

Unloading and Loading Database Content using Oracle Data Pump

Purpose

This module describes how you can unload and load data and metadata.

Topics

This module will discuss the following topics:

- [Overview](#)
- [Prerequisites](#)
- [Determining Table Dependencies](#)
- [Unloading Data](#)
- [Loading Data](#)

 **Move your mouse over this icon to show all screenshots. You can also move your mouse over each individual icon to see only the screenshot associated with it.**

Overview

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Oracle Database 10 *g* offers a variety of methods for unloading and loading data. In this module, you will use the Oracle Data Pump Export utility to unload data then use the Oracle Data Pump Import utility to load data. You will also watch a demonstration of an alternative method of quickly loading large amounts of data with cross-platform transportable tablespaces.

What is Oracle Data Pump?

Oracle Data Pump is a new feature of Oracle Database 10 *g* that provides high speed, parallel, bulk data and metadata movement of Oracle database contents. A new public interface PL/SQL package, DBMS_DATAPUMP, provides a server-side infrastructure for fast data and metadata movement. In Oracle Database 10 *g*, new Export (expdp) and Import (impdp) clients that use this interface have been provided. The new Data Pump Export and Import tools have vastly improved performance and greatly enhanced functionality, such as restartability, flexible object selection, and better monitoring and control of export and import jobs. Because of these valuable improvements, Oracle recommends that you use these new Data Pump Export and Import clients rather than the original Export (exp) and Import (imp) clients.

Lesson Overview

MyCompany is evaluating its product portfolio to determine which products are most profitable to its bottom line. To accomplish this, MyCompany is using Data Pump Export and Import to unload and load various database objects that they will later analyze. The Sales History (SH) schema has several tables which need to be unloaded then loaded into a different schema for analysis.

Prerequisites

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Data Pump is server-based, rather than client-based. Dump files, log files, and SQL files are accessed relative to server-based directory paths, so that appropriate file security can be enforced. Data Pump requires you to specify directory paths as directory objects. A directory object maps a name to a directory name on the file system.

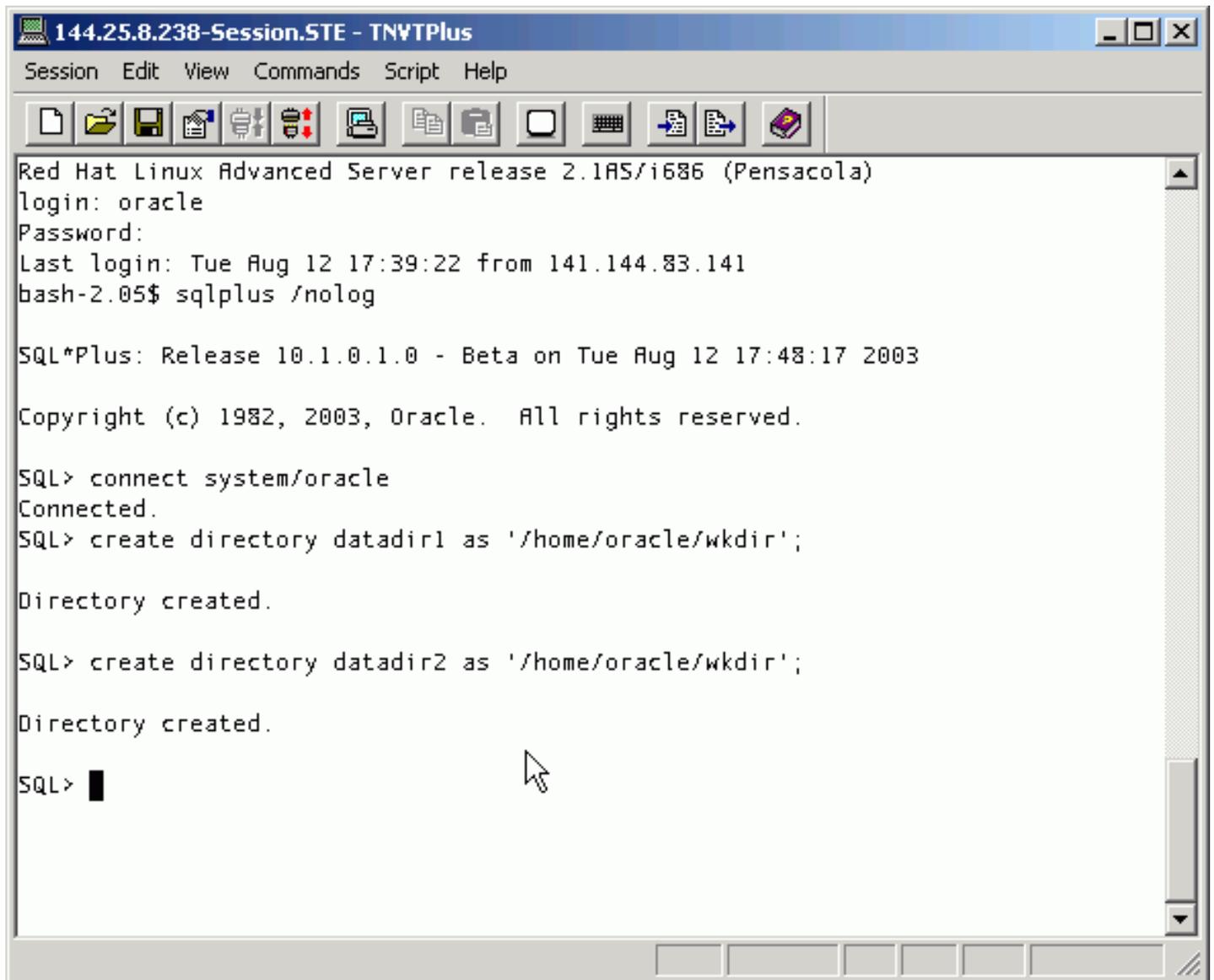
Before you can run Data Pump Export or Data Pump Import, a directory object must be created by a DBA or by any user with CREATE ANY DIRECTORY privilege. Then, when you are using Export or Import, you specify the directory object with the DIRECTORY parameter.

Creating Directory Objects

To create directory objects, perform the following:

1. Login to **SQL*Plus** as **system** and enter the following SQL commands to create two directories. Note the directory path that you specify will depend on your system. This is only an example. You will need to determine what directories on your system will be used to locate the files created by the Data Pump.

```
CREATE DIRECTORY datadir1 AS '/home/oracle/wkdir';  
CREATE DIRECTORY datadir2 AS '/home/oracle/wkdir';
```



```
144.25.8.238-Session.STE - TNVTPlus
Session Edit View Commands Script Help
Red Hat Linux Advanced Server release 2.1AS/i686 (Pensacola)
login: oracle
Password:
Last login: Tue Aug 12 17:39:22 from 141.144.83.141
bash-2.05$ sqlplus /nolog

SQL*Plus: Release 10.1.0.1.0 - Beta on Tue Aug 12 17:48:17 2003

Copyright (c) 1982, 2003, Oracle. All rights reserved.

SQL> connect system/oracle
Connected.
SQL> create directory datadir1 as '/home/oracle/wkdir';

Directory created.

SQL> create directory datadir2 as '/home/oracle/wkdir';

Directory created.

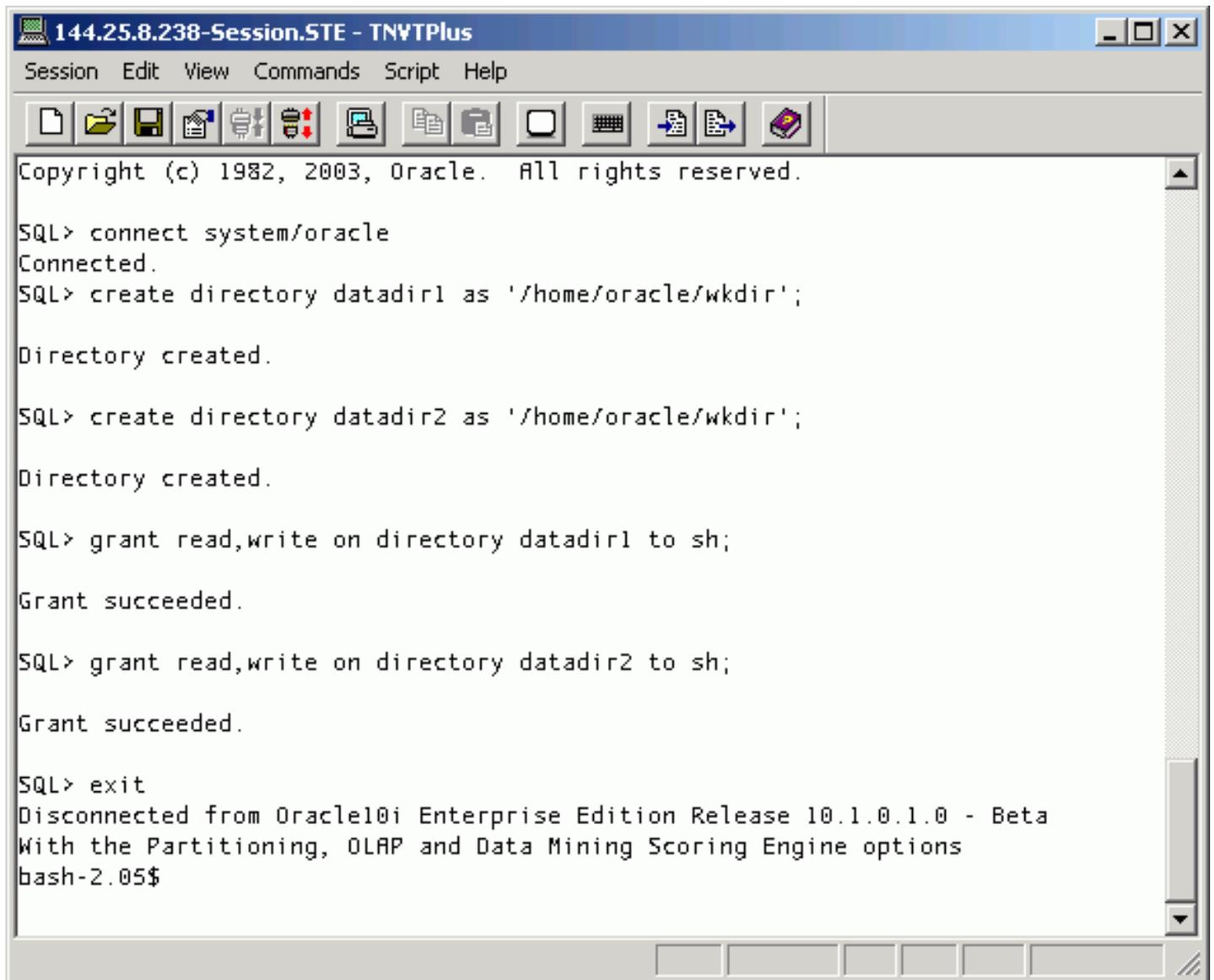
SQL> █
```

2. After a directory is created, the user creating the directory object needs to grant READ and WRITE permission on the directory to other users. To allow the Oracle database to read and to write to files on behalf of user SH in the directories named by datadir1 and datadir2, execute the following command:

```
GRANT READ,WRITE ON DIRECTORY datadir1 TO sh;
```

```
GRANT READ,WRITE ON DIRECTORY datadir2 TO sh;
```

```
exit
```



The screenshot shows a terminal window titled "144.25.8.238-Session.STE - TNVTPlus". The window has a menu bar with "Session", "Edit", "View", "Commands", "Script", and "Help". Below the menu bar is a toolbar with various icons for file operations and execution. The main area of the window displays the following text:

```
Copyright (c) 1982, 2003, Oracle. All rights reserved.

SQL> connect system/oracle
Connected.
SQL> create directory datadir1 as '/home/oracle/wkdir';

Directory created.

SQL> create directory datadir2 as '/home/oracle/wkdir';

Directory created.

SQL> grant read,write on directory datadir1 to sh;

Grant succeeded.

SQL> grant read,write on directory datadir2 to sh;

Grant succeeded.

SQL> exit
Disconnected from Oracle10i Enterprise Edition Release 10.1.0.1.0 - Beta
With the Partitioning, OLAP and Data Mining Scoring Engine options
bash-2.05$
```

Determining Table Dependencies

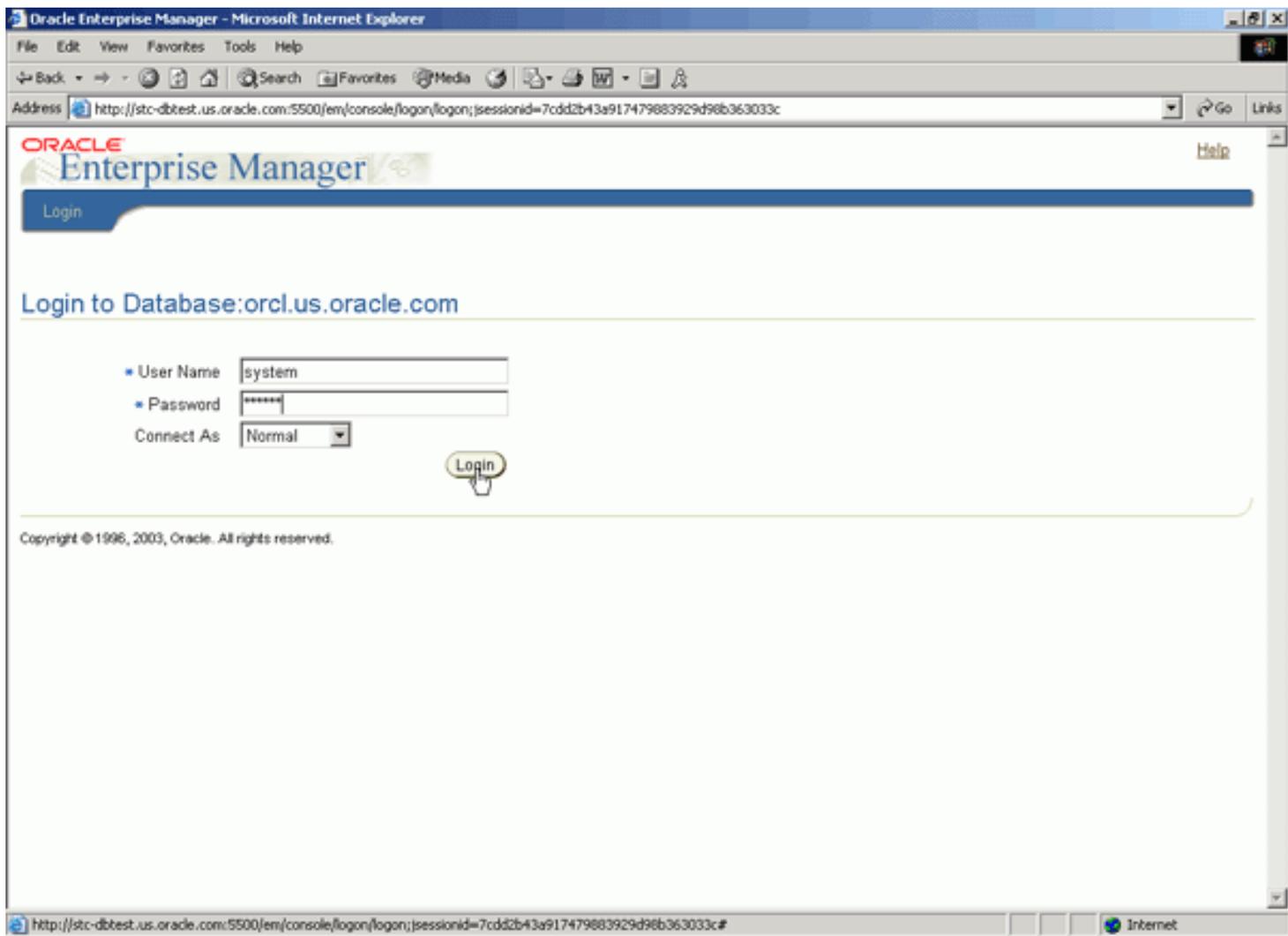
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You need to unload the SALES, PRODUCTS, and COSTS tables. To determine if these tables have any dependencies on other tables (which you may also want to unload), perform the following:

1. Open a browser and enter the following URL:

`http://<hostname>:5500/em`

Login as **system/<password>** then click **Login** .



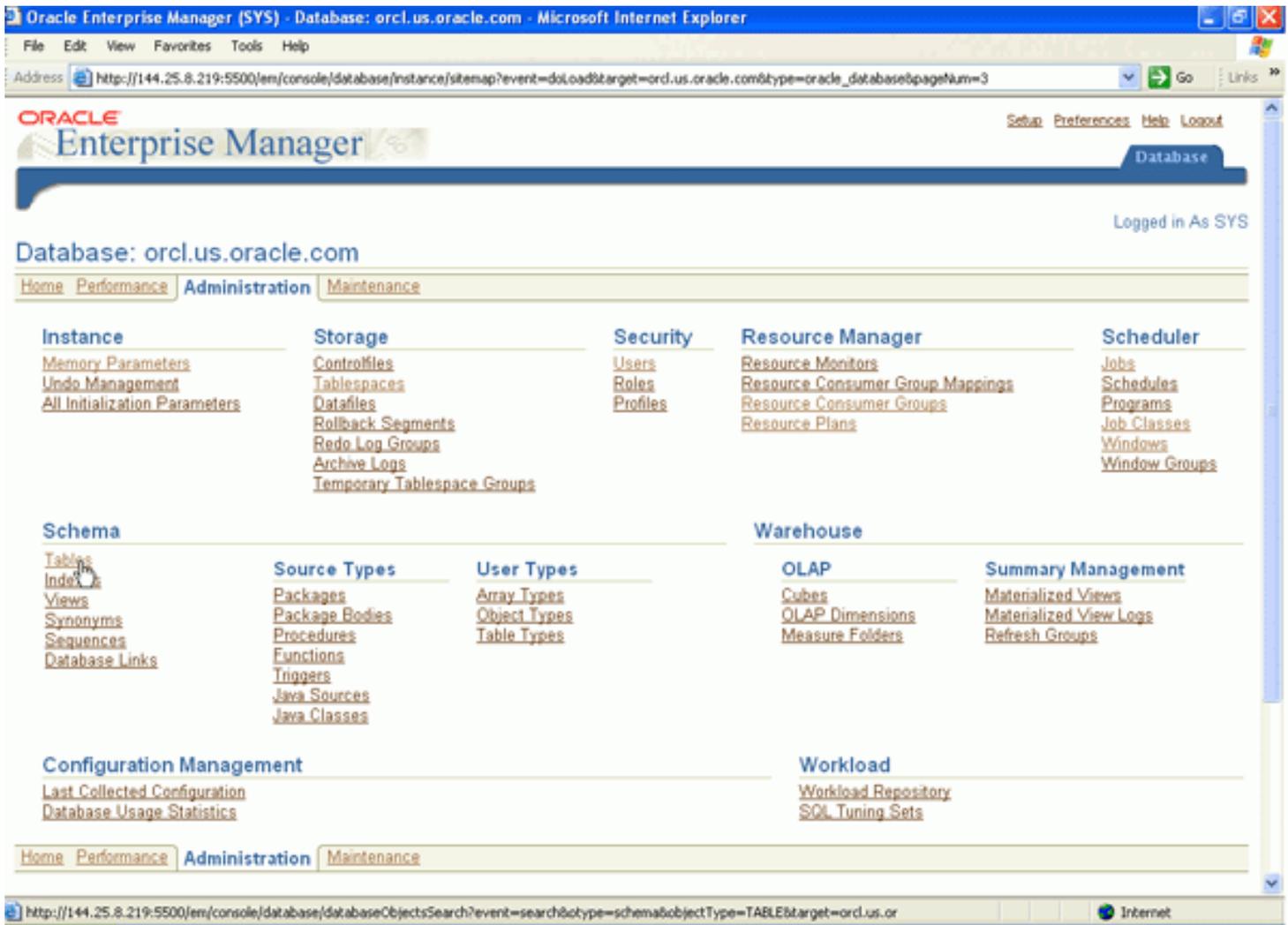
- Click on the **Administration** tab.

