
Subject: [SOLVED] Unable to compile MT applications (weird assembler error with GCC on Linux i386 arch)

Posted by [Oblivion](#) on Thu, 27 Feb 2014 00:42:00 GMT

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Hello guys,

I was trying to compile the latest TheIDE with MT to test the latest gdb_mi interface, but hit a strange error.

So I checked it with some other apps, and the U++ GuiMT example and always got the same result.

For example, with the GuiMT example I get the following errors, which seem to be the case for all MT apps (some part is in Turkish, but it can be translated as invalid expression before @indntpoff - thread local storage modifier for 32 bit architecture)

```
----- CtrlLib ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 1 / 9 )
----- CtrlCore ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 2 / 9 )
----- PdfDraw ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 3 / 9 )
----- Draw ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 4 / 9 )
----- plugin/bmp ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 5 / 9 )
----- RichText ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 6 / 9 )
----- Core ( GUI MT GCC DEBUG SHARED DEBUG_FULL BLITZ LINUX POSIX ) ( 7 / 9 )
heaputil.cpp
```

heap.cpp

Core: 2 file(s) built in (0:19.01), 9509 msec / file, duration = 19094 msec
There were errors. (0:19.58)

So I produced the asm code of the relevant source files (heaputil.cpp and heap.cpp)
In heap.cpp, the code block that produce the error is like this:

LFE6366:

```
.size _ZN3Upp12MemoryShrinkEv, .- _ZN3Upp12MemoryShrinkEv
.globl _ZN3Upp16MemoryFreeThreadEv
.type _ZN3Upp16MemoryFreeThreadEv, @function
_ZN3Upp16MemoryFreeThreadEv:
.LFB6367:
.cfi_startproc
pushl %ebp
.cfi_def_cfa_offset 8
```

```

.cfi_offset 5, -8
movl %esp, %ebp
.cfi_def_cfa_register 5
subl $24, %esp
movl %gs:0, %edx
movl _ZN3Upp4heapE@indntpoff, %eax          <<----- gives error.
addl %edx, %eax
movl %eax, (%esp)
call _ZN3Upp4Heap8ShutdownEv
leave
.cfi_restore 5
.cfi_def_cfa 4, 4
ret
.cfi_endproc

```

```

.LFE6367:
.size _ZN3Upp16MemoryFreeThreadEv, .-_ZN3Upp16MemoryFreeThreadEv
.globl _ZN3Upp11MemoryCheckEv
.type _ZN3Upp11MemoryCheckEv, @function
_ZN3Upp11MemoryCheckEv:
.LFB6368:
.cfi_startproc
pushl %ebp
.cfi_def_cfa_offset 8
.cfi_offset 5, -8
movl %esp, %ebp
.cfi_def_cfa_register 5
subl $24, %esp
movl %gs:0, %edx
movl _ZN3Upp4heapE@indntpoff, %eax        <<----- gives error.
addl %edx, %eax
movl %eax, (%esp)
call _ZN3Upp4Heap5CheckEv
leave
.cfi_restore 5
.cfi_def_cfa 4, 4
ret
.cfi_endproc

```

Above code is the asm translation of heap.cpp, line 268+:

```

void MemoryFreeThread()
{
    heap.Shutdown();
}

```

```

void MemoryCheck()
{
    heap.Check();
}

```

In heaputil.cpp, the code block that produce the error is like this:

```

.LFE6353:
.size _ZN3Upp17PeakMemoryProfileEv, .-_ZN3Upp17PeakMemoryProfileEv
.globl _ZN3Upp13DoPeakProfileEv
.type _ZN3Upp13DoPeakProfileEv, @function
_ZN3Upp13DoPeakProfileEv:
.LFB6354:
.cfi_startproc
pushl %ebp
.cfi_def_cfa_offset 8
.cfi_offset 5, -8
movl %esp, %ebp
.cfi_def_cfa_register 5
subl $24, %esp
movl _ZN3UppL5sPeakE, %eax
testl %eax, %eax
je .L57
movl _ZN3UppL5sPeakE, %eax
movl %eax, 4(%esp)
movl %gs:0, %edx
movl _ZN3Upp4heapE@indntpoff, %eax
error.
addl %edx, %eax
movl %eax, (%esp)
call _ZN3Upp4Heap4MakeERNS_13MemoryProfileE
.L57:
leave
.cfi_restore 5
.cfi_def_cfa 4, 4
ret
.cfi_endproc

....

.LLSDACSE6368:
.text
.size _ZN3Upp4Heap4MakeERNS_13MemoryProfileE,
.-_ZN3Upp4Heap4MakeERNS_13MemoryProfileE

```

<<----- gives

```

.align 2
.globl _ZN3Upp13MemoryProfileC2Ev
.type _ZN3Upp13MemoryProfileC2Ev, @function
_ZN3Upp13MemoryProfileC2Ev:
.LFB6370:
.cfi_startproc
pushl %ebp
.cfi_def_cfa_offset 8
.cfi_offset 5, -8
movl %esp, %ebp
.cfi_def_cfa_register 5
subl $24, %esp
movl 8(%ebp), %eax
movl %eax, 4(%esp)
movl %gs:0, %edx
movl _ZN3Upp4heapE@indntpoff, %eax          <<----- gives error.
addl %edx, %eax
movl %eax, (%esp)
call _ZN3Upp4Heap4MakeERNS_13MemoryProfileE
leave
.cfi_restore 5
.cfi_def_cfa 4, 4
ret
.cfi_endproc

```

Above code is the asm translation of heaputil.cpp, lines 46+ and 302+:

```

void DoPeakProfile()                // Line 46
{
    if(sPeak)
        heap.Make(*sPeak);
}

...

MemoryProfile::MemoryProfile()     // Line 302
{
    heap.Make(*this);
}

```

So the main culprit seems to be the "heap", which is defined as extern thread Heap in heapimp.h (see line 175):

```
extern thread__ Heap heap;
```

Any ideas on how to solve this problem? Is this a 32 bit i386 arch error only?
I can't compile any MT app with U++ heap. Note that they compile if I use USEMALLOC.

This happens on an ArchLinux with kernel 3.12 and GCC 4.8+ on a 32 bit AMD AthlonXP processor (without SSE2). I don't get this with an AMD 64 or newer Intel machines and I am using U++ nightly (6944).

Regards.
