Subject: mingw?
Posted by mirek on Thu, 11 Jun 2009 17:32:08 GMT
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Well, looking through satistics, I think we should perhaps reintroduce mingw package. (Not that I like that...

Anybody using mingw recently? What are actual versions working with U++?

Mirek

Subject: Re: mingw?
Posted by cocob on Thu, 11 Jun 2009 21:11:20 GMT
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i don't use it but i like the idea to have theide shipped with a preconfigured compiler

cocob

Subject: Re: mingw?
Posted by cbpporter on Thu, 11 Jun 2009 21:27:10 GMT
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I vote yes for Mingw.

Subject: Re: mingw?
Posted by mirek on Thu, 11 Jun 2009 21:43:59 GMT
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cbpporter wrote on Thu, 11 June 2009 17:27I vote yes for Mingw.

Anybody ready to pick pieces? Or should we use previous config?

Mirek

Subject: Re: mingw?
Posted by Sender Ghost on Fri, 12 Jun 2009 05:03:16 GMT
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luzr wrote on Thu, 11 June 2009 19:32Well, looking through satistics, I think we should perhaps reintroduce mingw package. (Not that I like that... :)

Anybody using mingw recently? What are actual versions working with U++?

Mirek
The 4.4.0 version from Twilight Dragon Media works fine for me, e.g. to compile TheIDE with MT build option, but doesn't work with SSE2 like MSC9 compiler.

Subject: Re: mingw?
Posted by masu on Fri, 12 Jun 2009 08:49:00 GMT
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luzr wrote on Thu, 11 June 2009 19:32Anybody using mingw recently? What are actual versions working with U++?
I use version 4.3.0 on WinXP and it works for the latest SVN version. I also use MT in one of my programs, didn't see any problem.

Matthias

Subject: Re: mingw?
Posted by koldo on Thu, 18 Jun 2009 14:01:11 GMT
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Sender Ghost wrote on Fri, 12 June 2009 07:03luzr wrote on Thu, 11 June 2009 19:32Well, looking through satistics, I think we should perhaps reintroduce mingw package. (Not that I like that...

Anybody using mingw recently? What are actual versions working with U++?

Mirek
The 4.4.0 version from Twilight Dragon Media works fine for me, e.g. to compile TheIDE with MT build option, but doesn't work with SSE2 like MSC9 compiler.

Oooh

I thought it worked with SSE2!

Anyway I have seen good references from that "unnoficial" MinGW version so I will try it.

Best regards
Koldo

Subject: Re: mingw?
Posted by koldo on Thu, 18 Jun 2009 14:32:10 GMT

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Hello all

I have just simply deleted Upp\MinGW folder, I have installed there MinGW 4.4.0 version from Twilight Dragon Media, and compiled perfectly TheIde itself and other relatively big program. Nothing to change as the installer do its all.

Thank you Sender Ghost

Best regards
Koldo

Subject: Re: mingw?
Posted by koldo on Thu, 18 Jun 2009 15:17:53 GMT
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Hello all

Just a benchmark. I have filled with random double numbers and multiplied two 2000x2000 matrices using SSE2 optimized code.

Compiled in console application with TheIde "Speed" option:

- Using MinGW bundled with Upp: 7.5 seconds
- Using MinGW TDM 4.4: 7.5 seconds
- Using MinGW TDM 4.4 with "-msse2" compiler option: 2.6 seconds
- Using MSC9: 17.3 seconds
- Using MSC9 with "/arch:SSE2" compiler option: 2.1 seconds

So Twilight Dragon really uses SSE2
And I would put by default in TheIde "-msse2" or "/arch:SSE2" in "Speed" option.

Best regards
Koldo

Subject: Re: mingw?
Posted by Sender Ghost on Thu, 18 Jun 2009 18:03:54 GMT
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koldo wrote on Thu, 18 June 2009 16:01
Oooh :cry:

I thought it worked with SSE2!

Hello, Koldo.

I meant GUI MT SSE2 main package configuration flags, not just Streaming SIMD Extensions 2 instruction set. It compiles well (in Optimal mode), but will crash when started (at least in my configuration). Console applications works. I guess, the GUI and SSE2 flags in conflict for GCC Optimal mode.

