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Database Sample Schemas

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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
- 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.

1

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 can be used for product documentation, courseware, software development, and application demos.

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 print media 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.
- Schema Customer Orders (CO) is a modern schema useful for demos of e-commerce transactions. It allows the storage of semi-structured data using JSON.

Design Principles for 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 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.

Topics:

- 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 CO - Division Customer Orders models a simple retail application consisting of customer, product, store and order data.

HR Sample Schema

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.

OE Sample Schema

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).

OC Sample Schema

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.

PM Sample Schema

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

- Press release texts
- Print media advertisements
- Other promotional texts and translations

IX Sample Schema

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.

SH Sample Schema

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.

CO Sample Schema

The Customer Orders (CO) schema records the details of transactions made by a retail application.

The CO schema is similar in concept to the OE schema. The CO schema is modern and highlights the features of Oracle database 12c such as JSON support.

The company sells a variety of products which is maintained in the `products` table. Each product has a unique identification number, name, price, details stored in a JSON object and product image details.

The orders placed by the customer is tracked using the order identification number, date and time when the order was placed, customer details, order status and the store information.

The details of the products in a particular order is also tracked using the order identification number. Details of the product(s), price at the time of purchase and quantity are recorded.

The information of a customer placing an order is tracked. Each customer has an identification number, name and email address which is used for communication of the orders.

The customers can purchase the products in stores or online through the company's website. The company stores the information of all the stores and their corresponding physical and virtual addresses. The information of the store is also recorded in the order details.

2
Installing Sample Schemas

Starting with Oracle Database 12c Release 2, the latest version of the sample schema scripts are available on GitHub at https://github.com/oracle/db-sample-schemas/releases/latest.

During a complete installation of Oracle Database, the HR schema can be installed either manually or automatically when creating a database using the `dbca` option. All the other sample schemas must be installed manually via the scripts available on GitHub.

This chapter contains the following topics:

- Installing HR Schema Only
- Installing Sample Schemas from GitHub

> **Note:**
>
> By installing any of the Oracle Database sample schemas, you will drop any previously installed schemas that use 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.

Installing HR Schema Only

This section contains the following topics:

- Installing HR Schema Using Database Configuration Assistant
- Manually Installing the HR Schema
- Uninstalling HR Schema

Installing HR Schema Using Database Configuration Assistant

Select the `sample schemas` option to install `HR` schema in the database.

At the end of the installation process, a dialog box displays the accounts that have been created and their lock status. By default, 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

Manually 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:

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

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

2. 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:
   ```

   Enter an appropriate tablespace, for example, `users` as the default tablespace for `HR`

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

4. Enter `temp` as the temporary tablespace for `HR`

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

5. Enter your `SYS` password

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

6. 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:

1. Removes any previously installed `HR` schema
2. Creates user `HR` and grants the necessary privileges
3. 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 HR Sample Schema Scripts and Objects.

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`.

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

Uninstalling HR Schema

If you need to remove the HR schema, run the following script on the SQL* Plus command line.

```
sqlplus system/systempw@connect_string
@drop_hr.sql
```

Installing Sample Schemas from GitHub

Starting with Oracle Database 12c Release 2, only the `HR` sample schema SQL scripts are available in the `$ORACLE_HOME/demo/schema/human_resources` directory. If you want to use sample schemas other than `HR`, such as `OE`, `OC`, `PM`, and `SH` schemas, you must download them from the GitHub repository.

The procedure to install sample schemas from GitHub is as follows:

1. To find the latest version of the sample schemas installation scripts, go to the following GitHub web site : https://github.com/oracle/db-sample-schemas/releases/latest

   For example, If you want a 12.2.0.1 version of the scripts, then go to https://github.com/oracle/db-sample-schemas/releases/tag/v12.2.0.1
2. Clone the GitHub repository, or download the ZIP bundle from GitHub and extract the files.
3. Unzip the file.
4. Follow the instructions to create the schemas in the README contained in the zip file.

This section includes the following topics:

- Resetting Sample Schemas
- Uninstalling Sample Schemas

Resetting Sample Schemas

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

