

# Supported and Compatible Compilers – Release 2010b

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 - 2010a

## MATLAB Product Family – Release 2010b

Compiler	Version	MATLAB	MATLAB Compiler	MATLAB Builder EX	MATLAB Builder NE	MATLAB Builder JA	SimBiology	Fixed-Point Toolbox
		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 accelerated computation	For accelerated computation
lcc - win32 <i>Included with MATLAB</i>	2.4.1	√	√				√	√
Microsoft Visual C++ 2010 Express <i>Available at no charge</i>	10.0	√	√	√	√ <sup>2</sup>		√	√
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√ <sup>2</sup>		√	√
Microsoft Visual C++ 2008 Express Edition and Windows SDK 6.1 <sup>1</sup> <i>Available at no charge</i>	9.0 <sup>5</sup>	√	√	√	√ <sup>2</sup>		√	√
Microsoft Visual C++ 2008 Professional SP1	9.0	√	√	√	√ <sup>2</sup>		√	√
Microsoft Visual C++ 2005 Professional SP1	8.0 <sup>5</sup>	√	√	√	√ <sup>2</sup>		√	√
Microsoft Visual C/C++ Professional <sup>3</sup>	6.0 <sup>5</sup>	√	√	√	√ <sup>2</sup>		√	√
Intel C++ <sup>4</sup>	11.1	√						
Open Watcom <sup>3,6</sup> <i>Available at no charge</i>	1.8	√					√	√
Intel Visual Fortran <sup>4</sup>	11.1	√						
	10.1 <sup>5</sup>	√						
Microsoft .NET Framework SDK <i>Available at no charge</i>	3.5				√ <sup>2,7</sup>			
	3.0				√ <sup>2,7</sup>			
	2.0				√ <sup>2,7</sup>			
Sun Java Development Kit (JDK) <i>Available at no charge</i>	1.6					√		

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## Simulink Product Family – Release 2010b

Compiler	Version	Simulink	Simulink	Simulink	Stateflow	Stateflow Coder	Real-Time Workshop	Real-Time Workshop Embedded Coder	xPC Target
		For S- Function compilation <sup>10</sup>	For model referencing, Accelerator mode, and Embedded MATLAB	For Rapid Accelerator mode	For all features	For all features	When targeting the host OS	When targeting the host OS <sup>10</sup>	For all features
Lcc - win32 <i>Included with MATLAB</i>	2.4.1	√	√	√	√	√	√	√	
Microsoft Visual C++ 2010 Express <i>Available at no charge</i>	10.0	√	√	√	√	√	√	√	
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√	√	√	√	
Microsoft Visual C++ 2008 Express Edition and Windows SDK 6.1 <sup>1</sup> <i>Available at no charge</i>	9.0 <sup>5</sup>	√	√	√	√	√	√	√	√
Microsoft Visual C++ 2008 Professional SP1	9.0	√	√	√	√	√	√	√	√
Microsoft Visual C++ 2005 Professional SP1	8.0 <sup>5</sup>	√	√	√	√	√	√	√	√
Microsoft Visual C/C++ Professional <sup>3</sup>	6.0 <sup>5</sup>	√	√	√	√	√	√	√	√
Intel C++ <sup>4</sup>	11.1	√							
Open Watcom <sup>3,6</sup> <i>Available at no charge</i>	1.8	√	√		√	√	√	√	√
Intel Visual Fortran <sup>4</sup>	11.1	√ <sup>8</sup>							√ <sup>9</sup>
	10.1 <sup>5</sup>	√ <sup>8</sup>							

### Notes for the Windows (32-bit) Platform

- Both Microsoft Visual C++ 2008 Express Edition and Windows Software Development Kit (SDK) 6.1 must be installed. For more information on installing Express Edition, see [Solution 1-BYZCYZ](#).
- 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.
- Support for C++ exception handling is limited. You can find more information in [Solution 1-4OKNSV](#).

