Eigner PLM 5.1

Installation Manual for Oracle 9i for Eigner PLM 5.1 on Windows

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Chapter 1

Introduction

This guide is intended as a quick handbook for installing Oracle9*i* and adapting the Oracle database for use with Eigner PLM 5.1 running under Windows 2000/XP/2003.

Where to Go for More Information

For additional information, consult the Oracle online installation and administration documentation, which is available on the Oracle Server CD disk1 or Eigner PLM DVD in folder disk1. The Oracle Documentation Library, which contains information about Oracle databases, is available on a separate Oracle documentation CD or Eigner PLM DVD folder oradoc.

For information on installing Oracle 9*i* and Eigner PLM at the same time, refer to the document *Installing the Eigner PLM 5.1 on Windows Server*.

> Note: The Eigner PLM installation guides are available in the doc directory on the product CD. To view Adobe® Portable Document Format (PDF) files, use Adobe Acrobat Reader® software, which is available at no charge at www.adobe.com.

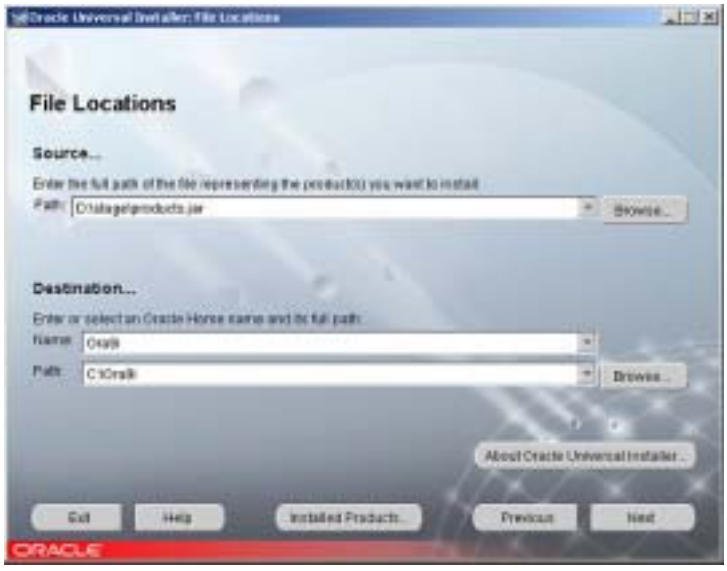
Chapter 2

Installing Oracle 9*i*

This chapter provides instructions for installing the Oracle 9*i* Server for use with Eigner PLM .

Starting the Oracle Server Installation

1. Insert the Oracle CD 1 and select **Install/Deinstall Products. If you are using the Eigner PLM 5.1 DVD, start setup.exe in folder disk1.**
2. Click **Next** to continue.
   The window for defining the file location is opened,



3. Enter the full path of your Oracle home directory and click **Next**.
   A list of available products is loaded.

4. Select **Oracle9i Database 9.2.0.1.0** and click **Next**.
5. Choose the Custom installation and click **Next**.
   The next window lets you select the components to be installed.

6. Select the components you want to install and click **Next.**
7. Confirm or change the destination location and click **Next**.

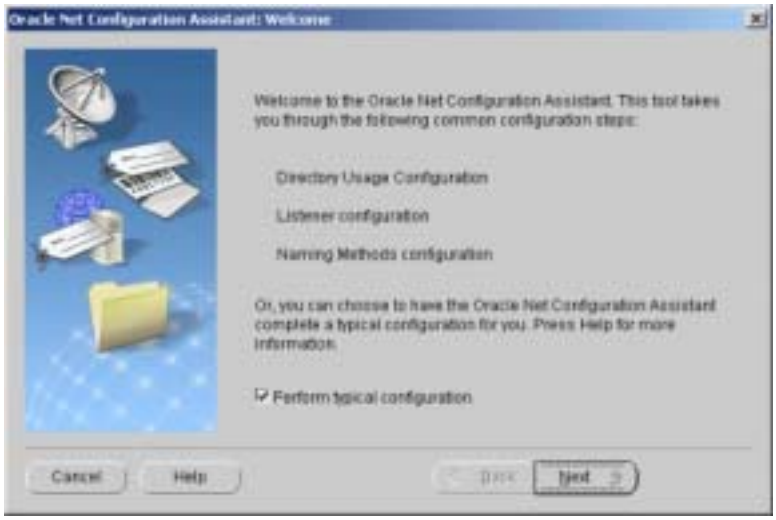
8. On the Create Database Screen, select **No** as you will create the database later and click **Next.**

9. Review the options you have chosen on the Summary screen. If necessary, click **Previous** to make changes

10. If the options are correct, click **Install** to start the installation.

The Oracle 9.2. installation begins. The installation may take some time.

