

# Automatically Managing Undo

## Purpose

This module describes how Oracle Database 10 *g* automates the management of undo.

## Topics

This module discusses the following:

- ☒ [Overview](#)
- ☒ [Prerequisites](#)
- ☒ [Creating an Undo Tablespace](#)
- ☒ [Enabling Automatic Undo Retention Tuning](#)
- ☒ [Generating Some Activity](#)
- ☒ [Reviewing Undo Advisor Recommendations](#)

## Overview

[Back to Topic List](#)

To simplify management of rollback segments, the Oracle9 *i* database introduced Automatic Undo Management (AUM) where the database automatically manages allocation and management of undo (rollback) space among various active sessions. In a database using AUM, all transactions share a single undo tablespace. Any executing transaction can consume free space in this tablespace. Undo space is dynamically transferred from committed transactions to executing transactions in the event of space scarcity in the undo tablespace. The AUM feature also provides a way for administrators to exert control on undo retention. You can specify the amount of undo to be retained in terms of wall clock time (number of seconds). With retention control, you can configure your systems to allow long running queries to execute successfully without encountering ORA-1555 (Snapshot too old) errors. The undo retention time is specified using a new persistent initialization parameter, `UNDO_RETENTION`. This parameter is dynamic and hence can be changed anytime during database operation using the `ALTER SYSTEM` command.

The AUM feature is further enhanced in Oracle Database 10 *g* by providing Automatic Undo Retention Tuning. This feature is used by default, and it automatically determines the optimal undo retention time depending on the size of the undo tablespace. Without your intervention, the Oracle Database 10 *g* dynamically adjusts to the change in undo requirements depending on the system activity. This maximizes the usage of the available space in the undo tablespace and allows long running queries to complete without encountering any “Snapshot Too Old” errors provide your undo tablespace is big enough.

In this lesson, you will intentionally switch to a small undo tbs, and although you use automatic undo retention tuning, you will encounter 1555 because the undo tbs is too small. In which case you need the undo advisor to compute the right size that depends on the workload.

## Prerequisites

Before starting this module, you should have:

1. Completed the [Configuring Linux for the Installation of Oracle Database 10g](#) lesson
2. Completed the [Installing the Oracle Database 10g on Linux](#) lesson
3. Download and unzip [undoadv.zip](#) into your working directory (i.e. /home/oracle/wkdir)

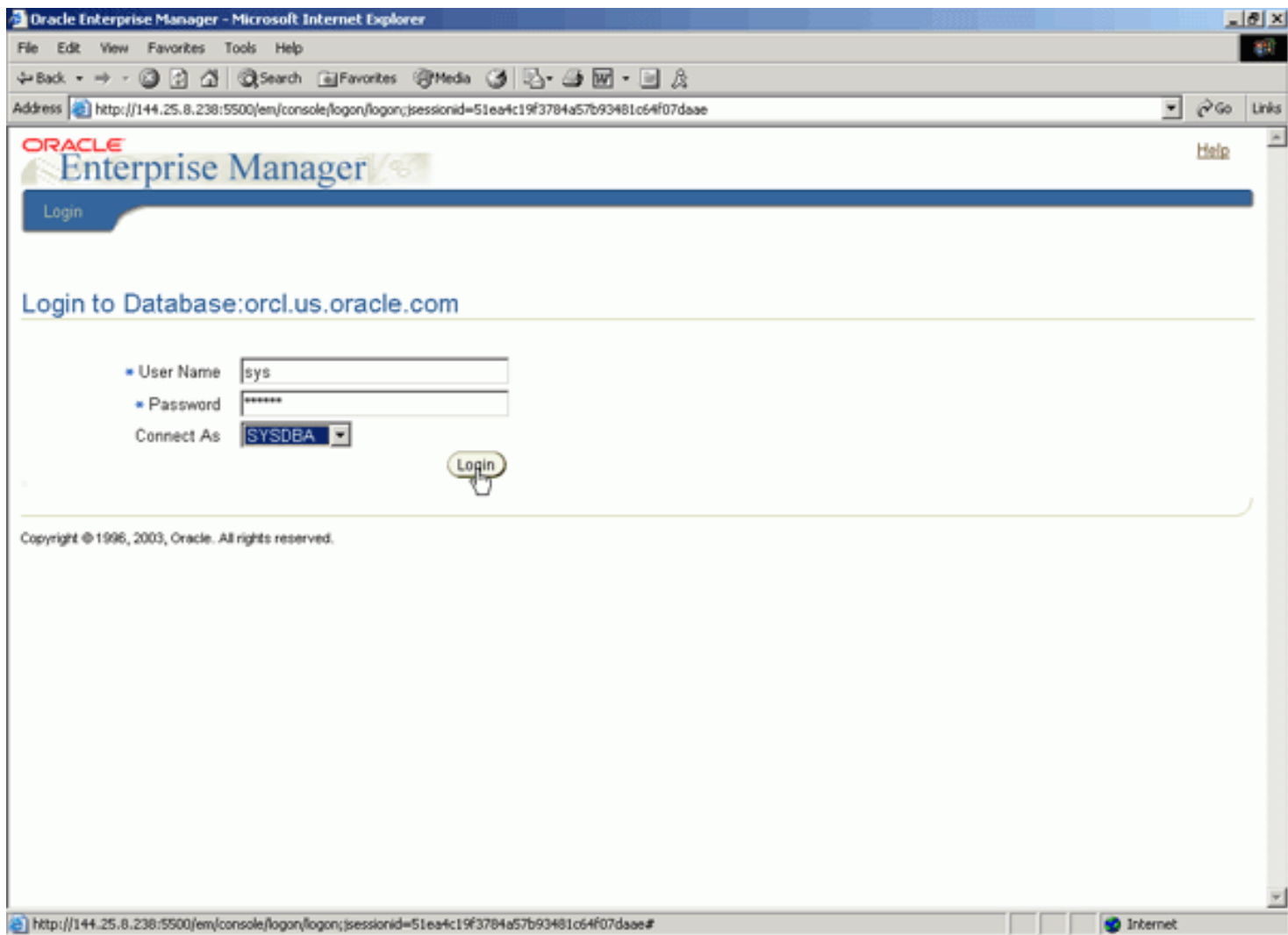
## Creating an Undo Tablespace

To create an undo tablespace in Enterprise Manager, perform the following

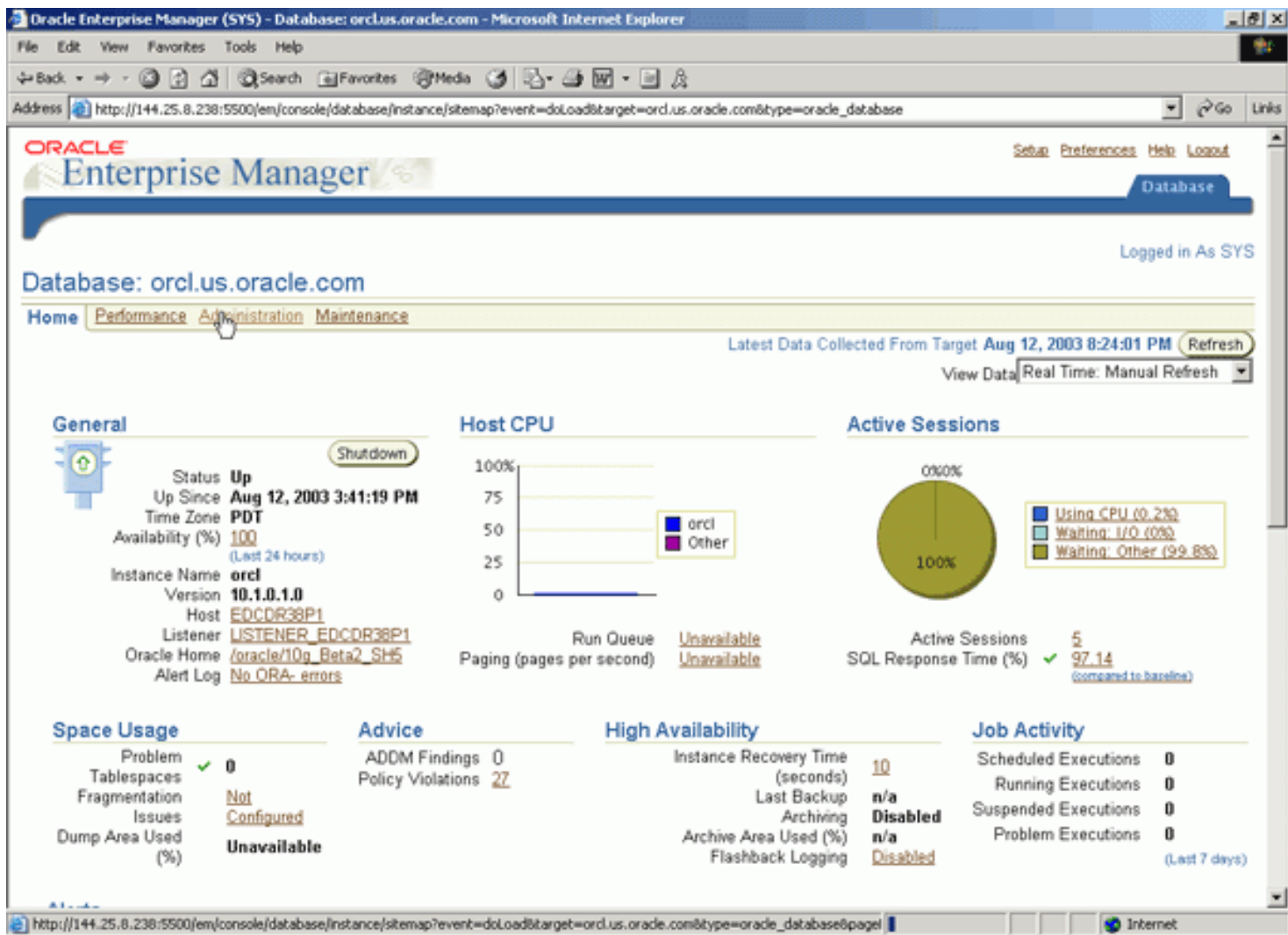
1. Open your browser and enter the following URL:

