PSCAD V5 Compatibility Charts

The following charts summarize the known compatibility of PSCAD V5 and related third-party software.

1.a Supported Operating Systems - PSCAD

The following chart illustrates the compatibility history of Windows Operating Systems with PSCAD, including released and non-released editions.

Note – PSCAD is NOT supported on IOS. Some users have successfully set up a Windows emulator on their IOS to run PSCAD, but this has not been tested this nor is this supported.

PSCAD Versions/Editions \ Windows[1]	Windows 7 SP1		Windows 8		Windows 8.1		Windows 10		Windows 11	Windows Server	Windows Server	Windows Server	Windows Server	Windows Server
	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	64-bit	2008 R2 SP1	2012	2016	2019	2022
v5.0.0	X	✓	X	X	X	X	X	✓	---[4]	✓	✓	✓	✓	---[3]
v5.0.1	X	✓	X	X	X	X	X	✓	---[5]	✓	✓	✓	✓	---[3]
v5.0.2	X	✓	X	X	X	X	X	✓	---[5]	✓	✓	✓	✓	✓
V5 (Free Edition)[2]	X	✓	X	X	X	X	X	✓	---[4]	---[3]	---[3]	---[3]	---[3]	---[4]
V5 (Beta Edition)[2]	X	✓	X	X	X	X	X	✓	---[4]	✓	✓	✓	✓	---[4]

PSCAD / Windows Operating System Compatibility

✓	Officially Supported – Tested, should work
X	Not Officially Supported – Will likely not work
---	Unknown – Not tested

1. Lock-based PSCAD licensing is not supported in a cloud desktop environment. Certificate licensing may work in a cloud desktop.
2. Compatibility for this edition is subject to change, with the listed configuration applicable as of December, 2023.
3. Although not officially supported, this combination has worked for some customers and/or on our test machines.
4. Although not specifically tested with PSCAD, this is expected to work.
5. Although not officially supported, these versions of PSCAD have worked on test machines running Windows 11 21H2 and 22H2.

1.b Supported Operating Systems – Standalone License Manager

The following chart illustrates the compatibility history of Windows Operating Systems with the standalone License Manager.

Note – The License Manager is NOT supported on IOS. Some users might have set up a Windows emulator on their IOS to run the License Manager, but this has not been officially tested nor is this supported.

License Manager \ Windows	Windows 7 SP1		Windows 8		Windows 8.1		Windows 10		Windows 11	Windows Server	Windows Server	Windows Server	Windows Server	Windows Server
	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	64-bit	2008 R2 SP1	2012 R2	2016	2019	2022
LM 1.46 (with PSCAD v5.0.0)	✓	✓	X	X	X	X	✓	✓	---[1]	✓	✓	✓	✓	---[1]
LM 1.47 (with PSCAD v5.0.0 Upd1)	✓	✓	X	X	X	X	✓	✓	---[1]	✓	✓	✓	✓	---[1]
LM 1.48 (with PSCAD v5.0.1)	✓	✓	X	X	X	X	✓	✓	---[1]	✓	✓	✓	✓	---[1]
LM 1.49 (with PSCAD v5.0.2)	✓	✓	X	X	X	X	✓	✓	---[1]	✓	✓	✓	✓	---[1]

License Manager / Windows Operating System Compatibility

✓	Officially Supported – Tested, should work
X	Not supported - will likely not work
---	Unknown – Not tested

1. Expected to work.

1.c Required Microsoft® Visual C++ Redistributables – Prerequisites for PSCAD

The following chart illustrates the compatibility history of Microsoft Visual C++ Redistributables with PSCAD, including released and non-released versions.
Refer to Chart 1.d below, for Visual C++ Redistributables version numbering.

Visual C++ Redistributables / **PSCAD Versions/Editions**	**2015**	**2017**[2]	**2019**[2]	**2022**[2]
V5 (v5.0.0)	X	✓	✓	✓
V5 (v5.0.1)	X	✓	✓	✓
V5 (v5.0.2)	X	X	X	✓
V5 (Free Edition)[1]	X	X	X	✓
V5 (Beta Edition)[1]	X	X	X	✓

PSCAD / Microsoft® Visual C++ Redistributables Compatibility

✓	Officially Supported
X	Not Officially Supported

1. Compatibility for this edition is subject to change, with the listed configuration applicable as of December, 2023.
2. Includes both editions of Visual C++ Redistributables, x86 and x64.

