise Applications**
3. Select **Install**
4. Select the location of SelfService.ear file and then click **Next**.
5. Leave the defaults as specified, and **Next**.
6. Under **Clusters and Servers** select your server, and then select your Module. Click **Apply**. Click **Next**.
7. On the **Map virtual hosts for Web modules** window, click **Next**.
8. Review the Summary, and click **Finish**.
9. Under **Installing....**, select **Save** when you see **Application SelfService installed successfully**.

Create WEB user in WebSphere

1. Select **Applications, Enterprise Applications**.
2. Select **SelfService**.
3. Navigate to **Enterprise Applications, SelfService, Security role to user/group mapping**. Select **cisusers** and click **OK**.
4. Select **WEB**. Then click **OK**.

Defining the Password in WebSphere. You may choose to define a user id and password other than WEB and selfservice, if desired. However, the authorization string to be added to the HTTP authorization connection request must be modified in the properties file. Refer to **Authorization String** on page 2-7 for more information on how to override this setting.

Oracle CCB Web Self Service Sample Application Configuration

This section describes configuration needed to enable a connection to Oracle Utilities Customer Care and Billing. It includes importing the appropriate services for use by XAI, configuration of the properties file and defining settings in Oracle Utilities Customer Care and Billing.

Configuring the Connection To Oracle Utilities Customer Care and Billing

This section describes the steps needed to import the appropriate XAI services needed by the Oracle Utilities Web Self Service application.

Oracle Utilities Web Self Service XAI Services

Starting with V2.2.0, Web Self Service XAI services are bundled with the application.

Navigate to the Self Service Login Page

Verify that you are able to get to the Self Service login page (http://server_name:port/SelfService/SSvcController/login<http://server:port/SelfService>).

Property File Configuration

The SelfServiceConfig.properties file of the self-service web application contains several properties that may need to be changed for your particular installation.

At installation time, this file was created based on a template and certain parameterized values were overwritten to correspond to appropriate values for your installation.

There are other settings in the configuration file that you may want to modify according to your business needs.

To review the settings for this file, go to the WEB-INF directory of the SelfService installation directory. It is named SelfServiceConfig.properties. Comments have a pound sign (#) at the beginning of the line.

To modify the settings of the configuration file, you must configure the settings in a second 'override' properties file. Its purpose is to define settings that are unique to your implementation, and to enable future releases of the web application to modify the SelfServiceConfig.properties file without affecting your settings.

The file name of override file is CMSelfServiceConfig.properties and is located in the WEB-INF directory of the SelfService directory (in the same location as the SelfServiceConfig.properties file).

General Settings

This section describes general settings needed by the system for web self-service.

URL of XAI Server

The URL of the XAI server. This setting has been parameterized for customization at installation time and is not found in the override properties file.

Override Properties File

Defines the name of the override properties file. This value is set to CMSelfServiceConfig.properties and may not be changed.

Oracle Utilities Customer Care and Billing User Id

The configuration file defines a user id of WEB. This is the user that the Oracle Utilities Web Self Service application uses to access application services in Oracle Utilities Customer Care and Billing. This user id must correspond with the user id you defined in WebLogic.

If you defined a user ID other than WEB in WebLogic, you must customize this setting. Find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# User Id in CC&B that the Self Service application should assume
# PARM com.splwg.selfservice.CC&BUser=WEB
```

The Oracle Utilities Customer Care and Billing user defined in the file (either WEB or your chosen id) must be defined in Oracle Utilities Customer Care and Billing. In Oracle Utilities Customer Care and Billing, navigate to **Utilities Menu, Security, User +**.

- Create a new user named WEB (or desired value). Be sure that this new user is added to appropriate user groups so that it has access to all the application services used by the Oracle Utilities Web Self Service application.
- Make sure to set Account Security for this web user. Since Oracle Utilities Web Self Service uses the web user id to connect to Oracle Utilities Customer Care and Billing, you may use this to restrict which accounts can be accessed through Oracle Utilities Web Self Service.

Authorization String

The authorization string defines a string to be added to the HTTP authorization connection request. It contains the user id and password encoded in Base 64. The configuration file provides a string with the user WEB and the password selfservice encoded in Base64. This user id and password must correspond to the settings defined in WebLogic.

If you defined a user ID other than WEB or a password other than selfservice in WebLogic, you must customize this setting. Find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" and provide the appropriate Base64 encoded value.

```
# Authorization cookie for the XAI server. This is user:password in
Base64.
# For user WEB, password selfservice the cookie is:
# com.splwg.selfservice.XAICookie=V0VConNlbGZzZXJ2aWN1
# PARM com.splwg.selfservice.XAICookie=V0VConNlbGZzZXJ2aWN1
```

Web Person ID Type

When registering for web self-service, the customer defines a web login id. This ID is stored as an entry in the person IDs collection with an appropriate Person ID Type. The configuration file defines the Person ID type to use as WEB. You may choose to use this ID type or you may prefer to set up a different id type.

To use a person ID type other than WEB, you must customize this setting. Find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Person Identifier Type to be used in CC&B for storing the user id
# PARM com.splwg.selfservice.IdType=WEB
```

The person ID type defined in the properties file (either WEB or your chosen id type) must be defined in Oracle Utilities Customer Care and Billing. In Oracle Utilities Customer Care and Billing, navigate to **Admin Menu, Identifier Type**. Add the ID type defined in your configuration file and indicate an appropriate description.

Format of the Web User ID. If you would like to impose restrictions on the web user chosen by your customers, you must create an identifier format algorithm. For example, you may want to restrict the web user ID to a minimum number of characters or to require a mixture of alpha and numeric characters.

Authentication Plug In Settings

By default, authentication is done by looking up the entered user ID and comparing the entered password with the password stored for this user on the Person table in the Oracle Utilities Customer Care and Billing database.

The configuration file defines special authentication as false and indicates a 'dummy' authentication class.

This authentication algorithm may be overridden by specifying an alternative java class that is used as a plug in. To override the value, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting.

```
# Whether a class different than the default is performing the
authentication (valid values true, false)
# PARM com.splwg.selfservice.Authentication=false

# Dynamic class name for Authentication
# PARM
com.splwg.selfservice.AuthenticationClassName=com.splwg.selfservice.Du
mmyAuthentication
```

Set the property 'Authentication' to true, and set the property 'AuthenticationClassName' to an alternative class name. This third-party class needs to implement the IAuthentication.class interface found under SelfService/Web-Inf/classes/com/splwg/selfservice.

Displaying Bill Print Image PDFs

If the DOC1 bill print software is installed on your system, bills may be displayed in PDF format. If this is the case, the **VIEW** hyperlink is displayed beside the last bill on the account information page.

Show Bill Image

The configuration file assumes that you are able to display a bill image using DOC1. The ShowBill setting is defaulted to true. If you are not able to display a bill image, you must customize this setting. Find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate false.

```
# Whether 'View' should be displayed next to the last bill in the
Account Information screen (valid values true, false)
# PARM com.splwg.selfservice.ShowBill=true
```

URL for On-line Bill

This setting indicates the server and port number for your Oracle Utilities Customer Care and Billing installation where the bill images may be found. This setting has been parameterized for customization at installation time and is not found in the override properties file.

Timeout for Cached Bill PDFs

The configuration file defines the timeout for cached bill PDFs as 60 (minutes). If you want to override this setting, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Timeout (in minutes) for cached bill PDFs
# PARM com.splwg.selfservice.PDFCacheTimeout=60
```

Directory for Cached Bill PDFs

If you choose to define a location for the PDF cache, different from the default temporary directory, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Directory to be used for cached bill PDFs
#
```



```
# Use this parameter if you want to specify the location for the PDF
cache.
# If it is omitted, the default temporary directory will be used.
# PARM com.splwg.selfservice.PDFCacheLocation=C:\\TEMP
```

Customer Contact Settings

Customer Contacts may be created for certain events. (Refer to the table below).

The configuration file defines the class and type as NONE for each event. This means that by default, no customer contact is generated.

The CMSelfServiceConfig.properties file defines possible settings for the customer contact class and type that you may choose to use to generate customer contacts. The following table defines the events that may generate a customer contact, along with the suggested values for the class and type for each event.

Event	Event Description	Property Name=Sample Value
Login Success	Customer successfully logged into the web self service application.	CustomerContactClassLoginSuccess=WEB CustomerContactTypeLoginSuccess= LOGIN
Login Failed	Customer attempted to login to the web self service application, but was not successful.	CustomerContactClassLoginFailure=WEB CustomerContactTypeLoginFailure=FAILLOGIN
Register New User	The customer registered to use the web self service application.	CustomerContactClassRegistration=WEB CustomerContactTypeRegistration=REGISTER
Meter Read	The customer entered a meter read via the web self service application.	CustomerContactClassMeterRead=WEB CustomerContactTypeMeterRead=MTRREAD
Payment	The customer entered a credit card payment via the web self service application.	CustomerContactClassPaymentReceived=WEB CustomerContactTypePaymentReceived=PAYRCV
Disconnect Service	The customer requested to stop one or more services via the web self service application.	CustomerContactClassServiceDisconnect=SVC CustomerContactTypeServiceDisconnect=STOP
Update Personal Info	The customer updated personal information via the web self service application.	CustomerContactClassPersonalInfoUpdate=WEB CustomerContactTypePersonalInfoUpdate=PERSONALINFO

If you choose to have a customer contact generated for an event, find the setting for the Customer Contact Class and Customer Contact Type for each event in the CMSelfServiceConfig.properties file and remove '#PARM'. If you choose to define a customer contact class/type different than the ones provided, indicate the desired value.

```
# Customer Contact Class in CC&B to be used when creating customer
contacts for successful logins
# PARM com.splwg.selfservice.CustomerContactClassLoginSuccess=WEB
```

```
# Customer Contact Type for a successful login
# PARM com.splwg.selfservice.CustomerContactTypeLoginSuccess=LOGIN
```

For each event that you want a customer contact generated for, you must enter a customer contact class and type in Oracle Utilities Customer Care and Billing that corresponds to the value in the properties file.

- Navigate in Oracle Utilities Customer Care and Billing to **Admin Menu, Customer Contact Class**. Add one or more class values for your customer contacts.
- Navigate to **Admin Menu, Customer Contact Type**. Add a unique customer contact type for each event above, where you would like a customer contact generated. Indicate the desired customer contact class defined in the previous step.

Error Creating Contact. If a customer contact cannot be created (e.g. because of incorrect setup of the customer contact class in Oracle Utilities Customer Care and Billing) an error is written to the WebLogic console and a To Do Entry for the Oracle Utilities Web Self Service administrator is created.

To Do Entry Settings

To Do Entries may be created for certain events listed in the table below.