After the installation is completed, the Oracle Net Configuration Assistant is opened.



11. Select **Perform typical configuration** and click **Next**.

The following features will be installed

- Oracle Net Configuration Assistant
- Agent Configuration Assistant

12. Click **Exit** to leave the Oracle Installer.

Installing Patches

After you have installed the Oracle Server Software from the original Oracle CDs, copy the corresponding Patch Set from the Agile Oracle Add-On CD to your server machine. Uncompress and extract the zip archive. The patch directory will contain a setup file that should be run to start the patch process.

Note: Please make sure all Oracle 9i services are stopped, before you start the setup.

1. Select **Installed Products** to review your already installed Oracle software components.
2. If the list is correct, click **Next**.
3. Review the Oracle Home name and path. (same values as in your previous Oracle 9i installation) and click **Next.**
4. Select **OUI 2.2.0.18.0** to install the patch for the Oracle Universal Installer and click **Next**.

5. Review the summary in the upcoming window and click **Install** to start patch installation.
6. After successful installation click **Next Install**.
7. Review the Oracle Home name and path. (same values as in your previous Oracle 9i installation) and click **Next**.
8. Select **Oracle 9iR2 Patch Set** and click **Next**.

9. Review the List of available components and click **Install** to start the Installation. This may take a while.
10. After successful installation, click **Exit** to leave the Oracle Universal Installer.

If possible, create the database after you have installed the patches. If you created the database prior to installing the patches, you will need to re-create the data dictionary:

Note: Refer also to the patch readme file for additional information.

1. Startup the Oracle listener.

```
lsnrctl start
```

2. Log in as sysdba using SQL*Plus.

```
sqlplus /nolog

connect system/oracle@plm as sysdba
```

3. Startup database in migrate mode

```
startup migrate
```

4. Run script catpatch.sql

```
@{ORACLE_HOME}\rdbms\admin\catpatch.sql
```

Note: Please substitute {ORACLE_HOME} with the path of your Oracle home directory.

Installing the Database

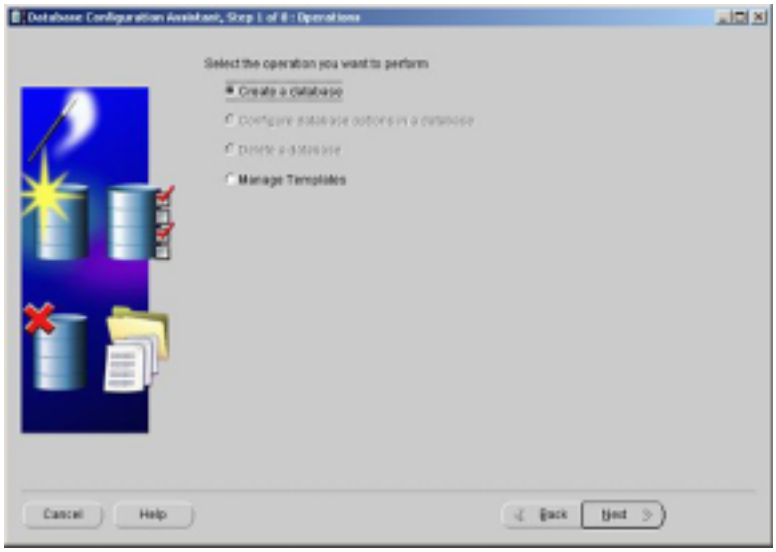
The database will be created by using Database Configuration Assistant (DBCA) templates provided in folder doc/OracleAddOn/win/templates. DBCA templates include database options, initialization parameters, and storage information for datafiles, tablespaces, control files and redo logs.

Six different templates are predefined to meet different requirements according to purpose, size and amount of the Eigner PLM database installation.