1.d Versions of Microsoft® Visual C++ Redistributables released with Microsoft® Visual Studio

The following chart lists the versions of Visual C++ Redistributables released with Visual Studio.
Refer to Chart 1.c, above, for compatibility with PSCAD.

MS Visual Studio Version	MS Visual C++ Redistributables	
	Official Name	Corresponding Version
2008 (v9)	*MS Visual C++ 2008 Redistributables*	9.0
2010 (v10)	*MS Visual C++ 2010 Redistributables*	10.0
2012 (v11)	*MS Visual C++ 2012 Redistributables*	11.0
2013 (v12)	*MS Visual C++ 2013 Redistributables*	12.0
2015 (v14)	*MS Visual C++ 2015 Redistributables*	14.0
2017 (v15)	*MS Visual C++ 2017 Redistributables*	14.10.*** : 14.16.***
2019 (v16)	*MS Visual C++ 2019 Redistributables*	14.20.*** : 14.29.***
2022 (v17)	*MS Visual C++ 2022 Redistributables*	14.30.*** 14.31.*** 14.32.*** 14.34.*** 14.36.*** 14.38.***

1.e Supported Operating Systems – Fortran Compilers

The following chart illustrates known compatibility between Windows Operating Systems with Fortran compilers.

	Compiler	Windows 7	Windows 8	Windows 8.1	Windows 10[2]	Windows 11	Windows Server 2016	Windows Server 2019	Windows Server 2022
Intel Fortran Classic (ifort) [1][3]	***Intel Fortran Composer XE***:								
	12 (2011)	✓	---	---	✓	---	---	---	---
	13 (2013)	✓	---	---	✓	---	---	---	---
	14 (2013 SP1)	✓	---	---	✓	---	---	---	---
	Intel Parallel Studio Composer:								
	15 (2015)	✓	---	---	✓	---	---	---	---
	16 (2016)	✓	---	---	✓	---	---	---	---
	17 (2017)	✓	---	---	✓	---	---	---	---
	18 (2018)	✓	---	---	✓	---	---	---	---
	19 (2019)	✓	---	---	✓	---	---	---	---
	19.1 (2020)	✓	---	---	✓	---	✓	✓	---
	Intel oneAPI: [1]								
	19.2 (2021)	---	---	---	✓	✓	✓	✓	---
	19.2 (2022)	---	---	---	✓	✓	✓	✓	✓
	19.2 (2023)	---	---	---	✓	✓	---	✓	✓
	19.2 (2024)	---	---	---	✓	✓	---	✓	✓
Intel Fortran (ifx) : [1][3]									
19.2 (2023)		---	---	---	✓	✓	---	✓	✓
19.2 (2024)		---	---	---	✓	✓	---	✓	✓
GFortran:									
GFortran 4.6.2		✓	---	---	✓	✓	✓	✓	✓
GFortran 8.1		✓	---	---	✓	✓	✓	✓	✓

FORTRAN Compiler / Windows Operating System Compatibility

✓ Tested or specified by vendor, should work
--- Not tested – Unknown

1. As determined per Intel® Release Notes (launched from the Intel® Release Notes page).
2. Refer to this article when attempting to run older third-party software on a newer Windows operating system.
3. Original versions using "ifort" are now classified as *Intel Fortran Classic (ifort)*.
   Newer versions using "ifx" are classified as *Intel Fortran (ifx) (to be supported in PSCAD v5.1.0 and newer)*.

1.f Compatibility of Microsoft Visual C++ Redistributables

The following chart illustrates which versions of Microsoft Visual C++ Redistributables are actually supported when required by another program.

A program which requires this version	Can use Visual C++ 2015	Can use Visual C++ 2017	Can use Visual C++ 2019	Can use Visual C++ 2022
Visual C++ 2015	✓	✓	✓	✓
Visual C++ 2017	X	✓	✓	✓
Visual C++ 2019	X	X	✓	✓
Visual C++ 2022	X	X	X	✓

2.a Supported Fortran Compilers with PSCAD

The following chart illustrates the compatibility of Fortran compilers with PSCAD.

