Solution-Soft

Quick Start Guide – Time Machine Solaris 10 for Oracle 9i DB

The following is a quick guide to evaluating Solution-Soft's Time Machine with Oracle 9i 9.2.0.1.0 (R2) Database on Solaris 10 installed on a SPARC machine. This paper will show how simple it is to integrate Time Machine to perform date & time (temporal) testing with Oracle 9i Databases running under their own user accounts.

NOTE: This paper is specific to Time Machine for use with Solaris 10. For those running on other platforms please refer to the Time Machine manual or contact Solution-Soft support at support@solution-soft.com

Time Machine for Oracle 9i is supported on Windows, AIX, HP-UX, Linux, and Solaris

System Configuration used in creating this paper:

OS: SunOS 5.10, Solaris 10, 1 CPU, 384 MB ram
Time Machine: Version 4.01 R48 for Solaris 5.1.0 Build Date: 10/27/10
Oracle 9i: Release 2 Build Number: 9.2.0.1.0
Publish Date: Aug 1, 2011

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Oracle9i Installation

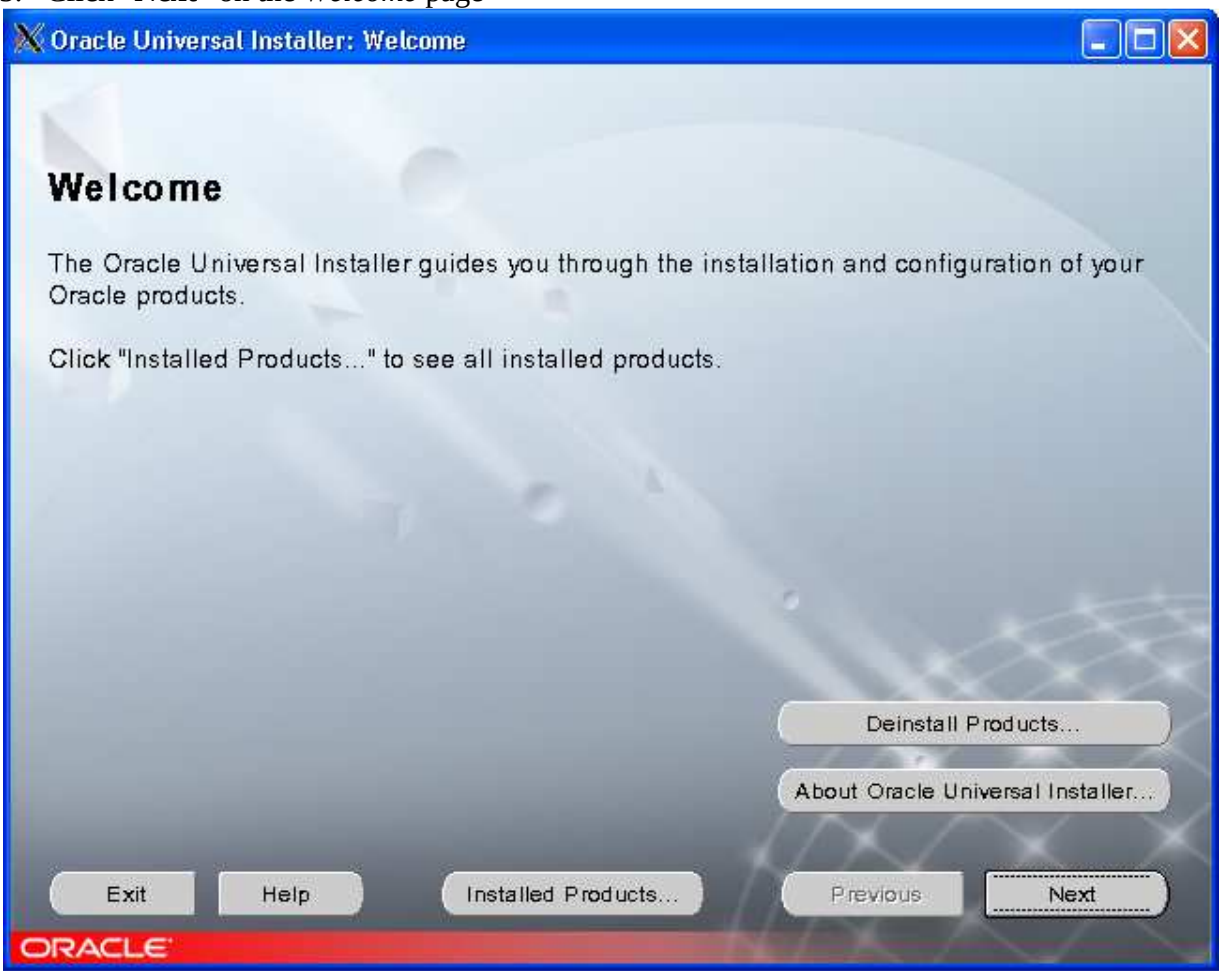
1. Create 2 user accounts that will be using the Oracle db. We used "**oracle1**" and "**oracle2**".
    i. Create 2 folders for each user, "**u01**" and "**u02**", outside of the user's home directories.
        i. These folders will come into play in step 9.

2. Download the 3 CD's for Oracle9i Database on Solaris 10.
    i. Files we used were **A99349-01.zip, A99350-01.zip, A99351-01.zip**

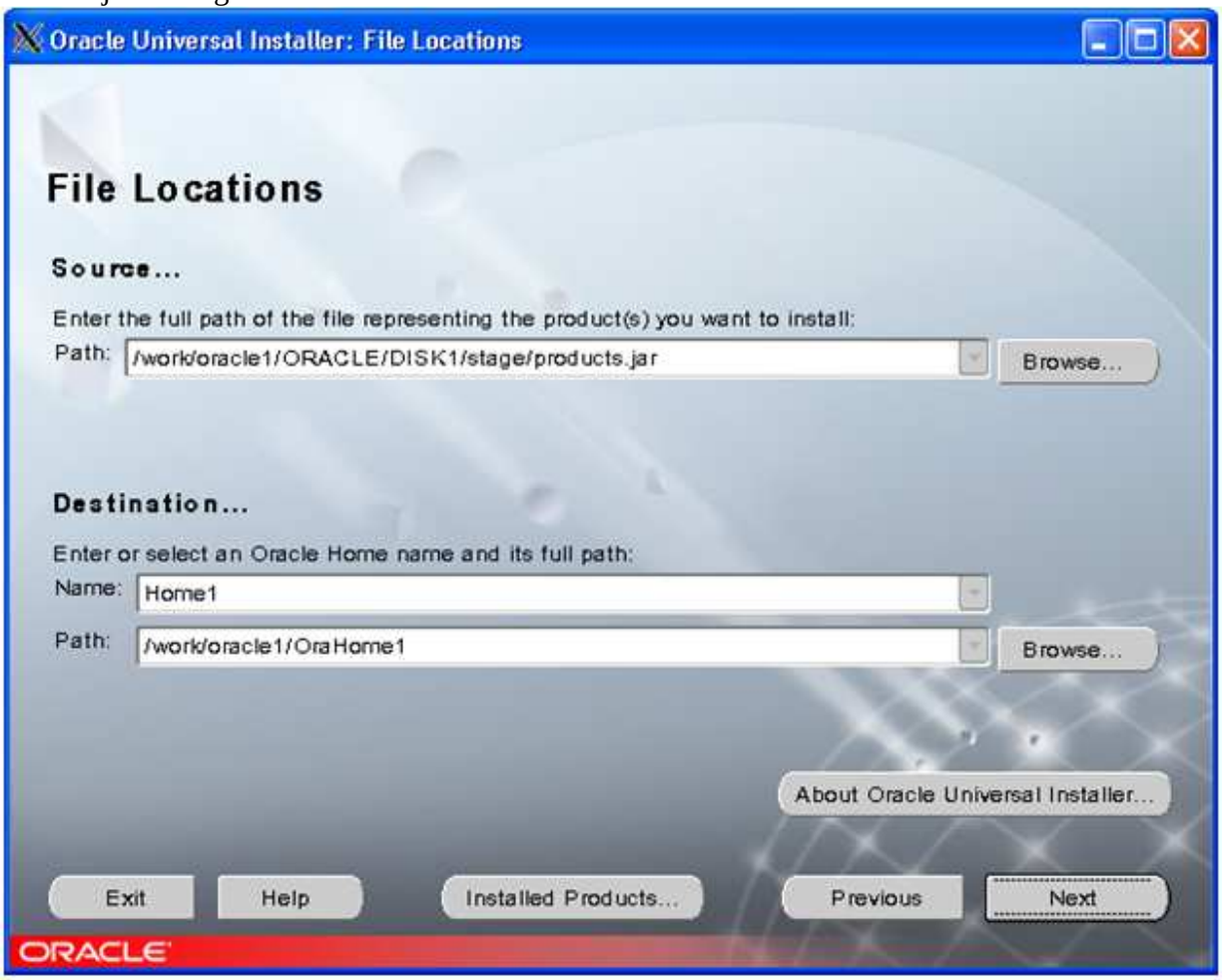
3. Make a copy of the 3 CD's to their respected user home folders
    i. Unzip each CD into its own folder, such as "**DISK1**" "**DISK2**" "**DISK3**"
    ii. You should have a directory tree similar to
        …/oracle1/DISK1
        …/oracle1/DISK2
        …/oracle1/DISK3
        …/oracle2/DISK1
        …/oracle2/DISK2
        …/oracle2/DISK3
    iii. **Warning**: Each user installing Oracle needs to have full ownership of their installation files. So in the "oracle1" folder the 3 zip files (A99349-01.zip, A99350-01.zip, A99351-01.zip) should be under the ownership of user "oracle1" before unzipping. Same goes for oracle2. Otherwise you need to manually change the ownership of the entire unzipped directory with chown or chmod.

