



Lost Without a Trace

SAGE Computing Services
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- **Using trace 10053**
- **Using trace 10046**
- **Including bind variable**
- **Setting application details**
- **Consolidating trace files**
- **Writing applications that allow tracing**



Trace 10053



Trace 10053

- ➡ Trace optimiser decisions
- ➡ Not formatted with tkprof
- ➡ ALTER SESSION SET EVENTS '10053 trace name context forever, level 1'
- ➡ ALTER SESSION SET EVENTS '10053 trace name context off';
- ➡ File in user_dump_dest
- ➡ Only on hard parse



Trace 10053 - Example

ALTER SESSION

SET EVENTS

'10053 trace name context forever, level 1';

SELECT b.resource_code, b.cost

FROM events e, bookings b

WHERE e.event_no = b.event_no

AND e.org_id = 1030;



ora10g_ora_3028.trc



Trace 10053 File – Initialisation Parameters

```
*****
PARAMETERS USED BY THE OPTIMIZER
*****

*****
PARAMETERS WITH ALTERED VALUES
*****
db_file_multiblock_read_count      = 16
*****

PARAMETERS WITH DEFAULT VALUES
*****
optimizer_mode_hinted               = false
optimizer_features_hinted           = 0.0.0
parallel_execution_enabled          = true
parallel_query_forced_dop            = 0
parallel_dml_forced_dop              = 0
parallel_ddl_forced_degree           = 0
parallel_ddl_forced_instances        = 0
_query_rewrite_fudge                = 90
optimizer_features_enable            = 10.1.0
_optimizer_search_limit              = 5
cpu_count                           = 2
active_instance_count                = 1
parallel_threads_per_cpu             = 2
hash_area_size                      = 131072
bitmap_merge_area_size               = 1048576
sort_area_size                      = 65536
sort_area_retained_size              = 0
_sort_elimination_cost_ratio         = 0
_optimizer_block_size                = 8192
_sort_multiblock_read_count          = 2
_hash_multiblock_io_count            = 0
_optimizer_max_permutations          = 2000
pga_aggregate_target                 = 24576 KB
*****
```

Check for Optimizer Mode and other session variables

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Trace 10053 File – Table, Column and Index Stats

```
Column Usage Monitoring is ON: tracking level = 1
*****
QUERY BLOCK SIGNATURE
*****
qb name was generated
signature (optimizer): qb_name=SEL$1 nbfros=2 flg=0
  fro(0): flg=0 objn=53694 hint_alias="B"@"SEL$1"
  fro(1): flg=0 objn=53686 hint_alias="E"@"SEL$1"
*****
BASE STATISTICAL INFORMATION
*****
Table stats      Table: BOOKINGS  Alias: B
TOTAL ::  CDN: 30  NBLKS: 1  AVG_ROW_LEN: 35
COLUMN:  EVENT_NO(NUMBER)  Col#: 2      Table: BOOKINGS  Alias: B
Size: 4  NDV: 11  Nulls: 0  Density: 1.6667e-002
Frequency Histogram: #BKT: 11
(30 uncompressed buckets and 11 endpoint values)
Index stats
Index: BK_EVT  COL#: 2
TOTAL ::  LVLS: 0  #LB: 1  #DK: 11  LB/K: 1  DB/K: 1  CLUF: 1
Index: BK_RES  COL#: 3
TOTAL ::  LVLS: 0  #LB: 1  #DK: 9  LB/K: 1  DB/K: 1  CLUF: 1
Index: BOOK_PK  COL#: 1
TOTAL ::  LVLS: 0  #LB: 1  #DK: 30  LB/K: 1  DB/K: 1  CLUF: 1
*****
Table stats      Table: EVENTS  Alias: E
TOTAL ::  CDN: 12  NBLKS: 1  AVG_ROW_LEN: 62
COLUMN:  EVENT_NO(NUMBER)  Col#: 1      Table: EVENTS  Alias: E
Size: 4  NDV: 12  Nulls: 0  Density: 8.3333e-002  Min: 100  Max: 226
No Histogram: #BKT: 1
(1 uncompressed buckets and 2 endpoint values)
Index stats
Index: EVT_PK  COL#: 1
TOTAL ::  LVLS: 0  #LB: 1  #DK: 12  LB/K: 1  DB/K: 1  CLUF: 1
_OPTIMIZER_PERCENT_PARALLEL = 0
*****
```



Trace 10053 File – Single Table Access Paths

```
*****
SINGLE TABLE ACCESS PATH
COLUMN:      ORG_ID(NUMBER)  Col#: 2      Table: EVENTS  Alias: E
Size: 4 NDV: 6 Nulls: 0 Density: 4.1667e-002
Frequency Histogram: #BKT: 6
              (12 uncompressed buckets and 6 endpoint values)
TABLE: EVENTS Alias: E
Original Card: 12 Rounded Card: 1 Computed Card: 0.50
Access Path: table-scan Resc: 2 Resp: 2
BEST_CST: 2.00 PATH: 2 Degree: 1
*****
SINGLE TABLE ACCESS PATH
TABLE: BOOKINGS Alias: B
Original Card: 30 Rounded Card: 30 Computed Card: 30.00
Access Path: table-scan Resc: 2 Resp: 2
BEST_CST: 2.00 PATH: 2 Degree: 1
*****
```


Trace 10053 File – Join Order and Mechanism [1]

```
*****
GENERAL PLANS
*****
Join order[1]:  EVENTS[E]#0  BOOKINGS[B]#1
Now joining: BOOKINGS[B]#1 *****
NL Join
  Outer table: cost: 2  cdn: 1  rcz: 8  resp: 2
  Inner table: BOOKINGS Alias: B
    Access Path: table-scan Resc: 2
    Join: Resc: 4  Resp: 4
    Access Path: index (join index)
      Index: BK_EVT
      rsc_cpu: 8441  rsc_io: 1
      ix_sel: 0.0000e+000  ix_sel_with_filters: 9.0909e-002
      NL Join: resc: 3  resp: 3
    Best NL cost: 3  resp: 3
Join cardinality: 1 = outer (1) * inner (30) * sel (9.0909e-002) [flag=0]
SM Join
  Outer table:
    resc: 2  cdn: 1  rcz: 8  deg: 1  resp: 2
  Inner table: BOOKINGS Alias: B
    resc: 2  cdn: 30  rcz: 12  deg: 1  resp: 2
    using join:1 distribution:2 #groups:1
  SORT resource      Sort statistics
    Sort width:      5 Area size:      131072 Max Area size:      1257472
    Degree:          1
    Blocks to Sort:  1 Row size:          19 Total Rows:          1
    Initial runs:    1 Merge passes:      0 IO Cost / pass:      0
    Total IO sort cost: 0      Total CPU sort cost: 23351136
    Total Temp space used: 0
  SORT resource      Sort statistics
    Sort width:      5 Area size:      131072 Max Area size:      1257472
    Degree:          1
    Blocks to Sort:  1 Row size:          24 Total Rows:          30
    Initial runs:    1 Merge passes:      0 IO Cost / pass:      0
    Total IO sort cost: 0      Total CPU sort cost: 23357768
    Total Temp space used: 0
  Merge join Cost: 6  Resp: 6
SM Join (with index on outer)
  Access Path: index (no start/stop keys)
```