```
sqlplus system/systempw@connect_string
@mksample systempw syspw hrpw oepw pmpw ixpw shpw bipw users temp /your/path/to/log/
connect_string
```

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.

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.

This script uses the following parameters:

- `systempwd`
- `SYSTEM`
- `connect_string`

The `systempwd` is the password for `SYSTEM` user and `connect_string` is the connection string of the database.

Example 2-1 How to Uninstall Sample Schemas

```
sqlplus system/systempw@connect_string
@drop_sch.sql
```

Installing CO schema

Currently, CO schema cannot be installed along with the other schema using the mksample script. Install the CO schema independently from GitHub.

The steps to install CO schema from GitHub is as follows:

1. Go to the GitHub web site: https://github.com/oracle/db-sample-schemas/releases/tag/v19.2
2. Clone the GitHub repository, or download the ZIP bundle from GitHub and extract the files.
3. Unzip the file.
4. Follow the instructions to create the schema in `README.txt` contained in the zip file.
5. Review `co_install.log` in the extracted zip folder for errors.
6. To verify that the schema was created, use the following command:

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

7. To remove the CO schema, run the following script to drop the CO user:

   ```
   SQL> @co_drop_user.sql
   ```

> **Note:**
>
> - The Customer Orders(CO) schema is available from Oracle Database 12c onwards.
> - The master script `@mksample` currently does not include the CO schema.

3
Schema Diagrams

Examine the diagrams of the sample database schemas.

Sample Schema Diagrams

Figure 3-1 illustrates sample schemas HR and OE and their relationship. The scripts and table descriptions for these schemas are in section "HR Schema" and "OE Schema", respectively.

Figure 3-2 illustrates schema PM. The scripts and table description for schema PM are at "PM Schema".

Figure 3-3 illustrates schema SH. The scripts and table description for schema SH are in section "SH Schema".

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

