ORACLE 11G DATABASE REPLAY : ANALYZE THE WORKLOAD DATA
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INTRODUCTION

In this part of the paper, I will provide details as how to analyze the data captured from Source database and then replayed on the Target Database.
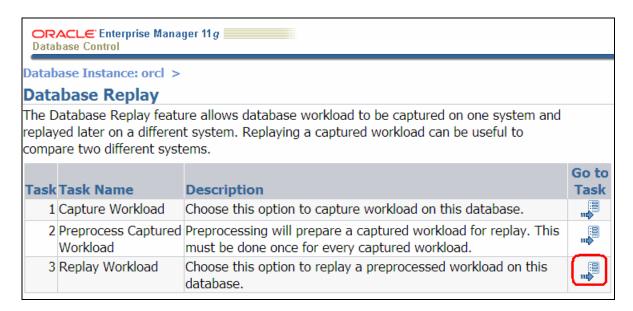
In this paper, I will use db02pn as Source Database and db01pn as Target Database. Source Database is the database where Workload is captured and then the workload will be replayed at Target database.

Step 1 : **Login to Enterprise Manager Database console of Target Database. Then select Software and Support tab and then click on Database Replay**

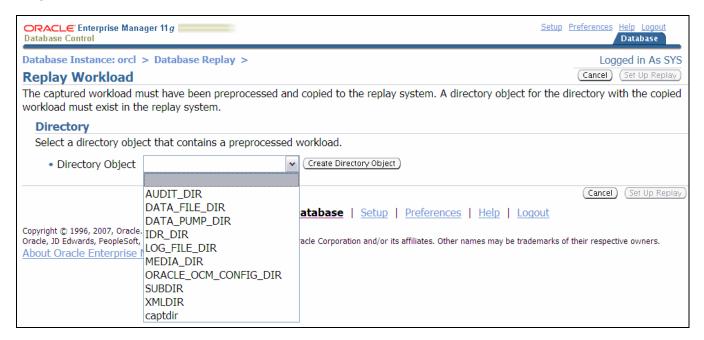**Step 2 :** **To view the Workload reports, Click on** **Go to Task** **against the Task Name** **Replay Workload** **as shown in RED below.**

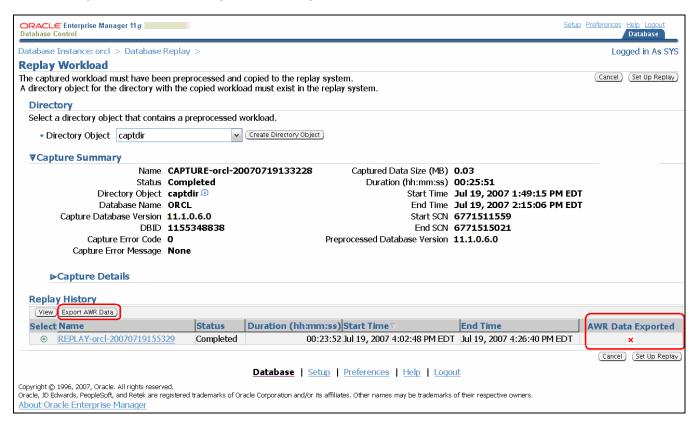**Step 3 :** **Select the appropriate directory used that contains the Capture Workload files on the Target Database server.**

Step 4 : **When you select the Directory objects from the drop-down list, it will show you Replay History information.**

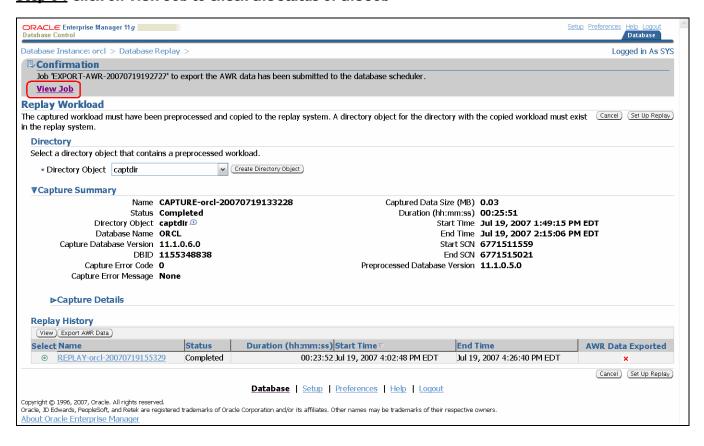**You can Export AWR data if required to analyze it later on as shown in RED below**

Step 5 : **Click on YES to export the AWR data. A job will be submitted to scheduler.**

Step 6 : Click on View Job to check the status of the Job

ORACLE Enterprise Manager 11g   Setup Preferences Help Logout
Database Control   Database

Database Instance: orcl > Database Replay >   Logged in As SYS

Confirmation
Job 'EXPORT-AWR-20070719192727' to export the AWR data has been submitted to the database scheduler.

