



Setting up a CityGRID® database using Oracle 11g

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1. Installation Oracle 11g (database server)

Install Oracle 11g with basic settings. The database must not be a starter database.

Uncheck 'Create Starter Database (additional 1482MB)'

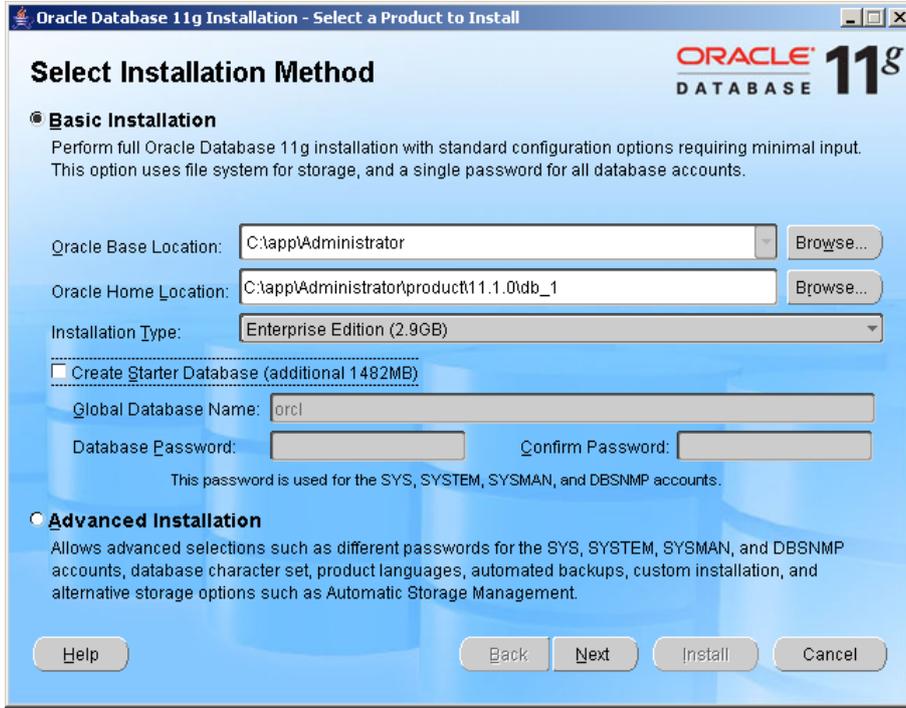


Fig. 01: basic settings

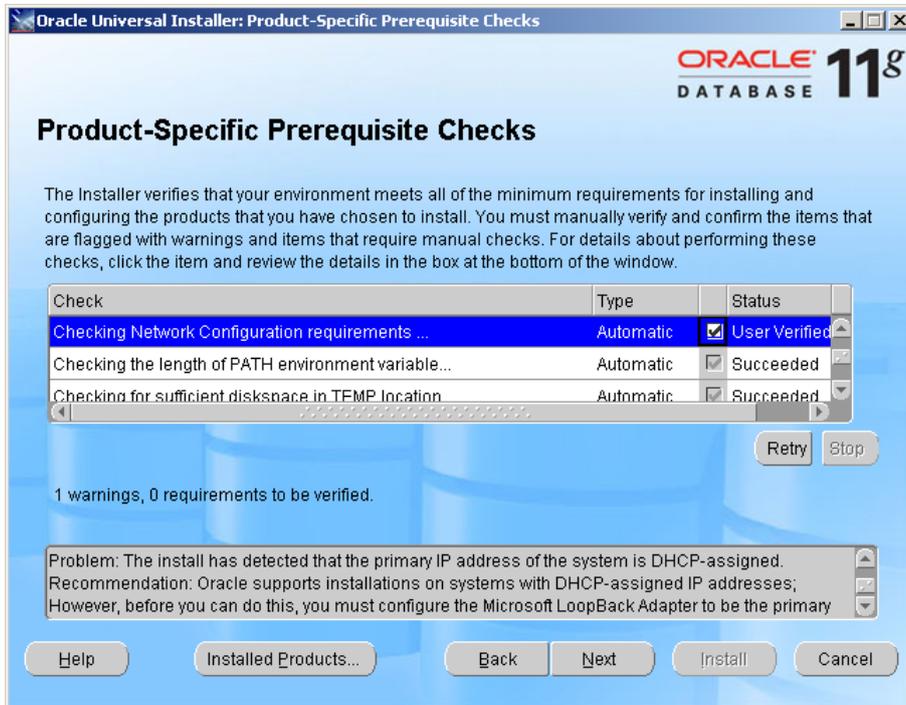


Fig. 02: basic settings

Please ignore the warning regarding the DHCP error message.

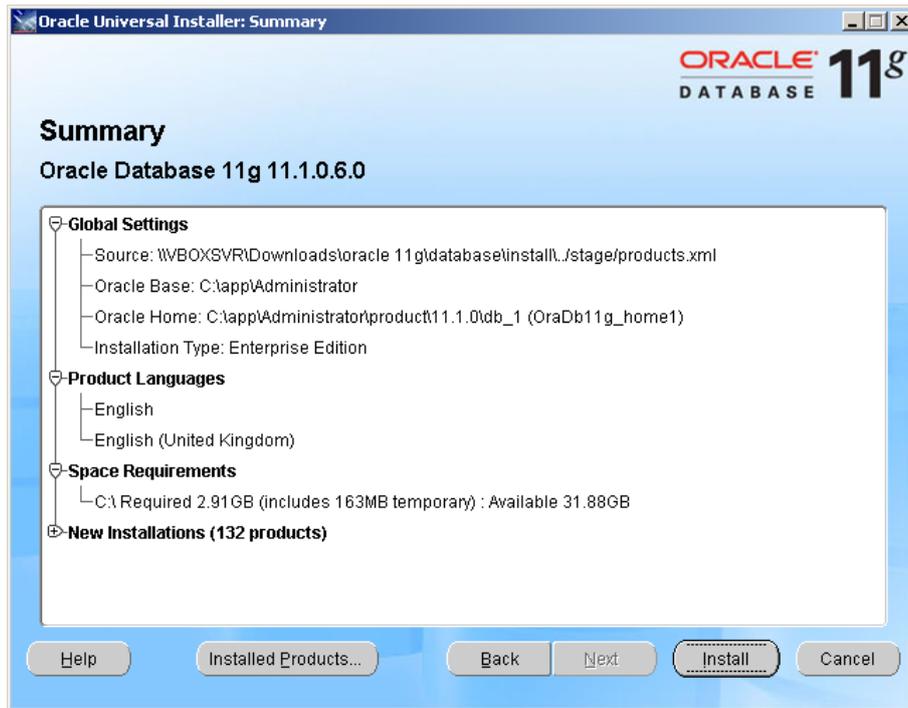


Fig. 03: summary

After the summary start the installation process with `Install`.

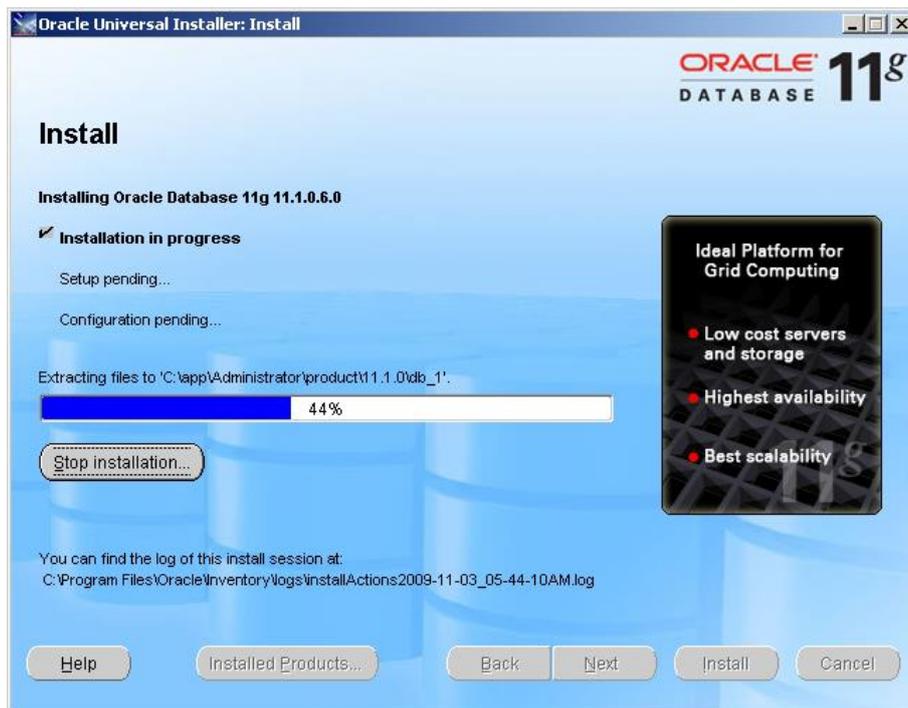


Fig. 04: Installation

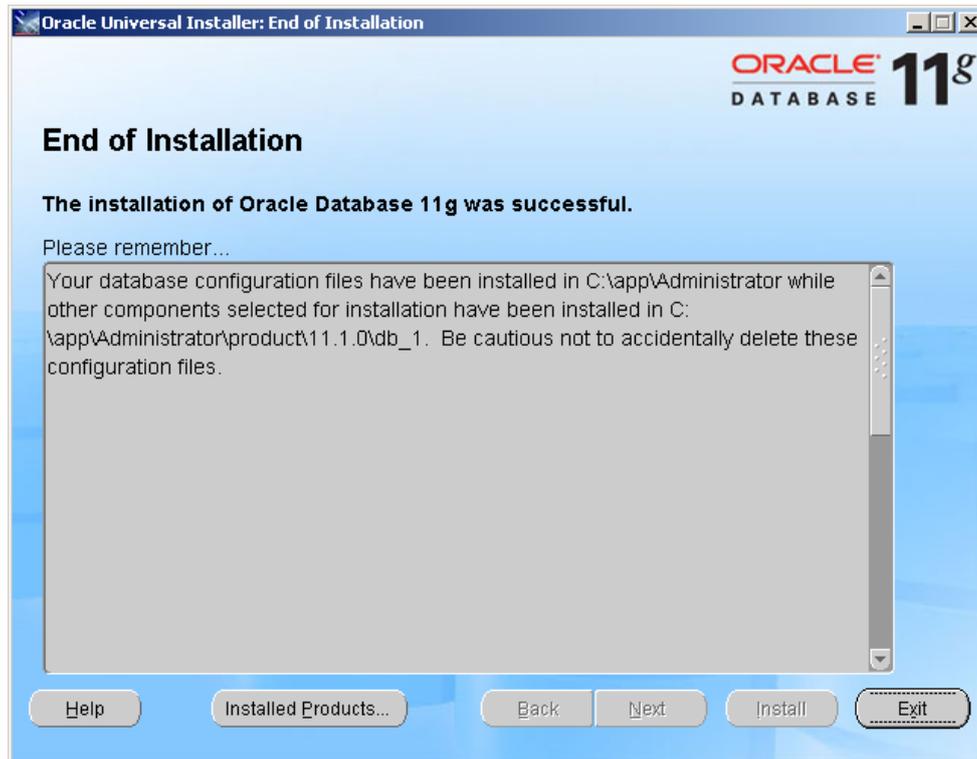


Fig. 05: End of installation

After the end of the installation leave the dialog with EXIT.

2. Configure Oracle-Listener

The listener accepts the connections and then addresses the correspondingly addressed database system or its instance behind it. It only has to be set up once per computer.

Start Net Configuration Assistant to create a listener.

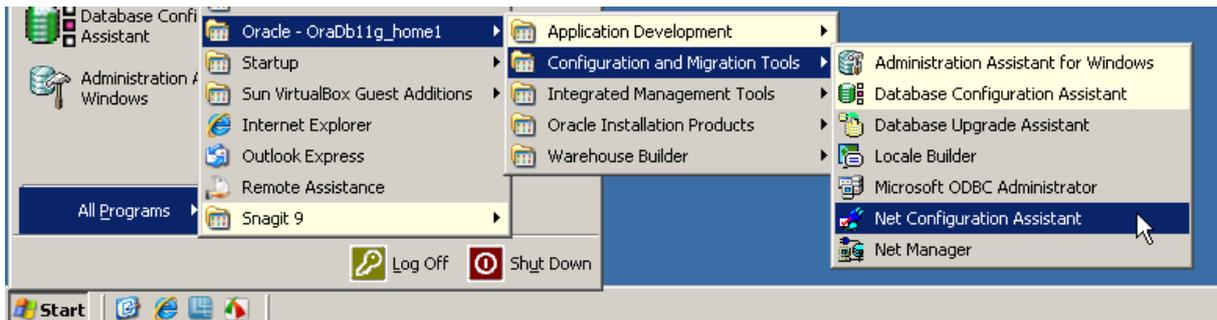


Fig. 06: start Net Configuration Assistant.

