

HPDI32

High Performance 32-bit Digital I/O

**HPDI32B
HPDI32ALT
HPDI32AL
HPDI32A
HPDI32**

Software Development Kit SDK 7.0.0 Compiler Support

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Preface

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1. Introduction

This manual applies to SDK release version 7.0.0.

1.1. Purpose

The purpose of this document is to describe the SDK's support for various compiler suites.

1.2. Acronyms

The following is a list of commonly occurring acronyms used throughout this document.

Acronyms	Description
API	Application Programming Interface (This is sometimes used synonymously with SDK or API Library.)
GSC	General Standards Corporation
SDK	Software Development Kit (This is sometimes used synonymously with API or API Library.)

1.3. Definitions

The following is a list of commonly occurring terms used throughout this document.

Term	Definition
Application	This refers to user mode processes.
Device Driver	This refers to the driver executable component of the HPDI32 driver package.
Driver	This refers to the device driver, which runs under control of the operating system.

2. Compiler Support

This section provides information pertinent to the SDK's support for various compiler suites. A compiler suite is designated as supported if the SDK ships with project files for that tool set.

2.1. Borland C++ Builder 6.0

This compiler suite is supported, but only for generating 32-bit Windows executables. Once the compiler suite is installed the projects files included with the SDK should build, as is, without incident.

2.2. CodeBlocks Using GCC

This IDE and compiler suite is supported for generating both 32-bit and 64-bit Windows executables. Once the appropriate tools are installed and configured as described below, the projects files included with the SDK should build without incident.

2.2.1. 32-bit Windows Targets

The 32-bit Windows build targets included with the SDK were built using CodeBlocks' compiler selection titled "GNU GCC Compiler". This compiler option was configured to use the GCC compiler suite included with the 32-bit version of MinGW. The configuration used is shown in Figure 1 below. No configuration beyond selecting this compiler was required.