[View Job]

Replay Workload
The captured workload must have been preprocessed and copied to the replay system. A directory object for the directory with the copied workload must exist   [Cancel] [Set Up Replay]
in the replay system.

Directory
Select a directory object that contains a preprocessed workload.

* Directory Object [captdir   ▼] [Create Directory Object]

▼Capture Summary

Name	CAPTURE-orcl-20070719133228	Captured Data Size (MB)	0.03
Status	Completed	Duration (hh:mm:ss)	00:25:51
Directory Object	captdir ⓘ	Start Time	Jul 19, 2007 1:49:15 PM EDT
Database Name	ORCL	End Time	Jul 19, 2007 2:15:06 PM EDT
Capture Database Version	11.1.0.6.0	Start SCN	6771511559
DBID	1155348838	End SCN	6771515021
Capture Error Code	0	Preprocessed Database Version	11.1.0.5.0
Capture Error Message	None		

▷Capture Details

Replay History
[View] [Export AWR Data]

Select	Name	Status	Duration (hh:mm:ss)	Start Time ▽	End Time	AWR Data Exported
⊙	REPLAY-orcl-20070719155329	Completed	00:23:52	Jul 19, 2007 4:02:48 PM EDT	Jul 19, 2007 4:26:40 PM EDT	✗

[Cancel] [Set Up Replay]

Database | Setup | Preferences | Help | Logout

Step 7 : A Job is successfully completed Click Database to go back to Home page

ORACLE Enterprise Manager 11*g*   Setup Preferences Help Logout
Database Control   Database

Database Instance: orcl > Scheduler Jobs >   Logged in As SYS

View Job: SYS.EXPORT-AWR-20070719192727

[OK]

General

Name **EXPORT-AWR-20070719192727**

Schema SYS

Command

Operation Detail

[View]

Select	Log ID	Log Date ▽	Operation	Status
⊙	893	Jul 19, 2007 7:28:13 PM -04:00	RUN	SUCCEEDED

[OK]

Database | Setup | Preferences | Help | Logout

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Oracle, JD Edwards, PeopleSoft, and Retek are registered trademarks of Oracle Corporation and/or its affiliates. Other names
About Oracle Enterprise Manager

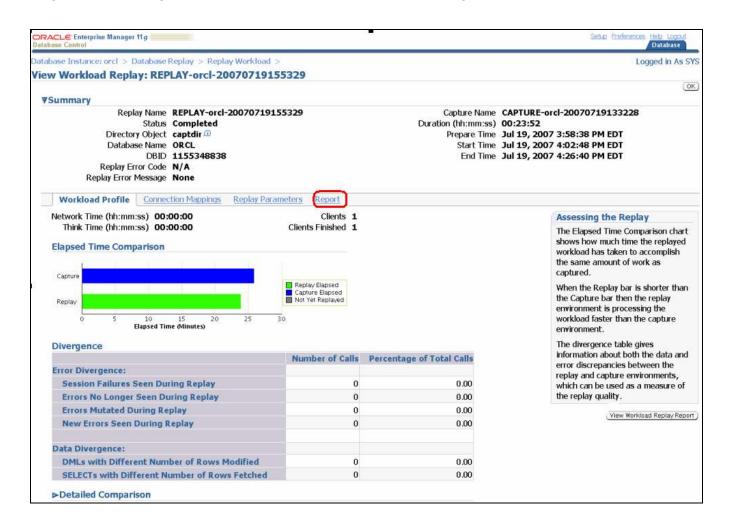DSI DATA SOFTECH INC.
Complete Database Solution Provider

