

## Re: Oracle connections and memory usage

**Source:** <http://unix.derkeiler.com/Mailing-Lists/AIX-L/2005-11/0080.html>

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**From:** Lamar Saxon (*Lamar.Saxon\_at\_AMERICREDIT.COM*)

**Date:** 11/10/05

Date: Thu, 10 Nov 2005 12:44:17 -0600  
To: aix-l@Princeton.EDU

Actually the 2x CPUs is a function of SMT on AIX 5.3. ( Symmetric Multi Threading ).

Lamar

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From: IBM AIX Discussion List [mailto:aix-l@Princeton.EDU] On Behalf Of Vincent D'Antonio

Sent: Thursday, November 10, 2005 12:36 PM

To: aix-l@Princeton.EDU

Subject: Re: Oracle connections and memory usage

Mark,

Thanks for the info I will try this and see what happens. Also something with the P5 servers it is an 8 way system but lparstat -i shows me with 8 virtual CPU's also. May be something to do with the dual core design of the CPU's?

Thanks

Vince

On 11/10/05, Hunter, Mark <Mark.Hunter@anheuser-busch.com> wrote:

I notice you have 16 cpus, not 8. Shouldn't make a difference though.

Without any users, you have 75% of the boxes RAM in use. That leaves less than 8GB for your 10.5GB worth of connections. Yes, you are going to swap.

Tune minperm% to 3, maxperm% to 5, maxclient% to 5. With 32GB, and especially with Oracle, you don't need a large disk cache. 5% is still 1.5GB , so you should be fine.

Have the oracle team look at decreasing the SGA from 16GB to

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12GB. See what it does to the cache hit %.

This should give you enough room to run 1500 connections.

Mark Hunter

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From: IBM AIX Discussion List [mailto:aix-l@Princeton.EDU ] On  
Behalf Of Vincent D'Antonio

Sent: Thursday, November 10, 2005 10:22 AM

To: aix-l@Princeton.EDU

Subject: Re: Oracle connections and memory usage

Mark,

We are using JFS2. and right now there is no load and no  
connections.

Here is the vmstat 5 5 output:

System configuration: lcpu=16 mem=31744MB

kthr memory page faults cpu

---

```
-----  
r b avm fre re pi po fr sr cy in sy cs us sy id  
wa  
0 0 4646776 2721286 0 0 0 0 0 0 48 9853 388 1  
0 93 6  
1 0 4645713 2722347 0 0 0 0 0 0 158 99367 2190 7  
4 83 6  
0 0 4645713 2722369 0 0 0 0 0 0 47 499 351 0  
0 93 6  
0 0 4645716 2722365 0 0 0 0 0 0 45 2809 529 1  
0 93 6  
0 0 4645716 2722363 0 0 0 0 0 0 49 347 351 0  
0 93 6
```

and topas:

Topas Monitor for host: sdp1 EVENTS/QUEUES  
FILE/TTY

Thu Nov 10 11:21:49 2005 Interval: 2 Cswitch 333  
Readch 5431

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Syscall 743

Writech 19161

Kernel 0.2 |# | Reads 12

Rawin 0

User 0.1 |# | Writes 6

Ttyout 269

Wait 6.0 |## | Forks 0

Igets 0

Idle 93.7 |##### | Execs 0

Namei 22

Runqueue 0.0

Dirblk 0

Network KBPS I-Pack O-Pack KB-In KB-Out Waitqueue 0.0

en7 2.5 24.5 2.5 1.4 1.1

en6 0.3 1.5 1.0 0.2 0.1 PAGING

MEMORY

lo0 0.1 1.0 1.0 0.0 0.0 Faults 257

Real,MB 31743

en8 0.0 0.0 0.0 0.0 0.0 Steals 0

% Comp 57.5

PgspIn 0

% Noncomp 9.8

Disk Busy% KBPS TPS KB-Read KB-Writ PgspOut 0

% Client 10.0

hdisk4 0.0 0.0 0.0 0.0 0.0 PageIn 2

hdisk7 0.0 0.0 0.0 0.0 0.0 PageOut 4

PAGING SPACE

hdisk28 0.0 0.0 0.0 0.0 0.0 Sios 6

Size,MB 32768

hdisk30 0.0 0.0 0.0 0.0 0.0

% Used 1.0

hdisk29 0.0 0.0 0.0 0.0 0.0 NFS (calls/sec)

