How can I read more than 4GB of data from a file in a single call to ReadFile?

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The `nNumberOfBytesToRead` parameter to `ReadFile` is a 32-bit unsigned integer, which limits the number of bytes that could be read at once to 4GB. What if you need to read more than 4GB?

The `ReadFile` function cannot read more than 4GB of data at a time. At the time the function was originally written, all Win32 platforms were 32-bit, so reading more than 4GB of data into memory was impossible because the address space didn't have room for a buffer that large.

When Windows was expanded from 32-bit to 64-bit, the byte count was not expanded. I don't know the reason for certain, but it was probably a combination of (1) not wanting to change the ABI more than necessary, so that it would be easier to port 32-bit device drivers to 64-bit, and (2) having no practical demand for reading that much data in a single call.

You can work around the problem by writing a helper function that breaks the large read into chunks of less than 4GB each.

But reading 4GB of data into memory seems awfully unusual. Do you really need all of it in memory at once? Maybe you can just read the parts you need as you need them. Or you can use a memory-mapped file to make this on-demand reading transparent. (Though at a cost of having to deal with in-page exceptions if the read cannot be satisfied.)