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

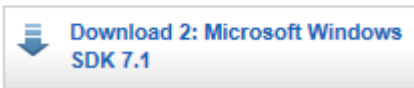
Intel Compilers on Microsoft Windows		Microsoft Visual Studio 2008 SP1 Professional Edition (32-bit)	Microsoft Visual Studio 2008 Shell (32-bit)	Microsoft Visual Studio 2005 SP1 Professional Edition (32-bit)
Compiler	Version	9.0	9.0	8.0
Intel C++	11.1	√		
Intel Visual Fortran	11.1	√	√	
	10.1			√

Access to the 2005 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.

5. 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.
6. Open Watcom is supported for use in C/C++ only; Open Watcom Fortran is not supported.
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.
10. On Windows 7, compiling Simulink S-Functions using the MEX build script may fail with an error that the Simulink include header file 'simstruc.h' cannot be found. See bug [661855](#) for further discussion.

### 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:



For step-by-step installation instructions, see the following [solution](#).

## MATLAB Product Family – Release 2010b

Compiler	Version	MATLAB For MEX-file compilation and external usage of MATLAB Engine and MAT-file APIs	MATLAB For loadlibrary	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	SimBiology For accelerated computation	Fixed-Point Toolbox For accelerated computation
Microsoft Visual C++ 2010 Express and Windows SDK 7.1 <sup>1</sup> <i>Available at no charge</i>	10.0	√		√	√	√ <sup>4</sup>		√	√
Microsoft Visual C++ 2010 Professional	10.0	√		√	√	√ <sup>4</sup>		√	√
Microsoft Visual C++ 2008 Express Edition and Windows SDK 6.1 <sup>2</sup> <i>Available at no charge</i>	9.0 <sup>6</sup>	√		√	√	√ <sup>4</sup>		√	√
Microsoft Visual C++ 2008 Professional SP1 and Windows SDK 6.1 <sup>2 3</sup>	9.0	√	√	√	√	√ <sup>4</sup>		√	√
Microsoft Visual C++ 2005 Professional SP1 <sup>3</sup>	8.0 <sup>6</sup>	√	√	√	√	√ <sup>4</sup>		√	√
Intel C++ <sup>5</sup>	11.1	√							
Intel Visual Fortran <sup>5</sup>	11.1	√							
	10.1 <sup>6</sup>	√							
Microsoft .NET Framework SDK <i>Available at no charge</i>	3.5					√ <sup>4,7</sup>			
	3.0					√ <sup>4,7</sup>			
	2.0					√ <sup>4,7</sup>			
Sun Java Development Kit (JDK) <i>Available at no charge</i>	1.6						√		

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## Simulink Product Family – Release 2010b

Compiler	Version	Simulink	Simulink	Stateflow	Stateflow Coder	Real-Time Workshop	Real-Time Workshop Embedded Coder
		For S-Function compilation <sup>5</sup>	For Model Referencing, Accelerator mode, Rapid Accelerator mode, and Embedded MATLAB	For all features	For all features	When targeting the host OS	When targeting the host OS <sup>5</sup>
Microsoft Visual C++ 2010 Express and Windows SDK 7.1 <sup>1</sup> <i>Available at no charge</i>	10.0	√	√	√	√	√	√
Microsoft Visual C++ 2010 Professional	10.0	√	√	√	√	√	√
Microsoft Visual C++ 2008 Express Edition and Windows SDK 6.1 <sup>2</sup> <i>Available at no charge</i>	9.0 <sup>6</sup>	√	√	√	√	√	√
Microsoft Visual C++ 2008 Professional SP1 and Windows SDK 6.1 <sup>2 3</sup>	9.0	√	√	√	√	√	√
Microsoft Visual C++ 2005 Professional SP1 <sup>3</sup>	8.0 <sup>6</sup>	√	√	√	√	√	√
Intel C++ <sup>5</sup>	11.1	√					
Intel Visual Fortran <sup>5</sup>	11.1	√ <sup>8</sup>					
	10.1 <sup>6</sup>	√ <sup>8</sup>					

