

Oracle® Transportation Management

Report Designer's Guide

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Oracle® Transportation Management Report Designer's Guide, Release 6.5.3

Part No. F82879-01

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Preface

This document is intended for Oracle Transportation and Global Trade Management clients, Oracle Transportation and Global Trade Management System administrators, or Oracle Transportation and Global Trade Management Consultants who have an interest in creating or configuring reports intended for use within the Oracle Transportation and Global Trade Management Application.

1. Overview

Oracle Transportation and Global Trade Management report infrastructure uses Oracle Analytics Publisher as a report generation component. It enables you to extract data from Oracle Transportation and Global Trade Management, create a template to layout the data in a report, and generate the report to numerous formats. The Transportation and Global Trade Management report infrastructure also enables you to schedule reports and deliver the reports to any delivery channel (email, printer, or store it in a content management system) required by your business. This guide is for report consumers and report designers.

Report Consumer

A report consumer may perform the following tasks

- Run and view reports from within Transportation and Global Trade Management.
- Schedule reports to run at selected intervals and to be delivered via channels defined by your administrators.
- Link the report to a document definition in Transportation and Global Trade Management.
- Configure the report to run on occurrence of an event using agent action.

Report Designer

A report consists of a data model, a layout, a set of properties, and a link to the report in Transportation and Global Trade Management. A report designer may perform the following tasks:

- Create the report data model, including parameters and a list of values, using Oracle Analytics Publisher's report editor.
- Design the layout template of the report. The layout can be created using different tools depending on your output requirements, including Microsoft Word, Adobe Acrobat, Microsoft Excel, and Adobe Flex Builder.
- Set up runtime configuration properties for the report.
- Establish a link between Transportation and Global Trade Management reports to Oracle Analytics Publisher reports.

It is strongly recommended that you refer to [Installing and Configuring Oracle Analytics Server](#), [Administering Oracle Analytics Publisher in Oracle Analytics Server](#), [Using Oracle Analytics Publisher in Oracle Analytics Server](#), [Create Pixel-Perfect Reports](#), [Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server](#), the [OTM Administration Guide](#), and the [OTM Installation Guide](#) before you proceed with this guide.

Accessing Oracle Analytics Publisher

Oracle Analytics Publisher can be made available in a few ways.

Complete Suite of Oracle Analytics Server

When you install the complete suite of Oracle Analytics Server, Oracle Analytics Publisher is available as one of the components. In this case, Oracle Analytics Publisher can be accessed by using the following URL.

```
http(s)://<host>:<port>/xmlpserver
```

In this case the catalog used by Oracle Analytics Server is used as the Oracle Analytics Publisher repository. All of the administration activities (i.e. changing roles and permission, creating data

sources, configuring printers, etc.) are performed using 'Manage BI Publisher' link in the administration section of Oracle Analytics Server.

Oracle Analytics Publisher Component

Install just the Oracle Analytics Publisher component. In this case Oracle Analytics Publisher can be accessed using the following URL. This same URL can be used even in case of complete Oracle Analytics Server install too.

```
http(s)://<host>:<port>/xmlpserver
```

It is recommended to perform the administration tasks, data modeling and layout editing using the analytics URL rather than using the xmlpserver URL in case of complete Oracle Analytics Server installation.

2. Architecture

Oracle Transportation and Global Trade Management supports generation of reports using an external reporting system such as Oracle Analytics Publisher. Report requests are sent via HTTP to an external report server. The report server may begin an interactive session or simply return the report content.

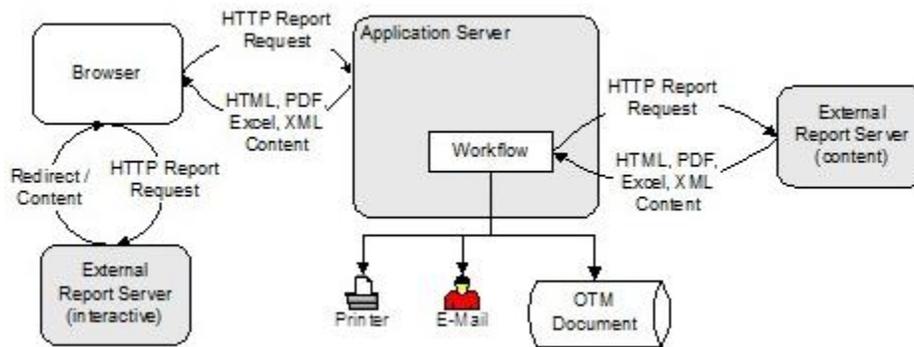


Figure 2-1: Reporting Architecture

Report System

Reports in Transportation and Global Trade Management are always associated with a report system type that defines the communication type between Transportation and Global Trade Management and the external report server. The following report systems are supported in Oracle Transportation Management:

- **BI Publisher:** A SOAP request is sent to the Oracle Analytics Publisher service and the SOAP response is parsed for content and errors. It includes details of the Oracle Analytics Publisher Server, such as report path prefix, host, port, and user credentials. These account for format, locale, and VPD user information.
- **Other via HTTP:** Use Other via HTTP for non-Oracle Analytics Publisher integration. It is assumed that the report path is a URL to the report with an optional {report} parameter that is replaced with the report path. This URL report parameter is appended as HTTP request parameters. Each request parameter name matches the name of the report parameter. This includes setting **&P_DESIRED_MIME_TYPE=<requested MIME type>**.

It is strongly recommended that you use Oracle Analytics Publisher as the report system type. This document describes the information pertaining to the Oracle Analytics Publisher report system type.

Report Content

The report content returned by the external report server can be used in different ways within Transportation and Global Trade Management. You have to specify the report content type for each report in Transportation and Global Trade Management. The following types of report content are supported in Transportation and Global Trade Management.

- **Embedded:** Embedded content means that report content returned by the external report server can be distributed to a browser, email, printer, or stored in content management systems without needing links or nested frames. You may, however, get back an HTML page that references other URLs from the report server. If a third party generator returns embedded content, it can be used as a replacement for Oracle Analytics Publisher.
- **Browser Only:** Browser-only content means that report content returned by the external report server will be piped to a browser. Selecting this option lets you optionally include links or fields applicable to report content. Transportation and Global Trade Management does not support distribution or storing of content for this option.
- **None:** This means that report content is not generated and returned by external report server, and an alternative URL link is used to generate the report on the report manager. These reports cannot be transactional as they do not accept business object information from Transportation and Global Trade Management. The standard Run/Schedule links to the report are not supported, nor are the reports included on any action menu. Instead, there is a single Report link in the Third Party Reports section of the Report Manager that directs the browser directly to the third party URL. Transportation and Global Trade Management does not add any implicit or explicit query parameters to the URL.

Report Generation

Report generation in Oracle Transportation and Global Trade Management can triggered as follows:

- **Ad Hoc Reports:** For ad hoc reports, an HTTP request is sent to the application server which sends an HTTP request to the report server and assumes the response, if successful, contains report content. This content is piped back through HTTP to the browser. The content may also be distributed via email, IPP printing, and/or stored with an associated business object.
- **Scheduled Reports:** Scheduled report requests, or requests triggered by a workflow agent, similarly send a HTTP request to the report server. The response content is distributed via email, printed via IPP, or stored with an associated business object.

The scheduling of the reports has nothing to do with the scheduling capabilities of the external report server. The scheduling is Transportation and Global Trade Management's own scheduling which is used for forming the report requests and receiving the response.

Streamlined support is available when generating reports on a remote Oracle Analytics Publisher server or a server farm. Requests are sent directly from the application server to Oracle Analytics Publisher via a SOAP web service call. Results or errors are returned by the service.

Important Notes

- All the report content generation only happens on the external reporting server. The support for embedded report content generation within Transportation and Global Trade Management using query and format template has been removed.
- Transportation and Global Trade Management no longer supports the use of the "Use Parameters Operator" on the Report manager. This means reports parameters do not have operators like "Begins With", "Same As", or "Ends With". Instead it is free-form text that you enter.
- Consolidated reports are not supported.
- It is strongly recommended to use the Transportation and Global Trade Management reporting capability only for transactional reports¹. All analytical reports should be generated directly on the Oracle Analytics Publisher server and should not be triggered from Transportation and Global Trade Management.

¹ A transactional report is one that is focused on a single business object. A shipment document, such as a Bill of Lading, is an example of a transactional report.

