Subject: GuiLock Example broken
Posted by masu on Mon, 17 Aug 2009 08:35:08 GMT
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Hi,

I tried the GuiLock example and got the following error:

Assertion failed in d:\programs\upp-svn\uppsrc\Draw\DrawLock.cpp, line 32
sGLockLevel > 0
Whereas GuiMT example works fine.
Could it be MingW causing the troubles?

System: WinXP, MingW 4.3.0, SVN 1514

Matthias

Subject: Re: GuiLock Example broken
Posted by cocob on Mon, 17 Aug 2009 08:36:46 GMT
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I have same type of problems with MINGW and MT.
No problems with MSC or GCC on Linux

cocob

Subject: Re: GuiLock Example broken
Posted by mirek on Mon, 17 Aug 2009 09:57:43 GMT
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masu wrote on Mon, 17 August 2009 04:35Hi,

I tried the GuiLock example and got the following error:

Assertion failed in d:\programs\upp-svn\uppsrc\Draw\DrawLock.cpp, line 32
sGLockLevel > 0
Whereas GuiMT example works fine.
Could it be MingW causing the troubles?

System: WinXP, MingW 4.3.0, SVN 1514

Matthias

AFAIK, there was a problem with TLS variables in mingw. sGLockLevel is TLS variable...

I am sorry, but right now we cannot support MT with mingw, to my best knowledge.

Mirek

Subject: Re: GuiLock Example broken
Posted by koldo on Mon, 17 Aug 2009 15:02:11 GMT
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Hello cocob/masu

Yes it happens the same to me.

I do not have any idea about MT but if you base on GuiMT sample you can do things that work.

Best regards
Koldo

Subject: Re: GuiLock Example broken
Posted by masu on Mon, 17 Aug 2009 16:22:50 GMT
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Hi,

I also added '-mthreads' flag to link command line and now the example works.
I think you simply forgot to add it at the time '-mthreads' was added to compile step for MingW long time ago.
A patch is applied for GccBuilder.cpp.

Matthias

File Attachments
1) GccBuilder.patch, downloaded 596 times

Subject: Re: GuiLock Example broken
Posted by mirek on Mon, 17 Aug 2009 17:17:14 GMT
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Nice. Thanks a lot, patch applied.

Mirek

Subject: Re: GuiLock Example broken
Posted by koldo on Mon, 17 Aug 2009 23:38:30 GMT
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Hello masu

I have compiled TheIde and sample using svn 1517.

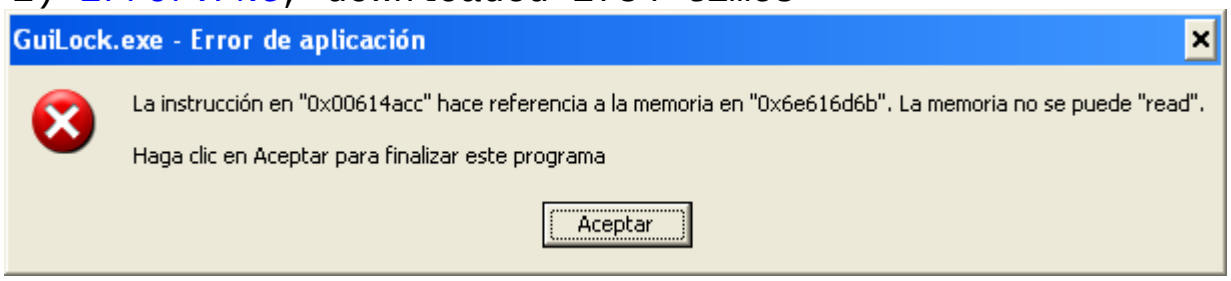
Sample now runs well with MinGW, but on closing the program I get an error. It seems to come from Windows but is in spanish (in my case).

It happens the same both in Debug and Speed versions.

Best regards
Koldo

File Attachments

1) Error.PNG, downloaded 1734 times



Subject: Re: GuiLock Example broken
Posted by masu on Tue, 18 Aug 2009 11:13:31 GMT
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Hi Koldo,

I could reproduce your problem, but I have different behavior on different machines. I observed problems on machines with different MingW version installed.
Can you make sure the right MingW binary path is the first in your PATH env variable and then try again?

Matthias

Subject: Re: GuiLock Example broken
Posted by koldo on Tue, 18 Aug 2009 12:45:05 GMT
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Hello masu

I use MinGW version 4.4.0.

Best regards
Koldo

Subject: Re: GuiLock Example broken
Posted by mirek on Tue, 18 Aug 2009 18:22:24 GMT
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To be fair, I had quite a lot problems to manage "exit".

It is not unlikely that MT code is broken - maybe it can crash in MSC or GCC/Linux too. It did not during my testing, but maybe somebody should test more intensely...

Mirek

Subject: Re: GuiLock Example broken
Posted by masu on Thu, 20 Aug 2009 15:52:29 GMT
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Hi,

attached I provide a test package for explicit TLS using phreads.

