

## Oracle E-Business Suite and BI Publisher using PLSQL

James W. Hanon  
O2Works LLC

The trend to using Oracle's BI Publisher as the means to format and produce complex, dynamic and rich business documents is growing all of the time. The Oracle E-Business Suite has been tooled up to send reports output to the BI Publisher for formatting, and its use is expanding.

For years, the standard reports development tool for the Oracle E-Business Suite has been Oracle Reports. Oracle Reports is a tried-and-true means of producing everything from daily reports, to invoices, to purchase orders. However, the generally accepted output format has been straight text, with neither graphics nor control over printed fonts.

The Oracle BI Publisher has changed all of that.

However, the standard means of generating the XML data used in a BI Publisher report is still Oracle Reports.

Producing XML output from Oracle Reports is a fairly simple matter, especially for simple datasets. For complex XML output, PL/SQL may be a better answer. However, defining a PL/SQL concurrent program for a BI Publisher report is not so straight forward.

In a standard Oracle Reports concurrent program, the output format is Text, and the number of rows and columns defined per the report.

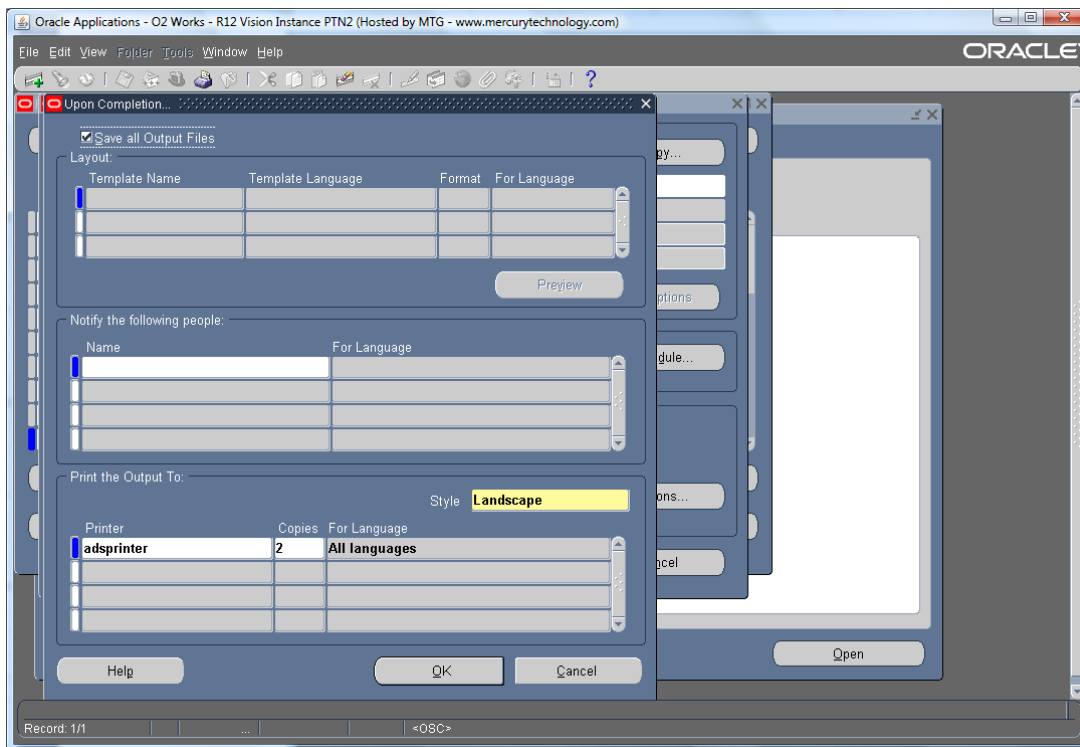
The screenshot displays the 'Concurrent Programs' window in Oracle Applications. The program being configured is 'AP Input Tax Group Listing' (AP\_ARXTTGL) under the 'Payables' application. The description is 'Tax Group Listing'. The executable is 'ARXTTGL' using the 'Oracle Reports' method. The output format is set to 'Text'. The 'Request' section includes checkboxes for 'Use in SRS', 'Run Alone', 'Enable Trace', 'Allow Disabled Values', 'Restart on System Failure', and 'NLS Compliant'. The 'Output' section shows 'Columns' as 132, 'Rows' as 66, and 'Style' as 'Landscape'. The 'Printer' field is empty. At the bottom, there are buttons for 'Copy to...', 'Session Control', 'Incompatibilities', and 'Parameters'. The status bar at the very bottom indicates 'Record: 1/?' and '<OSC>'.

In a standard Oracle PL/SQL concurrent program, too, the output format is Text, and the number of rows and columns defined per the report.

