0.11 - 配置编译器：警告和错误级别

亚历克斯于2018年9月19日| 最后由ALEX于2018年9月26日修改

编写程序时，编译器将检查以确保您遵循C ++语言的规则（假设您已关闭编译器扩展，根据课程**0.10 - 配置编译器：编译器扩展**）。

如果您已经做了明确违反语言规则的事情，那么在编译期间，编译器将发出**错误**，提供包含错误的行号，以及有关预期与找到的内容的文本。实际错误可能在该行上，也可能在前一行上。一旦确定并修复了错误的代码行，就可以再次尝试编译。

在其他情况下，编译器可能会发现似乎可能出错的代码，但编译器无法确定（请记住座右铭："信任程序员"）。在这种情况下，编译器可能会选择发出**警告**。警告不会停止编译，但是程序员会注意到某些事情似乎不对。

最佳实践

不要让警告堆积起来。遇到它们时解决它们（好像它们是错误的）。

在大多数情况下，可以通过修复警告指出的错误来解决警告，或者通过重写生成警告的代码行来解决警告，从而不再生成警告。

在极少数情况下，可能需要明确告诉编译器不要为相关代码行生成特定警告。C ++不支持官方方式，但许多单独的编译器（包括Visual Studio和GCC）提供了解决方案（通过非便携式#pragma指令）来暂时禁用警告。

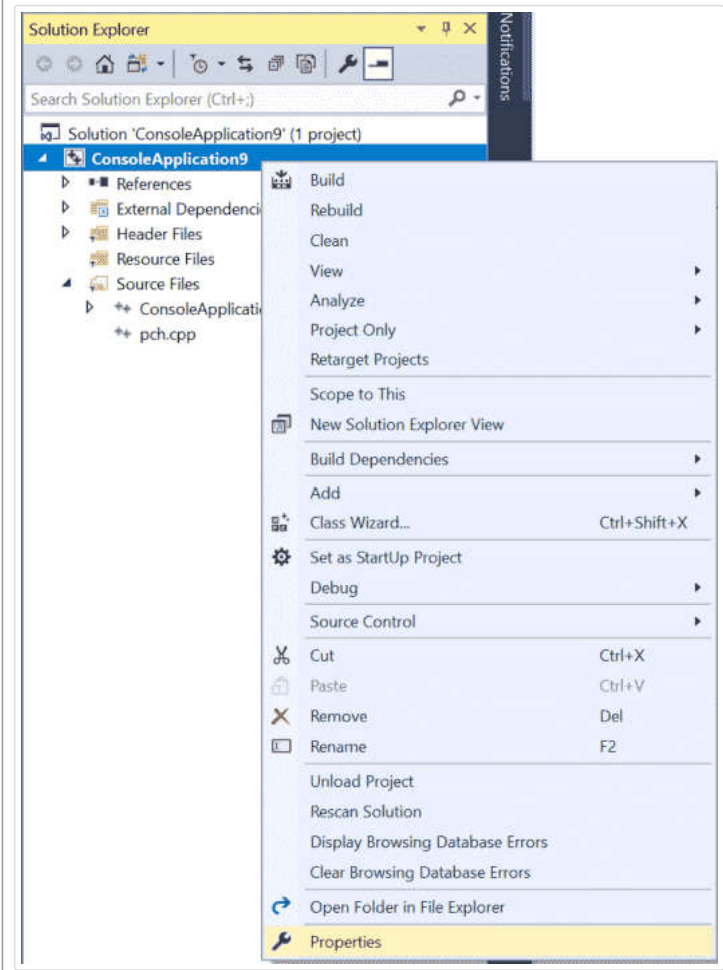默认情况下，大多数编译器只会生成有关最明显问题的警告。但是，您可以请求编译器更加自信地为发现奇怪的事情提供警告。