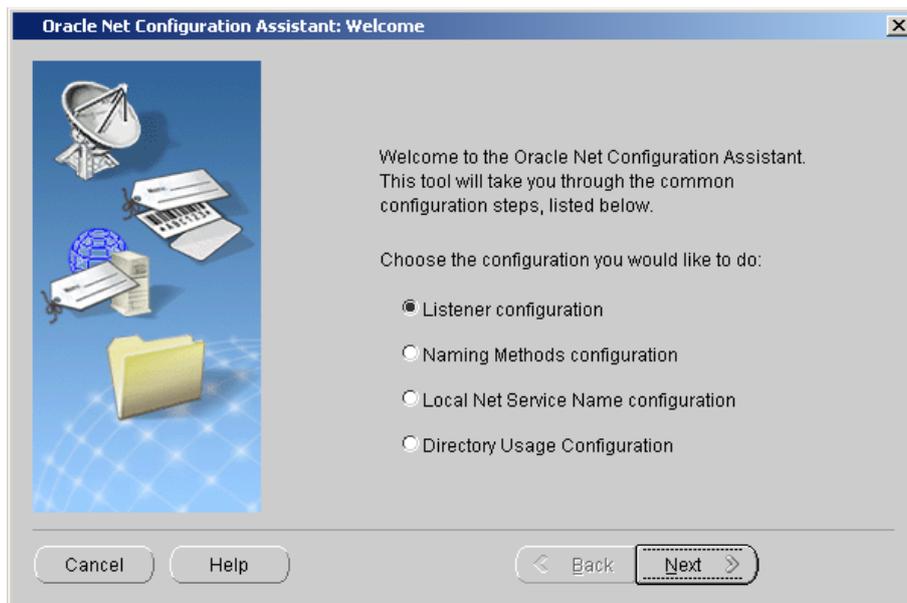


Fig. 07: Listener configuration

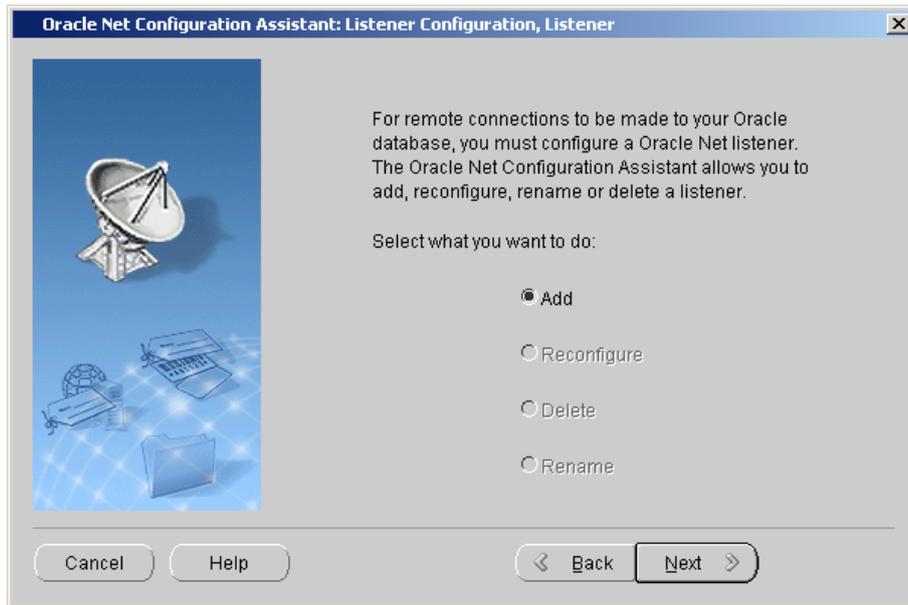


Fig. 08: Add Listener

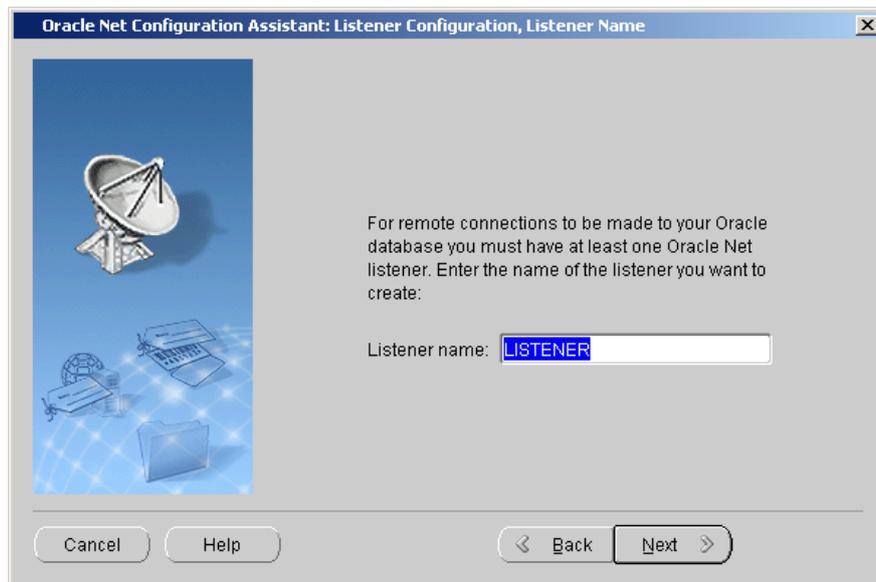


Fig. 09: define Listener name

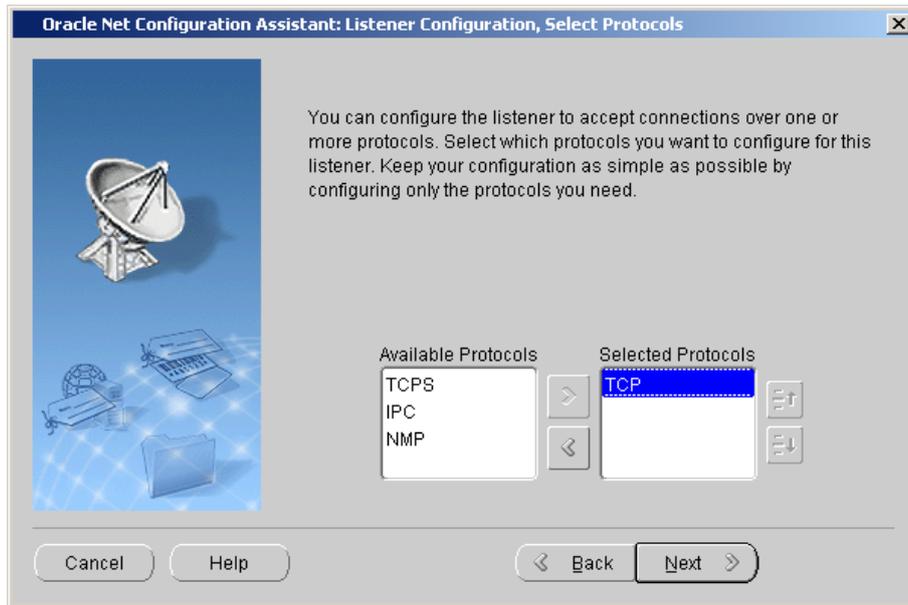


Fig.10: select TCP as protocol

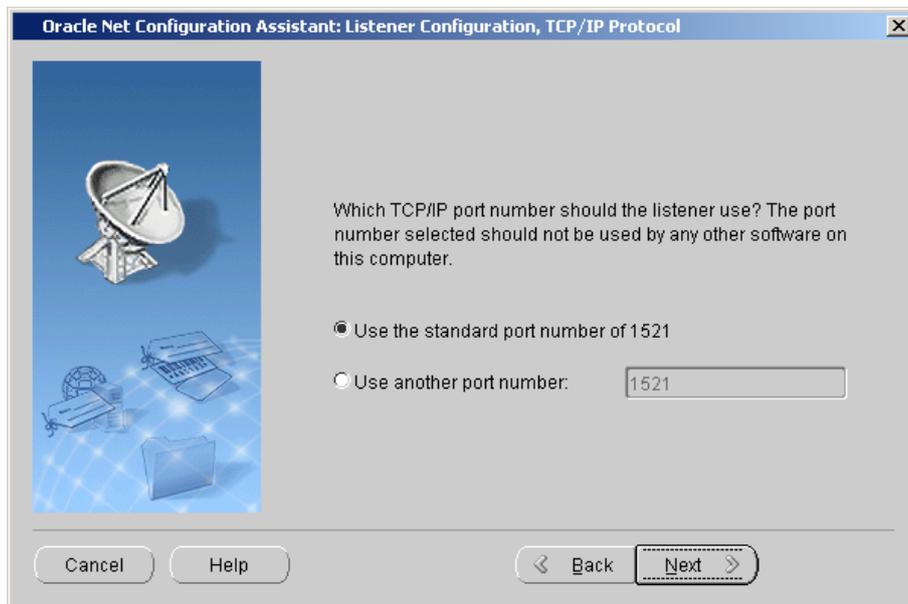


Fig. 11: accept standard port

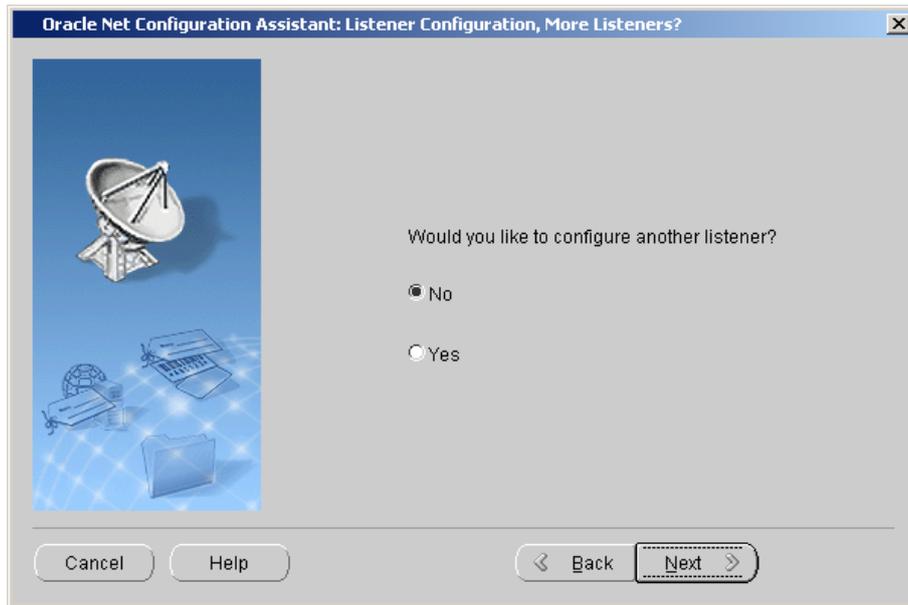


Fig. 12: no additional listener necessary



Fig. 13: exit assistant

3. Creating a database

To create a new database, please start the Database Configuration Assistant.