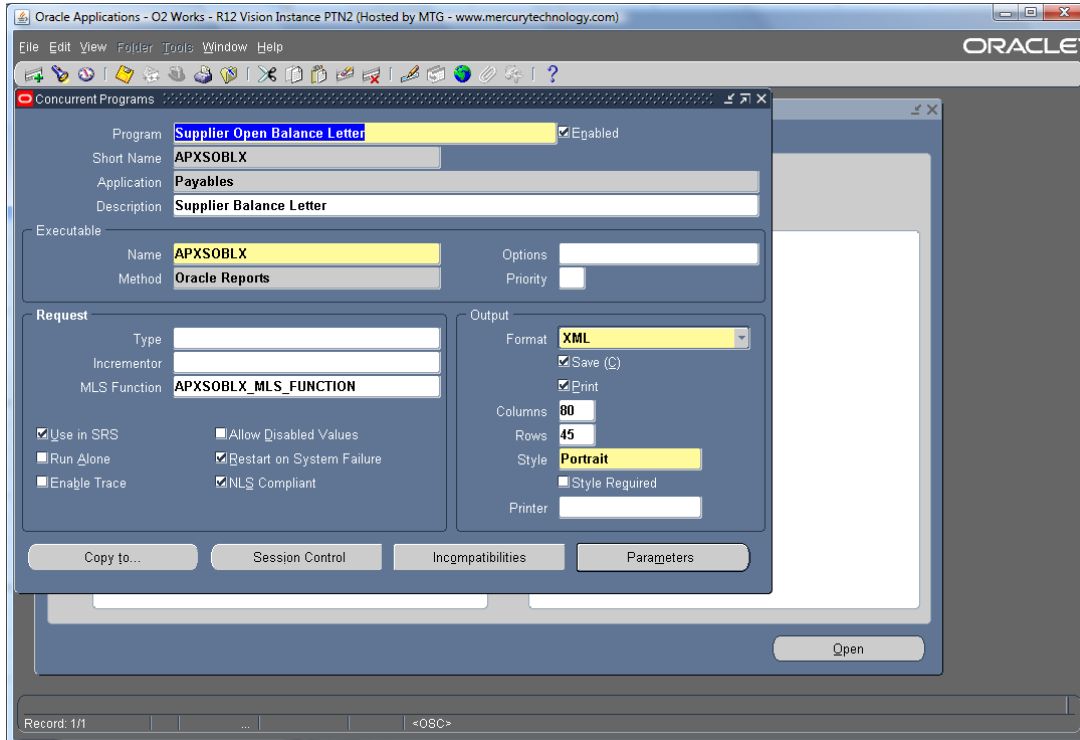
The screenshot shows the 'Concurrent Programs' window in Oracle Applications. The program 'Japanese Depreciable Assets Tax Reports' (Short Name: RXFADPTX) is selected. The 'Executable' section shows the Name 'FADPTXINS' and Method 'PL/SQL Stored Procedure'. The 'Request' section has 'Type' set to 'Text', 'Incrementor' and 'MLS Function' are empty, and 'Output Format' is 'Text'. Checkmarks are present for 'Use in SRS', 'Allow Disabled Values', 'Run Alone', 'Bestart on System Failure', 'Enable Trace', and 'NLS Compliant'. The 'Columns' field is set to 132, 'Rows' to 45, and 'Style' to 'Landscape'. The 'Printer' field is empty. Buttons at the bottom include 'Copy to...', 'Session Control', 'Incompatibilities', 'Parameters', and 'Open'.

In both cases, the user selects the concurrent program to be run, sets the number of copies to be printed and the destination printer, and then runs the program.

The screenshot shows the 'Submit Request' window in Oracle Applications. The request 'Active Users' is selected. The 'Run this Request...' section shows 'Name' as 'Active Users', 'Operating Unit' is empty, 'Parameters' is empty, and 'Language' is 'American English'. The 'At these Times...' section shows 'Run the Job' as 'As Soon as Possible'. The 'Upon Completion...' section has 'Save all Output Files' checked, 'Layout' is empty, 'Notify' is empty, and 'Print to' is 'adsprinter'. Buttons at the bottom include 'Help (H)', 'Submit', 'Cancel', and 'Open'.



For a BI Publisher Reports concurrent program, the output is set to XML and a BI Publisher Data Definition and Template are created and assigned to the concurrent program.



The Code used in the BI Publisher Data Definition must match the concurrent program short name. This is the link between the data definition and concurrent program, allowing the E-Business Suite to know when to call BI Publisher and produced output.

View Data Definition: Open Balance Supplier Letter Data - Windows Internet Explorer

http://ca-sna-demo1.mtghosting1.com:8012/OA\_HTML/OA.jsp?page=/oracle/apps/xdo/oa/datasource/webui/Data

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View Data Definition: Open Balance Supplier Letter Data

**General**

Name: Open Balance Supplier Letter Data  
Application: Payables  
End Date:   
Code: APXS0BLX  
Start Date: 01-Mar-2004

Description: Data for supplier balances letter.

