Supported and Compatible Compilers – Release 2013b

A number of MathWorks products or product features require that you have a third-party compiler installed on your system. The tables below outline the compilers that are supported by various MathWorks products. These compilers are provided by a number of vendors and are available under a variety of commercial, academic, or open source terms; visit the providers' Web sites for further information.

Windows (32-bit)

On 32-bit Windows, the lcc C compiler is installed along with MATLAB, providing out-of-the-box support for most MathWorks products. Further options are available as outlined in this table.

MATLAB Product Family – Release 2013b

Compiler	MATLAB	MATLAB Compiler	MATLAB Builder EX	MATLAB Builder NE	MATLAB Builder JA	MATLAB Coder	SimBiology	Fixed-Point Designer
	For MEX-file compilation and external usage of MATLAB Engine and MAT-file APIs	For C and C++ shared libraries	For all features	For all features	For all features	For all features	For accelerated computation	For accelerated computation
lcc-win32 v2.4.1 *Included with MATLAB*	✓					✓	✓	✓
Microsoft Windows SDK 7.1 *Available at no charge; requires .NET Framework 4.0*	✓	✓	✓	✓		✓	✓	✓
Microsoft Visual C++ 2012 Professional	✓	✓	✓	✓		✓	✓	✓
Microsoft Visual C++ 2010 Professional SP1	✓	✓	✓	✓		✓	✓	✓
Microsoft Visual C++ 2008 Professional SP1 [1]	✓	✓	✓	✓		✓	✓	✓
Intel C++ Composer XE 2013 [3]	✓							
Intel C++ Composer XE 2011 [1][3]	✓							
Intel Visual Fortran Composer XE 2013 [3]	✓							
Intel Visual Fortran Composer XE 2011 [1][3]	✓							
Microsoft .NET Framework SDK 2.0, 3.0, 3.5, 4.0 *Available at no charge*				✓ [3][4]				
Java Development Kit (JDK) 1.7 *Available at no charge*					✓			

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Simulink Product Family – Release 2013b

Compiler	Simulink — For S-Function compilation	Simulink — For model referencing, Accelerator mode, and MATLAB Function blocks	Simulink — For Rapid Accelerator mode	Stateflow — For all features	Simulink Coder — For all features	Embedded Coder — When targeting the host OS	xPC Target — For all features
Lcc-win32 v2.4.1 *Included with MATLAB*	✓	✓	✓	✓	✓	✓	
Microsoft Windows SDK 7.1 *Available at no charge; requires .NET Framework 4.0*	✓	✓	✓	✓	✓ [1]	✓ [1]	✓
Microsoft Visual C++ 2012 Professional	✓	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2010 Professional SP1	✓	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2008 Professional SP1 [1]	✓	✓	✓	✓	✓	✓	✓
Intel C++ Composer XE 2013 [2]	✓						
Intel C++ Composer XE 2011 [1] [2]	✓						
Intel Visual Fortran Composer XE 2013 [2]	✓						✓
Intel Visual Fortran Composer XE 2011 [1] [2]	✓						✓

Notes for the Windows (32-bit) Platform

1. Support for this version of this compiler will be discontinued in a future release, at which time a new version will be supported. Consult the *platform road map* for more information.

2. Intel compilers depend on tools provided by Microsoft. The following combinations are supported:

	Microsoft Windows SDK 7.1	Microsoft Visual Studio 2012 Professional (32-bit)	Microsoft Visual Studio 2010 Professional SP1 (32-bit)	Microsoft Visual Studio 2008 SP1 Professional Edition (32-bit)	Microsoft Visual Studio 2008 Shell (32-bit)
Intel C++ Composer XE 2013	✓	✓	✓		
Intel C++ Composer XE 2011	✓		✓	✓	
Intel Visual Fortran Composer XE 2013	✓	✓	✓		
Intel Visual Fortran Composer XE 2011	✓		✓	✓	✓

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3. To build .NET components, a Microsoft .NET Framework must be installed. The .NET Framework v3.0 does not contain a framework-specific compiler; compatible components can be built using the v2.0 compiler. The .NET Framework is automatically installed by Visual Studio. It can also be downloaded from the Microsoft Web site. To execute applications that use the resulting .NET components, the target machine must have the matching .NET Framework installed.