- By default, all reports are executed with "Use Report Parameter as Bind Variable" as Yes. This change in behavior was done to prevent performance and security issues.

3. Create a New Report in Oracle Analytics Publisher

Use reports to generate and print documents for internal operations, external business transactions, or legal requirements. To meet specific requirements, you may need to create or edit reports to capture different data, or present data in another way. This section provides general guidelines to design new reports and use them in Oracle Transportation and Global Trade Management. Refer to [Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server](#) for more options and details.

Report Components

Each report has components that you can configure, as described in this table:

Table 3-1: Report Components

| Report Component | Description | Tool for Configuring |
|-------------------------|---|---|
| Data model | Defines the data source, data structure, and parameters for the report. Multiple reports can use the same data model. Each report has one data model. | Data model editor in the application. |
| Layout | Defines the presentation, formatting, and visualizations of the data. A report can have multiple layouts. There are different types of layout templates, for example Excel and RTF. | Depending on the template file type: <ul style="list-style-type: none">• XPT: Layout editor in the application• RTF: Microsoft Word• PDF: Adobe Acrobat Professional• Excel: Microsoft Excel• eText: Microsoft Word |
| Properties | Specifies formatting and other settings for the report. | Report editor in the application |

What You Can Create or Edit

This table gives just a few examples of creating or editing reports.

Table 3-2: Examples of Creating or Editing Reports

| Task | Example |
|-------------------------------|--|
| Edit the layout of a report. | Add your company logo to the report output. |
| Add a new layout to a report. | Design a new layout template that provides less detail than the existing template. |

| Task | Example |
|--|--|
| Edit a data model. | Add two fields to the data model used by a report so you can add those new fields to a customer-defined layout for the report. |
| Create a new report based on a new data model. | Create a new data model based on data from an external system, and create reports using the customer-defined data model. |

Process Overview

Note: You must be assigned the Oracle Analytics Publisher Developer or Oracle Analytics Publisher Administrator role to create or edit the reports.

Creating a new report consists of the following steps:

1. Create the report data source. Your report data would come from the Transportation and Global Trade Management operational database or archive database.
2. Create the report entry in the desired folder on the **Reports** page.
3. Open the **Report Editor**.
4. Specify the general properties for the report.
5. Define the **Data Model**. Your report data may come from a SQL query, an HTTP feed, a Web service, an Oracle Analytics Server Answers request, or a file.
6. Define the parameters that you want users to pass to the query and define lists of values for users to select parameter values.
7. Test your data model.
8. Design the layout template.
9. If you are designing an RTF template, load the data to the Template Builder for Word. Use the Template Builder in conjunction with instructions in [Creating RTF Templates](#) to build your report layout.
10. If you are designing a PDF template, follow the instructions in [Creating PDF Templates](#) to build your report layout.
11. If you are using a predesigned PDF form (such as a government form), follow the instructions in [Creating a Layout from a Predefined PDF Form](#).
12. Upload your templates to the **Report Editor**.
13. (Optional) Add translations for your reports. See [Translating Reports](#).

Data Source

Next, you configure data sources to connect to the corresponding database. Follow the instruction at [Setting Up Data Sources](#). A typical setup uses the JDBC connection.

You can create a new data source to read the data from Transportation and Global Trade Management. It is recommended that you create two data source as follows:

- OTMOLTP: To connect to Transportation and Global Trade Management OLTP Schema
Data Source Name: **otmoltp**
Driver Type: Oracle **11g**

Database Driver Class: **oracle.jdbc.OracleDriver**
Connection String: **<otm oltp database connection string>**
Username: **globalreportuser**
Password: **<password for globalreportuser>**

- OTMARCHIVE: To connect to Transportation and Global Trade Management Archive Schema
Data Source Name: **otmarchive**
Driver Type: Oracle **11g**
Database Driver Class: **oracle.jdbc.OracleDriver**
Connection String: **<otm archive database connection string>**
Username: **archive schema user**
Password: **<password for archive schema>**

Note: Roles accessing out of the box reports should be given access to the data connection otmoltp as listed above. See Grant Data Access section in the Administering Oracle Analytics Publisher in Oracle Analytics Server guide for details.

Notes

It is highly recommended for security reasons to use the "globalreportuser" database user, provided by default, for the "otmoltp" data source. That user has the minimal rights needed to create and run reports.

- The above data source connections are defined for viewing standard reports and for designing any new reports using the globalreportuser and archive databases schema users.
- When the Transportation and Global Trade Management connects with Oracle Analytics Publisher, it does not send the same DB credentials that are defined above.
- For Online reports, the Transportation and Global Trade Management application sends the database credentials defined by the PRIMARY_THIN data source of Transportation and Global Trade Management application.
- For Offline reports, the Transportation and Global Trade Management application sends the database credentials defined by the ODS data source of Transportation and Global Trade Management application.
- For Archive Reports, the Transportation and Global Trade Management application sends the database credentials defined by the ARCHIVE data source of Transportation and Global Trade Management application.
- Since the users with which the report is designed and accessed may be different, any customer-defined tables need to be provided with necessary grants. For example, if you are designing an online report that involves any customer-defined table or view (other than the table or view provided by Transportation and Global Trade Management), then you will have to provide grants for the table or view for both globalreportuser and the schema defined by the PRIMARY_THIN data source.
- You will need to provide grants for customer-defined packages if they are used in any of the queries.
- Reports run from Oracle Analytics Publisher server will not have any VPD context applied.
- Reports run from Transportation and Global Trade Management run with the VPD Context of the user running the report.

Report Folders

All sample reports shipped with Transportation and Global Trade Management are created in the Reports folder under Shared Folders. It is highly recommended to create a folder named "custom" under Shared Folders and create all new reports and their corresponding data models in a separate

folder for each report (like Invoice Summary) under "custom". This will enable you to move the report artifacts across environments, such as Stage to Prod.

For more information on creating the folders please refer to the section [Create a Folder or Subfolder](#) in the chapter [Manage Pixel-Perfect Reports](#) in [Using Oracle Analytics Publisher in Oracle Analytics Server](#).

Data Models

A data model defines where data for a report comes from and how that data is retrieved and how the data is structured. If the existing data model cannot give you all the data that you need in your report, then you can either copy and edit an existing data model or create a new one.

Creating a Data Model

1. In the Oracle Analytics Publisher (OAP) catalog, click the New button and select Data Model under Published Reporting.
2. Optionally click the Data Model node in the Data Model pane to set properties for the data model.
3. Click the Data Set node in the Data Model pane to create or edit data sets, which determine where and how to retrieve data.
4. Click the New Data Set button and select a data set type. Select one of the data source created otmoltp or otmarchive. Most of the time you will be creating the data set using SQL Query which uses a Query Builder tool to define from where the data is to come from how to fetch the data.
5. Optionally, to limit the data included in the report output, click the Parameters node in the Data Model pane to define variables that users can set when they use the report.
6. Optionally, define other components of the data model.
7. Save your data model.

Editing a Data Model

1. To edit a predefined data model:
 - a. Find the data model in the BI catalog and click Copy.
 - b. Paste within Shared Folders > Custom in a subfolder that has a folder path similar to the folder that stores the original data model.
 - c. For the data model you pasted, click More, and select Edit.
2. Optionally click the Data Model node in the Data Model pane to set properties for the data model.
3. Click the Data Set node in the Data Model pane to create or edit data sets.
4. Perform steps 5 and 6 from the preceding Creating a Data Model task, as needed.

Refer to the [Part I Model Data for Pixel-Perfect Reports](#) section of the [Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server](#) guide.

Notes

Below are some of points to remember about the data model components while creating the data model.

-

- Lists of values will only be useful if the customers are trying to run the reports from the Oracle Analytics Publisher. The LOVs cannot be used from Transportation and Global Trade Management application.
- Bursting definitions are not used by Transportation and Global Trade Management for the distribution of reports to different destinations. Transportation and Global Trade Management uses its own infrastructure to distribute the reports to email and printers.
- Custom Metadata is not supported for reports integrated to Transportation and Global Trade Management.
- Although there are so many options for creating the Data Sets, Transportation and Global Trade Management supports only data sets created using SQL Query.

Utility Packages

Transportation and Global Trade Management provides a number of PL/SQL functions/procedures that can be used in Oracle Analytics Publisher Data Models. The following table summarizes the available procedures and functions. For more information, please review the `create_rpt` scripts in `OTM_INSTALL_DIR>\glog\oracle\script8`.