4. Log in as the first user, "**oracle1**" and go into the "**DISK1**" folder and execute "**./runInstaller**". Then follow the installation GUI.
    i. If an error appears about writing to a "**tmp**" directory, log in as **root** and **chmod 777** to the "**tmp**" folder. Then log back to the oracle user and the runInstaller will work.
    ii. When using xming to xterm for the installation, you cannot "su" to another user account to do the install; otherwise you will get an "xterm" error. Log in initially as the user you want to perform the install for.

5. Click “**Next**” on the *Welcome* page

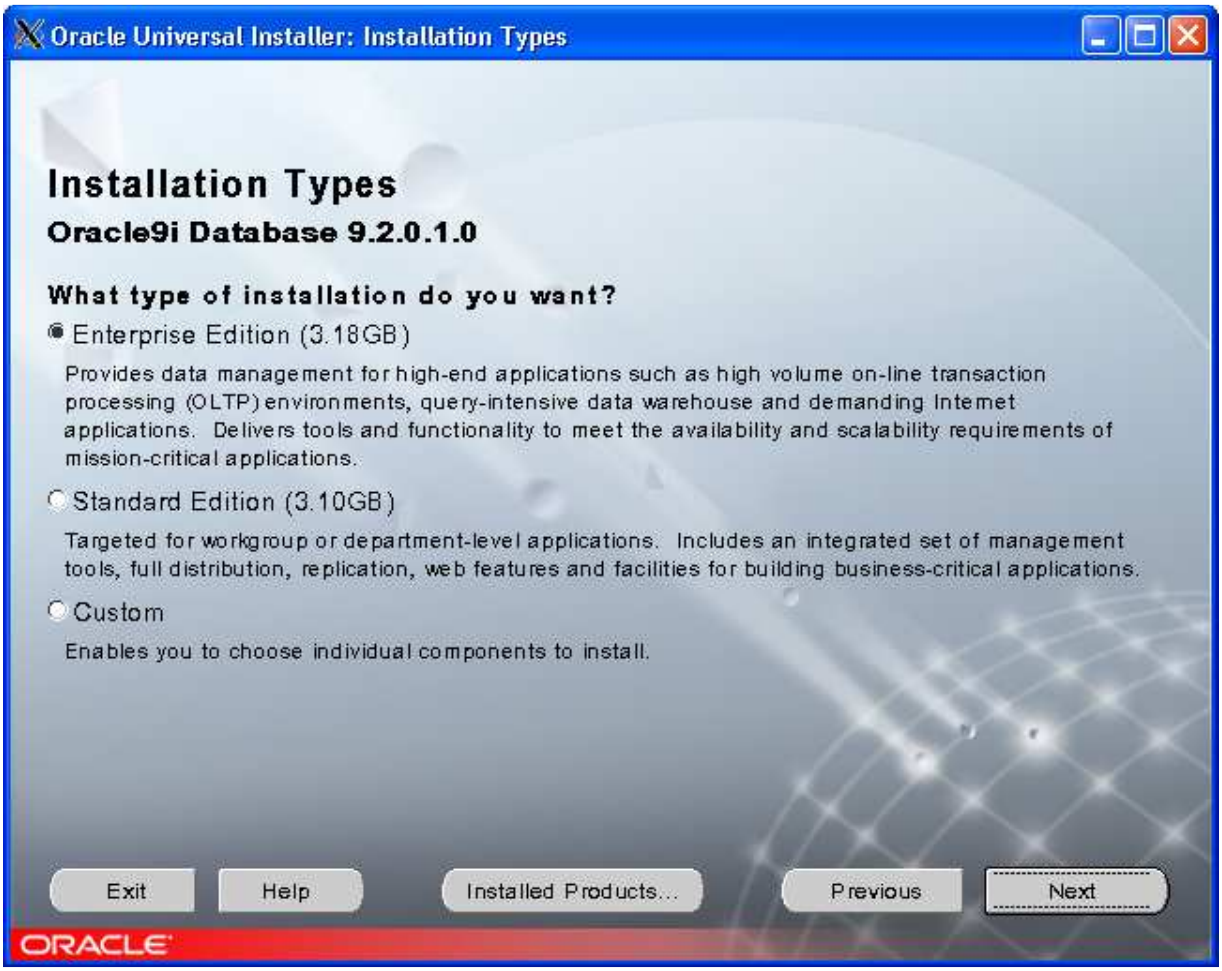


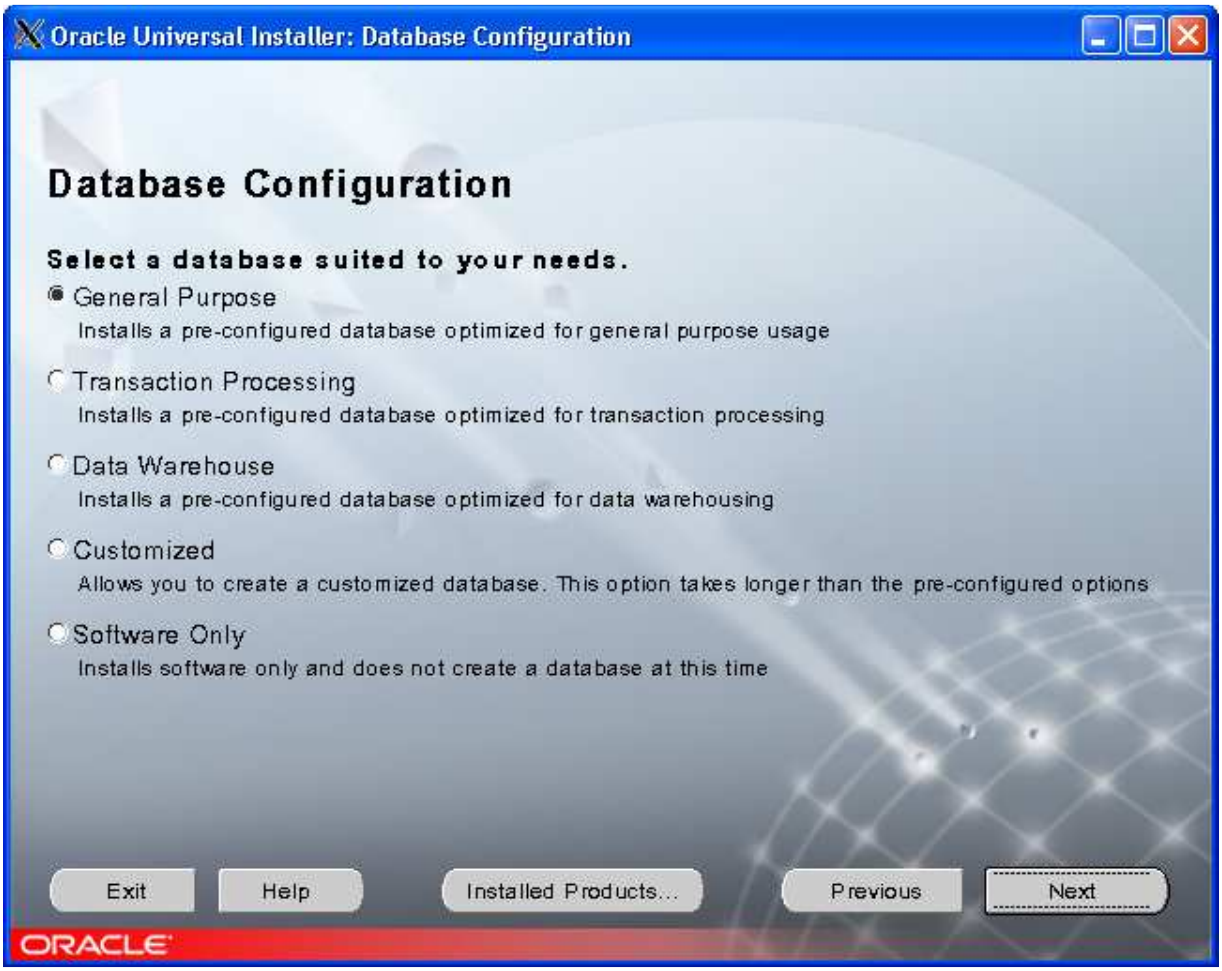
6. For *File Locations*, you should have folder layout similar to below. For the 2nd install with "**oracle2**" user just change the values in "Destination…" to **Home2 and /OraHome2**



