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ORMB Reporting - User Guide

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Oracle Revenue Management and Billing Reporting User Guide

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Preface

About This Document

This document will help you to understand ORMB reporting which is a unique platform that enables customers to uncover new insights and make faster, more informed business decisions by offering with best-in-class enterprise reporting.

- You need to deliver customized reports to different people in different departments and to your customers on time
- Allows implementers to efficiently create and update document templates
- Supports web based reporting

Intended Audience

This document is intended for the following audience:

- End-users
- Implementation Team
- Consulting Team
- Development Team

Organization of the Document

- The information in this document is organized into the following sections:

Section No.	Section Name	Description
Section 1	Overview	Explains the ORMB reporting.
Section 2	ORMB Frameworks	This section introduces the frameworks provided by ORMB and explains how you can use them to generate different reports.
Section 3	ORMB FOP framework Using Groovy	Explains how to use Groovy to generate different reports.

Related Documents

You can refer to the following documents for more information:

Document	Description
Oracle Revenue Management and Billing Banking User Guide	Lists and describes various banking features in Oracle Revenue Management and Billing. It also describes all screens related to these features and explains how to perform various tasks in the application.
User Guide For Report Generation Using ORMB Framework	Describes how to use reporting screens to generate reports.
User Guide for Letter and Bill PDF Generation Using FOP	Describes how to install and use apache FOP embedded framework to generate Bill's and Letter's or related documents.

Contents

1. Overview

Oracle Revenue Management and Billing Report provides different forms of report generation. This tool allows you to generate different reports or use the existing report formats as a base to create a new report.

The Oracle Revenue Management and Billing Reporting engine easily integrates into any existing infrastructure. It provides customizable design and data elements. The reports can be generated in various formats such as PDF, CSV, XML formats. The ORMB Report generation framework provides you an additional benefit of creating reports from Custom FOP Templates and API Access from Groovy.

2. ORMB Frameworks

This section introduces the frameworks provided by ORMB and explains how you can use them to generate different reports. The 2 frameworks are listed below:

1. ORMB Framework
2. Apache FOP framework template

2.1 Reporting Using ORMB Framework Feature

The ORMB Reports using ORMB framework feature consists of the following zones:

2.1.1 Submit Report Zone

This is an Explicit Object Map type zone which contains on UI map named 'C1-ReportType'. This contains reports that you can use for reporting or as a starting point for creating a new report. You can use this UI map to add some more reporting UI maps or navigation of custom reports.

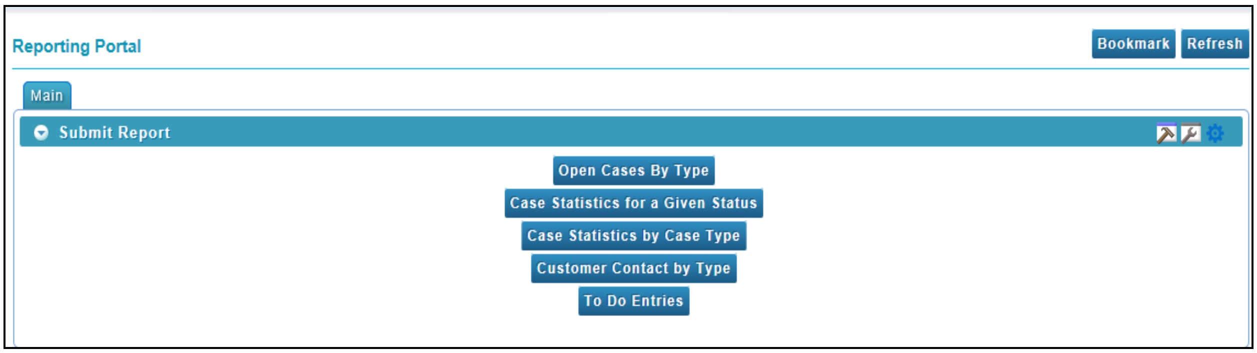

Figure 1: Submit Report Zone

2.1.2 BPA Script

This script will be used to configure steps of report display. Using this script, users can navigate from submit Report screen to Report detailed screen.