Table 3-3: PL/SQL Report Functions

| Package | Procedure/Function | Description | Parameters | Returns |
|---------|--------------------|---|---|---------|
| vpd | set_user | Sets the user for VPD data security | Oracle Transportation and Global Trade Management user GID | -- |
| | set_user_r | Sets the user and user role for VPD data security | Oracle Transportation and Global Trade Management user GID Oracle Transportation and Global Trade Management user role GID | -- |
| | set_user_fct | Sets the user for VPD data security. Designed for use as the first query in a Data Template | Oracle Transportation and Global Trade Management user GID | true |

| Package | Procedure/Function | Description | Parameters | Returns |
|-------------|--------------------|---|---|--|
| | set_user_r_fct | Sets the user and user role for VPD data security. Designed for use as the first query in a Data Template | Oracle Transportation and Global Trade Management user GID Oracle Transportation and Global Trade Management user role GID | true |
| | get_gl_user | Returns the current user for VPD data security | -- | Oracle Transportation and Global Trade Management user GID |
| | fnc_set_user_r | Sets the user and user role for VPD data security | Oracle Transportation and Global Trade Management user GID Oracle Transportation and Global Trade Management user role GID | true |
| utc | get_local_date | Converts a UTC timestamp to a location time zone | UTC Timestamp Location GID | Timestamp in the location's time zone |
| | get_utc_date | Converts a local timestamp to a UTC timestamp based on a location time zone | Local Timestamp Location GID | UTC Timestamp |
| | get_time_zone | Returns the time zone for a location | Location GID | Time Zone |
| rpt_general | p_insert_log | Logs a record to REPORT_LOG | Unique Filename Report GID Report Job # User Domain up to 3 (name, value) pairs | -- |

| Package | Procedure/Function | Description | Parameters | Returns |
|----------------|---------------------------|---|---|--|
| | f_uom_base | Returns the default storage type for a unit of measure | Unit of measure | Default storage type |
| | f_date_diff | Returns a readable string representing the duration difference of two dates | Ending date Starting date | Duration string |
| | f_remove_domain | Strips the domain from a GID | GID | XID |
| | f_format_address | Returns a formatted address for a location | Location GID | Formatted, multi-line address for the location |
| | f_corporation | Returns the corporation for a location | Location GID | Corporation GID |
| | f_location_refnum | Returns the value of a specific location reference number | Location GID Reference number qualifier | Reference number value |
| rpt_order | f_ob_refnum | Returns the value of a specific order base reference number | Order Base GID Reference number qualifier | Reference number value |
| rpt_ship | f_commodity | Returns the commodity name for a specific item | Item GID | Commodity name |
| | f_ob_party_location | Returns the location for a specific order base involved party | Order Base GID Involved party qualifier | Location GID |
| | f_or_party_location | Returns the location for a specific order release involved party | Order Release GID Involved party qualifier | Location GID |
| | f_order_base_gid | Returns the order base associated with an order release | Order Release GID | Order Base GID |

| Package | Procedure/Function | Description | Parameters | Returns |
|----------------|------------------------------|---|---|--|
| | f_party_address | Returns a formatted address for an order release involved party | Order Release GID Involved party qualifier | Formatted, multi-line address for the location |
| | f_tender_accepted_by | Returns the carrier that accepted a shipment tender | Shipment GID | Service Provider GID |
| | f_packaging_form_code | Returns the packaging form code for a ship unit specification | Ship Unit Specification GID | Packaging Form Code GID |
| | f_capacity_rate_offering | Returns the rate offering for a capacity usage | Capacity Usage GID | Rate Offering GID |
| | f_capacity_time_period | Returns the time period type for a capacity limit | Capacity Limit GID | Time Period Type |
| | f_lane_source | Returns the source for a lane | XLane GID | Source |
| | f_lane_destination | Returns the destination for a lane | XLane GID | Destination |
| | f_equipment_type_name | Returns the name for a equipment type | Equipment Type GID | Equipment Type Name |
| | f_sellside_cost | Returns the sell-side cost for a shipment | Shipment GID | Sell-side cost |
| | f_transport_mode_name | Returns the transport mode for a shipment | Shipment GID | Transport Mode |
| | f_get_ship_inv_party_address | Returns a formatted address for a shipment involved party | Shipment GID Involved Party Qualifier | Formatted, multi-line address for the involved party |
| | f_get_country_name | Returns the origin or destination country name for a shipment | Shipment GID 'O' for origin, 'D' for destination | Country name |

| Package | Procedure/Function | Description | Parameters | Returns |
|--------------|--------------------|---|--|--|
| | f_get_pol | Returns the port of lading for a shipment | Shipment GID | Port of lading |
| rpt_invoice | f_party_location | Returns an involved party location on the invoice | Invoice GID Involved Party Qualifier | Involved party location |
| | f_party_address | Returns a formatted address for an invoice involved party | Invoice GID Involved Party Qualifier | Formatted, multi-line address for the involved party |
| rpt_servprov | f_servprov_gid | Returns the Service Provider GID for a particular alias | Service Provider Alias Service Provider Alias Qualifier | Service Provider GID |
| | f_alias | Returns the Service Provider alias | Service Provider GID Service Provider Alias Qualifier | Service Provider Alias |

Parameters

Adding parameters to your data model enables users to interact with data when they submit or view reports. Transportation and Global Trade Management passes standard and ad hoc parameters to the report generator². This table summarizes the standard parameters passed to every report.

Table 3-4: Standard Parameters

| Name | Description | Comments |
|---------------|--------------------------------|--|
| P_REPORT_GID | The requested report | External systems are responsible for mapping the Oracle Transportation and Global Trade Management report GID to a valid report. Alternatively, the report URL can embed the mapping within a request parameter. |
| P_DBCONN_TYPE | The data schema | OLTP for the Oracle Transportation and Global Trade Management transactional database; ODS for the offline analytical database; ARCHIVE for the archived data. |
| P_GL_USER | The user requesting the report | This may be used by external systems to enforce VPD data security on report queries. |

² If external report generators do not support these parameters, their content type should be set to **None**.

| Name | Description | Comments |
|--------------------|--|--|
| P_ROLE_ID | The role of the requesting user | This may be used by external systems to enforce VPD data security on report queries. |
| P_DOMAIN | The domain of the requesting user | |
| P_LANGUAGE | The ISO language code requested for the report | For embedded reports, XLIFF translations are automatically applied. |
| P_COUNTRY | The ISO country code requested for the report | For embedded reports, XLIFF translations are automatically applied. |
| P_DISPLAY_NAME | A user-readable name for the report. | |
| P_DATE_FORMAT | The Oracle date format for both input parameters and output fields. | <p>For input parameters, use the <code>TO_DATE(:P_MY_DATE, :P_DATE_FORMAT)</code> function.</p> <p>For output parameters, use the <code>TO_CHAR(field, :P_DATE_FORMAT)</code> function.</p> <p>This should be reserved for fields that are date-only.</p> |
| P_DATE_TIME_FORMAT | The Oracle timestamp format for both input parameters and output fields. | <p>For input parameters, use the <code>TO_DATE(:P_MY_TIMESTAMP, :P_DATE_TIME_FORMAT)</code> function.</p> <p>For output fields, use the <code>TO_CHAR(field, :P_DATE_TIME_FORMAT)</code> function.</p> <p>This should be reserved for fields that have both date and time.</p> |

The above defined list of standard parameters can be used in any of the report you are designing. If you define any of these standard parameters as a parameter for the report, you do not have to define it as a parameter when defining the report in Transportation and Global Trade Management.

You will have to define any other parameter required for the report apart from the standard parameters as a report parameter when defining the report definition in Oracle Transportation and Global Trade Management.