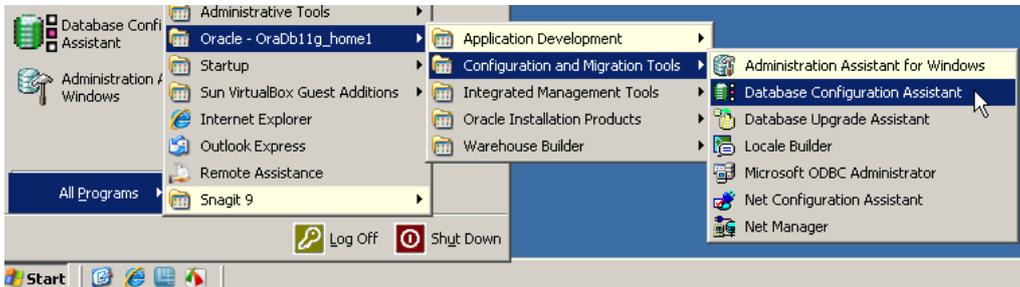


Fig. 14: start Database Configuration Assistant

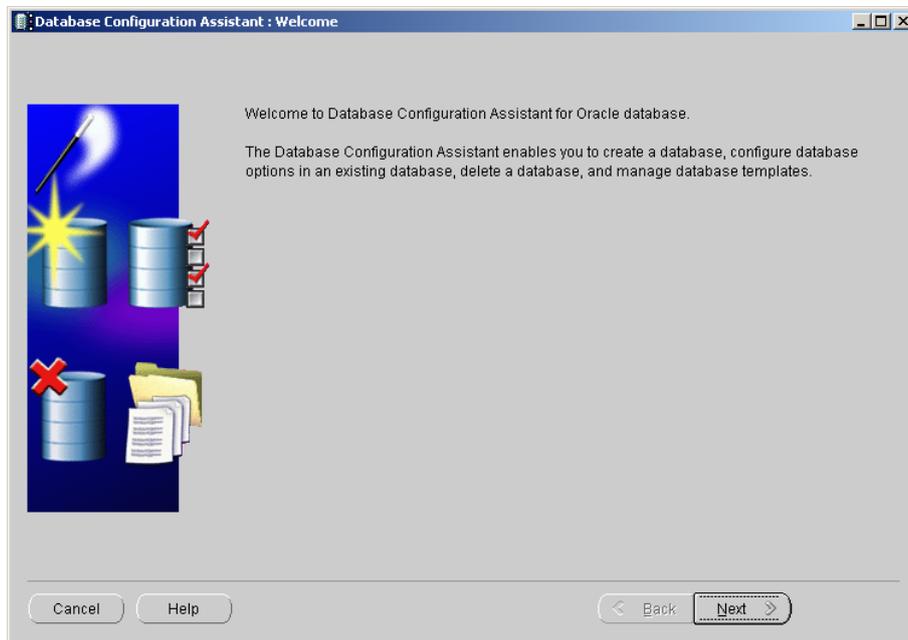


Fig. 15: start Database Configuration Assistant

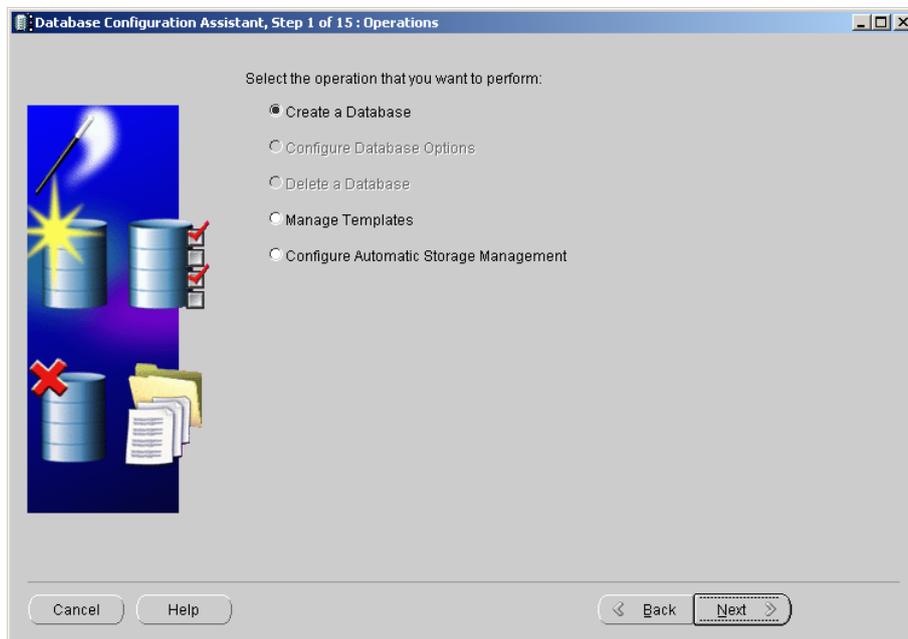


Fig. 16: create new database

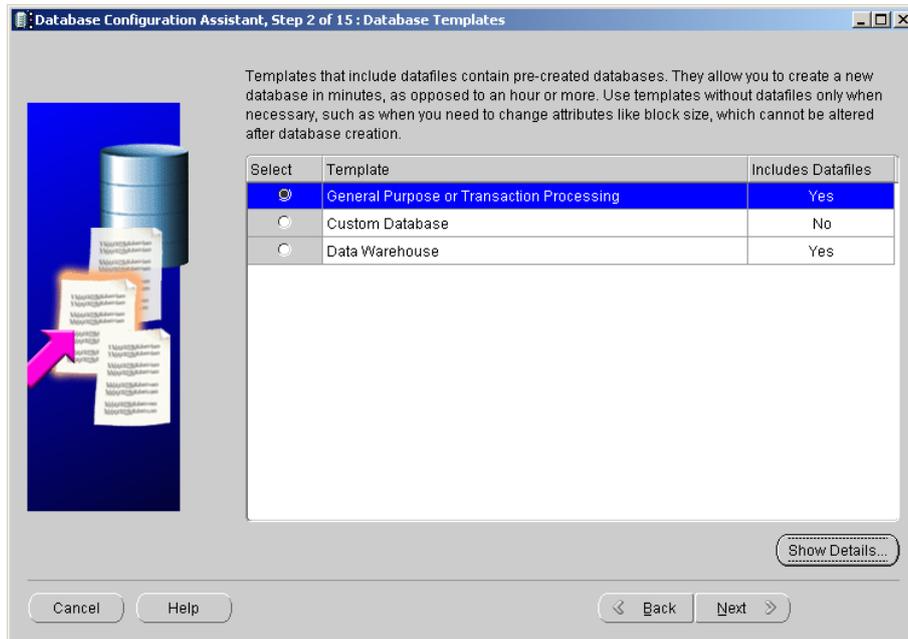


Fig. 17: select General Purpose or Transaction Processing database

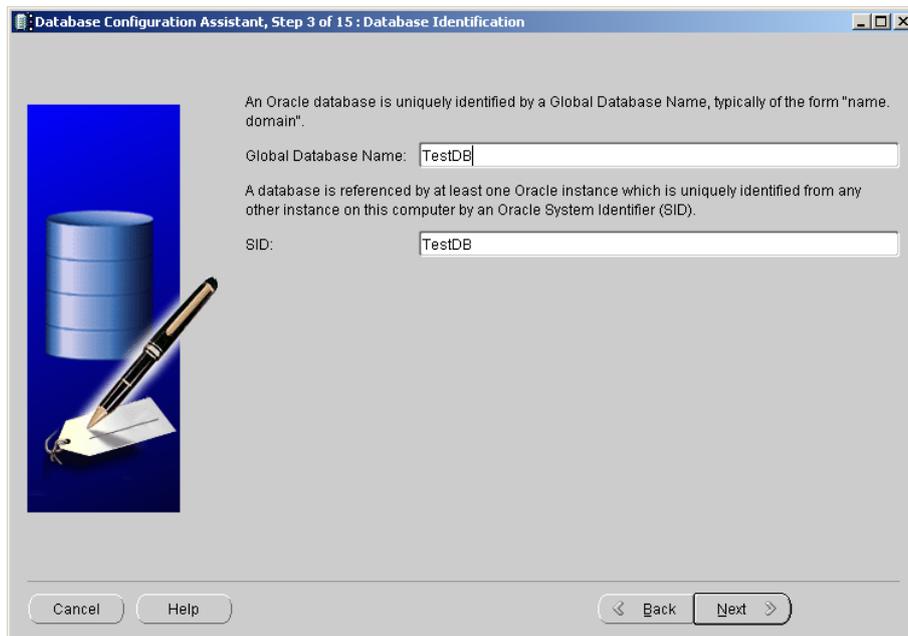


Fig. 18: set a database name

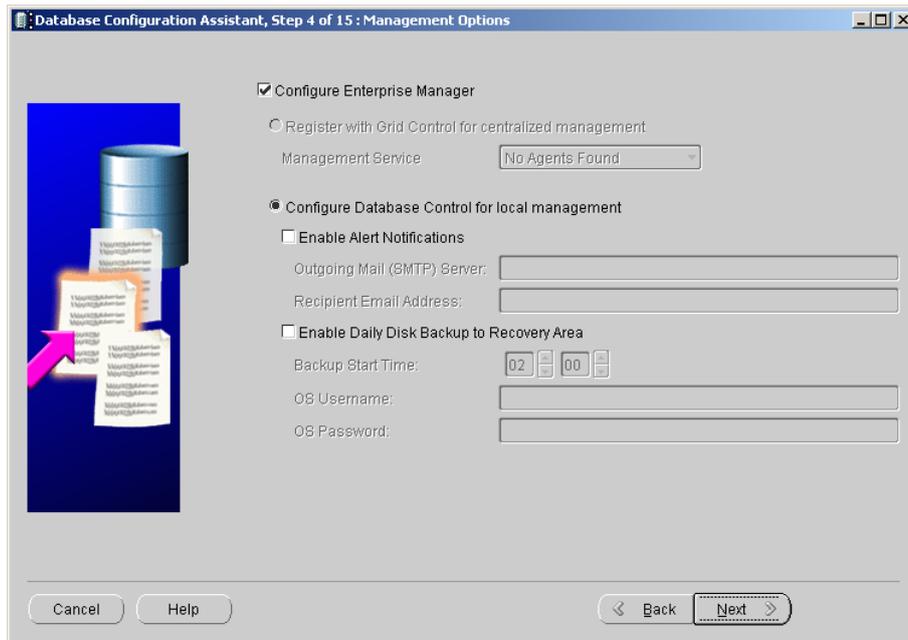


Fig. 19: Set management options as shown in the figure

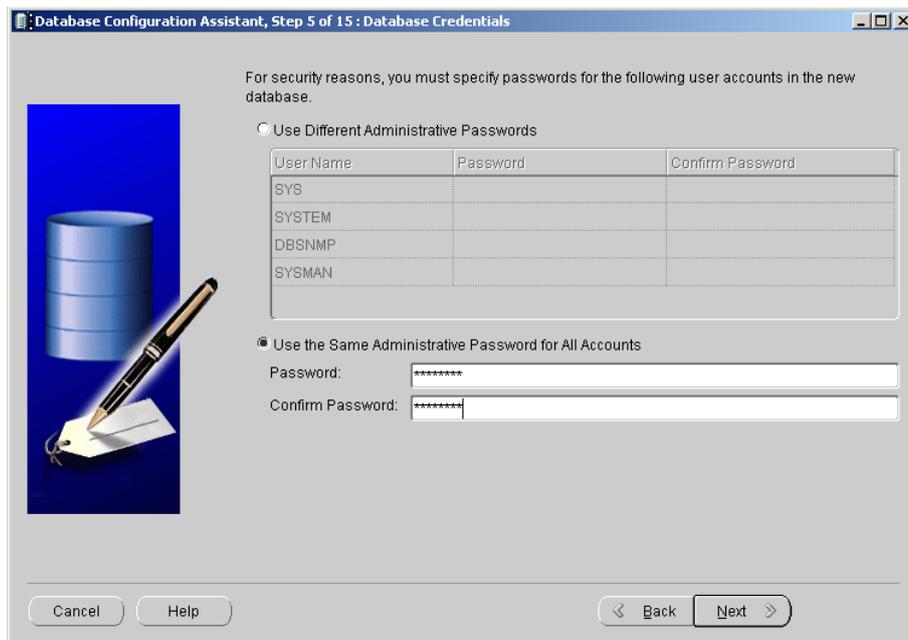


Fig. 20: set a password.

Use the same Administrative Password for all accounts

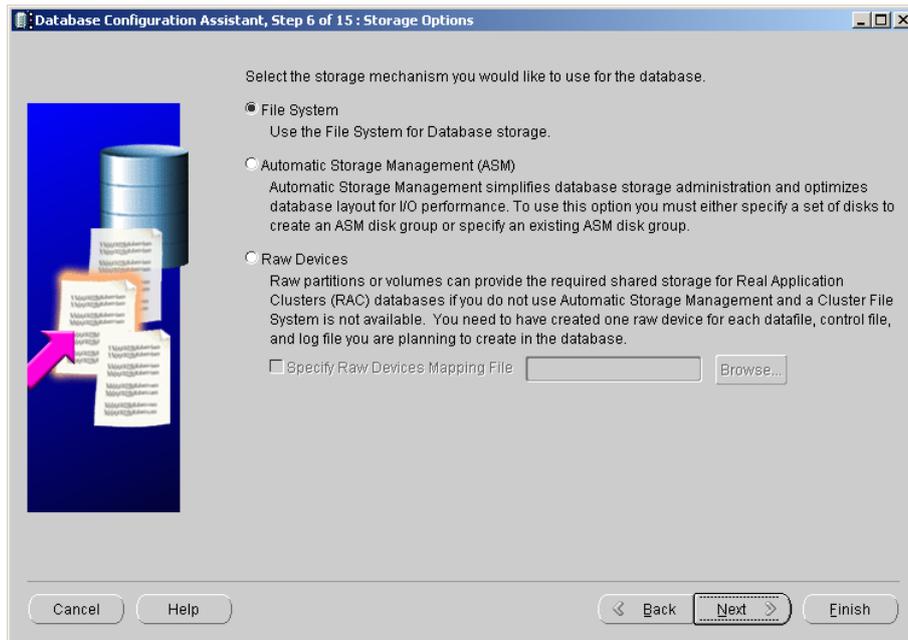


Fig. 21: use file system as storage mechanism

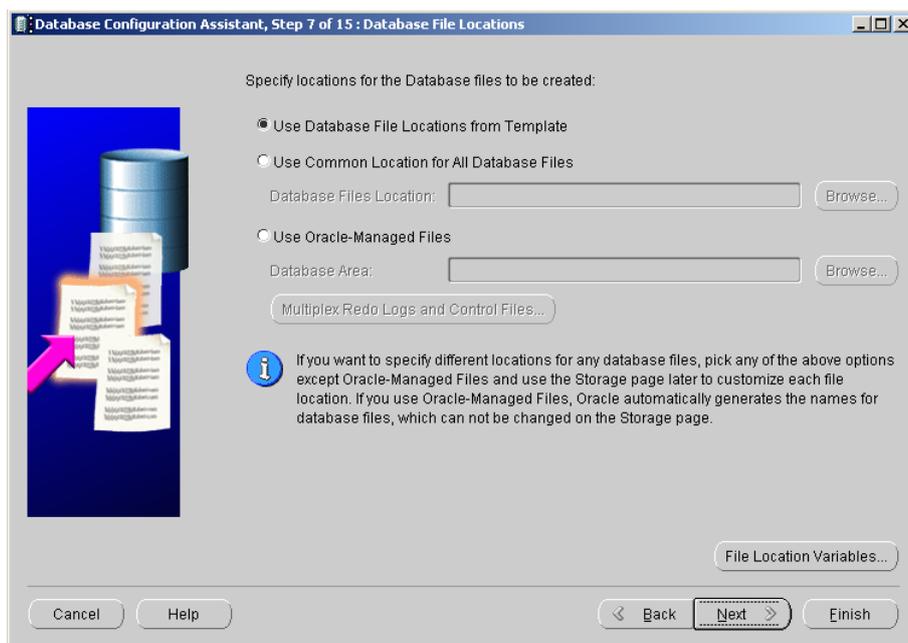


Fig. 22: use database file location as template .

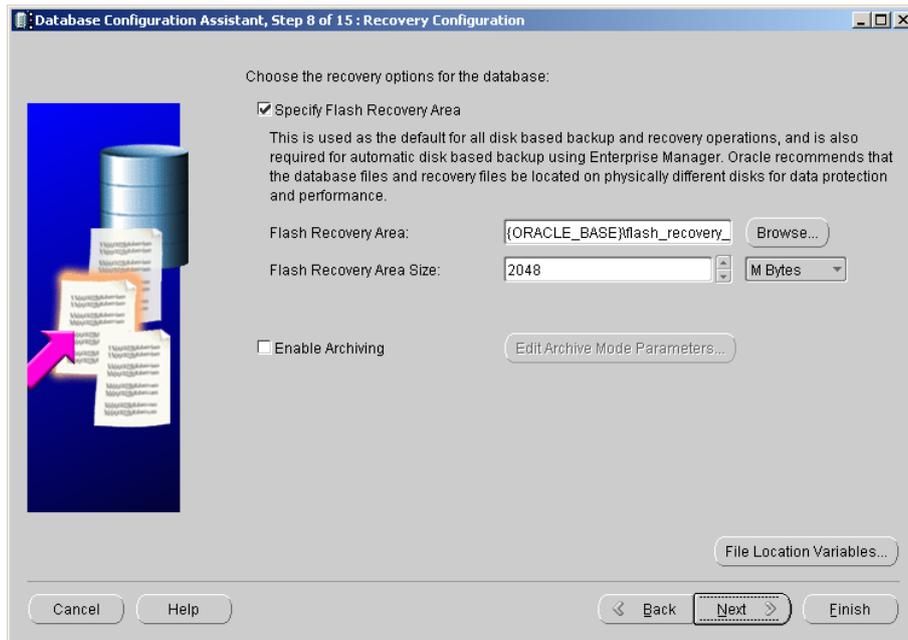


Fig. 23: check Flash Recovery Area

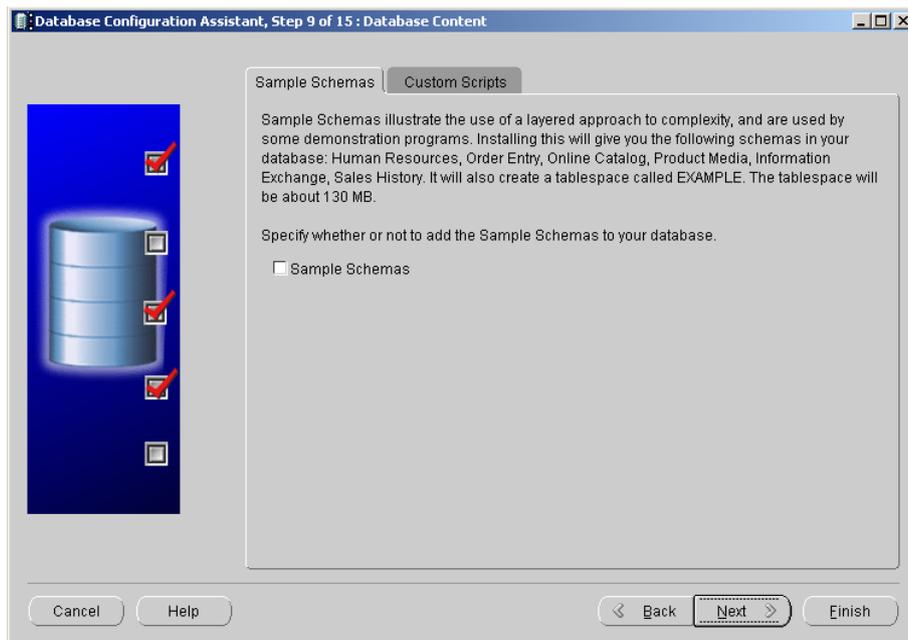


Fig. 24: no Sample Schemas

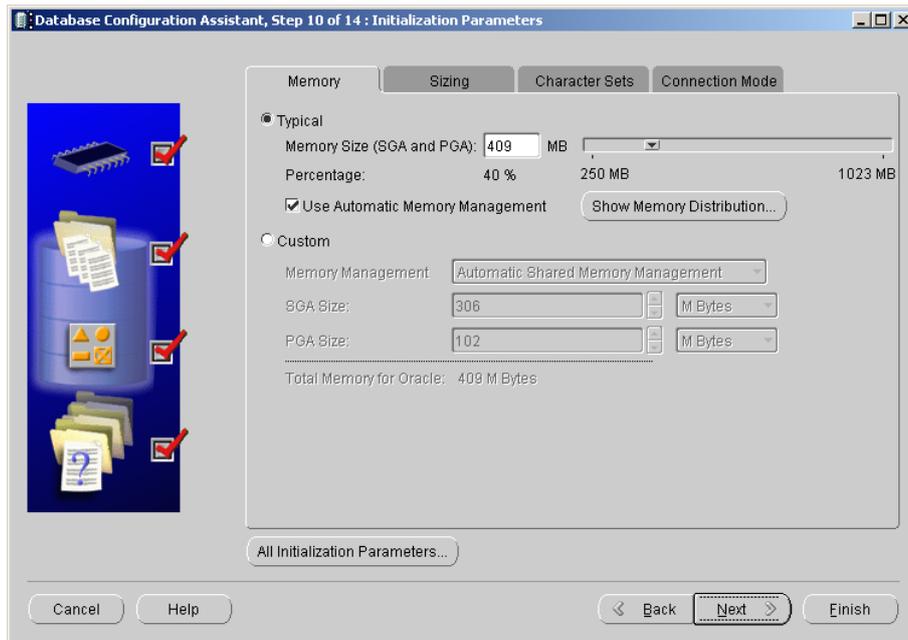


Fig. 25 accept the suggested initialization parameters.

