HP Operations Manager for UNIX

HPOM with an Independent Database Server

Software Version: 8.31

Edition 3

UNIX

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Conventions

The following typographical conventions are used in this manual.

Table 1   **Typographical Conventions**

Font	Meaning	Example
Italic	Book or manual titles, and man page names	Refer to the *HPOM Administrator's Reference* and the *opc(1M)* manpage for more information.
	Emphasis	You *must* follow these steps.
	Variable that you must supply when entering a command	At the prompt, enter **rlogin** ***username***.
	Parameters to a function	The *oper_name* parameter returns an integer response.
Bold	New terms	The **HTTPS agent** observes...
`Computer`	Text and other items on the computer screen	The following system message displays: `Are you sure you want to remove current group?`
	Command names	Use the `grep` command ...
	Function names	Use the `opc_connect()` function to connect ...
	File and directory names	`/opt/OV/bin/OpC/`
	Process names	Check to see if `opcmona` is running.
	Window/dialog-box names	In the `Add Logfile` window ...
	Menu name followed by a colon (`:`) means that you select the menu, then the item. When the item is followed by an arrow (`->`), a cascading menu follows.	Select `Actions: Filtering -> All Active Messages` from the menu bar.

Table 1   **Typographical Conventions (Continued)**

Font	Meaning	Example
Computer Bold	Text that you enter	At the prompt, enter **ls -l**
Keycap	Keyboard keys	Press **Return**.
[Button]	Buttons in the user interface	Click [OK].

In This Document

The purpose of this document is to describe the HP Operations Manager setup with an independent Oracle Database 9i, 10g, or 11g.

The following terms are used in this document:

Oracle Database   Oracle product

database server   computer system used for the Oracle Database

HPOM database   a database created in the Oracle Database and used by HPOM

Information in this document is subject to change without prior notice.

1 Installing HPOM with an Independent Database Server

Overview

This chapter describes how to install and configure HPOM for UNIX to use an independent Oracle Database system for the HPOM database. It contains the following information:

❏ System requirements for Oracle and HPOM. Refer to "Requirements" on page 11.

❏ HPOM system limitations. Refer to "Limitations During the HPOM Runtime" on page 12.

❏ Instructions for creating and configuring the database for HPOM. Refer to "Creating and Configuring the HPOM Database" on page 13.

❏ Instructions for enabling database access on the HP Operations Management Server. Refer to "Installing HPOM" on page 32.

Requirements

Oracle Requirements

Oracle 9i, Oracle 10g, and Oracle 11g are supported. Although both Oracle 10g Release 1 and Release 2 are supported, we strongly encourage you to use Oracle 10g Release 2. Oracle Database server and Oracle Database client (on the HP Operations Management Server) must be of the same version, further requirements are described in the *HPOM Installation Guide for the Management Server*.

The Oracle Database server can be installed and used with HPOM for UNIX on any platform supported by the HP Operations Management Server.

HPOM Requirements

The following are HPOM requirements:

❑ Supported with 8.31 HPOM Management Server patch or later.

❑ Uses a pre-created Oracle database for HPOM.

❑ Access to the HPOM database should be configured (Oracle Net Services).

NOTE HPOM Management Server and database server requirements, limitations and configuration details are described in the *HPOM Installation Guide for the Management Server*.

Limitations During the HPOM Runtime

During the HPOM runtime the following limitations apply:

❏ For a pre-created Oracle database setup the same limitations apply as for an independent database server setup.

❏ Removing the database or dropping the tablespaces using opcdbsetup is not supported. You can remove the database or drop tablespaces manually.

When removing the database manually, remove also the following files from the HP Operations Management Server when the database is removed:

— /etc/opt/OV/share/conf/ovdbconf

— /etc/opt/OV/share/conf/OpC/mgmt_sv/.opcdbpwd.sec

❏ The mondbfile policy can only run on the database server. Unassign the mondbfile policy from the HP Operations Management Server policy group and, if an HP Operations agent is running on the database server system, assign the mondbfile policy there.