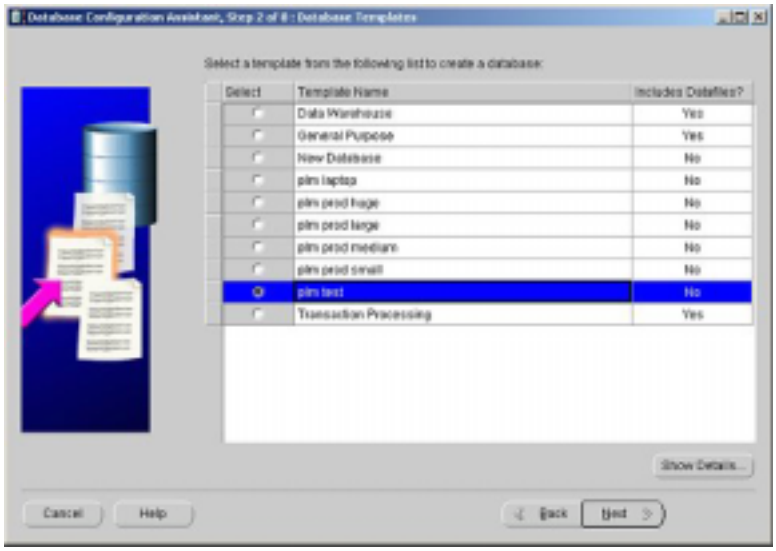
Template Name	Description
Plm_laptop	- small sized database especially designed for laptop installations
Plm_test	- database designed for test installations - number of concurrent users < 40 - no archiving
Plm_prod_small	- database designed for productive use - number of concurrent users < 40 - approximate database dump size: 250 MB - archiving
Plm_prod_medium	- database designed for productive use - number of concurrent users: 40 - 80 - approximate database dump size: 1 GB - archiving
Plm_prod_large	- database designed for productive use - number of concurrent users: 80 – 120 - approximate database dump size: 2 GB - archiving
Plm_prod_huge	- database designed for productive use - number of concurrent users: 120 - 150 - approximate database dump size: 2 GB and above - archiving

Additional information on significant database parameters and settings of each template can be found in the Appendix. Decide which templates corresponds to your needs approximately. It is also possible to adapt any of the values during the database creation process.

1. Copy the DBCA template file (e.g. plm_test.dbt) to {ORACLE_HOME}\assistants\dbca\templates.
2. Start the Oracle Database Configuration Assistant from Windows Start Menu **Start > Oracle - OraHome92 > Configuration and Migration Tool > Database Configuration Assistant**.
   An introduction window is opened.
3. Click **Next** to start the database configuration.
4. Select **Create a database** and click **Next.**

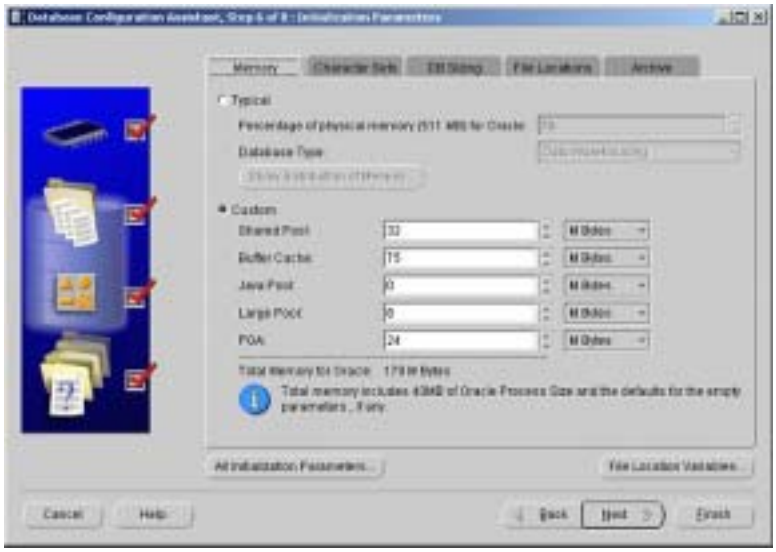


A list of different templates is provided. You should also see the template that you have chosen and copied in step 1.



5. Select the template you want to use and click **Next**.
6. Enter the global database name and SID (default: plm).
   The next window provides database features and the possibility to run custom scripts after database creation. It is not recommended to change the settings provided by the template.
7. Click **Next**.
8. Select **Dedicated Server Mode** and click **Next** .

   The next window provides diverse database parameters. You can navigate to the setting of memory, character sets, databases sizing, file locations, and archiving.



The values are Agile's recommendations for the selected kind of database installation.

9. Adjust the values if necessary.

Note: For productive installations it is highly recommended to archive the database. The archive log mode and the destination of the archive directory can be specified at the Archive folder.

