

ORATOP

Do lessget more ...

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About Me...

- Oracle and Apps DBA since 2000
- Worked for oracle for the past 7 Years
- Founder Of TopExperts since 2013
- Consult to top customer in Israel
- Board member of iloug



About TopExperts . . .

- Experts services for
 - Oracle Technology
 - MS-Sql , MySql etc ...
 - kdb+ , BigData Solutions



- Business partners of
 - Oracle
 - KX Systems



Agenda

- How to work less and get more
- Let's start with a question ?

What is Oratop ?

- A Text Base utility to monitor Oracle DB
- compatibility
 - 11.2 onwards
 - Unix/Linux OS (no Windows)

What Oratop can do?

- Real-Time Database Monitoring
- Real-Time Database performance
- Identifying contention and bottlenecks
- Not replacement of (ash, addm, awr etc..)

Oratop scope

- Single Instance
- RAC/ASM Aware
- PDB/CDB Aware (12c...)
- Standby Aware , Active Data Guard

How to Install ?

- Download from MOS : **1500864.1**
- And Start use it
- **Error while loading shared libraries:libclntsh.so.12.1**
 - export ORACLE_HOME=<database home>
 - export LD_LIBRARY_PATH=\$ORACLE_HOME/lib
 - export PATH=\$ORACLE_HOME/bin:\$PATH

Lets Start . . .

- `./oratop system@sid`
- `./oratop -f -d -i 10 / as sysdba`



Command line arguments

Command line vs Runtime

d : Real-Time Top 5 Wait Events, section 3.

Specifies Wait Events display mode.

Default: Cumulative

To override the default value

- Command line: **-d**
- Runtime: **d**

k : “FILE#:BLOCK#” for objects being waited on, process section 4.

Specifies “FILE#:BLOCK#” display mode.

Default: EVENT/LATCH

To override the default value

- Command line: **-k**
- Runtime: **k**

m : “MODULE/ACTION”, process section 4.

Specifies “MODULE/ACTION” display mode.

Default: USERNAME/PROGRAM

To override the default value

- Command line: **-m**
- Runtime: **m**

Command line vs Runtime

s : SQL mode of section 4.

Specifies SQL display.

Default: Process mode

To override the default value

- Command line: **-s**
- Runtime: **s**

c : Database Service centric mode.

Displays information based on the database service specified in the connect string.

Default: Connection mode

To override the default value

- Command line: **-c**
- Runtime: **N/A**

f : Long format, (132 columns)

Specifies long format for header & process section.

Default: short (80 columns)

To override the default value

- Command line: **-f**
- Runtime: **f**

p : Process mode of section 4.

process display.

Default: Process mode

To override the default value

- Command line: **-p**
- Runtime: **p**



Command line vs Runtime

t: Displays tablespace information.

Default: N/A

- Command line: N/A
- Runtime: **t**

a: Displays ASM diskgroup information. (no op for non-ASM)

Default: N/A

- Command line: N/A
- Runtime: **a**

x: Displays SQL execution plan table. Requires input of the active SQL sql_id value.

Default: N/A

- Command line: N/A
- Runtime: **x**

i: Interval delay time. (requires value in seconds)

Specifies the delay between update refresh. *A short interval delay (<10s) is not guaranteed for the specified delay. This is particularly true for a loaded system.*

Default: 5 seconds.

To override the default value

- Command line: **-i < number in seconds>**
- Runtime: **i**

Need Help ?

oratom -h

./oratom -h

```
bash-3.2$ ./oratom -h
oratom: Release 14.1.2
Usage:
  oratom [ [Options] [Logon] ]

Logon:
  {username[/password][@connect_identifier] | / }
  [AS {SYSDBA|SYSOPER}]

  connect_identifier:
    o Net Service Name, (TNS) or
    o Easy Connect (host[:port]/[service_name])

Options:
  -d : real-time (RT) wait events, section 3 (default is Cumulative)
  -k : FILE#;BLOCK#, section 4 It is (EVENT/LATCH)
  -m : MODULE/ACTION, section 4 (default is USERNAME/PROGRAM)
  -s : SQL mode, section 4 (default is process mode)
  -c : database service mode (default is connect string)
  -f : detailed format, 132 columns (default: standard, 80 columns)
  -b : batch mode (default is text-based user interface)
  -n : maximum number of iterations (requires number)
  -i : interval delay, requires value in seconds (default: 5s)
  -v : oratom release version number
  -h : this help
```

How we can connect ?