❏ opcadddbf tool is not supported.

Creating and Configuring the HPOM Database

Before approaching the HPOM software installation, perform the following pre-installation tasks to be able to use an independent Oracle Database server:

❏ Creating the HPOM Database

❏ Configuring Access to the HPOM Database

NOTE The HPOM installation procedure is detailed in the *HPOM Installation Guide for the Management Server*.

Creating the HPOM Database

Creating the HPOM database on the remote database server involves the following actions:

❏ Installing Oracle Database on the database server. For instructions, refer to *HPOM Installation Guide for the Management Server*.

❏ Creating and configuring the HPOM database.

Before proceeding, verify that your system meets the Oracle requirements:

For Oracle 9i:

• Oracle 9i 9.2.0.1.0

• Oracle Net Services 9.2.0.1.0

• 9.2.0.2 or higher Patch Set for the Oracle Database Server

For Oracle 10g:

• Oracle 10g 10.2.0.1.0

• Oracle Net Services 10.2.0.1.0

• SQL * Plus 10.2.0.1.0

• 10.2.0.2 or higher Patch Set for the Oracle Database Server

For Oracle 11g:

• Oracle 11g 11.1.0.6.0

• Oracle Net Services 11.1.0.6.0

• 11.1.0.7.0 or higher Patch Set for the Oracle Database Server for HP-UX 11i v3 on HP Integrity

To create and configure the HPOM database on the database server, follow the procedure described below:

1. Login to the database server as user oracle and start the Database Configuration Assistant. Enter the following command:

   $ $ORACLE_HOME/bin/dbca

   The Welcome dialog opens.

NOTE   In the process of creating the database using the Oracle Database Creation Assistant, follow the wizard. Not all steps in the wizard are described in this procedure. In all steps, not described below, leave default values or make custom selections that suit your needs.

Oracle 11g figures are displayed for your reference, Oracle 9i and Oracle 10g installation windows may vary.

2. In the Database Templates dialog select **New Database** (Oracle 9i) or **Custom Database** (Oracle 10g and Oracle 11g) template in the list and click [Next].

3. In the `Database Identification` dialog enter the global database name, and the Oracle System Identifier (global database name, for example: **openview**). Click [Next]. See Figure 1-1.

Figure 1-1   Database Identification Dialog
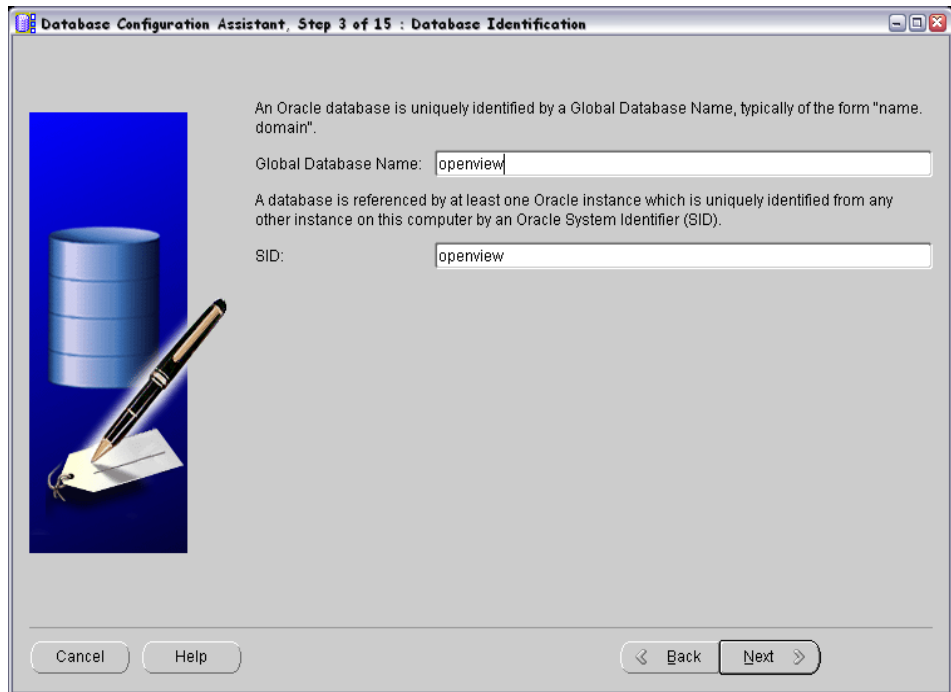
4. For Oracle 10g and Oracle 11g, set the SYS and SYSTEM user passwords in the `Database Credentials` dialog.