**`http://localhost:5500/em`**

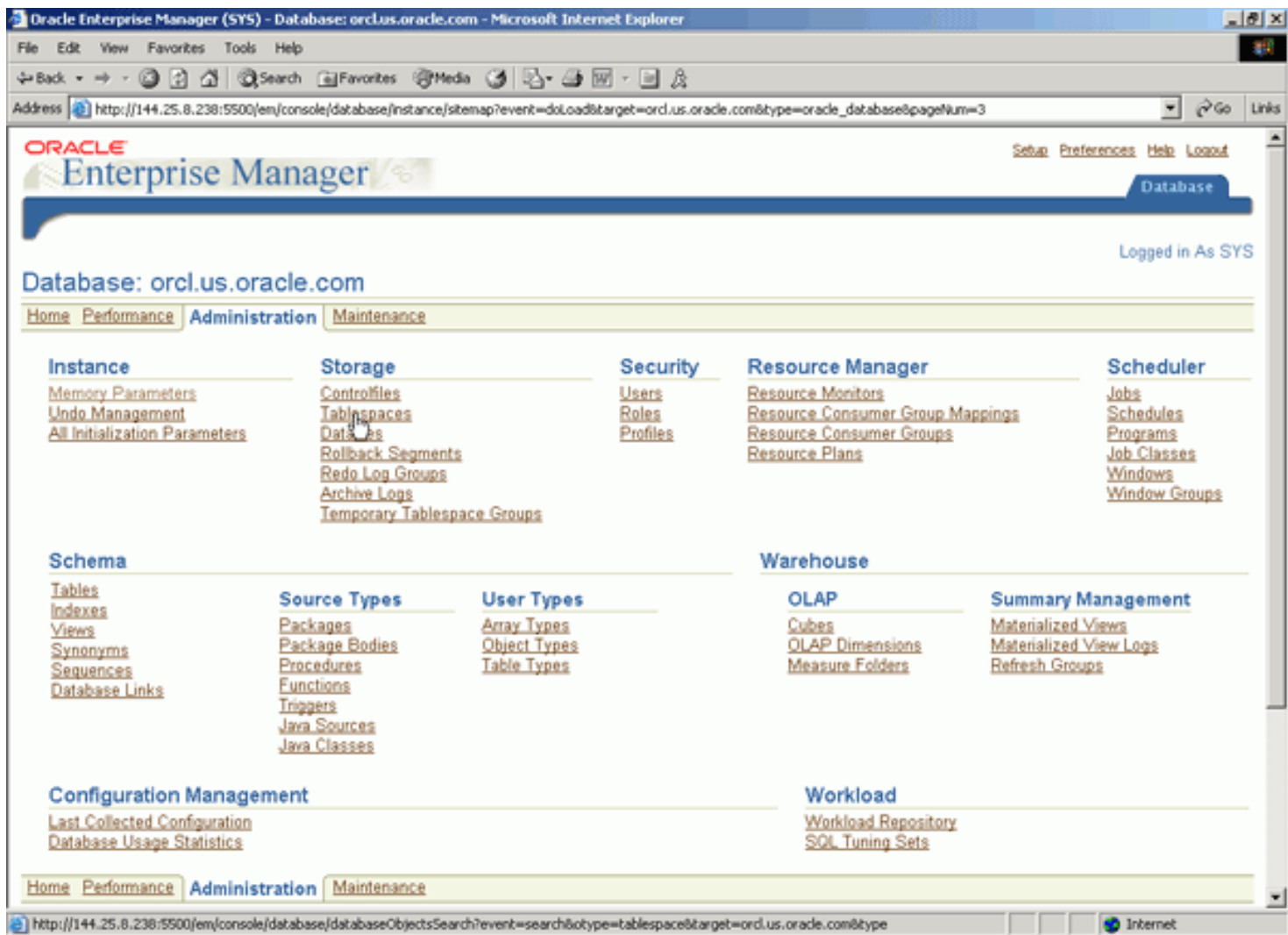
Enter **sys/oracle** and specify **SYSDBA** then click **Login** .



2. Click on the **Administration** tab.



- Click on the **Tablespaces** link.



4. Click **Create** .

Tablespaces - Microsoft Internet Explorer

Address: [http://144.25.8.238:5500/em/console/database/databaseObjectsSearch?event=search&otype=tablespace&target=orcl.us.oracle.com&type=oracle\\_database](http://144.25.8.238:5500/em/console/database/databaseObjectsSearch?event=search&otype=tablespace&target=orcl.us.oracle.com&type=oracle_database)

ORACLE Enterprise Manager

Database: orcl.us.oracle.com > Tablespaces

Logged in As SYS

Search

Name  Go

Example: Entering Test will return all items beginning with upper case TEST, i.e. TEST\_A, except for Java Source and Java Class which use case sensitive searches. Use double quotes to preserve case and embed wildcards(%).

Results

Tablespaces

Select	Name	Type	Extent Management	Size (MB)	Used (MB)	Used (%)
<input checked="" type="radio"/>	EXAMPLE	PERMANENT	LOCAL	151.875	151.438	99.71
<input type="radio"/>	SYSAUX	PERMANENT	LOCAL	290.000	285.063	98.30
<input type="radio"/>	SYSTEM	PERMANENT	LOCAL	460.000	446.813	97.13
<input type="radio"/>	TEMP	TEMPORARY	LOCAL	227.000	102.000	44.93
<input type="radio"/>	UNDOTBS1	UNDO	LOCAL	335.000	110.313	32.93
<input type="radio"/>	USERS	PERMANENT	LOCAL	5.000	2.750	55.00

Database | Setup | Preferences | Help | Logout

Copyright © 1996, 2003, Oracle. All rights reserved.  
[About Oracle Enterprise Manager Database Console](#)

- Enter **UT1** for the name, click on the Type **Undo** and click **Add** to add a datafile.

Oracle Enterprise Manager - Create Tablespace - Microsoft Internet Explorer

Database: orcl.us.oracle.com > Tablespaces > Create Tablespace

## Create Tablespace

General Storage Thresholds

Name:

**Extent Management**

- ☒ Locally Managed
- ☐ Dictionary Managed

**Type**

- ☐ Permanent
  - ☐ Set as default permanent tablespace
- ☐ Temporary
  - ☐ Set as default temporary tablespace
- ☒ Undo

**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 (KB)
No items found		

Add

General Storage Thresholds

Show SQL Cancel OK

http://144.25.8.238:5500/em/console/database/storage/tablespace?event=create&cancelURL=/em/console/database/databaseObjectsSear

- Enter **ut1.dbf** for the filename and make sure **/oracle/oradata/orcl** is set for the file directory. Enter **400KB** for the file size and click **OK**.

Oracle Enterprise Manager - Create Tablespace: Add Datafile - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print View Source

Address [http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle\\_database&cancelURL=/em/console/database/databaseObjectsSe](http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle_database&cancelURL=/em/console/database/databaseObjectsSe) Go Links

ORACLE Enterprise Manager Database

Database: [ord.us.oracle.com](#) > [Tablespaces](#) > Create Tablespace: Add Datafile

### Create Tablespace: Add Datafile

Cancel OK

File Name

File Directory

Tablespace **UT1**

File Size  KB

☐ Reuse Existing File

#### Storage

☐ Automatically extend datafile when full (AUTOEXTEND)

Increment  KB

Maximum File Size ☒ Unlimited

☐ Value  MB

Cancel OK

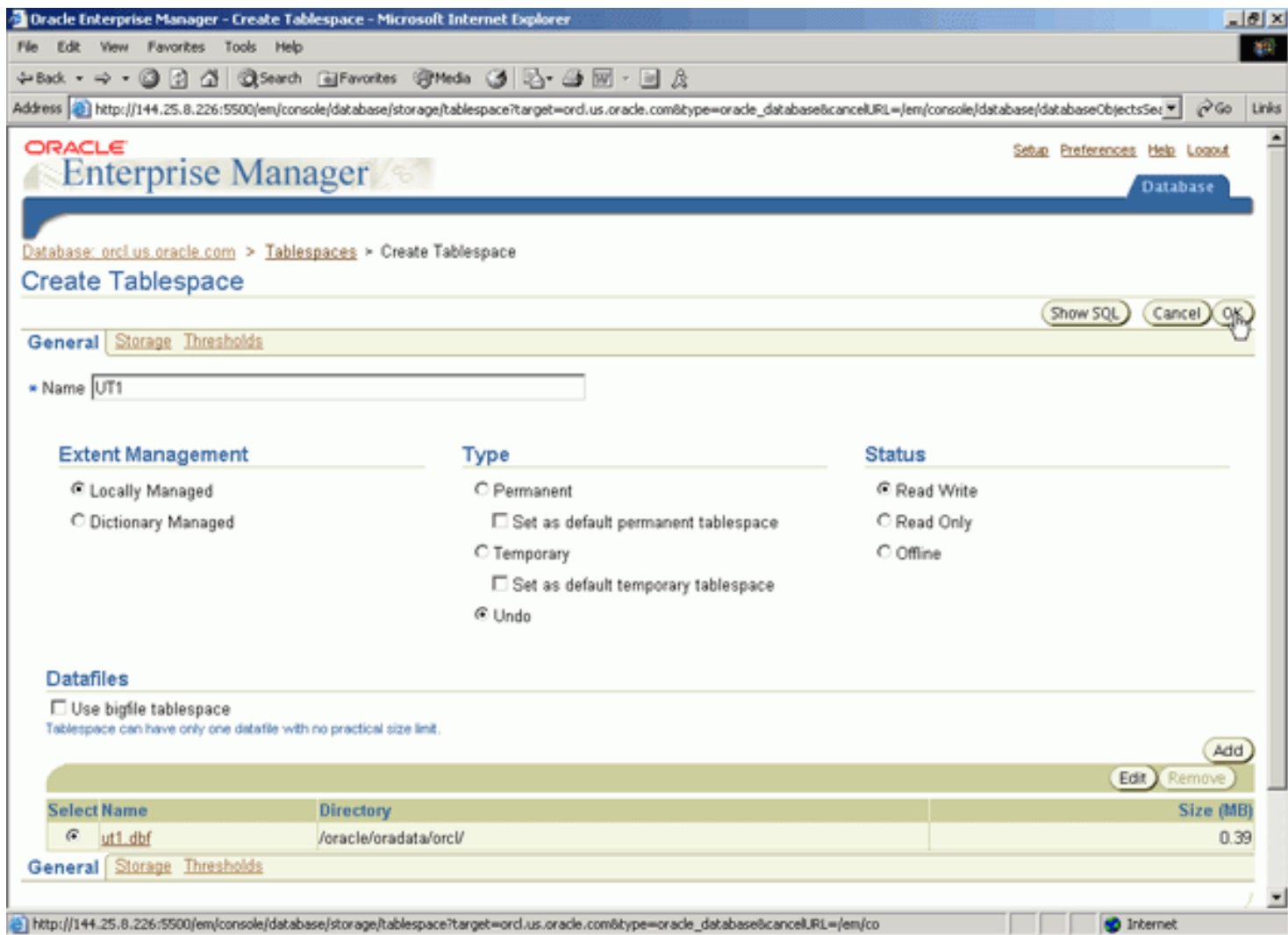
Database | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

Copyright © 1996, 2003, Oracle. All rights reserved.  
[About Oracle Enterprise Manager Database Console](#)

[http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle\\_database&cancelURL=/em/co](http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle_database&cancelURL=/em/co) Internet

7. Click **OK**.





8. Your undo tablespace was created. Now you can enable undo retention tuning. Click your **Database** breadcrumb.

Tablespaces - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address [http://144.25.8.226:5500/em/console/database/databaseObjectsSearch?event=redisplay&lastEvent=create&target=ord.us.oracle.com&type=oracle\\_database&createOK=true](http://144.25.8.226:5500/em/console/database/databaseObjectsSearch?event=redisplay&lastEvent=create&target=ord.us.oracle.com&type=oracle_database&createOK=true) Go Links

ORACLE Enterprise Manager Database

Database: [ord.us.oracle.com](http://ord.us.oracle.com) > Tablespaces Logged in As SYS

**Update Message**  
The object has been created successfully

## Tablespaces

**Search**

Name  Go

Example: Entering Test will return all items beginning with upper case TEST, i.e. TEST\_A, except for Java Source and Java Class which use case sensitive searches. Use double quotes to preserve case and embed wildcards(%).