Trace 10053 File – Join Order and Mechanism [2]

```

Join order[2]: BOOKINGS[B]#1 EVENTS[E]#0
Now joining: EVENTS[E]#0 *****
NL Join
  Outer table: cost: 2   cdn: 30   rcz: 12   resp: 2
  Inner table: EVENTS Alias: E
    Access Path: table-scan   Resc: 0
    Join:   Resc: 12   Resp: 12
  Access Path: index (unique)
    Index: EVI_PK
    rsc_cpu: 14663   rsc_io: 1
    ix_sel: 8.3333e-002   ix_sel_with_filters: 8.3333e-002
    NL Join:   resc: 32   resp: 32
  Access Path: index (eq-unique)
    Index: EVI_PK
    rsc_cpu: 14863   rsc_io: 1
    ix_sel: 0.0000e+000   ix_sel_with_filters: 0.0000e+000
    NL Join:   resc: 32   resp: 32
  Best NL cost: 12   resp: 12
Join cardinality: 1 = outer (30) * inner (1) * sel (9.0909e-002) [flag=0]
SM Join
  Outer table:
    resc: 2   cdn: 30   rcz: 12   deg: 1   resp: 2
  Inner table: EVENTS Alias: E
    resc: 2   cdn: 1   rcz: 8   deg: 1   resp: 2
    using join:1 distribution:2 #groups:1
  SORT resource      Sort statistics
    Sort width:      5 Area size:      131072 Max Area size:      1257472
    Degree:          1
    Blocks to Sort:  1 Row size:      24 Total Rows:      30
    Initial runs:    1 Merge passes:    0 IO Cost / pass:      0
    Total IO sort cost: 0      Total CPU sort cost: 23357768
    Total Temp space used: 0
  SORT resource      Sort statistics
    Sort width:      5 Area size:      131072 Max Area size:      1257472
    Degree:          1
    Blocks to Sort:  1 Row size:      19 Total Rows:      1
    Initial runs:    1 Merge passes:    0 IO Cost / pass:      0
    Total IO sort cost: 0      Total CPU sort cost: 23351136
    Total Temp space used: 0
  Merge join Cost: 6   Resp: 6

```



Trace 10053 File – Best So Far

```
Merge join Cost: 5 Resp: 5
HA Join
Outer table:
  resc: 2 cdn: 1 rcz: 8 deg: 1 resp: 2
Inner table: BOOKINGS Alias: B
  resc: 2 cdn: 30 rcz: 12 deg: 1 resp: 2
  using join:8 distribution:2 #groups:1
Hash join one ptn Resc: 1 Deg: 1
  hash_area: 32 (max=307) buildfrag: 1 probefrag: 1 ppasses: 1
Hash join Resc: 5 Resp: 5
Join result: cost: 3 cdn: 1 rcz: 20
Best so far: TABLE#: 0 CST: 2 CDN: 1 BYTES: 8
Best so far: TABLE#: 1 CST: 3 CDN: 1 BYTES: 20
*****
```



Trace 10053 File – Final Plan

```
HA Join
  Outer table:
    resc: 2  cdn: 30  rcz: 12  deg: 1  resp: 2
  Inner table: EVENTS  Alias: E
    resc: 2  cdn: 1  rcz: 8  deg: 1  resp: 2
    using join:8 distribution:2 #groups:1
  Hash join one ptn Resc: 1  Deg: 1
    hash_area: 32 (max=307)  buildfrag: 1  probefrag: 1  ppasses: 1
  Hash join  Resc: 5  Resp: 5
(newjo-stop-1) k:0, spcnt:0, perm:2, maxperm:2000
(newjo-save)    [1 0 ]
Final - All Rows Plan:
  JOIN ORDER: 1
  CST: 3  CDN: 1  RSC: 3  RSP: 3  BYTES: 20
  IO-RSC: 3  IO-RSP: 3  CPU-RSC: 18203  CPU-RSP: 18203
QUERY
SELECT  b.resource_code, b.cost
FROM    events e, bookings b
WHERE   e.event_no = b.event_no
AND     e.org_id = 1030
```



Trace 10046



Initialisation Parameters

- ➡ **user_dump_dest**
- ➡ **Location for trace files**
- ➡ **Set at system level only**

```
SELECT      isses_modifiable,  
            issys_modifiable,  
            isinstance_modifiable  
FROM        v$parameter  
WHERE       name = 'user_dump_dest'
```

```
ISSES  ISSYS_MOD  ISINS  
-----  
FALSE  IMMEDIATE  TRUE
```



Initialisation Parameters

- ➡ **max_dump_file_size**
- ➡ **Maximum size of trace file in OS blocks**
- ➡ **Can be set at session level**

```
SELECT      isses_modifiable,  
            issys_modifiable,  
            isinstance_modifiable  
FROM        v$parameter  
WHERE       name = 'max_dump_file_size'
```

```
ISSES  ISSYS_MOD  ISINS  
-----  
TRUE   IMMEDIATE TRUE
```



Initialisation Parameters

- **timed_statistics**
 - Automatically on if statistics_level = TYPICAL or ALL
 - Needed for cpu/elapsed times
- **sql_trace = true**
 - Sets tracing on at instance level
- **Can be set at session level**

```
SELECT      isses_modifiable,  
            issys_modifiable,  
            isinstance_modifiable  
FROM        v$parameter  
WHERE       name = 'sql_trace'
```

```
ISSES  ISSYS_MOD  ISINS  
-----  
TRUE   IMMEDIATE TRUE
```




Turning Trace 10046 On

- ➡ Identify location of user_dump_dest
- ➡ Check max_dump_file_size
- ➡ Turn tracing on for the instance (performance overhead) or session

```
ALTER SESSION SET SQL_TRACE=TRUE;
```

```
ALTER SYSTEM SET SQL_TRACE=TRUE;
```

tkprof

**tkprof ora10g_oracle_4216.trc trace16.lst
sort=execpu,prscpu,fchcpu, sys=no**

trace18.lst - Notepad

File Edit Format View Help

```
select count(b.comments)
from bookings_large b, events_large e
where e.event_no = e.event_no
```

call	count	cpu	elapsed	disk	query	current	rows
Parse	1	0.06	0.07	0	0	0	0
Execute	2	0.01	0.00	0	0	0	0
Fetch	2	3317.23	1279.94	409	733	2	1
total	5	3317.31	1280.02	409	733	2	1

Misses in library cache during parse: 1
Optimizer goal: ALL_ROWS
Parsing user id: 67

Elapsed times include waiting on following events:

Event waited on	Times waited	Max. wait	Total waited
SQL*Net message to client	2	0.00	0.00
db file scattered read	19	0.09	0.91
db file sequential read	2	0.04	0.09
direct path write temp	14	0.03	0.04
direct path read temp	48	0.12	0.31
SQL*Net message from client	1	0.00	0.00



Trace 10046 Levels

➡ Trace levels

- 1 Trace resources
- 4 Trace resources and bind variable values
- 8 Trace resources and wait events
- 12 Trace resources, bind variables and wait events

➡ **ALTER SYSTEM SET EVENTS '10046 trace name context forever, level 12'**

➡ **ALTER SESSION SET EVENTS '10046 trace name context forever, level 12'**



Trace 10046 Example

**ALTER session SET EVENTS '10046 trace
name context forever, level 12'**

```
DECLARE  
v_event_no NUMBER :=2264;  
v_count    NUMBER;  
BEGIN  
SELECT      COUNT(e.comments)  
INTO        v_count  
FROM        events e, bookings b  
WHERE       e.event_no = b.event_no  
AND         e.org_id = v_event_no;  
END;
```