IMPORTANT   Do not forget the passwords you defined. You will need these passwords for HPOM configuration and later on for database administration.

5. In the Database Features dialog (Oracle 9i and 10g) or the
   Database Content dialog (Oracle 11g) deselect all components. Then
   click [Standard Database Features] and also deselect all features.
   Click [OK]. See Figure 1-2 and Figure 1-3.
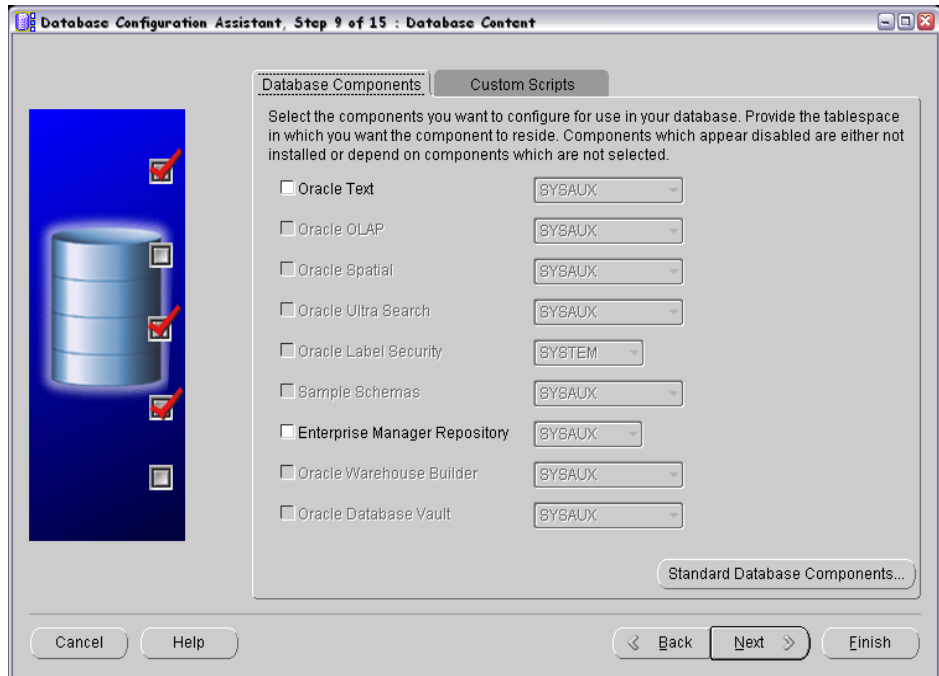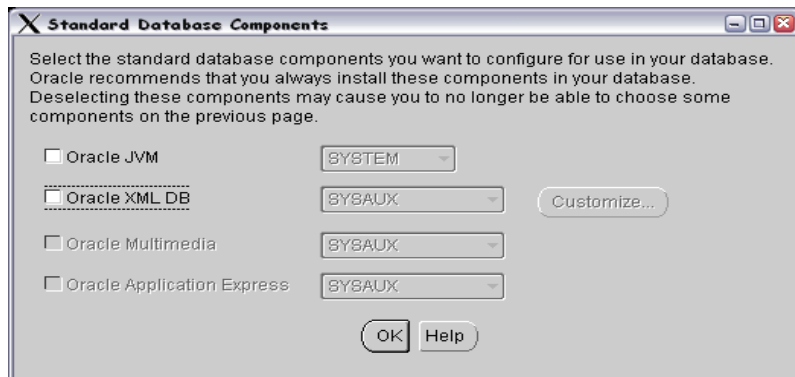
Figure 1-2   Database Components

Figure 1-3   Standard Database Components

6. In the `Database Connection Options` dialog (Oracle 9i) or `Connection Mode` tab of the `Initialization Parameters` dialog (Oracle 10g and Oracle 11g) select **Dedicated Server Mode**.