Update Edit Configuration

**Files**

XML Schema: apxsoblx.xsd Update File

Data Template: Add File

Preview Data: apxsoblx.xml Update File

Return to Data Definitions

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View Template: Supplier Balances Letter - Windows Internet Explorer

http://ca-sna-demo1.mtghosting1.com:8012/OA\_HTML/OA.jsp?page=/oracle/apps/xdo/oa/template/webui/Templ

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View Template: Supplier Balances Letter

**General**

Name: Supplier Balances Letter  
Application: Payables  
Type: RTF  
Default File: apxsoblx-2.rtf  
Default File Language: English  
Default File Territory: United States  
Code: APXS0BLX\_1  
Data Definition: Open Balance Supplier Letter Data  
Start Date: 01-Mar-2004  
End Date:   
Subtemplate:

Description: Supplier Balance Letter Template

Update Edit Configuration

**Template Files**

Preview Format: PDF Add File

**Localized Templates**

File Name	Language	Territory	Preview	Download	Update	Delete
apxsoblx-2.rtf	English	United States				

Return to Templates

Templates Data Definitions Administration Home Logout Preferences Help Diagnostics

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Done Internet Protected Mode: On 100%

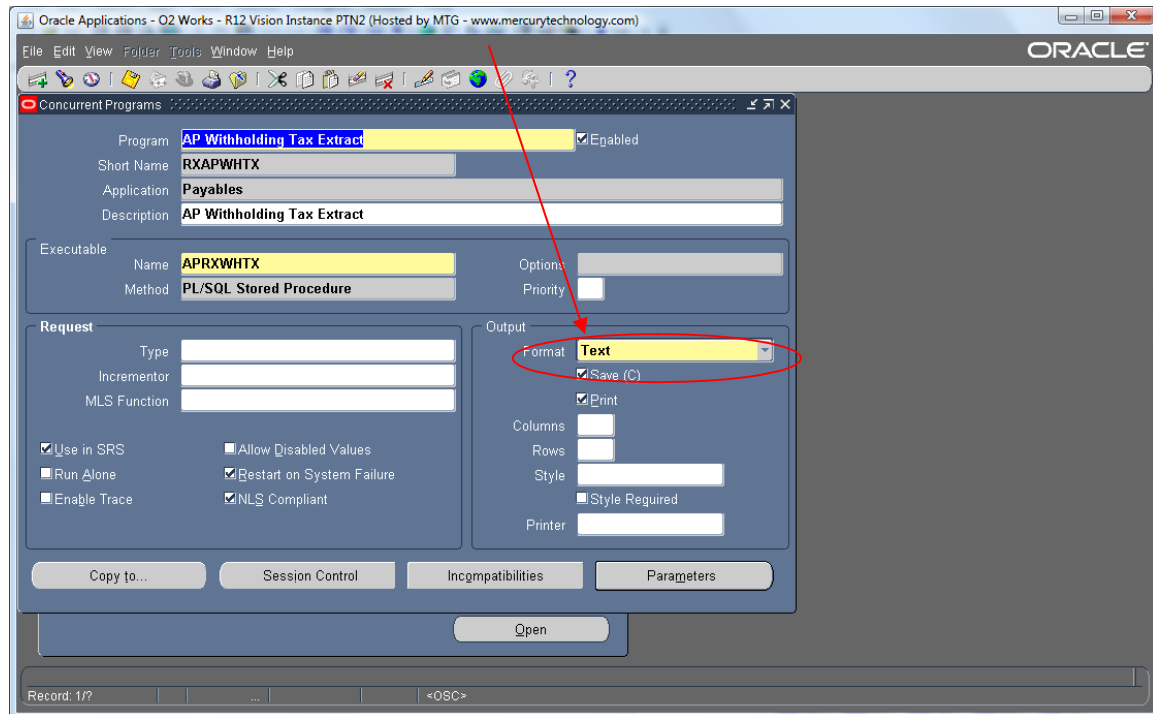
In the case of a BI Publisher Reports concurrent program, the user again selects the concurrent program to be run, sets the number of copies to be printed and the destination printer, and then runs the program.

However, a BI Publisher Reports concurrent program also shows the BI Publisher Template to be used. The user can also choose the output format, most commonly either PDF or MS Excel.

When complete, opening the concurrent program output will display the BI Publisher output, in the format chosen by the user.

Now, to direct the output of a PL/SQL concurrent program to BI Publisher, we will still generate Text output, even if it is, in fact, XML. So, something is needed to allow BI Publisher to take the Text output and utilize it for its own.