Fortran Compiler [1] / PSCAD	GFortran 95			Intel Fortran Classic (ifort)[4] [5]												Intel Fortran (ifx) [4] [5]
				Intel Visual Fortran	Intel Fortran Composer XE[3]			Intel Parallel Studio XE Composer Edition for Fortran						Intel oneAPI (Base/HPC Toolkits)				Intel oneAPI (Base/HPC Toolkits)
	v4.2.1 32-bit	v4.6.2 32-bit	v8.1 32-bit/ 64-bit	9, 10, 11	2011 v12	2013 v13	(SP1) v14	2015 v15 32-bit/ 64-bit	2016 v16 32-bit/ 64-bit	2017 v17 32-bit/ 64-bit	2018 v18 32-bit/ 64-bit	2019 v19.0 32-bit/ 64-bit	2020 v19.1 32-bit/ 64-bit	2021 v19.2 32-bit/ 64-bit	2022 v19.2 32-bit/ 64-bit	2023 v19.2 32-bit/ 64-bit	2024 v19.2 32-bit/ 64-bit	2023, 2024 64-bit
V5.0.0	X	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
V5.0.1	X	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
V5.0.2	X	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
V5 (Free)[2]	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
V5 (Beta)[2]	X	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Officially Supported – Tested, should work

X Not Officially Supported – Tested, will not work

1. Compatible compilers must be used for building a project that links in pre-compiled files (.obj, .o, or .lib) (see Charts 3.a and 3.b).
2. Compatibility for this edition is subject to change, with the listed configuration applicable as of December, 2023.
3. For these versions, only the 32-bit edition of the Intel Fortran compiler is supported with PSCAD.
4. The Fortran configuration file must be updated if using newer Intel versions. Instructions are in this article.
5. See Note 4, Chart 1.e.

2.b PSCAD Program Folders for Supported Intel® Fortran Compilers (IVF) and Microsoft® Visual Studio (VS)

The following chart specifies the PSCAD program folders for IVF along with supported IVF / VS combinations. Also included is reconfiguration capability.

PSCAD EMTDC Folder Name[1]	Applicable Versions of Intel[3]	Applicable Versions of Visual Studio	Toggle Between VS 2013- and VS 2015+[2]
IF12	Intel Fortran Classic (ifort): v12 v13 v14	VS 2013 and older	X
IF15 and *IF15_X86*	Intel Fortran Classic (ifort): v15 v16 v17	VS 2010 and newer[2]	✓
IF18 and *IF18_X86*	Intel Fortran Classic (ifort): v18 v19.0 v19.1 (2020) v19.2 (2021) v19.2 (2022) v19.2 (2023) v19.2 (2024) Intel Fortran (ifx): v19.2 (2023) v19.2 (2024	VS 2015 and newer	X

1. When PSCAD is installed, these folders are installed to the following location: C:\Program Files (x86)\PSCADxx\emtdc\
2. PSCAD may be toggled to use older Visual Studio libraries (2013 and older) or newer Visual Studio libraries (2015 and newer). More information is available in this article.
3. See Note 4, Chart 1.e.

2.c Supported Visual Studio Versions

The following chart illustrates the compatibility of Microsoft® Visual Studio with PSCAD.

PSCAD \ MS Visual Studio	2005 (v8)	2008 (v9)	2010 (v10)	2012 (v11)	2013 (v12)	2015 (v14)	2017 (v15)	2019 (v16)	2022 (v17)
v5.0.0	---	---	✓	--- [1]	✓	✓	✓	✓	✓
V5.0.1	---	---	✓	--- [1]	✓	✓	✓	✓	✓
V5.0.2	---	---	✓	--- [1]	✓	✓	✓	✓	✓
V5 (Free)[2]	X	X	X	X	X	X	X	X	X
V5 (Beta)[2]	---	---	✓	--- [1]	✓	✓	✓	✓	✓

✓ Officially Supported – Tested, should work
X Not Officially Supported – Tested, will not work
--- Unknown – Not tested

1. This version of Visual Studio is not recommended to ever be installed, as it can interfere with other versions, even after it has been removed.
2. Compatibility for this edition is subject to change, with the listed configuration applicable as of December, 2023.