Trace 10046 Example

```
=====
PARSING IN CURSOR #16 len=100 dep=1 uid=67 oct=3 lid=67 tim=1820067602 hv=3289882752 ad='671e4a68'
SELECT COUNT(E.COMMENTS) FROM EVENTS E, BOOKINGS B WHERE E.EVENT_NO = B.EVENT_NO AND E.ORG_ID = :B1
END OF STMT
PARSE #16:c=0,e=327,p=0,cr=0,cu=0,mis=1,r=0,dep=1,og=1,tim=1820067596
=====
PARSING IN CURSOR #8 len=210 dep=2 uid=0 oct=3 lid=0 tim=1820074126 hv=864012087 ad='6a3b2014'
select /*+ rule */ bucket_cnt, row_cnt, cache_cnt, null_cnt, timestamp#, sample_size, minimum, maximum, distcnt, lowval, h
END OF STMT
PARSE #8:c=0,e=89,p=0,cr=0,cu=0,mis=0,r=0,dep=2,og=3,tim=1820074121
BINDS #8:
  bind 0: dty=2 mxl=22(22) mal=00 scl=00 pre=00 oacflg=08 oacfl2=0001 size=24 offset=0
    bfp=05bfcd48 bln=22 avl=04 flg=05
    value=53686
  bind 1: dty=2 mxl=22(22) mal=00 scl=00 pre=00 oacflg=08 oacfl2=0001 size=24 offset=0
    bfp=062c029c bln=24 avl=02 flg=05
    value=7
EXEC #8:c=0,e=8682,p=0,cr=0,cu=0,mis=0,r=0,dep=2,og=3,tim=1820089289
FETCH #8:c=0,e=78,p=0,cr=3,cu=0,mis=0,r=1,dep=2,og=3,tim=1820090928
BINDS #16:
  bind 0: dty=2 mxl=22(21) mal=00 scl=00 pre=00 oacflg=13 oacfl2=206001 size=24 offset=0
    bfp=05e4bc8c bln=22 avl=03 flg=09
    value=2264
EXEC #16:c=31250,e=25972,p=0,cr=3,cu=0,mis=1,r=0,dep=1,og=1,tim=1820099318
WAIT #16: nam='db file sequential read' ela= 105980 p1=6 p2=130 p3=1
FETCH #16:c=0,e=107747,p=1,cr=5,cu=0,mis=0,r=1,dep=1,og=1,tim=1820208431
EXEC #14:c=31250,e=143977,p=1,cr=8,cu=0,mis=0,r=1,dep=0,og=1,tim=1820209995
WAIT #14: nam='SQL*Net message to client' ela= 5 p1=1413697536 p2=1 p3=0
```



tkprof

tkprof ora10g_oracle_456.trc trace1.prf

SQL*Net message to client							
				1	0.00	0.00	

SELECT COUNT(E.COMMENTS)							
FROM							
EVENTS E, BOOKINGS B WHERE E.EVENT_NO = B.EVENT_NO AND E.ORG_ID = :B1							
call	count	cpu	elapsed	disk	query	current	rows
-----	-----	-----	-----	-----	-----	-----	-----
Parse	1	0.00	0.00	0	0	0	0
Execute	1	0.03	0.01	0	0	0	0
Fetch	1	0.00	0.10	1	5	0	1
-----	-----	-----	-----	-----	-----	-----	-----
total	3	0.03	0.12	1	5	0	1
Misses in library cache during parse: 1							
Misses in library cache during execute: 1							
Optimizer goal: ALL_ROWS							
Parsing user id: 67 (recursive depth: 1)							
Elapsed times include waiting on following events:							
Event waited on				Times	Max. Wait	Total Wait	
-----				Waited	-----	-----	
db file sequential read				1	0.10	0.10	



Trcess

- ➡ **trcssess used to consolidate a number of trace files**
- ➡ **Based on**
 - ➡ **Service**
 - ➡ **Clientid**
 - ➡ **Module**
 - ➡ **Action**
- ➡ **DBMS_APPLICATION_INFO package can be used to set the module and action from within an application**



trcess - Syntax

**trcess output=output_file
session=session_id
clientid=client_id
service=service_name
action=action_name
module=module_name
trace_files =tracefilenames**



Setting Module and Action

```
dbms_application_info.set_module  
  (module_name=>'RESBOOK',  
   action_name=>'UPDATEBOOK');
```

```
SELECT module, action  
FROM    v$session  
WHERE   module IS NOT NULL
```

MODULE	ACTION
-----	-----
SQL*Plus	
RESBOOK	UPDATEBOOK
SQL*Plus	



Setting Module and Action

- ➡ **Set Module and Action in your program code**

A screenshot of a Notepad window titled "mon.sql - Notepad". The window contains the following SQL code:

```
File Edit Format View Help
CREATE OR REPLACE procedure update_bookings2
AS
BEGIN
    dbms_application_info.set_module(module_name=>'RESBOOK',action_name=>'UPDATEBOOK');

    UPDATE BOOKINGS_LARGE
    SET cost = cost *1.01;

    dbms_application_info.set_module(module_name=>null,action_name=>null);
END;
/
```

Create Trace Files

ALTER SYSTEM SET EVENTS

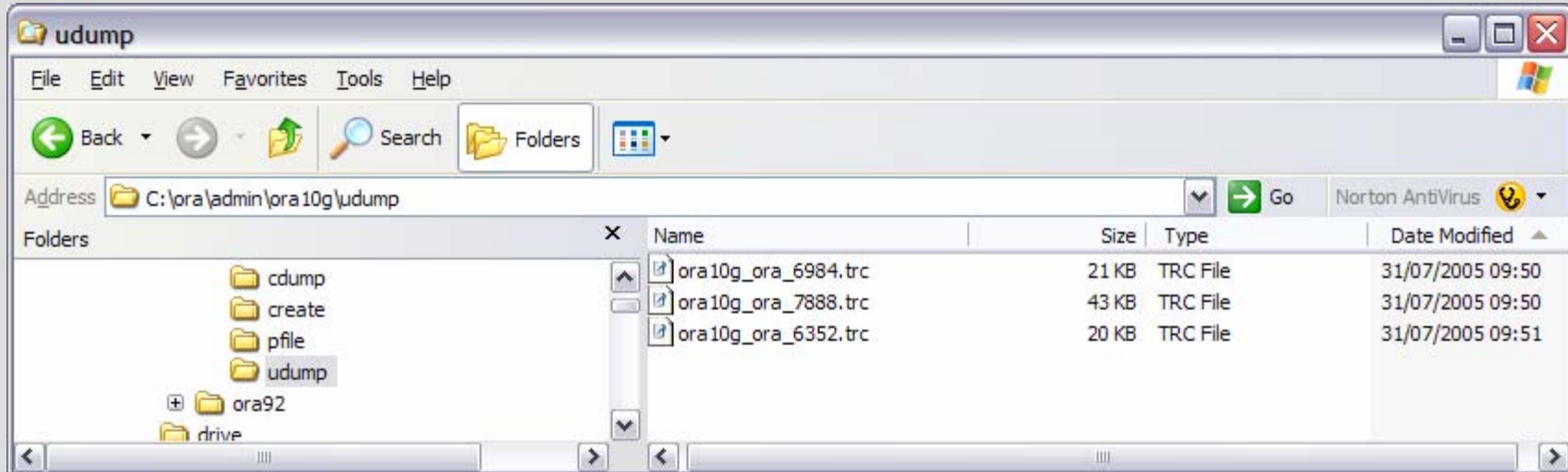
'10046 trace name context forever, level 12'

BEGIN

update_bookings2;

END;

**Execute this
from 3 sessions**



temp.trc - WordPad

File Edit View Insert Format Help

Dump file c:\ora\admin\ora10g\udump\ora10g_ora_7888.trc
Sun Jul 31 09:49:37 2005
ORACLE V10.1.0.2.0 - Production vsnsta=0
vsnsql=13 vsnxtr=3
Oracle Database 10g Enterprise Edition Release 10.1.0.2.0 - Production
With the Partitioning, OLAP and Data Mining options
Windows XP Version V5.1 Service Pack 2
CPU : 2 - type 586
Process Affinity: 0x00000000
Memory (A/P) : PH:357M/2046M, PG:2284M/3942M, VA:1752M/2047M
Instance name: ora10g

Redo thread mounted by this instance: 1

Oracle process number: 21

Windows thread id: 7888, image: ORACLE.EXE (SHAD)

*** SERVICE NAME:(ora10g.sagecomputing.com.au) 2005-07-31 09:49:37.468
*** SESSION ID:(33.907) 2005-07-31 09:49:37.468
WAIT #0: nam='SQL*Net message to client' ela= 5 p1=1413697536 p2=1 p3=0
WAIT #0: nam='SQL*Net message from client' ela= 2624 p1=1413697536 p2=1 p3=0
=====|
PARSING IN CURSOR #3 len=34 dep=0 uid=5 oct=47 lid=5 tim=4659568503 hv=1514172353 ad='6a7ab2a0'
BEGIN
train.update_bookings2;
end;
END OF STMT
PARSE #3:c=140625,e=181055,p=1,cr=6,cu=0,mis=1,r=0,dep=0,og=1,tim=4659568497
BINDS #3:
*** ACTION NAME:(UPDATEBOOK) 2005-07-31 09:50:01.609
*** MODULE NAME:(RESBOOK) 2005-07-31 09:50:01.609
=====

