Supported and Compatible Compilers – Release 2023b

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:

- Intel Parallel Studio XE 2020 is no longer supported as of R2023b
- Intel oneAPI 2021 support will be discontinued in a future release

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MATLAB Product Family – Release 2023b

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 8.1 C/C++ (Distributor: mingw-w64) Additional download and setup required. Direct download for MinGW 8.1. Setup instructions on MATLAB Answers. *Available at no charge*	✓	✓ [1]		✓	✓	✓	✓		
MinGW 6.3 C/C++ (Distributor: mingw-w64) Download Now *Available at no charge*	✓	✓ [1]		✓	✓	✓	✓		
Microsoft Visual C++ 2022 product family [2]	✓	✓	✓	✓	✓	✓		✓	✓
Microsoft Visual C++ 2019 product family [2]	✓	✓	✓	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2017 product family [2 3]	✓	✓	✓	✓	✓	✓	✓	✓	✓
Intel oneAPI 2023 for C/C++ [4]	✓								
Intel oneAPI 2022 for C/C++ [4]	✓								
Intel oneAPI 2021 for C/C++ [4]	✓	✓ [6]		✓	✓				
Intel oneAPI 2023 for Fortran [4]	✓								
Intel oneAPI 2022 for Fortran [4]	✓								
Intel oneAPI 2021 for Fortran [4]	✓			✓					

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Simulink Product Family – Release 2023b

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 8.1 C/C++ (Distributor: mingw-w64) Additional download and setup required. Direct download for MinGW 8.1. Setup instructions on MATLAB Answers. *Available at no charge*	✓	✓	✓	✓[1]	✓	✓
MinGW 6.3 C/C++ (Distributor: mingw-w64) *Available at no charge*	✓	✓	✓	✓[1]	✓	✓
Microsoft Visual C++ 2022 product family [2]	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2019 product family [2]	✓	✓	✓	✓	✓	✓
Microsoft Visual C++ 2017 product family [2 3]	✓	✓	✓	✓	✓	✓
Intel oneAPI 2023 for C/C++ [4]	✓[5]					
Intel oneAPI 2022 for C/C++ [4]	✓[5]					
Intel oneAPI 2021 for C/C++ [4]	✓[5]	✓		✓	✓	
Intel oneAPI 2023 for Fortran [4]	✓[5]					
Intel oneAPI 2022 for Fortran [4]	✓[5]					
Intel oneAPI 2021 for Fortran [4]	✓[5]					

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MATLAB Compiler – Release 2023b					
Compiler	MATLAB Compiler	MATLAB Compiler SDK			
	Excel add-in for desktop	C/C++	COM	.NET	Excel add-in for MPS
MinGW 8.1 C/C++ (Distributor: mingw-w64) Additional download and setup required. Direct download for MinGW 8.1. Setup instructions on MATLAB Answers. *Available at no charge*	✓ 7	✓	✓ 7		
MinGW 6.3 C/C++ (Distributor: ***mingw-w64***) *Available at no charge*	✓ 7	✓	✓ 7		
Microsoft Visual C++ 2022 product family	✓	✓	✓	✓	
Microsoft Visual C++ 2019 product family	✓	✓	✓	✓	
Microsoft Visual C++ 2017 product family [2]	✓	✓	✓	✓	
.NET Framework 4.6.2 or higher				✓	✓
.NET 6.0 or higher				✓	

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. MinGW does not support Code Profiling with C++ MEX target.
2. Microsoft Visual C++ is included with Visual Studio Build Tools, Community, Professional, and Enterprise. The Visual Studio installers group functionality into workloads; the “Desktop development with C++” workload is required for MEX and associated functionality.
3. Visual Studio 2017 can be downloaded from the Visual Studio documentation.
4. Intel compilers require that Microsoft Visual Studio also be installed on your system. The Intel compiler version must be equal to or newer than the Microsoft Visual Studio version.
5. 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.
6. MATLAB Function Blocks are not supported with Intel oneAPI.
7. Microsoft Windows SDK 10 is required to use MinGW with this product. ***See Answer 355476*** for more details.

Mac OS

Note:

Xcode 15 is supported as of R2023b Update 5.

MATLAB Product Family – Release 2023b									
Compiler	Apple silicon	Intel	MATLAB For MEX-file compilation, loadlibrary, and external usage of MATLAB Engine and MAT-file APIs	MATLAB Compiler SDK C/C++	MATLAB Coder For all features	SimBiology For accelerated computation	Fixed-Point Designer For accelerated computation	Audio Toolbox For validating and generating audio plugins	ROS Toolbox For custom messages and code generation
Xcode 15	✓	✓	✓	✓	✓	✓	✓	✓	✓
Xcode 14	✓	✓	✓	✓	✓	✓	✓	✓	✓
NAG Fortran Compiler	✓		✓						
Intel oneAPI 2023 for Fortran		✓							
Intel oneAPI 2022 for Fortran		✓	✓						
Intel oneAPI 2021 for Fortran		✓	✓						

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Simulink Product Family – Release 2023b							
Compiler	Apple silicon	Intel	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 15	✓	✓	✓	✓	✓	✓	
Xcode 14	✓	✓	✓	✓	✓	✓	✓
NAG Fortran Compiler [1]	✓		✓				
Intel oneAPI 2023 for Fortran [1]		✓	✓				
Intel oneAPI 2022 for Fortran [1]		✓	✓				
Intel oneAPI 2021 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.

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Linux (64-bit)

Support for GCC 7.x has been discontinued as of R2023b.

MATLAB Product Family – Release 2023b									
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++ 11.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCC C/C++ 10.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCC C/C++ 9.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
GCC C/C++ 8.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
GNU gfortran 10.x	✓								

Simulink Product Family – Release 2023b						
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++ 11.x	✓	✓	✓	✓	✓	✓
GCC C/C++ 10.x	✓	✓	✓	✓	✓	✓
GCC C/C++ 9.x	✓	✓	✓	✓	✓	✓
GCC C/C++ 8.x	✓	✓	✓	✓	✓	✓
GNU gfortran 10.x	✓ 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.