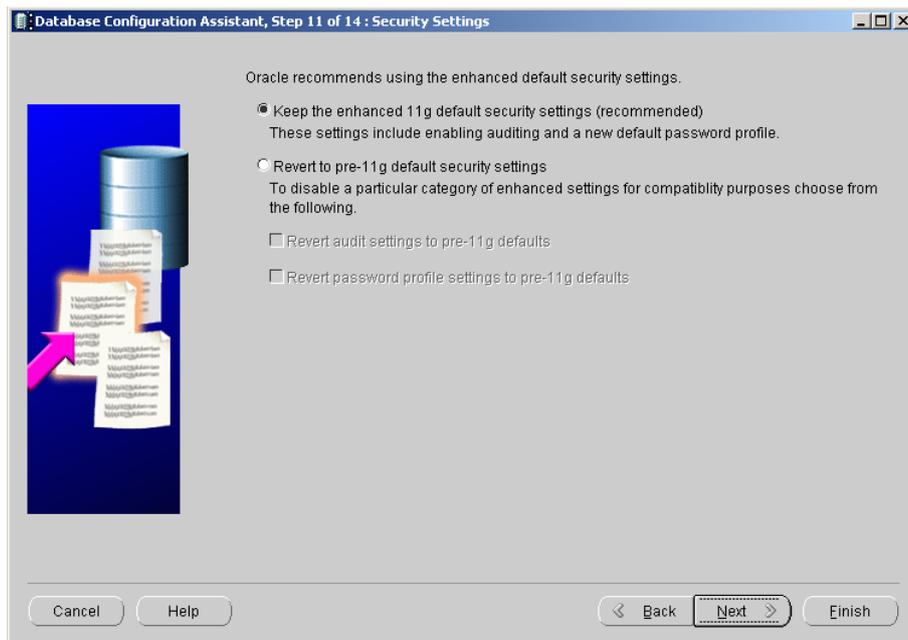


Fig. 26: turn on Enhanced default 11g security

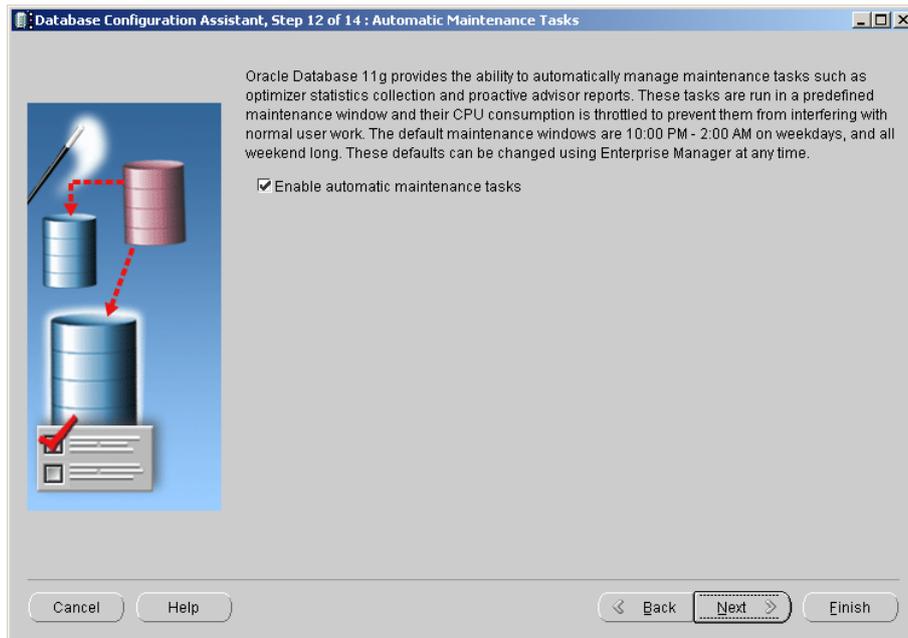


Fig. 27: enable automatic maintenance tasks

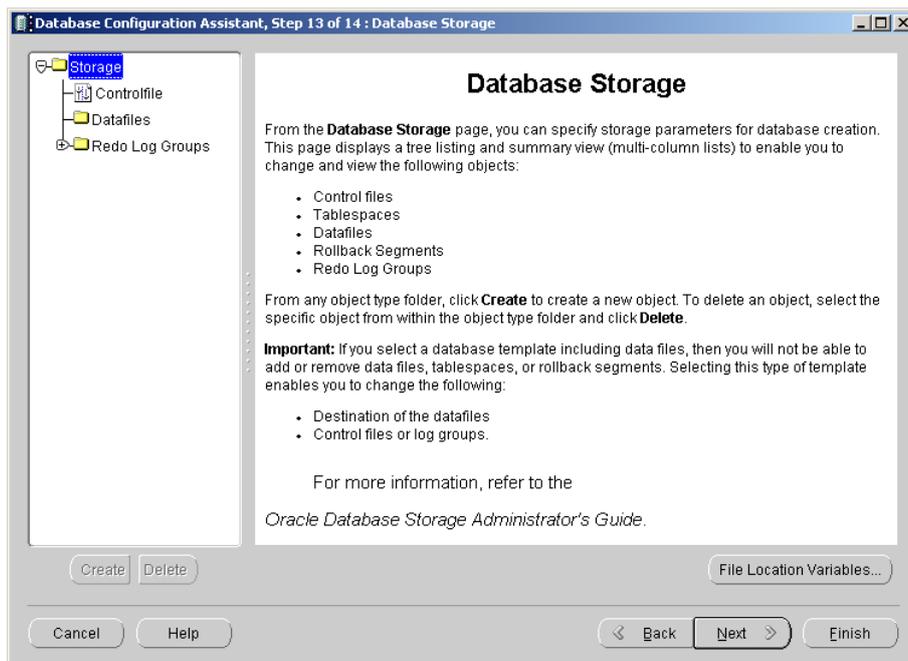


Fig. 28: summary

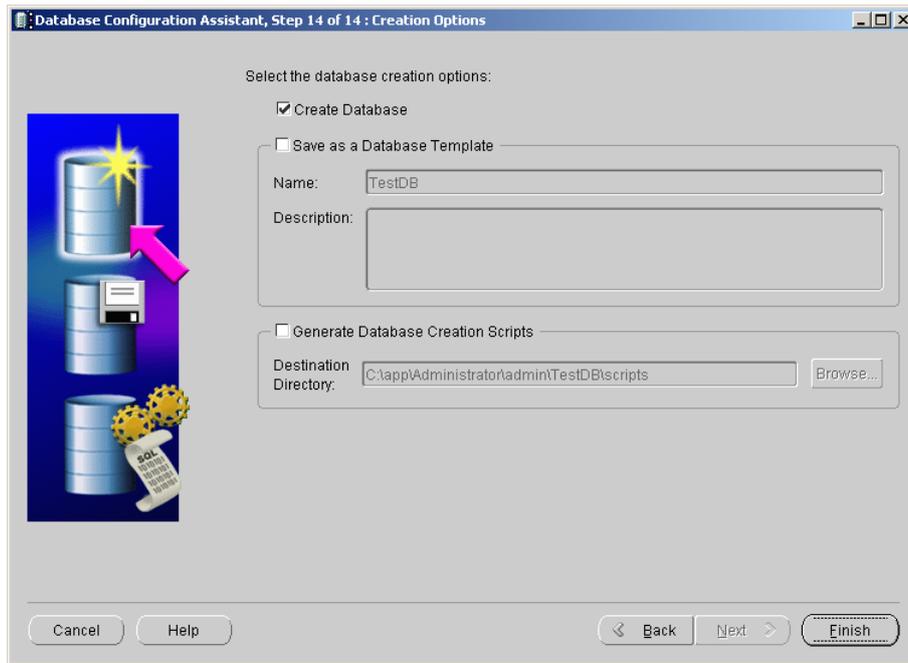


Fig. 29: create database

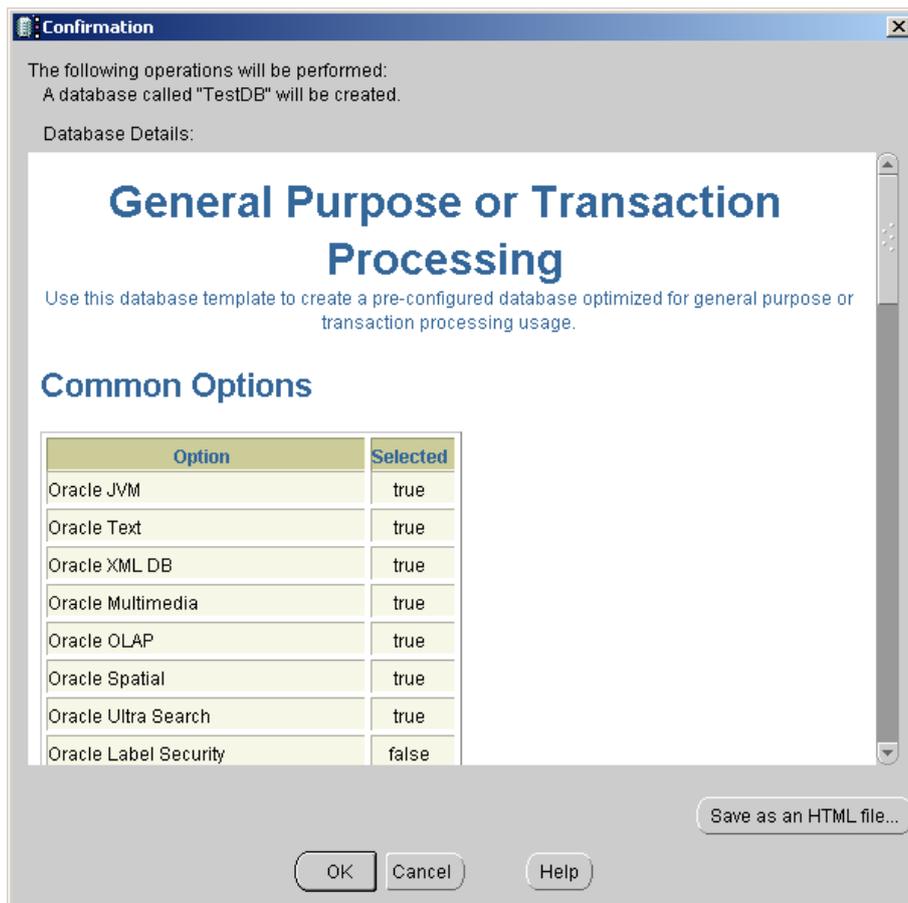


Fig. 30: OK creates the database.

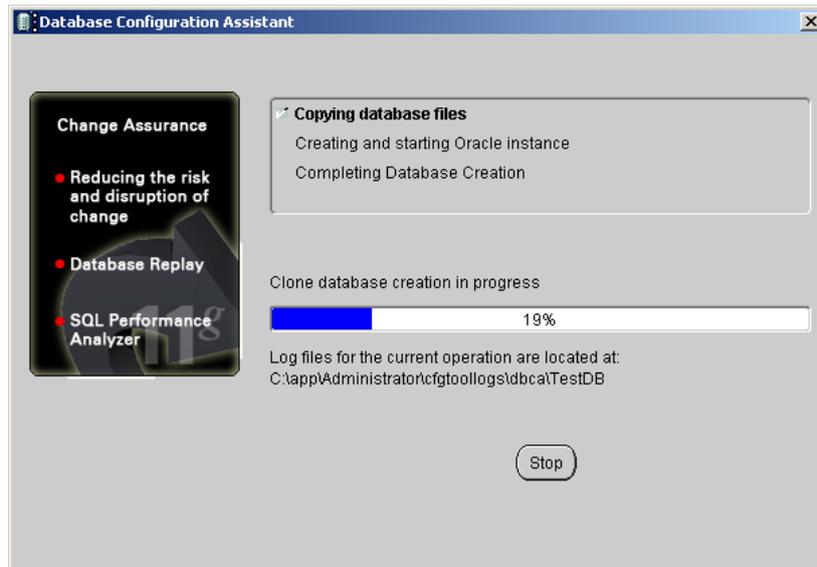


Fig. 31: Status bar

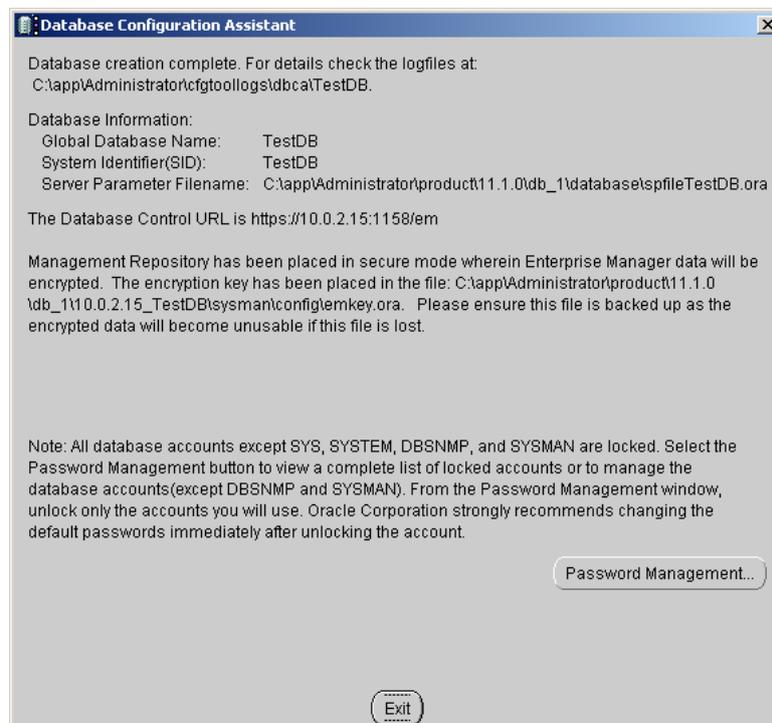


Fig. 32: After the database has been completet, you can leave the dialog with EXIT

4. Oracle Enterprise Manger

The Oracle Enterprise Manager is a web-based, graphical user interface for the administration of an Oracle environment including several databases.

Starting the Oracle Enterprise Manager



Fig. 41: Open database instance in the start menu

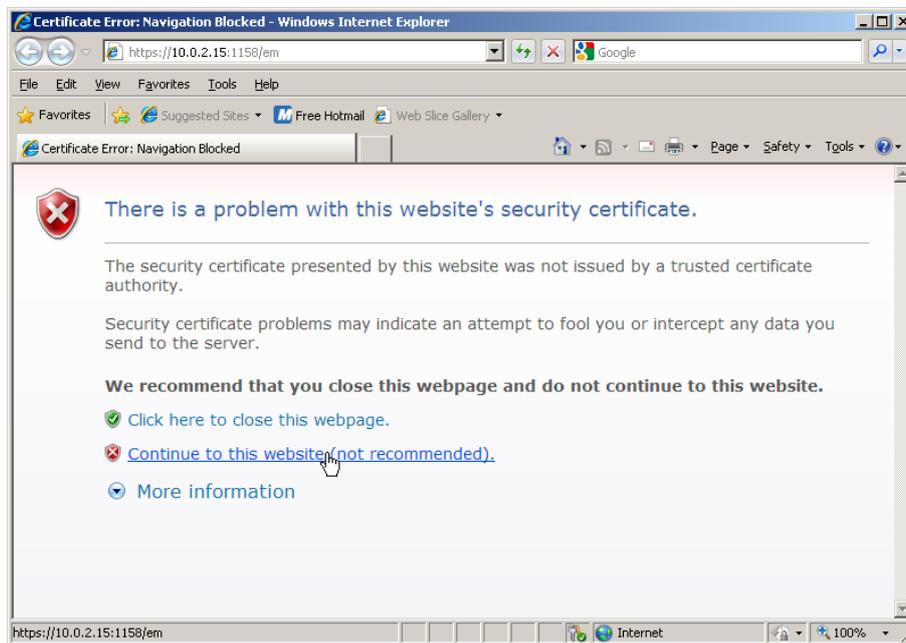


Fig. 42: Ignore the security notice based on the https certificate

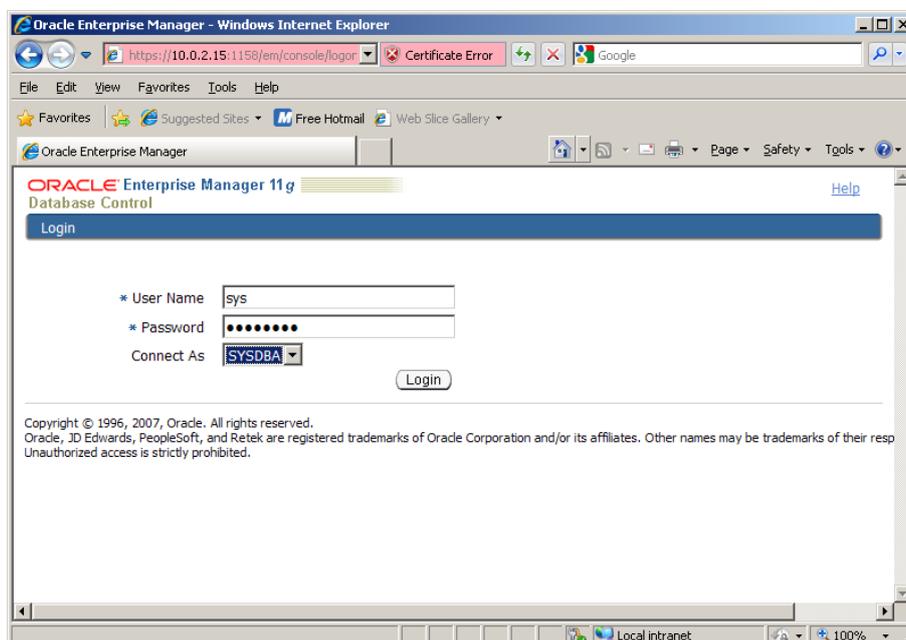


Fig. 43: Log on as SYSDBA with sys and the previously set password.

Create Tablespace

A tablespace in an Oracle database is a logical unit for storing data objects (e.g. tables). A tablespace must consist of at least one and can consist of several data files. It can be enlarged by attaching or enlarging a datafile.

