

# Installing a compiler

C++ programs are initially created as plain text files, saved with the file extension of “.cpp”. These can be written in any text editor, such as Windows’ Notepad application or the Vi editor on Linux.

In order to execute a C++ program it must first be “compiled” into byte code that can be understood by the computer. A C++ compiler reads the text version of the program and translates it into a second file – in machine-readable executable format.

Should the text program contain any syntax errors these will be reported by the compiler and the executable file will not be built.

If you are using the Windows platform and have a C++ Integrated Development Environment (IDE) installed then you will already have a C++ compiler available as the compiler is an integral part of the visual IDE. The excellent free Microsoft Visual C++ Express IDE provides an editor window where the program code can be written, and buttons to compile and execute the program. Visual IDEs can, however, seem unwieldy when starting out with C++ because they always create a large number of “project” files that are used by advanced programs.

The popular GNU C++ compiler is available free under the terms of the General Public License (GPL). It is included with most distributions of the Linux operating system. The GNU C++ compiler is also available for Windows platforms and is used to compile examples throughout this book.



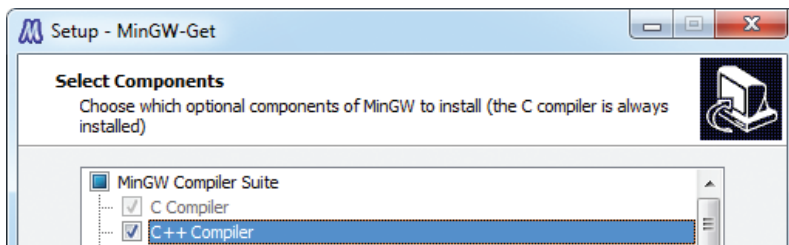
The terms and conditions of the General Public License can be found online at [www.gnu.org/copyleft/gpl.html](http://www.gnu.org/copyleft/gpl.html)

To discover if you already have the GNU C++ compiler on your system type `g++ -v` at a command prompt then hit Return. If it's available the compiler will respond with version information. If you are using the Linux platform and the GNU C++ compiler is not available on your computer install it from the distribution disc, or online, or ask your system administrator to install it.

The GNU (pronounced “guh-new”) Project was launched back in 1984 to develop a complete free Unix-like operating system. Part of GNU is “Minimalist GNU for Windows” (MinGW). MinGW includes the GNU C++ compiler that can be used on Windows systems to create executable C++ programs. Windows users can download and install the GNU C++ compiler by following the instructions on the opposite page.

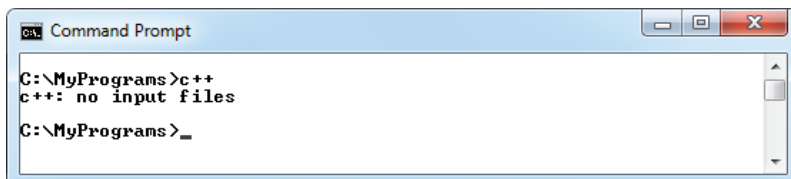
## ...cont'd

- 1 With an internet connection open, launch a web browser then navigate to <http://sourceforge.net/projects/mingw> and click the “Download” button to get the MinGW installer
- 2 Launch the installer and do accept the suggested location of **C:\MinGW** in the “Select Destination Location” dialog
- 3 Be sure to choose the optional “C++ Compiler” item in the “Select Components” dialog then complete installation



The MinGW C++ Compiler is a binary executable file located at **C:\MinGW\bin**. To allow it to be accessible from any system location this folder should now be added to the System Path:

- 4 In Windows’ Control Panel, click the System icon then select the Advanced System Settings item to launch the “System Properties” dialog
- 5 In the System Properties dialog, click the Environment Variables button, select the Path system variable, then click the Edit button and add the location **C:\MinGW\bin**;
- 6 Click OK to close each dialog then open a Command Prompt window and enter the command **c++**. If the installation is successful the compiler should respond that you have not specified any input files for compilation:



Don't forget



The MinGW installation process may be subject to change, but current guidance can be found at [www.mingw.org/wiki/Getting\\_Started](http://www.mingw.org/wiki/Getting_Started).

Beware



Location addresses in the Path statement must end with a ; semi-colon.