Event	Property Name
Administration	AdminToDoType=CI_WSSAD
Meter read out of high low limits	MeterReadToDoType=CI_WSSMR
Stop Service	ServiceStopToDoType=CI_WSSST
Update Personal Info	PersonalInfoToDoType=CI_WSSPE

For the Administration event, the To Do type is defined as shown in the table. The Administration To Do type is used to alert the Oracle Utilities Web Self Service administrator about a malfunction in the web self-service application as a result of one of the following reasons:

- Error in sending an email to the customer, either during the registration process, from the password change page or from the password reminder page. A reason for failure in sending an email may be a broken connection to the SMTP email server or incorrect definitions in the Oracle Utilities Web Self Service file.
- Error in attempting to create a customer contact.

If you prefer to define a different To Do type for the administration event, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# To Do Type for Administrator Information
# PARM com.splwg.selfservice.AdminToDoType=CI_WSSAD
```

The configuration file defines the remaining To Do types as NONE. This means that by default, no To Do entry is generated for those events. If you choose to have a To Do entry generated for an event, find the setting for the To Do type for each event in the CMSelfServiceConfig.properties file and remove '#PARM'. If you choose to define a To Do type different than the ones provided, indicate the desired value.

```
# To Do Type for Meter Reads failing High/Low
# PARM com.splwg.selfservice.MeterReadToDoType=CI_WSSMR

# To Do Type for Service Stop
```

```
# PARM com.splwg.selfservice.ServiceStopToDoType=CI_WSSST

# To Do Type for Update Personal Information
# PARM com.splwg.selfservice.PersonalInfoToDoType=CI_WSSPE
```

The following table identifies the required settings for the To Do entries. If you have decided to use a different To Do Type code, you must define the drill keys and sort keys as shown.

ToDo Type	Description	Message Cat / Message	Drill Down App Service	Sort Key(s)	Drill Key (Table/Field)
CI_WSSAD	Web Self Service Administration	15 / 314	CILCPERP (Person)	Error Message	CI_PER / PER_ID
CI_WSSMR	WSS Meter Read Failed Hi/Lo	15 / 312	CILMMRDP (Meter Read)	Actual Read,Low Limit,High Limit	CI_REG_READ / MR_ID
CI_WSSPE	WSS Personal Information Updated	15 / 313	CILCPERP (Person)	Customer Contact Id	CI_PER / PER_ID
CI_WSSST	WSS Stop Service	15 / 311	CILCSVAP (Service Agreement)	Service Agreement Id	CIS_SA / SA_ID

Note. The sort key and drill key for the administration To Do type are not really used. Values are required for the To Do type definition. The To Do entries are related to technical problems, so a transaction to drill down to is not available.

Error Creating To Do. If a To Do entry cannot be created successfully, an error message is written to the web server console.

Payment Related Settings

This section describes the settings needed to successfully store a credit card payment in Oracle Utilities Customer Care and Billing via the web.

Currency

The configuration file defines the currency to use for credit card payments as USD. If this is not the correct currency for your installation, you must customize this setting. Find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Currency code to use for payments
# PARM com.splwg.selfservice.CurrencyCode=USD
```

You must also ensure that the currency code defined (either USD or your override value) has been defined in Oracle Utilities Customer Care and Billing using **Admin Menu, Currency Code**.

Auto Pay Source Codes

Credit card payments submitted via the web are handled as an automatic payment and must be interfaced to the appropriate external system for card number verification.

In Oracle Utilities Customer Care and Billing, automatic payments must reference a tender type that indicates that the payment is used for auto pay and must reference an appropriate auto pay source code.

Note. The tender type and auto pay source codes described here would be used for any situation where a customer has provided a credit card for payment and the information must be sent to the appropriate credit card company. For example, perhaps a customer calls to provide credit card information for payment. As a result, you may already have appropriate values defined in Oracle Utilities Customer Care and Billing.

Navigate in Oracle Utilities Customer Care and Billing to **Admin Menu, Tender Type**. If you do not already have a tender type set up for credit card payments that require authorization, create one. The following table provides an example such an entry.

Tender Type	Description	Generate Auto Pay	External Type	Expiration Date Req'd
APCC	Auto Pay by Credit Card	Checked	Credit Card Withdrawal	Checked

One or more auto pay source codes are required. The auto pay source code allows you to reference a validation algorithm to validate the credit card number entered. The recommendation is to create a different auto pay source code for each type of credit card (for example, Visa, Master Card, etc) in order to reference the appropriate validation algorithm.

The configuration file defines a separate auto pay source code for the four major types of credit cards: Visa, Master Card, Discover and American Express. For your installation, you may choose to define different values for the auto pay source codes than the ones provided.

- If you choose to use the settings as defined in the configuration file, you must define the corresponding auto pay source codes in Oracle Utilities Customer Care and Billing.
- If you choose to override the values in the configuration file, you must find each setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Auto Pay Source Code for Visa
# PARM com.splwg.selfservice.AutoPay.Visa=VISA

# Auto Pay Source Code for MasterCard
# PARM com.splwg.selfservice.AutoPay.MasterCard=MASTERCARD

# Auto Pay Source Code for Discover
# PARM com.splwg.selfservice.AutoPay.Discover=DISCOVER

# Auto Pay Source Code for AmericanExpress
# PARM com.splwg.selfservice.AutoPay.AmericanExpress=AMEX
```

Navigate in Oracle Utilities Customer Care and Billing to **Admin Menu, Auto Pay Source Code**. If you do not already have source codes created for the various credit card types, create them. The following table provides examples.

Auto Pay Source	Description	Tender Type	Route Type	Validation Algorithm
VISA	Visa card	APCC	ACH	VALID-VISA

Auto Pay Source	Description	Tender Type	Route Type	Validation Algorithm
MASTERCARD	Master Card	APCC	ACH	VALID-MC
DISCOVER	Discover card	APCC	ACH	VALID-DSC
AMEX	American Express	APCC	ACH	VALID-AMEX

Notice that the auto pay source codes all reference the same tender type created above. Also note that the source codes reference the same auto pay route type. Refer to payment documentation for more information about the auto pay route type.

Credit Card Validation Class Plug In

By default, the credit card number entered by the customer is not fully validated. It basically checks that the number entered is a valid credit card number for the chosen credit card type. It does not try to contact a credit card company.

To implement a more thorough validation algorithm, indicate an alternative third-party Java class. To override these settings, find the setting in the `CMSelfServiceConfig.properties` file, remove "`# PARM`" to enable the setting.

```
# Whether a class is validating the credit card (valid values true,
false)
# PARM com.splwg.selfservice.CreditCardValidation=true

# Dynamic class name for CreditCardValidation
# PARM
com.splwg.selfservice.CreditCardValidationClassName=com.splwg.selfserv
ice.DummyCreditCardValidation
```

Modify the property '`CreditCardValidationClassName`' to specify the third-party class name. This third-party class needs to implement the `ICreditCardValidation.class` interface found under `SelfService/Web-Inf/classes/com/splwg/selfservice`.

Oracle Utilities Customer Care and Billing **Validation**. The auto pay source code may reference a validation algorithm to handle credit card validation. This validation is only done when the payment information is sent to Oracle Utilities Customer Care and Billing. Use the credit card validation plug-in spot in the configuration properties to capture an error in the credit card as soon as the user enters a value.

Location Settings

The location settings define format settings for display and entry of dates, numbers and phone numbers.

Phone Types

The web self service account and person information pages attempt to display a home and business phone number. Actually, the phone numbers displayed correspond to two phone number types defined in Oracle Utilities Customer Care and Billing for your person phone numbers.

The configuration file defines the phone type for the Home phone number as HOME and defines the phone type for the business phone number as BUSN. If these settings do not correspond with the phone types that you have defined in Oracle Utilities Customer Care and Billing for the person record, you must customize the settings. Find the setting in the `CMSelfServiceConfig.properties` file, remove "`# PARM`" to enable the setting and indicate the desired value.

```
# CCB phone type used for home phone numbers
# PARM com.splwg.selfservice.PhoneTypeHome=HOME

# CCB phone type used for business phone numbers
# PARM com.splwg.selfservice.PhoneTypeBusiness=BUSN
```

You probably already have the appropriate phone types defined in Oracle Utilities Customer Care and Billing. If not, navigate to **Admin Menu, Phone Type**. Add the two phone types defined in your configuration file and indicate an appropriate description.

Phone Format. In Oracle Utilities Customer Care and Billing, each phone type references an algorithm to define valid formats for the phone type. One of the valid phone formats defined in the algorithm for the phone types used by the Oracle Utilities Web Self Service application must be used for the phone format setting.

Phone Format

The configuration file defines the phone format used for display and entry of a phone number as (999) 999-9999. If this is not appropriate for your installation, you must customize this setting. Find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Phone format used on Update Personal Information screen
# PARM com.splwg.selfservice.PhoneFormat=(999) 999-9999
```

Valid Format. This phone format must be a valid format used by the phone format algorithm referenced in Oracle Utilities Customer Care and Billing on your home and business phone types.

Date Formats

The display format of dates and date/times are specified with the properties 'CorDaptixDateFormat' and 'CorDaptixDateTimeFormat'. These formats should correspond to the date and time formats defined in the Display Profile for the Oracle Utilities Customer Care and Billing User ID.

To override the formats set in the configuration properties file, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Date format used to display dates received from XAI
# PARM com.splwg.selfservice.CC&BDateFormat=MM-dd-yyyy

# Date-Time format used to display date/times received from XAI
com.splwg.selfservice.CC&BDateTimeFormat=MM-dd-yyyy HH:mm:ss
```

The format used by XAI is determined with the properties 'XAIDateFormat' and 'XAIDateTimeFormat'. These formats should correspond to the default date format and default date/time format defined for your Oracle Utilities Customer Care and Billing XAI Adapter.

Refer to the “Setting Up Your Registry” section in the XAI utilities guide for more information about defining XAI adapters.

Note. It is also possible for each individual Oracle Utilities Customer Care and Billing schema to define date and date/time formats. If that is the case, the schema formats should correspond to the formats defined here.

To override the formats set in the configuration properties file, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Date format used by XAI (set in XAI Formats control table) for dates
sent to XAI
# PARM com.splwg.selfservice.XAIDateFormat=yyyy-MM-dd

# Date-Time format used by XAI (set in XAI Formats control table) for
Date/Time sent to XAI
# PARM com.splwg.selfservice.XAIDateTimeFormat=yyyy-MM-dd HH:mm:ss
```

Amount Formats

The display format for amounts is specified with the property 'CorDaptixNumberFormat'.

To override the format set in the configuration properties file, find the setting in the CMSSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Number format to be used to display amounts received from XAI (should  
be identical to the display profile)  
# PARM com.splwg.selfservice.CCBNumberFormat=###,##0.00
```

Display Profile Setting. The decimal symbol and group symbol defined here should match the settings defined for the display profile defined for the Oracle Utilities Customer Care and Billing User ID.

The XAI format is specified with the property 'XAINumberFormat'.

To override the format set in the configuration properties file, find the setting in the CMSSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Number format to be used for Amounts sent to XAI  
# PARM com.splwg.selfservice.XAINumberFormat=#####0.00
```

E-Mail Settings

Several functions in the Oracle Utilities Web Self Service application (registration, password change and reminder) send an email with the user ID and password to the customer.