For Help, press F1



Consolidate Trace Files

```
trcssess output=trace4.trc module=RESBOOK
```

```
tkprof trace4.trc trace4.lst sys=no
```

trace4.lst - Notepad

File Edit Format View Help

UPDATE BOOKINGS_LARGE SET COST = COST *1.01

call	count	cpu	elapsed	disk	query	current	rows
Parse	3	0.00	0.00	0	0	0	0
Execute	5	2.43	33.58	0	35923	149715	56320
Fetch	0	0.00	0.00	0	0	0	0
total	8	2.43	33.58	0	35923	149715	56320

Misses in library cache during parse: 0
Optimizer goal: ALL_ROWS
Parsing user id: 67 (recursive depth: 1)

Elapsed times include waiting on following events:

Event waited on	Times waited	Max. wait	Total waited
log file sync	8	0.00	0.00



DBMS_MONITOR

➡ Trace

- ➡ Session
- ➡ Service/Module/Action
- ➡ Client ID

➡ Gather statistics for

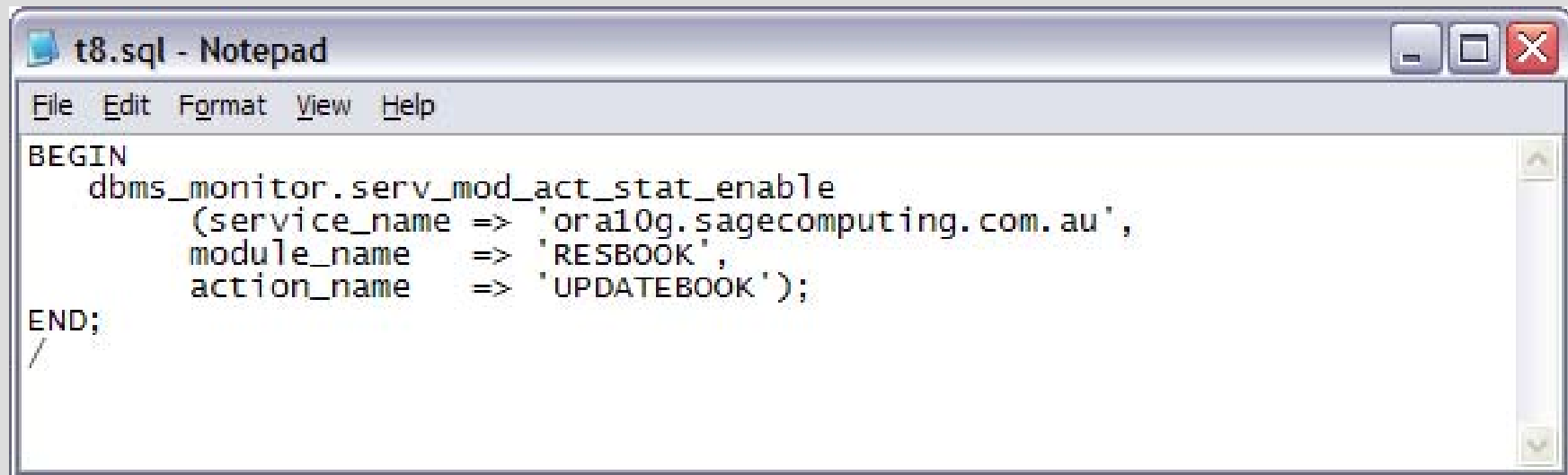
- ➡ Session
- ➡ Service/Module/Action
- ➡ Client ID

➡ Set Module/Action with `dbms_application_info`

➡ Set Client Id with `dbms_session`



Gather Stats for a Module/Action

A screenshot of a Notepad window titled "t8.sql - Notepad". The window contains the following SQL code:

```
BEGIN
  dbms_monitor.serv_mod_act_stat_enable
    (service_name => 'ora10g.sagecomputing.com.au',
     module_name   => 'RESBOOK',
     action_name    => 'UPDATEBOOK');
END;
/
```



Find Active Stats

```
SELECT *  
FROM  
DBA_ENABLED_AGGREGATIONS
```

```
AGGREGATION_TYPE
```

```
-----
```

```
PRIMARY_ID
```

```
-----
```

```
QUALIFIER_ID1
```

```
-----
```

```
QUALIFIER_ID2
```

```
-----
```

```
SERVICE_MODULE_ACTION
```

```
ora10g.sagecomputing.com.au
```

```
RESBOOK
```

```
UPDATEBOOK
```




View Stats

```
SELECT stat_name, value  
FROM    v$serv_mod_acts  
WHERE   service_name =  
         'ora10g.sagecomputing.com.au'  
AND     module = 'RESBOOK'  
AND     action  = 'UPDATEBOOK'  
AND     value   != 0  
/
```