Figure 3-4 illustrates schema CO. The scripts and table description for schema CO are in section "CO Schema"

Figure 3-1 Sample Schemas HR and OE

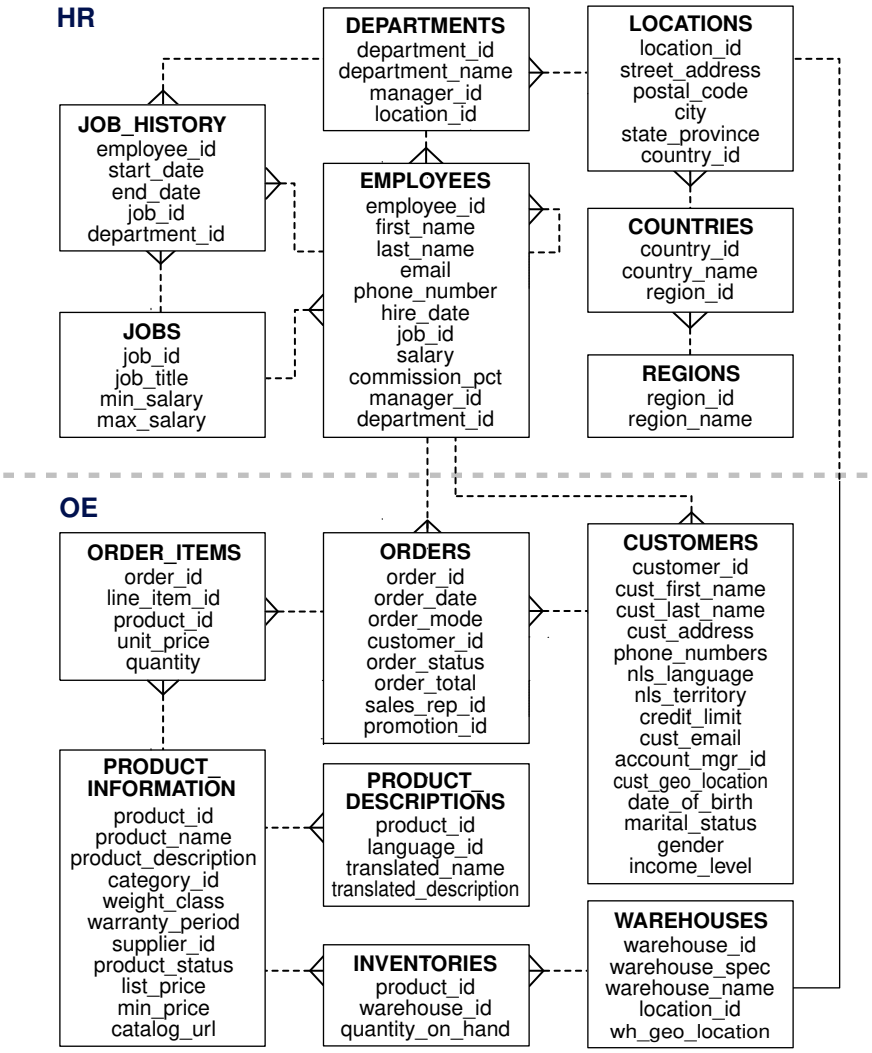


Figure 3-2 Sample Schemas OE and PM

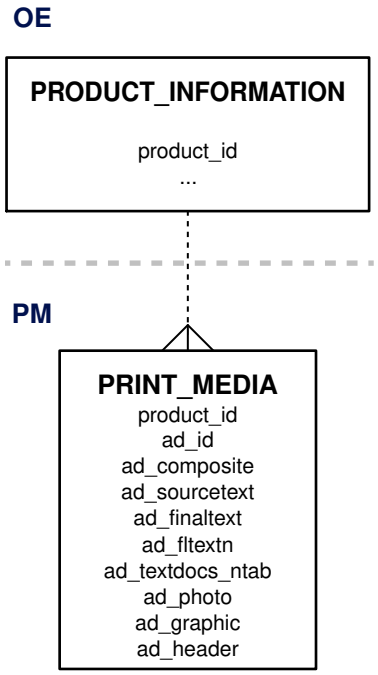


Figure 3-3 Sample Schema SH

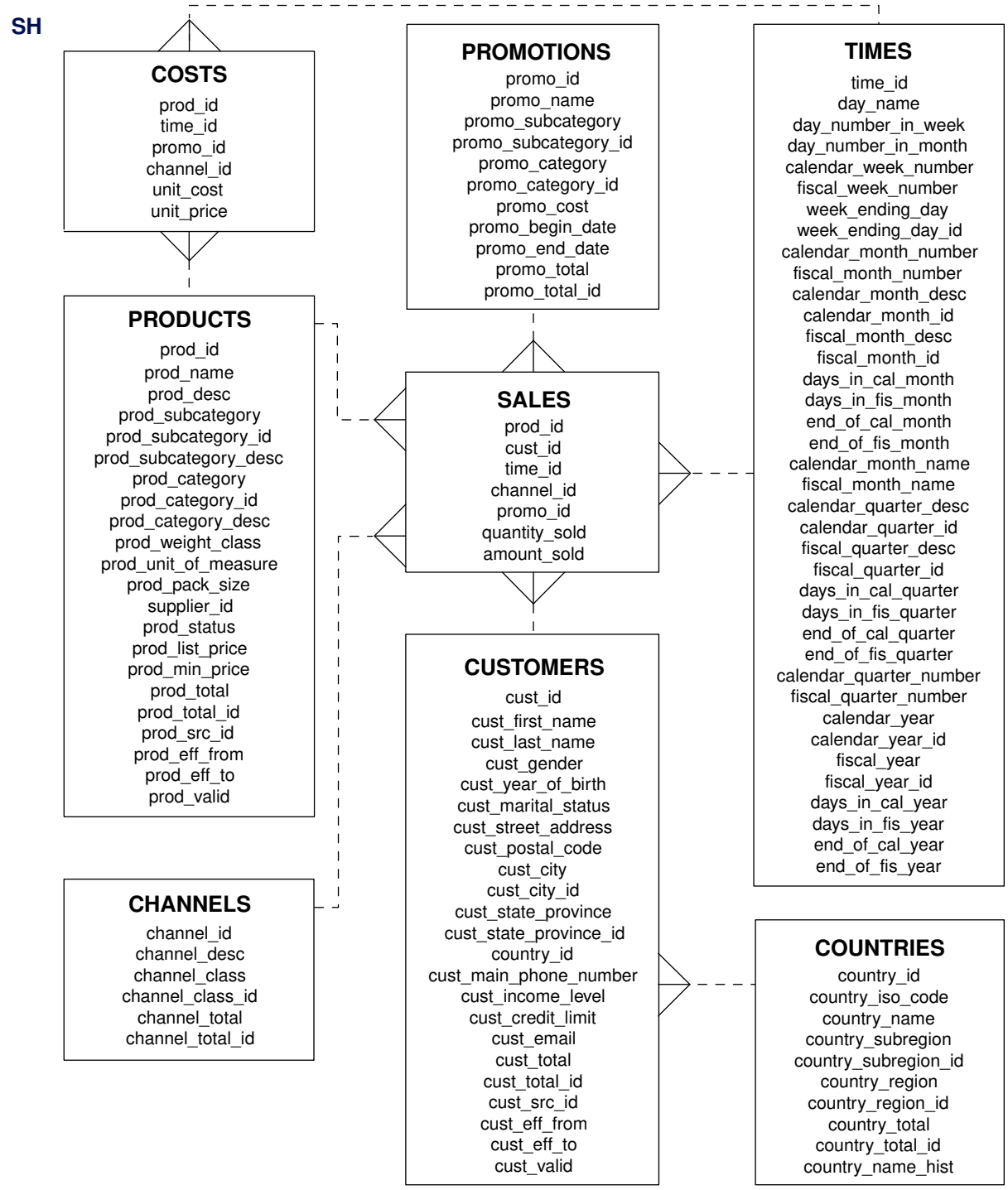
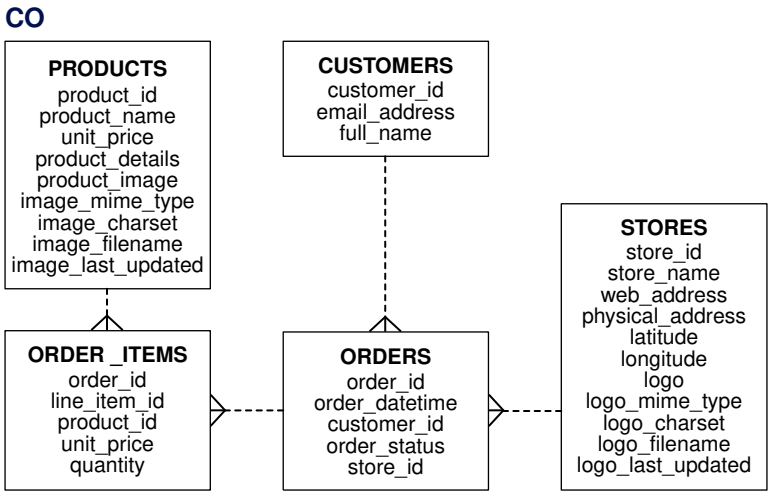


Figure 3-4 Sample Schema CO



4

Sample Schema Scripts and Object Descriptions

Consider the scripts used to generate the Oracle Database Sample Schemas. 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.

Master Script for Sample Schemas

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

In the master script (mksample.sql), 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
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
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
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
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
 11:
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
```