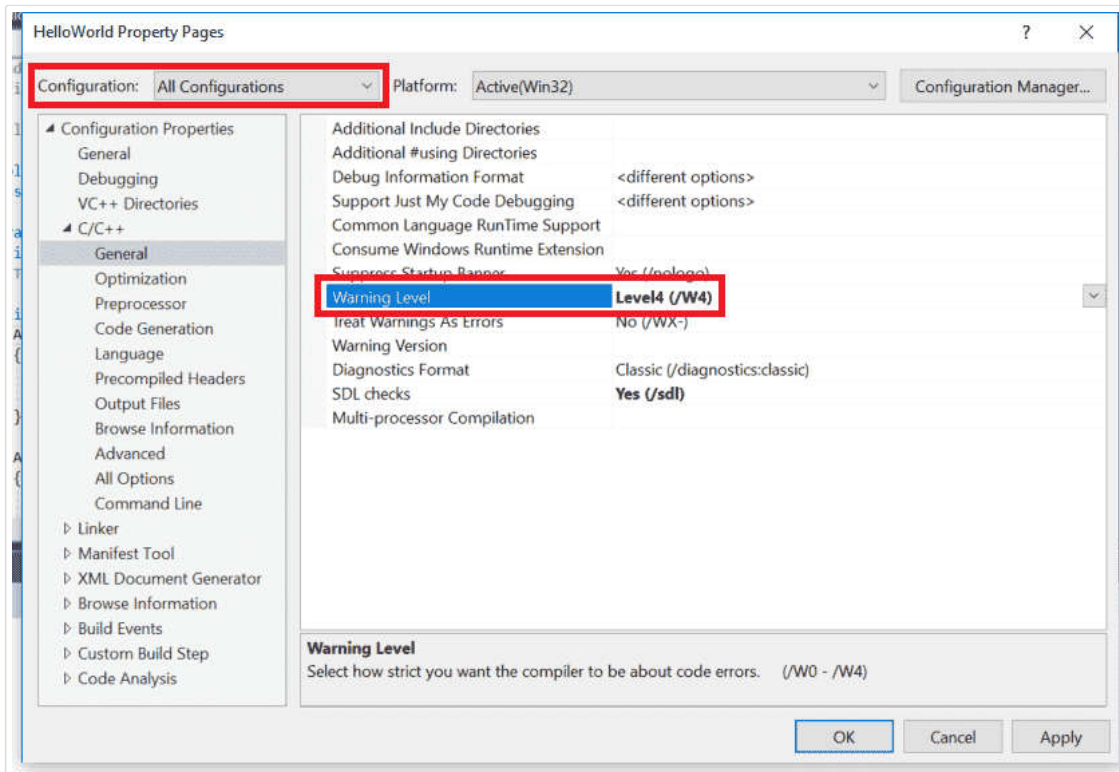
最佳实践

将警告级别提高到最大值，尤其是在您学习的时候。它将帮助您识别可能的问题。

提高警告级别

对于Visual Studio用户

要提高警告级别，请在"*解决方案资源管理器*"窗口中右键单击项目名称，然后选择"*属性*"：

在"*项目*"对话框中，首先确保"*配置*"字段设置为"*所有配置*"。

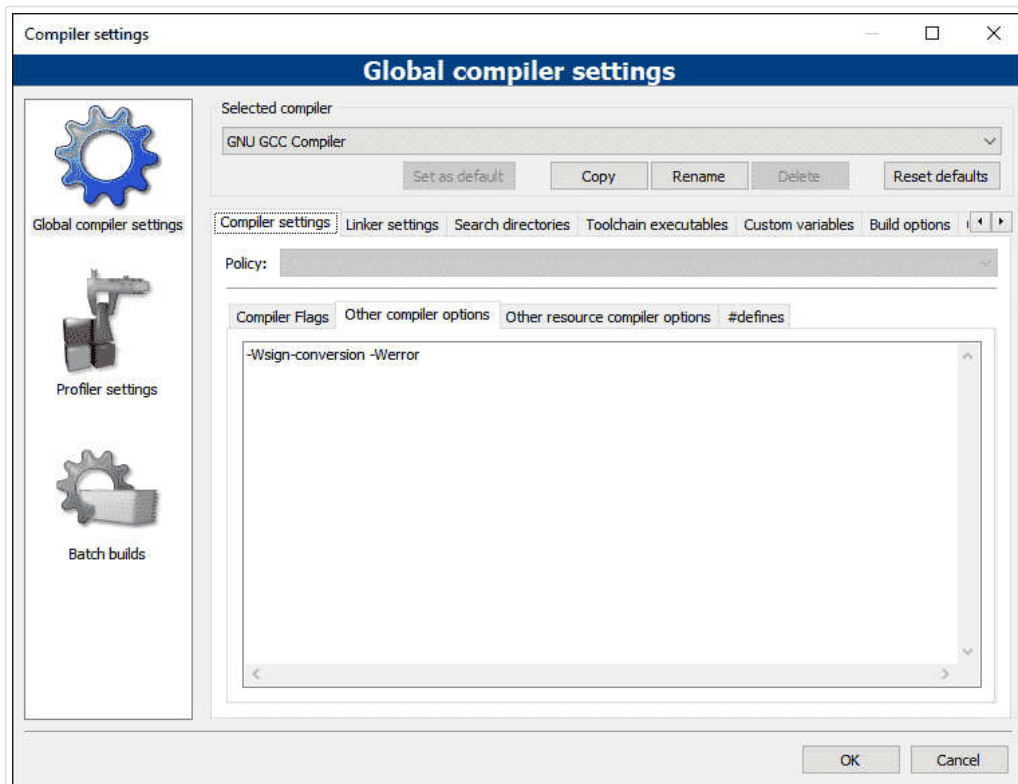然后选择*C / C ++> General选项卡*并将*警告级别*设置为*Level4（/ W4）*：

注意：不要选择*EnableAllWarnings（/ Wall）*，否则您将被隐藏在C ++标准库生成的警告中。

