

Oracle and MTS Installation and Configuration Guide For Biotics 4 For Oracle Version 10g

August 8, 2006
Version 1.0

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INTRODUCTION

Purpose of this Document

The purpose of this document is to provide detailed information about the installation and configuration process of an Oracle 10.2.0 database on a Windows 2003 or 2000 server, MTS (Microsoft Transaction Server) application server configuration and Oracle client installation for Biotics 4. This document will illustrate the installation procedure with screenshots of the installer program, and will go through the database configuration procedure for Biotics 4.

Biotics/Oracle Overview

The Biotics application can be described as being composed of 5 distinct pieces: Oracle server, Biotics application server, Middle-tier software, Biotics Tracker clients, and Biotics Mapper clients. Throughout this document, it will be assumed that the middle-tier software and the Biotics application server are the same machine, referred to as the **application server**. There are several pieces of Oracle software required to make this system work. The Oracle Server houses the back-end database where both tabular and system related data are kept. The application server requires an Oracle client installed. Biotics Mapper clients also require an Oracle client, although the MTS services are not necessary. The only components of Biotics that do not require an installation of Oracle software are the Biotics Tracker client machines. Biotics mapper communicates with Oracle through ODBC and Tracker communicates with Oracle through MTS. Crystal Reports communicates to Oracle through the ODBC driver and requires the Oracle Client. Oracle 9i and 10g differ from Oracle 8i as they do not require any special software on the MTS server other than a typical installation of the Oracle 9i or 10g client.

The Oracle server does not have to be the same machine as the application server. **Programs with Oracle 10.2.0 server or later already installed can proceed to section 3.** Programs running Oracle 10g but not yet at version 10.2.0 should consider installing the patches to bring their version of Oracle up to 10.2.0.

Note: Oracle 10g needs a minimum of 512 Mb of RAM. If there are more than 2 Biotics users a minimum of 1 Gb is recommended on the server.

SERVER INSTALLATION

Begin the Oracle installation from the CD.

Select the Destination name and path for the Oracle installation and click Next.

Notes: It is recommended that you choose a path other than your Windows installed drive.
For example, D:\ORACLE.

If another version of Oracle is already installed on this machine, make sure you create a new home directory to house this installation. Do NOT use the previously created Oracle Home Directory for both versions of the software.

In the Installation Method window, select **Advanced Installation** and click **Next**:

Oracle Database 10g Installation - Installation Method

Select Installation Method

☐ **Basic Installation**
Perform full Oracle Database 10g installation with standard configuration options requiring minimal input. This option uses file system for storage, and a single password for all database accounts.

Oracle Home Location:

Installation Type:

☒ Create Starter Database (additional 720MB)

Global Database Name:

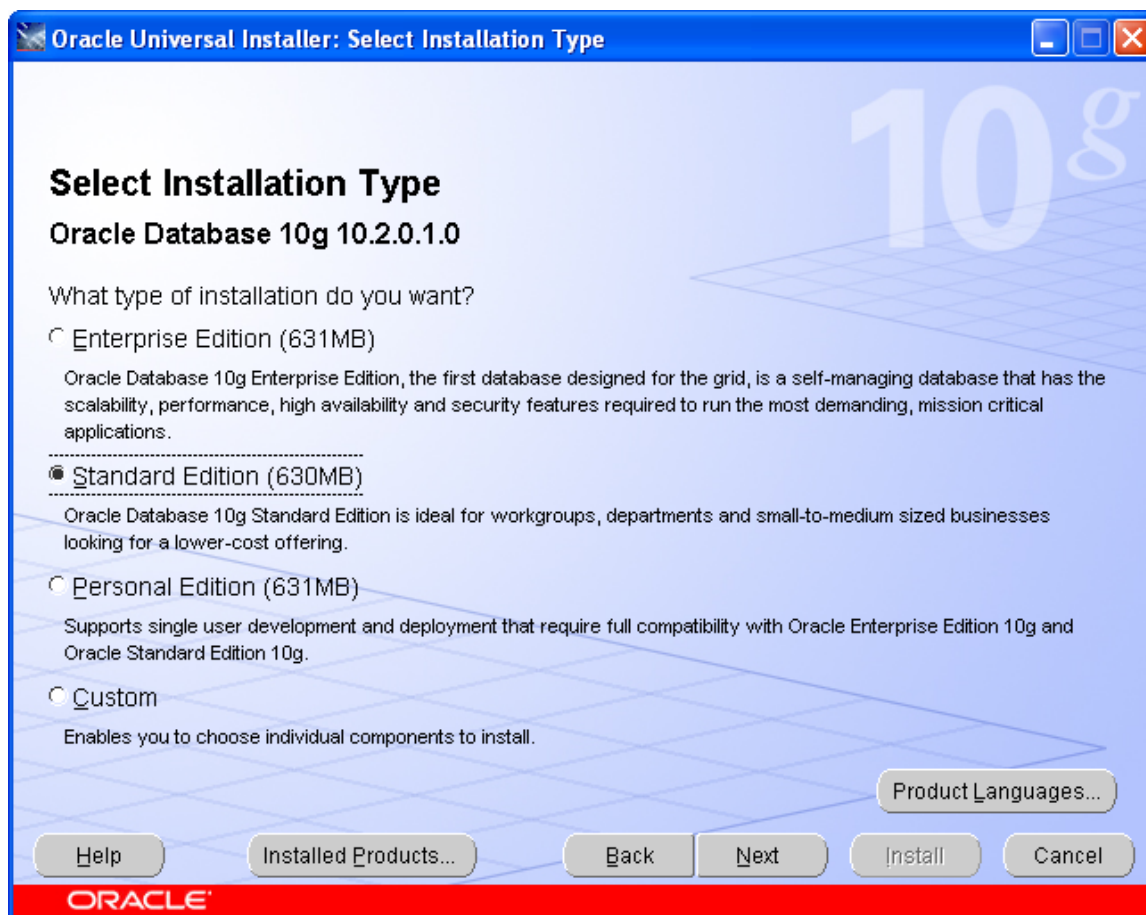
Database Password: Confirm Password:

This password is used for the SYS, SYSTEM, SYSMAN, and DBSNMP accounts.

☒ **Advanced Installation**
Allows advanced selections such as different passwords for the SYS, SYSTEM, SYSMAN, and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Automatic Storage Management.

ORACLE

In the Select Installation Type window, choose **Standard Edition** and click **Next**.



In the Specify Home Details window, accept the default location or browse to a new location and then click **Next**.

Oracle Universal Installer: Specify Home Details

Specify Home Details

Destination

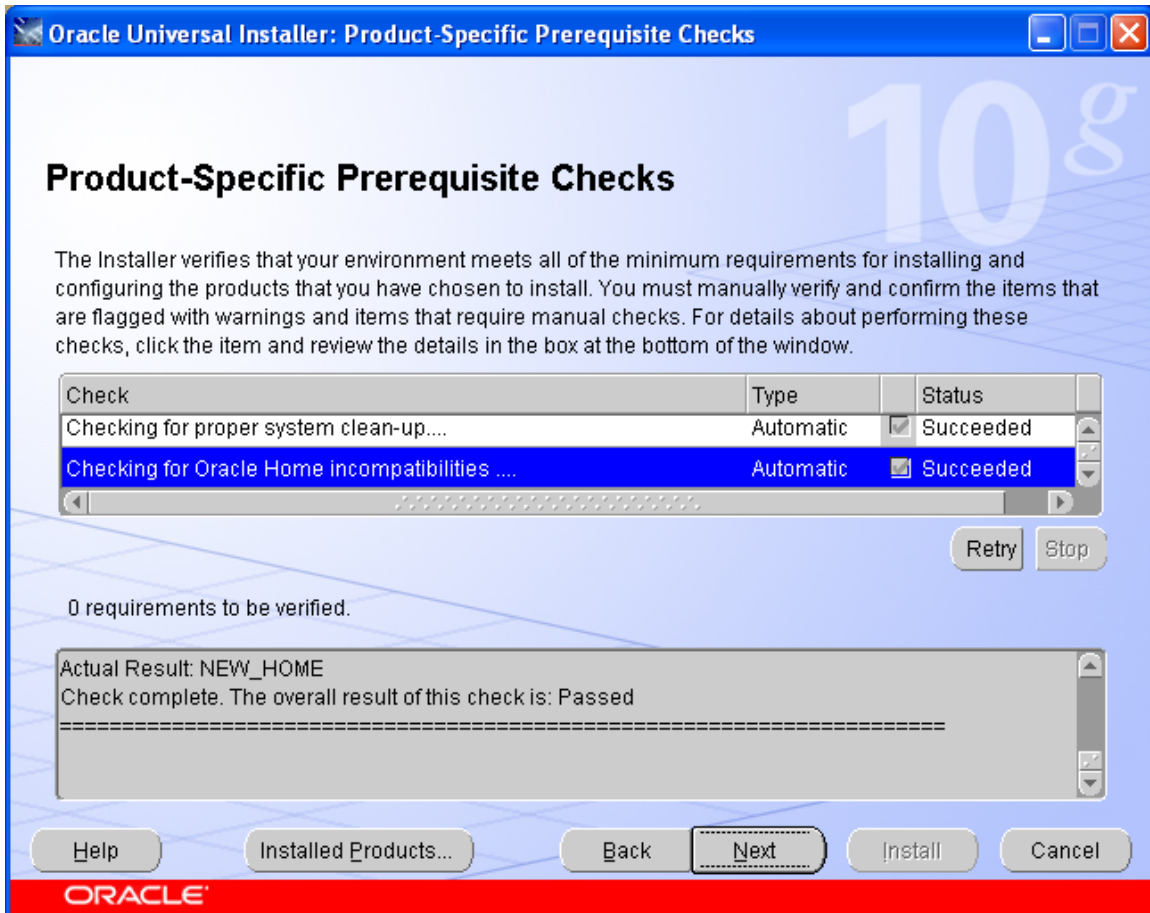
Enter or select a name for the installation and the full path where you want to install the product.

Name:

Path:

ORACLE

In the Product-Specific Prerequisite Checks window, verify that all checks have 'Succeeded' and then click **Next**. If any checks have failed, address as appropriate.



In the Select Configuration Option window, choose to **Create a database** and then click **Next**.

Oracle Universal Installer: Select Configuration Option

Select Configuration Option

Select the configuration that suits your needs. You can choose either to create a database or to configure Automatic Storage Management (ASM) for managing database file storage. Alternatively, you can choose to install just the software necessary to run a database, and perform any database configuration later.

☒ Create a database

☐ Configure Automatic Storage Management (ASM)

Specify ASM SYS Password:

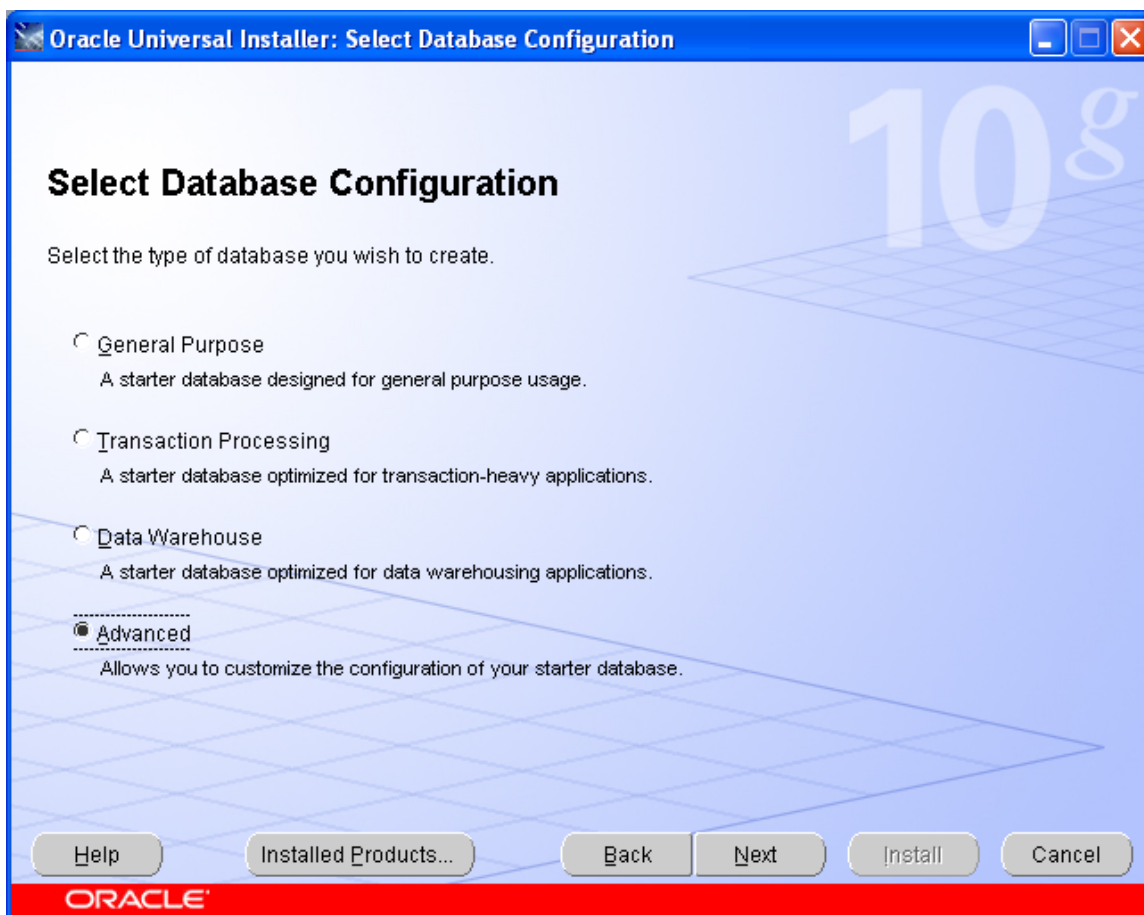
Confirm ASM SYS Password:

☐ Install database Software only

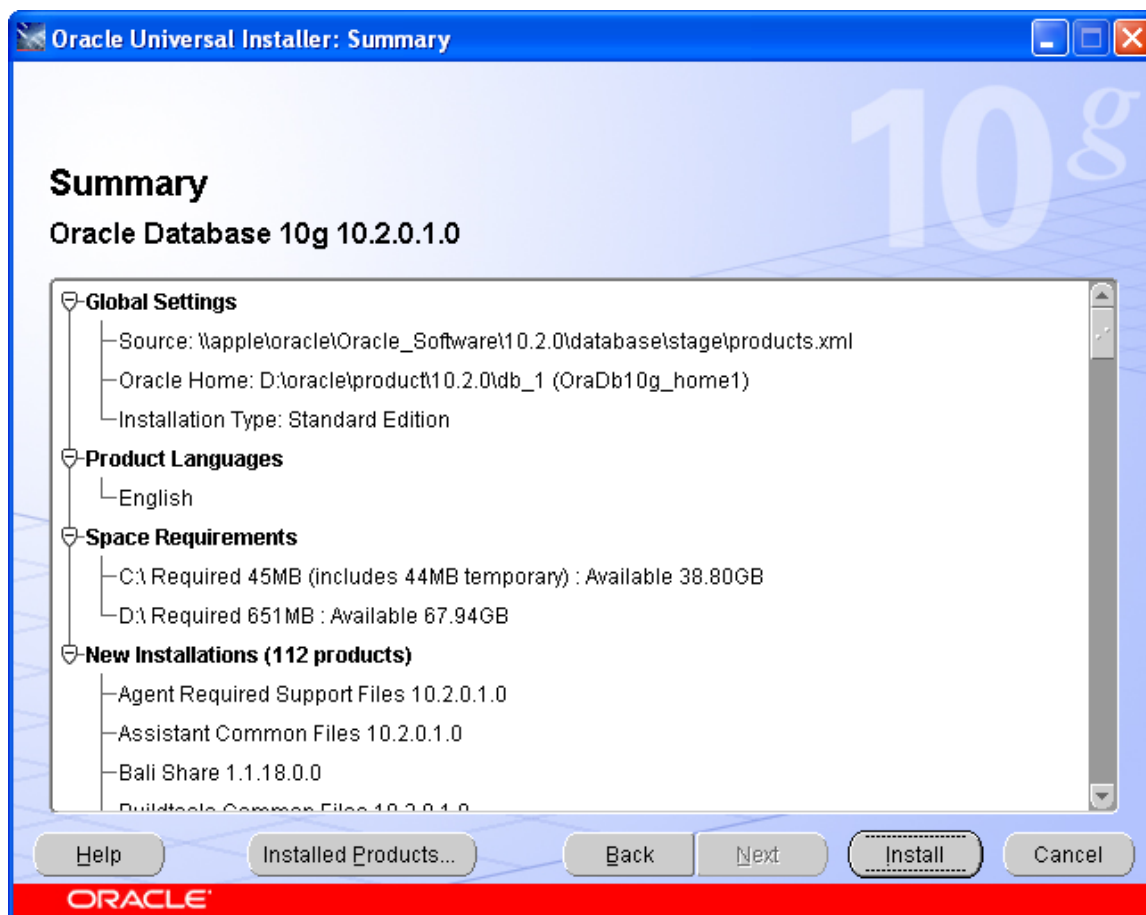
Help Installed Products... Back **Next** Install Cancel

ORACLE

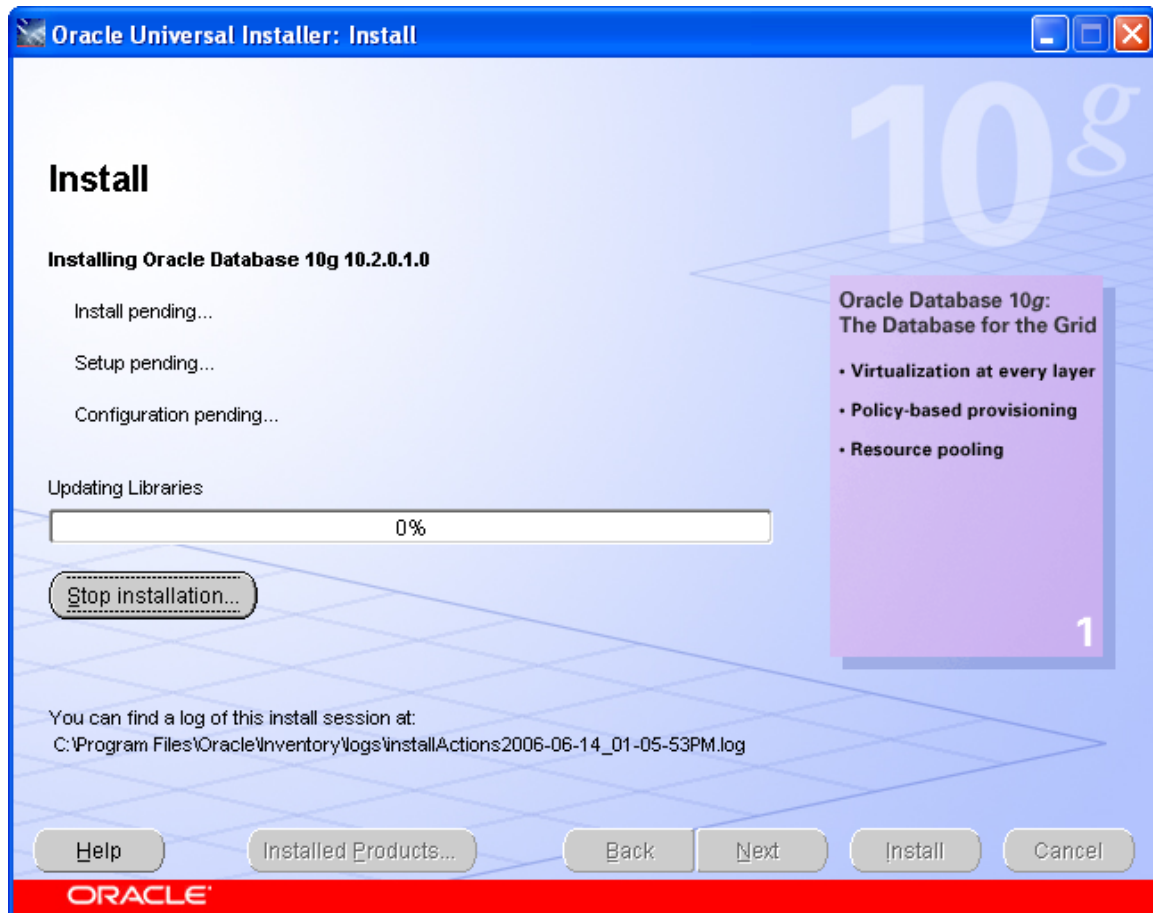
In the Select Database Configuration window, choose **Advanced** and then click **Next**.



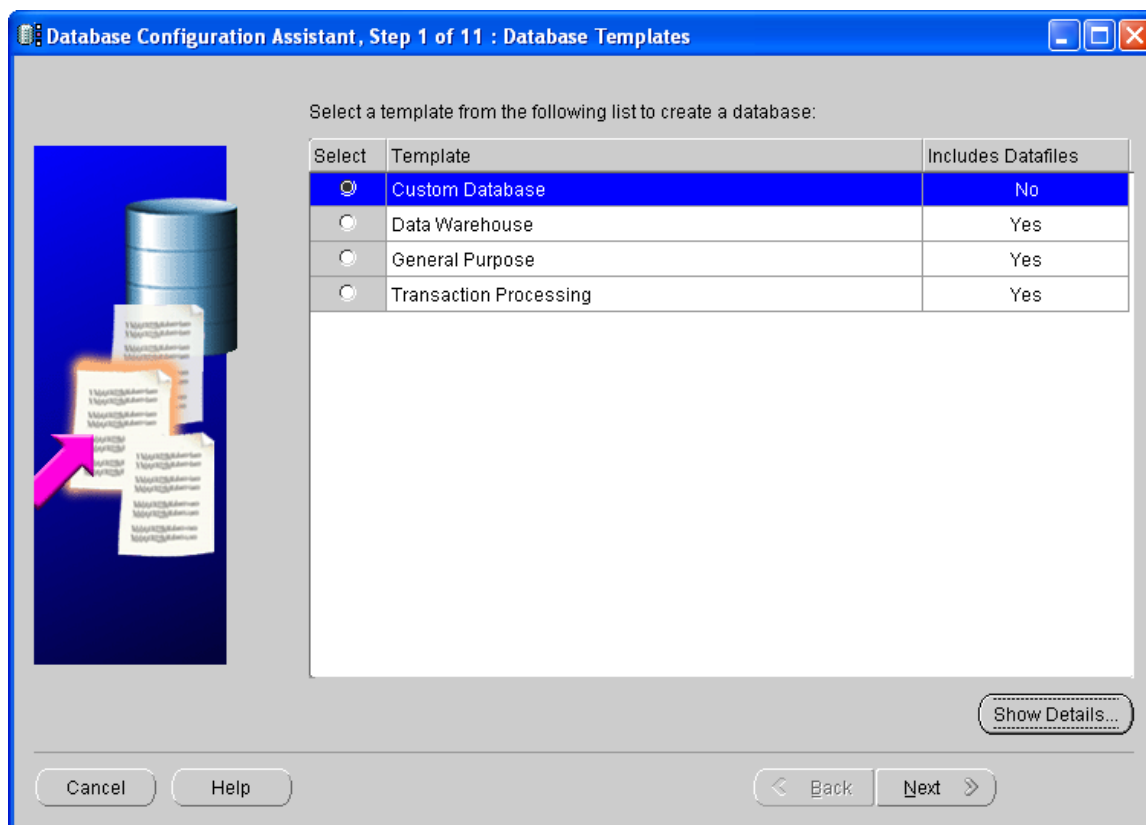
In the Summary window, click **Install**.



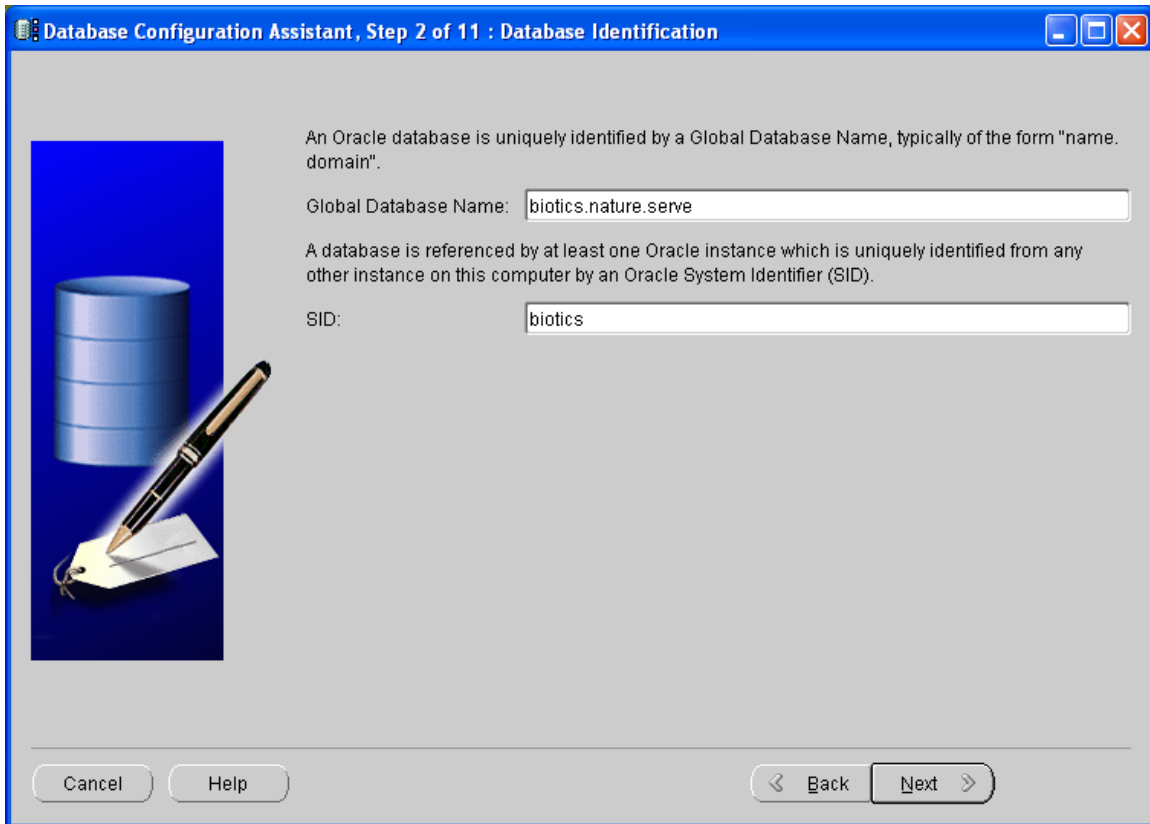
Watch the progress bar or get some other work done.



In the Database Configuration Assistant, Step 1, choose **Custom Database** and click **Next**.



Specify a **Global Database Name**, using your local windows domain name as a suffix. You can find the domain name by right-clicking My Computer and choosing Properties --> Computer Name (or Network Identification) tab. The **SID** is generated automatically as you type the Global Database Name; **important:** make sure the SID is 8 characters or less.



Database Configuration Assistant, Step 2 of 11 : Database Identification

An Oracle database is uniquely identified by a Global Database Name, typically of the form "name.domain".

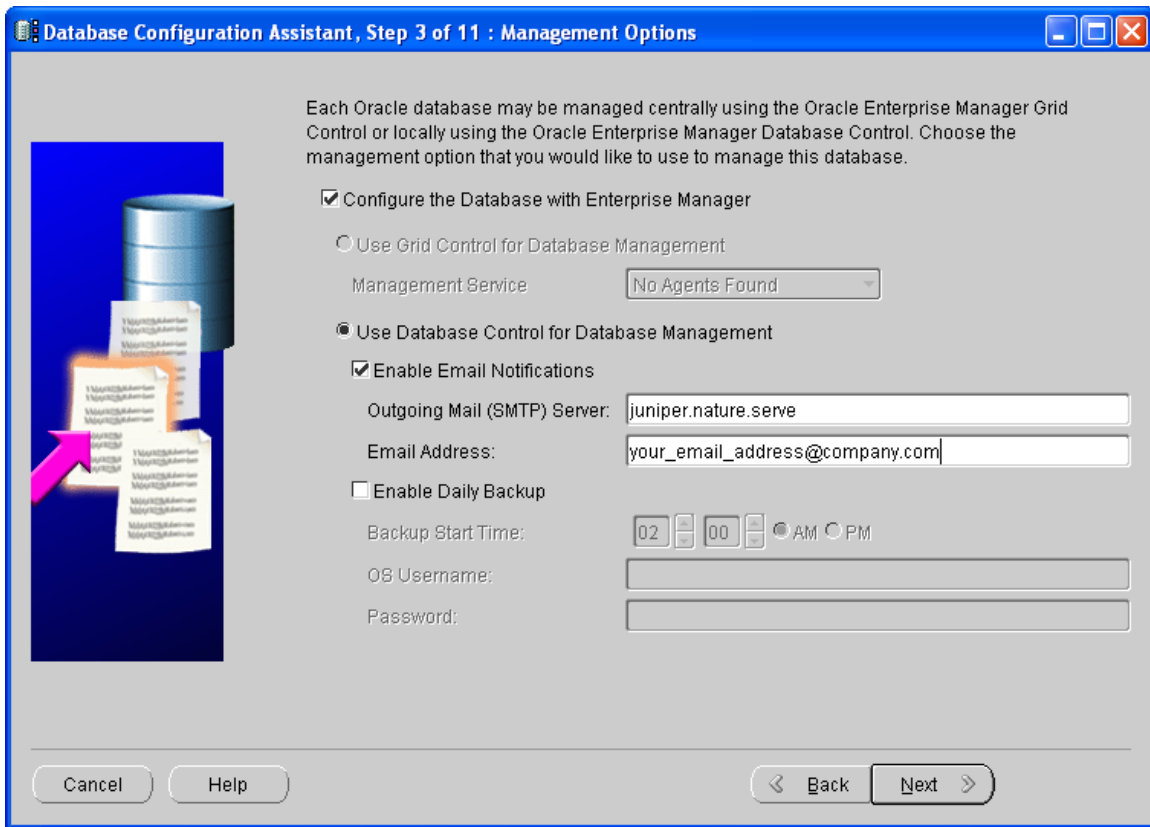
Global Database Name:

A database is referenced by at least one Oracle instance which is uniquely identified from any other instance on this computer by an Oracle System Identifier (SID).

SID:

Cancel Help Back Next

Check the box labeled **Configure the Database...** If you wish, you can set Oracle up to automatically send you critical notifications via e-mail. If you don't have your **Outgoing Mail (SMTP) Server** name, ask your network or system admin.



Database Configuration Assistant, Step 3 of 11 : Management Options

Each Oracle database may be managed centrally using the Oracle Enterprise Manager Grid Control or locally using the Oracle Enterprise Manager Database Control. Choose the management option that you would like to use to manage this database.

☒ Configure the Database with Enterprise Manager

☐ Use Grid Control for Database Management

Management Service: No Agents Found

☒ Use Database Control for Database Management

☒ Enable Email Notifications

Outgoing Mail (SMTP) Server: juniper.nature.serve

Email Address: your_email_address@company.com

☐ Enable Daily Backup

Backup Start Time: 02:00 AM

OS Username:

Password:

Cancel Help Back Next

Choose a **Password** that will be used for the four “backend” accounts, and click **Next**.

Database Configuration Assistant, Step 4 of 11 : Database Credentials

For security reasons, you must specify passwords for the following user accounts in the new database.

☒ Use the Same Password for All Accounts

Password:

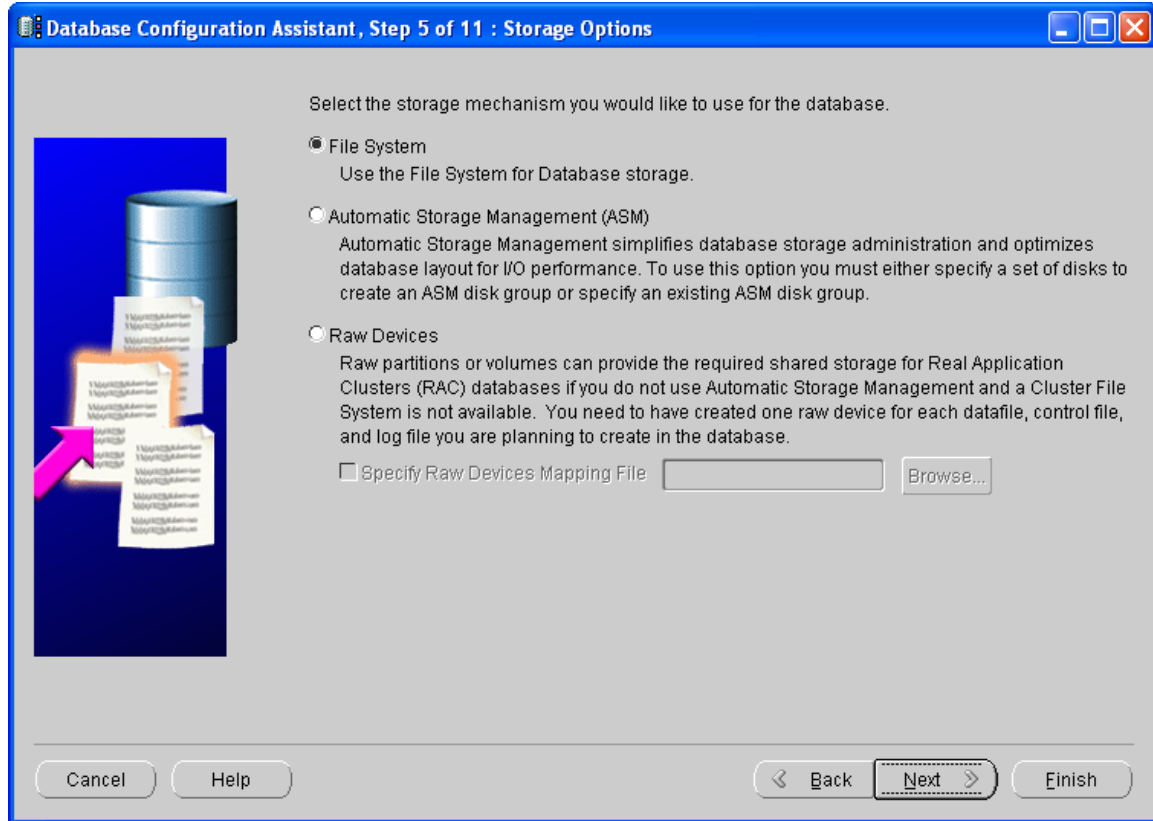
Confirm Password:

☐ Use Different Passwords

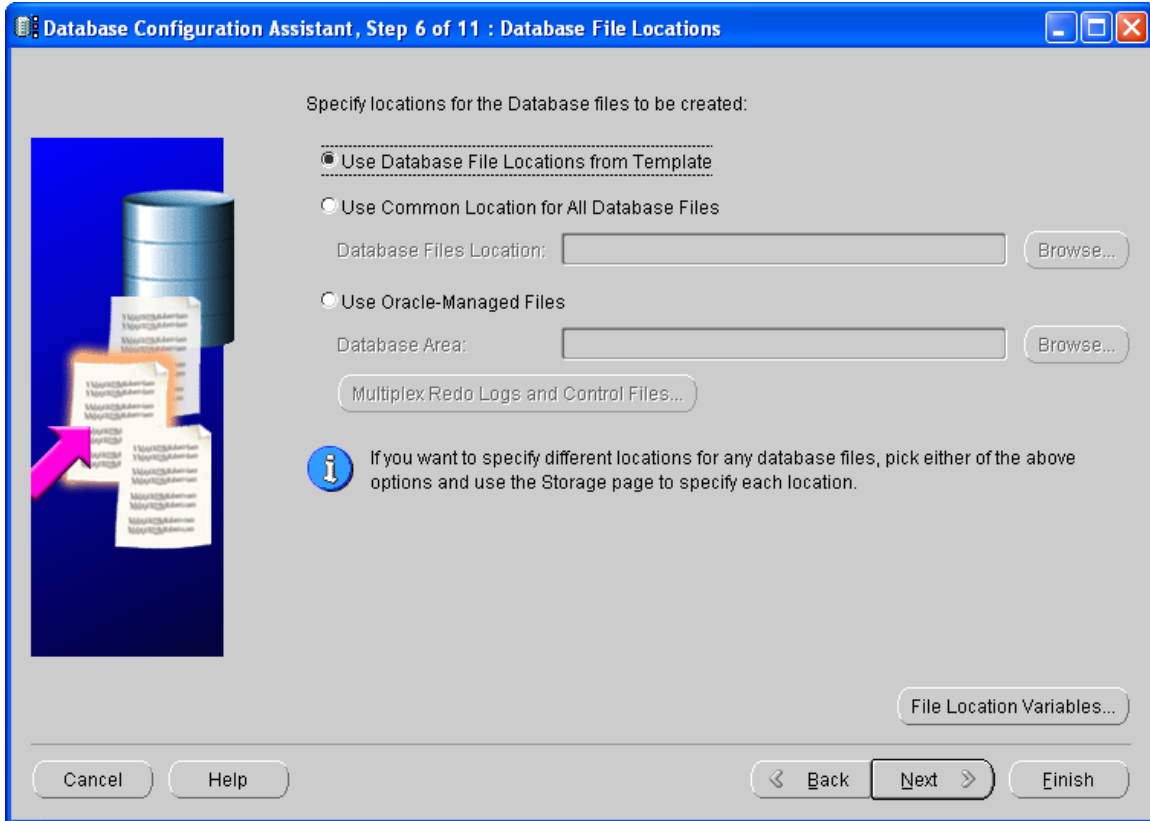
User Name	Password	Confirm Password
SYS		
SYSTEM		
DBSNMP		
SYSMAN		

Cancel Help Back Next

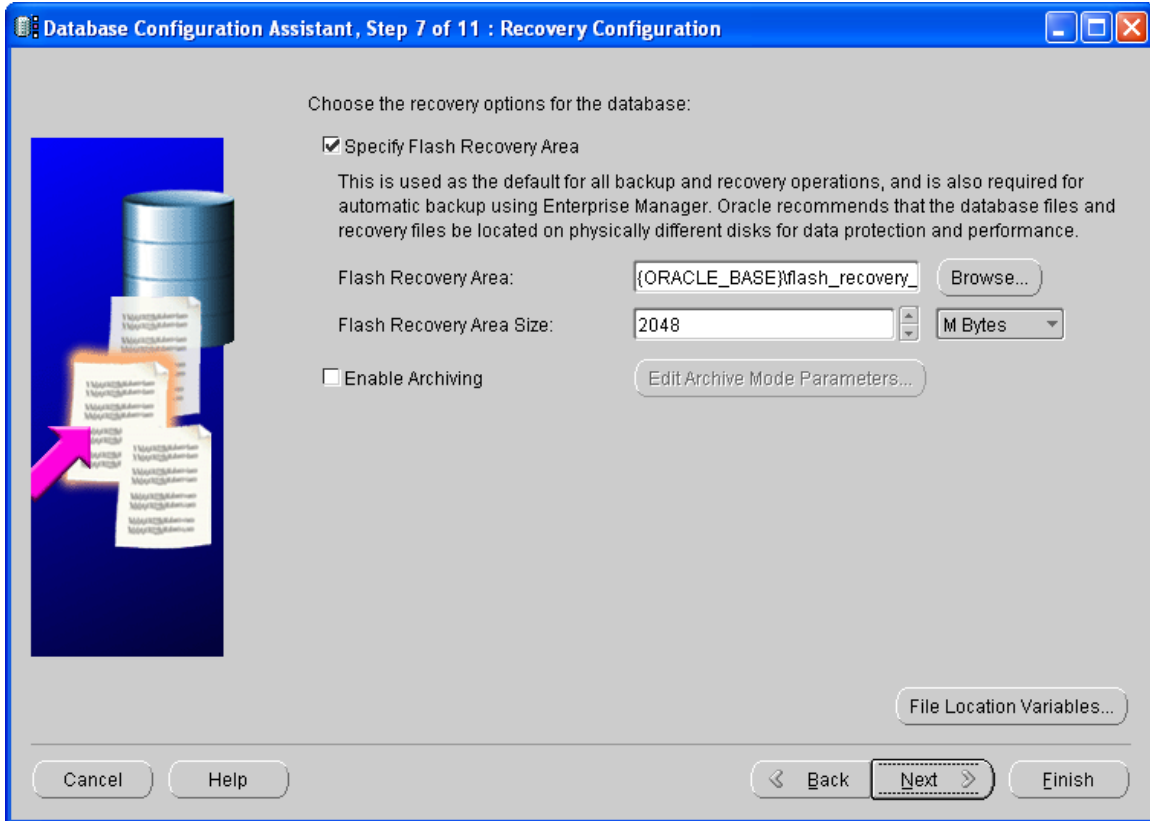
Select **File System** and click **Next**.



