

Re: More Processors? More Memory?

Source:

http://www.tech-archive.net/Archive/Windows/microsoft.public.windows.terminal_services/2005-07/msg00108.html

- *From:* "Ned Gnichtel" <makfu@xxxxxxxxxxxx>
 - *Date:* Tue, 5 Jul 2005 21:36:16 -0400
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Actually, this is not quite accurate. While a single, non AWE 32bit process is limited to addressing no more than 2 GB (or 3GB with the /3GB and compiled as large address space aware), it is possible to support more processes with larger working sets when using a PAE enabled system. So, for example, if you have 32 users, with an application set each committing 200 MB or memory, that roughly equals 6.2 GB of RAM. Now, if you have a PAE enabled system with 8GB of ram, versus 4GB of ram, the vast majority of the 6.2GB of committed memory can potentially reside in physical memory as working set. The additional memory reduces the pressure on the system to trim process working sets and inherently reduces paging.

With that said, the extra PAE memory does not directly extend the 32bit virtual address space. While it allows multiple processes to maintain larger portions of their private (user mode) addresses space in physical memory, it does provide for expansion of the kernel (globally mapped) upper 2GB address space. This means that there are still limitations on the number and size of kernel mode data structures including kernel pools, session space and PTE's that ultimately cap the scalability of Terminal Services regardless of how much physical memory or CPU cycles the system has available.

With all that said, I would not scale Terminal Services past 4 physical CPU's (HT or otherwise) and 8GB of ram on a 32bit platform. This configuration, when combined with WSRM should comfortably support around 120 heavy desktop replacement users, the maximum that I would recommend at this time. The fact is you will likely run out of kernel address space long before you can scale past the hardware I described above.

Win2k3 x64 greatly improve scalability by completely removing the kernel mode addressing limitations. Initial reports from MS internal testing indicate a nearly 80 percent improvement in terminal server vertical scalability on 4 CPU systems and considerable scalability improvements on 8 CPU systems. You may wish to perform some testing on Windows 2k3 x64, provided you have compatible applications.

-Ned

Re: More Processors? More Memory?

"Cláudio Rodrigues" <Claudio.Rodrigues@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:OggnxbagFHA.576@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

- > This may not help at all. You have the 4GB limitation on 32-bit Windows.
- > If you want a server that big you must use Windows 2003 on a 64-bit platform.
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- > --
- > Cláudio Rodrigues
- >
- > Microsoft MVP
- > Windows Technologies – Terminal Services
- > <http://www.terminal-services.net>
- > "bhbraswell" <bhbraswell@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote in message
- > news:D17254CC-16D6-468D-A539-4B1E7C1F1594@xxxxxxxxxxxxxxxxxxxx
- >> I'm currently on Win2000 standard with 2 processor 4GB RAM DL380s. The
- >> server max's out about 30 users with the applications that are loaded.
- >> I want to go to a bigger server. I was thinking 8 processors running
- >> under
- >> Windows 2003 Enterprise Edition and 32 GB RAM.
- >>
- >> Will my terminal server scale up with this configuration? Windows uses
- >> all
- >> the RAM right? and my apps will work the same? (there used to be a 4GB
- >> limit, i think) What are your hardware suggestions for this? Any
- >> reason
- >> to cluster?
- >>
- >> Can I go bigger? say 16 processors and 64 GB of RAM.
- >>
- >> Any thoughts are welcome, TIA..
- >
- >

• **References:**

- ◆ **More Processors? More Memory?**
 ◇ From: bhbraswell
- ◆ **Re: More Processors? More Memory?**
 ◇ From: Cláudio Rodrigues

- Prev by Date: **Re: HELP! License issue...**
- Next by Date: **Re: Win2k3 SPI**
- Previous by thread: **Re: More Processors? More Memory?**
- Next by thread: **RE: More Processors? More Memory?**
- Index(es):
 - ◆ **Date**
 - ◆ **Thread**