**Results**

Create Edit View Delete Actions Add Datafile Go

Select	Name	Type	Extent Management	Size (MB)	Used (MB)	Used (%)
<input checked="" type="radio"/>	EXAMPLE	PERMANENT	LOCAL	150.000	129.438	86.29
<input type="radio"/>	SYSAUX	PERMANENT	LOCAL	370.000	276.625	74.76
<input type="radio"/>	SYSTEM	PERMANENT	LOCAL	490.000	468.063	95.60
<input type="radio"/>	TEMP	TEMPORARY	LOCAL	227.000	49.000	21.59
<input type="radio"/>	UNDOTBS1	UNDO	LOCAL	345.000	110.938	32.16
<input type="radio"/>	USERS	PERMANENT	LOCAL	76.250	75.188	98.61
<input type="radio"/>	UT1	UNDO	LOCAL	0.391	.328	84.00

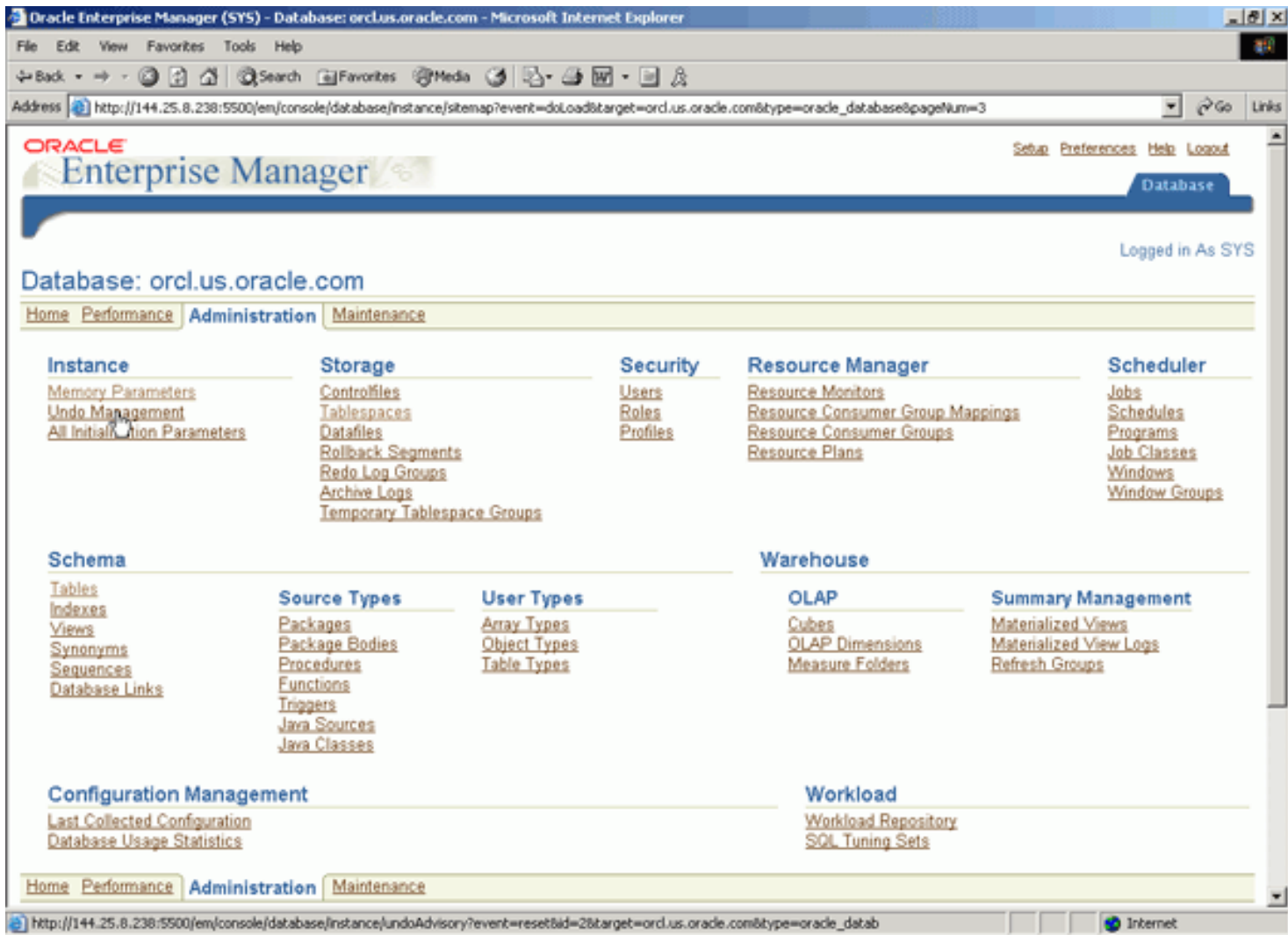
[http://144.25.8.226:5500/em/console/database/instance/sitemap?event=doLoad&target=ord.us.oracle.com&type=oracle\\_database&pageN](http://144.25.8.226:5500/em/console/database/instance/sitemap?event=doLoad&target=ord.us.oracle.com&type=oracle_database&pageN) Internet

## Enabling Automatic Undo Retention

[Back to Topic List](#)

Now you can enable Automatic Undo Retention and use the tablespace you just created. Perform the following:

1. Click on **Undo Management**.



2. Click **Enable** for Automatic Undo Retention.

Oracle Enterprise Manager - Undo Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address [http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?event=reset&id=2&target=orcl.us.oracle.com&type=oracle\\_database](http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?event=reset&id=2&target=orcl.us.oracle.com&type=oracle_database) Go Links

ORACLE Enterprise Manager Database

Database: orcl.us.oracle.com > Undo Management

### Undo Management

Undo Advisor

#### Configuration

Automatic Undo Retention	Disabled	Enable	Undo Tablespace	UNDOTBS1	Change Tablespace
Undo Retention (minutes)	360		Size (MB)	345	
Undo Retention Guarantee	No		Auto-Extendible	Yes	

#### Recommendations

Choose the time period that best represents the system activity to get the recommendations for undo retention length and undo tablespace size.

Analysis Time Period: Last Seven Days Update Analysis

Selected Analysis Time Period: 9/10/03 10:00 AM - 9/17/03 10:00 AM

Potential Problems: No Problem Found

Recommendations: No Recommendation

#### System Activity and Tablespace Usage

The recommendations are based on system activity and undo tablespace usage for the selected analysis time period.

Longest Running Query (seconds)	82
Average Undo Generation Rate (KB/minute)	57.0
Maximum Undo Generation Rate (KB/minute)	78.0

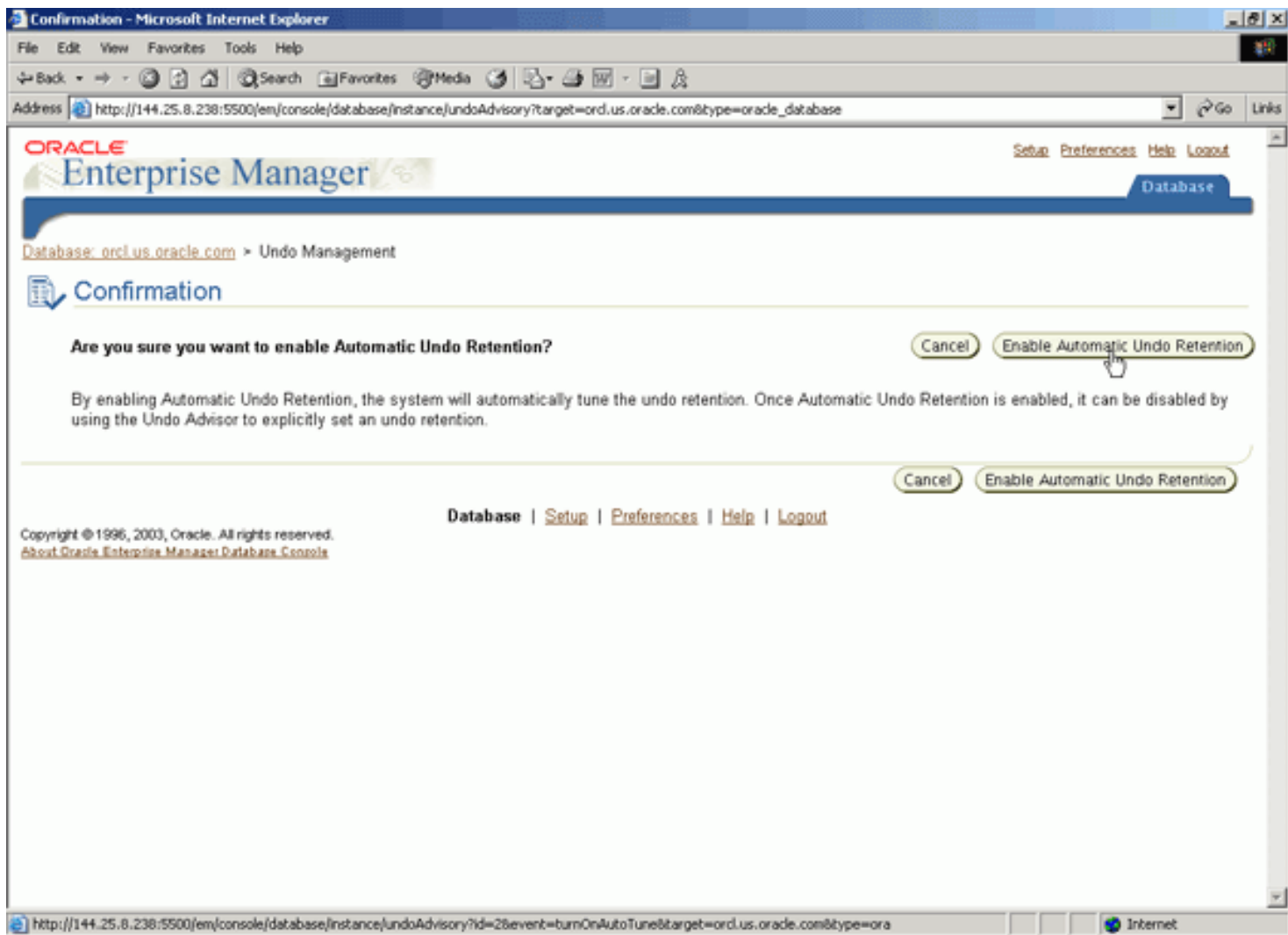
Show Graph

Undo Advisor

Database | Setup | Preferences | Help | Logout

[http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?event=reset&id=2&target=orcl.us.oracle.com&type=oracle\\_datab](http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?event=reset&id=2&target=orcl.us.oracle.com&type=oracle_datab) Internet

3. Click **Enable Automatic Undo Retention**.



4. Notice that Automatic Undo Retention is now enabled. Click **Change Tablespace** .

Oracle Enterprise Manager - Undo Management - Microsoft Internet Explorer

Address: [http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?id=28event=turnOnAutoTune&target=orcl.us.oracle.com&type=oracle\\_database](http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?id=28event=turnOnAutoTune&target=orcl.us.oracle.com&type=oracle_database)

Database: orcl.us.oracle.com > Undo Management

## Undo Management

[Undo Advisor](#)

### Configuration

Automatic Undo Retention	<b>Enabled</b>	Undo Tablespace	<b>UNDOTBS1</b>	<a href="#">Change Tablespace</a>
Undo Retention	<b>Automatic</b>	Size (MB)	<b>345</b>	
Undo Retention Guarantee	<b>No</b>	Auto-Extensible	<b>Yes</b>	

### Recommendations

Choose the time period that best represents the system activity to get the recommendations for undo retention length and undo tablespace size.

Analysis Time Period: [Last Seven Days](#) [Update Analysis](#)

Selected Analysis Time Period: **9/10/03 10:00 AM - 9/17/03 10:00 AM**

Potential Problems: **No Problem Found**

Recommendations: **No Recommendation**

### System Activity and Tablespace Usage

The recommendations are based on system activity and undo tablespace usage for the selected analysis time period.