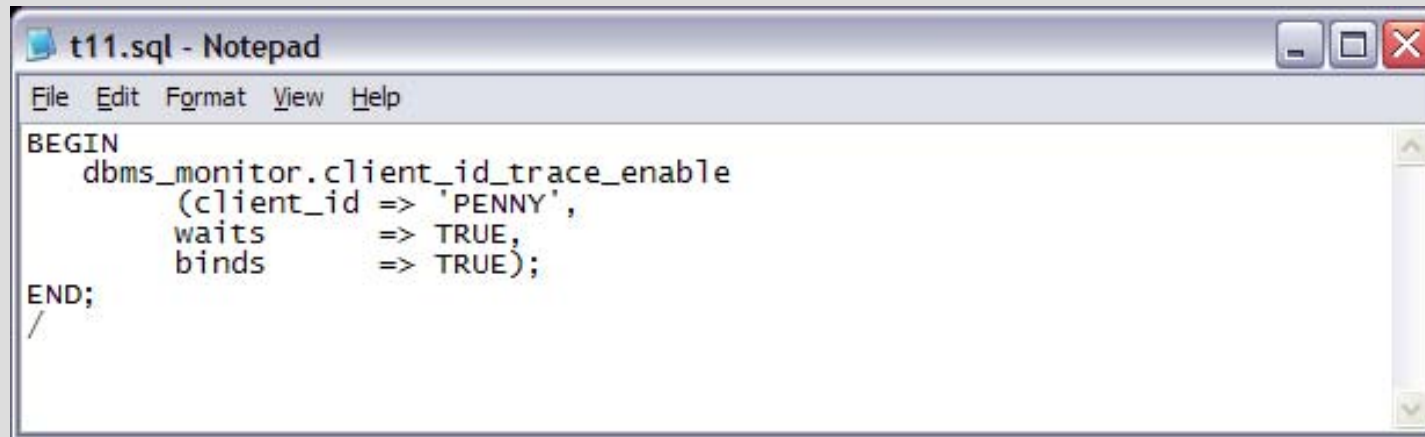


View Stats

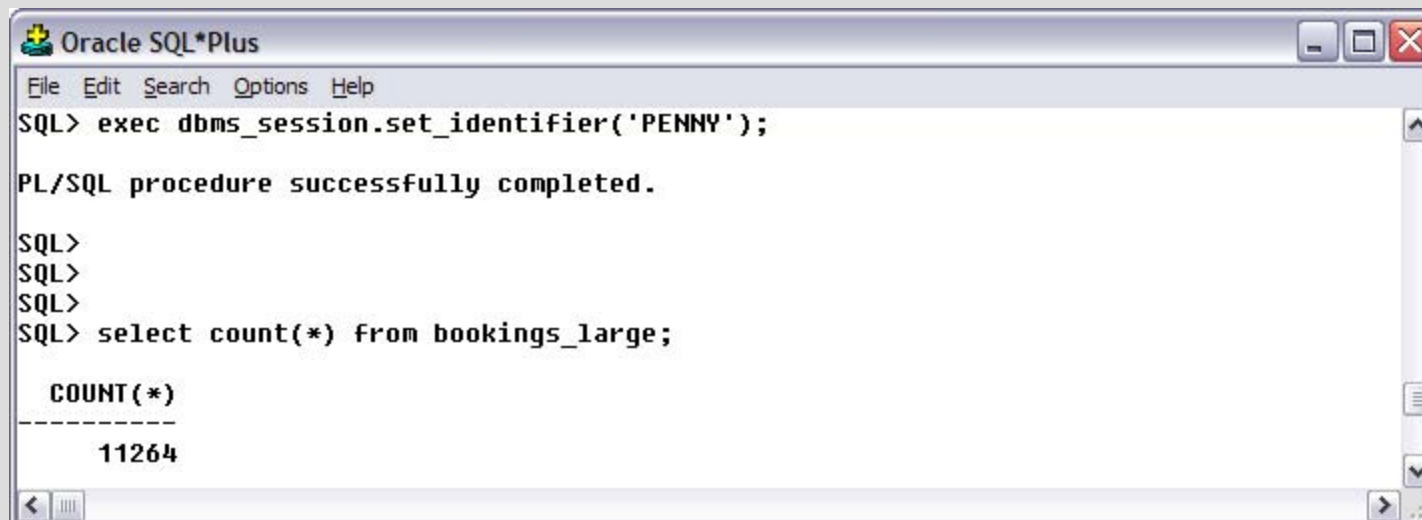
STAT_NAME	VALUE

user calls	4
DB time	859564
DB CPU	250180
parse count (total)	9
parse time elapsed	916
execute count	24
sql execute elapsed time	573749
opened cursors cumulative	9
session logical reads	31912
redo size	5770380
user commits	1
db block changes	49480

Trace a Client



```
t11.sql - Notepad
File Edit Format View Help
BEGIN
  dbms_monitor.client_id_trace_enable
    (client_id => 'PENNY',
     waits      => TRUE,
     binds      => TRUE);
END;
/
```



```
Oracle SQL*Plus
File Edit Search Options Help
SQL> exec dbms_session.set_identifier('PENNY');

PL/SQL procedure successfully completed.

SQL>
SQL>
SQL>
SQL> select count(*) from bookings_large;

  COUNT(*)
-----
      11264
```



Find Active Traces

```
SELECT *  
FROM  
DBA_ENABLED_TRACES
```

```
TRACE_TYPE  
-----  
PRIMARY_ID  
-----  
QUALIFIER_ID1  
-----  
QUALIFIER_ID2           WAITS BINDS INSTANCE_NAME  
-----  
CLIENT_ID  
PENNY  
  
TRUE TRUE
```



Trace a Client

```
ora10g_ora_7436.trc - WordPad
File Edit View Insert Format Help
Dump file c:\ora\admin\ora10g\udump\ora10g_ora_7436.trc
Sun Jul 31 12:05:49 2005
ORACLE V10.1.0.2.0 - Production vsnsta=0
vsnsql=13 vsnxtr=3
Oracle Database 10g Enterprise Edition Release 10.1.0.2.0 - Production
With the Partitioning, OLAP and Data Mining options
Windows XP Version V5.1 Service Pack 2
CPU : 2 - type 586
Process Affinity: 0x00000000
Memory (A/P) : PH:338M/2046M, PG:2266M/3942M, VA:1756M/2047M
Instance name: ora10g

Redo thread mounted by this instance: 1

Oracle process number: 18

Windows thread id: 7436, image: ORACLE.EXE (SHAD)

*** 2005-07-31 12:05:49.156
*** ACTION NAME: (UPDATEBOOK) 2005-07-31 12:05:49.140
*** MODULE NAME: (RESBOOK) 2005-07-31 12:05:49.140
*** SERVICE NAME: (ora10g.sagecomputing.com.au) 2005-07-31 12:05:49.140
*** CLIENT ID: (PENNY) 2005-07-31 12:05:49.140
*** SESSION ID: (36.43) 2005-07-31 12:05:49.140
```



Consolidate Trace Files

```
trcsess output=trace5.trc clientid='PENNY'
```

```
tkprof trace5.trc trace5.lst sys=no
```

A screenshot of a Notepad window titled "trace5.lst - Notepad". The window displays the output of the tkprof command, which includes a summary of the SQL*Net message, the SQL query being executed, and a detailed execution plan. The query is "select count(*) from bookings_large". The execution plan shows the following steps: Parse (4 rows, 0.00 CPU, 0.00 elapsed), Execute (4 rows, 0.01 CPU, 0.00 elapsed), and Fetch (8 rows, 0.03 CPU, 0.05 elapsed). The total execution time is 0.06 seconds. The output also includes information about misses in the library cache, the optimizer goal (ALL_ROWS), and the parsing user id (67).

```
SQL*Net message from client          1          15.39          15.39
*****

select count(*)
from
  bookings_large

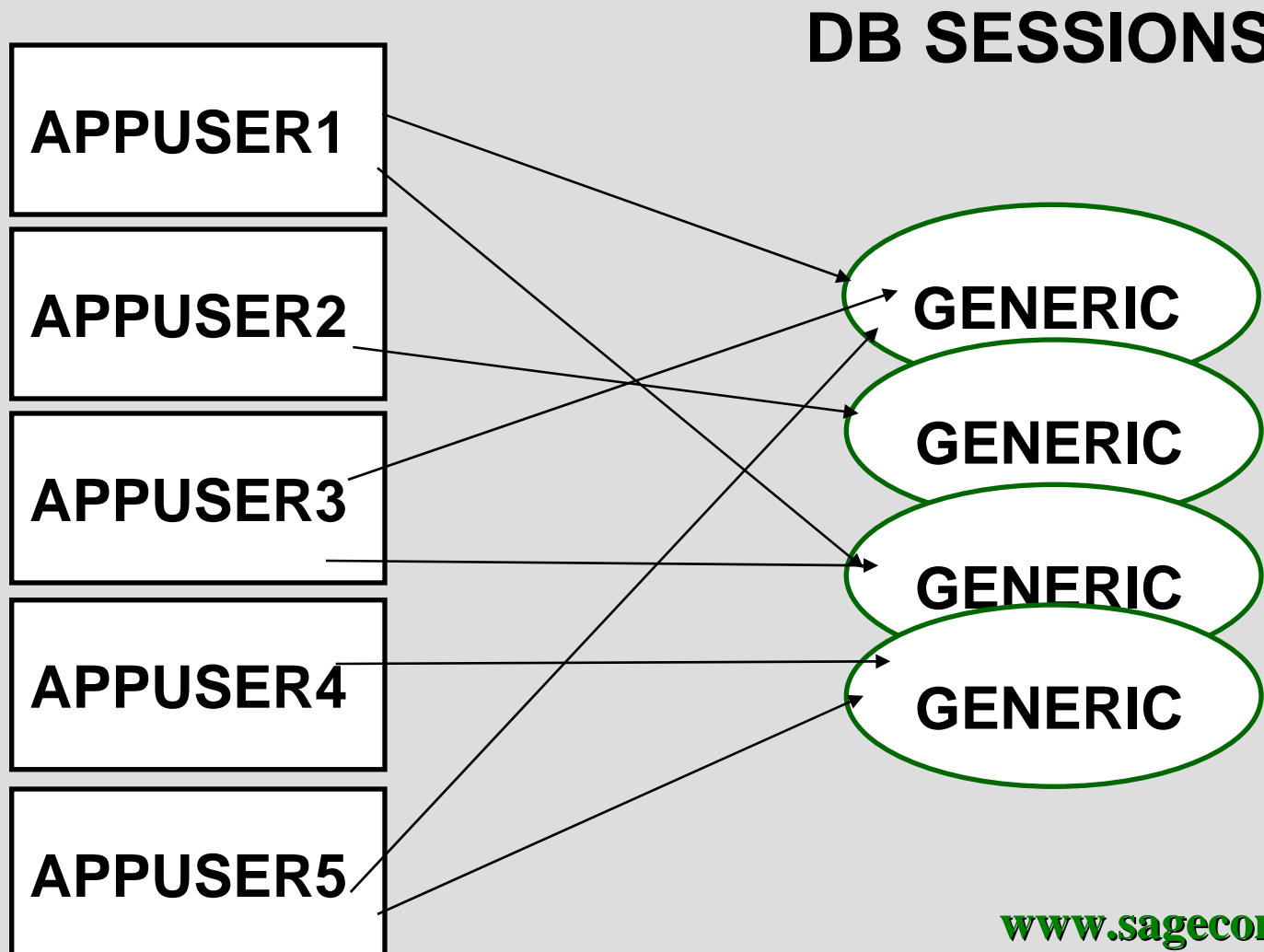
call      count          cpu    elapsed       disk      query    current    rows
-----
Parse         4         0.00       0.00          0          0          0         0
Execute       4         0.01       0.00          0          0          0         0
Fetch        8         0.03       0.05         26        116          0         4
-----
total        16         0.04       0.06         26        116          0         4

Misses in library cache during parse: 1
Optimizer goal: ALL_ROWS
Parsing user id: 67

Rows    Row Source Operation
-----
      1  SORT AGGREGATE (cr=29 pr=26 pw=0 time=49240 us)
    11264 INDEX FAST FULL SCAN BK_EVT5 (cr=29 pr=26 pw=0 time=34861 us)(object id
    54996)
```