The screenshot displays the Oracle Enterprise Manager (SYS) interface for a database instance named 'orcl.us.oracle.com'. The browser window title is 'Oracle Enterprise Manager (SYS) - Database: orcl.us.oracle.com - Microsoft Internet Explorer'. The address bar shows the URL: 'http://144.25.8.219:5500/em/console/database/instance/sitemap?event=doLoad&target=orcl.us.oracle.com&type=oracle_database&pageNum=1'. The interface includes a navigation menu with 'Home', 'Performance', 'Administration', and 'Maintenance' tabs. The 'Administration' tab is selected. The main content area is divided into several sections:

- General:** Shows the database status as 'Up' since 'Aug 22, 2003 10:32:38 PM'. Other details include 'Time Zone: PDT', 'Availability (%) 78.95 (Last 24 hours)', 'Instance Name: orcl', 'Version: 10.1.0.1.0', 'Host: EDCDR19P1', 'Listener: LISTENER_EDCDR19P1', 'Oracle Home: /oracle/ora10g', and 'Alert Log: No ORA- errors'. A 'Shutdown' button is visible.
- Host CPU:** A line graph showing CPU usage for 'orcl' (blue) and 'Other' (purple) processes. The y-axis ranges from 0 to 100%. Below the graph, 'Run Queue' and 'Paging (pages per second)' are both listed as 'Unavailable'.
- Active Sessions:** A pie chart showing session activity: 'Using CPU (0%)', 'Waiting: I/O (0%)', and 'Waiting: Other (100%)'. Below the chart, 'Active Sessions' is 0 and 'SQL Response Time (%)' is 77.95 (compared to baseline).
- Space Usage:** Shows 'Problem' as 0, 'Tablespaces' as 'Not Configured', and 'Dump Area Used (%)' as 'Unavailable'.
- Advice:** Shows 'ADDM Findings' as 1 and 'Policy Violations' as 23.
- High Availability:** Shows 'Instance Recovery Time (seconds)' as 12, 'Last Backup' as 'n/a', 'Archiving' as 'Disabled', 'Archive Area Used (%)' as 'n/a', and 'Flashback Logging' as 'Disabled'.
- Job Activity:** Shows 'Scheduled Executions', 'Running Executions', 'Suspended Executions', and 'Problem Executions' all as 0. A note indicates '(Last 7 days)'.
- Alerts:** A section at the bottom of the main content area.

The browser's status bar at the bottom shows the URL and 'Internet' connectivity.

- Click on the **Tables** link.



4. Enter **SH** in the Schema field then click **Go** .

The screenshot shows the Oracle Enterprise Manager console interface. At the top, there's a navigation bar with 'Setup', 'Preferences', 'Help', and 'Logout'. Below that, the breadcrumb path is 'Database: orcl.us.oracle.com > Tables'. The main heading is 'Tables'. Underneath, there's a search section with the following text: 'Select an object type and optionally enter a schema name and an object name to filter the data that is displayed in your results set.' The search criteria are: Object Type: 'Table', Schema: 'SH', and Object Name: (empty). A 'Go' button is highlighted. Below the search section, there's a 'Results' section with a table of search results. The table has columns: Select, Schema, Table Name, Tablespace, Partition Type, Partitions, Subpartitions, IOT, and Clustered. The results show 10 tables in the SYS schema, all with 0 partitions and 0 subpartitions, and are not clustered. The 'Go' button in the search section is circled in red.

Search

Select an object type and optionally enter a schema name and an object name to filter the data that is displayed in your results set.

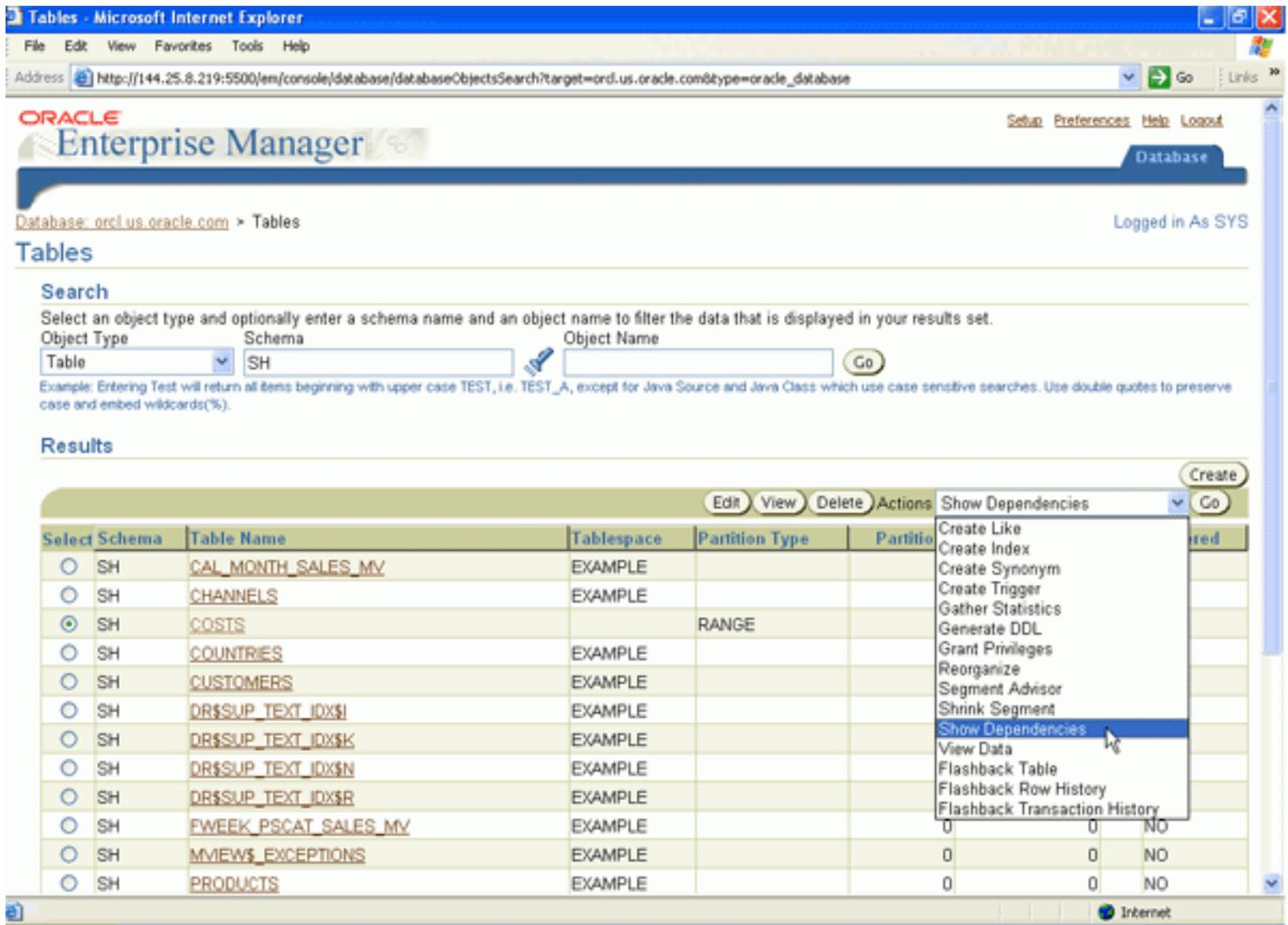
Object Type: Schema: Object Name:

Example: Entering Test will return all items beginning with upper case TEST, i.e. TEST_A, except for Java Source and Java Class which do case sensitive searches. Use double quotes to preserve case and embed wildcards(%).

Results

Select	Schema	Table Name	Tablespace	Partition Type	Partitions	Subpartitions	IOT	Clustered
<input checked="" type="radio"/>	SYS	ACCESS\$	SYSTEM		0	0		NO
<input type="radio"/>	SYS	ALERT_QT	SYSAUX		0	0		NO
<input type="radio"/>	SYS	APPLY\$_CONF_HDLR_COLUMNS	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_CONSTRAINT_COLUMNS	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_DEST_OBJ	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_DEST_OBJ_CMAP	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_DEST_OBJ_OPS	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_ERROR	SYSAUX		0	0		NO
<input type="radio"/>	SYS	APPLY\$_ERROR_HANDLER	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_SOURCE_OBJ	SYSTEM		0	0		NO
<input type="radio"/>	SYS	APPLY\$_SOURCE_SCHEMA	SYSTEM		0	0		NO

5. Select **Costs** then select **Show Dependencies** from the drop-down list. Click **Go** .



- Notice that the Costs table is dependent on four other tables: Channels, Products, Promotions, and Times. Other than Products, none of the other tables are needed for the analysis. Click **OK**.

Oracle Enterprise Manager - Show Dependencies: SH.COSTS - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/database/showdep/showdep?sname=SH&type=oracle_database&pageName=/database/showdep/showDependencies&target=or

Database: orcl.us.oracle.com > Tables > Show Dependencies: SH.COSTS

Show Dependencies: SH.COSTS

Dependencies Dependents

The following objects are dependencies of SH.COSTS:

Object Name	Object Type
SH.CHANNELS	TABLE
SH.PRODUCTS	TABLE
SH.PROMOTIONS	TABLE
SH.TIMES	TABLE
EXAMPLE	TABLESPACE
SH	USER
/oracle/oradata/orcl/example01.dbf	DATAFILE
DEFAULT	PROFILE
TEMP	TABLESPACE
/oracle/oradata/orcl/temp01.dbf	DATAFILE

Dependencies Dependents

Database | Setup | Preferences | Help | Logout

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7. Select **Products** then select **Show Dependencies** from the drop-down list. Click **Go**.

Tables - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/database/databaseObjectsSearch?event=redisplay&target=orcl.us.oracle.com&type=oracle_database

Select an object type and optionally enter a schema name and an object name to filter the data that is displayed in your results set.

Object Type: Table Schema: SH Object Name:

Example: Entering Test will return all items beginning with upper case TEST, i.e. TEST_A, except for Java Source and Java Class which use case sensitive searches. Use double quotes to preserve case and embed wildcards(%).

Results

Actions: Show Dependencies

Select	Schema	Table Name	Tablespace	Partition Type	Partitions	Subpartitions	IOT	Clustered
<input type="radio"/>	SH	CAL_MONTH_SALES_MV	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	CHANNELS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	COSTS		RANGE	28	0	NO	
<input type="radio"/>	SH	COUNTRIES	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	CUSTOMERS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$I	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$K	EXAMPLE		0	0	IOT	NO
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$N	EXAMPLE		0	0	IOT	NO
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$R	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	FWEEK_PSCAT_SALES_MV	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	MVIEW\$EXCEPTIONS	EXAMPLE		0	0	NO	
<input checked="" type="radio"/>	SH	PRODUCTS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	PROMOTIONS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	SALES		RANGE	28	0	NO	
<input type="radio"/>	SH	SALES_TRANSACTIONS_EXT	SYSTEM		0	0	NO	
<input type="radio"/>	SH	SUPPLEMENTARY_DEMOGRAPHICS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	TIMES	EXAMPLE		0	0	NO	

Actions: Show Dependencies

Address: http://144.25.8.219:5500/em/console/database/databaseObjectsSearch?event=redisplay&target=orcl.us.oracle.com&type=oracle_database

8. The Products table is not dependent on any other table. Click **OK** .

Oracle Enterprise Manager - Show Dependencies: SH.PRODUCTS - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/database/showdep/showdep?sname=SH&type=oracle_database&pageName=/database/showdep/showDependencies&target=or

Database: orcl.us.oracle.com > Tables > Show Dependencies: SH.PRODUCTS

Show Dependencies: SH.PRODUCTS

Dependencies Dependents

The following objects are dependencies of SH.PRODUCTS:

Object Name	Object Type
EXAMPLE	TABLESPACE
SH	USER
/oracle/oradata/orcl/example01.dbf	DATAFILE
DEFAULT	PROFILE
TEMP	TABLESPACE
/oracle/oradata/orcl/temp01.dbf	DATAFILE

Dependencies Dependents

Database | Setup | Preferences | Help | Logout

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9. Select **Sales** then select **Show Dependencies** from the drop-down list. Click **Go** .

The screenshot shows the Oracle Enterprise Manager Database Console interface. At the top, the browser title is "Tables - Microsoft Internet Explorer" and the address bar shows the URL: http://144.25.8.219:5500/em/console/database/databaseObjectsSearch?event=redisplay&target=orcl.us.oracle.com&type=oracle_database. The main content area is titled "Results" and contains a table with columns: Select, Schema, Table Name, Tablespace, Partition Type, Partitions, Subpartitions, IOT, and Clustered. The "Sales" table is selected, and the "Show Dependencies" dropdown menu is open, showing a "Go" button. Below the table, there are navigation links: "Database | Setup | Preferences | Help | Logout" and "Recycle Bin". The footer contains copyright information: "Copyright © 1996, 2003, Oracle. All rights reserved. About Oracle Enterprise Manager Database Console". The browser status bar at the bottom shows the URL and "Internet".

Select	Schema	Table Name	Tablespace	Partition Type	Partitions	Subpartitions	IOT	Clustered
<input type="radio"/>	SH	CAL_MONTH_SALES_MV	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	CHANNELS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	COSTS		RANGE	28	0	NO	
<input type="radio"/>	SH	COUNTRIES	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	CUSTOMERS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$I	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$K	EXAMPLE		0	0	IOT	NO
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$N	EXAMPLE		0	0	IOT	NO
<input type="radio"/>	SH	DR\$SUP_TEXT_IDX\$R	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	FWEEK_PSCAT_SALES_MV	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	MVIEW\$EXCEPTIONS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	PRODUCTS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	PROMOTIONS	EXAMPLE		0	0	NO	
<input checked="" type="radio"/>	SH	SALES		RANGE	28	0	NO	
<input type="radio"/>	SH	SALES_TRANSACTIONS_EXT	SYSTEM		0	0	NO	
<input type="radio"/>	SH	SUPPLEMENTARY_DEMOGRAPHICS	EXAMPLE		0	0	NO	
<input type="radio"/>	SH	TIMES	EXAMPLE		0	0	NO	

10. The Sales table is dependent on several other tables: Channels, Countries, Customers, Products, Promotions, and Times. Other than Products, none of the other tables are needed for the analysis. Click **OK**.



Unloading Data

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Data Pump Export is a utility for unloading data and metadata into a set of operating system files called a dump file set. The dump file set can be copied to another system and loaded by the Data Pump Import utility. The dump file set is made up of one or more disk files that contain table data, database object metadata, and control information. The files are written in a proprietary, binary format. During an import operation, the Data Pump Import utility uses these files to locate each database object in the dump file set. Data Pump Export allows you to specify that a job should move a subset of the data and metadata, as determined by the export mode. This is done using data filters and metadata filters, which are implemented through Export parameters.

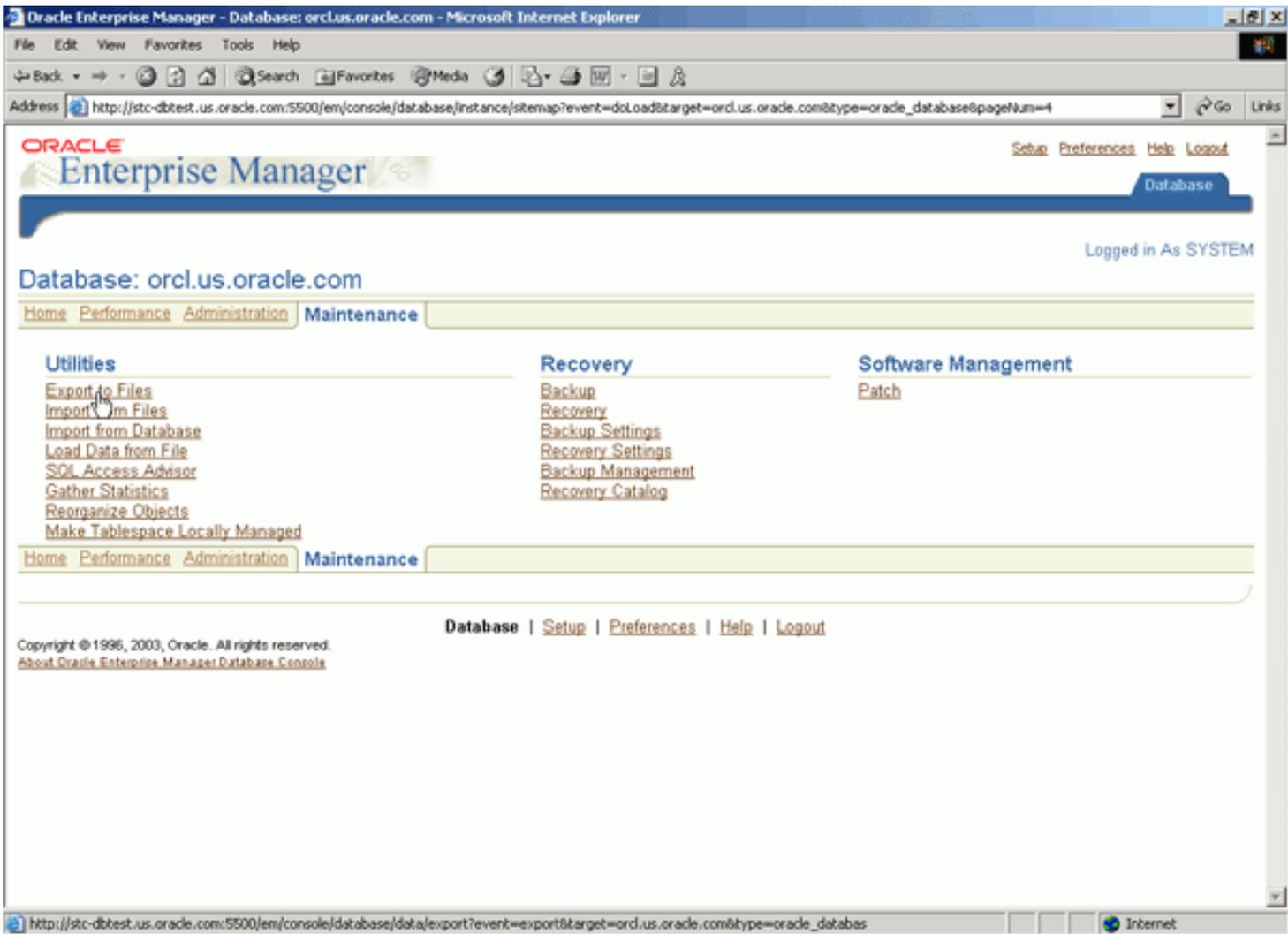
Oracle Data Pump Export can be accessed through Enterprise Manager. To unload your company's sales data, perform the following:

1. Click on the **Maintenance** link.

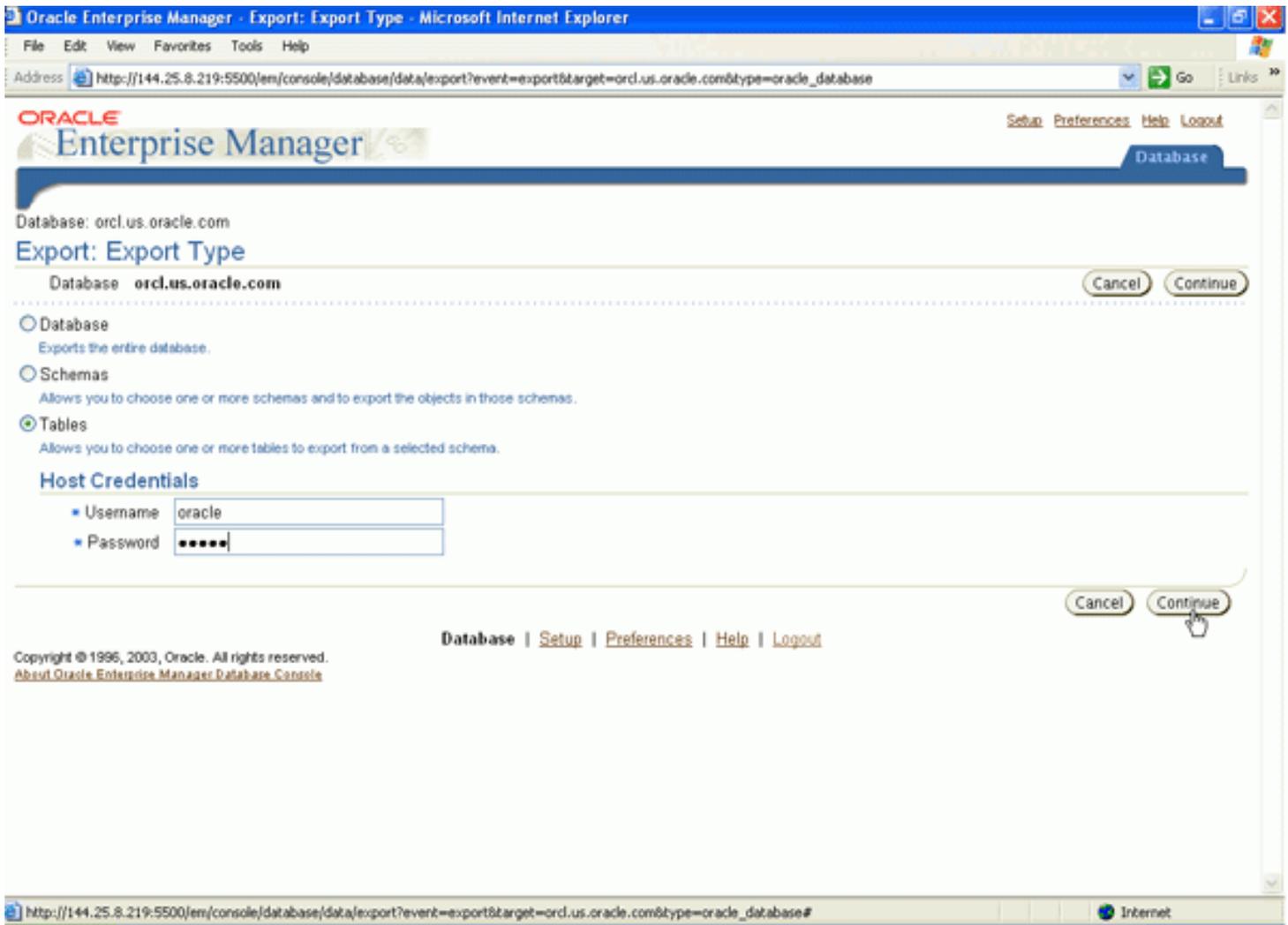
The screenshot shows the Oracle Enterprise Manager console for a database instance named 'orcl'. The interface includes a navigation menu with 'Home', 'Performance', 'Administration', and 'Maintenance' (highlighted). The main content area displays several key metrics:

- General:** Status is 'Up', up since 'Aug 4, 2003 8:49:42 AM', time zone 'PDT', and availability '96.8% (Last 24 hours)'. Instance name is 'orcl', version '10.1.0.1.0', host 'stc-dbtest.us.oracle.com', listener 'LISTENER_stc', and alert log 'Aug 4, 2003 7:26:06 AM'.
- Host CPU:** A bar chart shows CPU usage for 'orcl' (blue) and 'Other' (purple). The 'orcl' bar is at 0%. Metrics include Run Queue (0.09) and Paging (0.033 pages per second).
- Active Sessions:** A gauge shows 100% active sessions. Metrics include Active Sessions (.1) and SQL Response Time (76.25% compared to baseline).
- Space Usage:** 0 problems, fragmentation 'Not Configured', and 54% dump area used.
- Advice:** 1 ADDM finding and 23 violations.
- High Availability:** Instance recovery time is 18 seconds, last backup was 'Aug 5, 2003 2:03:28 AM', and archiving is 'Disabled'.
- Job Activity:** 1 scheduled execution, 0 running, 0 suspended, and 3 problem executions in the last 7 days.

2. Click on **Export to Files** link.



3. To export tables, select the **Tables** button and enter your OS username and password then click on **Continue** button.



4. Select the **Add** button to see the tables available for export.



5. Enter **SH** in the Schema field and click **Go** .



6. Select the checkboxes for the **Costs**, **Products**, and **Sales** tables and click **Select** .

Oracle Enterprise Manager - Export: Add Tables - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://144.25.8.219:5500/em/console/database/data/export> Go Links

Export: Add Tables

Database **orcl.us.oracle.com** Cancel Select

Tables and/or partitions must all belong to the same schema.

Search

Enter the full name of the schema or select a schema from which to display schema tables in the Search Results table. Enter search criteria in the Table field to filter the list of tables from the schema.

Schema Only tables from the selected schema will be found.

Table

Search for Tables Partitions Go

Search Results

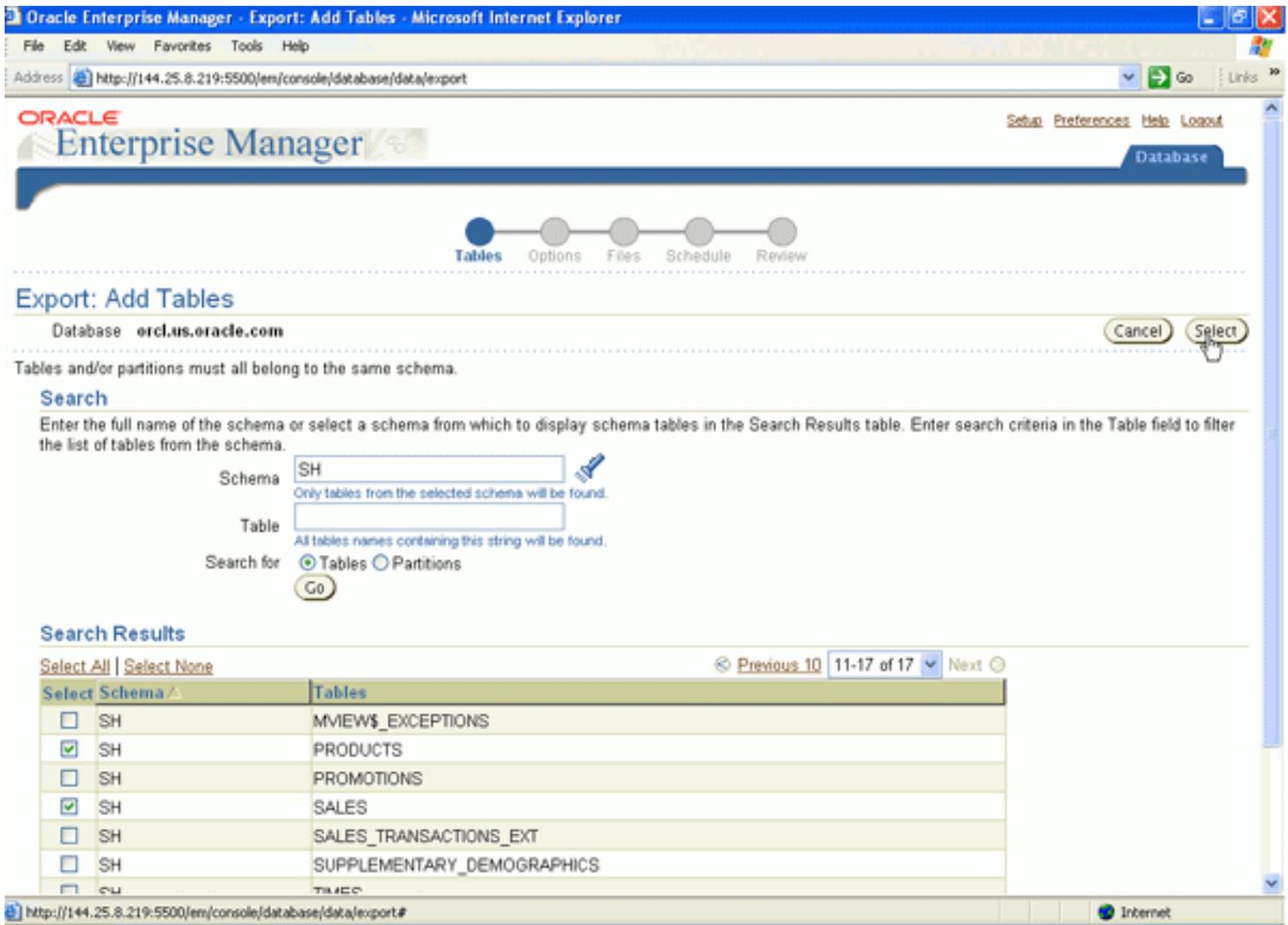
[Select All](#) | [Select None](#) Previous 1-10 of 17 Next 7

Select	Schema	Tables
<input type="checkbox"/>	SH	CAL_MONTH_SALES_MV
<input type="checkbox"/>	SH	CHANNELS
<input checked="" type="checkbox"/>	SH	COSTS
<input type="checkbox"/>	SH	COUNTRIES
<input type="checkbox"/>	SH	CUSTOMERS
<input type="checkbox"/>	SH	DR\$SUP_TEXT_IDX\$I
<input type="checkbox"/>	SH	DR\$SUP_TEXT_IDX\$K
<input type="checkbox"/>	SH	DR\$SUP_TEXT_IDX\$N
<input type="checkbox"/>	SH	DR\$SUP_TEXT_IDX\$R
<input type="checkbox"/>	SH	FWEEK_PSCAT_SALES_MV

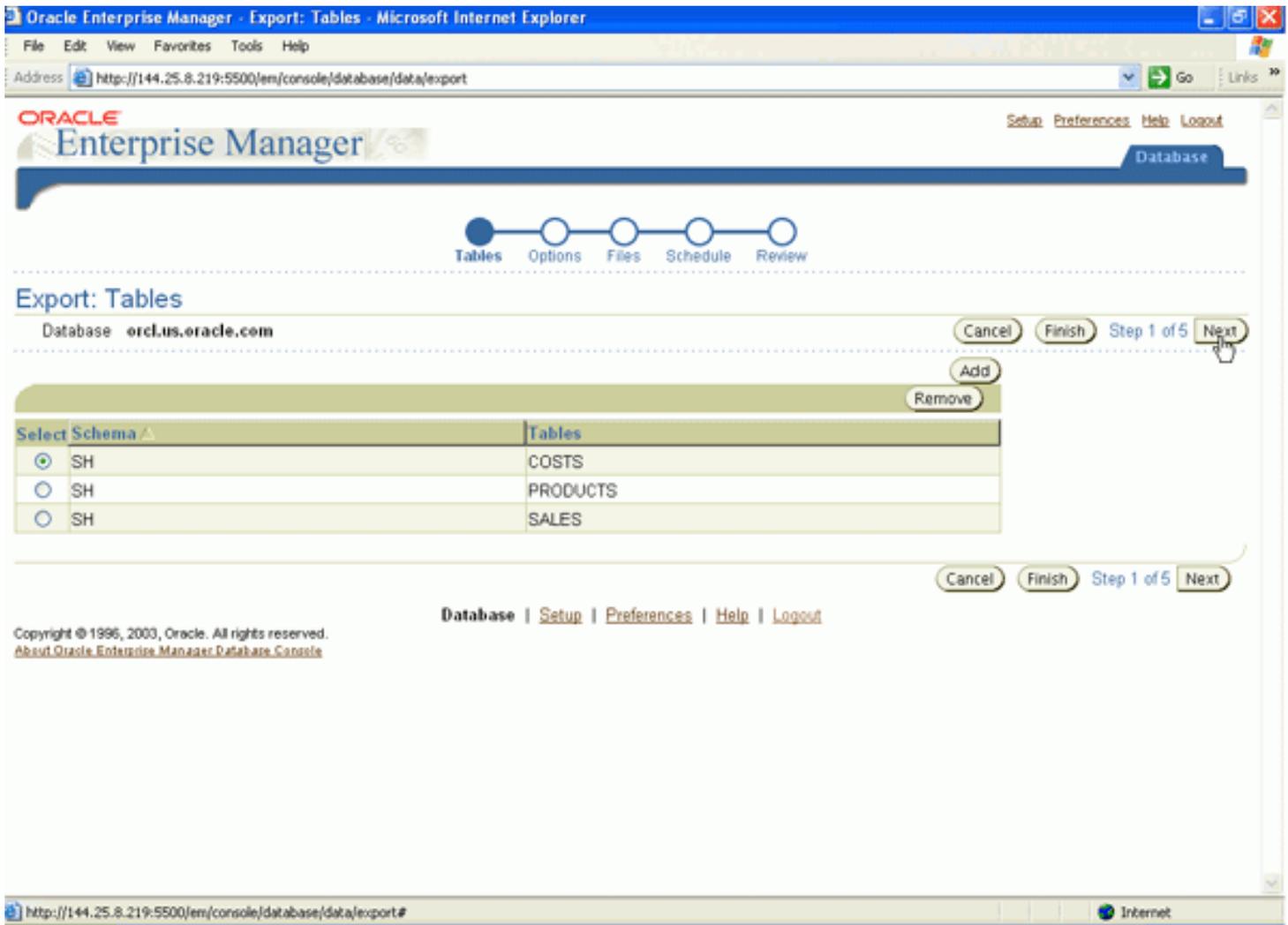
Previous 1-10 of 17 Next 7

Cancel Select

<http://144.25.8.219:5500/em/console/database/data/export#> Internet



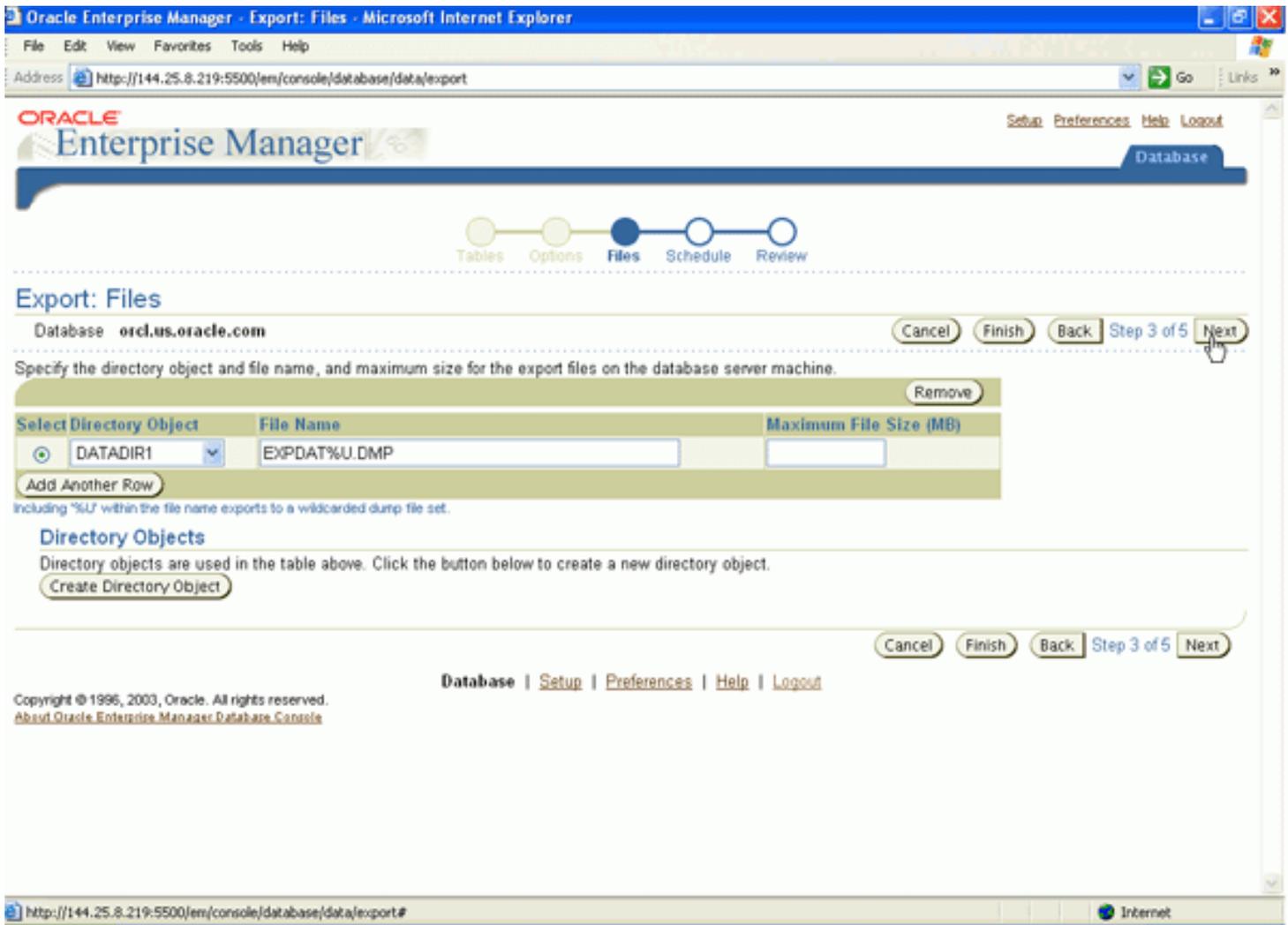
7. Click **Next** .