3.a Calling Pre-compiled Objects or Libraries – Comparison of Fortran Compilers

If pre-compiled objects or libraries will be linked into a project, a compatible compiler must be used to build that project:

Whether the Pre-compiled model will run with this version / Model was pre-compiled using this		GFortran		Intel Fortran Classic (ifort)[2]																Intel Fortran (ifx) [2]	
				Intel® Fortran Composer XE			Intel® Parallel Studio XE Composer Edition for Fortran												Intel oneAPI		Intel oneAPI	
		v4.6.2	v8.1	v12 2011	v13 2013	v14 2013 SP1	v15 (2015) 32-bit	v15 (2015) 64-bit	v16 (2016) 32-bit	v16 (2016) 64-bit	v17 (2017) 32-bit	v17 (2017) 64-bit	v18 (2018) 32-bit	v18 (2018) 64-bit	v19.0 (2019) 32-bit	v19.0 (2019) 64-bit	v19.1 (2020) 32-bit	v19.1 (2020) 64-bit	v19.2 (2021-2024) 32-bit	v19.2 (2021-2024) 64-bit	v19.2 (2023-2024) 32-bit	v19.2 (2023-2024) 64-bit
GFortran v4.6.2		✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	TBD	
GFortran v8.1		X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Intel Fortran Classic (ifort)	Intel v12	X	X	✓	✓	✓	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X		
	Intel v13	X	X	[1]	✓	✓	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X		
	Intel v14	X	X	[1]	[1]	✓	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X		
	Intel v15 (32-bit)	X	X	[1]	[1]	[1]	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X		
	Intel v15 (64-bit)	X	X	X	X	X	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓		
	Intel v16 (32-bit)	X	X	[1]	[1]	[1]	[1]	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓	X		
	Intel v16 (64-bit)	X	X	X	X	X	X	[1]	X	✓	X	✓	X	✓	X	✓	X	✓	X	✓		
	Intel v17 (32-bit)	X	X	[1]	[1]	[1]	[1]	X	[1]	X	✓	X	✓	X	✓	X	✓	X	✓	X		
	Intel v17 (64-bit)	X	X	X	X	X	X	[1]	X	[1]	X	✓	X	✓	X	✓	X	✓	X	✓		
	Intel v18 (32-bit)	X	X	[1]	[1]	[1]	[1]	X	[1]	X	[1]	X	✓	X	✓	X	✓	X	✓	X		
	Intel v18 (64-bit)	X	X	X	X	X	X	[1]	X	[1]	X	[1]	X	✓	X	✓	X	✓	X	✓		
	Intel v19.0 (32-bit)	X	X	[1]	[1]	[1]	[1]	X	[1]	X	---	X	[1]	X	✓	X	✓	X	✓	X		
	Intel v19.0 (64-bit)	X	X	X	X	X	X	[1]	X	---	X	[1]	X	[1]	X	✓	X	✓	X	✓		
	Intel v19.1 (32-bit)	X	X	[1]	[1]	[1]	[1]	X	---	X	[1]	X	[1]	X	[1]	X	✓	X	✓	X		
	Intel v19.1 (64-bit)	X	X	X	X	X	X	[1]	X	[1]	X	[1]	X	[1]	X	[1]	X	✓	X	✓		
	Intel v19.2 (32-bit)	X	X	[1]	[1]	[1]	[1]	X	[1]	X	[1]	X	[1]	X	[1]	X	[1]	X	✓	X		
	Intel v19.2 (64-bit)	X	X	X	X	X	X	[1]	X	[1]	X	[1]	X	[1]	X	[1]	X	[1]	X	✓		
Intel Fortran (ifx)	Intel v19.2 (64-bit)	X	X	TBD →																		

✓ Compatible
X Not compatible

1. The general rule is that a precompiled model should be compatible with the same or newer version of Intel. e.g. If precompiled with Intel 15, the model should work with Intel 15 and newer. However, it might be possible to build a precompiled model using an older version of Intel. e.g. If precompiled with Intel 15, the model might work with Intel 14 or older.

2. See Note 4, Chart 1.e.

3.b Calling Pre-compiled Objects or Libraries – Compatibility of Visual Studio Versions

This chart is in addition to considering the compatibility of the Visual Studio version with the Intel Fortran compiler version (see Table 4).

For any pre-compiled files containing non-Fortran code (e.g. C-code), the version of Visual Studio that was used to pre-compile the file must be considered.

Specifically, due to some changes that Microsoft® made to Visual Studio 2015 libraries, for pre-compiled models containing any non-Fortran code:

- If the model was pre-compiled using VS 2013 and older, it will not be compatible with VS 2015 and newer. The model may only be built using VS 2013 and older.
- If the model was pre-compiled using VS 2015 and newer, it will not be compatible with VS 2013 and older. The model may only be built using VS 2015 and newer.

