

freebsd-performance: frustratingly slow box at 4GB, but not 1GB of memory

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To: freebsd-performance@freebsd.org

Hi folks,

I've got a box I'm helping tune and it's not really responding as I'd expect.

It's a dual 2GHz Xeon box running on a Supermicro P4DLR motherboard with 4GB of physical RAM. It has 4GB of swap configured on a hardware RAID5 configuration.

It's running 4.9-RELEASE. It's also running Apache with PHP and Perl CGI's. The CGI's read/write to a MySQL DB.

Briefly, it responds pretty quickly when I only let the kernel use 1GB of the RAM, but gets bogged down when I let it use the full 4GB. I'm limiting the RAM by setting `hw.physmem`.

I've tried some of the things that I could dig up in the archives, but the knowledge is pretty widely scattered. :-)

I have `MAXUSERS` set to 96 as that gets me plenty of file descriptors and pid's. While tight, I believe I could get away with only 32, as there should not be more than 300-400 processes running at any one time.

I set `vm.pmap.shpgperproc="300"` because of warnings from the kernel. I'm not sure if this is the best value, but it made the warnings go away.

First, upping the `KVA_PAGES` to 768 to achieve a 3:1 ration of kernel to user memory, didn't change things.

Disabling swap seems to make a huge difference. It changes the time results for `"time top -bu"` by two orders of magnitude from 0.006s to 0.6s! In fact, I can run the box reasonably well with 2GB of RAM with swap disabled.

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If I let the box boot using all of the RAM, it is very slow. e.g.
"time top -bu >/dev/null" takes about 6 seconds.

I am seeing large runs of time (15–30 seconds) where the system time usage is in the high range (75–99). Does anyone have a suggestion on how to determine which kernel data structures are the problems?

thanks,

Adrian

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