Select **Use Database File Locations...** and click **Next**.



Check the box for **Specify Flash Recovery Area** and accept the defaults.



Database Configuration Assistant, Step 7 of 11 : Recovery Configuration

Choose the recovery options for the database:

☒ **Specify Flash Recovery Area**

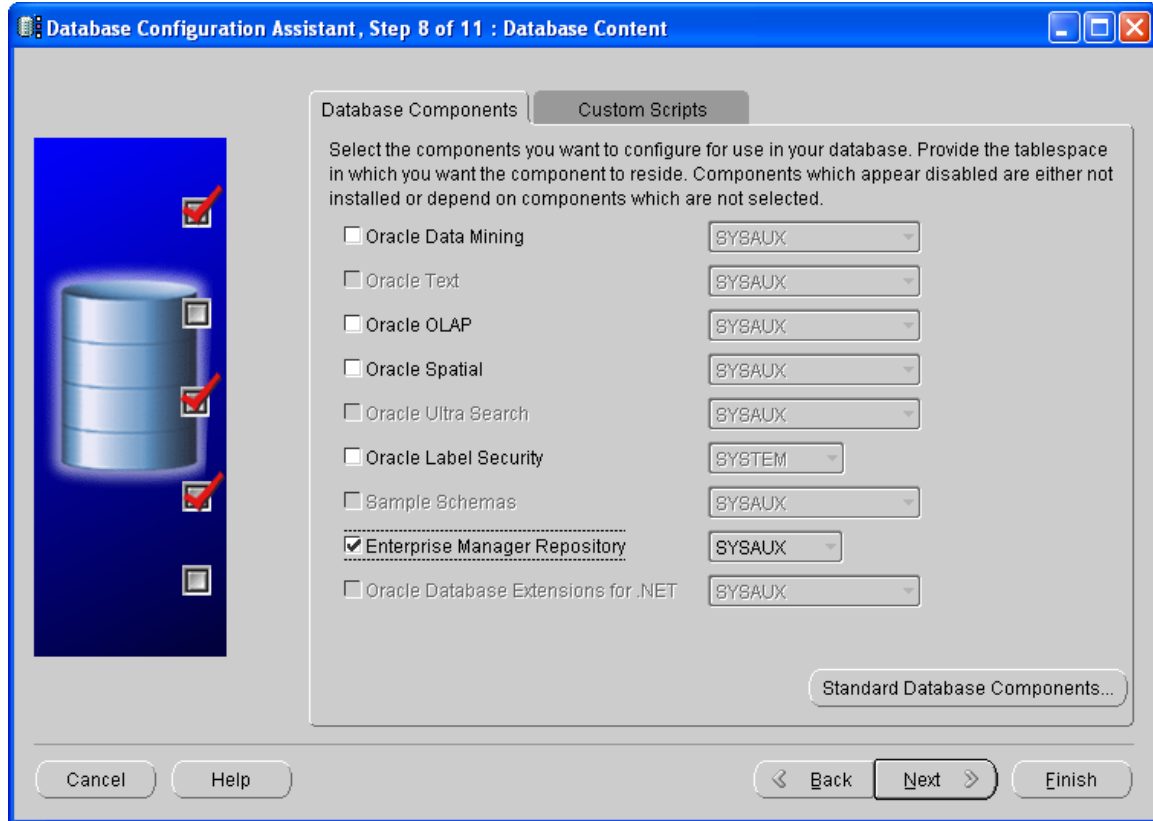
This is used as the default for all backup and recovery operations, and is also required for automatic backup using Enterprise Manager. Oracle recommends that the database files and recovery files be located on physically different disks for data protection and performance.

Flash Recovery Area:

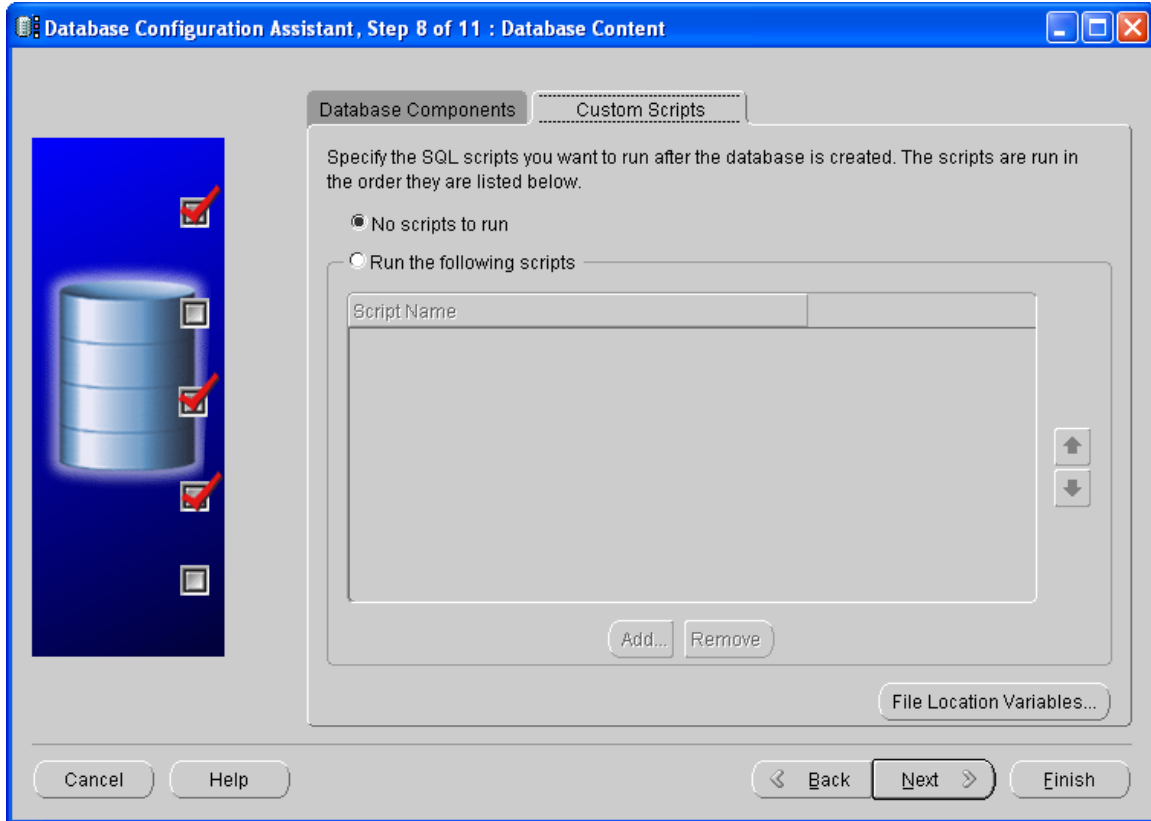
Flash Recovery Area Size:

☐ **Enable Archiving**

Uncheck all options except **Enterprise Manager Repository**.

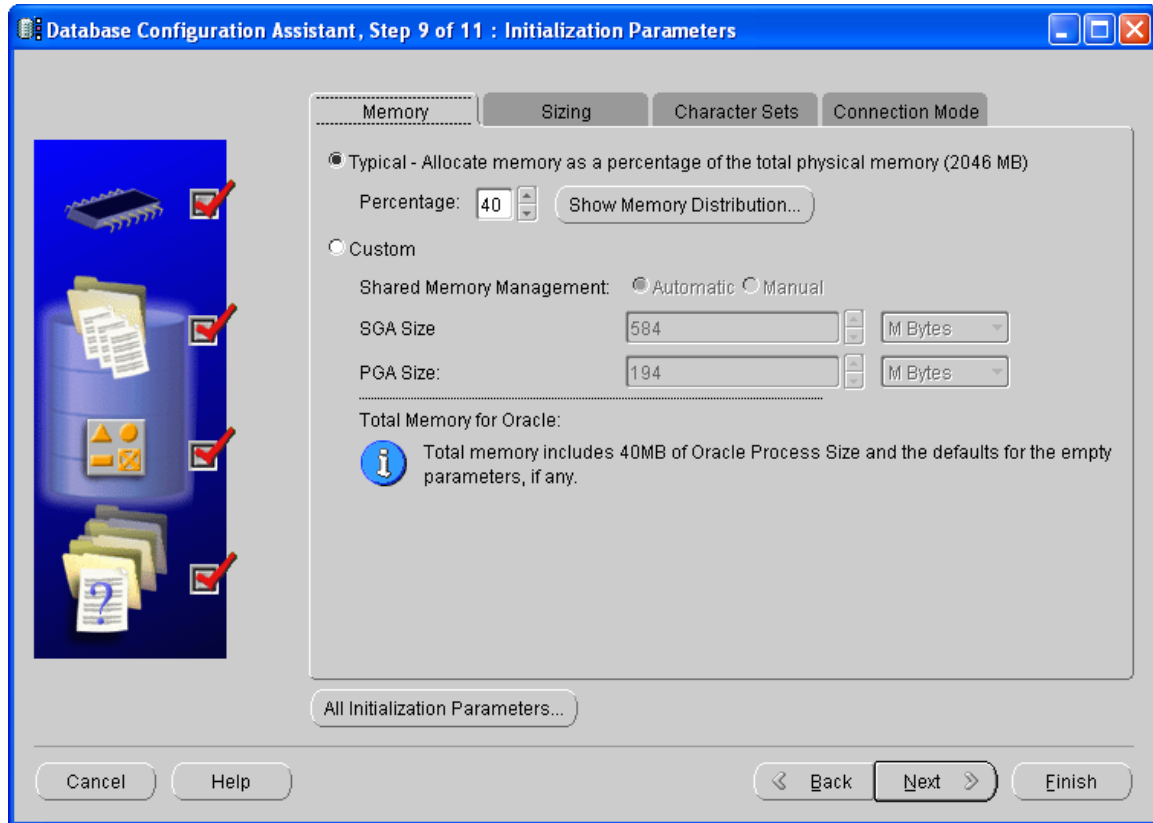


We use no custom scripts.



Please read and follow this regarding memory allocation:

Setting the System Global Area (total memory for Oracle): If your Oracle server has 2 Gb of RAM or more, select the **Typical** button and set the SGA as 40% of RAM. This would make the SGA 800 Mb. If your Oracle server has 1 Gb of RAM, use the custom setting in the second screen shot. Although it is preferable to have at least 2 Gb of RAM on the server, the SGA can always be increased at a later date.



(continued) If you have 1Gb of RAM, use these settings.

Database Configuration Assistant, Step 11 of 13 : Initialization Parameters

Memory Sizing Character Sets Connection Mode

☐ Typical - Allocate memory as a percentage of the total physical memory (2047 MB)
Percentage: 20 Show Memory Distribution...

☒ Custom

Shared Memory Management: ☒ Automatic ☐ Manual

SGA Size: 392 M Bytes

PGA Size: 80 M Bytes

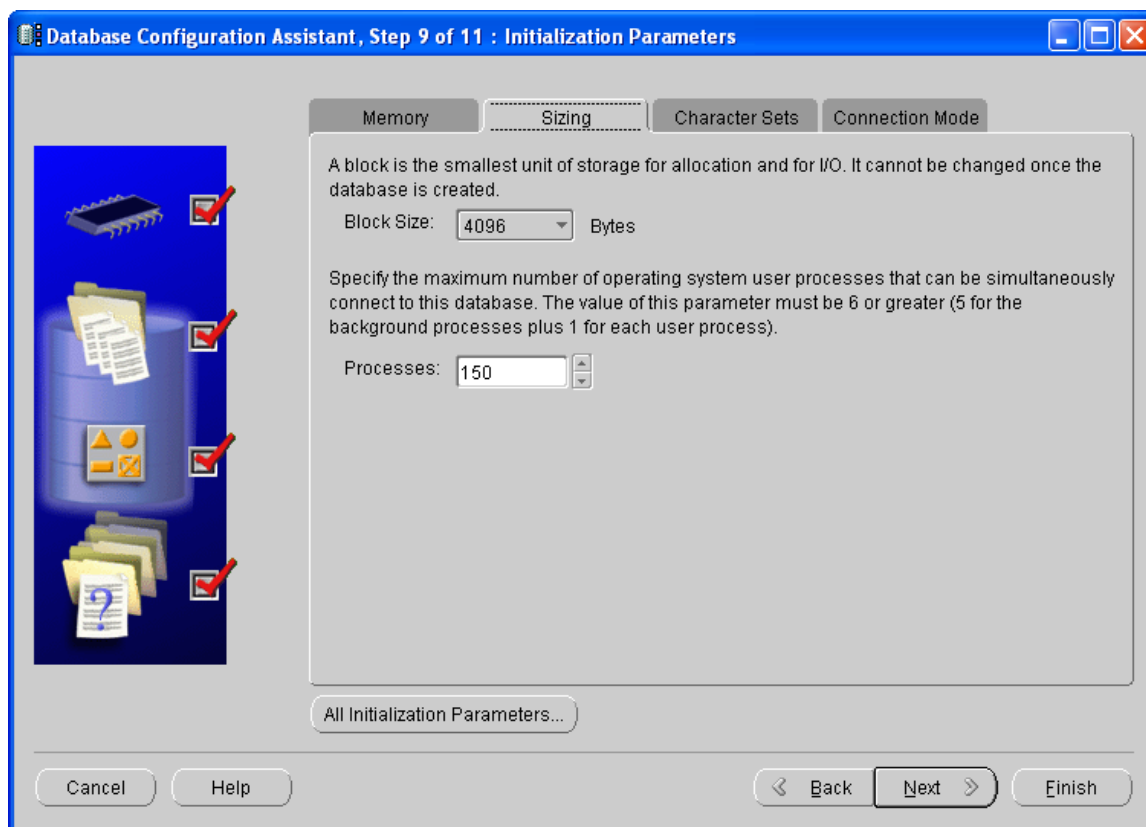
Total Memory for Oracle: 512 M Bytes

Total memory includes 40MB of Oracle Process Size and the defaults for the empty parameters, if any.

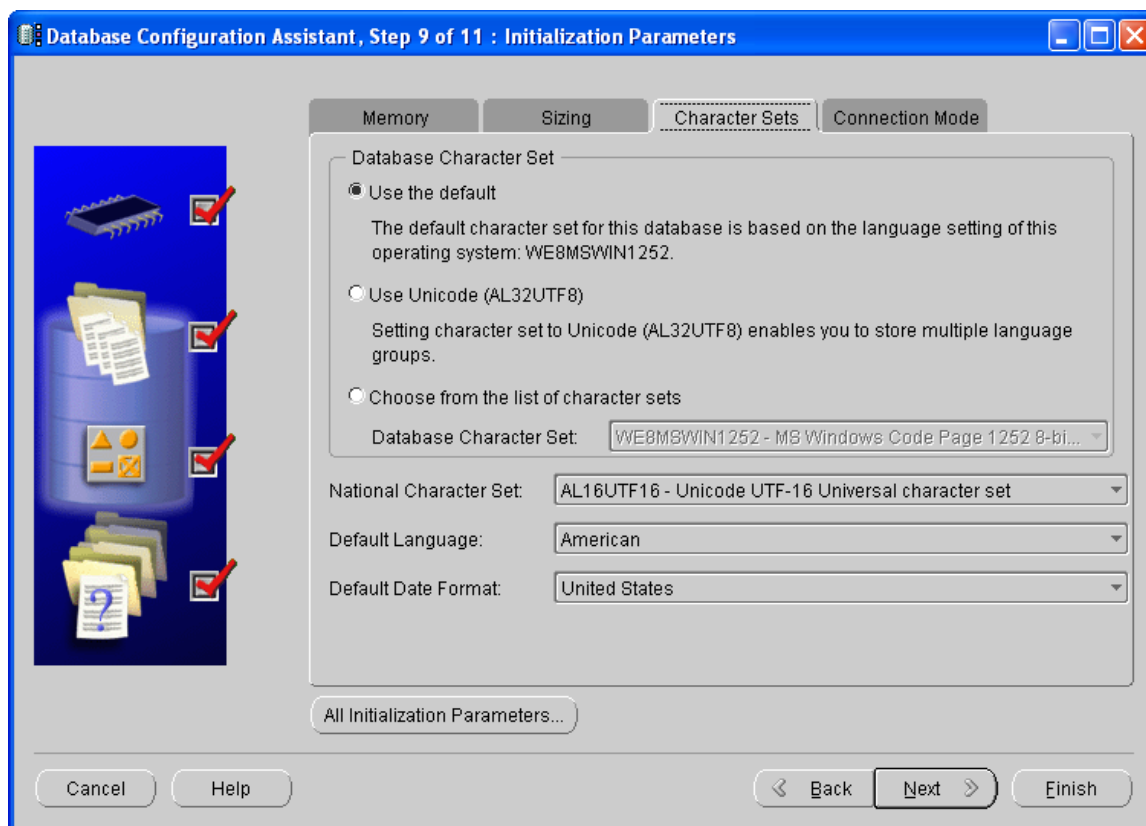
All Initialization Parameters...

Cancel Help Back Next Finish

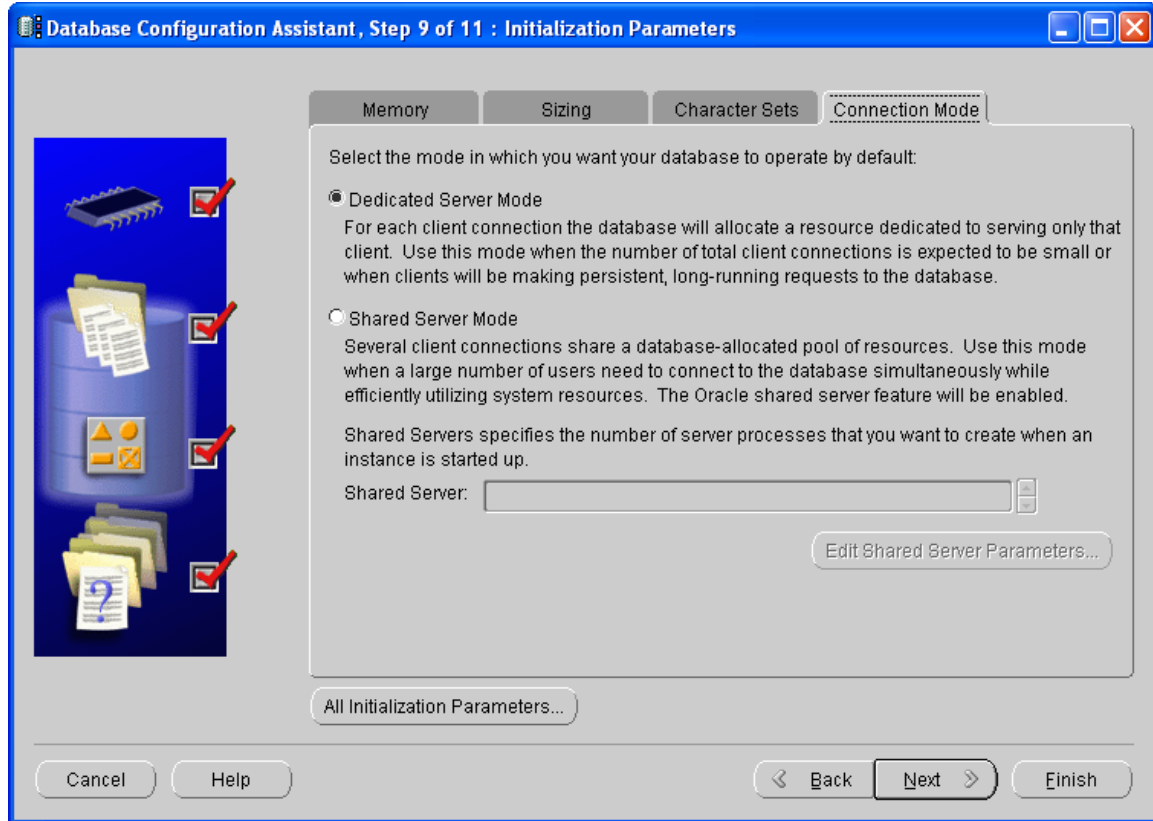
For Windows Machines, change the **Block Size** to 4096. Leave **Processes** at 150.



If the default character set is not set to WE8MSWIN1252 in the following window, choose the **Choose from the list of character sets** option and choose **WE8MSWIN1252...** from the Database Character Set dropdown menu.

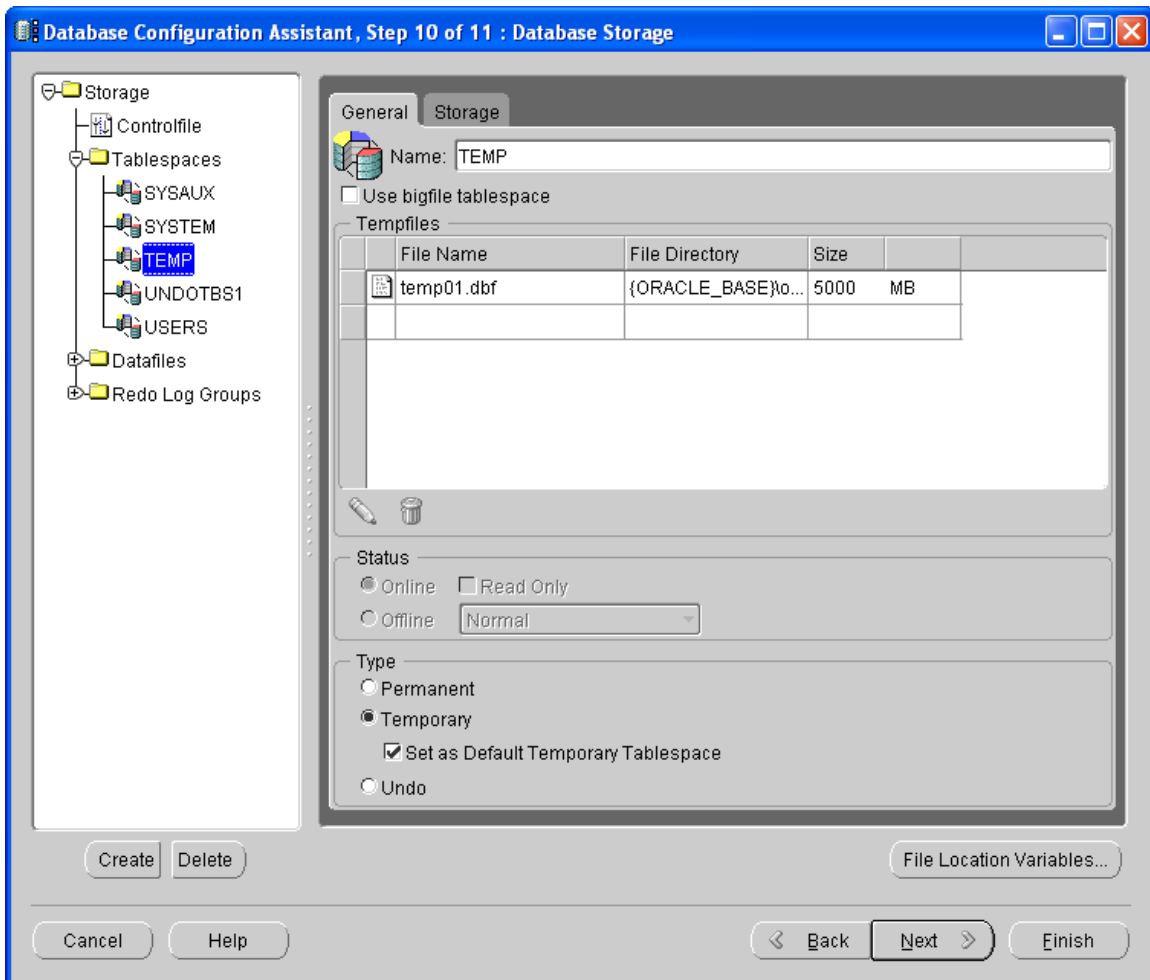


Use **Dedicated Server Mode**. Shared Server Mode is for hundreds of users.

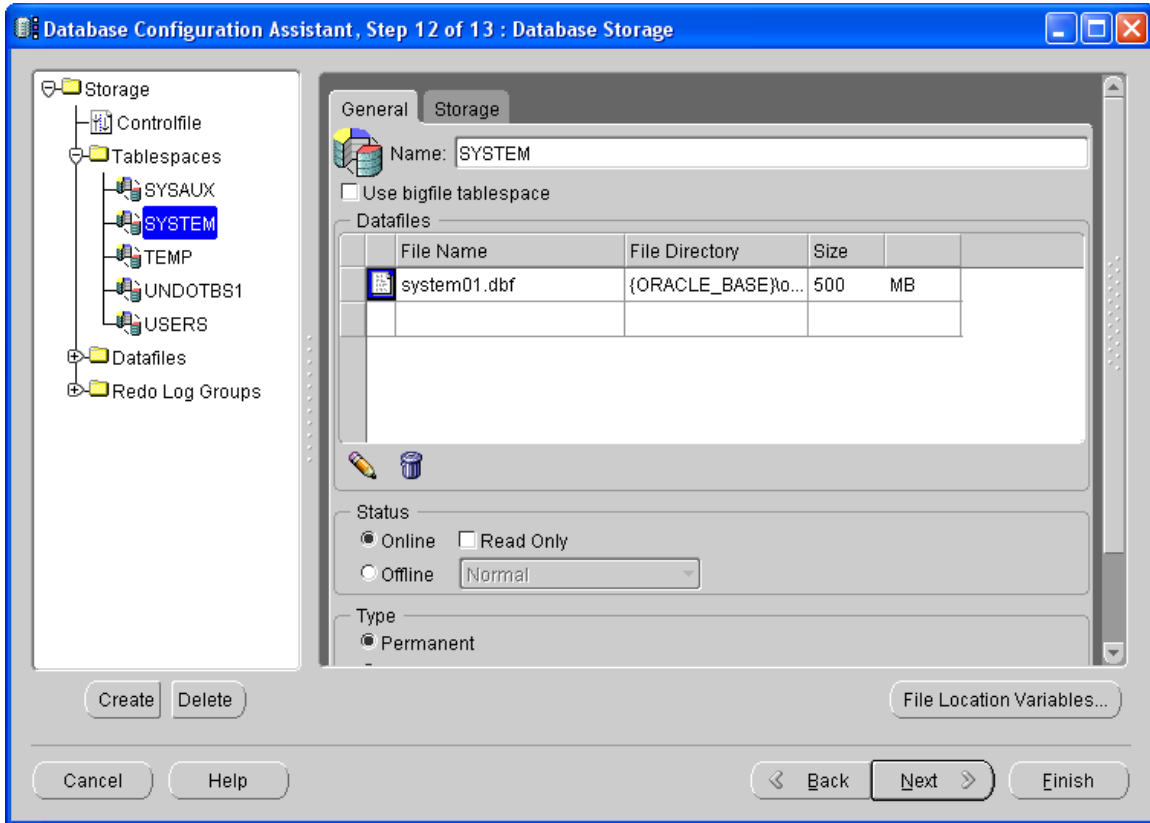


Expand the Tablespaces and change the **TEMP** tablespace according to the number of users you have. We have found that running Crystal Reports uses a good portion of temp table space and therefore we have been generous with the size. A temp table space of less than 1 Gb will cause problems for the application.

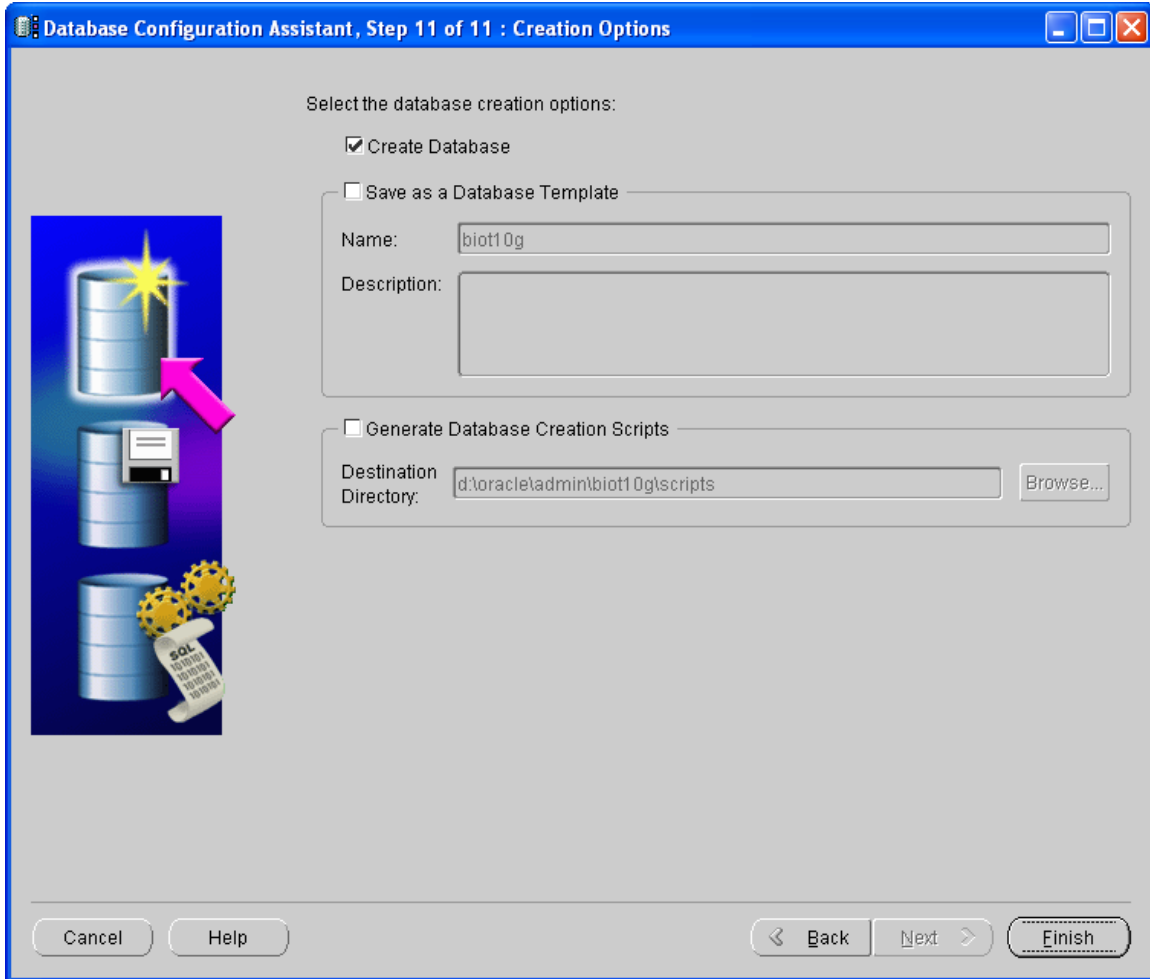
- < 4 users 2.5 Gb
- 4 - 9 users 3 Gb
- >10 users 5 Gb



Set the **SYSTEM** tablespace size to 500 MB.



Check the **Create Database** box and click **Finish**.