- SqlNet - TNS_ADMIN
- EZ-connect -

Example,
Using Easy Connect (EZConnect)

- Non-default port
`oracp system/manager@dbhost:4800/db1.domain.com`
- Default port (1521):
`oracp system/manager@dbhost/db1.domain.com`

Main Screen

Oracle 11g - Primary gltst 08:32:17 up: 21h, 1 ins, 78 sn, 3 us, 81G at, 0% fra, 4 er, 224% db

| ID | %CPU | LOAD | %DCU | AS | ASC | ASI | ASN | ASP | AST | UST | MBPS | IOPS | IOPL | LOGR | PHYR | PHYW | %FR | PGA | TEMP | UTPS | UCPS | SSRT | DCTR | DWTR | %DBT |
|----|------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| 1 | 74 | 17 | 73 | 26.9 | 14 | 24 | 21 | 1 | 49 | 78 | 147 | 17k | 276u | 13k | 14k | 14k | 36 | 1.3G | 1.7G | 1 | 6 | 560m | 41 | 58 | 100 |

| EVENT (RT) | TOTAL WAITS | TIME(s) | AVG_MS | PCT | WAIT_CLASS |
|-------------------------|-------------|---------|--------|-----|------------|
| db file sequential read | 485261 | 389 | 0 | 100 | User I/O |
| DB CPU | | 0 | | 0 | |

| ID | SID | SPID | USERNAME | PROGRAM | SRV | SERVICE | PGA | SQLID/BLOCKER | OPN | E/T | STA | STE | WAIT_CLASS | EVENT/*LATCH | W/T |
|----|------|-------|----------|---------|-----|---------|------|----------------|-----|-----|-----|-----|------------|-----------------------|------|
| 1 | 960 | 9579 | APPS | P039 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 6m |
| 1 | 1738 | 8939 | APPS | P032 | DED | SYS#USE | 3.7M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 4m |
| 1 | 1903 | 14108 | APPS | P045 | DED | SYS#USE | 4.8M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 2m |
| 1 | 1918 | 8925 | APPS | P025 | DED | SYS#USE | 4.8M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 2m |
| 1 | 197 | 8929 | APPS | P027 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 849u |
| 1 | 765 | 14106 | APPS | P044 | DED | SYS#USE | 5.3M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 828u |
| 1 | 7 | 8927 | APPS | P026 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 741u |
| 1 | 2095 | 8943 | APPS | P034 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 643u |
| 1 | 1164 | 9581 | APPS | P040 | DED | SYS#USE | 4.3M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 570u |
| 1 | 388 | 8931 | APPS | P028 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 559u |
| 1 | 1542 | 8937 | APPS | P031 | DED | SYS#USE | 4.2M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 527u |
| 1 | 1905 | 9587 | APPS | P043 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 417u |
| 1 | 215 | 8945 | APPS | P035 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 407u |
| 1 | 400 | 9573 | APPS | P036 | DED | SYS#USE | 4.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 405u |
| 1 | 1908 | 8941 | APPS | P033 | DED | SYS#USE | 4.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 402u |
| 1 | 594 | 9575 | APPS | P037 | DED | SYS#USE | 3.4M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 383u |
| 1 | 597 | 8933 | APPS | P029 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 319u |
| 1 | 1345 | 9583 | APPS | P041 | DED | SYS#USE | 4.4M | gukbvxi1rr4k5s | SEL | 30s | ACT | CPU | User I/O | cpu runqueue | 301u |
| 1 | 1337 | 8935 | APPS | P030 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 276u |
| 1 | 1531 | 14112 | APPS | P047 | DED | SYS#USE | 5.3M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 262u |
| 1 | 1735 | 9585 | APPS | P042 | DED | SYS#USE | 4.0M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 254u |
| 1 | 1355 | 14110 | APPS | P046 | DED | SYS#USE | 4.0M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 102u |
| 1 | 776 | 9577 | APPS | P038 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 90u |
| 1 | 1720 | 8923 | APPS | P024 | DED | SYS#USE | 3.5M | gukbvxi1rr4k5s | SEL | 30s | ACT | I/O | User I/O | db file sequential re | 31u |

Sections

- ***Header*** – Global Database information
- ***Databases*** – database Instance activity
- ***DB Events*** – AWR like top 5 events
- ***Process/SQL*** – Processes/SQL information

Sections

Header

Database section

```
Oracle 11g - Primary devdb 16:34:26 up: 19d, 1 ins, 27 sn, 6 us, 1.5G mt, 6% sra, 3 er, 8.9% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASP AST UST MBPS IOPS IORL LOGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DBT
1 6 0 5 0.2 0 0 0 0 0 27 0 13 0 1.1k 0 0 21 135M 237M 9 256 240u 120 0 100

EVENT (RT) TOTAL WAITS TIME(s) AVG MS PCT WAIT CLASS
DB CPU 0 44

ID SID SPID USERNAME PROGRAM SRV SERVICE PGA SQLID/BLOCKER OPN E/T STA STE IT CLASS EVENT/*LATCH W/T
```