7. In the `Character Sets` tab of the `Initialization Parameters` dialog, select a supported character set and `NLS_LANG` values. For example, select **WE8ISO8859P15** for the English database. Refer to Figure 1-4 on page 21.

NOTE
Refer to *HPOM Administrator's Reference* for more information on supported character sets and `NLS_LANG` values.

8. Click [`All Initialization Parameters`] and set initialization parameters according to your needs.

Table 1-1   HPOM Recommended Values for Oracle 9i

Parameter	Value
db_block_size	8192
db_cache_size	81920000
db_file_multiblock_read_count	16
db_files	80
dml_locks	100
log_buffer	1572864
log_checkpoint_interval	99999
max_dump_file_size	10240
open_cursors	1024
processes	200
shared_pool_size	134217728
sort_area_size	262144

Table 1-2　　　　　　　**HPOM Recommended Values for Oracle 10g**

Parameter	Value
db_block_size	8192
db_cache_size	81920000
db_file_multiblock_read_count	16
db_files	80
dml_locks	100
log_buffer	1572864
log_checkpoint_interval	99999
max_dump_file_size	10240
open_cursors	1024
processes	200
sga_target	367001600
sort_area_size	262144

Table 1-3   HPOM Recommended Values for Oracle 11g

Parameter	Value
compatible	11.1.0.0.0
db_block_size	8192
db_file_multiblock_read_count	16
db_files	80
diagnostic_dest	/opt/oracle
dml_locks	100
log_buffer	1572864
log_checkpoint_interval	99999
max_dump_file_size	10240
open_cursors	1024
processes	200
sga_target	367001600
sort_area_size	262144

Figure 1-4   Database Character Set Dialog
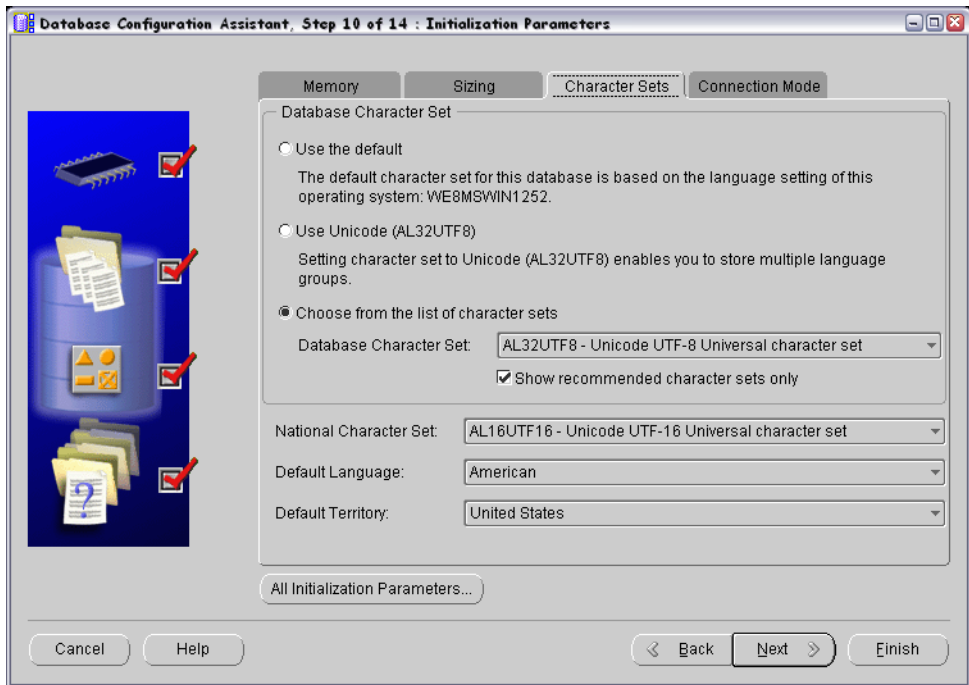
9. Create tablespaces and their datafiles as specified in Table 1-4 on page 22.