CO Sample Schema Scripts and Objects

This section lists the names of the scripts that create the customer orders (CO) schema and describes the objects in the schema.

Table 4-1 lists the CO scripts in alphabetical order, while Table 4-2 lists its objects.

Table 4-1 CO Sample Schema Scripts

Script Name	Description
co_ddl.sql	Creates tables, views and indexes
co_dml.sql	Populates the tables
co_drop_objects.sql	Drops CO objects from current schema
co_drop_user.sql	Drops CO user
co_main.sql	Main installation script for CO schema; calls other scripts
co_set_identity_starts.sql	Resets the current value of the identity columns
co_user.sql	Creates the CO database user
customers.sql	Inserts for the customers table
orders.sql	Inserts for the orders table
order_items.sql	Inserts for the order_items table
products.sql	Inserts for the products table
sample_queries.sql	Provides example SQL statements for data analysis
stores.sql	Inserts for the stores table

Table 4-2 CO Sample Schema Objects

Object Type	Objects
Index	customers_name_i, orders_customer_id_i, orders_store_id_i, products_pk, stores_pk, store_name_u, customers_pk, customers_email_u, store_at_least_one_address_c, products_json_c, orders_pk, orders_customer_id_fk, orders_status_c, orders_store_id_fk, order_items_order_id_fk, order_items_product_id_fk, order_items_pk, order_items_product_u
Table	customers, stores, products, orders, order_items

Table 4-2 (Cont.) CO Sample Schema Objects

Object Type	Objects
View	customer_order_products, store_orders, product_reviews, product_orders

CO Sample Schema Table Descriptions

Consider the columns of each table of CO sample schema.

- Table CO.CUSTOMERS
- Table CO.STORES
- Table CO.PRODUCTS
- Table CO.ORDERS
- Table CO.ORDER_ITEMS

Table CO.CUSTOMERS

The table below lists CO.CUSTOMERS table description.

Table 4-3 CO.CUSTOMERS Table Description

Column Name	Nulls Allowed?	Type
CUSTOMER_ID	NO	INTEGER
EMAIL_ADDRESS	NO	VARCHAR2(255 CHAR)
FULL_NAME	NO	VARCHAR2(255 CHAR)

Table CO.STORES

The table below lists CO.STORES table description.

Table 4-4 Table CO.STORES Table Description

Column Name	Nulls Allowed?	Type
STORE_ID	NO	INTEGER
STORE_NAME	NO	VARCHAR2(255 CHAR)
WEB_ADDRESS	YES	VARCHAR2(100 CHAR)
PHYSICAL_ADDRESS	YES	VARCHAR2(512 CHAR)
LATITUDE	YES	NUMBER
LONGITUDE	YES	NUMBER
LOGO	YES	BLOB
LOGO_MIME_TYPE	YES	VARCHAR2(512 CHAR)
LOGO_FILENAME	YES	VARCHAR2(512 CHAR)

Table 4-4 (Cont.) Table CO.STORES Table Description

Column Name	Nulls Allowed?	Type
LOGO_CHARSET	YES	VARCHAR2(512 CHAR)
LOGO_LAST_UPDATED	YES	DATE

> **Note:**
>
> The table has a constraint to verify either WEB_ADDRESS or PHYSICAL ADDRESS is NOT NULL.

Table CO.PRODUCTS

The table below lists CO.PRODUCTS table description.

Table 4-5 Table CO.PRODUCTS Table Description

Column Name	Nulls Allowed?	Type
PRODUCT_ID	NO	INTEGER
PRODUCT_NAME	NO	VARCHAR2(255 CHAR)
UNIT_PRICE	YES	NUMBER(10,2)
PRODUCT_DETAILS	YES	BLOB
PRODUCT_IMAGE	YES	BLOB
IMAGE_MIME_TYPE	YES	VARCHAR2(512 CHAR)
IMAGE_FILENAME	YES	VARCHAR2(512 CHAR)
IMAGE_CHARSET	YES	VARCHAR2(512 CHAR)
IMAGE_LAST_UPDATED	YES	DATE

Table CO.ORDERS

The table below lists CO.ORDERS table description.

