

Re: "NUL" device is missing

Source:

<http://www.tech-archive.net/Archive/WinXP/microsoft.public.windowsxp.embedded/2004-05/0796.html>

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KM wrote:

- > What VC version you are building against?
- > The reason I am asking is that the issue has been fixed in C standard of 99
- > year. Only VC 2003 has peaked up the fix.
- > The fix was to pass NULL to `_snprintf` to count the number of characters
- > required for a specified formatting string. Basically, you can make a call
- > like: `_snprintf(NULL,0,"%...",...)` and it will return you the number.
- >
- > You can easy track this down exploring CRT source of VC. In VC 6.0
- > (`sprintf.h`, `output.c`, `stdio.h`) you may see that the string formatting routine
- > subcalls do not check for NULL. In VC 2003 CRT, they do (`output.c`, `write_xxx`
- > functions called from `_output`). This may be a cure for you. Also, there is
- > another useful wrapper (don't know if it is ANSI compatible) –
- > `_sprintf(char* format,...)` – this will return the same number of characters
- > you need.

I'm stuck using Visual C/C++ v6.0 right now w/o the option to move on up to the Studio 2003 compiler. However, I will keep this in mind for future use.

I spent quite a bit of time last night reviewing the source code for the CRT and had reached the point where everything comes down to a call to the `_output()` function that does all of the dirty work. If it is one of the string `printf()` types of functions, then a dummy `_iob` [a.k.a. "FILE" structure] is worked up where it looks like a valid file handle but really points to the string buffer. I can see the counted vs. uncounted versions set a member in the structure to limit define the output buffer size. Still, it is the `_output()` function that does all of the work and I haven't gone through and reviewe the source code for `_output` to see if it tests properly for NULL. I think that in VC6 it doesn't as I've had errors occur when passing in a NULL pointer to `sprintf()`. I'll look at it all in more detail today.

It is encouraging to hear than an updated ANSI C standard does finally address this problem, though. I've got VS2003 .NET on hand and I will review the CRT source code from it, too, to see what the differences in the implementation look like. Perhaps I can cook up my own flavor of `_output()` to use with VC6 in my own code to back-port that functionality and thus

microsoft.public.windowsxp.embedded: Re: "NUL" device is missing

remove the dependency on the NUL device.

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