   Follow the recommended initial sizes as listed in the table. Create the datafiles as autoextend files, so that the datafiles can grow as needed. Autoextend can be enabled in the Datafiles list under the Storage tab. Set the increment size to the value defined in the Next column of Table 1-4. Change the TEMP tablespace type to permanent, and set OPC_TEMP as a default temporary tablespace. Refer to Figure 1-5 on page 23 and Figure 1-6 on page 24.

   HPOM requires at least 3 redo logs with a size of 20M each. Having more and bigger redo logs may increase the performance. We also recommend that you create mirrored copies of the redo logs on another disk. For more information, refer to the HPOM Administrator's Reference.

Table 1-4 **Required HPOM Tablespaces**

Tablespace Name	Tablespace Type	Datafile	
		Size	**Next**
SYSAUX[a]	Locally managed/permanent	120M	10M
SYSTEM	Locally managed/permanent	250M	1M
TEMP	Locally managed/permanent (not temporary)	20M	5M
OPC_1	Locally managed/permanent	4M	6M
OPC_2	Locally managed/permanent	5M	6M
OPC_3	Locally managed/permanent	1M	1M
OPC_4	Locally managed/permanent	26M	2M
OPC_5	Locally managed/permanent	1M	1M
OPC_6	Locally managed/permanent	4M	2M
OPC_7	Locally managed/permanent	4M	2M
OPC_8	Locally managed/permanent	4M	2M
OPC_9	Locally managed/permanent	6M	2M
OPC_10	Locally managed/permanent	6M	6M
OPC_INDEX1	Locally managed/permanent	13M	1M
OPC_INDEX2	Locally managed/permanent	10M	1M
OPC_INDEX3	Locally managed/permanent	10M	1M
OPC_TEMP	Locally managed/temporary	4M	1M

a. Required for Oracle 10g and Oracle 11g.