Table 4-6 Table CO.ORDERS Table Description

Column Name	Nulls Allowed?	Type
ORDER_ID	NO	INTEGER
ORDER_DATETIME	NO	TIMESTAMP
CUSTOMER_ID	NO	INTEGER
ORDER_STATUS	NO	VARCHAR2(10 CHAR)
STORE_ID	NO	INTEGER

Table CO.ORDER_ITEMS

The table below lists CO.ORDER_ITEMS table description.

Table 4-7 Table CO.ORDER_ITEMS Table Description

Column Name	Nulls Allowed?	Type
ORDER_ID	NO	INTEGER
LINE_ITEM_ID	NO	INTEGER
PRODUCT_ID	NO	INTEGER
UNIT_PRICE	NO	NUMBER(10,2)
QUANTITY	NO	INTEGER

HR Sample Schema Scripts and Objects

This section lists the names of the scripts that create the human resources (HR) schema and describes the objects in the schema. Table 4-8 lists the HR scripts in alphabetical order, while Table 4-9 lists its objects.

Table 4-8 HR Sample 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
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	Creates indexes on the HR tables
hr_main.sql	Main script for schema HR ; calls other scripts
hr_popul.sql	Populates the objects

Table 4-9 HR Sample Schema Objects

Object Type	Objects
Index	COUNTRY_C_ID_PK, DEPT_ID_PK, DEPT_LOCATION_IX, EMP_DEPARTMENT_IX, EMP_EMAIL_UK, EMP_EMP_ID_PK, EMP_JOB_IX, EMP_MANAGER_IX, EMP_NAME_IX, JHIST_DEPARTMENT_IX, JHIST_EMPLOYEE_IX, JHIST_EMP_ID_ST_DATE_PK, JHIST_JOB_IX, JOB_ID_PK, LOC_CITY_IX, LOC_COUNTRY_IX, LOC_ID_PK, LOC_STATE_PROVINCE_IX, REG_ID_PK

Table 4-9 (Cont.) HR Sample Schema Objects

Object Type	Objects
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 Sample Schema Table Descriptions

Consider the columns of each table of HR sample schema.

- Table HR.COUNTRIES
- Table HR.DEPARTMENTS
- Table HR.EMPLOYEES
- Table HR.JOBS
- Table HR.JOB_HISTORY
- Table HR.LOCATIONS
- Table HR.REGIONS

Table HR.COUNTRIES

Table 4-10 HR.COUNTRIES Table Description

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

Table HR.DEPARTMENTS

Table 4-11 HR.DEPARTMENTS Table Description

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

Table HR.EMPLOYEES

Table 4-12 HR.EMPLOYEES Table Description

Column Name	Null?	Type
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 HR.JOBS

Table 4-13 HR.JOBS Table Description

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

Table HR.JOB_HISTORY

Table 4-14 HR.JOB_HISTORY Table Description

Column Name	Null?	Type
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 HR.LOCATIONS

Table 4-15 HR.LOCATIONS Table Description

Column Name	Null?	Type
LOCATION_ID	NOT NULL	NUMBER(4)
STREET_ADDRESS		VARCHAR2(40)
POSTAL_CODE		VARCHAR2(12)
CITY	NOT NULL	VARCHAR2(30)
STATE_PROVINCE		VARCHAR2(25)
COUNTRY_ID		CHAR(2)

Table HR.REGIONS

Table 4-16 HR.REGIONS Table Description

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

OE Sample Schema Scripts and Objects

This section lists the names of the scripts that create the Order Entry (OE) sample schema and describes the objects in the schema. Table 4-17 lists the OE scripts in alphabetical order, while Table 4-18 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 4-17 OE Sample 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.sql[a]	Populates the object tables
oe_analz.sql	Gathers statistics on the OE objects