Create a tablespace as follows:

Switch to the **Server** tab and select **Tablespace** (Figure 44).

Click the Button **Create** in the **Tablespace** menu (Figure 45).

Use **TS_CITYMAN** as tablespace name (Figure 46). Then create a data file and also enter **TS_CITYMAN** as the file name. Define start size 1000 MB and automatically expand it by 100MB (Figure 47). All other settings are on default. Create the tablespace with the data file with **OK** (Figure 48 and 49).

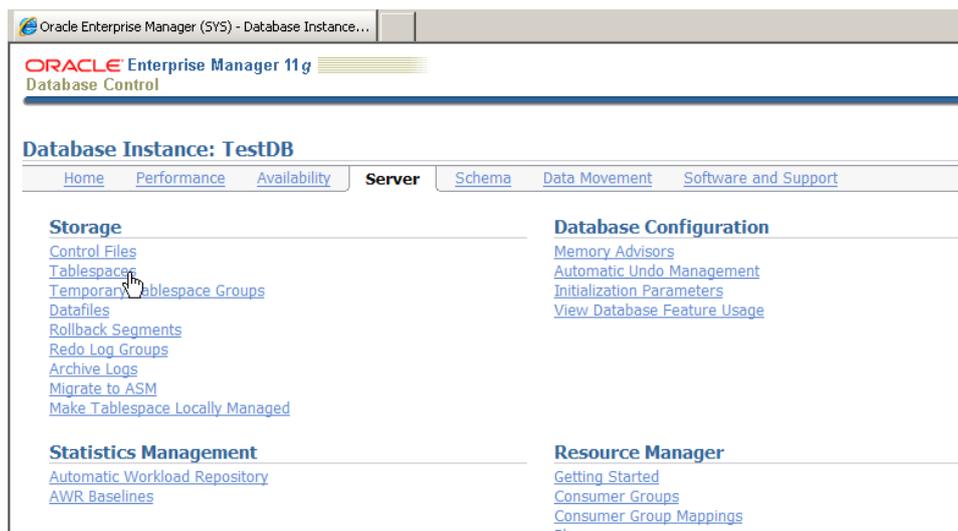


Fig. 44: select tablespaces

The screenshot shows the 'Tablespaces' page in Oracle Enterprise Manager 11g. It displays a table of existing tablespaces with columns for Name, Allocated Size (MB), Space Used (MB), Allocated Space Used (%), Allocated Free Space (MB), Status, Datafiles, Type, Extent Management, and Segment Management. A 'Create' button is visible in the top right corner of the table area.

Select	Name	Allocated Size (MB)	Space Used (MB)	Allocated Space Used (%)	Allocated Free Space (MB)	Status	Datafiles	Type	Extent Management	Segment Management
<input checked="" type="radio"/>	SYSAUX	564.5	536.7	95.1	27.8	✓	1	PERMANENT LOCAL	AUTO	
<input type="radio"/>	SYSTEM	680.0	678.6	99.8	1.4	✓	1	PERMANENT LOCAL	MANUAL	
<input type="radio"/>	TEMP	20.0	0.0	0.0	20.0	✓	1	TEMPORARY LOCAL	MANUAL	

Fig. 45: select create tablespaces

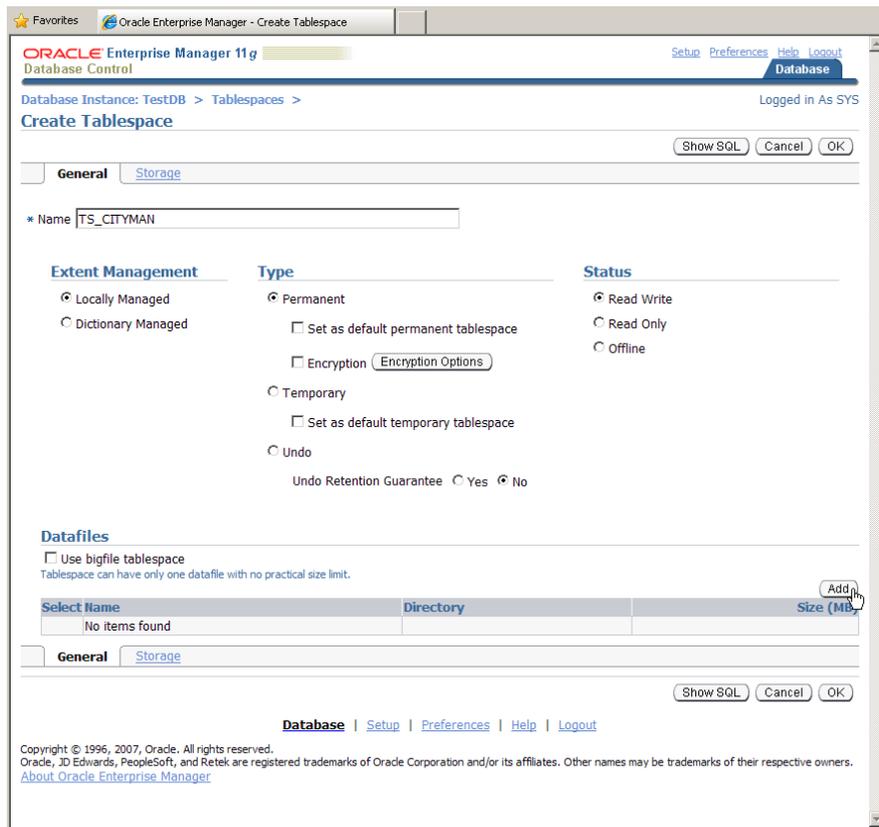


Fig. 46: define tablespace name

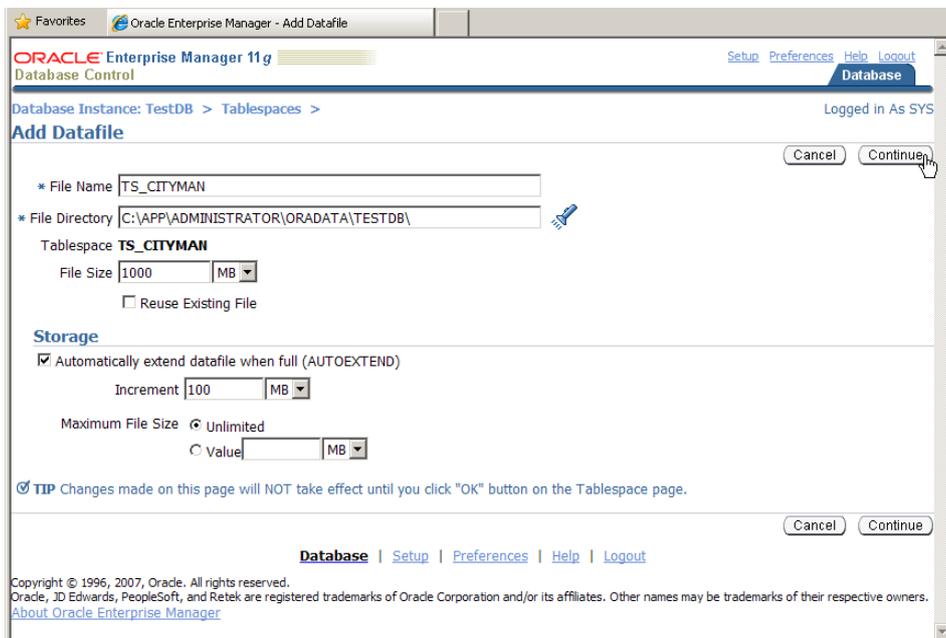


Fig. 47: settings for tablespace – datafile

File Size 1000 MB

Important: Check 'Automatically extend datafile when full (AUTOEXTEND)'
Increment by 100 MB

Database Instance: TestDB > Tablespaces > Logged in As SYS

Create Tablespace Show SQL Cancel OK

Information
Modification to the datafile will not take effect until you click "OK" button.

General [Storage](#)

* Name

Extent Management

Locally Managed

Dictionary Managed

Type

Permanent

Set as default permanent tablespace

Encryption [Encryption Options](#)

Temporary

Set as default temporary tablespace

Undo

Undo Retention Guarantee Yes No

Status

Read Write

Read Only

Offline

Datafiles

Use bigfile tablespace
Tablespace can have only one datafile with no practical size limit. Add

Select	Name	Directory	Size (MB)
<input checked="" type="checkbox"/>	TS_CITYMAN	C:\APP\ADMINISTRATOR\ORADATA\TESTDB\	1,000.00

General [Storage](#)

Fig. 48: settings for tablespace – datafile

Database Instance: TestDB > Logged in As SYS

Confirmation
The object has been created successfully

Tablespaces Object Type: Tablespace

Search
Enter an object name to filter the data that is displayed in your results set.
Object Name
Go

By default, the search returns all uppercase matches beginning with the string you entered. To run an exact or case-sensitive match, double quote the search string. You can use the wildcard symbol (%) in a double quoted string.

Selection Mode Single Create

Select	Name	Allocated Size(MB)	Space Used (MB)	Allocated Space Used(%)	Allocated Free Space (MB)	Status	Datafiles	Type	Extent Management	Segment Management
<input checked="" type="checkbox"/>	SYSAUX	564.5	536.8	95.1	27.7	✓	1	PERMANENT LOCAL	AUTO	
<input type="checkbox"/>	SYSTEM	680.0	678.6	99.8	1.4	✓	1	PERMANENT LOCAL	MANUAL	
<input type="checkbox"/>	TEMP	20.0	0.0	0.0	20.0	✓	1	TEMPORARY LOCAL	MANUAL	
<input checked="" type="checkbox"/>	TS_CITYMAN	1,000.0	0.1	0.0	999.9	✓	1	PERMANENT LOCAL	AUTO	
<input type="checkbox"/>	UNDOTBS1	40.0	8.4	21.1	31.6	✓	1	UNDO LOCAL	MANUAL	
<input type="checkbox"/>	USERS	5.0	0.4	8.8	4.6	✓	1	PERMANENT LOCAL	AUTO	

Total Allocated Size (MB) **2,309.5** ✓ Online ✗ Offline 🔒 Read Only
 Total Used (MB) **1,224.3**
 Total Allocated Free Space (MB) **1,085.2**

Fig. 49 settings for tablespace - datafile

Create User

Create a new user as follows

- ❖ In the Tab *Server* click *Users (Security - Users)* and create a new User (e.g. cityman) (Figure 50 und 51).
- ❖ Then define a password, default tablespace is TS_CITYMAN, leave temporary tablespace on TEMP (Figure 52).

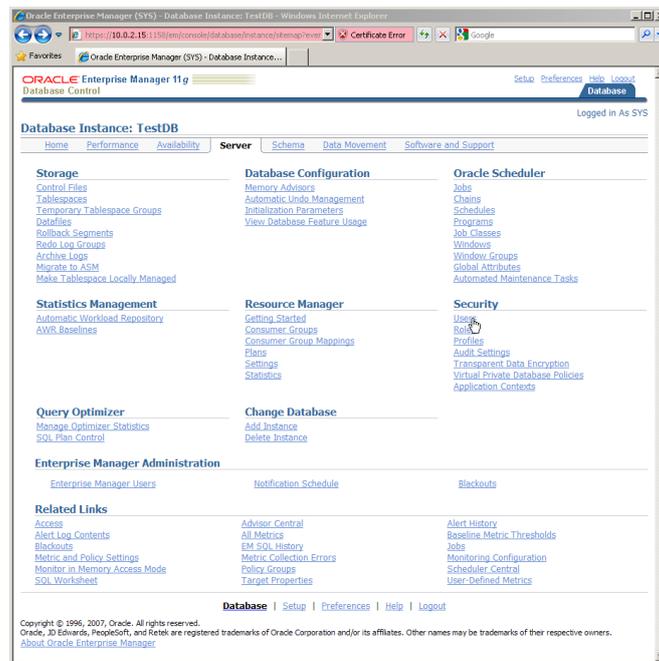


Fig. 50: create User.

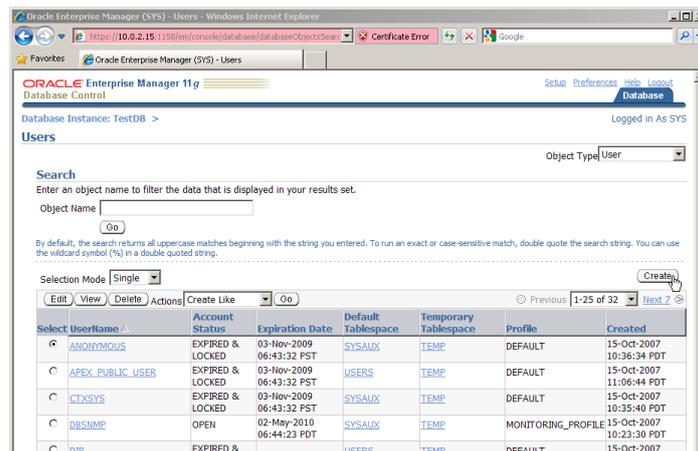


Fig. 51: create User

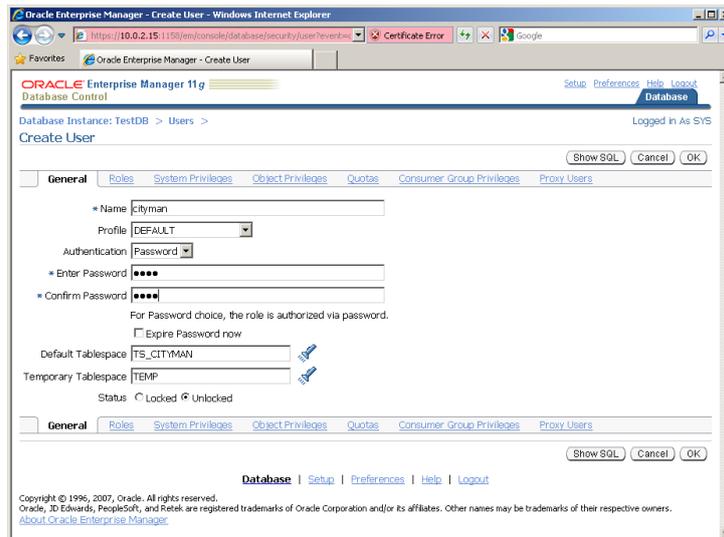


Fig. 52: create User

Set privileges

Permissions must be set so that the created user can perform certain actions.

Set permissions as follows:

- ❖ Edit the created user to add more roles (Figure 53 and 54)
- ❖ In addition to the `CONNECT` role, the created user also receive the roles `DBA`, `EXP_FULL_DATABASE` and `IMP_FULL_DATABASE` (Figure 55).