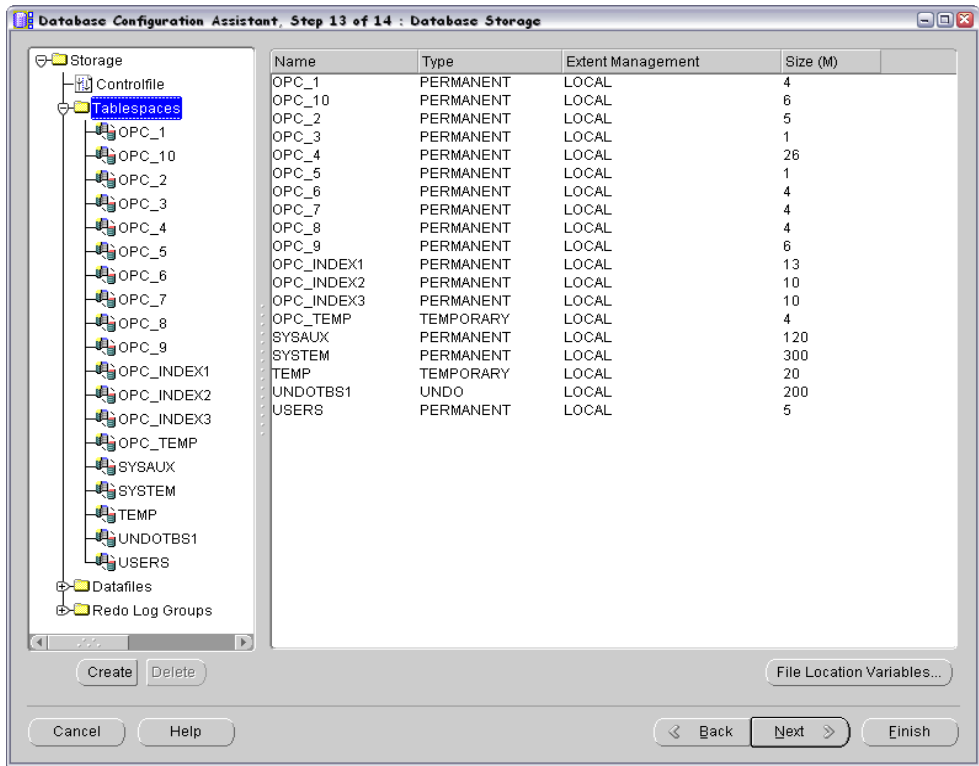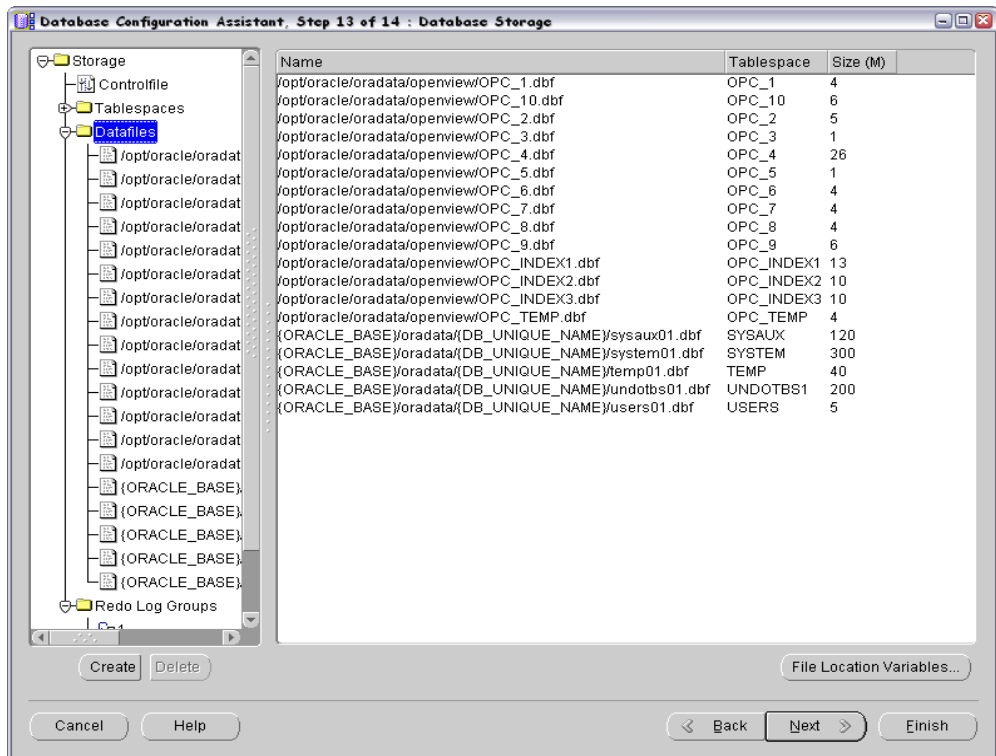**Figure 1-5   Database Tablespaces**

Figure 1-6   Database Datafiles

10. Click [Next] to create the database. Select the Create Database option and click [Finish].

11. For Oracle 9i, define passwords for users system and sys when the database is created.

IMPORTANT   Do not forget the passwords you defined. You will need these passwords for HPOM configuration and later on for database administration.