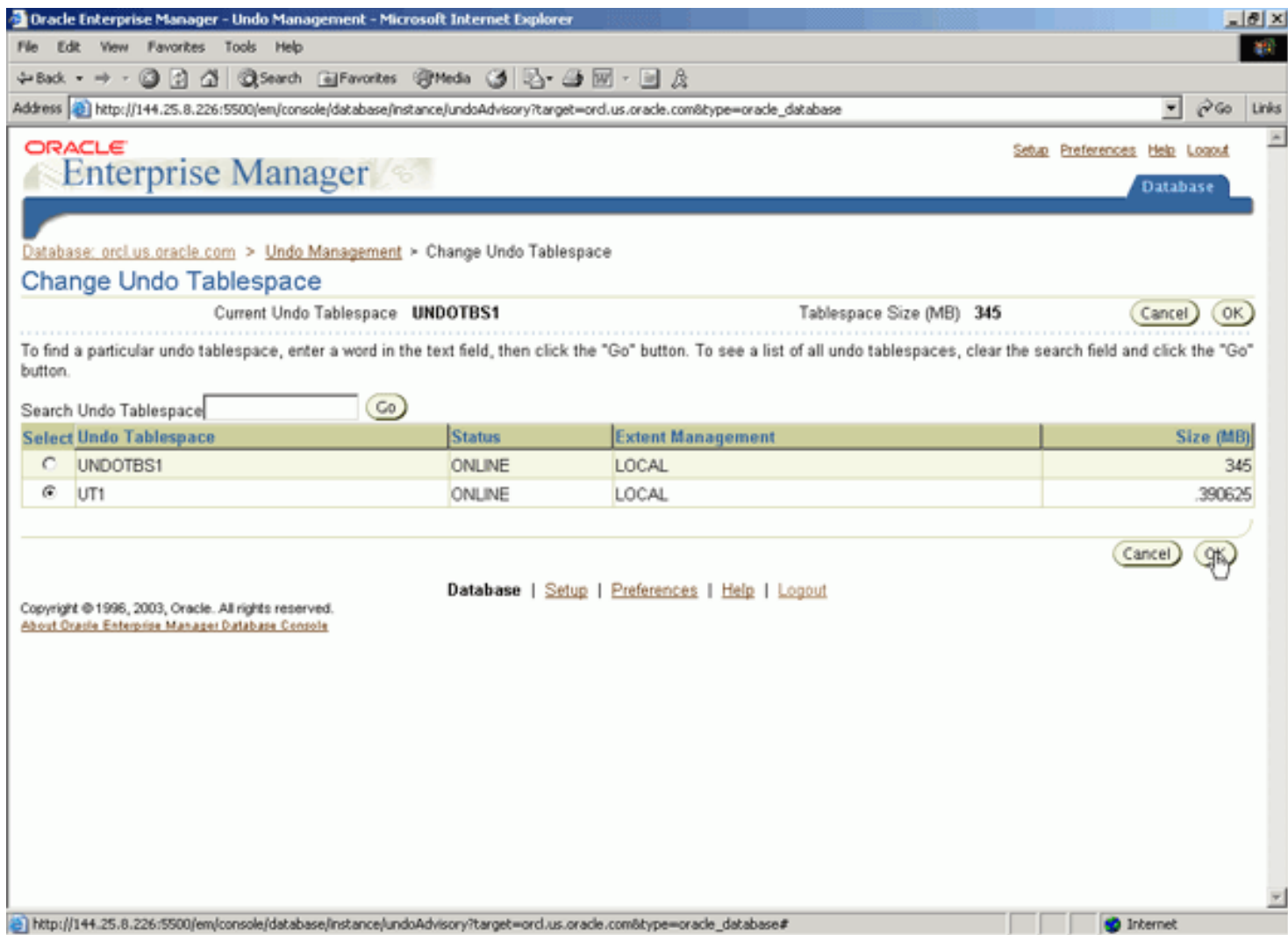
Longest Running Query (seconds)	<b>82</b>
Average Undo Generation Rate (KB/minute)	<b>57.0</b>
Maximum Undo Generation Rate (KB/minute)	<b>78.0</b>

[Show Graph](#)

[Undo Advisor](#)

Database | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

5. Select the radio button next to **UT1** and click **OK**.



6. The undo tablespace has been changed to the one you just created. Now you are ready to see how it works.



Oracle Enterprise Manager - Undo Management - Microsoft Internet Explorer

Address: [http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?target=orcl.us.oracle.com&type=oracle\\_database](http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?target=orcl.us.oracle.com&type=oracle_database)

Oracle Enterprise Manager

Database: [orcl.us.oracle.com](#) > Undo Management

## Undo Management

Undo Advisor

### Information

Undo Tablespace has been changed from UNDOTBS1 to UT1.

### Configuration

Automatic Undo Retention	<b>Enabled</b>	Undo Tablespace	<b>UT1</b>	<a href="#">Change Tablespace</a>
Undo Retention	<b>Automatic</b>	Size (MB)	<b>0</b>	
Undo Retention Guarantee	<b>No</b>	Auto-Extensible	<b>Yes</b>	

### Recommendations

Choose the time period that best represents the system activity to get the recommendations for undo retention length and undo tablespace size.

Analysis Time Period: [Last Seven Days](#) [Update Analysis](#)

Selected Analysis Time Period: 9/10/03 12:00 PM - 9/17/03 12:00 PM

Potential Problems: **Undo tablespace cannot support required undo retention**

Recommendations: **Size undo tablespace to 61 MB**

Rationale: **Increase undo tablespace size so that long running queries will not fail**

### System Activity and Tablespace Usage

The recommendations are based on system activity and undo tablespace usage for the selected analysis time period.

Longest Running Query (seconds)	<b>408</b>
Average Undo Generation Rate (KB/minute)	<b>699.0</b>
Maximum Undo Generation Rate (KB/minute)	<b>3602.0</b>

## Generating Some Activity

[Back to Topic List](#)

To see how undo management is handled, you need to generate some activity. Perform the following:

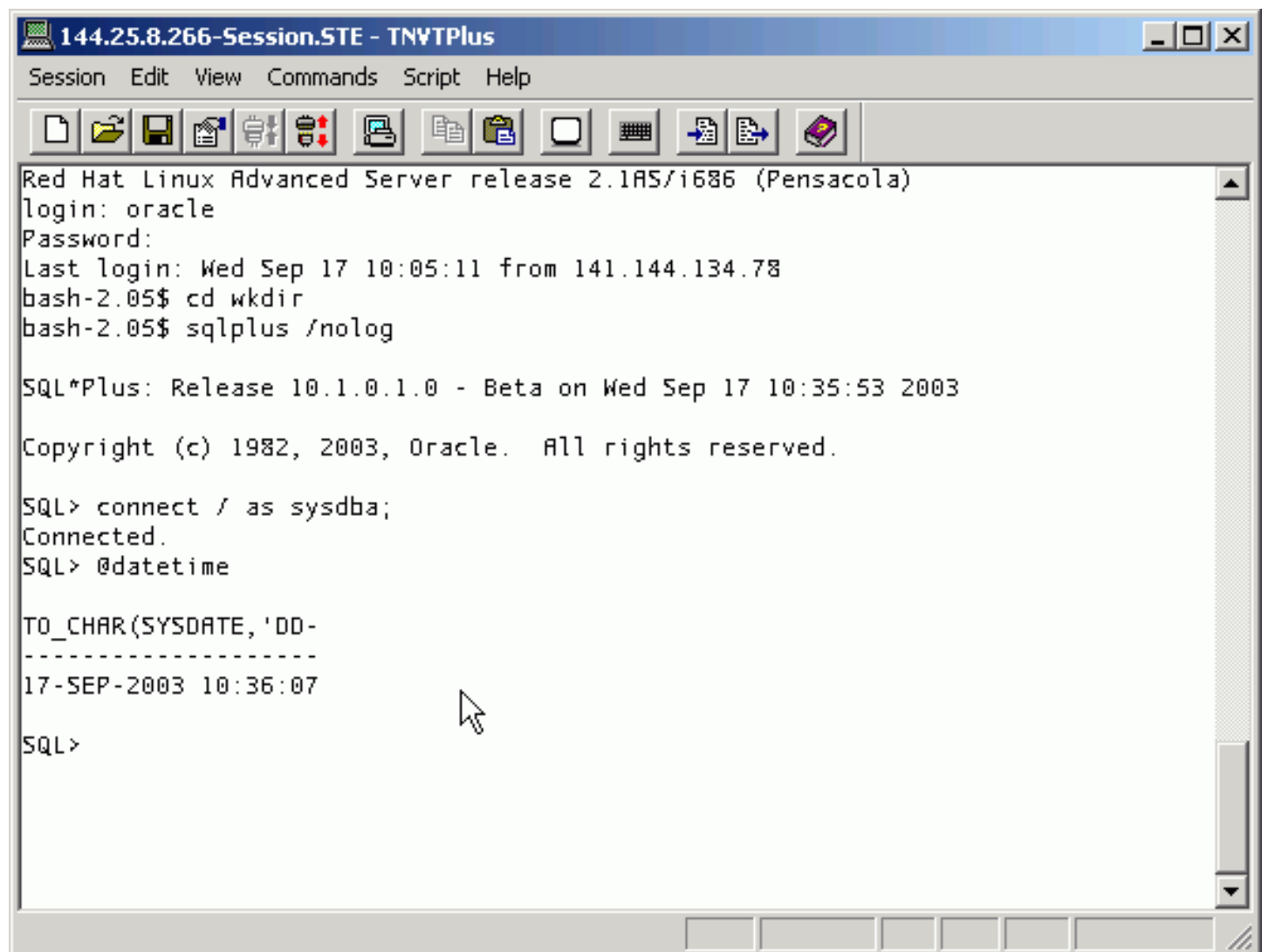


1. You will first need to determine the date and time of your database. Open a terminal window and enter the following commands:

```
cd wkdir
sqlplus /nolog
connect / as sysdba;
@datetime
```

The `datetime.sql` script looks as follows:

```
select to_char(sysdate,'DD-MON-YYYY HH24:MI:SS')
from dual;
```