Model containing non-Fortran code, was pre-compiled using this ↓ / Whether the model will run with this version →	Visual Studio 2013 and Older 2005, 2008, 2010, 2012, 2013	Visual Studio 2015 and Newer 2015, 2017, 2019, 2022
Visual Studio 2005	✓	X
Visual Studio 2008		
Visual Studio 2010		
Visual Studio 2012		
Visual Studio 2013		
Visual Studio 2015	X	✓
Visual Studio 2017		
Visual Studio 2019		
Visual Studio 2022		

If the model does not contain any non-Fortran code (e.g. C-code), and only contains Fortran code, then the above Visual Studio compatibility issue is not a consideration; any version of Visual Studio is acceptable, and the table below can be disregarded.

4. Intel Fortran Compilers and Visual Studio Compatibility

The following chart illustrates the compatibility history of Fortran compilers and Visual Studio.

Intel Fortran Compiler / Visual Studio (Microsoft)[1]	Intel Fortran Classic (ifort)[14]														Intel Fortran (ifx)[14]
	Intel® Fortran Composer XE			Intel® Parallel Studio XE Composer Edition for Fortran						Intel oneAPI				Intel oneAPI
	2011 v12.0/ v12.1	2013 v13.0/ v13.1	2013 (SP1) v14.0	2015 v15	2016 v16	2017 v17	2018 v18	2019 v19.0	2020 v19.1	2021 v19.2	2022 v19.2	2023 v19.2	2024 V19.2	2023-2024 V19.2
	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	32-bit/ 64-bit	64-bit
2005 (v8)	--- IVF ✓	--- IVF X	---	---	---	---	---	---	---	X	X	X	X	X
2008 (v9)	--- IVF ✓	---[4] IVF ✓	--- IVF ✓	--- IVF X	---	---	---	---	---	X	X	X	X	X
2010 (v10)	--- IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	--- IVF ✓	---	---	---	---	X	X	X	X	X
2012 (v11)[2]	---	--- IVF ✓	--- IVF ✓	--- IVF ✓	--- IVF ✓	--- IVF ✓	IVF X	---	---	X	X	X	X	X
2013 (v12)	---	---	--- IVF ✓	--- IVF ✓	--- IVF ✓	--- IVF ✓	PSCAD X[6]	PSCAD X[6]	PSCAD X[l]	X	X	X	X	X
2015 (v14)[3]	---	---	---	PSCAD✓ IVF ✓[5]	--- IVF ✓	---[7] IVF ✓	IVF ✓	IVF ✓	X	X	X	X	X	X
2017 (v15)[3]	---	---	---	---	---	--- IVF ✓[9]	[8] IVF ✓	[10] IVF ✓	IVF ✓	PSCAD ✓ IVF ✓	PSCAD ✓ IVF ✓	Xx	X	X
2019 (v16)[3]	---	---	---	---	---	PSCAD X IVF X	PSCAD X IVF X	PSCAD ✓ IVF[11]	IVF ✓	PSCAD ✓ IVF ✓	PSCAD✓ IVF ✓	PSCAD ✓ IVF ✓	PSCAD ✓ IVF ✓	PSCAD ✓ IVF ✓
2022 (v17)[3]	X	X	X	X	X	X	X	x	x	X	PSCAD ✓ IVF X[12]	PSCAD ✓ IVF ✓[13]	PSCAD ✓ IVF ✓	PSCAD ✓ IVF ✓

PSCAD✓	We support this combination (per internal testing)
PSCAD X	We do not support this combination (per internal testing)
IVF ✓	Intel Fortran officially supports this combination (per IVF Release Notes) (Note: earlier updates within an Intel version might not support this)
IVF X	Intel Fortran does not officially support this combination (per IVF Release Notes)
---	Unknown

1. When compiling projects containing C-code or components using DLLs, a VS edition containing a C-compiler must be installed. Refer to this article for more information.
2. It is not recommended to install Visual Studio 2012, as it can interfere with other Visual Studio installations even after the uninstallation of Visual Studio 2012.
3. Notes about Visual Studio 2015 and newer:
   a. Refer to this article to select your Visual Studio version and edition.

b. Refer to this article regarding important changes to Microsoft Visual Studio 2015 and newer. PSCAD will need to be properly configured.
c. If installing a standalone edition of Visual Studio2015+, ensure the required components are selected for installation as specified in this article.

