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Sample Schemas

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# Preface

This guide is a primary source of information on the sample schemas. 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 the Oracle Database.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at

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<http://www.oracle.com/technology/membership/index.html>

If you already have a username and password for OTN, then you can go directly to the documentation section of the OTN Web site at

<http://www.oracle.com/technology/documentation/index.html>

## Conventions

The following text conventions are used in this document:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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.



Oracle used the schema SCOTT with its two prominent tables EMP and DEPT for many years. With advances in Oracle Database technology, these tables have become inadequate to show even the most basic features of Oracle Database and other Oracle products. As a result, many other schemas have been created over the years to suit the needs of product documentation, courseware, software development, and application demos.

This chapter contains the following topics:

- [About Sample Schemas](#)
- [Oracle Database Sample Schemas Design Principles](#)
- [Customer Benefits of Sample Schemas](#)

## About Sample Schemas

The Oracle Database Sample Schemas provide a common platform for examples in each release of the Oracle Database. All Oracle Database documentation and training materials are being converted to Sample Schemas environment as those materials are updated.

The Oracle Database Sample Schemas are a set of interlinked schemas. This set of schemas provides a layered approach to complexity:

- A simple schema Human Resources (HR) is useful for introducing basic topics. An extension to this schema supports Oracle Internet Directory demos.
- A second 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.
- The Online Catalog (OC) subschema is a collection of object-relational database objects built inside the OE schema.
- The Product Media (PM) schema is dedicated to multimedia data types.
- A set of schemas gathered under the main schema name Information Exchange (IX) can demonstrate Oracle Advanced Queuing capabilities.
- The Sales History (SH) schema is designed to allow for demos with large amounts of data. An extension to this schema provides support for advanced analytic processing.

## Oracle Database Sample Schemas Design Principles

Sample Schemas have been created and enhanced with the following design principles in mind:

- **Simplicity and ease of use.** The HR and OE schemas are intentionally simple. They will not become overly complex by the addition of features. Rather, they are intended to provide a graduated path from the simple to intermediate levels of database use.
- **Relevance for typical users.** The base schemas and the 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.** Sample Schemas provide a logical and physical foundation for adding objects to demonstrate functionality beyond the fundamental scope.
- **Relevance.** 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 of Sample Schemas are as follows:

- **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 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 Sample Schemas and the examples that run against the schemas, the quality of Oracle documentation and training materials is enhanced.

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# Installation

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 Sample Schemas. It contains the following sections:

- [Using the Database Configuration Assistant](#)
- [Manually Installing Sample Schemas](#)
- [Resetting Sample Schemas](#)

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**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

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 Oracle Database Sample Schemas for your personal or business data and applications. They are meant to be used for demonstration purposes only.

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

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**Note:** The PM schema requires the database to be enabled for the Java Virtual Machine (JVM) and *interMedia*. You can accomplish this during installation or later using the DBCA.

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

1. You must connect as a system administrator using the SYSDBA privilege.
2. When prompted to enter a password for the schema, enter a secure password that meets the requirements described in *Oracle Database Security Guide*.
3. 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
4. When prompted for the log directory name, enter `$ORACLE_HOME/demo/schema/log/` or any other existing directory name.

