

Setting the Compiler Warning Level

in Visual Studio

Introduction

This document provides step-by-step instructions for setting the compiler warning level on a project in Visual Studio IDE. These instructions apply to Visual Studio Professional edition, Community edition, and other editions, and apply specifically to the C and C++ compilers.



Compilation warnings are important. They are the compiler's way of telling you:

“Something you wrote in your source code was ambiguous or might result in undefined behavior, so I created an executable program anyway, made some assumptions for you (which are probably wrong), and your code may or may not work some or all of the time.”

If you ignore compilation warnings, it's easy to spend hours trying to chase down a problem, and then discover that a compilation warning was pointing to the exact cause of the problem the whole time.

Levels of Warning

There are six possible warning level settings in the Visual Studio C and C++ compilers:

- Turn off all warnings
- Level 1 (*severe* warnings)
- Level 2 (Level 1 plus *significant* warnings)
- Level 3 (Level 2 plus *production quality* warnings)
- Level 4 (Level 3 plus warnings about *suspicious and non-portable code*)
- Enable all warnings (Level 4 and additional warnings).

It would appear that “enable all warnings” would allow the compiler to give us the most help. Indeed, you can find very subtle issues in the code by enabling all warnings. However, when certain library and/or system header files are included (e.g., windows.h), this setting can generate many extraneous warnings over which we have no control.

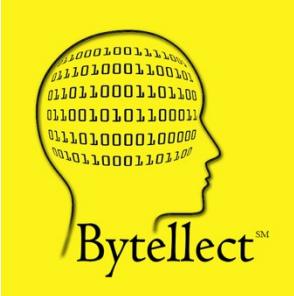
The default setting is Level 3, but to maximize the assistance we get from the compiler, while avoiding extraneous warnings, we recommended setting the warning level to Level 4, unless you have complete control of the source code – in which case, we recommend that you enable all warnings..

Setting the Warning Level

Here's how to set the compiler warning level to Level 4:

1. With the project selected in **Solution Explorer**, on the **Project** menu click **Properties**.
2. In the left pane of the **Property Pages**, click to expand **Configuration Properties**.
3. Under **Configuration Properties**, click to select **C/C++**.
4. In the right pane, next to **Warning Level**, click the drop-down arrow and click to select **Level4 (/W4)**.
5. Click **OK**.

This change will apply only to the selected project. If you have more than one project in your solution, you'll need to make this change for each project in the solution.



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