8. Enter **4** for the Maximum Number of Threads in Export Job and select **DATADIR1** for the Directory Object. Change the name of the export log file to **EXPORT_<today's date in mmddyy format>.log** and click **Next** .

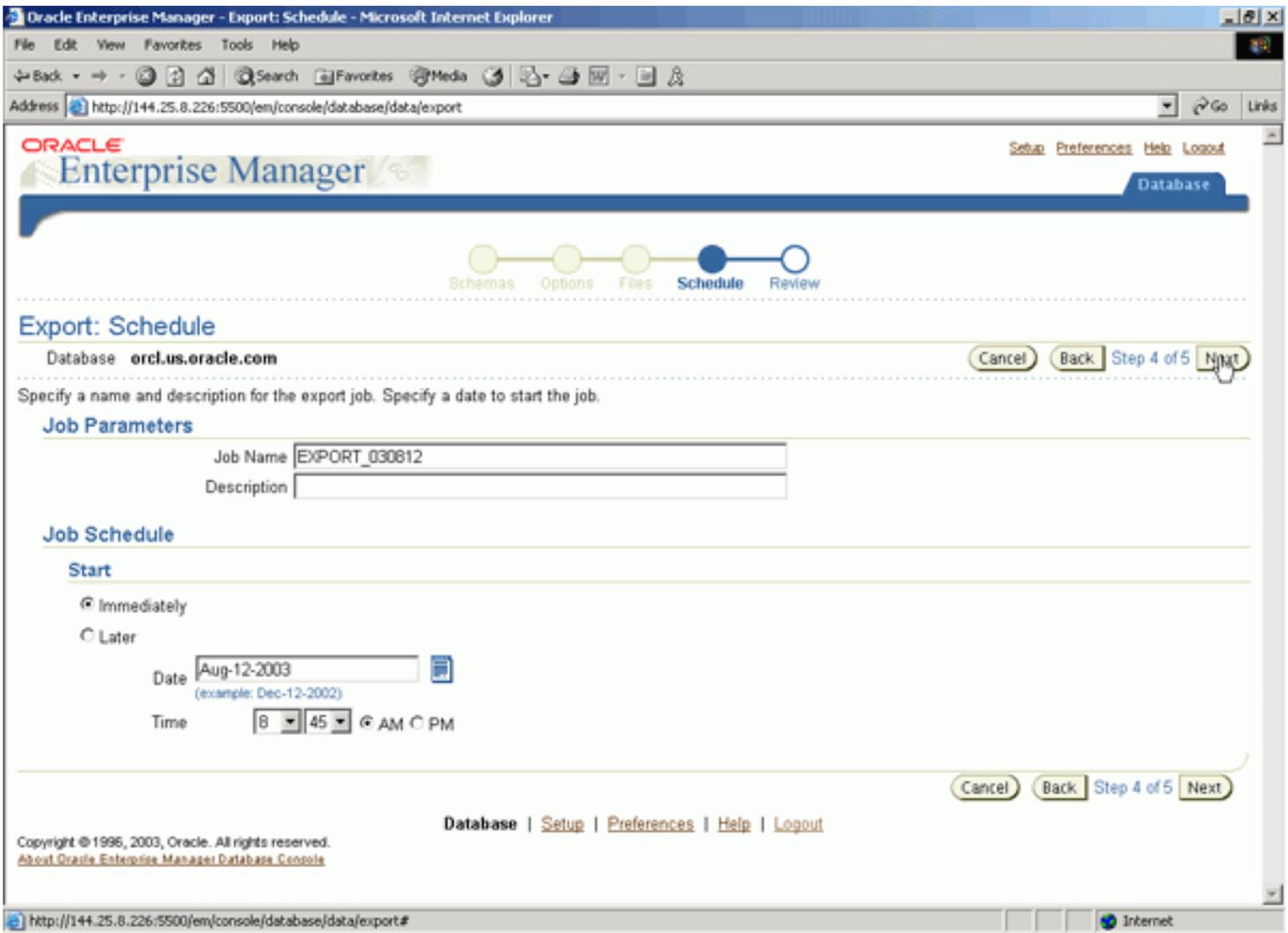


9. Click **Next** .



Enter a job name of **EXPORT<Today's Date>** and make sure Start is set to **Immediate** and click **Next** .

10.



Select the **Submit Job** button to submit the export job.

11.

Oracle Enterprise Manager - Export: Review - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/database/data/export

ORACLE Enterprise Manager Database

Tables Options Files Schedule **Review**

Export: Review

Database orcl.us.oracle.com

Cancel Back Step 5 of 5 Submit Job

Export Type	Tables
Statistics type	Estimate optimizer statistics when data is imported
Parallelism	4
Keep the master table after export is complete	No
Files to Export	DATADIR1 EXPDAT%U.DMP
Log File	DATADIR1 EXPDAT_082303.LOG

Export PL/SQL

```

declare
h1 NUMBER;
begin
begin
h1 := dbms_datapump.open (operation => 'EXPORT', job_mode => 'TABLE', job_name
=> 'EXPORT_082303', version => 'COMPATIBLE');
end;
begin
dbms_datapump.set_parallel(handle => h1, degree => 4);
end;

```

Cancel Back Step 5 of 5 Submit Job

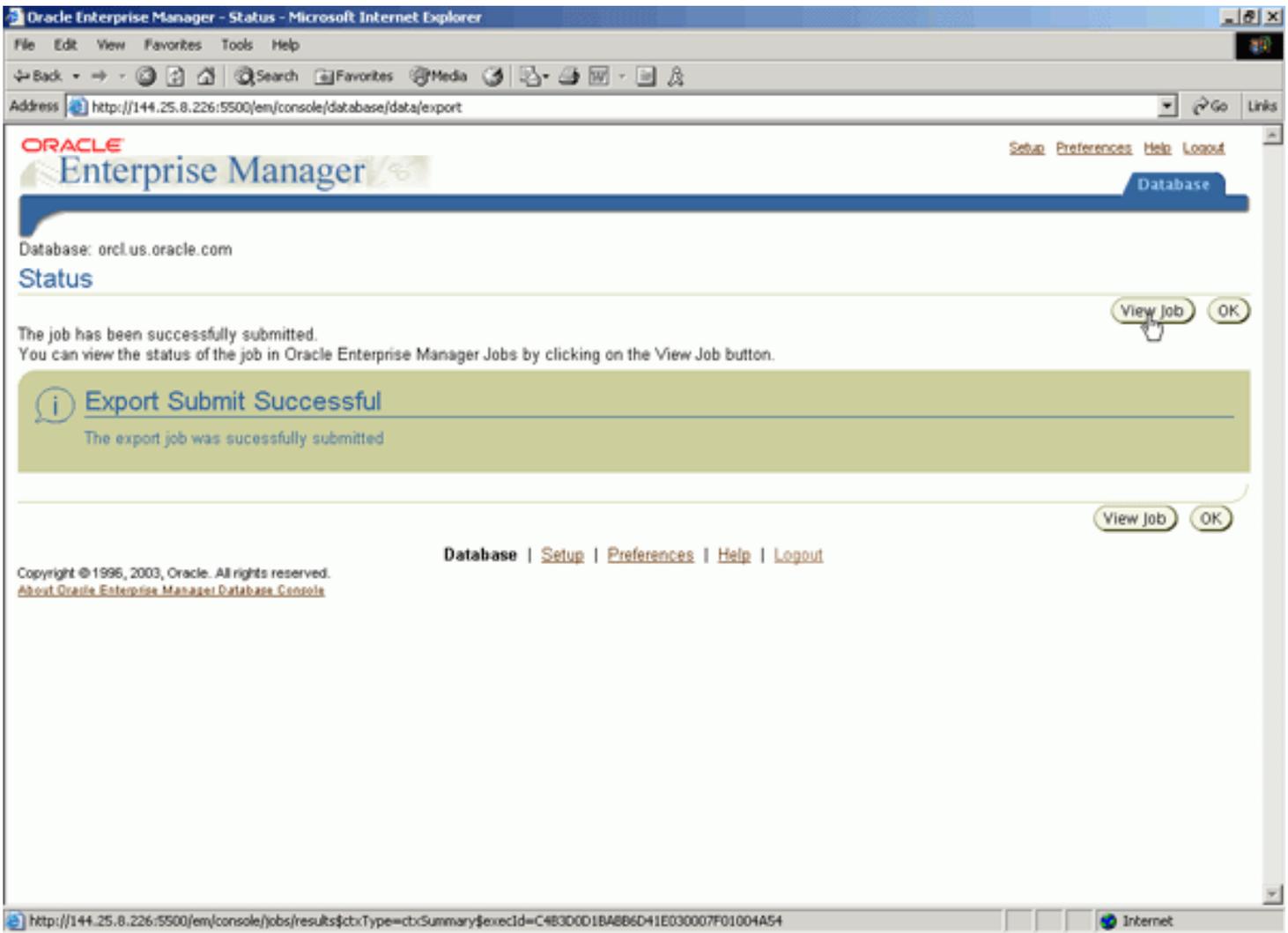
Database | Setup | Preferences | Help | Logout

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http://144.25.8.219:5500/em/console/database/data/export# Internet

Your export job was successfully submitted. Click **View Job** .

12.



Select the **Export** link to see the Export log status.

13.

Oracle Enterprise Manager (SYS) - Job: EXPORT_082303 - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/jobs/results?ctxType=ctxSummary&execId=C59159F7A598D03FE030007F01000EC6

ORACLE Enterprise Manager Database

Job: EXPORT_082303

Page Refreshed August 23, 2003 3:57:09 PM PDT [Delete] [View Definition]

Summary

The Stop and Suspend operations will wait for the current step to complete. A suspended job can be resumed later, at the next step. [Stop] [Suspend]

Status	Running	Type	Export
Scheduled	23-AUG-2003 15:56:24 -07:00	Owner	SYS
Started	23-AUG-2003 15:56:28 -07:00	Description	
Running Time	40 seconds	db_10_or_higher	true
		db_password	*****
		db_role_suffix	sysdba
		db_username	SYS
		export_script	\$oracle_home = "/oracle/ora10g"; \$oracle_sid = "orcl";
		host_password	*****
		host_username	oracle
		is_rac	false
		job_name	EXPORT_082303

[Monitor Data Pump Job]

Logs

Name	Targets	Status	Started	Ended	Running (sec)
<u>Export</u>	orcl.us.oracle.com	Running	23-AUG-2003 15:56:30 -07:00		39

[Delete] [View Definition]

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http://144.25.8.219:5500/em/console/jobs/stepLog?stepName=Export&stepID=12&jobName=EXPORT*_082303&execId=C59159F7A598D03FE03000 Internet

- The job is still running. Click **Show more** to see more of the log. If Show more does not appear, click Reload in your browser window.

Oracle Enterprise Manager (SYS) - Step: Export - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/jobs/stepLog?stepName=Export&stepID=12&jobName=EXPORT*_082303&execId=C59159F7A598D03FE030007F01000EC6

ORACLE Enterprise Manager

Job: EXPORT_082303 > Step: Export

Step: Export

Status **Succeeded** Started 23-AUG-2003 15:56:30 -07:00
 Targets **orcl.us.oracle.com** Ended 23-AUG-2003 15:57:55 -07:00
 Running Time 1:25 minutes

Page Refreshed Aug 23, 2003 3:57:57 PM

Output Log

Job EXPORT_082303 has been reopened at Saturday, 23 August, 2003 15:56
 Restarting "SYS"."EXPORT_082303":
 Estimate in progress using BLOCKS method...

Processing object type	TABLE_EXPORT/TBL_TABLE_DATA/TABLE/TABLE_DATA	
. estimated "SH"."SALES":	"SALES_Q4_2001"	2 MB
. estimated "SH"."SALES":	"SALES_Q1_1999"	1024 KB
. estimated "SH"."SALES":	"SALES_Q3_2001"	1024 KB
. estimated "SH"."SALES":	"SALES_Q3_1999"	960 KB
. estimated "SH"."SALES":	"SALES_Q1_2000"	960 KB
. estimated "SH"."SALES":	"SALES_Q2_2001"	960 KB

[Show more](#)

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Database | Setup | Preferences | Help | Logout

Address: <http://144.25.8.219:5500/em/console/jobs/stepLog?listSize=-1&stepName=Export&stepID=12&execId=C59159F7A598D03FE030007F01000EC6> Internet

The job has finished. Scroll down to the bottom to see all the messages in the log.

15.

Oracle Enterprise Manager (SYS) - Step: Export - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/jobs/stepLog?listSize=-1&stepName=Export&stepID=12&execId=C59159F7A596003FE030007F01000EC6&jobName=EXPORT*_j

ORACLE Enterprise Manager

Job: EXPORT_082303 > Step: Export

Step: Export

Status: **Succeeded**
 Targets: orcl.us.oracle.com

Started: 23-AUG-2003 15:56:30 -07:00
 Ended: 23-AUG-2003 15:57:55 -07:00
 Running Time: 1:25 minutes

Page Refreshed Aug 23, 2003 3:58:57 PM

Output Log

Job EXPORT_082303 has been reopened at Saturday, 23 August, 2003 15:56
 Restarting "SYS"."EXPORT_082303":
 Estimate in progress using BLOCKS method...
 Processing object type TABLE_EXPORT/TBL_TABLE_DATA/TABLE/TABLE_DATA

. estimated "SH"."SALES": "SALES_Q4_2001"	2 MB
. estimated "SH"."SALES": "SALES_Q1_1999"	1024 KB
. estimated "SH"."SALES": "SALES_Q3_2001"	1024 KB
. estimated "SH"."SALES": "SALES_Q3_1999"	960 KB
. estimated "SH"."SALES": "SALES_Q1_2000"	960 KB
. estimated "SH"."SALES": "SALES_Q2_2001"	960 KB
. estimated "SH"."SALES": "SALES_Q1_2001"	960 KB
. estimated "SH"."SALES": "SALES_Q4_1999"	960 KB
. estimated "SH"."SALES": "SALES_Q4_1998"	896 KB
. estimated "SH"."SALES": "SALES_Q4_2000"	896 KB
. estimated "SH"."SALES": "SALES_Q2_2000"	896 KB
. estimated "SH"."SALES": "SALES_Q3_2000"	896 KB
. estimated "SH"."SALES": "SALES_Q2_1999"	832 KB
. estimated "SH"."SALES": "SALES_Q1_1998"	768 KB
. estimated "SH"."SALES": "SALES_Q3_1998"	768 KB
. estimated "SH"."SALES": "SALES_Q2_1998"	640 KB
. estimated "SH"."COSTS": "COSTS_Q3_2001"	192 KB
. estimated "SH"."COSTS": "COSTS_Q4_2001"	192 KB
. estimated "SH"."COSTS": "COSTS_Q1_1998"	128 KB
. estimated "SH"."COSTS": "COSTS_Q3_1998"	128 KB
. estimated "SH"."COSTS": "COSTS_Q4_1998"	128 KB

Done Internet

Your export has completed successfully. Note the name of the dump file for use later in the lesson.

16.

```

Oracle Enterprise Manager (SYS) - Step: Export - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://144.25.8.219:5500/em/console/jobs/stepLog?listSize=-1&stepName=Export&stepID=12&execId=C59159F7A596003FE030007F01000EC6&jobName=EXPORT*_j
. . exported "SH"."COSTS": "COSTS_Q4_1999"          156.5 KB    5060 rows
. . exported "SH"."COSTS": "COSTS_Q2_1999"          130.0 KB    4179 rows
. . exported "SH"."PRODUCTS"                       22.09 KB     72 rows
. . exported "SH"."SALES": "SALES_1995"              0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q2_2002"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q4_2002"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q2_2003"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q4_2003"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q4_2003"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q3_2003"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q2_2003"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q1_2003"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q4_2002"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q3_2002"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q2_2002"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q1_2002"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_Q2_1998"          76.96 KB    2397 rows
. . exported "SH"."COSTS": "COSTS_H2_1997"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_H1_1997"           0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_1996"              0 KB         0 rows
. . exported "SH"."COSTS": "COSTS_1995"              0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q3_2003"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q1_2003"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q3_2002"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_Q1_2002"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_1996"              0 KB         0 rows
. . exported "SH"."SALES": "SALES_H1_1997"           0 KB         0 rows
. . exported "SH"."SALES": "SALES_H2_1997"           0 KB         0 rows
Master table "SYS"."EXPORT_082303" successfully loaded/unloaded
*****
Dump file set for SYS.EXPORT_082303 is:
/home/oracle/wkdir/EXPDAT01.DMP
Job "SYS"."EXPORT_082303" successfully completed at 15:57

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Done Internet

```

You will perform the following examples of using Data Pump Export command line interface:

- [Performing a Table Mode Export](#)
- [Estimating how much disk space will be consumed in a schema mode export](#)
- [Performing a schema mode export](#)
- [Performing a full database export using four parallel processes](#)
- [Attaching to and stopping an existing job](#)
- [Attaching to an restarting a stopped job](#)

Performing a Table Mode Export

[Back to List](#)

A table export is specified using the TABLES parameter. In the following example, the NOLOGFILE parameter indicates that an Export logfile of the operation will not be generated.

Issue the following export command to perform a table export of table Costs and table Sales:

1. Open a terminal window and execute the following:

```
expdp system/<password> \
TABLES=sh.costs,sh.sales \
DUMPFILE=datadir2:table.dmp \
NOLOGFILE=y
```

```
144.25.8.238-Session.STE - TNVTPlus
Session Edit View Commands Script Help
. . exported "SH"."SALES": "SALES_H1_1997"          0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_1996"            0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_1995"            0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_Q4_2003"          0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_Q3_2003"          0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_Q4_2003"          0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_Q3_2003"          0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_Q2_2003"          0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_Q1_2003"          0 KB          0 ROWS
. . exported "SH"."SALES": "SALES_Q4_2002"          0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_Q1_2003"          0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_Q3_2002"          0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_Q1_2002"          0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_1996"             0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_Q2_1998"          76.96 KB      2397 ROWS
. . exported "SH"."COSTS": "COSTS_H1_1997"          0 KB          0 ROWS
. . exported "SH"."COSTS": "COSTS_H2_1997"          0 KB          0 ROWS
Master table "SYSTEM"."SYS_EXPORT_TABLE_01" successfully loaded/unloaded
*****
Dump file set for SYSTEM.SYS_EXPORT_TABLE_01 is:
/home/oracle/wkdir/table.dmp
Job "SYSTEM"."SYS_EXPORT_TABLE_01" successfully completed at 17:53

bash-2.05$ █
```

Estimating How Much Disk Space Will Be Consumed in a Schema Mode Export

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The `ESTIMATE_ONLY` parameter estimates the space that would be consumed in a schema export, but stops without actually performing the export operation. The estimate is printed in the log file and displayed on the client's standard output device. The estimate is for table row data only; it does not include metadata.

The `INCLUDE` parameter allows you to filter the metadata that is exported by specifying objects and object types for the current export mode. The specified objects and all their dependent objects are exported. Grants on these objects are also exported.