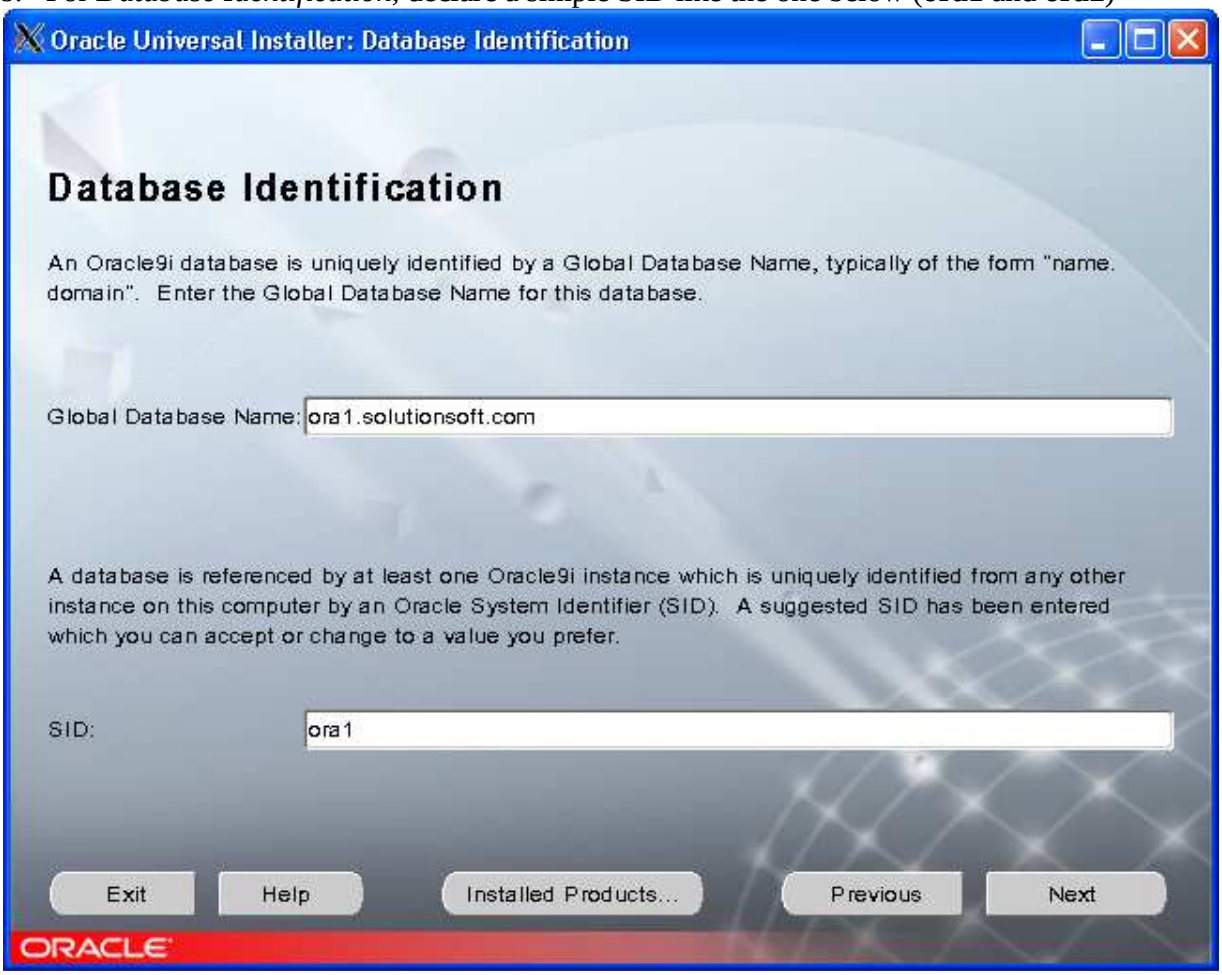
**For "Source…" I put my 3 DISK folders into an "ORACLE" folder, it doesn't matter. The "Home1" and "OraHome1" are the most important things here.

7. The next 3 pages we clicked "**Next**" for this guide.

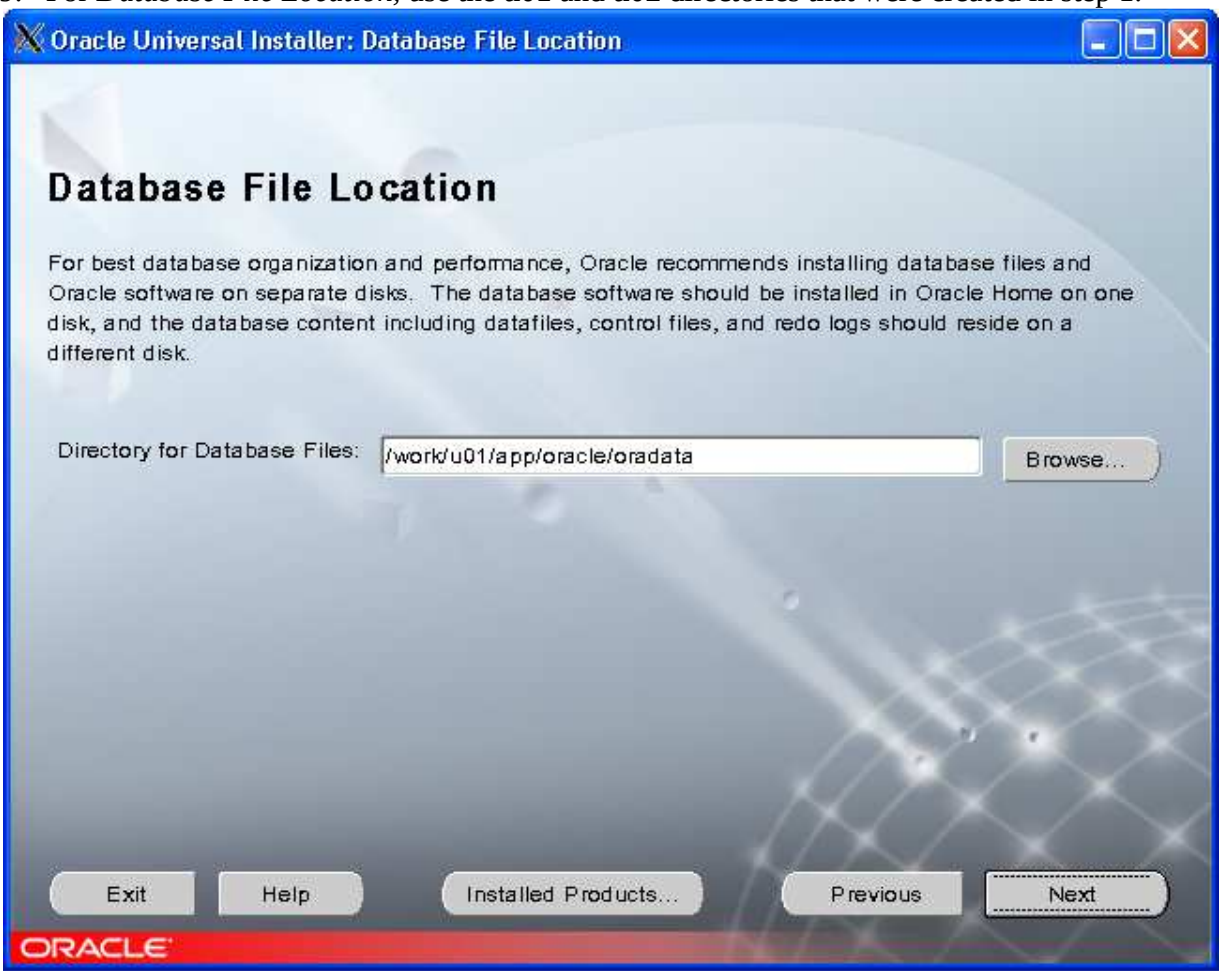

Oracle Universal Installer: Installation Types
Installation Types
Oracle9i Database 9.2.0.1.0
What type of installation do you want?
Enterprise Edition (3.18GB)
Provides data management for high-end applications such as high volume on-line transaction processing (OLTP) environments, query-intensive data warehouse and demanding Internet applications. Delivers tools and functionality to meet the availability and scalability requirements of mission-critical applications.
Standard Edition (3.10GB)
Targeted for workgroup or department-level applications. Includes an integrated set of management tools, full distribution, replication, web features and facilities for building business-critical applications.
Custom
Enables you to choose individual components to install.
Exit
Help
Installed Products...
Previous
Next
ORACLE


Oracle Universal Installer: Database Configuration
Database Configuration
Select a database suited to your needs.
General Purpose
Installs a pre-configured database optimized for general purpose usage
Transaction Processing
Installs a pre-configured database optimized for transaction processing
Data Warehouse
Installs a pre-configured database optimized for data warehousing
Customized
Allows you to create a customized database. This option takes longer than the pre-configured options
Software Only
Installs software only and does not create a database at this time
Exit
Help
Installed Products...
Previous
Next
ORACLE