Select	Username	Account Status	Expiration Date	Default Tablespace	Temporary Tablespace	Profile	Created
<input type="radio"/>	ANONYMOUS	EXPIRED & LOCKED	03-Nov-2009 06:43:32 PST	SYSAUX	TEMP	DEFAULT	15-Oct-2007 10:36:34 PDT
<input type="radio"/>	APEX_PUBLIC_USER	EXPIRED & LOCKED	03-Nov-2009 06:43:32 PST	USERS	TEMP	DEFAULT	15-Oct-2007 11:06:44 PDT
<input checked="" type="radio"/>	CITYMAN	OPEN	03-May-2010 00:14:51 PDT	TS_CITYMAN	TEMP	DEFAULT	04-Nov-2009 00:14:51 PST
<input type="radio"/>	CTXSYS	EXPIRED & LOCKED	03-Nov-2009 06:43:32 PST	SYSAUX	TEMP	DEFAULT	15-Oct-2007 10:35:40 PDT
<input type="radio"/>	DBSNMP	OPEN	02-May-2010 06:44:23 PDT	SYSAUX	TEMP	MONITORING_PROFILE	15-Oct-2007 10:23:30 PDT
<input type="radio"/>	DIP	EXPIRED & LOCKED		USERS	TEMP	DEFAULT	15-Oct-2007 10:11:17 PDT
<input type="radio"/>	EXFSYS	EXPIRED & LOCKED	03-Nov-2009 06:43:32 PST	SYSAUX	TEMP	DEFAULT	15-Oct-2007 10:35:14 PDT

Fig. 53: edit user to set privileges

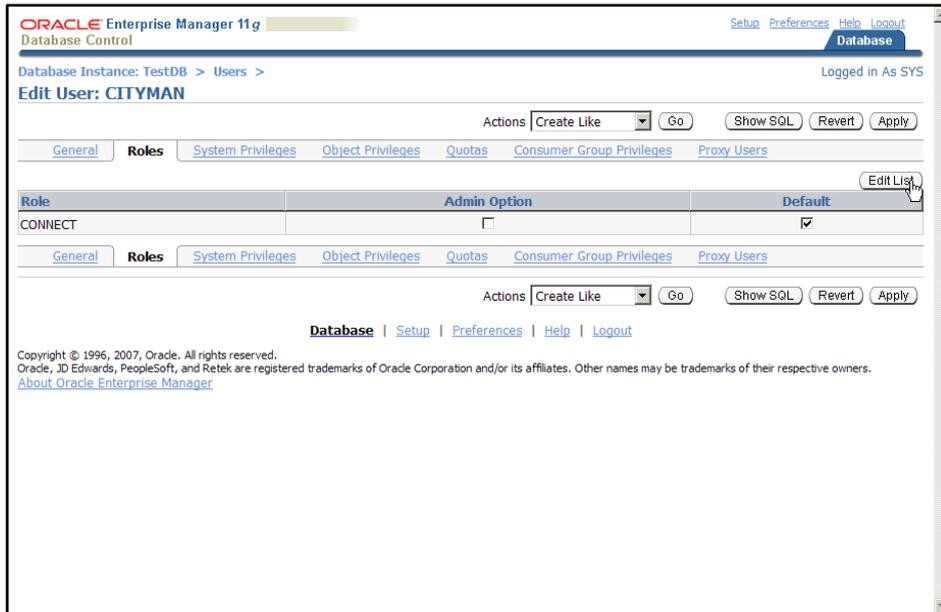


Fig. 54 edit user to set privileges

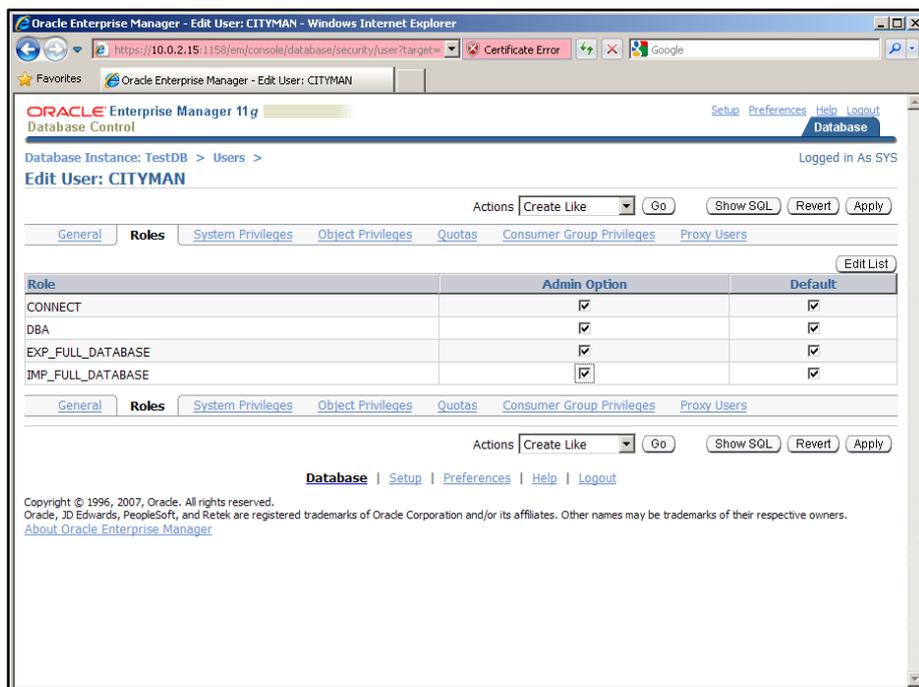


Fig. 55: assign privileges

5. Set up the service

In the Welcome window of the Oracle net configuration assistant, select **Local Net Service Name** configuration and click Next.

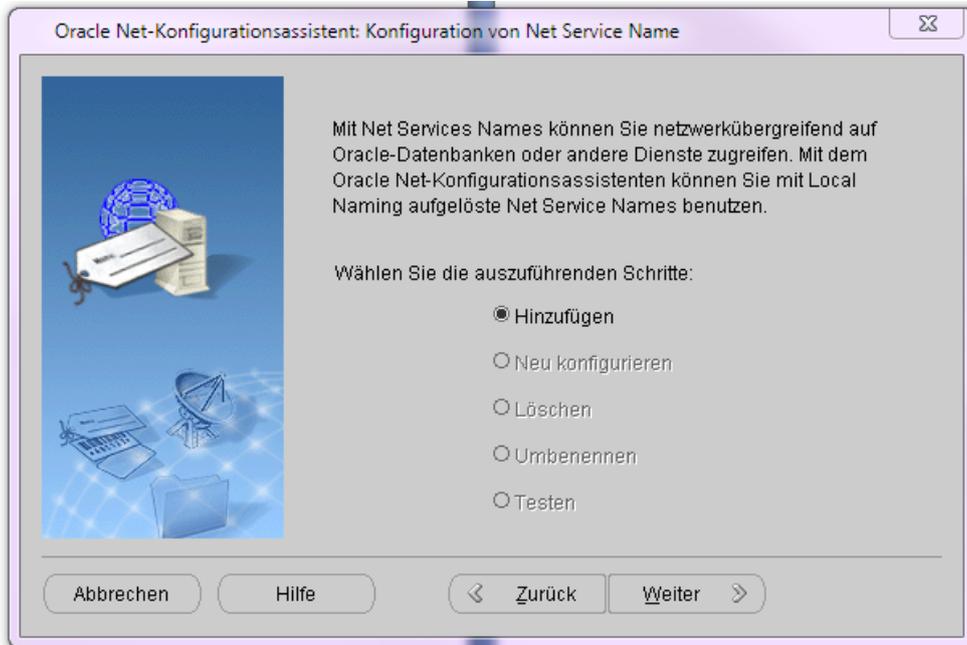


Fig. 63: add service

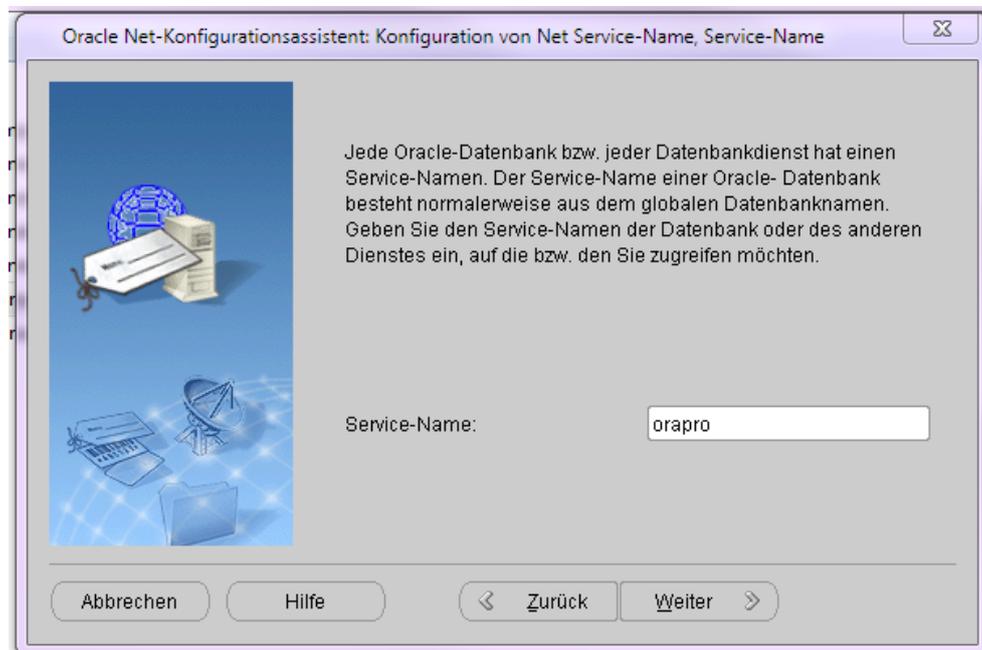


Fig. 64: Enter the service name. The service name of an Oracle database usually consists of the global database name. Enter the database name that you created earlier (Chapter 3, Figure 18).

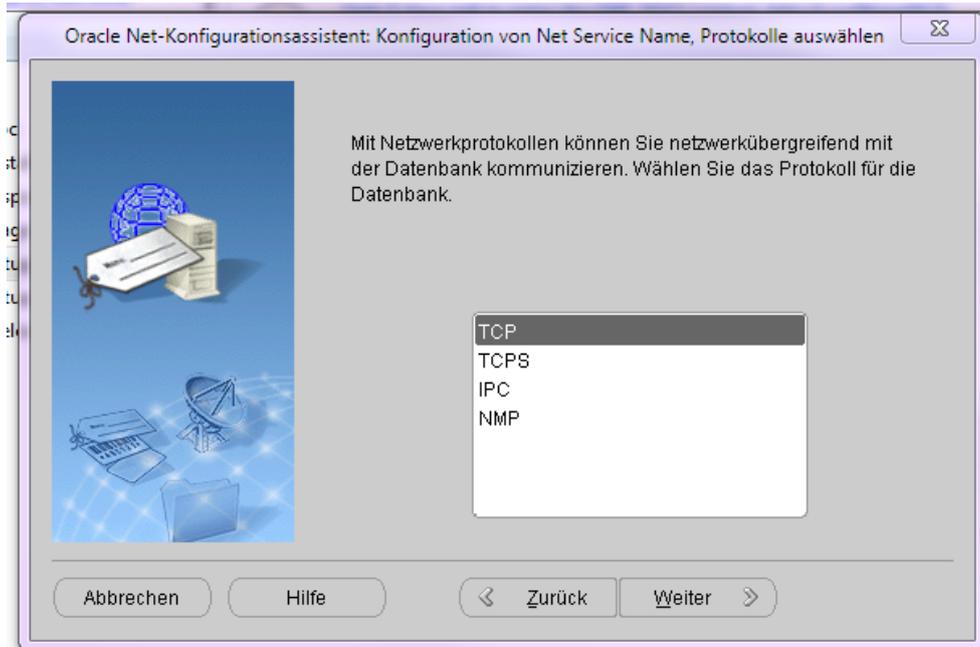


Fig. 65: Select protocol to communicate with the database across networks.



Fig. 66: Enter the host name of the database computer here.



Fig. 67: Test the registration in the database.



Fig. 68: The login data can be changed when logging into the database. Enter the user created above (Chapter 5c, Figure 52). By default, Oracle tries to log in with the standard user scott and password tiger.

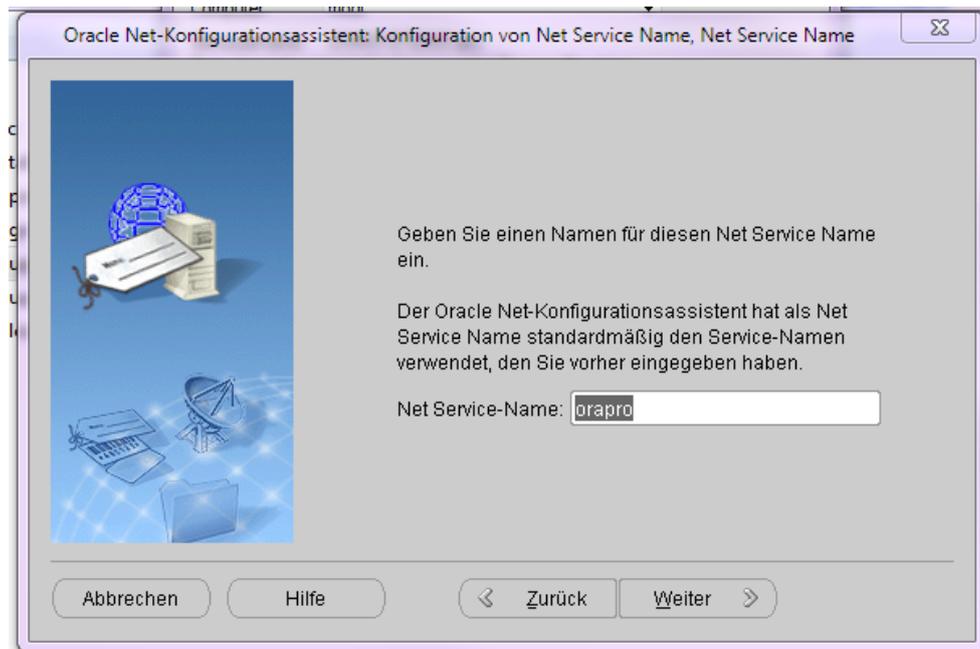


Fig. 69: Specify the net service name

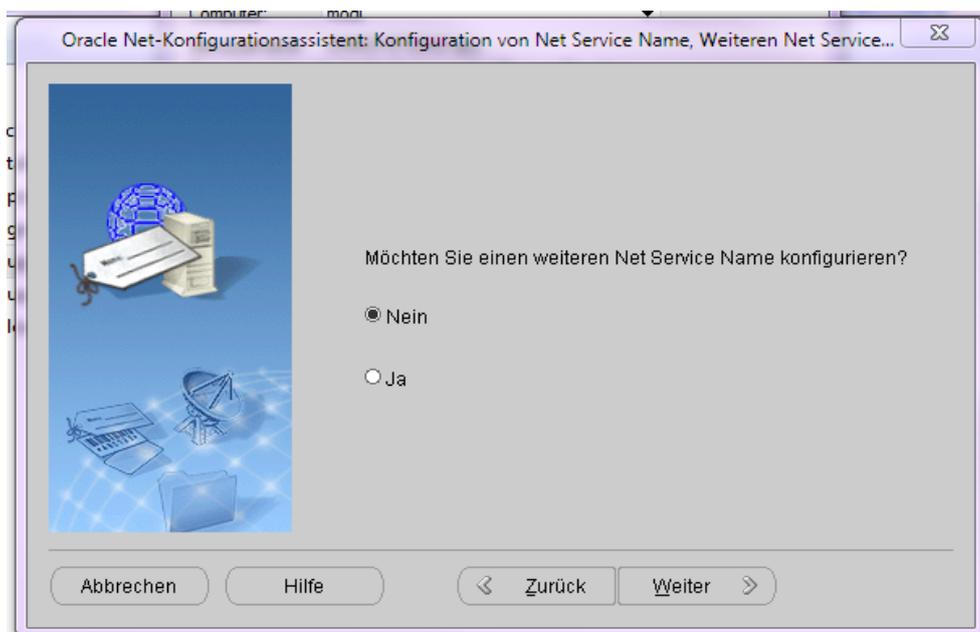


Fig. 70: If desired, additional net service names can be set up

6. Create CityGRID® tables

The SQL files, which are delivered with the license are necessary for the creation of the CityGRID® tables in the database. After successfully logging into the Oracle database, the user can have these tables created as follows:

IMPORTANT: It is necessary to specify the Texture directory either before or after you create the tables. Otherwise you will run into an error when trying to texture your models.

Before creating tables:

Open the Defaults.sql with Notepad++ and replace 'TODO' in Line 2 with your desired directory, so it would look something like this:

```
insert into INST_INFO (SCHEMA_VERSION,TEXTURE_PATH) values
(4.2,C:\MYTEXTUREPATH\);
```

save it and close.

After creating tables: (See chapter 8)

```
update INST_INFO set TEXTURE_PATH='\\my\texturepath';
commit;
```

- ❖ Open the Windows console window.
- ❖ Change to the supplied '<Script directory> / create' with "cd".

```
cd C:\YourDirectory\Create
```

- ❖ First test the login to the database via sqlplus. To do this, enter the following command in the command line window:

```
sqlplus <user>/<password>@<database name>
```

- ❖ If the login is successful in this way, write

```
@create_schema.sql
```

The tables will be created.