4. MATLAB Builder NE supports building .NET assemblies but not COM objects when using the Microsoft .NET Framework SDK without Microsoft Visual Studio.

5. This compiler does not support OpenMP. Code generation will treat parfor-loops as for-loops.

6. Fortran compilers are supported with Simulink only for creating Simulink S-Functions using the MATLAB MEX command. The S-Functions can be used with normal and accelerated simulations.

7. .sln project generation is not supported when using the Microsoft Windows SDK.

8. xPC Target supports Fortran code in Simulink models using C-MEX wrapper S-Functions.

Windows (64-bit)

For the 64-bit Windows platform, a C compiler is not supplied with MATLAB. A free download is available that is suitable for most users:

Microsoft Windows SDK 7.1

Installation Instructions

The complete set of supported compilers is described below.

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MATLAB Product Family – Release 2013b

Compiler	MATLAB	MATLAB Compiler	MATLAB Builder EX	MATLAB Builder NE	MATLAB Builder JA	MATLAB Coder	SimBiology	Fixed-Point Designer
	For MEX-file compilation, `loadlibrary`*, and external usage of MATLAB Engine and MAT-file APIs*	*For C and C++ shared libraries*	*For all features*	*For all features*	*For all features*	*For all features*	*For accelerated computation*	*For accelerated computation*
Microsoft Windows SDK 7.1	✓	✓	✓	✓ [4]		✓ [6]	✓	✓
Microsoft Visual C++ 2012 Professional	✓	✓	✓	✓ [4]		✓	✓	✓
Microsoft Visual C++ 2010 Professional SP1	✓	✓	✓	✓ [4]		✓	✓	✓
Microsoft Visual C++ 2008 Professional SP1 and Windows SDK 6.1 [1] [2]	✓	✓	✓	✓ [4]		✓	✓	✓
Intel C++ Composer XE 2013 [3]	✓							
Intel C++ Composer XE 2011 [1] [3]	✓							
Intel Visual Fortran Composer XE 2013 [3]	✓							
Intel Visual Fortran Composer XE 2011 [1] [3]	✓							
Microsoft .NET Framework SDK 2.0, 3.0, 3.5, 4.0 *Available at no charge*				✓ [4,5]				
Java Development Kit (JDK) 1.7 *Available at no charge*					✓			
lcc-win64 *Included with products that support it; only used when no other compiler is present*						✓ [6]		

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Simulink Product Family – Release 2013b

Compiler	Simulink For S-Function compilation	Simulink For Model Referencing, Accelerator mode, Rapid Accelerator mode, and MATLAB Function blocks	Stateflow For all features	Simulink Coder For all features	Embedded Coder When targeting the host OS	xPC Target For all features
Microsoft Windows SDK 7.1	✓	✓	✓	✓ [7]	✓ [7]	✓
Microsoft Visual C++ 2012 Professional	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2010 Professional SP1	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2008 Professional SP1 and Windows SDK 6.1 [1][2]	✓	✓	✓	✓	✓	✓
Intel C++ Composer XE 2013 [3]	✓					
Intel C++ Composer XE 2011 [1][3]	✓					
Intel Visual Fortran Composer XE 2013 [3]	✓ [4]					✓ [4]
Intel Visual Fortran Composer XE 2011 [1][3]	✓ [4]					✓ [4]
Icc-win64 *Included with products that support it; only used when no other compiler is present*		✓	✓			

Notes for the Windows (64-bit) Platform

1.Support for this version of this compiler will be discontinued in a future release, at which time a new version will be supported. Consult the *platform road map* for more information.

2. Both Microsoft Visual Studio 2008 and Windows Software Development Kit (SDK) 6.1 must be installed. When installing Microsoft Visual Studio, you must choose "X64 Compilers and Tools" when installing Microsoft Visual Studio; this is not selected by default.