4. This compiler/Visual Studio combination appears to work on our test computers without any problems, but our support may be limited.
5. Microsoft Visual Studio 2015 is officially supported with Intel Fortran 15 Update 5 and newer (15.0.5.280+). However, testing reveals that VS 2015 also works with Intel 15 Update 4 (15.0.4.221).
6. PSCAD does not support this version of Intel with Visual Studio 2013 and earlier, as of PSCAD v5 (refer to Chart 2.b) (even though this combination is supported by Intel).
   Note – this combination is supported with PSCAD v4.6.3, though.
7. In addition to Visual Studio 2015 Professional Edition being officially supported with Intel 17, Intel 17.0.210 also worked with Visual Studio 2015 Community Edition on a customer's machine.
8. In addition to Visual Studio 2017 Professional Edition being officially supported with Intel 18, Intel 18.0.185 also worked with Visual Studio 2017 Community Edition on a customer's machine.
9. Microsoft Visual Studio 2017 is supported with Intel Fortran 17 Update 4 and newer (17.0.4.210+).
10. In addition to Visual Studio 2017 Professional Edition being officially supported with Intel 19.0, Intel 19.0 also worked with Visual Studio 2017 Community Edition on a customer's machine.
11. Microsoft Visual Studio 2019 is supported with Intel 19.0 Update 4 and newer (19.0.4.228).
    Note: It is not officially documented whether the VS Community Edition is supported with IVF, however, one customer was able to run IVF 19.0 Update 5 and VS 2019 Community Edition.
12. Even though Intel Release Notes do not officially support this combination, this combination works for some customers.
13. Officially supported by Intel as of Intel Version 19.2.25922 (also known as 2023.0.0) (also known as 2021.8.0).
14. Intel Fortran (ifx) works with PSCAD v5.1.0 (to be released in 2024). See Note 4 Chart 1.e for other notes on these groupings.

5. Version of Visual Studio that comes Bundled with Intel Fortran

The following chart lists the version of Microsoft® Visual Studio Shell Edition (aka Premier Partner Edition) that comes bundled with an academic or commercial license for Intel Fortran version.

Note

Visual Studio software does not comes bundled with the free Intel Fortran trial edition nor with Intel Fortran 19.0 Update 3 and newer. Instead, Visual Studio software must be obtained and installed separately (and it must be installed prior to the installation Intel Fortran software to ensure integration between these two software). Refer to this article for details on obtaining and setting up software.

Intel Fortran Compiler / VisualStudio (Microsoft)	Intel® Fortran Composer XE				Intel® Parallel Studio XE Composer Edition for Fortran										2019 19.0 Update 3 and Newer
	2011	2011	2013	2013 (SP1)	2015		2016		2017		2018		2019		
	12.0	12.1	13.0/ 13.1	14.0	32-bit 15	64-bit 15	32-bit 16	64-bit 16	32-bit 17	64-bit 17	32-bit 18	64-bit 18	32-bit 19.0	64-bit 19.0	(32-bit and 64-bit)
2008 (v9)	✓														Not applicable[3]
2010 (v10)		✓	✓	✓	✓	✓									
2012 (v11)[1]															
2013 (v12)							✓	✓	✓	✓					
2015 (v14)											✓	✓	✓[2]	✓[2]	

✓ This version of Visual Studio comes bundled with the associated version of Intel Fortran.

1. This version of Visual Studio does not come bundled with any version of Intel Fortran.
2. As of Intel Fortran 2019 v19.0 Update 3 and newer, the Microsoft Visual Studio Shell Edition no longer comes bundled with a licensed edition of Intel Fortran.
3. As of Intel Fortran 2019, v19.0 Update 3 and newer, the Microsoft Visual Studio Shell Edition no longer comes bundled with a licensed edition of Intel Fortran.
   Instead, a supported standalone edition must be installed separately, and prior to the Intel software.
   Suppported editions include the Professional Edition, Enterprise Edition and Community Edition.
   Further details on software selection are available here.

6. Supported MATLAB and Fortran Compiler Compatibility Chart

The following chart represents known compatibility between MATLAB and Fortran compilers for PSCAD V5.