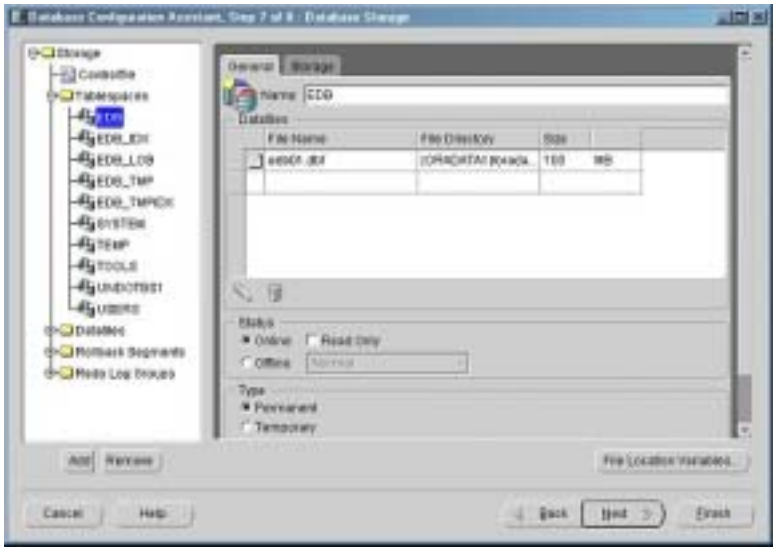
10. Click **File Location Variables** to review and adapt the file location to your system.
See table below for detailed information on predefined file destination variables.

Variable	Description
ORADATA1	Data files of tablespaces EDB, EDB_LOB, EDB_TMPIDX
ORADATA2	Data files of tablespaces EDB_IDX, EDB_TMP
ORADATA3	Data files of temporary tablespace TEMP
ORADATA4	Data files of undo tablespace
ORADATA5	Data files of tablespaces SYSTEM, TOOLS, USERS
ORAARCH	archive log files
REDO1	redo log files
REDO2	redo log files

Note: If the Shared Pool size is smaller than 32MB (e.g. when using plm_laptop template), there will be a warning that Oracle's minimum size recommendation is not met. This can be ignored by clicking **No**.

11. Click **Next.**

In the next step, the storage parameters for control files, tablespaces, datafiles, rollback segments and redo log files can be reviewed and modified.

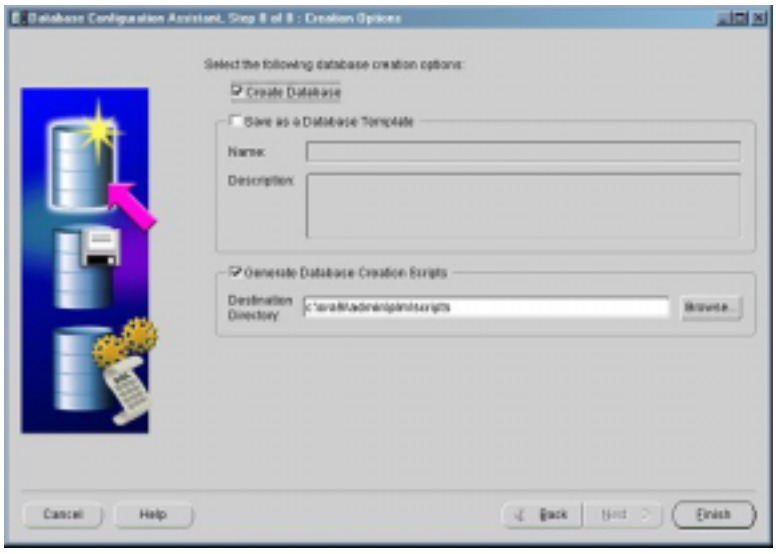


12. Double-click an object on the left want to edit and modify the settings in the right window section.

Note: The predefined values are reflecting Agile's recommendations according to the chosen kind of database installation.

13. Click **Next**.

14. Select **Create Database** to start the database creation immediately.



It is recommended to choose also the option **Generate Database Creation Scripts** and to define a destination directory (default: {ORACLE_HOME}\admin\plm\scripts). Those scripts are useful for future reference or use.

15. Click **Finish.**

A summary of the database parameter is displayed.

16. Click **Save as HTML file** for future reference and click **OK**.
The database creation process is started.

Note: During the database instance creation (in step “Creating data dictionary views”) it is possible that following warning occurs: **ORA-29807: specified operator does not exist**'. This is a known Oracle bug (will be fixed in next release). Click Ignore to continue.

17. After successful database creation, enter a password for the SYS and SYSTEM accounts in the new database.

Note: The password “manager” is not allowed.