The screenshot shows a terminal window with the following content:

```
144.25.8.266-Session.STE - TNVTPPlus
Session Edit View Commands Script Help

Red Hat Linux Advanced Server release 2.1AS/i686 (Pensacola)
login: oracle
Password:
Last login: Wed Sep 17 10:05:11 from 141.144.134.78
bash-2.05$ cd wkdir
bash-2.05$ sqlplus /nolog

SQL*Plus: Release 10.1.0.1.0 - Beta on Wed Sep 17 10:35:53 2003

Copyright (c) 1982, 2003, Oracle. All rights reserved.

SQL> connect / as sysdba;
Connected.
SQL> @datetime

TO_CHAR(SYSDATE,'DD-
-----
17-SEP-2003 10:36:07

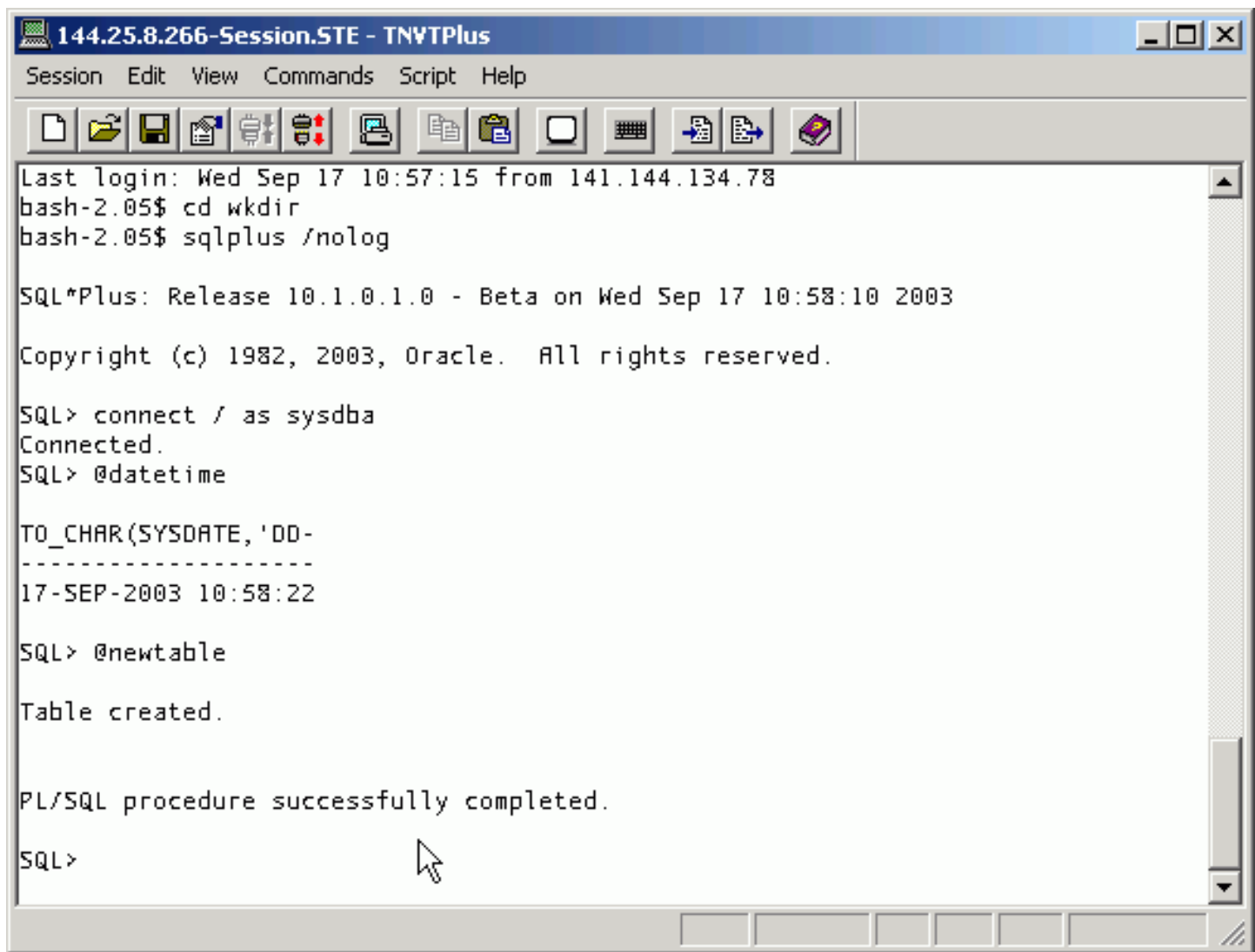
SQL>
```

2. From the same session, execute the following command:

```
@newtable
```

The `newtable.sql` script looks as follows:

```
create table newtable(b int, s varchar2(100));  
  
begin  
  
  for i in 1..100 loop  
  
    insert into newtable values(i, rpad('s', 100));  
  
  end loop;  
  
  commit;  
  
end;  
  
/
```

A screenshot of a TNVTPlus terminal window. The title bar reads "144.25.8.266-Session.STE - TNVTPlus". The menu bar includes "Session", "Edit", "View", "Commands", "Script", and "Help". The toolbar contains icons for file operations (new, open, save, print, etc.) and database actions. The terminal text shows a login session starting with "Last login: Wed Sep 17 10:57:15 from 141.144.134.78". The user runs "bash-2.05\$ cd wkdir" and "bash-2.05\$ sqlplus /nolog". The SQL\*Plus prompt shows "SQL\*Plus: Release 10.1.0.1.0 - Beta on Wed Sep 17 10:58:10 2003" and "Copyright (c) 1982, 2003, Oracle. All rights reserved.". The user enters "SQL> connect / as sysdba", followed by "Connected.". Then "SQL> @datetime" is entered, resulting in a timestamp "TO\_CHAR(SYSDATE, 'DD-SEP-2003 10:58:22'". Next, "SQL> @newtable" is entered, resulting in "Table created.". Finally, "SQL>" is entered, and the message "PL/SQL procedure successfully completed." is displayed. A mouse cursor is visible over the "SQL>" prompt.

```
144.25.8.266-Session.STE - TNVTPlus
Session Edit View Commands Script Help

Last login: Wed Sep 17 10:57:15 from 141.144.134.78
bash-2.05$ cd wkdir
bash-2.05$ sqlplus /nolog

SQL*Plus: Release 10.1.0.1.0 - Beta on Wed Sep 17 10:58:10 2003
Copyright (c) 1982, 2003, Oracle. All rights reserved.

SQL> connect / as sysdba
Connected.
SQL> @datetime

TO_CHAR(SYSDATE, 'DD-SEP-2003 10:58:22'

SQL> @newtable

Table created.

PL/SQL procedure successfully completed.
SQL>
```

3. From the first session, execute the following:

```
@uscript1
```

The `uscript1.sql` script looks as follows:

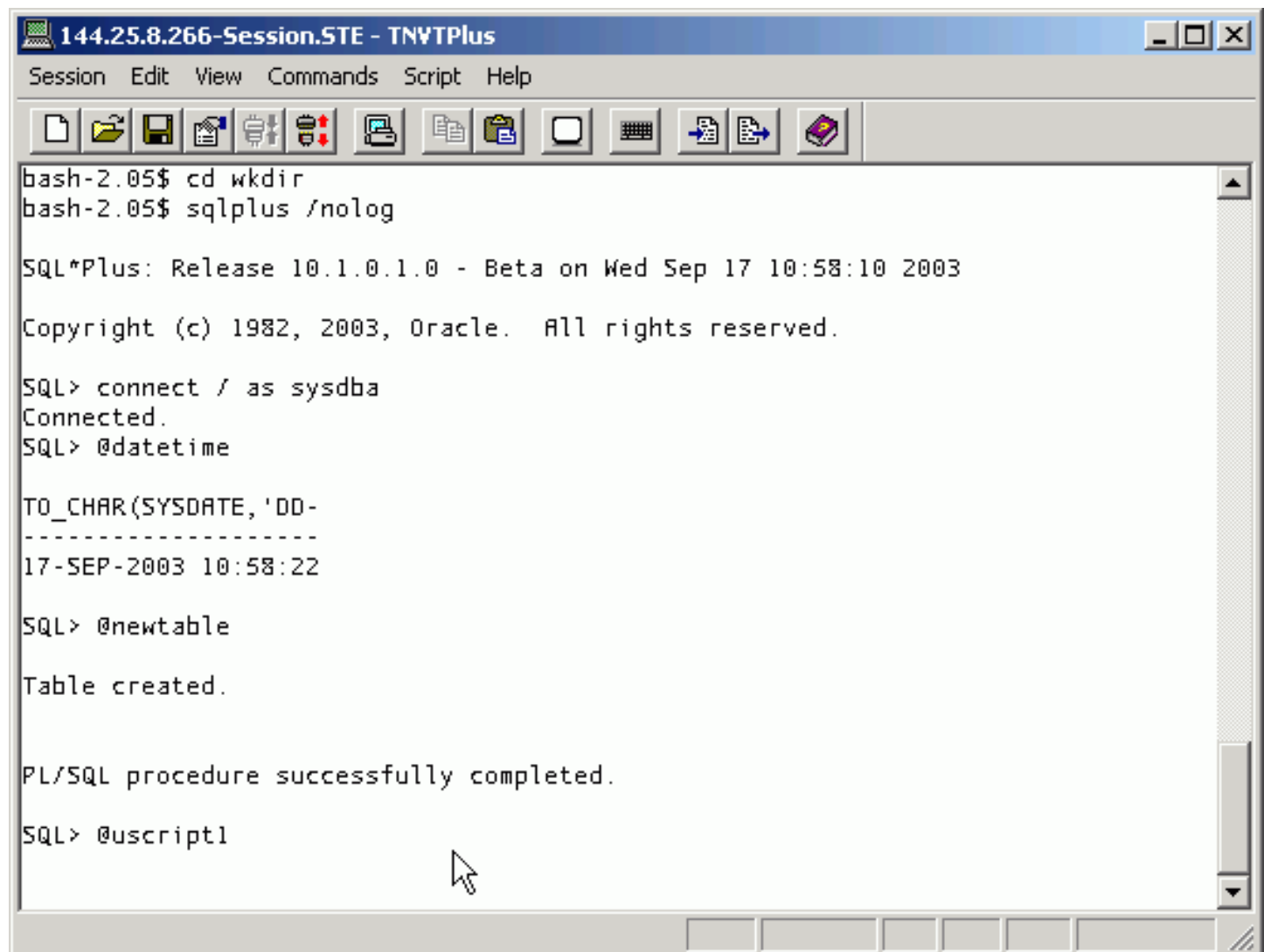
```
declare

b number;

cursor c1 is select b from newtable;

begin
```

```
open c1;  
  
loop  
  
    fetch c1 into b;  
  
    dbms_lock.sleep(6);  
  
    exit when c1%notfound;  
  
end loop;  
  
close c1;  
  
commit;  
  
end;  
  
/
```



The screenshot shows a terminal window titled "144.25.8.266-Session.STE - TNVTPlus". The window has a menu bar with "Session", "Edit", "View", "Commands", "Script", and "Help". Below the menu bar is a toolbar with various icons for file operations and execution. The terminal content shows a user logging into SQL\*Plus and executing several commands:

```
bash-2.05$ cd wkdir  
bash-2.05$ sqlplus /nolog  
  
SQL*Plus: Release 10.1.0.1.0 - Beta on Wed Sep 17 10:58:10 2003  
  
Copyright (c) 1982, 2003, Oracle. All rights reserved.  
  
SQL> connect / as sysdba  
Connected.  
SQL> @datetime  
  
TO_CHAR(SYSDATE,'DD-  
-----  
17-SEP-2003 10:58:22  
  
SQL> @newtable  
  
Table created.  
  
PL/SQL procedure successfully completed.  
SQL> @uscript1
```

4. Open another terminal window and execute the following commands:

```
cd wkdir
sqlplus /nolog
connect / as sysdba
@uscript2
```