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

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## 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:
```

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

4. 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:

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 the `hr_main.sql` script runs successfully and the HR schema is installed, you are connected as the 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 the 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 [Table 5-1](#) on page 5-4.

A pair of optional scripts, `hr_dn_c.sql` and `hr_dn_d.sql`, is provided as a schema extension. To prepare the HR schema 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 the HR schema, then use the `hr_dn_d.sql` script to undo the effects of the `hr_dn_c.sql` script.

Use the `hr_drop.sql` script to drop the HR schema.

## Installing the OE Schema and Its OC Subschema

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:

1. Removes any previously installed OE schema
2. Creates the user OE and grants the necessary privileges
3. Connects as OE
4. Calls the scripts that create and populate the schema objects

After the `oe_main.sql` script runs successfully and the OE schema is installed, you are connected as the 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 5-10](#) on page 5-7.

The `oe_drop.sql` and `oc_drop.sql` scripts are used to drop the OE schema and OC subschema, 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:

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

After the `pm_main.sql` script runs successfully and the PM schema is installed, you are connected as the 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 5-19](#) on page 5-11.

The `pm_drop.sql` script is used to drop the PM schema.

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**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.

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## Installing the IX Schema

All scripts necessary to create the Information Exchange (IX) schema reside in `$ORACLE_HOME/demo/schema/information_exchange`.

**See Also:** [Guidelines for Installing Sample Schemas](#) before you run `ix_main.sql`

To install the Information Exchange (IX) schema, 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:

1. Prompts for passwords and tablespace names used within the scripts
2. Removes any previously installed IX schema
3. Creates the user IX and grants the necessary privileges
4. Connects as IX
5. Calls the scripts that create and populate the schema objects

After the `ix_main.sql` script runs successfully and the IX schema is installed, you are connected as the 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 5-23](#) on page 5-12.

The `ix_drop.sql` script is used for dropping the IX schema.

## 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
2. Removes any previously installed SH schema
3. Creates the user SH and grants the necessary privileges
4. Connects as SH
5. Calls the scripts that create and populate the schema objects

After the `sh_main.sql` script runs successfully and the SH schema is installed, you are connected as the 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 5-27](#) on page 5-15.

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**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`.

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A pair of optional scripts, `sh_olp_c.sql` and `sh_olp_d.sql`, is provided as a schema extension. To prepare the SH schema 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 the SH schema, then use the script `sh_olp_d.sql` to undo the effects of `sh_olp_c.sql` and reinstate dimensions as they were before.

The file used to drop the SH schema is `sh_drop.sql`.

## 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 the `HR`, `OE`, `PM`, `IX`, `SH`, and `BI` schemas. 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 their objects.

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

For the `OC` catalog subschema of the `OE` schema:

1. Connect as the user `OE`.
2. Run the `oc_drop.sql` script.
3. Connect as `SYSTEM`.
4. Ensure that no user is connected as `OE`:

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

5. Drop the user:

```
DROP USER oe CASCADE;
```

For the IX schemas:

1. Connect as SYSTEM.

2. 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 the `dix.sql` script. You will be prompted for passwords for the individual users.

The Oracle Database sample schemas are based on a fictitious company that sells goods through various channels. This chapter describes the fictitious company and contains the following sections:

- [Overall Description](#)
- [HR](#)
- [OE](#)
- [PM](#)
- [IX](#)
- [SH](#)

## Overall Description

The sample company portrayed by the Oracle Database Sample Schemas operates worldwide to fill orders for several products. The company has several divisions:

- The Human Resources division tracks information about the employees and the facilities.
- The Order Entry division tracks product inventories and sales of company's products through various channels.
- The Product Media division maintains descriptions and detailed information about each product sold by the company.
- The Information Exchange division manages shipping through B2B applications.
- The Sales division tracks business statistics to facilitate business decisions.

Each of these divisions is represented by a 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.

## 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.

The OE schema also contains XML purchase order documents. The XML documents are stored in the 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 the `PURCHASEORDER` object-relational table by using SQL, by querying public views `RESOURCE_VIEW` and `PATH_VIEW`, and by querying the repository using XPath expressions.

The purchase order XML documents are located in the 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, and so on).

## OC Description

The Online Catalog (OC) subschema of the OE schema addresses an online catalog merchandising scenario. The same customers and products are used in OC as in the OE schema proper, but the OC subschema 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

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

## 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.

## 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 Sales History (SH) schema.

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.

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## Schema Diagrams

This chapter contains diagrams of sample schemas.

### Sample Schema Diagrams

[Figure 4-1, "HR and OE Schemas"](#) on page 4-2. illustrates HR and OE schemas and their relationship. Note that the scripts and table descriptions for these two schemas are in section ["HR Schema"](#) on page 5-4 and ["OE Schema"](#) on page 5-7, respectively.