Table 4-17 (Cont.) OE Sample Schema Scripts

Script Name	Description
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 4-18 OE Sample Schema 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_LOB0000045852C00013$$, SYS_LOB0000046019C00004$$, SYS_LOB0000046019C00005$$, SYS_LOB0000046019C00007$$, SYS_LOB0000046019C00011$$, SYS_LOB0000046019C00012$$, SYS_LOB0000046019C00015$$, SYS_LOB0000046019C00024$$, SYS_LOB0000046019C00031$$, SYS_LOB0000046019C00032$$, 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

Table 4-18 (Cont.) OE Sample Schema Objects

Object Type	Objects
Type	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 Sample Schema Table Descriptions

Consider the tables of the OE sample schema.

- 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 4-19 OE.CUSTOMERS Table Description

Column Name	Null?	Type
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

Table 4-19 (Cont.) OE.CUSTOMERS Table Description

Column Name	Null?	Type
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 4-20 OE.INVENTORIES Table Description

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

Table OE.ORDERS

Table 4-21 OE.ORDERS Table Description

Column Name	Null?	Type
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 4-22 OE.ORDER_ITEMS Table Description

Column Name	Null?	Type
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 4-23 OE.PRODUCT_DESCRIPTIONS Table Description

Column Name	Null?	Type
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 4-24 OE.PRODUCT_INFORMATION Table Description

Column Name	Null?	Type
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 4-25 OE.WAREHOUSES Table Description

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

PM Sample Schema Scripts and Objects

This section lists the names of the scripts that create the Product Media (`PM`) schema and describes the objects in the schema. Table 4-26 lists the `PM` scripts in alphabetical order, while Table 4-27 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 4-26 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
pm_p_ord.sql, pm_p_lob.sql, pm_p_lob.ctl, pm_p_lob.dat	Populates the objects in the schema
pm_main.sql	Main script for schema PM, which calls other scripts

Table 4-27 PM Sample Schema Objects

Object Type	Objects
Index	PRINTMEDIA_PK, SYS_C003538
Lob	SYS_LOB0000045882C00003$$, SYS_LOB0000045882C00017$$, SYS_LOB0000045882C00019$$, SYS_LOB0000045882C00034$$, SYS_LOB0000045882C00042$$, SYS_LOB0000045882C00054$$, SYS_LOB0000045882C00062$$, SYS_LOB0000045882C00069$$, SYS_LOB0000045882C00071$$, SYS_LOB0000045882C00080$$, SYS_LOB0000045907C00003$$, SYS_LOB0000045907C00004$$, SYS_LOB0000045907C00005$$, SYS_LOB0000045907C00006$$, SYS_LOB0000045907C00009$$, SYS_LOB0000045907C00015$$, SYS_LOB0000045908C00004$$
Table	PRINT_MEDIA
Type	ADHEADER_TYP, TEXTDOC_TAB, TEXTDOC_TYP

PM Sample Schema Table Descriptions

Consider the columns of PRINT_MEDIA table of PM sample schema.

- Table PM.PRINT_MEDIA

Table PM.PRINT_MEDIA

Table 4-28 PM.PRINT_MEDIA Table Description

Column Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER(6)
AD_ID	NOT NULL	NUMBER(6)
AD_COMPOSITE		BLOB
AD_SOURCETEXT		CLOB
AD_FINALTEXT		CLOB

Table 4-28 (Cont.) PM.PRINT_MEDIA Table Description

Column Name	Null?	Type
AD_FLTEXTN		NCLOB
AD_TEXTDOCS_NTAB		TEXTDOC_TAB
AD_PHOTO		BLOB
AD_GRAPHIC		BINARY FILE LOB
AD_HEADER		ADHEADER_TYP

IX Sample Schema Scripts and Objects

This section lists the names of the scripts that create the Information Exchange (IX) schema group and describes the objects in the schemas. Table 4-29 lists the IX scripts in alphabetical order, while Table 4-30 lists its objects.

