

---

# 4

---

## Setting Up Microsoft Visual Studio Developer Environment

To develop haptic applications using Openhaptics / QuickHaptics, you will need to setup the Microsoft Visual studio developer environment. Screenshots shown below are from the MS Visual studio version 2010 but other versions should have similar settings.

We assume that you have already created a new but empty console / Win32 / MFC project in MS visual C++.

This chapter includes the following sections:

Section	Page
Choosing the Application Platform and Configuration	4-1
Setup the Character Set	4-3
Setup the Include Directories	4-3
Setup the Runtime Library	4-4
Setup the Library Directories	4-5
Setup the Library Dependencies	4-7

---

### Choosing the Application Platform and Configuration

One needs to choose the right platform and configuration before setting up the project properties.

Please choose the appropriate platform and configuration from the drop down menu as shown in the figures below.

OpenHaptics supports both Win32 and X64 development platforms on 64-bit systems.

**Note** OpenHaptics academic version users must choose the configuration tagged “academic” to setup the project.

#### 4 SETTING UP MICROSOFT VISUAL STUDIO DEVELOPER ENVIRONMENT

##### Choosing the Application Platform and Configuration

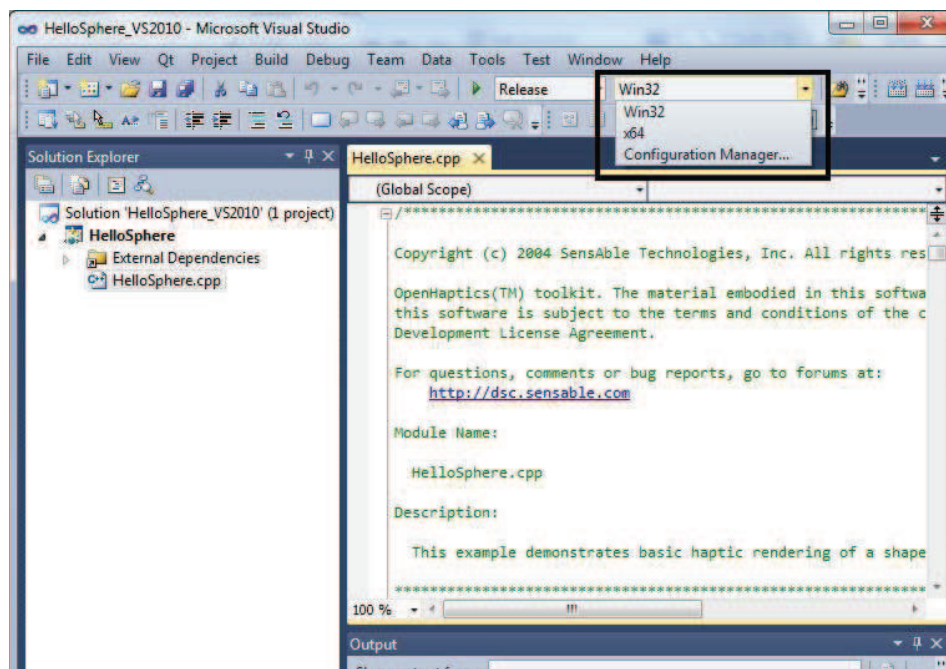


FIGURE 4-1. Choose the platform that you will use to run the OpenHaptics application.

