

## Re: Determine Disk Block Size ?

**Source:**

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**From:** Andrew J. Kelly (*sqlmvpnoospam\_at\_shadhawk.com*)

**Date:** 01/31/05

Date: Mon, 31 Jan 2005 08:03:20 -0500

An I agree with your comments except for the last one:

>>>

Furthermore, more files per Filegroup will spawn additional disk threads per request.

<<

That was true with 7.0 but is not necessarily true with SQL2000. In 2000 Sql Server can spawn multiple threads to read a single file as well. So just having multiple files does not mean it will be more efficient or spawn more threads than a single file.

--

Andrew J. Kelly SQL MVP

"Anthony Thomas" <ALThomas@kc.rr.com> wrote in message  
news:ep16rw1BFHA.3592@TK2MSFTNGP09.phx.gbl...

> Not that I disagree with the RAID-10 argument, I don't; however, I do  
> disagree with your comments about NTFS Cluster Sizes (a.k.a., block size).

>

> The MS SQL Server Operations Manual makes a recommendation of using 64-KB  
> cluster sizes. We have done so with a dramatic total disk I/O throughput.  
> It makes sense. SQL Server reads and writes data in 8KB data pages, but  
> issues Scatter-Gather I/O requests in 4 or more Extents (8 x 8KB pages)  
> simultaneously. If your block sizes are on these 8KB boundaries, SQL  
> Server

> Disk I/O requests can be more efficient.

>

> Your biggest disk throughput bottleneck is total number of I/O Operations

> a

> single spindle can handle. Your throughput will be based on type of  
> access, sequential versus random, and the size of each request.

> Optimizing

> the request sizes coupled with a fixed maximum number of I/O Ops, should  
> make your system as efficient as possible.

>

> Nevertheless, and along the same lines as the RAID arguments already  
> presented, this is also suggested from the Operations Manual: more smaller  
> disks are more efficient than fewer larger disks. This would come into  
> play

> in the 0 part of the RAID-10 argument. Striping allows more physical  
> spindles to fulfill requests, each one capable of servicing a theoretical  
> maximum number of I/O Ops. Furthermore, more files per Filegroup will  
> spawn

> additional disk threads per request. This coupled with number of disks

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> can
> greatly improve throughput.
>
> Sincerely,
>
>
> Anthony Thomas
>
>
> --
>
> "Mike Epprecht (SQL MVP)" <mike@epprecht.net> wrote in message
> news:uY2FhGsBFHA.3840@tk2msftngpl3.phx.gbl...
> Hi
>
> Rather make sure that your drives are configured correctly.
> Make sure your logs on RAID-10, and preferably your data on a separate
> RAID-10 volume. RAID-5 hurts more than it helps.
> As Geoff said, block size is not important, but getting maximum IO
> throughput is.
>
> Regards
> -----
> Mike Epprecht, Microsoft SQL Server MVP
> Zurich, Switzerland
>
> IM: mike@epprecht.net
>
> MVP Program: http://www.microsoft.com/mvp
>
> Blog: http://www.msmvps.com/epprecht/
>
> "Geoff N. Hiten" <SRDBA@Careerbuilder.com> wrote in message
> news:uhfJBgXBFHA.2180@TK2MSFTNGP12.phx.gbl...
>> Unless you have an overriding reason, go with the hardware manufacturer's
>> recommendations. These are typically the default settings. Changing the
>> NTFS block size usually has no measurable effect on system performance.
>>
>> --
>> Geoff N. Hiten
>> Microsoft SQL Server MVP
>> Senior Database Administrator
>> Careerbuilder.com
>>
>> I support the Professional Association for SQL Server
>> www.sqlpass.org
>>
>> "Joe K." <Joe K.@discussions.microsoft.com> wrote in message
>> news:B77A9710-86AA-4319-B539-6F65D91E5ECA@microsoft.com...
>> >
>> > I have a SQL Server 2000 Enterprise database that processes 300
>> > transactions/sec, approximately 300 users, and 250 GB in size. How can
> I
>> > determine the the appropriate disk block size that should be on my
> system.
>> >
>> > Thanks,
>> >
>> >
>>
>>
>>
>
```

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