## **Oracle® Database**

Sample Schemas 12*c* Release 1 (12.1) **E15979-04** 

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This manual describes the sample database schemas available with Oracle Database and used in some Oracle documentation and curriculum examples.



Oracle Database Sample Schemas, 12c Release 1 (12.1)

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Contributor: The Database 12c documentation is dedicated to Mark Townsend, who was an inspiration to all who worked on this release.

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# **Preface**

This guide is a primary source of information about the sample database schemas that are used for examples in Oracle Database documentation.

This preface contains the following topics:

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

### **Audience**

This document is intended for all users of the seed database, which is installed when you install Oracle Database.

# **Documentation Accessibility**

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# **Related Documents**

This guide does not discuss specific programming examples that use data in the sample schemas; see the Oracle Database documentation library for specific books that discuss the technology that you are using.

Sample database schema OE contains tables that use SQL data type XMLType. For information about the use of such data, see *Oracle XML DB Developer's Guide*.

### **Conventions**

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
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.

# **Introduction to Sample Schemas**

For many years, Oracle used the simple database schema SCOTT, with its two prominent tables EMP and DEPT, for various examples in documentation and training. These tables are inadequate to show the basic features of Oracle Database and other Oracle products. The sample database schemas described here provide more sutiable material that can be used for product documentation, courseware, software development, and application demos.

This chapter contains the following topics:

- About the Sample Schemas
- Design Principles of the Sample Schemas
- Customer Benefits of the Sample Schemas
- Overview of the Sample Schemas

## **About the Sample Schemas**

The sample database schemas provide a common platform for examples in each release of the Oracle Database. The sample schemas are a set of interlinked database schemas. This set provides approach to complexity:

- Schema Human Resources (HR) is useful for introducing basic topics. An extension to this schema supports Oracle Internet Directory demos.
- Schema Order Entry (OE) is useful for dealing with matters of intermediate complexity. Many data types are available in this schema, including nonscalar data types.
- Schema Online Catalog (OC) is a collection of object-relational database objects built inside schema OE.
- Schema Product Media (PM) is dedicated to multimedia data types.
- A set of schemas gathered under the main schema name Information Exchange (IX) can be used to demonstrate Oracle Advanced Queuing capabilities.
- Schema Sales History (SH) is designed to allow for demos with large amounts of data. An extension to this schema provides support for advanced analytic processing.

# **Design Principles of the Sample Schemas**

The sample database schemas have been created with the following design principles in mind:

- **Simplicity and ease of use**. Schemas HR and OE are intentionally simple. They provide a graduated path from simple to intermediate levels of database use.
- **Relevance for typical users.** The base schemas and their extensions bring to the foreground the functionality that customers typically use. Only the most commonly used database objects are built automatically in the schemas. The entire set of schemas provides a foundation upon which one can expand to illustrate additional functionality.
- **Extensibility**. The sample schemas provide a logical and physical foundation for adding objects to demonstrate functionality beyond the fundamental scope.
- Relevance. The sample schemas are designed to be applicable to e-business and other significant industry trends (for example, XML). When this goal conflicts with the goal of simplicity, schema extensions are used to showcase the trends in focus.

## **Customer Benefits of the Sample Schemas**

Benefits provided by the sample schemas include the following:

- **Continuity of context.** When encountering the same set of tables everywhere, users, students, and developers can spend less time becoming familiar with the schema and more time understanding or explaining the technical concepts.
- **Usability**. Customers can use these schemas in the seed database to run examples that are shown in Oracle Database documentation and training materials. This first-hand access to examples facilitates both conceptual understanding and application development.
- Quality. Through central maintenance and testing of both the creation scripts that build the sample schemas and the examples that run against the schemas, the quality of Oracle Database documentation and training materials is enhanced.

## Overview of the Sample Schemas

The Oracle Database sample schemas are based on a fictitious sample company that sells goods through various channels. The company operates worldwide to fill orders for products. It has several divisions, each of which is represented by a sample database schema.

- Schema HR Division Human Resources tracks information about the company employees and facilities.
- Schema OE Division Order Entry tracks product inventories and sales of company products through various channels.
- Schema PM Division Product Media maintains descriptions and detailed information about each product sold by the company.
- Schema IX Division Information Exchange manages shipping through B2B applications.
- Schema SH Division Sales tracks business statistics to facilitate business decisions.

### Schema HR

In the Human Resource (HR) records, each employee has an identification number, e-mail address, job identification code, salary, and manager. Some employees earn commissions in addition to their salary.

The company also tracks information about jobs within the organization. Each job has an identification code, job title, and a minimum and maximum salary range for the job. Some employees have been with the company for a long time and have held different positions within the company. When an employee resigns, the duration the employee was working, the job identification number, and the department are recorded.

The sample company is regionally diverse, so it tracks the locations of its warehouses and departments. Each employee is assigned to a department, and each department is identified either by a unique department number or a short name. Each department is associated with one location, and each location has a full address that includes the street name, postal code, city, state or province, and the country code.

In places where the departments and warehouses are located, the company records details such as the country name, currency symbol, currency name, and the region where the country is located geographically.

#### Schema OE

The company sells several products, such as computer hardware and software, music, clothing, and tools. The company maintains information about these products, such as product identification numbers, the category into which the product falls, order entry (OE), the weight group (for shipping purposes), the warranty period if applicable, the supplier, the availability status of the product, a list price, a minimum price at which a product will be sold, and a URL address for manufacturer information. Inventory information is also recorded for all products, including the warehouse where the product is available and the quantity on hand. Because products are sold worldwide, the company maintains the names of the products and their descriptions in several languages.

The company maintains warehouses in several locations to fulfill customer needs. Each warehouse has a warehouse identification number, name, facility description, and location identification number.

Customer information is also tracked. Each customer has an identification number. Customer records include customer name, street name, city or province, country, phone numbers (up to five phone numbers for each customer), and postal code. Some customers place orders through the Internet, so e-mail addresses are also recorded. Because of language differences among customers, the company records the native language and territory of each customer.

The company places a credit limit on its customers, to limit the amount of products they can purchase at one time. Some customers have an account manager, and this information is also recorded.

When a customer places an order, the company tracks the date of the order, how the order was placed, the current status of the order, shipping mode, total amount of the order, and the sales representative who helped place the order. The sales representative may or may not be the same person as the account manager for a customer. If an order is placed over the Internet, no sales representative is recorded. In addition to order information, the company also tracks the number of items ordered, the unit price, and the products ordered.

Schema OE also contains XML purchase-order documents. These are stored in Oracle XML DB Repository after validation against the registered XML schema purchaseorder.xsd. You can access these documents in various ways, such as by querying table purchaseorder using SQL, querying public views RESOURCE\_VIEW and PATH\_VIEW, and querying the repository using XPath expressions.

The purchase-order XML documents are located in Oracle XML DB Repository folder \$ORACLE\_HOME/rdbms/demo/order\_entry/2002/month, where month is a three-letter month abbreviation (for example, Jan, Feb, Mar).

**See Also:** Appendix A, "Purchase-Order XML Schema" for the structure of the XML data in table OE.purchaseorder

#### OC Description

The Online Catalog (OC) subschema of database schema OE addresses an online catalog merchandising scenario. The same customers and products are used in OC as in schema OE proper, but subschema OC organizes the products into a hierarchy of parent categories and subcategories. This hierarchy corresponds to the arrangement on an e-commerce portal site, where users navigate to specific products by drilling down through increasingly specialized categories of products.

#### Schema PM

The company stores multimedia and print information about its products in a database. The Product Media (PM) schema is used to store such information. Examples of such information are:

- Promotional audio and video clips
- Product images and thumbnails for Web publishing
- Press release texts
- Print media advertisements
- Other promotional texts and translations

#### Schema IX

The company has decided to test the use of messaging to manage its proposed B2B applications. The plan calls for a small test that will allow a user from outside the firewall to place an order and track its status. The order must be booked into the main system. Then, depending on the location of the customer, the order is routed to the nearest region for shipping. The Information Exchange (IX) schema stores such information.

Eventually, the company intends to expand beyond its current in-house distribution system to a system that will allow other businesses to provide the shipping. The messages sent must be in a self-contained format. XML is the perfect format for sending messages, and both Advanced Queuing Servlet and Oracle Internet Directory provide the required routing between the queues.

After the orders are either shipped or back ordered, a message must be sent back to the employee concerned to inform about the status of the order and to initiate the billing. It is important that the message be delivered only once and that there be a system for tracking and reviewing messages to facilitate resolution of any discrepancies with the order.

For the purpose of this test application, the company uses a database server and an application server. The application provides a mechanism for examining the XML messages as well as monitoring the queues. To demonstrate connectivity from outside the firewall, both the generation of a new order and customer service reporting are performed using queues. The new order application directly enables a queue, while the customer service queries require XML messaging to disable a queue.

### Schema SH

The sample company does a high volume of business, so it runs business statistics reports to aid in decision making. Many of these reports are time-based and nonvolatile. That is, they analyze past data trends. The company loads data into its data warehouse regularly to gather statistics for these reports. These reports include annual, quarterly, monthly, and weekly sales figures by product. These reports are stored with the help of schema Sales History (SH).

The company also runs reports on distribution channels through which its sales are delivered. When the company runs special promotions on its products, it analyzes the impact of the promotions on sales. It also analyzes sales by geographical area.

# **Installing Sample Schemas**

During a complete installation of your Oracle Database, the sample schemas can be installed automatically with the seed database. If the seed database is removed from the system, you will need to reinstall the sample schemas before you can perform the steps given in the examples that you find in Oracle documentation and training materials.

This chapter describes how to install Product Name. It contains the following sections:

- Using the Database Configuration Assistant
- Manually Installing Sample Schemas
- Resetting Sample Schemas

**Caution:** By installing any of the Oracle Database sample schemas, you will destroy any previously installed schemas that use any of the following user names: HR, OE, PM, SH, IX, BI.