Perform the following:

1. From your terminal window, issue the following command to estimate the amount of blocks required to export the data in the three tables: Sales, Products and Costs, from the Sales History (SH) schema. Use a backslash (\) as an escape character before a special character, such as a parenthesis, so that the character is not treated as a special character by the operating system.

```
expdp sh/sh \  
INCLUDE=table:\"IN \(\ \'SALES\','\'PRODUCTS\','\'COSTS\') \" \  
DIRECTORY=datadir2 \  
ESTIMATE_ONLY=y
```

```

144.25.8.238-Session.STE - TNVTPlus
Session Edit View Commands Script Help
. estimated "SH"."SALES":"SALES_Q2_2003"          64 KB
. estimated "SH"."SALES":"SALES_Q2_2002"          64 KB
. estimated "SH"."SALES":"SALES_Q1_2003"          64 KB
. estimated "SH"."SALES":"SALES_Q1_2002"          64 KB
. estimated "SH"."SALES":"SALES_H2_1997"          64 KB
. estimated "SH"."SALES":"SALES_H1_1997"          64 KB
. estimated "SH"."SALES":"SALES_1996"             64 KB
. estimated "SH"."SALES":"SALES_1995"             64 KB
. estimated "SH"."COSTS":"COSTS_Q4_2003"          64 KB
. estimated "SH"."COSTS":"COSTS_Q4_2002"          64 KB
. estimated "SH"."COSTS":"COSTS_Q3_2003"          64 KB
. estimated "SH"."COSTS":"COSTS_Q3_2002"          64 KB
. estimated "SH"."COSTS":"COSTS_Q2_2003"          64 KB
. estimated "SH"."COSTS":"COSTS_Q1_2002"          64 KB
. estimated "SH"."COSTS":"COSTS_Q2_1998"          64 KB
. estimated "SH"."COSTS":"COSTS_Q1_2003"          64 KB
. estimated "SH"."COSTS":"COSTS_1995"             64 KB
. estimated "SH"."COSTS":"COSTS_1996"             64 KB
. estimated "SH"."COSTS":"COSTS_H1_1997"          64 KB
. estimated "SH"."COSTS":"COSTS_H2_1997"          64 KB
Total estimation using BLOCKS method: 18.75 MB
Job "SH"."SYS_EXPORT_SCHEMA_01" successfully completed at 17:58

bash-2.05$

```

Performing a Schema Mode Export

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A schema export is specified using the SCHEMAS parameter. In a schema export, only objects belonging to the corresponding schemas are unloaded. This is the default mode. If you have the EXP_FULL_DATABASE role, then a list of schemas can be specified, and the schema definitions themselves are included, as well as system privilege grants to those schemas. In the following example, the file names contain a substitution variable (%U), which implies that multiple files may be generated by export.

Perform the following:

1. From your terminal window, issue the following export command to perform a schema export:

```
expdp system/<password> \
```

```
SCHEMAS=sh \
```

```
DUMPFILE=datadir1:schema1%U.dmp,datadir2:schema2%U.dmp \
```

```
LOGFILE=datadir1:expschema.log
```

```

. . exported "SH"."COSTS"."COSTS_Q4_2003"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q4_2002"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q3_2003"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q3_2002"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q2_2003"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q2_2002"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q2_1998"        76.96 KB      2397 rows
. . exported "SH"."COSTS"."COSTS_Q1_2003"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_Q1_2002"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_H2_1997"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_H1_1997"          0 KB          0 rows
. . exported "SH"."COSTS"."COSTS_1995"            0 KB          0 rows
. . exported "SH"."MVIEW$_EXCEPTIONS"              0 KB          0 rows
. . exported "SH"."PRODUCTS"                      22.09 KB       72 rows
. . exported "SH"."CHANNELS"                       4.687 KB        5 rows
. . exported "SH"."COUNTRIES"                      7.265 KB       23 rows
Master table "SYSTEM"."SYS_EXPORT_SCHEMA_01" successfully loaded/unloaded
*****
Dump file set for SYSTEM.SYS_EXPORT_SCHEMA_01 is:
  /home/oracle/wkdir/schema101.dmp
  /home/oracle/wkdir/schema201.dmp
Job "SYSTEM"."SYS_EXPORT_SCHEMA_01" successfully completed at 18:01

bash-2.05$ █

```

Performing a Parallel Full Database Export

The FULL parameter indicates that the export is a full database mode export. All data and metadata in the database are exported.

The PARALLEL parameter specifies the maximum number of threads of active execution operating on behalf of the export job. This parameter allows you to make trade-offs between resource consumption and elapsed time. For best performance, the value specified for PARALLEL should be at least as large as the number of output files specified with the DUMPFILE parameter. Each Data Pump execution thread writes exclusively to one file at a time.

The PARALLEL parameter is only valid in the Enterprise Edition of the Oracle database. To increase or decrease the value of PARALLEL during job execution, use interactive-command mode that is described in the example below.

The FILESIZE parameter will limit the maximum size of each dump file to 2 Gigabytes.

Perform the following:

1. From your terminal window, issue the following command to perform a full export using the PARALLEL parameter:

```
expdp system/<password> \  
FULL=y \  
  
DUMPFILE=datadir1:full1%U.dmp,datadir2:full2%U.dmp \  
  
FILESIZE=2g \  
  
PARALLEL=4 \  
  
LOGFILE=datadir1:expfull.log \  
  
JOB_NAME=expfull
```

```

144.25.8.238-Session.STE - TNVPlus
Session Edit View Commands Script Help
Processing object type DATABASE_EXPORT/SCHEMA/JAVA_RESOURCE/GRANT/OBJECT_GRANT
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/INDEX/DE_S_TBL_IDX_FBM_INDEX
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/INDEX/STATISTICS/DE_S_TBL_FS
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/INDEX/DE_S_TBL_IDX_DOMIDX_IX
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/POST_TABLE_ACTION
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/TRIGGER
Processing object type DATABASE_EXPORT/SCHEMA/VIEW/TRIGGER
Processing object type DATABASE_EXPORT/SCHEMA/MATERIALIZED_VIEW
Processing object type DATABASE_EXPORT/SCHEMA/JOB
Processing object type DATABASE_EXPORT/SCHEMA/DIMENSION
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/DE_TABLE_POSTINST_ACTOBS/PE
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/DE_TABLE_POSTINST_ACTOBS/PJ
Processing object type DATABASE_EXPORT/SCHEMA/DE_POST_SCHEMA_PROCOBJECT/PROCOBJ
Processing object type DATABASE_EXPORT/SCHEMA/DE_POST_SCHEMA_PROCOBJECT/PROCACTA
Master table "SYSTEM"."EXPFULL" successfully loaded/unloaded
*****
Dump file set for SYSTEM.EXPFULL is:
/home/oracle/wkdir/full101.dmp
/home/oracle/wkdir/full201.dmp
/home/oracle/wkdir/full102.dmp
/home/oracle/wkdir/full202.dmp
Job "SYSTEM"."EXPFULL" completed with 1 error(s) at 18:09

bash-2.05$

```

Note: The export may complete with an expected error due to not supporting a certain type of table.

2. Dump files full101.dmp, full201.dmp, full102.dmp, full202.dmp, and so on will be created in a round-robin fashion in the directories pointed to by datadir1 and datadir2. For best performance, these directories should be on separate I/O channels. Each dump file will be limited to 2 gigabytes in size. The job name will be expfull. The export log file will be written to expfull.log in the directory datadir1.

```

144.25.8.238-Session.STE - TNVPlus
Session Edit View Commands Script Help

Processing object type DATABASE_EXPORT/SCHEMA/TABLE/POST_TABLE_ACTION
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/TRIGGER
Processing object type DATABASE_EXPORT/SCHEMA/VIEW/TRIGGER
Processing object type DATABASE_EXPORT/SCHEMA/MATERIALIZED_VIEW
Processing object type DATABASE_EXPORT/SCHEMA/JOB
Processing object type DATABASE_EXPORT/SCHEMA/DIMENSION
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/DE_TABLE_POSTINST_ACTOBS/PE
Processing object type DATABASE_EXPORT/SCHEMA/TABLE/DE_TABLE_POSTINST_ACTOBS/PJ
Processing object type DATABASE_EXPORT/SCHEMA/DE_POST_SCHEMA_PROCOBJECT/PROCOBJ
Processing object type DATABASE_EXPORT/SCHEMA/DE_POST_SCHEMA_PROCOBJECT/PROCACTA
Master table "SYSTEM"."EXPFULL" successfully loaded/unloaded
*****
Dump file set for SYSTEM.EXPFULL is:
  /home/oracle/wkdir/full101.dmp
  /home/oracle/wkdir/full201.dmp
  /home/oracle/wkdir/full102.dmp
  /home/oracle/wkdir/full202.dmp
Job "SYSTEM"."EXPFULL" completed with 1 error(s) at 18:09

bash-2.05$ cd wkdir
bash-2.05$ ls
expfull.log  expschema.log  full102.dmp  full202.dmp  schema201.dmp
export.log   full101.dmp   full201.dmp  schema101.dmp  table.dmp
bash-2.05$

```

Attaching to and Stopping an Existing Job

[Back to List](#)

The ATTACH command attaches the client session to an existing export job and automatically places you in the interactive-command interface. Export displays a description of the job to which you are attached and also displays the export prompt. A job name does not have to be specified if there is only one export job that is associated with your schema. The job you attach to can be either currently executing or stopped.

In the following example, interactive mode will be run on the same terminal on which the export job is running. A user could also use interactive mode from a terminal other than the one on which the job is run; in this case, the expdp system/ <password> ATTACH is required.

Perform the following:

1. Run the Full Export again. While the export is running, press **Ctrl+C** , to connect to the interactive-command interface, which is required for the next example. The interactive-command interface stops logging to the terminal and displays the Export prompt, from which you can enter various commands, some of which are specific to interactive mode.

```
expdp system/<password> \  
FULL=y \  
  
DUMPFILE=datadir1:full3%U.dmp,datadir2:full4%U.dmp \  
  
FILESIZE=2g \  
  
PARALLEL=4 \  
  
LOGFILE=datadir1:expfull2.log \  
  
JOB_NAME=expfull2
```

Note: Due to the worker processes running in parallel, the display of metadata objects processed during the export may not be sequential.

2. From a terminal window, issue the following command to stop the job:

```
Export> STOP_JOB=immediate  
  
Are you sure you wish to stop this job (y/n): y
```

```

144.25.8.238-Session.STE - TNVTPlus
Session Edit View Commands Script Help
. . exported "SH"."CUSTOMERS"                9.848 MB    55500 rows
. . exported "OE"."PRODUCT_DESCRIPTIONS"      2.377 MB     8640 rows
. . exported "SYSMAN"."MGMT_SYSTEM_ERROR_LOG" 1.524 MB    17332 rows
. . exported "SH"."SALES"."SALES_Q4_2001"     2.255 MB   69749 rows
. . exported "SYSMAN"."MGMT_METRICS_RAW"      2.234 MB   37265 rows
. . exported "SH"."SALES"."SALES_Q3_2001"     2.127 MB   65769 rows
. . exported "SH"."SALES"."SALES_Q1_1999"     2.068 MB   64186 rows
. . exported "SYSMAN"."MGMT_METRICS_1HOUR"    1.622 MB   21328 rows
. . exported "SH"."SALES"."SALES_Q3_1999"     2.164 MB   67138 rows
. . exported "SH"."SALES"."SALES_Q3_2000"     1.907 MB   58950 rows
. . exported "SH"."SALES"."SALES_Q4_1999"     2.012 MB   62388 rows
. . exported "PM"."ONLINE_MEDIA"              142.8 KB     9 rows
. . exported "SH"."SALES"."SALES_Q2_2001"     2.048 MB   63292 rows
. . exported "SH"."SALES"."SALES_Q2_1999"     1.751 MB   54233 rows
. . exported "SH"."SALES"."SALES_Q1_2001"     1.962 MB   60608 rows
. . exported "SH"."SALES"."SALES_Q1_1998"     1.410 MB   43687 rows
. . exported "SH"."SALES"."SALES_Q1_2000"     2.009 MB   62197 rows
. . exported "SH"."SALES"."SALES_Q3_1998"     1.631 MB   50515 rows
. . exported "SH"."SALES"."SALES_Q2_2000"     1.799 MB   55515 rows

Export> stop_job=immediate
Are you sure you wish to stop this job ([y]/n): y

bash-2.05$

```

Attaching to and Restarting a Stopped Job

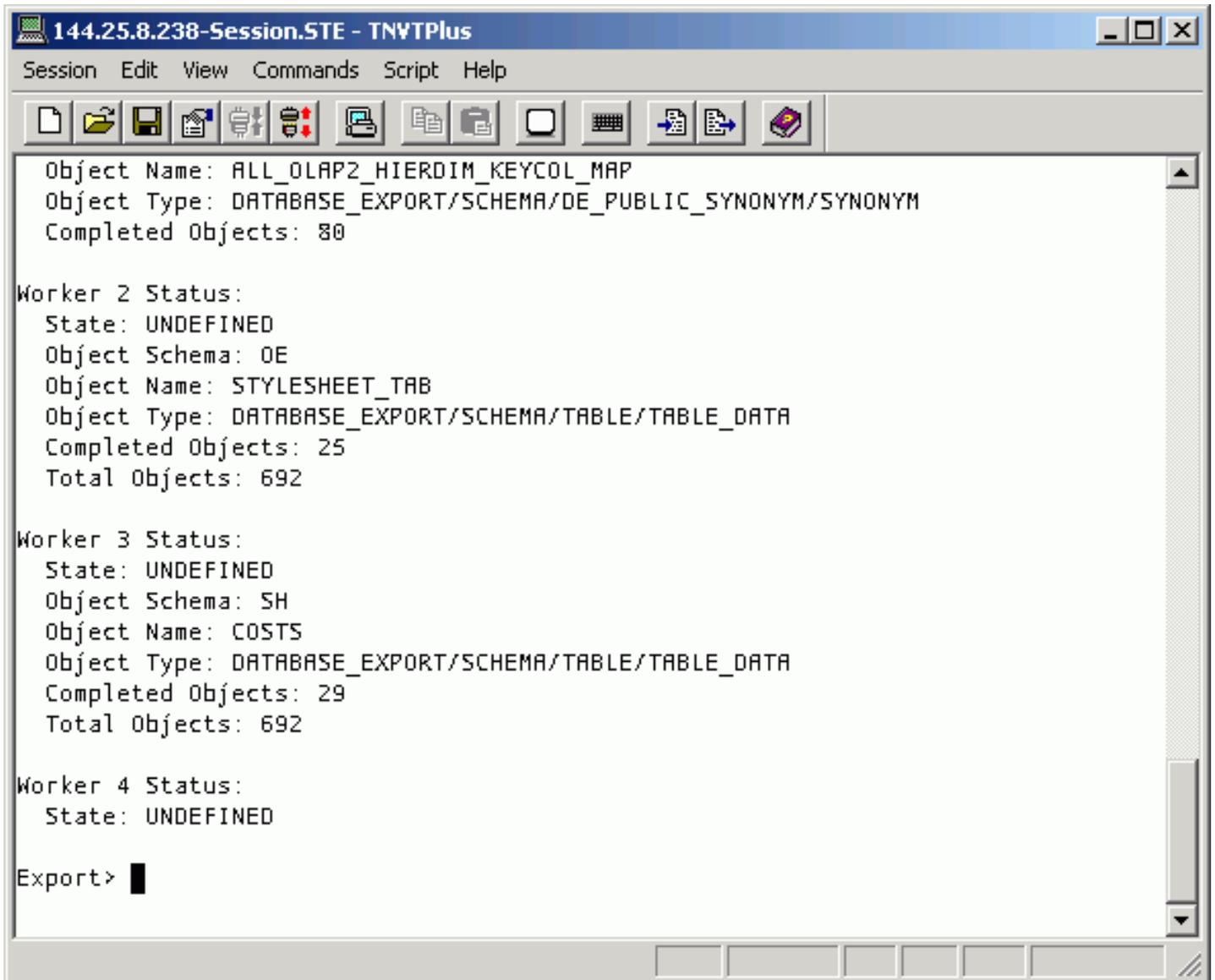
[Back to List](#)

The system manager restarts the job (perhaps during off hours) with a higher degree of parallelism. Note that a job name must be supplied in this case because the job was previously stopped. The job name is required in order to find the master table for the job. The system manager would also like a cumulative status of the job to be displayed, along with a description of the current operation. The system manager specifies how frequently, in seconds, this status should be displayed. This status information is written only to the standard output device, not to the log file.