% Free 98.9

hdisk6 0.0 0.0 0.0 0.0 0.0 ServerV2 0

hdisk11 0.0 0.0 0.0 0.0 0.0 ClientV2 0

Press:

hdisk13 0.0 8.0 0.5 0.0 8.0 ServerV3 0

"h" for help

ClientV3 0

"q" to quit

Name PID CPU% PgSp Owner

topas 1110202 0.1 1.1 root

hats\_nim 135766 0.0 1.7 root

oracle 237782 0.0 7.7 oracle8

oracle 123506 0.0 7.7 oracle8

oracle 180690 0.0 7.6 oracle8

hatsd 119642 0.0 8.2 root

gil 25154 0.0 0.1 root

oracle 193420 0.0 10.0 oracle8

hats\_nim 140212 0.0 1.7 root

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On 11/10/05, Hunter, Mark <Mark.Hunter@anheuser-busch.com >  
wrote:

Hmmm...

Looks like you have minperm%=5, maxperm%=10, and  
maxclient%=10. Probably should be ok.

Are you using jfs or jfs2? jfs2 hard limits by default  
but jfs does not. (strict\_maxclient).

Oracle is using 22.5GB approx. How many connections is  
this? I doubt you can get it, but what is the svmon for oracle just  
after the database comes up before any connections (minimum usage)? Can  
you get an svmon during the 800 connections?

Try

```
svmon -U | awk '$1~"User" {print;getline;print}'
```

also

```
vmstat 5 5
```

Also, if you can grab a screenprint of a topas session,  
that might help.

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From: IBM AIX Discussion List  
[mailto:aix-l@Princeton.EDU ] On Behalf Of Vincent D'Antonio  
Sent: Thursday, November 10, 2005 9:08 AM  
To: aix-l@Princeton.EDU  
Subject: Re: Oracle connections and memory usage

Here is the requested info:

```
minperm = 388872  
maxperm = 777747  
maxclient% = 10
```

SGA is set to 16GB, there are no other appl. running on  
this system just oracle.

out put of svmon -U is hugh but here is the beginning of  
the output:

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=====  
User Inuse Pin  
Pgsp Virtual LPageCap  
oracle8 5695786 89342  
68764 5751820 -

.....  
.....  
SYSTEM segments Inuse Pin  
Pgsp Virtual  
65554 65541  
1 65555

Vsid Esid Type Description LPage  
Inuse Pin Pgsp Virtual  
0 0 work kernel segment (lgpg\_vsid=0) Y  
65536 65536 0 65536  
12b8a4 - work -  
11 3 1 12  
2739cf - work -  
7 2 0 7

.....  
.....  
EXCLUSIVE segments Inuse Pin  
Pgsp Virtual  
5621614 22340  
68628 5677608

Numbers don't lie and I agree with you that I should be able to get my 1500 connections no problem but the system seems to disagree with me on this, maybe I am missing a process that is using more memory than being reported but I couldn't find anything.

Thanks again for you suggestions,

Vince

On 11/10/05, Hunter, Mark  
<Mark.Hunter@anheuser-busch.com > wrote:

More information please.  
What are your vmo minperm%, maxperm%, and maxclient%? Hopefully you have tuned these already.  
How big is the oracle SGA? Most oracle DBA like to set these really large.  
What other application run on the box?  
What does svmon -U using your RAM?

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Based upon your numbers, 7MB \* 1500 connection = 10.5GB of RAM, so you should have plenty.

Mark Hunter  
Anheuser-Busch Cos.  
MIS Consultant, ES&SO Server Planning and

Integration

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From: IBM AIX Discussion List  
[mailto:aix-l@Princeton.EDU] On Behalf Of Vincent D'Antonio  
Sent: Thursday, November 10, 2005 8:13 AM  
To: aix-l@Princeton.EDU  
Subject: Oracle connections and memory usage

AIXer's,

I have a P570 8way with 32GB of memory running oracle 10G. Per my DBA each connection to the database is sucking up 7MB of memory which after a while we start to swap, this is about 800 connections and need we to support a lot more than this (1500).

Is there anything that I can tune to improve memory usage or is there anything within oracle that can be tuned? I have AIX 5.3 ML2 no lpars just a full system.

Any info to help this would be great.  
Thanks in advance for your comments and suggestions,

Vince

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