Data contained in any of these schemas will be lost if you run any of the installation scripts described in this section. You should not use the sample schemas for your personal or business data and applications. They are meant to be used for demonstration purposes only.

## Using the Database Configuration Assistant

When you install Oracle Database with the Oracle Universal Installer, the sample schemas are installed by default if you select the Basic Installation option. Selecting the sample schemas option installs all sample schemas (HR, OE, PM, SH, IX) in the database. If you choose not to install the sample schemas at that time, you can add them later by following the instructions in section "Manually Installing Sample Schemas" on page 2-2.

At the end of the installation process, a dialog box displays the accounts that have been created and their lock status. By default, all sample schemas are locked and their passwords are expired. Before you can use a locked account, you must unlock it and reset its password. You can unlock the accounts at this point in the installation process. Alternatively, after the installation completes, you can unlock the schemas and reset their passwords by using the ALTER USER ... ACCOUNT UNLOCK statement. For example:

ALTER USER hr ACCOUNT UNLOCK IDENTIFIED BY Password;

**See Also:** "Guidelines for Securing Passwords" in *Oracle Database* Security Guide for guidelines related to creating secure passwords

The sample schemas available to you depend on the edition of Oracle Database that you have installed and its configuration. Refer to the following table:

Schema	Oracle Database Personal edition	Oracle Database Standard edition	Oracle Database Enterprise edition
HR	OK	OK	OK
OE	OK	OK	OK
PM	OK	OK	OK
IX	OK	OK	OK
SH	Not available	Not available	Needs Partitioning Option installed

# Manually Installing Sample Schemas

If you decide not to install the sample schemas at the time of your initial database installation using DBCA, then you can also create the sample schemas manually by running SQL scripts. Install Oracle Database Examples (Companion CD, part of the media kit) to include these scripts in the demo directory under \$ORACLE\_HOME.

**See Also:** Oracle Database Examples Installation Guide for download and installation information

## Schema Dependencies

Various dependencies have been established among the schemas. So, when you create the schemas manually, you must create them in the following order: HR, OE, PM, IX, and SH.

Use this sequence to create the schemas:

- 1. Create schema HR.
- Create schema OE. Schema HR is already present, and you must know the password for schema HR to grant HR object privileges to OE. Some HR tables are visible to user OE with the use of private synonyms. In addition, some OE tables have foreign key relationships to HR tables.
- 3. Create schema PM: Foreign key relationships require that schema OE already exist when schema PM is created. You must know the password for OE, to grant to PM the right to establish and use these foreign keys.

**Note:** Schema PM requires that the database be enabled for the Java Virtual Machine (JVM) and *inter*Media. You can accomplish this during installation or later using the DBCA.

**4.** Create schema IX: The information exchange schema, IX, is based on order entry data in schema OE. Again, foreign key relationships require that schema OE already be present when schema IX is created. You must know the password for OE to grant to IX, the right to establish and use the foreign keys.

5. Create schema SH. Schema SH logically depends on schema OE, but you can create schema SH without creating the other four schemas.

## Guidelines for Installing Sample Schemas

All scripts necessary to install sample schemas reside in \$ORACLE HOME/demo/schema directory. Before you install sample schemas by running these scripts, follow these guidelines:

- You must connect as a system administrator using the SYSDBA privilege.
- When prompted to enter a password for the schema, enter a secure password that meets the requirements described in *Oracle Database Security Guide*.
- When prompted for tablespace names while running scripts:
  - Enter an appropriate tablespace name, for example, users as the default tablespace for a schema
  - Enter temp as the temporary tablespace for a schema
- When prompted for the log directory name, enter \$ORACLE\_ HOME/demo/schema/log/ or any other existing directory name.

**Note:** Make sure that you end the log directory name with a trailing slash, for example, \$ORACLE\_HOME/demo/schema/log/

### Installing the HR Schema

All scripts necessary to create the Human Resource (HR) schema reside in \$ORACLE\_ HOME/demo/schema/human\_resources.

You need to call only one script, hr\_main.sql, to create all the objects and load the data. The following steps provide a summary of the installation process:

Log on to SQL\*Plus as SYS and connect using the AS SYSDBA privilege.

```
sqlplus connect sys as sysdba
Enter password: password
```

To run the hr\_main.sql script, use the following command:

```
SQL> @?/demo/schema/human_resources/hr_main.sql
```

**3.** Enter a secure password for HR

```
specify password for HR as parameter 1:
Enter value for 1:
```

**See Also:** Oracle Database Security Guide for the minimum password requirements

4. Enter an appropriate tablespace, for example, users as the default tablespace for

```
specify default tablespace for HR as parameter 2:
Enter value for 2:
```

**5.** Enter temp as the temporary tablespace for HR

```
specify temporary tablespace for HR as parameter 3:
```

```
Enter value for 3:
```

**6.** Enter your SYS password

```
specify password for SYS as parameter 4:
Enter value for 4:
```

7. Enter the directory path, for example, \$ORACLE\_HOME/demo/schema/log/, for your log directory

```
specify log path as parameter 5:
Enter value for 5:
```

After script hr main.sql runs successfully and schema HR is installed, you are connected as user HR. To verify that the schema was created, use the following command:

```
SQL> SELECT table_name FROM user_tables;
```

Running hr\_main.sql accomplishes the following tasks:

- Removes any previously installed HR schema
- Creates user HR and grants the necessary privileges
- Connects as HR
- **4.** Calls the scripts that create and populate the schema objects

For a complete listing of the scripts and their functions, refer to Table 4–1 on page 4-4.

A pair of optional scripts, hr\_dn\_c.sql and hr\_dn\_d.sql, is provided as a schema extension. To prepare schema HR for use with the directory capabilities of Oracle Internet Directory, run the hr\_dn\_c.sql script. If you want to return to the initial setup of schema HR, use script hr\_dn\_d.sql to undo the effects of script hr\_dn\_c.sql.

You can use script hr\_drop.sql to drop schema HR.

## Installing Schema OE and Subschema OC

All scripts necessary to create the Order Entry (OE) schema and its Online Catalog (OC) subschema reside in \$ORACLE HOME/demo/schema/order entry.

```
See Also: Guidelines for Installing Sample Schemas before you run
oe main.sql
```

You need to call only one script, oe\_main.sql, to create all the objects and load the data. Running oe\_main.sql accomplishes the following tasks:

- Removes any previously installed OE schema
- Creates schema (user) OE and grants it the necessary privileges
- Connects as OE
- Calls the scripts that create and populate the schema objects

After the oe\_main.sql script runs successfully and schema OE is installed, you are connected as user OE. To verify that the schema was created, use the following command:

```
SQL> SELECT table_name FROM user_tables;
```

For a complete listing of the scripts and their functions, refer to Table 4–10 on page 4-7.

You can use scripts oe\_drop.sql and oc\_drop.sql to drop schema OE and subschema OC, respectively.

## Installing the PM Schema

All scripts necessary to create the Product Media (PM) schema reside in \$ORACLE HOME/demo/schema/product\_media.

> **See Also:** Guidelines for Installing Sample Schemas before you run pm\_main.sql

You need to call only one script, pm\_main.sql, to create all the objects and load the data. Running pm\_main.sql accomplishes the following tasks:

- Prompts for passwords and tablespace names used within the scripts as well as datafile and log file directories
- Removes any previously installed PM schema
- Creates user PM and grants it the necessary privileges
- Connects as PM
- Calls the scripts that create and populate the schema objects

After script pm\_main.sql runs successfully and schema PM is installed, you are connected as user PM. To verify that the schema was created, use the following command:

```
SQL> SELECT table_name FROM user_tables;
```

For a complete listing of the scripts and their functions, refer to Table 4–19 on page 4-11.

You can use script pm\_drop.sql to drop schema PM.

**Note:** The SQL\*Loader data file pm\_p\_lob.dat contains hard-coded absolute path names that have been set during installation. Before attempting to load the data in a different environment, you should first edit the path names in this file.

## Installing the IX Schema

All scripts necessary to create the Information Exchange (IX) schema reside in \$ORACLE\_HOME/demo/schema/info\_exchange.

> **See Also:** Guidelines for Installing Sample Schemas before you run ix main.sql

To install schema IX, you need to call only one script, ix\_main.sql, which creates all the objects and loads the data.

Running ix\_main.sql accomplishes the following tasks:

- Prompts for passwords and tablespace names used within the scripts
- Removes any previously installed IX schema
- Creates user IX and grants the necessary privileges
- Connects as IX

**5.** Calls the scripts that create and populate the schema objects

After the ix\_main.sql script runs successfully and schema IX is installed, you are connected as user IX. To verify that the schema was created, use the following command:

```
SQL> SELECT table_name FROM user_tables;
```

For a complete listing of the scripts and their functions, refer to Table 4–23 on page 4-13.

You can use script dix\_v3.sql to drop schema IX.

## Installing the SH Schema

All scripts necessary to create the Sales History (SH) schema reside in \$ORACLE\_ HOME/demo/schema/sales\_history.

> **See Also:** Guidelines for Installing Sample Schemas before you run sh\_main.sql

You need to call only one script, sh\_main.sql, to create all the objects and load the data. Running sh\_main.sql accomplishes the following tasks:

- 1. Prompts for passwords and tablespace names used within the scripts as well as datafile and log file directories
- Removes any previously installed SH schema
- Creates user SH and grants the necessary privileges
- Connects as SH
- Calls the scripts that create and populate the schema objects

After script sh\_main.sql runs successfully and schema SH is installed, you are connected as user SH. To verify that the schema was created, use the following command:

```
SQL> SELECT table_name FROM user_tables;
```

For a complete listing of the scripts and their functions, refer to Table 4–27 on page 4-15.

> **Note:** The dimension tables PROMOTIONS, CUSTOMERS, PRODUCTS and the fact table SALES are loaded by SQL\*Loader, after which directory paths are created inside the database to point to the load and log file locations. This allows the loading of the COSTS table by using the external table sales\_transactions\_ext.