Step 8 : Follow Step 1-3 to go to the following screen to view the Workload Reports. You can see the AWR data is exported now.
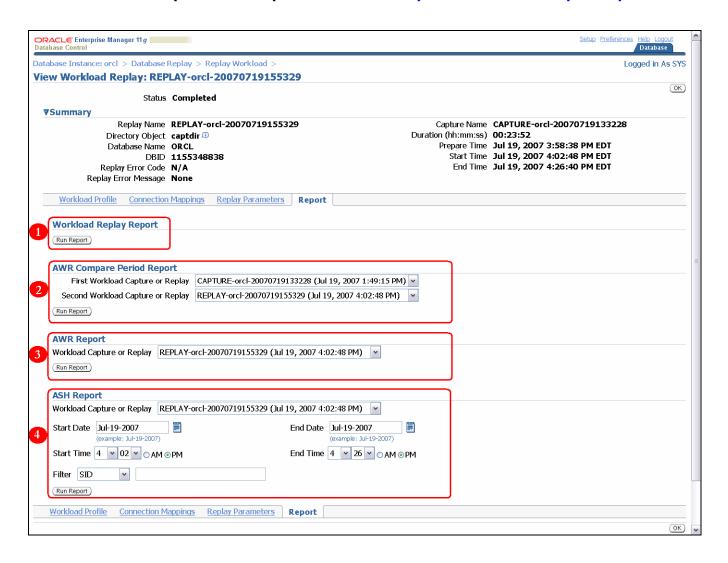
Click View to access the Reports

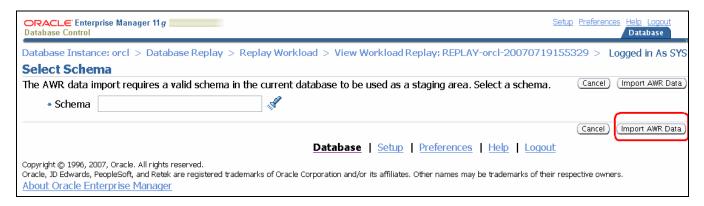**Step 8 :** **Click on Report Tab as show in Red below to view the reports**

Step 8 : **You can run 4 Report to analyze the Workload. The most important one for comparing the workload is AWR compare Period Report. Click on** **Run Report** **to view** **AWR compare Report**
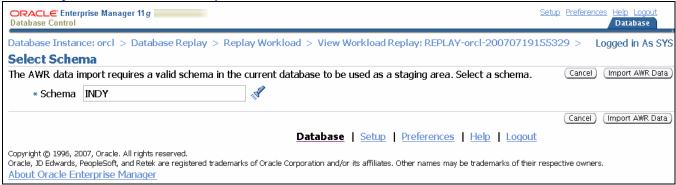
Step 8 : Select SCHEMA that can be used as a staging area and click import AWR data to load the data
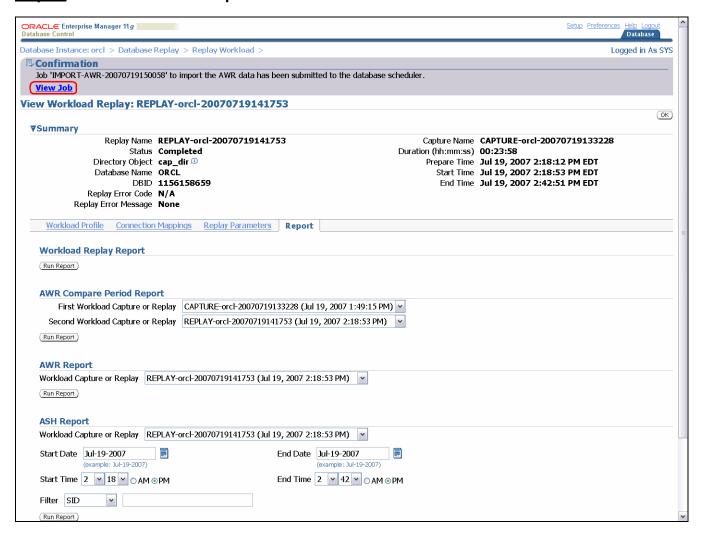

Select Indy as Schema and click Import AWR data

Step 9 : **Job is submitted to Import AWR data and click on** View Job **to check the status of the Job**

Sample Comparison Report

WORKLOAD REPOSITORY COMPARE PERIOD REPORT

Snapshot Set	DB Name	DB Id	Instance	Inst num	Release	Cluster	Host	Std Block Size
First (1st)	ORCL	1908040294	orcl	1	11.1.0.6.0	NO	db02pn	8192
Second (2nd)	ORCL	752664103	orcl	1	11.1.0.6.0	NO	db01pn	8192

Snapshot Set	Begin Snap Id	Begin Snap Time	End Snap Id	End Snap Time	Avg Active Users	Elapsed Time (min)	DB time (min)
1st	216	19-Jul-07 13:49:15 (Thu)	217	19-Jul-07 14:15:04 (Thu)	0.03	25.82	0.86
2nd	16	19-Jul-07 14:18:53 (Thu)	17	19-Jul-07 14:42:48 (Thu)	0.01	23.91	0.16
%Diff					-66.67	-7.40	-81.38