### Notes for the Windows (64-bit) Platform

- Both Microsoft Visual C++ 2010 Express and Windows Software Development Kit (SDK) 7.1 must be installed.
- Microsoft Visual Studio 2008 Express and Professional Editions require that the Microsoft Windows Software Development Kit (SDK) 6.1 is installed properly. For more information on installing Express Edition, see [Solution 1-6IJJ3L](#).
- 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.
- 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.
- 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)	Microsoft Visual Studio 2005 SP1 Professional Edition (64-bit)
Compiler	Version	9.0	9.0	8.0
Intel C++	11.1	√		
Intel Visual Fortran	11.1	√	√	
	10.1			√

Access to the 2005 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.

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. On Windows 7, compiling Simulink S-Functions using the MEX build script may fail with an error that the Simulink include header file 'simstruc.h' cannot be found. See bug [661855](#) for further discussion.

### 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 2010b

Compiler	Version	MATLAB For MEX-file compilation and external usage of MATLAB Engine and MAT-file APIs	MATLAB For loadlibrary	MATLAB Compiler For C and C++ shared libraries	MATLAB Builder JA For all features	SimBiology For accelerated computation	Fixed-Point Toolbox For accelerated computation
GNU gcc/g++ <i>Available at no charge</i>	4.3.x	√	√	√		√	√
GNU g95 <i>Available at no charge</i>	0.90	√					
Sun Java Development Kit (JDK) <i>Available at no charge</i>	1.6				√		

## Simulink Product Family – Release 2010b

Compiler	Version	Simulink For model referencing, Accelerator mode, Rapid Accelerator mode, and Embedded MATLAB	Simulink For Embedded MATLAB	Stateflow For all features	Stateflow Coder For all features	Real-Time Workshop When targeting the host OS	Real-Time Workshop Embedded Coder When targeting the host OS
GNU gcc/g++ <i>Available at no charge</i>	4.3.x	√	√	√	√	√	√
GNU g95 <i>Available at no charge</i>	0.90	√ <sup>1</sup>					

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.

### 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.

Compiler	Version	MATLAB For MEX-file compilation and external usage of MATLAB Engine and MAT-file APIs	MATLAB For loadlibrary	MATLAB Compiler For C and C++ shared libraries	MATLAB Builder JA For all features	SimBiology For accelerated computation	Fixed-Point Toolbox For accelerated computation
Apple Xcode with gcc/g++ <i>Available at no charge</i>	3.2 <sup>1</sup>	√	√	√		√	√
	3.1 <sup>2</sup>	√	√	√		√	√
GNU gfortran <i>Available at no charge</i>	4.3.0	√					
Sun Java Development Kit (JDK) <i>Available at no charge</i>	1.6				√		



## Simulink Product Family – Release 2010b

Compiler	Version	Simulink	Simulink	Stateflow	Stateflow Coder	Real-Time Workshop	Real-Time Workshop Embedded Coder
		For all features	For model referencing, Accelerator mode, Rapid Accelerator mode, and Embedded MATLAB	For all features	For all features	When targeting the host OS	When targeting the host OS
Apple Xcode with gcc/g++ <i>Available at no charge</i>	3.2 <sup>1</sup>	√	√	√	√	√	√
	3.1 <sup>2</sup>	√	√	√	√	√	√
GNU gfortran <i>Available at no charge</i>	4.3.0	√ <sup>3</sup>					

To determine the version of your compiler, see [Solution 1-1880F](#).

### Notes for the Mac Platform

1. For Mac OS X 10.6 (Snow Leopard). The gcc/g++ development tools version 4.0.1 (Apple Computer, Inc. build 5493) are required. These are installed with Xcode.
2. For Mac OS X 10.5 (Leopard). The gcc/g++ development tools version 4.0.1 (Apple Computer, Inc. build 5488) are required. These are installed with Xcode.
3. 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.