

Supported and Compatible Compilers – Release 2020b

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:

- MinGW has been updated to version 6.3 as of R2020b.
- Intel Parallel Studio XE 2017 for C/C++ and Fortran are not supported as of R2020b.

MATLAB Product Family – Release 2020b

| Compiler | MATLAB | MATLAB Coder | GPU Coder | SimBiology | Fixed Point Designer | HDL Coder | HDL Verifier | Audio Toolbox | ROS Toolbox |
|--|---|------------------|------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------------|---|---|
| | For MEX-file compilation, loadlibrary, C++ interface, and external usage of MATLAB Engine and MAT-file APIs | For all features | For all features | For accelerated computation | For accelerated computation | For accelerated testbench simulation | For DPI and TLM component generation | For validating and generating audio plugins | 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 | ✓ Update 3 | ✓ Update 5 | ✓ Update 5 | ✓ Update 5 | ✓ | | | ✓ Update 5 | |
| Microsoft Visual C++ 2017 product family ¹¹ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Microsoft Visual C++ 2015 Professional ¹⁰ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ ¹ | |
| 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 | ✓ | | | ✓ | | | | | |

Simulink Product Family – Release 2020b

| 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 |
| MinGW 6.3 C/C++ (Distributor: mingw-w64) Available at no charge | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Microsoft Visual C++ 2019 product family | ✓ ^{Update 3} | ✓ ^{Update 3} | ✓ | ✓ ^{Update 5} | ✓ | ✓ |
| Microsoft Visual C++ 2017 product family ¹¹ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Microsoft Visual C++ 2015 Professional ¹⁰ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Intel Parallel Studio XE 2020 for C/C++ ³ | ✓ | | | | | |
| Intel Parallel Studio XE 2019 for C/C++ ³ | ✓ | ✓ ¹³ | | ✓ | ✓ | |
| Intel Parallel Studio XE 2018 for C/C++ ³ | ✓ | ✓ ¹³ | | ✓ | ✓ | |
| Intel Parallel Studio XE 2020 for Fortran ³ | | | | | | |
| Intel Parallel Studio XE 2019 for Fortran ³ | | | | | | |
| Intel Parallel Studio XE 2018 for Fortran ³ | | | | | | |

MATLAB Compiler – Release 2020b

| Compiler | MATLAB Compiler | MATLAB Compiler SDK | | | |
|--|--------------------------|---------------------|----------------|-------------------|----------------------|
| | Excel add-in for desktop | C/C++ | COM | .NET | 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 ¹¹ | ✓ | ✓ | ✓ | ✓ | |
| Microsoft Visual C++ 2017 product family ¹¹ | ✓ | ✓ | ✓ | ✓ | |
| Microsoft Visual C++ 2015 Professional ¹⁰ | ✓ | ✓ | ✓ | ✓ ⁴ | |
| Microsoft .NET Framework SDK 4.0, 4.5, 4.6 <i>Available at no charge</i> | | | | ✓ ^{4, 5} | ✓ ⁹ |

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 2015, 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. This compiler does not support OpenMP. Code generation will treat parfor-loops as for-loops.
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. When building Excel add-ins for MPS, MATLAB Compiler SDK requires .NET framework 4.0 or later.
9. 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.
10. [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.
11. MATLAB Function Blocks are not supported with Intel Parallel Studio.

Mac OS

Note:

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](#).

- Support for Xcode 10 will be discontinued in an upcoming release.

MATLAB Product Family – Release 2020b

| 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 ROS 2 custom messages and code generation |
| Xcode 11.x <i>Available at no charge</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Xcode 10.x <i>Available at no charge</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 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 2020b | | | | | |
|---|----------------------------|---|------------------|------------------|----------------------------|
| Compiler | Simulink | Simulink | Stateflow | Simulink Coder | Embedded Coder |
| | 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 |
| Xcode 11.x <i>Available at no charge</i> | ✓ | ✓ | ✓ | ✓ | ✓ |
| Xcode 10.x <i>Available at no charge</i> | ✓ | ✓ | ✓ | ✓ | ✓ |
| 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 2020b

| 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 <i>Available at no charge</i> | ✓ | | | | | | | | |
| GCC C/C++ 8.x <i>Available at no charge</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| GCC C/C++ 7.x <i>Available at no charge</i> | ✓ | | | | | | | | |
| GNU gfortran 8.x <i>Available at no charge</i> | ✓ | | | | | | | | |

Simulink Product Family – Release 2020b

| 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 <i>Available at no charge</i> | ✓ | | | | | |
| GCC C/C++ 8.x <i>Available at no charge</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| GCC C/C++ 7.x <i>Available at no charge</i> | ✓ | | | | | |
| GNU gfortran 8.x <i>Available at no charge</i> | ✓ ¹ | | | | | |

To determine the version of your compiler, see [Answer 99897](#).

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.