Database Configuration Assistant, Step 11 of 11 : Creation Options

Select the database creation options:

☒ Create Database

☐ Save as a Database Template

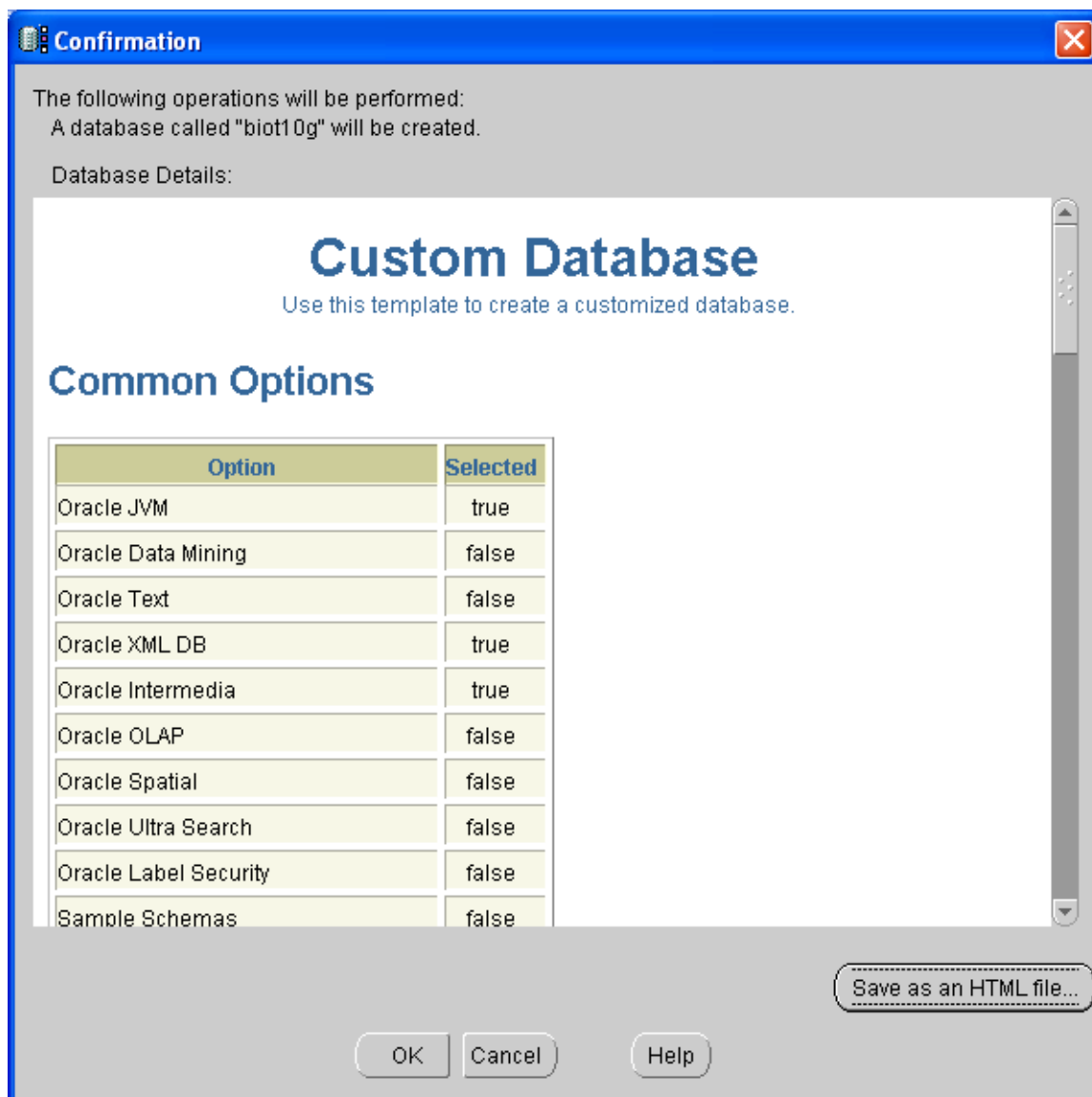
Name:

Description:

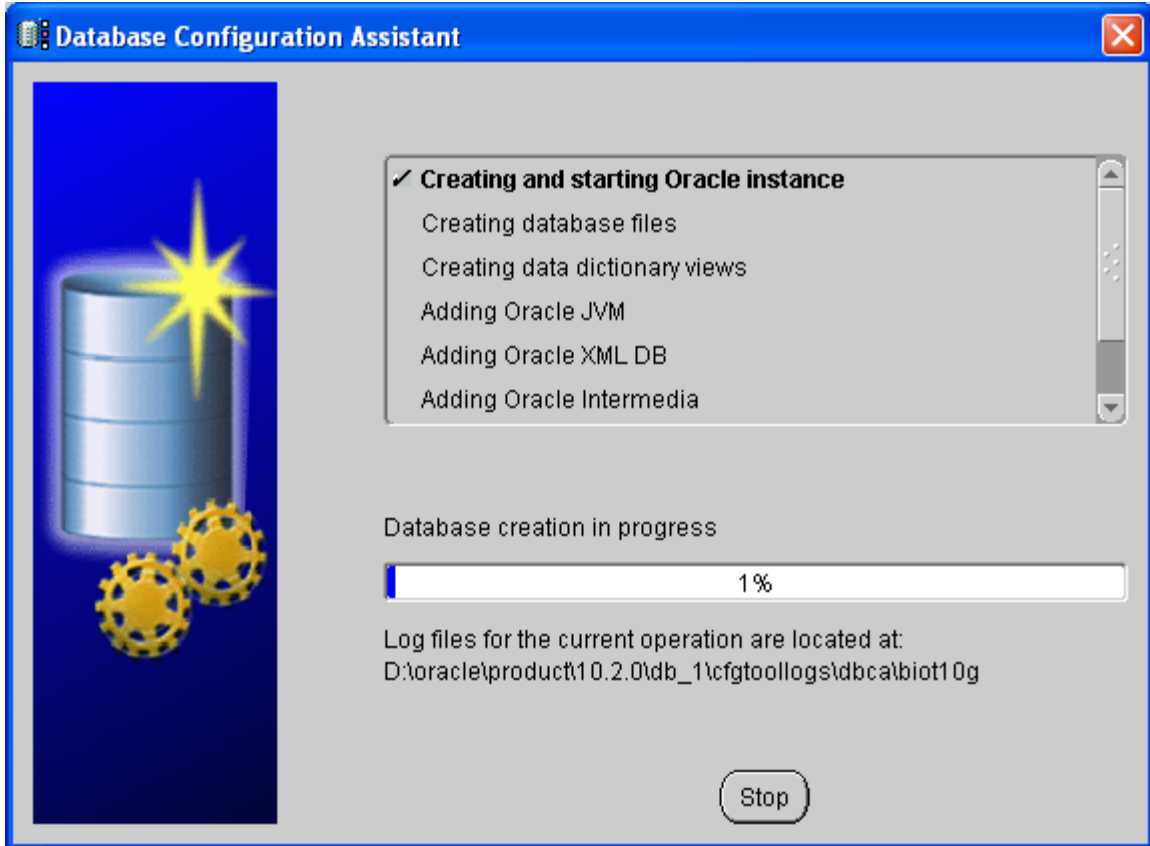
☐ Generate Database Creation Scripts

Destination Directory:

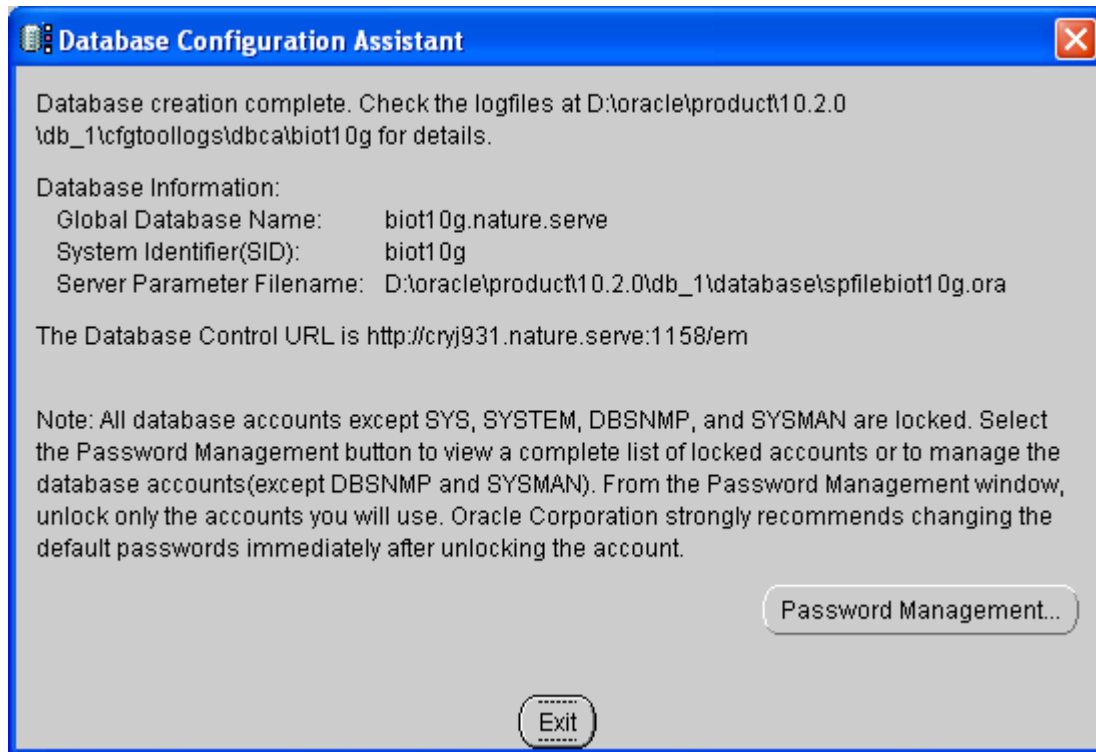
Click **OK**.



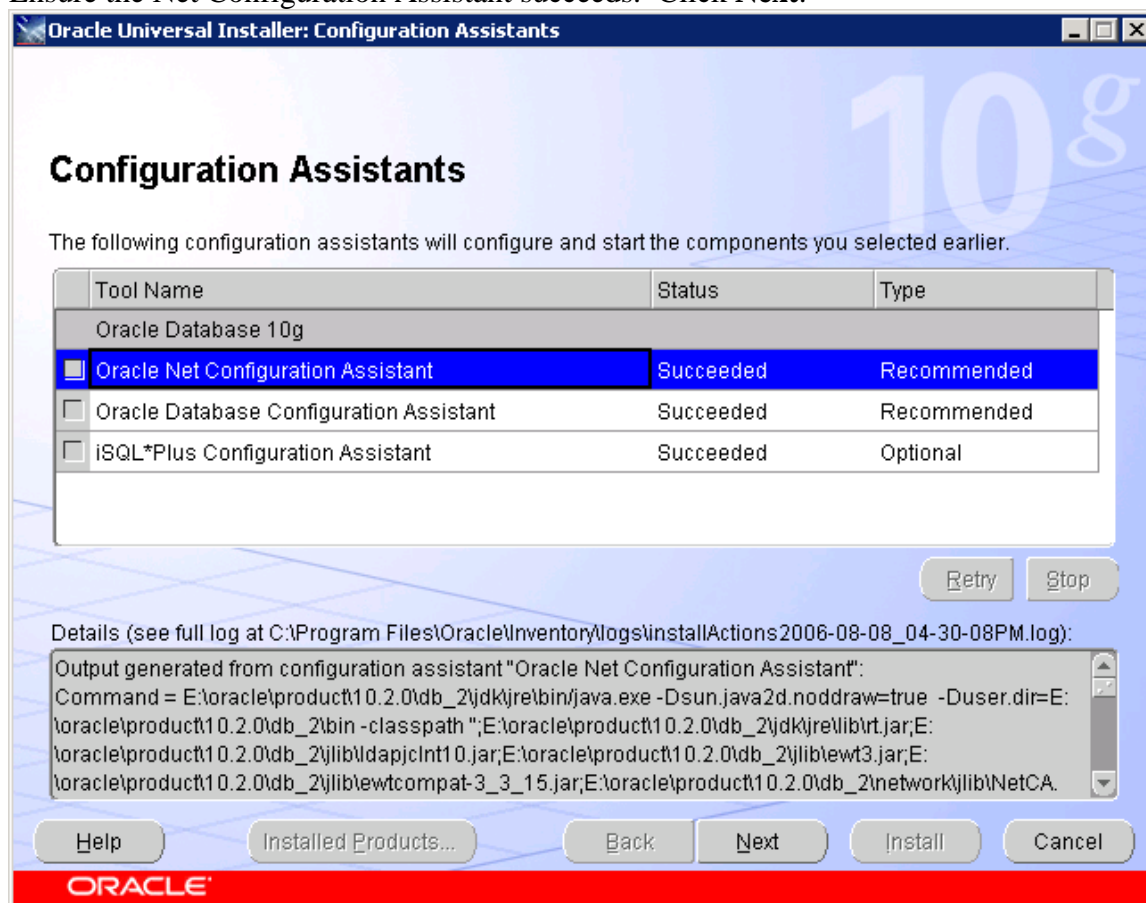
This may take a while.



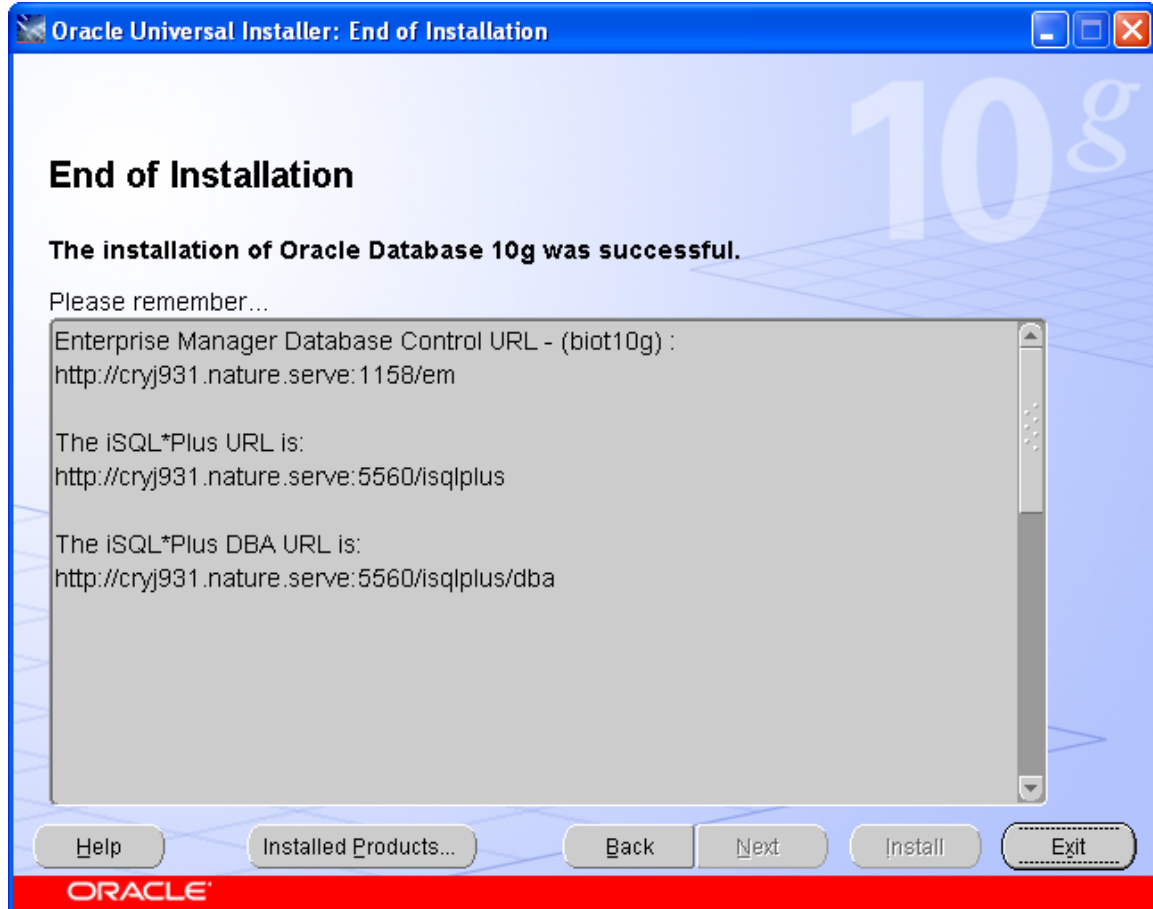
Remember that Database Control URL. Optional: take a screenshot and send it to product_support@natureserve.org. We will put the information in our BridgeTrack support database.



Ensure the Net Configuration Assistant succeeds. Click **Next**.



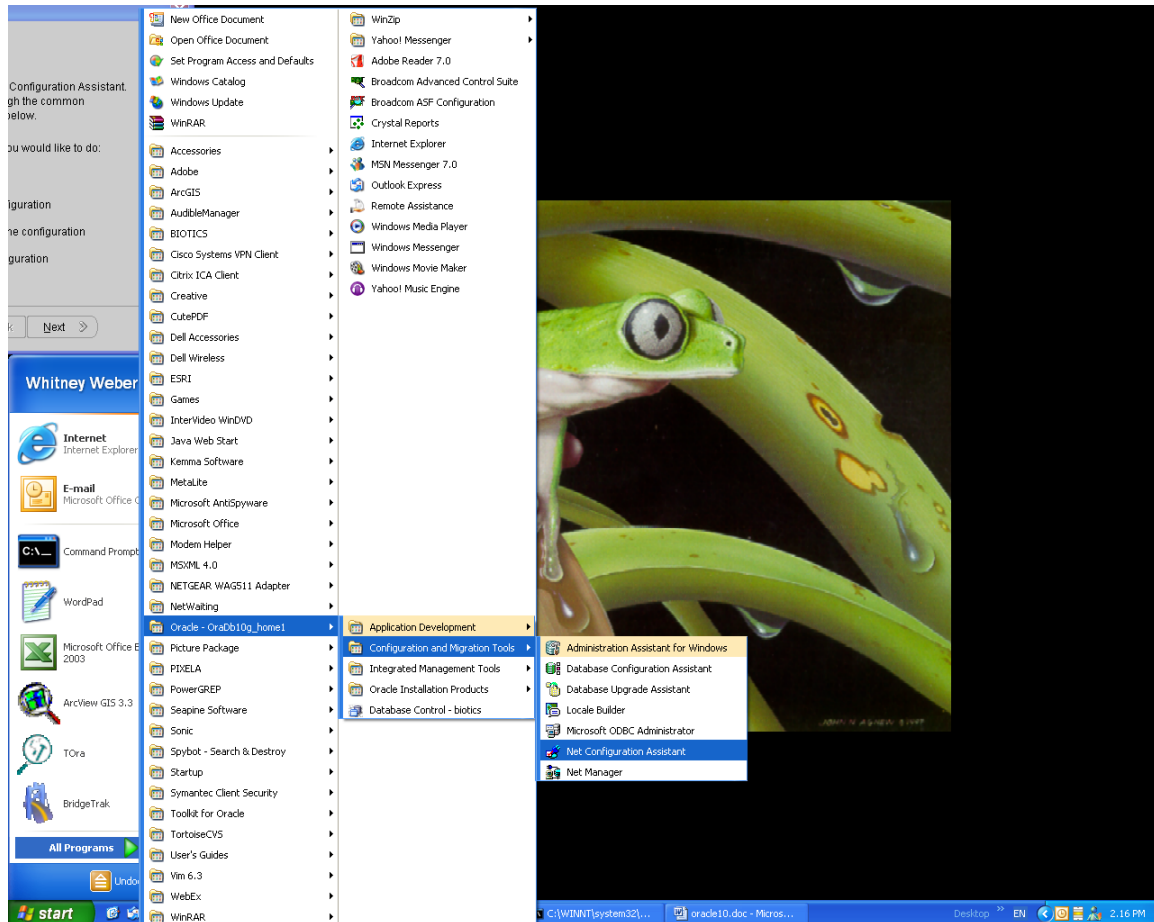
Click **Exit**.



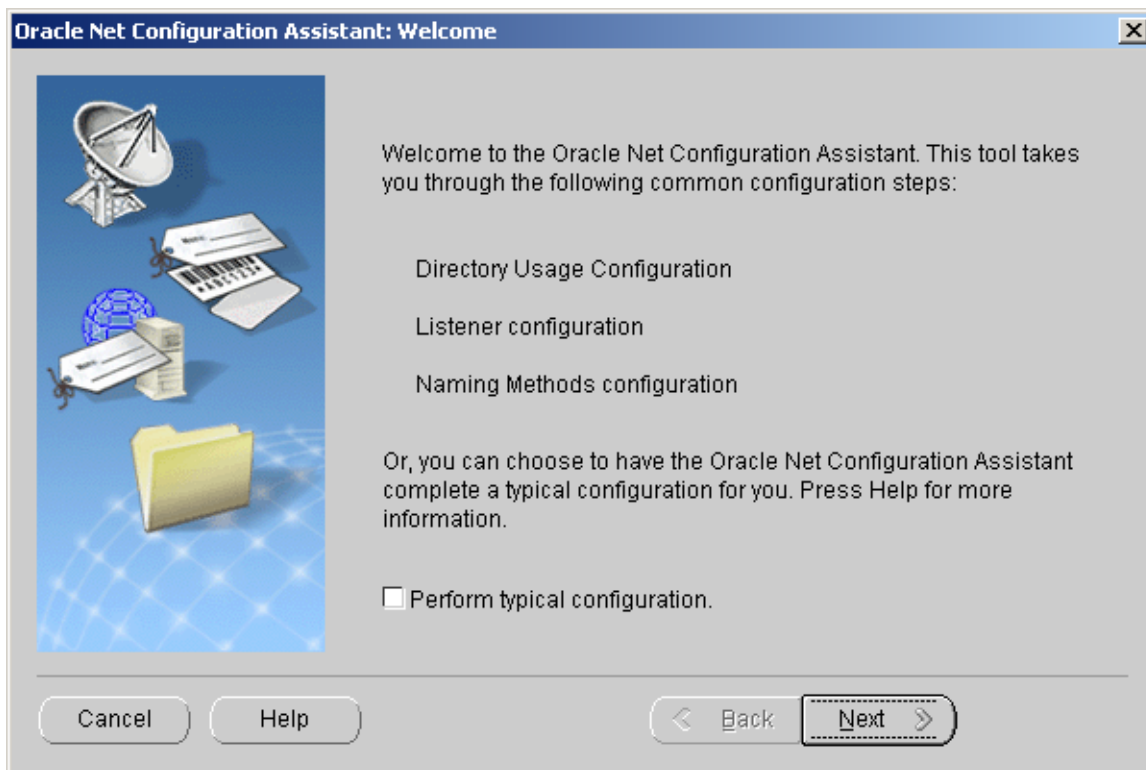
If the Net Configuration Assistant was successful, skip this section.

Create the TNS Listener

1. From the Windows Start menu, choose Programs, and Navigate to your version of Oracle. From the Configuration and Migration Tools menu, select **Net Configuration Assistant**.



2. Follow the screens below to create the TNS Listener.



Oracle Net Configuration Assistant: Listener Configuration, Listener Name




For remote connections to be made to your Oracle database you must have at least one Oracle Net listener. Enter the name of the listener you want to create:

Listener name:

Cancel Help Back Next

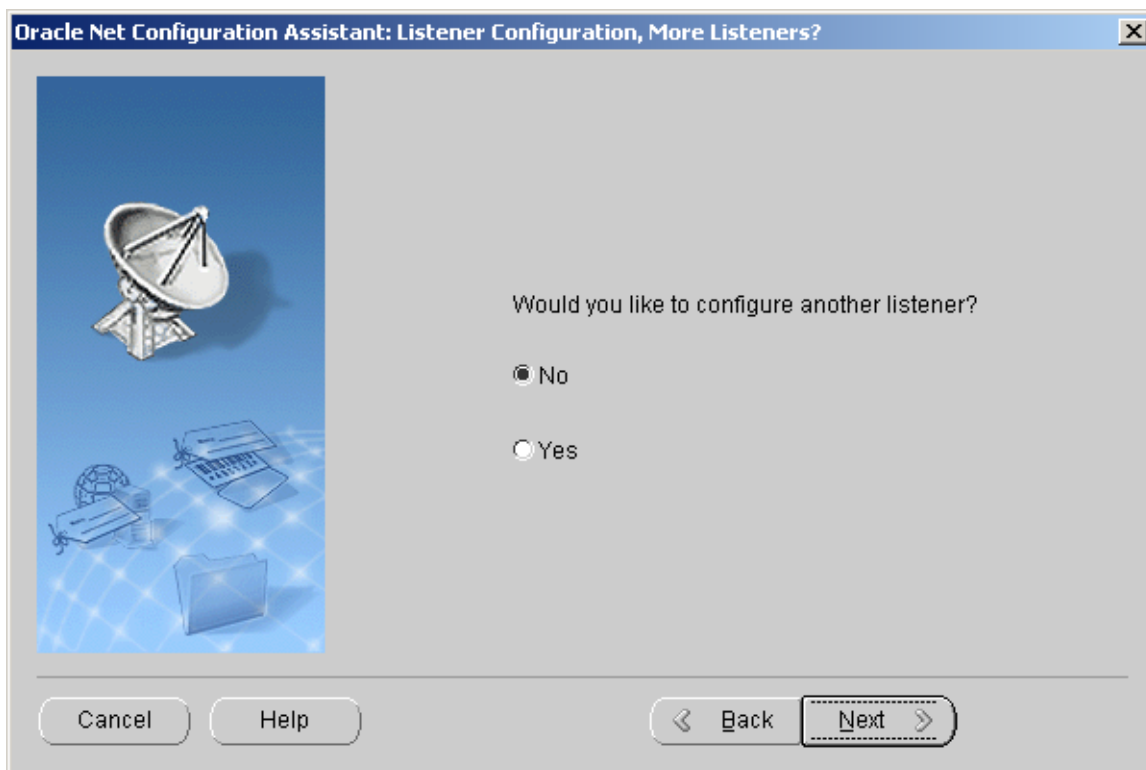
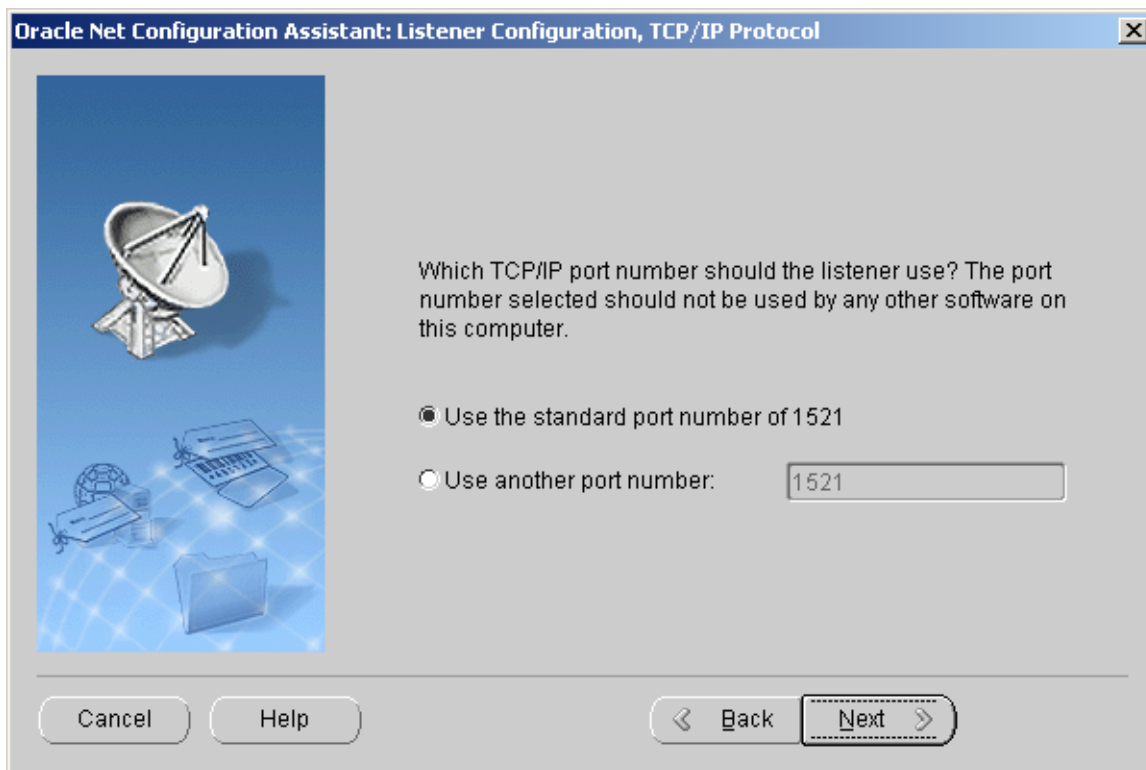
Oracle Net Configuration Assistant: Listener Configuration, Select Protocols

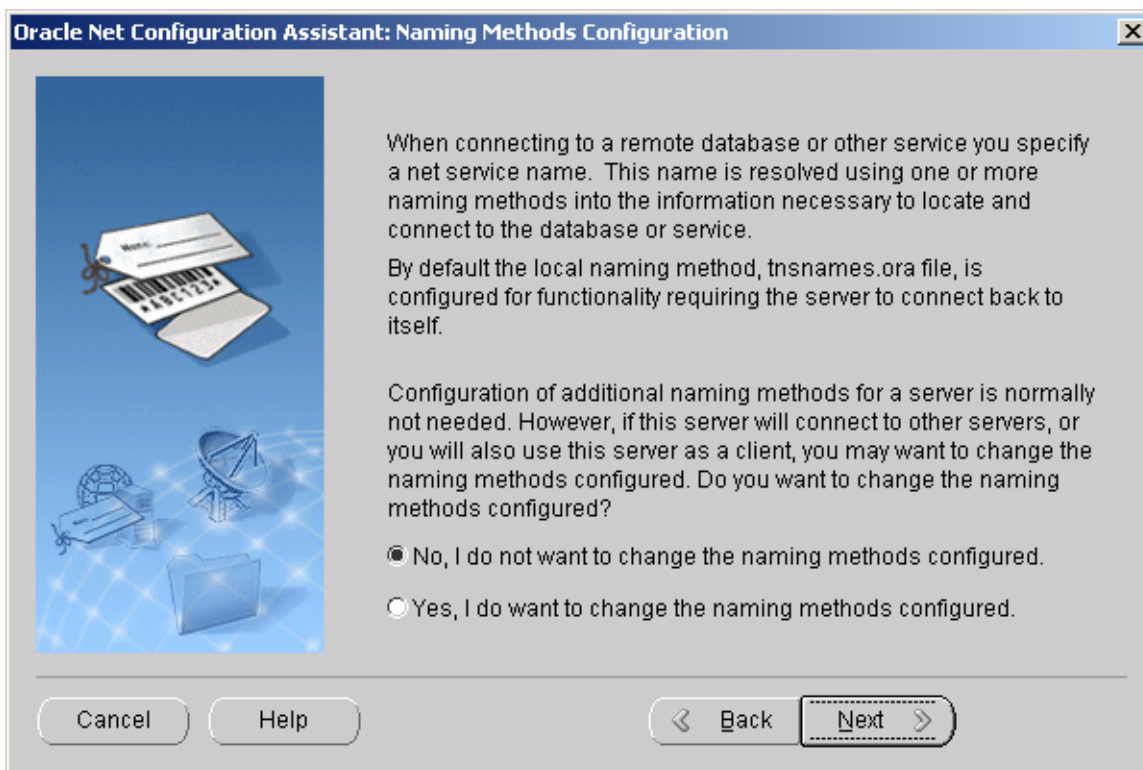
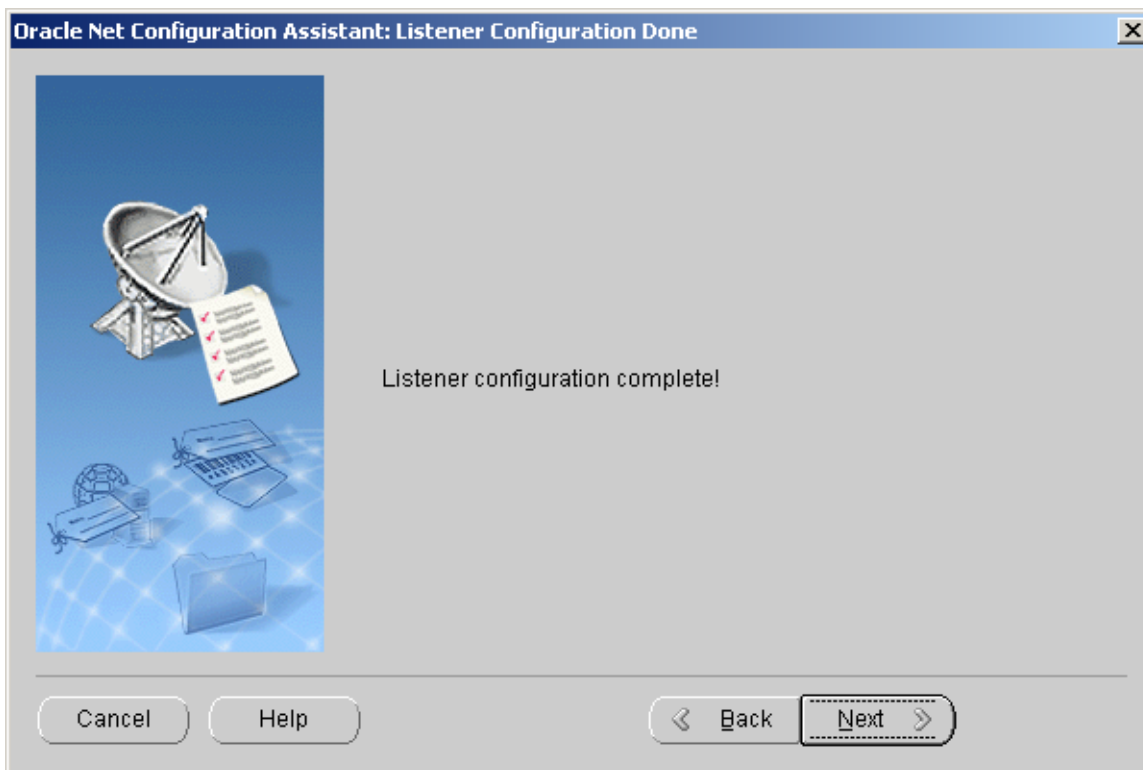


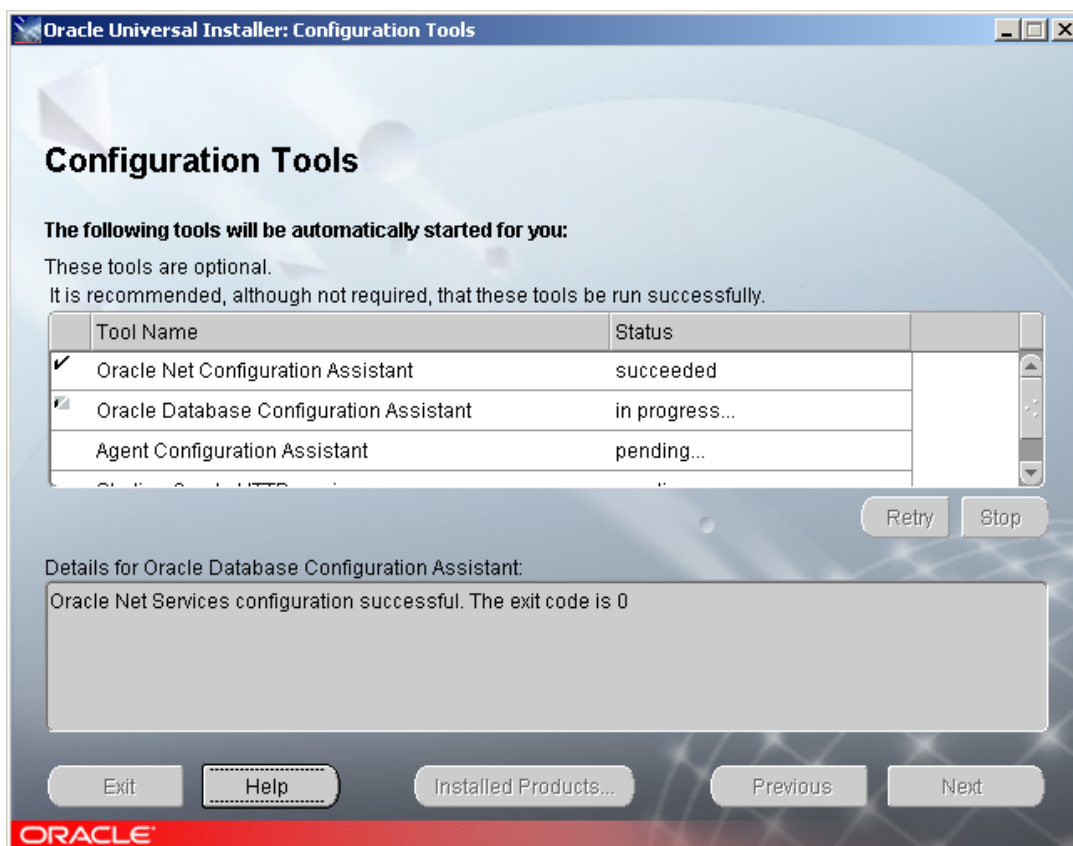
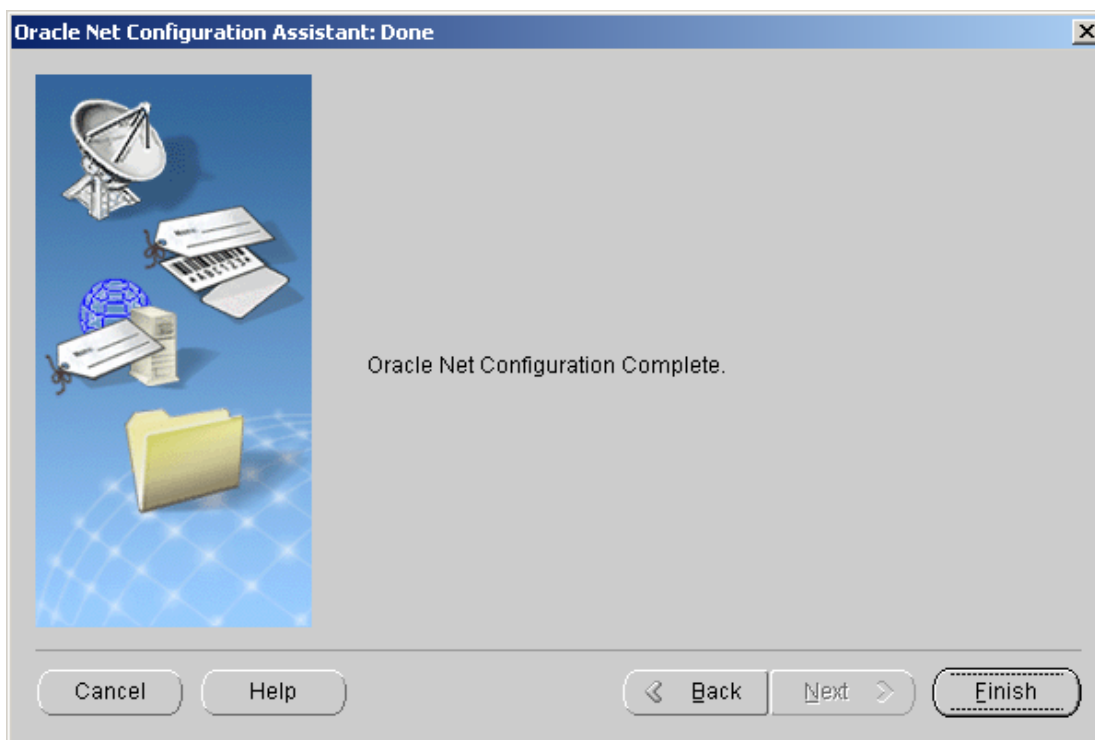
You can configure the listener to accept connections over one or more protocols. Select which protocols you want to configure for this listener. Keep your configuration as simple as possible by configuring only the protocols you need.