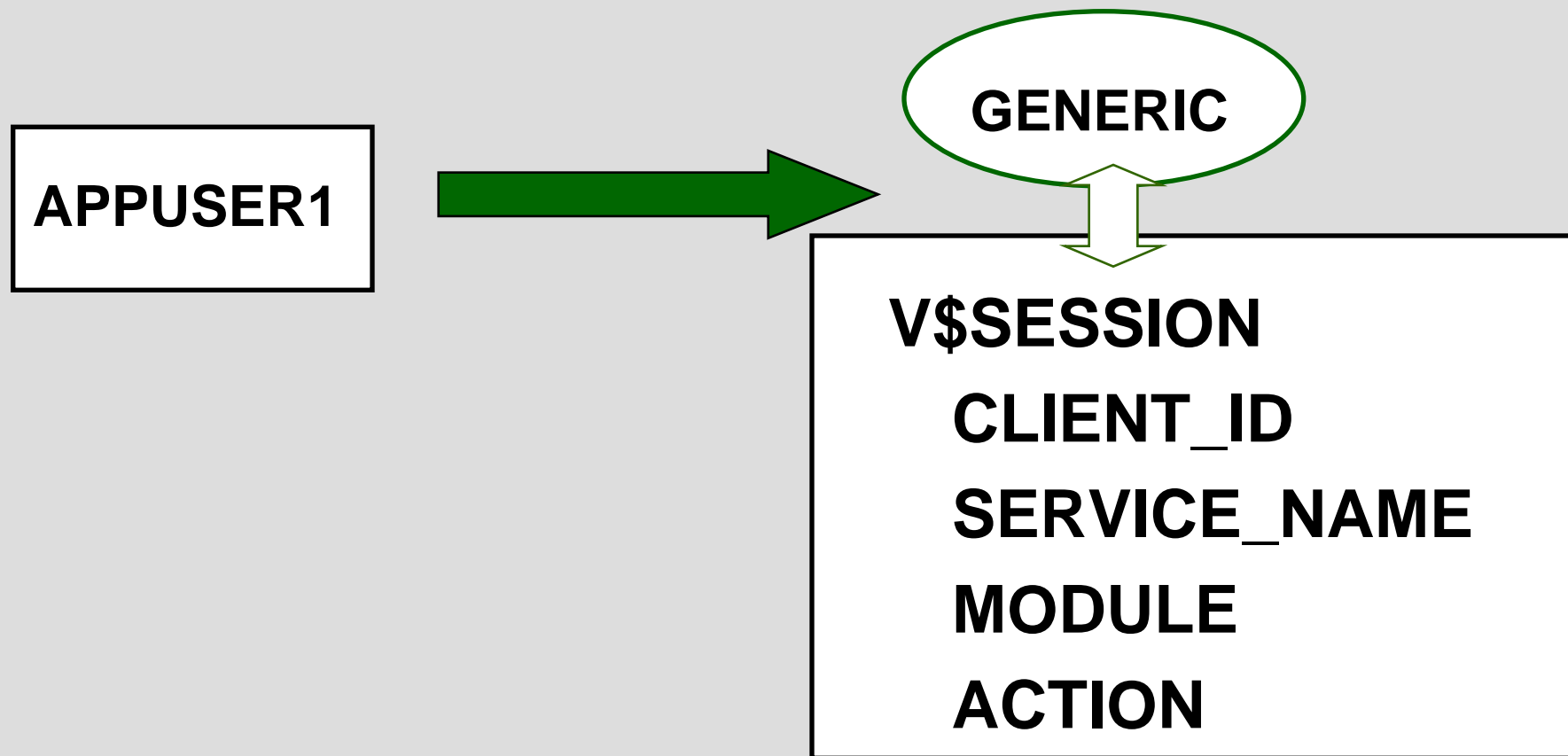


End to End Monitoring



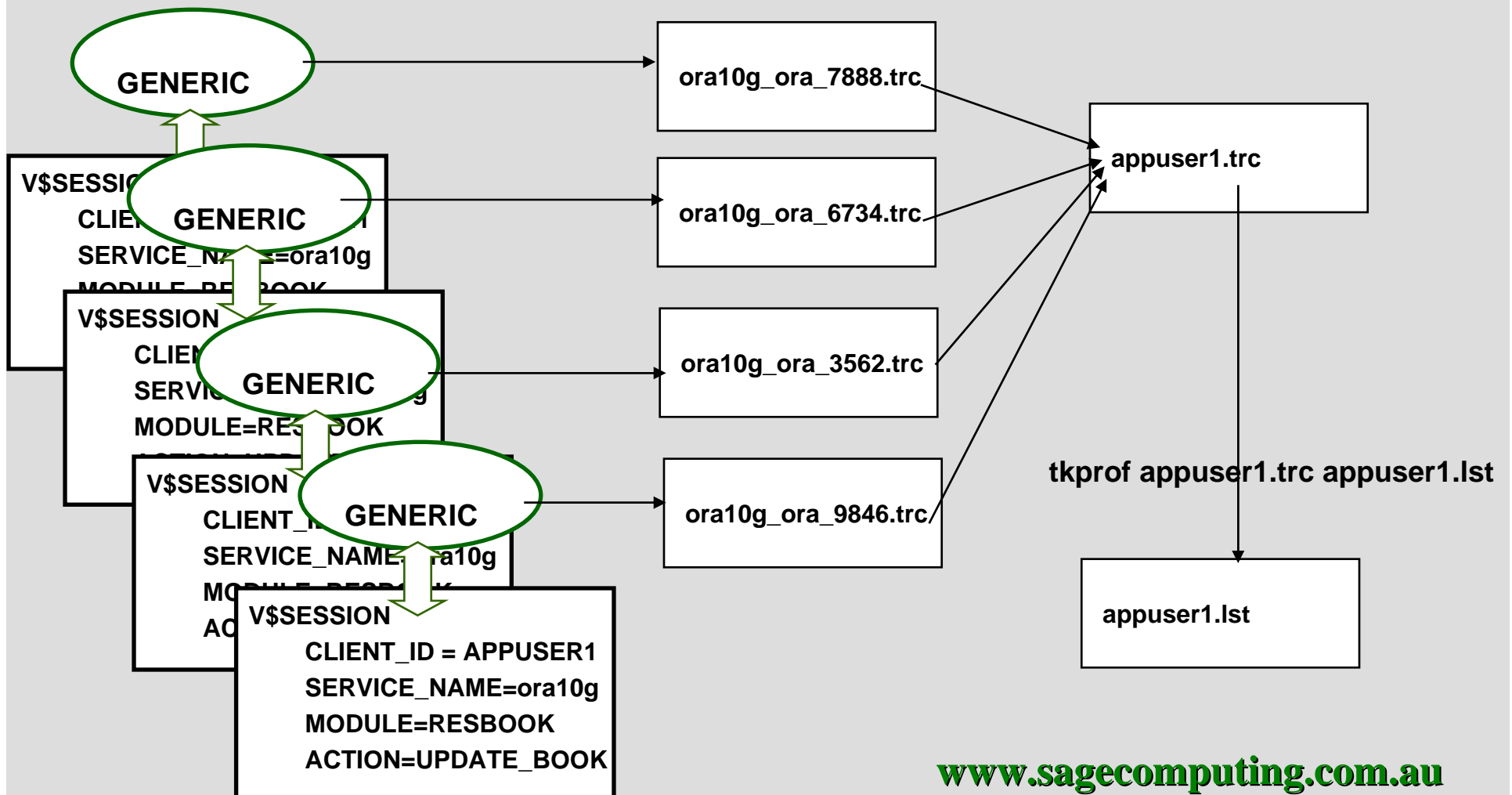


End to End Monitoring



End to End Monitoring

trcsess output=appuser1.trc clientid=APPUSER1



Example - HTMLDB

Employees - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address <http://sage4.sagecomputing.com.au:7780/pls/htmldb/f?p=118:6:11105254909161965822::NO> Go Links Norton Internet Security

[USER1] [] []

Home Employees Calendar Enter Timesheet Approve Timesheets Reporting Upload files Timesheet2 Parties Sec

Employee Parameters

Organisation

Name Go

Employees Create

	Name	First Names	Date of Birth	Job Title	Organisation	From	To
	Brunini	Christian	29-DEC-70	System Consultant	SAGE Computing Services	01-MAY-95	
	Cookson	Penny	14-JAN-56	Managing Director	SAGE Computing Services	01-MAY-93	05-FEB-05
	Harris	Eddie	10-NOV-87	System Consultant	SAGE Computing Services	21-JUN-02	
	Marshall	Katie	28-JUN-05	System Consultant	SAGE Training Services	10-JUL-04	
	Njegichddd	Branka		System Consultant	SAGE Training Services	24-AUG-98	
	Smith	Fred	01-JUN-53		Oddbods Professional Services	01-SEP-04	
	Tindallid	Ray		System Consultant	SAGE Computing Services	10-NOV-96	

1 - 7

Internet



Example HTMLDB

```
SELECT service_name, client_identifier,  
module, action, username  
FROM v$session  
WHERE username = 'HTMLDB_PUBLIC_USER'
```

SERVICE_NAME

CLIENT_IDENTIFIER

MODULE

ACTION

USERNAME

ora10g.sagecomputing.com.au

HTML DB

application 118, page 13, sessio HTMLDB_PUBLIC_USER



```
Dump file c:\ora\admin\ora10g\udump\ora10g_ora_6436.trc
Sun Jul 31 13:22:46 2005
ORACLE V10.1.0.2.0 - Production vsnsta=0
vsnsql=13 vsnxtr=3