对于Code :: Blocks用户

From *Settings menu > Compiler >Compiler settings tab*, find and check the options that correlate with *-Wall*, *-Weffc++*, and *-Wextra*:

☐

Then go to the *Other compiler options tab*, and add *-Wsign-conversion* to the text edit area:

Note: The *-Werror* parameter is explained below.
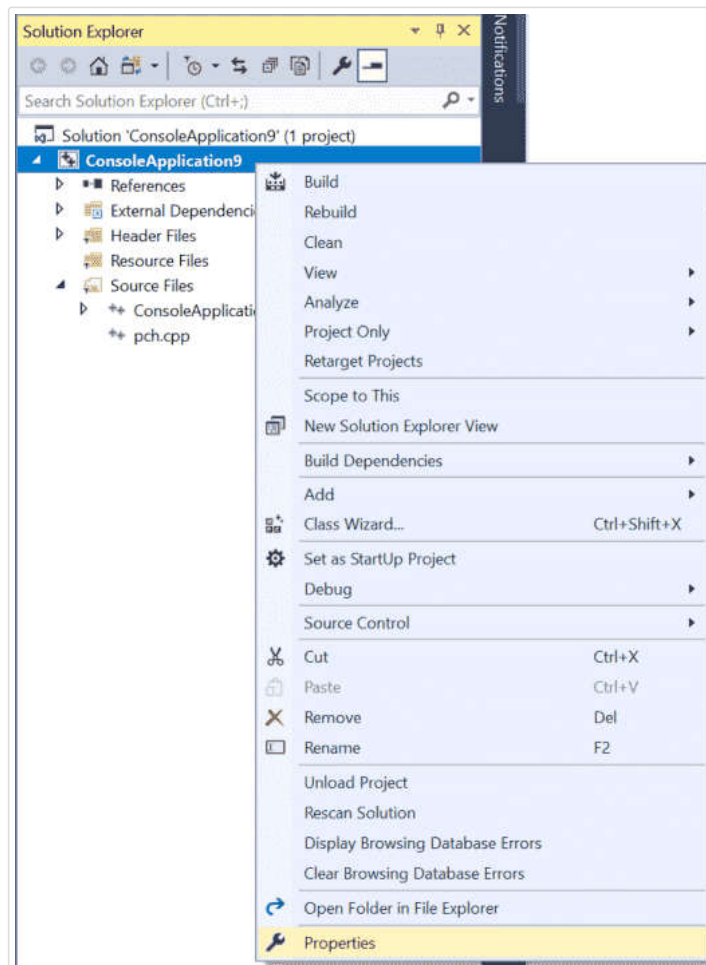