Subject: Re: mingw?
Posted by koldo on Thu, 18 Jun 2009 21:08:41 GMT
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Hello Sender Ghost

I have put the little benchmark in Upp "Bombs" example and it worked well without and with -msse2 (with this it worked three times faster).

As I do not have any idea about SSE2 optimizations I cannot give you any suggestion. If you want you can send me some sample that crash in your computer and test it here.

Any way I suggest anybody to update MinGW as much as possible.

And it also would be good to:
- either add to "Speed" option more optimisations like "-msse2" or "/arch:SSE2"
- or add other option like "Max Speed" (or other name) to include maximum optimizations that are less reliable, like -msse2 in your computer.

I do not know if there are more configurations, but I have been very surprised. Look in MSC9 test: from 17.3 to 2.1 seconds

Best regards
Koldo

Subject: Re: mingw?
Posted by Sender Ghost on Thu, 18 Jun 2009 22:23:49 GMT
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Ok, I found the cause. This is O3 GCC compiler optimization option which set by default in Build methods.

```
void BuildMethods::NewBuilder()
{
 String b = ~builder;
 if(IsNull(speed_options)) {
  if(IsGccBuilder(b))
```

```
  #ifdef PLATFORM_WIN32
   speed_options <<= "-O3 -ffunction-sections";
  #else
   speed_options <<= "-O3";
  #endif
  else
   speed_options <<= "-O2";
 }


if(HasFlag("SSE2"))
 cc << " -msse2 -mfpmath=sse";
```

The O2 instead of O3 compiler option works without crashes with SSE2 flag in GUI applications.

Thank you Koldo for testing.

Subject: Re: mingw?
Posted by tojocky on Fri, 19 Jun 2009 14:31:46 GMT
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koldo wrote on Fri, 19 June 2009 00:08Hello Sender Ghost

I have put the little benchmark in Upp "Bombs" example and it worked well without and with -msse2 (with this it worked three times faster).

.....
Any way I suggest anybody to update MinGW as much as possible.

And it also would be good to:
- either add to "Speed" option more optimisations like "-msse2" or "/arch:SSE2"
- or add other option like "Max Speed" (or other name) to include maximum optimizations that are less reliable, like -msse2 in your computer.

I do not know if there are more configurations, but I have been very surprised. Look in MSC9 test: from 17.3 to 2.1 seconds

Best regards
Koldo

Very interesting things. I agree to add this option to "Speed" when autobuild (Automatic setup), do not need to add new option "Max Speed".

For me works fine and speed time is more faster. can you tell how to upgrade minGW for u++? is any specific configuration or is standard installation of minGW?

Subject: Re: mingw?
Posted by koldo on Fri, 19 Jun 2009 19:38:32 GMT
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Hello Ion

It is very easy to upgrade MinGW to GCC 4.4.0:

1. Delete your Upp/MinGW folder
2. Go to Twilight Dragon Media page: http://www.tdragon.net/recentgcc/
3. Get the last TDM-MinGW instaler, now in
http://downloads.sourceforge.net/tdm-gcc/tdm-mingw-1.905.0-4 .4.0-2.exe
4. Install it in upp/MinGW and choose the options by default
5. That's all

Thank you Sender Ghost

Best regards
Koldo

Subject: Re: mingw?
Posted by koldo on Fri, 19 Jun 2009 19:44:42 GMT
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Hello Sender Ghost

I do not understand it

```
if(HasFlag("SSE2"))
 cc << " -msse2 -mfpmath=sse";
```

It seems TheIde now automatically choose -msse2.

I promise you that this:

Quote:I have put the little benchmark in Upp "Bombs" example and it worked well without and with -msse2 (with this it worked three times faster).
is absolutely true.

Best regards
Koldo

Subject: Re: mingw?
Posted by koldo on Fri, 19 Jun 2009 20:44:25 GMT
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Hello all

One thing I did not know:

- TheIde compiled with MSC can debug MinGW and MSC
- TheIde compiled with MinGW can debug MinGW but hungs trying to debug MSC.

In the last case TheIde outputs an Exclamation window with "Error invoking gdb !", strange as I am trying to compile with MSC.