Available Protocols		Selected Protocols
NMP	>	TCP
TCP8	<	

Cancel Help Back Next



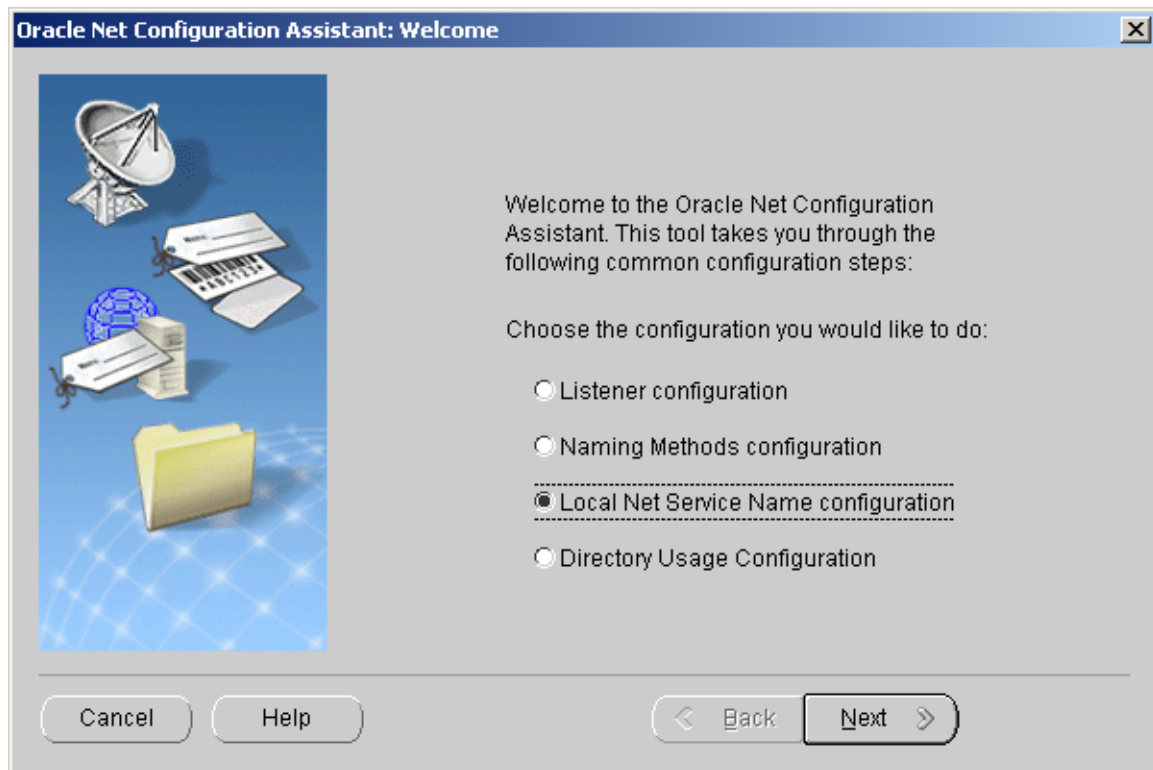
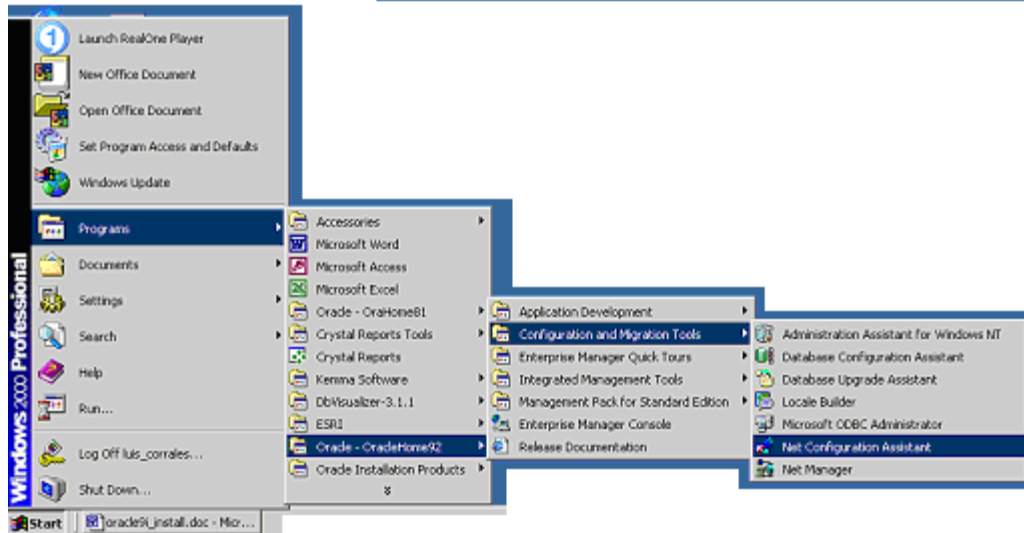


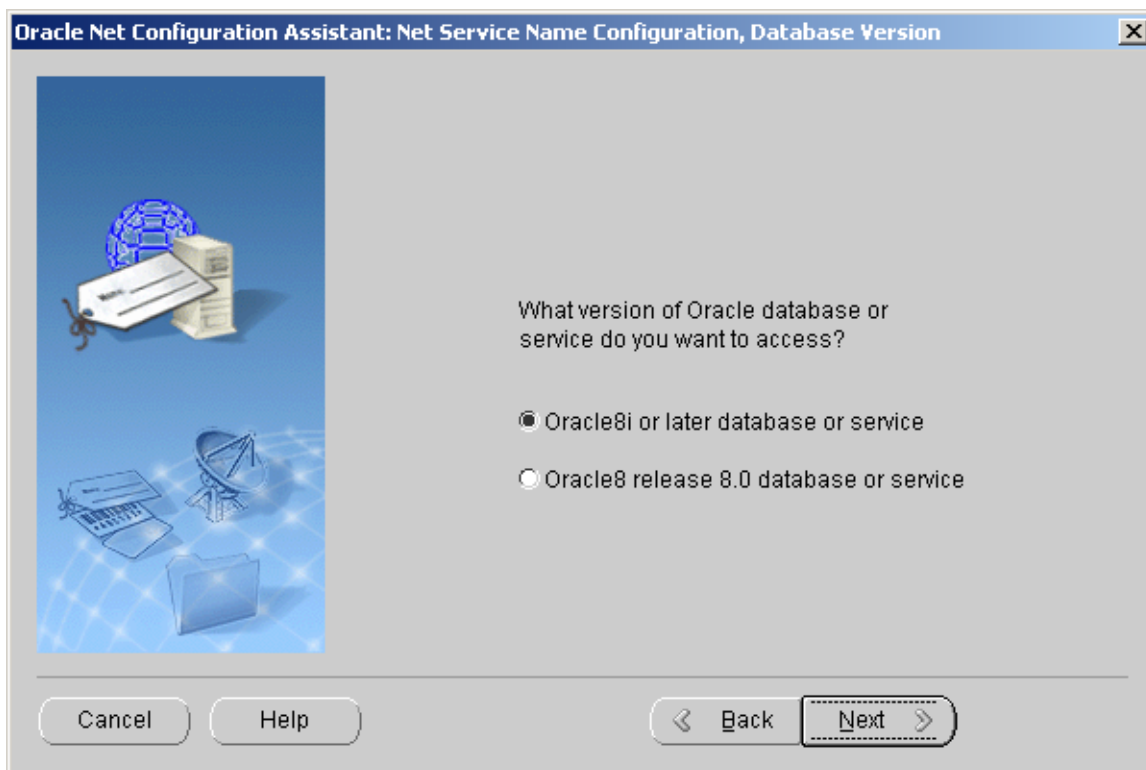
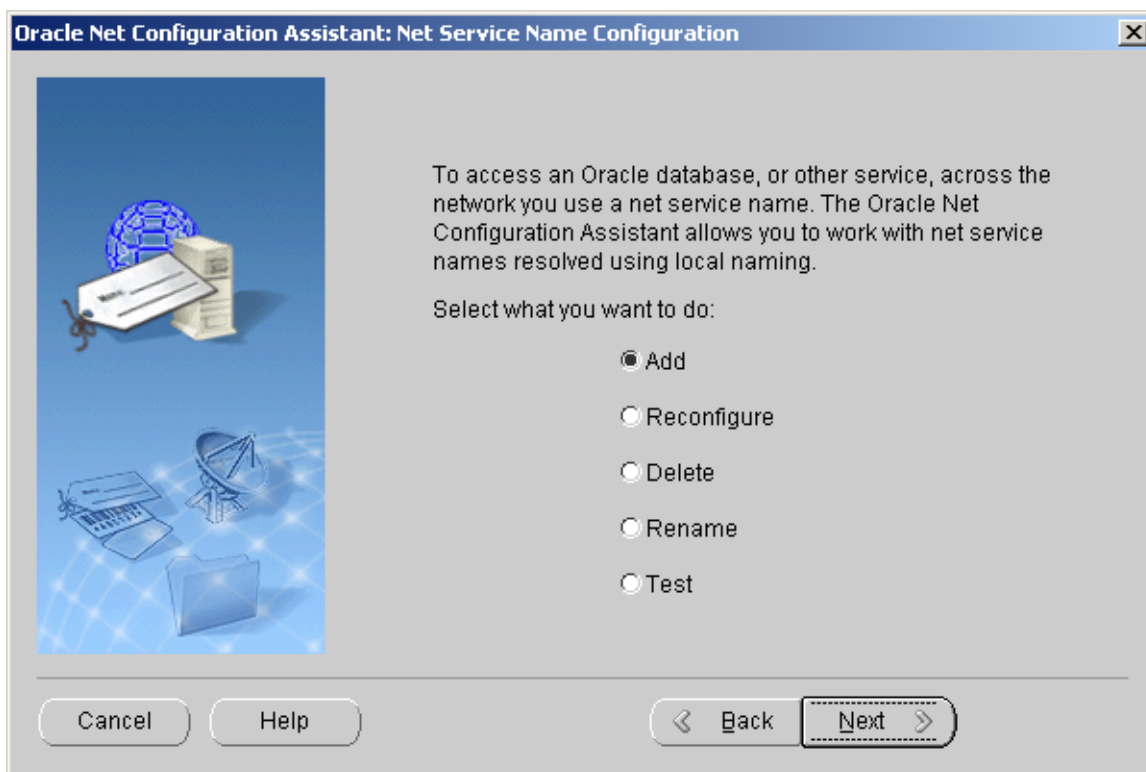


This screen may not appear.


Create a Net Service Name

Load the Net configuration Assistant:





Net8 Configuration Assistant: Net Service Name Configuration, Service Name




For an Oracle8i database or service you must provide its service name. An Oracle8i database's service name is normally its global database name.

Service Name:

Cancel Help < Back Next >

Oracle Net Configuration Assistant: Net Service Name Configuration, Select Protocols




To communicate with the database across a network, a network protocol is used. Select the protocol used for the database you want to access.

TCP
TCPS
IPC
NMP

Cancel Help < Back Next >

Oracle Net Configuration Assistant: Net Service Name Configuration, TCP/IP Protocol



To communicate with the database using the TCP/IP protocol, the database computer's host name is required. Enter the host name for the computer where the database is located.

Host name:


A TCP/IP port number is also required. In most cases the standard port number should be used.

☒ Use the standard port number of 1521

☐ Use another port number:

Cancel Help < Back Next >

Oracle Net Configuration Assistant: Net Service Name Configuration, Test



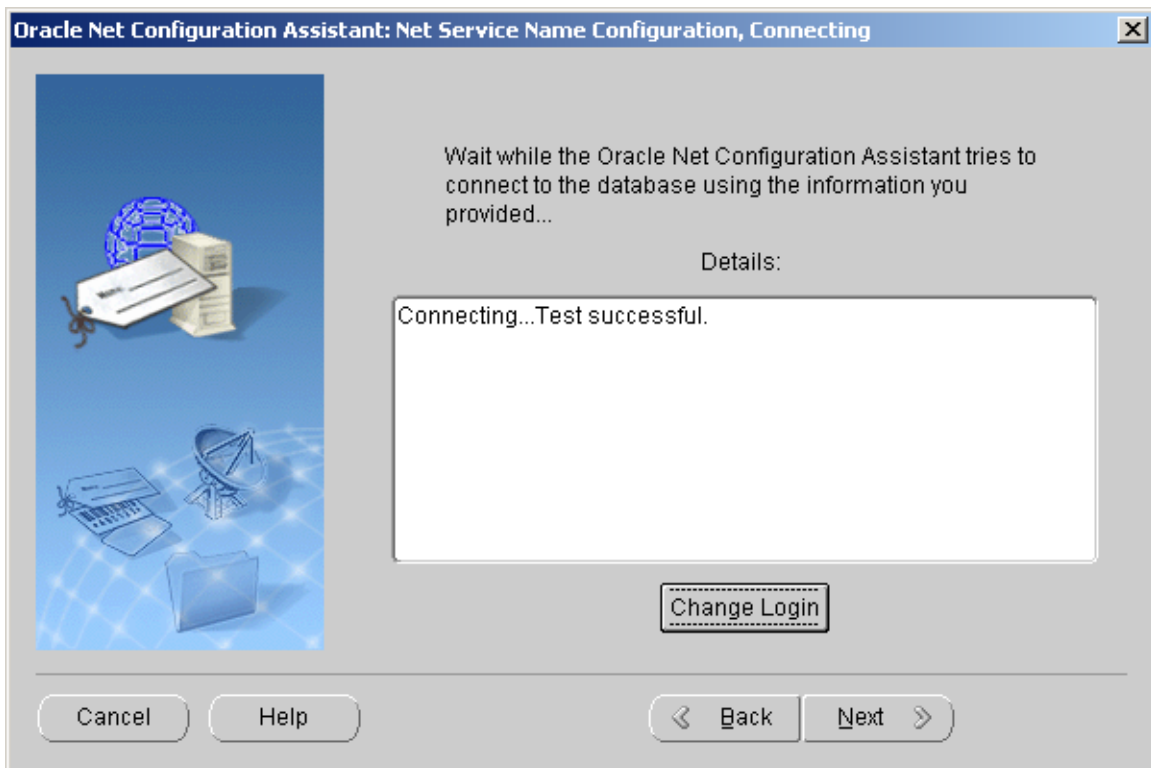
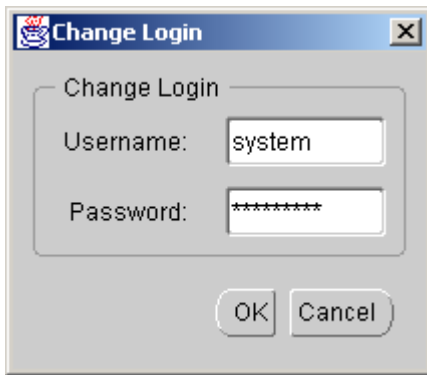
You can verify that an Oracle database can be reached, using the information provided, by performing a connection test.

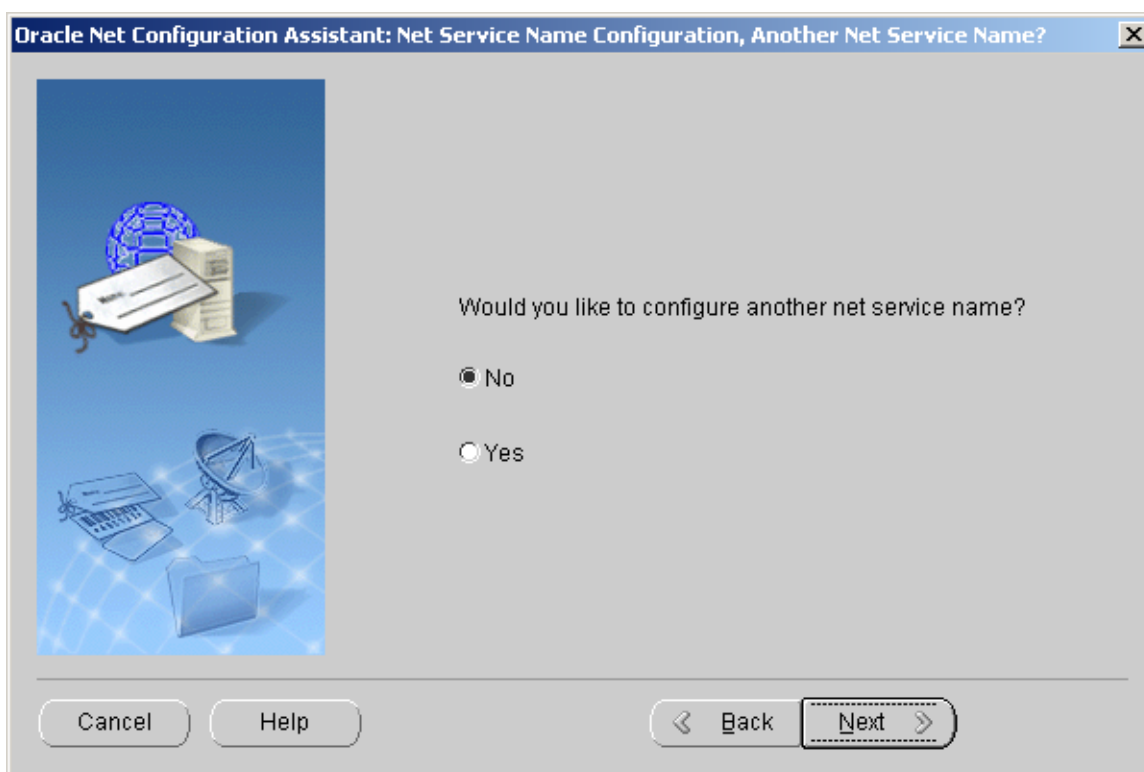
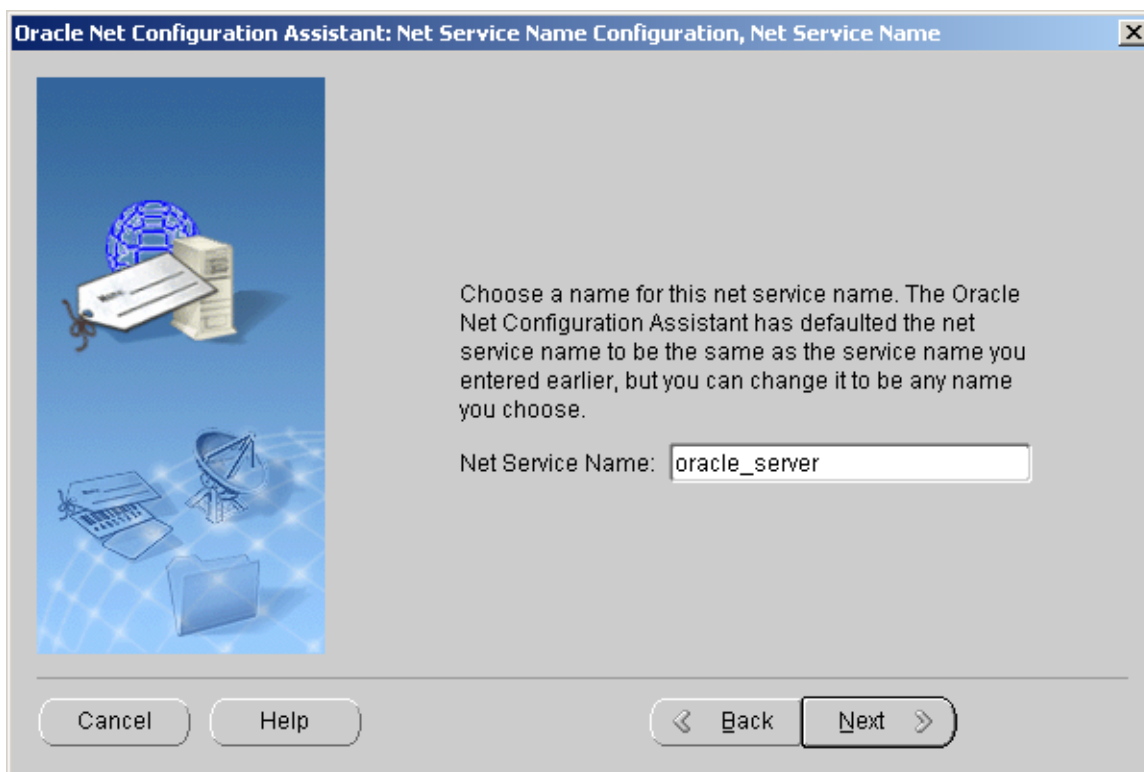
Would you like to test that a connection can be made to the database?

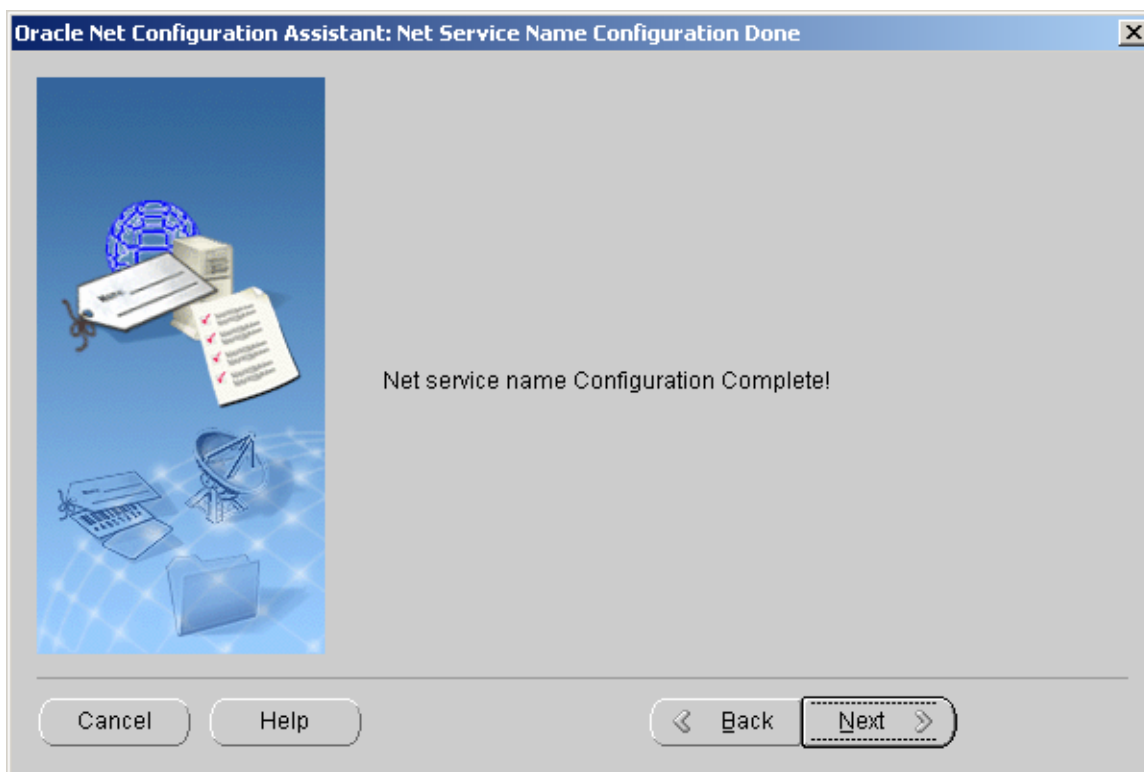
☐ No, do not test

☒ Yes, perform a test

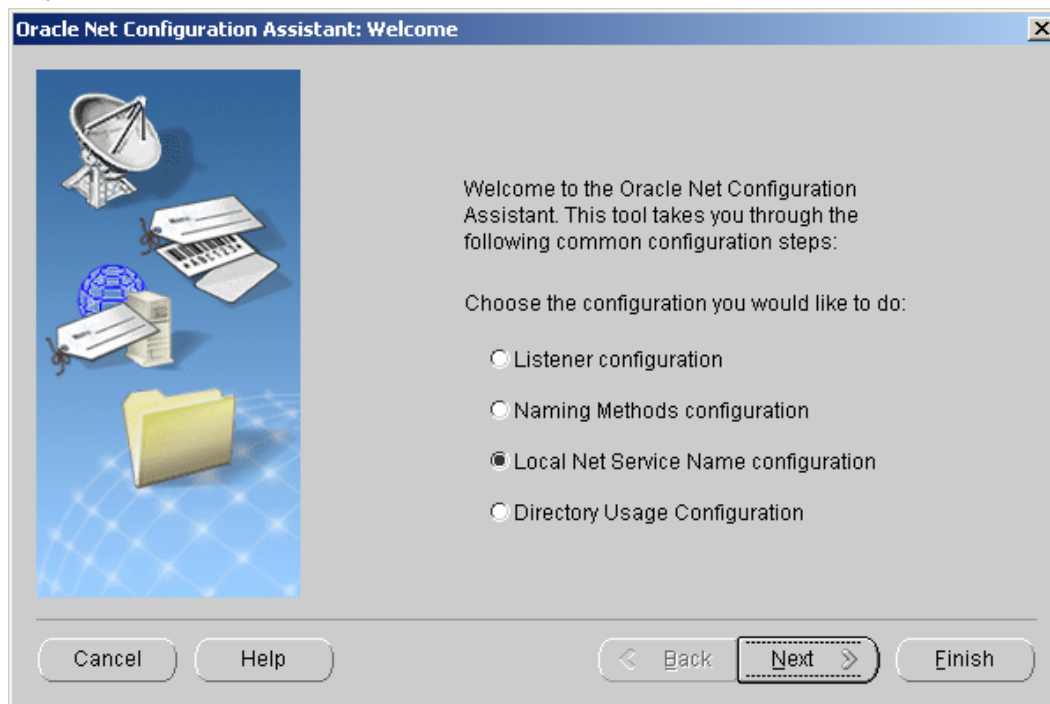
Cancel Help < Back Next >







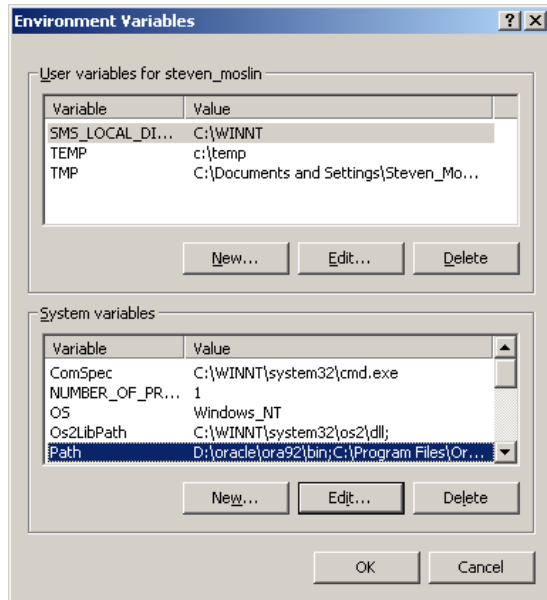
Click Finish



Check Path

The Oracle installer may not add the \$ORACLE_HOME/bin directory to the path. Tracker will not run correctly without this path. Go to Control Panel -> system -> Environment Variables -> Advanced tab.

You should see the path under the System Variables and should contain the string c:\oracle\ora92\bin (or whatever your \$ORACLE_HOME is). If needed, add it.

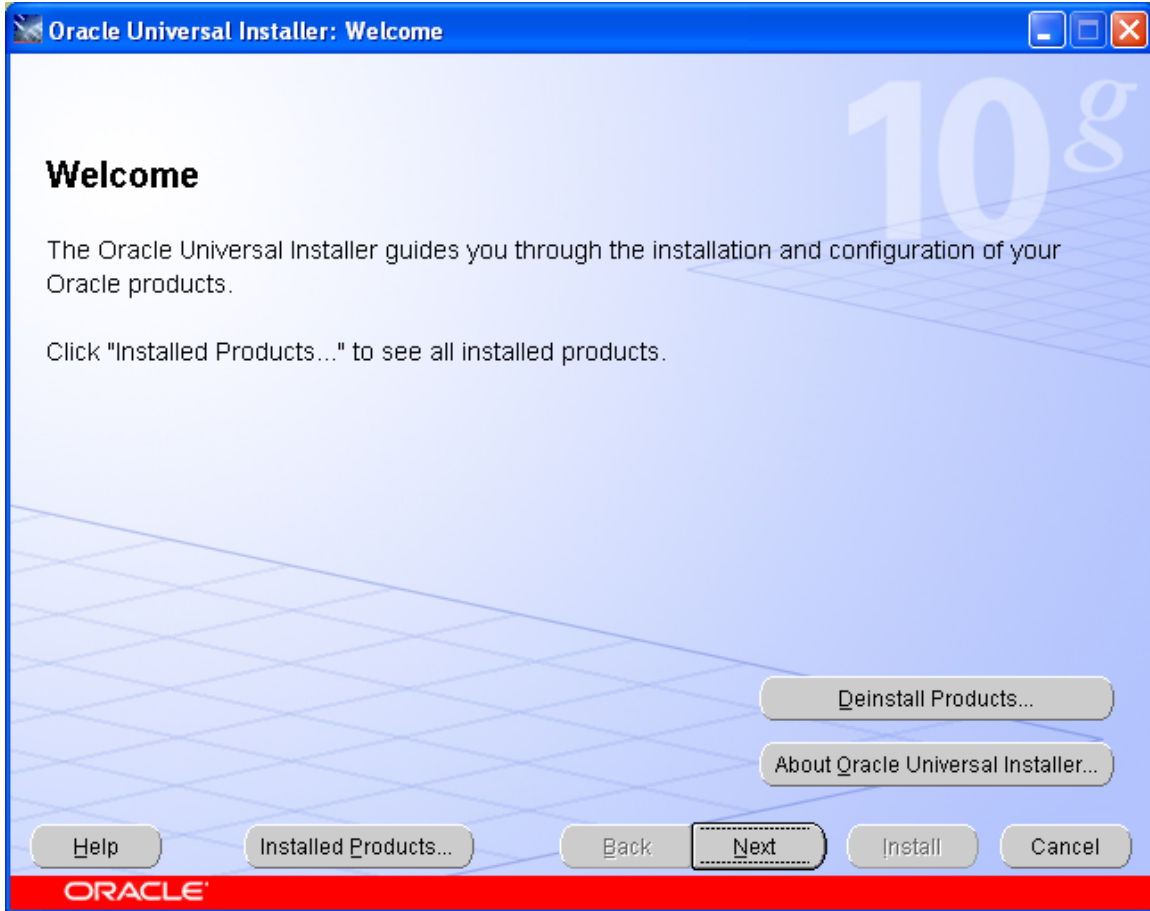


Server Installation of MTS and Oracle 10.2.0.2.0 Patch:

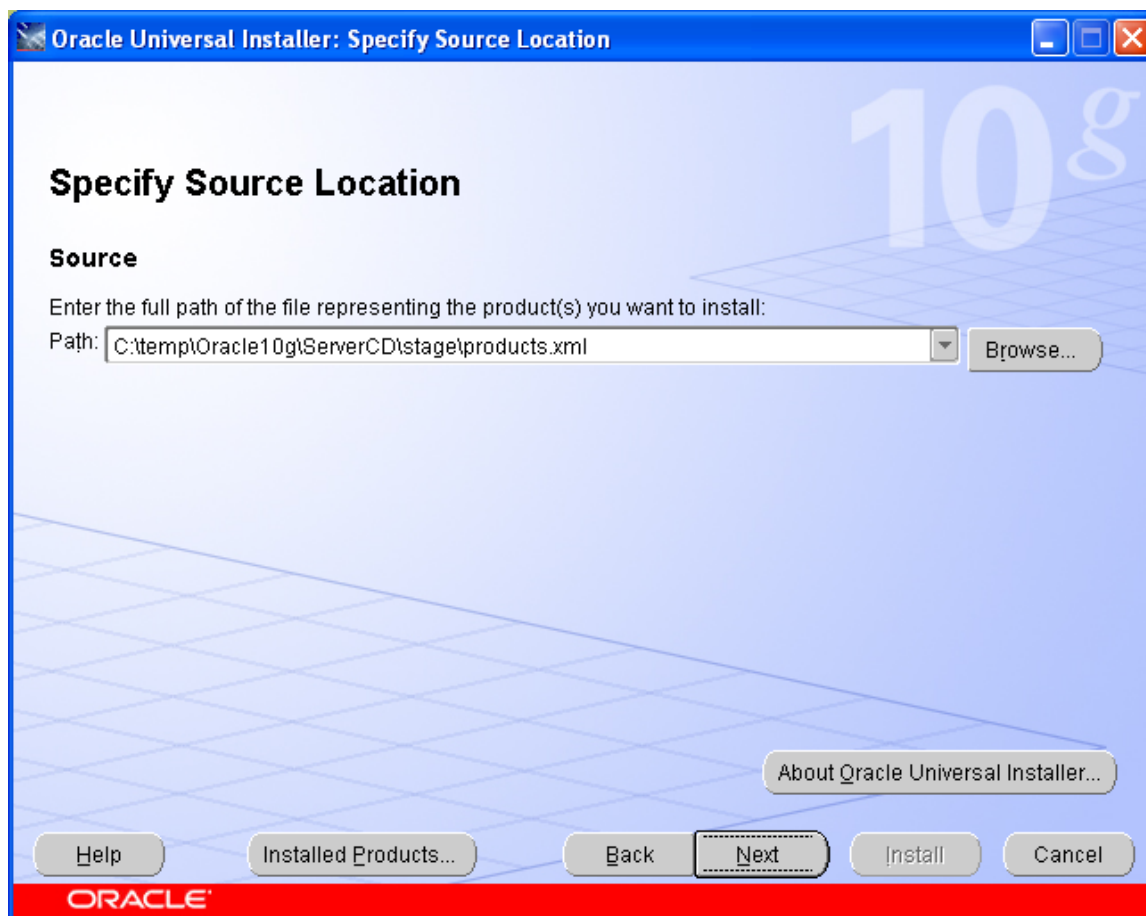
- Before you start this patch you will need to be able to log into the database as the sys user on the database server.
- Make sure the database is backed up!

1. Unzip the Patch file to the c:\temp directory on the Oracle server
2. Open a DOS window
c:\>sqlplus /nolog
SQL> conn sys/password@oracle_server as sysdba
3. Shut down the database:
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> exit
4. Exit SQL+
5. Shut down all Services:
 - a. From the Windows 'Start' menu, choose 'Settings', 'Administrative tools', 'Services'
 - b. Shut down all services that start with the name "Oracle" that say "Started" under the status column.
 - c. Shutdown the "Distributed Transaction Coordinator" Service. Don't forget this or the patch will not be able to overwrite the DLL's.
6. First install the MTS components. From the Windows Start menu, choose Programs (or All Programs, depending on your version of Windows), Oracle (your version), Oracle Installation Products, Universal Installer

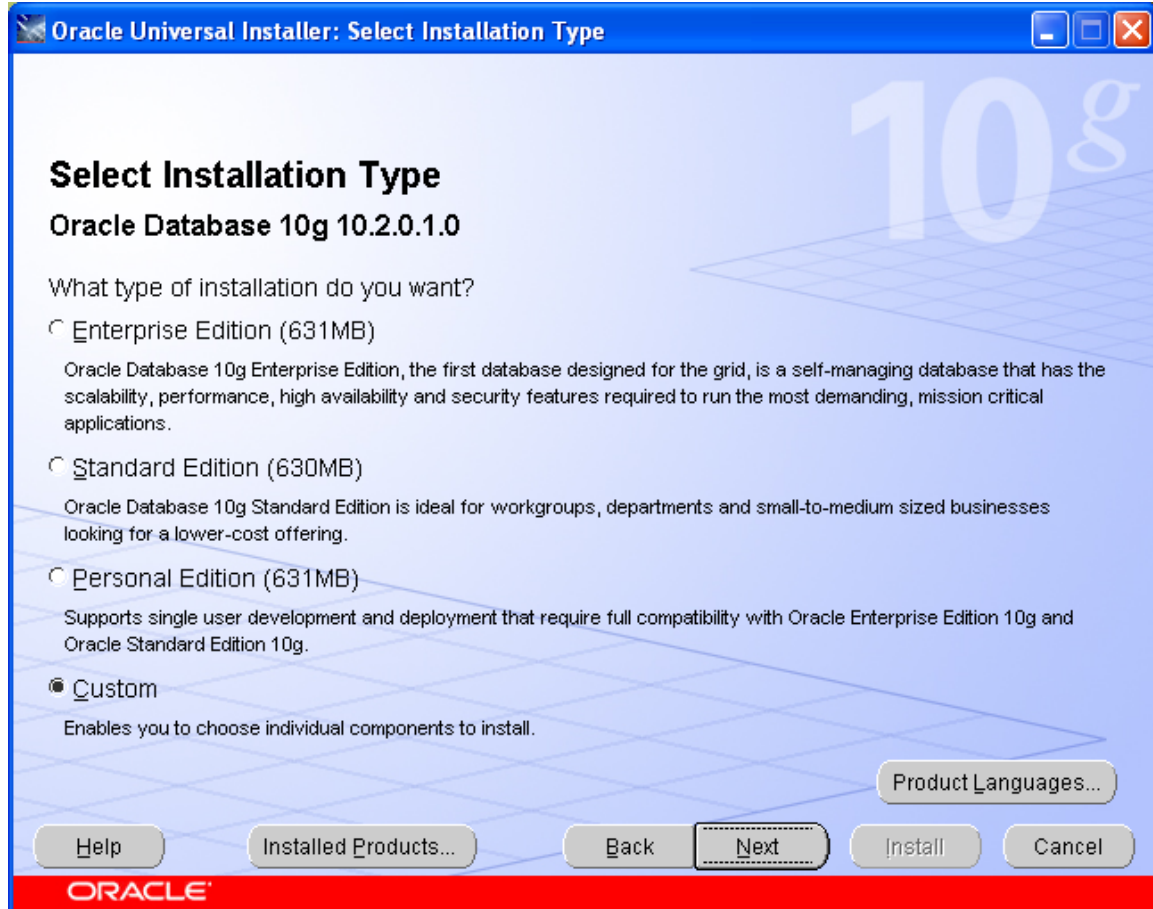
Click **Next**.



The Source Location will default to the location of your installation files. If you installed from CD, pop it in now. Click **Next**.



Choose **Custom**, and click **Next**.



This screen is very important; the Oracle Universal Installer assumes you want to install a second instance of Oracle, but that is incorrect. Make sure in the **Name** field is the name of your Oracle_home that you just created. Pull down the **Name** field to ensure the correct home is specified. If the correct **Name** is chosen, the path (where the Oracle software is installed on the server) should be correct.

Oracle Universal Installer: Specify Home Details

Specify Home Details

Destination

Enter or select a name for the installation and the full path where you want to install the product.

