

OpenGL4 Installation Guide

This installation guide describe you the steps needed to install OpenGL, FreeGLUT and GLEW libraries to use OpenGL4 in the C++ programs. We assume that you have Visual Studio 2010 installed in your machine and you are using Windows operating system.

Step 1: Download the libraries

OpenGL

You will need the following files for developing OpenGL programs:

Header Files:

gl.h

glu.h

Libraries:

opengl32.lib

glu32.lib

DLLs:

opengl32.dll

glu32.dll

The above files are usually provided by the manufacturer of your display adapter. In case the files are missing you can download from the link

“<http://www.cse.iitm.ac.in/~vplab/courses/CG/OpenGL/OpenGL.zip>”.

FreeGLUT

The following files are needed for using FreeGLUT:

Header Files:

freeglut.h

freeglut_ext.h

freeglut_std.h

glut.h

Libraries:

freeglut.lib

DLLs:

freeglut.dll

Download FreeGLUT from "<http://www.cse.iitm.ac.in/~vplab/courses/CG/openGL/freeglut-MSVC-2.8.0-1.mp.zip>".

GLEW

The following files are needed for using GLEW:

Header Files:

glew.h
glxew.h
wglew.h

Libraries:

glew32.lib
glew32mx.lib
glew32mxs.lib
glew32s.lib

DLLs:

glew32.dll

Download GLEW from "<http://www.cse.iitm.ac.in/~vplab/courses/CG/openGL/glew-1.9.0-win32.zip>".

Step 2: Copy the libraries

OpenGL

Installation on Windows (32-bit Operating System)

1. Copy the header (.h) files present in the OpenGL's include\gl folder and paste them to the folder "C:\Program Files\Microsoft SDKs\Windows\{(highest version)}\Include\gl". If the gl folder is not present then create it.
2. Copy the library (.lib) files present in the OpenGL's lib folder and paste them to the folder "C:\Program Files\Microsoft SDKs\Windows\{(highest version)}\Lib".
3. Copy the DLL (.dll) files present in the OpenGL's bin folder and paste them to the folder "C:\Windows\System32".

Installation on Windows (64-bit Operating System)

1. Copy the header (.h) files present in the OpenGL's include\gl folder and paste them to the folder "C:\Program Files (x86)\Microsoft SDKs\Windows\(\highest version)\Include\gl\". If the gl folder is not present then create it.
2. Copy the library (.lib) files present in the OpenGL's lib folder and paste them to the folder "C:\Program Files (x86)\Microsoft SDKs\Windows\(\highest version)\Lib\".
3. Copy the DLL (.dll) files present in the OpenGL's bin folder and paste them to the folder "C:\Windows\SysWOW64\".

FreeGLUT

Installation on Windows (32-bit Operating System)

1. Copy the header (.h) files present in the FreeGLUT's include\gl folder and paste them to the folder "C:\Program Files\Microsoft SDKs\Windows\(\highest version)\Include\gl\". If the gl folder is not present then create it.
2. Copy the library (.lib) files present in the FreeGLUT's lib folder and paste them to the folder "C:\Program Files\Microsoft SDKs\Windows\(\highest version)\Lib\".
3. Copy the DLL (.dll) files present in the FreeGLUT's bin folder and paste them to the folder "C:\Windows\System32\".

Installation on Windows (64-bit Operating System)

1. Copy the header (.h) files present in the FreeGLUT's include\gl folder and paste them to the folder "C:\Program Files (x86)\Microsoft SDKs\Windows\(\highest version)\Include\gl\". If the gl folder is not present then create it.
2. Copy the library (.lib) files present in the FreeGLUT's lib folder and paste them to the folder "C:\Program Files (x86)\Microsoft SDKs\Windows\(\highest version)\Lib\".
3. Copy the DLL (.dll) files present in the FreeGLUT's bin folder and paste them to the folder "C:\Windows\SysWOW64\".

GLEW

Installation on Windows (32-bit Operating System)

1. Copy the header (.h) files present in the GLEW's include\gl folder and paste them to the folder "C:\Program Files\Microsoft SDKs\Windows\(\highest version)\Include\gl\". If the gl folder is not present then create it.

2. Copy the library (.lib) files present in the GLEW's lib folder and paste them to the folder "C:\Program Files\Microsoft SDKs\Windows\(\highest version)\Lib\".
3. Copy the DLL (.dll) files present in the GLEW's bin folder and paste them to the folder "C:\Windows\System32\".

Installation on Windows (64-bit Operating System)

1. Copy the header (.h) files present in the GLEW's include\gl folder and paste them to the folder "C:\Program Files (x86)\Microsoft SDKs\Windows\(\highest version)\Include\gl\". If the gl folder is not present then create it.
2. Copy the library (.lib) files present in the GLEW's lib folder and paste them to the folder "C:\Program Files (x86)\Microsoft SDKs\Windows\(\highest version)\Lib\".
3. Copy the DLL (.dll) files present in the GLEW's bin folder and paste them to the folder "C:\Windows\SysWOW64\".

Step 3: Creating the Project

The next step is to set up the Visual C++ project, so start up Visual C++ Express or Visual Studio and in the menu bar, go to File -> New -> Project..., and click on the Visual C++ heading: Make sure you have the Win32 Console Application option selected, type in a name for the project, and click on the OK button, Click on next, but do not click the Finish button until you have checked the Empty Project check-box.

Step 4: Adding a Source File

Now that you have an empty project set up, we need to add a source file, which we'll name main.cpp for this guide. Right-click on the project, navigate to Add and click on New Item...: From the list, pick the option C++ File (.cpp), and change its name to main.cpp

It's important to have this file in your project before you enter the settings screen since certain settings would not appear on the screen without at least one source file available. After you click the Add button, the new file should show up in your Solution Explorer and open up in the text editor:

Step 5: Project Settings (Linker)

Go to the Linker property page, and click on the Input sub-page. Expand the drop-down list next to the Additional Dependencies option and click on Edit.... In the window, add glew32.lib followed by a newline, and freeglut.lib.

Click on the OK button, and when you're back at the settings screen, click on the OK button as well to save your settings.

Step 6: Compiling/Running the Project

Now it's time to test your setup, so grab some source code like the demos present in the lab website.

Go to the main menu, click on Build, click on Build Solution and your build should succeed without any warnings or errors.

Go to the main menu, click on Debug and Start Debugging (or just press F5) to build as well as run the program.

Troubleshooting:

Compilation Error: Compilation error reporting one of the header files described above in the guide is not found. Then follow the instruction to copy the header file to the proper "include/gl" path inside Microsoft SDK's folder as described above.

Linking Error: Linking error reporting one of the lib files described above in the guide is not found. Then follow the instruction to copy the lib file to the proper "lib" path inside Microsoft SDK's folder as described above.

Runtime Error: Runtime error reporting one of the dll files described above in the guide is not found. Then follow the instruction to copy the dll file to the proper path i.e. System32 or SysWOW64 depending on your operating system as described above.