Oracle Database 10g Enterprise Edition Release 10.1.0.2.0 - Production
With the Partitioning, OLAP and Data Mining options
Windows XP Version V5.1 Service Pack 2
CPU           : 2 - type 586
Process Affinity: 0x00000000
Memory (A/P)   : PH:1067M/2046M, PG:3086M/3942M, VA:1753M/2047M
Instance name: ora10g

Redo thread mounted by this instance: 1

Oracle process number: 17

Windows thread id: 6436, image: ORACLE.EXE (SHAD)

*** 2005-07-31 13:22:46.250
*** ACTION NAME:(application 118, page 6, session) 2005-07-31 13:22:46.234
*** MODULE NAME:(HTML DB) 2005-07-31 13:22:46.234
*** SERVICE NAME:(ora10g.sagecomputing.com.au) 2005-07-31 13:22:46.234
*** SESSION ID:(29.531) 2005-07-31 13:22:46.234
=====
PARSING IN CURSOR #54 len=614 dep=0 uid=65 oct=47 lid=65 tim=2059248367 hv=3947649331 ad='6844bef8'
declare
  rc__ number;
begin
  owa.init_cgi_env(:n__,:nm__,:v__);
  http.HTBUF_LEN := 255;
  null;
  null;
```



Example HTMLDB

```
SELECT service_name, client_identifier,  
module, action, username  
FROM v$session  
WHERE username = 'HTMLDB_PUBLIC_USER'
```

SERVICE_NAME

CLIENT_IDENTIFIER

MODULE

ACTION

USERNAME

ora10g.sagecomputing.com.au

HTML DB

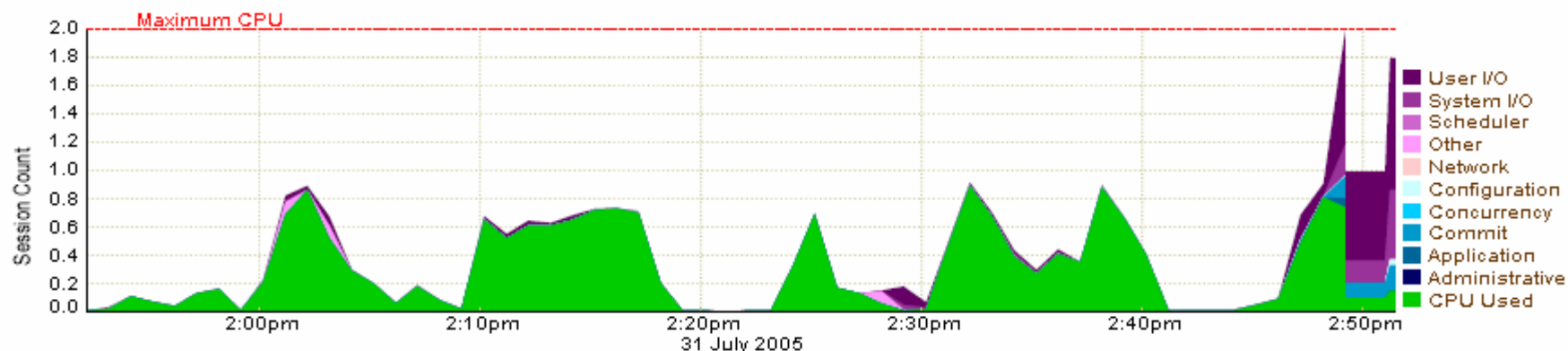
application 118, page 13, sessio HTMLDB_PUBLIC_USER



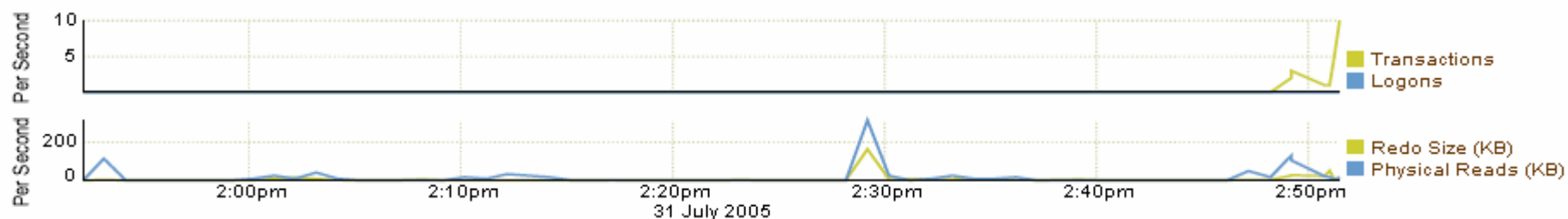
Example HTMLDB

Process	
* Page	7 Employee Details ▼
* Name	set_user
Type: PL/SQL anonymous block	
Process Firing Point	
* Sequence	11
Process Point	On Submit - After Computations and Validations ▼
Run Process	Once Per Page Visit (default) ▼
Source	
* Process [Download Source]	
<pre>begin dbms_session.set_identifier(:APP_USER); end;</pre>	

