**[Osama Mustafa Oracle Blog](http://osamamustafa.blogspot.fr/)**

Oracle is not Magic, it's just years of experience Where I share those experience years with who wants to learn

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**Understand AWR Report**

I mention earlier how to generate AWR , But after you did this how can you read it .

**1) The first thing to be checked in AWR report is the following**:-

Snap Id Snap Time Sessions Cursors/Session

Begin Snap: 112 11-Jun-09 00:00:57 191 6.7  
End Snap: 113 11-Jun-09 01:00:11 173 7.4  
Elapsed: 59.23 (mins)  
DB Time: 710.73 (mins)

Check the "DB Time" metric. If it is much higher than the elapsed time, then it indicates that the sessions are waiting for something.  
  
Here in this example, the Elapsed Time is around 60 minutes while the DB Time is around 700 minutes. This means that 700 minutes of time is spent by the sessions on waiting.  
  
**2) Next thing to be looked is the following:-**

Instance Efficiency Percentages (Target 100%)

Buffer Nowait %: 100.00 Redo NoWait %: 100.00   
Buffer Hit %: 98.67 In-memory Sort %: 100.00   
Library Hit %: 98.60 Soft Parse %: 99.69   
Execute to Parse %: 5.26 Latch Hit %: 99.31   
Parse CPU to Parse Elapsd %: 12.78 %Non-Parse CPU: 99.10

As per the thumb rule, Instance Efficieny Percentages should be ideally above 90%.

**3) Then comes the Shared Pool Statistics**.

Shared Pool Statistics

Begin End   
Memory Usage %: 85.49 80.93   
% SQL with executions>1: 42.46 82.96   
% Memory for SQL w/exec>1: 47.77 81.03

The memory usage statistics of shared pool is shown.  
Idealy this should be lesser. If it is very high like beyond 90, this shows the contention in the shared pool.  
  
  
**4) Next thing to be looked after is the Top 5 Timed Events table.**  
  
This shows the most significant waits contributing to the DB Time.

Top 5 Timed Events

Event Waits Time(s) Avg Wait(ms) % Total Call Time Wait Class   
db file sequential read 4,076,086 28,532 7 66.9 User I/O   
CPU time 11,214 26.3   
Backup: sbtbackup 4 4,398 1,099,452 10.3 Administrative   
log file sync 37,365 2,421 65 5.7 Commit   
log file parallel write 37,928 1,371 36 3.2 System I/O

Here, the significant wait is the db file sequential read which contributes to 67% of DB Time.

**5) Then , SQL Statistics can be checked.**

SQL Statistics

SQL ordered by Elapsed Time   
SQL ordered by CPU Time   
SQL ordered by Gets   
SQL ordered by Reads

SQL Statistics section would have commonly the above four sections.  
  
Each section shows the list of SQLs based on the order of the respective metric.  
For example, SQL ordered by Elapsed Time section shows the list of SQLs in the order  
of the Elapsed Time. High resource consuming SQLs can be spotted out and meant for  
tuning.  
  
Note: All the above four sections of SQL Statistics show the list of SQLs in descending order.  
i.e, For ex: Highest elapsed time is shown as first.  
  
**6) Then comes the IO Stats section.**  
  
This shows the IO Statistics for each tablespaces in the database.  
  
As the thumb rule, the Av Rd(ms) [Average Reads in milliseconds] should not cross beyond 30, add myself(not greater that 30)  
which is considered to be IO bottleneck.

Tablespace IO Stats  
ordered by IOs (Reads + Writes) desc

Tablespace Reads Av Reads/s Av Rd(ms) Av Blks/Rd Writes Av Writes/s Buffer Waits Av Buf Wt(ms)  
TEMP 3,316,082 933 4.91 1.00 28,840 8 0 0.00  
DAT1 520,120 146 16.06 1.21 185,846 52 902 13.00  
DAT3 93,411 26 42.82 2.98 13,442 4 16 23.13  
DAT2 98,171 28 91.97 7.97 5,333 2 325 34.89

In the above example, the Av Rd(ms) is high in all tablespaces indicating the IO contention.  
  
**7) Then , Advisory Statistics can be checked.**  
  
This section shows the following:-

Buffer Pool Advisory   
PGA Aggr Summary   
PGA Aggr Target Stats   
PGA Aggr Target Histogram   
PGA Memory Advisory   
Shared Pool Advisory   
SGA Target Advisory   
Streams Pool Advisory   
Java Pool Advisory

It is very commonly used to check the advisories for the most important SGA structures like shared pool, buffer cache etc and PGA.  
  
**8) Then finally, init.ora Parameters is shown which shows the list of parameters set at instance level.**

init.ora Parameters

All the above said sections except the DB Time can be checked from Statspack report also.  
  
The statspack snapshots are not generated automatically as in AWR.It has to be generated during the problem period as follows:-  
  
Take 2 snapshots between 60 minutes interval during the problem and generate the statspack report

exec statspack.snap  
wait for 60 minutes  
exec statspack.snap

**Please run $ORACLE\_HOME/rdbms/admin/spreport.sql  
and specify BEGIN and END ID's of the snapshots taken during the problem.**  
  
**Some Other Links Will Be Useful :**  
  
**1-**[**statspack examples**](http://jonathanlewis.wordpress.com/statspack-examples/)**.**  
**2-**[**Analyaz statspack**](http://jonathanlewis.wordpress.com/2006/12/27/analysing-statspack-2/)**.**  
**3-**[**Active Session History**](http://www.oracle.com/technetwork/database/focus-areas/manageability/ppt-active-session-history-129612.pdf)**.**  
**4-**[**Statspack Article**](http://www.oracle.com/technetwork/database/focus-areas/performance/statspack-opm4-134117.pdf)**.**  
**5-**[**About Statspack**](http://oracledoug.com/serendipity/index.php?/archives/1153-A-Small-Statspack-Success.html)**.**  
**6-**[**Using Statspack**](http://joordsblog.vandenoord.eu/2009/11/installing-and-using-standby-statspack.html)**.**  
**7-**[**AWR Reports**](http://jonathanlewis.wordpress.com/2011/02/23/awr-reports/)  
  
  
Thank you  
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