

# Supported and Compatible Compilers – Release 2016b

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' websites for further information.

Please see [Polyspace documentation](#) for the list of compilers that Polyspace supports in the current release.

View System Requirements for [previous releases](#).

## Windows (64-bit)

Note:

- MinGW 4.9.2 will be replaced by a newer version in a future release
- Microsoft Visual C++ 2010 Professional SP1 is not supported as of R2016b
- Microsoft Visual C++ 2012 Professional will not be supported in a future release
- Microsoft .NET Framework SDK 2.0, 3.0, 3.5 will not be supported in a future release
- Support for Microsoft .NET Framework SDK 4.6 was added in R2016b
- Java Development Kit 1.7 will be replaced by a newer version in a future release
- Microsoft Windows SDK 7.1 support will be dropped in a future release

## MATLAB Product Family – Release 2016b

Compiler	MATLAB	MATLAB Compiler	MATLAB Compiler SDK				MATLAB Coder	SimBiology	Fixed Point Designer	HDL Coder	HDL Verifier
	<i>For MEX-file compilation, <b>loadlibrary</b>, and external usage of MATLAB Engine and MAT-file APIs</i>	<i>Excel add-in for desktop</i>	<i>C/C++ &amp; COM</i>	<i>.NET</i>	<i>Java</i>	<i>Excel add-in for MPS</i>	<i>For all features</i>	<i>For accelerated computation</i>	<i>For accelerated computation</i>	<i>For accelerated testbench simulation</i>	<i>For DPI and TUM component generation</i>
<i>MinGW 4.9.2 C/C++ (Distributor: TDM-GCC) Available at no charge</i>	✓						✓ <sup>6</sup>	✓	✓	✓	✓
Microsoft Visual C++ 2017 product family <sup>12</sup> <i>(Patch required)</i>	✓	✓	✓	✓							
Microsoft Visual C++ 2015 Professional <sup>11</sup>	✓	✓	✓	✓ <sup>4</sup>			✓	✓	✓	✓	✓
Microsoft Visual C++ 2013 Professional	✓	✓	✓	✓ <sup>4</sup>			✓	✓	✓	✓	✓
Microsoft Visual C++ 2012 Professional	✓	✓	✓	✓ <sup>4</sup>			✓	✓	✓	✓	✓
Microsoft Windows SDK 7.1 Available at no charge; requires .NET Framework 4.0	✓	✓	✓				✓ <sup>6</sup>	✓	✓	✓	✓
Intel Parallel Studio XE 2016 for C/C++ <sup>3</sup>	✓										
Intel Parallel Studio XE 2015 for C/C++ <sup>3</sup>	✓										
Intel C++ Composer XE 2013 <sup>3</sup>	✓										
Intel Parallel Studio XE 2016 for Fortran <sup>3</sup>	✓										
Intel Parallel Studio XE 2015 for Fortran <sup>3</sup>	✓										
Intel Visual Fortran Composer XE 2013 <sup>3</sup>	✓										
Microsoft .NET Framework SDK 2.0, 3.0, 3.5, 4.0, 4.5, 4.6 Available at no charge	✓			✓ <sup>4,5</sup>		✓ <sup>10</sup>					
Java Development Kit (JDK) 1.7 Available at no charge					✓						
icc-win64 Included with products that support it							✓ <sup>6</sup>	✓	✓	✓	

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## Simulink Product Family – Release 2016b

	Simulink	Simulink	Stateflow	Simulink Coder	Embedded Coder	Simulink Real-Time
Compiler	<i>For S-Function compilation</i>	<i>For Model Referencing, Accelerator mode, Rapid Accelerator mode, and MATLAB Function blocks</i>	<i>For all features</i>	<i>For all features</i>	<i>When targeting the host OS</i>	<i>For all features</i>
<b>MinGW 4.9.2</b> C/C++ (Distributor: TDM-GCC) Available at no charge	✓	✓	✓	✓	✓	
Microsoft Visual C++ 2017 product family <sup>12,13</sup> <i>(Patch required)</i>	✓	✓		✓	✓	✓ <sup>13</sup>
Microsoft Visual C++ 2015 Professional	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2013 Professional	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2012 Professional	✓	✓	✓	✓	✓	✓
Microsoft Windows SDK 7.1 Available at no charge; requires .NET Framework 4.0	✓	✓	✓	✓ <sup>7</sup>	✓ <sup>7</sup>	
Intel Parallel Studio XE 2016 for C/C++ <sup>3</sup>	✓					
Intel Parallel Studio XE 2015 for C/C++ <sup>3</sup>	✓					
Intel C++ Composer XE 2013 <sup>3</sup>	✓					
Intel Parallel Studio XE 2016 for Fortran <sup>3</sup>	✓ <sup>8</sup>					
Intel Parallel Studio XE 2015 for Fortran <sup>3</sup>	✓ <sup>8</sup>					
Intel Visual Fortran Composer XE 2013 <sup>3</sup>	✓ <sup>8</sup>					✓ <sup>9</sup>
lcc-win64 Included with products that support it		✓	✓	✓	✓	

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

- Support for some versions 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.
- Microsoft Windows SDK 7.1 may not be compatible with Windows 8 or Windows 10
- Intel compilers depend on tools provided by Microsoft. The following combinations are supported:

	Microsoft Windows SDK 7.1	Microsoft Visual Studio 2015 Professional (64-bit)	Microsoft Visual Studio 2013 Professional (64-bit)	Microsoft Visual Studio 2012 Professional (64-bit)	Microsoft Visual Studio 2010 Professional SP1 (64-bit)
Intel Parallel Studio XE 2016 For C/C++	✓	✓	✓	✓	✓
Intel Parallel Studio XE 2015 For C/C++	✓	✓	✓	✓	✓
Intel Parallel Studio XE 2016 For Fortran	✓	✓	✓	✓	✓
Intel Parallel Studio XE 2015 For Fortran	✓	✓	✓	✓	✓
Intel C++ Composer XE 2013	✓		✓	✓	✓
Intel Visual Fortran Composer XE 2013	✓		✓	✓	✓

- 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.
- MATLAB Compiler SDK supports building .NET assemblies but not COM objects when using the Microsoft .NET Framework SDK without Microsoft Visual Studio.
- This compiler does not support OpenMP. Code generation will treat parfor-loops as for-loops.
- .sln project generation is not supported when using the Microsoft Windows SDK.
- 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.
- Simulink Real-Time supports Fortran code in Simulink models using C-MEX wrapper S-Functions.
- When building Excel add-ins for MPS, MATLAB Compiler SDK requires .NET framework 4.0 or later.
- A compiler is not installed by default with this version of Visual Studio and must be specified while performing a custom installation.  
*See Answer 328432 for more details.*
- Community, Professional, and Enterprise editions are supported.
- See Answer 348269* for instructions on how to set up Microsoft Visual Studio 2017 for use with Simulink Real-Time.

## Mac OS X

Note:

- Xcode 6.x will not be supported in a future release
- Java Development Kit 1.7 will be replaced by a newer version in a future release

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

### MATLAB Product Family – Release 2016b

Compiler	MATLAB	MATLAB Compiler SDK		MATLAB Coder	SimBiology	Fixed-Point Designer
	<i>For MEX-file compilation, <b>loadlibrary</b>, and external usage of MATLAB Engine and MAT-file APIs</i>	<i>C/C++</i>	<i>Java</i>	<i>For all features</i>	<i>For accelerated computation</i>	<i>For accelerated computation</i>
Xcode 8.x Available at no charge	✓					
Xcode 6.x, 7.x Available at no charge	✓	✓		✓ <sup>1</sup>	✓	✓
Intel Parallel Studio XE 2016 for Fortran	✓					
Intel Parallel Studio XE 2015 for Fortran	✓					
Intel Fortran Composer XE (2013)	✓					
Java Development Kit (JDK) 1.7 Available at no charge			✓			

## Simulink Product Family – Release 2016b

	Simulink	Simulink	Stateflow	Simulink Coder	Embedded Coder
Compiler	<i>For S-Function compilation</i>	<i>For model referencing, Accelerator mode, Rapid Accelerator mode, and MATLAB Function blocks</i>	<i>For all features</i>	<i>For all features</i>	<i>When targeting the host OS</i>
Xcode 6.x, 7.x	✓	✓	✓	✓	✓
Available at no charge					
Intel Parallel Studio XE 2016 for Fortran	✓ <sub>2</sub>				
Intel Parallel Studio XE 2015 for Fortran	✓ <sub>2</sub>				
Intel Fortran Composer XE (2013)	✓ <sub>2</sub>				

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

### 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.

## Linux (64-bit)

Note:

- Support has been upgraded from GCC C/C++ 4.7 to 4.9 as of R2016b
- Support has been upgraded from GNU gfortran 4.7 to 4.9 as of R2016b
- Java Development Kit 1.7 will be replaced by a newer version in a future release

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

### MATLAB Product Family – Release 2016b

Compiler	MATLAB	MATLAB Compiler SDK		MATLAB Coder	SimBiology	Fixed-Point Designer	HDL Coder	HDL Verifier
	<i>For MEX-file compilation, <b>loadlibrary</b>, and external usage of MATLAB Engine and MAT-file APIs</i>	<i>C/C++</i>	<i>Java</i>	<i>For all features</i>	<i>For accelerated computation</i>	<i>For accelerated computation</i>	<i>For accelerated test-bench simulation</i>	<i>For DPI and TLM component generation</i>
GCC C/C++ 4.9.x Available at no charge	✓	✓	✓	✓	✓	✓	✓	✓
GNU gfortran 4.9.x Available at no charge	✓							
Java Development Kit (JDK) 1.7 Available at no charge			✓					

## Simulink Product Family – Release 2016b

	Simulink	Simulink	Stateflow	Simulink Coder	Embedded Coder
Compiler	<i>For S-Function compilation</i>	<i>For model referencing, Accelerator mode, Rapid Accelerator mode, and MATLAB Function blocks</i>	<i>For all features</i>	<i>For all features</i>	<i>When targeting the host OS</i>
GCC C/C++ 4.9.x Available at no charge	✓	✓	✓	✓	✓
GNU gfortran 4.9.x Available at no charge	✓ <sup>2</sup>				

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

### Notes for the Linux Platform

- 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.