For sending multiple values for a parameter of the data model, please refer to FAQ section [How do I send multiple values for a parameter of the reports?](#)

Date and Timestamp Handling

Report designers should take special care when writing queries involving DATE columns. This includes:

- **Converting date parameters for where clause comparison:** All date parameters are sent as strings, formatted according to your date preferences. To compare one to a data field, the designer should use Oracle's `TO_DATE` function, applying the standard `P_DATE_FORMAT` parameter:

```
where accessorial_cost.effective_date > TO_DATE(:P_EARLIEST_DATE,
:P_DATE_FORMAT)
      and accessorial_cost.effective_date < TO_DATE(:P_LATEST_DATE,
:P_DATE_FORMAT)
```

- **Converting timestamp parameters for where clause comparison:** Like dates, timestamp parameters are sent as strings, formatted according to your date/time preferences³. To compare one to a timestamp field, the designer should use Oracle's `TO_DATE` function, applying the standard `P_DATE_TIME_FORMAT` parameter:

```
where shipment.start_time > TO_DATE(:P_EARLIEST_START, :P_DATE_TIME_FORMAT)
      and shipment.start_time < TO_DATE(:P_EARLIEST_START,
:P_DATE_TIME_FORMAT)
```

- **Applying date and time preferences:** Depending on the use case, designers may want to apply user preferences to dates displayed on the final report. If so, the SQL query should convert selected date and timestamp values using Oracle's `TO_CHAR` function:

```
select TO_CHAR(accessorial_cost.effective_date, :P_DATE_FORMAT) ...
select TO_CHAR(shipment.start_time, :P_DATE_TIME_FORMAT) ...
```

- **Accounting for UTC storage:** Nearly all timestamp fields in Oracle Transportation and Global Trade Management are converted to UTC before persisting to the database. A report designer who simply queries `shipment.start_time`, for example, receives the time in UTC. To convert the stored time to the application or report server's time zone, use the `vpd.gmt_offset` function:

```
select TO_CHAR(shipment.start_time-(vpd.gmt_offset/24), :P_DATE_TIME_FORMAT)
...
```

- **Accounting for UTC storage:** To compare timestamp fields to some offset of current time, designers can either convert the field or use `vpd.gmt_sysdate`. This function returns the current time in UTC. E.g. to query shipments starting in the next three days:

```
select shipment.gid
where shipment.start_time > vpd.gmt_sysdate
and shipment.start_time < vpd.gmt_sysdate+3
```

Layouts

The layout determines what and how data is displayed on report output. Each report has at least one layout template. This topic describes the following aspects of report templates:

- Layout templates
- Layout template types
- Overall process of managing layouts
- Deleting layout templates

³ Note that the reporting has never applied user time preference. Time preference is assumed to be HH24:MI:SS.

Layout Templates

To configure a layout, you edit the layout template, which:

- Defines the presentation components, such as tables and labeled fields.
- Maps columns from the data model to these components so that the data is displayed in the right place.
- Defines font sizes, styles, borders, shading, and other formatting, including images such as a company logo.

Layout Template Types

There are a few types of template files to support different report layout requirements.

- **RTF**: Rich text format (RTF) templates created using Microsoft Word.
- **XPT**: Created using the application's layout editor, these templates are for interactive and more visually appealing layouts.
- **eText**: These templates are specifically for Electronic Data Interchange (EDI) and electronic funds transfer (EFT) information.

You can also create and edit other types of templates using Adobe PDF, Microsoft Excel, Adobe Flash, and XSL-FO.

Creating or Editing Layouts

Editing or creating report layout, for example using Microsoft Word or the layout editor, involves making the actual changes to the template file. But that task is just one part of the entire process for configuring layouts.

1. Copy the original report and save the customer-defined version in Shared Folders - custom in the OAS catalog. You create or edit templates for the customer-defined copy of the report. Tip: You can use the Customize option if the original is a predefined report.
2. Review report settings for online viewing.
3. Generate sample data for the report.
4. Edit or create the layout template file.
5. Upload the template file to the report definition. Skip this step if you're using the layout editor.
6. Configure the layout settings.

Deleting Layout Templates

To remove a layout template for a report:

1. Select your report in the OAS catalog and click **Edit**.
2. In the report editor, click **View a list**.
3. Select the layout template and click **Delete**.

Generating Sample Report Data: Procedure

Depending on the type of report layout changes you're making, sample data can be required or optional. You generate sample data, and then load it for use with your layout so that you can map data fields to layout components. For example, for the Start Date table column in your layout, you can set it so that the data displayed in that column comes from the Start Date field in the sample data.

You can generate sample data from the:

- Report data model
- Report viewer
- Scheduler

Generating Sample Data from the Data Model

Follow these steps:

1. Select your data model in the OAS catalog and click Edit. Alternatively:
 - a. In the catalog, find the report to generate sample data for and click **Edit**.
 - b. Click the data model name in the report editor.
2. In the data model editor, click **View Data**.
3. Enter values for any required parameters, select the number of rows to return, and click **View**.
4. To save the sample data to the data model, click **Save As Sample Data**.
5. If you're designing a .rtf template, click **Export** to save the file locally.
6. Save the data model.

Saving Sample Data from the Report Viewer

For reports that are enabled for online viewing, you can save sample data from the report viewer:

1. Select the report in the OAS catalog.
2. Click **Open** to run the report in the report viewer with the default parameters.
3. On the Actions menu, click **Export**, then click **Data**.
4. Save the data file.

Saving Sample Data from the Scheduler

For reports that are enabled for scheduling (not necessarily as a scheduled process), you can save sample data from the scheduler:

1. Select the report in the OAS catalog.
2. Click **Schedule**.
3. On the General tab, enter values for any report parameters.
4. On the Output tab, ensure that **Save Data for Republishing** is selected.
5. Click **Submit**.
6. Open the Report Job History page.
7. On the global header, click **Open**, then click **Report Job History**.
8. Select your report job name in the Job Histories table.
9. On the details page, under Output and Delivery, click the **XML Data Download** icon button.

Layout Editor Templates

The layout editor in the application provides an intuitive, drag-and-drop interface for creating pixel-perfect reports with PDF, RTF, Excel, PowerPoint, and HTML output. The layout template files you create with this tool have an .xpt extension. The layout editor tool is the only editing tool that provides dynamic HTML output. Users can interact with this output in a browser, for example by sorting, applying filters, and so on.

Prerequisite

Make sure that sample data is generated from the data model that your report is using.

Using the Layout Editor

To configure XPT templates:

1. Select the report in the Oracle Analytics Server (OAS) catalog and click **Edit**.
2. In the report editor, click **Edit** to update a template.
Or, click **Add New Layout** and select a template type under the Create Layout section.
3. Create or edit the layout.
4. Click **Save** to save the layout to the report definition.

RTF and Excel Report Layout Templates

You can use Microsoft Word or Microsoft Excel to create or edit RTF and Excel layout templates, in addition to the layout editor in the application. If you use Word or Excel directly, you must download and install the appropriate add-in so that the Microsoft application has the features you need to design report layouts.

Note: If you're designing a new layout for your report, consider using the layout editor instead unless you are an experienced layout designer.

Installing the Add-In

1. Open the **Reports and Analytics** work area, or the Reports and Analytics pane if available in other work areas.
2. Click the **Browse Catalog** button.
3. Click **Home**.
4. Under the Get Started pane, click **Download BI Desktop Tools**.
5. Select the add-in for the type of template you're working with.
 - Template Builder for Word: RTF templates
 - Analyzer for Excel: Excel templates
6. Save and then run the installer.

Creating and Editing RTF Report Layout Templates: Procedure

An RTF template is a rich text format file that contains the layout instructions to use when generating the report output. Use Microsoft Word with the Template Builder for Word add-in to design RTF templates.

Prerequisites

Install the Template Builder for Word add-in, and generate sample data.

Using Template Builder for Word

To configure an RTF template:

1. If you are editing an existing layout:
 - a. Select your report in the business intelligence catalog and click Edit.
 - b. In the report editor, click the Edit link of the layout to download the RTF file.
If you are creating a new layout, skip this step.

2. Open the downloaded RTF template file in Microsoft Word. Or, if you're creating a new template, just open Microsoft Word.
3. Load the sample data that you generated.
4. Edit or create the layout template.
5. Save the file as Rich Text Format (RTF).

eText Report Layout Templates

An eText template is an RTF-based report template that is used for Electronic Funds Transfer (EFT) and Electronic Data Interchange (EDI). The template is applied to an input XML data file to create a flat text file that you transmit to a bank or other organizations. Use Microsoft Word to create or edit eText templates.

File Format

Because the output is for electronic communication, not printing, you must follow specific format instructions for exact placement of data on the template. You design eText templates using tables.

- Each record is represented by a table.
- Each row in a table corresponds to a field in a record.
- The columns of the table specify the position, length, and value of the field.

Special Commands

You must set up special handling of the data from the input XML file. This table describes the two levels of handling and where you declare the corresponding commands.