Send Email

The configuration file assumes that you want to send emails for the above listed events. If your installation does not want to send email confirmations, you must customize this setting. Find the setting in the CMSSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate a value of false.

```
# Whether an email will be sent (should be set to false when no SMTP  
server can be reached); valid values: true, false  
# PARM com.splwg.selfservice.SendEmail=true
```

Email File Location

Indicates the location of the text file containing the text mailed to the customer, when the customer chooses the transactions Password Change and Password Reminder ('Forgot Password'). This setting has been parameterized for customization at installation time and is not found in the override properties file.

A sample file called EmailFile.txt, located in the SelfService directory. The contents of the email may contain the following substitution variables that are replaced at execution time with the Userid or Password. This is done by embedding the following values in the email text file:

- @user@ - represents the userid
- @password@ - represents the password

Email Subject

This setting defines the subject of the email for password changes and reminders. The configuration file defines this value as Your User and Password. If your installation would prefer a different email subject, find the setting in the CMSSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Subject of Mail
# PARM com.splwg.selfservice.EmailSubject=Your User and Password
```

Registration Email File Location

Indicates the location of the text file containing the text mailed to the customer, when the customer successfully registers as a new user. This setting has been parameterized for customization at installation time and is not found in the override properties file.

Registration Email Subject

This setting defines the subject of the email for successful registrations. The configuration file defines the subject as Your registered User and Password. If your installation would prefer a different email subject, you must customize this setting, find the setting in the CMSelfServiceConfig.properties file, remove "# PARM" to enable the setting and indicate the desired value.

```
# Subject of Registration Mail
# PARM com.splwg.selfservice.RegistrationEmailSubject=Your registered
User and Password
```

SMTP Host

This setting defines your SMTP host name. It has been parameterized for customization at installation time and is not found in the override properties file.

From Address

This setting defines the sender address appearing on emails to your customers from the Oracle Utilities Web Self Service application. This setting must be defined in the override properties file.

```
# From Address:
com.splwg.selfservice.FromAddress=SelfServiceAdmin
<administrator@company.com>
```

Error Sending Email. If an email is not sent successfully, a message is written to the web server console and an "administration" To Do entry is created.

Action Settings

This section is needed if your implementers decide to add new pages to the web self service functionality delivered. The parameters provided below are samples to show the expected syntax.

```
# Actions:
# The following section allows the dynamic definition of additional
actions. The property name must start with
# "com.splwg.selfservice.Action" and after that it contains the action
name. The property value is the class name.
# Following two examples:

# PARM
com.splwg.selfservice.Action.financialhistory=com.splwg.selfservice.Ac
countFinancialHistoryAction
# PARM
com.splwg.selfservice.Action.billinghistory=com.splwg.selfservice.Bill
ingHistoryAction
```

The property name must start with "com.splwg.selfservice.Action", followed by the action name. The property value is the class name.

Refer to the Creating an Action Class section in the Oracle Utilities Web Self Service guide for more information.

Customizing Self Service Functionality

All source files for the sample application are included in the SelfServe.war archive.

If you develop your own Self Service application customization, please follow this rule:

Every file you create should be prefixed by CM (for example, CMSelfServiceConfig.properties).

All files prefixed by CM will be preserved during future upgrades of Self Service application, that will save you time and effort during customization of the future upgrades.

Refer to the Customizing Web Self-Service section in the online help of the application for information about customizing the web self service functionality.

Chapter 3

Reports Configuration

This section describes the steps required to configure Oracle Utilities Customer Care and Billing and a reporting engine to support the Oracle Utilities Customer Care and Billing reporting solution using Business Objects Enterprise or Oracle BI Publisher. This section includes:

- **Reports Configuration for Oracle BI Publisher**
- **Reports Configuration for Business Objects Enterprise**

Reports Configuration for Oracle BI Publisher

This section describes the steps required to configure Oracle Utilities Customer Care and Billing and Oracle BI Publisher to support a reporting solution that uses Oracle BI Publisher.

Installing Oracle BI Publisher Enterprise

Oracle BI Publisher Enterprise™ provides the tools for:

- Making reports available over the web (establishing the required report server processes)
- Integrating reports with the Oracle Utilities Customer Care and Billing system
- Scheduling reports to run on a regular basis
- Managing instances of the reports that have been created by a previous run
- Managing user access to the report instances

This document assumes that you have already installed Oracle BI Publisher Enterprise such that requests can be pointed to the Oracle BI Publisher Enterprise running on Windows or Unix.

Version Note: We used Oracle BI Publisher 10.1.3.3.2 Enterprise Edition to develop sample reports that are distributed with the Oracle Utilities Customer Care and Billing system. We used Oracle BI Publisher 10.1.3.3.2 on Windows and Unix server for running reports on the web and for testing the integration with Oracle Utilities Customer Care and Billing. The report layouts have been created using the BI Publisher Desktop 10.1.3.2. The sample reports and integration may not work with other Oracle BI Publisher Enterprise versions and products.

In addition, the following database client software versions were used:

Version Note: Images Do Not Generate Properly Without X Server in Unix version of BI Publisher. If you are running the BI Publisher server on a Linux or Unix machine that does not have an X Server installed reports that contain images may not be properly generated. Workaround: If you are running Java 1.4.2 or later, start the environment with a headless implementation. Specify the following property at the java command line:

```
-Djava.awt.headless=true
```

For JDK versions prior to 1.4.2 please see your documentation on how to implement X Host for your environment.

Configuring The System To Enable Reports

This section describes the steps needed to configure your system to enable reports.

Configure the System to Invoke Oracle BI Publisher Enterprise Real-time

In order to invoke Oracle BI Publisher Enterprise from within Oracle Utilities Customer Care and Billing, the system must be configured so that Oracle Utilities Customer Care and Billing knows how to invoke reports.

Specify Reporting Tool Options

The following information should be defined on Reporting Tool Options table:

- **Reporting Server** is the web server URL where the reporting tool is installed.
- **Reporting Folder** defines the name of the directory on the Oracle BI Publisher server where reports are located. The Oracle Utilities Customer Care and Billing reporting tool algorithm constructs the URL to open Oracle BI Publisher Enterprise based on the information

provided on Reporting Options. The same folder name should be used as a report folder in Oracle BI Publisher Enterprise where reports are published.

Refer to the Reports chapter of the Oracle Utilities Customer Care and Billing user guide for more information about the reporting options table.

Reporting Tool Algorithm

The base product provides an installation algorithm plug-in spot called Reporting Tool. This plug-in spot should contain an algorithm that invokes the reporting tool real-time. Oracle Utilities Customer Care and Billing provides an algorithm type called F1-BIPR-INV, which invokes Oracle BI Publisher Enterprise.

This algorithm relies on information defined in the Reporting Options table: the reporting server and folder names for accessing the reporting tool. The algorithm constructs several strings, for example, the URL of the BI Publisher, information about the report being requested and user info in the format expected by Oracle BI Publisher Enterprise. The Java program returns the correct URL to the browser. The browser then opens a BI Publisher Enterprise window with the appropriate URL.

To use the F1-BIPR-INV algorithm type to invoke Oracle BI Publisher Enterprise, perform the following steps:

1. Create an algorithm for this algorithm type.
2. On the installation options, add an entry to the algorithm collection with an algorithm entity of Reporting Tool and indicate the algorithm created in the previous step.

Interface with Oracle BI Publisher Enterprise Batch Scheduler

Presently Oracle Utilities Customer Care and Billing does not provide support for batch jobs with Oracle BI Publisher. Please use Oracle BI Publisher directly in order to schedule reports to run in batch.

Sample Reports Supplied with the Product

The system provides several sample reports that may be used by your organization as a starting point for creating a new report. The following sections provide instructions on how to set up your implementation environment to use the sample reports.

Refer to the Reports chapter of the Oracle Utilities Customer Care and Billing user guide for a description of each sample report.

How to Use a Sample Report Provided with the System

If you would like to use any of the sample reports, you need to perform some steps to be able to execute them in an implementation environment. This section walks you through the steps needed.

Oracle Functions and Packages

Each report has one or more corresponding database function, package that store the business logic to fetch the data from the database that is then presented in the report.

The prerequisite for Oracle Utilities Customer Care and Billing reports to work against the target database is setting up of a RPTUSER database user. This user should have read access to all Oracle Utilities Customer Care and Billing database objects and execution privilege on the stored procedures that the reports access.

The steps involved in setting up the RPTUSER are:

1. Create the RPTUSER.

To create the RPTUSER (it doesn't exist), navigate to the Database\Oracle folder and edit the file CDX_rptuser.sql to match your requirements. The parameters in this file that need review are: password of the user, default and temporary tablespace names for the user.

Now log into the target database as a DBA user using SQLPLUS and execute the script by entering following command at SQL prompt:

```
SQL> @CDX_rptuser.sql
```

("SQL>" denotes the SQL prompt and doesn't need to be typed).

2. Create or refresh the Oracle functions and packages.

Log into the target database as the user that owns Oracle Utilities Customer Care and Billing schema objects using SQLPLUS and execute the script CDX_rptfn.sql by entering the following command at the SQL prompt:

```
SQL> @CDX_rptfn.sql
```

3. Compile the invalid objects.

If you see an Oracle error while executing the step 2, execute the database object compilation script CDX_compfn.sql

