ORACLE

Oracle Tax Analytics

Implementation Guide

Release 2.0.0

E37756-01

October 2012

ORACLE®

Oracle Tax Analytics Implementation Guide

Release 2.0.0

E37756-01

October 2012

Contents

Chapter 1

Preface

The *Oracle Tax Analytics Implementation Guide* describes best practices for implementing a data warehouse based on Oracle Tax Analytics.

Audience

This document is intended for business analysts, data modelers, data warehouse administrators, IT staff, and ETL developers who implement Oracle Tax Analytics.

Documentation and Related Resources

Oracle Tax Analytics Documentation Set	The Oracle Tax Analytics documentation set includes the following documents: • *Oracle Tax Analytics Release Notes* • *Oracle Tax Analytics Quick Install Guide* • *Oracle Tax Analytics Installation Guide* • *Oracle Tax Analytics Implementation Guide* • *Oracle Tax Analytics Reference Guide*
Oracle Technology Network	Visit the Oracle Technology Network (OTN) to access demos, whitepapers, Oracle By Example (OBE) tutorials, updated Oracle documentation, and other collateral. *Registering on OTN* You must register online before using OTN, Registration is free and can be done at www.oracle.com/technetwork/index.html *Oracle Documentation on OTN* The Oracle Documentation site on OTN provides access to Oracle documentation. After you have a user name and password for OTN, you can go directly to the documentation section of the OTN Web site at www.oracle.com/technetwork/indexes/documentation/index.html

Oracle Support	Oracle customers have access to electronic support through My Oracle Support.

Document Conventions

The following text conventions are used in this document:

Table 1: Documentation Conventions

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Chapter 2

Introduction to Oracle Tax Analytics Customization

This section provides an introduction to customizing Oracle Tax Analytics.

What is Oracle Tax Analytics?

Oracle Tax Analytics is a standards-based Enterprise Data Warehouse pre-built solution that addresses the operational and predictive analytical needs of public sector revenue management authorities.

Overview

The Oracle Tax Analytics tax and revenue management data warehousing solution enables tax authorities and public sector agencies to realize the power of insight more quickly. Oracle Tax Analytics reduces costs for both immediate and on-going operations by leveraging out-of-box Oracle-based Data Warehouse and Business Intelligence solutions, making world-class database and business intelligence technology solutions available with a taxation-specific data model.

Using Oracle Tax Analytics, you can jump-start design and implementation and quickly achieve a positive ROI for your data warehousing and business intelligence project with a predictable implementation effort. The pre-built content includes a foundational Oracle Tax Data Model, Intra-ETL for data movement within the Oracle Tax Data Model, reports, dashboards, metrics, and key performance indicators.

Oracle Tax Analytics provides much of the data modeling work that you must do for a tax or public sector business intelligence solution. The Oracle Tax Analytics logical and physical data models were designed following best practices generally for public sector agencies and specifically for tax authorities.

Oracle Tax Analytics Components

Oracle Tax Analytics includes the following components:

- Oracle Tax Data Model. Based on Oracle's leading data warehousing technology and reference architecture, the Oracle Tax Data Model provides a schema that contains a foundation layer and an analytical layer.

- Foundation Layer: the Foundation Layer is a third normal for (3NF) entity-object standards-based model that provides an integrated basis for business information with fully defined entities and relationships.
  - Analytical Layer: the Analytical Layer includes tables to support operational and predictive analytics.
- Oracle Data Integrator (ODI) Intra-ETL packages to extract, transform, and load data from the foundation layer tables to the derived and aggregate tables in the analytical layer.
- Reports, dashboards, metrics, key performance indicators developed using Oracle Business Intelligence Suite Enterprise Edition.
- Data mining schema.

See the *Oracle Tax Analytics Reference Guide* and the *Oracle Tax Analytics Installation Guide* for additional information on the components.

Oracle Products in Oracle Tax Analytics

Several Oracle technologies are involved in building the infrastructure for Oracle Tax Analytics.

