

Re: blocking non blocking

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<http://www.tech-archive.net/Archive/Development/microsoft.public.win32.programmer.networks/2006-07/msg00088>

- *From:* "Daniel" <DanielV@xxxxxxxxxxxxxxxxxx>
 - *Date:* Thu, 6 Jul 2006 00:44:33 +0100
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Ok now i am very confused...here is why i think non blocking is less efficient, a quote from TCP/IP sockets in c# Practical guide for programmers:

"like polling, non blocking sockets typically involve some busy waiting and are not very efficient"

So you see why i am confused? I am getting conflicting opinions :(Can anyone explain and put me straight?

"Alexander Nickolov" <agnickolov@xxxxxxx> wrote in message <news:ekoQv3snGHA.1664@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>

Why do you think non-blocking is less efficient? There's no real difference for a single client (occasional three system calls instead of one), but for multiple clients you dramatically cut on the number of threads needed thus significantly improving performance with non-blocking or overlapped model. (BTW, overlapped is the better deal of the two...)

I have some vague recollection from NT4 days that an NT4 server of those days (one CPU) crashed with under 1000 threads. Just to put this into perspective, even if you can manage somehow a server with 50K threads, it'll be prohibitively more expensive than an equivalent server using a non-blocking or overlapped I/O servicing 50K clients. Dual core won't cut it a by a long shot! (Perhaps 16 or 32 dual cores...)

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Alexander Nickolov
Microsoft MVP [VC], MCSD
email: agnickolov@xxxxxxx
MVP VC FAQ: <http://www.mvps.org/vcfaq>
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"Daniel" <DanielV@xxxxxxxxxxxxxxxxxx> wrote in message

Re: blocking non blocking

news:OCXwCIHnGHA.2256@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

I have currently designed it using asynchronous threads. From what i have read and learnt about blocking and non blocking, it seems non blocking is less efficient than blocking but i have to beware of deadlock?

I am not using select and wait. I spawn a thread per client which stays active for as long as the client is connected. So theoretically i could have 50k threads running at any time. My server would definitely be dual core, so 25k threads per cpu to handle, and i may even use 2 multi core servers and load balancing.

Does that sound like it could handle it? Is my current set up ok for how scalable a solution i require?

"Alexander Nickolov" <agnickolov@xxxxxxx> wrote in message news:OdqRGOHnGHA.4240@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

50K open sockets definitely calls for IOCP and a thread pool!

It may also call for multi-CPU or multi-core machine I might add...

The other model that can deal with lots of sockets is asynchronous

socket I/O, but it doesn't scale as much. With select and wait functions you are limited to 64 sockets per thread. Blocking sockets can't go beyond a handful of sockets or risk major latency introduced at your server...

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"Daniel" <DanielV@xxxxxxxxxxxxxxxxxxxx> wrote in message news:uowZ029mGHA.4620@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

I may need to handle up to 50,000 clients at any given time. Is that how scalable you are talking, is blocking ok for this kind of size? My data size is tiny though, at largest 8Kb – 16Kb roughly at any given time.

"Alexander Nickolov"
<agnickolov@xxxxxxx> wrote in message

Re: blocking non blocking

news:%23%23kqq46mGHA.2252@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

ioctlsocket with FIONBIO
or one of the select API
calls that
do it for you
(WSAEventSelect and
WSAAsyncSelect).

The advantage is you don't
need two threads per socket
per
client so your server can
actually scale to more than a
handful
of clients. The disadvantage
is the somewhat harder logic
needed
to implement non-blocking
communication. However,
for a truly
high performance scalable
server you want overlapped
I/O and
a completion port used with
a thread pool, which is
significantly
harder to implement...

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"Daniel"
<DanielV@xxxxxxxxxxxxxxxx>
wrote in message
news:%23yE41I6mGHA.3376@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

Hey guys

My socket
connection
is
blocking=true,

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and i have
multiple
clients
connecting
to my
server.

The more
clients i
have the
more
problems i
have.

How do i
set the
socket to
non
blocking?
what are the
disadvantages
of this?
What are
the
advantages
of this?

Thanks