Table 3-5: Two Levels of Handling

| Level | Example | Setup |
|--------------|---|---|
| Global | Character replacement Sequencing | Declare global commands in separate setup tables. |
| Record | Sorting | Declare functions in command rows, in the same table as the data. |

Uploading the Layout Template File to the Report Definition

If you're creating or editing a report layout using the layout editor, the layout is automatically saved to the report definition, so you can skip this step. For all other layout types, for example RTF, upload the template file to the report definition after you're done making layout changes.

Uploading the Template File

1. Select your report in the business intelligence catalog and click Edit.
2. In the report editor, click View a list.
3. In the table that lists the layouts, click Create.
4. Under Upload or Generate Layout, click Upload.
5. In the Upload Template File dialog box:
 - a. Enter a layout name.

- b. Browse for and select the layout template file that you created or edited.
 - c. Select the template file type.
 - d. Select the locale, which you can't change once the template file is saved to the report definition.
 - e. Click Upload.
6. Save the report definition.

Configuring Layout Settings for Reports

As part of creating or editing layout, you can set report properties related to layout. These settings determine, for example, which layouts users can choose from when viewing or scheduling the report. The settings apply only to your report.

Setting Layout Properties

1. Select your report in the business intelligence catalog and click Edit.
2. In the report editor, click View a list.
3. Set layout properties, some of which are described in this table.

Table 3-6: Layout Properties

| Setting | Usage |
|----------------|--|
| Output Formats | Depending on the requirements for a report, you may want to limit the output file formats (for example, PDF or HTML) that users can choose. The available output formats vary depending on the template file type. |
| Default Format | When multiple output formats are available for the report, the default output format is generated when users open the report in the report viewer. |
| Default Layout | When multiple layouts are available for the report, you must select a default layout to present it first in the report viewer. |
| Active | Active layouts are available for users to choose from when they view or schedule the report. |
| View Online | Select this check box so that layouts are available to users when they view the report. Otherwise, the layout is available only for scheduling the report. |

4. Click Save Report.

For more information on designing the Layouts refer [Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server](#).

4. Use Oracle Analytics Publisher Report in Transportation and Global Trade Management

This section provides general guidelines to use the newly created report in Oracle Transportation and Global Trade Management. You would need to refer to Oracle Transportation and Global Trade Management online help topics about Reports for more options and details.

Setup

Note: You must be assigned the Transportation and Global Trade Management Administrator role to use the newly created report in Oracle Transportation and Global Trade Management.

Using a new report consists of the following steps:

1. Create the report systems that represent the connection to Oracle Analytics Publisher Server.
2. Create the report, by specifying report details like content type, report system, report URL, default format type, report parameters, and other details.
3. Test your Oracle Transportation and Global Trade Management Report.

Report System

The report system is used to define the Oracle Analytics Publisher host, port, user, password, and report path prefix common to all reports sent to that host. Oracle Transportation and Global Trade Management provides a report system named "DEFAULT". This report system uses property macros to substitute property values at run time. These properties facilitate easy move from Stage to Prod Oracle Analytics Publisher instances. The following properties should be configured:

- glog.bip.externalFarm.host=
- glog.bip.externalFarm.port=9704
- glog.bip.externalFarm.user=bipreportuser
- glog.bip.externalFarm.password=
- glog.bip.externalFarm.reportPath=

Report

The report is used to define the link to Oracle Analytics Publisher report from Oracle Transportation and Global Trade Management by specifying the report path. Additional details that are specified include report system, content type, display format type, report parameters, and other details. You can use "Select via UI" to allow the report to explicitly run as an Transportation and Global Trade Management user.

Report Parameters

Oracle Transportation and Global Trade Management passes standard and ad hoc parameters to the report generator⁴. For more details on the standard parameters please refer to the **Parameters** section under the Data Models section.

⁴ If external report generators do not support these parameters, their content type should be set to **None**.

The report designer may add additional, ad-hoc parameters to a report using the Report Parameters grid of the Report Manager. Before submitting a report request, you are presented with a list of these additional parameters and must enter information for any marked as **mandatory**.⁵

For external reports other than Oracle Analytics Publisher, report parameters are added as HTTP request parameters to the URL.

Data Security

Oracle Transportation and Global Trade Management implements data security via Oracle's Virtual Private Database (VPD). Given a user and their role, the system limits row access to tables. The default VPD policies implement a domain model, where a user's domain determines their read/write privileges. Specific implementations, however, can enhance this model to restrict access based on other columns and grant access across domains.

When running Oracle Analytics Publisher reports from within Transportation and Global Trade Management, VPD security is automatically enforced by the system. The database credentials passed to the Oracle Analytics Publisher web services has the user and role in context, applying VPD policies on any queries that are executed for the report.

External report generators other than Oracle Analytics Publisher, however, have two options regarding data security:

- Suppress it. The standard `glogdba` database user requires a VPD context. If a report logs in as `glogowner`, however, VPD is suppressed. The report queries have access to all data. This may be appropriate for transactional reports where the data is restricted to a particular business object. Alternatively, each report can implement its own data security model independent of Oracle Transportation and Global Trade Management.
- Set the user context before issuing any queries. The `GLOGOWNER.VPD` package provides the following procedures and functions to set the context for VPD:

```
procedure set_user (user VARCHAR2);
procedure set_user_r (user VARCHAR2, user_role varchar2);

function set_user_fct (user VARCHAR2);
function set_user_r_fct (user VARCHAR2, user_role varchar2);
```

By passing the standard `P_GL_USER` (and optionally `P_ROLE_ID`) parameter to one of these functions, VPD returns the proper rows.

⁵ Note that transactional reports have at least one mandatory parameter matching the business object type. If requested from a transactional manager, the system automatically populates this parameter. E.g., a shipment document with one mandatory `P_SHIPMENT_ID` parameter with a `Query Name` of `BUY_SHIPMENT` can be selected from the shipment manager. The `P_SHIPMENT_ID` parameter is automatically populated with the relevant shipment `GID`.

5. Sample Transportation and Global Trade Management Reports

Some sample reports are included as part of the Transportation and Global Trade Management software installation. Since Oracle Transportation and Global Trade Management does not automatically install Oracle Analytics Publisher, loading the sample reports into the Oracle Analytics Publisher repository is a post-installation process. The sample reports are located in the Transportation and Global Trade Management installation in the following directory, where <otm_install> is the directory where Transportation and Global Trade Management is being installed:

```
<otm_install>/otm/
```

The Oracle Analytics Publisher catalog utility enables administrators and report developers to import Reports into the Oracle Analytics Publisher catalog. For more details on this subject, please refer to the "Moving Catalog Objects between Environments" section of the [Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server](#). The following section gives sample instructions used to do the import the reports.

If the Oracle Transportation and Global Trade Management app server and Oracle Analytics Publisher report server are on two different machines, make sure to copy the report artifacts from the app server to a folder on the Oracle Analytics Publisher report server, e.g. temp_otm_reports.

6. Export and Import Reports to Oracle Analytics Publisher Repository

This chapter provides general guidelines on how to move report between environments. One can use the same guidelines to import the sample reports. There are two major artifacts for any report once completely designed.

- Report.xdo files with corresponding configuration files
- Report.xdm files with corresponding configuration files

More detailed explanation of the report artifacts is given in the chapter [Moving Catalog Objects between Environments](#) in Administering Oracle Analytics Publisher in Oracle Analytics Server.

Configure the Oracle Analytics Publisher Catalog Utility

On-Premise customers have the option to use a command line utility for importing/exporting report artifacts. Please refer to section [Preparing to Use the BI Publisher Catalog Utility](#) in the chapter [Moving Catalog Objects between Environments](#) in Administering Oracle Analytics Publisher in Oracle Analytics Server.

Assume [Oracle Analytics Publisher Home] to be the directory where Oracle Analytics Publisher is installed. The following steps and commands are given for Linux machine with bash shell.