MATLAB Versions \ Fortran Compilers	GFortran 95	Intel Visual Fortran Composer XE		Intel Parallel Studio XE Composer Edition for Fortran								Intel Fortran Classic (ifort)[7]				Intel oneAPI (Base and HPC Toolkits)								Intel Fortran (ifx)[7] Intel oneAPI (Base and HPC Toolkits)	
		2011 v12	2013 (SP1) v13	v14	2015 (32-bit) (64-bit) v15		2016 (32-bit) (64-bit) v16		2017 (32-bit) (64-bit) v17		2018 (32-bit) (64-bit) v18	v18	2019 (32-bit) (64-bit) v19.0		2020 (32-bit) (64-bit) v19.1		2021 (32-bit) (64-bit) v19.2		2022 (32-bit) (64-bit) v19.2		2023 (32-bit) (64-bit) v19.2		2024 (32-bit) (64-bit) v19.2		2023 64-bit V19.2	2024 64-bit V19.2
R2011b, 7.13	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2012a, 7.14	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2012b, 8.0	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2013a, 8.1	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2013b, 8.2	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2014a, 8.3	X	✓	✓	X	X[2]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2014b, 8.4	X	✓	✓	✓	X[2]	X[2]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2015a, 8.5	X	✓	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2015b, 8.6	X	✓	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2016a, 9.0 (64-bit)	X	X	X[4]	X[4]	X	✓	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2016b, 9.1 (64-bit)	X	X	X[4]	X[4]	X	✓	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2017a, 9.2 (64-bit)	X	X	X[4]	X[4]	X	✓	X	✓	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2017b, 9.3 (64-bit)	X	X	X[4]	X[4]	X	✓	X	✓	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2018a, 9.4 (64-bit)[5]	X	X	X[4]	X[4]	X	✓	X	✓	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2018b, 9.5 (64-bit)[5]	X	X	X	X	X	✓	X	✓	X	✓	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2019a, 9.6 (64-bit)[5]	X	X	X	X	X	✓	X	✓	X	✓	X	✓	X	✓	X	---	X	---	X	---	X	---	X	---	---	---
R2019b, 9.7 (64-bit)[5]	X	X	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	---[5]	X	---[5]	X	---	X	---	X	---	---	---
R2020a, 9.8 (64-bit)	X	X	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	✓	X	---[5]	X	---	X	---	X	---	---	---
R2020b, 9.9 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	---[5]	X	---	X	---	X	---	---	---
R2021a, 9.10 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	---[5]	X	---	X	---	X	---	---	---
R2021b, 9.11 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	---[5]	X	---	X	---	X	---	---	---
R2022a, 9.12 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	---[6]	X	✓	X	✓	X	✓	X	---[6]	X	---	X	---	---	---
R2022b, 9.13 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	X	✓	X	---	X	---	X	---	---	---
R2023a, 9.14 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	✓	X	---	✓	---

Supported MATLAB and Fortran Compiler Compatibility
(Source: https://www.mathworks.com/support/sysreq/previous_releases.html)

✓	Fortran compiler is officially supported by MATLAB
X	Fortran compiler is not officially supported by MATLAB[1]
---	Unknown

1. Although not supported, these combinations might work.
2. Internal testing has shown that this combination works.
3. This combination was successfully run by a customer.

4. Although this combination is supported by Mathworks, it is not supported with PSCAD due to incompatible editions (Matlab is 64-bit and Intel is 32-bit).
5. Not officially supported as per the above-listed source, but is expected to work with PSCAD V5.
6. Mathworks website does not specify support for this combination, but internal testing at MHI has shown that this combination works.
7. See Note 4 in Chart 1.e.

7. PSCAD/MATLAB Compatibility Chart

The following chart lists the compatibility for PSCAD with MATLAB.