18. Click **Exit** to finish the process.

Chapter 3

Modifying the Oracle Database

Creating a Database User

You will need to create the Eigner PLM database user and provide the necessary privileges and quotas. You can do this using the commands in the following section, or using the Oracle Enterprise Manager Console, as described in the section below.

Using SQL to create a user

1. Create a database user (named, for example, plm):

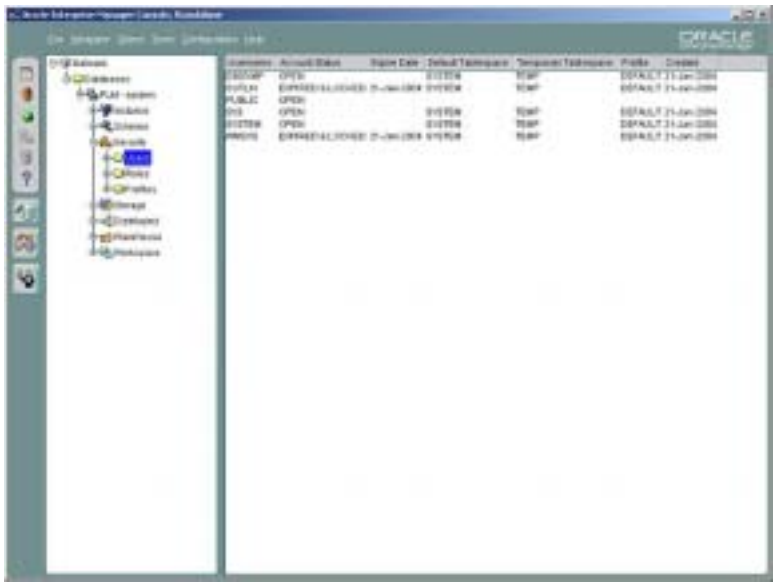
```
CREATE USER PLM
IDENTIFIED BY <PASSWORD>
DEFAULT TABLESPACE "EDB"
TEMPORARY TABLESPACE "TEMP"
PROFILE DEFAULT
QUOTA UNLIMITED ON "EDB"
QUOTA UNLIMITED ON "EDB_IDX"
QUOTA UNLIMITED ON "EDB_TMP"
QUOTA UNLIMITED ON "EDB_TMPIDX"
QUOTA UNLIMITED ON "EDB_LOB"
ACCOUNT UNLOCK;
GRANT "CONNECT" TO PLM;
GRANT CREATE PROCEDURE TO PLM;
GRANT CREATE VIEW TO PLM;
GRANT CREATE TRIGGER TO PLM;
ALTER USER PLM DEFAULT ROLE ALL;
```

A default script (cre_plm_usr.sql) with these commands can be found on the Agile Oracle Add-On CD.

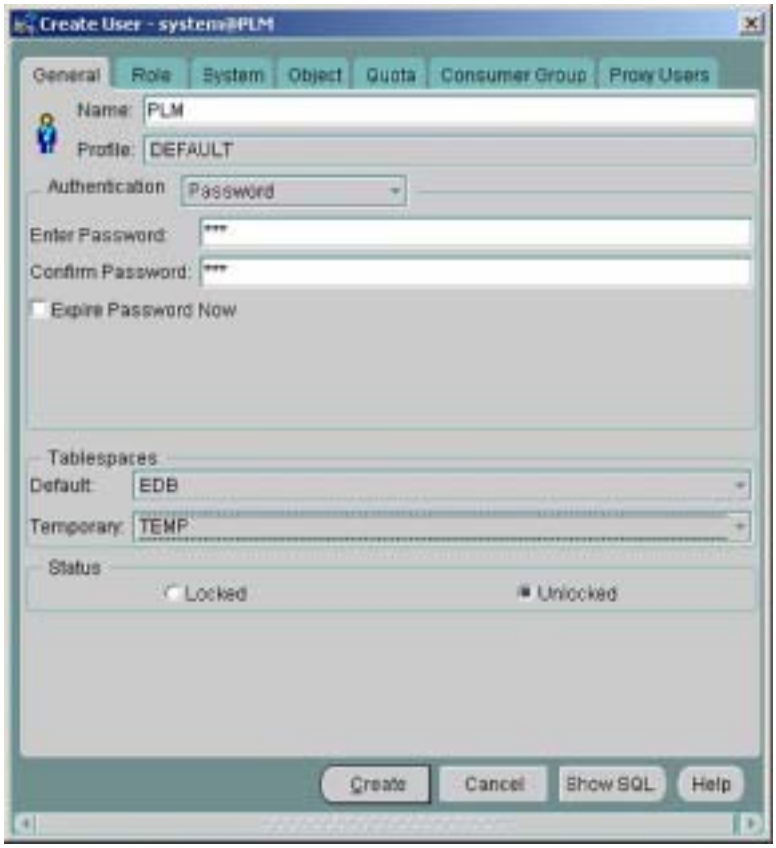
Using Oracle Enterprise Manager Console to create a user

1. Start the Oracle Enterprise Manager Console from the Windows Start Menu **Start > Oracle > Enterprise Manager Console**.
2. Choose **Launch standalone** and click **OK**.