Perform the following:

1. From your terminal window, issue the following command:

```
expdp system/<password> ATTACH=expfull2
```



The screenshot shows a terminal window titled "144.25.8.238-Session.STE - TNVTPlus". The window has a menu bar with "Session", "Edit", "View", "Commands", "Script", and "Help". Below the menu bar is a toolbar with various icons. The main text area displays the following output:

```
Object Name: ALL_OLAP2_HIERDIM_KEYCOL_MAP
Object Type: DATABASE_EXPORT/SCHEMA/DE_PUBLIC_SYNONYM/SYNONYM
Completed Objects: 80

Worker 2 Status:
State: UNDEFINED
Object Schema: OE
Object Name: STYLESHEET_TAB
Object Type: DATABASE_EXPORT/SCHEMA/TABLE/TABLE_DATA
Completed Objects: 25
Total Objects: 692

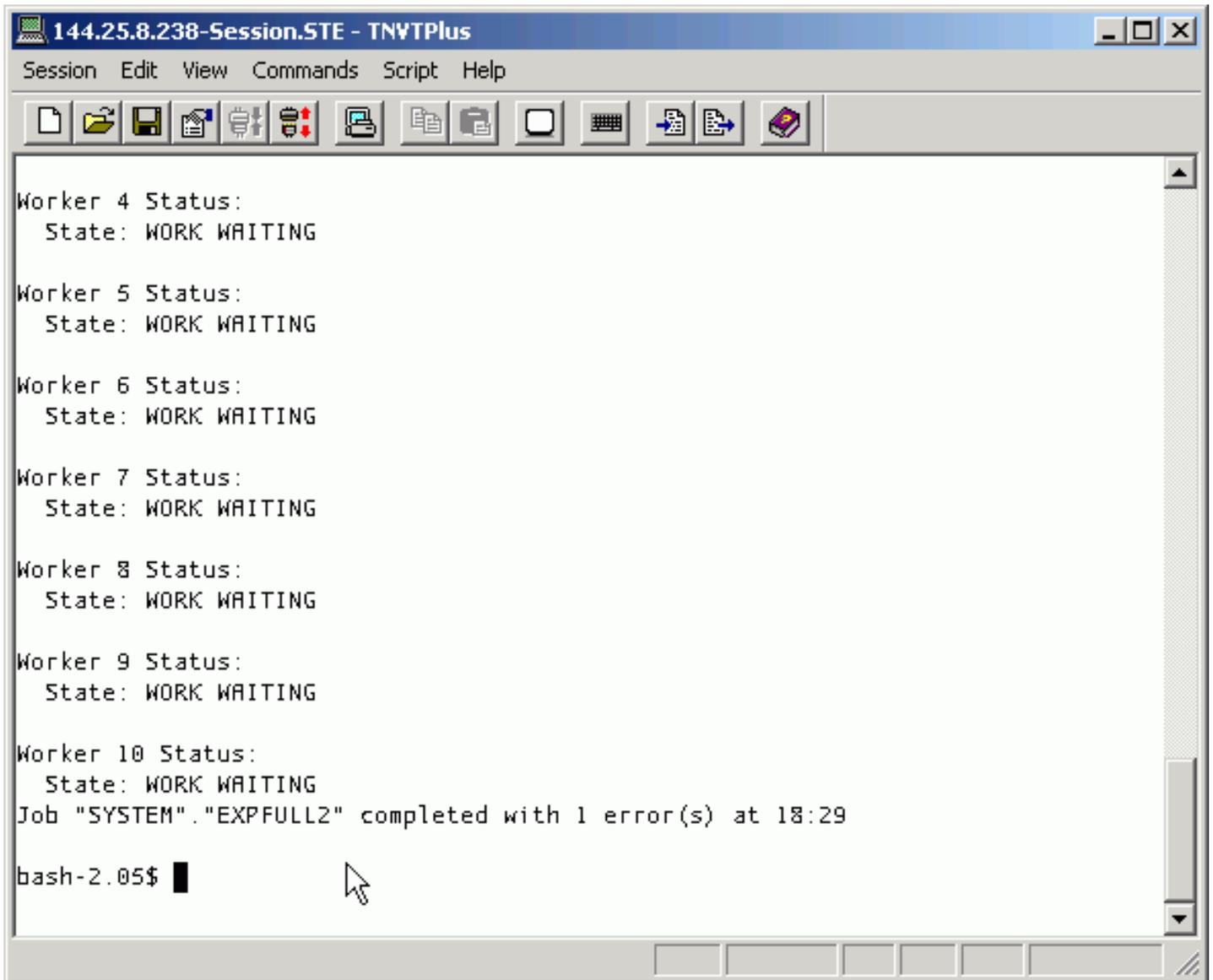
Worker 3 Status:
State: UNDEFINED
Object Schema: SH
Object Name: COSTS
Object Type: DATABASE_EXPORT/SCHEMA/TABLE/TABLE_DATA
Completed Objects: 29
Total Objects: 692

Worker 4 Status:
State: UNDEFINED

Export> █
```

2. After all the job statuses are displayed, issue the following interactive mode commands:

```
Export> PARALLEL=10
Export> START_JOB
Export> STATUS=600
Export> CONTINUE_CLIENT
```



```
144.25.8.238-Session.STE - TNVTPPlus
Session Edit View Commands Script Help

Worker 4 Status:
  State: WORK WAITING

Worker 5 Status:
  State: WORK WAITING

Worker 6 Status:
  State: WORK WAITING

Worker 7 Status:
  State: WORK WAITING

Worker 8 Status:
  State: WORK WAITING

Worker 9 Status:
  State: WORK WAITING

Worker 10 Status:
  State: WORK WAITING
Job "SYSTEM"."EXPFULL2" completed with 1 error(s) at 18:29

bash-2.05$ █
```

Logging mode is entered, in which job status is continually output to the terminal every 10 minutes.

Note: The export may complete with an expected error due to stopping the job.

Loading Data

Data Pump Import is a utility for loading an export dump file set into a target system. The dump file set is made up of one or more disk files that contain table data, database object metadata, and control information. The files are written by the Data Pump Export utility in a proprietary, binary format. During an import operation, the Data Pump Import utility uses these files to locate each database object in the dump file set.

Import can also be used to load a target database directly from a source database with no intervening files, which allows export and import operations to run concurrently. This avoids the creation of dump files on the file system, and may also minimize the total elapsed time for the entire export and import operation. This is known as network import.

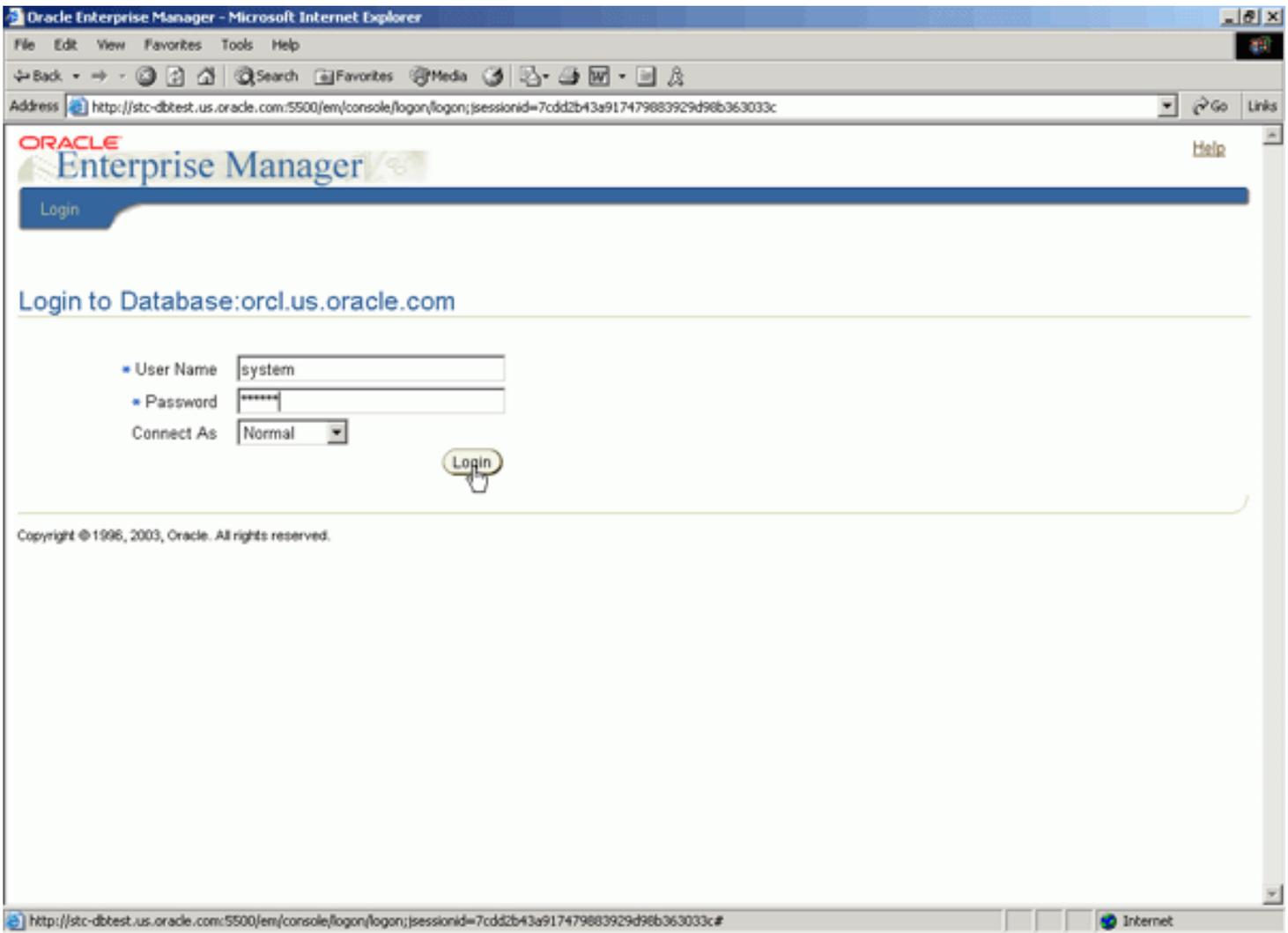
Data Pump Import allows you to specify whether a job should move a subset of the data and metadata, as determined by the import mode. This is done using data filters and metadata filters, which are implemented through Import parameters.

Oracle Data Pump Import can be accessed through Enterprise Manager. To import a schema through Enterprise Manager, perform the following:

1. Open a browser and enter the following URL:

`http://<hostname>:5500/em`

Login as **system/<password>** then click **Login** .



2. Click on the **Maintenance** link.

Oracle Enterprise Manager - Database: orcl.us.oracle.com - Microsoft Internet Explorer

Address: http://stc-dbttest.us.oracle.com:5500/em/console/database/instance/sitemap?event=doLoad&target=orcl.us.oracle.com&type=oracle_database

Database: orcl.us.oracle.com

Home Performance Administration **Maintenance**

Latest Data Collected From Target **Aug 5, 2003 8:03:49 AM** Refresh

View Data Real Time: Manual Refresh

General

Status **Up** [Shutdown](#)

Up Since **Aug 4, 2003 8:49:42 AM**

Time Zone **PDT**

Availability (%) **96.8**
(Last 24 hours)

Instance Name **orcl**

Version **10.1.0.1.0**

Host [stc-dbttest.us.oracle.com](#)

Listener [LISTENER_stc-dbttest.us.oracle.com](#)

Oracle Home [/home/oracle/101R1_Beta2_Rel4a](#)

Alert Log [Aug 4, 2003 7:26:06 AM](#)

Host CPU

Run Queue **0.09**

Paging (pages per second) **0.033**

Active Sessions

100%

No data is currently available.

Active Sessions **.1**

SQL Response Time (%) **76.25**
(compared to baseline)

Space Usage

Problem **0**

Tablespaces **0**

Fragmentation **Not Configured**

Issues **Not Configured**

Dump Area Used (%) **54**

Advice

ADDM Findings **1**

Violations **23**

High Availability

Instance **18**

Recovery Time (seconds) **18**

Last Backup **Aug 5, 2003 2:03:28 AM**

Archiving **Disabled**

Archive Area Used (%) **n/a**

Job Activity

Scheduled Executions **1**

Running Executions **0**

Suspended Executions **0**

Problem Executions **3**
(Last 7 days)

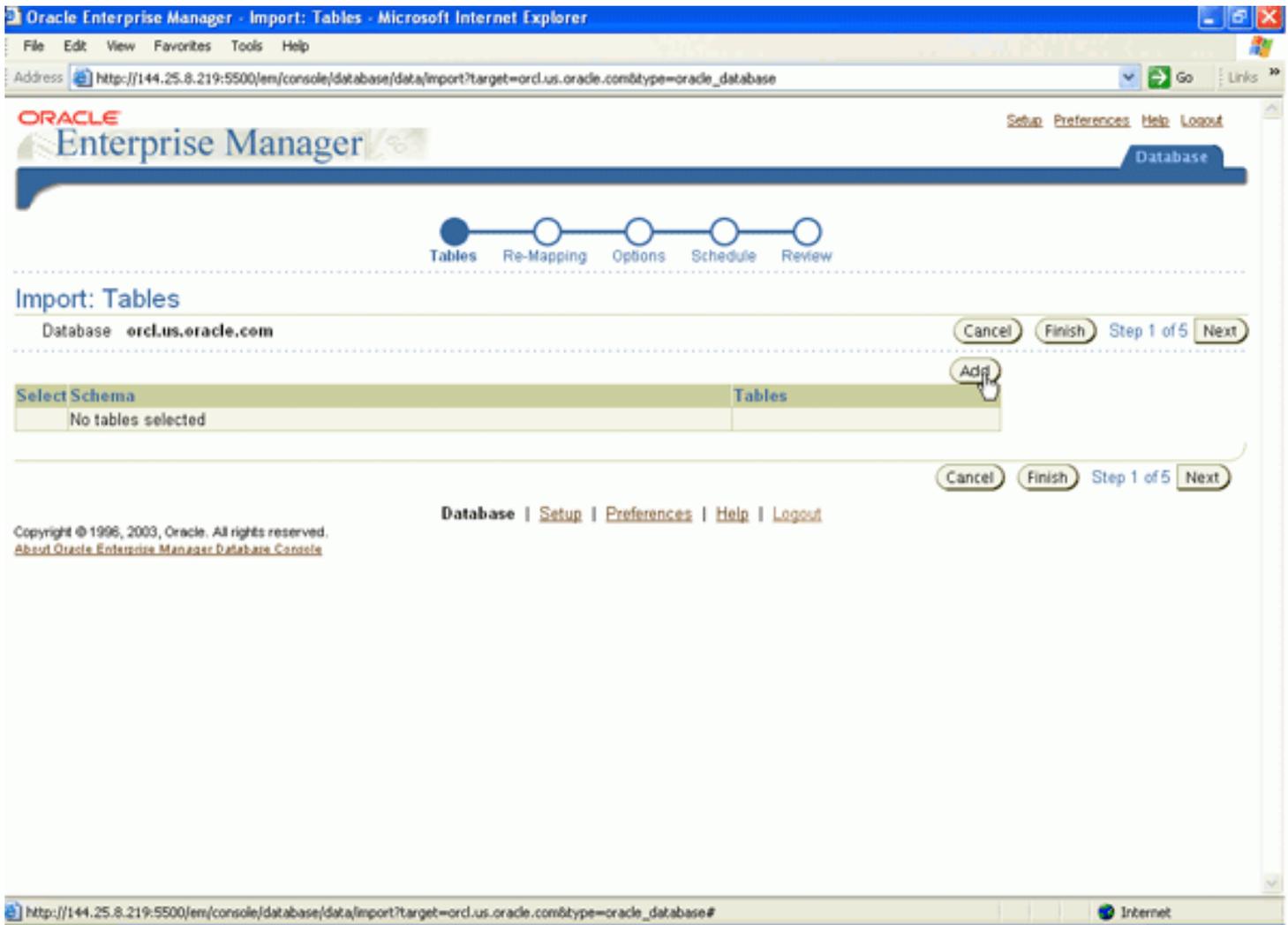
3. Click on **Import from Files** link.



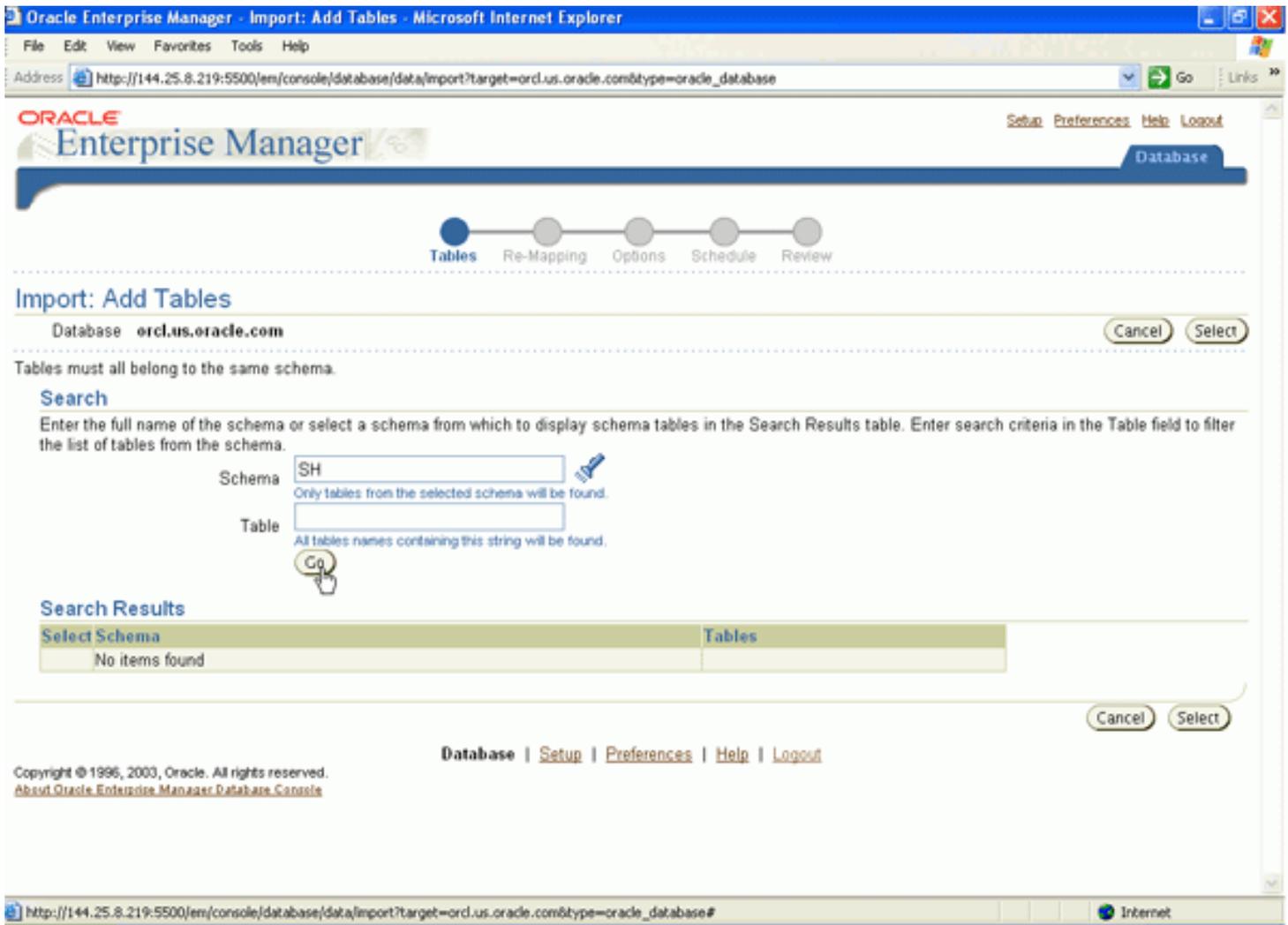
4. Set the **Import Type** to **Tables** and enter the Host username and password, then click **Continue** .