The `uscript2.sql` script looks as follows:

```
begin

  for i in 1..1000 loop

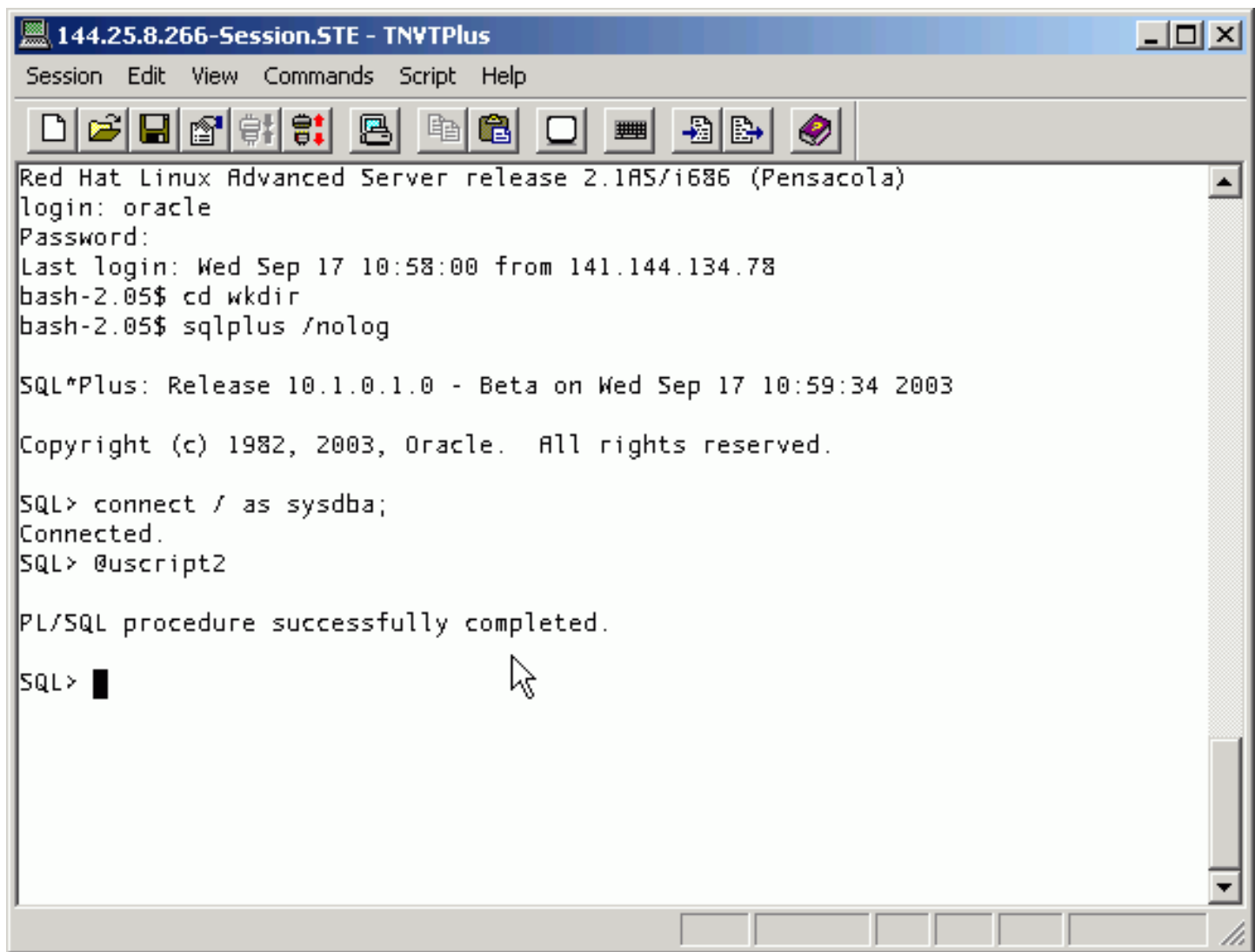
    update newtable set b=b+1, s=rpad('t', 100);

    commit;

  end loop;

end;

/
```



The screenshot shows a terminal window titled "144.25.8.266-Session.STE - TNVTPlus". The window has a menu bar with "Session", "Edit", "View", "Commands", "Script", and "Help". Below the menu bar is a toolbar with various icons for file operations and terminal functions. The terminal content shows a login sequence for "oracle" on a Red Hat Linux Advanced Server release 2.1AS/i686 (Pensacola). The user enters the password and is prompted for the last login time. The user then runs "cd wkdir" and "sqlplus /nolog". The SQL\*Plus prompt appears, showing the release "10.1.0.1.0 - Beta on Wed Sep 17 10:59:34 2003" and the copyright notice. The user enters "connect / as sysdba;" and is prompted for a password. The user then enters "@uscript2" and the message "PL/SQL procedure successfully completed." is displayed. The prompt "SQL>" is shown with a cursor.

```
Red Hat Linux Advanced Server release 2.1AS/i686 (Pensacola)
login: oracle
Password:
Last login: Wed Sep 17 10:58:00 from 141.144.134.78
bash-2.05$ cd wkdir
bash-2.05$ sqlplus /nolog

SQL*Plus: Release 10.1.0.1.0 - Beta on Wed Sep 17 10:59:34 2003

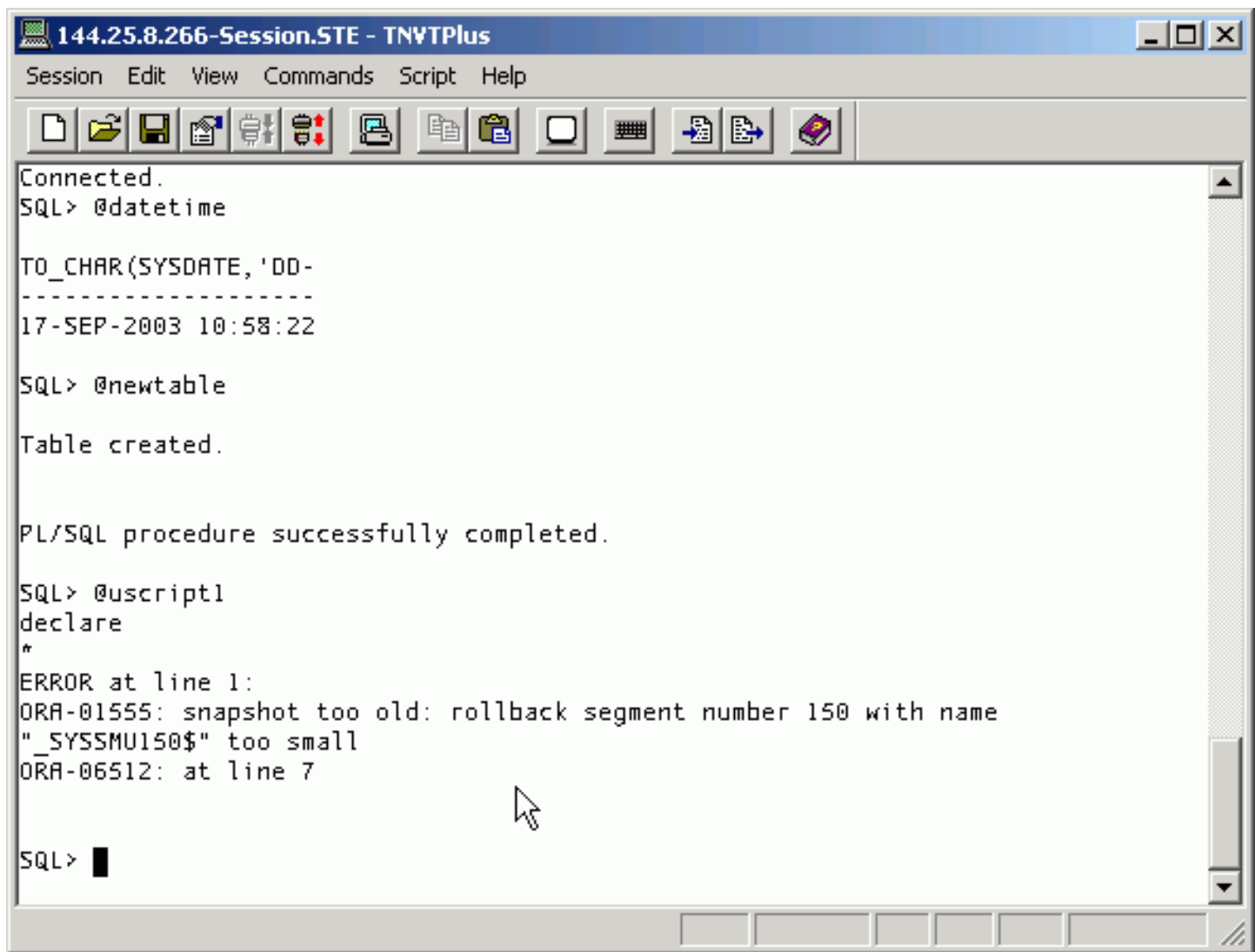
Copyright (c) 1982, 2003, Oracle. All rights reserved.

SQL> connect / as sysdba;
Connected.
SQL> @uscript2

PL/SQL procedure successfully completed.

SQL> █
```

5. Switch back to the first SQL\*Plus session. Soon, you get a "Snapshot too old" error. Although you are using Automatic Undo Retention tuning, your undo tablespace is too small to accommodate the update script.



```
144.25.8.266-Session.STE - TNVTPlus
Session Edit View Commands Script Help

Connected.
SQL> @datetime

TO_CHAR(SYSDATE, 'DD-
-----
17-SEP-2003 10:58:22

SQL> @newtable

Table created.

PL/SQL procedure successfully completed.

SQL> @uscript1
declare
*
ERROR at line 1:
ORA-01555: snapshot too old: rollback segment number 150 with name
"_SYSSMU150$" too small
ORA-06512: at line 7

SQL> █
```

## Reviewing Undo Advisor Recommendations

[Back to Topic List](#)

To review the recommendations that the undo advisor made, perform the following:

1. Switch back to Enterprise Manager and look at the Undo Management page. Notice that the current recommendation (61MB) is because the default analysis is for the past seven days. Since you want to analyze a particular workload, and not what had happened before you will need to customize the time period. Select the **Customized Time Period** for the Analysis Time Period and click **Update Analysis**.

Oracle Enterprise Manager - Undo Management - Microsoft Internet Explorer

Database: orcl.us.oracle.com > Undo Management

Undo Management

Undo Advisor

**Information**

Undo Tablespace has been changed from 'UNDOTBS1' to 'UT1'.

**Configuration**

Automatic Undo Retention	<b>Enabled</b>	Undo Tablespace	<b>UT1</b>	<a href="#">Change Tablespace</a>
Undo Retention	<b>Automatic</b>	Size (MB)	<b>0</b>	
Undo Retention Guarantee	<b>No</b>	Auto-Extensible	<b>Yes</b>	

**Recommendations**

Choose the time period that best represents the system activity to get the recommendations for undo retention length and undo tablespace size. [Edit Undo Tablespace](#)

Analysis Time Period: **Customize Time Period** [Update Analysis](#)

Selected Analysis Time Period: **9/10/03 12:00 PM - 9/17/03 12:00 PM**

Potential Problems: **Undo tablespace cannot support required undo retention**

Recommendations: **Size undo tablespace to 61 MB**

Rationale: **Increase undo tablespace size so that long running queries will not fail**

