

Re: Hyperthreading in 6.x ... still frowned upon?

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Source: <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/stable/2006-05/msg00092.html>

- *From:* Vinny Abello <vinny@xxxxxxxxxxxxxx>
 - *Date:* Wed, 03 May 2006 13:36:04 -0400
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At 11:36 AM 5/3/2006, Chuck Swiger wrote:

Marc G. Fournier wrote:

In 4.x, it was a 'shut it off' sort of deal .. my new amd64 don't appear to have it enabled, but my older i386 server that I just upgraded to 6.x does:

```
user pid %cpu %mem vsz rss tt state start time command
root 14 104.0 0.0 0 8 ?? RL 11:38AM 0:55.02 [idle: cpu0]
root 11 99.1 0.0 0 8 ?? RL 11:38AM 0:00.00 [idle: cpu3]
root 13 99.1 0.0 0 8 ?? RL 11:38AM 0:00.00 [idle: cpu1]
root 12 98.0 0.0 0 8 ?? RL 11:38AM 0:54.54 [idle: cpu2]
```

Is it still something that I should disable, and, if so, how in 6.x?

You should test it for the workloads you have, but most of the time, HT isn't especially helpful. AMD64 CPUs come in dual-core format rather than HT-enabled. If you've seen "HT" or "HTT" applied to an AMD system, it's likely an abbreviation for "HyperTransport" or "HyperTransport Technology".

An Intel technical rep that gave a presentation on upcoming Intel VT technology in processors (Virtualization Technology) that I attended indicated that Hyperthreading was really designed to start getting programmers to program threading into their applications in preparation of dual core processors that we now have. Hyperthreading will likely be removed in future processors now that dual core technology is standard. In some instances it created a slight performance boost.

Hyperthreading is known to hurt performance under high loads because it diminishes the amount of cache available for each thread. Many times, having no Hyperthreading but more CPU cache available increases performance under high loads.

I typically disable Hyperthreading on all my servers as they are dual processor or dual core/dual processor or better anyway. I tend to get better results (with my applications) without Hyperthreading. I've been experimenting with leaving it on with my workstation as it's not a dual core or dual processor.

The reason hyperthreading frowned upon in multiuser scenarios of FreeBSD is due to a vulnerability found in Hyperthreading:

<http://lists.freebsd.org/pipermail/freebsd-security/2005-May/002903.html>

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Hyperthreading needs to be disabled in the BIOS. Often is referred to as a "Virtual Processor" in the BIOS.

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"Courage is resistance to fear, mastery of fear – not absence of fear" --- Mark Twain

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