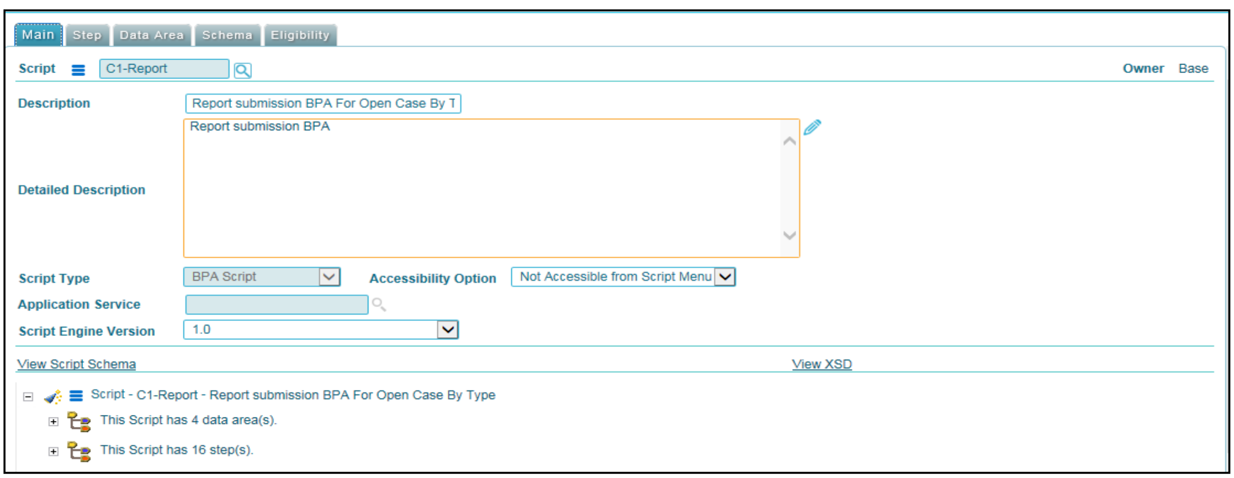

Figure 2: BPA Script

The script contains total 16 steps which are used to display final report.

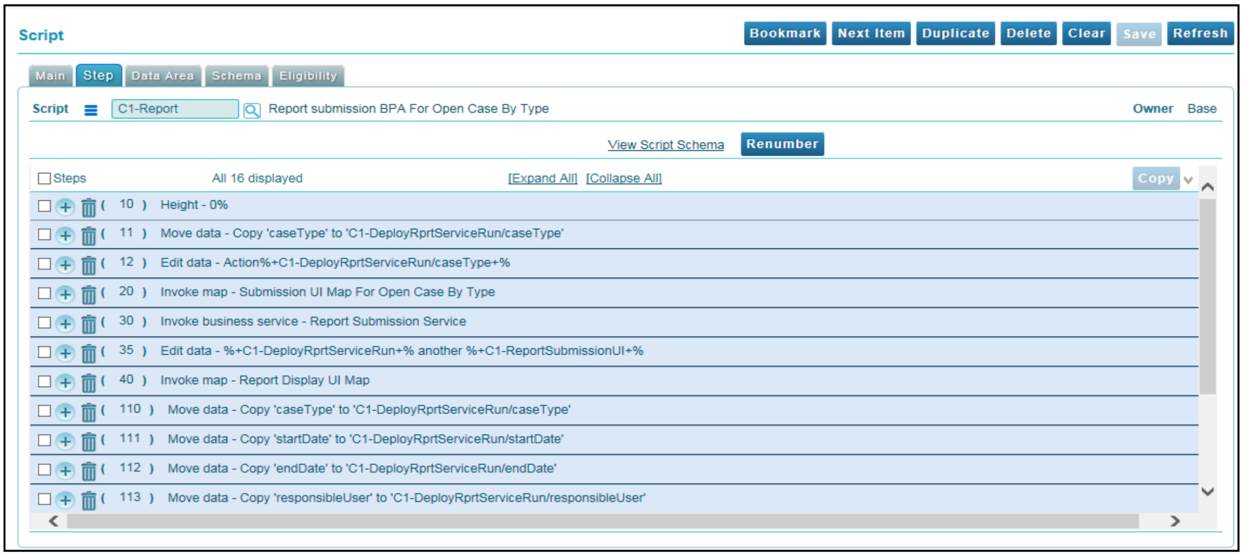

Figure 3: Steps

The Data Area within script has 3 UI maps and 1 Business Service (BS). The below mentioned data area types relate to UI:

- **C1-ReportSubmission** - This UI map is responsible to take user input and pass it to the BS.
- **C1-ChartDetailsUI map** - Once data is received from BS by using framework graph feature, it generates graphs and displays the same on the screen. If there is no data against entered criteria, it will display a blank screen.