Host Configuration Comparison

	1st	2nd	Diff	%Diff
Number of CPUs:	4	4	0	0.00
Number of CPU Cores:	2	2	0	0.00
Number of CPU Sockets:	2	2	0	0.00
Physical Memory:	16238M	16238M	0M	0.00
Load at Start Snapshot:	.02	.4	.38	1,900.00
Load at End Snapshot:	.47	.17	-.3	-63.83
%User Time:	.64	.46	-.17	-28.13
%System Time:	.26	.08	-.18	-69.23
%Idle Time:	99.1	99.45	.35	0.35
%IO Wait Time:	.25	.03	-.22	-88.00

System Configuration Comparison

	1st	2nd	Diff	%Diff
SGA Target:	0	0	0M	0.00
Buffer Cache:	784M	1,504M	720M	91.84
Shared Pool Size:	352M	416M	64M	18.18
Large Pool Size:	16M	16M	0M	0.00
Java Pool Size:	16M	16M	0M	0.00
Streams Pool Size:	0M	0M	0M	0.00
Log Buffer:	11,372K	10,492K	-880K	-7.74
PGA Aggregate Target:	0	0	0M	0.00
Undo Management:	AUTO	AUTO		

Load Profile

	1st per sec	2nd per sec	%Diff	1st per txn	2nd per txn	%Diff
DB time:	0.03	0.01	-66.67	0.07	0.05	-28.57
CPU time:	0.01	0.01	0.00	0.02	0.04	100.00
Redo size:	3,532.82	1,656.20	-53.12	7,456.10	12,640.09	69.53
Logical reads:	86.08	32.99	-61.68	181.68	251.81	38.60
Block changes:	22.22	6.84	-69.22	46.90	52.24	11.39
Physical reads:	0.17	0.57	235.29	0.37	4.37	1,081.08

Physical writes:	0.94	0.45	*-52.13*	1.98	3.47	*75.25*
User calls:	5.36	3.36	*-37.31*	11.31	25.68	*127.06*
Parses:	6.46	3.14	*-51.39*	13.64	23.94	*75.51*
Hard parses:	0.27	0.10	*-62.96*	0.56	0.79	*41.07*
Sorts:	2.36	1.49	*-36.86*	4.99	11.34	*127.25*
Logons:	0.05	0.01	*-80.00*	0.11	0.10	*-9.09*
Executes:	16.23	10.17	*-37.34*	34.26	77.60	*126.50*
Transactions:	0.47	0.13	*-72.34*			

	1st	2nd	Diff
% Blocks changed per Read:	25.81	20.75	-5.07
Recursive Call %:	92.51	92.92	*0.40*
Rollback per transaction %:	15.94	51.06	*35.12*
Rows per Sort:	13.66	7.05	*-6.60*
Avg DB time per Call (sec):	0.01	0.00	*-0.00*

Top Timed Events

- Events with a "-" did not make the Top list in this set of snapshots, but are displayed for comparison purposes

1st						2nd					
Event	Wait Class	Waits	Time(s)	Avg Time(ms)	%DB time	Event	Wait Class	Waits	Time(s)	Avg Time(ms)	%DB time
CPU time			13.97		27.13	CPU time			8.44		87.99
log buffer space	Configuration	4	4.00	1,000.06	7.77	db file sequential read	User I/O	478	0.68	1.42	7.05
control file parallel write	System I/O	552	2.29	4.15	4.45	control file parallel write	System I/O	509	0.59	1.16	6.17
os thread startup	Concurrency	36	1.17	32.40	2.26	db file scattered read	User I/O	106	0.29	2.72	3.00
log file sequential read	System I/O	352	1.12	3.19	2.18	log file parallel write	System I/O	654	0.24	0.36	2.45
-db file scattered read	User I/O	16	0.73	45.57	1.42	-os thread startup	Concurrency	3	0.09	29.23	0.91
-log file parallel write	System I/O	1,242	0.47	0.38	0.90	-					
-db file sequential read	User I/O	196	0.12	0.59	0.22	-					

Report Details

- **Time Model Statistics**
- **Operating System Statistics**
- **Wait Events**
- **Service Statistics**
- **SQL Statistics**
- **Instance Activity Statistics**
- **IO Stats**
- **Advisory Statistics**
- **Wait Stats**
- **Undo Statistics**
- **Latch Statistics**
- **Segment Statistics**
- **Dictionary Cache Statistics**
- **Libarary Cache Statistics**
- **Memory Statistics**
- **Streams Statistics**

Supplemental Information

- **init.ora Parameters**
- **SQL Statements**

And So On….