Name:

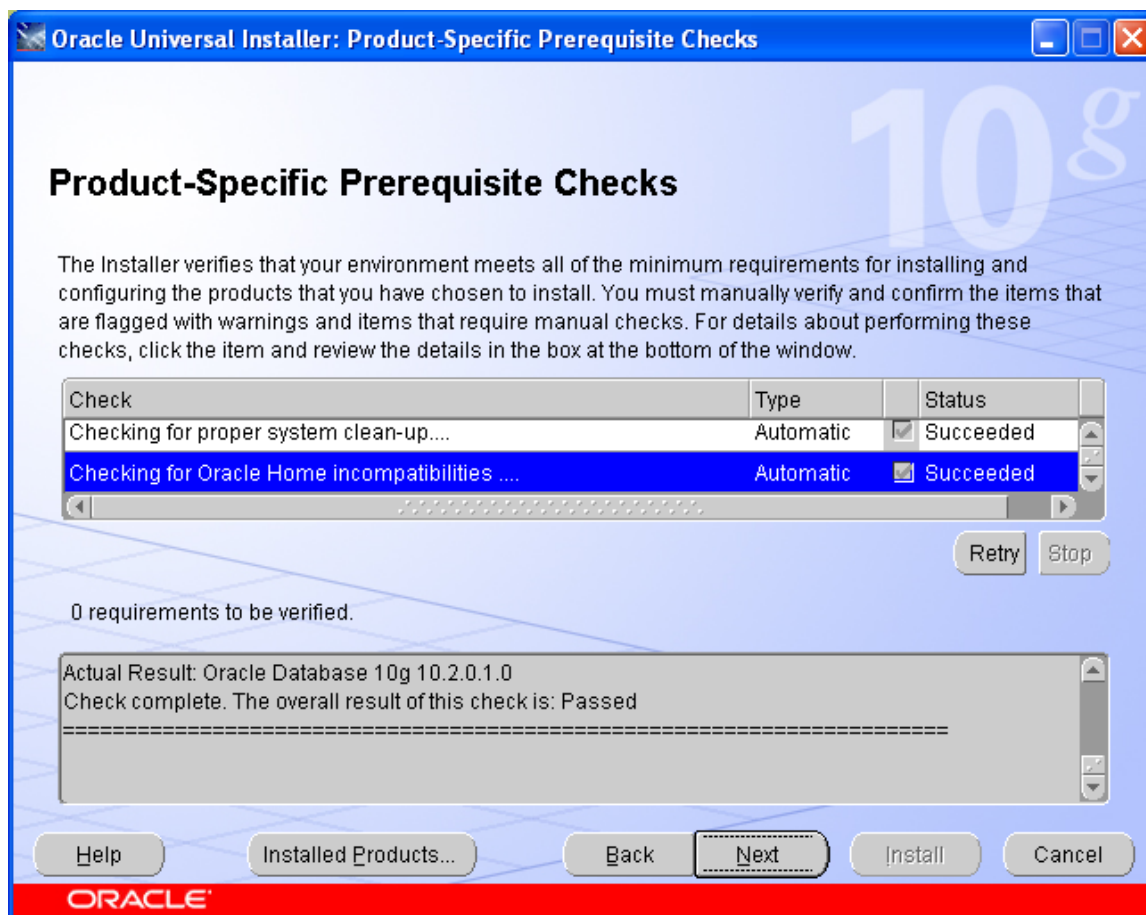
Path:

ORACLE

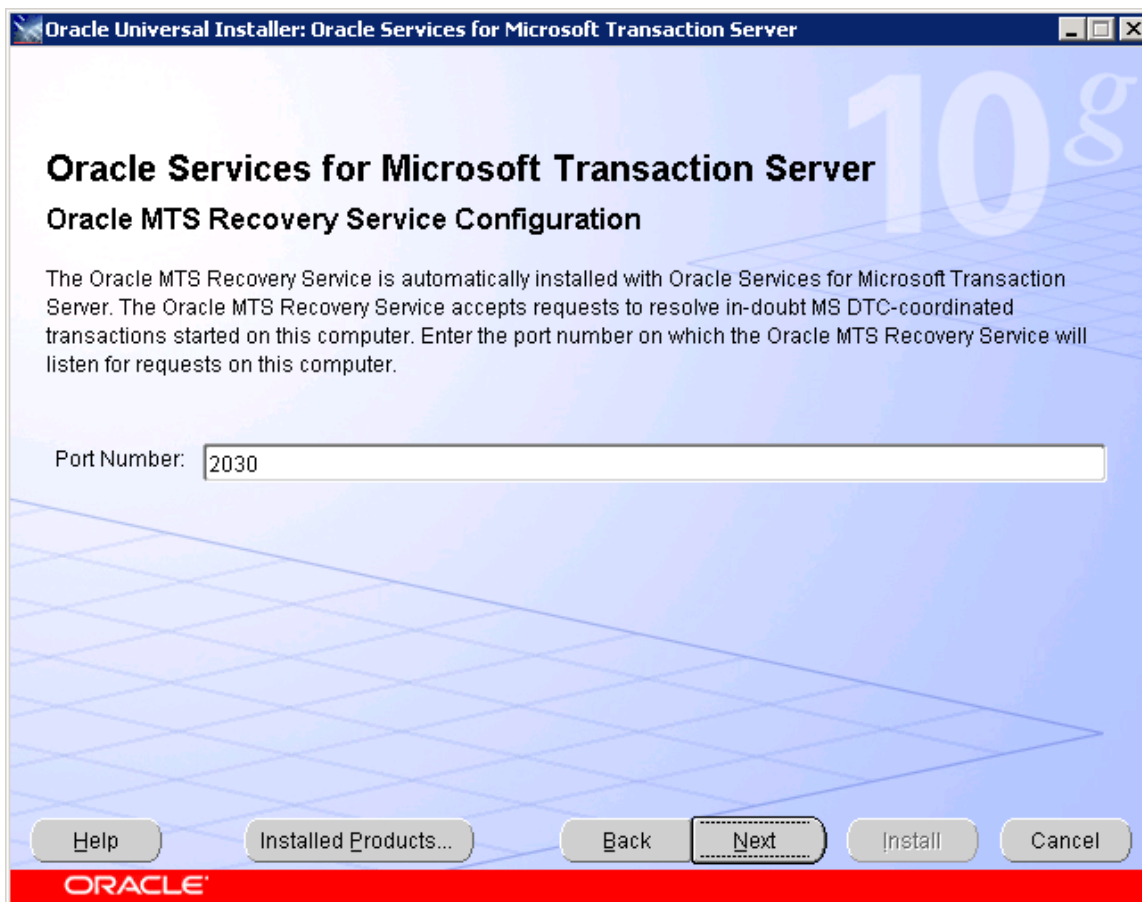
Drill down to Oracle Database 10g --> Oracle Windows Interfaces --> Oracle Services for Microsoft Transaction Server and make sure it is checked. Click **Next**.



Ensure all the prerequisite checks succeed.



Click **Next**.



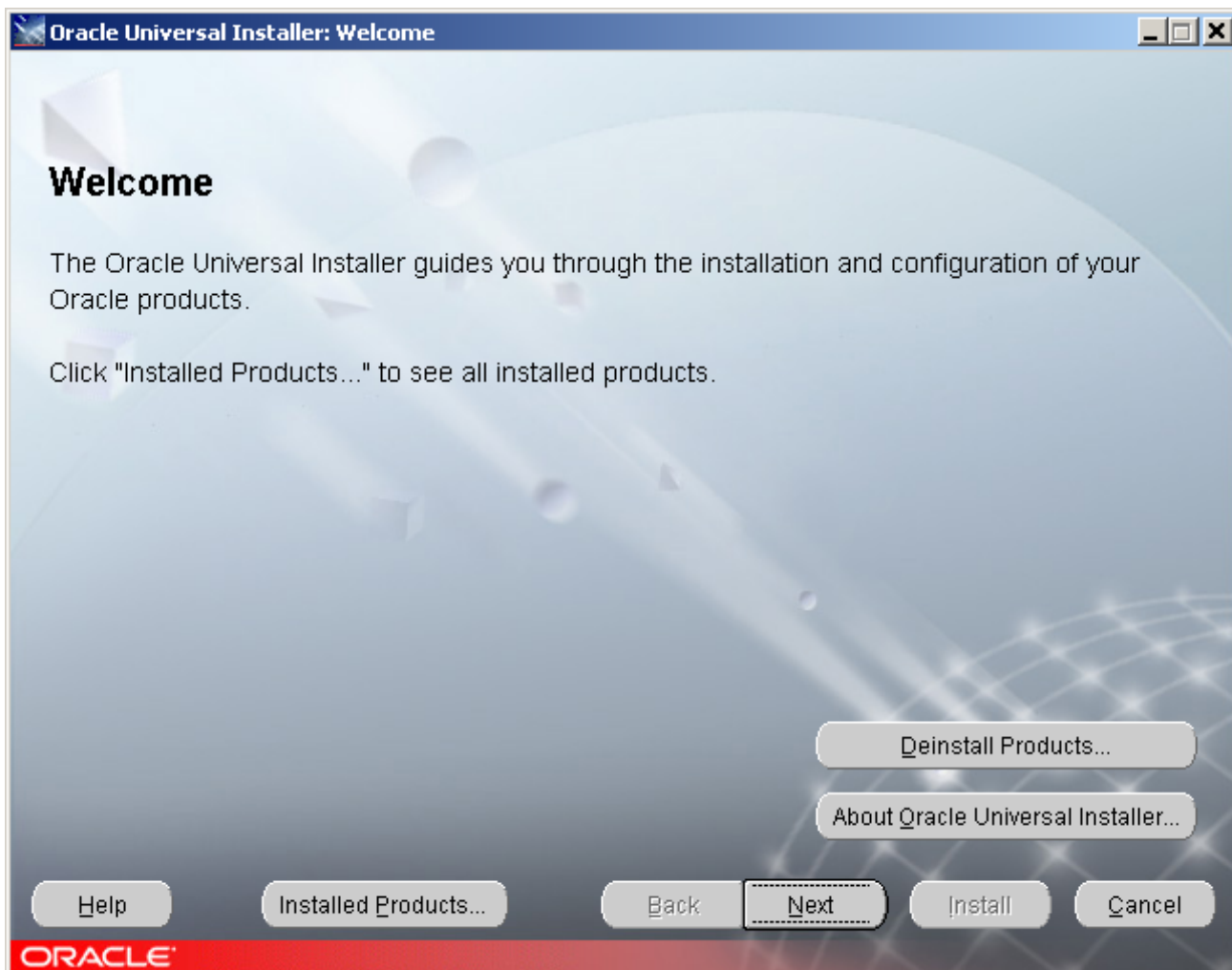
Click **Install**.



This finishes relatively quickly.

7. Install Patch 10.2.0.2.0. Go to the directory where you unzipped the patch (eg. C:\temp) and double-click the Disk1/setup.exe file.

Click **Next**.



Biotics 4
Oracle 10.2.0 and MTS Installation and Configuration

This screen is very important; as before, Oracle may assume you want to install into a new Oracle Home, and this is incorrect. So make sure in the **Name** field is the name of your Oracle_home that you recently created. Pull down the **Name** field to ensure the correct home is specified. If the correct **Name** is chosen, the path (where the Oracle software is installed on the server) should be correct.

Oracle Universal Installer: Specify Home Details

Specify Home Details

Destination

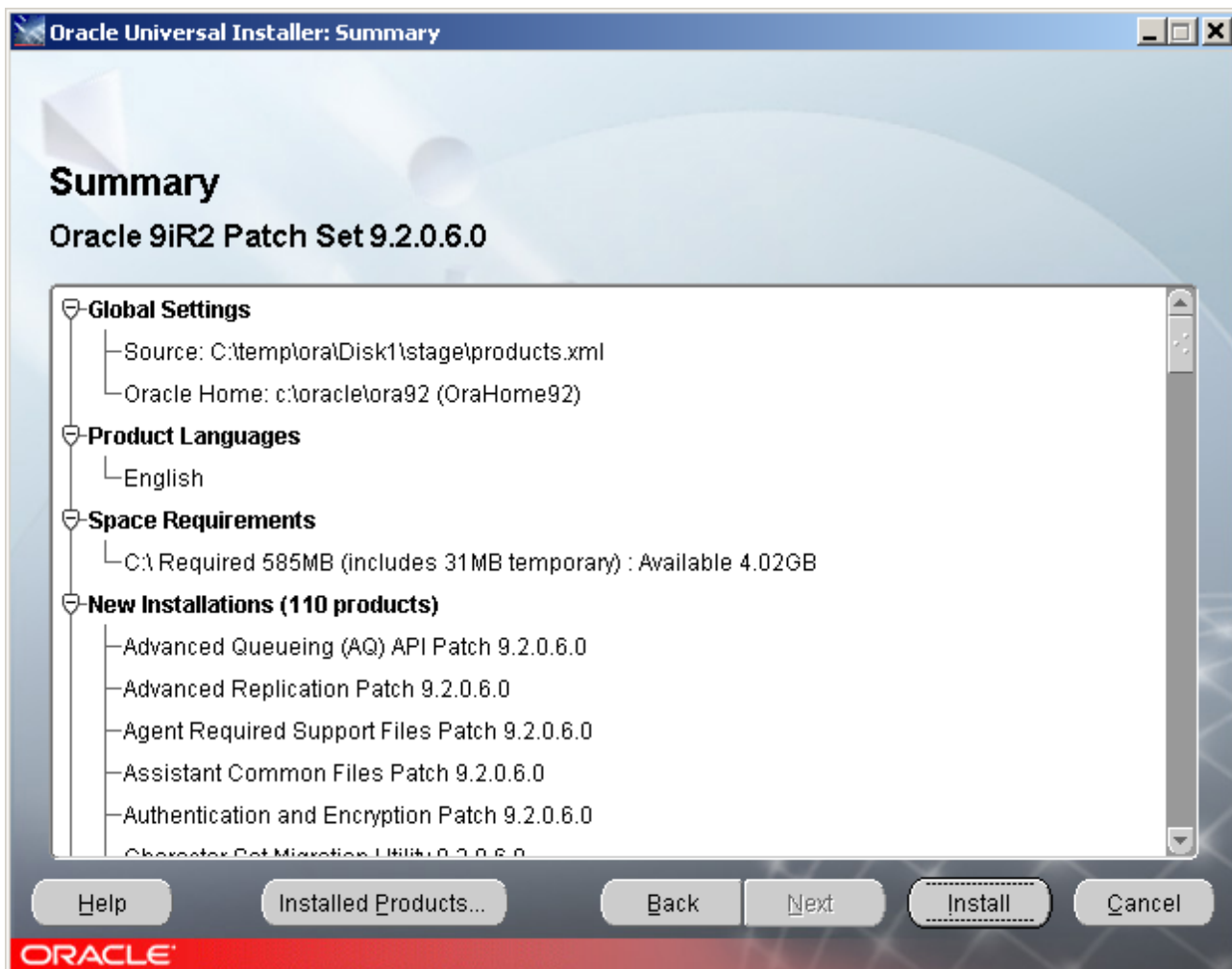
Enter or select a name for the installation and the full path where you want to install the product.

Name:

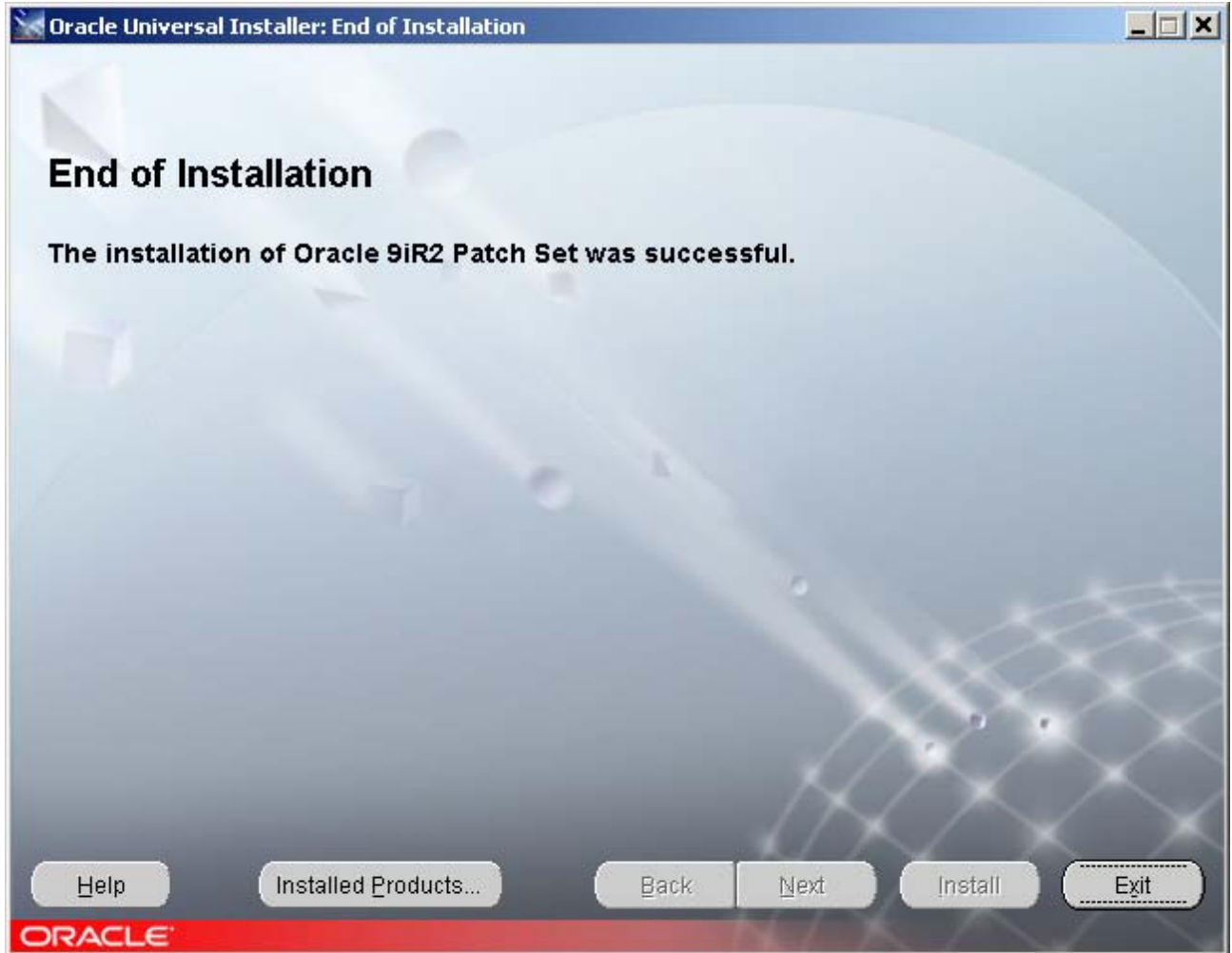
Path:

ORACLE

Click **Install**.



Click **Exit**.



The patch is installed, but there are several remaining tasks.

8. Restart the Services: From the Windows 'Start' menu, choose 'Settings', 'Administrative tools', 'Services'
 - a. Start the "Distributed Transaction Coordinator"
 - b. Of the remaining services, start the Oracle listener service first. Start the rest of the Oracle services that you shut down earlier. Don't try to startup any service with startup type of "manual".

Starting the Oracle services will automatically restart the database.

9. Log into the database - at the DOS prompt type:
 - C:\> sqlplus /NOLOG
 - SQL> CONNECT SYS/password AS SYSDBA

10. Enter the following SQL*Plus commands:

- SQL> STARTUP UPGRADE
- SQL> SPOOL C:\TEMP\patch.log
- SQL> @ORACLE_BASE\ORACLE_HOME\rdbms\admin\catupgrd.sql
- SQL> SPOOL OFF

11. Review the [patch.log](#) file for errors (it will be in your temp directory) and inspect the list of components that is displayed at the end of [catupgrd.sql](#) script. This list provides the version and status of each SERVER component in the database.

The following two errors can be ignored, as they are not used:

```
select dbms_java.full_ncomp_enabled from dual
*
```

ERROR at line 1:

ORA-29558: JAccelerator (NCOMP) not installed. Refer to Install Guide for instructions.

ORA-06512: at "SYS.DBMS_JAVA", line 236

```
alter procedure xdb.XDB_DATASTORE_PROC compile
*
```

ERROR at line 1:

ORA-04043: object XDB_DATASTORE_PROC does not exist

If necessary, rerun the [catupgrd.sql](#) script after correcting any problems.

12. Restart the database:

- SQL> SHUTDOWN IMMEDIATE
- SQL> STARTUP

13. Run the [utlrlp.sql](#) script to recompile all invalid PL/SQL packages now instead of when the packages are accessed for the first time. This step is optional but recommended.

- SQL> @ORACLE_BASE\ORACLE_HOME\rdbms\admin\utlrlp.sql

Note:

When the 10.2.0.2 patch set is applied to an Oracle Database 10g Standard Edition database or Standard Edition One database, there may be 42 invalid objects after the [utlrlp.sql](#) script runs. These objects belong to the unsupported components and do not affect the database operation.

Ignore any messages indicating that the database contains invalid recycle bin objects similar to the following:

```
BIN$4lzljWIt9gfgMFeM2hVSoA==$0
```

PREPARING ORACLE 10 FOR MTS

Run the oramtsadmin script

Connect sys as sysdba and run the

C:\oracle\product\10.2.0\db_1\oramts\admin\ORAMTSADMIN.SQL script to create the MTS administrator user account. Unix/Linux Administrators: This script needs to be run from a Windows client.

1. Launch the DOS prompt window (cmd.exe)
2. type: C:\>set ORACLE_SID=biotics
3. type: C:\>sqlplus sys as sysdba
4. type: Enter password: (masked)
5. type: SQL>@C:\oracle\product\10.2.0\db_1\oramts\oramtsadmin.sql
6. Enter the MTS administrator username as mtssys
7. Enter the MTS administrator password of your choosing.
8. The net connect string will be ORACLE_SERVER or Biotics if you have not created a net service name on this machine.
9. Notice you will get an ORA- error if this is the first time this script has been run. You can't drop something that doesn't exist.

```
CA Command Prompt - sqlplus sys as sysdba

C:\>sqlplus sys as sysdba

SQL*Plus: Release 10.2.0.1.0 - Production on Tue Aug 8 17:46:37 2006
Copyright (c) 1982, 2005, Oracle. All rights reserved.

Enter password:

Connected to:
Oracle Database 10g Release 10.2.0.1.0 - Production

SQL> @C:\oracle\product\10.2.0\db_1\oramt\admin\oramtadmin.sql
enter the MTS administrator username (default mtssys) => mtssys
enter the MTS administrator password (default mtssys) => changeMe
enter the Net connect string for the database (default local) => orcl
old 1: drop user &mtsadm_usr cascade
new 1: drop user mtssys cascade
drop user mtssys cascade
*
ERROR at line 1:
ORA-01918: user 'MTSSYS' does not exist

old 1: create user &mtsadm_usr identified by &mtsadm_pwd
new 1: create user mtssys identified by changeMe

User created.

old 1: grant connect, resource, create session to &mtsadm_usr
new 1: grant connect, resource, create session to mtssys

Grant succeeded.

old 1: grant create synonym, create view, create table to &mtsadm_usr
new 1: grant create synonym, create view, create table to mtssys

Grant succeeded.

old 1: grant select_catalog_role to &mtsadm_usr
new 1: grant select_catalog_role to mtssys

Grant succeeded.

old 1: grant force any transaction to &mtsadm_usr
new 1: grant force any transaction to mtssys

Grant succeeded.

old 1: grant execute on dbms_job to &mtsadm_usr
new 1: grant execute on dbms_job to mtssys

Grant succeeded.

old 1: grant execute on utl_http to &mtsadm_usr
new 1: grant execute on utl_http to mtssys

Grant succeeded.

old 1: grant select on sys.dba_pending_transactions to &mtsadm_usr
new 1: grant select on sys.dba_pending_transactions to mtssys

Grant succeeded.

old 1: grant select on sys.dba_2pc_pending to &mtsadm_usr
new 1: grant select on sys.dba_2pc_pending to mtssys

Grant succeeded.

old 1: grant select, update, delete on sys.pending_trans$ to &mtsadm_usr
new 1: grant select, update, delete on sys.pending_trans$ to mtssys

Grant succeeded.

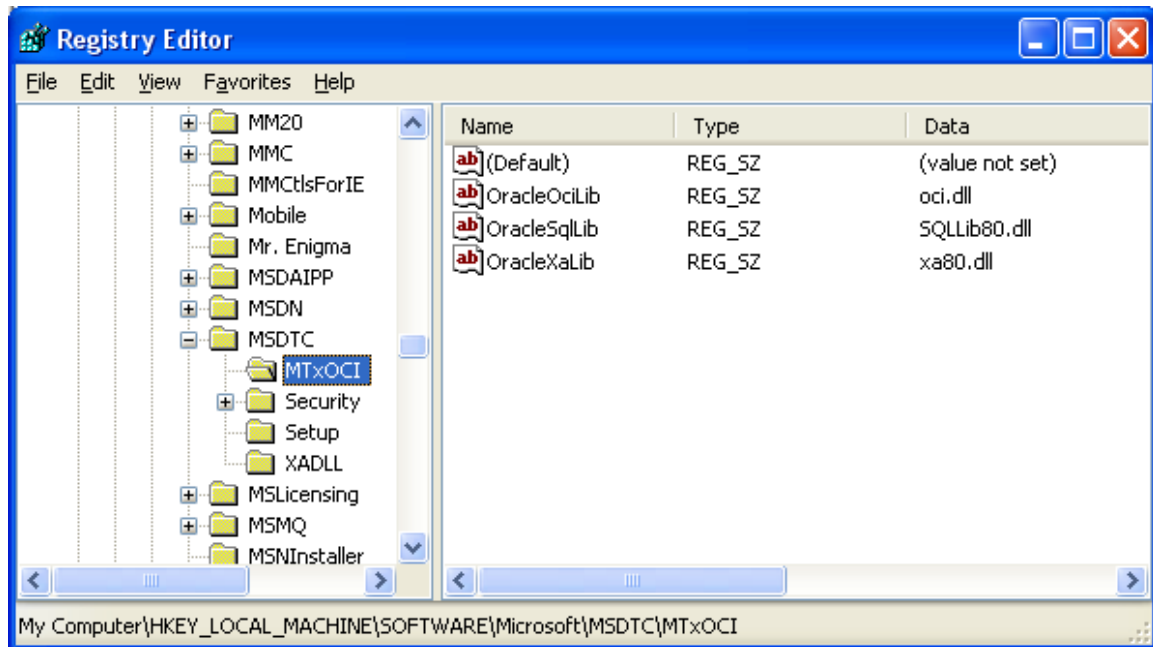
old 1: grant select, update, delete on sys.pending_sessions$ to &mtsadm_usr
new 1: grant select, update, delete on sys.pending_sessions$ to mtssys
```

Alter MTS Server Registry Settings:

If you are running the MTS server on a different machine from the Oracle server you will have to install the Oracle 10g client on the MTS machine. This would be an **Admin** client install. The Oracle client install disk should be used.

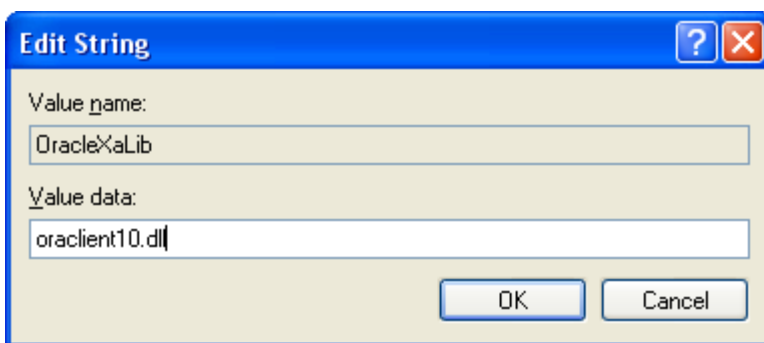
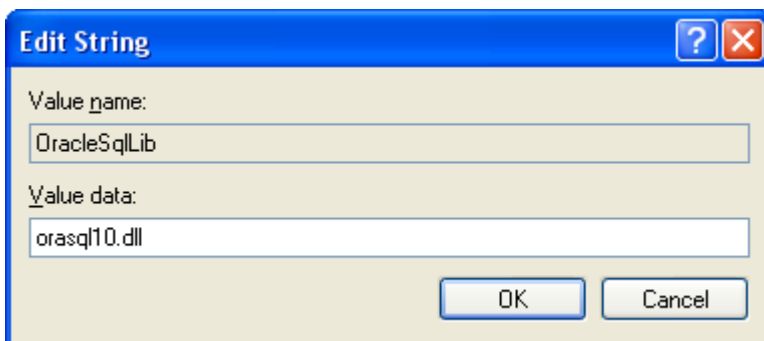
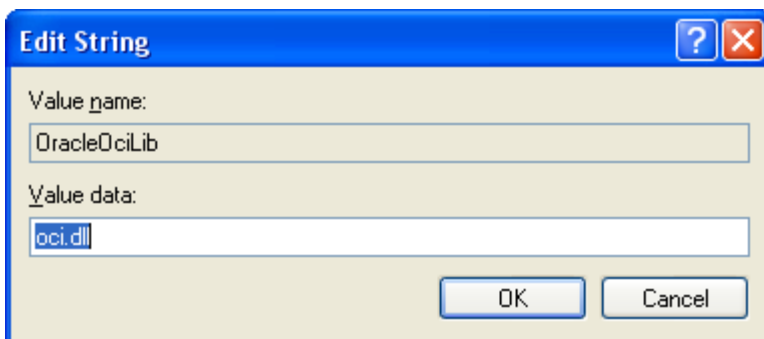
Alter the following registry settings on the **MTS server** (this may be different from your Oracle server) in order for MTS components to work properly by navigating to the following location in the Windows registry:

\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC\MTxOCI



Change the following registry keys by double-clicking on the key in the window and entering the Value field in the popup window:

“OracleOciLib” = “oci.dll”
“OracleSqlLib” = “orasql10.dll”
“OracleXaLib” = “oraclient10.dll”



DATABASE INSTANCE CONFIGURATION FOR BIOTICS

Please note: There is a script located in CVS at /hdms/sql/setup/Bio4tablespaces9i.sql to create the users and tablespaces automatically. This script will work with Oracle 10g. You can skip this chapter if you run it as it will create the tablespaces and users. After you run the script run the following two commands as system:

```
Alter user biotics_user identified by thenewbioticspassword;  
Alter user biotics_del identified by thenewbioticsdelpassword;
```

The following steps are required to configure the Oracle server:

Create Tablespaces

Six tablespaces are suggested to maximize performance: one for the table data, one for the indexes, one for audit data, and one to hold deleted data and two for exchanger.

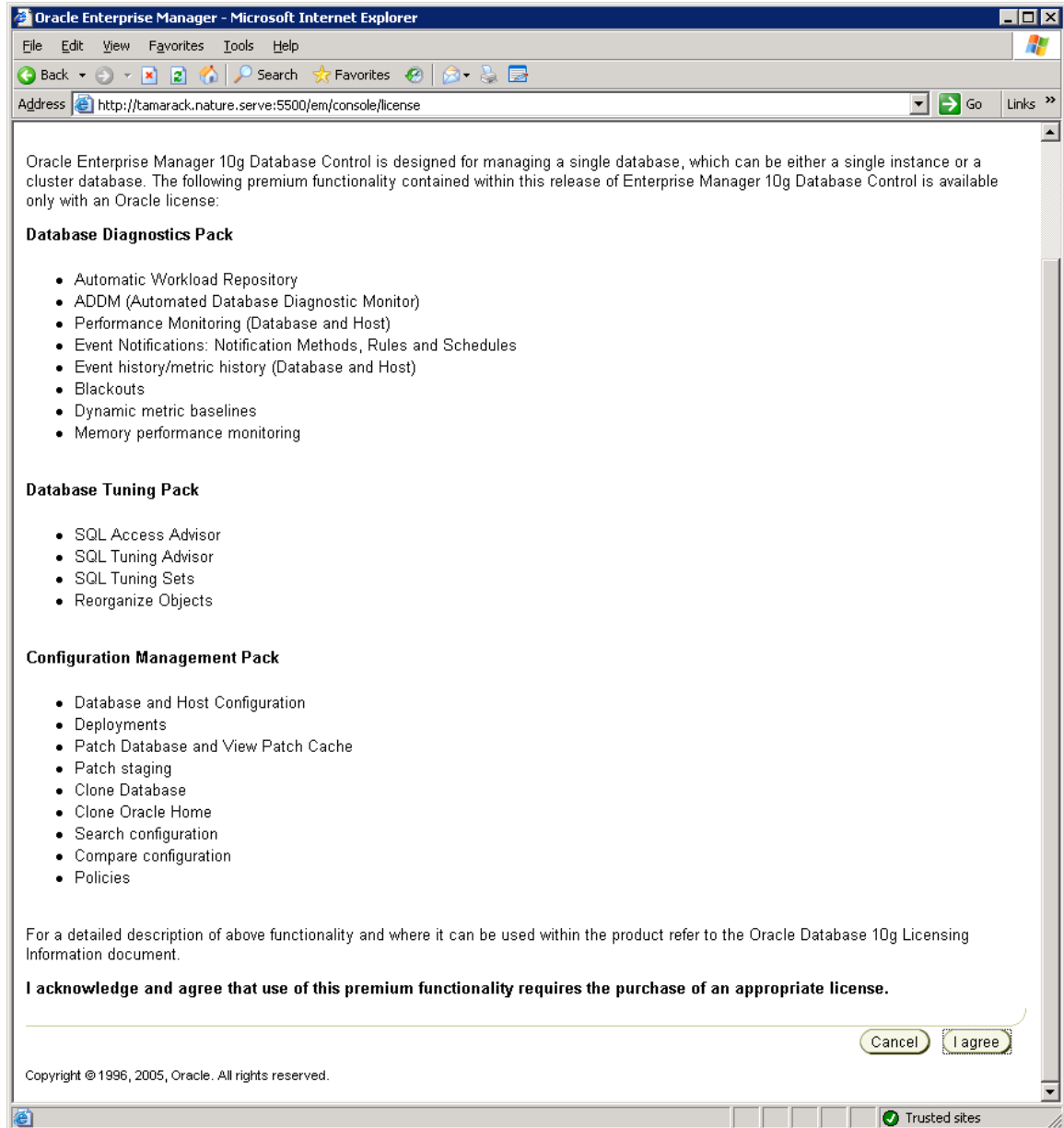
Suggested names for these tablespaces are:

- BIOTICS_DATA - for the table data
 - BIOTICS_INDEX - for the indexes
 - BIOTICS_AUDIT - for the audit tables
 - BIOTICSDEL_DATA – for the delete tables
 - BIOTICS_DX_DATA – Data Exchange tables
 - BIOTICS_DX_INDEX – Data Exchange indexes
1. Tablespaces are most easily created using the Oracle Enterprise Manager provided with Oracle 10g. The OEM in 10g is very different from the 8i (DBA Studio) and 9i versions as the 10g version is web-based. To open the OEM on the Server, click Start --> [all] Programs --> Oracle - yourHomeName --> Database Control.

2. Log in as system, and connect as Normal.

The screenshot shows a web browser window titled "Oracle Enterprise Manager - Microsoft Internet Explorer". The address bar displays the URL: `http://tamarack.nature.serve:5500/em/console/logon/logon.jsessionid=a`. The page content includes the Oracle logo and "Enterprise Manager 10g Database Control" header. A blue "Login" button is visible in the top navigation bar. Below this, the heading "Login to Database:orcl" is followed by a login form. The form contains three fields: "User Name" with the value "system", "Password" with masked characters, and "Connect As" with a dropdown menu set to "Normal". A "Login" button is positioned to the right of these fields. At the bottom of the page, a copyright notice reads: "Copyright © 1996, 2005, Oracle. All rights reserved." The browser's status bar at the bottom shows the same URL and a "Trusted sites" indicator.

3. Scroll down and click 'I Agree' if this is the first time using the OEM.



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- The “front page” of the OEM shows you the current status of your database. Click ‘Administration’ near the top left portion of the window.

The screenshot displays the Oracle Enterprise Manager (OEM) 10g Database Control interface for the database instance 'orcl'. The browser window title is 'Oracle Enterprise Manager (SYSTEM) - Database Instance: orcl - Microsoft Internet Explorer'. The address bar shows the URL: http://tamarack.nature.serve:5500/em/console/database/instance/sitemap?event=doLoad&target=orcl&type=oracle_database. The page is titled 'Database Instance: orcl' and shows the user is logged in as 'SYSTEM'. The navigation tabs include 'Home', 'Performance', 'Administration', and 'Maintenance'. The 'Administration' tab is selected. The page is refreshed on 'Aug 8, 2006 6:14:19 PM'. The main content area is divided into several sections: 'General' (Status: Up, Up Since: Aug 8, 2006 5:02:15 PM EDT, Instance Name: orcl, Version: 10.2.0.1.0, Host: tamarack.nature.serve, Listener: LISTENER_tamarack.nature.serve), 'Host CPU' (Load: 0.00, Paging: 0.16, Maximum CPU: 4), 'Active Sessions' (Wait, User I/O, CPU), 'SQL Response Time' (Baseline is empty), 'Diagnostic Summary' (ADDM Findings: No ADDM run available, All Policy Violations: 6, Alert Log: No ORA errors), 'Space Summary' (Database Size (GB): 0.84, Problem Tablespaces: 0, Segment Advisor Recommendations: 0, Space Violations: 0, Dump Area Used (%): 18), 'High Availability' (Last Backup: n/a, Usable Flash Recovery Area (%): 100, Flashback Logging: Disabled), 'Alerts' (Category: All, Critical: 0, Warning: 0), 'Job Activity' (Scheduled Executions: 0, Running Executions: 0, Suspended Executions: 0, Problem Executions: 0), and 'Related Links' (Advisor Central, All Metrics, Alert History, Blackouts, Alert Log Content, SQL*Plus, Metrics Database). The footer shows 'Trusted sites'.

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5. Under the Database Administration, Storage heading, click Tablespaces.

The screenshot displays the Oracle Enterprise Manager 10g Database Control interface in a Microsoft Internet Explorer browser window. The browser's address bar shows the URL: `http://tanarack.nature.serve:5500/em/console/database/instance/sitemap?event=doLoad&target=oracle_database&pageNum=3`. The page title is "Oracle Enterprise Manager 10g Database Control". The user is logged in as "As SYSTEM".

The main navigation bar includes links for "Home", "Performance", "Administration", and "Maintenance". Below this, a descriptive text states: "The Administration tab displays links that allow you to administer database objects and initiate database operations inside an Oracle database. The Maintenance tab displays links that provide functions that control the flow of data between or outside Oracle databases."