A pair of optional scripts, sh\_olp\_c.sql and sh\_olp\_d.sql, is provided as a schema extension. To prepare schema SH for use with the advanced analytical capabilities of OLAP Services, run the sh\_olp\_c.sql create script. If you want to return to the initial setup of schema SH, then use script sh\_olp\_d.sql to undo the effects of sh\_olp\_c.sql and reinstate dimensions as they were before.

You can use script sh\_drop.sql to drop schema SH.

# **Resetting Sample Schemas**

To reset sample schemas to their initial state, use the following syntax from the SQL\*Plus command-line interface:

@?/demo/schema/mksample systempwd syspwd hrpwd oepwd pmpwd ixpwd shpwd bipwd default\_tablespace temp\_tablespace log\_file\_directory/

The mksample script expects 11 parameters. Provide the password for SYSTEM and SYS, and for schemas HR, OE, PM, IX, and SH. Specify a temporary and a default tablespace, and make sure to end the name of the log file directory with a trailing slash.

The mksample script produces several log files:

- mkverify.log is the Sample Schema creation log file.
- hr\_main.log is the HR schema creation log file.
- oe\_oc\_main.log is the OE schema creation log file.
- pm\_main.log is the PM schema creation log file.
- pm\_p\_lob.log is the SQL\*Loader log file for PM.PRINT\_MEDIA.
- ix\_main.log is the IX schema creation log file.
- sh\_main.log is the SH schema creation log file.
- cust.log is the SQL\*Loader log file for SH.CUSTOMERS.
- prod.log is the SQL\*Loader log file for SH.PRODUCTS.
- promo.log is the SQL\*Loader log file for SH.PROMOTIONS.
- sales.log is the SQL\*Loader log file for SH. SALES.
- sales\_ext.log is the external table log file for SH.COSTS.

In most situations, there is no difference between installing a Sample Schema for the first time or reinstalling it over a previously installed version. The \*\_main.sql scripts drop the schema users and all of their objects.

In some cases, complex interobject relationships in schema OE or IX prevent DROP USER ... CASCADE operations from completing normally. To correct these rare cases, use one of the following procedures:

For the OC catalog subschema of schema OE:

- Connect as user OE.
- Run script oc\_drop.sql. 2.
- Connect as SYSTEM.
- Ensure that user OE is not connected:

```
SELECT username FROM v$session;
```

Drop user OE:

```
DROP USER oe CASCADE;
```

For the IX schemas:

- Connect as SYSTEM.
- Ensure that no user is connected as an IX user:

```
SELECT username FROM v$session WHERE username like 'IX%';
```

**3.** Drop the schemas by running script dix.sql. You will be prompted for passwords for the individual users.

# **Uninstalling Sample Schemas**

If you need to remove the sample schemas from the installation, run script drop\_ sch.sql on the SQL\*Plus command line. This script ships with Oracle Database.

#### Example 2-1 How to Uninstall Sample Schemas

@?/demo/schema/drop\_sch.sql systempwd spool\_file\_name

Script drop\_sch.sql uses two parameters: systempwd is the password for SYSTEM user, and spool\_file\_name is the name of the spool file that captures the log of the operation.

# **Schema Diagrams**

This chapter contains diagrams of the sample database schemas.

# Sample Schema Diagrams

Figure 3–1, "Sample Schemas HR and OE" on page 3-2. illustrates sample schemas HR and OE and their relationship. The scripts and table descriptions for these schemas are in section "HR Schema" on page 4-4 and "OE Schema" on page 4-7, respectively.

Figure 3–2, "Sample Schemas OE and PM" on page 3-3 illustrates schema PM. The scripts and table description for schema PM are at "PM Schema" on page 4-11.

Figure 3-3, "Sample Schema SH" on page 3-4 illustrates schema SH. The scripts and table description for schema SH are in section "SH Schema" on page 4-15.

This edition of the book does not illustrate schema IX, but its scripts and table description are in section "IX Schema" on page 4-13.

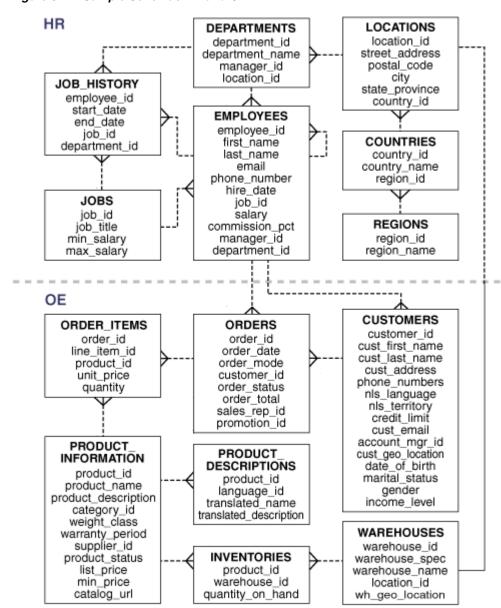
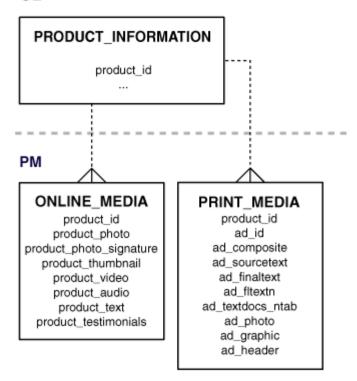


Figure 3-1 Sample Schemas HR and OE

Figure 3–2 Sample Schemas OE and PM

#### OE



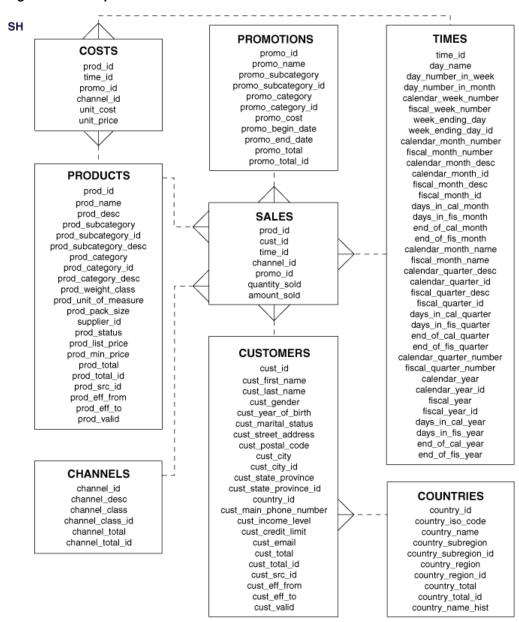


Figure 3-3 Sample Schema SH

# Sample Schema Scripts and Object **Descriptions**

This chapter describes the scripts used to generate the Oracle Database Sample Schemas. It contains the following sections:

- About the Scripts
- Master Script
- HR Schema
- **OE Schema**
- PM Schema
- IX Schema
- SH Schema

# **About the Scripts**

Sample schemas script directories are located in \$ORACLE\_HOME/demo/schema. You must install the Oracle Database Examples media to populate the directories with the Sample Schema scripts. Each schema has two primary scripts:

- The xx\_main.sql script, where xx is the schema abbreviation, resets and creates all objects and data for a particular schema. This main script calls all other scripts necessary to build and load the schema.
- Script xx\_drop.sql, where xx is the schema name, removes all objects from a particular schema.

Sample Schemas script directories are located in the \$ORACLE\_HOME/demo/schema directory after completing the Oracle Database Examples installation.

**Note:** This chapter contains only the master script for the entire sample schemas environment. It does not include the scripts for the individual schemas because these scripts are very lengthy.

## **Master Script**

The master script, mksample.sql, sets up the overall Sample Schema environment and creates all the schemas.

**Note:** In the master script (mksample.sql), which follows, you will notice variables such as %s pmPath%, %s logPath%, and %s shPath%. These variables are instantiated on installation.