1. Make a directory "BIPCatalogUtil" under [Oracle Analytics Publisher Home]/.

```
mkdir [Oracle Analytics Publisher Home]/BIPCatalogUtil
```
2. Go to [Oracle Analytics Publisher Home]/Oracle_BI1/clients/bipublisher.
3. Extract contents of BIPCatalogUtil.zip in the above location to go to [Oracle Analytics Publisher Home]/BIPCatalogUtil.
4. Unzip BIPCatalogUtil.zip -d [Oracle Analytics Publisher Home]/BIPCatalogUtil
5. Edit xmlp-client-config.xml. This configuration file is located in the BIPCatalogUtil/config directory.
6. Specify the Oracle Analytics Publisher instance URL ("bipurl") and the user name and password of the Oracle Analytics Publisher instance from which you must export or to which you must import.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE properties SYSTEM "http://java.sun.com/dtd/properties.dtd">
<properties>
  <comment>BIP Server Information</comment>
  <entry key="bipurl">http://sta00XXX.example.com:14001/xmlpserver/</entry>
  <entry key="username">OPERATIONS</entry>
  <entry key="password">welcome</entry>
</properties>
```

If you do not want to store this information in the configuration file, then at the time of import/export you can also set the bipurl, username, and password as parameters in the command line to overwrite values defined in xmlp-client-config.xml.

7. Add below variables to your environment

```
export BI_EXPORT_HOME=[Oracle Analytics Publisher Home]/BIPCatalogUtil
export PATH=$BI_EXPORT_HOME/bin:$PATH
export BIP_LIB_DIR=$BI_EXPORT_HOME/lib
export BIP_CLIENT_CONFIG=$BI_EXPORT_HOME/config
```

Add the above commands into your `.bashrc` file if you are using a batch shell, so that every time a user logs into a shell, these commands are automatically executed.

8. Close the terminal and launch a new Terminal.

Command Line Utilities to Import and Export Report Artifacts

The following commands are used to export and import reports:

Export Command

```
BIPCatalogUtil.sh -exportfolder catalogpath=[folder-name-to-export]
basedir=[dest-folder-to-place-exported] subfolders=true extract=true
overwrite=true
```

Import Command

```
BIPCatalogUtil.sh -import basedir=<temp_otm_reports> subfolders=true
overwrite=true
```

<temp_otm_reports> is the directory where the report artifacts are placed.

Other Options to Move the Report Artifacts

For many users and report designers, the command line utilities are difficult to use. They may not have access to the environments where they will have to execute these commands. In such case you can use the Download and Upload tools in the report UI.

For more information on this please refer to the section [Performing Tasks on Catalog Objects](#) and [Downloading and Uploading Catalog Objects](#) in Using Oracle Analytics Publisher in Oracle Analytics Server.

7. Intermediate File Persistence

During report generation, content and report files are written to the disk before being distributed. By default, these files have a short lifespan. Once the report is generated, the content file is deleted. Once the report is distributed, the report file is deleted. For troubleshooting, it may be useful to view these files. They can be persisted via the following properties:

Table 7-1: Intermediate File Persistence

| Property | Description | Default |
|---|---|----------------|
| glog.bipreports.report.persist.browser | If true, report files used for browser views are not removed. | false |
| glog.bipreports.report.persist.attachment | If true, report files used for email attachments are not removed. | false |
| glog.bipreports.report.persist.printer | If true, report files used for IPP printing are not removed. | false |

8. Printing Reports

Oracle Transportation and Global Trade Management supports the printing of reports to an Internet Printing Protocol (IPP) compliant printer with specific support for a Common UNIX Printing System (CUPS) printer.

Configure Printer in Oracle Analytics Publisher

This document lists the steps required to enable IPP printing either through a printer running from a CUPS server or directly via IPP.

If you are going to use a printer running through CUPS, your system administrator needs to add the printer to the CUPS server. Once your CUPS printer is set up, complete the following:

Log into the Oracle Analytics Publisher console.

1. Click **Sign In**.
2. Click **Administration**.
3. Click the **Printer** tab.
4. Click **Add Server**.
5. For a CUPS or direct IPP printer:
6. Enter the **Server Name**. You will need to enter this into Transportation and Global Trade Management later, so make note of it.
7. Enter the URI for your server. For CUPS the form is "ipp://<CUPS host>:631/printers/<printer name>"

IPP uses the TCP port 631 for printing, so any firewalls between the client and the server must be configured to allow bi-directional traffic on that port. Please consult your network administrator if you think any configuration changes are necessary.
8. Check with your system administrator for any Filter requirements.
9. It is required to use SSL Encryption. Select **SSL** for the **Encryption Type** in the Security section.
10. It is also required to protect the Printer/Print Server using User Authentication. Please enter the corresponding details in the **Username**, **Password**, and **Authentication Type** fields. The **Authentication Type** must be **Basic** or **Digest**.
11. The Proxy Server needs to be configured for the Printer.
12. Click **Apply**.

A Direct IPP printer is set up the same way except for one difference. Instead of going through the CUPS server, you set up the URI to point to the server and IPP port directly. The URI would be entered in the following format, "ipp://<PRINTER_FQDN>:631"

Print from Oracle Analytics Publisher

To ensure Oracle Analytics Publisher functionality, you can print a test page with your printers.

1. Click **Home > Report Job > Search**.
2. Click the "+" sign next to "Reports".
3. Double click "domestic_packing_list".
4. Highlight the "domestic_packing_list" report.
5. Click **Open**.

6. Select the **Output** tab.
7. Click the **Add Destination** button.
8. Select a printer. You can select all your printers by clicking the **Add Destination** button an appropriate number of times.
9. Click the **Schedule** button. Ensure the Frequency is correct, in this case "Once".
10. Select **Run Now**.
11. Click **Submit**.
12. In the **Submit** pop-up, enter a **Report Job Name**.
13. Click **OK**.
14. Go to your physical printer and ensure that your jobs were printed.
15. Sign out of the Oracle Analytics Publisher console.

Configure Printer in Transportation and Global Trade Management

After confirming that printing is working from within Oracle Analytics Publisher, you need to configure Transportation and Global Trade Management to use the printer defined in Oracle Analytics Publisher.

Configure the Printers

1. Navigate to **Business Process Automation > Power Data > Document Generation > Printers**.
2. Click **New**.
3. Enter the following:
 - **Printer ID**: A printer ID
 - **Printer Name**: The server name you gave your printer when you set up the printer in Oracle Analytics Publisher.
4. No other fields are necessary. The system uses the following fields if specified: Orientation, Sides, Number of Copies, and Media.
5. Click **Finished**. Repeat for as many printers as you have set up in Oracle Analytics Publisher.

Print from Transportation and Global Trade Management

Option 1

1. Navigate to **Business Process Automation > Document Manager**.
2. Click **Search**.
3. Select the check box next to a document.
4. Click **Actions > Send Content**.
5. In the Printers grid, enter your printer(s).
6. Click **Save**.
7. Click **Submit**.

You should get a Confirmation dialog box.

Option 2

1. Navigate to **Shipment Management > Shipment Management > Buy Shipments**.
2. Click **Search**.
3. Select the check box next to a shipment.
4. Click **Actions > Business Process Administration > Reports > Domestic Packing List**.
5. Enter the following:
 - a. **Report Format:** PDF
 - b. **Delivery Method:** Print
 - c. **Printer ID**
6. Click **Submit**.

You should get an Information screen saying, "The report print request has been submitted to <YOUR_PRINTER>".

Enable Transportation and Global Trade Management Print Logging

Additionally you can turn on some printing logging as follows:

1. Navigate to **Configuration and Administration > Power Data > General > Log Files**.
2. Select a **Type** of System.
3. Click **Search**.
4. Edit the SYSTEM log.
Note: To edit the SYSTEM log you must be logged into Transportation and Global Trade Management as DBA.ADMIN.
5. Add the following log IDs to the SYSTEM log:
 - a. Print
 - b. PrintDebug
 - c. PrintDetails
6. Click **Finished**.

View Logging

1. Open any Process Management screen. For example, Shipment Management > Process Management.
2. Under Logs, click System.
3. In the **From** field, change the time to when you submitted the first print job.
4. In the **Log** field, select SYSTEM.
5. In the **Severities** field, leave default setting.
6. Select the following IDs:
 - a. Print
 - b. Print Debug
 - c. PrintDetails
7. Leave the **Top Level Process** field blank.

8. Click **View Results**.

You should see something like the following:

```
Debug Print Sending print: Domestic Packing List to <YOUR_PRINTER> (<#>)
[transport - IPP - 1]
Debug PrintDebug File to print
/middleware/app/otm641/otm/temp/prt714623267893139703.pdf [transport - IPP - 1]
Debug PrintDebug BIP Print Service URL: http://pod-primary-1.otmgtm-
cloud.oracle.com:8704/xmlpserver/services/v2/ScheduleService [transport - IPP -
1]
Debug PrintDebug BIP Print Soap Request:
Debug PrintDebug BIP Print Soap Response:
Debug Print Print successful: Domestic Packing List to <YOUR_PRINTER> (<#>)
[transport - IPP - 1]
```

Debugging Using CUPS Print Server

It is highly recommended to use a CUPS printer server. Using a print server will make it easier to diagnose issues since you can view the status of the printer and printer jobs.

1. Log into the printer server host.
2. Click the **Printers** tab.

You will see a list of CUPS printers and ancillary information. Look for the "Status".

3. Click on your printer in the queue **Name** column.
4. Click **Show Active Jobs**.
5. Scroll to the bottom of the page, and you should see a job "spooling".

If your job spools it's in the printer queue which indicates that your job has been recognized and is being processed.

IPP Printing Frequently Asked Questions (FAQs)

Is there an alternative means of printing reports, documents, etc.?

Yes. Reports can be viewed and printed on a local printing using a web browser.

Can a self signed SSL certificate be used, rather than a certificate from a Certification Authority?

No. Self signed certificates are not supported.

Can the print server be the printer itself, or, must a print server be, for example, a CUPS (Common UNIX Printing System) server?

The IPP print server can be the printer itself. Newer printers already have built in IPP over HTTPS support. Consult the printer's user guide for specific setup requirements and availability.

Is it mandatory to use SSL and client authentication?

Yes.

How to test that my printer is working?

You can run any report and redirect the print output to the newly setup printer. If the job completes successfully and the printer receives the print request then the setup is good.

Are there any troubleshooting tips in case the print request doesn't go through?

Review and make sure the prerequisite steps are followed.

Verify the print server logs to check if it received the print request. Refer the IPP print server, CUPS or Windows IPP software vendor documentation for more details on where to find the logs.

9. Oracle Analytics Publisher 10g Migration

Oracle Transportation and Global Trade Management provides the following reports as the sample reports.

- AES_FILING
- BILL_OF_LADING
- CUSTOMER_COMMERCIAL_INVOICE
- DEMURRAGE_FINANCIAL
- DOMESTIC_PACKING_LIST
- INVOICE
- PICKUP_SUMMARY
- PROCUREMENT_BID_ROUND_STATUS
- PROCUREMENT_LANE_SUMMARY
- PROCUREMENT_MANUAL_AWARDS
- PROCUREMENT_OUTLIER_BID_STATUS
- PROCUREMENT_SHIPMENT_HISTORY
- PROCUREMENT_SOL_EVAL_BY_LANE
- PROCUREMENT_SOLUTION_BY_LANE
- PROCUREMENT_SOLUTION_COST_SUMMARY
- PROCUREMENT_WINNING_VS_OTHER_BIDS

These reports are available for new installations and systems that were migrated from a version prior to 6.4. However, these reports need to be loaded into the Oracle Analytics Publisher instance installed by the customer.

Migrating from Stand-alone Oracle Analytics Publisher 10g

If you have an existing external Oracle Analytics Publisher 10g instance, you can migrate the existing reports to Oracle Analytics Publisher 11g. Please refer to the [Upgrading Oracle BI Publisher](#) in the [Oracle® Fusion Middleware Upgrade Guide for Oracle Business Intelligence](#) for more details. Particular attention should be paid to the “Post Upgrade Considerations for BI Publisher 11g” section.

Once you have upgraded to 11g, you can upgrade to 12c.

Migrating from Embedded BI Publisher 10g

If you are migrating from the embedded BI Publisher, you will need to do more work to migrate existing reports. The SQL queries defined in BI Publisher 10g Data Templates will need to be rebuilt as BI Publisher 11g Data Models. It may be possible to upload the BI Publisher 10g Format Template into the BI Publisher 11g catalog, however it is highly recommended that you re-create reports using the new 11g Layout Template whenever possible. The 11g Layout Template is a WYSIWYG report designer which can greatly simplify report design and maintenance.

In addition to migrating the report itself, it will be necessary to modify the existing Report Registration in Oracle Transportation and Global Trade Management. The follow changes should be made to have a report execute using the external BI Publisher instance.

1. Log into Oracle Transportation and Global Trade Management.

2. Navigate to **Business Process Automation > Power Data > Document Generation > Reports**.
3. Select an existing report.
4. Select the **Report System** created previously. See BI Publisher Configuration section for more detail.
5. Specify the **Report Path** corresponding to the Report in BI Publisher.
6. Click **Finish**.

Migrating from BI Publisher 11g to 12c

If you are migrating from BI Publisher 11g to 12c (12.2.1.2.x), you can migrate the existing reports to BI Publisher 12c. Please refer to [Oracle® Fusion Middleware Upgrade Guide for Oracle Business Intelligence](#) for more details. Particular attention should be paid to the “Post Migration Steps for BI Publisher” section.

10. Report Storage and Cleanup

Report Storage

Depending on your use of reports, you may want to adjust how temporary report files are stored. These files are used to provide report content to emails, printers and the browser and are managed via common Store functionality. A store represents a stream of data:

- **In memory:** If the data is generally small, a customer can configure the data to be stored in memory. This increases performance at the cost of memory usage.
- **On disk where the caller determines the data lifespan:** This is referred to as an 'owned' cache as the items are owned by the caller. An owned cache is typically used when the data has a short, deterministic lifespan; or to allow debugging of persistent content. Owned caches leverage the standard `glog.util.cache.TemporaryFileCache`, which in turn extends our common `glog.util.cache.OwnedCache`.
- **On disk in an LRU file cache:** This store leverages the standard `glog.util.cache.TemporaryFileLRUCache`, which in turn extends our common `glog.util.cache.LRUCache`.

The following list contains properties that control the report store. Note that the store can be monitored via App-Tier Caches accessible as DBA.ADMIN under Technical Support. The cache name is Reports.

- `glog.bipreports.report.store`
- `glog.bipreports.report.path`
- `glog.bipreports.report.prefix`
- `glog.cache.Reports.capacity`

Report Persistence

Regardless of the store type, most report use cases are synchronous. A user requests a report from the browser and either receives a synchronous HTTP response or immediately generates an email with a report attachment. In both these cases, caller code can remove the content or report as soon as it's used. Only when reports are retrieved asynchronously by a user via an email link does a report store truly need to manage generated files.

The following table details the lifespan of reports. For each use case, you can suppress the automatic removal of data and rely on the store or periodic cleanup (see below) to limit file growth. This is recommended for asynchronous reports but may also be useful for debugging of synchronous reports.

Table 10-1: Report Lifespans

| Use Case | Report Removal | Suppress Removal With | Default |
|-------------------------------------|--|--|---------|
| Run report; Display on Screen | After HTTP response is streamed | <code>glog.bipreports.report.persist.browser</code> | false |
| Run report; Email | After creation of e-mail attachment | <code>glog.bipreports.report.persist.attachment</code> | false |

| Use Case | Report Removal | Suppress Removal With | Default |
|---|---|--|---------|
| Schedule report Print Document (Agent action) | After the report is first served to a remote user | glog.bipreports.report.persist.log | true |
| Printing of the Report | After creation of print attachment to send to printer | glog.bipreports.report.persist.printer | false |

General File Cleanup

The default implementations of the report store automatically control file growth on the application servers. There are a number of reasons, though, why a general cleanup mechanism is needed:

- If Oracle Transportation and Global Trade Management application servers fail or are cycled, the owned and LRU stores lose all state. Any files currently on disk will remain.
- If you choose to suppress report removal for debugging, files can build up on disk.

To address these cases, the report engine includes a cleanup poller that wakes up periodically and scans the specified directories for files older than a given threshold. These files are then removed.

Properties include:

- glog.bipreports.cleanup.type=report
- glog.bipreports.cleanup.report.path=<directory to scan>. This defaults to \$glog.bipreports.report.path\$
- glog.bipreports.cleanup.report.files=<comma-delimited list of file wildcards to clean. See WildcardFileSearch for syntax.>. This defaults to report-*, *.html, *.rtf, *.pdf, *.xls.
- glog.bipreports.cleanup.report.threshold=<# of days old a file must be for cleaning>. This defaults to 30 days.
- glog.bipreports.cleanup.report.frequency=<# of minutes between cleanup checks>. This defaults to 360 minutes.

11. Troubleshooting

When generating a report, errors can occur in Oracle Analytics Publisher. If fatal, an exception is thrown to Oracle Transportation and Global Trade Management. For an ad-hoc report request, the exception is shown to the user; for scheduled or automated reports, it is written to the exception log.

Report Logging

Two types of logging are available to diagnose report issues:

- Oracle Transportation and Global Trade Management logging. The `Report` log ID outputs the major steps of report creation. The `ReportDetails` log ID provides more detailed information.
- Oracle Analytics Publisher logging. The Oracle Analytics Publisher engine maintains a separate logging subsystem to track data generation and transformation progress. Please refer to Oracle Analytics Publisher documentation for more details on this topic

Oracle Transportation and Global Trade Management Logging

As mentioned above, you can enable logging in Oracle Transportation and Global Trade Management by enabling the `Report` and `ReportDetails` log IDs. This logging will can give the details of which report is being accessed and the SOAP request being posted to the Oracle Analytics Publisher external server web service.

Oracle Analytics Publisher Logging

You can enable detailed logging on the Oracle Analytics Publisher server to track what is being done by Oracle Analytics Publisher while generating the report. For more information on the type of log files, the categorization of the log levels, and configuration of the log files refer to [Enable Diagnostics](#) in the [Administering Oracle Analytics Publisher in Oracle Analytics Server](#).

Frequently Asked Questions

How do I configure Oracle Analytics Publisher reports in Oracle Transportation and Global Trade Management?

This guide talks about this in more detail. Below are the high level steps.

1. Configure the Oracle Analytics Publisher Data Source.
 - a. Give data source name as `otmoltp`
 - b. Give the database username as `globalreportuser`.
2. Design Report in Oracle Analytics Publisher.
 - a. Define a data model.
 - b. Define a report with layout for the data model.
 - c. Test the report using Oracle Analytics Publisher server directly.
3. Define a report system for connecting to the Oracle Analytics Publisher server or use the report system `DEFAULT` with property macros pointing to `glog.bip.externalFarm.*` properties.

The Oracle Analytics Publisher user with which you created a report and user with which you want to access the report need not be the same. Please refer to [Understand Publisher Users, Roles, and Permissions](#), [Configure Users, Roles, and Data Access](#), and [Grant Catalog Permissions](#) sections in the [Administering Oracle Analytics Publisher in Oracle Analytics Server](#).

4. Define the report definition with the report system.
 - a. Provide the report absolute path. This will be the path in the URL for accessing the report from the Oracle Analytics Publisher server.
 - b. Take the Report path prefix defined in the report system into consideration since the absolute path provided for the web service will be a concatenation of the report path prefix and the absolute path given in the report definition.
 - c. Define report parameters. The parameter name should match the parameter name defined for the data model in Oracle Analytics Publisher.

Which database user is used for generating reports?

The application uses the database user pointed by the PRIMARY_THIN data source defined in Transportation and Global Trade Management for generating online reports. Typically it is glogdba.

For generating offline reports which connect to a replicated offline database, the application uses the database user pointed by the ODS data source defined in Transportation and Global Trade Management.

For generating archive reports which connect to an archive schema, the application uses the database user pointed by the ARCHIVE data source defined in Transportation and Global Trade Management.

Another important point to note here is the reports run from the Oracle Analytics Publisher server will not have any VPD context applied. Reports run from Transportation and Global Trade Management run with the VPD Context of the user running the report.

Why do I get Invalid format requested error when trying to view selected format of the report?

After designing the report and registering it with Transportation and Global Trade Management, when trying to generate the report for a particular format, if there is an error like:

```
oracle.xdo.webservice.exception.OperationFailedException:  
PublicReportService::generateReport for reportAbsolutePath  
[/Reports/pickup_summary/pickup_summary.xdo] failed: due to  
oracle.xdo.servlet.data.DataException: Invalid format requested: excel2000  
[000717] Invalid format requested: excel2000
```

This is because the report is not enabled for the format being requested.

Follow the steps described in the following link: [Part II Create Pixel-Perfect Reports and Layouts](#)

How do I send multiple values for a parameter of the report?

Follow the steps as per the below link

Review the [Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server](#)

When defining a new parameter enable the check box for Text field contains comma-separated values.

How do I move report artifacts from one server to another?

Once a report is designed in the test environment, we will want to move the report from test environment to production environment.

Please follow the steps as outlined in chapter 6 of this guide.

Why do I get OutOfMemoryError: Java heap space?

Oracle Transportation and Global Trade Management is integrated with Oracle Analytics Publisher to send the report requests and receive the generated output as response. Transportation and Global Trade Management is not equipped to manage very large responses that can be received from the Oracle Analytics Publisher server. Typically Transportation and Global Trade Management assumes that transactional reports which tie to one business object are configured.

If analytical reports are configured, these reports can return a large amount of data which in turn can occupy the space in the java heap and can lead to OutOfMemoryError.

While Transportation and Global Trade Management can receive a small amount of data for the transactional reports, it may not have enough space to handle the large amount data that can be generated in case of analytical reports.

It is recommended that you use transactional reports within Transportation and Global Trade Management for this reason. The analytical report can still be used by leveraging the Oracle Analytics Publisher report server capabilities.

How do I view all of the scheduled reports?

Use the menu link **View Scheduled Jobs** at **Business Process Automation > Reporting > View Scheduled Jobs**.

Use **Business Process Automation > Reporting > View Completed Jobs** to view the report jobs which were generated during the scheduled period.

Note that the scheduling that happens in the application has no relation with the scheduling that Oracle Analytics Publisher provides. Transportation and Global Trade Management uses the Oracle Analytics Publisher server only to send the report generation SOAP requests.

Scheduled reports are not being received as emails, what should I check?

A scheduled report, even though it got generated, can back up on the mail queue in the application if the mail queue does not have enough threads to process the queued items. The report once generated will be queued up for email processing. The queue used for this is "transport - SMTP". Check the number of threads given for this queue and check the backlog on this queue. If there are backlog items on the queue, please increase the number of threads for this queue using the following property.

```
glog.process.threadGroup.mail
```

By default it has a value of 1. Please increase this value but do not increase it to a high value which will result in burdening of the mailing system.

Why are scheduled report received as a link and not as an attachment?

Read the online help for Security Level that can be configured for each of the report.

Even if the security level allows you to attach, there is a limit of size of the reports which can be attached. The property that governs this is

```
glog.notify.report.maxPdfSize
```

You should also check the property

`glog.mail.maxContentSize`

This property defines the maximum content of the email size. So if you decide to increase the first property you should check that the limit does not exceed the second property.

How do I generate reports with a bar code?

For information on how to create reports which need to print barcodes, please refer to the [2D Barcode Functions](#). You will be able to use only three bar code fonts shipped with Oracle Analytics Publisher. Please refer to the above documentation for more information.

Why does the report give me the same output for the same set of parameters even though I change the user?

When a report is designed in Oracle Analytics Publisher, you need to pay attention to the caching properties of the reports. If the caching is enabled when you have the same set of parameter the report can be cached for a certain period of time. See [Set Server Caching Specifications](#) in the Administering Oracle Analytics Publisher in Oracle Analytics Server guide.

Though it is a different application user, the report has no way of telling that it is different user unless, the user is also defined as one of the report parameters.

How do I disable report caching?

Please refer to the section "Why does the report give me the same output for the same set of parameters even though I change the user?"

12. Additional Resources

[Oracle Analytics Server documentation library](#)

13. Appendix: General Properties

See the “Advanced Configuration: Customer-defined Properties” chapter in the Administration Guide for instructions on how to manage reserved properties.

Table 13-1: General Properties

| Property | Reserved | Description |
|--|----------|--|
| glog.bipreports.app.tempDir | Yes | This sets the base directory for the app-tier bi publisher report generation. Default: \$temp.dir\$/bipublisher/ |
| <p>glog.bipreports.cleanup.type=report</p> <p>glog.bipreports.cleanup.report.path=<directory to scan>.</p> <p>glog.bipreports.cleanup.report.files=<comma-delimited list of file wildcards to clean.</p> <p>See WildcardFileSearch for syntax.>.</p> <p>glog.bipreports.cleanup.report.threshold=<# of days old a file must be for cleaning>.</p> <p>glog.bipreports.cleanup.report.frequency=<# of minutes between cleanup checks>.</p> | Yes | A cleanup type specifies some group of files in a common directory to scan. See the Report Designer’s Guide. |
| glog.bipreports.report.path=<path> | Yes | Directory to store final reports. Only valid for owned or LRU stores. Default: \$temp.dir\$ (e.g. /opt/otm-61-wl/temp) |
| glog.bipreports.web.tempDir | Yes | This sets the base directory for the web-tier bi publisher report generation. Default: /bipublisher/temp/ |