This is in the file gdb.cpp:

```
bool Gdb::Create(One<Host> _host, const String& exefile, const String& cmdline)
{
 host = _host;
 dbg = host->StartProcess("gdb " + GetHostPath(exefile));
 if(!dbg) {
  Exclamation("Error invoking gdb !");
  return false;
 }
```

Gdb::Create is called in the same file in:

```
One<Debugger> GdbCreate(One<Host> host, const String& exefile, const String& cmdline)
{
 Gdb *dbg = new Gdb;
 if(!dbg->Create(host, exefile, cmdline)) {
  delete dbg;
  return NULL;
 }
 return dbg;
}
```

And GdbCreate is called in file Debug.cpp in:

```
void Ide::BuildAndDebug(bool runto)
{
...
#ifdef COMPILER_MSC
 debugger = builder == "GCC" ? GdbCreate(host, target, runarg) : PdbCreate(host, target, runarg);
#else
 debugger = GdbCreate(host, target, runarg);
#endif
```

So it seems the code forces to use Gdb although the compiler used is MSC. This could be the problem.

Best regards
Koldo

Subject: Re: mingw?
Posted by Sender Ghost on Fri, 19 Jun 2009 21:05:36 GMT
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Hello, Koldo.

TheIDE in Optimal mode will compile packages and selected files with "Optimize for speed" option using defined compiler string (by default: "-O3 -ffunction-sections") and other files with "Optimize for size" compiler string (by default: "-Os -finline-limit=20 -ffunction-sections") as installed in Build methods for GCC builder.
When we use SSE2 flag in main package configuration TheIDE will add "-msse2 -mfpmath=sse" string to compiler options (both for speed and size).
I suggested to use O2 compiler option instead of O3 when using SSE2. Because in my configuration, e.g. TheIDE and AddressBook, U++ GUI application crashes when started. The cause can exists in following areas:
- GCC compiler itself;
- U++ algorithms which used in GUI applications (area can be limited by "Opimize for speed" files);
- Operating system;
- Hardware configuration.

Yes, I can run Bombs U++ GUI application, but it crashes when I click on "Game" submenu.

Subject: Re: mingw?
Posted by koldo on Fri, 19 Jun 2009 22:36:11 GMT
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Hello all

I have just recompiled again Bombs sample with code that multiplies two 2000x2000 matrices.

Main package configuration: "GUI"
Compiling option "Speed"
Compiler options and results:
- MinGW TDM 4.4.0 with -msse2: 2.43 seconds
- MinGW TDM 4.4.0 without -msse2: 9.37 seconds
- MSC9 with /arch:SSE2: 4.04 seconds
- MSC9 without /arch:SSE2: 26.06 seconds

In all cases Bombs menus have worked properly. No crash. And the only change between versions is the -msse2 or /arch:SSE2 compiler option.

I do not know anything about SSE2, but I know that I will choose it in programs that require all optimisations like in Image Processing.

Best regards
Koldo

PD. The matrix libraries I am using today are newer than yesterday so that MinGW gets now better results in comparison to MSC. I have done this test today in a slower computer.

Subject: Re: mingw?
Posted by Sender Ghost on Sat, 20 Jun 2009 10:10:41 GMT
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koldo wrote on Sat, 20 June 2009 00:36
In all cases Bombs menus have worked properly. No crash. And the only change between versions is the -msse2 or /arch:SSE2 compiler option.

Ok, I just said about SSE2 build flag and O3 compiler option. Without SSE2 build flag (and with, but O2) all works fine.
The SSE2 build flag in TheIDE expanded by "-msse2 -mfpmath=sse" compiler options, not just "-msse2".
There is no issue.

Subject: Re: mingw?
Posted by koldo on Sun, 21 Jun 2009 13:35:55 GMT
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Hello Speed Ghost

It seems that there is something else ...
I have done more tests with changed Bombs example with SSE2 matrix code at the beginning, all with MinGW, SPEED and rebuilding it all every time:

Main Pack. Conf. Compiler Opt Test time Problems?
- GUI SSE2 No option 2.3 sec Crash
- GUI -msse2 2.4 sec Ok
- GUI SSE2 -msse2 2.3 sec Crash
- GUI -msse2 -mfpmath=sse 2.3 sec Ok
- GUI SSE2 -msse2 -mfpmath=sse 2.3 sec Crash
The crash was always using the menus and not in the initial matrix code.