```
SQL> @CDX_compfn.sql
```

4. Configure security.

This involves generating synonyms in RPTUSER and granting it privileges to execute the stored procedures and read the Oracle Utilities Customer Care and Billing tables. The utility prompts you to answer for the following questions:

- Enter the Oracle user that owns the schema (e.g. CISADM): **CISADM**
- Enter the password for the CISADM user: **CISADM**
- Enter the name of the Oracle Database: *Your_db*
- Enter a comma-separated list of Oracle users in which synonyms need to be created (e.g. cisuser,cisread): **RPTUSER**

The utility runs and configures security for the Oracle Utilities Customer Care and Billing objects.

Unzip Oracle Utilities Customer Care and Billing Report Files

Unzip the CCB-V230-Reportss.zip file from the installation media into an empty directory. We'll refer to this directory as the reports extract folder.

Note: By default, the reports provided are read only. You will need to reset the permissions on the files before making any changes, for example, to configure the default data source.

Publish the Sample Reports in Oracle BI Publisher Enterprise

The installation media contains sample reports provided with the system. The report files are in the reports extract folder under ..\CCB-V230-Reports\BIPublisher\reportFiles.

Install Oracle BI Publisher Enterprise. This section assumes that you have already installed Oracle BI Publisher Enterprise.

Note: If you install Oracle BI Publisher Enterprise in a location other than the default installation directory of C:\oracle\BI101332, adjust the path descriptions to match your actual install directories.

The first step you need to take in order to use any of the samples is to publish the report in Oracle BI Publisher Enterprise. You need to create a folder in Oracle BI Publisher Enterprise named as defined on Reporting Options table in Oracle Utilities Customer Care and Billing and publish there report extracted to the reports extract folder.

Create a folder named CCB in the folder C:\oracle\BI101332\xmlp\XMLP\Reports. Copy all Oracle BI Publisher sample reports into the CCB folder.

Please refer to the Oracle BI Publisher Enterprise documentation for more information.

Prepare Oracle BI Publisher Enterprise server for integration

The CCB Reporting Options Table should include the following information about Reporting Server and Folder:

Reporting Folder: CCB

Reporting Server: URL of reporting server. For example: http://sf-ugbu.splwg.com:9704

If you want to have a different name for your reporting folder, you can rename the CCB folder on the server and put the corresponding value on the Reporting options table.

To configure the BI Publisher Server, follow these steps:

1. Login as "Administrator" to BI Publisher Server
2. Go to the **Admin** Tab

In the **JDBC Connection** section under **Data Sources**, add a new data source using **Add Data Source**. Create a new Data Source named CCB with connection details pointing to the CCB database. Test Connection to make sure the Database connection is successful and save changes using Apply.

To define a User for Integration with Oracle Utilities Customer Care and Billing:

1. Log in as Administrator and go to the **Admin** tab. Go to the **Users** section under **Security Center**. Create a new User using **Create User** button. Create a user rptuser and specify the password.
2. Go to the **Roles and Permissions** tab under **Security Center** and use **Create Role** to create a new role. Create a new role called CCB Reports.

Once the role has been created, the role now appears in the Roles and Permissions tab.

For the Role Name CCB Reports just created, click on **Add Folders** to add the CCB sample reports to the Allowed Folders.

For Role Name CCB Reports, click on **Add Data Sources** to add the CCB data source to the Allowed Data Sources.

To include appropriate Roles for Role Name CCB Reports, click on **Add Role**.

To verify Sample BI Publisher reports on Server:

1. Log in to Oracle BI Publisher Server as user rptuser.
2. Verify that all sample reports provided appear in the CCB folder.

Define Company Title and Logo

The sample reports provided by the system expect the company title to be defined on the **Installation Options - Messages** page in Oracle Utilities Customer Care and Billing.

The Company Logo should be defined in a file named "company_logo.gif" and should be placed in the "C:\oracle\BI101332\oc4j_bi\jee\home\default-web-app\logo" folder on the server where Oracle BI Publisher Enterprise is installed.

Oracle Utilities Customer Care and Billing User ID and Report Code.

The Oracle Utilities Customer Care and Billing user id and report Code are defined as the required parameter in every sample report. These parameters are hidden when report is submitted from Oracle Utilities Customer Care and Billing, but must be defined in the report.

How To Copy A Report Definition From The Demonstration Database

In order to use one of the sample reports in your Oracle Utilities Customer Care and Billing region, you must define the meta-data for the report. The demonstration database contains the report definition and all its related data for each sample report.

Refer to the Reports chapter of the Oracle Utilities Customer Care and Billing user guide for instructions on how to copy any / all of the report definitions from the demonstration database to your implementation's database.

Adding Custom Layout to existing reports in BI Publisher

The layout of the sample reports have been created in Microsoft Word using BI Publisher Desktop 10.1.3.2 plug-in. Custom Layouts can be created in BI Publisher. The name of the Custom layout can be specified in the Report Definition: Customer Specific Font/Layout. BI Publisher will then use this custom layout when the report is invoked from Oracle Utilities Customer Care and Billing.

Reports Configuration for Business Objects Enterprise

The Framework supports the integration of Crystal Reports/Business Objects Enterprise integration with the Oracle Utilities Customer Care and Billing application.

No Oracle Utilities Customer Care and Billing centric sample reports are provided.

Business Objects Enterprise™ provides the tools for:

- Making reports available over the web (establishing the required report server processes).
- Integrating reports with the Oracle Utilities Customer Care and Billing system.
- Scheduling reports to run on a regular basis.
- Managing instances of the reports that have been created by a previous run.
- Managing user access to the report instances.

This section assumes that you have already installed Business Objects Enterprise such that requests can be pointed to the Business Objects Enterprise running with Windows Tomcat server. For information about installing Business Objects Enterprise, refer to **Business Objects Enterprise XI 3.1 Edition** on page 4-2 and to the installation instructions provided with the Business Objects Enterprise application.

Note: We used Crystal Reports XI Developer Edition to develop sample reports that are distributed with the Oracle Utilities Customer Care and Billing system. We used Business Objects Enterprise XI 3.1 on Windows with Tomcat server for running reports on the web and for testing the integration with Oracle Utilities Customer Care and Billing. The sample reports and integration may not work with other Business Objects Enterprise versions and products.

Configuring The System To Enable Reports

This section describes the steps needed to configure your system to enable reports.

Configure the System to Invoke Business Objects Enterprise Real-time

In order to invoke Business Objects Enterprise from within Oracle Utilities Customer Care and Billing, the system must be configured so that Oracle Utilities Customer Care and Billing knows how to invoke reports.

Specify Reporting Tool Options

The following information should be defined on Reporting Tool Options table:

- **Reporting Tool User ID** defines the user id to use when logging into Business Objects Enterprise.
- **Reporting Tool Password** defines the password to use when logging into Business Objects Enterprise.
- **Suppress User Credentials** is a security option that tells the system not to send the reporting tool userid and password to the client's browser session in the URL. Instead, the userid and password are retrieved when needed. If you are overriding the standard functionality using reportRedirect.jsp and you need the userid and password to be available to the client session, you should set this value to "N". Otherwise, for security reasons, you should set it to "Y". The default value is "N".
- **Reporting Server** is the web server URL where the reporting tool is installed.

Note: Reporting Server option must include the real server name and not just IP address. Business Object Enterprise SDK uses the machine name for logon.

- **Reporting Folder** defines the name of the directory on the Business Objects web server where Java Service pages (JSP) are located. The Oracle Utilities Customer Care and Billing

reporting tool algorithm constructs the URL to open Business Objects Enterprise based on the information provided on Reporting Options. The reporting tool algorithm assumes that JSP files used for the integration (for example, `logon.jsp`) are located there. The same folder name should be used as a report folder in Business Objects Enterprise where reports are published. See **Prepare BO Enterprise Tomcat Server for Integration** on page 3-10 for more information.

Refer to the Reports chapter of the Oracle Utilities Customer Care and Billing user guide for more information about the reporting options table.

Reporting Tool Algorithm

The base product provides an installation algorithm plug-in spot called Reporting Tool. This plug-in spot should contain an algorithm that invokes the third-party reporting tool real-time. Oracle Utilities Customer Care and Billing provides an algorithm type called RPTE-INV, which invokes Business Objects Enterprise.

This algorithm relies on information defined in the Reporting Options table: the reporting server and folder names, the user name and password for accessing the reporting tool, and the “suppress credentials” flag. The algorithm constructs several strings, for example, the URL of the Java server page in the Reporting Folder on the Business Objects Enterprise server, information about the report being requested and user info in the format expected by Business Objects Enterprise. The Cobol program returns these fields to the browser. The browser then submits these strings as hidden HTML form and opens a Business Objects Enterprise window.

To use the RPTE-INV algorithm type to invoke Business Objects Enterprise, perform the following steps:

- Create an algorithm for this algorithm type.
- On the installation options, add an entry to the algorithm collection with an algorithm entity of Reporting Tool and indicate the algorithm created in the previous step.

Interface with Business Objects Enterprise Batch Scheduler

For many of your reports, you probably want the report to be produced on a regular basis according to a scheduler. The Oracle Utilities Customer Care and Billing reporting solution relies on the Business Objects Enterprise software to provide the batch scheduler functionality. Refer to Business Objects Enterprise documentation for details about configuring the batch scheduler.

Oracle Utilities Customer Care and Billing provides a report history page to display report instances that were produced via the batch scheduler and are stored in a repository. The report history page relies on the reporting tool algorithm to invoke Business Objects Enterprises and display the historic instances for the selected report.

Oracle Utilities Customer Care and Billing provides two batch jobs that can schedule reports in batch - Bill Print and FO Print. Refer to User documentation for more information.

Sample Reports Supplied with the Product

The system provides several sample reports that may be used by your organization as a starting point for creating a new report. The following sections provide instructions on how to set up your implementation environment to use the sample reports.

Refer to the Reports chapter of the Oracle Utilities Customer Care and Billing user guide for a description of each sample report.

How to Use a Sample Report Provided with the System

If you would like to use any of the sample reports, you need to perform some steps to be able to execute them in an implementation environment. This section walks you through the steps needed.

Stored Procedures

Each report has one or more corresponding database stored procedures that store the business logic to fetch the data from the database that is then presented in the report.

Oracle

The prerequisite for Oracle Utilities Customer Care and Billing reports to work against the target database is setting up of a RPTUSER database user. This user should have read access to all Oracle Utilities Customer Care and Billing database objects and execution privilege on the stored procedures that the reports access.

The steps involved in setting up the RPTUSER are:

1. Create the RPTUSER

To create the RPTUSER (if it doesn't exist), navigate to the Database\Oracle folder and edit the file CDX_rptuser.sql to match your requirements. The parameters in this file that need review are: password of the user, default and temporary tablespace names for the user.

Now log into the target database as a DBA user using SQLPLUS and execute the script by entering following command at SQL prompt:

```
SQL> @CDX_rptuser.sql
```

("SQL>" denotes the SQL prompt and doesn't need to be typed).

2. Create or refresh the stored procedures.

Log into the target database as the user that owns Oracle Utilities Customer Care and Billing schema objects using SQLPLUS and execute the script CDX_rptsp.sql by entering the following command at the SQL prompt:

```
SQL> @CDX_rptsp.sql
```

3. Compile the invalid objects.

If you see an Oracle error while executing the step2, execute the database object compilation script CDX_compsp.sql