MATLAB Versions	PSCAD Free Edition	PSCAD Beta Edition	PSCAD V5 v5.0.0	PSCAD V5 v5.0.1	PSCAD V5 v5.0.2
R2011b, 7.13	X	---	---	---	---
R2012a, 7.14	X	---	---	---	---
R2012b, 8.0	X	---	---	---	---
R2013a, 8.1	X	---	---	---	---
R2013b, 8.2	X	---	---	---	---
R2014a, 8.3	X	---	---	---	---
R2014b, 8.4	X	---	---	---	---
R2015a, 8.5	X	---	---	---	---
R2015b, 8.6	X	---	---	---	---
R2016a, 9.0[1]	X	---	---	---	---
R2016b, 9.1	X	---	---	---	---
R2017a (9.2)	X	---	---	---	---
R2017b (9.3)	X	---[6]	---[6]	✓[5]	✓
R2018a (9.4)	X	---[6]	---[6]	✓[5]	✓
R2018b (9.5)	X	---[6]	---[6]	---[6]	---
R2019a (9.6)	X	---[6]	---[6]	✓[5]	✓
R2019b (9.7)	X	---[6]	---[6]	✓[5]	✓
R2020a (9.8)	X	---[6]	---[6]	✓[5]	✓
R2020b (9.9)	X	---[6]	---[3][6]	✓[5]	✓
R2021a (9.10)	X	✓	✓[4]	✓	✓
R2021b (9.11)	X	✓	✓[4][5]	✓	✓
R2022a (9.12)	X	✓	✓[4]	✓	✓
R2022b (9.13)	X	---	---	---	---[6]
R2023a (9.14)	X	---[4]	---[4]	---[4]	✓
Production Server	X	X	X	X	X

PSCAD/MATLAB Compatibility

✓	Tested, works
X	This combination is not compatible
---	Not tested

1. As of R2016a and newer, Matlab is only available as a 64-bit application.
2. <Deleted>
3. Confirmed by customer (with Intel 19.2/VS 2019)
4. This combination should work as long as PSCAD has the updated matlab versions.xml file.
5. Confirmed on a test machine with Intel oneAPI 19.2 Update 4 (v2021.4; v19.2.3556).
6. Expected to work.

8. Supported Licensing

The following chart lists the compatibility history between PSCAD and the two types of licensing.

PSCAD Versions, (License Manager Released with this version)	Lock-Based Licensing	Certificate Licensing
	USB locks	
v5.0.0 (LM v1.46, v1.47)	✓	✓
v5.0.1 (LM v1.48)	✓	✓
v5.0.2 (LM v1.49)	✓	✓
V5 (Free Edition)	X	✓
V5 (Beta Edition)	X	✓

✓ Supported
X Not supported

DOCUMENT TRACKING

Rev.	Description	Date
0	Initial	11/Mar/2020
1	Updates to Intel oneAPI and Windows Server 2019 throughout; Update to Charts 1a, 1b, 2b, 3b General improvements	7/Apr/2021
2	Updated per releases: PSCAD v5.0.1, License Manager v1.48, Matlab R2020/R2021, VS 2022, Intel 19.2	09/Oct/2021
3	Added Chart 1.f, Added Visual Studio 2022 and Intel 19.2 (2022) to Chart 4; General improvements	28/Apr/2022
4	Added support details regarding Matlab R2022b to Tables 6 and 7; Added support details regarding Intel oneAPI 2022 to Tables 1.e, 2.a, and 6; Added support details regarding Windows 11 to Table 1.e Added support details regarding Visual C++ Redistributables 2019 and 2022 to Table 1.c	02/Sep/2022
5	Updated per MHI releases: PSCAD v5.0.2 and License Manager v1.49; Updated per third-party releases: Matlab R2022b, Matlab R2023a, Intel oneAPI v19.2 (2023), Windows 11, Windows Server 2022, Microsoft MS Visual C++ 2022 Redistributables updates; Windows 8 / 8.1 not supported; Minor fixes and improvements	06/Apr/2023
6	Chart 1.a – Added support for PSCAD v5.0.2 with Windows Server 2022; Chart 1.c – Removed support for PSCAD Beta Edition with Microsoft Visual C++ 2017 and 2019 Redistributables	10/Apr/2023
7	Chart 1.a – Added compatibility information for Windows 11; Chart 3.b – Converted the text to a table; Chart 4 – Removed compatibility for VS 2017 with Intel oneAPI 2023 Chart 7 – Added possible support for Matlab R2022b with PSCAD v5.0.2	09/Jun/2023
8	Chart 3.b – Corrections	19/June/2023

Rev.	Description	Date
9	Added compatibility for Intel 19.2 (2024) to Charts 2.a, 3.a, 4, 6; Added compatibility for new “Intel Fortran (ifx)” v19.2 to Charts 1.e, 2.a, 2.b, 3.a, 4, 6; Updated Matlab R2023a compatibility in Chart 6	05/Dec/2023