Sessions: waiting and working



Instance Throughput



View ☒ Per Second ☐ Per Transaction

Additional Monitoring Links

- [Top Sessions](#)
- [Top SQL](#)
- [Blocking Sessions](#)
- [Database Locks](#)
- [Instance Activity](#)
- [Top Consumers](#)
- [Snapshots](#)

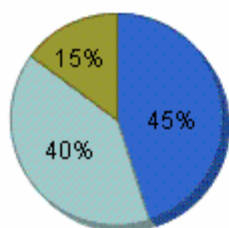
[Home](#) [Performance](#) [Administration](#) [Maintenance](#)

Related Links



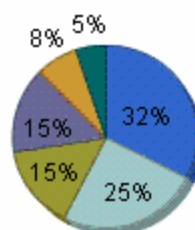
Overview [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

Top Services



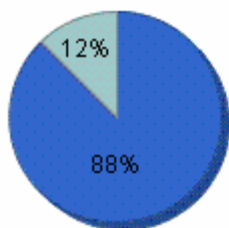
■ [SYS\\$USERS\(45%\)](#)
■ [ora10g.sagecomputing.com.au\(40%\)](#)
■ [SYS\\$BACKGROUND\(15%\)](#)

Top Modules (by Service)



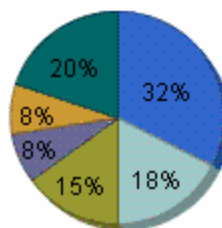
■ [emagent.exe \(SYS\\$USERS\)\(32.5%\)](#)
■ [OEM.SystemPool \(ora10g.sagecomputing.com.au\)\(25%\)](#)
■ [HTML DB \(ora10g.sagecomputing.com.au\)\(15%\)](#)
■ [Unnamed \(SYS\\$BACKGROUND\)\(15%\)](#)
■ [EM_PING \(SYS\\$USERS\)\(7.5%\)](#)
■ [Other\(5%\)](#)

Top Clients



■ [Unnamed\(87.5%\)](#)
■ [ADMIN\(12.5%\)](#)

Top Actions (by Module) (by Service)



■ [Unnamed \(emagent.exe\) \(SYS\\$USERS\)\(32.5%\)](#)
■ [XMLLoader0 \(OEM.SystemPool\) \(ora10g.sagecomputing.com.au\)\(17.5%\)](#)
■ [Unnamed \(Unnamed\) \(SYS\\$BACKGROUND\)\(15%\)](#)

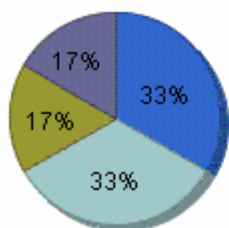
Logged in As SYS

Module: HTML DB

Page Refreshed 31-Jul-2005 15:17:00 Refresh

Actions	Statistics
---------	------------

Top Actions



application 4000, page 1, sessi(33.3%)
application 4000, page 4150, se(33.3%)
application 118, page 7, sessio(16.7%)
application 118, page 6, sessio(16.7%)

Active Actions

View Active Actions

[Enable Aggregation](#)
[Disable Aggregation](#)
[Enable SQL Trace](#)
[Disable SQL Trace](#)
[View SQL Trace File](#)

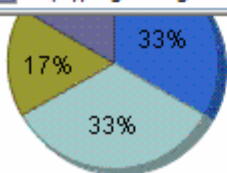
[Select All](#) | [Select None](#)

Aggregation	SQL Trace	Delta Elapsed Time	Cumulative Elapsed Time	Delta CPU Time	Cumulative CPU Time	Delta Physical I/O	Cumulative Physical
-------------	-----------	--------------------	-------------------------	----------------	---------------------	--------------------	---------------------

Page Refreshed 31-Jul-2005 15:15:39 Refresh

[Previous](#)
1-25 of 27
[Next 2](#)

Page 1 of 1



[application 4000, page 1, sessi\(33.3%\)](#)
[application 4000, page 4150, se\(33.3%\)](#)
[application 118, page 7, sessio\(16.7%\)](#)
[application 118, page 6, sessio\(16.7%\)](#)

Active Actions

View Active Actions

Enable Aggregation

Disable Aggregation

Enable SQL Trace

Disable SQL Trace

View SQL Trace File

[Select All](#) | [Select None](#)

Select	Action	Activity (% for the last 5 minutes)	Aggregation Enabled	SQL Trace Enabled	Delta Elapsed Time (seconds)	Cumulative Elapsed Time (seconds)	Delta CPU Time (seconds)	Cumulative CPU Time (seconds)	Delta Physical I/O (blocks)	Cumulative Physical I/O (blocks)
<input type="checkbox"/>	application 4000, page 1, sessi	33.3	FALSE	FALSE						
<input type="checkbox"/>	application 4000, page 4150, se	33.3	FALSE	FALSE						
<input checked="" type="checkbox"/>	application 118, page 7, sessio	16.7	FALSE	FALSE						
<input type="checkbox"/>	application 118, page 6, sessio	16.7	FALSE	FALSE						

Actions

[Statistics](#)

ORACLE Enterprise Manager 10g

Database Control

[Setup](#) [Preferences](#) [Help](#) [Logout](#)[Database](#)Database: ora10g.sagecomputing.com.au > [Top Consumers](#) > [Service: ora10g.sagecomputing.com.au](#) > [Module: HTML DB](#) >

Enable SQL Trace

Logged in As SYS

Enable SQL Trace

Cancel

OK

Action	Waits	Binds
application 118, page 7, sessio	TRUE 	TRUE 

Cancel

OK

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

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[About Oracle Enterprise Manager 10g Database Control](#)



Information

SQL Trace has been successfully enabled for the selected items.

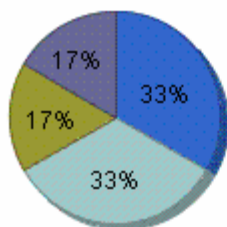
View Data Real Time: Manual Refresh

Module: HTML DB

Page Refreshed 31-Jul-2005 15:19:15 Refresh

Actions Statistics

Top Actions



- application 4000, page 1, sessi(33.3%)
- application 4000, page 4150, se(33.3%)
- application 118, page 7, sessio(16.7%)
- application 118, page 6, sessio(16.7%)

Active Actions

View Active Actions

Enable Aggregation Disable Aggregation Enable SQL Trace Disable SQL Trace View SQL Trace File

Select All | Select None

Aggregation	SQL Trace	Delta Elapsed Time	Cumulative Elapsed Time	Delta CPU Time	Cumulative CPU Time	Delta Physical I/O	Cumulative Physical				



Oracle Enterprise Manager (SYS) - View SQL Trace File - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Mail Print Wordpad Find People

Address <http://sage4.sagecomputing.com.au:5500/em/console/database/instance/SMDetails?service=ora10g.sagecomp> Go Links Norton Internet Security

ORACLE Enterprise Manager 10g Database Control

Setup Preferences Help Logout Database

Database: ora10g.sagecomputing.com.au > Top Consumers > Service: ora10g.sagecomputing.com.au > Module: HTML DB > View SQL Trace File

Logged in As SYS

View SQL Trace File

Oracle provides a tool called Trace Analyzer to collect trace data for a given identifier and produce a single output file. The command to generate the trace output file for service ora10g.sagecomputing.com.au, module HTML DB, action application 118, page 7, sessio is as below:

```
trcsess [output=<output file name>] service=ora10g.sagecomputing.com.au module=HTML DB action=application 118, page 7, sessio <trace file name>
```

The output file produced by Trace Analyzer may be difficult to interpret. You can use TKPROF to format the data. TKPROF provides tabulated statistics for each SQL statement. It can also show the explain plan for each statement.

OK

Database | Setup | Preferences | Help | Logout

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[About Oracle Enterprise Manager 10g Database Control](#)

Done Internet



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