Then I have recompiled TheIde changing this:
```
 if(HasFlag("SSE2"))
  cc << " -msse2";// -mfpmath=sse";
```
and:
Main Pack. Conf. Compiler Opt Test time Problems?
- GUI SSE2 No option 2.4 sec Crash
and I have recompiled again with:

```
 if(HasFlag("SSE2"))
  cc << " ";//-msse2";// -mfpmath=sse";
```
and:

Main	Pack.	Conf.	Compiler Opt	Test time	Problems?
-	GUI	SSE2	No option	9.5 sec	Ok

Conclussion:

There is a problem in some Upp GUI library that uses SSE2 caused by MinGW TDM 4.4.0 or by Upp

I have done the tests in Linux and there have been no crash.

Best regards
Koldo

Subject: Re: mingw?
Posted by tojocky on Tue, 23 Jun 2009 13:32:52 GMT
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koldo wrote on Sun, 21 June 2009 16:35Hello Speed Ghost

Then I have recompiled TheIde changing this:
```
 if(HasFlag("SSE2"))
  cc << " -msse2";// -mfpmath=sse";
```
and:

Main	Pack.	Conf.	Compiler Opt	Test time	Problems?
-	GUI	SSE2	No option	2.4 sec	Crash

and I have recompiled again with:
```
 if(HasFlag("SSE2"))
  cc << " ";//-msse2";// -mfpmath=sse";
```
and:

Main	Pack.	Conf.	Compiler Opt	Test time	Problems?
-	GUI	SSE2	No option	9.5 sec	Ok

.....
Best regards
Koldo

Koldo,

I thing that is need to set a final source version and propuse for change in svn.
Use as flag I do not thing that it is a good idea. But use in compile options is more transparent.
I thing that it should change Automatic setup (maybe it for win32 only) for speed option set this command.
for mingw
-msse2 -mfpmath=sse

Subject: Re: mingw?
Posted by koldo on Tue, 23 Jun 2009 13:55:34 GMT
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Hello Ion

Excuse me, I do not understand you very well

After the tests I compile in "GUI" (not in "GUI SSE2") and for the end source if SSE2 code is included I include compiler options "-msse2 -mfpmath=sse" and "/arch:sse2".

Best regards
Koldo

Subject: Re: mingw?
Posted by koldo on Wed, 24 Jun 2009 09:32:41 GMT
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Breaking news

Yesterday MinGW released Gcc 4.4.0

Announcement: http://sourceforge.net/forum/forum.php?forum_id=969885

Best regards
Koldo

Subject: Re: mingw?
Posted by tojocky on Wed, 24 Jun 2009 12:19:04 GMT
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Sorry Koldo,

I understood wrong.
The problem is not in u++ but in MinGW TDM 4.4.0?
Right?

I tested for me with old MinGW and have not errors.

koldo wrote on Tue, 23 June 2009 16:55Hello Ion

Excuse me, I do not understand you very well

After the tests I compile in "GUI" (not in "GUI SSE2") and for the end source if SSE2 code is included I include compiler options "-msse2 -mfpmath=sse" and "/arch:sse2".

Best regards
Koldo

Subject: Re: mingw?
Posted by ptDev on Wed, 24 Jun 2009 12:45:33 GMT
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koldo wrote on Wed, 24 June 2009 11:32Breaking news

Yesterday MinGW released Gcc 4.4.0

Announcement: http://sourceforge.net/forum/forum.php?forum_id=969885

Best regards
Koldo

Tried it, seems to work fine: it has a big difference with respect to the TDM builds. It uses Dwarf2 for exceptions. Of course, this means one DLL dependency (libgcc_s_dw2-1.dll), regardless of how simple your program is.

Subject: Re: mingw?
Posted by koldo on Wed, 24 Jun 2009 14:08:42 GMT
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tojocky wrote on Wed, 24 June 2009 14:19Sorry Koldo,

I understood wrong.
The problem is not in u++ but in MinGW TDM 4.4.0?
Right?