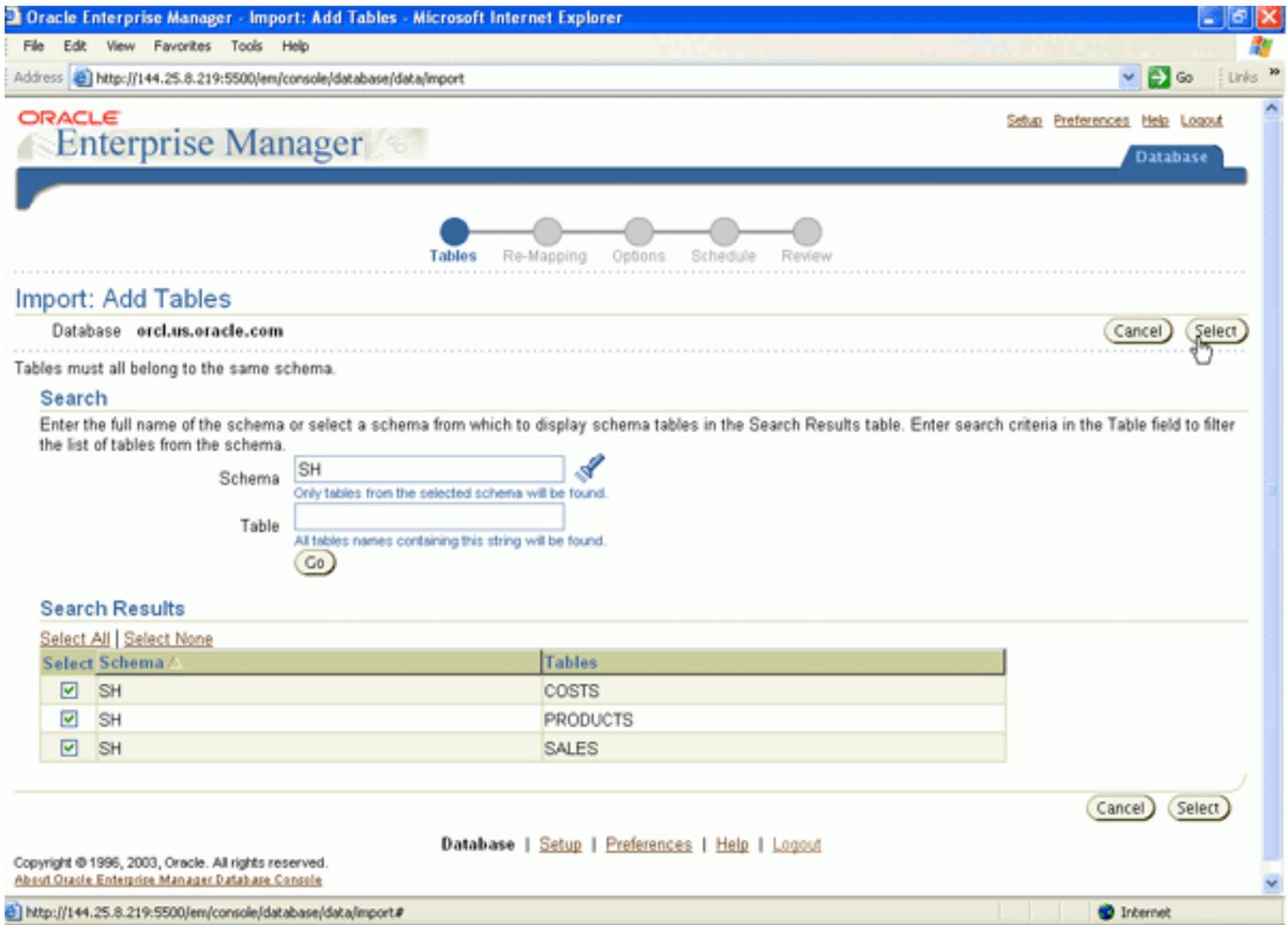
5. Select the **Add** button to see the tables available for import.



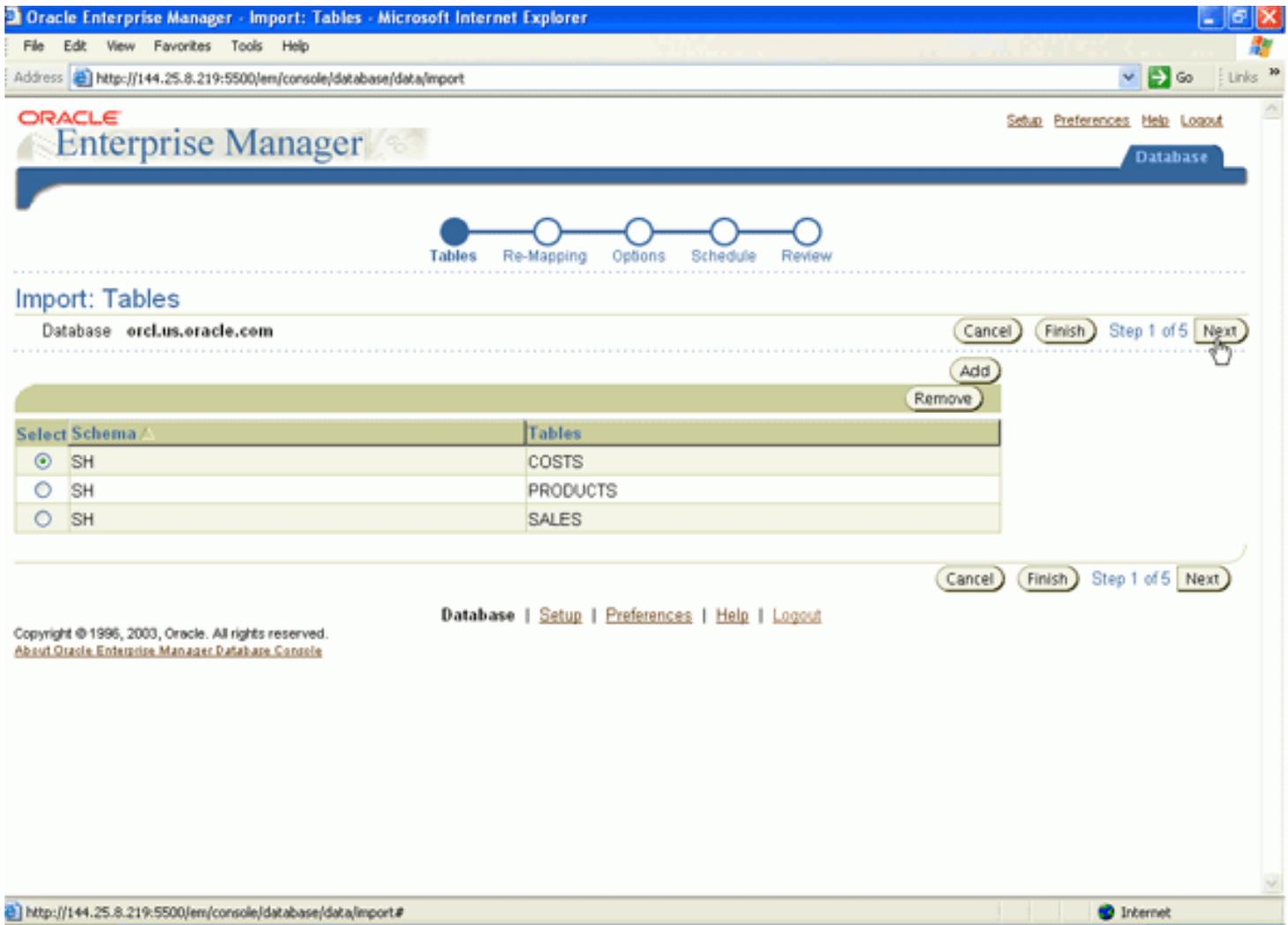
6. Enter **SH** in the Schema field and click **Go** .



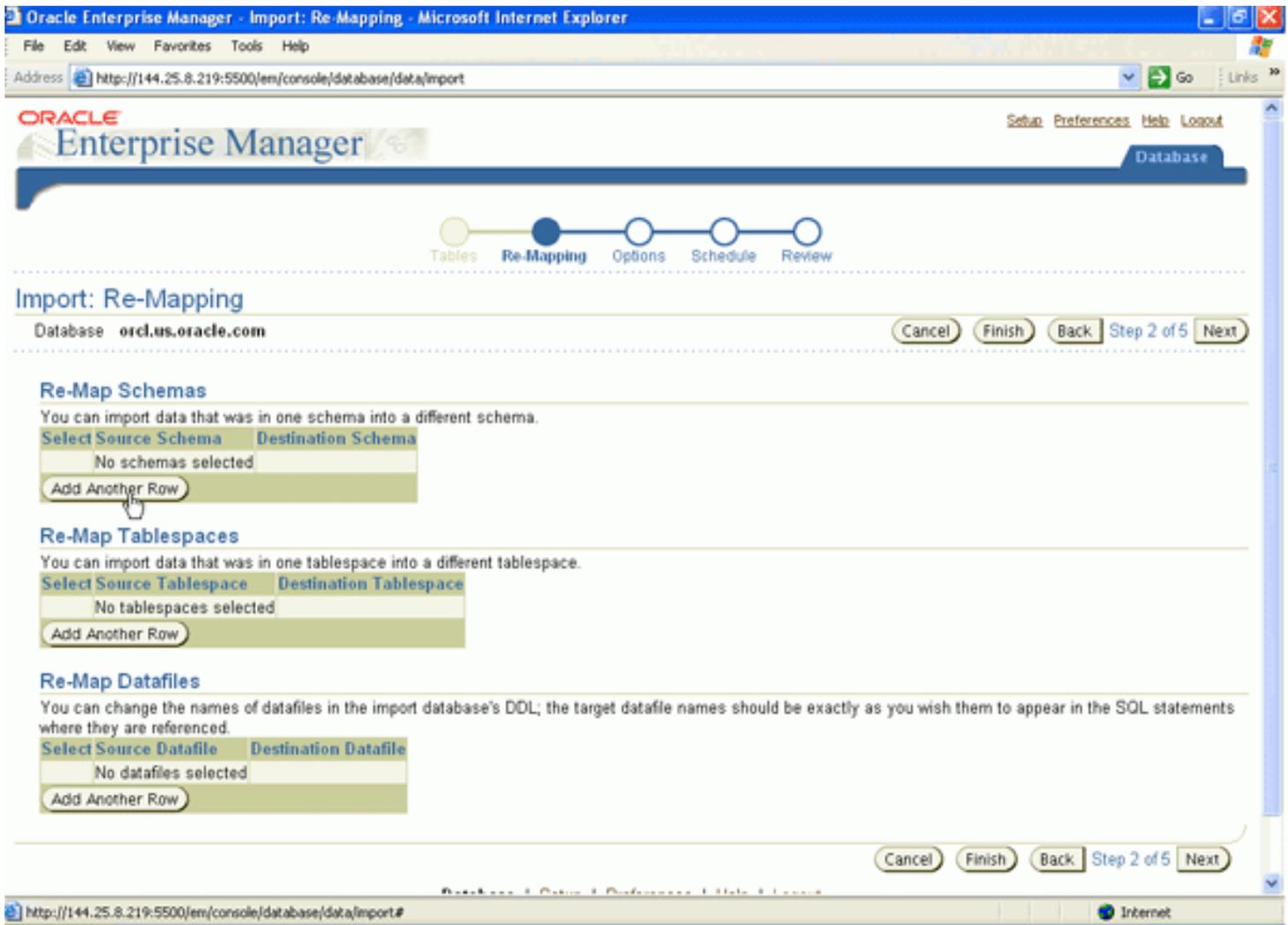
7. Select the checkboxes for **Costs**, **Products**, and **Sales** then click **Select** .



8. Click **Next** .



9. Click the **Add Another Row** button under the **Re-Map Schemas** section.



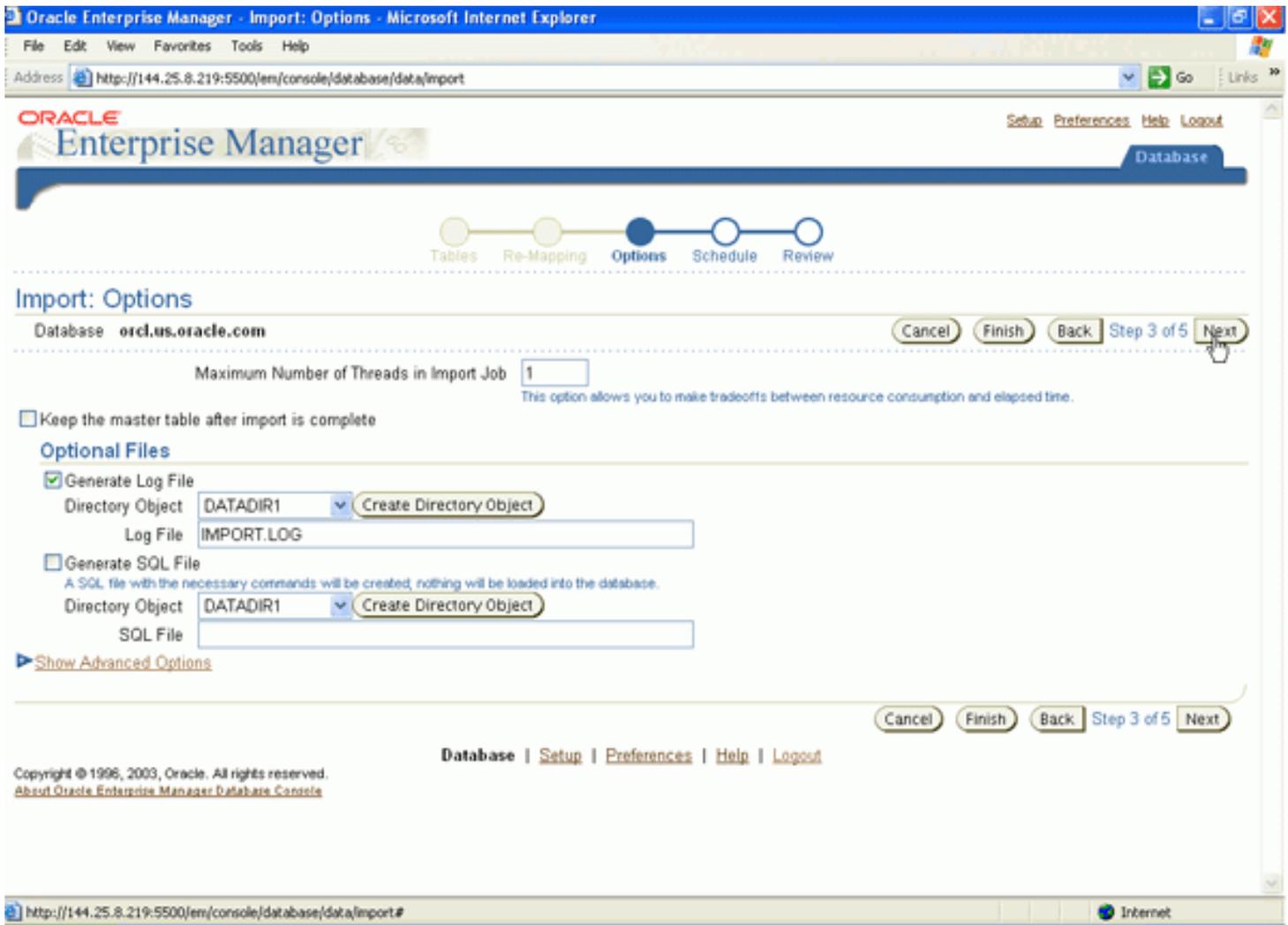
Under the Destination Schema column, select **SCOTT** then click **Next** .

10.



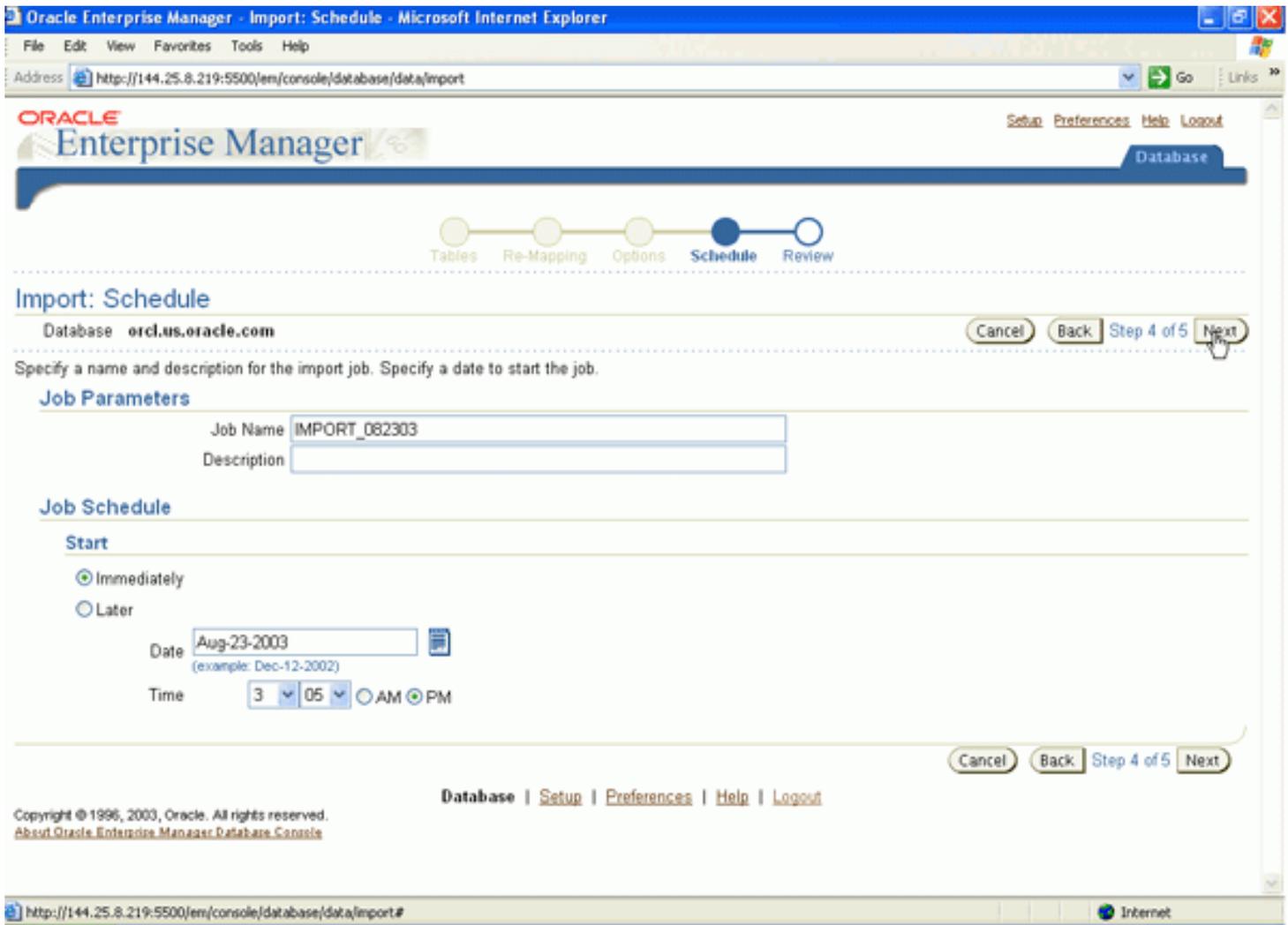
Click **Next** .

11.



Enter **IMPORT_<Today's Date>** in the Job field then click **Next** .

12.



Click **Submit Job** .

13.

Oracle Enterprise Manager - Import: Review - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/database/data/import

ORACLE Enterprise Manager Database

Tables Re-Mapping Options Schedule **Review**

Import: Review

Database orcl.us.oracle.com

Cancel Back Step 5 of 5 **Submit Job**

Import Type	Tables
Files to Import	DATADIR1 EXPDAT%U.DMP
Log File	DATADIR1 IMPORT.LOG
SQL File	Not Used
Parallelism	1
Keep the master table after import is complete	No
Overwrite Existing Data Files	No

Import PL/SQL

```

declare
h1 NUMBER;
begin
begin
h1 := dbms_datapump.open (operation => 'IMPORT', job_mode => 'TABLE', job_name
=> 'IMPORT_082303', version => 'COMPATIBLE');
end;
begin
dbms_datapump.set_parallel(handle => h1, degree => 1);
end;

```

Cancel Back Step 5 of 5 **Submit Job**

Database | Setup | Preferences | Help | Logout

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[About Oracle Enterprise Manager Database Console](#)

http://144.25.8.219:5500/em/console/database/data/import# Internet

Click **View Job** .