I wanted to evaluate implicit TLS due to missing __thread storage qualification support on OpenBSD. What I discovered was a strange behavior with U++ Core package included.

It runs without problems when compiled in optimal mode without including U++ Core. But when I include Core U++ package I get segmentation faults all the time regardless if it is compiled in debug mode or optimal mode.

As far as I understand the only thing that is replaced by including Core package is heap implementation (in optimal mode) and since I use the heap to allocate and de-allocate memory for the TLS variables it is used instead of standard one. Is that right?

If I do not use heap allocated variables, but pre-allocated ones, I do not have any problems (This can be done by setting TLS_PRE_ALLOC to true).

Matthias

File Attachments

1) pthread_tls.tgz, downloaded 547 times

Subject: Re: GuiLock Example broken
Posted by mirek on Fri, 21 Aug 2009 12:12:59 GMT
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Memory allocator uses implicit TLS, __thread (in fact, it is the cornerstone of its efficiency). If that one is replaced by something not working, it explains the issue. Have you tried with USEMALLOC.

Another thing to mention is that Thread has, at thread exit, explicit call to release per-thread associated allocator cache. If you are not using Thread, you should call MemoryFreeThread(); at the end of thread. But symptoms of this would be leaks, not crashes.

Side note: allocator only replaces new/delete, not alloc/free.

Subject: Re: GuiLock Example broken
Posted by mirek on Fri, 21 Aug 2009 12:15:29 GMT
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BTW, it looks like you alloc tls by 'new' and free it using 'free'.

That is a receipt of failure in any case

Mirek

Subject: Re: GuiLock Example broken
Posted by masu on Fri, 21 Aug 2009 12:19:59 GMT
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Hi Mirek,

thanks for explanations, it seems, it was the call to free instead of delete that caused the crash ... (sorry about that).

I meant explicit TLS not implicit one in my prior post, will edit it to correct this one.

Thanks for now,
Matthias

Subject: Re: GuiLock Example broken
Posted by mirek on Fri, 21 Aug 2009 12:33:33 GMT
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masu wrote on Fri, 21 August 2009 08:19Hi Mirek,

thanks for explanations, it seems, it was the call to free instead of delete that caused the crash ... (sorry about that).

I meant explicit TLS not implicit one in my prior post, will edit it to correct this one.

Thanks for now,
Matthias

Actually, if correct __thread is not available, U++ allocator cannot work in MT.

Maybe you should just USEMALLOC then... In any case, to stay on the safe side, you TLS implementation should use malloc/free (and maybe then you could use such TLS to make U++ allocator work, although any positive effects will be likely diminished by slow TLS).

Mirek

Subject: Re: GuiLock Example broken
Posted by masu on Fri, 21 Aug 2009 12:43:21 GMT
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luzr wrote on Fri, 21 August 2009 14:33Actually, if correct __thread is not available, U++ allocator cannot work in MT.

I know, thats why I get problems on OpenBSD (at least I think so, at the moment).

luzr wrote on Fri, 21 August 2009 14:33Maybe you should just USEMALLOC then... In any case, to stay on the safe side, you TLS implementation should use malloc/free (and maybe then you could use such TLS to make U++ allocator work, although any positive effects will be likely diminished by slow TLS).

Ok, thanks for the advice.

Matthias

Subject: Re: GuiLock Example broken
Posted by koldo on Sun, 23 Aug 2009 08:37:36 GMT
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Hello all

Now GuiMT sample fails in the same way in MinGW as reported in GuiLock sample in Tue, 18 August 2009. It goes ok in MSC (Windows) and Gcc (Linux)

It happens in the program end.

In Debug mode I get this:

emutls_destroy function is called from the exit() function.

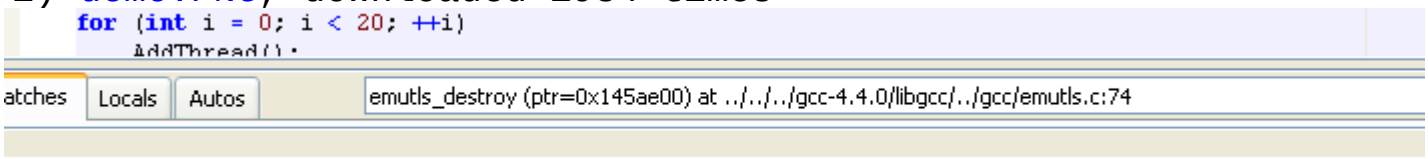
Is MinGW the source of this problem ?

In new version 4.4.1 emutls.c file has been changed. However I have not found MinGW 4.4.1 binaries.

Best regards
Koldo

File Attachments

1) demo.PNG, downloaded 1934 times



Subject: Re: GuiLock Example broken
Posted by koldo on Mon, 24 Aug 2009 08:26:18 GMT
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Hello all

Good news. Twilight Dragon Media has released their GCC/mingw32 4.4.1 version (http://www.tdragon.net/recentgcc/)

I have just tried GUIMT and GUILock samples and both work.