Process / Sql info
Section

Database Event
section

Header – Global Database information

Oracle DB version

Database Role :
Primary, Secondary

total user sessions
(active/inactive)

number of
distinct users

Db
Name

```
Oracle 11g - Primary LDIS 18:23:07 up: 88d. 1 ins, 220 sn, 5 us, 106G mt, 0% fra, 4 er, 119% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASI AST US MBPS IOPS IORL LGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DET
1 8 5 5 76,7 2 0 70 0 72 220 84 802 0 211k 10k 2,4k 17 1,5G 3,7G 755 914 9m 3 96 100
```

time as of the most
recent stats
(hh24:mi:ss)

Database Uptime, since
startup

total number of
instance(s) , RAC

global database
memory total (sga+pga)

flashback recovery area
%used
(turn red when greater 90%)

```
Oracle 11g - Primary LDS 18:23:07 up: 88d. 1 ins, 220 sn, 5 us, 106G mt, 0% fra, 4 er, 119% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASP AST UST MBPS IOPS IORL LOGR PHYPH PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR IDET
1 8 5 5 76,7 2 0 70 0 72 220 84 802 0 211k 10k 2,4k 17 1,5 3,7G 755 914 9m 3 96 100
```

diag active problem count
(faults)

database time as
%(dbtime/cpu)
(turn red if greater 99%)

Databases – database Instance activity

ID= instance id

%CPU=host cpu busy
%(busy/busy+idle).
(red if > 90%)

AAS=Average
Active Sessions

ASI=active Sessions
waiting on user I/O

```
Oracle11g - Primary LDS 18:23:07 up: 88d, 1 ins, 220 sn, 5 us, 106G mt, 0% fra, 4 er, 119% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASP AST UST MBPS IOPS IORL LOGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DBT
1 8 5 5 76.7 2 0 70 0 72 220 84 802 0 211k 10k 2.4k 17 1.5G 3.7G 755 914 9m 3 96 100
```

LOAD=current os load.
(red if > 2*#cpu)

%DCU=db cpu otusef as
%host cpu. **(red if > 99%)**

ASC=active Sessions on
CPU

ASW=Active Sessions Waiting

ASP=active parallel sessions

AST=Active user Sessions Total (ASC+ASI+ASW)

```
Oracle 11g - Primary LDS 18:23:01 up: 88d, 1 ins, 220 sn, 5 us, 106G mt, 0% fra, 4 er, 119% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASP AST UST MBPS IOPS IORL LOGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DBT
1 8 5 5 76.7 2 0 70 0 72 220 84 802 0 211k 10k 2.4k 17 1.5G 3.7G 755 914 9m 3 96 100
```

UST=user Sessions Total (Active/Inactive)

MBPS=i/o megabytes per second (throughput)

IOPS=i/o requests per second

ASW=Active Sessions Waiting

ASP=active parallel sessions

AST=Active user Sessions Total (ASC+ASI+ASW)

PHYR=physical writes per sec

```
Oracle 11g - Primary LDS 18:23:01 up: 88d, 1 ins, 220 sn, 5 us, 106G wr, 0% fra, 4 er, 119% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASP AST UST MBPS IOPS IORL LOGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DBT
1 8 5 5 76.7 2 0 70 0 72 220 84 802 0 211k 10k 2.4k 17 1.5G 3.7G 755 914 9m 3 96 100
```

IORL=avg synchronous single-block read latency (red if > 20ms)

LOGR=logical reads per sec

PHYR=physical reads per sec

PHYW=physical writes per sec

%FR=shared pool free %

PGA==total pga allocated

TEMP=temp space used

```
Oracle 11g - Primary LDS 18:23:07 up: 88d, 1 ins, 220 sn, 5 us, 106G mt, 0% fra, 4 er, 119% db
ID %CPU LOAD %DCU AAS ASC ASI ASW ASP AST UST MBPS IOPS IORL LOGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DBT
1 8 5 5 76,7 2 0 70 0 72 220 84 802 0 211k 10k 2,4k 17 1,5G 3,7G 755 914 9m 3 96 100
```

UTPS=user transactions per sec

UCPS=user calls per sec

SSRT=sql service response time

DB Events – AWR like top 5 events

Top 5 Timed Events

- o Cluster-wide, non-idle
- o Ordered by wait time desc

wait event name

total waits

total wait time in seconds

| EVENT (RT) | TOTAL WAITS | TIME(s) | AVG_MS | PCT | WAIT_CLASS |
|---------------------------|-------------|---------|--------|-----|-------------|
| DB CPU | | 245088 | | 56 | |
| cursor: pin S wait on X | 14900003 | 192624 | 0.1 | 44 | Concurrency |
| library cache: mutex X | 1962513 | 1445 | 0 | 0 | Concurrency |
| library cache lock | 240 | 900 | 37.5 | 0 | Concurrency |
| SQL*Net message to client | 105 | 0 | 0 | 0 | Network |

| EVENT (C) | TOTAL WAITS | TIME(s) | AVG_MS | PCT | WAIT_CLASS |
|-------------------------|-------------|---------|--------|-----|------------|
| DB CPU | | 464200 | | 48 | |
| db file sequential read | 1,400E+08 | 270444 | 1.9 | 28 | User I/O |
| direct path read | 1816829 | 102233 | 56.3 | 11 | User I/O |
| resmgr:cpu quantum | 3440516 | 88660 | 25.8 | 9 | Scheduler |
| direct path read temp | 2520009 | 45221 | 17.9 | 5 | User I/O |

average wait time
in milliseconds

percent of wait time
(all events)

name of the
wait class

Processes/SQL information

SERVER (dedicated, shared, etc.)