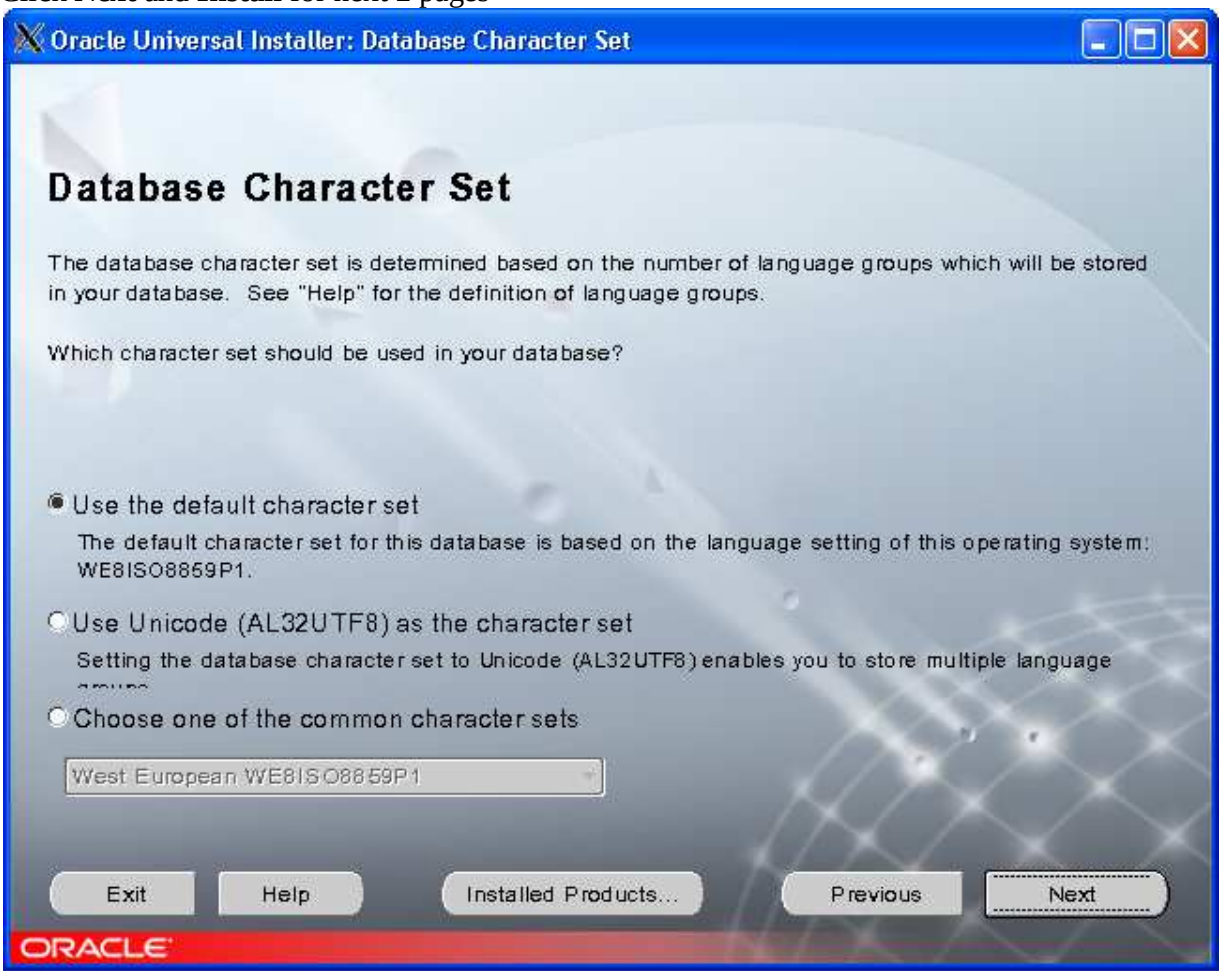
8. For *Database Identification*, declare a simple SID like the one below (**ora1** and **ora2**)

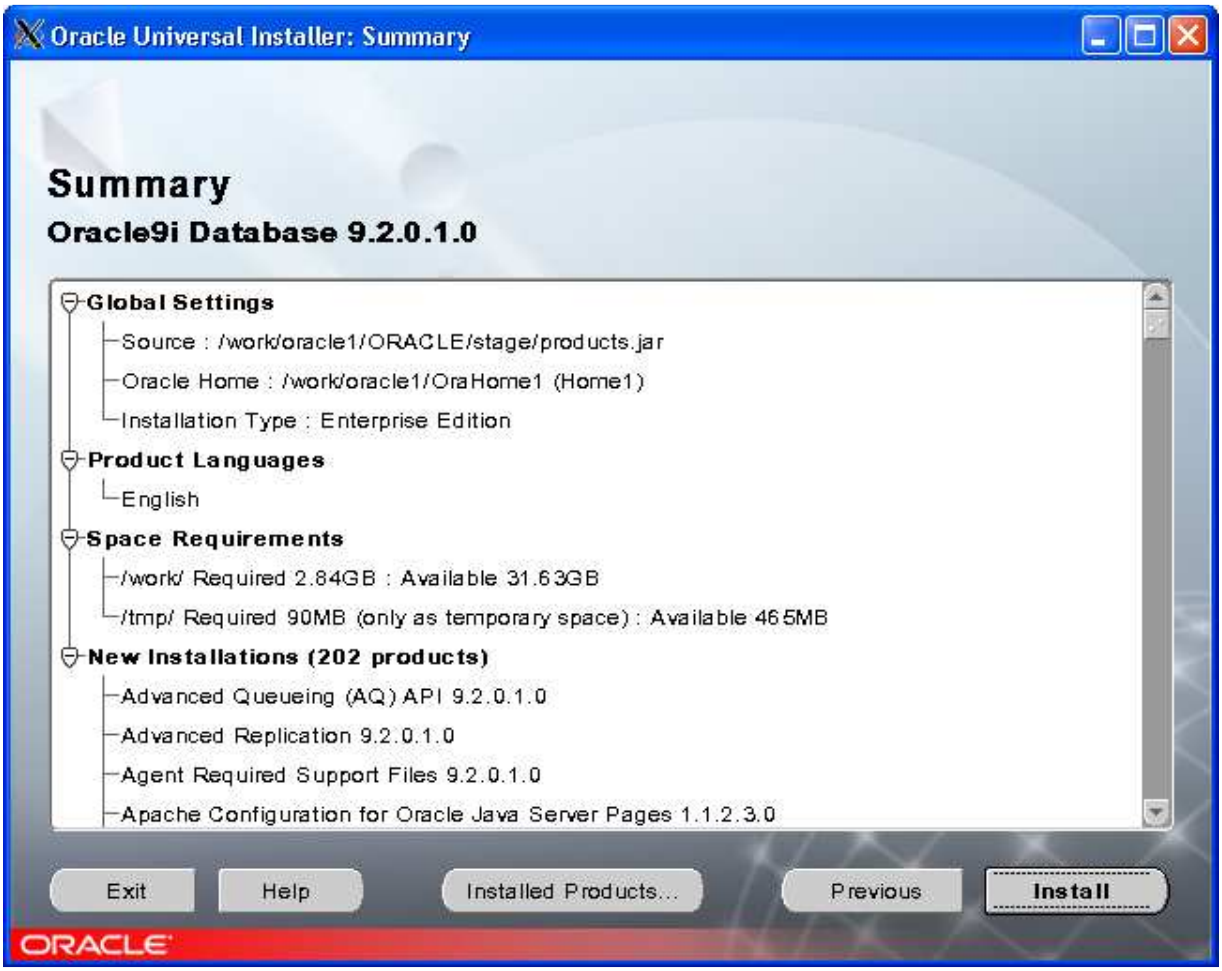


9. For *Database File Location*, use the **u01** and **u02** directories that were created in step 1.



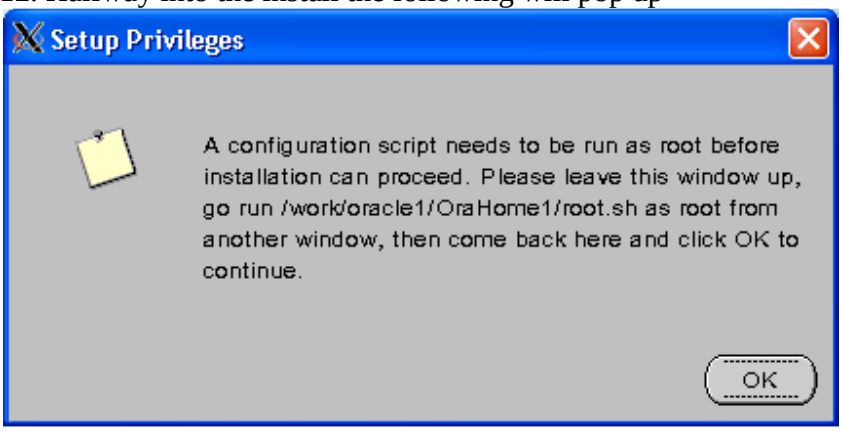
10. Click **Next** and **Install** for next 2 pages