## mksample.sql

The text of the mksample.sql script follows:

```
Rem
Rem $Header: mksample.sql.sbs 02-apr-2003.14:55:17 $
Rem mksample.sql
Rem
Rem Copyright (c) 2001, 2003, Oracle Corporation. All rights reserved.
Rem
Rem NAME
Rem mksample.sql - creates all 5 Sample Schemas
Rem DESCRIPTION
Rem This script rees and creates all Schemas belonging
Rem to the Oracle Database 10g Sample Schemas.
Rem If you are unsure about the prerequisites for the Sample Schemas,
Rem please use the Database Configuration Assistant DBCA to
Rem configure the Sample Schemas.
Rem NOTES
Rem - OUI instantiates this script during install and saves it
Rem as mksample.sql. The instantiated scripts matches
Rem the directory structure on your system
Rem - Tablespace EXAMPLE created with:
Rem CREATE TABLESPACE example
Rem NOLOGGING
Rem DATAFILE '<filename>' SIZE 150M REUSE
Rem AUTOEXTEND ON NEXT 640k
Rem MAXSIZE UNLIMITED
Rem EXTENT MANAGEMENT LOCAL
Rem SEGMENT SPACE MANAGEMENT AUTO;
Rem
Rem - CAUTION: This script will erase the following schemas:
Rem - HR
Rem - OE
Rem - PM
Rem - SH
Rem - IX
Rem - BI
Rem - CAUTION: Never use the preceding Sample Schemas for
Rem anything other than demos and examples
Rem - USAGE: To return the Sample Schemas to their initial
Rem state, you can call this script and pass the passwords
Rem for SYS, SYSTEM and the schemas as parameters.
Rem Example: @?/demo/schema/mksample mgr secure h1 o2 p3 q4 s5
Rem (please choose your own passwords for security purposes)
Rem MODIFIED (MM/DD/YY)
Rem
Rem
SET FEEDBACK 1
SET NUMWIDTH 10
```

```
SET LINESIZE 80
SET TRIMSPOOL ON
SET TAB OFF
SET PAGESIZE 999
SET ECHO OFF
SET CONCAT '.'
SET SHOWMODE OFF
PROMPT
PROMPT specify password for SYSTEM as parameter 1:
DEFINE password_system = &1
PROMPT
PROMPT specify password for SYS as parameter 2:
DEFINE password_sys = &2
PROMPT
PROMPT specify password for HR as parameter 3:
DEFINE password_hr = &3
PROMPT
PROMPT specify password for OE as parameter 4:
DEFINE password_oe = &4
PROMPT
PROMPT specify password for PM as parameter 5:
DEFINE password_pm = &5
PROMPT
PROMPT specify password for IX as parameter 6:
DEFINE password_ix = &6
PROMPT
PROMPT specify password for SH as parameter 7:
DEFINE password_sh = &7
PROMPT
PROMPT specify password for BI as parameter 8:
DEFINE password_bi = &8
PROMPT
PROMPT specify default tablespace as parameter 9:
DEFINE default_ts = &9
PROMPT
PROMPT specify temporary tablespace as parameter 10:
DEFINE temp_ts = &10
PROMPT
PROMPT specify log file directory (including trailing delimiter) as parameter
DEFINE logfile dir = &11
PROMPT
PROMPT Sample Schemas are being created ...
PROMPT
DEFINE vrs = v3
CONNECT system/&&password_system
DROP USER hr CASCADE;
DROP USER oe CASCADE;
DROP USER pm CASCADE;
DROP USER ix CASCADE;
DROP USER sh CASCADE;
DROP USER bi CASCADE;
CONNECT system/&&password_system
SET SHOWMODE OFF
```

```
@?/demo/schema/human_resources/hr_main.sql &&password_hr &&default_ts &&temp_ts
&&password_sys &&logfile_dir
CONNECT system/&&password_system
SET SHOWMODE OFF
@?/demo/schema/order_entry/oe_main.sql &&password_oe &&default_ts &&temp_ts
&&password_hr &&password_sys %s_oePath% &&logfile_dir &vrs
CONNECT system/&&password_system
SET SHOWMODE OFF
@?/demo/schema/product_media/pm_main.sql &&password_pm &&default_ts &&temp_ts
&&password_oe &&password_sys %s_pmPath% &&logfile_dir %s_pmPath%
CONNECT system/&&password_system
SET SHOWMODE OFF
@?/demo/schema/info_exchange/ix_main.sql &&password_ix &&default_ts &&temp_ts
&&password_sys &&logfile_dir &vrs
CONNECT system/&&password_system
SET SHOWMODE OFF
@?/demo/schema/sales_history/sh_main &&password_sh &&default_ts &&temp_ts
&&password_sys %s_shPath% &&logfile_dir &vrs
CONNECT system/&&password_system
SET SHOWMODE OFF
@?/demo/schema/bus_intelligence/bi_main &&password_bi &&default_ts &&temp_ts
&&password_sys &&password_oe &&password_sh &&logfile_dir &vrs
CONNECT system/&&password_system
SPOOL OFF
DEFINE veri_spool = &&logfile_dir.mkverify_&vrs..log
@?/demo/schema/mkverify &&password_system &veri_spool
EXIT
```

## **HR Schema**

This section lists the names of the scripts that create the human resources (HR) schema and describes the objects in the schema. Table 4-1 on page 4-4 lists the HR scripts in alphabetical order, while Table 4–2 on page 4-5 lists its objects.

Table 4–1 HR Schema Scripts

Script Name	Description
hr_analz.sql	Collects statistics on the tables in the schema
hr_code.sql	Creates procedural objects in the schema
hr_comnt.sql	Creates comments for each object in the schema
hr_cre.sql	Creates the HR objects

Table 4-1 (Cont.) HR Schema Scripts

Script Name	Description	
hr_dn_c.sql	Adds the distinguished name column used by Oracle Internet Directory to the employees and departments tables	
hr_dn_d.sql	Drops the Oracle Internet Directory distinguished name column from employees and departments	
hr_drop.sql	Drops schema HR and all its objects	
hr_idx.sql	c_idx.sql Creates indexes on the HR tables	
hr_main.sql	Main script for schema HR; calls other scripts	
hr_popul.sql	Populates the objects	

Table 4-2 HR Objects

Object Type	Objects		
Index  COUNTRY_C_ID_PK, DEPT_ID_PK, DEPT_LOCATION_IX, EMP_DEPARTMENT  EMAIL_UK, EMP_EMP_ID_PK, EMP_JOB_IX, EMP_MANAGER_IX, EMP_NAME_I  DEPARTMENT_IX, JHIST_EMPLOYEE_IX, JHIST_EMP_ID_ST_DATE_PK, JHI IX, JOB_ID_PK, LOC_CITY_IX, LOC_COUNTRY_IX, LOC_ID_PK, LOC_STATE  PROVINCE_IX, REG_ID_PK			
Procedure	ADD_JOB_HISTORY, SECURE_DML		
Sequence	DEPARTMENTS_SEQ, EMPLOYEES_SEQ, LOCATIONS_SEQ		
Table	COUNTRIES, DEPARTMENTS, EMPLOYEES, JOBS, JOB_HISTORY, LOCATIONS, REGIONS		
Trigger	SECURE_EMPLOYEES, UPDATE_JOB_HISTORY		
View	EMP_DETAILS_VIEW		

## **HR Table Descriptions**

This section describes the columns of each table of schema HR.

- Table 4–3, "HR.COUNTRIES Table Description" on page 4-5
- Table 4-4, "HR.DEPARTMENTS Table Description" on page 4-6
- Table 4–5, "HR.EMPLOYEES Table Description" on page 4-6
- Table 4-6, "HR.JOBS Table Description" on page 4-6
- Table 4–7, "HR.JOB\_HISTORY Table Description" on page 4-6
- Table 4-8, "HR.LOCATIONS Table Description" on page 4-6
- Table 4–9, "HR.REGIONS Table Description" on page 4-7

Table 4–3 HR.COUNTRIES Table Description

Column Name	Null?	Туре	
COUNTRY_ID	NOT NULL	CHAR(2)	,
COUNTRY_NAME		VARCHAR2 (40)	
REGION_ID		NUMBER	

Table 4-4 HR.DEPARTMENTS Table Description

Column Name	Null?	Туре	
DEPARTMENT_ID	NOT NULL	NUMBER (4)	
DEPARTMENT_NAME	NOT NULL	VARCHAR2(30)	
MANAGER_ID		NUMBER (6)	
LOCATION_ID		NUMBER (4)	

Table 4–5 HR.EMPLOYEES Table Description

Column Name	Null?	Туре
EMPLOYEE_ID	NOT NULL	NUMBER (6)
FIRST_NAME		VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(25)
EMAIL	NOT NULL	VARCHAR2(20)
PHONE_NUMBER		VARCHAR2(20)
HIRE_DATE	NOT NULL	DATE
JOB_ID	NOT NULL	VARCHAR2(10)
SALARY		NUMBER(8,2)
COMMISSION_PCT		NUMBER(2,2)
MANAGER_ID		NUMBER (6)
DEPARTMENT_ID		NUMBER(4)

Table 4–6 HR.JOBS Table Description

Column Name	Null?	Туре	
JOB_ID	NOT NULL	VARCHAR2(10)	
JOB_TITLE	NOT NULL	VARCHAR2(35)	
MIN_SALARY		NUMBER(6)	
MAX_SALARY		NUMBER(6)	

Table 4–7 HR.JOB\_HISTORY Table Description

Column Name	Null?	Туре
EMPLOYEE_ID	NOT NULL	NUMBER (6)
START_DATE	NOT NULL	DATE
END_DATE	NOT NULL	DATE
JOB_ID	NOT NULL	VARCHAR2(10)
DEPARTMENT_ID		NUMBER(4)

Table 4–8 HR.LOCATIONS Table Description

Column Name	Null?	Туре
LOCATION_ID	NOT NULL	NUMBER(4)

Table 4–8 (Cont.) HR.LOCATIONS Table Description

Column Name	Null?	Туре
STREET_ADDRESS		VARCHAR2 (40)
POSTAL_CODE		VARCHAR2 (12)
CITY	NOT NULL	VARCHAR2(30)
STATE_PROVINCE		VARCHAR2 (25)
COUNTRY_ID		CHAR(2)

Table 4–9 HR.REGIONS Table Description

Column Name	Null?	Туре
REGION_ID	NOT NULL	NUMBER
REGION_NAME		VARCHAR2(25)

### **OE Schema**

This section lists the names of the scripts that create the Order Entry (OE) sample schema and describes the objects in the schema. Table 4–10 on page 4-7 lists the OE scripts in alphabetical order, while Table 4–11 on page 4-8 lists its objects. Note that language-specific statements for product names and descriptions are stored in these files (each representing a different language): INSERToe\_p\_us.sqloe\_p\_ar.sql, oe\_p\_ cs.sql,oe\_p\_d.sql,oe\_p\_dk.sql,oe\_p\_e.sql,oe\_p\_el.sql,oe\_p\_esa.sql,oe\_p\_ f.sql,oe\_p\_frc.sql,oe\_p\_hu.sql,oe\_p\_i.sql,oe\_p\_iw.sql,oe\_p\_ja.sql,oe\_p\_ ko.sql, oe\_p\_n.sql, oe\_p\_nl.sql, oe\_p\_pl.sql, oe\_p\_pt.sql, oe\_p\_ptb.sql, oe\_p\_ ro.sql, oe\_p\_ru.sql, oe\_p\_s.sql, oe\_p\_sf.sql, oe\_p\_sk.sql, oe\_p\_th.sql, oe\_p\_ tr.sql, oe\_p\_zhs.sql, oe\_p\_zht.sql.