Pga used for the session

session elapsed time

| ID | SID | SPIID | USERNAME | PROGRAM | SRV | SERVICE | PGA | SQLID/BLOCKER | OPN | E/T | STA | STE | WAIT_CLASS | EVENT/*LATCH | W/T |
|----|------|--------|----------|-----------|-----|---------|------|---------------|-----|------|-----|-----|------------|-----------------------|------|
| 1 | 243 | 68187 | LDS_APP | JDBC Thin | DED | LDS | 3.6M | 2yqsa6b06v4yv | SEL | 508s | ACT | WAI | Concurrenc | cursor: pin S wait on | 508s |
| 1 | 753 | 79644 | LDS_APP | JDBC Thin | DED | LDS | 1.0M | 2yqsa6b06v4yv | SEL | 505s | ACT | WAI | Concurrenc | cursor: pin S wait on | 506s |
| 1 | 28 | 38911 | LDS_APP | JDBC Thin | DED | LDS | 2.4M | 2yqsa6b06v4yv | SEL | 498s | ACT | WAI | Concurrenc | cursor: pin S wait on | 498s |
| 1 | 962 | 114176 | LDS_APP | JDBC Thin | DED | LDS | 2.1M | 2yqsa6b06v4yv | SEL | 486s | ACT | WAI | Concurrenc | cursor: pin S wait on | 486s |
| 1 | 1495 | 110438 | LDS_APP | JDBC Thin | DED | LDS | 2.4M | 2yqsa6b06v4yv | SEL | 482s | ACT | WAI | Concurrenc | cursor: pin S wait on | 482s |
| 1 | 771 | 79646 | LDS_APP | JDBC Thin | DED | LDS | 1.2M | 2yqsa6b06v4yv | SEL | 467s | ACT | WAI | Concurrenc | cursor: pin S wait on | 468s |
| 1 | 603 | 44520 | LDS_APP | JDBC Thin | DED | LDS | 1.9M | 2yqsa6b06v4yv | SEL | 466s | ACT | WAI | Concurrenc | cursor: pin S wait on | 466s |
| 1 | 1374 | 81054 | LDS_APP | JDBC Thin | DED | LDS | 1.2M | 2yqsa6b06v4yv | SEL | 458s | ACT | WAI | Concurrenc | cursor: pin S wait on | 459s |

Sql_id OR Blocker (instance:sid)

Operation eg, select, update create index

ACTIVE | **INACTIVE** | **KILLED**

Process state

wait_class for the
named event

event wait time

| ID | SID | SPIID | USERNAME | PROGRAM | SRV | SERVICE | PGA | SQLID/BLOCKER | OPN | E/T | STA | STE | WAIT_CLASS | EVENT/*LATCH | W/T |
|----|------|--------|----------|-----------|-----|---------|------|---------------|-----|------|-----|-----|------------|-----------------------|------|
| 1 | 243 | 68187 | LDS_APP | JDBC Thin | DED | LDS | 3.6M | 2yqsq6b06v4yv | SEL | 508s | ACT | WAI | Concurrenc | cursor: pin S wait on | 508s |
| 1 | 753 | 79644 | LDS_APP | JDBC Thin | DED | LDS | 1.0M | 2yqsq6b06v4yv | SEL | 505s | ACT | WAI | Concurrenc | cursor: pin S wait on | 506s |
| 1 | 28 | 38911 | LDS_APP | JDBC Thin | DED | LDS | 2.4M | 2yqsq6b06v4yv | SEL | 498s | ACT | WAI | Concurrenc | cursor: pin S wait on | 498s |
| 1 | 962 | 114176 | LDS_APP | JDBC Thin | DED | LDS | 2.1M | 2yqsq6b06v4yv | SEL | 486s | ACT | WAI | Concurrenc | cursor: pin S wait on | 486s |
| 1 | 1495 | 110438 | LDS_APP | JDBC Thin | DED | LDS | 2.4M | 2yqsq6b06v4yv | SEL | 482s | ACT | WAI | Concurrenc | cursor: pin S wait on | 482s |
| 1 | 771 | 79646 | LDS_APP | JDBC Thin | DED | LDS | 1.2M | 2yqsq6b06v4yv | SEL | 467s | ACT | WAI | Concurrenc | cursor: pin S wait on | 468s |
| 1 | 603 | 44520 | LDS_APP | JDBC Thin | DED | LDS | 1.9M | 2yqsq6b06v4yv | SEL | 466s | ACT | WAI | Concurrenc | cursor: pin S wait on | 466s |
| 1 | 1374 | 81054 | LDS_APP | JDBC Thin | DED | LDS | 1.2M | 2yqsq6b06v4yv | SEL | 458s | ACT | WAI | Concurrenc | cursor: pin S wait on | 459s |
| 4 | 505 | 438508 | LDS_APP | JDBC Thin | DED | LDS | 1.9M | 2yqsq6b06v4yv | SEL | 455s | ACT | WAI | Concurrenc | cursor: pin S wait on | 455s |