After you have successfully created the HPOM database using the Database Creation Assistant, manually configure users, passwords, and user rights on the database server. Perform the following steps:

1. Log in as user oracle and connect as sysdba. Enter the following commands:

   ```
   su - oracle
   sqlplus "system as sysdba"
   ```

2. Enter the password for user system. This is the password you set when creating the database.

3. Enter the following command to create the user opc_op:

   ```
   create user opc_op identified by <password>
   default tablespace OPC_5 temporary tablespace OPC_TEMP;
   ```

   For example:
   ```
   create user opc_op identified by pwd123
   default tablespace OPC_5 temporary tablespace OPC_TEMP;
   ```

4. Enter the following command to create the user opc_report:

   ```
   create user opc_report identified by <password>
   default tablespace OPC_5 temporary tablespace OPC_TEMP;
   ```

5. Configure user rights for the users you created. Enter the following commands:

```
create role opc_report_role;
```

```
grant create session to opc_report_role;
```

```
grant opc_report_role to opc_report;
```

```
grant connect,
      resource,
      create public synonym,
      drop public synonym,
      alter tablespace
      to opc_op;
```

If you are using Oracle 10g or Oracle 11g, enter the following command as well:

```
grant create table , create view to opc_op;
```

IMPORTANT   The opc_report_role is required and must be created.

6. Optionally, you can configure additional user rights on the database server. The following is needed if you want to use the mondbfile policy and the opc_odc tool:

create role opc_monitorer;

grant select on v_$datafile to opc_monitorer;

grant select on v_$log to opc_monitorer;

grant select on v_$logfile to opc_monitorer;

grant select on dba_free_space to opc_monitorer;

grant select on dba_data_files to opc_monitorer;

grant select on dba_extents to opc_monitorer;

grant select on dba_tablespaces to opc_monitorer;

grant select on dba_tables to opc_monitorer;

grant select on dba_indexes to opc_op;

grant select on dba_ind_columns to opc_op;

grant select on dba_cons_columns to opc_op;

grant select on dba_constraints to opc_op;

grant select on v_$parameter to opc_op;

grant select on v_$sga to opc_op;

grant opc_monitorer to opc_op;

IMPORTANT   The mondbfile policy can only run on the database server. If the HP Operations Agent is running on the database server, you can assign the mondbfile policy there.

7. To close sqlplus, enter **exit**.

Known Problems and Workarounds

1. **Symptom**

   During database creation, a window may pop up with the following
   error displayed:

   ```
   ORA-29807: Specified operator does not exist
   ```

   Solution

   Click `Ignore`, and continue with database configuration.

Configuring Access to the HPOM Database

To configure access to the HPOM database, you need to set up Net Services on the database server. You can either use Oracle tools to configure the Net Services, or create the Net Services manually. You can choose an Oracle Net alias (HPOM default is ov_net). You can specify the used Net Services alias when configuring the HP Operations Management Server.

To create the Net Services files manually, perform the steps below:

1. Configure Net Services, needed on the database server.

   Net files tnsnames.ora and listener.ora are required. Optionally, you can also configure tnsnav.ora and sqlnet.ora files. These files are located in the $ORACLE_HOME/network/admin directory.

NOTE   The syntax in the following examples must be followed completely with new-lines, spaces, and tabs.

Example contents of the tnsnames.ora file:

```
ov_net =
  (DESCRIPTION=
    (ADDRESS_LIST=
      (ADDRESS =
       (COMMUNITY=OPENVIEW_COMMUNITY)
       (PROTOCOL=TCP)
       (HOST=hrabal)
       (PORT=1521)
      )
    )
    (CONNECT_DATA=
(SID=openview)
    )
  )
```

Example contents of the listener.ora file:

```
STARTUP_WAIT_TIME_LISTENER = 0

LOG_DIRECTORY_LISTENER = /opt/oracle/product/11.1.0/network/log

LISTENER =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = hrabal)(PORT = 1521))
  )

CONNECT_TIMEOUT_LISTENER = 10

TRACE_LEVEL_LISTENER = OFF

LOG_FILE_LISTENER = listener
```

