Resolving Oracle 8i problems with changes in hardware

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The computers at one of the UNITEC labs were upgraded in December 2003. Database administration was previously taught on the older IBM Pentium 3 computers using the Windows NT operating system. After the hardware upgrade was completed it was discovered that Oracle would not install. To resolve this, changes in the operating system and in the Oracle setup were required.

To date, there are still problems associated with running a complex database like Oracle on a Windows 2003 server. However there is now a working database that satisfies the requirements of the database administration course. These solutions were implemented without a support contract from Oracle Corporation. Strategies used to obtain a working system included trial and error and use of information available on the internet.

In this paper, the problems encountered and the solutions implemented by the author, both during and after the installation, are discussed.

1. INTRODUCTION

Database Administration has been taught as a level 7 course for the Bachelor of Computing Systems degree at UNITEC from July 2001 onwards. Each student is given a removable disk containing the Oracle 8i installation software. The students are required to install the Oracle database and then use the database for studying and practicing the various aspects of database administration.

Prior to December 2003, the Oracle 8i database was run on an IBM P3, model number 6578-LAA, using a Windows NT operating system (patch level 6). In December 2003, the hardware was changed to an IBM Celeron, model number 8305-HAD, using a Celeron 2 GHz processor (IBM, 2004).

When installing Oracle 8i on Windows NT on the new hardware, the installation process hung.

This paper explains the resolution of the problems and other alternatives that could be explored in a teaching environment.

2. RESOLVING THE INSTALLATION PROBLEM

Since Microsoft has stopped supporting Windows NT, the first attempt to resolve the problem was to upgrade the operating system to a Windows 2003 server. This was done to eliminate the possibility of Windows NT not being compatible with the new Celeron 2 GHz chip.

The installation process on Windows 2003 again hung.

Research on the internet revealed that Oracle Corporation has provided a patch (number 1507768) for installing Oracle 8i on computers using the Pentium 4 processor. This is available at Oracle Corporation's Metalink website. (Oracle Corporation, 2001)

The Celeron 2 GHz chip is based on a Pentium 4 core. (Intel n.d.a; n.d.b; HowStuffWorks n.d.)

Therefore, it was surmised that the suggested resolution of problems on the Pentium 4 chip might apply on the Celeron chip as well.

The patch number 1507768 was downloaded and applied as per the following instructions given along with the patch. (Note: OUI stands for the Oracle Universal Installer – the program used for installing Oracle products.)

- Obtain patch number 1507768 from Metalink
- Unzip the patch
- Unjar (unzip again) the contents

■ Go to the directory .\cd\Disk1\stage\Components\oracle.swd.jre\1.1.7.30\1\DataFiles\Expanded\jre\win32\bin\symcjit.dll

■ rename symcjit.dll to symcjit.dll.ori

■ Invoke OUI and install OUI to disk

■ cd .\cd\Disk1\install\win32\setup.exe

■ Use the installed OUI to install the RDBMS

■ Invoke OUI from the start menu, and install RDBMS software.

The following corrections and additions to the above instructions were required for successful installation of Oracle 8i:

■ To install Oracle 8i, the OUI is invoked from the start menu and "next install" is clicked. At this point, the following two corrections needed to be made:

■ The product to be installed points back to the OUI. This needs to be changed to Oracle. The products.jar file for Oracle is located at : Oracle\oracle8i\stage\products.jar

■ On the OUI screen, the home directory for installing Oracle points to the same directory as the home directory for OUI. This could cause problems since some of the files could be overwritten. It was therefore necessary to change the home directory for Oracle when prompted for it. Any other directory may be chosen – such as E:\OraHome. (On the UNITEC lab computers, there were two partitions "C:" and "E:".)

3. RESOLUTION OF SOME OTHER ORACLE 8I PROBLEMS

When the computer is started, Oracle starts automatically. At this point several "Java" error messages appear. Ignoring these messages did not cause any problems. Since this database is used only by students for studying the basics of database administration, the java error messages could be safely ignored. However, it is not recommended to ignore these messages on a commercial database.

When archiving was turned on, the database hung. The problem was resolved by changing the following parameter in init.ora file:

```
log_archive_dest_1 =
"location=E:\oracle\oradata\unitec\archive"
```

The correction was as follows:

```
log_archive_dest =
"E:\oracle\oradata\unitec\archive"
```

■ When starting Oracle 8i through svrmgrl the following error came up:

```
"ORA-00101: invalid specification for
system parameter MTS_DISPATCHERS"
```

The problem was resolved by commenting the following line in the init.ora file.

```
mts_dispatchers =
"(PROTOCOL=TCPS)(PRE=oracle.aurora.server.SGiopServer)"
```

The correction was as follows:

```
# mts_dispatchers =
"(PROTOCOL=TCPS)(PRE=oracle.aurora.server.SGiopServer)"
```

4. INSTALLING ORACLE 10G

Burke Kelly, a senior consultant with Oracle Corporation, was consulted about the problems encountered with Oracle 8i on a Windows 2003 server running on a Celeron 2 GHz. He said that Oracle Corporation did not support Oracle 8i on Windows 2003 and suggested that Oracle 10g be used instead.

The latest version of Oracle, Oracle 10g, was installed on a computer running the Windows 2003 operating system with a Celeron 2 GHz processor. There were no problems during the installation. However the performance was absolutely unacceptable. The disk was in continuous use – signifying constant paging between the disk and the RAM. In view of this a minimum RAM of 512 MB is recommended. According to the Oracle 10g installation guide (Oracle Corporation, 2004), a RAM of 256 MB barely meets minimum memory requirements. They recommend 512 MB of RAM. At the time of writing it was not feasible to install more RAM on all the computers in the lab.

The downloaded Oracle 10g for MS Windows comes to 576 MB and easily fits onto one CD. Oracle 8i occupied more than 600 MB in spite of having a lot less features. Burke Kelly said that Oracle 10g is a complete re-write of all the software from scratch. Thus a lot of legacy has been left out.

The standard edition of Oracle 10g requires less resources while providing sufficient functionality for learning the basics of Oracle database administration. However, the performance of even the stand-

ard edition was not acceptable with 256MB of RAM.

When Oracle 10g was tested on a server running Windows 2003 and having 512 MB of RAM the performance was excellent.

5. CONCLUDING RECOMMENDATIONS

On computers with a memory of 512 MB, it is recommended to install Oracle 10g. Other than unacceptably slow performance on computers with 256 MB of memory, no problems were encountered either with the installation or the running of Oracle 10g. However, the testing was limited to a few basic tasks such as creating tables and users.

According to Burke Kelly, Oracle Corporation is moving towards using Linux as its preferred platform due to its lower cost and better reliability. Therefore, it would be better to use Linux rather than Windows 2003 as the operating system.

On computers with a memory of only 256 MB, it is recommended to use Oracle 8i with the error correction procedures mentioned in this paper. The performance is satisfactory for a classroom situation and all the functionality required for teaching and learning the basics of Oracle Database Administration are available. However, in the longer term, it would be advisable to move to Oracle 10g since Oracle Corporation is no longer supporting Oracle 8i. By then it is hoped that most computers will have 512 MB of RAM.

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