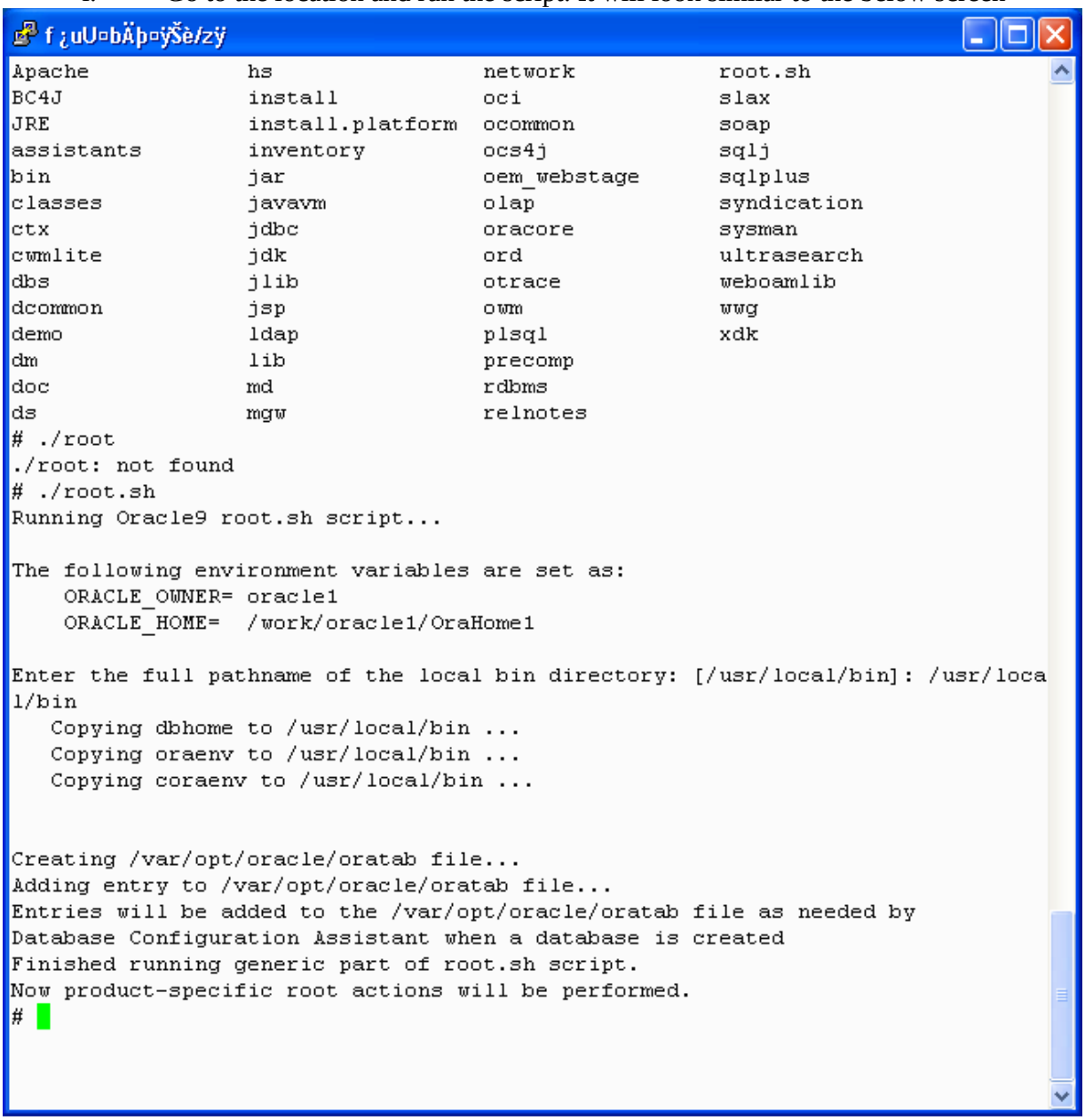

Oracle Universal Installer: Summary
Summary
Oracle9i Database 9.2.0.1.0
Global Settings
Source : /work/oracle1/ORACLE/stage/products.jar
Oracle Home : /work/oracle1/OraHome1 (Home1)
Installation Type : Enterprise Edition
Product Languages
English
Space Requirements
/work/ Required 2.84GB : Available 31.63GB
/tmp/ Required 90MB (only as temporary space) : Available 465MB
New Installations (202 products)
Advanced Queueing (AQ) API 9.2.0.1.0
Advanced Replication 9.2.0.1.0
Agent Required Support Files 9.2.0.1.0
Apache Configuration for Oracle Java Server Pages 1.1.2.3.0
Exit
Help
Installed Products...
Previous
Install
ORACLE

11. When the below window pops up, select the "**DISK2**" and "**DISK3**" folders created in step 3.

12. Halfway into the install the following will pop up

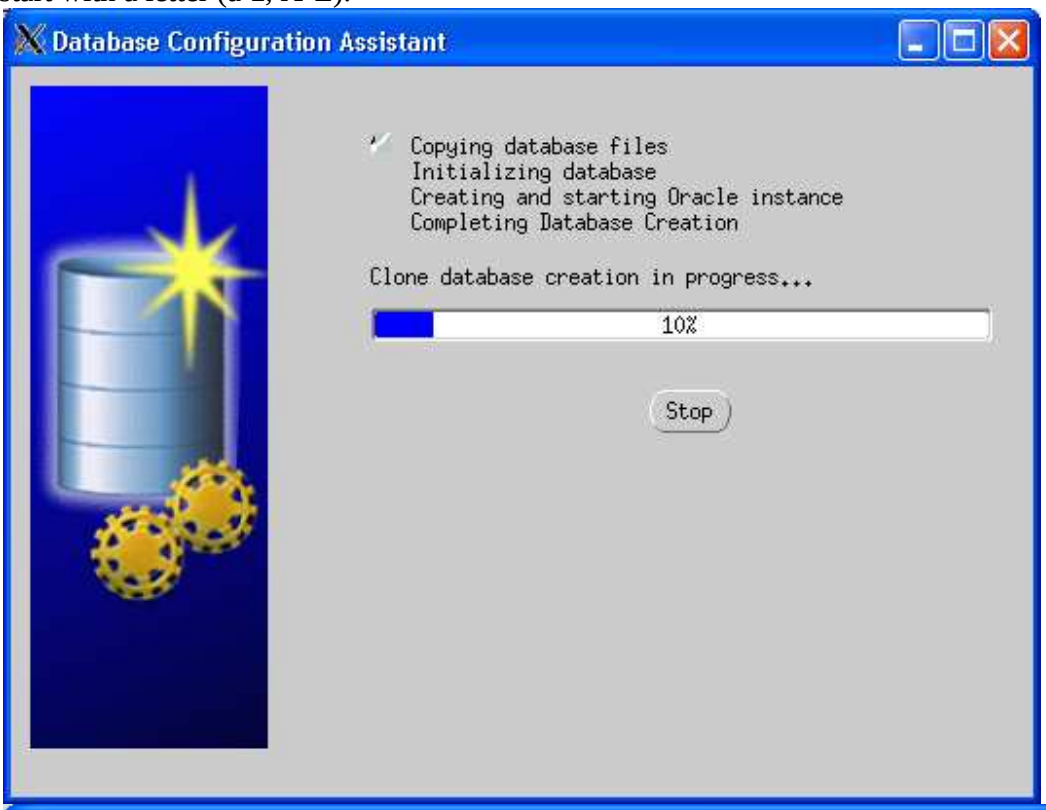


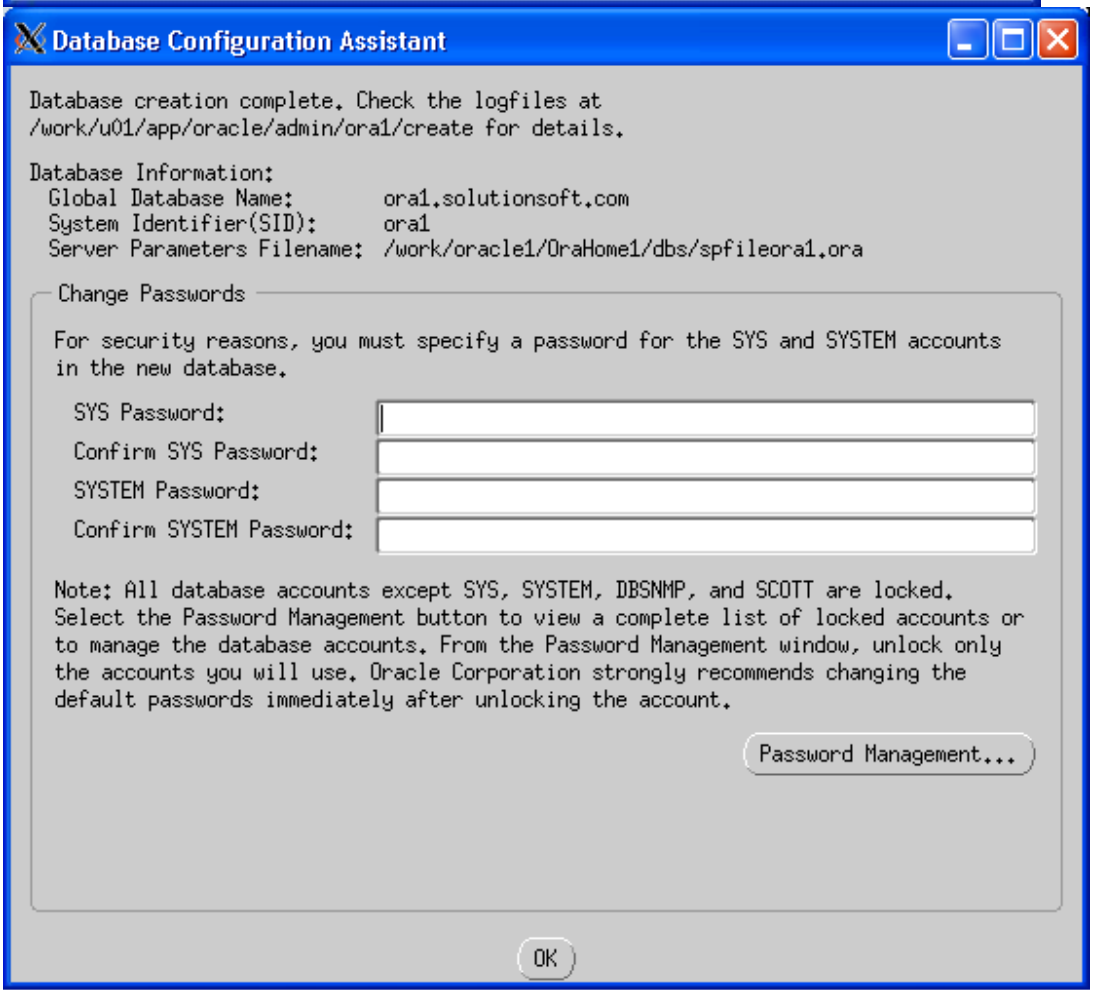
i. Go to the location and run the script. It will look similar to the below screen