session wait event name

Extended keys

Explain Plan

- Hit the “x” and enter the sql_id
- Will display the actual plan

```

Oracle 11g - Primary: 08:42:17 up: 21h, 1 ins, 77 sn, 3 us, 81G at, 0% fra, 4 er, 132% db
DB CPU LOAD %DDBU PAS SSC ASI ASH ASP AST USI MBPS IOFS IOCL LOGR RHW RHW XPR PGA TEMP UFPS UFPS SSRT DCTR DWTR XDBT
1 96 15 95 15.9 12 3 35 9 49 77 510 649 226u 63k 61k 1.5k 36 1.3G 1.3G 1 5 70m 74 25 100

EVENT (RT) TOTAL WAITS TIME(s) AVG_MS PCT WAIT_CLASS
direct path read 199601 79 0 65 User I/O
PX qref latch 141285 41 0 35 Other
DB CPU 0 0

ID SID SPID USERNAME PROGRAM SRV SERVICE PGA SOLID/BLOCKER OPN E/T STA STE WAIT_CLASS EVENT/*LATCH W/T
1 1164 9581 APPS P040 DED SYS+USE 5.6M 4nw4asjppqr16 SEL 460s ACT I/O User I/O direct path read 87%
1 1738 9585 APPS P042 DED SYS+USE 5.2M 4nw4asjppqr16 SEL 460s ACT CPU User I/O cpu runqueue 21%
1 1352 9583 APPS P041 DED SYS+USE 6.8M 4nw4asjppqr16 SEL 460s ACT CPU Other cpu runqueue 1%

Enter sql_id: 4nw4asjppqr16

PLAN_TABLE_OUTPUT
-----
SQL_ID: 4nw4asjppqr16, child number 0
-----
SELECT /*+ PARALLEL(T,260) PARALLEL_INDEX(T,260) DBMS_STATS
CURSOR_SHARING_EXACT USE_WEAK_NAME_RESL DYNAMIC_SAMPLING(0) NO_MONITORING
NO_SUBSTRB_PAD */COUNT(*), COUNT("PROJECT_TO_DATE_DR_BEQ"), COUNT(DISTINCT
"PROJECT_TO_DATE_DR_BEQ"), SUM(SYS_OP_OPNSIZE("PROJECT_TO_DATE_DR_BEQ")),
SUBSTRB(DUMP(MIN("PROJECT_TO_DATE_DR_BEQ"),16,0,32),1,120),
SUBSTRB(DUMP(MAX("PROJECT_TO_DATE_DR_BEQ"),16,0,32),1,120),
COUNT("PROJECT_TO_DATE_CR_BEQ"), COUNT(DISTINCT "PROJECT_TO_DATE_CR_BEQ"),
SUM(SYS_OP_OPNSIZE("PROJECT_TO_DATE_CR_BEQ")),
SUBSTRB(DUMP(MIN("PROJECT_TO_DATE_CR_BEQ"),16,0,32),1,120),
SUBSTRB(DUMP(MAX("PROJECT_TO_DATE_CR_BEQ"),16,0,32),1,120),
COUNT("QUARTER_TO_DATE_DR"), COUNT(DISTINCT "QUARTER_TO_DATE_DR"),
SUM(SYS_OP_OPNSIZE("QUARTER_TO_DATE_DR")),
SUBSTRB(DUMP(MIN("QUARTER_TO_DATE_DR"),16,0,32),1,120),
SUBSTRB(DUMP(MAX("QUARTER_TO_DATE_DR"),16,0,32),1,120),
COUNT("QUARTER_TO_DATE_CR"), COUNT(DISTINCT "QUARTER_TO_DATE_CR"),
SUM(SYS_OP_OPNSIZE("QUARTER_TO_DATE_CR")), SUBSTRB(DUMP(MIN("QUA

Plan hash value: 1797687188
-----
| Id | Operation | Name | Rows | Cost | Stale |
|----|-----|-----|-----|-----|-----|
| 0 | SELECT STATEMENT | | | | |
| 1 | SORT GROUP BY | | | | |
| 2 | PX COORDINATOR | | | | |
| 3 | PX SEND QC (RANDOM) | :TQ10001 | 1 | | |
| 4 | SORT GROUP BY | | | | |
| 5 | PX RECEIVE | | | | |
| 6 | PX SEND HASH | :TQ10000 | 1 | | |
| 7 | SORT GROUP BY | | | | |
| 8 | PX BLOCK ITERATOR | | 211M | 23k | |
| 9 | TABLE ACCESS SAMPLE BY ROWID RANGE | GL_BALANCES | 211M | 23k | NO

press Enter to return
    
```