Table 4–10 OE Schema Scripts

Script Name	Description	
oc_comnt.sql	Adds comments to the online catalog (OC) subschema wherever possible	
oc_cre.sql	Creates subschema OC	
oc_drop.sql	Drops subschema OC	
oc_main.sql	Main script for subschema OC	
oc_popul.sqla	Populates the object tables	
oe_analz.sql	Gathers statistics on the OE objects	
oe_comnt.sql	Creates comments for the objects in the schema	
oe_cre.sql	Creates the OE objects	
oe_drop.sql	Drops schema OE and all its objects	
oe_idx.sql	Creates indexes on the OE tables	
oe_main.sql	Main script for the OE schema; calls other scripts	
oe_views.sql	Creates the OE schema views	

Table 4-11 OE Objects

Object Type	Objects
Index	CUSTOMERS_PK, CUST_ACCOUNT_MANAGER_IX, CUST_EMAIL_IX, CUST_LNAME_IX, CUST_UPPER_NAME_IX, INVENTORY_IX, INV_PRODUCT_IX, ITEM_ORDER_IX, ITEM_ PRODUCT_IX, ORDER_ITEMS_PK, ORDER_ITEMS_UK, ORDER_PK, ORD_CUSTOMER_IX, ORD_ORDER_DATE_IX, ORD_SALES_REP_IX, PRD_DESC_PK, PRODUCT_INFORMATION_ PK, PROD_NAME_IX, PROD_SUPPLIER_IX, PROMO_ID_PK, REFERENCE_IS_UNIQUE, SYS_C003584, SYS_C003587, SYS_C003588, SYS_C003589, SYS_C003590, WAREHOUSES_PK, WHS_LOCATION_IX
Function	GET_PHONE_NUMBER_F
Sequence	ORDERS_SEQ
Lob	SYS_LOB0000045843C00022\$\$, SYS_LOB0000045843C00023\$\$, SYS_LOB0000045852C00003\$\$, SYS_LOB0000045852C00012\$\$, SYS_LOB0000045852C00012\$\$, SYS_LOB0000046019C00004\$\$, SYS_LOB0000046019C00007\$\$, SYS_LOB0000046019C00007\$\$, SYS_LOB0000046019C00012\$\$, SYS_LOB0000046019C00012\$\$, SYS_LOB0000046019C00012\$\$, SYS_LOB0000046019C00024\$\$, SYS_LOB0000046019C00031\$\$, SYS_LOB0000046019C00032\$\$, SYS_LOB0000046019C00032\$\$, SYS_LOB0000046019C00032\$\$, SYS_LOB0000046044C00003\$\$
Synonym	COUNTRIES, DEPARTMENTS, EMPLOYEES, JOBS, JOB_HISTORY, LOCATIONS
Table	CUSTOMERS, INVENTORIES, ORDERS, ORDER_ITEMS, PRODUCT_DESCRIPTIONS, PRODUCT_INFORMATION, WAREHOUSES
Trigger	INSERT_ORD_LINE, ORDERS_ITEMS_TRG, ORDERS_TRG
Туре	CATALOG_TYP, CATEGORY_TYP, COMPOSITE_CATEGORY_TYP, CORPORATE_CUSTOMER_ TYP, CUSTOMER_TYP, CUST_ADDRESS_TYP, INVENTORY_LIST_TYP, INVENTORY_TYP, LEAF_CATEGORY_TYP, ORDER_ITEM_LIST_TYP, ORDER_ITEM_TYP, ORDER_LIST_ TYP, ORDER_TYP, PHONE_LIST_TYP, PRODUCT_INFORMATION_TYP, PRODUCT_REF_ LIST_TYP, SUBCATEGORY_REF_LIST_TYP, SYS_YOID0000046073\$, SYS_ YOID0000046075\$, SYS_YOID0000046077\$, SYS_YOID0000046079\$, SYS_ YOID0000046081\$, WAREHOUSE_TYP, XDBPO_ACTIONS_TYPE, XDBPO_ACTION_ COLLECTION, XDBPO_ACTION_TYPE, XDBPO_LINEITEMS_TYPE, XDBPO_LINEITEM_ COLLECTION, XDBPO_LINEITEM_TYPE, XDBPO_PART_TYPE, XDBPO_REJECTION_TYPE, XDBPO_SHIPINSTRUCTIONS_TYPE, XDBPO_TYPE
Type Body	CATALOG_TYP, COMPOSITE_CATEGORY_TYP, LEAF_CATEGORY_TYP
View	ACCOUNT_MANAGERS, BOMBAY_INVENTORY, CUSTOMERS_VIEW, DEPTVIEW, OC_CORPORATE_CUSTOMERS, OC_CUSTOMERS, OC_INVENTORIES, OC_ORDERS, OC_PRODUCT_INFORMATION, ORDERS_VIEW, PRODUCTS, PRODUCT_PRICES, SYDNEY_INVENTORY, TORONTO_INVENTORY

## **OE Table Descriptions**

This section describes the tables of sample database schema OE.

- Table OE.CUSTOMERS
- Table OE.INVENTORIES
- Table OE.ORDERS
- Table OE.ORDER\_ITEMS
- Table OE.PRODUCT\_DESCRIPTIONS
- Table OE.PRODUCT\_INFORMATION
- Table OE.WAREHOUSES
- Table OE.PURCHASEORDER

### **Table OE.CUSTOMERS**

Table 4–12 OE.CUSTOMERS Table Description

Column Name	Null?	Туре
CUSTOMER_ID	NOT NULL	NUMBER(6)
CUST_FIRST_NAME	NOT NULL	VARCHAR2(20)
CUST_LAST_NAME	NOT NULL	VARCHAR2(20)
CUST_ADDRESS		CUST_ADDRESS_TYP
PHONE_NUMBERS		PHONE_LIST_TYP
NLS_LANGUAGE		VARCHAR2(3)
NLS_TERRITORY		VARCHAR2(30)
CREDIT_LIMIT		NUMBER(9,2)
CUST_EMAIL		VARCHAR2(30)
ACCOUNT_MGR_ID		NUMBER (6)
CUST_GEO_LOCATION		MDSYS.SDO_GEOMETRY
DATE_OF_BIRTH		DATE
MARITAL_STATUS		VARCHAR2(20)
GENDER		VARCHAR2(1)
INCOME_LEVEL		VARCHAR2(20)

### **Table OE.INVENTORIES**

Table 4–13 OE.INVENTORIES Table Description

Column Name	Null?	Туре
PRODUCT_ID	NOT NULL	NUMBER(6)
WAREHOUSE_ID	NOT NULL	NUMBER(3)
QUANTITY_ON_HAND	NOT NULL	NUMBER(8)

#### **Table OE.ORDERS**

Table 4–14 OE.ORDERS Table Description

	•	
Column Name	Null?	Туре
ORDER_ID	NOT NULL	NUMBER(12)
ORDER_DATE	NOT NULL	TIMESTAMP(6) WITH LOCAL TIME ZONE
ORDER_MODE		VARCHAR2(8)
CUSTOMER_ID	NOT NULL	NUMBER(6)
ORDER_STATUS		NUMBER(2)
ORDER_TOTAL		NUMBER(8,2)
SALES_REP_ID		NUMBER(6)
PROMOTION_ID		NUMBER(6)

## Table OE.ORDER\_ITEMS

Table 4–15 OE.ORDER\_ITEMS Table Description

Column Name	Null?	Туре
ORDER_ID	NOT NULL	NUMBER(12)
LINE_ITEM_ID	NOT NULL	NUMBER(3)
PRODUCT_ID	NOT NULL	NUMBER(6)
UNIT_PRICE		NUMBER(8,2)
QUANTITY		NUMBER(8)

### Table OE.PRODUCT\_DESCRIPTIONS

Table 4–16 OE.PRODUCT\_DESCRIPTIONS Table Description

Column Name	Null?	Туре
PRODUCT_ID	NOT NULL	NUMBER(6)
LANGUAGE_ID	NOT NULL	VARCHAR2(3)
TRANSLATED_NAME	NOT NULL	NVARCHAR2(50)
TRANSLATED_DESCRIPTION	NOT NULL	NVARCHAR2(2000)

## Table OE.PRODUCT\_INFORMATION

Table 4–17 OE.PRODUCT\_INFORMATION Table Description

Column Name	Null?	Туре
PRODUCT_ID	NOT NULL	NUMBER(6)
PRODUCT_NAME		VARCHAR2(50)
PRODUCT_DESCRIPTION		VARCHAR2(2000)
CATEGORY_ID		NUMBER(2)
WEIGHT_CLASS		NUMBER(1)
WARRANTY_PERIOD		INTERVAL YEAR(2) TO MONTH
SUPPLIER_ID		NUMBER(6))
PRODUCT_STATUS		VARCHAR2(20)
LIST_PRICE		NUMBER(8,2)
MIN_PRICE		NUMBER(8,2)
CATALOG_URL		VARCHAR2(50)

### **Table OE.WAREHOUSES**

Table 4–18 OE.WAREHOUSES Table Description

Column Name	Null?	Туре	
WAREHOUSE_ID	NOT NULL	NUMBER (3)	
WAREHOUSE_SPEC		SYS.XMLTYPE	
WAREHOUSE_NAME		VARCHAR2(35)	

Table 4–18 (Cont.) OE.WAREHOUSES Table Description

Column Name	Null?	Туре
LOCATION_ID		NUMBER(4)
WH_GEO_LOCATION		MDSYS.SDO_GEOMETRY

Column warehouse spec of table OE. warehouses contains XMLType data. This data is not based on any XML schema, which means that it can take any form. However, the actual data in column warehouse\_spec at the outset (before any changes you might have made to it) has a top-level element Warehouse with the following child elements:

- Building, with text node Owned or Rented
- Area, with text node a number (representing, for example, square feet)
- Docks, with text node the number of loading docks (for example, 1, 2, or 3)
- DockType, with text node empty or Rear Load or Side Load
- WaterAccess, with text node Y or N
- RailAccess, with text node Y or N
- Parking, with text node Street or Lot
- VClearance (vertical clearance), with text node a number followed by a linear unit (for example, 11.5 ft)

**See Also:** *Oracle XML DB Developer's Guide* for examples using the XMLType data in column warehouse\_spec

#### Table OE.PURCHASEORDER

Table OE. purchaseorder is an object-relational table with XMLType data. The data conforms to XML schema purchaseOrder.xsd—see Appendix A, "Purchase-Order XML Schema".