Bad news. The samples seem to go slow. GUILock with MSC Debug goes much faster than with MinGW Speed.

The binaries I have chosen first are without dwarf-2.

Best regards
Koldo

Addendum 1:

Unfortunately there are compiling problems using dwarf-2 version

Compiling GUILock sample I get:Quote:In file included from
C:/upp/out/Draw/MINGW.Debug.Debug_full.Gui.Mt\$bl itz.cpp:3:
C:\upp\uppsrc\Draw\DrawLock.cpp:11: error: thread-local storage not supported for this target
In file included from C:/upp/out/Draw/MINGW.Debug.Debug_full.Gui.Mt\$bl itz. sGlokLevel > 0".cpp:10:
C:\upp\uppsrc\Draw\Font.cpp:266: error: thread-local storage not supported for this target
C:\upp\uppsrc\Draw\Font.cpp:328: error: thread-local storage not supported for this target
C:\upp\uppsrc\Draw\Font.cpp:355: error: thread-local storage not supported for this target
C:\upp\uppsrc\Draw\Font.cpp:356: error: thread-local storage not supported for this target
C:\upp\uppsrc\Draw\Font.cpp:357: error: thread-local storage not supported for this target
...

They are related with thread__.

Addendum 2:

This is black magic for me: In Mt.h using always
#define thread__ __declspec(thread) (removing __thread) GUIMT sample works well and GUILock stops with error "Assertion failed in ... DrawLock.cpp, line 32. sGLockLevel > 0"

Subject: Re: GuiLock Example broken
Posted by masu on Mon, 24 Aug 2009 10:23:44 GMT
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Hi Koldo,

thank you for your investigation.

Implicit TLS (thread-local storage) that is used in U++ is not always supported, depending on Compiler and OS support.
It is declared by using __declspec(thread) var for MSC and __thread for GCC.

That is why you see problems with GUILock example since it depends on having sGLockLevel variable locally available in all threads which does not seem to be supported with dwarf-2 version.
AFAIK GuiMT example does not need to use thread-local variables, that is why it works.

I have the same problems with OpenBSD that is why I try to find a solution for systems (Compiler and OS combinations) that do not support implicit TLS.

Regards,
Matthias

Subject: Re: GuiLock Example broken

Posted by koldo on Wed, 26 Aug 2009 07:10:08 GMT
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Thank you Matthias+Mirek

Finally I will left TDM 4.4.1 as non-dwarf version makes very slow programs and dwarf version with "Speed" option cannot link the programs. It seems it has to be polished.

To work I have returned to MinGW 4.4.0 using GuiMT concepts and voiding __thread in line 10 of Mt.h, so that now the programs end well without the emutls_destroy problem reported before.

I understand Mirek, but under Windows I do not want to depend only on MSC so I prefer to use something worse than GuiLock __, but more portable.

Best regards
Koldo

Subject: Re: GuiLock Example broken
Posted by masu on Wed, 26 Aug 2009 08:33:50 GMT
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Hi Koldo,

at the moment I am working on integrating explicit TLS support into Core and Draw.
Basically I replace all thread__ variables with another per Thread mechanism to have them thread-local.
For now I managed to have a working version for console apps using pthread lib (only tested in OpenBSD at the moment).
But I will extend it to also include explicit TLS on Win32 for compilers that do not support it.

Regards,
Matthias

Subject: Re: GuiLock Example broken
Posted by koldo on Wed, 26 Aug 2009 18:40:58 GMT
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Thank you Matthias

I wonder if there is somebody out there that has done something like this before. But thank you again for your efforts.

Best regards
Koldo

Subject: Re: GuiLock Example broken
Posted by Novo on Thu, 27 Aug 2009 03:57:28 GMT
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koldo wrote on Mon, 24 August 2009 04:26
Good news. Twilight Dragon Media has released their GCC/mingw32 4.4.1 version (http://www.tdragon.net/recentgcc/)

I have just tried GUIMT and GUILock samples and both work.

This problem seems to be fixed in recent versions of gcc.

http://www.mail-archive.com/gcc-bugs@gcc.gnu.org/msg258414.h tml
http://www.mail-archive.com/gcc-bugs@gcc.gnu.org/msg258420.h tml

Subject: Re: GuiLock Example broken
Posted by masu on Thu, 27 Aug 2009 11:50:58 GMT
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Thank you Novo for the hint.

I installed latest version (tdm-mingw-1.908.0-4.4.1.exe), but unfortunately speed of GuiLock example is very very slow (1 minute min.), now.

So, it is not worth to update to latest version.

Regards,
Matthias

Subject: Re: GuiLock Example broken
Posted by koldo on Tue, 13 Oct 2009 12:13:03 GMT
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New news in post http://www.ultimatepp.org/forum/index.php?t=msg&goto=233 52&#msg_23352