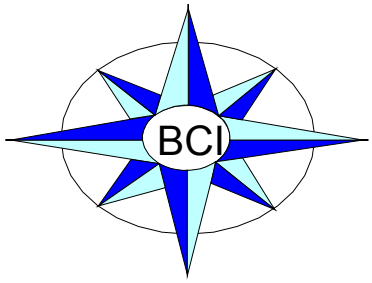
Practical Exercise 2
(Managing Undo)



ORACLE DBA I

Practical Exercise 2
Managing Undo

DIRECTIONS: This is a hands-on performance exercise. Follow the directions provided. You will have 30 minutes to complete this exercise. DO YOUR OWN WORK!

We will be creating a schema to hold data for all courses attended for each soldier. The schema will be called courses.

The purpose of this schema is to have a list of all courses a soldier has taken and when they should be retaken. This scenario will build on itself for each lab.

In Module 5, we determined the tablespace needs. We are assuming that every soldier has taken at least 5 courses at different locations. We have tested this application structure and found that the growth rate is approximately 1M every month.

In module 6, we designed a few tables. One table should hold the service member information and be called member. Eventually, this will tie in to the sidpers database, but for now, we'll just need the table.

This table should have three fields: One for social security number, one for name, and one for service date.

Additionally, you will need to create a table to hold the courses data. This table should have fields for social security number (referenced the member table), the course number, the course name, the date graduated from the course, and the date to retake the course.

We can assume that each course should be retaken 2 years after graduation date. This could be a calculated field -- date graduated plus 2 years. Perhaps this could be a default setting.

In this module, we will be dealing with undo data. Let's assume that this schema will be utilizing the server a lot on the 15th and the 30th of each month. Many reports will be run including a large report that sorts by service member social security number.

Perform the following steps:

1. Connect to EM Database Express as user SYSTEM, password of password, and Normal connection.

2. From the EM Home tab in the Storage section, take the Tablespaces link. Click Create.

3. Enter UNDO2 as the tablespace name, and set the radio buttons to Extent Management “Locally Managed,” Type “Undo,” and Status “Read Write At the bottom of the screen, click Add to specify a datafile.

4. Enter UNDO2-01.dbf as the file name, leave everything else on default, and click Continue.

5. On the Create Tablespace screen, click Show SQL and study the statement used to create your undo tablespace. Click Return to return to the Create Tablesapce screen, and click OK to create the tablespace.

6. Connect to SQL*Plus as SYSTEM, password of password. Run the following query:

   Select tablespace_name, contents, retention from dba_tablespaces;

7. Switch your database to the new Undo tablespace and run a query that creates large undo.
   SQL> alter system set undo_tablespace=UNDO2;

SQL> @bigpart

8. Still using SQL*Plus, set up your session for displaying dates conveniently:

   Alter session set nls_date_format='dd-mm-yy:hh24:mi:ss';
9. Query V$UNDOSTAT as follows:

   Select begin_time, end_time, undoblks, maxquerylen, ssolderrcnt, nospaceerrcnt from v$undostat;

Interpret the results of the query. Note that the view has one row per ten-minute interval, showing you how much undo was generated, in blocks; how long the longest query was, in seconds; and whether there were any "snapshot too old" errors, or errors from transactions running out of undo space.

Calculate the minimum necessary size in bytes for your undo tablespace that will prevent errors, given your current activity data, with the following query:

Select

(select max(undoblks)/600 * max(maxquerylen) from v$undostat)

*

(select value from v$parameter where name = 'db_block_size')

From dual;

Now, use Database Control to view the same data and see if the results are the same. Also click on Advisor and see if there is any advice for your system.