```
SQL> @CDX_compsp.sql
```

4. Configure security for RPTUSER using the OraGenSec.exe utility.

This involves generating synonyms in RPTUSER and granting it privileges to execute the stored procedures and read the Oracle Utilities Customer Care and Billing tables. The utility prompts you to answer the following questions:

- Enter the Oracle user that owns the schema (e.g. CISADM): **CISADM**
- Enter the password for the CISADM user: **CISADM**
- Enter the name of the Oracle Database: **YOUR_DB**
- Enter a comma-separated list of Oracle users in which synonyms need to be created (for example, cisuser,cisread): **RPTUSER**

The utility runs and configures security for the Oracle Utilities Customer Care and Billing objects.

5. Create the ODBC connection information for the user CDX on the Reports Server. Driver to use CR Oracle Wire Protocol.

Note: On 64-bit Windows machine, there is a 32-bit ODBC Administrator and a 64-bit ODBC Administrator. If you set up a data source (DSN) using the default 64-bit ODBC Administrator then that DSN will not appear for 32-bit applications.

The ODBC Administrator application is called odbcad32.exe for both 32-bit and 64-bit versions.

On 64-bit Windows, the ODBC Administrator is located in the following locations:

32-bit ODBC Administrator: %SystemRoot%\system32\odbcad32.exe

64-bit ODBC Administrator: %SystemRoot%\SysWOW64\odbcad32.exe

Prepare BO Enterprise Tomcat Server for Integration

Note: If you install Business Objects Enterprise in a location other than the default installation directory of C:\Program Files\Business Objects\, adjust the path descriptions to match your actual install directories.

1. Extract the contents of the CCB-V231-Reports.zip file from the installation media and copy the CCB-V231-Reports\CrystalReports\spl-jsp folder to the C:\Program Files\Business Objects\Tomcat55\webapps folder.

The spl-jsp folder contains the Java Server Pages and other files used for integration. It also puts the MessageCatalogRepository.class files in the following folder:

C:\Program Files\Business Objects\Tomcat55\webapps\spl-jsp\WEB-INF\classes\com\splwg\reportServer

2. Copy crystalreportviewer12

This copy must be done while Apache (Tomcat) is running - the war file will be automatically expanded.

Copy the folder crystalreportviewer12 from the following folder:

C:\Program Files\Business Objects\common\4.0\crystalreportviewers12

or C:\Program Files (x86)\Business Objects\common\4.0\crystalreportviewers12

To the following location:

C:\Program Files\Business Objects\Tomcat55\webapps\spl-jsp\crystalreportviewers12

3. Copy jar files

Copy *.jar files from the following folders:

C:\Program Files\Business Objects\common\4.0\java\lib

C:\Program Files\Business Objects\common\4.0\java\lib\external

Along with the subfolder "taglib":

C:\Program Files\Business Objects\common\4.0\java\lib\external\taglib

to the following folder:

C:\Program Files\Business Objects\Tomcat55\webapps\spl-jsp\WEB-INF\lib

4. Edit web.xml

Open web.xml file located in the following folder:

C:\Program Files\Business Objects\Tomcat55\webapps\spl-jsp\WEB-INF

Verify that the web.xml file includes a context parameter for crystal_image_uri that points to the location of a folder created in the step 2: Copy crystalreportviewer12:

```

<!-- Context Param -->
    <context-param>
<param-name>crystal_image_uri</param-name>
<param-value>crystalreportviewers12</param-value>
    </context-param>
<!-- Context Param End -->

<servlet>
    <servlet-name>CrystalReportViewerServlet</servlet-name>
    <servlet-class>
com.crystaldecisions.report.web.viewer.CrystalReportViewerServlet
</servlet-class>
</servlet>

<servlet-mapping>
    <servlet-name>CrystalReportViewerServlet</servlet-name>
    <url-pattern>/CrystalReportViewerHandler</url-pattern>
</servlet-mapping>

```

5. Verify structure of web application

Verify that your web application is set according to the following structure:

/Tomcat55/webapps/spl-jsp/

In the Oracle Utilities Customer Care and Billing, the Reporting Options Table should include the following information about Reporting Server and Folder:

- Reporting Folder: spl-jsp
- Reporting Server:
- Reporting Tool Password:
- Reporting Tool User ID:
- Suppress User Credentials (Y/N):

Note. Server name defined on Reporting Server Options between http:// and port number (if it exists) must match CMS name defined in Business Objects Enterprise. For example, if the Reporting Server is http://nj-pdnt001:8080/, the CMS name is nj-pdnt001.

If you want to have a different name for your reporting folder, you can rename spl-jsp folder on the server and put the corresponding value on the Reporting options table.

6. Restart Tomcat

Type %CATALINA_HOME%\bin\shutdown in the Command Prompt window.

Type %CATALINA_HOME%\bin\startup in the Command Prompt window.

Note. This installation guide assumes that you use Business Object Enterprise server for integration with only one Oracle Utilities Customer Care and Billing environment. If you need to have several Oracle Utilities Customer Care and Billing environments pointed to the same Business Objects Enterprise server, you need to create a new web application - repeat steps Prepare BO Enterprise Tomcat server for integration for a folder that will be used as a root for a web application.

Define Company Title and Logo

The sample reports provided by the system expect the company title to be defined on the Installation Options - Messages page in Oracle Utilities Customer Care and Billing.

The Company Logo should be defined in a file named "company_logo.bmp" and should be placed in the "C:\logo" folder on the server where Business Objects Enterprise is installed.

Define a User for Integration with Oracle Utilities Customer Care and Billing

The user defined on Report Options transaction in Oracle Utilities Customer Care and Billing should exist in Business Objects Enterprise. It is possible to use one of the two users that are provided with every BO installation (Administrator or Guest) or define a new one using Crystal Management Console (for example, CDXUSER).

Unzip Oracle Utilities Customer Care and Billing Report Files

Unzip the CCBCrystalReports.zip file from the installation media into an empty directory. We'll refer to this directory as the reports extract folder.

Note: By default, the reports provided are read only. You will need to reset the permissions on the files before making any changes, for example, to configure the default data source.

Publish the Sample Reports in Business Objects Enterprise

The installation media contains sample reports provided with the system. The report files are in the reports extract folder under ..\CCB-V230-Reports\Crystal\reportFiles. These are the files with a .rpt extension.

Install Business Objects Enterprise. This section assumes that you have already installed Business Objects Enterprise.

The first step you need to take in order to use any of the samples is to publish the report in Business Objects Enterprise. You need to create a folder in Business Objects Enterprise named as defined on Reporting Options table in Oracle Utilities Customer Care and Billing and publish there the report extracted to the reports extract folder. You do not need to publish subreports - they are released as samples.

Please refer to the Business Objects Enterprise documentation for more information.

The remaining topics in this section provide information about settings needed to ensure that the report is accessible via Oracle Utilities Customer Care and Billing.

Configuring the Database Access

The sample reports are written assuming that an ODBC System DSN named CDX is used to define the data source. If you have not defined the data source like this, you must modify the report source to reference the appropriate name. When publishing the sample report in Business Objects Enterprise, verify that the data source defined for the report matches your definition.

During the Business Objects Enterprise database access configuration, you must use the appropriate Crystal supplied ODBC driver when connecting to an Oracle database.

If you are using Oracle ODBC driver, you must select **Procedure Returns Results** option on the **Advanced** tab of the Driver Setup dialog box.

Data source of sample report is defined as stored procedure available under RPTUSER schema. If you have defined stored procedures under a different schema, you must modify the report source to reference the appropriate name.

When publishing a report in Business Objects Enterprise, you are asked for database logon information. The logon user name and password must be the user name and password that has access to the stored procedures related to this report in your database.

Verify Parameter Definition

Once your report has been published, navigate to the Crystal Management Console (CMC). This is the web-based administration component for Business Objects Enterprise and provides access to all administrative functions.

To verify/change the settings of a report in the Crystal Management Console go to the Objects management area and select the desired report by clicking its link located in the Object Title column.

Once you have selected your report, click the Process tab to change the settings.

To set up report parameters follow Parameters link.

If your report requires parameters to be provided by the user, you must configure the parameter settings in the Crystal Management Console to ensure that parameter values are passed from Oracle Utilities Customer Care and Billing when submitting the report via the Report Submission page. If you plan to submit reports from Oracle Utilities Customer Care and Billing, the **Prompt the user for new value(s) when viewing** check box should be checked.

Submitting Reports Through Business Objects Enterprise. If you plan to submit reports from Business Objects Enterprise, you must also define an appropriate initial value for each parameter, if applicable.

Oracle Utilities Customer Care and Billing **User ID and Report Code.** The Oracle Utilities Customer Care and Billing user id and report Code are defined as required parameters in every sample report. These parameters are hidden when report is submitted from Oracle Utilities Customer Care and Billing, but must be defined in the report.

Report Code parameter (P_REPORT_CD) is a required parameter for all reports. If you plan to preview reports from Business Objects Enterprise, do not select **Prompt the user for new value(s) when viewing** check box. You need to populate Report Code value in Crystal Management Console and the preview functionality will use it. Report Submission from Oracle Utilities Customer Care and Billing always populates this parameter behind the scenes.

Verify Authorization Level

To verify the user's access rights, navigate to the **Rights** tab in the Objects management area of the Crystal Management Console and check that Oracle Utilities Customer Care and Billing user has correct security level for the report.

Integration with Oracle Utilities Customer Care and Billing requires an access level of View On Demand for the Oracle Utilities Customer Care and Billing user.

How To Copy A Report Definition From The Demonstration Database

In order to use one of the sample reports in your Oracle Utilities Customer Care and Billing region, you must define the meta data for the report. The demonstration database contains the report definition and all its related data for each sample report.

Refer to the Reports chapter of the Oracle Utilities Customer Care and Billing user guide for instructions on how to copy any or all of the report definitions from the demonstration database to your implementation's database.

Reporting off multi-byte character set databases

Crystal version XI fully supports Unicode, and will automatically convert multi-byte characters in to Unicode output. If you have single-byte Windows environment, you will need to install the language pack and update report font on Report Definition transaction in order to see multi-byte characters in the reports.

Example scenario

- An Oracle database has non-English data such as Traditional Chinese (supports AL32UTF8 character set).
- Business Objects Enterprise XI is installed on the machine with Windows 2000 operating system is English.

Steps to configure the environment on the CE server:

1. Configure the system environment on the database client side to Chinese character code by setting the NLS_LANG variable set to AMERICAN_AMERICA.UTF8 under the registry HKEY_Local_Machine\Software\Oracle\Homeo.
2. Install language pack for Traditional Chinese in Win2000.

Steps to configure Metadata in Oracle Utilities Customer Care and Billing

1. Open **Utilities, Report Definition** transaction. Set **Override Report Font** field to 'MingLiU' for all reports.

Now you will be able to see Chinese data in the reports.

Chapter 4

Additional Products

This section discusses additional products that can be installed and configured for use with Oracle Utilities Customer Care and Billing, including:

- **Business Objects Enterprise XI 3.1 Edition**
- **On-line Document Display with DOC1**
- **On-line Document Display with Oracle Documaker**
- **Point-Of-Sale (POS) Printer Installation**

Business Objects Enterprise XI 3.1 Edition

Oracle Utilities Customer Care and Billing is integrated with Business Objects Enterprise XI 3.1 Release 2 multi language build (MLB) on Windows.

In order to use Business Objects with Oracle Utilities Customer Care and Billing some additional steps should be performed:

- Install all DataDirect ODBC drivers. Drivers can be downloaded from the Business Objects Web site.
- Deploy InfoView and the Business Object Enterprise Admin LaunchPad to Tomcat.
- Deploy the Java Web Component Adapter to Tomcat.

Business Objects Enterprise XI can be downloaded from the Oracle Utilities FTP site. Please contact Oracle Utilities Customer Support for more information.

Note. The machine should not have any previous version of Crystal, Business Objects, or Microsoft SQL Server installed. If the machine has any of the software listed above installed, you need to uninstall it following instructions provided by Business Objects Enterprise. We cannot guarantee that you will be able to install Business Objects Enterprise XI in this case. If the Java SDK is installed before Business Objects Enterprise installation, the Business Objects will only work with Java version 1.4.2. We also recommend that you disable IIS if it already installed.

In addition to this guide, please consult the instructions provided by Business Objects to install Business Objects IX - Professional Edition on Windows.

Installing Business Objects XI Server

Select these specific options during the Business Object Enterprise XI installation setup:

1. When prompted for **Select Client or Server Installation:**
Select the **Perform Server Installation** option - this will install all required application features required for Oracle Utilities Customer Care and Billing to interact with Business Objects IX
2. When prompted for **Install Type:**
Select **New** and ensure **Install MySql Database Server** is selected.
3. When prompted for **Choose Web Component Adapter Type:**
Select **Java application server** and select **Install Tomcat application server** (JDK will be installed).
You do not need to install IIS ASP.Net
4. When prompted to **Configure Tomcat**, you may install Tomcat on any available port.

Note: If you use connection port 80 ensure IIS is disabled

Configure Business Object Enterprise

To deploy to Tomcat:

1. Configure the Java environment variable.
2. Set Tomcat properties.
3. Set up Jar files.
4. Deploy the WAR files.

Please consult the instruction provided by Business Objects in xir2_bip_install_en.pdf

You can find helpful Information on the Business Objects Web site. Please refer to Business Objects knowledge database article ID: c2018319 - How to configure a WAR file that uses the Enterprise XI Release 2 Java SDK.

Refer to the **Chapter 3: Reports Configuration** for information how to configure Business Object Enterprise to interact with Oracle Utilities Customer Care and Billing

After completion of the installation, log on into Business Object Enterprise and verify that it is running.

On-line Document Display with DOC1

Group 1 Software DOC1®, enables Adobe's Portable Document Format (PDF) to be used for on-line viewing and Internet delivery of on-line bills and other documents. This document describes how Oracle Utilities Customer Care and Billing can be integrated with DOC1® to allow bills and letters to be viewed online.

This facility requires the DOC1® software to already be installed. DOC1® can be purchased and licensed separately from GROUP1 Software (<http://www.g1.com>). Please refer to the Software Requirements section in the *Oracle Utilities Customer Care and Billing Installation Guide* for version and installation details.

Supported DOC1 Reports

The following DOC1 online reports are supported for this release of CCB:

- ONLN-BL-DSP - Creates a PDF of bill image by calling Doc1.
- ONLD-LT - Creates a PDF of letter image by calling Doc1.

Installing and Integrating DOC1 Templates with CCB

Follow this process to integrate the supplied DOC1 templates with your CCB installation and to configure your system:

1. Login to the target server hosting the environment that you are setting up for online image display.

2. Initialize the target environment

On Unix:

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

On Windows:

```
%SPLEBASE%\bin\splenvron.cmd -e <SPLENVIRON>
```

3. Add an environment variable DOC1HOSTDIR to the system. The value of DOC1HOSTDIR should be set to the location where the DOC1 software is installed. Ensure that the environment variable DOC1HOSTDIR is set correctly
4. Run the initialSetup utility for the environment to generate the Oracle Utilities Customer Care and Billing related DOC1 INI files:

On Unix:

```
$SPLEBASE/bin/initialSetup.sh
```

On Windows:

```
%SPLEBASE%\bin\initialSetup.cmd
```

5. Stop and start the environment:

On Unix:

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

On Windows:

```
%SPLEBASE%\bin\spl.cmd stop/start
```

6. Copy the file appropriate AppFiles <platform>.jar from the Reports package (Doc1-Templates folder) to a temporary folder on the target server (referred to hereafter as <TEMPDIR>). If you are using FTP to transfer this file to a UNIX server, remember to use the BINARY option for the FTP transfer.

7. Decompress the file:

```
cd <TEMPDIR>
jar -xvf AppFiles-Unix.jar
```

The directory AppFiles will be created.

8. If one does not already exist, create a folder AppFiles under the DOC1 host directory <DOC1HOSTDIR>. Copy the contents of the appropriate AppFiles folder in the <TEMPDIR> to the AppFiles directory DOC1 host directory on the target application server (see the section Software Requirements in the Oracle Utilities Customer Care and Billing *Installation Guide* for installation location). It should be at the same level as generate.
9. Ensure that the Oracle Utilities Customer Care and Billing Administrator user ID (typically cissys) has execute permissions to all files in the <DOC1HOSTDIR>/generate and <DOC1HOSTDIR>/AppFiles folders.

Sample Directory Structure

Directory	Contents
<DOC1HOSTDIR>/generate	DOC1 Binaries
<DOC1HOSTDIR>/AppFiles	CCB templates and driver programs
<DOC1HOSTDIR>/AppFiles/examples	CCB examples and sample extracts

Sample Generated Ini File

The following files will be populated during the execution of the initialSetup utility:

doc1dirfile.ini

```
ONLINE DOC HOST=<DOC1HOSTDIR>
ONLINE DOC TEMPLATE=<DOC1HOSTDIR>/AppFiles
DOC EXTRACT PATH=<SPLAPP>
DOC IMAGE PATH=<SPLEBASE>/splapp/billView/
DOC IMAGE SCRIPT=<DOC1HOSTDIR>/AppFiles/_ccbPrintDoc.sh
URL PREFIX=/spl/billView/
```

billdirfile.ini

```
ONLINE BILL HOST=<DOC1HOSTDIR>
ONLINE BILL TEMPLATE=<DOC1HOSTDIR>/AppFiles/
BILL EXTRACT PATH=<SPLAPP>
BILL IMAGE PATH=<SPLEBASE> /splapp/billView/
BILL IMAGE SCRIPT=<DOC1HOSTDIR>AppFiles/_ccbPrint.sh
URL PREFIX=/spl/billView/
```

Description of On-line Bill Display

The on-line bill display process is an algorithm (ONLN-BL-DSP), which is triggered when the **Display Bill** action button on the Bill Maintenance window is invoked. This algorithm is responsible for extracting bill information for the current bill. The bill information is created as a flat file, which is processed by DOC1® to create a bill image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the bill image.

Refer to the section Background Processes Addendum in the application user documentation for detailed information.

On-line Bill Display Components

The on-line bill display process requires the following components:

The ONLINEBILLINI environment variable

The full path location of the billdirfile.ini is contained in the ONLINEBILLINI environment variable (typically <SPLEBASE>/etc directory). This environment variable must be set when the Oracle Utilities Application Framework is installed initially, or whenever you run the initialSetup utility to ensure that the INI files are generated correctly.

The billdirfile.ini File

The billdirfile.ini file is used by the Online Bill Print Algorithm and the bill image generator script to render the bill image. The INI file contains the following externalized parameters:

- ONLINE BILL HOST=<DOC1 Host Path> - This parameter defines where DOC1 is installed. Value typically <DOC1HOSTDIR>. Value typically <DOC1HOSTDIR>
- ONLINE BILL TEMPLATE=<DOC1 Template Path> - This parameter defines the location of DOC1's template. Value typically <DOC1HOSTDIR>/AppFiles.
- BILL EXTRACT PATH=<Bill Extract Output Path> - This parameter defines the location where the bill print extract program creates its flat file output. Value Typically <SPLAPP>.
- BILL IMAGE PATH=<Full PDF Path> - This parameter defines the location where DOC1 creates the bill image PDF file. Typically <SPLEBASE>/splapp/billView. The DOC1 log files for specific reports are also in this directory.
- BILL IMAGE SCRIPT= <Bill Image Generator Script with full path> - This parameter defines the location of the script that invokes DOC1 to generate the PDF file from the extract file. <DOC1HOSTDIR>/AppFiles/_ccbPrint.sh.
- URL PREFIX=<URL Prefix> - This parameter defines the prefix that will be affixed to the PDF filename in order to compose its full URL when displayed.

Algorithm Type - CIPBONBX

CIPBONBX is the core of the on-line bill display processing. It is responsible for calling the bill extract program and then calling the bill image generator script component, which in turn calls DOC1®. It is also the responsibility of this program to return to the browser the full URL of the bill image, which is in PDF file format.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the ONLINEBILLINI environment variable.

This program utilizes the INI file to determine the target location for the bill extract program and the location of the bill image generator script (see above).

To activate this algorithm, within the application the following steps have to be executed by someone having access to the admin tables, that knows how to set up and define algorithms. (See also the Business Process Guide on Algorithms in the Oracle Utilities Customer Care and Billing user documentation)

- Create an algorithm with the following values:
 - Algorithm code: OB-DISP-DOC1
 - Description: Online Bill Display
 - Algorithm Type: ONLN-BL-DSP
 - Parameter
 - Bill Route Type
- In the Oracle Utilities Customer Care and Billing Application, navigate to the Installation Algorithm screen and add an Installation Algorithm with the following values (this will create a row on the CI_INSTALL_ALG table):
 - INSTALL_OPT_ID: 11111

- INS_ALG_ENTITY_FLG: ONBD
- SEQ_NUM: 1
- ALG_CDOB-DISP-DOC: 1
- VERSION: 1

Bill Image Generator Script

The bill print extract script and DOC1 ini files are provided to assist in the integration of DOC1 into the product. This code is provided as examples only and is not supported as part of the base product.

The Bill Image Generator shell script `_ccbPrint.sh` is invoked by the bill print extract algorithm. The call parameters are based on the contents the `billdirfile.ini` file identified through the `ONLINEBILLINI` environment variable. This script validates the input parameters passed to it in turn calls the main driver `splbill_s5_v3_main_batch_pdf.sh` which in turns call all related bill generation and DOC1 scripts responsible for creating a document image in PDF file. The output from this process as well as the PDF file are placed in the appropriate directory where it can be picked up by the application and displayed in the user's browser (usually `$SPLENVIRON/splapp/billView` folder).

On-Line Document Display Components

DOC1 is responsible for creating a document image in PDF file format based on the document information (from the extract) and template supplied. The below script is used for all other sample reports excluding bill print.

The application will call `_CCBPrintDoc.sh` as defined in the `doc1dirfile.ini` file

This script validates the input and calls the main driver script, sets the template prefix depending on the parameter passed in to it. Each type of document displayed has a different template. Generic scripts handle all the rest of the reports.

For detailed information, see the section Background Processes Addendum in the user documentation.

The on-line document image display process requires the following components:

The ONLINEDOCINI Environment Variable

The full path location of the `doc1dirfile.ini` is contained in the `ONLINEDOCINI` environment variable (typically `<SPLEBASE>/etc/doc1dirfile.ini`). This environment variable must be set when the Oracle Utilities Framework Application is installed initially, or whenever `initialSetup.sh` is run to ensure that the INI files are generated correctly

The doc1dirfile.ini File

This file is used by the Online Image display and the online image generator script to render the bill image. The INI file contains the following externalized parameters:

- `ONLINE DOC HOST=<DOC1 Host Path>` - This parameter defines where DOC1 is installed. Value typically `<DOC1HOSTDIR>`
- `ONLINE DOC TEMPLATE=<DOC1 Template Path>` - This parameter defines the location of DOC1's template files. Value typically `<DOC1HOSTDIR>/AppFiles/`
- `DOC EXTRACT PATH=<Bill Extract Output Path>` - This parameter defines the location where the applicable extract program creates its flat file output. Value Typically `<SPLAPP>`
- `DOC IMAGE PATH=<Full PDF Path>` - This parameter defines the location where DOC1 creates the bill image PDF file. The DOC1 log files for a specific report is also in this directory. Value Typically `<SPLEBASE>/splapp/billView/`

- **DOC IMAGE SCRIPT=** <Bill Image Generator Script with full path> - This parameter defines the location of the script that invokes DOC1 to generate the PDF file from the extract file. Value typically <DOC1HOSTDIR>/AppFiles/_CCBPrintDoc.sh
- **URL PREFIX=** <URL prefix> - This parameter defines the prefix that will be affixed to the PDF filename in order to compose its full URL when displayed. This value dependant on the application middleware (Oracle Application Server, WebLogic, WebSphere).

Algorithm Type

An algorithm type controls each type of document available for display, such as customer letters and bills). Each of these algorithm types has similar processing:

- It calls the appropriate extract algorithm, which returns the various records that contain the information that appears on the printed document.
- It passes these records to the DOC1 software. This software reconstructs the document's image (in a PDF).
- This PDF is returned to the calling program. This program then displays it in a separate page on the user's browser.

Please refer to the Oracle Utilities Customer Care and Billing user documentation for more detailed descriptions of the algorithms that control online image display.

Examples provided

Examples to test the installation, infrastructure, and license are provided in the following directory: ../ AppFiles/examples

After the environment has been set, copy the .DAT files from this directory into the \$SPLAPP directory. Copy the sample*.* to ../ AppFiles folder. The example programs can be run directly from the command line, for example:

- **sample:** to generate an online bill without the GUI
- **sampleletr:** for online letters.

The generated PDF file will be created in \$SPLEBASE/splapp/billView folder The output from the DOC1 generation process will also be copied to this directory.

Note: Additional examples and templates are provided but are not supported for CCB 2.3.1. The only templates that are supported are Online Bill Display and Online Letters.

On-line Document Display with Oracle Documaker

Oracle Documaker enables Adobe's Portable Document Format (PDF) to be used for on-line viewing and Internet delivery of on-line bills and other documents. This section describes how Oracle Utilities Customer Care and Billing can be integrated with Documaker to allow Bills, Letters, Statements, Field Orders and Quotes to be viewed online.

This facility requires the Documaker software to already be installed. Documaker can be purchased and licensed separately from Oracle E-Delivery (<http://edelivery.oracle.com/>).

Supported Documaker Versions

At the time of release the supported versions for Customer Care and Billing 2.3.1 are:

Windows: Documaker 11.4

Linux: Documaker 11.5

Supported Oracle Documaker Reports

The following Documaker online reports are supported for this release of CCB:

- C1-BL-DISP - Creates a PDF of bill image by calling Documaker.
- C1-QT-DISP - Creates a PDF of quote image by calling Documaker.
- C1-LT-DISP - Creates a PDF of letter image by calling Documaker.
- C1-ST-DISP - Creates a PDF of statement image by calling Documaker.
- C1-FO-DISP - Creates a PDF of field order image by calling Documaker.

Installing and Integrating Documaker Templates with CCB

Follow this process to integrate the supplied Documaker templates with your CCB installation and to configure your system:

1. Login to the target server hosting the environment that you are setting up for online image display.
2. Initialize the target environment

On Unix:

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

On Windows:

```
%SPLEBASE%\bin\splenvron.cmd -e <SPLENVIRON>
```

3. Add an environment variable DOCHOSTDIR to the system. The value of DOCHOSTDIR should be set to the location where the Documaker is installed. Ensure that the environment variable DOCHOSTDIR is set correctly
4. Run the initialSetup utility for the environment to generate the Oracle Utilities Customer Care and Billing related Documaker INI files:

On Unix:

```
$SPLEBASE/bin/initialSetup.sh
```

On Windows:

```
%SPLEBASE%\bin\initialSetup.cmd
```

5. Stop and start the environment:

On Unix:

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

On Windows:

```
%SPLEBASE%\bin\spl.cmd stop/start
```

6. Copy the file CCB-OSplatform.jar to a temporary folder on the target server (referred to hereafter as <TEMPDIR>. If you are using FTP to transfer this file to a UNIX server, remember to use the BINARY option for the FTP transfer.
7. Decompress the file:

```
cd <TEMPDIR>
jar -xvf CCB-OSplatform.jar
```

CCB folder will be extracted.
8. If one does not already exist, create a folder CCB under the Documaker host directory <DOCHOSTDIR>. Copy the contents of the appropriate CCB folder in the <TEMPDIR> to the CCB directory Documaker host directory on the target application server (see the section Software Requirements in the Oracle Utilities Customer Care and Billing Installation Guide for installation location). It should be at the same level as FAP folder.
9. Ensure that the Oracle Utilities Customer Care and Billing Administrator userid (typically cissys) has execute permissions to all files in the <DOCHOSTDIR>/FAP and <DOCHOSTDIR>/CCB folders.

Sample Directory Structure

Directory	Contents
<DOCHOSTDIR>/FAP	Documaker Binaries
<DOCHOSTDIR>/CCB	CCB templates and driver programs
<DOCHOSTDIR>/CCB/INPUT	CCB sample extracts
<DOCHOSTDIR>/CCB/DATA	CCB example PDFs

Sample Generated Ini File

The following files will be populated during the execution of the initialSetup utility:

billfiledirectory.ini

```
ONLINE BILL HOST=<DOCHOSTDIR>
ONLINE BILL TEMPLATE=<DOCHOSTDIR>/CCB
BILL EXTRACT PATH=<SPLOUTPUT>
BILL IMAGE PATH=<SPLEBASE>/splapp/billView/
BILL IMAGE SCRIPT=<DOCHOSTDIR>/CCB/_ccbPrint.sh
URL PREFIX=/spl/billView/
```

docfiledirectory.ini