[Figure 4-2, "PM Schema"](#) on page 4-3 illustrates the PM schema. Note that the scripts and table description for the PM schema are at ["PM Schema"](#) on page 5-10.

[Figure 4-3, "SH Schema"](#) on page 4-4 illustrates the SH schema. Note that the scripts and table description for the SH schema are in section ["SH Schema"](#) on page 5-15.

This edition of the book does not illustrate the IX schema, but its scripts and table description are in section ["IX Schema"](#) on page 5-12.

Figure 4-1 HR and OE Schemas

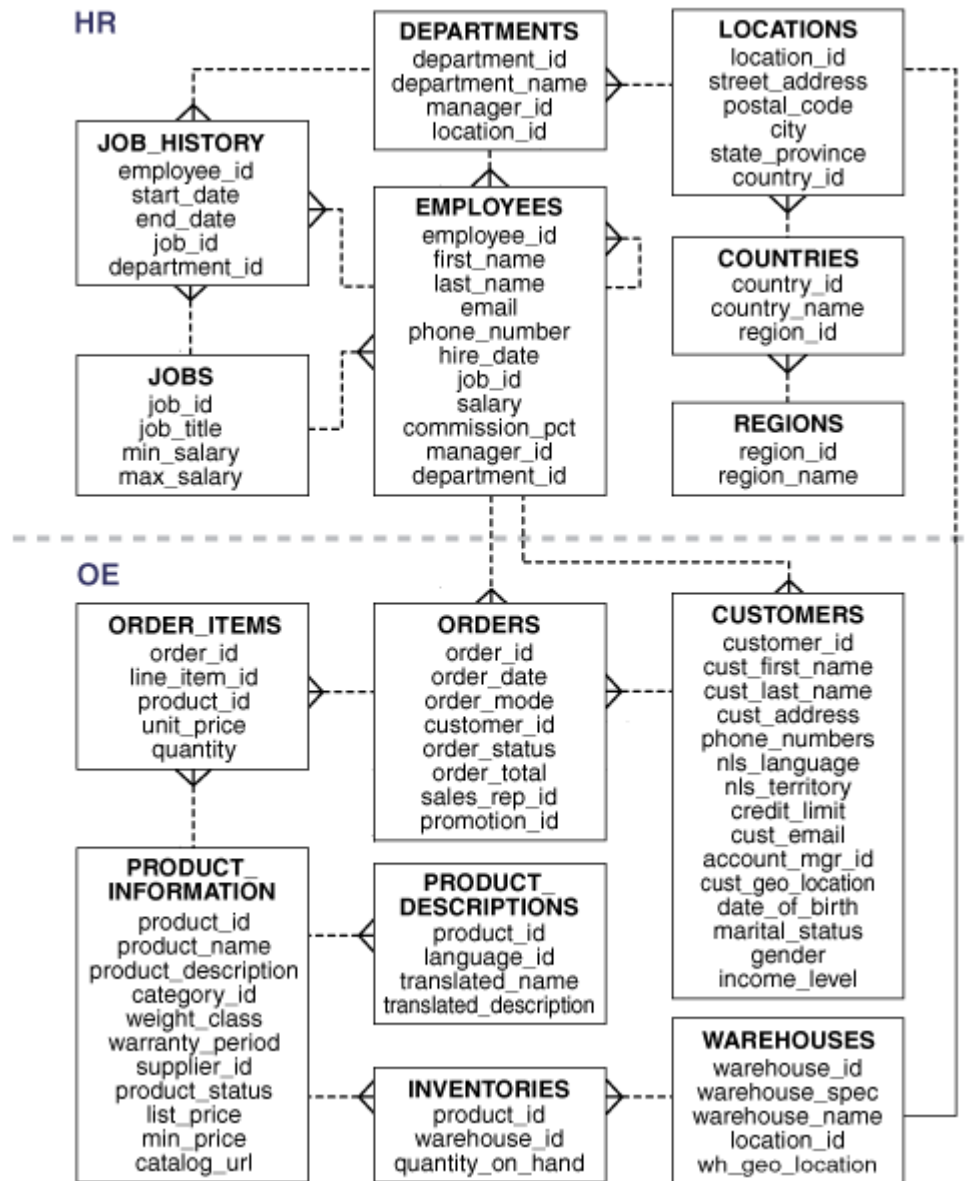




Figure 4-2 PM Schema

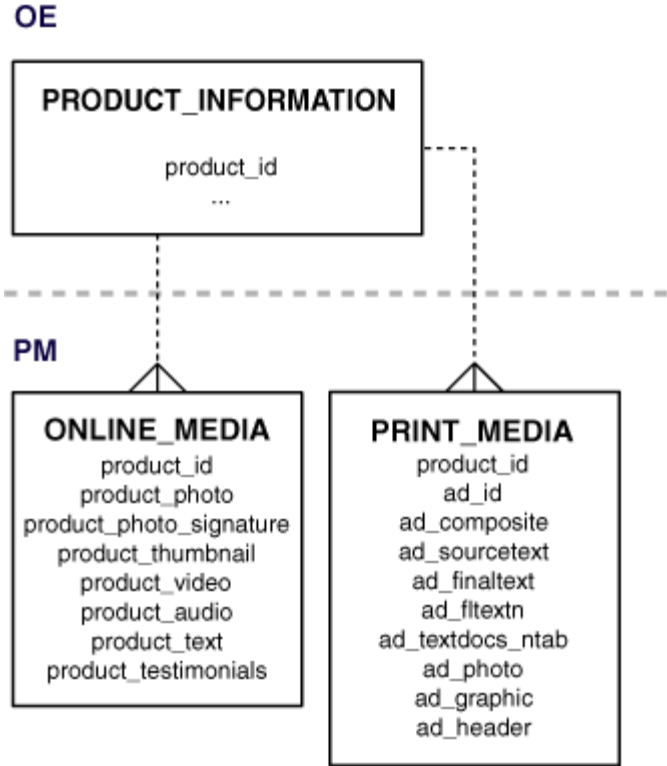
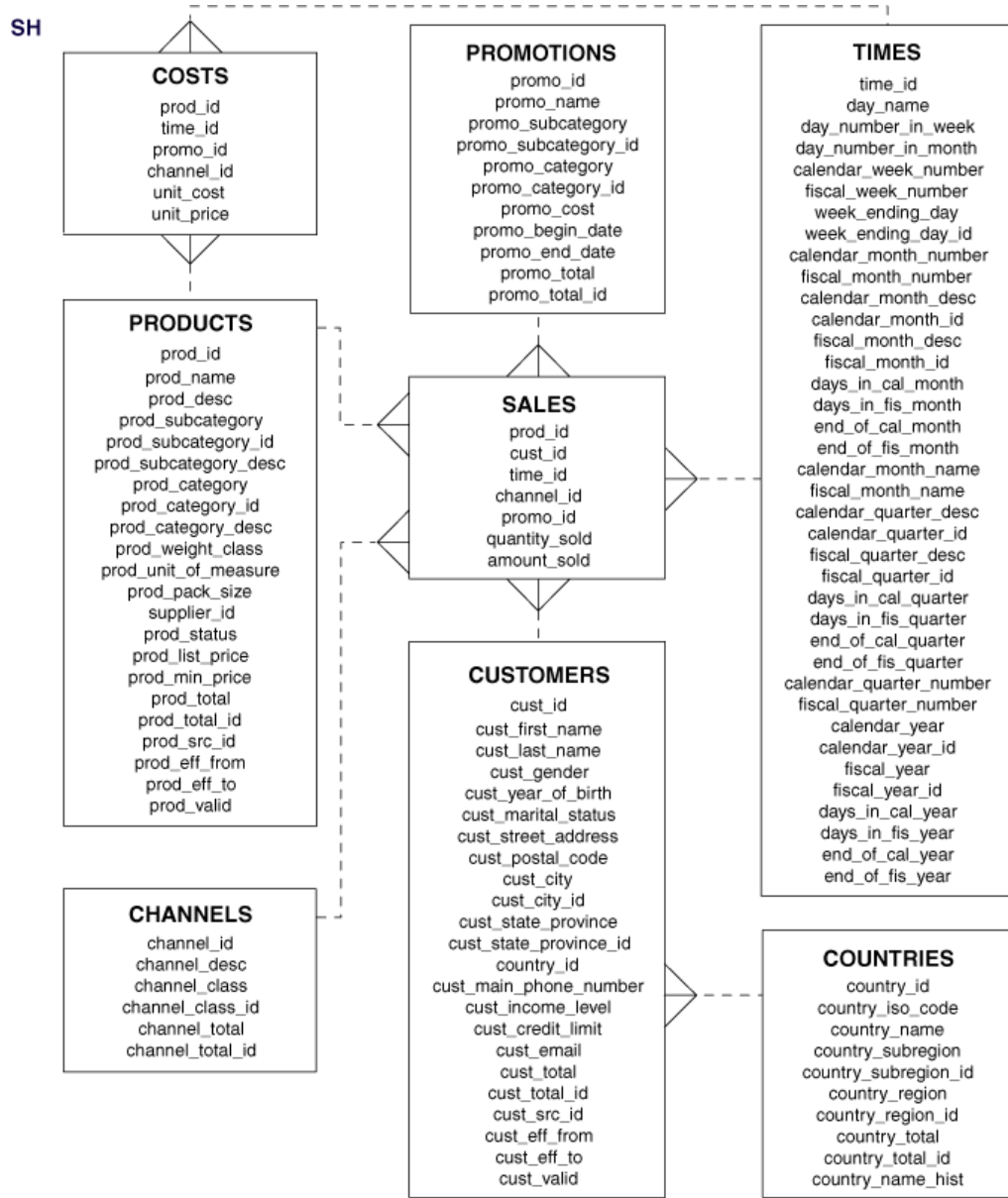


Figure 4-3 SH Schema



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## 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.
- The script `xx_drop.sql`, where `xx` is the schema abbreviation, 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.

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**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.

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### Master Script

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