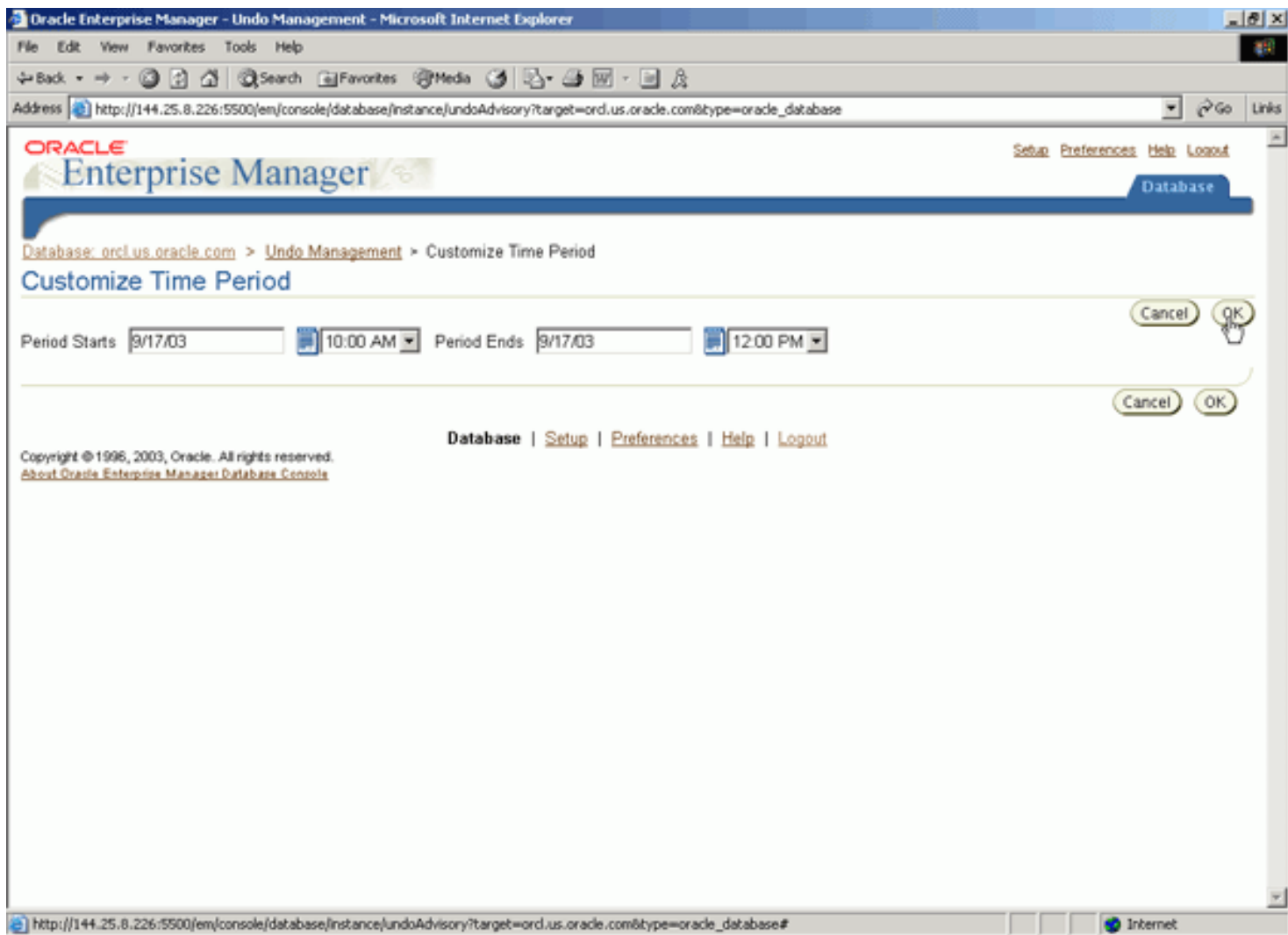
**System Activity and Tablespace Usage**

The recommendations are based on system activity and undo tablespace usage for the selected analysis time period.

Longest Running Query (seconds)	<b>408</b>
Average Undo Generation Rate (KB/minute)	<b>699.0</b>
Maximum Undo Generation Rate (KB/minute)	<b>3602.0</b>

2. Use the date and time you determined previously for the Period Starts field. For the Period Ends field, use the same value plus two hours. Once done, press the **OK** button.





3. You want perform the recommendation and raise the size of your undo tablespace. Click **Edit Undo Tablespace** .

Oracle Enterprise Manager - Undo Management - Microsoft Internet Explorer

Address: [http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?target=ord.us.oracle.com&type=oracle\\_database](http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?target=ord.us.oracle.com&type=oracle_database)

Database: [orcl.us.oracle.com](#) > Undo Management

## Undo Management

[Undo Advisor](#)

### Configuration

Automatic Undo Retention	<b>Enabled</b>	Undo Tablespace	<b>UT1</b>	<a href="#">Change Tablespace</a>
Undo Retention	<b>Automatic</b>	Size (MB)	<b>0</b>	
Undo Retention Guarantee	<b>No</b>	Auto-Extensible	<b>Yes</b>	

### Recommendations

Choose the time period that best represents the system activity to get the recommendations for undo retention length and undo tablespace size.

Analysis Time Period: [Customize Time Period](#) [Update Analysis](#)

Selected Analysis Time Period: **9/17/03 10:00 AM - 9/17/03 12:00 PM**

Potential Problems: **Undo tablespace cannot support required undo retention**

Recommendations: **Size undo tablespace to 66 MB**

Rationale: **Increase undo tablespace size so that long running queries will not fail**

[Edit Undo Tablespace](#)

### System Activity and Tablespace Usage

The recommendations are based on system activity and undo tablespace usage for the selected analysis time period.

Longest Running Query (seconds)	<b>408</b>
Average Undo Generation Rate (KB/minute)	<b>1449.0</b>
Maximum Undo Generation Rate (KB/minute)	<b>3602.0</b>

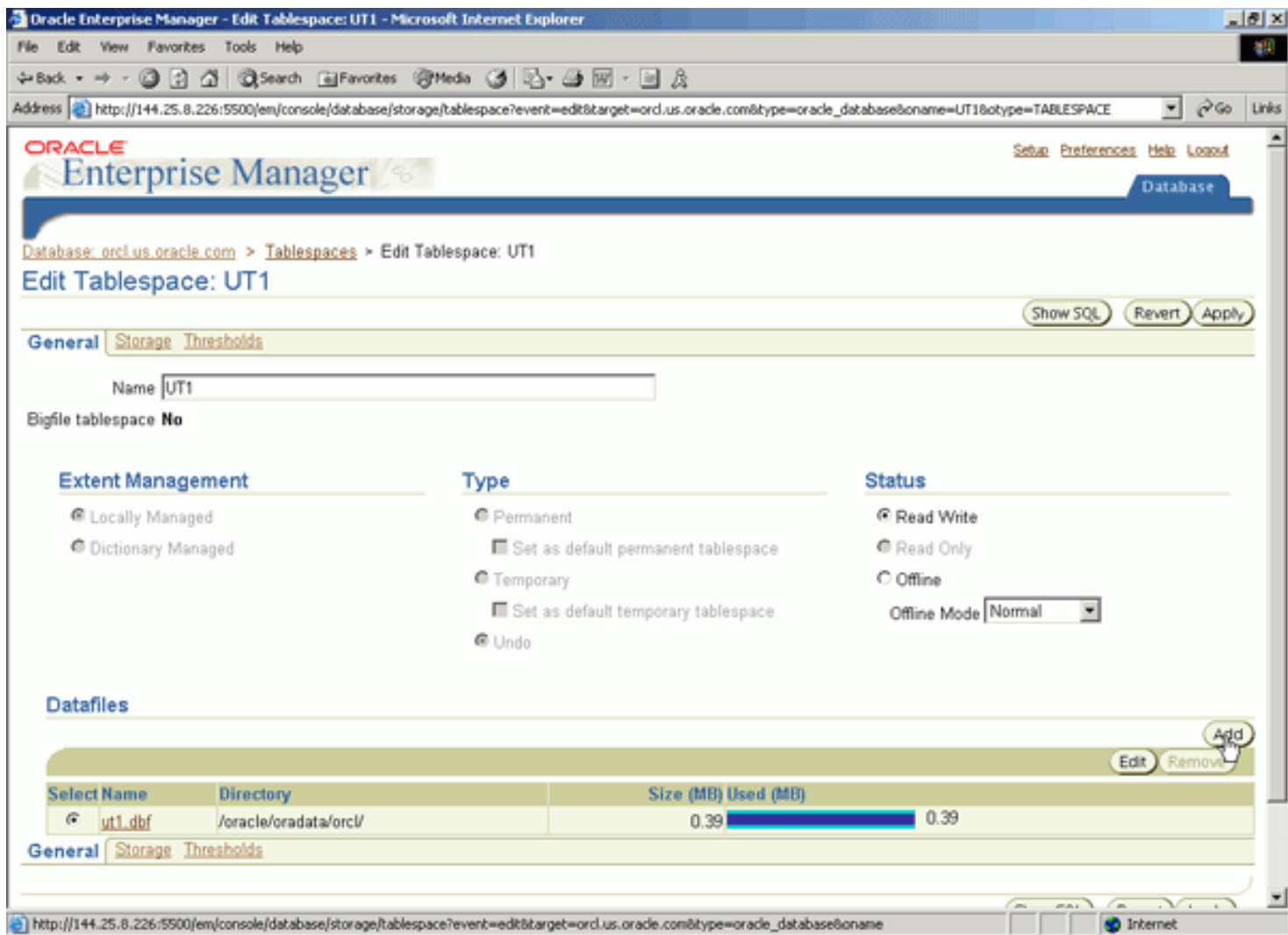
[Show Graph](#)

[Undo Advisor](#)

Database | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

Address: [http://144.25.8.226:5500/em/console/database/storage/tablespace?event=edit&target=ord.us.oracle.com&type=oracle\\_database&name](http://144.25.8.226:5500/em/console/database/storage/tablespace?event=edit&target=ord.us.oracle.com&type=oracle_database&name)

- Click **Add** to add a datafile.



- Enter **ut2.dbf** as the filename and specify whatever the recommendation should be. Then click **OK**.

Oracle Enterprise Manager - Edit Tablespace: UT1: Add Datafile - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print View Source

Address [http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle\\_database&name=UT1&otype=TABLESPACE](http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle_database&name=UT1&otype=TABLESPACE) Go Links

ORACLE Enterprise Manager Database

Database: [ord.us.oracle.com](#) > [Tablespaces](#) > Edit Tablespace: UT1: Add Datafile

### Edit Tablespace: UT1: Add Datafile

Cancel OK

• File Name

• File Directory

Tablespace **UT1**

File Size  MB

☐ Reuse Existing File

#### Storage

☐ Automatically extend datafile when full (AUTOEXTEND)