The "Database Administration" section is expanded, showing several sub-sections:

- Storage**
 - [Control Files](#)
 - [Tablespaces](#)
 - [Temporary Tablespace Groups](#)
 - [Datafiles](#)
 - [Rollback Segments](#)
 - [Redo Log Groups](#)
 - [Archive Logs](#)
- Database Configuration**
 - [Memory Parameters](#)
 - [Undo Management](#)
 - [All Initialization Parameters](#)
 - [Database Feature Usage](#)
- Database Scheduler**
 - [Jobs](#)
 - [Chains](#)
 - [Schedules](#)
 - [Programs](#)
 - [Job Classes](#)
 - [Windows](#)
 - [Window Groups](#)
 - [Global Attributes](#)
- Statistics Management**
 - [Automatic Workload Repository](#)
 - [Manage Optimizer Statistics](#)
- Change Database**
 - [Migrate to ASM](#)
 - [Make Tablespace Locally Managed](#)
- Resource Manager**
 - [Monitors](#)
 - [Consumer Groups](#)
 - [Consumer Group Mappings](#)
 - [Plans](#)
- Policies**
 - [Policy Library](#)
 - [Policy Violations](#)

The "Schema" section is also visible, containing:

- Database Objects**
 - [Tables](#)
 - [Indexes](#)
 - [Views](#)
 - [Synonyms](#)
 - [Sequences](#)
 - [Database Links](#)
 - [Directory Objects](#)
 - [Reorganize Objects](#)
- Programs**
 - [Packages](#)
 - [Package Bodies](#)
 - [Procedures](#)
 - [Functions](#)
 - [Triggers](#)
 - [Java Classes](#)
 - [Java Sources](#)
- XML Database**
 - [Configuration](#)
 - [Resources](#)
 - [Access Control Lists](#)
 - [XML Schemas](#)
 - [XML Type Tables](#)
 - [XML Type Views](#)
- Users & Privileges**
 - [Users](#)
 - [Roles](#)
 - [Profiles](#)
 - [Audit Settings](#)
- Materialized Views**
 - [Materialized Views](#)
 - [Materialized View Logs](#)
 - [Refresh Groups](#)
- BI & OLAP**
 - [Dimensions](#)
- User Defined Types**
 - [Array Types](#)

The browser's status bar at the bottom shows the URL: `http://tanarack.nature.serve:5500/em/console/database/databaseObjectsSearch?event=search&otYPE=TABLESPACE&target=oracle_database=oracle` and a "Trusted sites" icon.

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6. Click the Create button near the right side of the window.

Oracle Enterprise Manager (SYSTEM) - Tablespaces - Microsoft Internet Explorer

Address: http://amarack.nature.serve:5500/em/console/database/databaseObjectsSearch?event=search&otype=TABLESPACE&target=oracle_database

ORACLE Enterprise Manager 10g Database Control

Database Instance: orcl > Tablespaces

Object Type: Tablespace

Search

Select an object type and optionally 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	Size (MB)	Used (MB)	Used (%)	Free (MB)	Status	Datafiles	Type	Extent Management	Segment Management
<input checked="" type="radio"/>	SYSAUX	180.0	178.0	98.9	2.0	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	SYSTEM	500.0	414.7	82.9	85.3	✓	1	PERMANENT	LOCAL	MANUAL
<input type="radio"/>	TEMP	5,120.0	0.0	0.0	5,120.0	✓	1	TEMPORARY	LOCAL	MANUAL
<input type="radio"/>	UNDOTBS1	235.0	0.0	0.0	235.0	✓	1	UNDO	LOCAL	MANUAL
<input type="radio"/>	USERS	5.0	0.2	5.0	4.8	✓	1	PERMANENT	LOCAL	AUTO

Total Size (MB) 6,040.0
Total Used (MB) 597.9
Total Free (MB) 5,447.1

✓ Online ✗ Offline Ⓜ Read Only

Database | Setup | Preferences | Help | Logout

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[About Oracle Enterprise Manager 10g Database Control](#)

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7. Enter the name of the first tablespace (BIOTICS_DATA in this example) and click the Add button in the Datafiles area.

Oracle Enterprise Manager 10g Database Control

Database Instance: orcl > Tablespaces > Create Tablespace

Logged in As SYSTEM

Create Tablespace

General | Storage

Name:

Extent Management

☒ Locally Managed
☐ Dictionary Managed

Type

☒ Permanent
☐ Set as default permanent tablespace
☐ 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.

Select Name	Directory	Size (MB)
No items found		

General | Storage

Show SQL Cancel OK

Database | Setup | Preferences | Help | Logout

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About Oracle Enterprise Manager 10g Database Control

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8. Enter the file name of your new tablespace, and accept the File Directory value unless you would like to put your datafiles in a different location. Click the Continue button.

The screenshot shows the 'Add Datafile' page in the Oracle Enterprise Manager 10g Database Control. The page is titled 'Add Datafile' and is part of the 'Tablespaces' configuration. The 'File Name' field is set to 'BIOTICS_DATA01.DBF'. The 'File Directory' field is set to 'D:\ORACLE\PRODUCT\10.2.0\ORADATA\ORCL\'. The 'Tablespace' is set to 'BIOTICS_DATA'. The 'File Size' is set to '1000 MB'. The 'Storage' section includes options for 'Automatically extend datafile when full (AUTOEXTEND)', 'Increment', and 'Maximum File Size'. The 'Continue' button is visible at the bottom right of the form.

9. Now you can click the OK button to create your tablespace (you will accept the defaults on all the settings).

Oracle Enterprise Manager 10g Database Control

Database Instance: orcl > Tablespaces > Create Tablespace

Created by: As SYSTEM

General | Storage

Name: BIOTICS_DATA

Extent Management: ☒ Locally Managed ☐ Dictionary Managed

Type: ☒ Permanent ☐ Temporary ☐ Undo

☐ Set as default permanent tablespace
☐ Set as default temporary tablespace

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.

Select Name	Directory	Size (MB)
<input checked="" type="radio"/> BIOTICS_DATA01.DBF	E:\ORACLE\PRODUCT\10.2.0\ORADATA\ORCL	1000.00

General | Storage

Show SQL Cancel OK

Database | Setup | Preferences | Help | Logout

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About Oracle Enterprise Manager 10g Database Control

The size required for the tablespaces will vary according to the amount of data already recorded in the BIOTICS. As a guideline, a database containing approximately 5000 element occurrences and 1000 managed areas requires a **minimum** of:

BIOTICS_DATA 500 MB
BIOTICS_INDEX 500 MB
BIOTICSDEL_DATA 250 MB
BIOTICS_AUDIT 250 MB
BIOTICS_DX_DATA 900 MB
BIOTICS_DX_INDEX 900 MB

Hard disk space has become increasingly cheap. Datafile sizes of up to 2 GB are acceptable and won't hamper performance on newer servers. You should factor into the sizes you choose the anticipated growth of your database. For example, if there is a huge backlog of element occurrence data waiting to be input, you might want to double (or even triple) the tablespace sizes (ie. 1 GB for the tables, and 750

MB for the indexes). In general, you want to make sure the tablespace is large enough that it takes many years before it is full.

10. To create additional tablespaces repeat steps 6-9.

Create Oracle Users

Two Oracle users must be created – the first user that will own the BIOTICS tables and data. This user is typically called "BIOTICS_USER", and requires *connect* and *resource* privileges.

The second user will own the deleted data and is called "BIOTICS_DEL" and also requires *connect* and *resource* privileges.

Optionally, a third user may be created for running reports. This user will have read-only (select) access on the objects owned by BIOTICS_USER. This user is typically called "BIOTICS_REPORT" and requires *connect* privileges only.

Note: Users never need to know the Oracle user and password. They logon to Biotics as an application user, and Biotics connects to Oracle for them (the Oracle user id and password is obtained from an encrypted file stored on the server).

Users can be created using the OEM; note that you must be logged into Oracle as a user with the "create users" privilege assigned to create users. The "system" user that is created on the Oracle install has these privileges by default.

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1. Where you left off with the tablespace creation, click on the link in the upper-left of the browser window titled 'Database Instance: orcl' (your instance name will probably not be 'orcl').

Oracle Enterprise Manager (SYSTEM) - Tablespaces - Microsoft Internet Explorer

Address: http://tamarack.nature.serve:5500/em/console/database/databaseObjectsSearch?event=search&otype=TABLESPACE&target=orcl&type=oracle_database

ORACLE Enterprise Manager 10g Database Control

Database Instance: orcl > Tablespaces

Object Type: Tablespace

Search

Select an object type and optionally 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	Size (MB)	Used (MB)	Used (%)	Free (MB)	Status	Datafiles	Type	Extent Management	Segment Management
<input type="radio"/>	BIOTICSDEL_DATA	500.0	0.1	0.0	499.9	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	BIOTICS_AUDIT	250.0	0.1	0.0	249.9	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	BIOTICS_DATA	1,000.0	0.1	0.0	999.9	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	BIOTICS_DX_DATA	900.0	0.1	0.0	899.9	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	BIOTICS_DX_INDEX	900.0	0.1	0.0	899.9	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	BIOTICS_INDEX	350.0	0.1	0.0	349.9	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	SYSAUX	180.0	178.0	98.9	2.0	✓	1	PERMANENT	LOCAL	AUTO
<input type="radio"/>	SYSTEM	500.0	414.7	82.9	85.3	✓	1	PERMANENT	LOCAL	MANUAL
<input type="radio"/>	TEMP	5,120.0	0.0	0.0	5,120.0	✓	1	TEMPORARY	LOCAL	MANUAL
<input type="radio"/>	UNDOTBS1	235.0	0.0	0.0	235.0	✓	1	UNDO	LOCAL	MANUAL
<input type="radio"/>	USERS	5.0	0.2	5.0	4.8	✓	1	PERMANENT	LOCAL	AUTO

Total Size (MB) 9,940.0 ✓ Online ✗ Offline Ⓜ Read Only

Total Used (MB) 593.5

Total Free (MB) 9,346.5

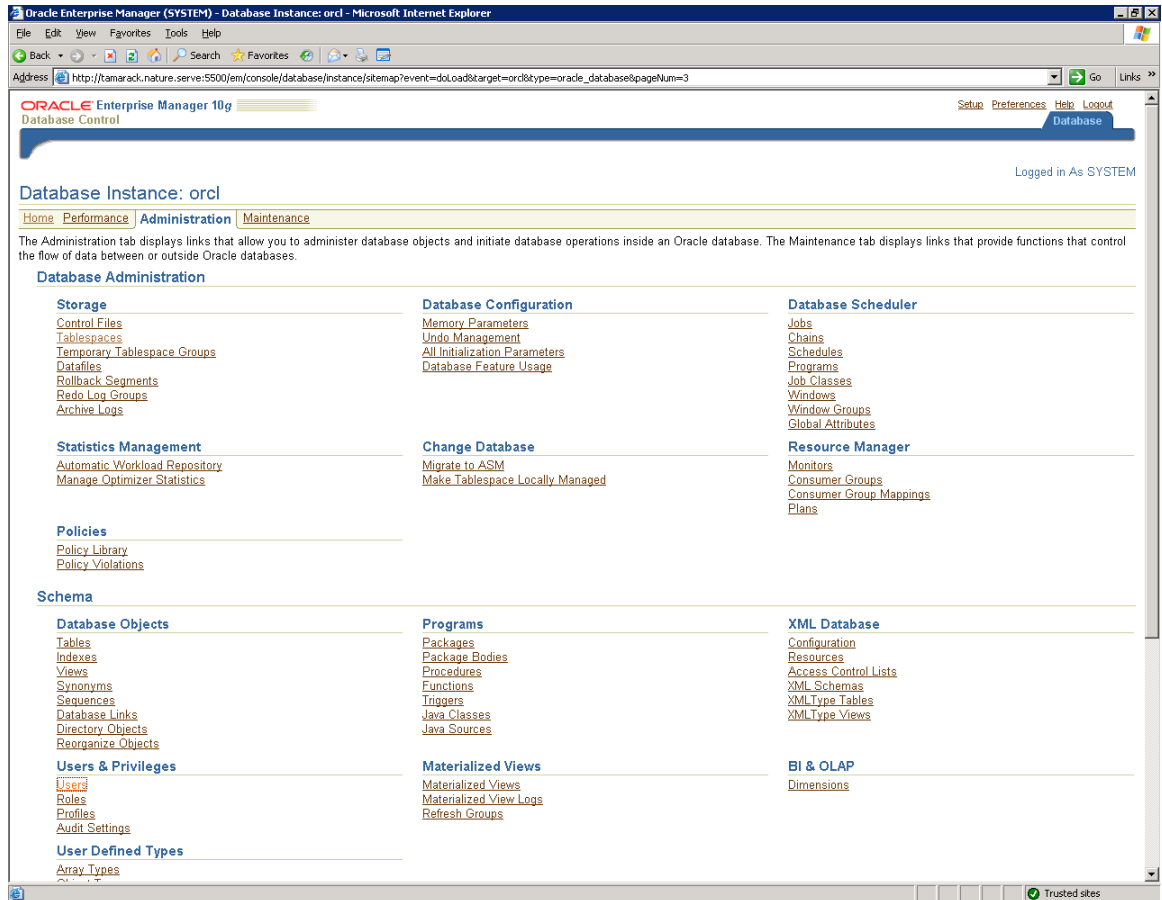
Database | Setup | Preferences | Help | Logout

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About Oracle Enterprise Manager 10g Database Control

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2. Scroll down if necessary to the Schema, Users & Privileges area and click on Users.



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- Notice there are many built-in users, but most of these accounts are locked. Click the Create button.

Oracle Enterprise Manager (SYSTEM) - Users - Microsoft Internet Explorer

Address: http://tamarack.nature.serve:5500/em/console/database/databaseObjectsSearch?event=search&otype=USER&target=ord&type=oracle_database

ORACLE Enterprise Manager 10g Database Control

Database Instance: orcl > Users

Logged in As SYSTEM

Object Type: User

Search

Select an object type and optionally 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	UserName	Account Status	Expiration Date	Default Tablespace	Temporary Tablespace	Profile	Created
<input checked="" type="radio"/>	ANONYMOUS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:51:08 PM EDT
<input type="radio"/>	DBSNMP	OPEN		SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:44:23 PM EDT
<input type="radio"/>	DIP	EXPIRED & LOCKED		USERS	TEMP	DEFAULT	Aug 8, 2006 4:38:42 PM EDT
<input type="radio"/>	EXFSYS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:50:49 PM EDT
<input type="radio"/>	MDSYS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:52:53 PM EDT
<input type="radio"/>	MGMT_VIEW	OPEN		SYSTEM	TEMP	DEFAULT	Aug 8, 2006 5:01:26 PM EDT
<input type="radio"/>	MTSSYS	OPEN		USERS	TEMP	DEFAULT	Aug 8, 2006 5:54:31 PM EDT
<input type="radio"/>	ORDPLUGINS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:52:53 PM EDT
<input type="radio"/>	ORDSYS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:52:53 PM EDT
<input type="radio"/>	OUTLN	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSTEM	TEMP	DEFAULT	Aug 8, 2006 4:36:24 PM EDT
<input type="radio"/>	PUBLIC	OPEN					
<input type="radio"/>	SI_INFORMTN_SCHEMA	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:52:53 PM EDT
<input type="radio"/>	SYS	OPEN		SYSTEM	TEMP	DEFAULT	Aug 8, 2006 4:36:20 PM EDT
<input type="radio"/>	SYSMAN	OPEN		SYSAUX	TEMP	DEFAULT	Aug 8, 2006 5:00:02 PM EDT
<input type="radio"/>	SYSTEM	OPEN		SYSTEM	TEMP	DEFAULT	Aug 8, 2006 4:36:20 PM EDT
<input type="radio"/>	TSMSYS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	USERS	TEMP	DEFAULT	Aug 8, 2006 4:42:24 PM EDT
<input type="radio"/>	WM SYS	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:45:19 PM EDT
<input type="radio"/>	XDB	EXPIRED & LOCKED	Aug 8, 2006 5:02:01 PM EDT	SYSAUX	TEMP	DEFAULT	Aug 8, 2006 4:51:08 PM EDT

Edit View Delete Actions Create Like Go

Database | Setup | Preferences | Help | Logout

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Trusted sites

Biotics 4

Oracle 10.2.0 and MTS Installation and Configuration

4. Fill in the fields. BIOTICS_USER is the name, use the default profile and use Password authentication. Enter the password twice, and give BIOTICS_USER the default tablespace of BIOTICS_DATA and a temporary tablespace of TEMP. Click Roles.

Oracle Enterprise Manager 10g
Database Control

Database Instance: orcl > Users > Create User

Logged in As SYSTEM

Create User

Show SQL Cancel OK

General Roles System Privileges Object Privileges Quotas Consumer Groups Switching Privileges Proxy Users

Name: BIOTICS_USER

Profile: DEFAULT

Authentication: Password

Enter Password: [masked]

Confirm Password: [masked]

For Password choice, the role is authorized via password.

☐ Expire Password now

Default Tablespace: BIOTICS_DATA

Temporary Tablespace: TEMP

Status: ☐ Locked ☒ Unlocked

General Roles System Privileges Object Privileges Quotas Consumer Groups Switching Privileges Proxy Users

Show SQL Cancel OK

Database | Setup | Preferences | Help | Logout

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About Oracle Enterprise Manager 10g Database Control

Biotics 4

Oracle 10.2.0 and MTS Installation and Configuration

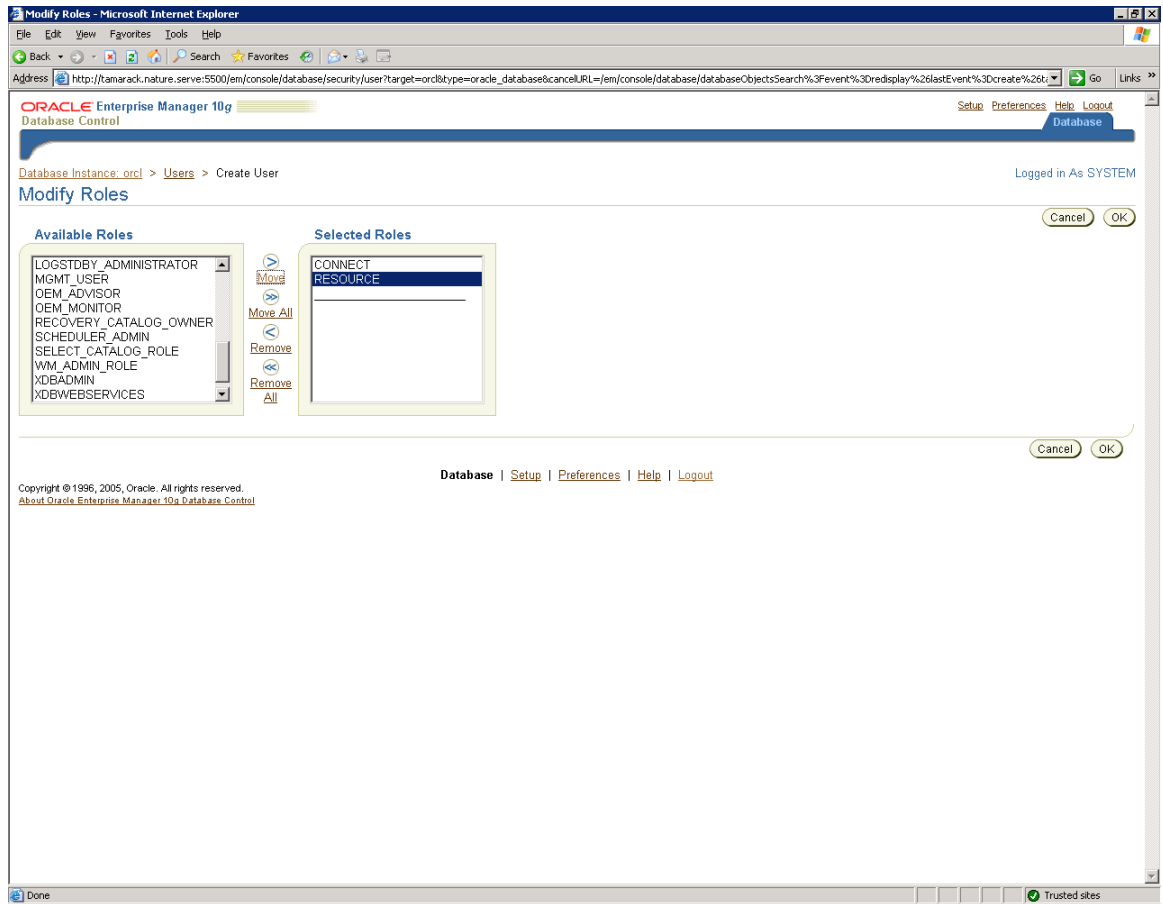
5. The Connect Role is already in the list by default. We need to add the Resource Role, though. Click Edit List.

The screenshot shows the Oracle Enterprise Manager 10g 'Create User' page. The browser is Microsoft Internet Explorer. The address bar shows the URL: http://tamarack.nature.serve:5500/em/console/database/security/user?target=ord&type=oracle_database&cancelURL=/em/console/database/databaseObjectsSearch%3Fevent%3Dredisplay%26lastEvent%3Dcreate%26t. The page title is 'ORACLE Enterprise Manager 10g Database Control'. The breadcrumb navigation is 'Database Instance: orcl > Users > Create User'. The user is logged in as 'SYSTEM'. The 'Create User' page has tabs for 'General', 'Roles', 'System Privileges', 'Object Privileges', 'Quotas', 'Consumer Groups', 'Switching Privileges', and 'Proxy Users'. The 'Roles' tab is selected. Below the tabs is a table with columns 'Role', 'Admin Option', and 'Default'. The table contains one row: 'CONNECT', with 'Admin Option' set to 'No' and 'Default' set to 'Yes'. There are 'Show SQL', 'Cancel', and 'OK' buttons at the top right of the table. An 'Edit List' button is also present. At the bottom of the page, there is a copyright notice: 'Copyright © 1996, 2005, Oracle. All rights reserved. About Oracle Enterprise Manager 10g Database Control'.

Role	Admin Option	Default
CONNECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Biotics 4
Oracle 10.2.0 and MTS Installation and Configuration

6. Move Resource from the right-hand list to the left-hand list. Click OK.



Biotics 4

Oracle 10.2.0 and MTS Installation and Configuration

7. Now you need to assign the Unlimited Tablespace system privilege. Click System Privileges.

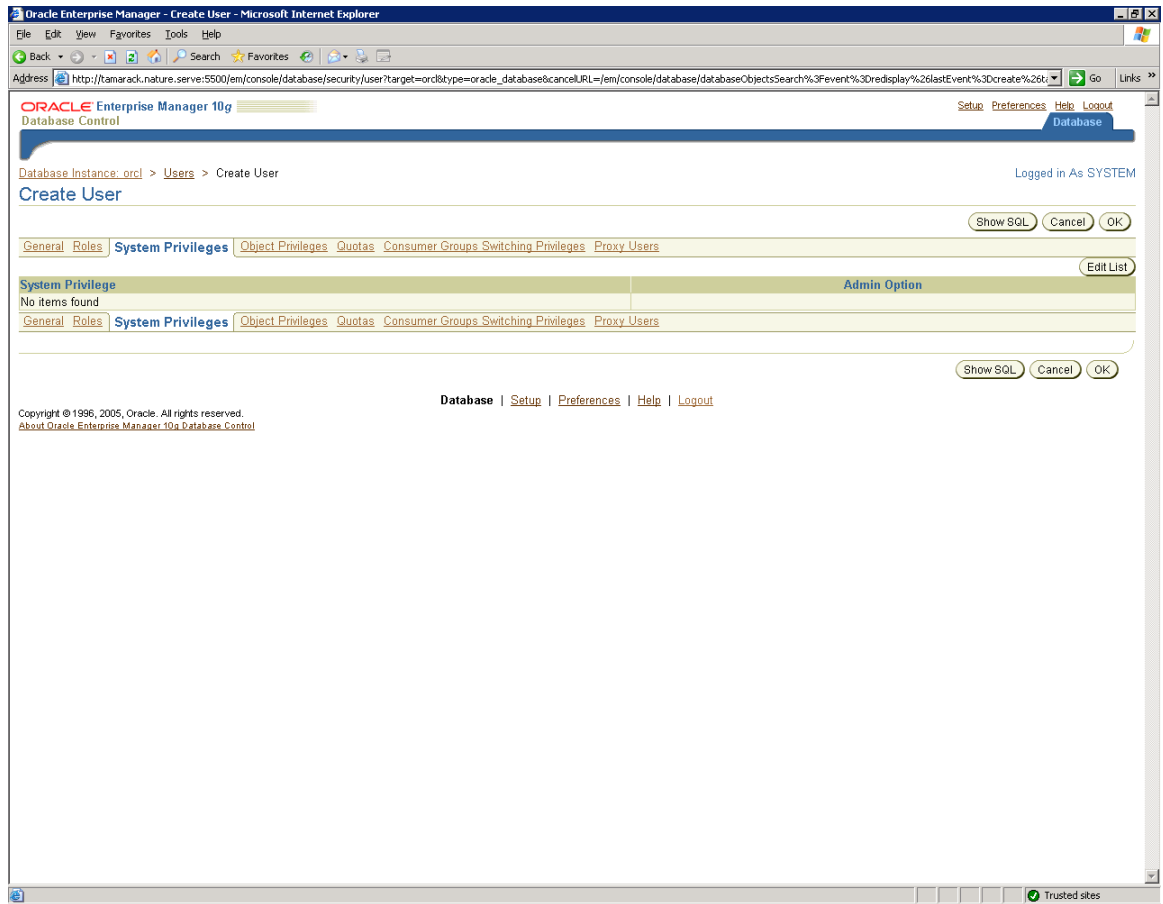
The screenshot shows the Oracle Enterprise Manager 10g Database Control interface in a Microsoft Internet Explorer browser. The page title is "Oracle Enterprise Manager - Create User - Microsoft Internet Explorer". The address bar shows a URL from tamarack.nature.serve:5500. The page header includes "ORACLE Enterprise Manager 10g Database Control" and navigation links for "Setup", "Preferences", "Help", and "Logout". Below the header, it says "Database Instance: orcl > Users > Create User" and "Logged in As SYSTEM". The main section is titled "Create User" and has tabs for "General", "Roles", "System Privileges", "Object Privileges", "Quotas", "Consumer Groups", "Switching Privileges", and "Proxy Users". The "Roles" tab is selected, showing a table with columns "Role", "Admin Option", and "Default".

Role	Admin Option	Default
CONNECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RESOURCE	<input type="checkbox"/>	<input checked="" type="checkbox"/>

At the bottom of the page, there is a copyright notice: "Copyright © 1996, 2005, Oracle. All rights reserved. About Oracle Enterprise Manager 10g Database Control".

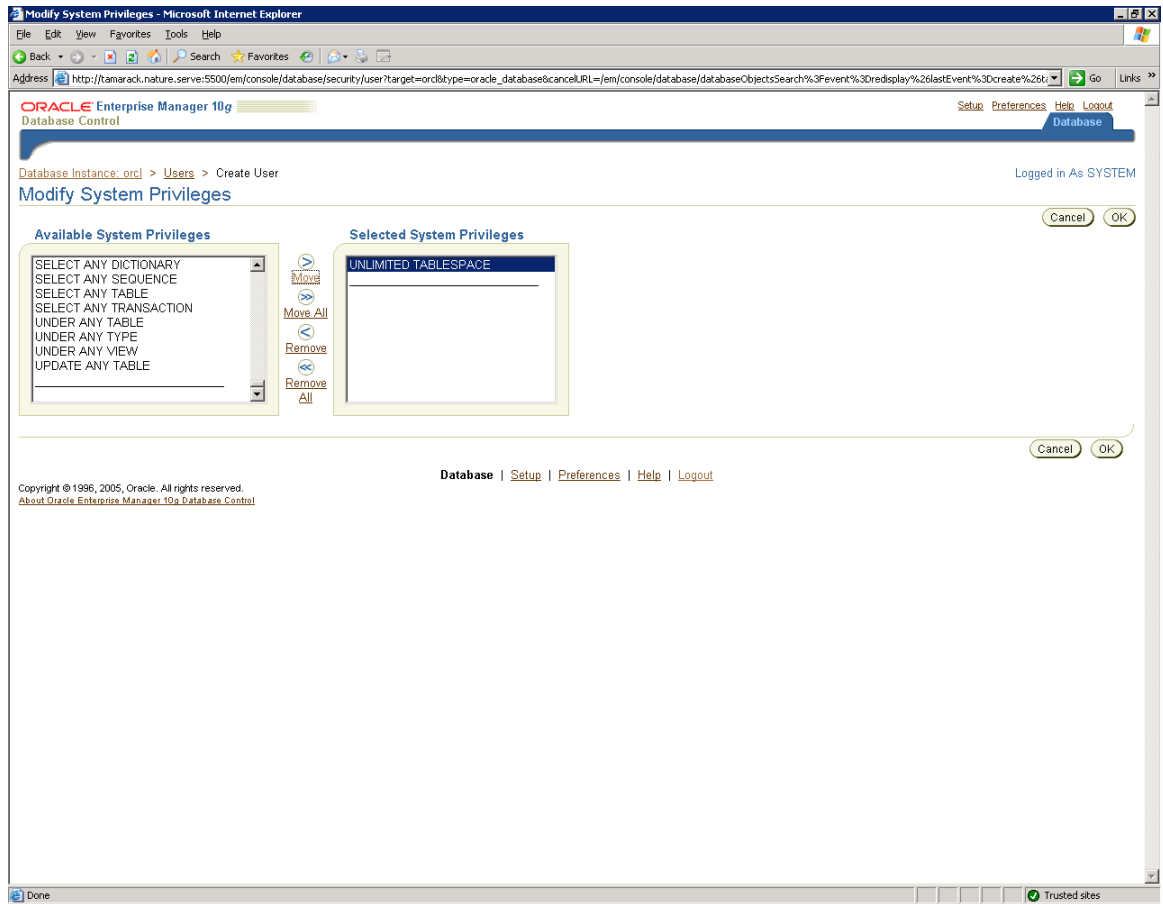
Biotics 4
Oracle 10.2.0 and MTS Installation and Configuration

8. The list is empty; click Edit List.



Biotics 4
Oracle 10.2.0 and MTS Installation and Configuration

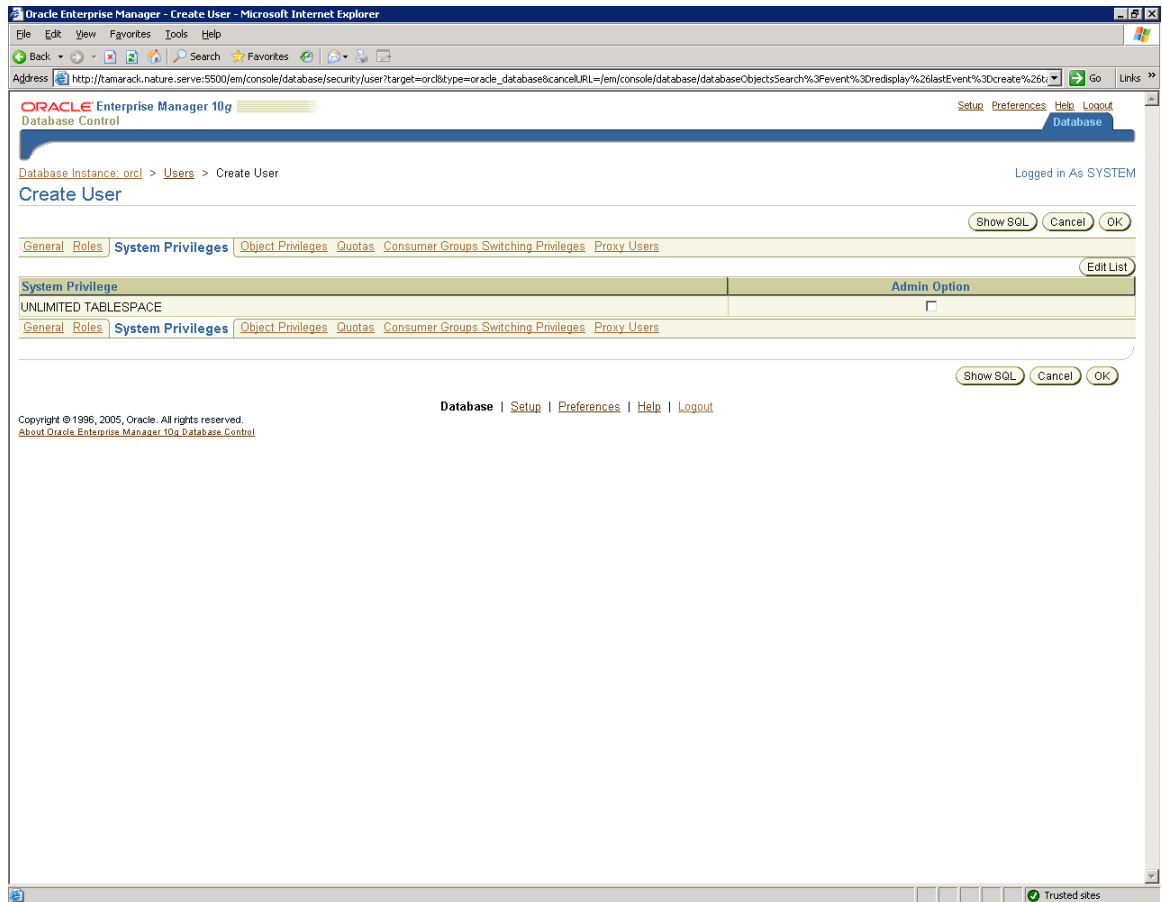
9. Add Unlimited Tablespace from the left-hand list to the right-hand list and click OK.



Biotics 4

Oracle 10.2.0 and MTS Installation and Configuration

10. Now click OK to create the user.

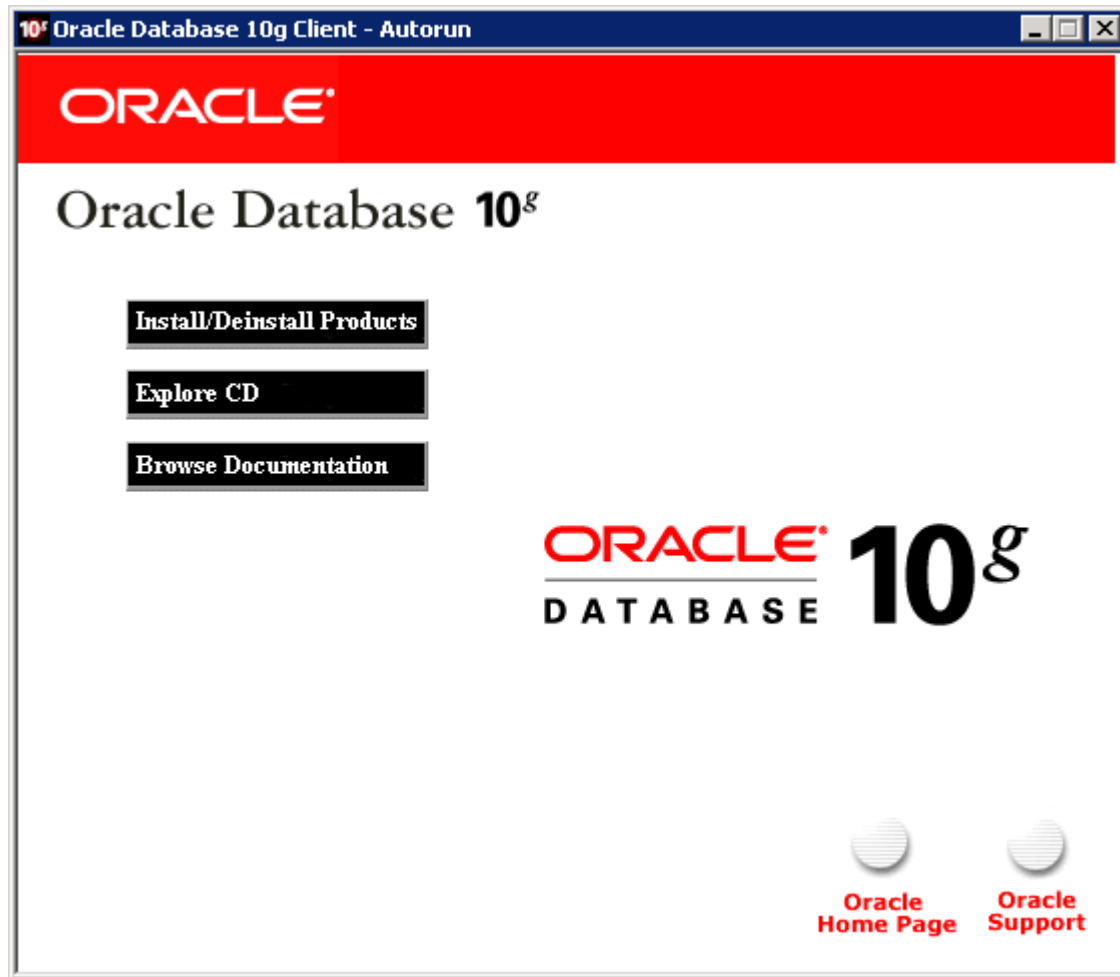


11. Repeat to create the BIOTICS_DEL user and BIOTICS_REPORT user. The default tablespace of BIOTICS_DEL is BIOTICSDEL_DATA. The BIOTICS_REPORT user doesn't need Unlimited Tablespace Privileges.