### PM Schema

This section lists the names of the scripts that create the Product Media (PM) schema and describes the objects in the schema. Table 4–19 on page 4-11 lists the OE scripts in alphabetical order, while Table 4-20 on page 4-12 lists its objects. Note that the SQL\*Loader data file pm\_p\_lob.dat contains hard-coded absolute path names that have been set during installation. Before attempting to load the data in a different environment, you should first edit the path names in this file.

Table 4-19 PM Schema Scripts

Script Name	Description	
pm_analz.sql	Gathers statistics on the PM objects	
pm_cre.sql	Creates the PM objects	
pm_drop.sql	Drops schema PM and all its objects	
<pre>pm_p_ord.sql, pm_p_lob.sql, pm_ Populates the objects in the schema p_lob.ctl, pm_p_lob.dat</pre>		
pm main.sql	Main script for schema PM, which calls other scripts	

Table 4-20 PM Objects

Object Type	Objects
Index	ONLINEMEDIA_PK, PRINTMEDIA_PK, SYS_C003538
Lob	SYS_LOB0000045882C00003\$\$, SYS_LOB0000045882C00017\$\$, SYS_LOB0000045882C00017\$\$, SYS_LOB0000045882C00034\$\$, SYS_LOB0000045882C00054\$\$, SYS_LOB0000045882C00054\$\$, SYS_LOB0000045882C00069\$\$, SYS_LOB0000045882C00069\$\$, SYS_LOB0000045882C00080\$\$, SYS_LOB0000045882C00080\$\$, SYS_LOB0000045907C00004\$\$, SYS_LOB0000045907C00004\$\$, SYS_LOB0000045907C00006\$\$, SYS_LOB0000045907C00006\$\$, SYS_LOB0000045907C00015\$\$, SYS_LOB0000045907C00015\$\$, SYS_LOB0000045907C00015\$\$, SYS_LOB0000045907C00015\$\$
Table	ONLINE_MEDIA, PRINT_MEDIA
Туре	ADHEADER_TYP, TEXTDOC_TAB, TEXTDOC_TYP

# **PM Table Descriptions**

This section describes the columns of each table of schema PM, as follows:

- Table 4–21, "PM.ONLINE\_MEDIA Table Description" on page 4-12
- Table 4–22, "PM.PRINT\_MEDIA Table Description" on page 4-12

Table 4–21 PM.ONLINE\_MEDIA Table Description

Column Name	Null?	Туре
PRODUCT_ID	NOT NULL	NUMBER (6)
PRODUCT_PHOTO		ORDSYS.ORDIMAGE
PRODUCT_PHOTO_SIGNATURE		ORDSYS.ORDIMAGESIGNATURE
		This type, ORDImageSignature, is deprecated; do not use it in new code. Existing occurrences of this object type will continue to function as in the past.
PRODUCT_THUMBNAIL		ORDSYS.ORDIMAGE
PRODUCT_VIDEO		ORDSYS.ORDVIDEO
PRODUCT_AUDIO		ORDSYS.ORDAUDIO
PRODUCT_TEXT		CLOB
PRODUCT_TESTIMONIALS		ORDSYS.ORDDOC

Table 4–22 PM.PRINT\_MEDIA Table Description

Column Name	Null?	Туре
PRODUCT_ID	NOT NULL	NUMBER(6)
AD_ID	NOT NULL	NUMBER(6)
AD_COMPOSITE		BLOB
AD_SOURCETEXT		CLOB
AD_FINALTEXT		CLOB
AD_FLTEXTN		NCLOB
AD_TEXTDOCS_NTAB		TEXTDOC_TAB

Table 4–22 (Cont.) PM.PRINT\_MEDIA Table Description

Column Name	Null?	Туре
AD_PHOTO		BLOB
AD_GRAPHIC		BINARY FILE LOB
AD_HEADER		ADHEADER_TYP

## IX Schema

This section lists the names of the scripts that create the Information Exchange (IX) schema group and describes the objects in the schemas. Table 4–23 on page 4-13 lists the IX scripts in alphabetical order, while Table 4–24 on page 4-13 lists its objects.

Table 4–23 Information Exchange (IX) Schema Scripts

Script Name	Description
cix_v3.sql	Creates the IX schema objects
dix_v3.sql	Drops schema IX objects
ix_main.sql	Main script for schema IX; calls other scripts
vix_v3.sql	Enables, disables, and verifies IX objects

Table 4-24 IX Objects

Object Type	Objects
Evaluation Context	AQ\$_ORDERS_QUEUETABLE_V, AQ\$_STREAMS_QUEUE_TABLE_V
Index	SYS_C003540, SYS_C003543, SYS_C003548, SYS_C003551, SYS_IOT_TOP_ 45932, SYS_IOT_TOP_45934, SYS_IOT_TOP_45936, SYS_IOT_TOP_45939, SYS_IOT_TOP_45949, SYS_IOT_TOP_45951, SYS_IOT_TOP_45953, SYS_IOT_ TOP_45956
Lob	SYS_LOB0000045926C00036\$\$, SYS_LOB0000045941C00028\$\$, SYS_ LOB0000045941C00029\$\$
Queue	AQ\$_ORDERS_QUEUETABLE_E, AQ\$_STREAMS_QUEUE_TABLE_E, ORDERS_QUEUE, STREAMS_QUEUE
Rule Set	ORDERS_QUEUE_N, ORDERS_QUEUE_R, STREAMS_QUEUE_N, STREAMS_QUEUE_R
Sequence	AQ\$_ORDERS_QUEUETABLE_N, AQ\$_STREAMS_QUEUE_TABLE_N
Table	ORDERS_QUEUETABLE, STREAMS_QUEUE_TABLE
Туре	ORDER_EVENT_TYP
View	AQ\$ORDERS_QUEUETABLE, AQ\$ORDERS_QUEUETABLE_R, AQ\$ORDERS_ QUEUETABLE_S, AQ\$STREAMS_QUEUE_TABLE, AQ\$STREAMS_QUEUE_TABLE_R, AQ\$STREAMS_QUEUE_TABLE_S

## IX Table Descriptions

This section describes the columns of each table of schema IX.

- Table 4–25, "IX.ORDERS\_QUEUETABLE Table Description" on page 4-14
- Table 4-26, "IX.STREAMS\_QUEUE\_TABLE Table Description" on page 4-14

Table 4–25 IX.ORDERS\_QUEUETABLE Table Description

Column Name	Null?	Туре	
Q_NAME		VARCHAR2(30)	
MSGID	NOT NULL	RAW(16)	
CORRID		VARCHAR2 (128)	
PRIORITY		NUMBER	
STATE		NUMBER	
DELAY		TIMESTAMP(6)	
EXPIRATION		NUMBER	
TIME_MANAGER_INFO		TIMESTAMP(6)	
LOCAL_ORDER_NO		NUMBER	
CHAIN_NO		NUMBER	
CSCN		NUMBER	
DSCN		NUMBER	
ENQ_TIME		TIMESTAMP(6)	
ENQ_UID		VARCHAR2(30)	
ENQ_TID		VARCHAR2(30)	
DEQ_TIME		TIMESTAMP(6)	
EEQ_UID		VARCHAR2(30)	
DEQ_TID		VARCHAR2(30)	
RETRY_COUNT		NUMBER	
EXCEPTION_QSCHEMA		VARCHAR2(30)	
EXCEPTION_QUEUE		VARCHAR2(30)	
STEP_NO		NUMBER	
RECIPIENT_KEY		NUMBER	
DEQUEUE_MSGID		RAW(16)	
SENDER_NAME		VARCHAR2(30)	
SENDER_ADDRESS		VARCHAR2 (1024)	
SENDER_PROTOCOL		NUMBER	
USER_DATA		ORDER_EVENT_TYP	
USER_PROP		SYS.ANYDATA	

Table 4–26 IX.STREAMS\_QUEUE\_TABLE Table Description

Column Name	Null?	Туре
Q_NAME		VARCHAR2(30)
MSGID	NOT NULL	RAW(16)
CORRID		VARCHAR2 (128)
PRIORITY		NUMBER
STATE		NUMBER

Table 4–26 (Cont.) IX.STREAMS\_QUEUE\_TABLE Table Description

Column Name	Null?	Туре
DELAY		TIMESTAMP(6)
EXPIRATION		NUMBER
TIME_MANAGER_INFO		TIMESTAMP(6)
LOCAL_ORDER_NO		NUMBER
CHAIN_NO		NUMBER
CSCN		NUMBER
DSCN		NUMBER
ENQ_TIME		TIMESTAMP(6)
ENQ_UID		VARCHAR2(30)
ENQ_TID		VARCHAR2(30)
DEQ_TIME		TIMESTAMP(6)
EEQ_UID		VARCHAR2(30)
DEQ_TID		VARCHAR2(30)
RETRY_COUNT		NUMBER
EXCEPTION_QSCHEMA		VARCHAR2(30)
EXCEPTION_QUEUE		VARCHAR2(30)
STEP_NO		NUMBER
RECIPIENT_KEY		NUMBER
DEQUEUE_MSGID		RAW(16)
SENDER_NAME		VARCHAR2(30)
SENDER_ADDRESS		VARCHAR2(1024)
SENDER_PROTOCOL		NUMBER
USER_DATA		ORDER_EVENT_TYP
USER_PROP		SYS.ANYDATA

# **SH Schema**

This section lists the names of the scripts that create the Sales History (SH) schema and describes the objects in the schema. Table 4–27 on page 4-15 lists the SH scripts in alphabetical order, while Table 4–28 on page 4-16 lists its objects.