Space check

- Hit the “t” for non-ASM
- Hit the “a” for ASM and diskgroups

```

Oracle 11g - Primary prod  22:25:28 up: 1.7h,  1 ins,  1 sn,  1 us, 1.1G mt,  28% fra,  0 er,  0.4% db
ID %CPU LOAD %DCU  AAS  ASC  ASI  ASW  ASP  AST  UST MBPS IOPS IORL LOGR PHYR PHYW  %FR  PGA TEMP UTPS UCPS SSRT DCTR DWTR  %DBT
1   0   0   0   0   0   0   0   0   0   1   0   9   3u   0   0   0   25  201M 1.0M  0   1 990u  78  21  100

EVENT (RT)                                TOTAL WAITS  TIME(s)  AVG MS  PCT                                WAIT CLASS
DB CPU                                     1011      1011     100
ARCH wait on ATTACH                       3020      1011     3.3  100                                Network

ID  SID  SPID USERNAME  PROGRAM  SRV  SERVICE  PGA  SQLID/BLOCKER  OPN  E/T  STA  STE  WAIT CLASS  EVENT/*LATCH  W/T
1   60   3874 B/G      ARCO      DED  SYS$BAC  17M                1.7h  ACT  WAI  Network  ARCH wait on ATTACH  11s

TABLESPACE INFORMATION:

TABLESPACE_NAME          SIZE  USED  USE%  STATUS  BIG  NDBF  LOGGING  CONTENTS  EXTENT_MAN  SEGMENT  RETENTION  ENC
-----
SYSAUX                   32G  143M  0.4  ONLINE  NO   1  LOGGING  PERMANENT  LOCAL      AUTO      NOT APPLY  NO
SYSTEM                   32G  303M  0.9  ONLINE  NO   1  LOGGING  PERMANENT  LOCAL      MANUAL    NOT APPLY  NO
TEMP                     32G  1.0M  0    ONLINE  NO   1  NOLOGGING  TEMPORARY  LOCAL      MANUAL    NOT APPLY  NO
UNDOTBS1                 32G  12M   0    ONLINE  NO   1  LOGGING  UNDO       LOCAL      MANUAL    NOGUARANTEE  NO
USERS                    32G  1.0M  0    ONLINE  NO   1  LOGGING  PERMANENT  LOCAL      AUTO      NOT APPLY  NO
-----
Total:                   160G  460M  0.3

press Enter to return
  
```

ENC=encrypted

Asm Diskgroup info

```

Oracle 12c - PDB 23:18:21 up: 2.8d, 4 ins, 327 sn, 2 us, 406G mt, 37.8% db
ID %CPU LOAD %DCU AAS ASC ASI ASW AST IOPS %FR PGA UTPS UCPS SSRT %DBT
3 18 7 14 13.3 5 0 5 10 2.1k 83 1.7G 375 3.6k 3m 27.5
2 18 7 13 12.9 5 0 2 7 1.9k 84 3.6G 345 3.4k 3m 26.7
1 18 6 13 11.8 5 1 3 9 1.9k 81 1.2M 358 3.6k 4m 24.5
4 18 6 13 10.3 5 0 4 9 2.0k 83 555M 344 3.3k 3m 21.3

EVENT (C) TOT WAITS TIME(s) AVG_MS PCT WAIT_CLASS
enq: TX - index contention 1.078E+08 7256233 64.9 33 Concurrency
enq: TX - allocate ITL entry 3809488 5658662 1456.0 26 Configuration
gc buffer busy acquire 3.143E+08 4015223 14.6 18 Cluster
DB CPU 2659118 12
enq: TX - row lock contention 3491430 2123575 580.3 10 Application

ID SID SPID USR PROG S PGA SQLID/BLOCKER OPN E/T STA STE EVENT/*LA W/T
4 1260 28413 BT JDBC D 2.5M dcv5358a.izbsn UPD 1.0s ACT WAI enq: TX - 552m

ASM DISKGROUP INFORMATION:

INST_ID DISKGROUP_NAME SIZE FREE %USED HOTTU COLD STATE TYPE OFF
-----
1 DATA 1.0T 917G 8.3 0 83G CONNECTED NORMAL 1
1 RECO 1.0T 153G 84.7 0 848G CONNECTED NORMAL 1
2 DATA 1.0T 917G 8.3 0 83G CONNECTED NORMAL 1
2 RECO 0 0 0 0 0 DISMOUNTED 0
  