14.



Select the **Import** link to see the Import log status.

15.

Cannot find server - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/jobs/results?ctxType=ctxSummary&execId=C59159F7A59ED03FE030007F01000EC6

ORACLE Enterprise Manager Database

Job: IMPORT_082303

Page Refreshed August 23, 2003 4:13:33 PM PDT [Delete] [View Definition]

Summary

The Stop and Suspend operations will wait for the current step to complete. A suspended job can be resumed later, at the next step. [Stop] [Suspend]

Status	Running	Type	Import
Scheduled	23-AUG-2003 16:13:04 -07:00	Owner	SYS
Started	23-AUG-2003 16:13:08 -07:00	Description	
Running Time	25 seconds	db_10_or_higher	true
		db_password	*****
		db_role_suffix	sysdba
		db_username	SYS
		host_password	*****
		host_username	oracle
		import_script	\$oracle_home - "/oracle/ora10g"; \$oracle_sid = "orcl";
		is_rac	false
		job_name	IMPORT_082303

[Monitor Data Pump Job]

Logs

Name	Targets	Status	Started	Ended	Running (sec)
Import	orcl.us.oracle.com	Running	23-AUG-2003 16:13:09 -07:00		24

[Delete] [View Definition]

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http://144.25.8.219:5500/em/console/jobs/stepLog?stepName=Import&stepID=16&jobName=IMPORT*_082303&execId=C59159F7A59ED03FE03000 Internet

16. The job is still running. Click **Show more** to see more of the log. If Show more does not appear, click Reload in your browser window.

The screenshot shows the Oracle Enterprise Manager (SYS) interface in a Microsoft Internet Explorer browser. The page title is "Oracle Enterprise Manager (SYS) - Step: Import - Microsoft Internet Explorer". The address bar shows the URL: `http://144.25.8.219:5500/em/console/jobs/stepLog?stepName=import&stepID=16&jobName=IMPORT*_082303&execId=C59159F7A59EDD3FE030007F01000EC6`. The page content includes the Oracle logo, navigation links (Setup, Preferences, Help, Logout), and a "Database" button. The main heading is "Job: IMPORT_082303 > Step: Import" and "Step: Import". A status bar indicates "Status Running", "Targets orcl.us.oracle.com", "Started 23-AUG-2003 16:13:09 -07:00", and "Running Time 56 seconds". The "Output Log" section shows the following text:

```

Job IMPORT_082303 has been reopened at Saturday, 23 August, 2003 16:13
Restarting "SYS"."IMPORT_082303":
Processing object type TABLE_EXPORT/TABLE
Processing object type TABLE_EXPORT/TBL_TABLE_DATA/TABLE/TABLE_DATA
. . imported "SCOTT"."SALES"."SALES_Q4_2001"          2.255 MB   69749 rows
. . imported "SCOTT"."SALES"."SALES_Q1_1999"          2.068 MB   64186 rows
. . imported "SCOTT"."SALES"."SALES_Q3_2001"          2.127 MB   65769 rows
. . imported "SCOTT"."SALES"."SALES_Q3_1999"          2.164 MB   67138 rows
. . imported "SCOTT"."SALES"."SALES_Q1_2000"          2.009 MB   62197 rows
. . imported "SCOTT"."SALES"."SALES_Q2_2001"          2.048 MB   63292 rows
    
```

Below the log, there is a "Show more" link. At the bottom of the page, there is a copyright notice: "Copyright © 1996, 2003, Oracle. All rights reserved. About Oracle Enterprise Manager Database Console". The browser's status bar at the bottom shows the same URL and "Internet" as the protocol.

The job has finished. Scroll down to the bottom to see all the messages in the log.

17.

Oracle Enterprise Manager (SYS) - Step: Import - Microsoft Internet Explorer

Address: http://144.25.8.219:5500/em/console/jobs/stepLog?listSize=-1&stepName=import&stepID=16&execId=C59159F7A59E003FE030007F01000EC6&jobName=IMPORT*_j

Oracle Enterprise Manager

Job: IMPORT_082303 > Step: Import

Step: Import

Page Refreshed Aug 23, 2003 4:14:22 PM

Status: **Running**
Targets: ord.us.oracle.com

Started: 23-AUG-2003 16:13:09 -07:00
Running Time: 1:12 minutes

Output Log

Job IMPORT_082303 has been reopened at Saturday, 23 August, 2003 16:13
Restarting "SYS"."IMPORT_082303":
Processing object type TABLE_EXPORT/TABLE
Processing object type TABLE_EXPORT/TBL_TABLE_DATA/TABLE/TABLE_DATA

. . imported	"SCOTT"."SALES":	"SALES_Q4_2001"	2.255 MB	69749 rows
. . imported	"SCOTT"."SALES":	"SALES_Q1_1999"	2.068 MB	64186 rows
. . imported	"SCOTT"."SALES":	"SALES_Q3_2001"	2.127 MB	65769 rows
. . imported	"SCOTT"."SALES":	"SALES_Q3_1999"	2.164 MB	67138 rows
. . imported	"SCOTT"."SALES":	"SALES_Q1_2000"	2.009 MB	62197 rows
. . imported	"SCOTT"."SALES":	"SALES_Q2_2001"	2.048 MB	63292 rows
. . imported	"SCOTT"."SALES":	"SALES_Q1_2001"	1.962 MB	60608 rows
. . imported	"SCOTT"."SALES":	"SALES_Q4_1999"	2.012 MB	62388 rows
. . imported	"SCOTT"."SALES":	"SALES_Q4_1998"	1.579 MB	48874 rows
. . imported	"SCOTT"."SALES":	"SALES_Q4_2000"	1.811 MB	55984 rows
. . imported	"SCOTT"."SALES":	"SALES_Q2_2000"	1.799 MB	55515 rows
. . imported	"SCOTT"."SALES":	"SALES_Q3_2000"	1.907 MB	58950 rows
. . imported	"SCOTT"."SALES":	"SALES_Q2_1999"	1.751 MB	54233 rows
. . imported	"SCOTT"."SALES":	"SALES_Q1_1998"	1.410 MB	43687 rows
. . imported	"SCOTT"."SALES":	"SALES_Q3_1998"	1.631 MB	50515 rows
. . imported	"SCOTT"."SALES":	"SALES_Q2_1998"	1.157 MB	35758 rows
. . imported	"SCOTT"."COSTS":	"COSTS_Q3_2001"	231.9 KB	7545 rows
. . imported	"SCOTT"."COSTS":	"COSTS_Q4_2001"	275.8 KB	9011 rows
. . imported	"SCOTT"."COSTS":	"COSTS_Q1_1998"	136.9 KB	4411 rows
. . imported	"SCOTT"."COSTS":	"COSTS_Q3_1998"	128.5 KB	4129 rows
. . imported	"SCOTT"."COSTS":	"COSTS_Q4_1998"	142.1 KB	4577 rows

Done

18. Your import has completed successfully even though the log file displayed some errors. These errors were generated because the **Sales** and **Costs** tables are dependent on several tables which were not included in the export and thus were not imported. In this case, the omission was intentional and you can ignore the errors in the log file.

```

Oracle Enterprise Manager (SYS) - Step: Import - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://144.25.8.219:5500/em/console/jobs/stepLog?listSize=-1&stepName=import&stepID=16&execId=C59159F7A59E003FE030007F01000EC6&jobName=IMPORT*_j
Failing sql is:
ALTER TABLE "SCOTT"."SALES" ADD CONSTRAINT "SALES_CUSTOMER_FK" FOREIGN KEY ("CUST_ID") REFERENCES "SCOTT"."CUSTOMERS" ("CUST_ID")
ENABLE NOVALIDATE

ORA-39083: Object type REF_CONSTRAINT failed to create with error:
ORA-00942: table or view does not exist
Failing sql is:
ALTER TABLE "SCOTT"."SALES" ADD CONSTRAINT "SALES_TIME_FK" FOREIGN KEY ("TIME_ID") REFERENCES "SCOTT"."TIMES" ("TIME_ID")
ENABLE NOVALIDATE

ORA-39083: Object type REF_CONSTRAINT failed to create with error:
ORA-00942: table or view does not exist
Failing sql is:
ALTER TABLE "SCOTT"."SALES" ADD CONSTRAINT "SALES_CHANNEL_FK" FOREIGN KEY ("CHANNEL_ID") REFERENCES "SCOTT"."CHANNELS" ("CHANNEL_ID")
ENABLE NOVALIDATE

ORA-39083: Object type REF_CONSTRAINT failed to create with error:
ORA-00942: table or view does not exist
Failing sql is:
ALTER TABLE "SCOTT"."COSTS" ADD CONSTRAINT "COSTS_PROMO_FK" FOREIGN KEY ("PROMO_ID") REFERENCES "SCOTT"."PROMOTIONS" ("PROMO_ID")
ENABLE NOVALIDATE

ORA-39083: Object type REF_CONSTRAINT failed to create with error:
ORA-00942: table or view does not exist
Failing sql is:
ALTER TABLE "SCOTT"."COSTS" ADD CONSTRAINT "COSTS_TIME_FK" FOREIGN KEY ("TIME_ID") REFERENCES "SCOTT"."TIMES" ("TIME_ID")
ENABLE NOVALIDATE

ORA-39083: Object type REF_CONSTRAINT failed to create with error:
ORA-00942: table or view does not exist
Failing sql is:
ALTER TABLE "SCOTT"."COSTS" ADD CONSTRAINT "COSTS_CHANNEL_FK" FOREIGN KEY ("CHANNEL_ID") REFERENCES "SCOTT"."CHANNELS" ("CHANNEL_ID")
DISABLE

Processing object type TABLE_EXPORT/INDEX/TBL_FBM_INDEX_INDEX/INDEX
Processing object type TABLE_EXPORT/INDEX/STATISTICS/TBL_FBM_IND_STATS/INDEX_STATISTICS
Job "SYS"."IMPORT_082303" completed with 7 error(s) at 16:14

```

You will go through the following examples of using Data Pump Import command line interface:

- [Performing a data only table mode import](#)
- [Performing a schema mode import](#)

Performing a Data Only Table Mode Import

[Back to List](#)

The CONTENT parameter allows you to filter the data and metadata that Import loads. The DATA_ONLY value loads only table row data; no database object definitions (metadata) are recreated.

Perform the following:

1. From a terminal window, issue the following IMPORT command to perform a table data only import of table Costs using the dump file created previously in the Export section of this lesson.

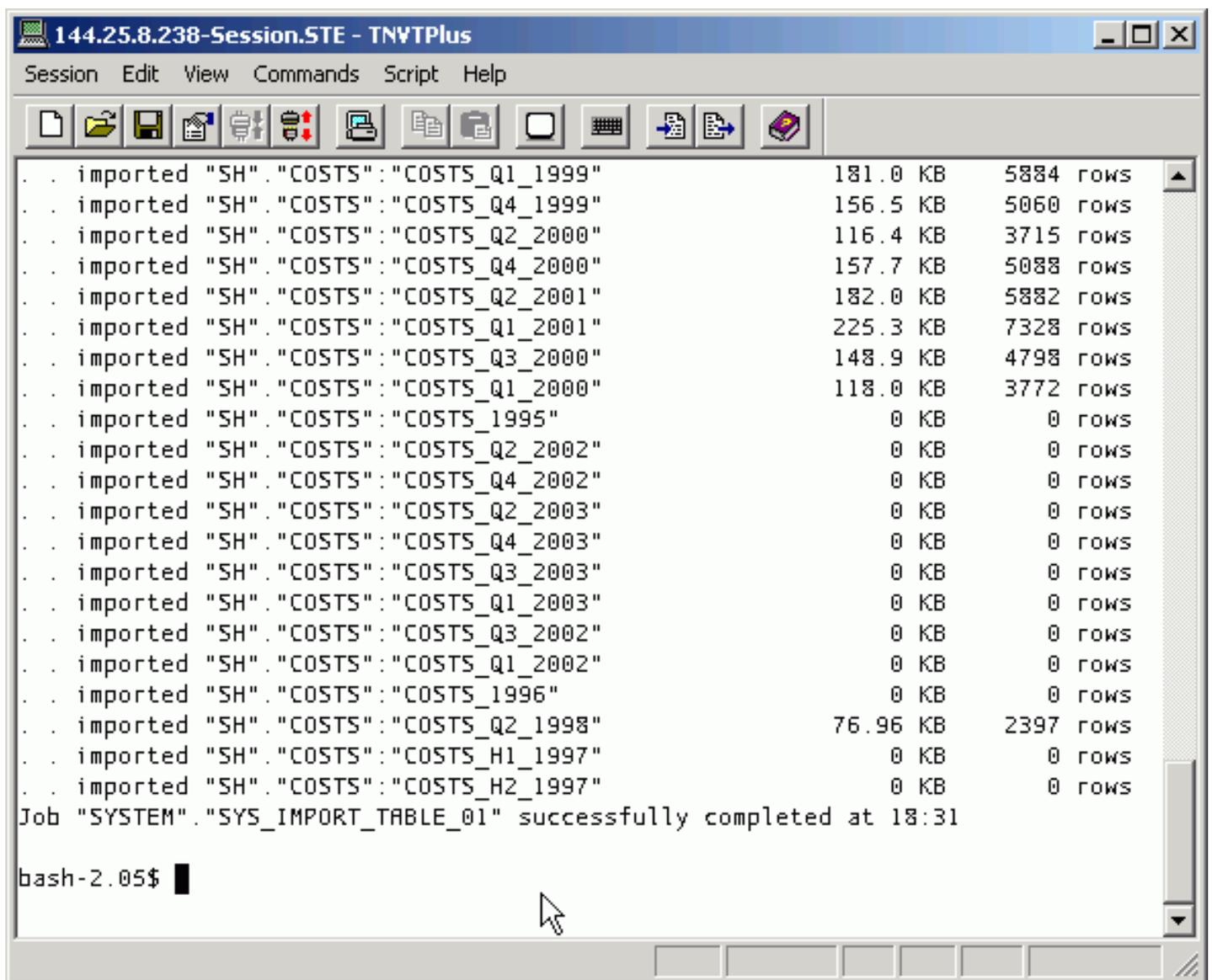
```
impdp system/<password> \
```

```
TABLES=sh.costs \
```

```
CONTENT=data_only \
```

```
DUMPFILE=datadir2:table.dmp \
```

```
NOLOGFILE=y
```



```
144.25.8.238-Session.STE - TNVTPlus
Session Edit View Commands Script Help
. . imported "SH"."COSTS"."COSTS_Q1_1999"          181.0 KB      5884 rows
. . imported "SH"."COSTS"."COSTS_Q4_1999"          156.5 KB      5060 rows
. . imported "SH"."COSTS"."COSTS_Q2_2000"          116.4 KB      3715 rows
. . imported "SH"."COSTS"."COSTS_Q4_2000"          157.7 KB      5088 rows
. . imported "SH"."COSTS"."COSTS_Q2_2001"          182.0 KB      5882 rows
. . imported "SH"."COSTS"."COSTS_Q1_2001"          225.3 KB      7328 rows
. . imported "SH"."COSTS"."COSTS_Q3_2000"          148.9 KB      4798 rows
. . imported "SH"."COSTS"."COSTS_Q1_2000"          118.0 KB      3772 rows
. . imported "SH"."COSTS"."COSTS_1995"              0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q2_2002"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q4_2002"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q2_2003"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q4_2003"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q3_2003"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q1_2003"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q3_2002"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q1_2002"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_1996"              0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_Q2_1998"          76.96 KB      2397 rows
. . imported "SH"."COSTS"."COSTS_H1_1997"          0 KB           0 rows
. . imported "SH"."COSTS"."COSTS_H2_1997"          0 KB           0 rows
Job "SYSTEM"."SYS_IMPORT_TABLE_01" successfully completed at 18:31

bash-2.05$
```

Performing a Schema Mode Import

[Back to List](#)

The EXCLUDE parameter allows you to filter the metadata that is imported by specifying database objects that you want to exclude from the import job. For the given mode of import, all the objects contained within the source, and all their dependent objects, are included except those specified in an EXCLUDE statement. If an object is excluded, all of its dependent objects are also excluded.

TABLE_EXISTS_ACTION instructs import on what to do if the table it is trying to create already exists. When TABLE_EXISTS_ACTION=REPLACE is specified, the import drops the existing table and then recreates and loads it using the source database contents.

Perform the following:

1. From your terminal window, issue the following import command to perform a schema import that excludes constraints, referential constraints, indexes and materialized views using the dump file set created by the schema mode export in the Export section.

```
impdp system/<password> \  
SCHEMAS=sh \  
REMAP_SCHEMA=sh:sh2 \  
DUMPFILE=datadir1:schema1%U.dmp,datadir2:schema2%U.dmp \  
  
EXCLUDE=constraint, ref_constraint, index,materialized_view \  
TABLE_EXISTS_ACTION=replace \  
  
logfile=datadir1:impschema.log
```

```

. . imported "SH"."COSTS"."COSTS_H2_1997"          0 KB          0 rows
. . imported "SH"."MVIEW$_EXCEPTIONS"             0 KB          0 rows
. . imported "SH"."COSTS"."COSTS_1995"            0 KB          0 rows
. . imported "SH"."COSTS"."COSTS_1996"            0 KB          0 rows
. . imported "SH"."COSTS"."COSTS_H1_1997"         0 KB          0 rows
. . imported "SH"."CHANNELS"                      4.679 KB       5 rows
. . imported "SH"."COUNTRIES"                    7.015 KB      19 rows
Processing object type SCHEMA_EXPORT/TABLE/GRANT/OBJECT_GRANT
Processing object type SCHEMA_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
Processing object type SCHEMA_EXPORT/TABLE/COMMENT
Processing object type SCHEMA_EXPORT/MATERIALIZED_VIEW
ORA-31685: Object type MATERIALIZED_VIEW:"SH"."CAL_MONTH_SALES_MV" failed due to:
CREATE MATERIALIZED VIEW "SH"."CAL_MONTH_SALES_MV" USING ("CAL_MONTH_SALES_MV",
ORA-31685: Object type MATERIALIZED_VIEW:"SH"."FWEEK_PSCAT_SALES_MV" failed due:
CREATE MATERIALIZED VIEW "SH"."FWEEK_PSCAT_SALES_MV" USING ("FWEEK_PSCAT_SALES_0
Processing object type SCHEMA_EXPORT/DIMENSION
ORA-31684: Object type DIMENSION:"SH"."CHANNELS_DIM" already exists
ORA-31684: Object type DIMENSION:"SH"."CUSTOMERS_DIM" already exists
ORA-31684: Object type DIMENSION:"SH"."PRODUCTS_DIM" already exists
ORA-31684: Object type DIMENSION:"SH"."PROMOTIONS_DIM" already exists
ORA-31684: Object type DIMENSION:"SH"."TIMES_DIM" already exists
Job "SYSTEM"."SYS_IMPORT_SCHEMA_01" completed with 10 error(s) at 09:39

bash-2.05$ █

```

 **Move your mouse over this icon to hide all screenshot**