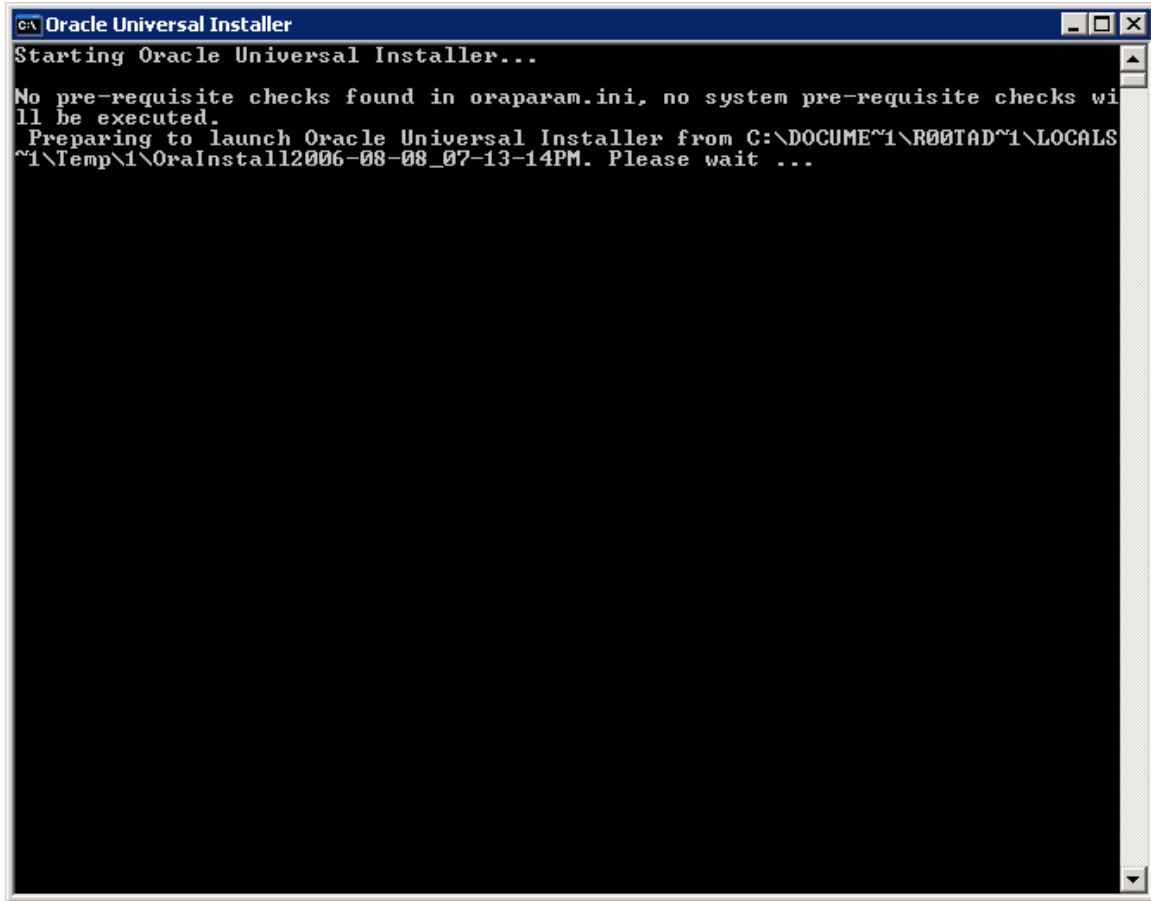
INSTALLATION OF ORACLE 10G CLIENT

The Oracle Client is only necessary for Mapper Client machines, the Tracker server (only if not on the same machine as the Oracle Server), and machines used by Datamanagers for Oracle Administration. It is not required for Tracker Clients. If there is already an Oracle 8 or 9 client on the machine, we recommend a full uninstall of that client prior to Oracle 10g Client installation. Prior to using this document, consult Metalink Document ID Note 124353.1 for uninstall procedures. If you have upgraded your server to 10g, it is not necessary to upgrade Mapper Clients to 10g. However, you should upgrade clients used for Oracle Administration tasks.

Insert the Oracle Client CD and click Install/Deinstall Products

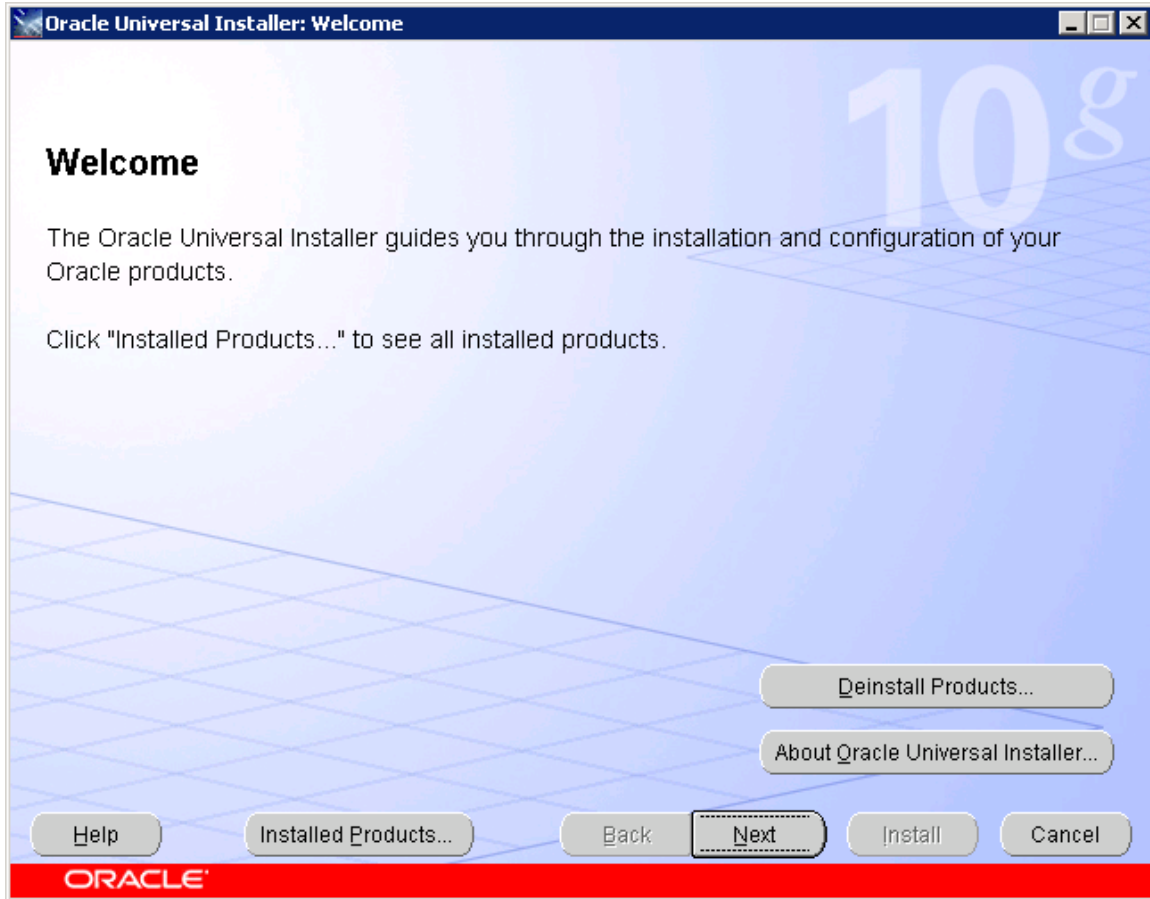


This is normal; just be patient.

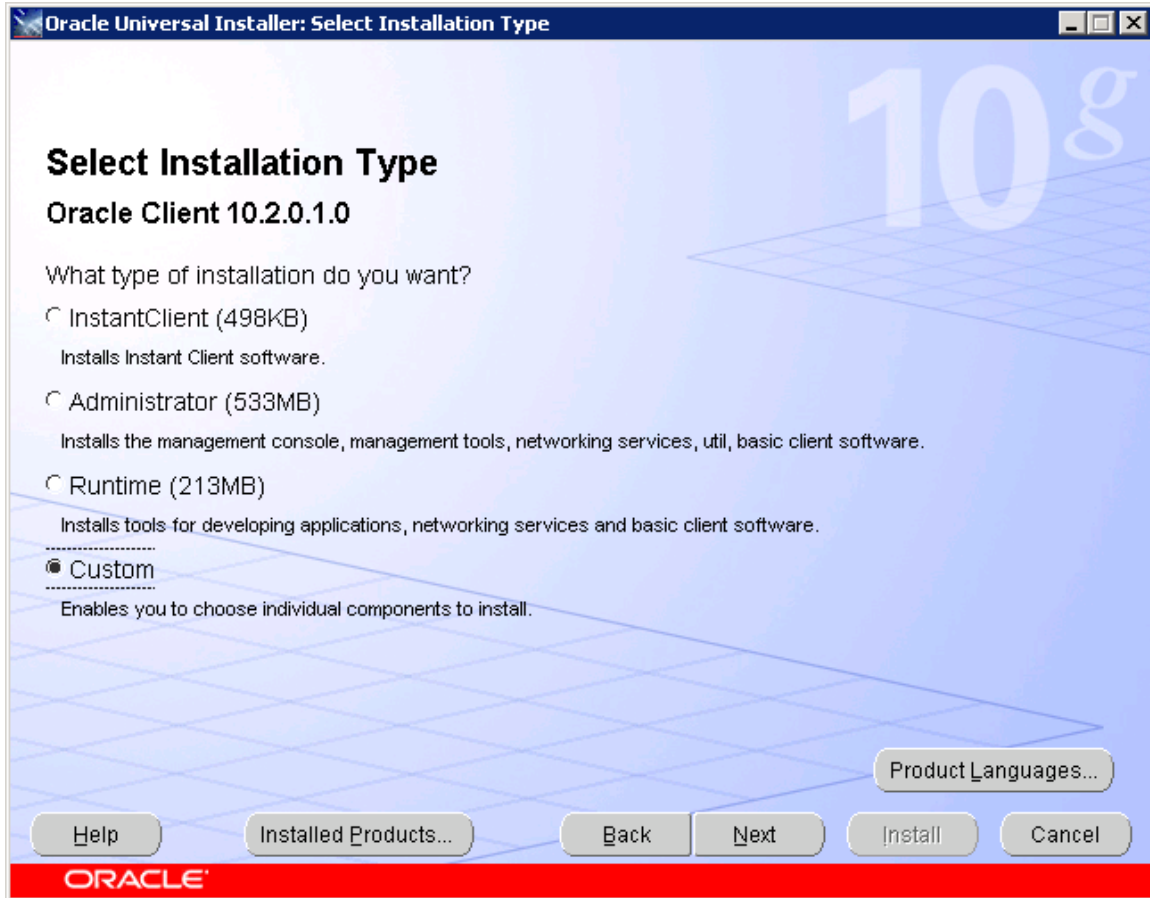
A screenshot of a Windows-style window titled "C:\ Oracle Universal Installer". The window contains a black background with white text. The text reads: "Starting Oracle Universal Installer...", "No pre-requisite checks found in oraparam.ini, no system pre-requisite checks will be executed.", and "Preparing to launch Oracle Universal Installer from C:\DOCUME~1\ROOTAD~1\LOCALS~1\Temp\1\OraInstall12006-08-08_07-13-14PM. Please wait ...".

```
C:\ Oracle Universal Installer
Starting Oracle Universal Installer...
No pre-requisite checks found in oraparam.ini, no system pre-requisite checks will be executed.
Preparing to launch Oracle Universal Installer from C:\DOCUME~1\ROOTAD~1\LOCALS~1\Temp\1\OraInstall12006-08-08_07-13-14PM. Please wait ...
```

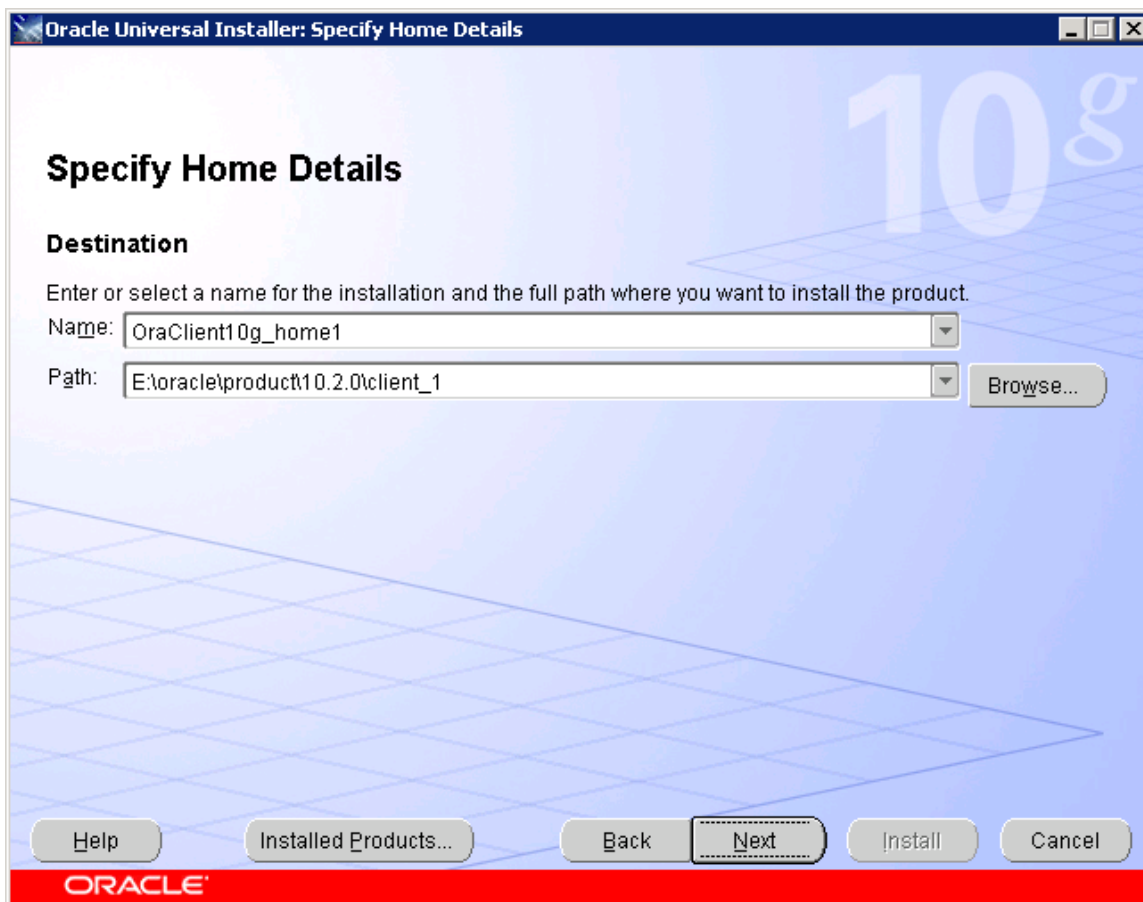
Click **Next**.



If this is a Mapper-client install, choose **Custom** and click **Next**. If this is an installation for a Datamanager's computer or for a Tracker server, choose Administrator. You will not see the "Available Product Components" window in a few pages. For Tracker server Oracle client installations, you will have to run the Oracle Universal installer again and choose a Custom installation type in order to ensure Oracle Services for Microsoft Transaction Server is installed.



Choose where to place the client or just take the defaults.



The image shows a screenshot of the 'Oracle Universal Installer: Specify Home Details' window. The window has a blue header bar with the title 'Oracle Universal Installer: Specify Home Details'. The main area has a light blue background with a large '10g' logo in the upper right. The title 'Specify Home Details' is prominently displayed. Under the heading 'Destination', there is a text box for 'Name' containing 'OraClient10g_home1' and a text box for 'Path' containing 'E:\oracle\product\10.2.0\client_1'. A 'Browse...' button is next to the path field. At the bottom, there is a row of buttons: 'Help', 'Installed Products...', 'Back', 'Next' (which is highlighted with a dashed border), 'Install', and 'Cancel'. A red bar at the very bottom contains the 'ORACLE' logo.

Oracle Universal Installer: Specify Home Details

Specify Home Details

Destination

Enter or select a name for the installation and the full path where you want to install the product.

Name: OraClient10g_home1

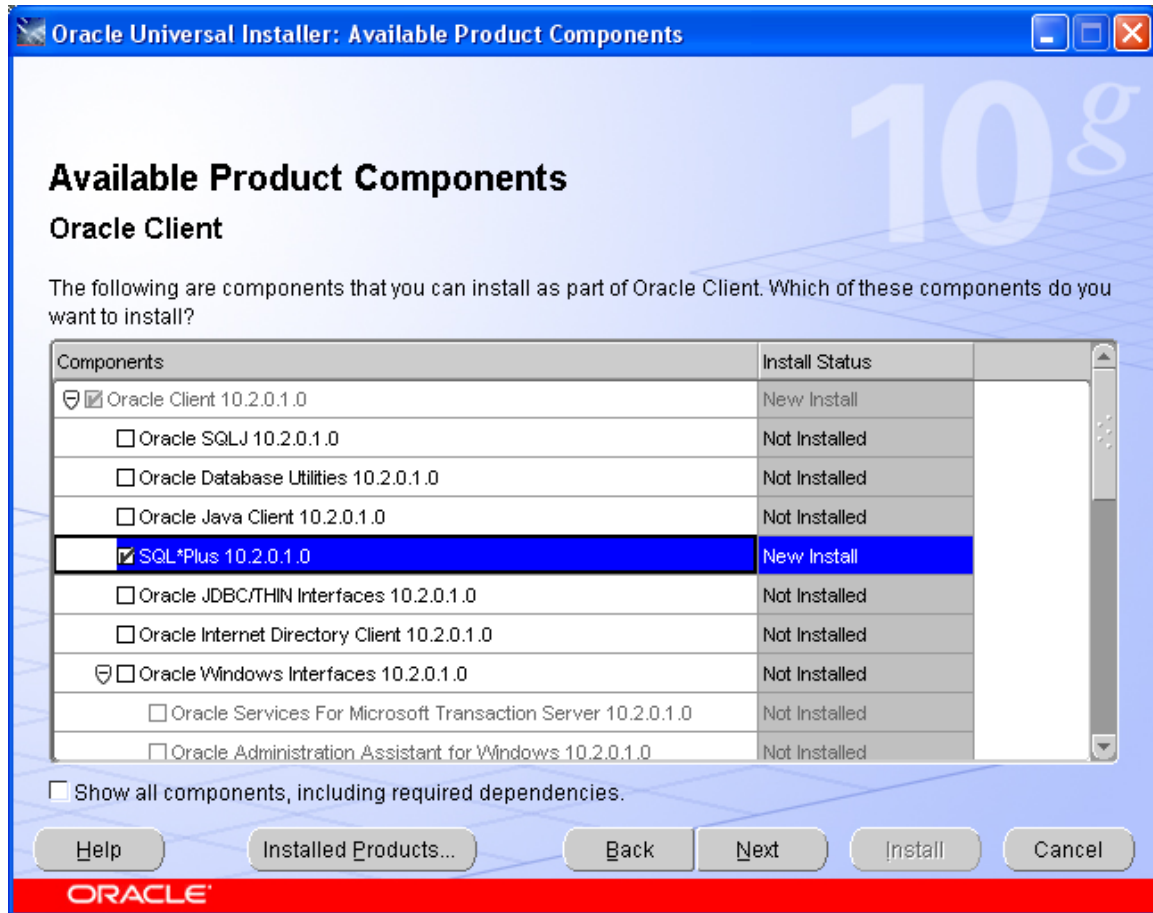
Path: E:\oracle\product\10.2.0\client_1

Browse...

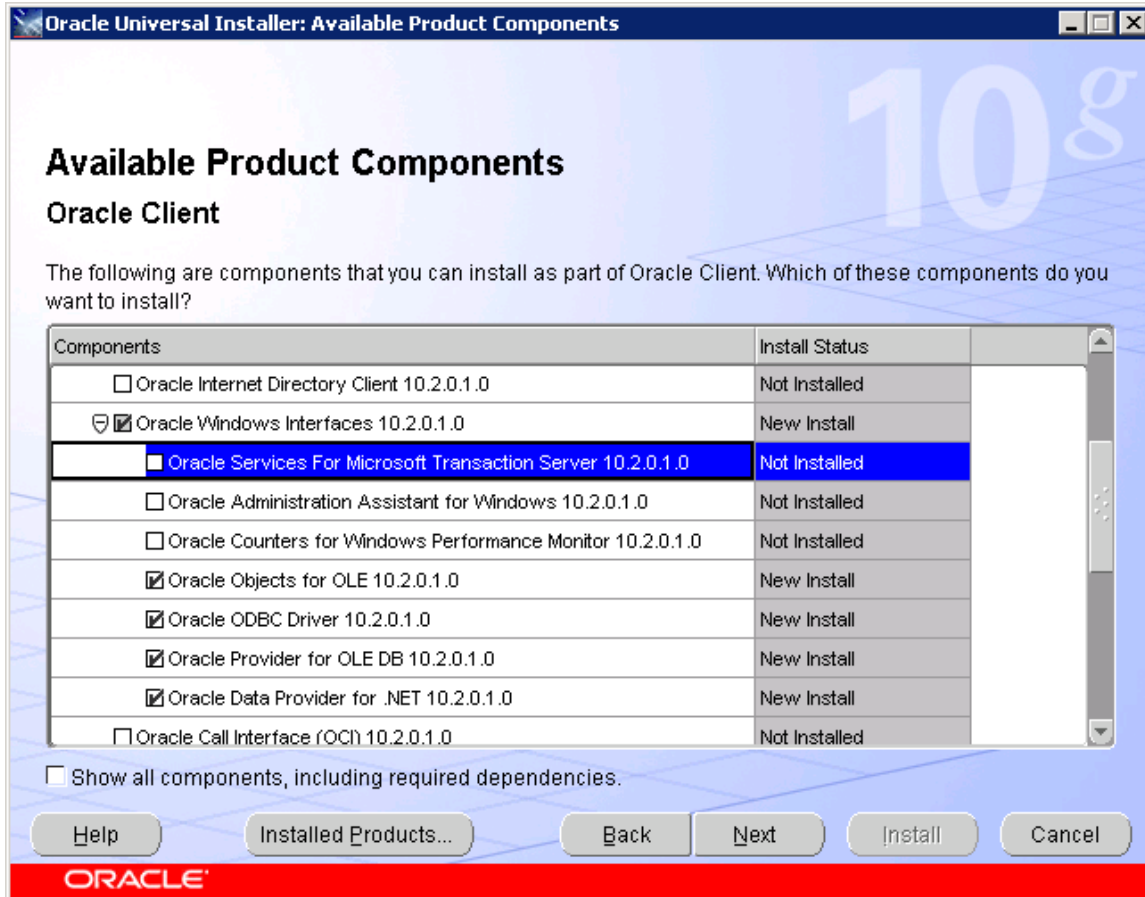
Help Installed Products... Back **Next** Install Cancel

ORACLE

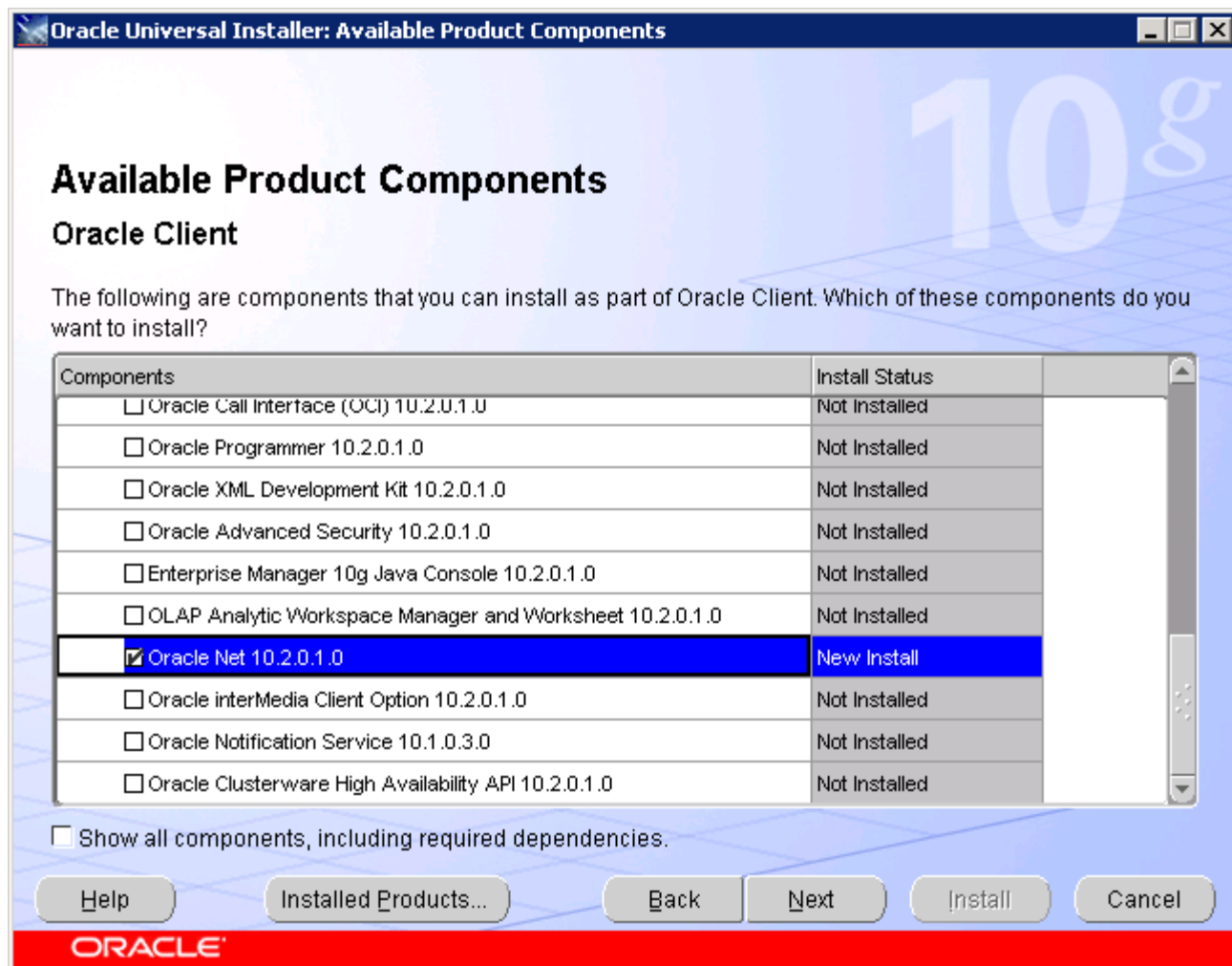
Check the box for SQL*Plus to be installed and scroll down so you can see all of Oracle Windows Interfaces.



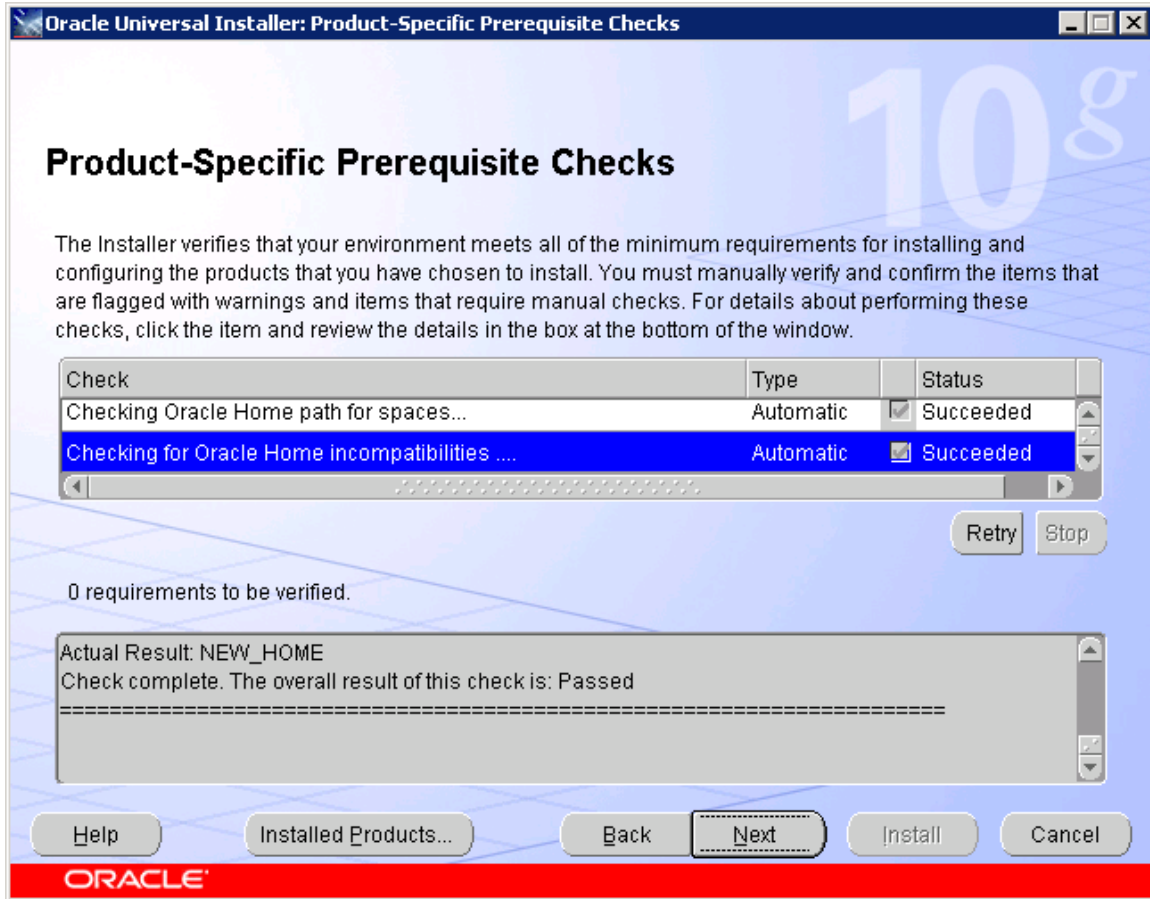
Ensure that Oracle ODBC Driver is checked for Mapper Client installs. There will be a few other components checked by default also. Leave them set to their defaults. Scroll down some more.



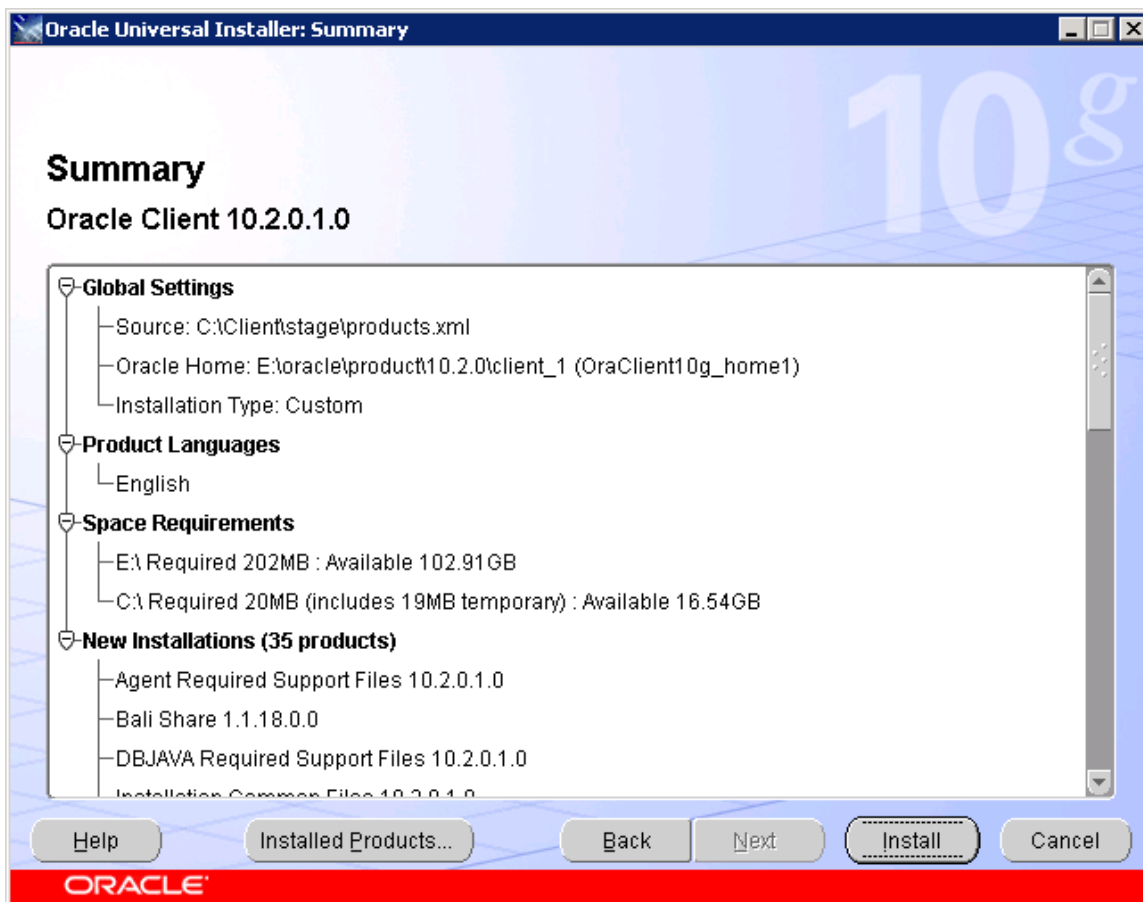
Check the box for Oracle Net, too.



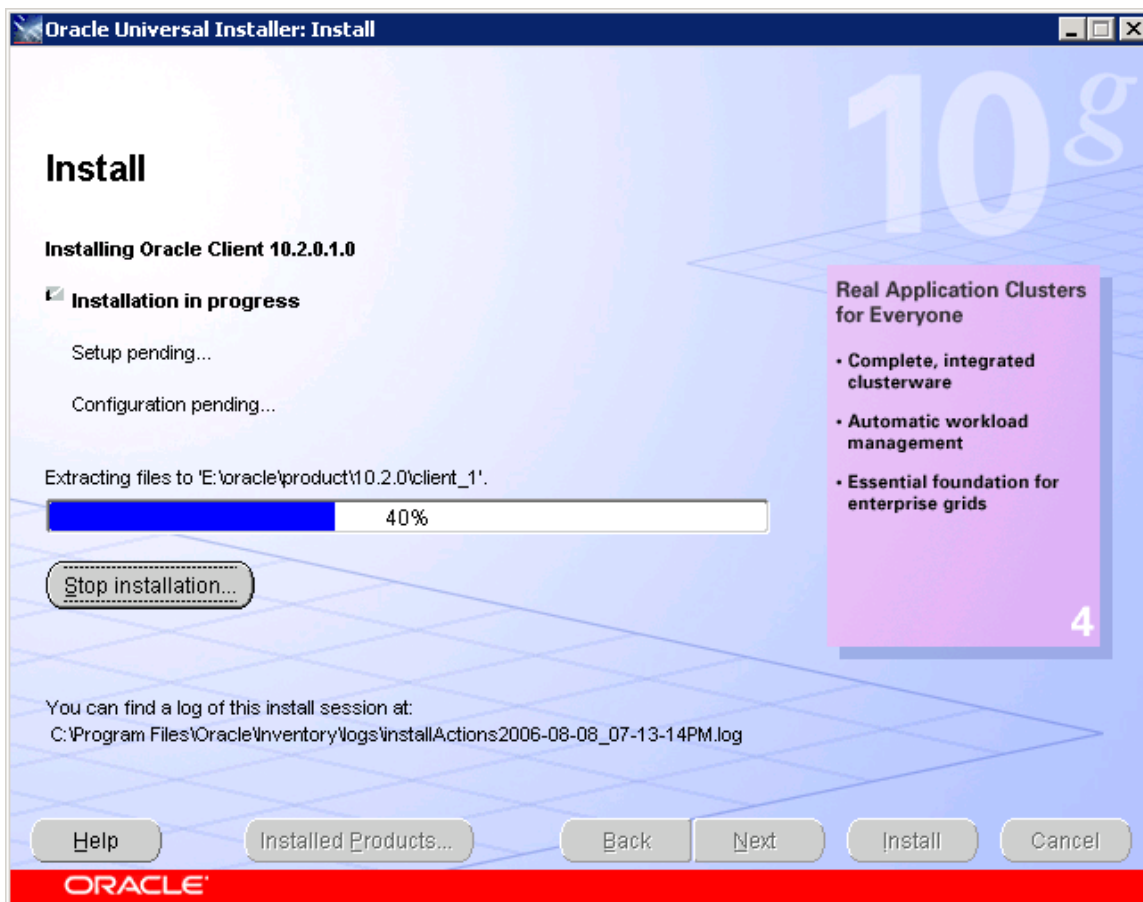
Make sure the Prerequisite Checks succeed. Click **Next**.



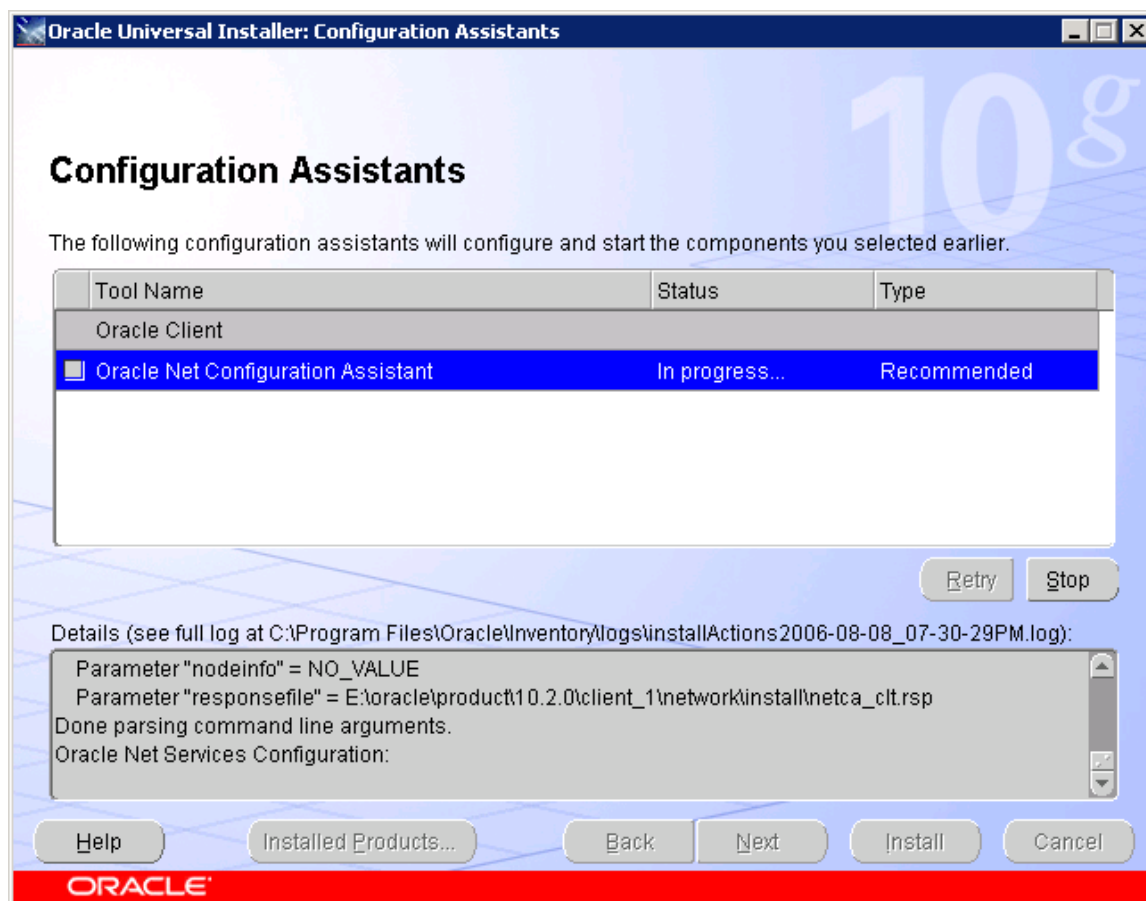
Click Install and wait.