```

Number of bytes in hot region

Number of bytes in the cold region

State of disk group relative to the instance

Redundancy type: external ,normal, high

Number of disk in the DG offline

DataGuard

Oracle 12c - Standby db2 20:14:54 up: 1.9d, 2 ins, 26 sn,

| ID | %CPU | LOAD | %DCU | AAS | ASC | ASI | ASW | ASP | AST | UST | MBPS | IOPS |
|----|------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|
| 2 | 3 | 1 | 2 | 0.8 | 1 | 0 | 2 | 0 | 3 | 4 | 0 | 48 |
| 1 | 68 | 12 | 66 | 12.6 | 9 | 0 | 2 | 0 | 11 | 22 | 7 | 1.2k |

EVENT (C)

DB CPU
Data Gua

gc cr mu 3 us, 9G mt, 15% fra, 0 er, ar 533kps, 41.7% db
reliable IOURL LOGR PHYR PHYW %FR PGA TEMP UTPS UCPS SSRT DCTR DWTR %DBT
control 141u 8.6k 0 0 12 427M 0 0 44 13m 46 53 5.9
2m 1.4M 0 122 11 921M 0 0 175 61m 87 12 94.1

| ID | SID | TOTAL WAITS | TIME(s) | AVG_MS | PCT | WAIT_CLASS |
|----|------|-------------|---------|--------|-----|------------|
| 2 | 1708 | | | | | |
| 1 | 1140 | | 683202 | | 75 | |
| 1 | 1519 | 8391352 | 110346 | 13.2 | 12 | Other |
| 1 | 2276 | 29209126 | 56195 | 1.9 | 6 | Cluster |
| 1 | 388 | 33020277 | 33158 | 0.9 | 4 | Other |
| 1 | 764 | 20499067 | 31119 | 1.0 | 3 | System I/O |
| 1 | 1330 | | | | | |
| 1 | E | | | | | |

| OPER | OPN | E/T | STA | STE | WAIT_CLASS | EVENT/*LATCH | W/T |
|-------|-----|------|-----|-----|------------|-------------------------|------|
| .07fg | SEL | 5.0s | ACT | WAI | Cluster | gc cr multi block reque | 241u |
| x6b6 | SEL | 0 | ACT | CPU | Concurrenc | cpu runqueue | 182u |
| .07fg | SEL | 1.0s | ACT | CPU | Concurrenc | cpu runqueue | 107u |
| x6b6 | SEL | 0 | ACT | CPU | Concurrenc | cpu runqueue | 94u |
| w250 | SEL | 0 | ACT | CPU | Concurrenc | cpu runqueue | 91u |
| .07fg | SEL | 0 | ACT | CPU | Concurrenc | cpu runqueue | 87u |
| .07fg | SEL | 0 | ACT | CPU | Network | cpu runqueue | 9u |
| .07fg | SEL | 1.0s | ACT | CPU | Network | cpu runqueue | 7u |

Archive Apply Rate

DataGuard

```
oracle@aws1-db-1:~/oratop
Oracle 11g - Standby stdbt          up: 113s,  1 ins,  3 sn,  1 us, 6.0G mt,  0% fra,  0 er, ar  0ps,  0% db
ID %CPU LOAD %DCU  AAS  ASC  ASI  ASW  ASP  AST  UST MBPS IOPS IORL LOGR PHYR PHYW  %FR  PGA TEMP UTPS UCPS SSRT DCTR DWTR  %DBI
EVENT (RT)                                TOTAL WAITS  TIME(s)  AVG MS  PCT                                WAIT CLASS
DB CPU                                     87          100
MRP wait on archivelog arrival            957         95        1.0    100                                Other

ID  SID  SPID USERNAME  PROGRAM  SRV  SERVICE  PGA  SQLID/BLOCKER OPN  E/T  STA  STE  WAIT CLASS  EVENT/*LATCH  W/T
1   9    2003 F/G     PR00     DED  SYS$USE 7.6M                101s ACT  WAI  Other      MRP wait on archivelog 38m
```

Connecting to CDB

Oracle 12c - Primary **cdb1** 21:15:21 up: 13d, 2 ins, 203 sn,

| ID | %CPU | LOAD | %DCU | AAS | ASC | ASI | ASW | ASP | AST | UST | MBPS | IOPS |
|----|------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|
| 2 | 19 | 4 | 18 | 4.1 | 11 | 0 | 1 | 0 | 12 | 121 | 0 | 7 |
| 1 | 45 | 10 | 44 | 10.0 | 3 | 0 | 0 | 0 | 3 | 82 | 0 | 3 |

