

Re: Exchange 2000 Server Virtual Memory Fragmentation

Source:

<http://www.tech-archive.net/Archive/Exchange/microsoft.public.exchange2000.information.store/2004-07/0220.html>

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If you are running Windows 2000 standard edition, as you cannot use /3 GB switch in the boot.ini, the initial memory used by applications like exchange

<http://support.microsoft.com/default.aspx?scid=%2fservicedesks%2fwebcasts%2fen%2fwc110502%2fwct110502.asp>

Let's go on to the next slide (9), which is "What Can Contribute to the Problem?" One of the big things that we have seen here in PSS that contributes to this problem quite a bit is incorrect use of the /3GB switch on Windows 2000 Servers. Windows 2000 can address 4 gigabyte (GB) of virtual address space altogether. By default, user-mode applications, such as Exchange or SQL ServerT or whatever you might have running on your server, they get 2 GB to work in. Kernel mode or the system also gets 2 GB to work in. So by default we can address 4 GB of virtual address space: user-mode applications get 2 GB and the system gets 2 GB.

Now please note there is a Knowledge Base (KB) article, which is Q266096. It's called "Exchange 2000 Requires /3GB Switch with More Than 1 Gigabyte of Physical RAM" that actually tells you that we do require a /3GB switch in the startup line of the Boot.ini file on the Exchange 2000 Server, if Exchange has more than 1 GB of RAM. So that's usually the article that is being followed when /3GB switch is being put into the Boot.ini file on the Exchange servers. So let's continue on this incorrect use of the /3GB switch (slide 10).

What happens? When the /3GB switch is used in Boot.ini, on the Windows 2000 Server what happens is user mode or all the applications gets 2 GB of virtual address space and kernel mode gets 1 GB of virtual address space. On the previous slide, you can see that, by default, they have 2 and 2, but if you use a /3GB switch on Windows 2000 Standard Server, now we're going to have 2 for user mode and 1 for the kernel mode, so we took away 1 GB from the system.

On Windows 2000 Advanced Server, however, and Windows 2000 Datacenter Server, what will happen if you are using that /3GB switch in a user-mode

application, such as in Exchange, is that you're going to have 3 GB of virtual address space to work in and kernel mode will get 1 GB. What's going to happen is that the /3GB switch is designed to take away 1 GB of virtual address space from kernel mode, which is from systems, and give it to user-mode application systems, which are your applications such as Exchange or SQL Servers that are running on the server.

" However, it works only on Advanced Server and Windows 2000 Datacenter Server. It's going to hurt you if it's being used on Windows 2000 Standard Server. "

See whether the following changes have been made, these might be helpful.

HeapDecommitFreeBlockThreshold

XADM: The HeapDecommitFreeBlockThreshold Registry Key

<http://support.microsoft.com/?id=315407>

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager

Value type: REG_DWORD

Value name: HeapDecommitFreeBlockThreshold

Value data: 262144 (0x00040000 in hex)

msExchESEParamCacheSizeMax

XSTR: How to Modify the Store Database Maximum Cache Size

<http://support.microsoft.com/?id=266768>

Open ADSIEDIT. In the Configuration container navigate to CN=Services, CN=Microsoft Exchange, CN=<Org_name>, CN=Administrative Groups, CN=<AG_name>, CN=Servers, CN=<Server_Name>, CN=InformationStore

Right-click CN=InformationStore, and then click Properties

On the Select a property to view menu, click msExchESEParamCacheSizeMax.

In the Edit Attribute box, type 147456 and then click Set

(This will set the cache to 576MB – the default is 900)

msExchESEParamMaxOpenTables

XGEN: Exchange 2000 Server Memory Use and the /3GB Switch

<http://support.microsoft.com/?id=328882>

Open ADSIEDIT. In the Configuration container navigate to CN=Services, CN=Microsoft Exchange, CN=<Org_name>, CN=Administrative Groups, CN=<AG_name>, CN=Servers, CN=<Server_Name>, CN=InformationStore, CN=<Storage group>

Right-click CN=<Storage Group>, and then click Properties

On the Select a property to view menu, click msExchESEParamMaxOpenTables

In the Edit Attribute box, type 13800, and then click Set

(This value is for 4 processors – the limit of Windows 2000 Std.)

msExchESEParamLogBuffers

XADM: ESE Log Buffers That Are Set Too Low Can Cause the Store to Stop Responding

<http://support.microsoft.com/?ID=328466>

Open ADSIEDIT. In the Configuration container navigate to CN=Services, CN=Microsoft Exchange, CN=<Org_name>, CN=Administrative Groups, CN=<AG_name>, CN=Servers, CN=<Server_Name>, CN=InformationStore, CN=<Storage group>

Right-click CN=<Storage Group>, and then click Properties
On the Select a property to view menu, click msExchESEParamLogBuffers
In the Edit Attribute box, type 512, and then click Set

Initial Memory Percentage

XADM: "Initial Memory Percentage" Registry Value Has No Effect

<http://support.microsoft.com/?id=810883>

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSEExchangeIS\ParametersSystem

Value type: REG_DWORD

Value name: Initial Memory Percentage

Value data: 0xa

Nathan

Microsoft PSS

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"john" <johnboy1973@hotmail.com> wrote in message
news:85fc67bc.0407220230.3f8bc2fd@posting.google.com...

> *Hi all*

>

> *I have the wondfull Event 9582 Error*

>

>

> *"The virtual memory necessary to run your Exchange server is
> fragmented in such a way that normal operation may begin to fail. It
> is highly recommended that you restart all Exchange services to
> correct this issue" ERROR*

>

> *Having viewd the webcast, tried the hotfixes, sp3, all KB's reg hacks,
> and even adsi edit fixes, I still have the error.*

>

> *I comes every hour, on the dot. Running 4GB ram, SP4 Win 2K, exk2 sp3.*

>

> *Anyone actually fixed this one ????*

>

> *Cheers in advance.*

>

> *John*