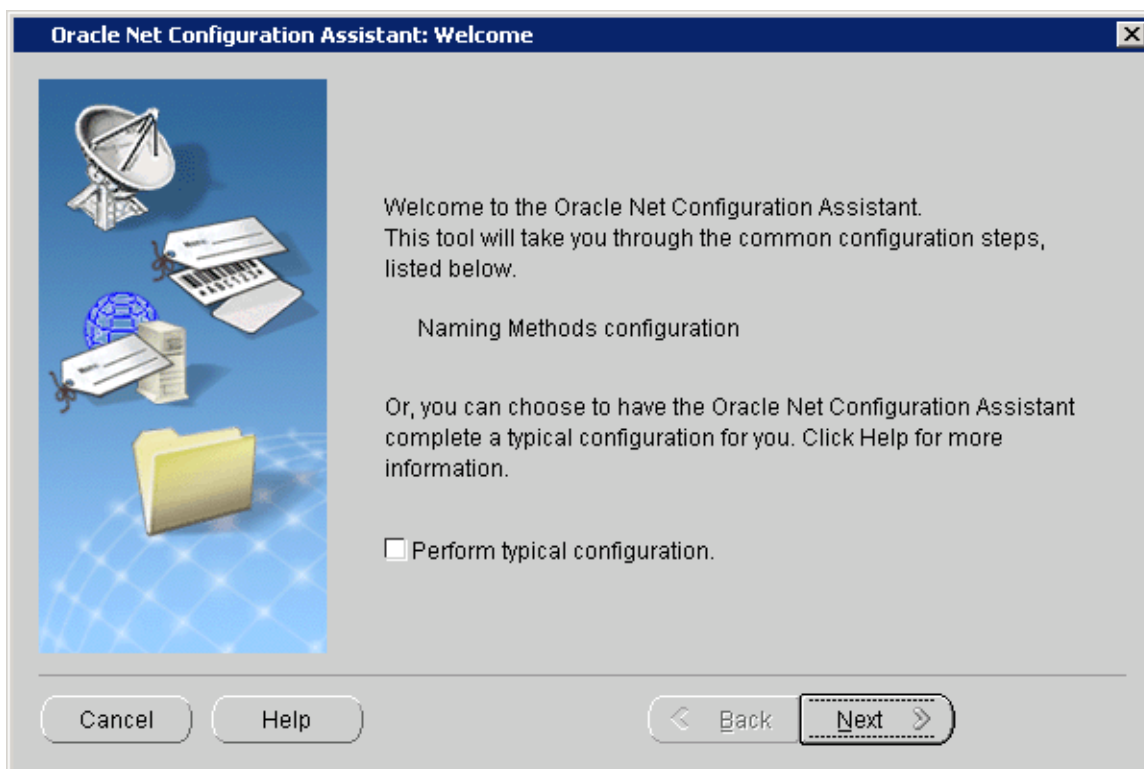
It's not so bad...



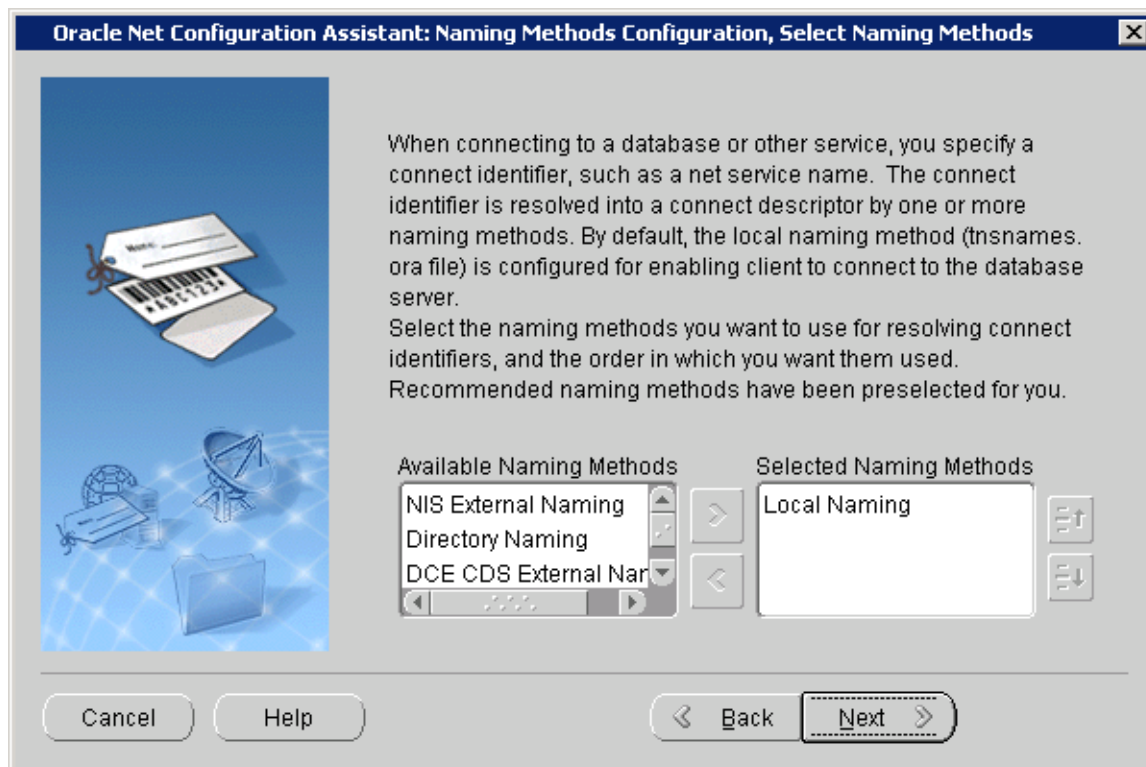
The Net Configuration Assistant starts automatically. Sometimes, the actual assistant program hides underneath this window. Minimize it if it feels like the program is hung.



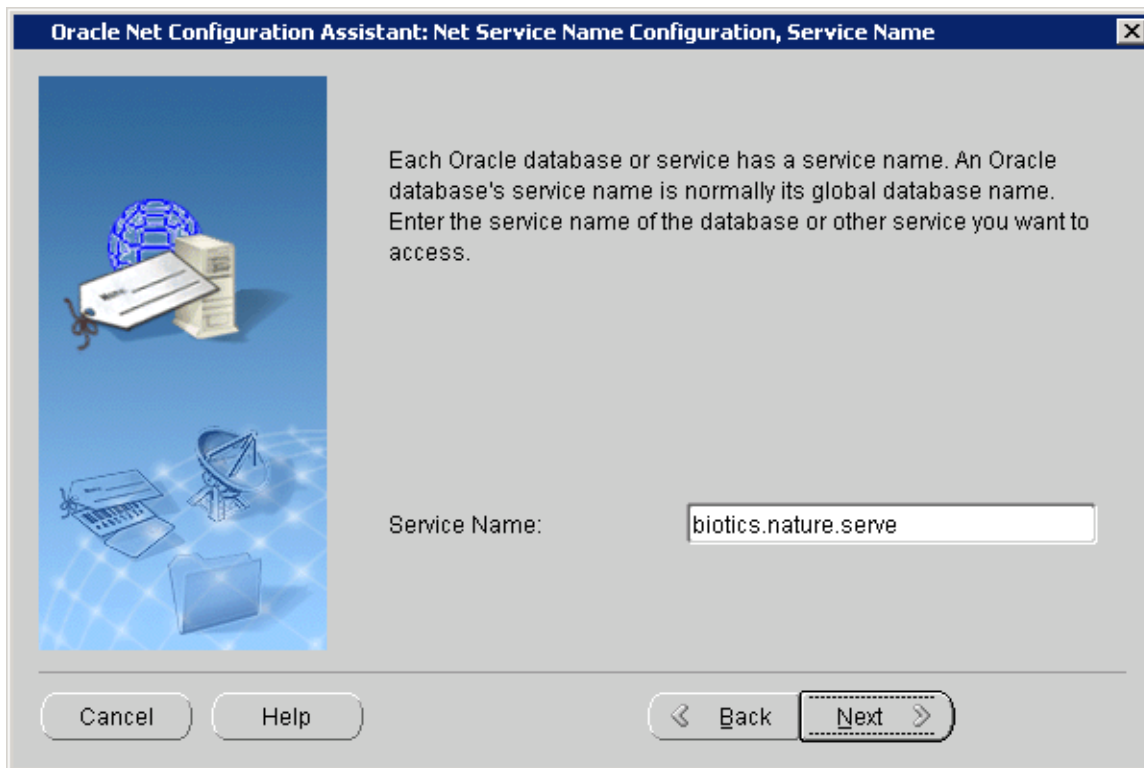
Leave the box for “typical...” unchecked and click **Next**.



Accept the default of “Local Naming” and click **Next**.



Enter the Service Name. You chose this when you created your database. Back then it was called the Global Database Name. Annoying, no? Click **Next**.



The screenshot shows a Windows-style dialog box titled "Oracle Net Configuration Assistant: Net Service Name Configuration, Service Name". On the left is a blue graphic with icons of a globe, a server, a satellite, and a folder. The main text area contains the following instructions: "Each Oracle database or service has a service name. An Oracle database's service name is normally its global database name. Enter the service name of the database or other service you want to access." Below this text is a label "Service Name:" followed by a text input field containing the value "biotics.nature.serve". At the bottom of the dialog are four buttons: "Cancel", "Help", "< Back", and "Next >". The "Next >" button is highlighted with a dashed border.

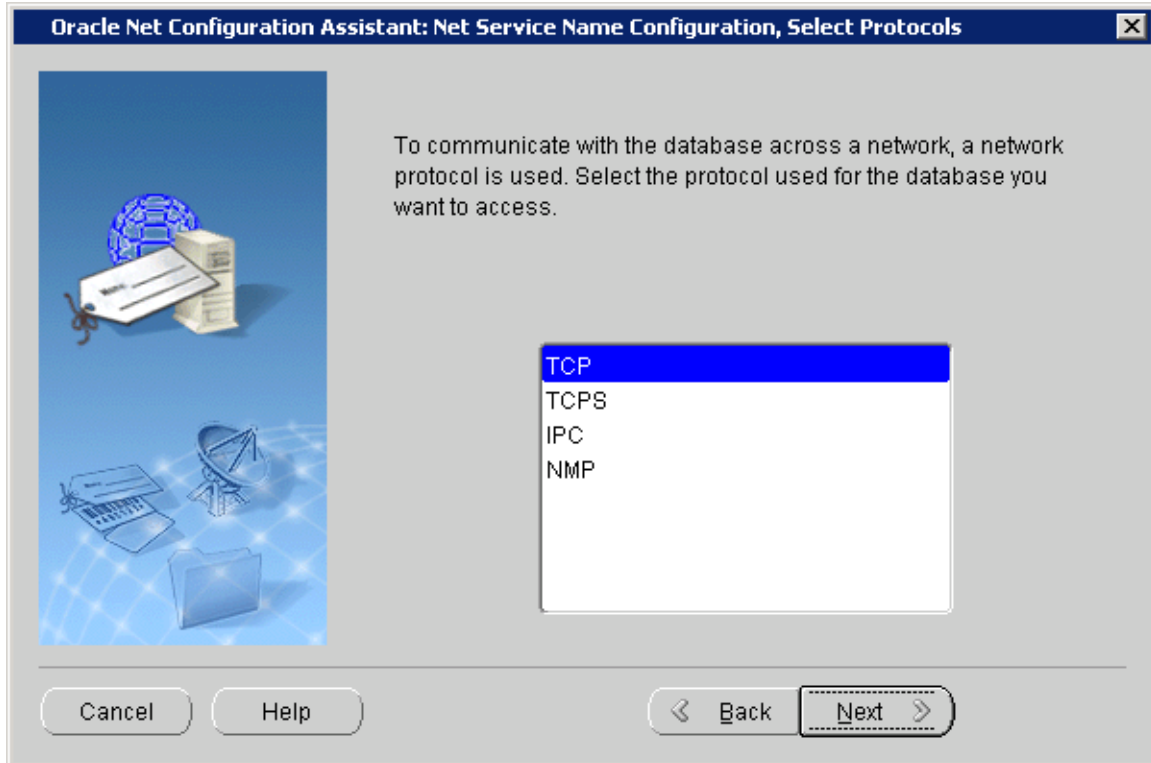
Oracle Net Configuration Assistant: Net Service Name Configuration, Service Name

Each Oracle database or service has a service name. An Oracle database's service name is normally its global database name. Enter the service name of the database or other service you want to access.

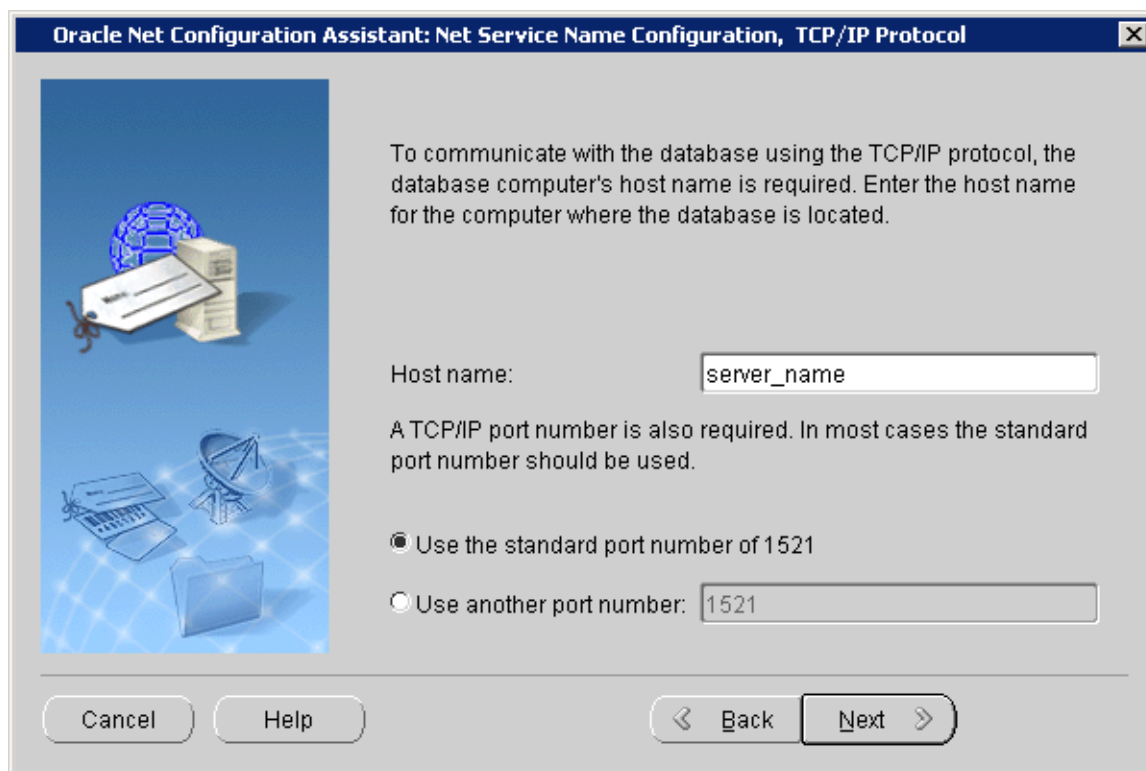
Service Name:

Cancel Help < Back Next >

TCP is the network protocol you will use. Click **Next**.

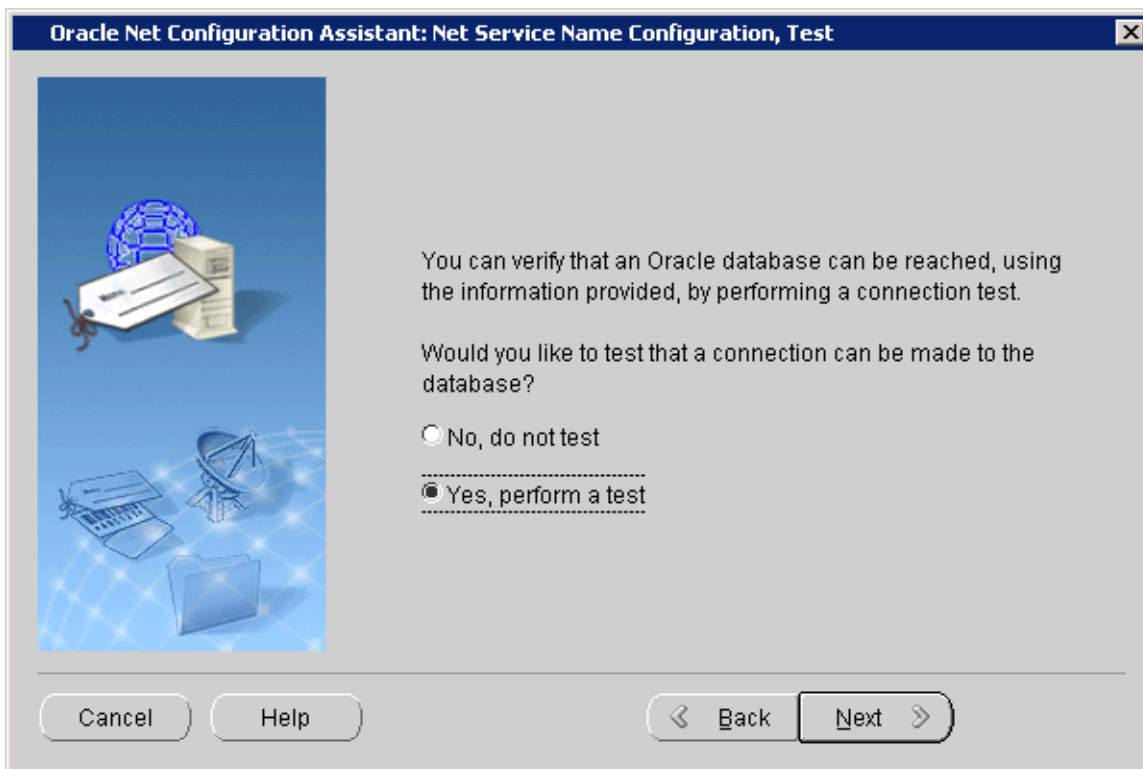


Enter the server name of the Oracle Server. This is the name it is referred to on your network. Accept the default port number and click **Next**.

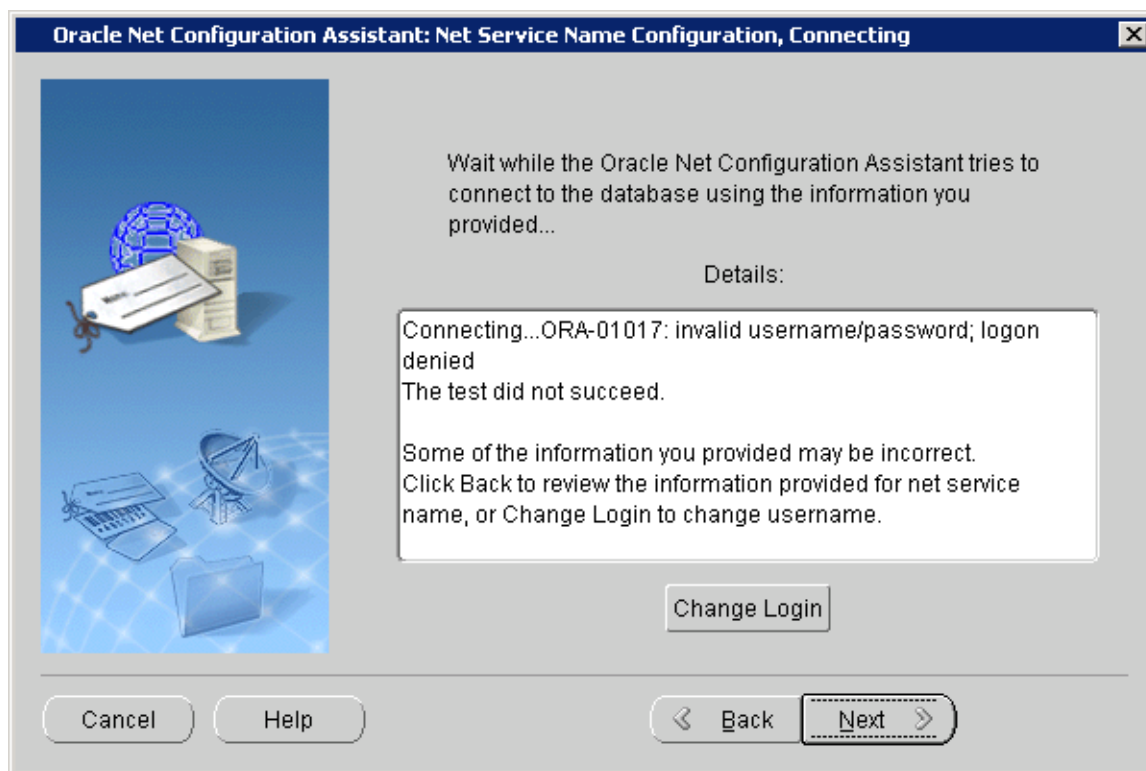


The screenshot shows a Windows-style dialog box titled "Oracle Net Configuration Assistant: Net Service Name Configuration, TCP/IP Protocol". On the left is a blue graphic with icons of a globe, a server tower, a satellite dish, and a folder. The main text area contains the following instructions: "To communicate with the database using the TCP/IP protocol, the database computer's host name is required. Enter the host name for the computer where the database is located." Below this is a text field labeled "Host name:" containing the text "server_name". Another instruction follows: "A TCP/IP port number is also required. In most cases the standard port number should be used." There are two radio button options: "Use the standard port number of 1521" (which is selected) and "Use another port number:" followed by a text field containing "1521". At the bottom are four buttons: "Cancel", "Help", "< Back", and "Next >".

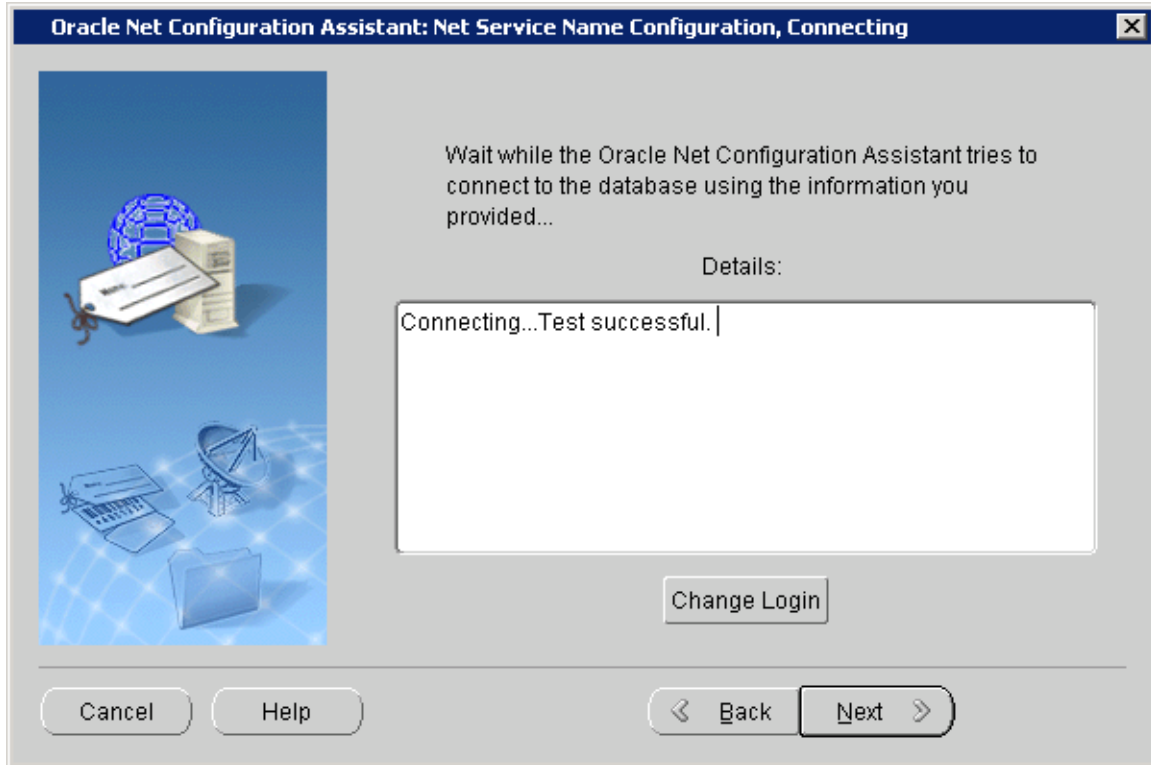
Go ahead and perform a test. Click Next.



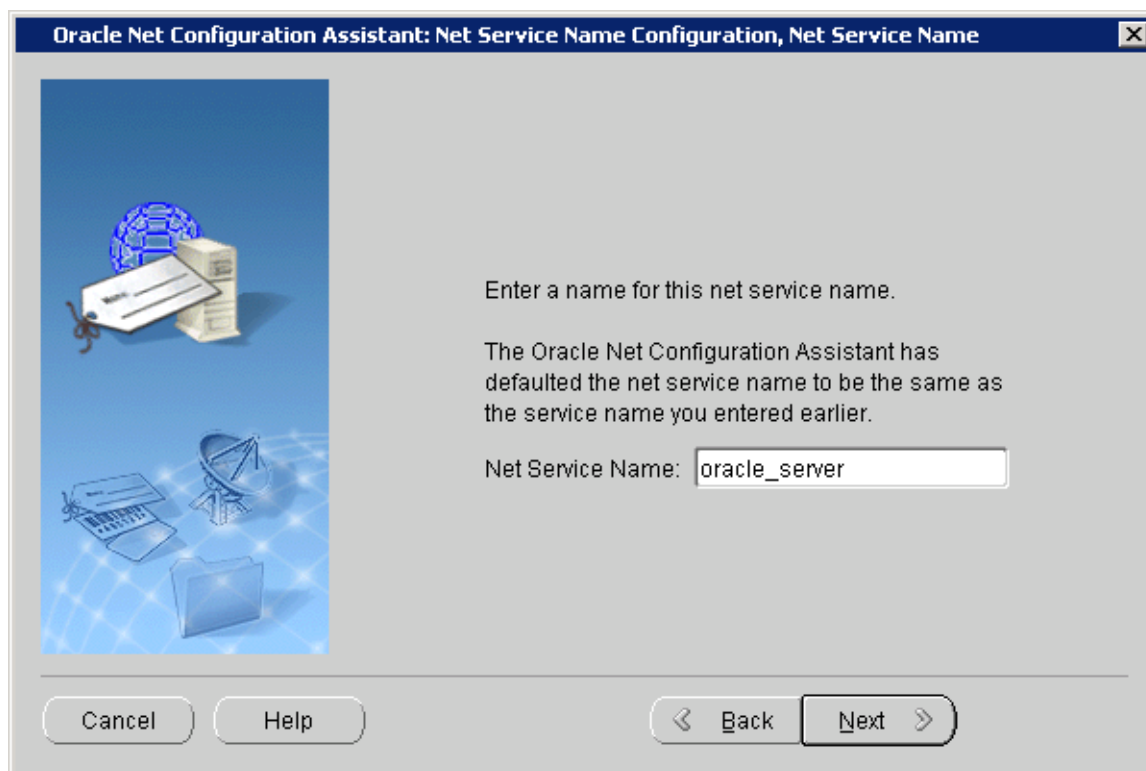
Click Change Login and change the SYSTEM user's password to the super-secret password you chose when you created the database.



Now you're in. Click **Next**.



Now choose a name that you will use to refer to your database. Many Biotics installations use “oracle_server” as the Net Service Name, but you may use anything you like as long as it is consistent within your organization. Click **Next**.



The screenshot shows a Windows-style dialog box titled "Oracle Net Configuration Assistant: Net Service Name Configuration, Net Service Name". On the left is a blue graphic with icons of a globe, a server tower, a satellite dish, and a folder. The main area has a light gray background with the following text:

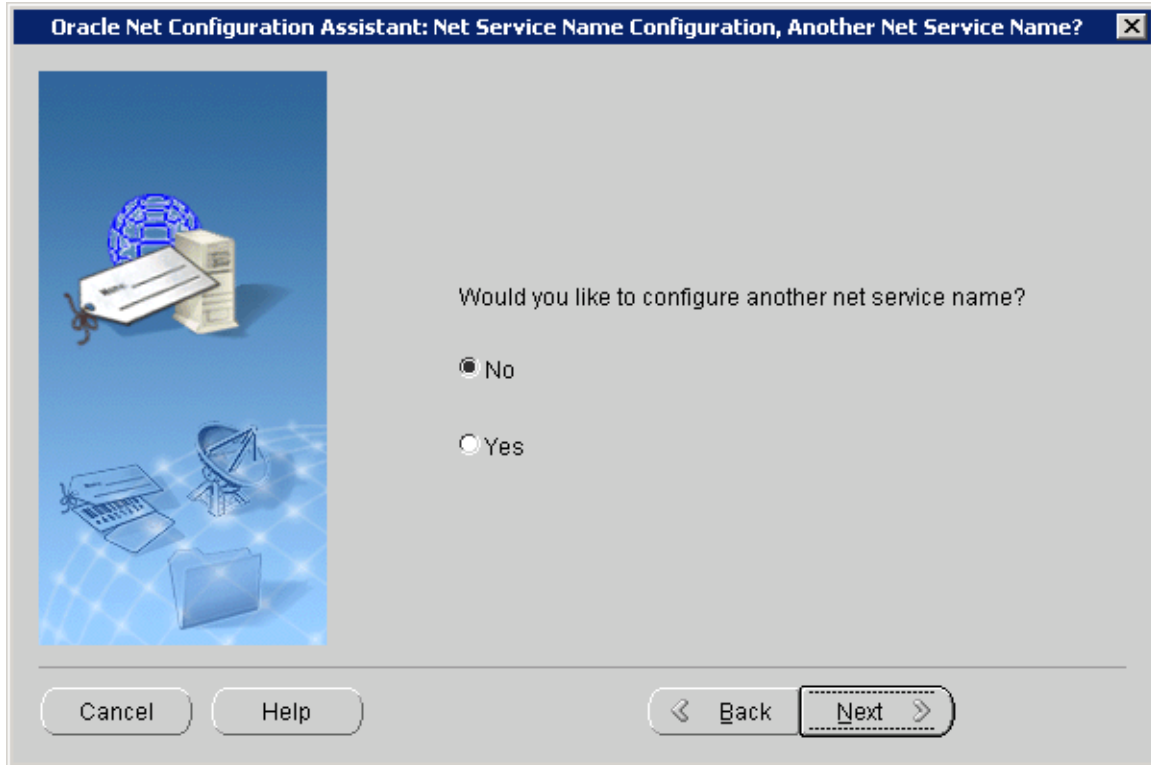
Enter a name for this net service name.

The Oracle Net Configuration Assistant has defaulted the net service name to be the same as the service name you entered earlier.

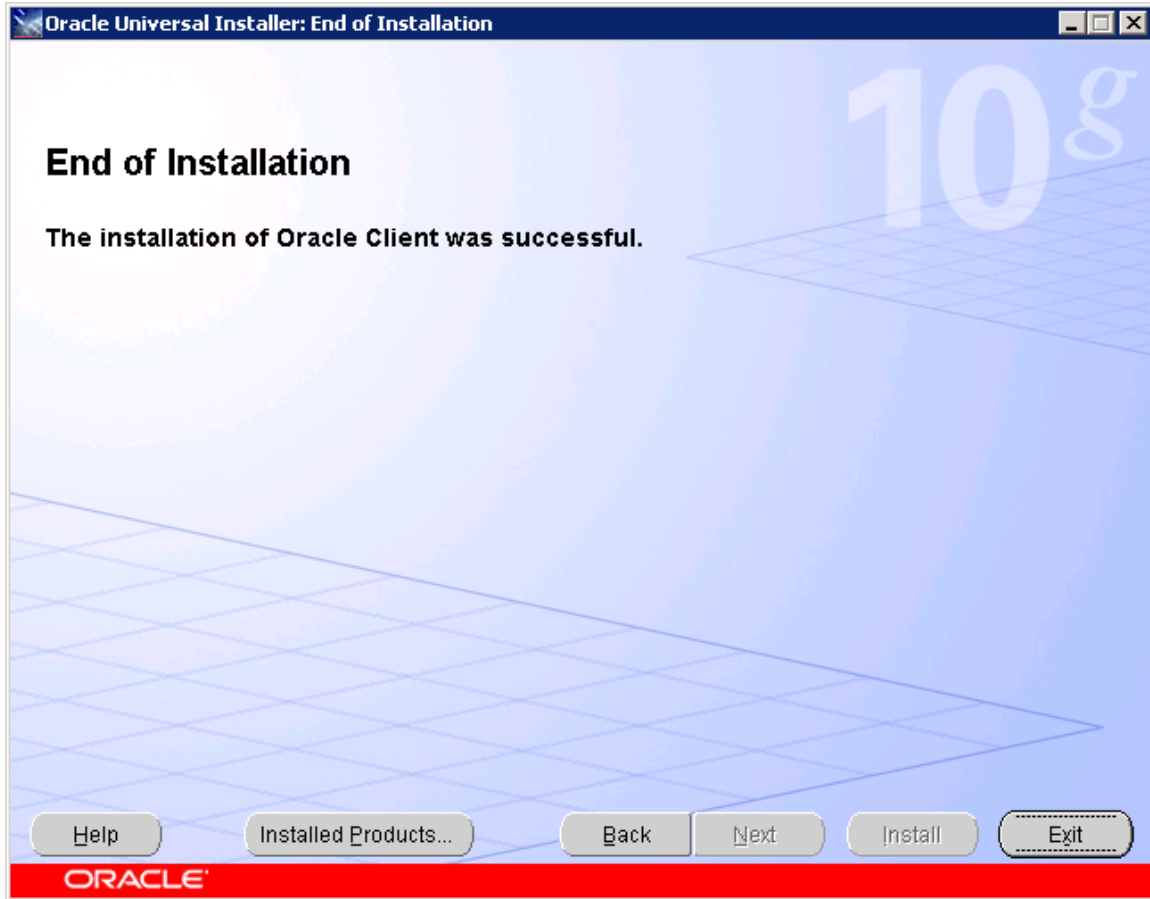
Net Service Name:

At the bottom, there are four buttons: "Cancel", "Help", "< Back", and "Next >".

Do not configure another Net Service Name. Click **Next** three times then **Finish**.



Click **Exit**, and you're done.



UPGRADE FROM ORACLE 8I OR 9I

If you need to upgrade to Oracle 10g NatureServe recommends a complete uninstallation of Oracle 8i or 9i followed by an installation of Oracle 10g. Oracle 8i and 9i MTS software will conflict with Oracle 10g MTS software.

Uninstallation of Oracle software is a tricky process compared to other software, missed steps can cause a non-functioning database. Metalink references below need to be followed carefully.

An experienced DBA may have different methods for upgrading an Oracle database, we have only tested a complete uninstallation of Oracle 8i, followed by a new install of Oracle 10g using Oracle export/import files to migrate the data and do not plan on testing other methods at this time.

Please note:

Oracle 10g requires faster hardware than previous versions; check server specifications in Oracle 10g documentation. Oracle minimal hardware specifications will not be adequate for more than very light use. 2 Gb RAM minimum is recommended.

Do not change Biotics tablespace names or user names.

When importing biotics_user and biotics_del schemas the biotics_del schema must be imported first as the biotics_user schema needs to grant privileges to the biotics_del tables. Objects will have to be recompiled in the biotics_user schema database. Search on ORA-24372 in the knowledge base for a script to do this.

Uninstall the previous client and install 10g client on the MTS server if your MTS server is separate from the Oracle server. Note: the Oracle manager for Microsoft Transaction does not need to be installed or created in 10g (Hooray!).

There is no Oracle MTS patch for 10g as there was with Oracle 9i.

We have only tested using character set WE8MSWIN1252 (for Windows) and WE8ISO8859P1 (for Unix/Linux or Windows) with national character set AL16UTF16 on Oracle 10g. Note: Biotics does not use the national character set. UTF8 or WE8ISO8859P9 will not work with Biotics.

If you use the WE8ISO8859P1 character set on 9i you will have to make sure the NLS_LANG variable is set to AMERICAN_AMERICA.WE8ISO8859P1 on the clients. The will include the Unix Oracle startup script and the Registry key \HKEY_LOCAL_MACHINE\SOFTWARE\HOME0\NLS_LANG for Windows. If this is not set up you will see a "exporting questionable statistics" error, when exporting data.