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Supported and Compatible Compilers – Release 2021b

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. See *Supported Interfaces to Other Languages* for information about using MATLAB with other programming languages.

Windows

MinGW is a supported C/C++ compiler which is available free of charge. *Download MinGW now.*

Note:

- Microsoft Visual C++ 2015 Professional is not supported as of R2021b.

- Support for Intel Parallel Studio XE 2018 for C/C++ and Fortran will be discontinued in an upcoming release.

MATLAB Product Family – Release 2021b

Compiler	MATLAB For MEX-file compilation, loadlibrary, C++ interface, and external usage of MATLAB Engine and MAT-file APIs	MATLAB Coder For all features	GPU Coder For all features	SimBiology For accelerated computation	Fixed-Point Designer For accelerated computation	HDL Coder For accelerated testbench simulation	HDL Verifier For DPI and TLM component generation	Audio Toolbox For validating and generating audio plugins	ROS Toolbox For custom messages and code generation
MinGW 6.3 C/C++ (Distributor: mingw-w64) Download Now *Available at no charge*	✓	✓		✓	✓	✓	✓		
Microsoft Visual C++ 2019 product family	✓	✓	✓	✓	✓			✓	
Microsoft Visual C++ 2017 product family [9]	✓	✓	✓	✓	✓	✓	✓	✓	✓
Intel Parallel Studio XE 2020 for C/C++ [3]	✓			✓	✓				
Intel Parallel Studio XE 2019 for C/C++ [3]	✓	✓		✓	✓				
Intel Parallel Studio XE 2018 for C/C++ [3]	✓	✓		✓	✓				
Intel Parallel Studio XE 2020 for Fortran [3]	✓			✓					
Intel Parallel Studio XE 2019 for Fortran [3]	✓			✓					
Intel Parallel Studio XE 2018 for Fortran [3]	✓			✓					

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Simulink Product Family – Release 2021b

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	SerDes Toolbox For IBIS-AMI model generation
MinGW 6.3 C/C++ (Distributor: mingw-w64) *Available at no charge*	✔	✔	✔	✔	✔	✔
Microsoft Visual C++ 2019 product family	✔	✔	✔	✔	✔	✔
Microsoft Visual C++ 2017 product family [9]	✔	✔	✔	✔	✔	✔
Intel Parallel Studio XE 2020 for C/C++ [3]	✔					
Intel Parallel Studio XE 2019 for C/C++ [3]	✔	✔ [8]		✔	✔	
Intel Parallel Studio XE 2018 for C/C++ [3]	✔	✔ [8]		✔	✔	
Intel Parallel Studio XE 2020 for Fortran [3]	✔ [6]					
Intel Parallel Studio XE 2019 for Fortran [3]	✔ [6]					
Intel Parallel Studio XE 2018 for Fortran [3]	✔ [6]					

MATLAB Compiler – Release 2021b

Compiler	MATLAB Compiler Excel add-in for desktop	MATLAB Compiler SDK C/C++	MATLAB Compiler SDK COM	MATLAB Compiler SDK .NET	MATLAB Compiler SDK Excel add-in for MPS
MinGW 6.3 C/C++ (Distributor: *mingw-w64*) Available at no charge	✔ [2]	✔	✔ [2]		
Microsoft Visual C++ 2019 product family	✔	✔	✔	✔	
Microsoft Visual C++ 2017 product family [9]	✔	✔	✔	✔	
Microsoft .NET Framework SDK 4.0, 4.5, 4.6 Available at no charge				✔ [4, 5]	✔ [7]

The following products include lcc-win64 when installed: Simulink, MATLAB Coder, SimBiology, Fixed-Point Designer, HDL Coder, HDL Verifier, Stateflow, Simulink Coder, and Embedded Coder. This compiler is no longer supported and will be removed in a future release of MATLAB and Simulink. MathWorks recommends you install one of the other compilers listed on this page when using these products.

Notes for the Windows Platform

1. The corresponding version of Visual Studio Community is reported to work. Full support for Visual Studio Community has not been qualified by MathWorks.

2. Microsoft Windows SDK 10 is required to use MinGW with this product. See Answer 355476 for more details.

3. Intel compilers require that Microsoft Visual Studio 2017, or 2019 also be installed on your system.

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 Compiler SDK supports building .NET assemblies but not COM objects when using the Microsoft .NET Framework SDK without Microsoft Visual Studio.

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. When building Excel add-ins for MATLAB Production Server, MATLAB Compiler SDK requires .NET framework 4.0 or later.

8. MATLAB Function Blocks are not supported with Intel Parallel Studio.

9. Visual Studio 2017 can be downloaded from the Visual Studio documentation. Community, Professional, and Enterprise editions are supported. The Visual Studio installer groups functionality into workloads; the "Desktop development with C++" workload is required for MEX and associated functionality.

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Mac OS

Note:

- Intel Parallel Studio XE 2017 is not supported as of R2021b

- Support for Xcode 11 will be discontinued in an upcoming release

On macOS, 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 2021b							
Compiler	MATLAB	MATLAB Compiler SDK	MATLAB Coder	SimBiology	Fixed-Point Designer	Audio Toolbox	ROS Toolbox
	For MEX-file compilation, loadlibrary, and external usage of MATLAB Engine and MAT-file APIs	C/C++	For all features	For accelerated computation	For accelerated computation	For validating and generating audio plugins	For custom messages and code generation
Xcode 12.x Available at no charge	✔	✔	✔	✔	✔	✔	✔
Intel Parallel Studio XE 2020 for Fortran	✔						
Intel Parallel Studio XE 2019 for Fortran	✔						
Intel Parallel Studio XE 2018 for Fortran	✔						
Intel Parallel Studio XE 2017 for Fortran	✔						

Simulink Product Family – Release 2021b

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
Xcode 12.x Available at no charge	✔	✔	✔	✔	✔
Intel Parallel Studio XE 2020 for Fortran	✔				
Intel Parallel Studio XE 2019 for Fortran	✔ [1]				
Intel Parallel Studio XE 2018 for Fortran	✔ [1]				
Intel Parallel Studio XE 2017 for Fortran	✔ [1]				

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

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.

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 2021b

Compiler	MATLAB	MATLAB Compiler SDK	MATLAB Coder	GPU Coder	SimBiology	Fixed-Point Designer	HDL Coder	HDL Verifier	ROS Toolbox
	For MEX-file compilation, `loadlibrary`, and external usage of MATLAB Engine and MAT-file APIs	C/C++	For all features	For all features	For accelerated computation	For accelerated computation	For accelerated testbench simulation	For DPI and TLM component generation	For custom messages and code generation
GCC C/C++ 9.x — Available at no charge	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCC C/C++ 8.x — Available at no charge	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCC C/C++ 7.x — Available at no charge	✓	✓	✓	✓	✓	✓	✓	✓	✓
GNU gfortran 8.x — Available at no charge	✓								

Simulink Product Family – Release 2021b

Compiler	Simulink	Simulink	Stateflow	Simulink Coder	Embedded Coder	SerDes Toolbox
	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	For IBIS-AMI model generation
GCC C/C++ 9.x — Available at no charge	✓	✓	✓	✓	✓	✓
GCC C/C++ 8.x — Available at no charge	✓	✓	✓	✓	✓	✓
GCC C/C++ 7.x — Available at no charge	✓	✓	✓	✓	✓	✓
GNU gfortran 8.x — Available at no charge	✓ [1]					

To determine the version of your compiler, see *Answer 99897*.

Notes for the Linux 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.