Supported and Compatible Compilers – Release 2011a

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 2011a

Compiler	Version	MATLAB For MEX-file compilation and external usage of MATLAB Engine and MAT-file APIs	MATLAB Compiler For C and C++ shared libraries	MATLAB Builder EX For all features	MATLAB Builder NE For all features	MATLAB Builder JA For all features	MATLAB Coder For all features	SimBiology For accelerated computation	Fixed-Point Toolbox For accelerated computation
lcc - win32 *Included with MATLAB*	2.4.1	√	√				√	√	√
Microsoft Visual C++ 2010 Express *Available at no charge*	10.0	√	√	√	√ [1]		√	√	√
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√ [1]		√	√	√
Microsoft Visual C++ 2008 Professional SP1	9.0	√	√	√	√ [1]		√	√	√
Microsoft Visual C++ 2005 Professional SP1	8.0 [4]	√	√	√	√ [1]		√	√	√
Microsoft Visual C/C++ Professional [2]	6.0 [4]	√	√	√	√ [1]		√	√	√
Intel C++ [3]	11.1	√							
Open Watcom [2, 5] *Available at no charge*	1.8	√					√	√	√
Intel Visual Fortran [3]	11.1	√							
Microsoft .NET Framework SDK *Available at no charge*	3.5				√ [1, 6]				
	3.0				√ [1, 6]				
	2.0				√ [1, 6]				
Java Development Kit (JDK) *Available at no charge*	1.6					√			

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Simulink Product Family – Release 2011a

Compiler	Version	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 *Included with MATLAB*	2.4.1	√	√	√	√	√	√	
Microsoft Visual C++ 2010 Express *Available at no charge*	10.0	√	√	√	√	√	√	√
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√	√	√	√
Microsoft Visual C++ 2008 Professional SP1	9.0	√	√	√	√	√	√	√
Microsoft Visual C++ 2005 Professional SP1	8.0 [4]	√	√	√	√	√	√	√
Microsoft Visual C/C++ Professional [2]	6.0 [4]	√	√	√	√	√	√	√
Intel C++ [3]	11.1	√						
Open Watcom [2, 5] *Available at no charge*	1.8	√	√		√	√	√	√
Intel Visual Fortran [3]	11.1	√ [7]						√ [8]

Notes for the Windows (32-bit) Platform

1. 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.

2. Support for C++ exception handling is limited. You can find more information in *Solution 1-4OKNSV.*

3. Intel compilers depend on tools provided by Microsoft development products. The following combinations are supported by MATLAB and Simulink related products:

Intel Compilers on Microsoft Windows		Microsoft Visual Studio 2008 SP1 Professional Edition (32-bit)	Microsoft Visual Studio 2008 Shell (32-bit)
Compiler	Version	9.0	9.0
Intel C++	11.1	√	
Intel Visual Fortran	11.1	√	√

Access to the 2008 SP1 edition is available from Microsoft as part of their *Visual Studio with MSDN* subscriptions. You should use the Microsoft Visual Studio 2008 Shell that is bundled with certain Intel Visual Fortran packages.

4. 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.

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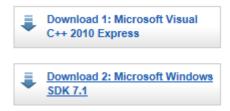5. Open Watcom is supported for use in C/C++ only; Open Watcom Fortran is not supported.

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

7. 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.

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. Free downloads are available that are suitable for most users. To get a C compiler and support libraries, install the following downloads in order:

Download 1: Microsoft Visual C++ 2010 Express

Download 2: Microsoft Windows SDK 7.1

For step-by-step installation instructions, see the following *solution.*

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MATLAB Product Family – Release 2011a

Compiler	Version	MATLAB For MEX-file compilation, `loadlibrary`, and external usage of MATLAB Engine and MAT-file APIs	MATLAB Compiler For C and C++ shared libraries	MATLAB Builder EX For all features	MATLAB Builder NE For all features	MATLAB Builder JA For all features	MATLAB Coder For all features	SimBiology For accelerated computation	Fixed-Point Toolbox For accelerated computation
Microsoft Visual C++ 2010 Express and Windows SDK 7.1 [1] *Available at no charge*	10.0	√	√	√	√ [4]		√	√	√
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√ [4]		√	√	√
Microsoft Visual C++ 2008 Professional SP1 and Windows SDK 6.1 [2][3]	9.0	√	√	√	√ [4]		√	√	√
Microsoft Visual C++ 2005 Professional SP1 [3]	8.0 [6]	√	√	√	√ [4]		√	√	√
Intel C++ [5]	11.1	√							
Intel Visual Fortran [5]	11.1	√							
Microsoft .NET Framework SDK *Available at no charge*	3.5				√ [4,7]				
	3.0				√ [4,7]				
	2.0				√ [4,7]				
Java Development Kit (JDK) *Available at no charge*	1.6					√			