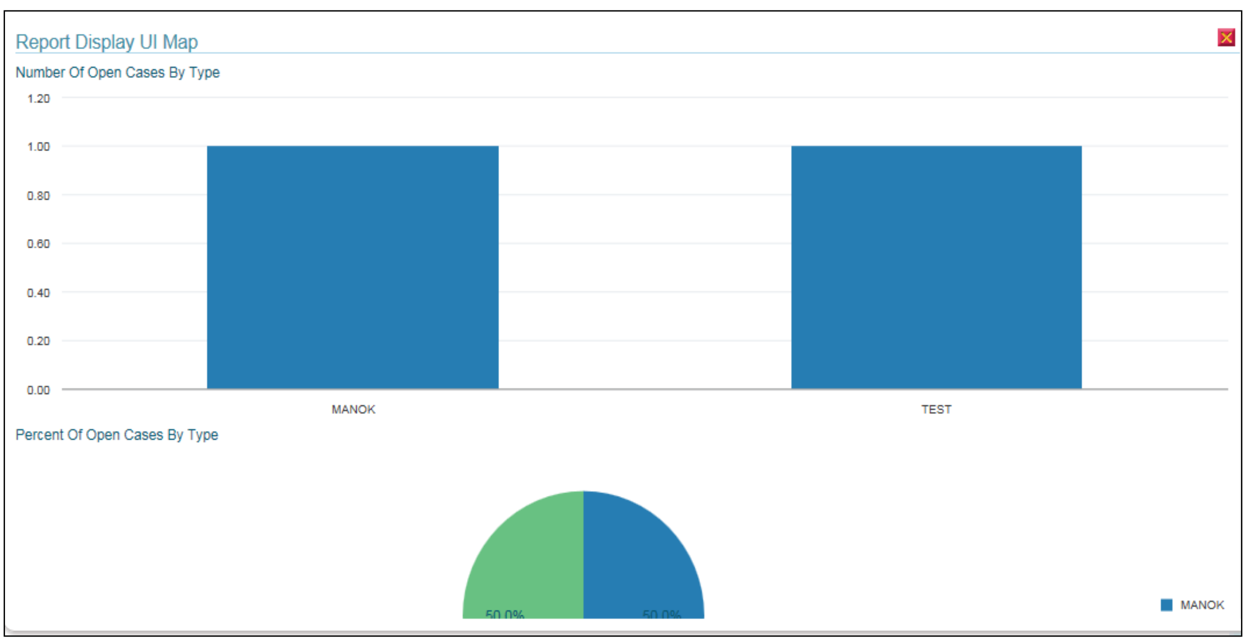

Figure 4: C1-ChartDetailsUI map

- **C1-ReportDisplayUI** – You can navigate to report details screen by clicking the chart region. The actual records are displayed

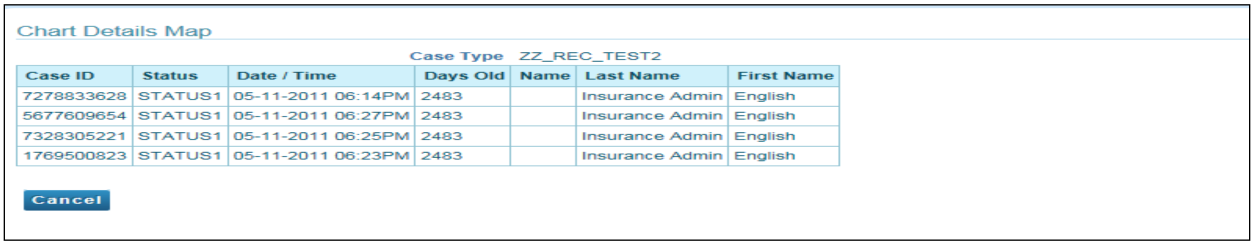

Chart Details Map

Case Type ZZ_REC_TEST2

Case ID	Status	Date / Time	Days Old	Name	Last Name	First Name
7278833628	STATUS1	05-11-2011 06:14PM	2483		Insurance Admin	English
5677609654	STATUS1	05-11-2011 06:27PM	2483		Insurance Admin	English
7328305221	STATUS1	05-11-2011 06:25PM	2483		Insurance Admin	English
1769500823	STATUS1	05-11-2011 06:23PM	2483		Insurance Admin	English

Cancel

Figure 5: C1-ReportDisplayUI

The below mentioned data area type relates to Business Service:

- **C1-DeployRprtServiceRun -** Once user fill all above details and click on submit button all input through BPA will send to the BS and this BS will get the all data from database and send back to the chart details UI map.

2.1.3 List of Reports Bundled With the Application

ORMB provides you with five different reports that you can use for reporting or as a starting point for creating a new report.

2.1.3.1 Open Cases By Type (CI_CSEOPN)

This type of migration request defines a set of migration plans to be logically included together as part of a migration.