3. Double-click **Databases** on the left to expand the database tree. The new database is displayed in the list. (Default name: PLM).
4. Double-click the database name to login.
5. Login as SYSTEM user.
6. Double-click on **Security** in order to explore this section.



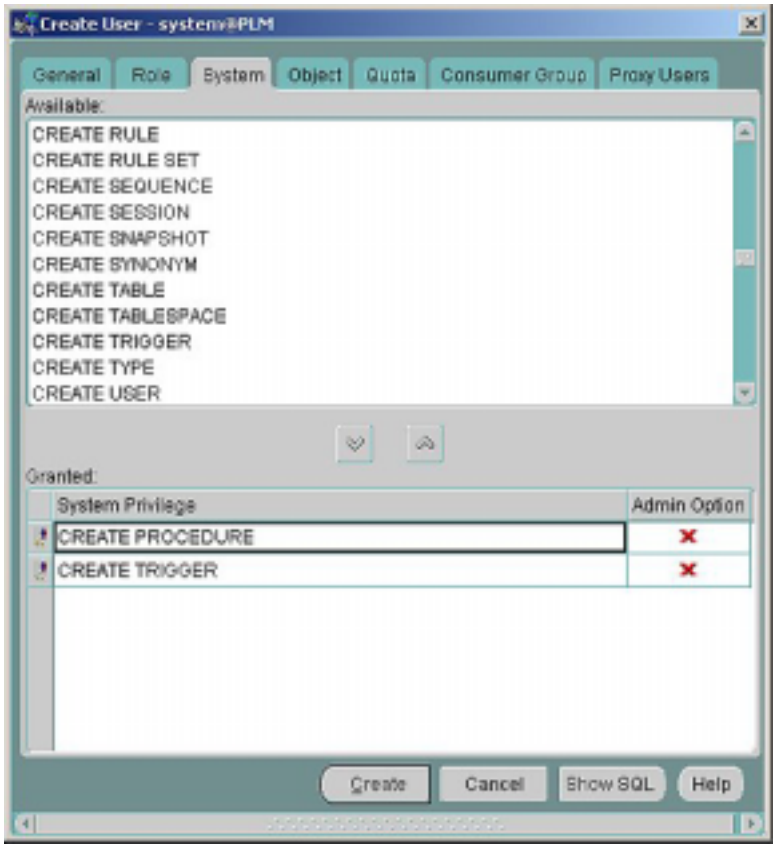
2. Right-click Users and choose **Create** from the context menu. The **Create User** window is opened.



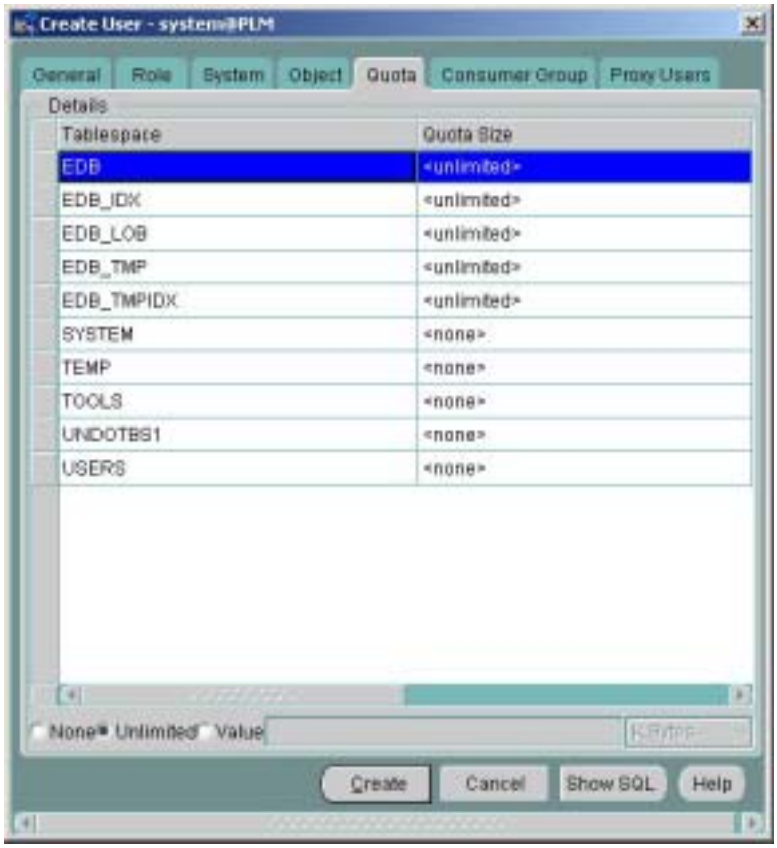
3. Click on the **General** tab and insert a user name and password, and assign default and temporary tablespaces.