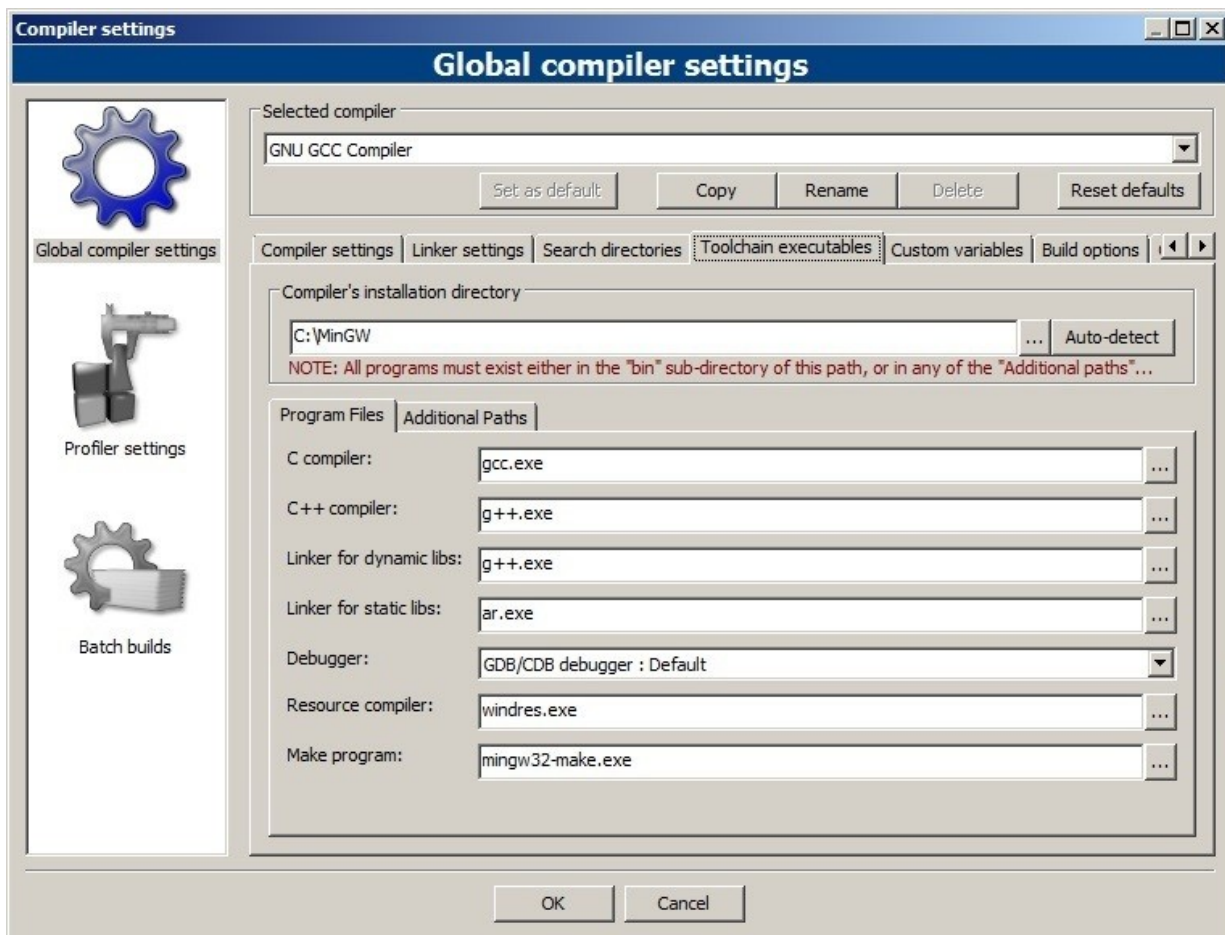


Figure 1 CodeBlocks' GCC compiler configuration for 32-bit Windows executables.

2.2.2. 64-bit Windows Targets

The 64-bit Windows build targets included with the SDK were built using the GCC compiler suite included with the 64-bit version of MinGW. This compiler option has to be added to CodeBlocks as it is not included as a built-in selection. This compiler option was created by copying the “GNU GCC Compiler” selection, which was then configured as shown in Figure 2 below. Additional configuration beyond selecting this compiler is required and is described below.

NOTE: For 64-bit GCC builds, applications link to the HPDI32 SDK DLL directly instead of to an intermediate link library. Linker command lines should therefore include the file `hpdi32\api\win64\hpdi32.dll` instead of a linker library (i.e. `hpdi32.a`), which is not provided.