If you already have exited sqlplus before creating the table you can use this command:

```
sqlplus <user>/<password>@<databasename.hostname> @create_schema.sql
```

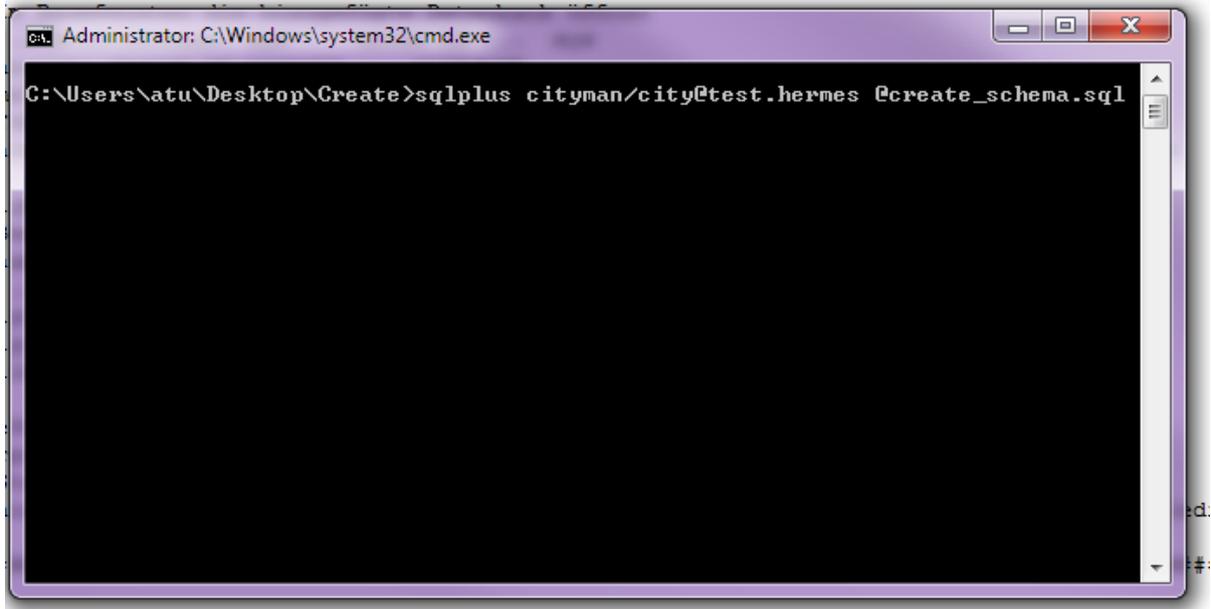


Fig. 56: command for creating CityGRID® tables

7. Installation Oracle Client (Client computer)

When installing Oracle Client, please select the Administrator. In addition to the basic client software, the administration tools, the management console, ie network services and utilities are installed.

If everything is installed on one computer and different versions are used for the server or client, Oracle Base must be set differently on the client than on the server!