3.Intel compilers depend on tools provided by Microsoft. The following combinations are supported:

	Microsoft Windows SDK 7.1	Microsoft Visual Studio 2012 Professional (64-bit)	Microsoft Visual Studio 2010 Professional SP1 (64-bit)	Microsoft Visual Studio 2008 SP1 Professional Edition (64-bit)	Microsoft Visual Studio 2008 Shell (64-bit)
Intel C++ Composer XE 2013	✓	✓	✓		
Intel C++ Composer XE 2011	✓		✓	✓	
Intel Visual Fortran Composer XE 2013	✓	✓	✓		
Intel Visual Fortran Composer XE 2011	✓		✓	✓	✓

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4.To build .NET components, a Microsoft .NET Framework must be installed. The .NET Framework v3.0 does not contain a framework-specific compiler; compatible components can be built using the v2.0 compiler. The .NET Framework is automatically installed by Visual Studio. It can also be downloaded from the Microsoft Web site. To execute applications that use the resulting .NET components, the target machine must have the matching .NET Framework installed.

5.MATLAB Builder NE supports building .NET assemblies but not COM objects when using the Microsoft .NET Framework SDK without Microsoft Visual Studio.

6.This compiler does not support OpenMP. Code generation will treat parfor-loops as for-loops.

7..sln project generation is not supported when using the Microsoft Windows SDK.

8.Fortran compilers are supported with Simulink only for creating Simulink S-Functions using the MATLAB MEX command. The S-Functions can be used with normal and accelerated simulations.

9.xPC Target supports Fortran code in Simulink models using C-MEX wrapper S-Functions.

Linux (64-bit)

On Linux, no C compiler is supplied with MATLAB. The GNU compiler (gcc) is included with many Linux distributions.

MATLAB Product Family – Release 2013b						
Compiler	MATLAB	MATLAB Compiler	MATLAB Builder JA	MATLAB Coder	SimBiology	Fixed-Point Designer
	For MEX-file compilation, `loadlibrary`, and external usage of MATLAB Engine and MAT-file APIs	For C and C++ shared libraries	For all features	For all features	For accelerated computation	For accelerated computation
GNU gcc/g++ 4.7.x [1] Available at no charge	✔	✔		✔	✔	✔
GNU gfortran 4.7.x Available at no charge	✔					
Java Development Kit (JDK) 1.7 Available at no charge			✔			

Simulink Product Family – Release 2013b					
Compiler	Simulink	Simulink	Stateflow	Simulink Coder	Embedded Coder
	For S-Function compilation	For model referencing, Accelerator mode, Rapid Accelerator mode, and MATLAB Function blocks	For all features	For all features	When targeting the host OS
GNU gcc/g++ 4.7.x [1] Available at no charge	✔	✔	✔	✔	✔
GNU gfortran 4.7.x Available at no charge	✔ [2]				

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To determine the version of your compiler, see *Solution 1-1880F.*

Notes for the Linux Platform

1.g++ libraries are required, even when compiling C-language source code. This may require installing the "gcc-g++" (or similar) package on your system.

2.Fortran compilers are supported with Simulink only for creating Simulink S-functions using the MATLAB MEX command. The S-functions can be used with normal and accelerated simulations.

Mac OS X

On the Mac, no C compiler is supplied with MATLAB. If you use products that require one, Apple's development environment for OS X (Xcode) is available in the Mac App Store.

MATLAB Product Family – Release 2013b

Compiler	MATLAB	MATLAB Compiler	MATLAB Builder JA	MATLAB Coder	SimBiology	Fixe Des
	For MEX-file compilation, loadlibrary, and external usage of MATLAB Engine and MAT-file APIs	For C and C++ shared libraries	For all features	For all features	For accelerated computation	acce comp
Apple Xcode 4.3 or higher *Available at no charge*	✓	✓		✓ ,	✓	
GNU gfortran 4.3.x *Available at no charge*	✓					
Java Development Kit (JDK) 1.7 *Available at no charge*			✓			

Simulink Product Family – Release 2013b

Compiler	Simulink	Simulink	Stateflow	Simulink Coder	Embedded Coder
	For S-Function compilation	For model referencing, Accelerator mode, Rapid Accelerator mode, and MATLAB Function blocks	For all features	For all features	When targeting the host OS
Apple Xcode 4.3 or higher *Available at no charge*	✓	✓	✓	✓	✓
GNU gfortran 4.3.x *Available at no charge*	✓ ₁				

To determine the version of Xcode installed, start Xcode and then select Xcode->About Xcode.

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Notes for the Mac Platform

1.This compiler does not support OpenMP. Code generation will treat parfor-loops as for-loops.

2.Fortran compilers are supported with Simulink only for creating Simulink S-functions using the MATLAB MEX command. The S-functions can be used with normal and accelerated simulations.

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