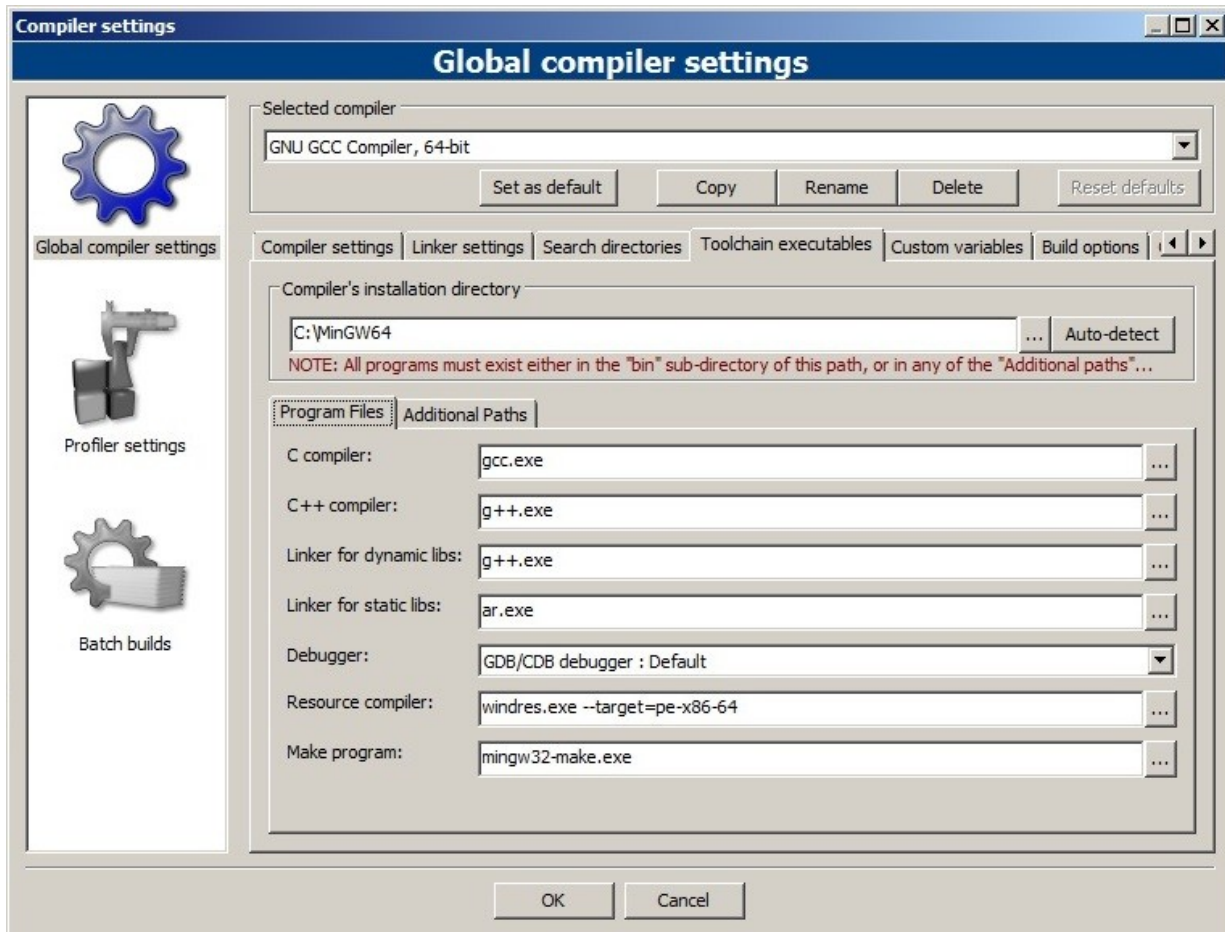


Figure 2 CodeBlocks' GCC compiler configuration for 64-bit Windows executables.

The following table lists the configuration needed for generation of 64-bit executables.

Configurable Item	Added Component	Description
Compiler settings: Toolchain executables: Resource compiler	--target=pe-x86-64	This configures the resource compiler to generate 64-bit output. See Figure 2.
Project build options: Selected compiler	GNU GCC Compiler, 64-bit	This selects the compiler suite for generating 64-bit Windows output.
Project build options:	-m64	This configures the compiler to generate 64-bit output.

Compiler settings: Other options		
Project build options: Compiler settings: #defines	WIN32 WIN64	This configures the compiler to generate 64-bit Windows output.
Project build options: Linker settings: Other linker options:	-m64	This configures the linker to generate 64-bit output.

NOTE: The 64-bit MinGW suite is available from the SourceForge web site. While other versions were and may now be available, the file downloaded for developmental builds at GSC was named `i686-4.9.2-release-win32-sjlj-rt_v3-rev0.7z`. The package was installed simply by extracting the archive content to the directory `C:\MinGW64`, as shown in Figure 2.

2.3. Microsoft Visual C++ 6

This compiler suite is supported, but only for generating 32-bit Windows executables. Once the compiler suite is installed the projects files included with the SDK should build, as is, without incident.

NOTE: While the GUI may not run under Windows Vista and later, the compiler should function successfully from the command line.

2.4. Microsoft Visual Studio 2005

This compiler suite is supported for generating both 32-bit and 64-bit Windows executables. Once the compiler suite is installed the projects files included with the SDK should build, as is, without incident.

2.5. Microsoft Visual Studio 2008

This compiler suite is supported for generating both 32-bit and 64-bit Windows executables. Once the compiler suite is installed the projects files included with the SDK should build, as is, without incident.

2.6. Microsoft Visual Studio 2010

This compiler suite is supported for generating both 32-bit and 64-bit Windows executables. Once the compiler suite is installed the projects files included with the SDK should build, as is, without incident.

2.7. Microsoft Visual Studio 2012

This compiler suite is supported for generating both 32-bit and 64-bit Windows executables. Once the compiler suite is installed the projects files included with the SDK should build, as is, without incident.

Document History

Revision	Description
November 13, 2014	Initial release.