Table 4–27 SH Schema Scripts

Script Name Description	
sh_analz.sql	Gathers statistics on the schema objects
sh_comnt.sql	Creates comments for the objects in the schema
sh_cons.sql	Modifies constraints on objects in the schema
sh_cre.sql	Creates the objects in the schema
sh_cremv.sql	Creates materialized views and bitmapped indexes
sh_drop.sql	Drops schema SH and all its objects

Table 4-27 (Cont.) SH Schema Scripts

Script Name	Description	
sh_idx.sql	Creates indexes on tables in the schema	
sh_main.sql	Main script for schema SH; calls other scripts	
olp_v3.sql	Creates dimensions and hierarchies used by the OLAP server	
sh_olp_d.sql	Drops the objects used by the OLAP server	

Table 4-28 SH Objects

Object Type	Objects
Dimension	CHANNELS_DIM, CUSTOMERS_DIM, PRODUCTS_DIM, PROMOTIONS_DIM, TIMES_DIM
Index	CHANNELS_PK, COSTS_PROD_BIX, COSTS_TIME_BIX, COUNTRIES_PK, CUSTOMERS_GENDER_BIX, CUSTOMERS_MARITAL_BIX, CUSTOMERS_PK, CUSTOMERS_YOB_BIX, DR\$SUP_TEXT_IDX\$X, FW_PSC_S_MV_CHAN_BIX, FW_ PSC_S_MV_PROMO_BIX, FW_PSC_S_MV_SUBCAT_BIX, FW_PSC_S_MV_WD_BIX, PRODUCTS_PK, PRODUCTS_PROD_CAT_IX, PRODUCTS_PROD_STATUS_BIX, PRODUCTS_PROD_SUBCAT_IX, PROMO_PK, SALES_CHANNEL_BIX, SALES_CUST_ BIX, SALES_PROD_BIX, SALES_PROMO_BIX, SALES_TIME_BIX, SUP_TEXT_IDX, SYS_IOT_TOP_45927, SYS_IOT_TOP_45932, TIMES_PK
Index Partition	COSTS_PROD_BIX, COSTS_TIME_BIX, SALES_CHANNEL_BIX, SALES_CUST_ BIX, SALES_PROD_BIX, SALES_PROMO_BIX, SALES_TIME_BIX
Lob	SYS_LOB0000045924C00006\$\$, SYS_LOB0000045929C00002\$\$
Materialized View	CAL_MONTH_SALES_MV, FWEEK_PSCAT_SALES_MV
Table	CHANNELS, COSTS, COUNTRIES, CUSTOMERS, PRODUCTS, PROMOTIONS, SALES, TIMES
Table Partition	COSTS, SALES
View	PROFITS

## **SH Table Descriptions**

This section describes the columns of each table of schema SH, as follows:

- Table 4-29, "SH.CHANNELS Table Description" on page 4-16
- Table 4–30, "SH.COSTS Table Description" on page 4-17
- Table 4–31, "SH.COUNTRIES Table Description" on page 4-17
- Table 4–32, "SH.CUSTOMERS Table Description" on page 4-17
- Table 4-33, "SH.PRODUCTS Table Description" on page 4-18
- Table 4–34, "SH.PROMOTIONS Table Description" on page 4-19
- Table 4–35, "SH.SALES Table Description" on page 4-19
- Table 4–36, "SH.TIMES Table Description" on page 4-19

Table 4–29 SH.CHANNELS Table Description

Column Name	Null?	Туре	
CHANNEL_ID	NOT NULL	NUMBER	
CHANNEL_DESC	NOT NULL	VARCHAR2(20)	

Table 4–29 (Cont.) SH.CHANNELS Table Description

Column Name	Null?	Туре
CHANNEL_CLASS	NOT NULL	VARCHAR2 (20)
CHANNEL_CLASS_ID	NOT NULL	NUMBER
CHANNEL_TOTAL	NOT NULL	VARCHAR2(13)
CHANNEL_TOTAL_ID	NOT NULL	NUMBER

Table 4–30 SH.COSTS Table Description

Column Name	Null?	Туре
PROD_ID	NOT NULL	NUMBER
TIME_DESC	NOT NULL	DATE
PROMO_ID	NOT NULL	NUMBER
CHANNEL_ID	NOT NULL	NUMBER
UNIT_COST	NOT NULL	NUMBER(10,2)
UNIT_PRICE	NOT NULL	NUMBER(10,2)

Table 4–31 SH.COUNTRIES Table Description

Column Name	Null?	Туре
COUNTRY_ID	NOT NULL	NUMBER
COUNTRY_ISO_CODE	NOT NULL	CHAR(2)
COUNTRY_NAME	NOT NULL	VARCHAR2 (40)
COUNTRY_SUBREGION	NOT NULL	VARCHAR2(30)
COUNTRY_SUBREGION_ID	NOT NULL	NUMBER
COUNTRY_REGION	NOT NULL	VARCHAR2(20)
COUNTRY_REGION_ID	NOT NULL	NUMBER
COUNTRY_TOTAL	NOT NULL	VARCHAR2(11)
COUNTRY_TOTAL_ID	NOT NULL	NUMBER
COUNTRY_NAME_HIST		VARCHAR2 (40)

Table 4–32 SH.CUSTOMERS Table Description

Column Name	Null?	Туре
CUST_ID	NOT NULL	NUMBER
CUST_FIRST_NAME	NOT NULL	VARCHAR2 (20)
CUST_LAST_NAME	NOT NULL	VARCHAR2 (40)
CUST_GENDER	NOT NULL	CHAR(1)
CUST_YEAR_OF_BIRTH	NOT NULL	NUMBER(4)
CUST_MARITAL_STATUS		VARCHAR2(20)
CUST_STREET_ADDRESS	NOT NULL	VARCHAR2 (40)
CUST_POSTAL_CODE	NOT NULL	VARCHAR2(10)

Table 4–32 (Cont.) SH.CUSTOMERS Table Description

Column Name	Null?	Туре
CUST_CITY	NOT NULL	VARCHAR2 (30)
CUST_CITY_ID	NOT NULL	NUMBER
CUST_STATE_PROVINCE	NOT NULL	VARCHAR2 (40)
CUST_STATE_PROVINCE_ID	NOT NULL	NUMBER
COUNTRY_ID	NOT NULL	NUMBER
CUST_MAIN_PHONE_NUMBER	NOT NULL	VARCHAR2 (25)
CUST_INCOME_LEVEL		VARCHAR2(30)
CUST_CREDIT_LIMIT		NUMBER
CUST_EMAIL		VARCHAR2(30)
CUST_TOTAL	NOT NULL	VARCHAR2 (14)
CUST_TOTAL_ID	NOT NULL	NUMBER
CUST_SRC_ID		NUMBER
CUST_EFF_FROM		DATE
CUST_EFF_TO		DATE
CUST_VALID		VARCHAR2(1)

Table 4–33 SH.PRODUCTS Table Description

Column Name	Null?	Туре
PROD_ID	NOT NULL	NUMBER(6)
PROD_NAME	NOT NULL	VARCHAR2 (50)
PROD_DESC	NOT NULL	VARCHAR2 (4000)
PROD_SUBCATEGORY	NOT NULL	VARCHAR2 (50)
PROD_SUBCATEGORY_ID	NOT NULL	NUMBER
PROD_SUBCATEGORY_DESC	NOT NULL	VARCHAR2 (2000)
PROD_CATEGORY	NOT NULL	VARCHAR2 (50)
PRD_CATEGORY_ID	NOT NULL	NUMBER
PROD_CATEGORY_DESC	NOT NULL	VARCHAR2(2000)
PROD_WEIGHT_CLASS	NOT NULL	NUMBER(3)
PROD_UNIT_OF_MEASURE		VARCHAR2(20)
PRD_PACK_SIZE	NOT NULL	VARCHAR2(30)
PROD_SUPPLIER_ID	NOT NULL	NUMBER(6)
PROD_STATUS	NOT NULL	VARCHAR2(20)
PROD_LIST_PRICE	NOT NULL	NUMBER(8,2)
PRD_MIN_PRICE	NOT NULL	NUMBER(8,2)
PROD_TOTAL	NOT NULL	VARCHAR2(13)
PROD_TOTAL_ID	NOT NULL	NUMBER
PROD_SRC_ID		NUMBER

Table 4–33 (Cont.) SH.PRODUCTS Table Description

Column Name	Null?	Туре	
PRD_EFF_FROM		DATE	
PROD_EFF_TO		DATE	
PROD_VALID		VARCHAR2(1)	

Table 4-34 SH.PROMOTIONS Table Description

Column Name	Null?	Туре
PROMO_ID	NOT NULL	NUMBER(6)
PROMO_NAME	NOT NULL	VARCHAR2(30)
PROMO_SUBCATEGORY	NOT NULL	VARCHAR2(30)
PROMO_SUBCATEGORY_ID	NOT NULL	NUMBER
PROMO_CATEGORY	NOT NULL	VARCHAR2(30)
PRMO_CATEGORY_ID	NOT NULL	NUMBER
PROMO_COST	NOT NULL	NUMBER(10,2)
PROMO_BEGIN_DATE	NOT NULL	DATE
PROMO_END_DATE	NOT NULL	DATE
PROMO_TOTAL	NOT NULL	VARCHAR2(15)
PROMO_TOTAL_ID	NOT NULL	NUMBER

Table 4–35 SH.SALES Table Description

Column Name	Null?	Туре
PROD_ID	NOT NULL	NUMBER
CUST_ID	NOT NULL	NUMBER
TIME_ID	NOT NULL	DATE
CHANNEL_ID	NOT NULL	NUMBER
PROMO_ID	NOT NULL	NUMBER
QUANTITY_SOLD	NOT NULL	NUMBER(10,2)
AMOUNT_SOLD	NOT NULL	NUMBER(10,2)

Table 4–36 SH.TIMES Table Description

Column Name	Null?	Туре
TIME_ID	NOT NULL	DATE
DAY_NAME	NOT NULL	VARCHAR2(9)
DAY_NUMBER_IN_WEEK	NOT NULL	NUMBER(1)
DAY_NUMBER_IN_MONTH	NOT NULL	NUMBER(2)
CALENDAR_WEEK_NUMBER	NOT NULL	NUMBER(2)
FISCAL_WEEK_NUMBER	NOT NULL	NUMBER(2)
WEEK_ENDING_DAY	NOT NULL	DATE