The Open Cases by Type (CI_CSEOPN) report allows you to view cases that are currently open. The data is grouped based on the case type. For each case type, the report shows:

- Number of open cases by age bucket (the last 3 parameters control the size (in days) of each bucket)
- Percentage of open cases by age bucket
- Details of the open cases

To generate the CI_CSEOPN report:

1. From the Admin Menu, select R and then click Report Submission.
2. Reporting Portal screen appears. The available report submission options are displayed.
3. Click **Open Cases By Type**. The ‘Submission UI Map For Open Case By Type’ screen appears with the following parameters:

Field Name	Field Description	Mandatory (Yes or No)
Start Date (YYYY-MM-DD)	Used to search for cases that are created on or after the specified date and are still open. **Note:** If you do not specify the start date, the system sets the start date to the current date minus seven days.	No
End Date (YYYY-MM-DD)	Used to search for cases that are created on or before the specified date and are still open. **Note:** If you do not specify the end date, the system sets the current date as the end date.	No
Case Type	Used to specify the case type. **Note:** If you specify the case type, only open cases of that type are listed in the report.	No
Responsible User	Used to specify the user name. **Note:** If you specify the user name, only open cases that are handled by that user are listed in the report.	No
First Bucket High Limit	Used to group cases that are open for less than or equal to the specified number of days.	Yes
Second Bucket High Limit	Used to group cases that are open for less than or equal to the specified number of days, but greater than the number of days specified in the First Bucket High Limit field.	Yes
Third Bucket High Limit	Used to group cases that are open for less than or equal to the specified number of days, but greater than the number of days specified in the Second Bucket High Limit field.	Yes

4. Enter the parameters based on which you want to generate the report.
5. Click Submit. The report opens directly in application using UI MAP.
6. Click on the graphs generated to open the detailed report.

2.1.3.2 Case statistics for a given status (CI_CSESGS)

The Case Statistics for a Given Status (CI_CSESGS) report allows you to view cases of a given case type that transitioned to a given status within a given date range. It also shows the number and percentage of cases grouped by the time it took to reach the status in the graphical format. These statistics are grouped into age buckets whose size (in days) is controlled by the following parameters:

- First Bucket High Limit
- Second Bucket High Limit
- Third Bucket High Limit

In addition, this report shows the minimum, maximum, average, and median time taken to reach the status.

To generate the CI_CSESGS report:

1. From the Admin Menu, select R and then click Report Submission.
2. Reporting Portal screen appears. The available report submission options are displayed.
3. Click **Case Statistics for a Given Status**. The 'Submit Case Statistics for a Given Status' screen appears with the following parameters:

Field Name	Field Description	Mandatory (Yes or No)
Start Date (YYYY-MM-DD)	Used to search for cases of a given case type that transitioned to a given status on or after the specified date. **Note:** If you do not specify the start date, the system sets the start date to the current date minus seven days.	No
End Date (YYYY-MM-DD)	Used to search for cases of a given case type that transitioned to a given status on or before the specified date. Note: If you do not specify the end date, the system sets the current date as the end date.	No
Case Type	Used to specify the case type for which you want to generate the report.	Yes
Case Status	Used to specify the case status for which you want to generate the report.	Yes
Responsible User	Used to specify the user name. Note: If you specify the user name, only cases that are handled by that user are listed in the report.	No

Field Name	Field Description	Mandatory (Yes or No)
First Bucket High Limit (in days)	Used to group cases that took less than or equal to the specified number of days to reach a given status.	No
Second Bucket High Limit (in days)	Used to group cases that took less than or equal to the specified number of days, but greater than the number of days specified in the First Bucket High Limit field to reach a given status.	No
Third Bucket High Limit (in days)	Used to group cases that took less than or equal to the specified number of days, but greater than the number of days specified in the Second Bucket High Limit field to reach a given status.	No

4. Enter the parameters based on which you want to generate the report.
5. Click Submit. The report opens directly in application using UI MAP.
6. Click on the graphs generated to open the detailed report.