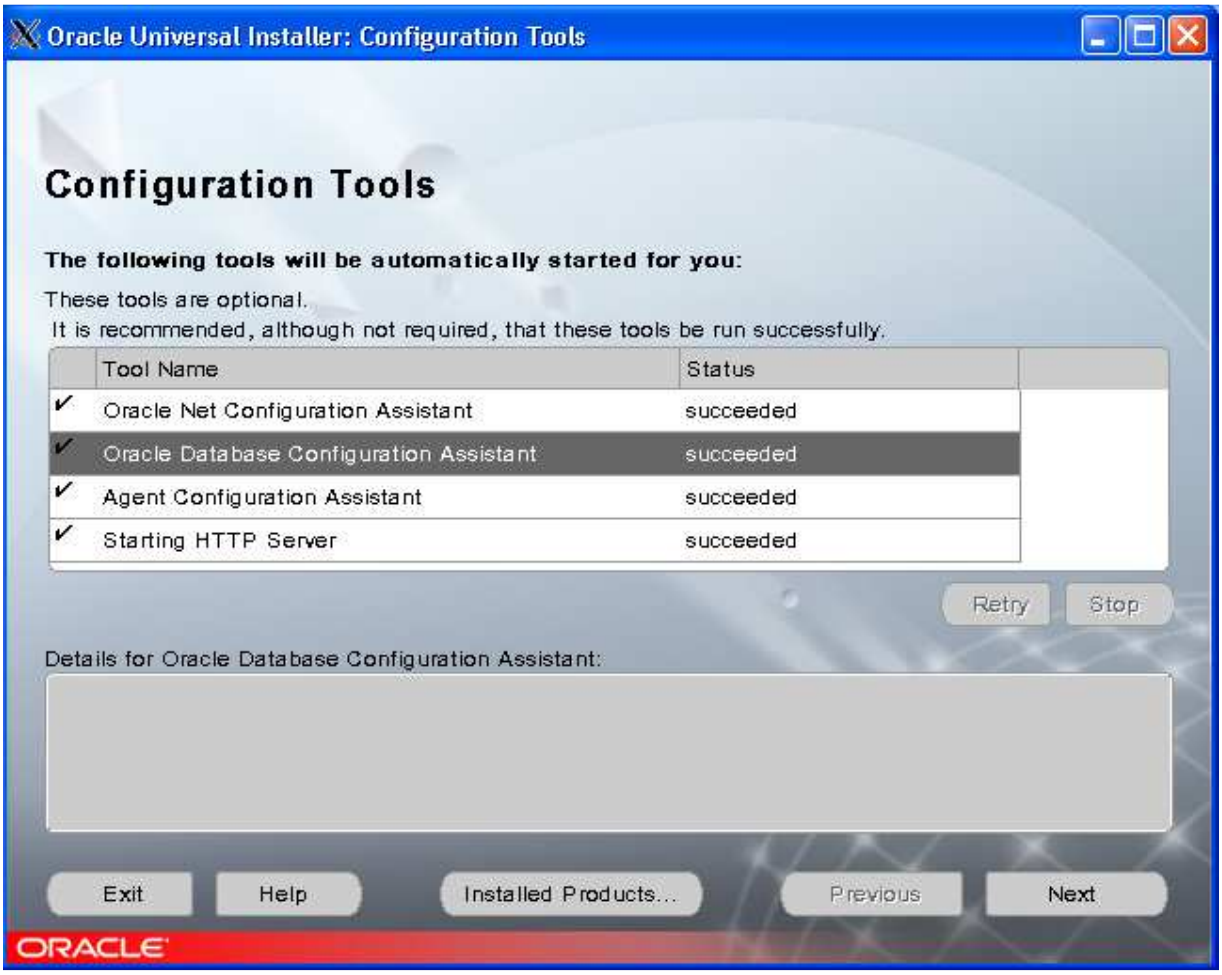
ii. When asked to "**Enter the full pathname of the local bin directory:**" just enter "**/usr/local/bin**"

13. Create **SYS** and **SYSTEM** passwords. We used the same password for both to be easy. Passwords need to start with a letter (a-z, A-Z).

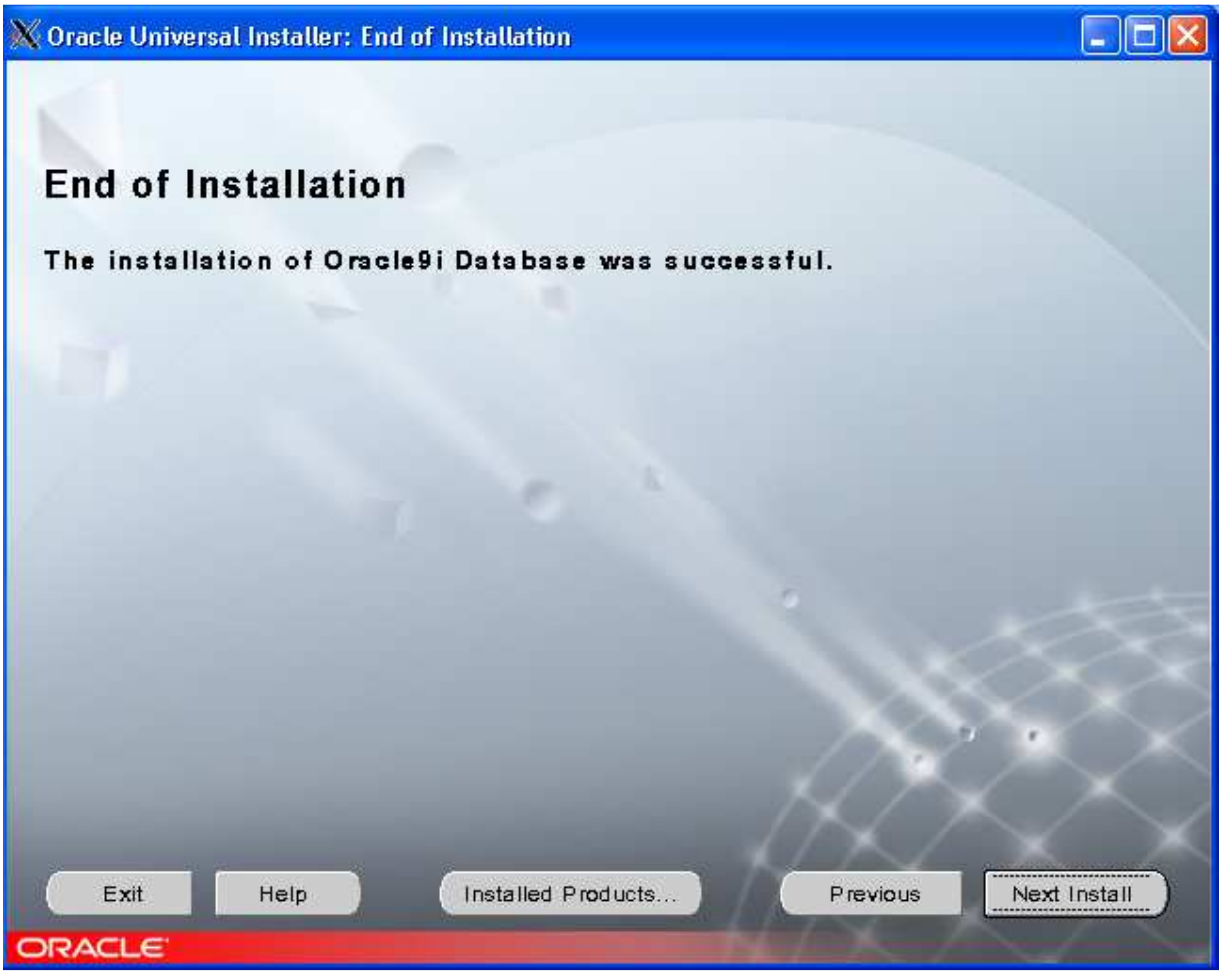




14. Click **Next**



15. Click **Exit**



16. Now user "**oracle1**" is fully installed. For "**oracle2**" follow same steps; log in as oracle2, run the installer and use the same name convention but with a '2'.

Post-Install Configuration (SQLPLUS)

Before starting up SQLPLUS to access your database you need to set up oracle shell environmental variables.

1. Execute the following commands depending on your shell.
    a. For csh
    setenv ORACLE_SID "ora1"
    setenv ORACLE_BASE "/work/u01/app/oracle"
    setenv ORACLE_HOME "/work/u01/app/OraHome1"

    b. For bash
    export ORACLE_SID=ora1
    export ORACLE_BASE=/work/u01/app/oracle
    export ORACLE_HOME=/work/u01/app/OraHome1

    c. Type "**env**" to check if the environment variables were loaded.

2. Now go into your "**u01/app/OraHome1/bin**" folder and execute "**./sqlplus**".

3. Log in to **sqlplus**

    a. For our guide we used "**sys as sysdba**" with the password for **SYS** we created in the "Oracle Install" Step 13

4. Once logged in, type "**startup**" to officially start the Oracle database for use.

5. Now you're done, enter "**exit**".

TimeMachine Configuration

Before running TimeMachine to create a virtual clock and access it from your SQLPLUS database, you need to configure TimeMachine Dynamic Link Library

1. Follow "**6b)Solaris Sparc - Supplemental Setup**" in the TimeMachine Manual

After completing "6b)Solaris Sparc - Supplemental Setup" it's time to create a virtual clock.

2. Go into the TimeMachine directory (**/etc/ssstm**) and execute the below command as root
    a. tmuser –a –u oracle1 –x (enter your own virtual date)

3. Go back to "**u01/app/OraHome1/bin**" and execute "**./sqlplus**".

4. Log in and you will see your virtual date in the sql welcome header.

Client/Listener Configuration (External Client Accessing DB)

Before running the client you need to start the Listener service. Before running the Listener service you need to make sure that you've started up the Oracle Database ("startup" in sqlplus).