Table 4–36 (Cont.) SH.TIMES Table Description

Column Name	Null?	Туре	
WEEK_ENDING_DAY_ID	NOT NULL	NUMBER	
CALENDAR_MONTH_NUMBER	NOT NULL	NUMBER(2)	
FISCAL_MONTH_NUMBER	NOT NULL	NUMBER(2)	
CALENDAR_MONTH_DESC	NOT NULL	VARCHAR2(8)	
CALENDAR_MONTH_ID	NOT NULL	NUMBER	
FISCAL_MONTH_DESC	NOT NULL	VARCHAR2(8)	
FISCAL_MONTH_ID	NOT NULL	NUMBER	
DAYS_IN_CAL_MONTH	NOT NULL	NUMBER	
DAYS_IN_FIS_MONTH	NOT NULL	NUMBER	
END_OF_CAL_MONTH	NOT NULL	DATE	
END_OF_FIS_MONTH	NOT NULL	DATE	
CALENDAR_MONTH_NAME	NOT NULL	VARCHAR2(9)	
FISCAL_MONTH_NAME	NOT NULL	VARCHAR2(9)	
CALENDAR_QUARTER_DESC	NOT NULL	CHAR (7)	
CALENBDAR_QUARTER_ID	NOT NULL	NUMBER	
FISCAL_QUARTER_DESC	NOT NULL	CHAR (7)	
FISCAL_QUARTER_ID	NOT NULL	NUMBER	
DAYS_IN_CAL_QUARTER	NOT NULL	NUMBER	
DAYS_IN_FIS_QUARTER	NOT NULL	NUMBER	
END_OF_CAL_QUARTER	NOT NULL	DATE	
END_OF_FIS_QUARTER	NOT NULL	DATE	
CALENDAR_QUARTER_NUMBER	NOT NULL	NUMBER(1)	
FISCAL_QUARTER_NUMBER	NOT NULL	NUMBER(1)	
CALENDAR_YEAR	NOT NULL	NUMBER (4)	
CALENDAR_YEAR_ID	NOT NULL	NUMBER	
FISCAL_YEAR	NOT NULL	NUMBER (4)	
FISCAL_YEAR_ID	NOT NULL	NUMBER	
DAYS_IN_CAL_YEAR	NOT NULL	NUMBER	
DAYS_IN_FIS_YEAR	NOT NULL	NUMBER	
END_OF_CAL_YEAR	NOT NULL	DATE	
END_OF_FIS_YEAR	NOT NULL	DATE	

# **Purchase-Order XML Schema**

This appendix includes a full listing of the purchase-order XML schema that is used to define the XML data in table OE.purchaseorder.

#### See Also:

- Oracle XML DB Developer's Guide for information about XML Schema
- Oracle XML DB Developer's Guide for information about using XML schemas with Oracle XML DB

## Purchase-Order XML Schema: File purchaseOrder.xsd

Example A-1 is the complete listing of the XML schema used to define the structure of the data in table OE. purchase order. It is in file purchase Order.xsd.

#### Example A-1 XML Schema purchaseOrder.xsd

```
<xs:schema</pre>
 xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xdb="http://xmlns.oracle.com/xdb"
 version="1.0" xdb:storeVarrayAsTable="true">
 <xs:element name="PurchaseOrder" type="PurchaseOrderType" xdb:defaultTable="PURCHASEORDER"/>
 <xs:complexType name="PurchaseOrderType" xdb:SQLType="PURCHASEORDER_T">
   <xs:sequence>
     <xs:element name="Reference" type="ReferenceType" minOccurs="1" xdb:SQLName="REFERENCE"/>
     <xs:element name="Actions" type="ActionsType" xdb:SQLName="ACTIONS"/>
     <xs:element name="Reject" type="RejectionType" minOccurs="0" xdb:SQLName="REJECTION"/>
     <xs:element name="Requestor" type="RequestorType" xdb:SQLName="REQUESTOR"/>
     <xs:element name="User" type="UserType" minOccurs="1" xdb:SQLName="USERID"/>
     <xs:element name="CostCenter" type="CostCenterType" xdb:SOLName="COST CENTER"/>
     <xs:element name="ShippingInstructions" type="ShippingInstructionsType"</pre>
                  xdb:SQLName="SHIPPING_INSTRUCTIONS"/>
      <xs:element name="SpecialInstructions" type="SpecialInstructionsType"</pre>
                 xdb:SQLName="SPECIAL_INSTRUCTIONS"/>
      <xs:element name="LineItems" type="LineItemsType" xdb:SQLName="LINEITEMS"/>
   </xs:sequence>
 </xs:complexType>
 <xs:complexType name="LineItemsType" xdb:SQLType="LINEITEMS_T">
      <xs:element name="LineItem" type="LineItemType" maxOccurs="unbounded"</pre>
                 xdb:SQLName="LINEITEM" xdb:SQLCollType="LINEITEM_V"/>
   </xs:sequence>
 </xs:complexType>
 <xs:complexType name="LineItemType" xdb:SQLType="LINEITEM_T">
   <xs:sequence>
```

```
<xs:element name="Description" type="DescriptionType" xdb:SQLName="DESCRIPTION"/>
   <xs:element name="Part" type="PartType" xdb:SQLName="PART"/>
 </xs:sequence>
 <xs:attribute name="ItemNumber" type="xs:integer" xdb:SQLName="ITEMNUMBER"</pre>
               xdb:SQLType="NUMBER"/>
</xs:complexType>
<xs:complexType name="PartType" xdb:SQLType="PART_T">
 <xs:attribute name="Id" xdb:SQLName="PART_NUMBER" xdb:SQLType="VARCHAR2">
   <xs:simpleType>
     <xs:restriction base="xs:string">
       <xs:minLength value="10"/>
       <xs:maxLength value="14"/>
     </xs:restriction>
   </xs:simpleType>
 </xs:attribute>
 <xs:attribute name="Quantity" type="quantityType" xdb:SQLName="QUANTITY"/>
 <xs:attribute name="UnitPrice" type="moneyType" xdb:SQLName="UNITPRICE"/>
</xs:complexType>
<xs:simpleType name="ReferenceType">
 <xs:restriction base="xs:string">
   <xs:minLength value="18"/>
   <xs:maxLength value="30"/>
 </xs:restriction>
</xs:simpleType>
<xs:complexType name="ActionsType" xdb:SQLType="ACTIONS_T">
 <xs:sequence>
   <xs:element name="Action" maxOccurs="4" xdb:SQLName="ACTION" xdb:SQLCollType="ACTION_V">
     <xs:complexType xdb:SQLType="ACTION_T">
       <xs:sequence>
         <xs:element name="User" type="UserType" xdb:SQLName="ACTIONED_BY"/>
          <xs:element name="Date" type="DateType" minOccurs="0" xdb:SQLName="DATE_ACTIONED"/>
        </xs:sequence>
     </xs:complexType>
   </xs:element>
 </xs:sequence>
</xs:complexType>
<xs:complexType name="RejectionType" xdb:SQLType="REJECTION_T">
   <xs:element name="User" type="UserType" minOccurs="0" xdb:SQLName="REJECTED_BY"/>
   <xs:element name="Date" type="DateType" minOccurs="0" xdb:SQLName="DATE_REJECTED"/>
   <xs:element name="Comments" type="CommentsType" minOccurs="0" xdb:SQLName="REASON_REJECTED"/>
 </xs:all>
</xs:complexType>
<xs:complexType name="ShippingInstructionsType" xdb:SQLType="SHIPPING_INSTRUCTIONS_T">
 <xs:sequence>
   <xs:element name="name" type="NameType" minOccurs="0" xdb:SQLName="SHIP_TO_NAME"/>
   <xs:element name="address" type="AddressType" minOccurs="0" xdb:SQLName="SHIP_TO_ADDRESS"/>
   <xs:element name="telephone" type="TelephoneType" minOccurs="0" xdb:SQLName="SHIP_TO_PHONE"/>
 </xs:sequence>
</xs:complexType>
<xs:simpleType name="moneyType">
 <xs:restriction base="xs:decimal">
   <xs:fractionDigits value="2"/>
   <xs:totalDigits value="12"/>
 </xs:restriction>
</xs:simpleType>
<xs:simpleType name="quantityType">
 <xs:restriction base="xs:decimal">
   <xs:fractionDigits value="4"/>
   <xs:totalDigits value="8"/>
```

```
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="UserType">
 <xs:restriction base="xs:string">
    <xs:minLength value="0"/>
    <xs:maxLength value="10"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="RequestorType">
  <xs:restriction base="xs:string">
    <xs:minLength value="0"/>
    <xs:maxLength value="128"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="CostCenterType">
 <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="4"/>
 </xs:restriction>
</xs:simpleType>
<xs:simpleType name="VendorType">
 <xs:restriction base="xs:string">
    <xs:minLength value="0"/>
    <xs:maxLength value="20"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="PurchaseOrderNumberType">
  <xs:restriction base="xs:integer"/>
</xs:simpleType>
<xs:simpleType name="SpecialInstructionsType">
 <xs:restriction base="xs:string">
    <xs:minLength value="0"/>
    <xs:maxLength value="2048"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="NameType">
 <xs:restriction base="xs:string">
   <xs:minLength value="1"/>
    <xs:maxLength value="20"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="AddressType">
 <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="TelephoneType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="24"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="DateType">
  <xs:restriction base="xs:date"/>
</xs:simpleType>
<xs:simpleType name="CommentsType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="2048"/>
```

```
</xs:restriction>
 </xs:simpleType>
 <xs:simpleType name="DescriptionType">
   <xs:restriction base="xs:string">
     <xs:minLength value="1"/>
     <xs:maxLength value="256"/>
   </xs:restriction>
 </xs:simpleType>
</xs:schema>
```

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