```
ONLINE DOC HOST=<DOCHOSTDIR>
ONLINE DOC TEMPLATE=<DOCHOSTDIR>/CCB/
DOC EXTRACT PATH=<SPLOUTPUT>
DOC IMAGE PATH=<SPLEBASE> /splapp/billView/
DOC IMAGE SCRIPT=<DOCHOSTDIR>CCB/_ccbPrintDoc.sh
URL PREFIX=/spl/billView/
```

Design Element - Documaker Integration

This design element describes using Oracle Documaker to display Bills, Letters, Statements, Field Orders and Quotes.

On-line Bill Display Components

The on-line bill display process requires the following components:

Plug-in Spot: Installation - Online Bill Display

The plug-in spot is used to generate a Bill Image.

Algorithm Type: Create PDF of bill image by calling Documaker (C1-BL-DISP) (New)

A new algorithm C1-BL-DISP (CIPBBLDX) will be created for on-line bill display using Documaker which is triggered when the Display Bill action button on the Bill Maintenance window is invoked. This algorithm is responsible for calling the bill extract program and passing the bill information flat file to the Bill Image Generator script to create a bill image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the bill image.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the BILLDISPINI environment variable.

This program utilizes the INI file to determine the target location for the bill extract program and the location of the bill image generator script (see below).

To activate this algorithm, within the application the following steps have to be executed by someone having access to the admin tables, that knows how to set-up and define algorithms. (See also the Business Process Guide on Algorithms)

1. Create an algorithm with the following values:
 - Algorithm code: CM-BL-DISP
 - Description: Online Bill Display
 - Algorithm Type: C1-BL-DISP
 - Parameter
 - Bill Route Type
2. In the Oracle Customer Care and Billing Application, navigate to the Installation Algorithm screen and add an Installation Algorithm with the following values (this will create a row on the CL_INSTALL_ALG table):
 - INS_ALG_ENTITY_FLG : ONBD
 - SEQ_NUM : 1
 - ALG_CD : CM-BL-DISP
 - VERSION : 1

Bill Image Generator Script

The Bill Image Generator script _ccbPrint.sh or _ccbPrint.cmd is invoked by the bill print extract algorithm. The call parameters are based on the contents of the billfiledirectory.ini file identified through the BILLDISPINI environment variable. This script validates the input parameters passed to it, sets the environment variables for input file, output file and log file and calls the main driver BillRun.sh /BillRun.cmd. The driver file will in turn call the Oracle Documaker scripts. The output from this process as well as the PDF file are placed in the appropriate directory from the billfiledirectory.ini file where it can be picked up by the application and displayed in the user's browser (usually \$SPLEBASE/splapp/billView or %SPLEBASE%\splapp\billView folder).

The path for the input and output files is specified in the fsisys.ini file and Documaker reads the INI file option values in lower case. There will be an error in UNIX if the path for the input/output files has directory/file names not in lower case. To avoid this error, the input file will be copied to an intermediate file with the input file name in lower case in documaker/11.4/CCB/data folder and the output file from the same data folder will be copied to the original output directory specified in the billfiledirectory.ini file.

BILLDISPINI environment variable

The full path location of the billfiledirectory.ini is contained in the BILLDISPINI environment variable (typically <SPLEBASE>/etc directory).

The billfiledirectory.ini File

The billfiledirectory.ini file is used by the Bill Print Algorithm to render the bill image.

The INI file contains the following externalized parameters:

- **ONLINE BILL HOST**=<Oracle Documaker Host Path> - This parameter defines where Oracle Documaker is installed. Value typically <DOCHOSTDIR> (note that FAP will be a subfolder)
- **ONLINE BILL TEMPLATE**=<Oracle Documaker Template Path> - This parameter defines the location of Oracle Documaker's template. Value typically <DOCHOSTDIR>/CCB
- **BILL EXTRACT PATH**=<Bill Extract Output Path> - This parameter defines the location where the bill print extract program creates its flat file output. Value Typically <SPLOUTPUT>
- **BILL IMAGE PATH**=<Full PDF Path> - This parameter defines the location where Documaker creates the bill image PDF file. Value typically <SPLEBASE>/splapp/billView. The Documaker log files for a specific report is also in this directory.
- **BILL IMAGE SCRIPT**= <Bill Image Generator Script with full path> - This parameter defines the location of the script that invokes Oracle Documaker to generate the PDF file from the extract file. <DOCHOSTDIR>/CCB/_ccbPrint.sh or _ccbPrint.cmd
- **URL PREFIX**=<URL Prefix> - This parameter defines the prefix that will be affixed to the PDF filename in order to compose its full URL when displayed. This value dependant on the application middleware (WebLogic, WebSphere, Tomcat)

On-line Quote Display Components

Plug-in Spot: Installation - Online Quote Display

The plug-in spot is used to generate a Quote Image.

Algorithm Type: Create PDF of Quote image by calling Documaker (C1-QT-DISP) (New)

A new algorithm C1-QT-DISP (CIPCQTDIX) will be created for on-line quote display using Documaker which is triggered when the Display Quote action button on the Quote Maintenance window is invoked. This algorithm is responsible for calling the quote extract program and passing the quote information flat file to the Document Image Generator script to create a quote image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the quote image.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the DOCDISPINI environment variable.

This program utilizes the INI file to determine the target location for the quote extract program and the location of the document image generator script (see below).

To activate this, a new algorithm of this type should be created and should be plugged from the Installation Options.

Document Image Generator Script

The Document Image Generator script `_ccbPrintDoc.sh` or `_ccbPrintDoc.cmd` is invoked by the various document extract algorithms. The call parameters are based on the contents of the `docfiledirectory.ini` file identified through the `DOCDISPINI` environment variable. This script validates the input parameters passed to it, sets the environment variables for input file, output file and log file and calls the main driver depending on the document type. The driver file will in turn call the Oracle Documaker scripts. The output from this process as well as the PDF file are placed in the appropriate directory from the `docfiledirectory.ini` file where it can be picked up by the application and displayed in the user's browser (usually `$SPLEBASE/splapp/billView` or `%SPLEBASE%\splapp\billView` folder).

The path for the input and output files is specified in the `fsisys.ini` file and Documaker reads the INI file option values in lower case. There will be an error in UNIX if the path for the input/output files has directory/file names not in lower case. To avoid this error, the input file will be copied to an intermediate file with the input file name in lower case in `documaker/11.4/CCB/data` folder and the output file from the same data folder will be copied to the original output directory specified in the `docfiledirectory.ini` file.

DOCDISPINI environment variable

The full path location of the `docfiledirectory.ini` is contained in the `DOCDISPINI` environment variable (typically `<SPLEBASE>/etc` directory).

The docfiledirectory.ini File

The `docfiledirectory.ini` file is used by the various Document Print Algorithms to render the document image.

The INI file contains the following externalized parameters:

- `ONLINE DOC HOST=<Oracle Documaker Host Path>` - This parameter defines where Oracle Documaker is installed. Value typically `<DOCHOSTDIR>` (note that FAP will be a subfolder)
- `ONLINE DOC TEMPLATE=<Oracle Documaker Template Path>` - This parameter defines the location of Oracle Documaker's template. Value typically `<DOCHOSTDIR>/CCB`
- `DOC EXTRACT PATH=<Document Extract Output Path>` - This parameter defines the location where the various document print extract programs create their flat file output. Value Typically `<SPLOUTPUT>`
- `DOC IMAGE PATH=<Full PDF Path>` - This parameter defines the location where Documaker creates the document image PDF file. Value typically `<SPLEBASE>/splapp/billView` The Documaker log files for a specific report is also in this directory.
- `DOC IMAGE SCRIPT= <Document Image Generator Script with full path>` - This parameter defines the location of the script that invokes Oracle Documaker to generate the PDF file from the extract file. `<DOCHOSTDIR>/CCB/_ccbPrintDoc.sh` or `_ccbPrintDoc.cmd`
- `URL PREFIX=<URL Prefix>` - This parameter defines the prefix that will be affixed to the PDF filename in order to compose its full URL when displayed. This value dependant on the application middleware (WebLogic, WebSphere, Tomcat)

On-line Letter Display Components

Plug-in Spot: Installation - Online Letter Image

The plug-in spot is used to generate a Letter Image.

Algorithm Type: Create PDF of Letter image by calling Documaker (C1-LT-DISP) (New)

A new algorithm C1-LT-DISP (CIPCLTDX) will be created for on-line letter display using Documaker which is triggered when the Display Letter action button on the Customer Contact Maintenance window is invoked. This algorithm is responsible for calling the letter extract program and passing the letter information flat file to the Document Image Generator script to create a letter image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the letter image.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the DOCDISPINI environment variable.

This program utilizes the INI file to determine the target location for the letter extract program and the location of the document image generator script.

To activate this, a new algorithm of this type should be created and should be plugged from the Installation Options.

On-line Plug-in Spot: Installation - Online Letter Image

The plug-in spot is used to generate a Letter Image.

Algorithm Type: Create PDF of Letter image by calling Documaker (C1-LT-DISP) (New)

A new algorithm C1-LT-DISP (CIPCLTDX) will be created for on-line letter display using Documaker which is triggered when the Display Letter action button on the Customer Contact Maintenance window is invoked. This algorithm is responsible for calling the letter extract program and passing the letter information flat file to the Document Image Generator script to create a letter image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the letter image.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the DOCDISPINI environment variable.

This program utilizes the INI file to determine the target location for the letter extract program and the location of the document image generator script.

To activate this, a new algorithm of this type should be created and should be plugged from the Installation Options.

Statement Display Components

Plug-in Spot: Installation - Online Statement Image

The plug-in spot is used to generate a Statement Image.

Algorithm Type: Create PDF of Statement image by calling Documaker (C1-ST-DISP) (New)

A new algorithm C1-ST-DISP (CIPBSTDX) will be created for on-line Statement display using Documaker which is triggered when the Display Statement action button on the Statement Maintenance window is invoked. This algorithm is responsible for calling the Statement extract program and passing the Statement information flat file to the Document Image Generator script to create a Statement image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the Statement image.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the DOCDISPINI environment variable.

This program utilizes the INI file to determine the target location for the Statement extract program and the location of the document image generator script.

To activate this, a new algorithm of this type should be created and should be plugged from the Installation Options.

On-line Field Order Display Components

Plug-in Spot: Installation - Online Field Order Image

The plug-in spot is used to generate a Field Order Image.

Algorithm Type: Create PDF of Field Order image by calling Documaker (C1-FO-DISP) (New)

A new algorithm C1-FO-DISP (CIPOFODX) will be created for on-line Field Order display using Documaker which is triggered when the Display Field Order action button on the Field Order Maintenance window is invoked. This algorithm is responsible for calling the Field Order extract program and passing the Field Order information flat file to the Document Image Generator script to create a Field Order image in PDF format. The URL of this PDF file is then returned back to the client browser, which renders the Field Order image.

To make this program flexible, its configurable parameters are stored in an INI file. The full path of the INI file is defined by the DOCDISPINI environment variable.

This program utilizes the INI file to determine the target location for the Field Order extract program and the location of the document image generator script.

To activate this, a new algorithm of this type should be created and should be plugged from the Installation Options.

Examples provided

Examples to test the installation, infrastructure are provided in the following directory:

/CCB/input/examples

Review the sample scripts samplebill.sh/.cmd to generate an online bill without the GUI and sampleletr.sh/.cmd for online letters.

The generated PDF file will be created in .../CCB/data folder. The output from the Oracle Documaker generation process will also be copied to this directory.

Point-Of-Sale (POS) Printer Installation

The OLE for POS Application Development Kit (OPOS ADK) is a Component Object Model (COM) software package developed by a group of Point-Of-Sale (POS) device manufacturers in partnership with Microsoft. It implements a set of standard interfaces that may be invoked by an application program to control a supported set of Point-Of-Sale devices.

The software used during development was obtained without charge by contacting Epson USA in Long Beach, California. There should be extensive documentation pertaining to the use of the software included as part of the Application Development Kit.

Epson USA is one of the principal members of the OLE for Retail POS Committee that developed the OLE for POS Application Development Kit. Other principal members are Fujitsu and NCR.

The Point-Of-Sale printer must be one of the supported devices listed in the documentation provided with the OLE for POS Application Development Kit. Although other printers might work, it is almost certain that the output will be incorrect.

Installation

1. Obtain the latest version of the OLE for POS Application Development Kit (OPOS ADK) and install the software.
2. Configure the installation with the aid of the *OPOS ADK User's Guide*, which should have complete instructions for both installation and setup.
3. During the configuration, set the Logical Device Name (LDN) for the printer that is connected to the client machine to POSPRTR. The interface from Oracle Utilities Customer Care and Billing to the OLE for POS software uses the logical device name of POSPRTR for the device to print to. If the Logical Device Name is set to anything else, the application returns errors when printing is attempted.
4. On the application server, install the following files in the path \$SPLBASE/splapp/applications/root/c1/cm/ :

cm_POSPrint.js

Open this file and verify that the value of the variable of paymentQuickAddPopUpExists is set to 'true'.

PayEventPOSPrinter.html

PayQuickAddPOSPrinter.html

These files are available from your implementation team.

The directory path specified above may not exist. If it does not, it must be created and the files installed there. The application looks for these files in this location and the print functions do not work if they are placed elsewhere.

5. On the client machine, open the Web browser. Reset the local intranet security settings such that the browser will permit the free use of ActiveX objects. In Internet Explorer, go to **Tools, Internet Options**, select the **Security** tab, and click **Local Intranet** then **Custom Level**. Enable the options for **Run ActiveX controls and plug-ins**, **Initialize and script ActiveX controls not marked as safe**, and **Script ActiveX controls marked safe for scripting**. If this is not done, the printing functions do not work.

Special Considerations

- The printer *must not* be installed at LPT1 via the operating system's hardware/printer installation services. If it is, the ActiveX software cannot control it and errors result.

- If desired, the content and format of the printer output may be changed to suit your business requirements. The following is a list of the source code files that may be edited to accomplish this:
 - \$SPLEBASE/splapp/applications/root/c1/cm/py/POSPrinter/PayEventPOSPrinter.html
 - \$SPLEBASE/splapp/applications/root/c1/cm/py/POSPrinter/PayQuickAddPOSPrinter.html
 - \$SPLEBASE/splapp/applications/root/c1/py/payEvent/paymentEventPrintControl.xml
 - \$SPLEBASE/splapp/applications/root/c1/py/payEvent/paymentEventPrintControl.xjs
 - \$SPLEBASE/splapp/applications/root/c1/py/payQuickAdd/paymentQuickAddPrintControl.xml
 - \$SPLEBASE/splapp/applications/root/c1/py/payQuickAdd/paymentQuickAddPrintControl.xjs
- It is beyond the scope of this section to provide comprehensive instructions regarding the customization of printer output. Careful study of the documentation for the OPOS standard interface, the data structure definitions for the relevant Oracle Utilities Customer Care and Billing components, and the existing JavaScript should provide sufficient knowledge from which a successful customization can proceed.
- Other than those requirements already set forth for a Oracle Utilities Customer Care and Billing workstation, there are no special requirements for a PC using a Point-Of-Sale printer. The application is configured for use with a printer connected to the PC via a parallel port; installation of a USB printer requires additional steps that are covered in the OLE for POS documentation.

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