First, the PL/SQL concurrent program must produce its output as a valid, well formed XML document. The output format will be Text, but the content will be XML.



Second is a “shell” concurrent program built around the PL/SQL concurrent program. This shell program is called to enable the adding of a BI Publisher Layout to the concurrent request generating the XML output.

```

PROCEDURE start_outbound
(
  errbuf          OUT NOCOPY VARCHAR2
  , retcode        NUMBER
  , p_debug_mode   IN          VARCHAR2   DEFAULT 'Y'
  , p_organization_id IN      NUMBER
  , p_delivery_date_low IN     DATE
  , p_delivery_date_high IN   DATE
  , p_freight_code IN         VARCHAR2
  , p_delivery_id   IN         NUMBER
  , p_trip_id       IN         NUMBER
  , p_delivery_leg_id IN       NUMBER
  , p_item_display  IN         VARCHAR2
  , p_item_flex_code IN       VARCHAR2
) IS

  l_xml_layout      BOOLEAN      := FALSE;
  l_req_id          NUMBER;

BEGIN

  l_xml_layout := fnd_request.add_layout ('XXCUSTOM','XXCUS_WSHRDBOL','en','US','PDF');
  l_req_id := fnd_request.submit_request( 'XXCUSTOM' -- application
    , 'XXCUSECMBOL' -- program
    , 'XXEDI/Memo Outbound Bill of Lading PDF Output' -- description
    , NULL -- start_time
    , FALSE -- sub_request
    , p_debug_mode -- P_DEBUG_MODE
    , p_organization_id -- P_ORGANIZATION_ID
    , p_delivery_date_low -- P_DELIVERY_DATE_LOW
    , p_delivery_date_high -- P_DELIVERY_DATE_HIGH
    , p_freight_code -- P_FREIGHT_CODE
    , p_delivery_id -- P_DELIVERY_ID
    , p_trip_id -- P_TRIP_ID
    , p_delivery_leg_id -- P_DELIVERY_LEG_ID
    , p_item_display -- P_ITEM_DISPLAY
  );

```

```

, p_item_flex_code                                -- P_ITEM_FLEX_CODE
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
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, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
, CHR(0), CHR(0), CHR(0), CHR(0), CHR(0), CHR(0)
);

END start_outbound;

```

The PL/SQL concurrent program simply sets the appropriate BI Publisher layout Template and then calls the PL/SQL concurrent program which produces the require XML output.

The following line takes the place of the Upon Completion Options and assigns the appropriate BI Publisher Template, hard coding the BI Publisher Output Format to PDF. It is possible that a Value Set could be created for the shell concurrent program allowing the user to select the BI Publisher Output type.

```
l_xml_layout := fnd_request.add_layout ('XXCUSTOM','XXCUS_WSHRDBOL','en','US','PDF');
```

The user then calls the shell concurrent program, with all the parameters simply passed on to the main concurrent program. When complete, opening the concurrent program output will display the BI Publisher output, in the format chosen by the user.

Bill of Lading-101-1005 - 02357				Report Date 17-NOV-2008 23:12		
<b>Shipper/Exporter</b> MANUFACTURING COMPANY 2700 Somewhere Dr NE Grand Rapids MI 49505 US			RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, from its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed by the shipper and accepted for himself and his assigns.			
<b>Carrier</b>	<b>Trailer</b>	<b>Delivery</b>	P R O			
Holland Motor Freight						
<b>Consignee</b> MANUFACTURING CUSTOMER-99998 2200 SOMEWHERE ELSE COURT OAK BROOK IL 60521 US						
<b>Bill of Lading Information</b>						
<b>PO Number</b>		<b>Delivery Name</b>				
219141						
<b>Packages Kind of Package, Description, Special Marks, etc.</b>						
<b>Marks and Number</b>	<b>Description of Packages and Goods</b>	<b>Item NMFC</b>	<b>LTL</b>	<b>Weight</b>	<b>PO</b>	<b>Delivery</b>
11433	CARTONS STC CARTONS Loose DRAWER SLIDES	196775	60.0	0	tr/2	
Total Number of SKIDS 1 SKIDS STC 25 Cartons Ship Date is 20081028						
Subject to Section 7 of conditions of applicable bill of lading, if the shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of the freight and all other lawful charges.						
Received \$		To apply in payment of the charges on the property hereon.		Pay		*Shipper's imprint in lieu of stamp, not a part of bill of lading approved by the Interstate Commerce Commission.  If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is the "tare" or shipper's weight.  *If charges are to be paid, write or stamp here "FOR THE SHIPPER"
NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.  The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding:				PER		

Mr. Hanon is an accomplished consultant, with more than 17 years experience as both a team leader and member in various environments, implementing and customizing the Oracle E-Business Suite, from version 10.5 through 12.01 since 1996.