- *Oracle Database*
- *Enterprise Edition Oracle Data Integrator*
- *Oracle Development Tools*
- *Oracle Business Intelligence Suite Enterprise Edition Presentation Tools*
- *Oracle Data Mining*

Oracle Database

Oracle Tax Analytics uses a complete Oracle technical stack.

Oracle Data Integrator

Oracle Data Integrator is a comprehensive data integration platform that covers all data integration requirements: from high-volume/high-performance batch loads, to event-driven, trickle-feed integration processes, to SOA-enabled data services. Oracle Data Integrator is the technology used for Intra-ETL within the Oracle Tax Data Model.

Oracle Development Tools

You can use the following Oracle tools to customize the predefined physical models provided with Oracle Tax Data Model:

Table 2: Oracle Development Tools Used with Oracle Tax Analytics>

Name	Use
SQL Developer or SQL*Plus	To modify, customize, and extend database objects

Oracle Business Intelligence Suite Enterprise Edition Presentation Tools

Oracle Business Intelligence Suite Enterprise Edition is a comprehensive suite of enterprise BI products that delivers a full range of analysis and reporting capabilities. You can use Oracle Business Intelligence Suite Enterprise Edition Analysis and Dashboard presentation tools to create your own measure, KPI, reports and dashboards.

Oracle Data Mining

Oracle Data Mining provides powerful data mining functionality as native SQL functions within the Oracle Database. Oracle Data Mining enables users to discover new insights hidden in data and to leverage investments in Oracle Database

technology. With Oracle Data Mining, you can build and apply predictive models that help you target your best customers, develop detailed customer profiles, and find and prevent fraud. Oracle Data Mining, a component of the Oracle Advanced Analytics Option, helps companies better "compete on analytics." Oracle Data Mining provides a collection of in-database data mining algorithms that solve a wide range of business problems. The sample data mining model that is included with Oracle Tax Analytics utilizes the Oracle Data Mining technology. Oracle Data Mining is an optional component of the Oracle Tax Analytics infrastructure.

Customizing Oracle Tax Analytics

Although Oracle Tax Analytics was designed following best practices for public sector revenue management authorities, usually the model requires some customization to meet your business needs. The reasons that you might customize Oracle Tax Analytics include:

- You business does not have a business area that is in the Oracle Tax Analytics data model.

- Your business has a specific business are that does not exist in the Oracle Tax Data Analytics data model.

- You want to add a new or different business rule.

- You have different presentation requirements.

Oracle Tax Analytics does not support custom code developed by customers unless the issues related to customizations can be recreated using Oracle Tax Analytics delivered objects.

Before you start, ensure the implementation team has the required knowledge as outlined in the following section.

Prerequisite Knowledge for Implementers

As outlined in *Oracle Products in Oracle Tax Analytics* , Oracle Tax Analytics uses much of the Oracle stack. Consequently, to successfully implement Oracle Tax Analytics, the implementation team needs:

- Experience performing information and data analysis and data modeling.

    Note: Experience using Oracle SQL Data Modeler, is a plus.

- An understanding of the Oracle technology stack, especially related to data warehouse (database, data warehouse, OLAP, data mining, Oracle Data Integrator, Oracle Business Intelligence Suite Enterprise Edition).

- Hands-on experience using:
  - Oracle Database

  - PL/SQL

  - SQL DDL and DML syntax

  - Oracle Data Integrator

  - Oracle SQL Developer

  - Oracle Business Intelligence Suite Enterprise Edition Administrator, Answers, and Dashboards

Chapter 3

Physical Model Customization

This section provides general information about customizing the Oracle Tax Analytics physical model.

Conventions When Customizing the Physical Model

When developing the physical model for Oracle Tax Analytics, the conventions outlined below were followed. Continue to follow these conventions as you customize the physical model.