Simulink Product Family – Release 2011a

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Simulink Product Family – Release 2011a

Compiler	Version	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 Visual C++ 2010 Express and Windows SDK 7.1 [1] *Available at no charge*	10.0	√	√	√	√	√	√
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√	√	√
Microsoft Visual C++ 2008 Professional SP1 and Windows SDK 6.1 [2][3]	9.0	√	√	√	√	√	√
Microsoft Visual C++ 2005 Professional SP1 [3]	8.0 [6]	√	√	√	√	√	√
Intel C++ [5]	11.1	√					
Intel Visual Fortran [5]	11.1	√ [8]					√ [9]

Notes for the Windows (64-bit) Platform

1. Both Microsoft Visual C++ 2010 Express and Windows Software Development Kit (SDK) 7.1 must be installed.

2. Microsoft Visual Studio 2008 Professional Edition requires that the Microsoft Windows Software Development Kit (SDK) 6.1 is installed properly.

3. To use Microsoft Visual Studio with MATLAB on a 64-bit platform, you must choose "X64 Compilers and Tools" when installing Microsoft Visual Studio. This is not selected by default.

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. Intel compilers depend on tools provided by Microsoft development products. The following combinations are supported by MATLAB and Simulink related products:

Intel Compilers on Microsoft Windows		Microsoft Visual Studio 2008 SP1 Professional Edition (64-bit)	Microsoft Visual Studio 2008 Shell (64-bit)
Compiler	Version	9.0	9.0
Intel C++	11.1	√	
Intel Visual Fortran	11.1	√	√

Access to the 2008 SP1 edition is available from Microsoft as part of their *Visual Studio with MSDN* subscriptions. You should use the Microsoft Visual Studio 2008 Shell that is bundled with certain Intel Visual Fortran packages.

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6. 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.

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

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 (32-bit and 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 2011a

Compiler	Version	MATLAB For MEX-file compilation, `loadlibrary`, and external usage of MATLAB Engine and MAT-file APIs	MATLAB Compiler For C and C++ shared libraries	MATLAB Builder JA For all features	MATLAB Coder For all features	SimBiology For accelerated computation	Fixed-Point Toolbox For accelerated computation
GNU gcc/g++ *Available at no charge*	4.3.x	√	√		√	√	√
GNU gfortran *Available at no charge*	4.3.x	√					
Java Development Kit (JDK) *Available at no charge*	1.6			√			

Simulink Product Family – Release 2011a

Compiler	Version	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
GNU gcc/g++ *Available at no charge*	4.3.x	√	√	√	√	√
GNU gfortran *Available at no charge*	4.3.x	√ 1				

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

Notes for the Linux (32-bit and 64-bit) Platform

1. 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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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 from Apple at no cost through Apple's Developer Program. It is also available for a nominal charge in the Mac App Store.

MATLAB Product Family – Release 2011a

Compiler	Version	MATLAB For MEX-file compilation, `loadlibrary`, and external usage of MATLAB Engine and MAT-file APIs	MATLAB Compiler For C and C++ shared libraries	MATLAB Builder JA For all features	MATLAB Coder For all features	SimBiology For all features	Fixed-Point Toolbox For all features
Apple Xcode For use with Mac OS X 10.7 (Lion)	4.1	√	√		√	√	√
Apple Xcode For use with Mac OS X 10.6 (Snow Leopard)	3.2	√	√		√	√	√
GNU gfortran Available at no charge	4.3.x	√					
Java Development Kit (JDK) Available at no charge	1.6			√			

Simulink Product Family – Release 2011a

Compiler	Version	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
Apple Xcode For use with Mac OS X 10.7 (Lion)	4.1	√	√	√	√	√
Apple Xcode For use with Mac OS X 10.6 (Snow Leopard)	3.2	√	√	√	√	√
GNU gfortran Available at no charge	4.3.x	√ [1]				

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

Notes for the Mac Platform

1.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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