1. Go to the "**u01/app/OraHome1/bin**" and execute "**./lsnrctl**".

2. Enter "**start**"

3. Now the listener service is started and you can make outside client queries to the database.

    a. The Listener Configuration uses 3 files "**listener.ora**" "**tnsnames.ora**" "**sqlnet.ora**" located in "**u01/app/OraHome1/network/admin**" that can be configured as you wish. However the default configuration is fine and how we left it in this guide. For more details please refer to http://download.oracle.com/docs/cd/B10501_01/network.920/a96580/listener.htm

The next steps show how to install the Oracle client. This guide installs a 32bit Windows client and connects to the Oracle9i database. The below link has instructions for configuring the client for Unix/Linux/Windows.

http://download.oracle.com/docs/cd/B19306_01/server.102/b14357/ape.htm

4. Download the "Oracle Instant Client" for your correct platform with the below link
   http://www.oracle.com/technetwork/database/features/instant-client/index-097480.html
    a. Download the "Client Basic" and "Client Package – SQL *Plus" We used the packages below.

    Version 10.2.0.3
    Instant Client Package - Basic: All files required to run OCI, OCCI, and JDBC-OCI applications
    instantclient-basic-win32-10.2.0.3-20061115.zip (34,469,920 bytes)
    *Instant Client Package - SQL*Plus: Additional libraries and executable for running SQL*Plus with Instant Client
    instantclient-sqlplus-win32-10.2.0.3-20061115.zip (722,059 bytes)

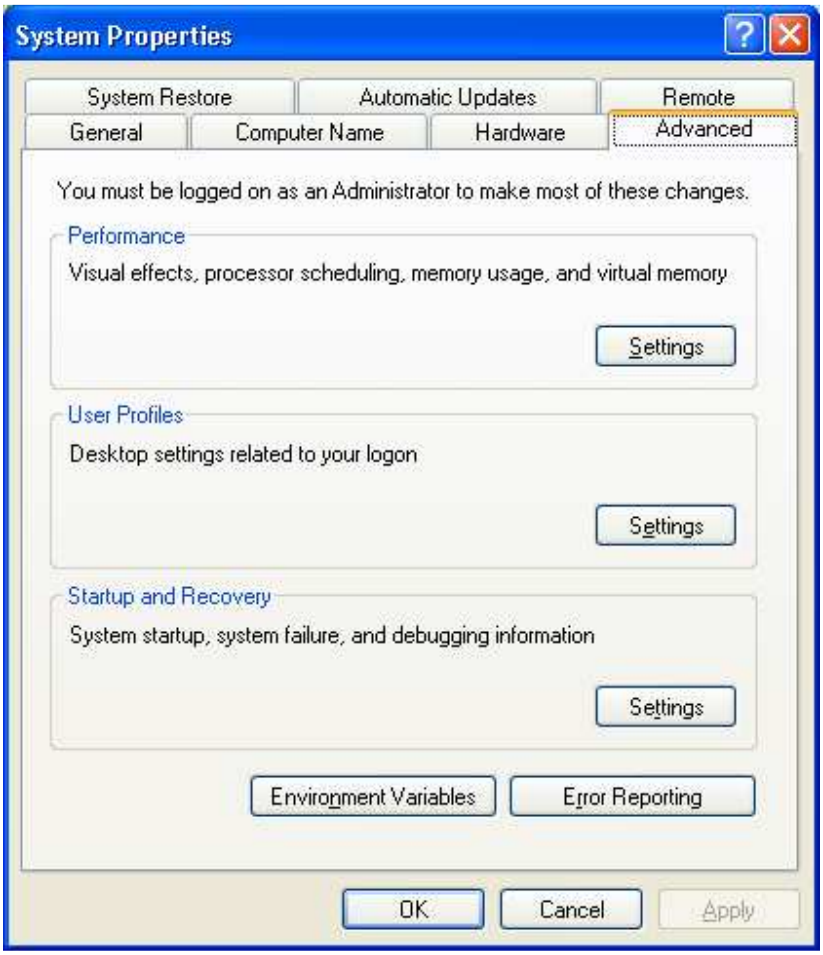
    b. **Warning:** The only clients that work for Oracle9i are the **Version 10.2.0.***; we verified **Version 10.2.0.3**

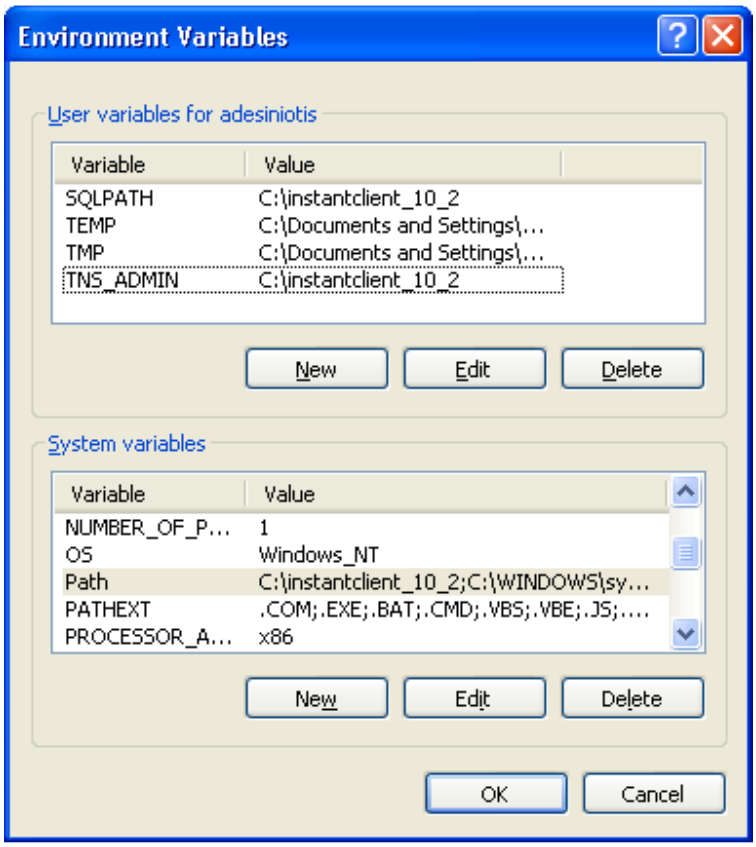
5. Unzip both packages into the top directory, e.g. **C:\instantclient_10_2**

6. Make a copy of the "**tnsnames.ora**" file from the server directory "**u01/app/OraHome1/network/admin**" to the client directory **C:\instantclient_10_2**
    a. If any problems occur connecting the client, make sure the HOST value inside the "**tnsnames.ora**" is the explicit IP address of the server 192.xxx.xx.xxx

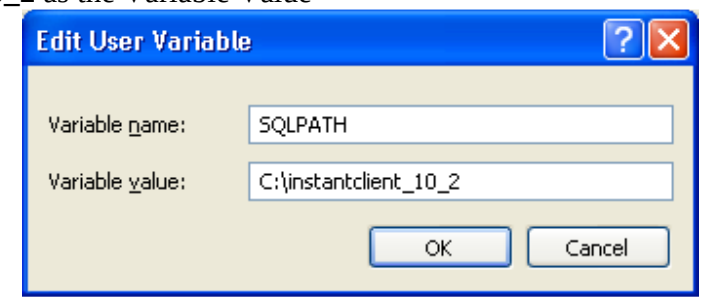
Before running the **sqlplus.exe** that is inside the **C:\instantclient_10_2** folder, environment variables need to be set.

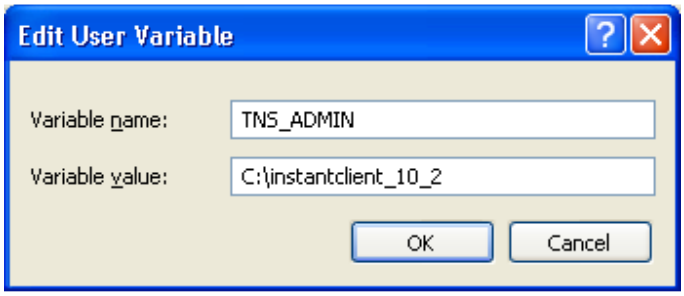
7. Right click **My Computer** and click the **Advanced Tab** and click **Environmental Variables**


System Properties
System Restore
Automatic Updates
Remote
General
Computer Name
Hardware
Advanced
You must be logged on as an Administrator to make most of these changes.
Performance
Visual effects, processor scheduling, memory usage, and virtual memory
Settings
User Profiles
Desktop settings related to your logon
Settings
Startup and Recovery
System startup, system failure, and debugging information
Settings
Environment Variables
Error Reporting
OK
Cancel
Apply

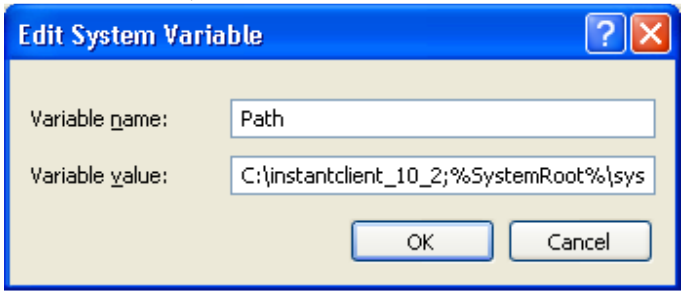

Environment Variables
User variables for adesiniotis
Variable
Value
SQLPATH
C:\instantclient_10_2
TEMP
C:\Documents and Settings\...
TMP
C:\Documents and Settings\...
TNS_ADMIN
C:\instantclient_10_2
New
Edit
Delete
System variables
Variable
Value
NUMBER_OF_P...
1
OS
Windows_NT
Path
C:\instantclient_10_2;C:\WINDOWS\sy...
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;....
PROCESSOR_A...
x86
New
Edit
Delete
OK
Cancel