Table 4-29 IX Sample 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 4-30 IX Sample Schema 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
Type	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 Sample Schema Table Descriptions

Consider the columns of each table of IX sample schema.

- Table IX.ORDERS_QUEUETABLE
- Table IX.STREAMS_QUEUE_TABLE

Table IX.ORDERS_QUEUETABLE

Table 4-31 IX.ORDERS_QUEUETABLE Table Description

Column Name	Null?	Type
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

Table 4-31 (Cont.) IX.ORDERS_QUEUETABLE Table Description

Column Name	Null?	Type
USER_DATA		ORDER_EVENT_TYP
USER_PROP		SYS.ANYDATA

Table IX.STREAMS_QUEUE_TABLE

Table 4-32 IX.STREAMS_QUEUE_TABLE Table Description

Column Name	Null?	Type
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

Table 4-32 (Cont.) IX.STREAMS_QUEUE_TABLE Table Description

Column Name	Null?	Type
USER_PROP		SYS.ANYDATA

SH Sample Schema Scripts and Objects

This section lists the names of the scripts that create the Sales History (SH) schema and describes the objects in the schema. Table 4-33 lists the SH scripts in alphabetical order, while Table 4-34 lists its objects.

Table 4-33 SH Sample 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
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 4-34 SH Sample Schema 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, DRSUP_TEXT_IDXX, 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$$, SYS_LOB0000045929C00002$$

Table 4-34 (Cont.) SH Sample Schema Objects

Object Type	Objects
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 Sample Schema Table Descriptions

Consider the columns of each table of SH sample schema.

- Table SH.CHANNELS
- Table SH.COSTS
- Table SH.COUNTRIES
- Table SH.CUSTOMERS
- Table SH.PRODUCTS
- Table SH.PROMOTIONS
- Table SH.SALES
- Table SH.TIMES

Table SH.CHANNELS

Table 4-35 SH.CHANNELS Table Description

Column Name	Null?	Type
CHANNEL_ID	NOT NULL	NUMBER
CHANNEL_DESC	NOT NULL	VARCHAR2(20)
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 SH.COSTS

Table 4-36 SH.COSTS Table Description

Column Name	Null?	Type
PROD_ID	NOT NULL	NUMBER
TIME_DESC	NOT NULL	DATE

Table 4-36 (Cont.) SH.COSTS Table Description

Column Name	Null?	Type
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 SH.COUNTRIES

Table 4-37 SH.COUNTRIES Table Description

Column Name	Null?	Type
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 SH.CUSTOMERS

Table 4-38 SH.CUSTOMERS Table Description

Column Name	Null?	Type
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)
CUST_CITY	NOT NULL	VARCHAR2(30)
CUST_CITY_ID	NOT NULL	NUMBER

Table 4-38 (Cont.) SH.CUSTOMERS Table Description

Column Name	Null?	Type
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 SH.PRODUCTS

Table 4-39 SH.PRODUCTS Table Description

Column Name	Null?	Type
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)

Table 4-39 (Cont.) SH.PRODUCTS Table Description

Column Name	Null?	Type
PROD_TOTAL_ID	NOT NULL	NUMBER
PROD_SRC_ID		NUMBER
PRD_EFF_FROM		DATE
PROD_EFF_TO		DATE
PROD_VALID		VARCHAR2(1)

Table SH.PROMOTIONS

Table 4-40 SH.PROMOTIONS Table Description

Column Name	Null?	Type
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 SH.SALES

Table 4-41 SH.SALES Table Description

Column Name	Null?	Type
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 SH.TIMES

Table 4-42 SH.TIMES Table Description

Column Name	Null?	Type
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
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)

Table 4-42 (Cont.) SH.TIMES Table Description

Column Name	Null?	Type
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

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