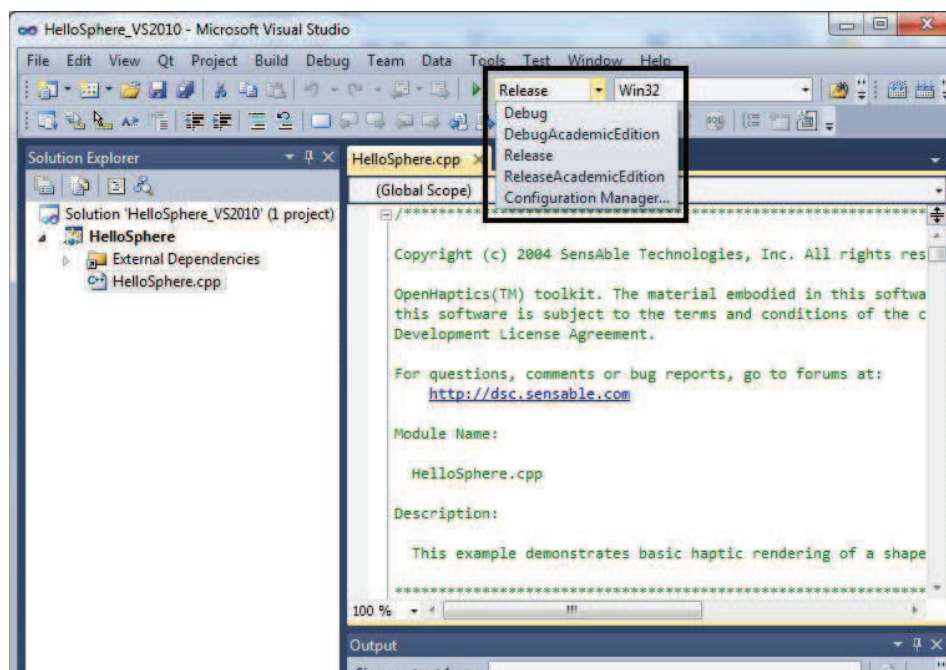
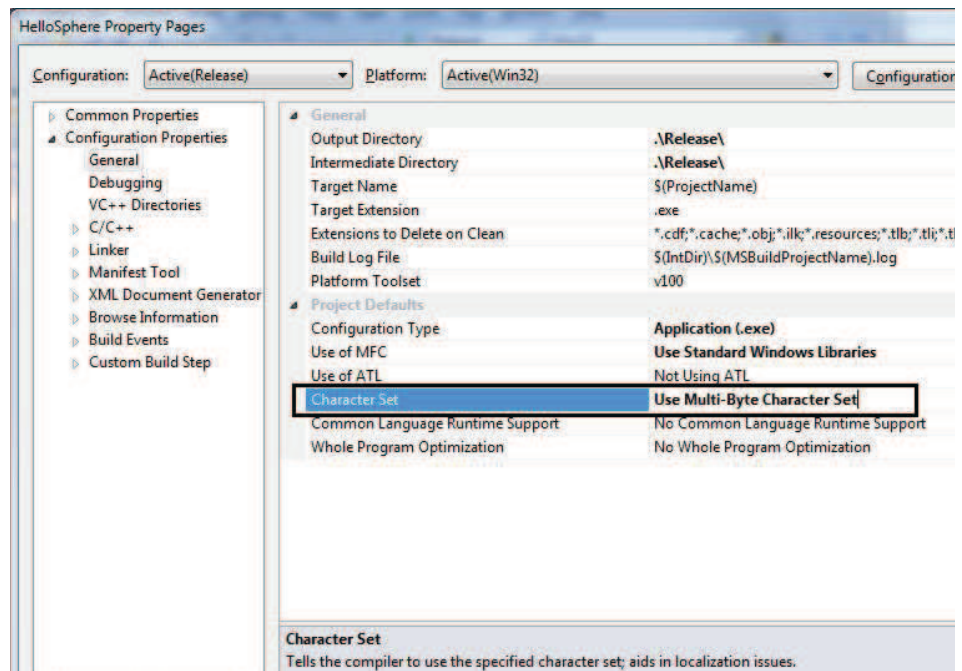


FIGURE 4-2. Select the Configuration of OpenHaptics that you will use.

## Setup the Character Set

Under windows, it is recommended to setup the character set to “Multi-Byte character set” as shown in the figure.



## Setup the Include Directories

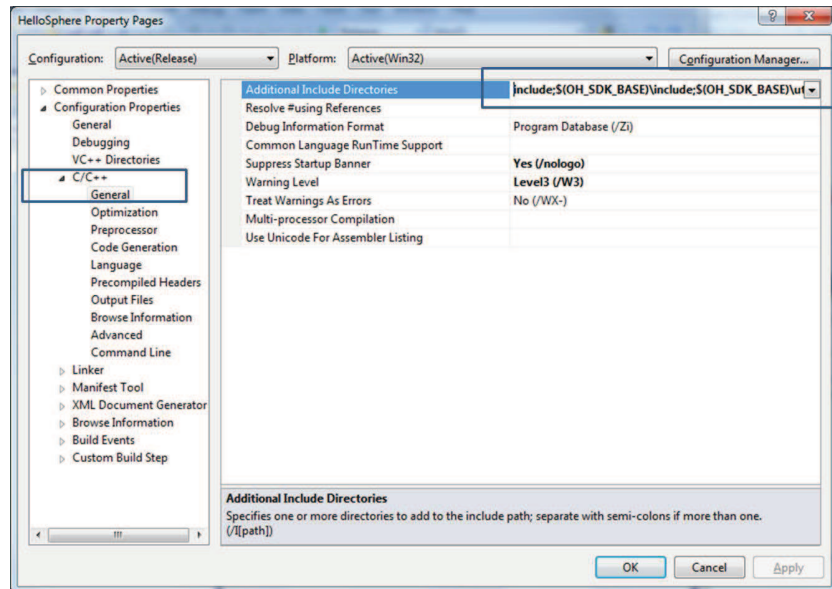
Set the correct include path, as shown below in the “Additional include directories.” All important include paths:

- **\$(OH\_SDK\_BASE)\include** : Main include directory for Openhaptics
- **\$(OH\_SDK\_BASE)\utilities\include**: Include directory for Openhaptics utilities
- **\$(OH\_SDK\_BASE)\QuickHaptics\header** : Main include directory for QuickHaptics.