For GCC/G++ users

Add the following flags to your command line: *-Wall -Weffc++ -Wextra -Wsign-conversion*

Treat warnings as errors

It is also possible to tell your compiler to treat all warnings as if they were errors (in which case, the compiler will halt compilation if it finds any warnings). This is a good way to enforce the recommendation that you should fix all warnings (if you lack self-discipline, which most of us do).
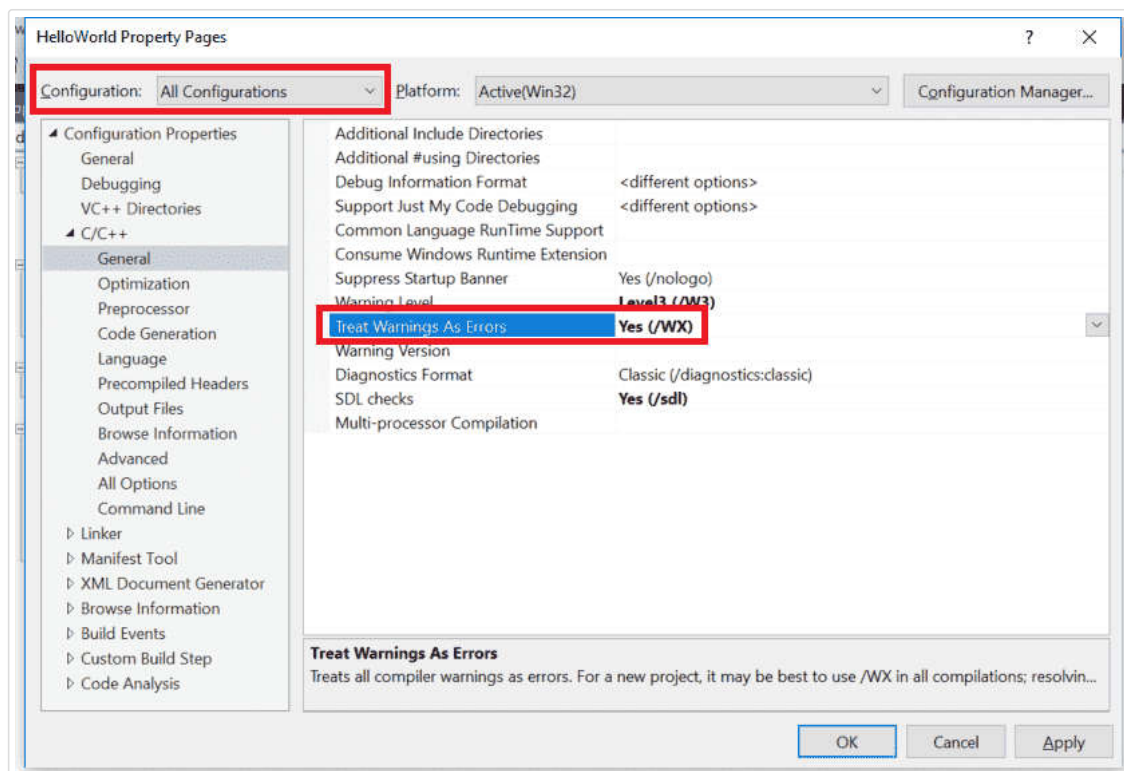
For Visual Studio users