Example contents of the tnsnav.ora file:

```
LOCAL_COMMUNITIES =
  (COMMUNITY_LIST =
    (COMMUNITY = OPENVIEW_COMMUNITY)
  )
```

Example contents of the sqlnet.ora file:

```
TRACE_LEVEL_CLIENT = OFF
TRACE_DIRECTORY_CLIENT = /opt/oracle/product/11.1.0/network/log
LOG_DIRECTORY_CLIENT = /opt/oracle/product/11.1.0/network/log
```

NOTE   In all example files change hostname and directory paths information according to your system settings.

2. Start listener. As user oracle enter the following command:

lsnrctl start

Installing HPOM

Before you proceed with the HPOM installation, verify that your HP Operations management server system meets the following requirements:

For Oracle 9i:

- Oracle 9i Client 9.2.0.1.0

- Oracle Network Utilities 9.2.0.1.0

- SQL * Plus 9.2.0.1.0

- 9.2.0.2 or higher Patch Set for the Oracle Database Server

To install these products, in the `Available Products` window select `Oracle 9i Client 9.2.0.1.0`, and then select the `Custom` installation type.

For Oracle 10g:

- Oracle 10g Client 10.2.0.1.0

- Oracle Network Utilities 10.2.0.1.0

- SQL * Plus 10.2.0.1.0

- 10.2.0.2 or higher Patch Set for the Oracle Database Server

For Oracle 11g:

- Oracle 11g Client 11.1.0.6.0

- Oracle Network Utilities 11.1.0.6.0

- SQL * Plus 11.1.0.6.0

- 11.1.0.7.0 or higher Patch Set for the Oracle Database Server for HP-UX 11i v3 on HP Integrity

To install these products, in the `Select Installation Type` window select the `Custom` installation type.

To set up HPOM to use an independent database server system, follow the HP Operations Management Server installation procedure as described in the *HPOM Installation Guide for the Management Server*, but with exceptions in the procedure as described below.

During the installation procedure, answer the following questions as follows:

- `Do you want to set up the database manually`
  `(local/remote) (y|n):`

  Answer **y**.

- `Is the manually configured database already set up (y|n):`

  Answer **n**.

When the following message is displayed:

`Once you are finished with applying patches/setting up the`
`remote database, answer y to the following question to`
`continue with the configuration of the database. Do you want`
`to continue now (y|n):`

leave the `ovoinstall` window open without answering the question and in another window perform the procedure below as the root user:

IMPORTANT   This procedure replaces the procedure for setting up an independent database server, described in the *HPOM Installation Guide for the Management Server*.

1. Install the latest HPOM for UNIX Management Server patch (8.31).

2. Export `ORACLE_HOME`, `ORACLE_SID`, and `LANG` (for an appropriate `LANG` value, refer to *HPOM Administrator's Reference*).

3. Copy the following Net files from the Oracle database server to the HP Operations Management Server:

   - `$ORACLE_HOME/network/admin/sqlnet.ora`
   - `$ORACLE_HOME/network/admin/tnsnames.ora`
   - `$ORACLE_HOME/network/admin/tnsnav.ora`

   These files are required on the database server and the HP Operations Management Server. When you copy the files to the HP Operations Management Server, check that the directory paths point to the correct locations and modify them if necessary.

NOTE   `tnsnav.ora` and `sqlnet.ora` files are optional. In case you
configured these files on the database server, you should also
configure them on the HP Operations Management Server.

4. Run `/opt/OV/bin/OpC/opcdbsetup -p`

5. Optionally, if you configured additional user rights on the database
   server in step 6 while creating the HPOM database, you can run
   `/opt/OV/contrib/OpC/opc_odc` to verify the database setup (logfile
   is in `/tmp/opc_odc.log`).

Continue the installation procedure in the `ovoinstall` window. Answer
y to the previous question and proceed with the installation. For details,
refer to the *HPOM Installation Guide for the Management Server*.