I tested for me with old MinGW and have not errors.

koldo wrote on Tue, 23 June 2009 16:55Hello Ion

Excuse me, I do not understand you very well

After the tests I compile in "GUI" (not in "GUI SSE2") and for the end source if SSE2 code is included I include compiler options "-msse2 -mfpmath=sse" and "/arch:sse2".

Best regards
Koldo

Hello Ion

Perhaps yes. It is most probable that the problem is in MinGW as MSC and Gcc (Linux) work.

But perhaps there is in Upp MinGW-Gcc 3 specific code for Windows version that does not work well in version 4.

In fact the benchmark program I have used works the best with MinGW-Gcc 4.4 so not only does not have problems with MinGW, but it gets the maximum optimization, so:

Quote:After the tests I compile in "GUI" (not in "GUI SSE2") and for the end source if SSE2 code is included I include compiler options "-msse2 -mfpmath=sse" and "/arch:sse2".

Best regards
Koldo

Subject: Re: mingw?
Posted by Mindtraveller on Sun, 28 Jun 2009 07:27:58 GMT
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ptDev wrote on Wed, 24 June 2009 16:45It uses Dwarf2 for exceptions. Of course, this means one DLL dependency (libgcc_s_dw2-1.dll), regardless of how simple your program is.
I wonder if additional dll dependency is worth using debugging format which AFAIK U++ doesn`t support? And I`d answer "no".

Subject: Re: mingw?
Posted by ptDev on Sun, 28 Jun 2009 07:50:29 GMT
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It's true, and I found this annoying too. Especially considering it's just a 44kb dll.

However, if one uses the '-static-libgcc' option, the dependency is removed. This is something to keep in mind.

Subject: Re: mingw?
Posted by koldo on Thu, 06 Aug 2009 07:57:53 GMT
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Hello

ptDev wrote on Sun, 28 June 2009 09:50It's true, and I found this annoying too. Especially considering it's just a 44kb dll.

However, if one uses the '-static-libgcc' option, the dependency is removed. This is something to keep in mind.

Perhaps we would have to propose Theide developers to include this in source code.

A possible implementation could be in file GccBuilder.cpp, line 130, adding this:

```
 if(HasFlag("WIN32")) {
  cc << " -static-libgcc";
```

I have compiled Theide with this change and I have debugged programs with MinGW 4.4.0 and without libgcc_s_dw2-1.dll without problems.

Best regards
Koldo

Subject: Re: mingw?
Posted by Didier on Fri, 07 Aug 2009 19:36:01 GMT
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Hello all,

I have some experience using simd instructions. On PPC if the data used int SIMD instructions are not aligned ==> crash.
I think it's the same on intel architectures.

Depending on the object creation order for example, on build can work and another crash without having modified any functionnal code.

This is probably one cause of problem.

Subject: Re: mingw?
Posted by sergeynikitin on Fri, 07 Aug 2009 21:07:26 GMT
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I often use MINGW. Moreover, MINGW I have, some old version that was included with the UPP. When I was downloading update UPP (for Linux), - I Replace folder uppsrc of wine, - and it works.

By the way - the generation of Win applications under wine, in my opinion, better guarantees against viruses in the final assembly of windows applications.

That is why - I really want to branch MINGW developed, supported and discussed.

Subject: Re: mingw?
Posted by Didier on Fri, 07 Aug 2009 21:54:26 GMT
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2 points !

I vote for MINGW for the same reason: 'windows build' under linux using wine (very pratcical) .

Subject: Re: mingw?
Posted by kasome on Sat, 08 Aug 2009 12:12:25 GMT
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As the previous two.
I also want Mingw can be supported.

Subject: Re: mingw?
Posted by mirek on Sat, 08 Aug 2009 12:19:31 GMT
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koldo wrote on Thu, 06 August 2009 03:57Hello

ptDev wrote on Sun, 28 June 2009 09:50It's true, and I found this annoying too. Especially considering it's just a 44kb dll.

However, if one uses the '-static-libgcc' option, the dependency is removed. This is something to keep in mind.

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  cc << " -static-libgcc";
```

I have compiled Theide with this change and I have debugged programs with MinGW 4.4.0 and without libgcc_s_dw2-1.dll without problems.

Best regards
Koldo

I think it should work via build method too, correct? (In that case, I can make it part of mingw autosetup).

Mirek