To treat warnings as errors, right click on your project name in the *Solution Explorer* window, then choose *Properties*:
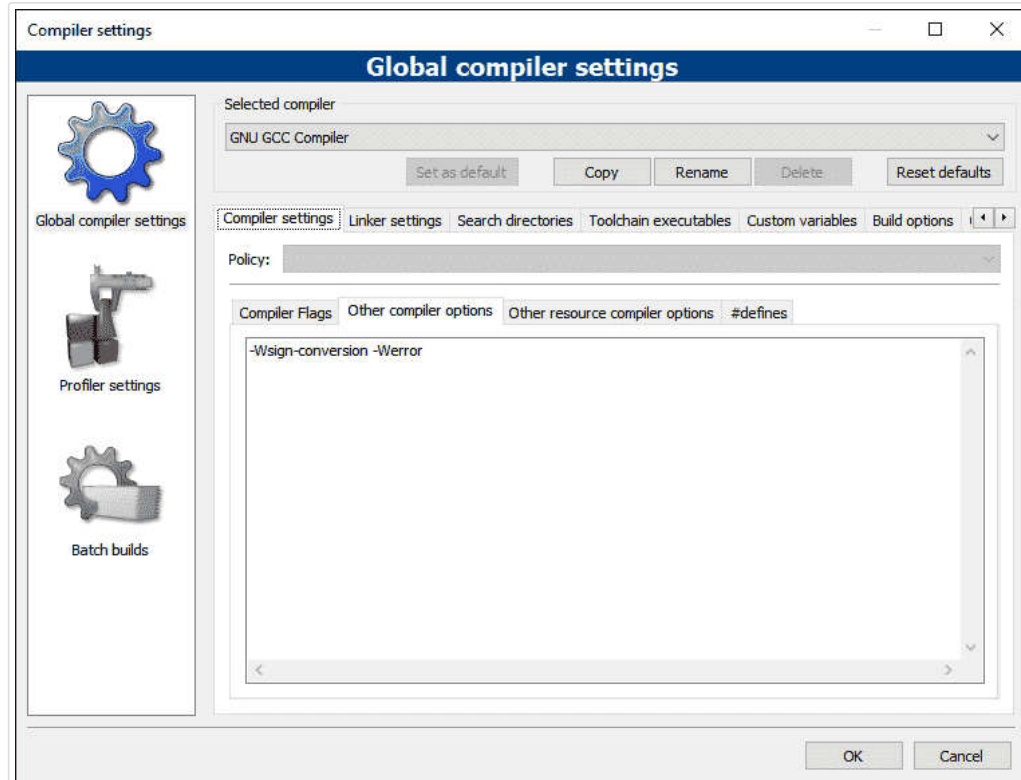

From the *Project* dialog, first make sure the *Configuration* field is set to *All Configurations*.

Then select *C/C++ > General tab* and set *Treat Warnings As Errors* to *Yes (/WX)*.

For Code::Blocks users

From *Settings menu > Compiler > Other compiler options tab*, add *-Werror* to the text edit area:

For GCC/G++ users

Add the following flag to your command line: *-Werror*

 1.1 -- Structure of a program

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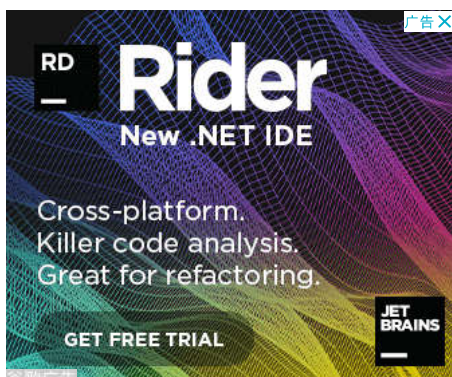 **0.10 -- Configuring your compiler: Compiler extensions**

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17 comments to 0.11 — Configuring your compiler: Warning and error levels

Bob
October 26, 2018 at 4:48 pm · Reply

Do we need to worry about this with Xcode? The warnings seem to be already pretty aggressive~

Alex
October 28, 2018 at 4:46 pm · Reply

I don't have any familiarity with Xcode. Perhaps another reader can answer.