2.1.3.3 Case statistics by case type (CI_CSESTS)

The Case Statistics by Case Type (CI_CSESTS) report allows you to view the number and percentage of cases that are open and/or closed. This report provides two types of statistics

- Open cases whose creation date falls between the input date range (inclusive)
- Closed cases whose closing date falls between the input date range (inclusive)

The third parameter is only used if you want to restrict the statistics to only open or closed cases. If you leave this parameter blank, both open and closed statistics will be produced. The following information is provided:

- Number of cases by type
- Percentage of cases by type

To generate the CI_CSESTS report:

1. From the Admin Menu, select R and then click Report Submission.
2. Reporting Portal screen appears. The available report submission options are displayed.
3. Click **Case Statistics by Case Type**. The ‘Case Statistics by Case Type’ screen appears with the following parameters:

Field Name	Field Description	Mandatory (Yes or No)
Start Date (YYYY-MM-DD)	Used to search for the following: • Cases that are created on or after the specified date and are currently open Cases that are closed on or after the specified date	No
End date (YYYY-MM-DD)	Used to search for the following: • Cases that are created on or before the specified date and are currently open Cases that are closed on or before the specified date	No
Case Condition	Used to indicate whether you want to generate the report for open or closed cases. • OPEN • CLSD If you want to generate the report for both open and closed cases, leave this field blank.	No

4. Enter the parameters based on which you want to generate the report.
5. Click **Submit**. The report opens directly in application using UI MAP.
6. Click on the graphs generated to open the detailed report.

2.1.3.4 Customer Contact By Type (CI_CUSTCN)

This report lists all customer contacts in the system created within the input date range. You may optionally restrict the report to customer contacts for a given Customer Contact Type / Class (parameter 3/4). Note, the information on this report is shown in both textual and graphical formats.

The Customer Contact by Type (CI_CUSTCN) report allows you to view all customer contacts that are created for a given contact class and contact type within a given date range. It displays information both in textual and graphical formats.

To generate the CI_CUSTCN report:

1. From the Admin Menu, select R and then click Report Submission.
2. Reporting Portal screen appears. The available report submission options are displayed.
3. Click **Customer Contact By Type**. The ‘Customer Contact by Type’ screen appears with the following parameters:

Field Name	Field Description	Mandatory (Yes or No)
Start Date (YYYY-MM-DD)	Used to search for person's contacts that are created on or after the specified date.	No
End date (YYYY-MM-DD)	Used to search for person's contacts that are created on or before the specified date.	No
Customer Contact Type	Used to specify the customer contact type for which you want to generate the report. If you want to generate the report for all contact types within a given contact class, just specify the customer contact class. However, if you want to generate the report for a given contact type within a given contact class, then specify customer contact class as well in the next field.	No
Customer Contact Class	Used to specify the customer contact class for which you want to generate the report.	No

4. Enter the parameters based on which you want to generate the report.
5. Click **Submit**. The report opens directly in application using UI MAP.
6. Click on the graphs generated to open the detailed report.

2.1.3.5 To do entries (CI_TDENTR)

The To Do Entries (CI_TDENTR) report allows you to view the total number of To Do entries that are open or being worked on for each To Do type. It displays information both in textual and graphical formats.

Note: You can limit the report to entries in a given status by specifying the desired status (open or being worked) below. If you don't specify a status, all open and being worked To Do entries will appear on this report.
You can also limit the report to entries of a given To Do Type by specifying the desired To Do Type below. If you don't specify a To Do Type, all To Do Types with at least one entry in the open / being worked state will appear on this report.

To generate the CI_TDENTR report:

1. From the Admin Menu, select R and then click Report Submission.
2. Reporting Portal screen appears. The available report submission options are displayed.
3. Click **To Do Entries**. The 'To Do Entries' screen appears with the following parameters:

Field Name	Field Description	Mandatory (Yes or No)
To Do Entry Status	Used to include To Do entries with the specified status in the report. **Note:** If you leave this field blank, the report shows To Do entries with all statuses.	No
To Do Type	Used to include To Do entries with the specified To Do type in the report. **Note:** If you leave this field blank, the report shows To Do entries with all To Do types.	No

4. Enter the parameters based on which you want to generate the report.
5. Click **Submit**. The report opens directly in application using UI MAP.
6. Click on the graphs generated to open the detailed report.

2.2 Reporting Using Apache FOP framework template

What is Apache-FOP?

Apache FOP (Formatting Objects Processor) is a print formatter driven by XSL formatting objects. It is a Java application that reads a formatting object tree conforming to the XSL 1.1 Recommendation (05 December 2006) and then turns it into a PDF document or other output formats and allows you to preview it directly on screen.

It is a Java application that reads a Formatting Object (FO) tree and renders it to a specified output such as PDF, PS, XML, etc. The primary output target is PDF.

Refer official Apache FOP site at https://xmlgraphics.apache.org/fop/

The link for the github repo -> https://github.com/apache/fop

Note: Currently we support ORMB FOP reporting feature only to BILL and Letter PDF generation.

