

Re: [LONG] vmstat: What I/O is blocked and how to fix it?

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*Source:* <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/performance/2005-12/msg00061.html>

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- *From:* Mark Bucciarelli <[mark@xxxxxxxxxxxxxxxxxxxxxxxx](mailto:mark@xxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Fri, 16 Dec 2005 10:00:57 -0500
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On Tue, Dec 13, 2005 at 03:52:44PM -0500, Mark Bucciarelli wrote:

> On two occasions recently, vmstat has showed me that a  
> number of processes are blocked due to I/O. At the same  
> time, the number of disk transactions per second reported is  
> a small fraction of the disk's capability.

I did a lot of reading to try and understand what was happening to this heavily loaded box. The most helpful resources I found were posts by Andrew Kinney [1][2], Terry Lambert [3][4], and Daniel Lang [5], as well as the VM design elements doc written by Mathew Dillon [6].

I figure the kernel did not have enough memory to operate efficiently. I set `KDA_PAGES = 512` and the new kernel didn't show any blocked processes for the `spamd-setup` test. :)

A first question:

There were notes that the kernel auto-sizes things like memory for files and other things based on the amount of memory available.

In this context, does "memory available" = RAM + swap?

So now I should monitor things. I think I know how to watch network buffers and paging, are there any other stats I should watch?

– network buffers (`netstat -m`)

– vm page pointers  
(`vmstat -z, PV_ENTRY "free" + "used" >= 90% of "limit"`)

– anything else?

Any other recommended reading?

Thanks for any pointers.

m

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- [1] <http://lists.freebsd.org/pipermail/freebsd-hackers/2004-February/005528.html>
- [2] <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/hackers/2003-12/0221.html>
- [3] <http://lists.freebsd.org/pipermail/freebsd-current/2003-June/005691.html>
- [4] <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/hackers/2003-12/0229.html>
- [5] <http://freebsd.hanirc.org/holyboard/holyboard.cgi?db=hackers&mode=view&now=55&no=26202&jd=-1>
- [6] [http://ezine.daemonnews.org/200001/freebsd\\_vm.html](http://ezine.daemonnews.org/200001/freebsd_vm.html)

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• **References:**

- ◆ **[\[LONG\] vmstat: What I/O is blocked and how to fix it?](#)**  
    ◇ From: Mark Bucciarelli

- Prev by Date: **[Re: Benchmark MySQL Performance On FreeBSD And Linux](#)**
- Next by Date: **[Re: \[LONG\] vmstat: What I/O is blocked and how to fix it?](#)**
- Previous by thread: **[\[LONG\] vmstat: What I/O is blocked and how to fix it?](#)**
- Next by thread: **[Re: \[LONG\] vmstat: What I/O is blocked and how to fix it?](#)**
- Index(es):
  - ◆ **[Date](#)**
  - ◆ **[Thread](#)**