EVENT (C)
DB CPU
 gc buff: 2 us, 19G mt, 53% fra, 2 er, **3 pdb**, 29.4% db
 reliable
 gc cr b
 enq: TX

| ORL | LOGR | PHYR | PHYW | %FR | PGA | TEMP | UTPS | UCPS | SSRT | DCTR | DWTR | %DBT |
|-----|------|------|------|-----|------|------|------|------|------|------|------|------|
| 1m | 831k | 0 | 0 | 11 | 998M | 0 | 0 | 98 | 35m | 99 | 0 | 29.4 |
| 5u | 1.5M | 0 | 0 | 40 | 886M | 0 | 0 | 61 | 117m | 99 | 0 | 70.6 |

ID CID U

| ID | CID | U | TOTAL WAITS | TIME(s) | AVG_MS | PCT | WAIT_CLASS |
|----|-----|---|-------------|----------|--------|-----|-------------|
| 2 | 3 | B | | 1.92E+07 | | 94 | |
| 1 | 3 | B | 49089366 | 452325 | 8.8 | 2 | Cluster |
| | | | 37478911 | 288897 | 6.9 | 1 | Other |
| | | | 1.684E+08 | 214083 | 1.2 | 1 | Cluster |
| | | | 86331 | 210404 | 2804.9 | 1 | Application |

TEXT X ELAP CPUT IOWT WAIT EXEC ROWS BUFG DISK BH% LOAD

| | | | | | | | | | | | |
|----------|---|------|------|-----|------|------|---|------|---|-----|---|
| t c,name | S | 2.2s | 2.1s | 77u | 303u | 146k | 7 | 6.4k | 0 | 100 | 2 |
| t c,name | S | 2.0s | 2.0s | 0 | 6u | 373k | 7 | 2.6k | 0 | 100 | 1 |

3 pdb (not including the cdb)

Connecting to PDB

Oracle 12c - Primary **PDB1** 21:51:21 up; 13d, 2 ins, 103 sn,

| ID | %CPU | LOAD | %DCU | AAS | ASC | ASI | ASW | ASP | AST | UST | MBPS | IOPS |
|----|------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|
| 2 | 18 | 4 | 17 | 3.6 | 1 | 0 | 1 | 0 | 2 | 21 | 0 | 6 |
| 1 | 45 | 12 | 44 | 10.5 | 18 | 0 | 0 | 0 | 18 | 82 | 0 | 5 |

EVENT (C)

DB CF''

gc bu 2 us, 19G mt, 53% fra, 2 er, **cid: 3**, 29.3% db

relia

gc cr

enq:

| ID | U | IORL | LOGR | PHYR | PHYW | %FR | PGA | TEMP | UTPS | UCPS | SSRT | DCTR | DWTR | %DBT |
|----|---|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| | | 876u | 764k | 0 | 0 | 11 | 986M | 0 | 0 | 96 | 34m | 99 | 0 | 25.3 |
| | | 556u | 1.5M | 0 | 0 | 40 | 894M | 0 | 0 | 63 | 110m | 99 | 0 | 74.7 |

| ID | U | TOTAL WAITS | TIME(s) | AVG_MS | PCT | WAIT_CLASS |
|----|---|-------------|----------|--------|-----|-------------|
| 1 | I | | 1.90E+07 | | 94 | |
| 1 | I | 49058463 | 452235 | 8.8 | 2 | Cluster |
| 1 | I | 35150236 | 275448 | 6.8 | 1 | Other |
| | | 1.679E+08 | 213570 | 1.2 | 1 | Cluster |
| | | 86310 | 210400 | 2805.6 | 1 | Application |

| XT | X | ELAP | CPUT | IOWT | WAIT | EXEC | ROWS | BUFG | DISK | BH% | LOAD |
|-------------|---|------|------|------|------|------|------|------|------|-----|------|
| c.name, c | S | 2.0s | 2.0s | 0 | 6u | 378k | 7 | 6.4k | 0 | 100 | 7 |
| o.custid, S | S | 1.1s | 1.0s | 0 | 9u | 378k | 7 | 1.8k | 0 | 100 | 1 |
| prodid, p | S | 947m | 928m | 0 | 3u | 504k | 7 | 8.2k | 0 | 100 | 5 |

Demo

Useful info

- MOS note: 1500864.1
 - Installation
 - Download
 - manual

- Abbreviations:

- [N/B]: count(N)/ Byte(B) - (k)illo, (M)ega, (G)iga, (T)erra, [PEZY]
- [T] : Time - (u)micro, (m)illi, (s)econd, (h)our, (d)ay, (y)ear
- [m/s]: stats interval size, (m) 1 minute, (s) 15s, else, Real Time

- Limitations

- Run on oracle client 11.2 and 12cR1
- Statistic_level=Typical

ORATOP

Do lessget more ...

Gadi Chen

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