The goal of this **Quick Start Guide** is to help novice users get Apache FOP up and running quickly. Typically, you'll need to:

1. Install FOP in ORMB
2. Configure ORMB FOP Reporting
3. Develop FOP template (XSL development)
4. Upload FOP templates using ‘Reporting Template Upload’ UI.
5. Develop an ORMB algorithm.
6. Call ORMB FOP framework API to generate PDF reports Bill and Letters.

2.2.1 Install FOP in ORMB

To configure and install FOP in ORMB framework, refer
Oracle Revenue Management and Billing Reporting Installation Guide.

2.2.2 Configure FOP in ORMB

ORMB Reporting tool allows you to configure FOP for Bill and Letter Templates.

To configure FOP for Bill:

1. From the Admin Menu, select I and then click Installation Options - Framework. The Installation Options - Framework screen appears.
2. Click the Algorithms tab
3. Go to 'Online Bill Display' in System Event and attach C1_FOPONBL to the **Online Bill Display** system event.

   C1-FOPONBL is the algorithm code for the algorithm used to create an online bill view. The below table gives an overview of this algorithm:

Field	Description
Algorithm Code	C1_ FOPONBL
Description	This Algorithm is created for FOP online bill view.
Algorithm Type	C1_FOPONBL
Algorithm Type Description	This Algorithm is created for FOP online bill view. It identifies respective algorithms based on the bill route type configuration corresponding to respective bills. And call FOP code to generate pdf files .To generate PDF file it will use FOP xsl template which is uploaded from Reporting template upload screen of admin menu. And by using extract algorithm configured on BILL ROUTE TYPE generate the extract XML. And finally by using FOP API it will generate the PDF file which will be stored at output folder of reporting directory.

To configure FOP for Letter templates:

1. From the Admin Menu, select **I** and then click Installation Options - Framework. The Installation Options - Framework screen appears.
2. Click the Algorithms tab.
3. Go to 'Online Letter Image' in System Event and attach C1_ FOPLTRALG to the **Online Letter Image** system event.

The table displayed below gives an overview of this algorithm:

Algorithm Code	C1_ FOPLTRALG
Description	Wrapper Algorithm Type for FOP Online Letter Display
Algorithm Type	C1_FOPLTRALG
Algorithm Type Description	Wrapper algorithm will internally call letter extract algorithm as per the Letter Template configuration. It will invoke external system interface to send request to external system. It will extract URL from the response and present bill online.

2.2.3 Develop template (XSL development)

To produce a PDF file from XML file, we need an XSLT stylesheet that converts the XML to XSL-FO. This is the first step in the processing chain. The second step will be done by FOP when it reads the generated XSL-FO document and formats it to a PDF document. You can copy the following minimal XSLT stylesheet.

To create a new FOP template, refer Oracle Revenue Management and Billing Reporting SDK Guide 3.2.4 point...

For more details and XSLT stylesheet, refer below links:

- https://netjs.blogspot.in/2015/07/how-to-create-pdf-from-xml-using-apache-fop.html
- https://xmlgraphics.apache.org/fop/

The following table lists FOP templates which come with Oracle Revenue Management and Billing

1. **Bill Template**

Sr. No	FOP Template	Description
1	billExtract_Banking_Individual.xsl	FOP Template for Individual Billing
2	billExtract_Comm_Banking_List.xsl	FOP Template for List Billing

2. **Letter Template**

Sr. No	FOP Template	Description
1	ExpiringCreditCard_Letter.xsl	FOP Template for Expiring Credit Card Letter
2	PastDueExtract_Letter.xsl	FOP Template for Past Due Extract Letter
3	NoticeOfIntent_Letter.xsl	FOP Template for Notice Of Intent Letter
4	AutoPay_Letter.xsl	FOP Template for Auto Pay Letter

2.2.4 Upload FOP templates using 'Reporting Template Upload' UI:

To upload newly developed FOP template follow below steps:

1. Go to admin menu. Select R and then click Reporting Template.

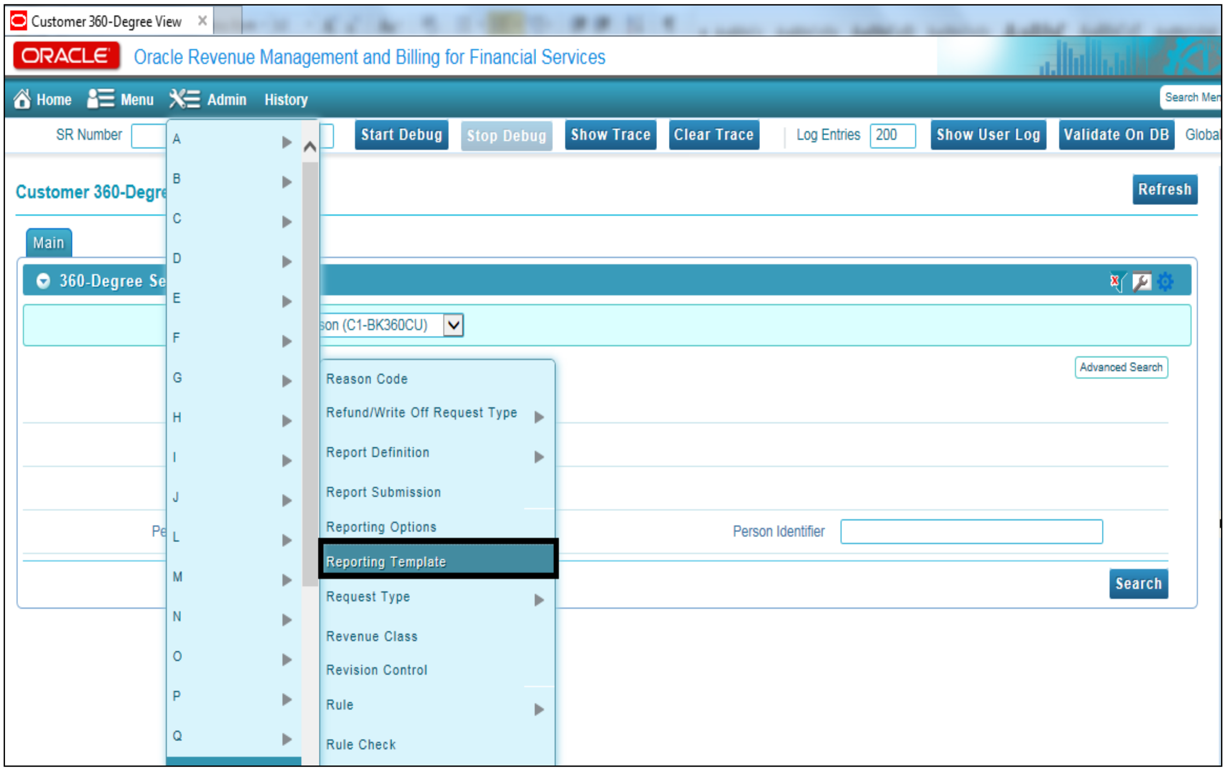

Figure 6: Reporting Template

2. Reporting Template screen appears. Click on Upload link present in right corner.

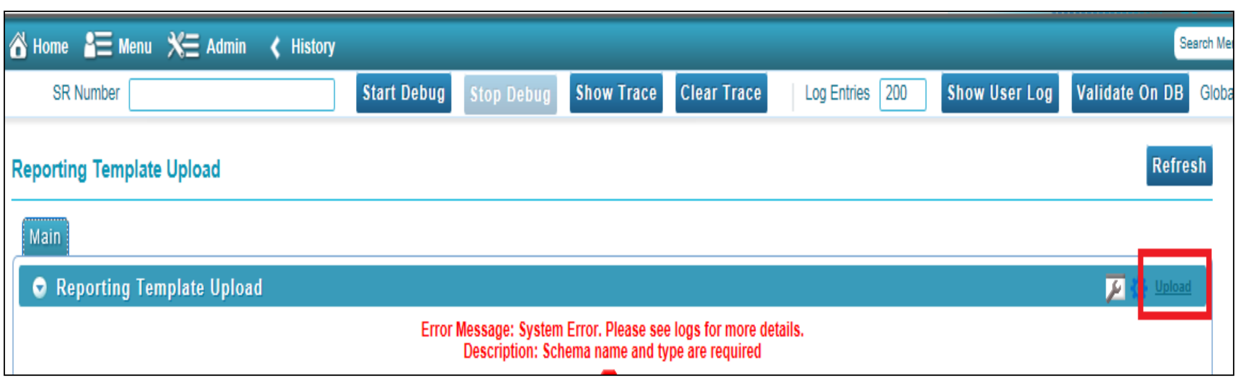

Figure 7: Reporting Template Upload

3. Reporting Template Upload screen appears.

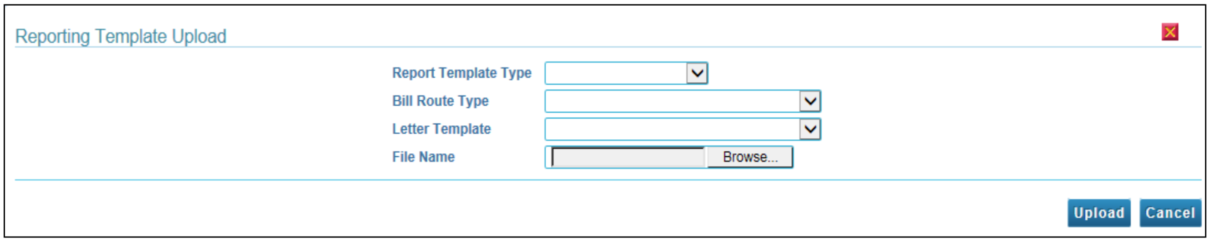

Figure 8: Reporting Template Upload

This screen prompts you to enter information for the following parameters:

Property	Description
Report Template Type	• Bill Template(BILL) • Letter Template(LTR) • Image
Bill Route Type	If you have selected Bill Template as Report Template type, this field list user select BILL then this list will get enable and List All Bill route Type in the system choose any one.
Letter Template	If in first dropdown list user select LTR then this list will get enable and List All Letter Template's which is available in the system choose any one.
File Name	Select actual file from system for each bill route type and letter template. For image above both dropdown list will get disable.

NOTE: If user wanted to display any bill of letter in PDF format that time all necessary configuration need to done as system configuration with that for each bill route type available in the system user needs to upload an xsl (FOP template)

This screen will save your uploaded template in 'your bill route type.xsl' format.

For example if your selected bill route type is POSTAL then it will store your FOP template in 'POSTAL.xsl' name in following path:

`<application installation directory>/ splapp/reporting/xsl /<BILL_ROUTY TYPE_CODE/LETTER_TEMPLATE_CODE>.xsl.`

For example.

`/scratch/rmbbuild/spl/ORMB26010SF/splapp/reporting/xsl/POSTAL.xsl.`

2.2.5 Develop an ORMB algorithm

To generate a PDF file using ORMB FOP Reporting, user needs to provide two inputs: FOP template and XML file. In this section we will understand by using an ORMB algorithm how we can generate the XML file. Write an algorithm or use existing one to generate XML file at given path `(<application installation directory>/ splapp/reporting/extractxml/file_name.xml`)

Note: Make sure your xml will get generate only on given path.

2.2.6 Call ORMB FOP framework API to generate PDF reports Bill and Letters

ORMB provides Business Component 'FOPReportGenerationComponent_Impl' to generate FOP reports. You must use this business component to call reporting API.

The API can be defined as:

public String getFOPPdf(String trialBillId, String xslFIlePath, String pdfFilePath, String billExtractXmlPath, String outputHttpUrl)

This API has following parameters:

1. trialBillId - Bill or Letter Id used to name the PDF
2. xslFIlePath - defines FOP XSL file path. The path should be

   `<application installation directory>/ splapp/reporting/xsl /<BILL_ROUTY TYPE_CODE/LETTER_TEMPLATE_CODE>.xsl`
3. pdfFilePath - this path value must be fully qualified path of PDF generation which must be.

   <application installation directory>/ splapp/reporting/output/<any name/letter_id/bill_id>.pdf
4. billExtractXmlPath- this path value must be fully qualified path of xml generated by algorithm which must be.

   <application installation directory>/ splapp/reporting/extractxml/<generated xml name>.xml
5. outputHttpUrl - this parameter value can be.
   - **application_URL/billView.** or null
   - For example, https://mum00bwc.in.oracle.com:7601/ouaf/billView/

   The Pseudo Code to call getFOPPdf () component method used to generate PDF file:

   - FOPReportGenerationComponent_Impl fopReportGenerationComponent = new FOPReportGenerationComponent_Impl ();
   - fopReportGenerationComponent.getFOPPdf(billId, xslFIlePath, pdfFilePath, billExtractXmlPath, outputHttpUrl);

3. ORMB FOP framework Using Groovy

ORMB FOP framework allows you generate reports in Apache Groovy. You can use ORMB FOP framework to edit existing bill and letter template or to create new PDF report. You can initiate various processes using Groovy. The processes can be listed as:

1. Report Generation On Person Context Menu - For detailed information, refer to the Oracle Revenue Management and Billing Reporting SDK Guide 3.2.8.1 point.
2. Custom Letter Using SS and Groovy - For detailed information, refer to the Oracle Revenue Management and Billing Reporting SDK Guide 3.2.8.2 point.
3. New Letter Using BS - For detailed information, refer to Oracle Revenue Management and Billing Reporting SDK Guide 3.2.8.4 point.
4. New Letter Using Groovy – For detailed information, refer to the Oracle Revenue Management and Billing Reporting SDK Guide 3.2.8.3 point.