General Naming Conventions for Physical Objects

Follow these guidelines for naming physical objects that you define:

* When naming the physical objects follow the naming guidelines for naming objects within an Oracle Database schema. For example:
  * Table and column names must start with a letter, can use only 30 alphanumeric characters or less, cannot contain spaces or some special characters such as "!" and cannot use reserved words.
  * Table names must be unique within a schema that is shared with views and synonyms.
  * Column names must be unique within a table.
* Although it is common to use abbreviations in the physical modeling stage, as much as possible, use names for the physical objects that correspond to the names of the entities in the logical model. Use consistent abbreviations to avoid programmer and user confusion.
* When naming columns, use short names if possible. Short column names reduce the time required for SQL command parsing.
* The OTDM schema delivered with Oracle Tax Analytics uses the prefixes and suffixes described in the Naming Conventions section in chapter 5 of the *Oracle Tax Analytics Reference Guide*. Use these prefixes and suffixes for any new tables, views, cubes and indexes that you define, and ensure that they are prefixed with **WX**.

  Note: See: *Oracle Tax Analytics Reference Guide* for detailed information about the objects in the default Oracle Tax Analytics.

Common Change Scenarios

There are several common change scenarios when customizing the foundation layer of the physical data model:

Additions to Existing Structures

If you identify business areas or processes that are not supported in the default foundation layer of the Oracle Tax Analytics physical data model, add new tables and columns. Ensure these are prefixed correctly.

Carefully study the default foundation layer of the physical data model of Oracle Tax Analytics (and the underlying logical data model) to avoid building redundant structures when making additions. If these additions add high value to your business value, communicate the additions back to the Oracle Tax Analytics Development Team for possible inclusion in future releases of Oracle Tax Analytics.

Changes to Existing Structures

In some situations some structures in the foundation layer of the physical data model of the Oracle Tax Analytics may not exactly match the corresponding structures that you use. In this case you can make a copy of the structure prefixing it with **WX** and then make the changes required.

Deletions of Existing Structures

If there are areas of the model that cannot be matched to any of the business requirements of your legacy systems, it is safer to keep these structures and not populate that part of the warehouse.

Deleting a table in the foundation layer of the physical data model can destroy relationships needed in other parts of the model or by applications based on it. Some tables may not be needed during the initial implementation, but you may want to use these structures at a later time. If this is a possibility, keeping the structures now saves re-work later.

If tables are deleted they will be added back once you perform a product upgrade.

> **Note:** The guidelines above apply to both the foundation layer and the access and performance layer included in the OTDM schema.

Chapter 4

Intra-ETL Customization

Oracle Tax Analytics supports the use of ETL tools such as Oracle Data Integrator to define the workflow to execute the intra-ETL process. You can, of course, write your own intra-ETL. However, an intra-ETL component is delivered with Oracle Tax Analytics. This process flow is described in chapter 6 of the Reference Guide.

Follow these guidelines for customizing the intra-ETL:

- Do not make any changes to the packages or interfaces included as part of Oracle Tax Analytics. Any changes made to product code may be lost during an upgrade and cannot be supported. If you need to make changes, create a copy of the interface and then make changes.

- New interfaces and packages need to reside in a designated folder/s for customized code. Do not add any objects under product folders. This will ensure your code is not impacted during an upgrade.

- ODI repository IDs **001** to **500** and **999** are reserved for product development. Custom code must be created using repository ID in the range of **501** to **998**.

Chapter 5

Reporting Layer Customization

Dashboards and reports are delivered with Oracle Tax Analytics. These were developed using Oracle Business Intelligence Suite Enterprise Edition which is a comprehensive suite of enterprise business intelligence products that delivers a full range of analysis and reporting capabilities. Thus, the reports also illustrate the ease with which you can use Oracle Business Intelligence Suite Enterprise Edition Answers and Dashboard presentation tools to create useful reports. See the *Oracle Tax Analytics Reference Guide* for detailed information on the included reports.

You can use Oracle Business Intelligence Suite Enterprise Edition Answers and Dashboard presentation tools to create your own dashboards and reports. Changes to product reports or metrics are not supported. If you see a report or metric that needs to be changed to suit your business requirements, make a copy of this report/metric and then apply your changes.

New reports and/or dashboards should be created in a designated folder/s for customized code. Do not add any objects under product folders. This will ensure your code is not impacted during an upgrade.