Setting the include path as indicated above enables you to include header files as follows:

- `#include <HD/hd.h>`
- `#include <HL/hl.h>`
- `#include <QHHeadersGLUT.h>`
- `#include <QHHeadersWin32.h>`
- `#include <Hdu/hduVector.h>`
- `#include <GL/glut.h>`

**Note** \$(OH\_SDK\_BASE) macro points to the OpenHaptics install directory.



**FIGURE 4-3.** Additional Include Directories window. Set the correct include path, as shown below in “Additional Include Directories.”

## Setup the Runtime Library

Link the C-runtime (CRT), as shown below in “Runtime Library.” The options are Multi-threaded DLL (/MD) or Multi-threaded Debug DLL (/MDd) based on the configuration you have selected.

**Warning** As an SDK developer, you need to make sure that you link your application with the multi-threaded CRT. Otherwise unpredictable behavior, including crashes, can occur.

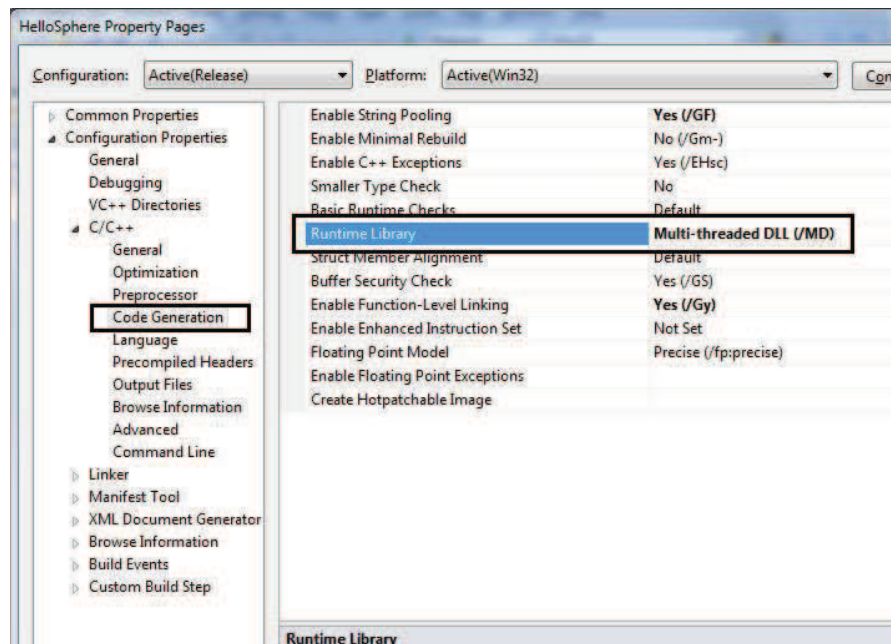


FIGURE 4-4. Setup the runtime library type.

## Setup the Library Directories

Make sure the linker paths are set correctly on the "Additional Library Directories" line so that the library files can be found when your application links.

All important library paths include:

- **`$(OH_SDK_BASE)\lib\$(Platform)\$(Configuration)`** : Main OpenHaptics library directory.
- **`$(OH_SDK_BASE)\utilities\lib\$(Platform)\$(Configuration)`** : OpenHaptics utilities library directory.
- **`$(OH_SDK_BASE)\QuickHaptics\lib\$(Platform)\$(Configuration)`** : QuickHaptics library directory.

The macro `$(Platform)` points to the folders "Win32" or "X64" based on the platform selected in the section "Choosing the Application Platform and Configuration."

The macro `$(Configuration)` points to the different configuration folders selected in the section "Choosing the Application Platform and Configuration."

See the tables below for details on the real Lib Path for both the Academic and Commercial editions of OpenHaptics.