8. Create 2 new “User Variables” called **SQLPATH** and **TNS_ADMIN** with the installed client folder **C:\instantclient_10_2** as the Variable Value

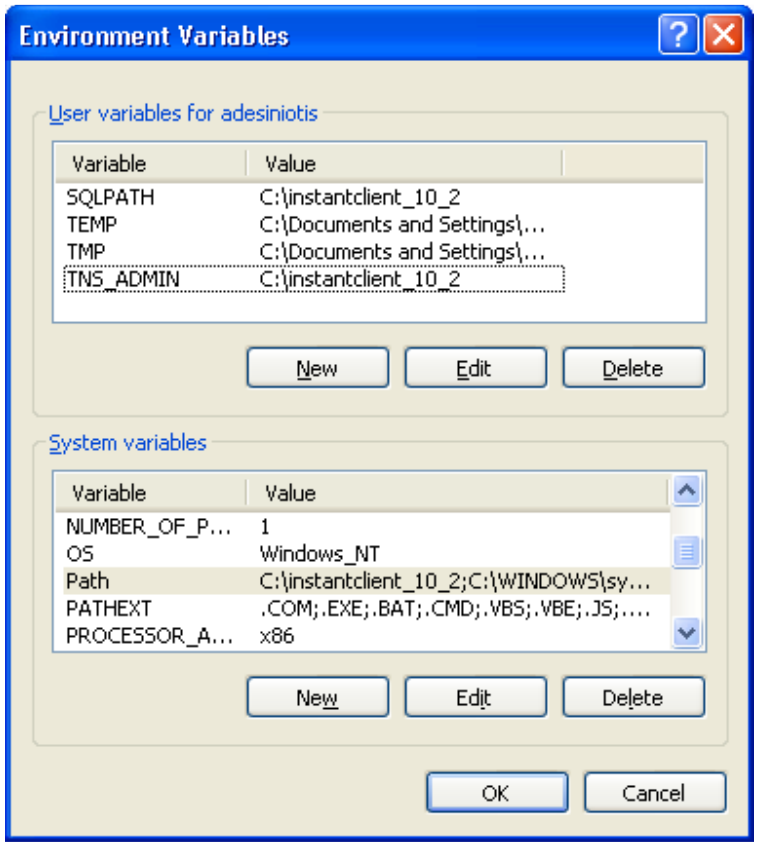




9. Scroll down the “System variables” and edit the “**Path**” variable. Paste the location **C:\instantclient_10_2** in the Variable value in front of all the present values. Make sure to include a ‘**;**’ to separate it from the current values, as below.



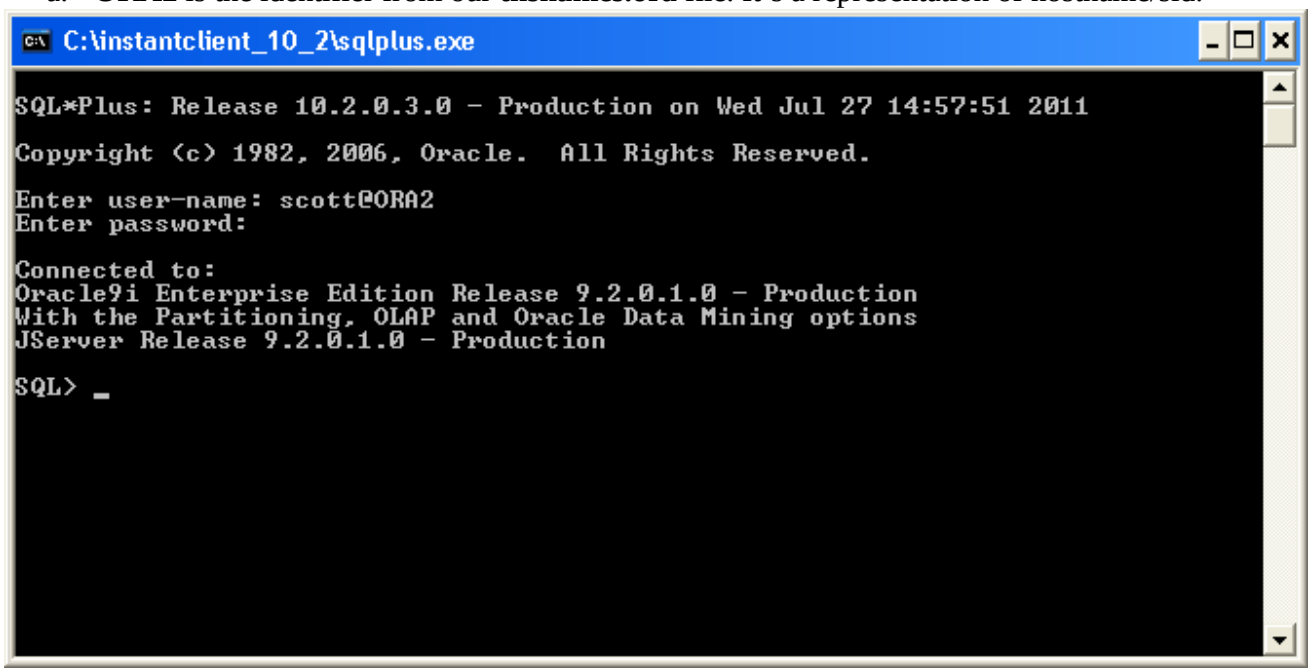
10. Press **OK**. Your final window should look similar to below



11. Open the **C:\instantclient_10_2** folder and execute the **sqlplus.exe**

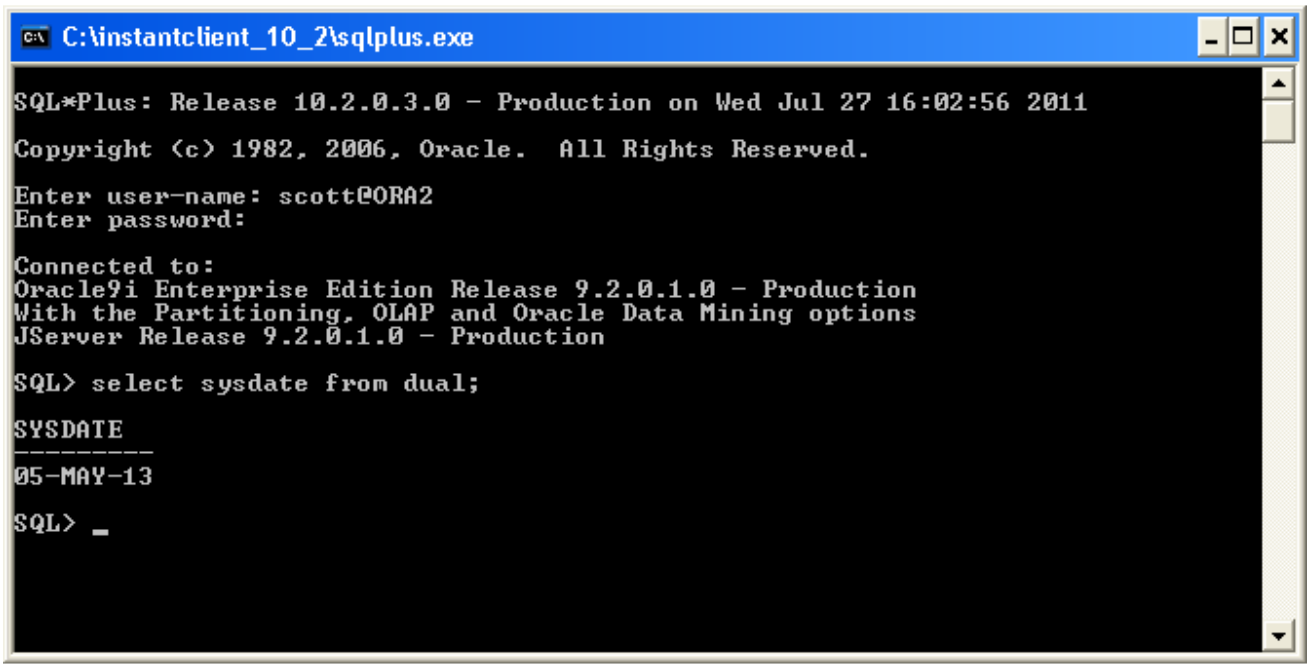
12. For the sake of testing, use the username s**cott** and password **tiger** to log in. The format is **username@identifier**. Then your password.

    a. **ORA2** is the identifier from our **tnsnames.ora** file. It's a representation of hostname/sid.



For more details refer to "Connecting to a Database with SQL*Plus Instant Client"
http://download.oracle.com/docs/cd/B19306_01/server.102/b14357/ape.htm

13. You've successfully installed an Oracle client and remotely logged into your database server. Below is the final screenshot of accessing the virtual date, created earlier in the guide, from the client.



As you can see the SQL header system date is different than the virtual time acquired on the bottom.

a. If you do not get the virtual date, you have to restart the LISTENER service.
   i. Close and reopen the client without logging in.
   ii. Go to the "**u01/app/OraHome1/bin**" and execute "**./lsnrctl**".
   iii. Enter "**stop**" then "**start**"
   iv. Log into the client and check the date. You will now see the virtual date.