Subject: TheIDE precompiled headers: again
Posted by Shire on Sun, 04 Jan 2015 06:47:19 GMT

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I wrote patch for proper PCH handling three years ago, but have no feedback yet.
Now TheIDE build system has global flag "Allow precompiled headers" per build method.

This is not good way. Let's examine why:

0. you cannot set PCH flag for specific package - it's global. PCH has effect only for frequent
builds (1..5 changing packages, not all).
1. PCH is supported only by MSC Builder. GCH is not supported.
2. only <package name>.h header can be precompiled
3. any file in package must include it (see "add check" TODO's in source code)
4. PCH building at begin and not in parallel with other files
5. you cannot set specific defines or compiler options for some .cpp file
6. additional temporary .cpp file is created
7. PCH can be used only with BLITZ

My patch is more flexible:

0. PCH flag can be set per package (at Output mode package grid, near BLITZ checkbox). Now
you can check it for current developing packages
1. PCH is supported by MSC (include v7.0) and GCC too (GCH)
2. any single header file can be used as precompiled (mark it by adding PCH compiler option at
Package Organizer)
3. inclusion of PCH is made automatically ("-FI" for MSC and "-include" for GCC)
4. PCH builds in parallel with other files. When it built, it can be used
5. files with specific defines or compiler options are compiled without PCH
6. no additional source files is created (header compiles as is)
7. PCH can be used with or without BLITZ

There is only one breaking change: build-time defines bm* (bmYEAR, bmMONTH, bmDAY,
bmHOUR, bmMINUTE, bmSECOND) are deprecated.

Working with PCH header is also simple:

Marking header by compiler option is just workaround for package format compatibilty. In future,
marker can be checkbox near "Optimize the file for speed".

Patch published on GitHub, also you can test prebuilt TheIDE binaries for Debian 7 x64 (GCC
4.7.2) or Win32 (MSC10)

Subject: Re: TheIDE precompiled headers: again
Posted by mirek on Sun, 04 Jan 2015 17:52:35 GMT

Hi,

thanks. That "Allow precompiled headers" option was meant as just the start of the work, which really has not got too far at that point.

I will investigate your patch soon. Some points:

- I believe that PCH should be more or less completely automated, that is why I wanted to precompile "Package.h" header. For most packages it is the right thing to do... Providing "No PCH" flag (akin "No BLITZ") per package is however a good idea anyway.

- bmYear etc... is pity, but I understand that they are incomapatible with PCH. We will have to provide some alternative way how to get them into the code. I guess that one possible way is to create temporary .cpp file with those #defines which could be included where that info is needed.

Mirek

Subject: Re: TheIDE precompiled headers: again
Posted by Shire on Mon, 05 Jan 2015 12:53:52 GMT

mirek wrote on Sun, 04 January 2015 23:52
- I believe that PCH should be more or less completely automated, that is why I wanted to precompile "Package.h" header. For most packages it is the right thing to do...

PCH is huge file (for example, ~70Mb per package PCH on MSC32, and ~190Mb for GCC32), and it's build time is too long. Enabling PCH for any package will eat many output directory space and will significally increase first build time. Any change in any dependent header will cause PCH rebuild, and efficiency of most PCH'es will be negative.
That's why I prefer default setting "off".
Hardcoding <package_name>.h is not good when you writing plugins. I make precompiled "common.h" header with UPP and plugin private headers.

Subject: Re: TheIDE precompiled headers: again
Posted by mirek on Mon, 05 Jan 2015 18:49:21 GMT

Shire wrote on Mon, 05 January 2015 13:53mirek wrote on Sun, 04 January 2015 23:52
- I believe that PCH should be more or less completely automated, that is why I wanted to precompile "Package.h" header. For most packages it is the right thing to do...

PCH is huge file (for example, ~70Mb per package PCH on MSC32, and ~190Mb for GCC32),

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and it's build time is too long. Enabling PCH for any package will eat many output directory space and will significally increase first build time. Any change in any dependent header will cause PCH rebuild, and efficiency of most PCH'es will be negative.
That's why I prefer default setting "off".
Hardcoding <package_name>.h is not good when you writing plugins. I make precompiled "common.h" header with UPP and plugin private headers.

Good points, thanks.

BTW, have you investigated clang?

Mirek

Subject: Re: TheIDE precompiled headers: again
Posted by Shire on Fri, 09 Jan 2015 05:39:06 GMT
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Sorry for delay.
mirek wrote on Tue, 06 January 2015 00:49
BTW, have you investigated clang?

No, I have no actual version clang and, therefore, can't test it with UPP.
Clang v3.0 fails to build UPP, and rebuilds all every time.

According clang documentation, there is one difference - ".pch" instead ".gch", and, maybe, "-x c++-header" must be added.