   Note: Click the **Role** tab, double-click CONNECT so it appears in the Role window, and then click in the default column to grant the role.

4. Click on the **System Privileges** tab, and grant the privileges CREATE PROCEDURE CREATE VIEW and CREATE TRIGGER.



5. Click the **Quota** tab, and assign unlimited quota on EDB, EDB_IDX, EDB_LOB, EDB_TMP and EDB_TMPIDX.



6. Click **Create** to finish the database user creation.

Importing the Database Dump

Import the Eigner PLM dump using the following commands, and then check the logfile for errors.

```
imp plm/plm@plm file=plm50.dmp log=plm50.log buffer=132000 commit=y analyze=n full=y
```

commit=y	rollback segments cannot get too small
analyze=n	no statistics will be created
buffer=132000	necessary for lobs, better performance
full=y	imports full dump even if the dump was exported by different user

Create Statistics

If you are using Oracle's cost based optimizer (optimizer_mode=choose), which is the default setting, Agile highly recommends creating statistics in order to avoid performance loss. This should be done after the dump import and has to repeated periodically.

Calculate statistics on all tables and indexes in db schema PLM:

```
SQL> EXECUTE DBMS_STATS.GATHER_SCHEMA_STATS('PLM',CASCADE =>true);
```

Calculate statistics on all tables and indexes in db schema PLM with 5% of the rows:

```
SQL> EXECUTE DBMS_STATS.GATHER_SCHEMA_STATS('PLM', estimate_percent => 5, CASCADE
=>true);
```

Drop all statistics of PLM schema objects. Optimizer is now running in rule mode.

```
SQL> EXECUTE DBMS_STATS.DELETE_SCHEMA_STATS('PLM');
```

For all schema objects, their must be statistics available to support the cost based optimizer. If tables and indexes are modified or created, statistics must be established.

Calculate statistics on all tables without statistics and their indexes in db schema PLM with 5% of the rows:

```
SQL> EXECUTE DBMS_STATS.GATHER_SCHEMA_STATS(ownname => 'PLM',options => 'GATHER
EMPTY', estimate_percent => 5, CASCADE =>true);
```

Calculate statistics on tables t_master_dat and their indexes in db schema PLM_ENTW with 10% of the rows:

```
SQL> exec sys.dbms_stats.gather_table_stats(ownname=> 'PLM_ENTW', tabname=> 'T_MASTER_DAT',
partname=> NULL , estimate_percent=> 10 ,cascade=> true);
```

Statistic information can be viewed e.g. in user_tables and user_indexes. These views provide information like average row length and number of rows.

Set access rights for axalantrt

The Eigner PLM runtime user needs read permission on the Oracle software. You can use the Explorer,

1. Select the Oracle software folder and
2. Select properties
3. Give local user axalantrt read access

or you can use the following command:

```
cd c:\oracle
cacls ora92 /c /t /e /g axalantrt:R
```

Deinstall Oracle for Windows

If you have a improper Oracle installation. A second installation try will fail. You have to deinstall Oracle and then try from scratch. The automate Oracle installation performed by Eigner PLM or axalant setup is only possible if Oracle is not installed on the system.

Deistall Oracle:

1. If you want to deinstall Windows Service entries for databases use oradim
   `oradim -delete -SID axa`

2. Shutdown all Oracle Services
3. Start Oracle Installer
4. Select all packets except the Oracle Installer themself
5. Press remove
6. Drop Oracle folders (Oracle Home: c:\orant, Oracle Installer: c:\programme\oracle)
7. drop the registry leave HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE
8. If still windows services exist, drop the special registry sections in HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Oracle*
9. Reboot machine

Oracle installation on Windows failed

These are the most likely reasons why the Oracle installation do not start.
If the software is installed (C:\oracle\ora92*) and registry entries are created (HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE) the creation of the database may fail.