Increment  KB

Maximum File Size ☒ Unlimited

☐ Value  MB

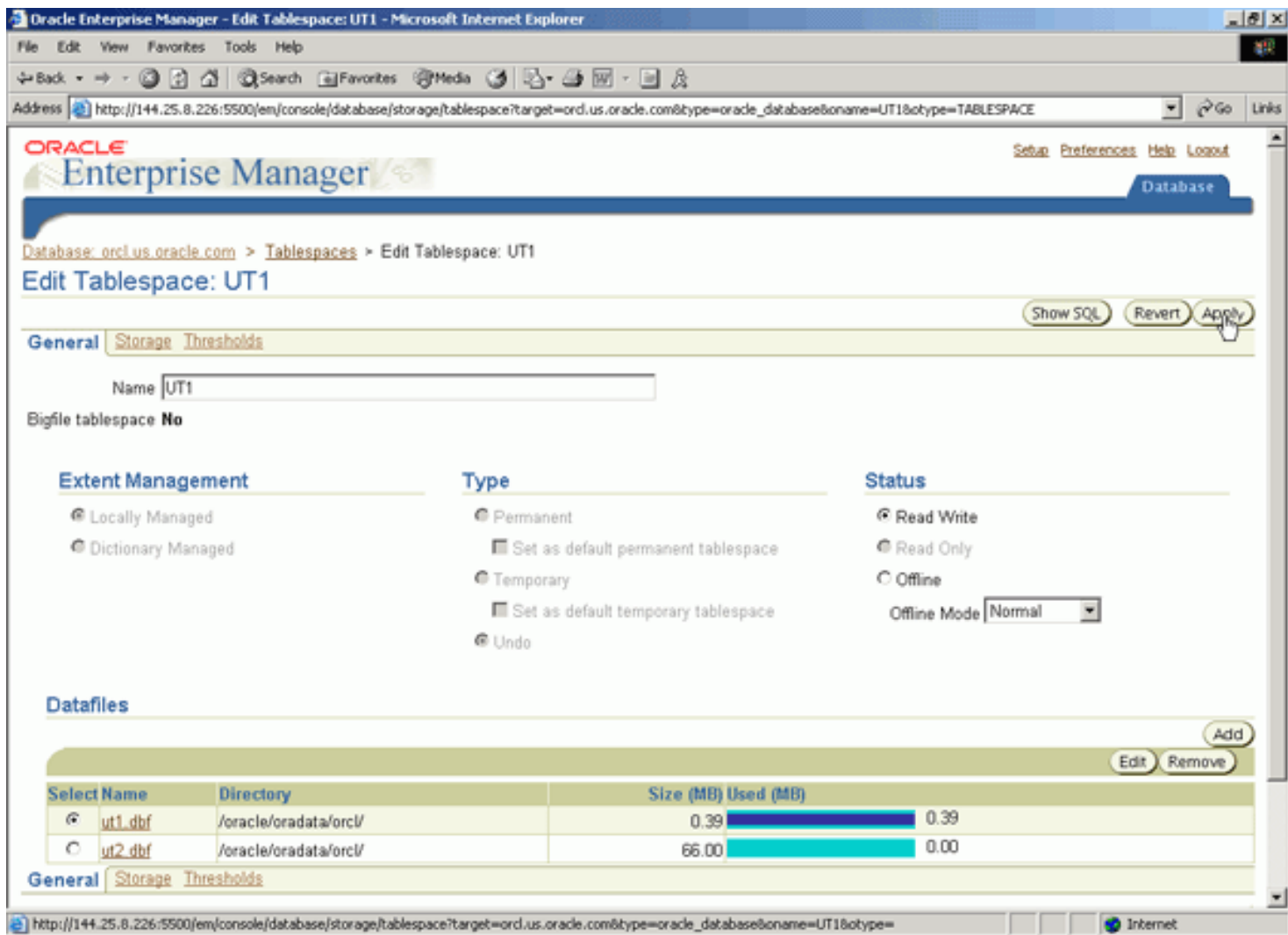
Cancel OK

Database | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

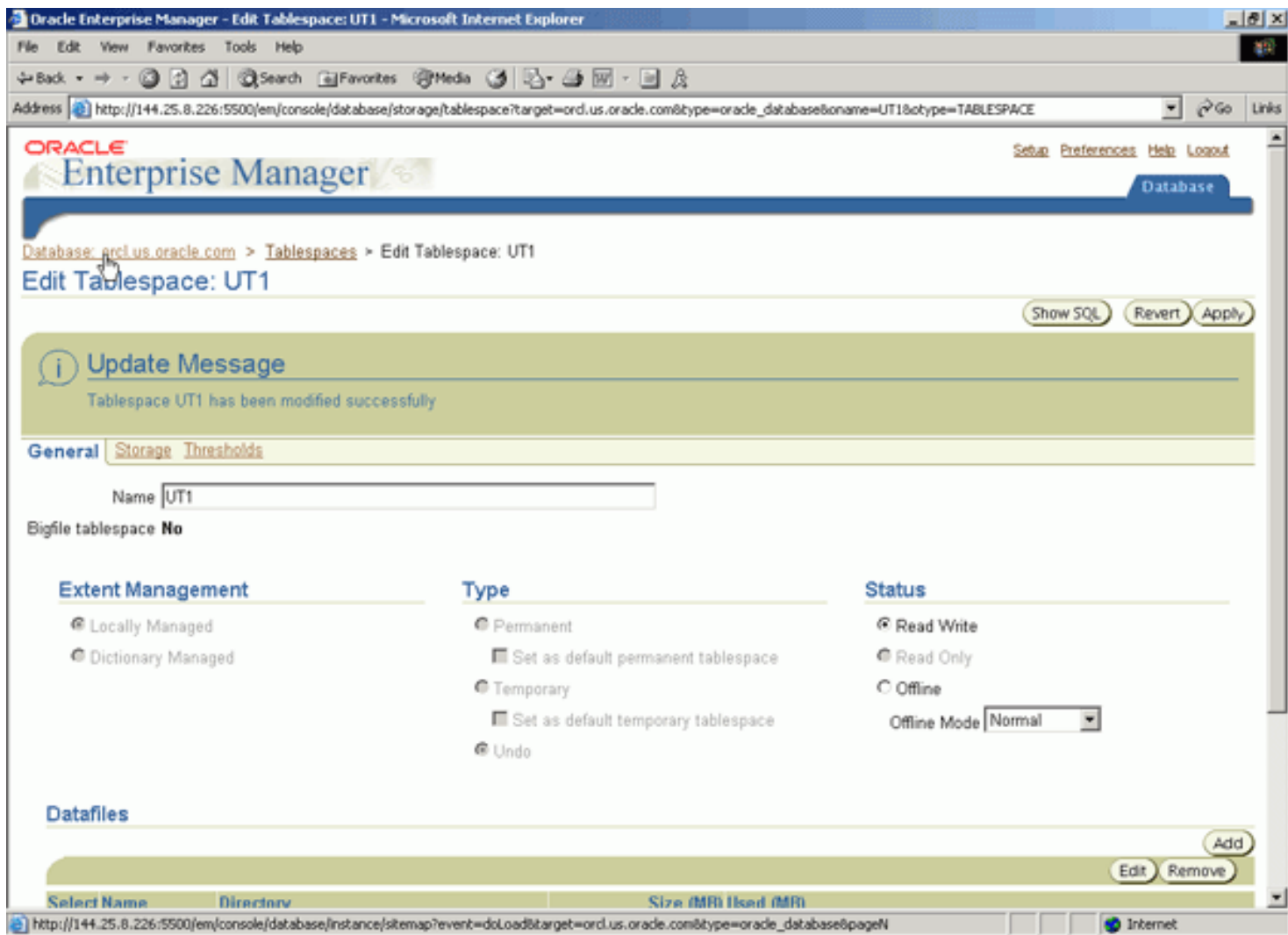
Copyright © 1996, 2003, Oracle. All rights reserved.  
[About Oracle Enterprise Manager Database Console](#)

[http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle\\_database&name=UT1&otype=](http://144.25.8.226:5500/em/console/database/storage/tablespace?target=ord.us.oracle.com&type=oracle_database&name=UT1&otype=) Internet

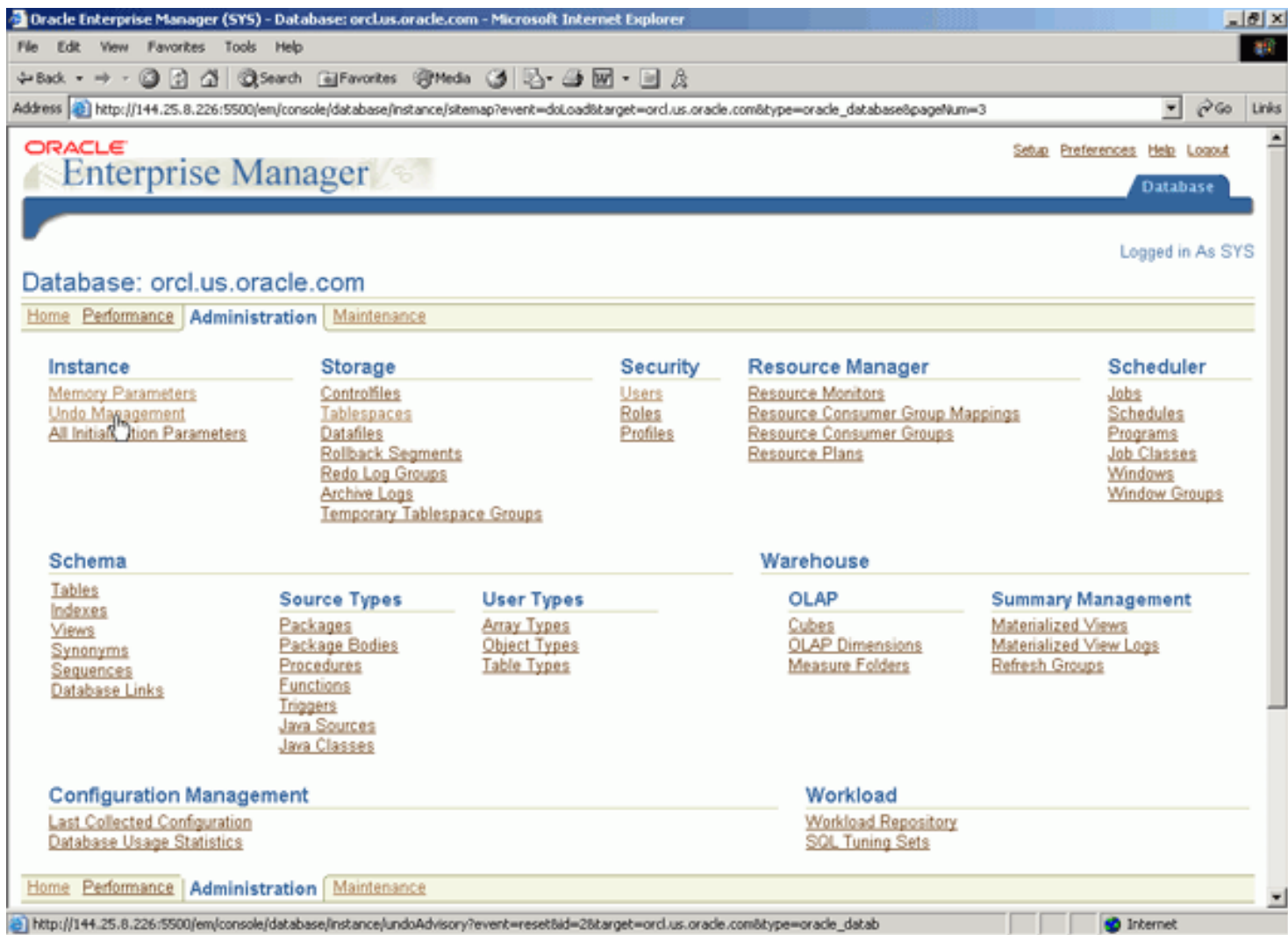
6. Click **Apply** .



7. Select your **Database** breadcrumb.



8. Select **Undo Management** .



9. Notice that there are no problems or recommendations any longer. You may try running the uscript1 and uscript2 again to make sure the size of your tablespace is appropriate.

Oracle Enterprise Manager - Undo Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print Mail

Address [http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?event=reset&id=2&target=orc.us.oracle.com&type=oracle\\_database](http://144.25.8.226:5500/em/console/database/instance/undoAdvisor?event=reset&id=2&target=orc.us.oracle.com&type=oracle_database) Go Links

---

**ORACLE** Enterprise Manager Database

Database: [orc.us.oracle.com](#) > Undo Management

## Undo Management

Undo Advisor

### Configuration

Automatic Undo Retention	<b>Enabled</b>	Undo Tablespace	<b>UT1</b>	<a href="#">Change Tablespace</a>
Undo Retention	<b>Automatic</b>	Size (MB)	<b>66</b>	
Undo Retention Guarantee	<b>No</b>	Auto-Extensible	<b>No</b>	

### Recommendations

Choose the time period that best represents the system activity to get the recommendations for undo retention length and undo tablespace size.

Analysis Time Period: **Last Seven Days** [Update Analysis](#)

Selected Analysis Time Period: **9/10/03 12:00 PM - 9/17/03 12:00 PM**

Potential Problems: **No Problem Found**

Recommendations: **No Recommendation**

[Edit Undo Tablespace](#)

### System Activity and Tablespace Usage

The recommendations are based on system activity and undo tablespace usage for the selected analysis time period.

Longest Running Query (seconds)	<b>408</b>
Average Undo Generation Rate (KB/minute)	<b>820.0</b>
Maximum Undo Generation Rate (KB/minute)	<b>3602.0</b>

[Show Graph](#)

Undo Advisor

Database | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

Done Internet