#### 4 SETTING UP MICROSOFT VISUAL STUDIO DEVELOPER ENVIRONMENT

##### Setup the Library Directories

#### Academic Edition

PLATFORM	LIB PATH
Win 32	\$(OH_SDK_BASE)\lib\Win32\DebugAcademicEdition
Win 32	\$(OH_SDK_BASE)\lib\Win32\ReleaseAcademicEdition
X64	\$(OH_SDK_BASE)\lib\X64\DebugAcademicEdition
X64	\$(OH_SDK_BASE)\lib\X64\ReleaseAcademicEdition

#### Commercial Edition

PLATFORM	LIB PATH
Win 32	\$(OH_SDK_BASE)\lib\Win32\Debug
Win 32	\$(OH_SDK_BASE)\lib\Win32\Release
X64	\$(OH_SDK_BASE)\lib\X64\Debug
X64	\$(OH_SDK_BASE)\lib\X64\Release

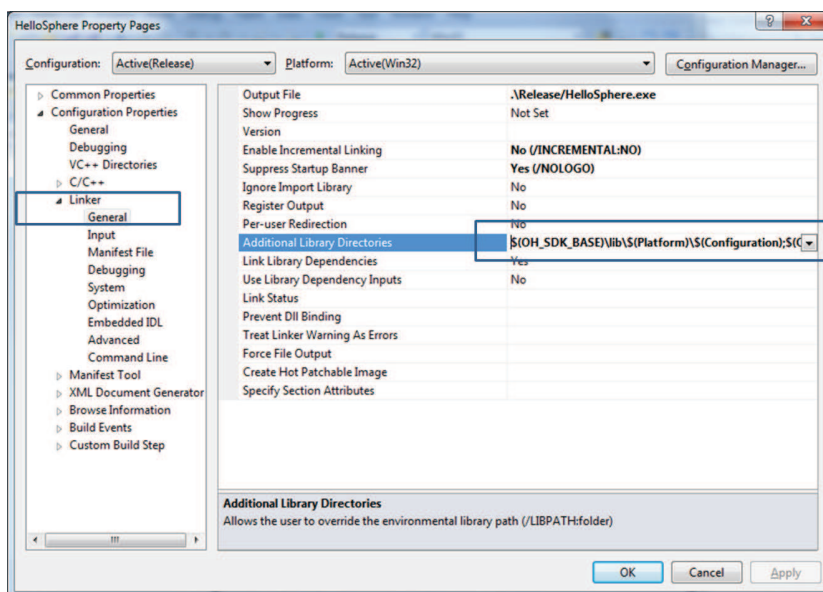


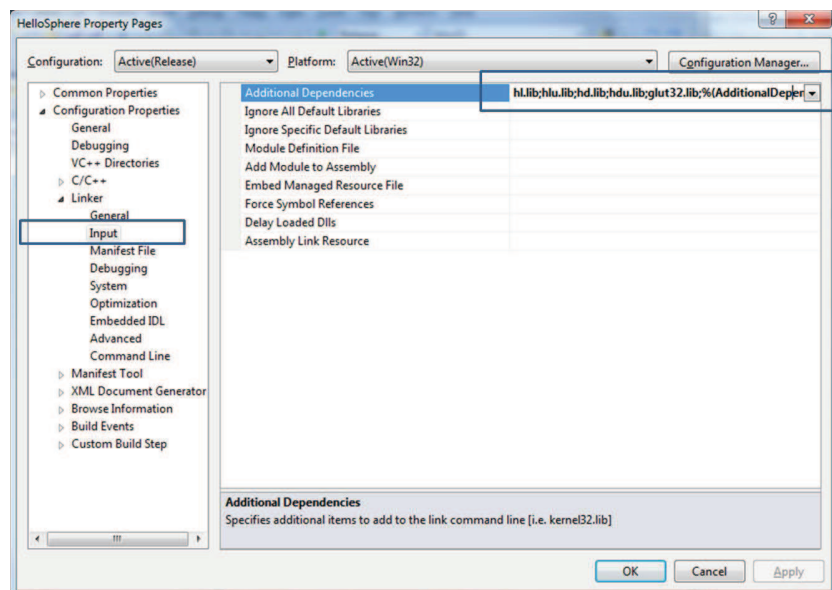
FIGURE 4-5. Setting up the Library Directories.



## Setup the Library Dependencies

Add the appropriate library modules as shown below in “Additional Dependencies.” Depending on the project under development, you may need one or more of these libraries to be included as dependencies.

- **hd.lib:** HDAPI library
- **hdu.lib:** HD utility library
- **hl.lib:** HLAPI library
- **hlu.lib:** HL utility library
- **hapticmouse.lib :** haptic mouse library
- **snapconstraints.lib:** haptic interface constraints library.
- **Qh.lib:** Main quickHaptics library
- **QHWin32Wrapper.lib:** Quickhaptics Win32 wrapper library
- **QHGLUTWrapper.lib:** QuickHaptics Glut wrapper library.
- **glui32.lib:** Glut user interface library.
- **glut32.lib:** OpenGL utility kit



Now you are ready to start programming haptic applications using Openhaptics or QuickHaptics under the MS Visual studio developer environment.

#### 4 SETTING UP MICROSOFT VISUAL STUDIO DEVELOPER ENVIRONMENT

##### *Setup the Library Dependencies*