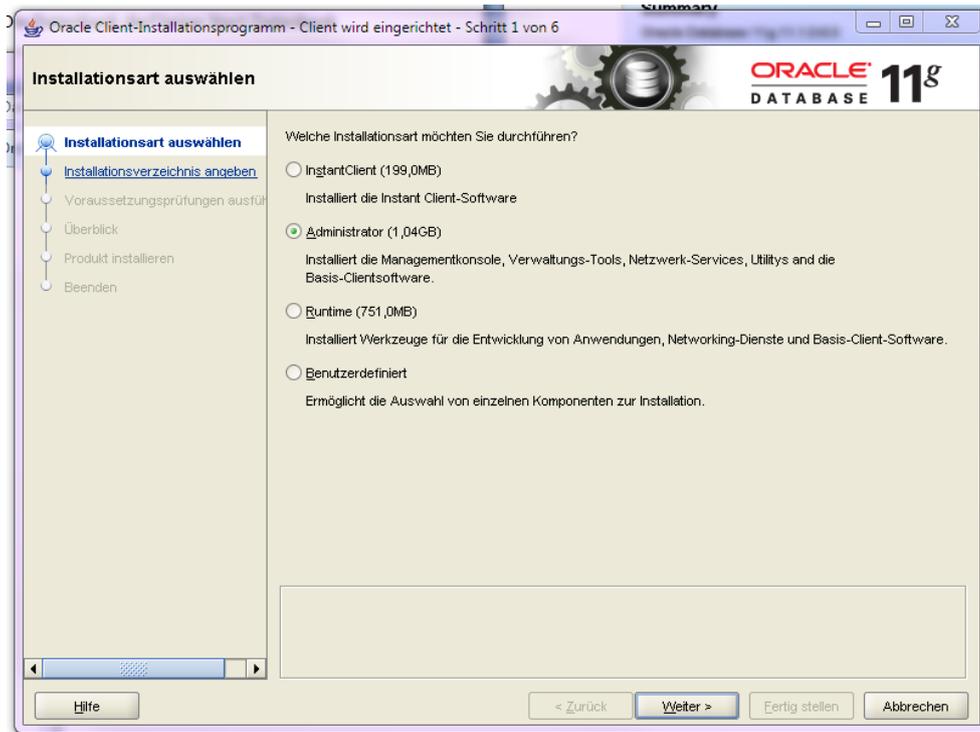


Fig. 57: Installation of Client-Administrator

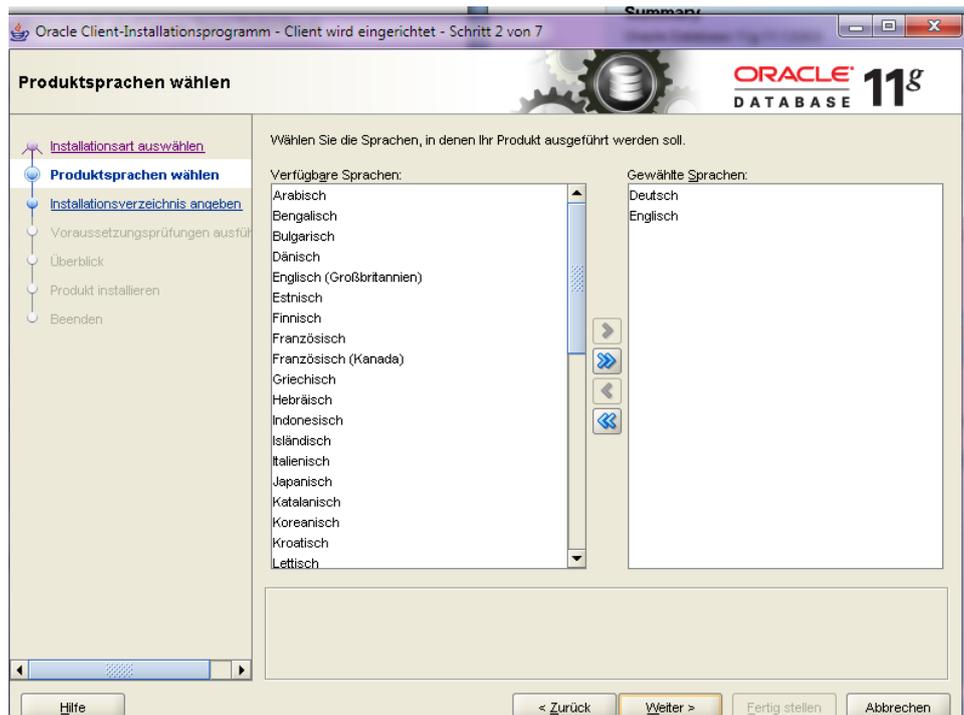


Fig. 58: Selected languages: german, english

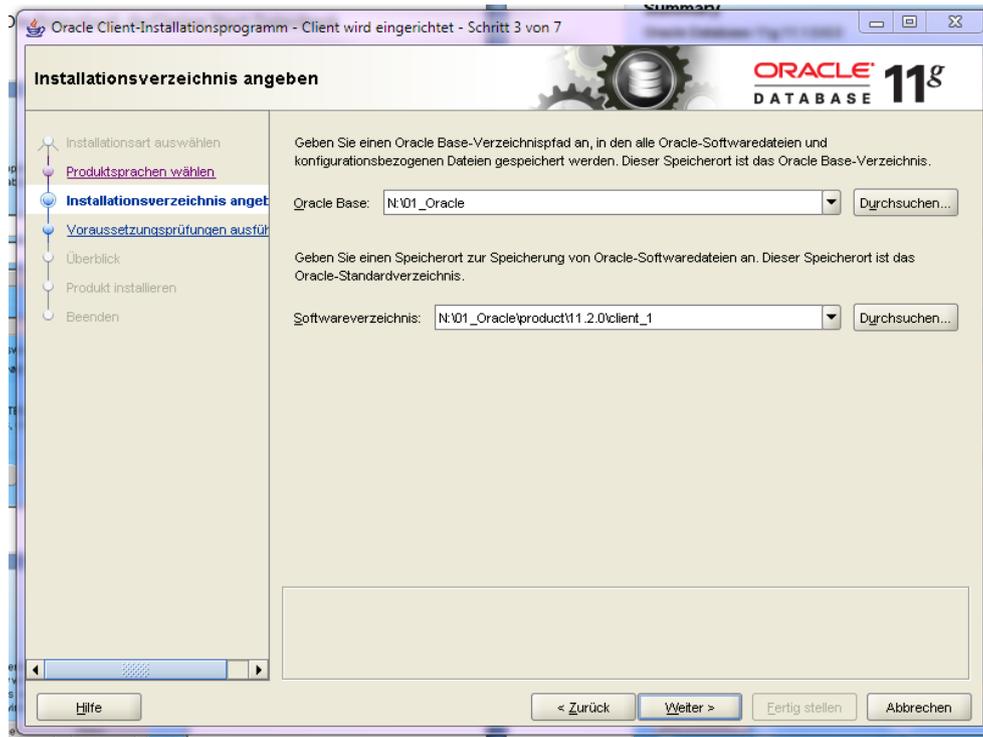


Fig. 59: Installation directory

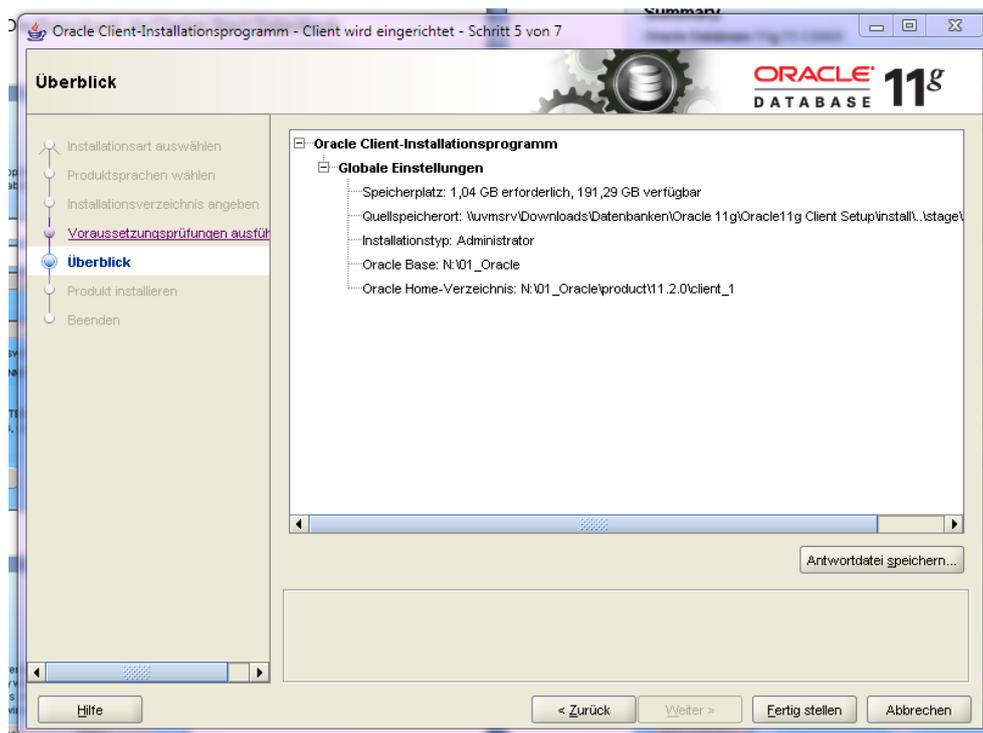


Fig. 60: Overview

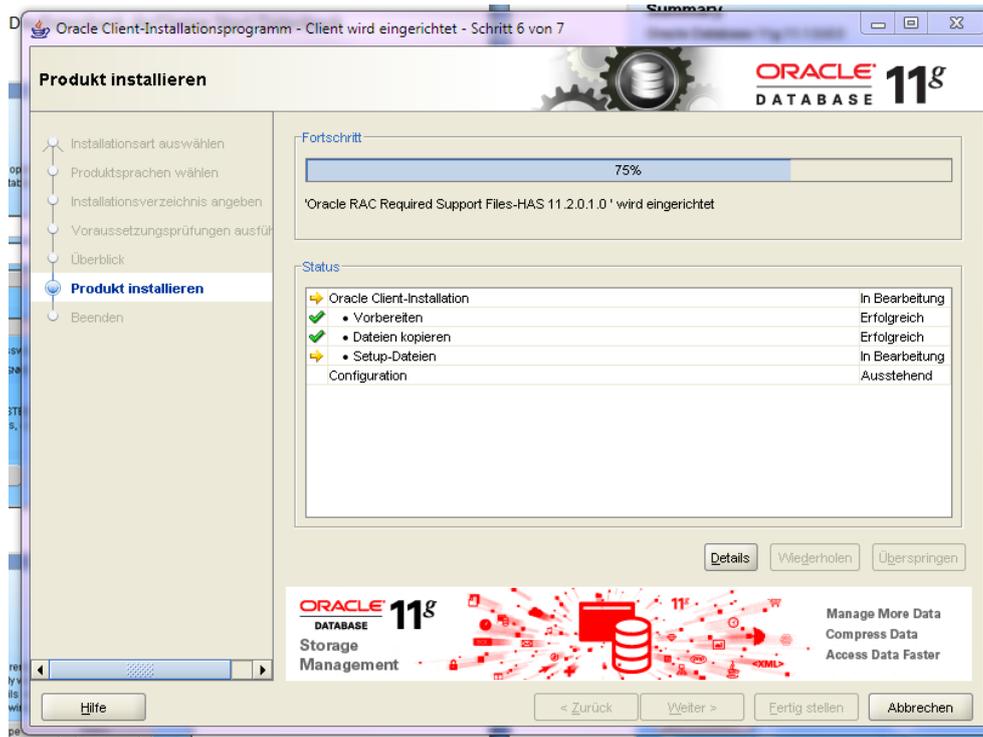


Fig. 61: Installation process

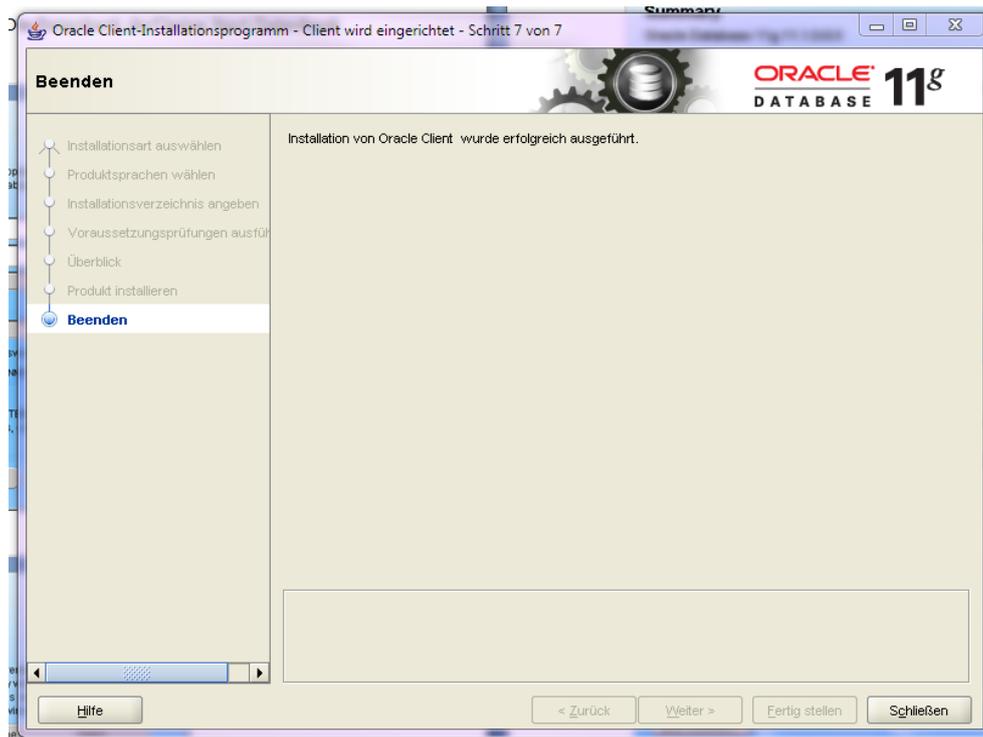
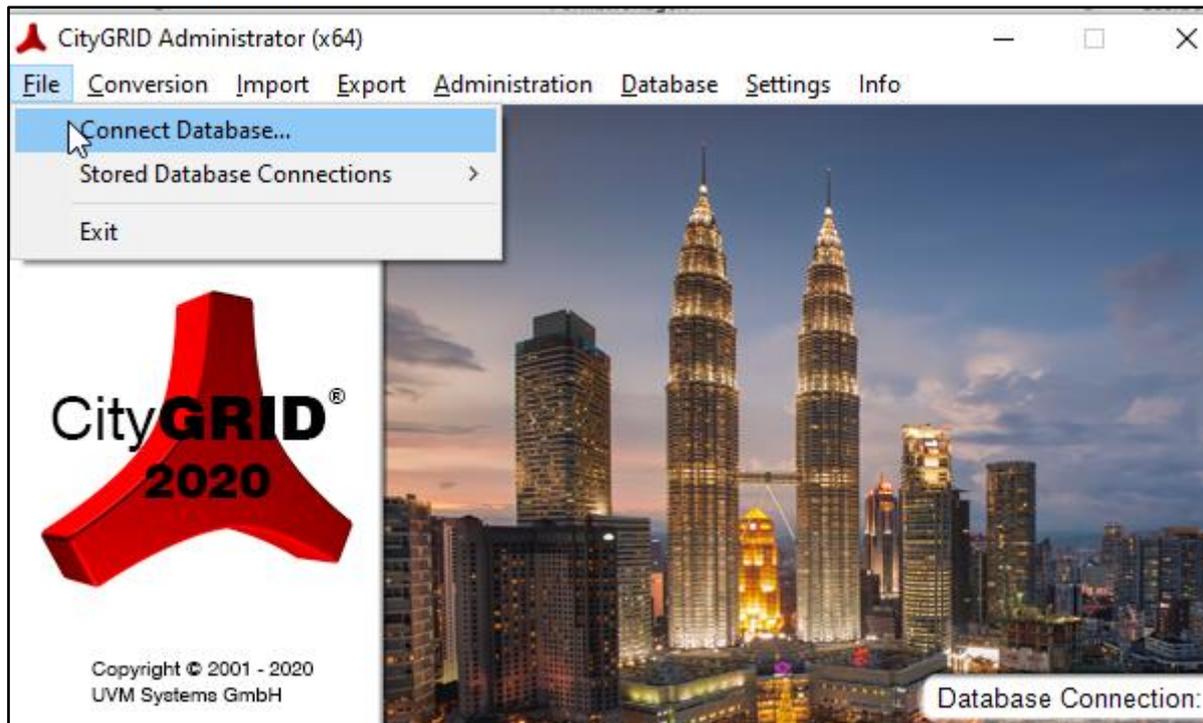


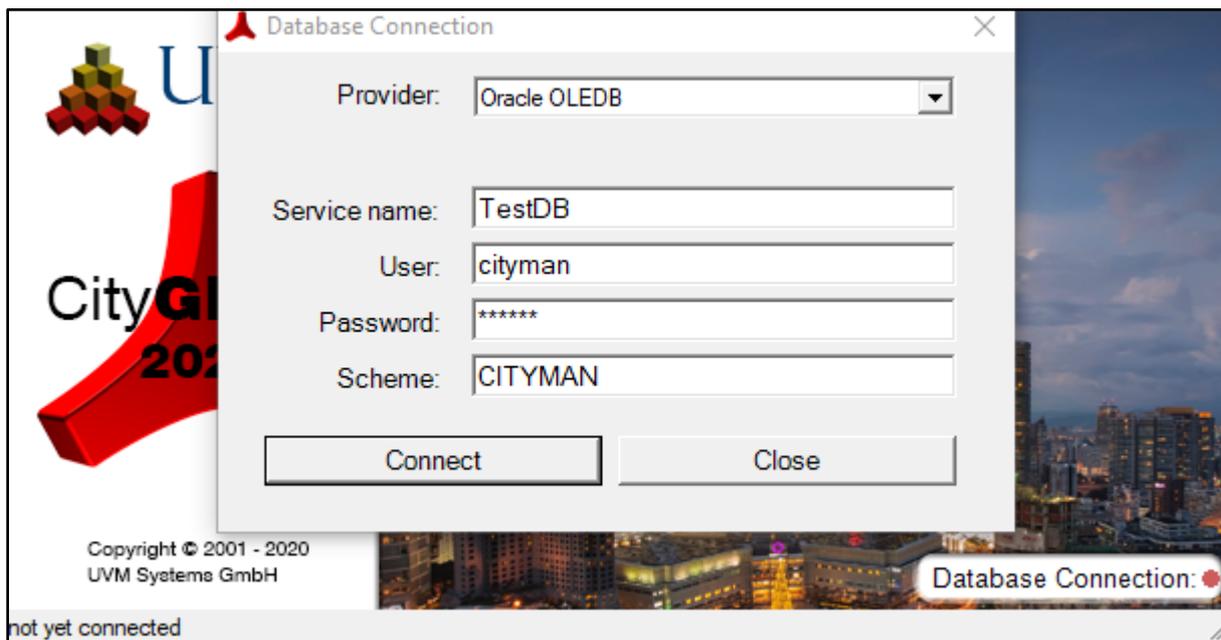
Fig. 62: complete installation

8. Log into database with CityGRID® Administrator

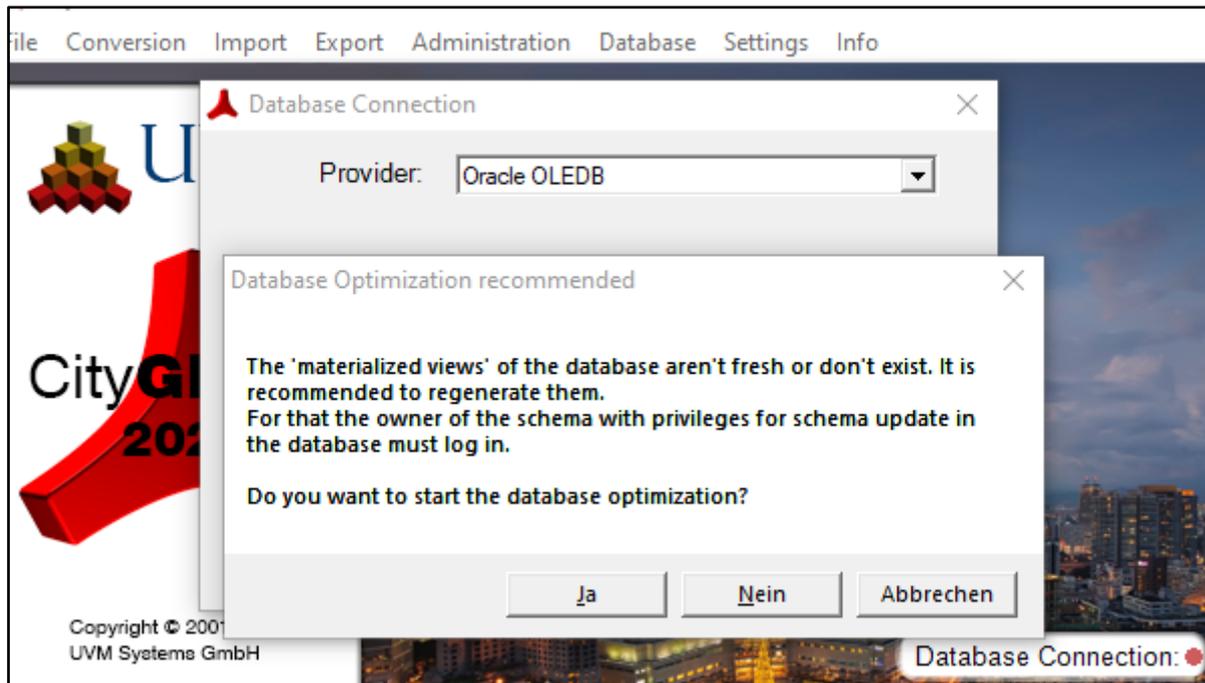
- ❖ Start CityGRID® Administrator and select File ->Connect database



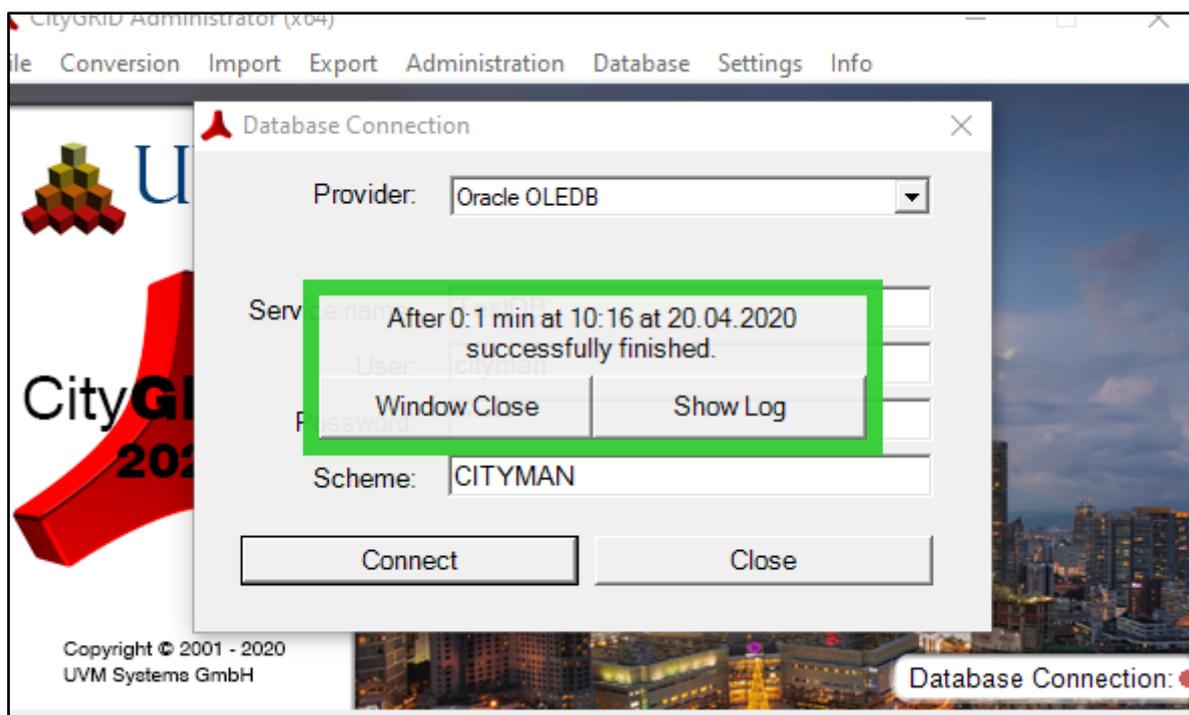
- ❖ When the dialog opens, select 'Oracle OLEDB' as Provider
- ❖ Fill in the login data according to your previous installation inputs.



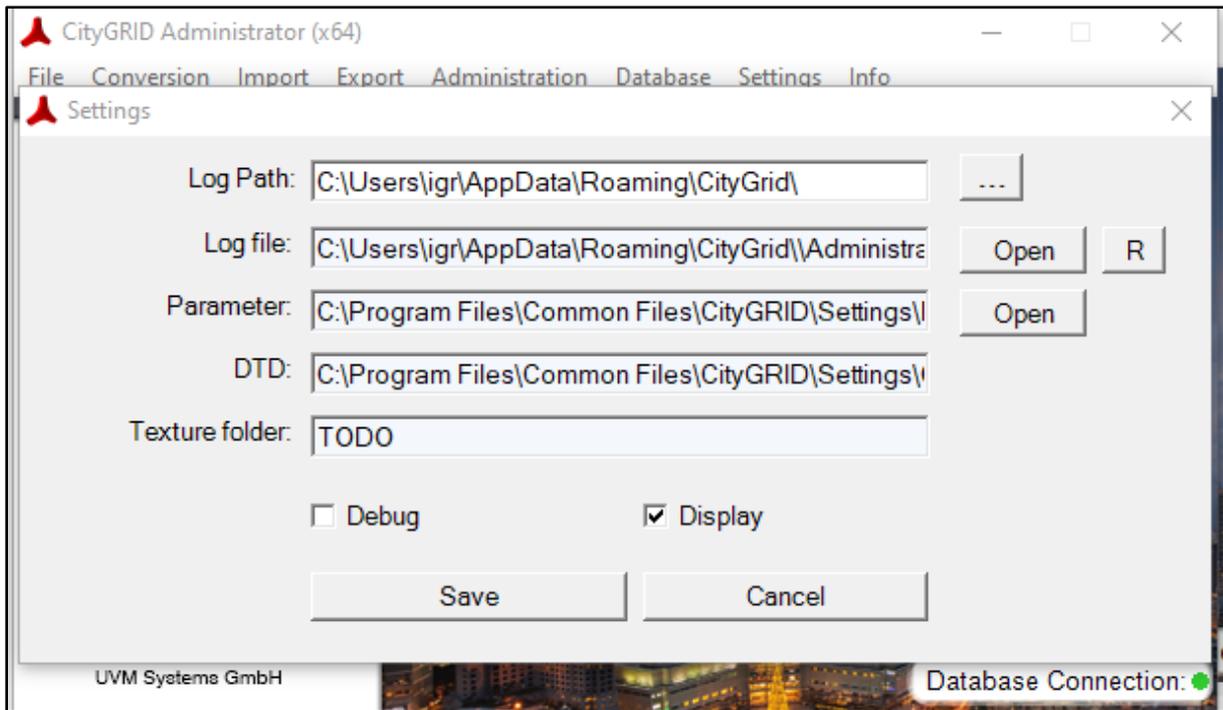
- ❖ After 'clicking Connect' you might be prompted to update the database schema. Accept by clicking Yes
- ❖ Also, you might be prompted to optimize your Database. Accept, by clicking Yes.



- ❖ You will be prompted to login as owner. Type in your password again and click 'Connect'



- ❖ Close the logging window and again, go to File->Connect database and fill in your login data.
- ❖ After successful connection to your new database, open the Settings Tab.
- ❖ If you haven't changed the texture path actively in your Defaults.sql you will see these Settings:



The Texture folder is not defined and you will not be able to change it within this dialog. Therefore, open the Windows Console window and login to sqlplus (see chapter 5)

Use the following command to change your texture path

```
update INST_INFO set TEXTURE_PATH='\\my\texturepath';
commit;
```

(instead of \\my\texturepath use your desired Texture directory)

Check the updated table with

```
Select * from INST_INFO;
```

Check the Settings in CityGRID® Administrator. If the Texture folder matches your input above, you are ready to use your database. (See CityGRID® Administrator Manual for extensive help)