```
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

```

## 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 5-1](#) on page 5-4 lists the HR scripts in alphabetical order, while [Table 5-2](#) on page 5-5 lists its objects.

**Table 5-1 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 5–1 (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 the HR schema and all its objects
hr_idx.sql	Creates indexes on the HR tables
hr_main.sql	Main script for the HR schema; calls other scripts
hr_popul.sql	Populates the objects

**Table 5–2 HR 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
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 the HR schema, as follows:

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

**Table 5–3 HR.COUNTRIES Table Description**

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

**Table 5-4 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 5-5 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 5-6 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 5-7 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 5-8 HR.LOCATIONS Table Description**

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



**Table 5–8 (Cont.) HR.LOCATIONS Table Description**

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

**Table 5–9 HR.REGIONS Table Description**

Column Name	Null?	Type
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) schema and describes the objects in the schema. [Table 5–10](#) on page 5-7 lists the OE scripts in alphabetical order, while [Table 5–11](#) on page 5-8 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.sql`, `oe_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 5–10 OE Schema Scripts**

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

**Table 5–11 HR 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
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_VOID0000046073\$, SYS_VOID0000046075\$, SYS_VOID0000046077\$, SYS_VOID0000046079\$, SYS_VOID0000046081\$, 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 columns of each table of the OE schema, as follows:

- [Table 5–12, "OE.CUSTOMERS Table Description"](#) on page 5-9
- [Table 5–13, "OE.INVENTORIES Table Description"](#) on page 5-9
- [Table 5–14, "OE.ORDERS Table Description"](#) on page 5-9
- [Table 5–15, "OE.ORDER\\_ITEMS Table Description"](#) on page 5-9
- [Table 5–16, "OE.PRODUCT\\_DESCRIPTIONS Table Description"](#) on page 5-10
- [Table 5–17, "OE.PRODUCT\\_INFORMATION Table Description"](#) on page 5-10
- [Table 5–18, "OE.WAREHOUSES Table Description"](#) on page 5-10

**Table 5–12 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
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 5–13 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 5–14 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 5–15 OE.ORDER\_ITEMS Table Description**

Column Name	Null?	Type
ORDER_ID	NOT NULL	NUMBER (12)

**Table 5–15 (Cont.) OE.ORDER\_ITEMS Table Description**

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

**Table 5–16 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 5–17 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 5–18 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

## 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 5–19](#) on page 5-11 lists the OE scripts in alphabetical order, while [Table 5–20](#) on page 5-11 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 5–19 PM Schema Scripts**

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

**Table 5–20 PM Objects**

Object Type	Objects
Index	ONLINEMEDIA_PK, 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	ONLINE_MEDIA, PRINT_MEDIA
Type	ADHEADER_TYP, TEXTDOC_TAB, TEXTDOC_TYP

## PM Table Descriptions

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

- [Table 5–21, "PM.ONLINE\\_MEDIA Table Description" on page 5-11](#)
- [Table 5–21, "PM.ONLINE\\_MEDIA Table Description" on page 5-11](#)

**Table 5–21 PM.ONLINE\_MEDIA Table Description**

Column Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER (6)
PRODUCT_PHOTO		ORDSYS.ORDIMAGE
PRODUCT_PHOTO_SIGNATURE		ORDSYS.ORDIMAGESIGNATURE
PRODUCT_THUMBNAIL		ORDSYS.ORDIMAGE
PRODUCT_VIDEO		ORDSYS.ORDVIDEO
PRODUCT_AUDIO		ORDSYS.ORDAUDIO
PRODUCT_TEXT		CLOB
PRODUCT_TESTIMONIALS		ORDSYS.ORDDOC

**Table 5–22 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
AD_FLTEXTN		NCLOBO
AD_TEXTDOCS_NTAB		TEXTDOC_TAB
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 5–23](#) on page 5-12 lists the IX scripts in alphabetical order, while [Table 5–24](#) on page 5-12 lists its objects.

**Table 5–23 Information Exchange (IX) Schema Scripts**

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

**Table 5–24 IX Objects**

Object Type	Objects
Evaluation Context	AQ\$_ORDERS_QUEUE_TABLE_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_QUEUE_TABLE_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_QUEUE_TABLE_N, AQ\$_STREAMS_QUEUE_TABLE_N
Table	ORDERS_QUEUE_TABLE, STREAMS_QUEUE_TABLE
Type	ORDER_EVENT_TYP

**Table 5–24 (Cont.) IX Objects**

Object Type	Objects
View	AQ\$ORDERS_QUEUE_TABLE, AQ\$ORDERS_QUEUE_TABLE_R, AQ\$ORDERS_QUEUE_TABLE_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 the IX schema, as follows:

- [Table 5–25, "IX.ORDERS\\_QUEUE\\_TABLE Table Description"](#) on page 5-13
- [Table 5–26, "IX.STREAMS\\_QUEUE\\_TABLE Table Description"](#) on page 5-14

**Table 5–25 IX.ORDERS\_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

**Table 5–25 (Cont.) IX.ORDERS\_QUEUE\_TABLE Table Description**

Column Name	Null?	Type
USER_DATA		ORDER_EVENT_TYP
USER_PROP		SYS.ANYDATA

**Table 5–26 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
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 5–27](#) on page 5-15 lists the SH scripts in alphabetical order, while [Table 5–28](#) on page 5-15 lists its objects.

**Table 5–27 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 the SH schema and all its objects
sh_idx.sql	Creates indexes on tables in the schema
sh_main.sql	Main script for the SH schema; 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 5–28 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\$, 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 the SH schema, as follows:

- [Table 5–29, "SH.CHANNELS Table Description"](#) on page 5-16
- [Table 5–30, "SH.COSTS Table Description"](#) on page 5-16

- [Table 5–31, "SH.COUNTRIES Table Description"](#) on page 5-16
- [Table 5–32, "SH.CUSTOMERS Table Description"](#) on page 5-17
- [Table 5–33, "SH.PRODUCTS Table Description"](#) on page 5-17
- [Table 5–34, "SH.PROMOTIONS Table Description"](#) on page 5-18
- [Table 5–35, "SH.SALES Table Description"](#) on page 5-18
- [Table 5–36, "SH.TIMES Table Description"](#) on page 5-19

**Table 5–29 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 5–30 SH.COSTS Table Description**

Column Name	Null?	Type
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 5–31 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 5–32 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_BRITH	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
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 5–33 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)

**Table 5–33 (Cont.) SH.PRODUCTS Table Description**

<b>Column Name</b>	<b>Null?</b>	<b>Type</b>
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
PRD_EFF_FROM		DATE
PROD_EFF_TO		DATE
PROD_VALID		VARCHAR2 (1)

**Table 5–34 SH.PROMOTIONS Table Description**

<b>Column Name</b>	<b>Null?</b>	<b>Type</b>
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 5–35 SH.SALES Table Description**

<b>Column Name</b>	<b>Null?</b>	<b>Type</b>
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 5-36 SH.TIMES Table Description**

<b>Column Name</b>	<b>Null?</b>	<b>Type</b>
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)
CALENDAR_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

**Table 5-36 (Cont.) SH.TIMES Table Description**

<b>Column Name</b>	<b>Null?</b>	<b>Type</b>
END_OF_CAL_YEAR	NOT NULL	DATE
END_OF_FIS_YEAR	NOT NULL	DATE

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