Possible reasons:

- insufficient memory (Oracle parameters to high, small RAM size)
- incorrect internal password
- no administrative rights on the machine
- wrong path definition
- not enough disk space for datafiles
- ..

Please see

- Database create logs: C:\oracle\admin\plm\create\cre*.log
- Instance Parameter file: C:\oracle\admin\plm\pfile\init.ora
- Database log file: D:\oracle\admin\plm\bdump\plmALRT.LOG
- Network configuration: C:\oracle\ora92\network\ADMIN*.ora

Chapter 4

Appendix A

The most significant parameters of the predefined Database Configuration Assistant templates are referenced in the following.

Recommended Settings

Parameter	Value
db_name	Plm
instance_name	Plm
undo_management	AUTO
hash_join_enabled	FALSE
optimizer_index_caching	90
optimizer_index_cost_adj	50
compatible	9.2.0.0.0
timed_statistics	FALSE
characterSet	WE8ISO8859P15
nationalCharacterSet	UTF8

Template “plm_laptop”

Parameter/Setting	Value
db_block_size	2 k
db_cache_size (buffer)	35 MB
db_file_multiblock_read_count	32
shared_pool_size	12 MB
sort_area_size	524288
open_cursors	600
processes	40

pga_aggregate_target	17 MB
Tablespaces	dictionary managed
EDB	25 MB
EDB_IDX	25 MB
EDB_LOB	5 MB
EDB_TMP	1 MB
EDB_TMP_IDX	1 MB
Redolog file size	5 MB
archiveLogMode	FALSE

Template “plm_test”

Parameter/Setting	Value
db_block_size	2 k
db_cache_size (buffer)	75 MB
db_file_multiblock_read_count	64
shared_pool_size	32 MB
sort_area_size	524288
open_cursors	600
processes	80
pga_aggregate_target	24 MB
Tablespaces	local manageded
EDB	100 MB
EDB_IDX	100 MB
EDB_LOB	5 MB
EDB_TMP	5 MB
EDB_TMP_IDX	5 MB
Redolog file size	5 MB

archiveLogMode	FALSE

Template “plm_prod_small” 40 users max

Parameter/Setting	Value
db_block_size	4 k
db_cache_size (buffer)	100 MB
db_file_multiblock_read_count	32
shared_pool_size	32 MB
sort_area_size	524288
open_cursors	600
processes	100
pga_aggregate_target	24 MB
Tablespaces	local managed
EDB	300 MB
EDB_IDX	300 MB
EDB_LOB	5 MB
EDB_TMP	5 MB
EDB_TMP_IDX	5 MB
Redolog file size	5 MB
archiveLogMode	TRUE

Template “plm_prod_medium” 80 users max

Parameter/Setting	Value
db_block_size	8 k
db_cache_size (buffer)	250 MB
db_file_multiblock_read_count	32

shared_pool_size	50 MB
sort_area_size	524288
open_cursors	600
processes	180
pga_aggregate_target	40 MB
Tablespaces	local managed
EDB	1,5 GB
EDB_IDX	1,5 GB
EDB_LOB	5 MB
EDB_TMP	5 MB
EDB_TMP_IDX	5 MB
Redolog file size	10 MB
archiveLogMode	TRUE

Template “plm_prod_large” 120 user max

Parameter/Setting	Value
db_block_size	8 k
db_cache_size (buffer)	500 MB
db_file_multiblock_read_count	32
shared_pool_size	75 MB
sort_area_size	524288
open_cursors	600
processes	260
pga_aggregate_target	60 MB
Tablespaces	local managed
EDB	2 data files, each 1,5 GB
EDB_IDX	2 data files, each 1,5 GB

EDB_LOB	5 MB
EDB_TMP	10 MB
EDB_TMP_IDX	10 MB
Redolog file size	10 MB
archiveLogMode	TRUE

Template “plm_prod_huge” 150 users max

Parameter/Setting	Value
db_block_size	8 k
db_cache_size (buffer)	500 MB
db_file_multiblock_read_count	64
shared_pool_size	95 MB
sort_area_size	524288
open_cursors	600
processes	320
pga_aggregate_target	75
Tablespaces	local managed
EDB	2 data files, each 1,5 GB
EDB_IDX	2 data files, each 1,5 GB
EDB_LOB	5 MB
EDB_TMP	10 MB
EDB_TMP_IDX	10 MB
Redolog file size	10 MB
archiveLogMode	TRUE