I'm in love with alex's tutor
October 26, 2018 at 3:46 am · Reply

Dear Mr.Alex!
Really Thank you so much, this really helps me a lot to find out minor mistakes of mine . This increases a programmer perfection to make his program free against any bugs.
Bless you forever Sir!

Qluefqen
October 20, 2018 at 4:40 am · Reply

When I try to use this flag:

```
1  -Wextra-Wsign-conversion
```

I get this error:

```
1  g++: error: unrecognized command line option '-Wextra-Wsign-conversion'; did you mean '-Wno-sign-conversion'?
```

So I tried it with

```
1  -Wno-sign-conversion
```

and got no errors or warnings but am not clear on what that flag is. Can you help?

Compiler is

```
1  g++ (Debian 8.2.0-7) 8.2.0
```

. Running Debian Buster (Testing) KDE and using Kate and Konsole if that makes any diff.

PS: Made a minor edit and screwed up the formatting without changing it. Sorry.

Alex
October 22, 2018 at 1:34 pm · Reply

There should be a space between -Wextra and -Wsign-conversion.

vbot
September 25, 2018 at 6:06 am · Reply

Hi,

enabling all warnings (/Wall) in VS 2017 15.8.5 will throw hundreds of MSVC-warnings that are turned off by default. See:
https://docs.microsoft.com/en-us/cpp/preprocessor/compiler-warnings-that-are-off-by-default?view=vs-2017

here it says: "The C runtime libraries and the C++ standard libraries are intended to emit no warnings only at warning level /W4."

Greets

Alex
September 25, 2018 at 8:55 am · Reply

I appreciate the warning (ha ha). I've updated the article accordingly. Thank you much!

William
September 23, 2018 at 5:26 pm · Reply

Shouldn't the flag for "treat warnings as errors" to be -Werror? The -Wfatal-errors flag means to stop the compilation once an error occur. Ref:
https://gcc.gnu.org/onlinedocs/gcc-4.8.0/gcc/Warning-Options.html#Warning-Options

nascardriver
September 24, 2018 at 12:16 am · Reply

Yep, the screenshot of codeblocks is also showing the wrong entry.

Alex
September 24, 2018 at 8:32 am · Reply

Text and picture updated. Thanks for pointing out the error!

Ryan
September 23, 2018 at 12:25 am · Reply

Hello! I may have found a typo, and wanted to point it out in case it was a mistake. When you said "you can request your compiler be more assertive about providing warnings about for things it finds strange", I think you might have accidentally put 'about' a second time.

Alex
September 24, 2018 at 7:53 am · Reply

No may about it, definitely a typo. Again, thanks for pointing all of these out.

Ryan
September 24, 2018 at 12:37 pm · Reply

My pleasure! I'm glad I could help. I worded it in a subjective way to make sure I wasn't possibly just misinterpreting something and falsely pointing it out, especially since I'm not entirely familiar with the field yet. That's what I'm here to change, though!

Ahmed
September 19, 2018 at 3:22 pm · Reply

以下任何内容：
在命令行中添加以下标志：-Watatal-errors

亚历克斯
2018年9月19日下午4:24 ·回复

不，但基本上只是这样做：

gcc main.cpp –o outputfile -Wfatal-errors

艾哈迈德
2018年9月19日下午4:59 ·回复

谢谢你

nascardriver
2018年9月20日上午12:45 ·回复

* G ++